



VENTILE



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Hydraulikventile

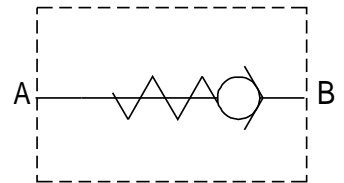
VUR – Rückschlagventil

Material: Stahl galvanisiert

Hydraulic valves

VUR – check valve

material: steel galvanized



Leitungseinbau / *inline mounting*

Bestell-Nr. code	Typ type	Gewinde thread	Q max. l/min	P max. bar	Öffnungsdruck open press	kg
210-010-01000	VUR010C14	1/4"	25	400	0,5	0,10
210-010-01050	VUR020C38	3/8"	40	400	0,5	0,18
210-010-01100	VUR030C12	1/2"	80	350	0,5	0,31
210-010-01150	VUR040C34	3/4"	110	300	0,5	0,56
210-010-01200	VUR050C100	1"	140	270	0,5	0,91
210-010-01250	VUR060C114	1.1/4"	200	250	0,5	1,48
210-010-01300	VUR070C112	1.1/2"	300	200	0,5	2,37
Öffnungsdruck / <i>opening pressure</i> : 0,5 bar						

210-010

Hydraulikventile

VBPS – entsperrbares Rückschlagventil einfachwirkend

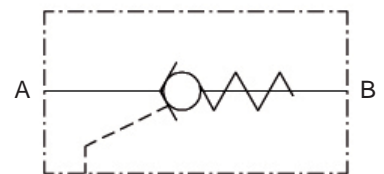
Material: Stahl galvanisiert

Hydraulic valves

VBPS – pilot-controlled check valve

- single acting -

material: steel galvanized



*einfachwirkend / single acting
Leitungseinbau / inline mounting*

Bestell-Nr. code	Typ type	Gewinde thread	Q max. l/min	P max. bar	Übersetz.- verhältnis ratio	kg
210-020-01000	VBPS010G14	1/4"	15	320	1:9,5	0,70
210-020-01050	VBPS020G38	3/8"	35	320	1:6	0,92
210-020-01100	VBPS030G12	1/2"	45	300	1:4,3	1,07
210-020-01150	VBPS040G34	3/4"	80	250	1:4	2,30
210-020-01200	VBPS050G100	1"	120	220	1:3,5	2,36

210-020

Hydraulikventile

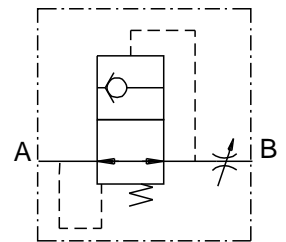
VUBA – Rohrbruchsicherungsventil

Material: Stahl galvanisiert

Hydraulic valves

VUBA – burst valve

material: steel galvanized



Patrone / cartridge
geläppte Dichtflächen / lapped tight surface

Bestell-Nr. code	Typ type	Gewinde thread	Q max. l/min	P max. bar	S	kg
210-040-01000	VUBA14	1/4"	25	350	0,8	0,010
210-040-01050	VUBA38	3/8"	45	350	1,5	0,010
210-040-01100	VUBA12	1/2"	70	350	1,8	0,030
210-040-01150	VUBA34	3/4"	140	350	2,2	0,050
210-040-01200	VUBA100	1"	180	350	2,6	0,100

S = Standardöffnung / standard opening

210-040

Hydraulikventile

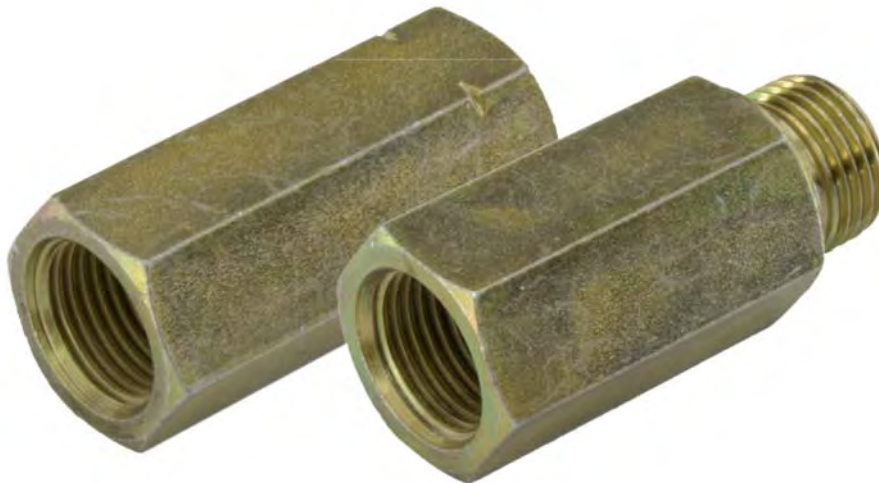
CMF-CFF – Gehäuse für „VUBA“-Ventile

Material: Stahl galvanisiert

Hydraulic valves

CMF-FF – „VUBA“ valve adapter

material: steel galvanized



Bestell-Nr. code	Typ type	Gewinde thread	Gewinde- ausführung	P max. bar	kg
Aussen-Innengewinde / Male-Female					
210-050-01000	CMF14	1/4"	AG/IG	300	0,070
210-050-01050	CMF38	3/8"	AG/IG	300	0,094
210-050-01100	CMF12	1/2"	AG/IG	300	0,147
210-050-01150	CMF34	3/4"	AG/IG	300	0,225
210-050-01200	CMF100	1"	AG/IG	300	0,425
Innen-Innengewinde / Female-Female					
210-060-01000	CFF14	1/4"	IG/IG	300	0,070
210-060-01050	CFF38	3/8"	IG/IG	300	0,098
210-060-01100	CFF12	1/2"	IG/IG	300	0,145
210-060-01150	CFF34	3/4"	IG/IG	300	0,222
210-060-01200	CFF100	1"	IG/IG	300	0,435

210-050

Hydraulikventile

CMF-CFF – Gehäuse für „VUBA“-Ventile

Material: Stahl galvanisiert

Hydraulic valves

CMF-FF – „VUBA“ valve adapter

material: steel galvanized



Bestell-Nr. code	Typ type	Gewinde thread	Gewinde- ausführung	P max. bar	kg
Aussen-Innengewinde / Male-Female					
210-050-01000	CMF14	1/4"	AG/IG	300	0,070
210-050-01050	CMF38	3/8"	AG/IG	300	0,094
210-050-01100	CMF12	1/2"	AG/IG	300	0,147
210-050-01150	CMF34	3/4"	AG/IG	300	0,225
210-050-01200	CMF100	1"	AG/IG	300	0,425
Innen-Innengewinde / Female-Female					
210-060-01000	CFF14	1/4"	IG/IG	300	0,070
210-060-01050	CFF38	3/8"	IG/IG	300	0,098
210-060-01100	CFF12	1/2"	IG/IG	300	0,145
210-060-01150	CFF34	3/4"	IG/IG	300	0,222
210-060-01200	CFF100	1"	IG/IG	300	0,435

210-060

Hydraulikventile

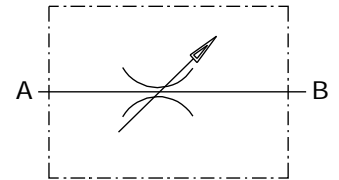
VRB – Drosselventil

Material: Stahl galvanisiert

Hydraulic valves

VRB – throttle valve

material: steel galvanized



beidseitig drosselnd / *double throttling*
Leitungseinbau / *inline mounting*

Bestell-Nr. code	Typ type	Gewinde thread	Q max. l/min	P max. bar	kg
210-070-01000	VRB010	1/4"	15	350	0,30
210-070-01050	VRB020	3/8"	30	350	0,47
210-070-01100	VRB030	1/2"	45	350	0,58
210-070-01150	VRB040	3/4"	80	300	1,35
210-070-01200	VRB050	1"	150	230	2,15

210-070

Hydraulikventile

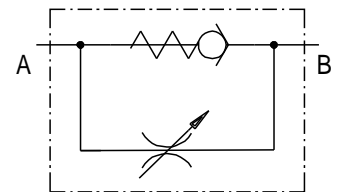
VRFC – Drossel-Rückschlagventil

Material: Stahl galvanisiert

Hydraulic valves

*VRFC – adjustable
throttle check valve*

material: steel galvanized



einseitig drosselnd / *unidirectional*
Leitungseinbau / *inline mounting*

Bestell-Nr. code	Typ type	Gewinde thread	Q max. l/min	P max. bar	kg
210-080-01000	VRFC010	1/4"	25	350	0,30
210-080-01050	VRFC020	3/8"	45	350	0,48
210-080-01100	VRFC030	1/2"	70	350	0,59
210-080-01150	VRFC040	3/4"	110	300	1,34
210-080-01200	VRFC050	1"	160	250	2,15
210-080-01250	VRFC060	1.1/4"	210	230	3,31
210-080-01300	VRFC070	1.1/2"	280	230	4,76

210-080

Hydraulikventile

**VMP – Druckbegrenzungsventil
direkt gesteuert**

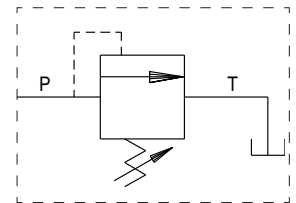
Material: Stahl galvanisiert

Hydraulic valves

VMP – relief valve

- direct acting -

material: steel galvanized



Leitungseinbau / inline mounting

Bestell-Nr. code	Typ type	Gewinde thread	Q max. l/min	P max. bar	kg
L= Leichte Reihe					
210-090-01500	VMP14LD	1/4"	30	300	0,48
210-090-01550	VMP38LD	3/8"	40	300	0,47
210-090-01600	VMP38D	3/8"	45	300	0,83
210-090-01650	VMP12D	1/2"	70	300	1,06
210-090-01700	VMP34D	3/4"	120	300	1,48
Feder / spring					
A= 5-50 bar – B= 20-100 bar – C= 40-180 bar – D= 50-250 bar (standard) – E= 80-300 bar					

210-090

Hydraulikventile

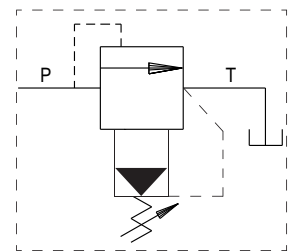
**VMPP – Druckbegrenzungsventil
vorgesteuert**

Material: Stahl galvanisiert

Hydraulic valves

VMP – relief valve

*- pilot operated -
material: steel galvanized*



Leitungseinbau / inline mounting

Bestell-Nr. code	Typ type	Gewinde thread	Q max. l/min	P max. bar	kg
210-100-01000	VMPP34P	3/4"	120	350	2,19
210-100-01050	VMPP1P	1"	180	350	3,25
Feder / spring N= 20-200 bar – P= 50-350 bar (standard)					

210-100

Hydraulikventile

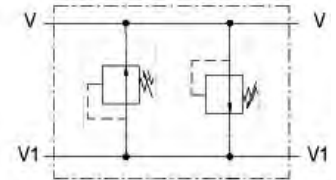
**VAU/DE – Schockventil
doppeltwirkend**

Material: Stahl galvanisiert

Hydraulic valves

**VAU/DE – dual cross-
over relief valve**

*- double acting -
material: steel galvanized*



Leitungseinbau / inline mounting

Bestell-Nr. code	Typ type	Gewinde thread	Q max. l/min	P max. bar	kg
210-110-01400	VAU-DE14D	1/4"	30	300	1,01
210-110-01450	VAU-DE38D	3/8"	45	300	1,12
210-110-01500	VAU-DE12D	1/2"	70	300	1,15
210-110-01550	VAU-DE34D	3/4"	110	300	1,4
Feder / spring					
A= 5-50 bar – B= 20-100 bar – C= 40-180 bar – D= 50-250 bar (standard) – E= 80-300 bar					

210-110

Hydraulikventile

VAU/DE – Schockventil für Motoren
doppeltwirkend

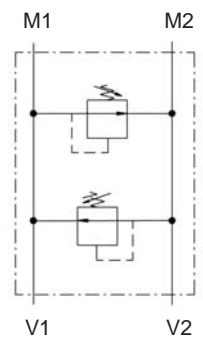
Material: Stahl galvanisiert

Hydraulic valves

VAU/DE – cross-over relief valve for motors

- double acting -

material: steel galvanized



Aufflanschbar auf Planetenmotore / *flanshable on planetary motors*

Bestell-Nr. code	Typ type	Gewinde thread	Q max. l/min	P max. bar	kg
210-120-01300	VAU-DE12D-OMP-R	1/2"	60	300	1,76
210-120-01350	VAU-DE12D-OMS	1/2"	60	300	1,75
210-120-01400	VAU-DE34D-OMT	3/4"	100	300	1,91

Feder / *spring*

A= 5-50 bar – B= 20-100 bar – C= 40-180 bar – **D= 50-250 bar (standard)** – E= 80-300 bar

210-120

Hydraulikventile

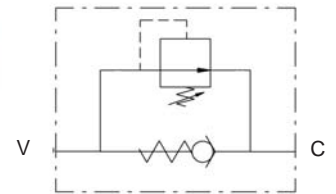
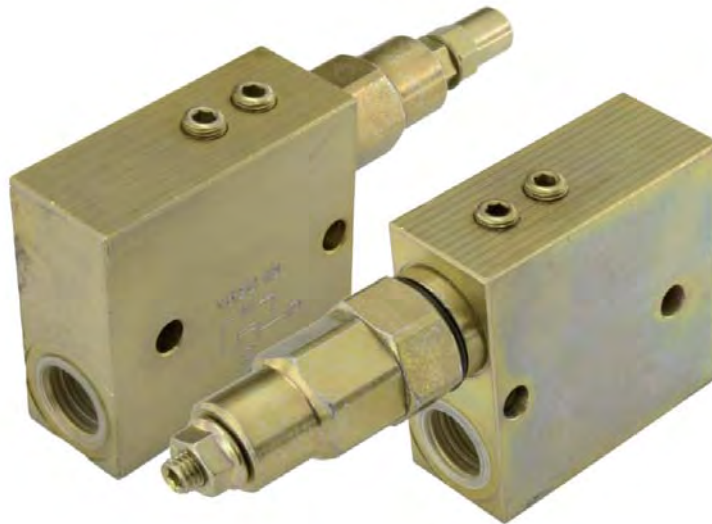
VS2C – Druckfolgeventil

Material: Stahl galvanisiert

Hydraulic valves

VS2C – sequenz valve

material: steel galvanized



Leitungseinbau / inline mounting

Bestell-Nr. code	Typ type	Gewinde thread	Q max. l/min	P max. bar	kg
210-130-01300	VS2C38D	3/8"	35	350	1,17
210-130-01350	VS2C12D	1/2"	70	350	1,20
210-130-01400	VS2C34D	3/4"	110	350	2,90

Feder / spring

A= 5-50 bar – B= 20-100 bar – C= 40-180 bar – **D= 50-250 bar (standard)** – E= 80-300 bar

210-130

Hydraulikventile

VS2C – Druckfolgeventil

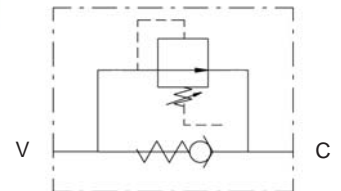
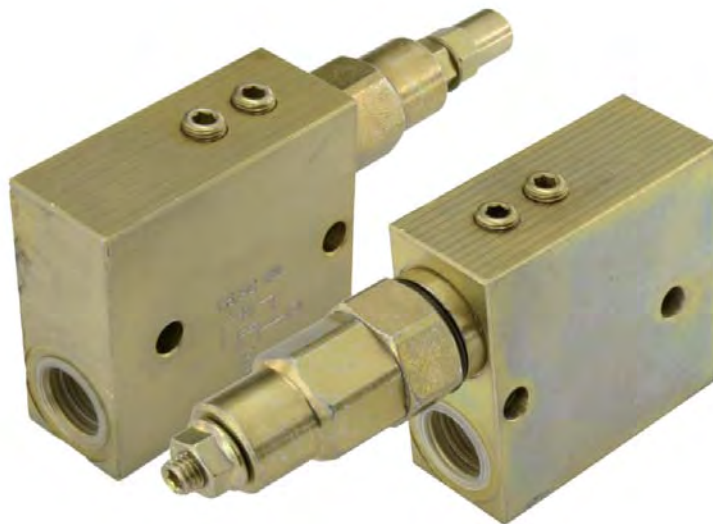
Federraumentlastet

Material: Stahl galvanisiert

Hydraulic valves

VS2C – sequenz valve

*- spring chamber released -
material: steel galvanized*



Leitungseinbau / inline mounting

Bestell-Nr. code	Typ type	Gewinde thread	Q max. l/min	P max. bar	kg
210-140-01200	VSQAPP38D	3/8"	35	250	1,25
210-140-01250	VSQAPP12D	1/2"	60	250	1,30

Feder / spring

A= 5-50 bar – B= 20-100 bar – C= 40-180 bar – **D= 50-250 bar (standard)** – E= 80-300 bar

210-140

Hydraulikventile

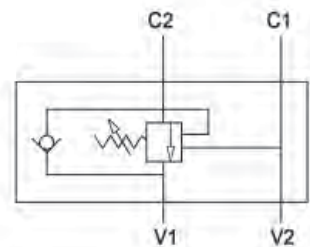
**VBCD/A SE – Senkbremssventil
einfachwirkend**

Material: Stahl galvanisiert

Hydraulic valves

**VBCD/A SE –
overcenter valve**

*- single acting -
material: steel galvanized*



einfachwirkend / *single acting*
Leitungseinbau / *inline mounting*

Bestell-Nr. code	Typ type	Gewinde thread	Q max. l/min	P max. bar	Übersetz.- verhältnis ratio	kg
210-160-01000	VBCD-ASE38	3/8"	40	350	1:4,5	1,26
210-160-01050	VBCD-ASE12	1/2"	60	350	1:4,5	1,20
210-160-01100	VBCD-ASE34	3/4"	95	350	1:5,5	2,37

Hydraulikventile

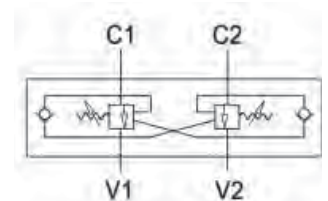
VBCD/A DE – Senkbremsventil
doppeltwirkend

Material: Stahl galvanisiert

Hydraulic valves

VBCD/A DE –
overcenter valve

- double acting -
material: steel galvanized



doppeltwirkend / double acting
Leitungseinbau / inline mounting

Bestell-Nr. code	Typ type	Gewinde thread	Q max. l/min	P max. bar	Übersetz.- verhältnis ratio	kg
210-160-01150	VBCD-ADE38	3/8"	40	350	1:4,5	1,95
210-160-01200	VBCD-ADE12	1/2"	60	350	1:4,5	1,90
210-160-01250	VBCD-ADE34	3/4"	95	350	1:5,5	3,82

Hydraulikventile

**VBCD/A SE-FLV – Senkbremsventil
einfachwirkend**

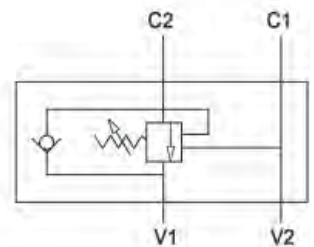
Material: Stahl galvanisiert

Hydraulic valves

**VBCD/A SE-FLV –
overcenter valve**

- single acting -

material: steel galvanized



einfachwirkend / *single acting*

Montage am Zylinder / *cylinder mounting*

Bestell-Nr. code	Typ type	Gewinde thread	Q max. l/min	P max. bar	Übersetz.- verhältnis ratio	kg
210-170-01000	VBCD-ASE-FLV38	3/8"	40	350	1:4,5	1,4
210-170-01050	VBCD-ASE-FLV12	1/2"	60	350	1:4,5	1,3

Hydraulikventile

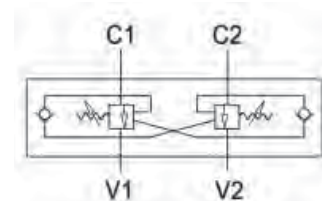
VBCD/A DE-FLV – Senkbremsventil
doppeltwirkend

Material: Stahl galvanisiert

Hydraulic valves

**VBCD/A DE-FLV –
overcenter valve**

*- double acting -
material: steel galvanized*

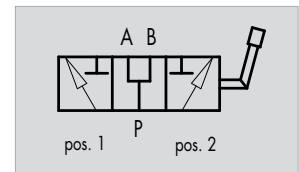


einfachwirkend / *single acting*
Montage am Zylinder / *cylinder mounting*

Bestell-Nr. code	Typ type	Gewinde thread	Q max. l/min	P max. bar	Übersetz.- verhältnis ratio	kg
210-170-01100	VBCD-ADE-FLV38	3/8"	40	350	1:4,5	2,1
210-170-01150	VBCD-ADE-FLV12	1/2"	60	350	1:4,5	2

Hydraulikventile

– 3-Wege Umschaltventil –



– DDF3-A –	Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	kg	Code
	offene Ruhestellung							
	220-010-01000	3 Wege Drehumschaltventil	3/8" - Überdeckung negativ	Grauguss	315	60	0,89	DDF3A020
	220-010-01050	3 Wege Drehumschaltventil	1/2" - Überdeckung negativ		280	90	1,43	DDF3A030
	220-010-01100	3 Wege Drehumschaltventil	3/4" - Überdeckung negativ		250	120	1,83	DDF3A040
	220-010-01150	3 Wege Drehumschaltventil	1" - Überdeckung negativ		250	180	2,51	DDF3A050

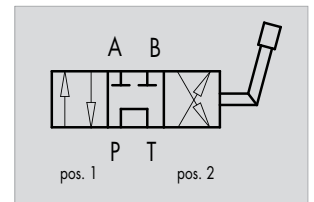
Hydraulikventile – 3-Wege Umschaltventil –



– DDF3 AP...A –

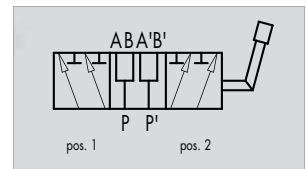
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	kg	Code
offene Ruhestellung – Hochdruck							
220-020-01000	3 Wege Drehumschaltventil	3/8" - Überdeckung negativ	Stahl	450	60	1,40	DDF3AP020A
220-020-01050	3 Wege Drehumschaltventil	1/2" - Überdeckung negativ		400	90	2,28	DDF3AP030A
220-020-01100	3 Wege Drehumschaltventil	3/4" - Überdeckung negativ		350	120	2,90	DDF3AP040A
220-020-01150	3 Wege Drehumschaltventil	1" - Überdeckung negativ		350	180	4,70	DDF3AP050A

Hydraulikventile – 4-Wege Umschaltventil –



– IDF4-A –	Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	kg	Code
	offene Ruhestellung							
	220-030-01000	4 Wege Drehumschaltventil	3/8" - in Mittelstellung P zu T verbunden	Grauguss	250	35	1,25	IDF4A020
	220-030-01050	4 Wege Drehumschaltventil	1/2" - in Mittelstellung P zu T verbunden		250	50	1,89	IDF4A030
	220-030-01100	4 Wege Drehumschaltventil	3/4" -in Mittelstellung P zu T verbunden		220	90	2,52	IDF4A040

Hydraulikventile – 6-Wege Umschaltventil –



– DDF6-A –	Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	kg	Code	
	offene Ruhestellung								
	220-040-01000	6 Wege Drehumschaltventil	3/8" - Überdeckung negativ	Grauguss	315	60	1,78	DDF6A020	
	220-040-01050	6 Wege Drehumschaltventil	1/2" - Überdeckung negativ		280	90	2,88	DDF6A030	
220-040-01100	6 Wege Drehumschaltventil	3/4" - Überdeckung negativ	250		120	3,69	DDF6A040		

Hydraulikventile – 6-Wege Umschaltventil –



– IDF8-A –	Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	kg	Code	
	offene Ruhestellung								
	220-050-01000	8 Wege Drehumschaltventil	3/8" -in Mittelstellung P zu T verbunden	Grauguss	250	35	2,50	IDF8A020	
	220-050-01050	8 Wege Drehumschaltventil	1/2" - in Mittelstellung P zu T verbunden		250	50	3,74	IDF8A030	
220-050-01100	8 Wege Drehumschaltventil	3/4" - in Mittelstellung P zu T verbunden	220		90	5,00	IDF8A040		

220-050

Rohrleitungsventile – Druckbegrenzungsventil direktgesteuert –



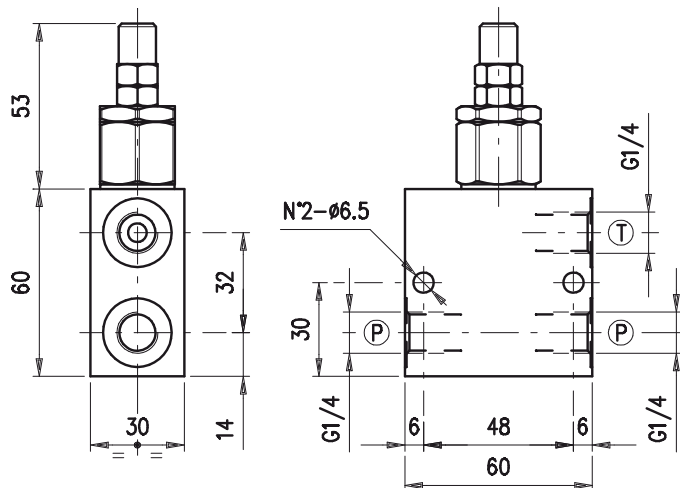
– Druckbegrenzungsventil –

direktgesteuert

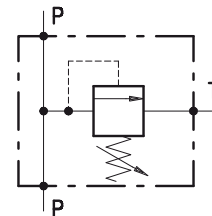
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0020-0140	VMP/B/L 03-14/TB.S	1/4"-Einstellb. 5-40bar-Hutmutter	Alu	210	10	1111011100
230-0020-0145	VMP/B/L 03-14/TB.V	1/4"-Einstellb. 5-40bar-Handrad				1111011101
230-0020-0150	VMP/B/L 03-14/TS.S	1/4"-Einstellb. 50-200bar-Hutmutter				1111011104
230-0020-0155	VMP/B/L 03-14/TS.V	1/4"-Einstellb. 50-200bar-Handrad				1111011105
230-0020-0160	VMP/B/L 03-14/TR.S	1/4"-Einstellb. 150-350bar-Hutmutter				1111011106
230-0020-0165	VMP/B/L 03-14/TR.V	1/4"-Einstellb. 150-350bar-Handrad				1111011107
230-0020-0170	VMP/B/L 03-14/LPD/TR.V	1/4"-Einstellb. 150-350bar-Handrad				1111011113
230-0020-0175	VMP/B/L 03-14/TR.S/ac	1/4"-Einstellb. 150-350bar-Hutmutter	Stahl	350	10	1111012100
230-0020-0180	VMP/B/L 03-14/TS.S/ac	1/4"-Einstellb. 50-200bar-Hutmutter				1111012101
230-0020-0185	VMP/B/L 03-14/TR.V/ac	1/4"-Einstellb. 150-350bar-Handrad				1111012102

PRESSURE RELIEF VALVES
VMP /B /L 03-14

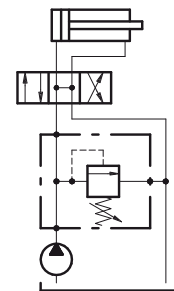
DIMENSIONS (mm)



HYDRAULIC DIAGRAM



ASSEMBLY DIAGRAM



DESCRIPTION

Direct acting, poppet type.

OPERATION

Allows oil flow from P to T when pressure in P reaches the setting of the spring.

PERFORMANCE

Maximum flow: 10 l/min.

Maximum Pressure:

210 bar (aluminium valve)

350 bar (steel valve)

Application range with standard springs:

5 + 80 bar (test setting: 30 bar at 5 l/min.) pressure increase by steps of 11.5 bar per screw turn

50 + 220 bar (test setting: 150 bar at 5 l/min.) pressure increase by steps of 31.5 bar per screw turn

180 + 350 bar (test setting: 250 bar at 5 l/min.) pressure increase by steps of 74 bar per screw turn

To perform setting of the valve see the pressure drop/ flow diagram.

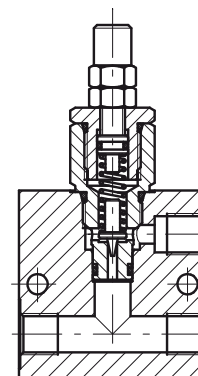
Hysteresis: 90% of the setting value for flow capacity 1 l/min.

Oil leaks from P to T: disregarable.

Working temperature:

min. -25°C max. 90°C with standard BUNAN gaskets

min. -20°C max. 200°C with optional VITON gaskets



RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Weight:

aluminium valves 0.40 kg
steel valves 0.84 kg

Cartridges: see page 1.1000.050.

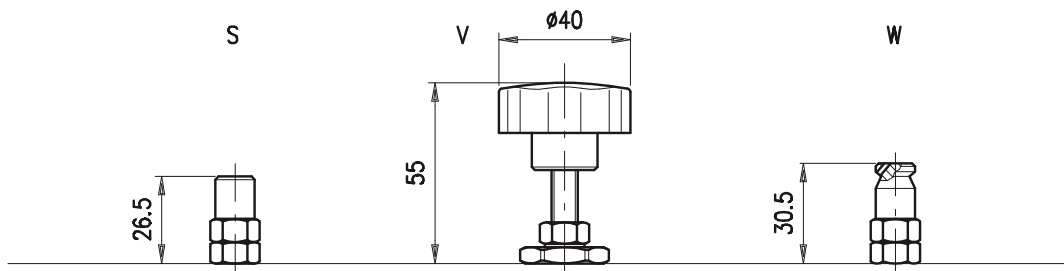
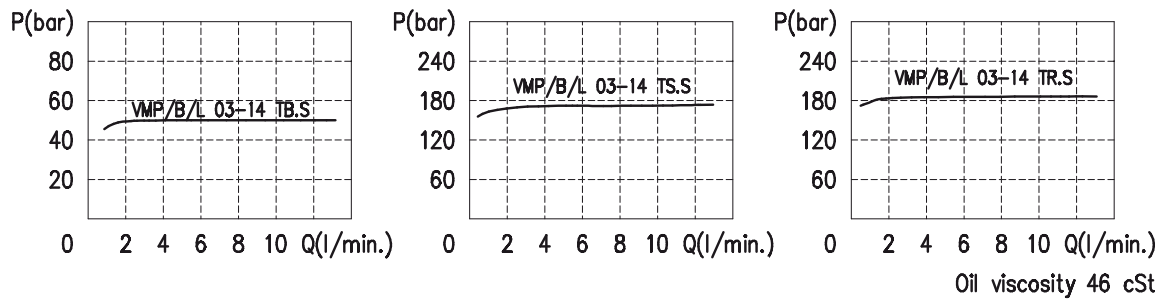
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office .

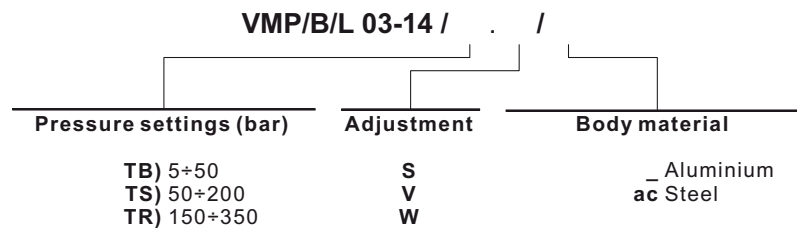
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RATING DIAGRAMS



CODE NUMBER



230-0020

Rohrleitungsventile - Druckbegrenzungsventil direktgesteuert -



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0030-0190	VMP/B/L 5-38/TB.S	3/8"-Einstellb. 5-40bar-Hutmutter	Alu	210	35	1111021100
230-0030-0195	VMP/B/L 5-38/TB.V	3/8"-Einstellb. 5-40bar-Handrad		210	35	1111021101
230-0030-0200	VMP/B/L 5-38/TV.S	3/8"-Einstellb. 20-80bar-Hutmutter		210	35	1111021102
230-0030-0205	VMP/B/L 5-38/TV.V	3/8"-Einstellb. 20-80bar-Handrad		210	35	1111021103
230-0030-0210	VMP/B/L 5-38/TS.S	3/8"-Einstellb. 50-220bar-Hutmutter		210	35	1111021104
230-0030-0215	VMP/B/L 5-38/TS.V	3/8"-Einstellb. 50-220bar-Handrad		210	35	1111021105
230-0030-0220	VMP/B/L 5-38/TR.S	3/8"-Einstellb. 180-350bar-Hutmutter		210	35	1111021106
230-0030-0225	VMP/B/L 5-38/TR.V	3/8"-Einstellb. 180-350bar-Handrad		350	35	1111021107
230-0030-0230	VMP/B/L 5-12/TV.S	1/2"-Einstellb. 20-80bar-Hutmutter		350	35	1111021152
230-0030-0235	VMP/B/L 5-12/TV.V	1/2"-Einstellb. 20-80bar-Handrad		350	35	1111021153
230-0030-0240	VMP/B/L 5-12/TS.S	1/2"-Einstellb. 50-220bar-Hutmutter		210	35	1111021154
230-0030-0245	VMP/B/L 5-12/TS.V	1/2"-Einstellb. 50-220bar-Handrad		210	35	1111021155
230-0030-0250	VMP/B/L 5-12/TR.S	1/2"-Einstellb. 180-350bar-Hutmutter		210	35	1111021156
230-0030-0255	VMP/B/L 5-12/TR.V	1/2"-Einstellb. 180-350bar-Handrad		210	35	1111021157
230-0030-0260	VMP/B/L 5-38/TS.S/ac	3/8"-Einstellb. 50-220bar-Hutmutter	Stahl	350	35	1111022101
230-0030-0265	VMP/B/L 5-38/TR.V/ac	3/8"-Einstellb. 180-350bar-Handrad		350	35	1111022102
230-0030-0270	VMP/B/L 5-38/TV.V/ac	3/8"-Einstellb. 20-80bar-Handrad		350	35	1111022103
230-0030-0275	VMP/B/L 5-38/TR.S/ac	3/8"-Einstellb. 180-350bar-Hutmutter		350	35	1111022107
230-0030-0280	VMP/B/L 5-38/TB.V/ac	3/8"-Einstellb. 5-40bar-Handrad		350	35	1111022111
230-0030-0285	VMP/B/L 5-38/TV.S/ac	3/8"-Einstellb. 20-80bar-Hutmutter		350	35	1111022114
230-0030-0290	VMP/B/L 5-38/TS.V/ac	3/8"-Einstellb. 50-220bar-Handrad		350	35	1111022115
230-0030-0295	VMP/B/L 5-38/TB.S/ac	3/8"-Einstellb. 5-40bar-Hutmutter		350	35	1111022117
230-0030-0300	VMP/B/L 5-12/TS.S/ac	1/2"-Einstellb. 50-220bar-Hutmutter		350	35	1111022150
230-0030-0305	VMP/B/L 5-12/TR.V/ac	1/2"-Einstellb. 180-350bar-Handrad		350	35	1111022151
230-0030-0310	VMP/B/L 5-12/TB.S/ac	1/2"-Einstellb. 5-40bar-Hutmutter		350	35	1111022153

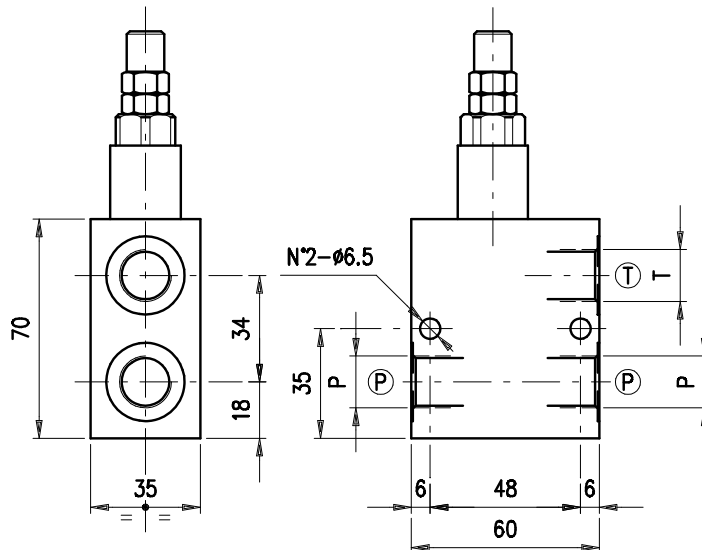
- Druckbegrenzungsventil -

direktgesteuert

230-0030

PRESSURE RELIEF VALVES
VMP /B /L 5 -

• DIMENSIONS (mm)



VMP/B/L 5	P	T
38	G3/8	G3/8
12	G1/2	G1/2

• DESCRIPTION

Direct acting, poppet type.

• OPERATION

Allows oil flow from P to T when pressure in P reaches the setting of the spring.

• PERFORMANCE

Maximum flow: 35 l/min.

Maximum Pressure:

- 210 bar (aluminium valve)
- 350 bar (steel valve)

Application range with standard springs:

- 5 + 40 bar (test setting: 30 bar at 5 l/min.)
- 20 + 80 bar (test setting: 60 bar at 5 l/min.)
- 50 + 220 bar (test setting: 160 bar at 5 l/min.)
- 180 + 350 bar (test setting: 280 bar at 5 l/min.)

To perform setting of the valve see the pressure drop/ flow diagram.

Hysteresis: 85% of the setting value for flow capacity 1 l/min.

Oil leaks from P to T: disregarable.

Working temperature:

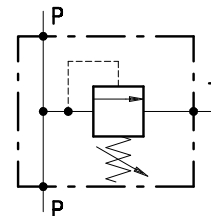
- min. -25°C max. 90°C with standard BUNAN gaskets
- min. -20°C max. 200°C with optional VITON gaskets

• RECOMMENDATIONS

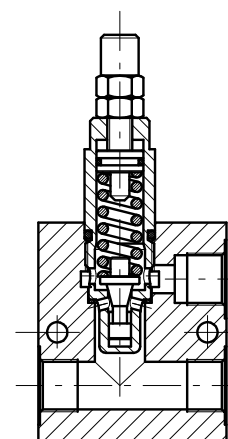
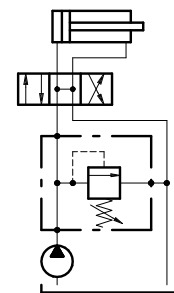
Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

• HYDRAULIC DIAGRAM



• ASSEMBLY DIAGRAM



230-0030

Weight:

- aluminium valves 0.50 kg
- steel valves 1.07 kg

Cartridges: see page 1.1000.100.

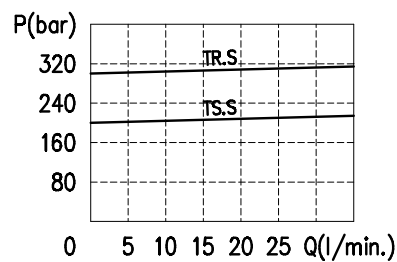
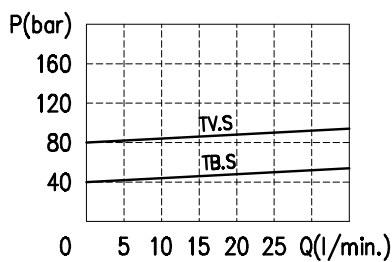
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office .

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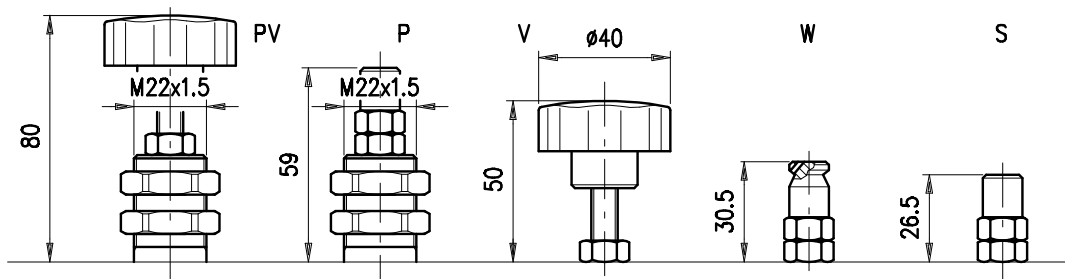
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• RATING DIAGRAMS

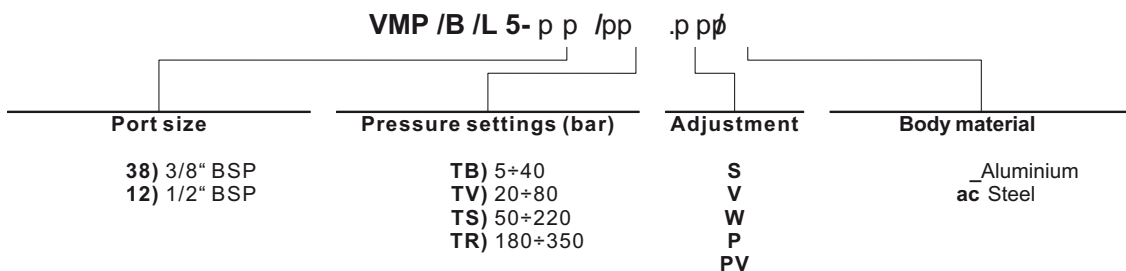


Oil viscosity 46 cSt

• ADJUSTMENTS



• CODE NUMBER



230-0030

Rohrleitungsventile - Druckbegrenzungsventil direktgesteuert -



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0040-0315	VMP/B/L 10-12/TB.S	1/2"-Einstellb. 5-40bar-Hutmutter	Alu	210	60	1111031100
230-0040-0320	VMP/B/L 10-12/TB.V	1/2"-Einstellb. 5-40bar-Handrad		210	60	1111031101
230-0040-0325	VMP/B/L 10-12/TV.S	1/2"-Einstellb. 20-80bar-Hutmutter		210	60	1111031102
230-0040-0330	VMP/B/L 10-12/TV.V	1/2"-Einstellb. 20-80bar-Handrad		210	60	1111031103
230-0040-0335	VMP/B/L 10-12/TS.S	1/2"-Einstellb. 50-220bar-Hutmutter		210	60	1111031104
230-0040-0340	VMP/B/L 10-12/TS.V	1/2"-Einstellb. 50-220bar-Handrad		210	60	1111031105
230-0040-0345	VMP/B/L 10-12/TR.S	1/2"-Einstellb. 180-350bar-Hutmutter		210	60	1111031106
230-0040-0350	VMP/B/L 10-12/TR.V	1/2"-Einstellb. 180-350bar-Handrad		210	60	1111031107
230-0040-0355	VMP/B/L 10-34/TB.S	3/4"-Einstellb. 5-40bar-Hutmutter		210	60	1111031150
230-0040-0360	VMP/B/L 10-34/TB.V	3/4"-Einstellb. 5-40bar-Handrad		210	60	1111031151
230-0040-0365	VMP/B/L 10-34/TV.S	3/4"-Einstellb. 20-80bar-Hutmutter		210	60	1111031152
230-0040-0370	VMP/B/L 10-34/TV.V	3/4"-Einstellb. 20-80bar-Handrad		210	60	1111031153
230-0040-0375	VMP/B/L 10-34/TS.S	3/4"-Einstellb. 50-220bar-Hutmutter		210	60	1111031154
230-0040-0380	VMP/B/L 10-34/TS.V	3/4"-Einstellb. 50-220bar-Handrad		210	60	1111031155
230-0040-0385	VMP/B/L 10-34/TR.S	3/4"-Einstellb. 180-350bar-Hutmutter		210	60	1111031156
230-0040-0390	VMP/B/L 10-34/TR.V	3/4"-Einstellb. 180-350bar-Handrad		210	60	1111031157
230-0040-0395	VMP/B/L 10-12/TS.S/ac	1/2"-Einstellb. 50-220bar-Hutmutter		Stahl	350	60
230-0040-0400	VMP/B/L 10-12/TR.S/ac	1/2"-Einstellb. 180-350bar-Hutmutter	350		60	1111032101
230-0040-0405	VMP/B/L 10-12/TS.V/ac	1/2"-Einstellb. 50-220bar-Handrad	350		60	1111032102
230-0040-0410	VMP/B/L 10-12/TR.V/ac	1/2"-Einstellb. 180-350bar-Handrad	350		60	1111032105
230-0040-0415	VMP/B/L 10-34/TS.S/ac	3/4"-Einstellb. 50-220bar-Hutmutter	350		60	1111032151
230-0040-0420	VMP/B/L 10-34/TR.S/ac	3/4"-Einstellb. 180-350bar-Hutmutter	350		60	1111032152
230-0040-0425	VMP/B/L 10-34/TV.V/ac	3/4"-Einstellb. 20-80bar-Handrad	350		60	1111032153
230-0040-0430	VMP/B/L 10-34/TV.S/ac	3/4"-Einstellb. 20-80bar-Hutmutter	350		60	1111032154

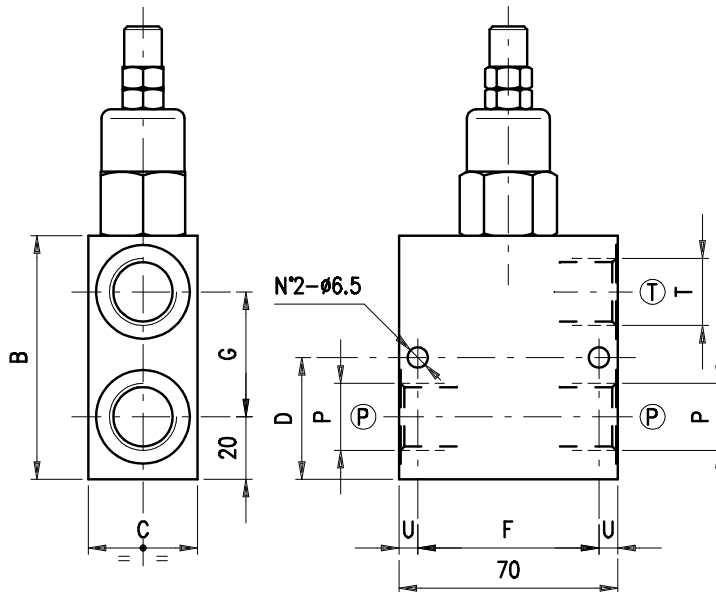
- Druckbegrenzungsventil -

direktgesteuert

230-0040

PRESSURE RELIEF VALVES
VMP /B /L 10 -

• DIMENSIONS (mm)



VMP/B/L 10	B	C	D	F	G	P	T	U	Z
12	78	35	39	58	40	G3/8	G3/8	6	6.5
34	90	40	45	54	50	G1/2	G1/2	8	8.5

• DESCRIPTION

Direct acting, poppet type.

• OPERATION

Allows oil flow from P to T when pressure in P reaches the setting of the spring.

• PERFORMANCE

Maximum flow: 60 l/min.

Maximum Pressure:

- 210 bar (aluminium valve)
- 350 bar (steel valve)

Application range with standard springs:

- 5 ÷ 40 bar (test setting: 30 bar at 5 l/min.)
- 20 ÷ 80 bar (test setting: 60 bar at 5 l/min.)
- 50 ÷ 220 bar (test setting: 160 bar at 5 l/min.)
- 180 ÷ 350 bar (test setting: 280 bar at 5 l/min.)

To perform setting of the valve see the pressure drop/ flow diagram.

Hysteresis: 85% of the setting value for flow capacity 1 l/min.

Oil leaks from P to T: disregarable.

Working temperature:

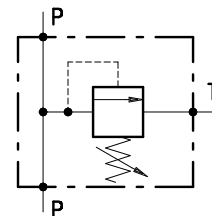
- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

• RECOMMENDATIONS

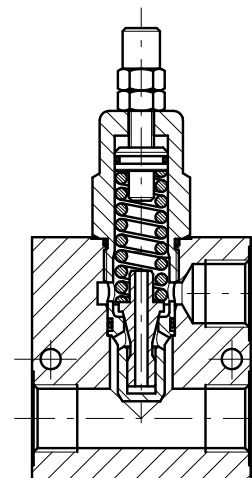
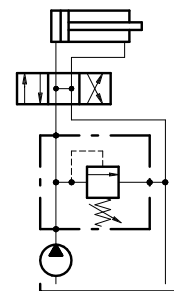
Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

• HYDRAULIC DIAGRAM



• ASSEMBLY DIAGRAM



Weight:

- 0.77 kg and 0.87 kg (for aluminium valves model VMP/B/L 10-12 and VMP/B/L 10-34 respectively)
 - 1.07 kg and 1.74 kg (for aluminium valves model VMP/B/L 10-12 and VMP/B/L 10-34 respectively)
- Cartridges:** see page 1.1000.200.

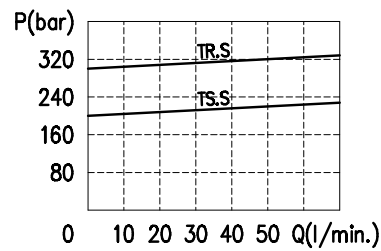
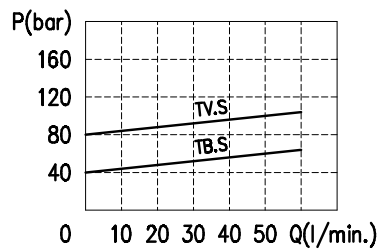
Material: internal components made out of high-grade steel duly treated and fabricated.

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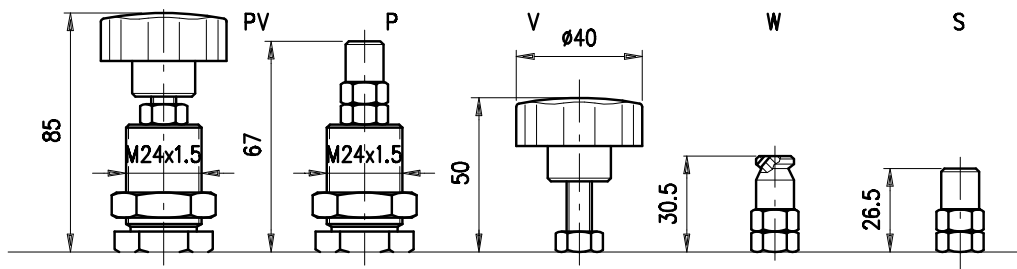
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RATING DIAGRAMS



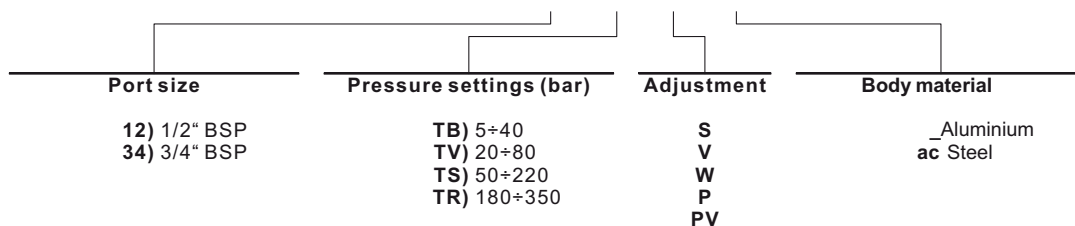
Oil viscosity 46 cSt

ADJUSTMENTS



CODE NUMBER

VMP / B / L 10 -



Rohrleitungsventile – Druckbegrenzungsventil direktgesteuert –



Bestellnr.	Typ	Bezeichnung	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0050-0435	VMP/B/L 20-34/TB.S	3/4"-Einstellb. 5-40bar-Hutmutter	210	100	1111041100
230-0050-0440	VMP/B/L 20-34/TB.V	3/4"-Einstellb. 5-40bar-Handrad	210	100	1111041101
230-0050-0445	VMP/B/L 20-34/TV.S	3/4"-Einstellb. 20-80bar-Hutmutter	210	100	1111041102
230-0050-0450	VMP/B/L 20-34/TV.V	3/4"-Einstellb. 20-80bar-Handrad	210	100	1111041103
230-0050-0455	VMP/B/L 20-34/TS.S	3/4"-Einstellb. 50-220bar-Hutmutter	210	100	1111041104
230-0050-0460	VMP/B/L 20-34/TS.V	3/4"-Einstellb. 50-220bar-Handrad	210	100	1111041105
230-0050-0465	VMP/B/L 20-34/TR.S	3/4"-Einstellb. 180-350bar-Hutmutter	210	100	1111041106
230-0050-0470	VMP/B/L 20-34/TR.V	3/4"-Einstellb. 180-350bar-Handrad	210	100	1111041107
230-0050-0475	VMP/B/L 20-100/TB.S	1"-Einstellb. 5-40bar-Hutmutter	210	100	1111041150
230-0050-0480	VMP/B/L 20-100/TB.V	1"-Einstellb. 5-40bar-Handrad	210	100	1111041151
230-0050-0485	VMP/B/L 20-100/TV.S	1"-Einstellb. 20-80bar-Hutmutter	210	100	1111041152
230-0050-0490	VMP/B/L 20-100/TV.V	1"-Einstellb. 20-80bar-Handrad	210	100	1111041153
230-0050-0495	VMP/B/L 20-100/TS.S	1"-Einstellb. 50-220bar-Hutmutter	210	100	1111041154
230-0050-0500	VMP/B/L 20-100/TS.V	1"-Einstellb. 50-220bar-Handrad	210	100	1111041155
230-0050-0505	VMP/B/L 20-100/TR.S	1"-Einstellb. 180-350bar-Hutmutter	210	100	1111041156
230-0050-0510	VMP/B/L 20-100/TR.V	1"-Einstellb. 180-350bar-Handrad	210	100	1111041157
230-0050-0515	VMP/B/L 20-34/TR.S/ac	3/4"-Einstellb. 180-350bar-Hutmutter	350	100	1111042101
230-0050-0520	VMP/B/L 20-34/TS.S/ac	3/4"-Einstellb. 50-220bar-Hutmutter	350	100	1111042102
230-0050-0525	VMP/B/L 20-34/TR.V/ac	3/4"-Einstellb. 180-350bar-Handrad	350	100	1111042103
230-0050-0530	VMP/B/L 20-34/TS.V/ac	3/4"-Einstellb. 50-220bar-Handrad	350	100	1111042104
230-0050-0535	VMP/B/L 20-34/TB.S/ac	3/4"-Einstellb. 5-40bar-Hutmutter	350	100	1111042108
230-0050-0540	VMP/B/L 20-100/TS.S/ac	1"-Einstellb. 50-220bar-Hutmutter	350	100	1111042150
230-0050-0545	VMP/B/L 20-100/TR.S/ac	1"-Einstellb. 180-350bar-Hutmutter	350	100	1111042151
230-0050-0550	VMP/B/L 20-100/TS.V/ac	1"-Einstellb. 50-220bar-Handrad	350	100	1111042154
230-0050-0555	VMP/B/L 20-100/TR.V/ac	1"-Einstellb. 180-350bar-Handrad	350	100	1111042155

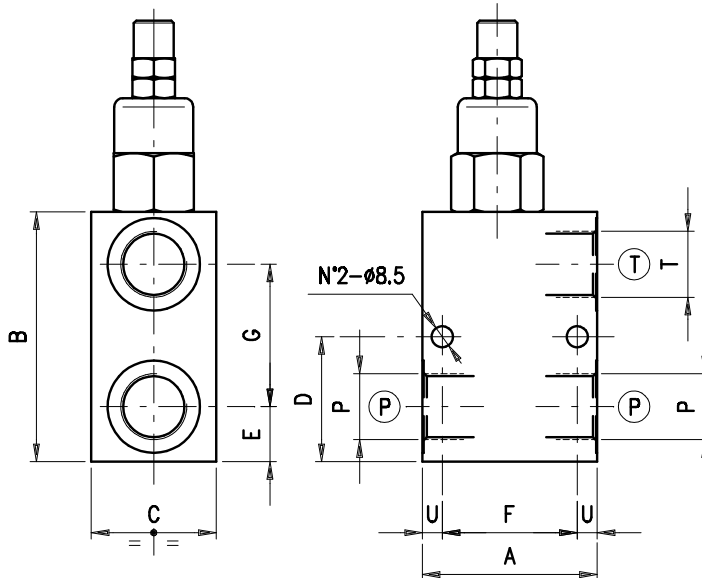
– Druckbegrenzungsventil –

direktgesteuert

230-0050

PRESSURE RELIEF VALVES
VMP /B /L 20 -

• DIMENSIONS (mm)



VMP/B/L 20	A	B	C	D	E	F	G	P	T	U
34	70	100	50	50	22	54	57	G3/4	G3/4	8
100	85	120	60	63	30	65	65	G 1"	G 1"	10

• DESCRIPTION

Direct acting, poppet type.

• OPERATION

Allows oil flow from P to T when pressure in P reaches the setting of the spring.

• PERFORMANCE

Maximum flow: 100 l/min.

Maximum Pressure:

- 210 bar (aluminium valve)
- 350 bar (steel valve)

Application range with standard springs:

- 5 ÷ 40 bar (test setting: 30 bar at 5 l/min.)
- 20 ÷ 80 bar (test setting: 60 bar at 5 l/min.)
- 50 ÷ 220 bar (test setting: 160 bar at 5 l/min.)
- 180 ÷ 350 bar (test setting: 280 bar at 5 l/min.)

To perform setting of the valve see the pressure drop/ flow diagram.

Hysteresis: 85% of the setting value for flow capacity 1 l/min.

Oil leaks from P to T: disregarable.

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

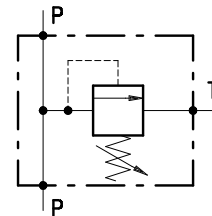
• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

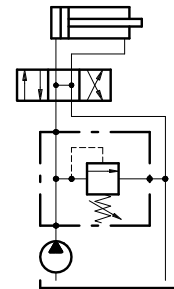
Filter: see page Z.9000.000.

OLEOSTAR S.p.A. – Reggio Emilia ITALY

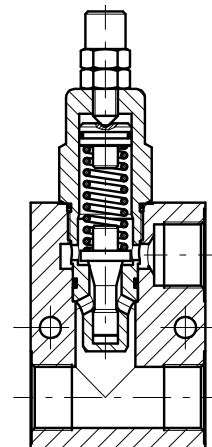
• HYDRAULIC DIAGRAM



• ASSEMBLY DIAGRAM



• CROSS SECTION



Weight:

- 1.70 kg and 2.31 kg (for aluminium valves model VMP/B/L 20-34 and VMP/B/L 20-100 respectively)
- 2.91 kg and 5.20 kg (for aluminium valves model VMP/B/L 20-34 and VMP/B/L 20-100 respectively)

Cartridges: see page 1.1000.300.

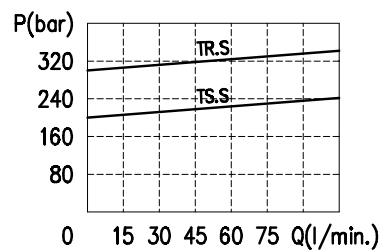
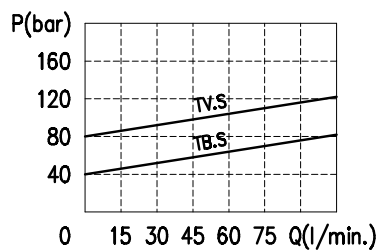
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office .

Variations and modifications of technical features and dimensions are reserved. **OLEOSTAR S.p.A.** also reserves the right to stop production of each and any model listed in the catalogue with no notice.

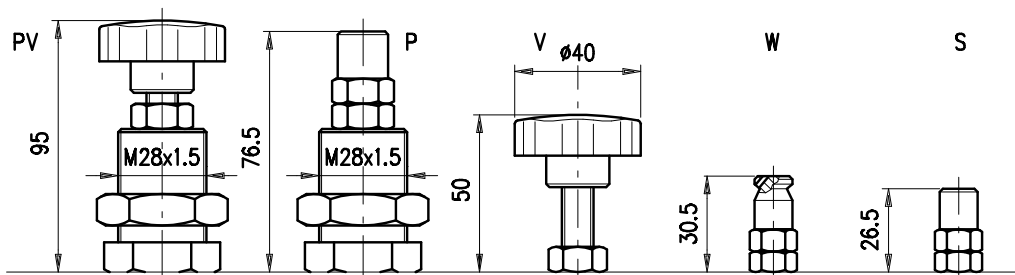
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RATING DIAGRAMS



Oil viscosity 46 cSt

ADJUSTMENTS



CODE NUMBER

VMP /B /L 20 -

Port size	Pressure settings (bar)	Adjustment	Body material
34) 3/4" BSP	TB) 5÷40	S	_Aluminium
100) 1" BSP	TV) 20÷80	V	ac Steel
	TS) 50÷220	W	
	TR) 180÷350	P	
		PV	

230-0050

Rohrleitungsventile

- Druckbegrenzungsventil direktgesteuert -



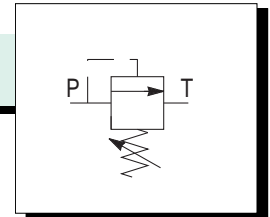
	Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
vorgesteuert	230-0160-0745	VMPP/B/L 10-12/TS.V	1/2"-Einstellb. 20-400bar-Handrad	Alu	210	40	1132031101
	230-0160-0750	VMPP/B/L 10/12/TB.V	1/2"-Einstellb. 5-40bar-Handrad			70	1132031102
	230-0160-0755	VMPP/B/L 10-12/TB.S	1/2"-Einstellb. 5-40bar-Hutmutter			1132031104	
	230-0160-0760	VMPP/B/L 10-12/TB.S/ac	1/2"-Einstellb. 5-40bar-Hutmutter	Stahl	350	70	1132032101
	230-0160-0765	VMPP/B/L 10-12/TS.V/ac	1/2"-Einstellb. 20-400bar-Handrad			1132032102	
	230-0160-0770	VMPP/B/L 20-34/TB.V VITON	3/4"-Einstellb. 5-40bar-Handrad	Alu	210	120	1132041103
	230-0160-0775	VMPP/B/L 20-100/TS.V VITON	1"-Einstellb. 20-400bar-Handrad				1132041151
	230-0160-0780	VMPP/B/L 20-100/TB.V VITON	1"-Einstellb. 5-40bar-Handrad	Stahl	350	120	1132041161
	230-0160-0785	VMPP/B/L 20-34/TS.V/ac VITON	3/4"-Einstellb. 20-400bar-Handrad				1132042103
	230-0160-0790	VMPP/B/L 20-100/TS.V/ac VITON	1"-Einstellb. 20-400bar-Handrad				1132042150
	230-0160-0795	VMPP/B/L 20-100/TS.W/ac VITON	1"-Einstellb. 20-400bar-Innensechskant				1132042151
	230-0160-0800	VMPP/B/L 45-114/TB.S		Alu			1132061100
	230-0160-0805	VMPP/B/L 45-114/TV.S					1132061102
	230-0160-0810	VMPP/B/L 45-114/TS.S					1132061104
	230-0160-0815	VMPP/B/L 45-114/TS.V					1132061105
	230-0160-0820	VMPP/B/L 45-114/TR.S					1132061106
	230-0160-0825	VMPP/B/L 45-114/TR.V					1132061107
	230-0160-0830	VMPP/B/L 45-114/TS.V/ac		Stahl			1132062100
	230-0160-0835	VMPP/B/L 45-114/TR.S/ac					1132062102
	230-0160-0840	VMPP/B/L 45-114/TB.S/ac					1132062103
230-0160-0845	VMPP/B/L 45-114/TR.V/ac		1132062104				

230-0160



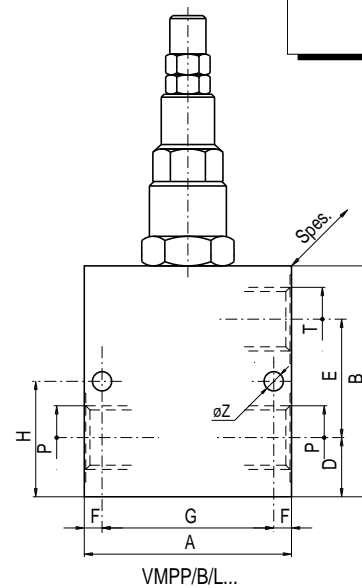
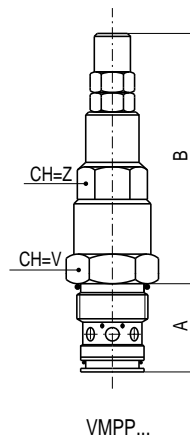
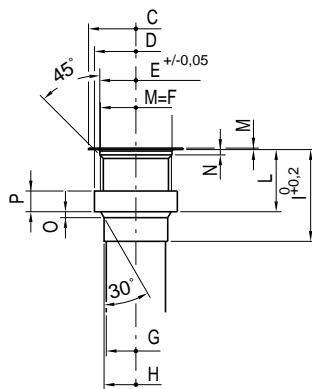
VALVOLE DI MASSIMA PRESSIONE PILOTATE
(TENUTA A CONO)
RELIEF VALVE, PILOT OPERATED
(POPPET TYPE)

Tipo **VMPP...** **VMPP/B/L...**



MATERIALI

CORPO: Alluminio (210Bar)-Acciaio(350Bar)
PART.INTERNI:AcciaioCmt-Tmp-Rett



Tipo	A	B	V	Z	C	D	E	F	G	H	I	L	M	N	O	P	Q(L/1')
VMPP 10	30,5	83,5	27	22	32	28	24,5	24x1,5	20	21,5	31	21	0,5	3	2	6	50
VMPP 20	38	84	36	32	38	36	30,5	30x1,5	24	26	39	26	0,5	3	1	10	120
VMPP 45	54	92	46	32	55	50	43,5	42x2	28	38	55	40	0,5	6	3	15	250

Tipo	P-T	A	B	Spes.	D	E	G	H	Z
VMPP/B/L 10-12	G 1/2	70	78	35	20	40	58	39	6,5
VMPP/B/L 20-34	G 3/4	70	100	50	22	57	54	50	8,5
VMPP/B/L 20-100	G 1"	85	120	60	30	65	65	63	8,5
VMPP/B/L 45-114	G 1 1/4	100	135	70	35	68	80	70	10,5

molle(Bar)		
5-40	50-250	30-400
5-40	20-400	
5-40	50-250	30-400

Rohrleitungsventile – Schockventil direktgesteuert –

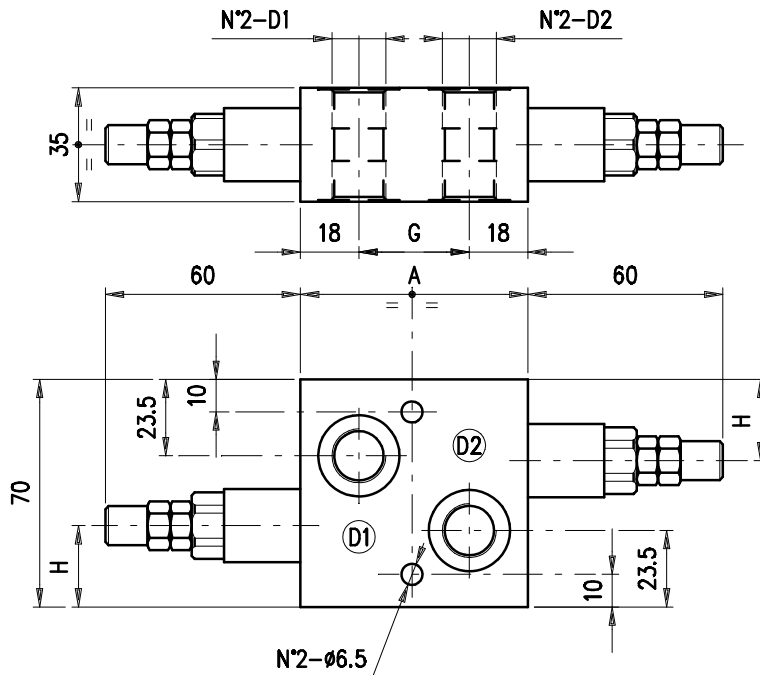


	Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code		
direktgesteuert	230-0200-0850	VAIL 5-38/TB.S	3/8"-Einstellb. 5-40bar-Hutmutter	Alu	210	25	1140021100		
	230-0200-0855	VAIL 5-38/TV.S	3/8"-Einstellb. 20-80bar-Hutmutter				1140021101		
	230-0200-0860	VAIL 5-38/TS.S	3/8"-Einstellb. 50-220bar-Hutmutter				1140021102		
	230-0200-0865	VAIL 5-38/TR.S	3/8"-Einstellb. 180-350bar-Hutmutter				1140021103		
	230-0200-0870	VAIL 5-12/TB.S	1/2"-Einstellb. 5-40bar-Hutmutter			Stahl	350	25	1140021150
	230-0200-0875	VAIL 5-12/TV.S	1/2"-Einstellb. 20-80bar-Hutmutter						1140021151
	230-0200-0880	VAIL 5-12/TS.S	1/2"-Einstellb. 50-220bar-Hutmutter					1140021152	
	230-0200-0885	VAIL 5-12/TR.S	1/2"-Einstellb. 180-350bar-Hutmutter					1140021153	
	230-0200-0890	VAIL 5-38/TR.S/ac	3/8"-Einstellb. 180-350bar-Hutmutter	35	1140022101				
	230-0200-0895	VAIL 5-12/TS.S/ac	3/8"-Einstellb. 50-220bar-Hutmutter		1140022150				
	230-0200-0900	VAIL 5-12/TR.S/ac	1/2"-Einstellb. 180-350bar-Hutmutter		1140022151				

230-0200

PRESSURE RELIEF VALVES
VAIL 5 -

• DIMENSIONS (mm)



VAIL	A	G	H	D1	D2
5-38	70	34	25	G 3/8	G 3/8
5-12	75	39	24.5	G 1/2	G 1/2

• DESCRIPTION

Dual cross-line relief valve. Direct acting, poppet type, line mounting.

• OPERATION

Allows pressure relief on delivery pipes to engines and cylinders.
Actuator close mount is recommended to assure a more rapid valve action.

• PERFORMANCE

Maximum flow:

- VAIL 5-38 = 25 l/min.
- VAIL 5-12 = 35 l/min.

Maximum Pressure:

- 210 bar (aluminium valves)
- 350 bar (steel valves)

Application range with standard springs:

- 5 + 40 bar (test setting: 30 bar at 5 l/min.)
- 20 + 80 bar (test setting: 60 bar at 5 l/min.)
- 50 + 220 bar (test setting: 160 bar at 5 l/min.)
- 180 + 350 bar (test setting: 250 bar at 5 l/min.)

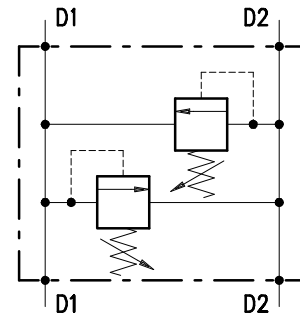
To perform setting of the valve see the pressure drop/ flow diagram.

Hysteresis: 85% of the valve setting for 1 L. flow capacity per minute.

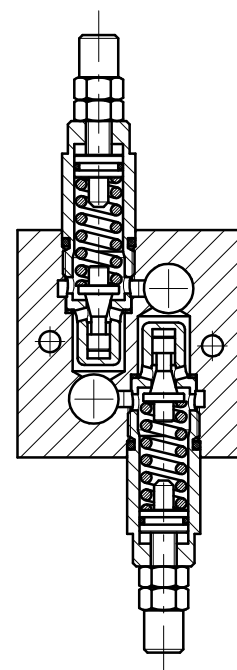
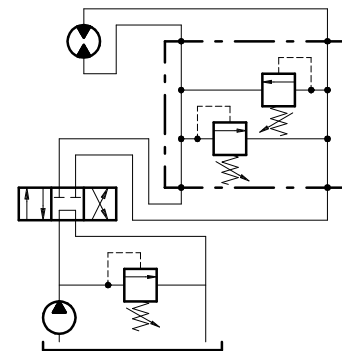
Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

• HYDRAULIC DIAGRAM



• ASSEMBLY DIAGRAM



• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight:

- 0.67 kg aluminium valves (VAIL 5-38 and VAIL 5-12)

- 1.29 kg steel valves (VAIL 5-38 and VAIL 5-12)

Cartridge used: see page 1.1000.100.

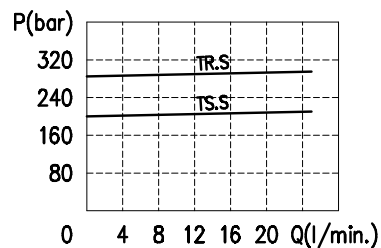
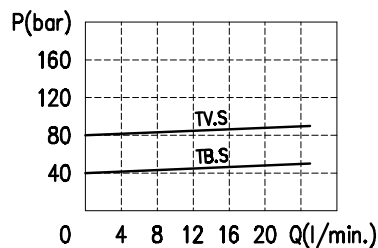
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

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• RATING DIAGRAMS

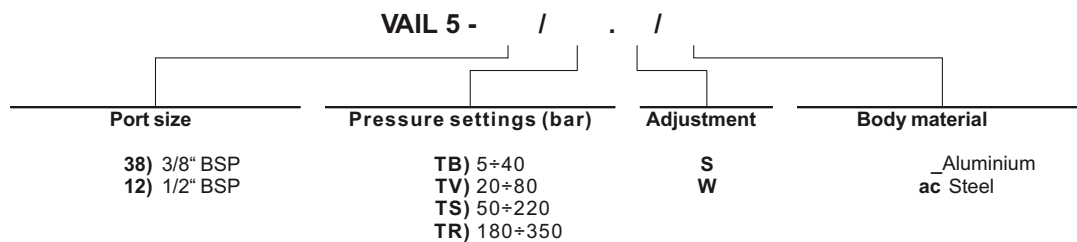


Oil viscosity 46 cSt

• ADJUSTMENTS



• CODE NUMBER



Rohrleitungsventile – Druckfolgeventil direktgesteuert –

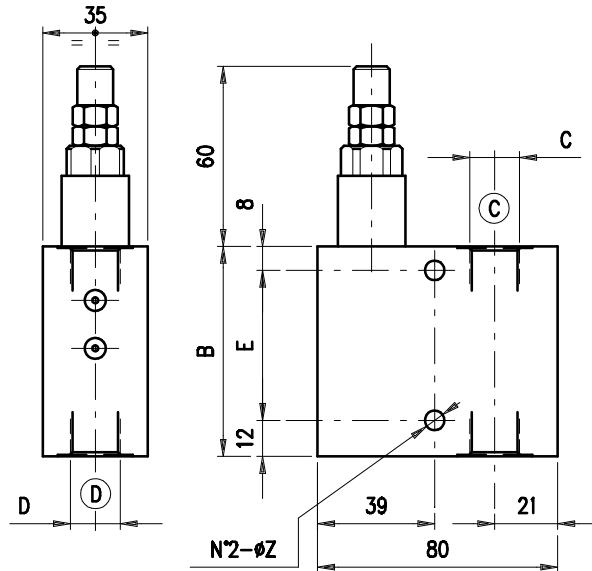


	Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code		
direktgesteuert	230-0240-1045	VDSRL 5-38/TB.S	3/8"-Einstellb. 5-50bar-Hutmutter	Alu	210	25	1200021100		
	230-0240-1050	VDSRL 5-38/TV.S	3/8"-Einstellb. 20-80bar-Hutmutter				1200021101		
	230-0240-1055	VDSRL 5-38/TS.S	3/8"-Einstellb. 50-220bar-Hutmutter				1200021102		
	230-0240-1060	VDSRL 5-38/TR.S	3/8"-Einstellb. 180-350bar-Hutmutter				1200021103		
	230-0240-1065	VDSRL 5-14/TS.S	1/4"-Einstellb. 50-220bar-Hutmutter				1200021107		
	230-0240-1070	VDSRL 5-38/TV.V	3/8"-Einstellb. 20-80bar-Handrad				1200021108		
	230-0240-1075	VDSRL 5-38/TS.V	3/8"-Einstellb. 50-220bar-Handrad				1200021109		
	230-0240-1080	VDSRL 5-12/TB.S	1/2"-Einstellb. 5-50bar-Hutmutter				1200021150		
	230-0240-1085	VDSRL 5-12/TV.S	1/2"-Einstellb. 20-80bar-Hutmutter				1200021151		
	230-0240-1090	VDSRL 5-12/TS.S	1/2"-Einstellb. 50-220bar-Hutmutter			1200021152			
	230-0240-1095	VDSRL 5-12/TR.S	1/2"-Einstellb. 180-350bar-Hutmutter			1200021153			
	230-0240-1100	VDSRL 5-12/TV.V	1/2"-Einstellb. 20-80bar-Handrad			1200021154			
	230-0240-1105	VDSRL 5-12/TS.V	1/2"-Einstellb. 50-220bar-Handrad			1200021155			
	230-0240-1110	VDSRL 5-12/TB.V	1/2"-Einstellb. 5-50bar-Handrad			1200021159			
	230-0240-1115	VDSRL 5-38/TR.S/ac	3/8"-Einstellb. 180-350bar-Hutmutter			Stahl	350	25	1200022101
	230-0240-1120	VDSRL 5-38/TS.S/ac	3/8"-Einstellb. 50-220bar-Hutmutter						1200022102
	230-0240-1125	VDSRL 5-12/TS.S/ac	1/2"-Einstellb. 50-220bar-Hutmutter					35	1200022150
	230-0240-1130	VDSRL 5-12/TR.S/ac	1/2"-Einstellb. 180-350bar-Hutmutter						1200022151

230-0240

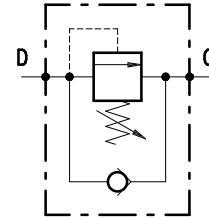
SEQUENCE
VDSRL 5 -

• DIMENSIONS (mm)

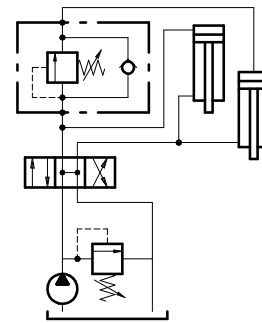


VDSRL	B	C	D	E	Z
5-38	70	G 3/8	G 3/8	50	6.5
5-12	75	G 1/2	G 1/2	55	8.5

• HYDRAULIC DIAGRAM



• ASSEMBLY DIAGRAM



• DESCRIPTION

Direct control sequence valve.

• OPERATION

Allows for oil flow from D into C when the pressure in D achieves the spring setting value. Should back pressure arise in C, the valve opening pressure shall be same as the setting pressure plus the back pressure.

• PERFORMANCE

Maximum flow:

- VDSRL 5-38=25 l/min.
- VDSRL 5-12=35 l/min.

Maximum Pressure:

- 210 bar (aluminium valve)
- 350 bar (steel valve)

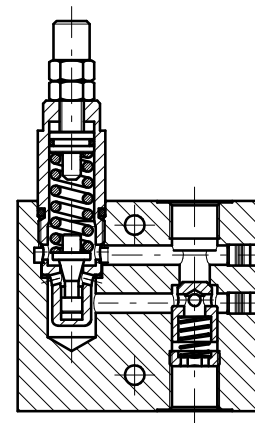
Application range with standard springs:

- 5 bar (test setting: 30 bar at 5 l/min.)
- 20 + 80 bar (test setting: 60 bar at 5 l/min.)
- 50 + 220 bar (test setting: 160 bar at 5 l/min.)
- 180 + 350 bar (test setting: 280 bar at 5 l/min.)

To perform setting of the valve see the pressure drop/ flow diagram.

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets



• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight:

- VDSRL 5-38=0.65 kg and 1.45 kg for aluminium and steel valves respectively
- VDSRL 5-12=0.70 kg and 1.50 kg for aluminium and steel valves respectively

Cartridge used: see page 1.1000.100.

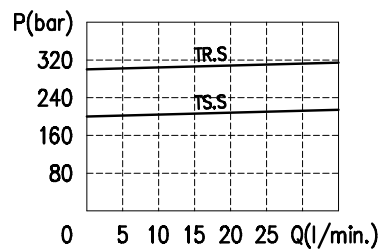
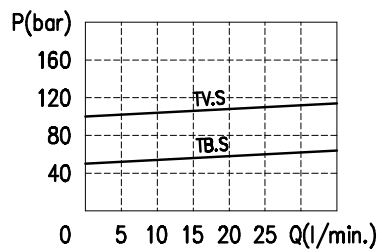
Material: internal components made out of high-grade steel duly treated and fabricated.

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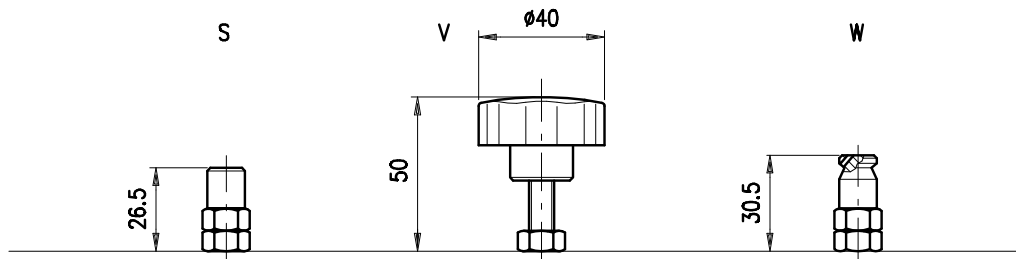
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• RATING DIAGRAMS

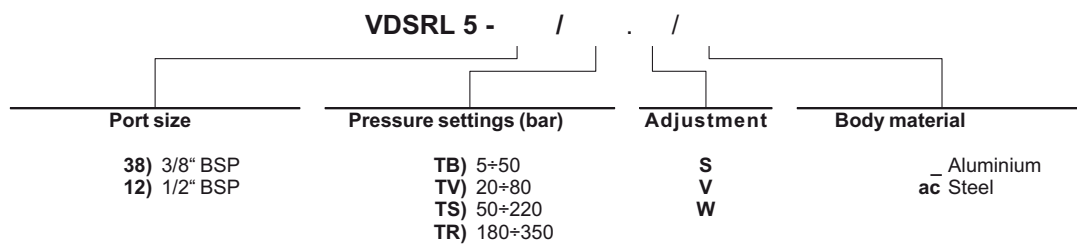


Oil viscosity 46 cSt

• ADJUSTMENTS



• CODE NUMBER



Rohrleitungsventile - Druckfolgeventil direktgesteuert -

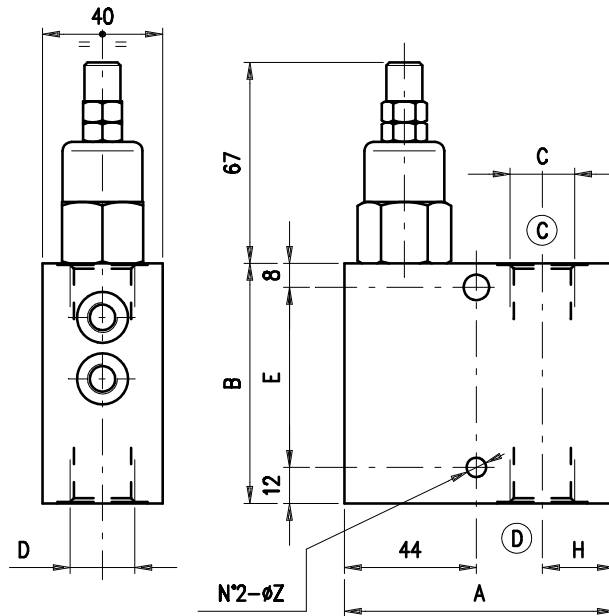


	Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code	
direktgesteuert	230-0250-1135	VDSRL 10-12/TB.S	1/2"-Einstellb. 5-40bar-Hutmutter	Alu	210	50	1200031100	
	230-0250-1140	VDSRL 10-12/TV.S	1/2"-Einstellb. 20-80bar-Hutmutter				1200031101	
	230-0250-1145	VDSRL 10-12/TS.S	1/2"-Einstellb. 50-220bar-Hutmutter				1200031102	
	230-0250-1150	VDSRL 10-12/TR.S	1/2"-Einstellb. 180-350bar-Hutmutter				1200031103	
	230-0250-1155	VDSRL 10-12/TS.V	1/2"-Einstellb. 50-220bar-Handrad				1200031105	
	230-0250-1160	VDSRL 10-12/TV.V	1/2"-Einstellb. 20-80bar-Handrad				1200031106	
	230-0250-1165	VDSRL 10-12/TB.V	1/2"-Einstellb. 5-40bar-Handrad			1200031109		
	230-0250-1170	VDSRL 10-34/TB.S	3/4"-Einstellb. 5-40bar-Hutmutter			70	70	1200031150
	230-0250-1175	VDSRL 10-34/TV.S	3/4"-Einstellb. 20-80bar-Hutmutter					1200031151
	230-0250-1180	VDSRL 10-34/TS.S	3/4"-Einstellb. 50-220bar-Hutmutter					1200031152
	230-0250-1185	VDSRL 10-34/TR.S	3/4"-Einstellb. 180-350bar-Hutmutter					1200031153
	230-0250-1190	VDSRL 10-34/TV.V	3/4"-Einstellb. 20-80bar-Handrad					1200031157
	230-0250-1195	VDSRL 10-34/TS.V	3/4"-Einstellb. 50-220bar-Handrad	1200031158				
	230-0250-1200	VDSRL 10-12/TS.S/ac	1/2"-Einstellb. 50-220bar-Hutmutter	Stahl	350	50	1200032100	
	230-0250-1205	VDSRL 10-12/TR.S/ac	1/2"-Einstellb. 180-350bar-Hutmutter				1200032101	
	230-0250-1210	VDSRL 10-34/TS.S/ac	3/4"-Einstellb. 50-20bar-Hutmutter			70	1200032150	
230-0250-1215	VDSRL 10-34/TB.S/ac	3/4"-Einstellb. 5-40bar-Hutmutter	1200032151					

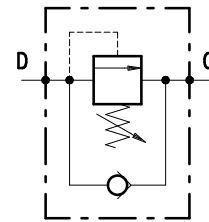
230-0250

SEQUENCE
VDSRL 10 -

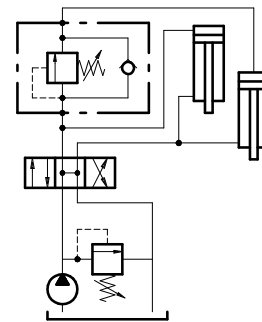
• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• ASSEMBLY DIAGRAM



• DESCRIPTION

Direct control sequence valve.

• OPERATION

Allows for oil flow from D into C when the pressure in D achieves the spring setting value. Should back pressure arise in C, the valve opening pressure shall be same as the setting pressure plus the back pressure.

• PERFORMANCE

Maximum flow:

- VDSRL 10-12=50 l/min.
- VDSRL 10-34=70 l/min.

Maximum Pressure:

- 210 bar (aluminium valve)
- 350 bar (steel valve)

Application range with standard springs:

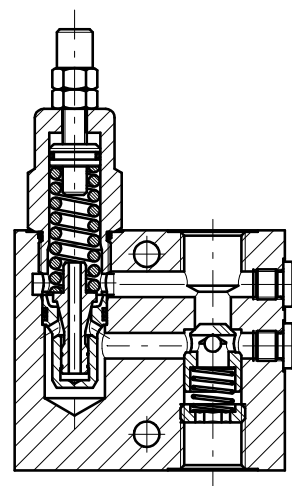
- 5 + 40 bar (test setting: 30 bar at 5 l/min.)
- 20 + 80 bar (test setting: 60 bar at 5 l/min.)
- 50 + 220 bar (test setting: 160 bar at 5 l/min.)
- 180 + 350 bar (test setting: 280 bar at 5 l/min.)

To perform setting of the valve see the pressure drop / flow diagram.

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

RECOMMENDATIONS



Filter: see page Z.9000.000.

Weight:

- VDSRL 10-12=1.00 kg and 2.15 kg for aluminium and steel valves respectively
- VDSRL 10-34=1.10 kg and 2.41 kg for aluminium and steel valves respectively

Cartridge used: see page 1.1000.200.

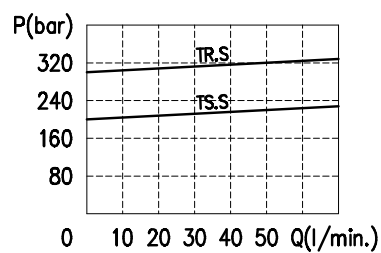
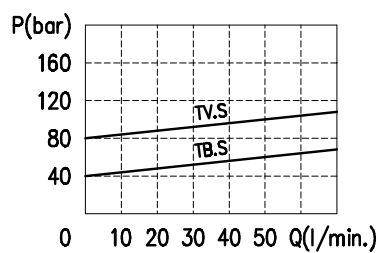
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

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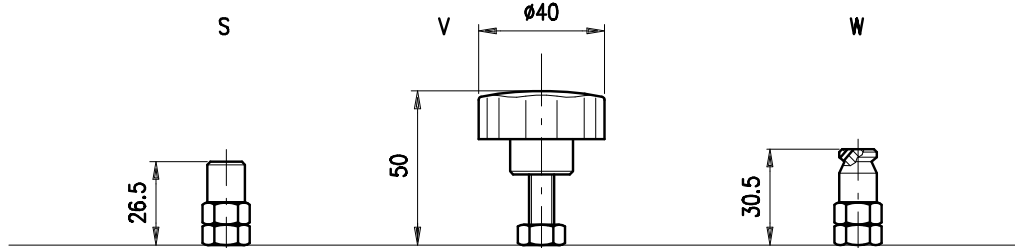
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• RATING DIAGRAMS

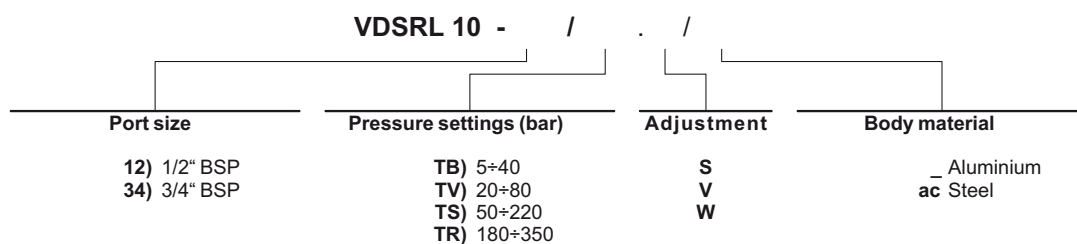


Oil viscosity 46 cSt

• ADJUSTMENTS



• CODE NUMBER



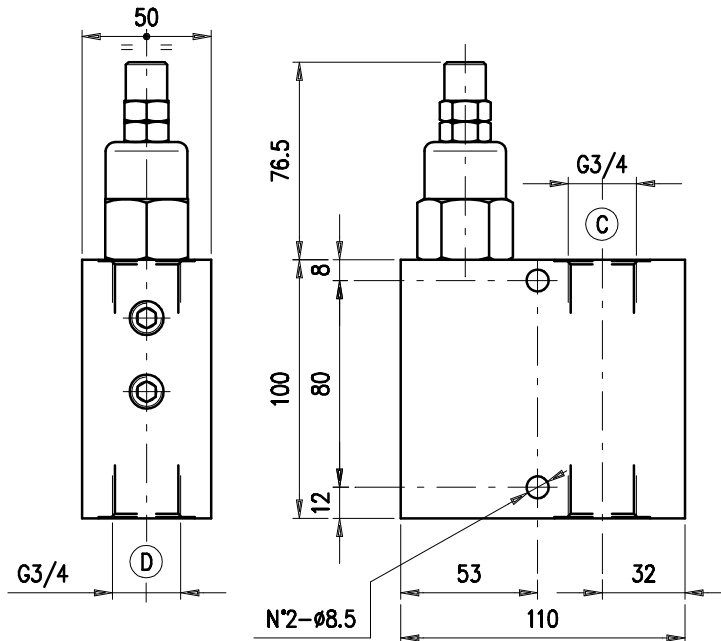
Rohrleitungsventile – Druckfolgeventil direktgesteuert –



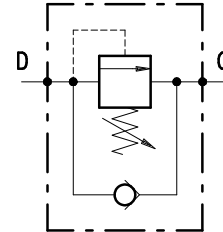
	Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
direktgesteuert	230-0260-1220	VDSRL 20-34/TB.S	3/4"-Einstellb. 5-40bar-Hutmutter	Alu	210	120	1200041100
	230-0260-1225	VDSRL 20-34/TV.S	3/4"-Einstellb. 20-80bar-Hutmutter				1200041101
	230-0260-1230	VDSRL 20-34/TS.S	3/4"-Einstellb. 50-220bar-Hutmutter				1200041102
	230-0260-1235	VDSRL 20-34/TR.S	3/4"-Einstellb. 180-350bar-Hutmutter				1200041103
	230-0260-1240	VDSRL 20-34/TS.V	3/4"-Einstellb. 50-220bar-Handrad				1200041104
	230-0260-1245	VDSRL 20-34/TV.V	3/4"-Einstellb. 20-80bar-Handrad				1200041107
	230-0260-1250	VDSRL 20-34/TB.V	3/4"-Einstellb. 5-40bar-Handrad				1200041108
	230-0260-1255	VDSRL 20-34/TR.V	3/4"-Einstellb. 180-350bar-Handrad				1200041111
	230-0260-1260	VDSRL 20-34/TS.S/ac	3/4"-Einstellb. 50-220bar-Hutmutter	Stahl	350	120	1200042100
	230-0260-1265	VDSRL 20-34/TR.S/ac	3/4"-Einstellb. 180-350bar-Hutmutter				1200042101

SEQUENCE
VDSRL 20 - 34

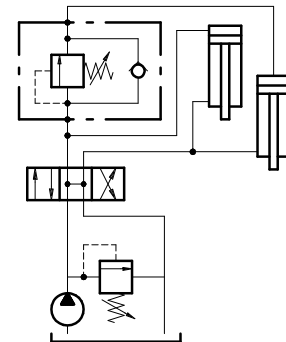
• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• ASSEMBLY DIAGRAM



• DESCRIPTION

Direct control sequence valve.

• OPERATION

Allows for oil flow from D into C when the pressure in D achieves the spring setting value. Should back pressure arise in C, the valve opening pressure shall be same as the setting pressure plus the back pressure.

• PERFORMANCE

Maximum flow: 120 l/min.

Maximum Pressure:

- 210 bar (aluminium valve)

- 350 bar (steel valve)

Application range with standard springs:

- 5 ÷ 40 bar (test setting: 30 bar at 5 l/min.)

- 20 ÷ 80 bar (test setting: 60 bar at 5 l/min.)

- 50 ÷ 220 bar (test setting: 160 bar at 5 l/min.)

- 180 ÷ 350 bar (test setting: 280 bar at 5 l/min.)

To perform setting of the valve see the pressure drop/ flow diagram.

Working temperature:

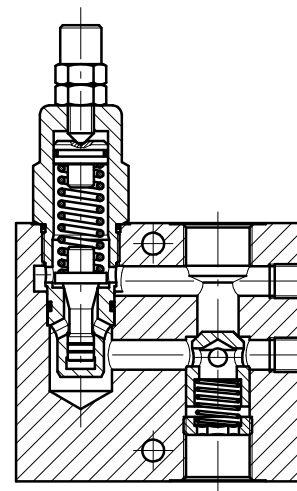
- min. -25°C max. 90°C with standard BUNA N gaskets

- min. -20°C max. 120°C with optional VITON gaskets

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.



Weight: 1.80 kg and 4.00 kg for aluminium and steel valves respectively.

Cartridge used: see page 1.1000.300.

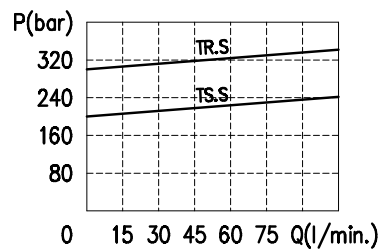
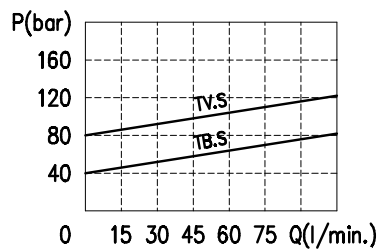
Material: internal components made out of high-grade steel duly treated and fabricated.

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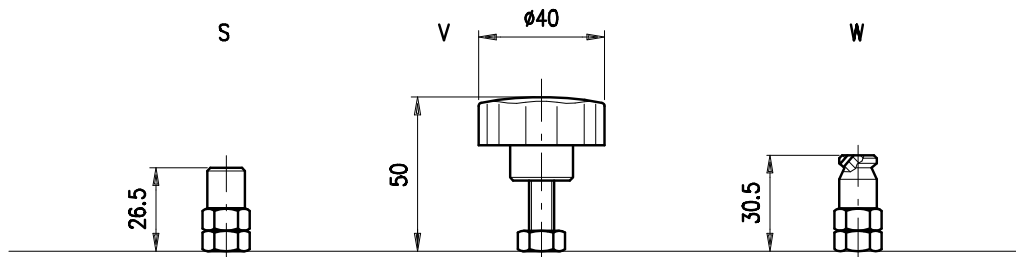
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• RATING DIAGRAMS

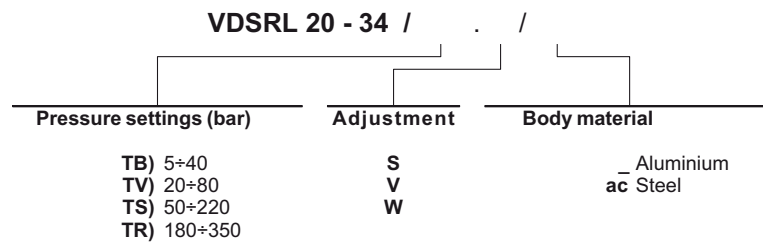


Oil viscosity 46 cSt

• ADJUSTMENTS



• CODE NUMBER



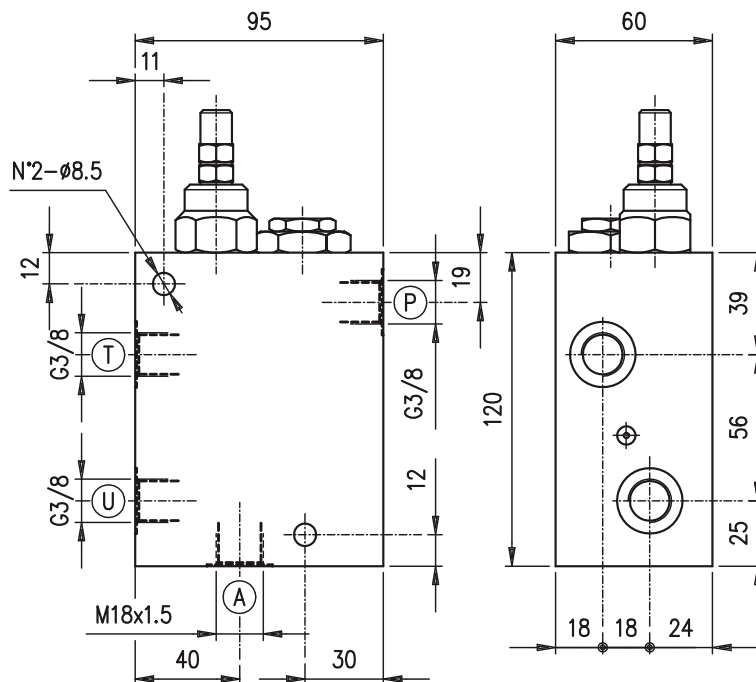
Druckabschaltventile – G 3/8" –



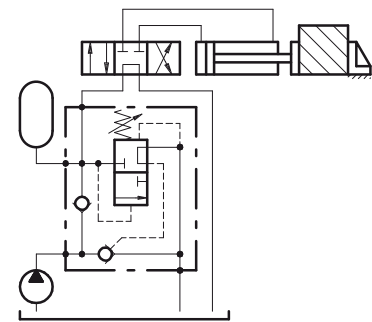
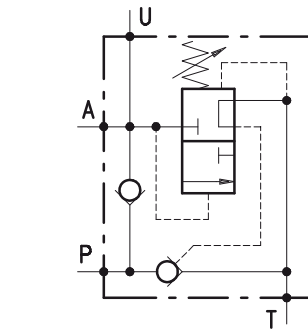
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0310-1395	VDA 38/TV.S.VRR	3/8"-Einstellb. 5-110bar-Hutmutter	Alu	250	25	1210021100
230-0310-1400	VDA 38/TR.S.VRR	3/8"-Einstellb. 100-250bar-Hutmutter				1210021101
230-0310-1405	VDA 38/TV.S.VRR/ac	3/8"-Einstellb. 5-110bar-Hutmutter	Stahl	1210022100		
230-0310-1410	VDA 38/TR.S.VRR/ac	3/8"-Einstellb. 100-250bar-Hutmutter		1210022101		

SEQUENCE
VDA 38

• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• DESCRIPTION

Automatic cut-off valve.

• OPERATION

Allows for pump discharge when the setting pressure is reached in U. Later the valve keeps constant pressure in U by means of the accumulator in A.

• PERFORMANCE

Maximum flow: 25 l/min.

Maximum Pressure: 250 bar (aluminium body).

Application range with standard springs:

- 5 ÷ 110 bar (test setting: 90 bar at 5 l/min.)
- 100 ÷ 250 bar (test setting: 200 bar at 5 l/min.)

To perform setting of the valve see the pressure drop / flow diagram.

Connection Pressure:

- 15% of the valve setting pressure for standard valves
- ask our technical office for special valves

Working temperature:

- min. -25°C max. 90°C with standard BUNAN gaskets
- min. -20°C max. 120°C with optional VITON gaskets

• RECOMMENDATIONS:

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

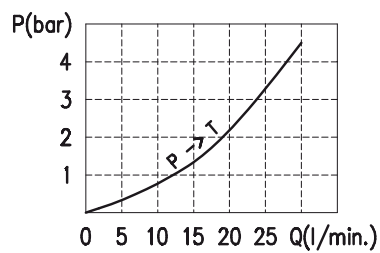
Weight: 2.15 kg (aluminium body)

Material: internal components made out of high-grade steel duly treated and fabricated

230-0310

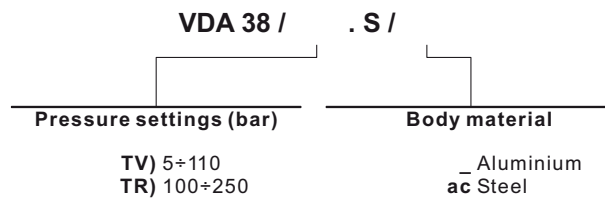
For more information please ask our technical office.
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• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER



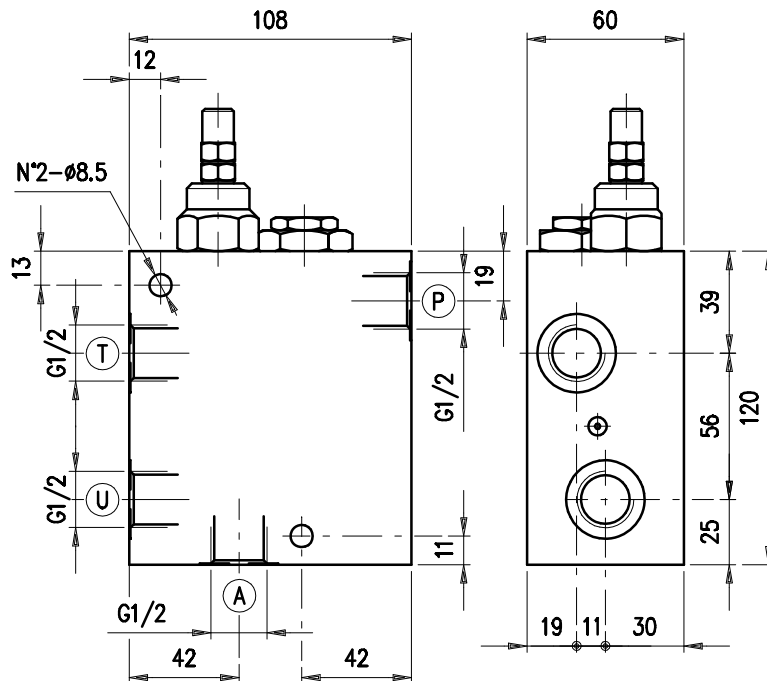
Druckabschaltventile - G 1/2" -



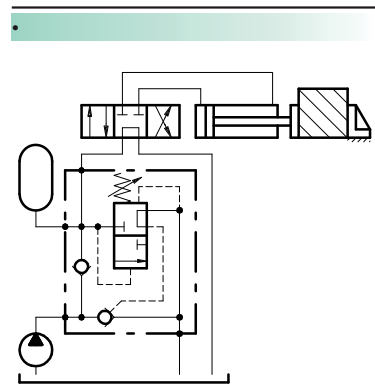
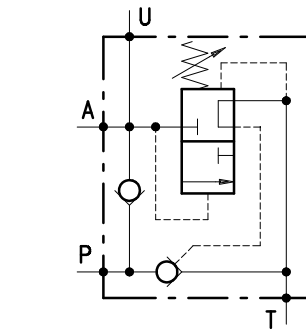
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0320-1415	VDA 12/TV.S.VRR	1/2"-Einstellb. 5-110bar-Hutmutter	Alu	250	50	1210031100
230-0320-1420	VDA 12/TR.S.VRR	1/2"-Einstellb. 100-250bar-Hutmutter				1210031101
230-0320-1425	VDA 12/TR.S.VRR/ac	1/2"-Einstellb. 100-250bar-Hutmutter	Stahl	350		1210032101

SEQUENCE
VDA 12

• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• DESCRIPTION

Automatic cut-off valve.

• OPERATION

Allows for pump discharge when the setting pressure is reached in U. Later the valve keeps constant pressure in U by means of the accumulator in A.

• PERFORMANCE

Maximum flow: 50 l/min.

Maximum Pressure: 250 bar (aluminium body).

Application range with standard springs:

- 5 ÷ 110 bar (test setting: 90 bar at 5 l/min.)
- 100 ÷ 250 bar (test setting: 200 bar at 5 l/min.)

To perform setting of the valve see the pressure drop / flow diagram.

Connection Pressure:

- 15% of the valve setting pressure for standard valves
- ask our technical office for special valves

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight: 2.35 kg (aluminium body).

Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

230-0320

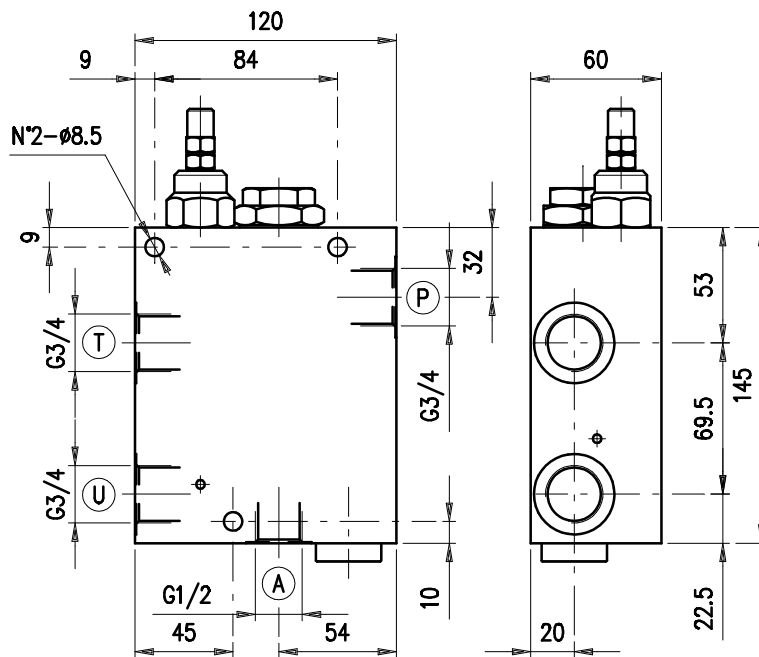
Druckabschaltventile – G 3/4" –



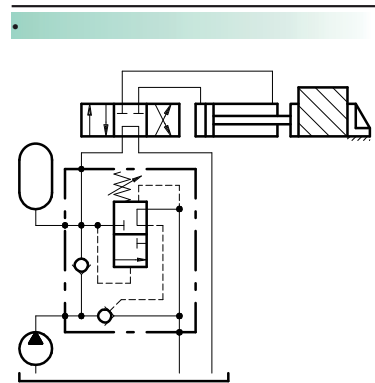
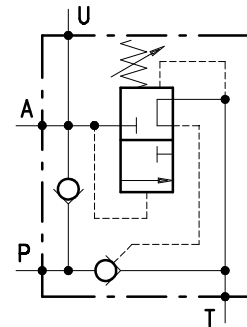
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0330-1430	VDA 34/TV.S.VRR	3/4"-Einstellb. 5-110bar-Hutmutter	Alu	250	100	1210041100
230-0330-1435	VDA 34/TR.S.VRR	3/4"-Einstellb. 100-250bar-Hutmutter				1210041101
230-0330-1440	VDA 34/TR.S.VRR/ac	3/4"-Einstellb. 5-110bar-Hutmutter	Stahl	1210042100		
230-0330-1445	VDA 34/TG.S.VRR/ac	3/4"-Einstellb. 100-250bar-Hutmutter		1210042101		

SEQUENCE
VDA 34

• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• DESCRIPTION

Automatic cut-off valve.

• OPERATION

Allows for pump discharge when the setting pressure is reached in U. Later the valve keeps constant pressure in U by means of the accumulator in A.

• PERFORMANCE

Maximum flow: 100 l/min.

Maximum Pressure: 250 bar (aluminium body).

Application range with standard springs:

- 5 ÷ 110 bar (test setting: 90 bar at 5 l/min.)
- 100 ÷ 250 bar (test setting: 200 bar at 5 l/min.)

To perform setting of the valve see the pressure drop / flow diagram.

Connection Pressure:

- 15% of the valve setting pressure for standard valves
- ask our technical office for special valves

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight: 3.20 kg (aluminium body).

Material: internal components made out of high-grade steel duly treated and fabricated.

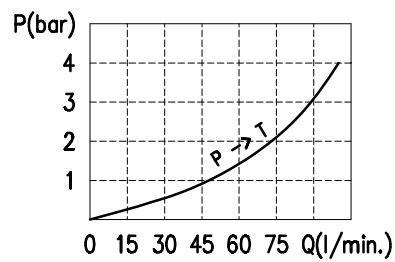
For more information please ask our technical office.

230-0330

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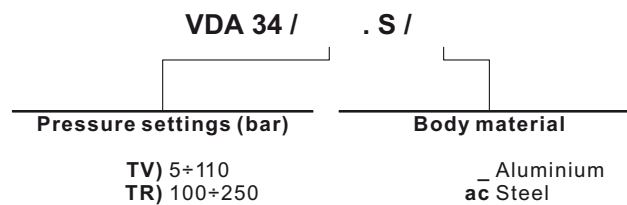
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• RATING DIAGRAMS

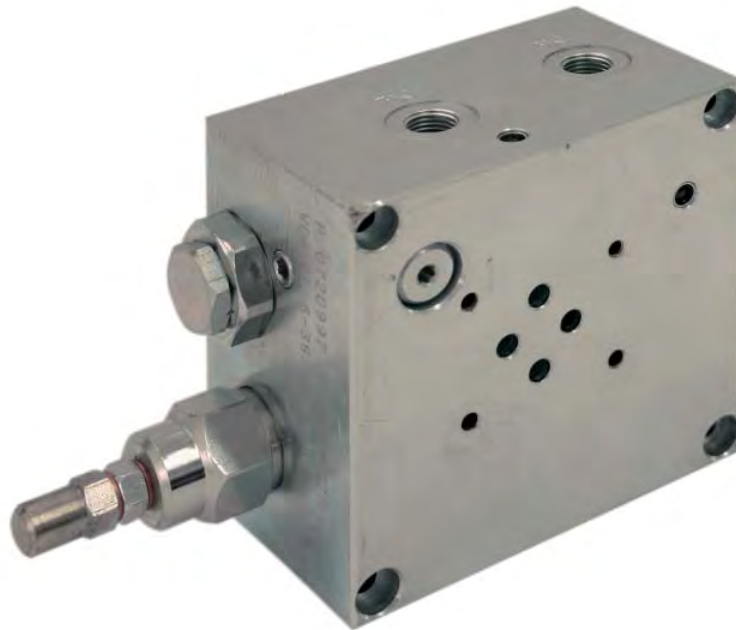


Oil viscosity 46 cSt

• CODE NUMBER



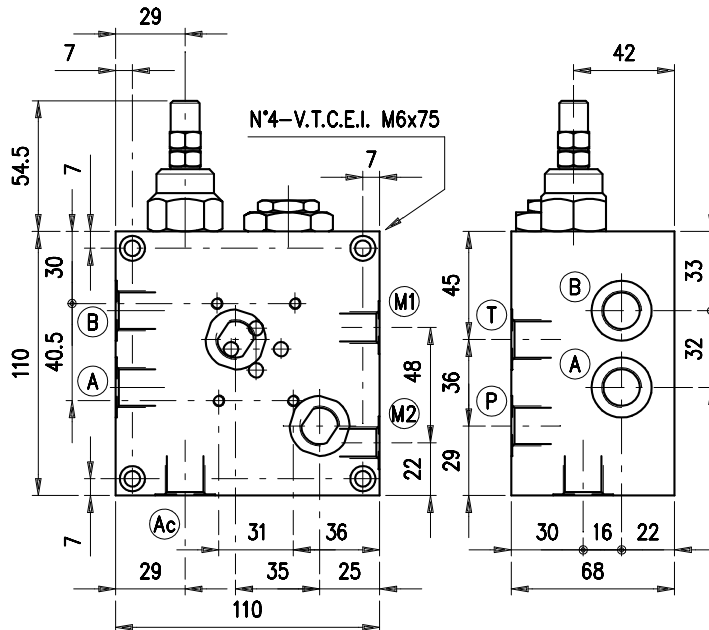
Druckabschaltventile – Cetop 03 Grundplatte G 3/8" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0360-1465	VDA/FL 6-38/TV.S.VRR	3/8"-Einstellb. 5-110bar-Hutmutter	Alu	250	25	1214021100
230-0360-1470	VDA/FL 6-38/TR.S.VRR	3/8"-Einstellb. 100-250bar-Hutmutter				1214021101
230-0360-1475	VDA/FL 6-38/TR.S.VRR/ac	3/8"-Einstellb. 100-250bar-Hutmutter	Stahl	350		1214022100

SEQUENCE
VDA /FL 6-38

DIMENSIONS (mm)



VDA/FL	A-B	P-T	M1	M2
6-38	G 3/8	G 3/8	G 1/4	G 1/4

DESCRIPTION

Automatic cut-off valve with "NG 6" flange.

OPERATION

Allows for pump discharge when the setting pressure is reached in P. Later the valve keeps constant pressure in P by means of the accumulator in Ac.

PERFORMANCE

Maximum flow: 25 l/min.

Maximum Pressure: 250 bar (aluminium body).

Application range with standard springs:

- 5 ÷ 110 bar (test setting: 90 bar at 5 l/min.)
- 100 ÷ 250 bar (test setting: 200 bar at 5 l/min.)

To perform setting of the valve see the pressure drop / flow diagram.

Connection Pressure:

- 15% of the valve setting pressure for standard valves
- ask our technical office for special valves

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

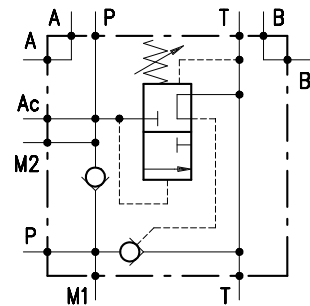
Weight: 2.43 kg (aluminium body).

Material: internal components made out of high-grade steel duly treated and fabricated.

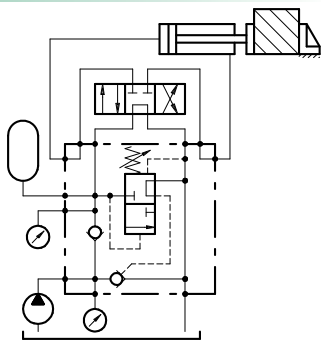
For more information please ask our technical office.

OLEOSTAR

HYDRAULIC DIAGRAM



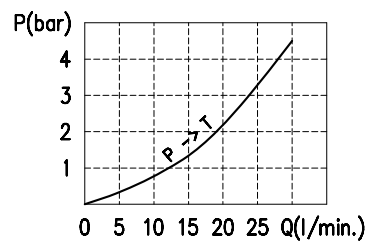
ASSEMBLY DIAGRAM



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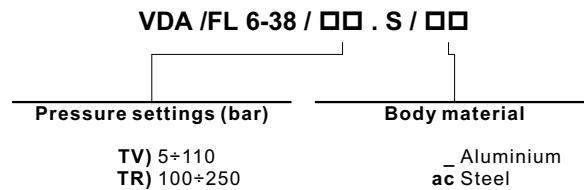
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• RATING DIAGRAMS

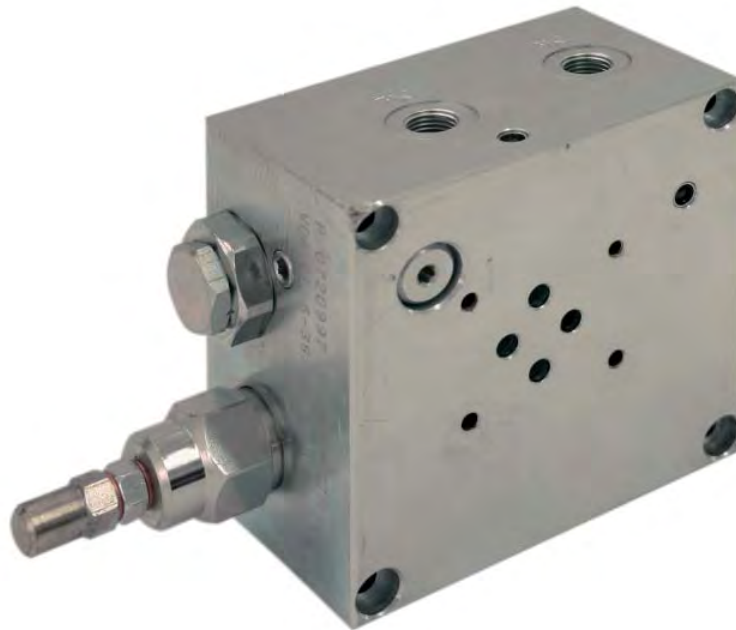


Oil viscosity 46 cSt

• CODE NUMBER



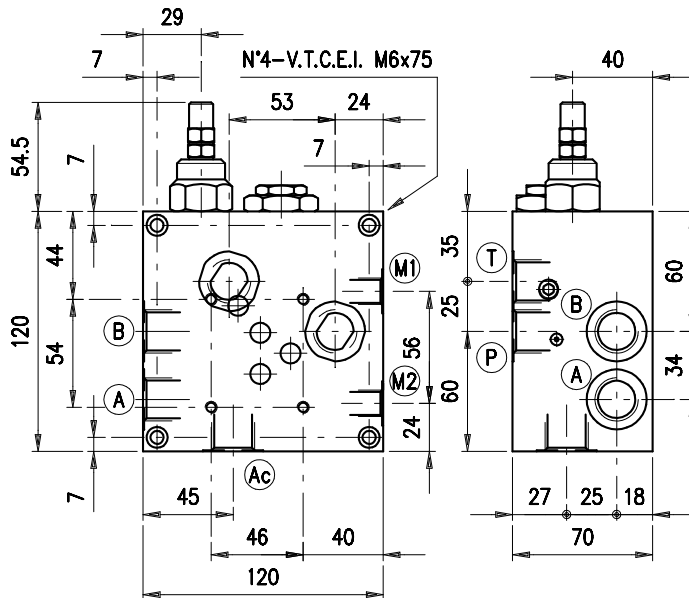
Druckabschaltventile – Cetop 05 Grundplatte G 1/2" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0370-1480	VDA/FL 10-12/TV.S.VRR	1/2"-Einstellb. 5-110bar-Hutmutter	Alu	250	50	1214031100
230-0370-1485	VDA/FL 10-12/TR.S.VRR	1/2"-Einstellb. 100-250bar-Hutmutter				1214031101
230-0370-1490	VDA/FL 10-12/TR.S.VRR/ac	1/2"-Einstellb. 100-250bar-Hutmutter	Stahl	350		1214032100

SEQUENCE
VDA /FL 10-12

DIMENSIONS (mm)



VDA/FL	A-B	P-T	M1	M2
10-12	G 1/2	G 1/2	G 1/4	G 1/4

DESCRIPTION

Automatic cut-off valve with "NG 10" flange.

OPERATION

Allows for pump discharge when the setting pressure is reached in P. Later the valve keeps constant pressure in P by means of the accumulator in Ac.

PERFORMANCE

Maximum flow: 50 l/min.

Maximum Pressure: 250 bar (aluminium body).

Application range with standard springs:

- 5 ÷ 110 bar (test setting: 90 bar at 5 l/min.)
- 100 ÷ 250 bar (test setting: 200 bar at 5 l/min.)

To perform setting of the valve see the pressure drop / flow diagram.

Connection Pressure:

- 15% of the valve setting pressure for standard valves
- ask our technical office for special valves

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

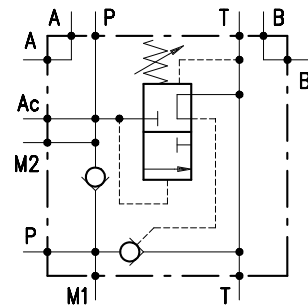
Weight: 2.86 kg (aluminium body).

Material: internal components made out of high-grade steel duly treated and fabricated.

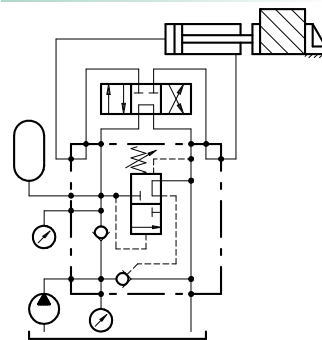
For more information please ask our technical office.

OLEOSTAR

HYDRAULIC DIAGRAM



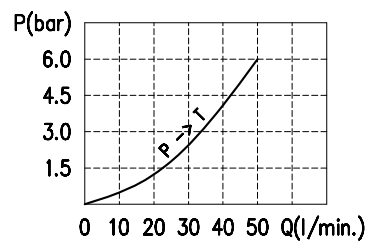
ASSEMBLY DIAGRAM



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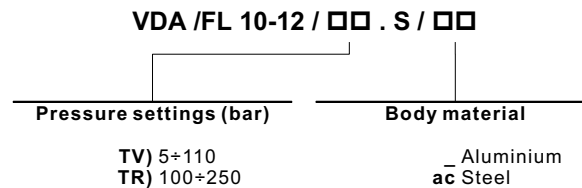
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• RATING DIAGRAMS

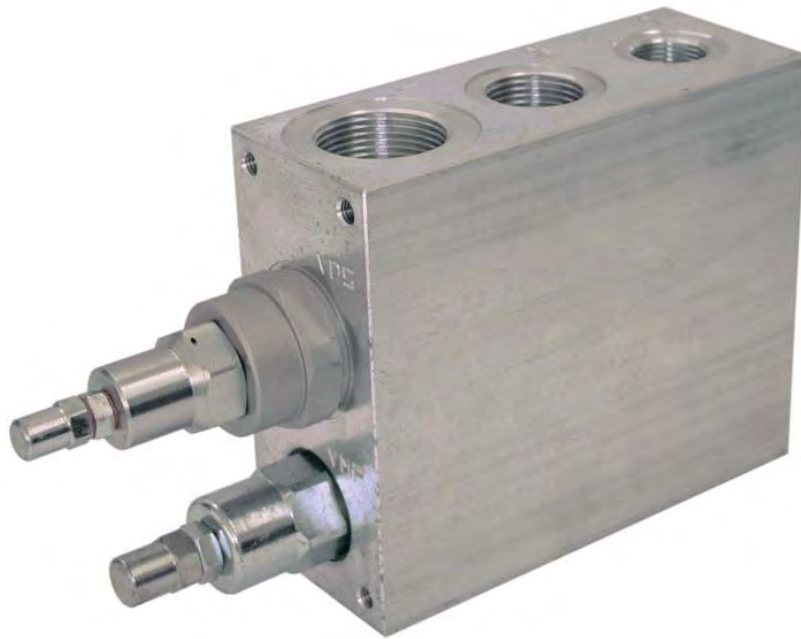


Oil viscosity 46 cSt

• CODE NUMBER



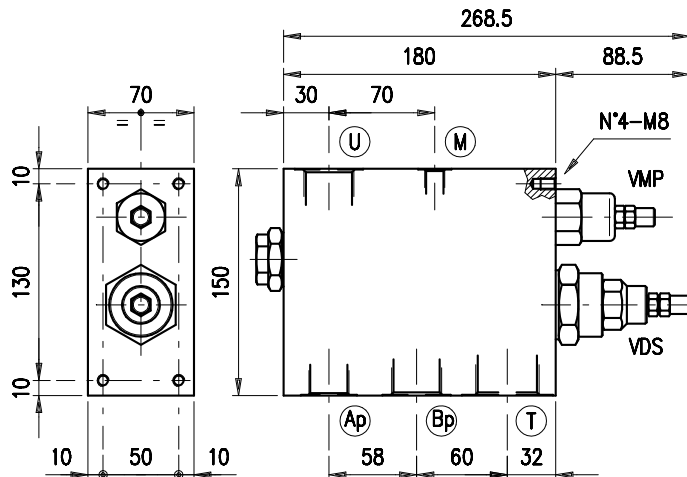
Hochdruck-/Niederdruckabschaltventil - G 1" -



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0410-1620	VEP 100/TS-TV.S	1"-Einstellb. 50-220+20-80bar-Hutmutter	Alu	210	180 (150 + 50)	1220051100
230-0410-1625	VEP 100/TR-TV.S	1"-Einstellb. 180-350+20-80bar-Hutmutter				1220051101
230-0410-1630	VEP 100/TS-TB.S	1"-Einstellb. 50-220+5-40bar-Hutmutter				1220051102
230-0410-1635	VEP 100/TR-TS.S	1"-Einstellb. 180-350+50-220bar-Hutmutter				1220051105
230-0410-1640	VEP 100/TR-TB.S	1"-Einstellb. 180-350+5-40bar-Hutmutter				1220051106
230-0410-1645	VEP 100/TR-TV.S/ac	1"-Einstellb. 180-350+20-80bar-Hutmutter	Stahl	350		1220052101
230-0410-1650	VEP 100/TS-TV.S/ac	1"-Einstellb. 50-220+20-80bar-Hutmutter				1220052104

SEQUENCE
VEP 100

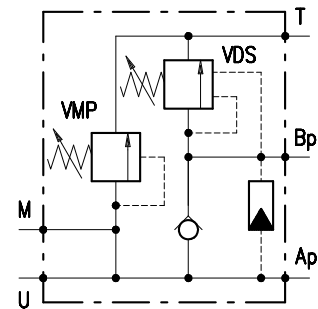
• DIMENSIONS (mm)



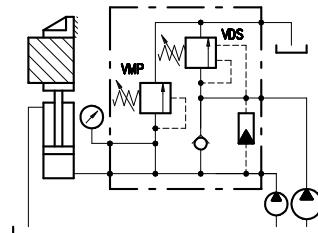
VEP	U	M	T	Ap	Bp
100	G 1"	G 1/4	G 1/4	G 3/4	G 1"

OLEOSTAR

• HYDRAULIC DIAGRAM



• ASSEMBLY DIAGRAM



• DESCRIPTION

High/Low pressure cut-out valve.

• OPERATION

Recommended for systems powered by two pumps where double speed (fast-slow sequence) is made available. Fast speed is obtained by summing up both pumps capacity up to the setting value of the VDS valve. Slow speed according to the small pump is obtained by later discharge of the bigger pump. Working pressure during slow speed is controlled by the VMP valve.

• PERFORMANCE

Maximum flow:

- Ap line = 50 l/min.
- Bp line = 150 l/min.
- U line = 180 l/min.

Maximum Pressure:

- 210 bar (aluminium body)
- 350 bar (steel body)

Application range with standard springs "Ap"(VMP):

- 50 + 220 bar (test setting: 180 bar at 5 l/min.)
- 180 + 350 bar (test setting: 280 bar at 5 l/min.)

To perform setting of the valve see the pressure drop / flow diagram.

Application range with standard springs "Bp"(VDS):

- 5 + 40 bar (test setting: 30 bar at 5 l/min.)
- 20 + 80 bar (test setting: 60 bar at 5 l/min.)

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets



OLEOSTAR

• **RECOMMENDATIONS**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight:

- 5.85 kg (aluminium body)
- 13.50 kg (steel body)

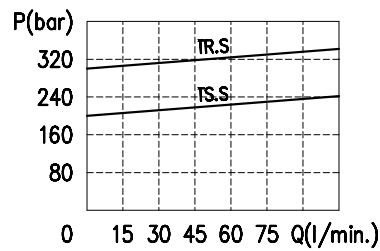
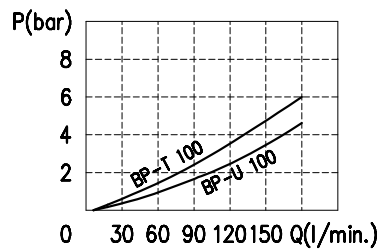
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

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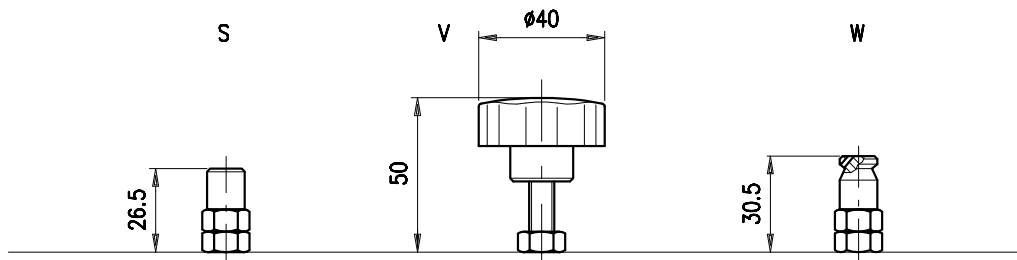
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• **RATING DIAGRAMS**

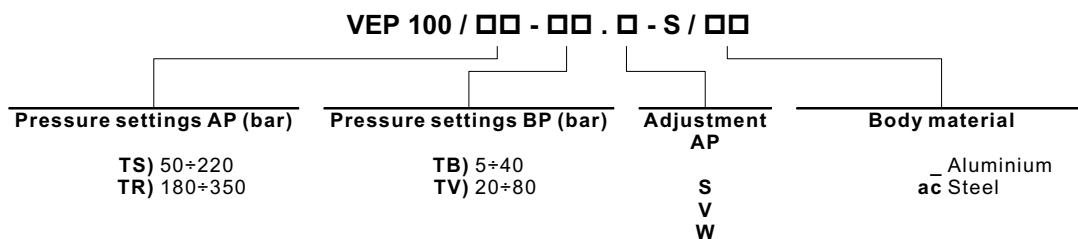


Oil viscosity 46 cSt

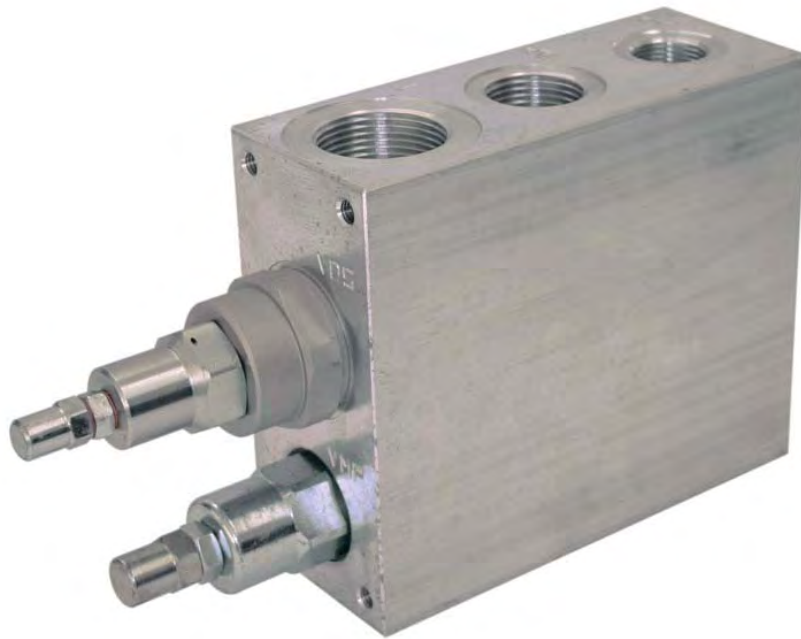
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• **CODE NUMBER**



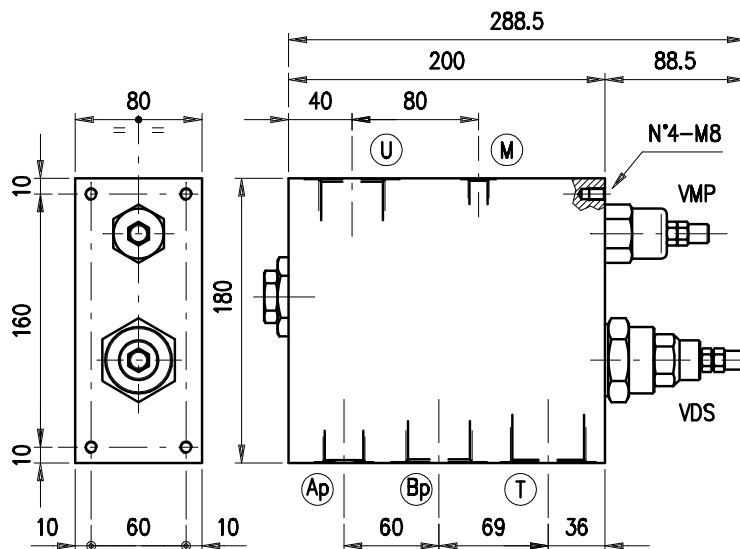
Hochdruck-/Niederdruckabschaltventil - G 1 1/4" -



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0420-1655	VEP 114/TS-TV.S	1 1/4"-Einstellb. 50-220+20-80bar-Hutmutter	Alu	210	250 (200 + 80)	1220061100
230-0420-1660	VEP 114/TR-TV.S	1 1/4"-Einstellb. 180-350+20-80bar-Hutmutter				1220061101
230-0420-1665	VEP 114/TR-TS.S	1 1/4"-Einstellb. 180-350+50-220bar-Hutmutter				1220061102
230-0420-1670	VEP 114/TR-TV.S/ac	1 1/4"-Einstellb. 180-350+20-80bar-Hutmutter	Stahl	350		1220062100
230-0420-1675	VEP 114/TR-TS.S/ac	1 1/4"-Einstellb. 180-350+50-220bar-Hutmutter				1220062101

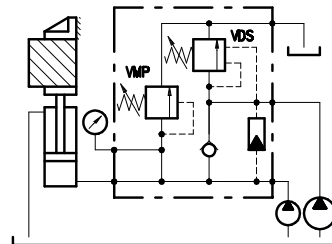
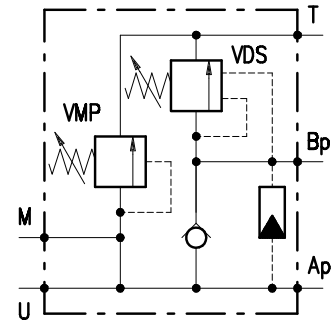
SEQUENCE
VEP 114

• DIMENSIONS (mm)



VEP	U	M	T	Ap	Bp
114	G 1" 1/4	G 1/4	G 1" 1/2	G 3/4	G 1" 1/4

• HYDRAULIC DIAGRAM



• DESCRIPTION

High/Low pressure cut-out valve.

• OPERATION

Recommended for systems powered by two pumps where double speed (fast-slow sequence) is made available. Fast speed is obtained by summing up both pumps capacity up to the setting value of the VDS valve. Slow speed according to the small pump is obtained by later discharge of the bigger pump. Working pressure during slow speed is controlled by the VMP valve.

• PERFORMANCE

Maximum flow:

- Ap line = 80 l/min.
- Bp line = 200 l/min.
- U line = 250 l/min.

Maximum Pressure:

- 210 bar (aluminium body)
- 350 bar (steel body)

Application range with standard springs "Ap"(VMP):

- 50 ÷ 220 bar (test setting: 180 bar at 5 l/min.)
- 180 ÷ 350 bar (test setting: 280 bar at 5 l/min.)

To perform setting of the valve see the pressure drop / flow diagram.

Application range with standard springs "Bp"(VDS):

- 5 ÷ 40 bar (test setting: 30 bar at 5 l/min.)
- 20 ÷ 80 bar (test setting: 60 bar at 5 l/min.)

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets

230-0420

• RECOMMENDATIONS:

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight:

- 8.40 kg (aluminium body)
- 19.50 kg (steel body)

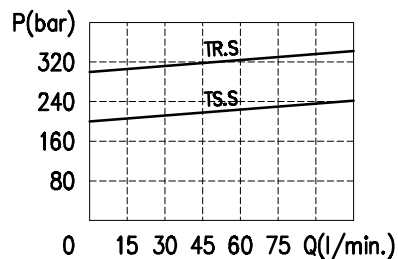
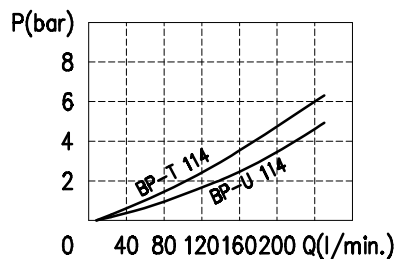
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office .

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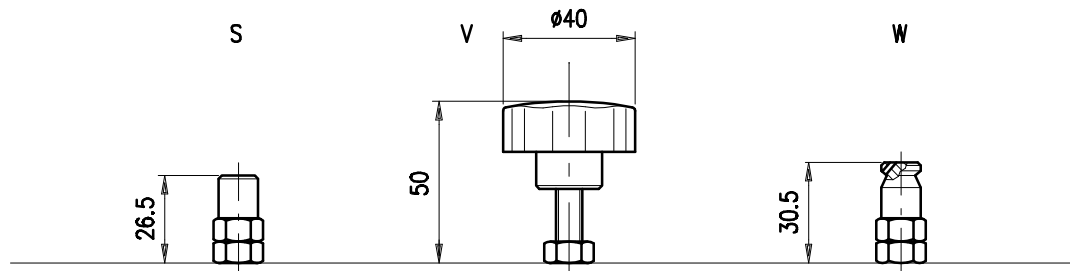
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• RATING DIAGRAMS

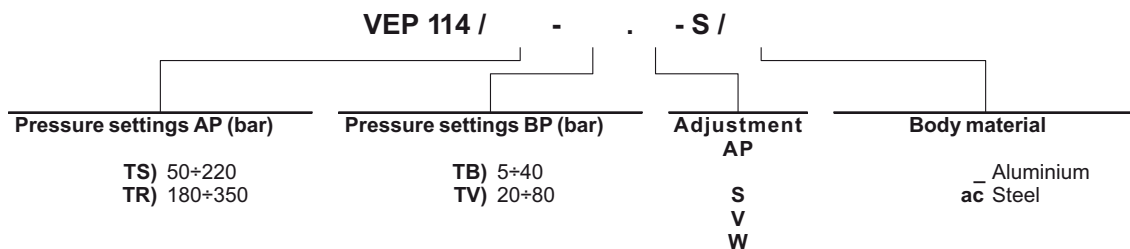


Oil viscosity 46 cSt

• ADJUSTMENTS



• CODE NUMBER



Hochdruck-/Niederdruckabschaltventil - G 1 + 1 -

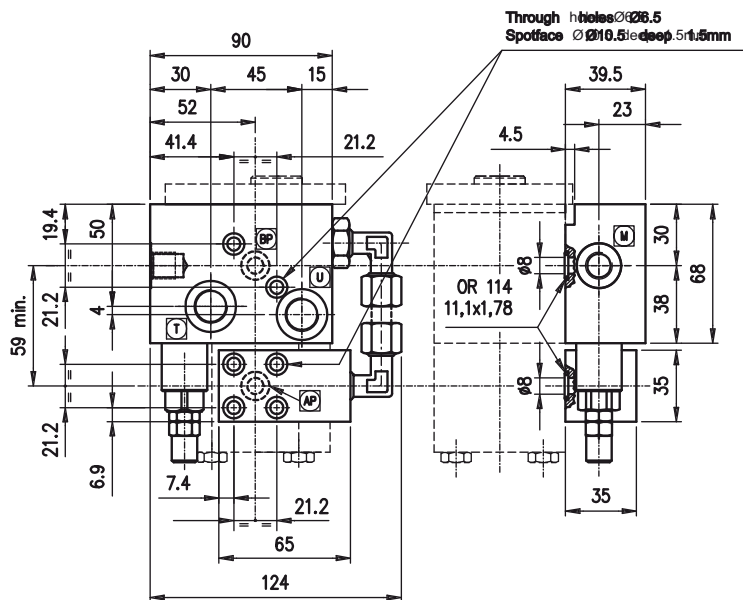


Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0430-1680	VEP/FC 38/Gr1+1/TV.S	3/8"-Einstellb. 50-220+20-80bar-Hutmutter	Alu	210	30 (25 + 10)	1222021100
230-0430-1685	VEP/FC 38/Gr1+1/TB.S					1222021105
230-0430-1690	VEP/FC 38/Gr1+1/TV.S/ac		Stahl			1222022100

SEQUENCE

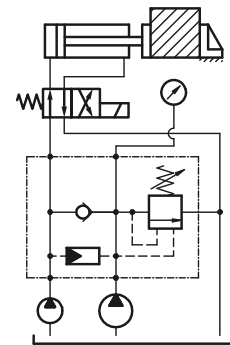
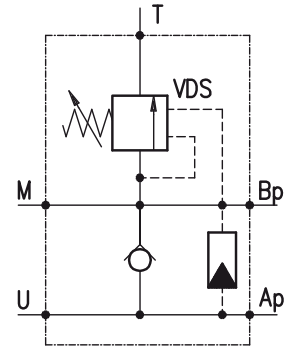
VEP/FC 38-gr 1+1-PLP

• DIMENSIONS (mm)



VEP/FC	U	T	M	AP - BP
38	G 3/8	G 3/8	G 1/4	Flanged Ports

• HYDRAULIC DIAGRAM



• DESCRIPTION

High/Low pressure cut-out valve.

• OPERATION

Recommended for systems powered by two pumps where double speed (fast-slow sequence) is made available. Fast speed is obtained by summing up both pumps capacity up to the setting value of the VDS valve. Slow speed according to the small pump is obtained by later discharge of the bigger pump.

• PERFORMANCE

Maximum flow:

- Ap line = 10 l/min.
- Bp line = 25 l/min.
- U line = 30 l/min.

Maximum Pressure:

- 210 bar (aluminium body)
- 350 bar (steel body)

Application range with standard springs "Bp"(VDS):

- 50 + 40 bar (test setting: 30 bar at 5 l/min.)
- 20 + 80 bar (test setting: 60 bar at 5 l/min.)

Working temperature:

- min. -25°C max. 90°C with standard BUNAN gaskets
- min. -20°C max. 120°C with optional VITON gaskets

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight:

- 1.1 kg (aluminium body)
- 3 kg (steel body)

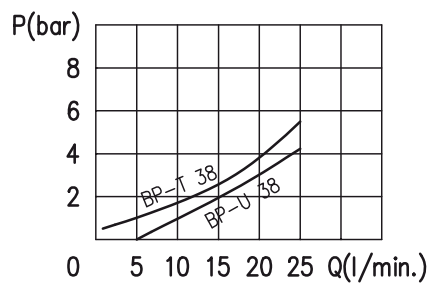
Material: internal components made out of high-grade steel duly treated and fabricated.

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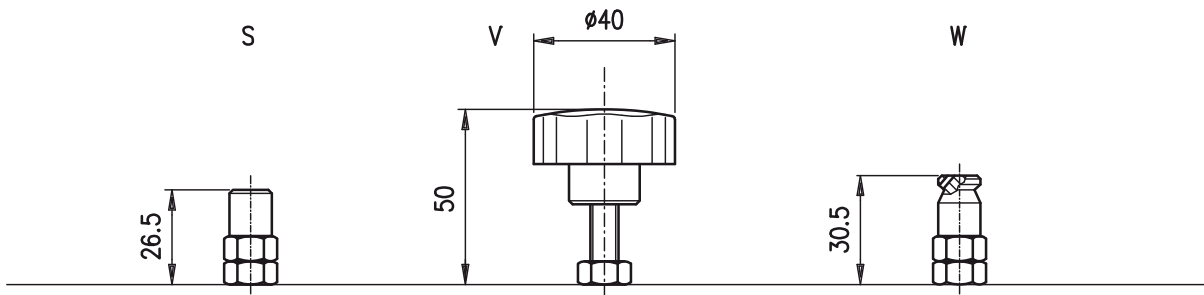
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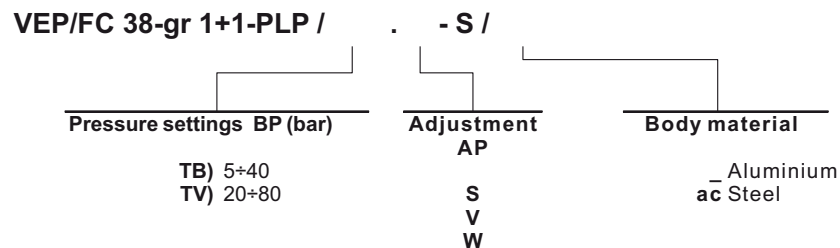


Oil viscosity 46 cSt

• ADJUSTMENTS



• CODE NUMBER



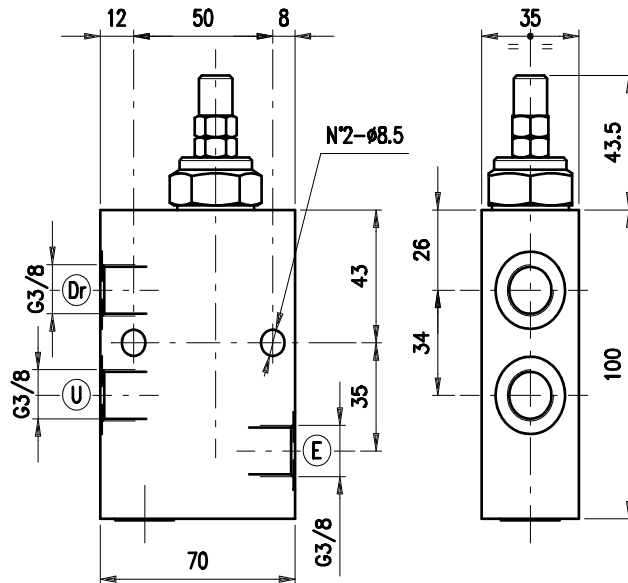
Druckminderventile – G 3/8" –



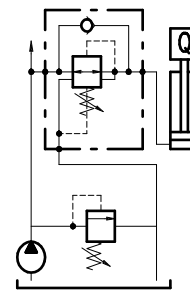
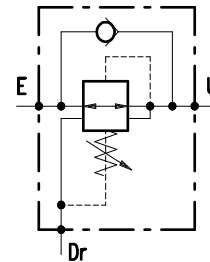
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0500-1875	VRPRL 38/TB.S	3/8"-Einstellb. 5-50bar-Hutmutter	Alu	210	20	1230021100
230-0500-1880	VRPRL 38/TB.V	3/8"-Einstellb. 5-50bar-Handrad				1230021101
230-0500-1885	VRPRL 38/TV.S	3/8"-Einstellb. 40-110bar-Hutmutter				1230021102
230-0500-1890	VRPRL 38/TV.V	3/8"-Einstellb. 40-110bar-Handrad				1230021103
230-0500-1895	VRPRL 38/TR.S.	3/8"-Einstellb. 180-350bar-Hutmutter				1230021106
230-0500-1900	VRPRL 38/TS.V	3/8"-Einstellb. 100-200bar-Handrad				1230021107
230-0500-1905	VRPRL 38/TS.S	3/8"-Einstellb. 100-200bar-Hutmutter				1230021112
230-0500-1910	VRPRL 38/TV.S/ac	3/8"-Einstellb. 40-100bar-Hutmutter	Stahl	350	20	1230022100
230-0500-1915	VRPRL 38/TB.S/ac	3/8"-Einstellb. 5-50bar-Hutmutter				1230022101
230-0500-1920	VRPRL 38/TV.V/ac	3/8"-Einstellb. 40-110bar-Handrad				1230022104
230-0500-1925	VRPRL 38/TV.PV/ac	3/8"-Einstellb. 40-110bar-Handrad				1230022105
230-0500-1930	VRPRL 38/TS.S/ac	3/8"-Einstellb. 100-200bar-Hutmutter				1230022106
230-0500-1935	VRPRL 38/TB.V/ac	3/8"-Einstellb. 5-50bar-Handrad				1230022107

PRESSURE REDUCING VALVES
VRPRL 38

• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• DESCRIPTION

Direct control pressure adjustment valve with relieving and free return.

• OPERATION

Allows for free oil flow from E into U. When the pressure value set in U is achieved, the valve will shut the pass between E and U in order to maintain constant pressure in U. Should the pressure in U further exceed the setting value, the pass in E will shut and the connection in U will joint to Dr to relieve eventual pressure peaks. Single acting valve, allows for free oil return from U to E.

• PERFORMANCE

Maximum flow: 20 l/min.

Maximum Pressure:

- 210 bar (aluminium valve)
- 350 bar (steel valve)

Application range with standard springs:

- 5 + 50 bar (test setting: 40 bar at 5 l/min.)
- 40 + 110 bar (test setting: 90 bar at 5 l/min.)
- 100 + 200 bar (test setting: 160 bar at 5 l/min.)

To perform setting of the valve see the pressure drop/ flow diagram.

Oil leak in Dr: 20 cc per minute at 150 bar pressure and oil viscosity 46 cSt.

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

• RECOMMENDATIONS:

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight: 0.85 kg and 1.73 kg for aluminium and steel valves respectively.

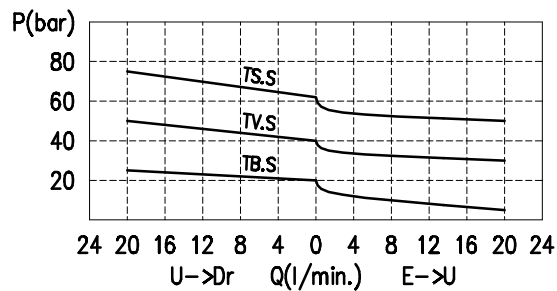
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

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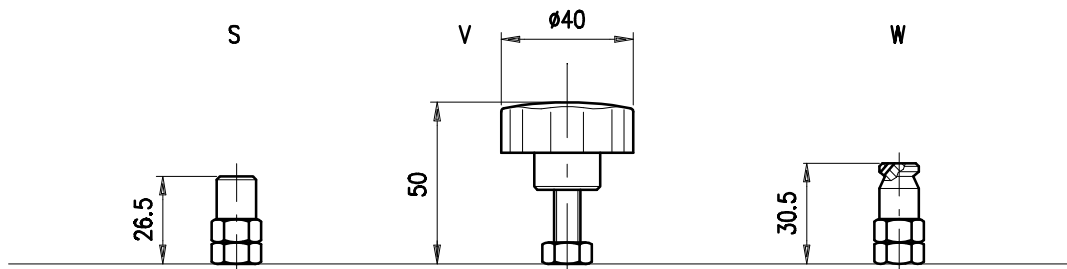
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• RATING DIAGRAMS

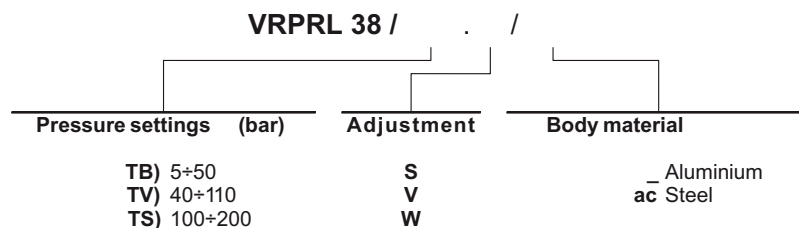


Oil viscosity 46 cSt

• ADJUSTMENTS



• CODE NUMBER



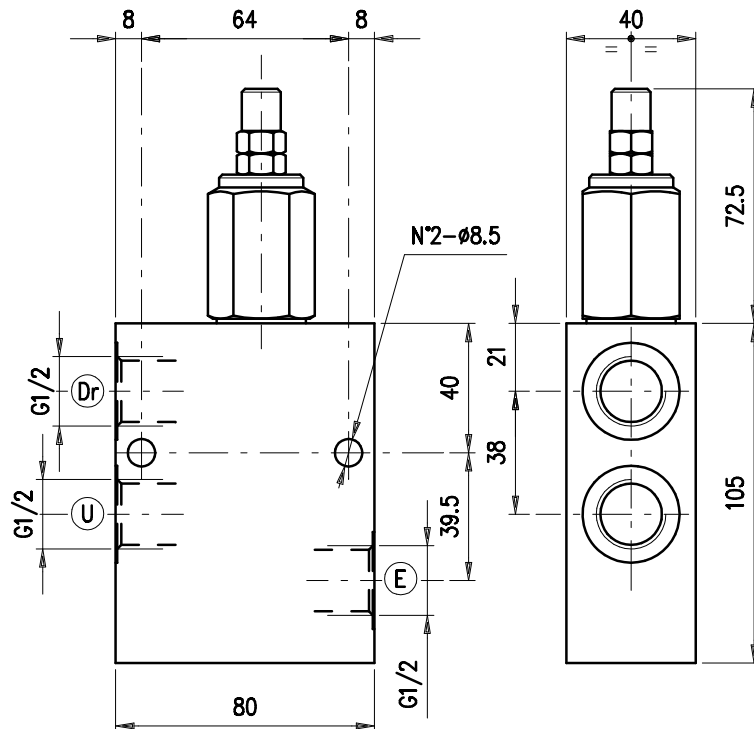
Druckminderventile - G 1/2" -



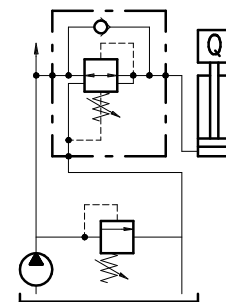
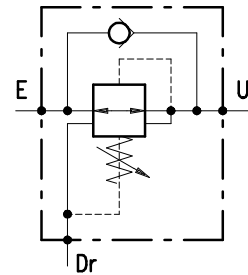
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0510-1940	VRPRL 12/TB.S	1/2"-Einstellb. 5-50bar-Hutmutter	Alu	210	50	1230031100
230-0510-1945	VRPRL 12/TB.V	1/2"-Einstellb. 5-50bar-Handrad				1230031101
230-0510-1950	VRPRL 12/TV.S	1/2"-Einstellb. 40-110bar-Hutmutter				1230031102
230-0510-1955	VRPRL 12/TV.V	1/2"-Einstellb. 40-110bar-Handrad				1230031103
230-0510-1960	VRPRL 12/TV.S/ac	1/2"-Einstellb. 40-110bar-Hutmutter	Stahl	350		1230032100
230-0510-1965	VRPRL 12/TS.S/ac	1/2"-Einstellb. 100-200bar-Hutmutter				1230032101
230-0510-1970	VRPRL 12/TV.V/ac	1/2"-Einstellb. 40-110bar-Handrad				1230032102
230-0510-1975	VRPRL 12/TB.V/ac	1/2"-Einstellb. 5-50bar-Handrad				1230032103

PRESSURE REDUCING VALVES
VRPRL 12

• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• DESCRIPTION

Direct control pressure adjustment valve with relieving and free return.

• OPERATION

Allows for free oil flow from E into U. When the pressure value set in U is achieved, the valve will shut the pass between E and U in order to maintain constant pressure in U. Should the pressure in U further exceed the setting value, the pass in E will shut and the connection in U will joint to Dr to relieve eventual pressure peaks. Single acting valve, allows for free oil return from U to E.

• PERFORMANCE

Maximum flow: 50 l/min.

Maximum Pressure:

- 210 bar (aluminium valve)

- 350 bar (steel valve)

Application range with standard springs:

- 5 ÷ 50 bar (test setting: 40 bar at 5 l/min.)

- 40 ÷ 110 bar (test setting: 90 bar at 5 l/min.)

- 100 ÷ 200 bar (test setting: 160 bar at 5 l/min.)

To perform setting of the valve see the pressure drop/ flow diagram.

Oil leak in Dr: 20 cc per minute at 150 bar pressure and oil viscosity 46 cSt

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets

- min. -20°C max. 120°C with optional VITON gaskets

• RECOMMENDATIONS:

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

230-0510

Weight: 2.21 kg and 2.54 kg for aluminium and steel valves respectively

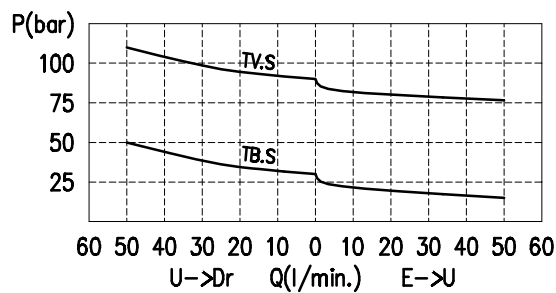
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

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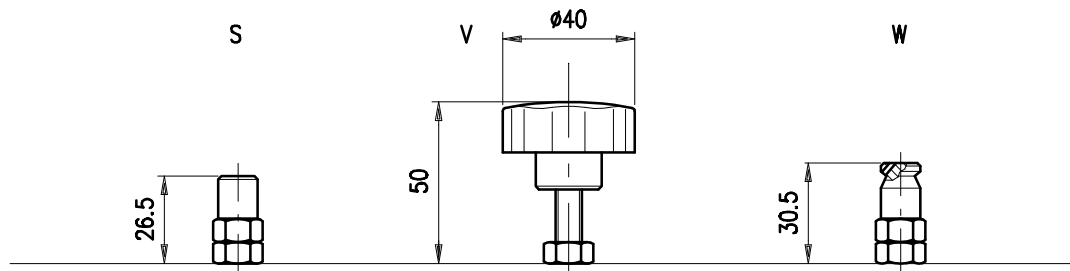
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• RATING DIAGRAMS

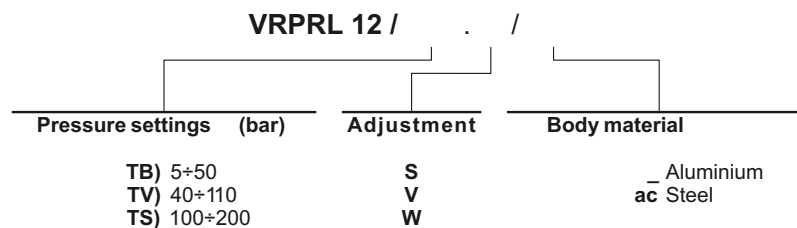


Oil viscosity 46 cSt

• ADJUSTMENTS



• CODE NUMBER



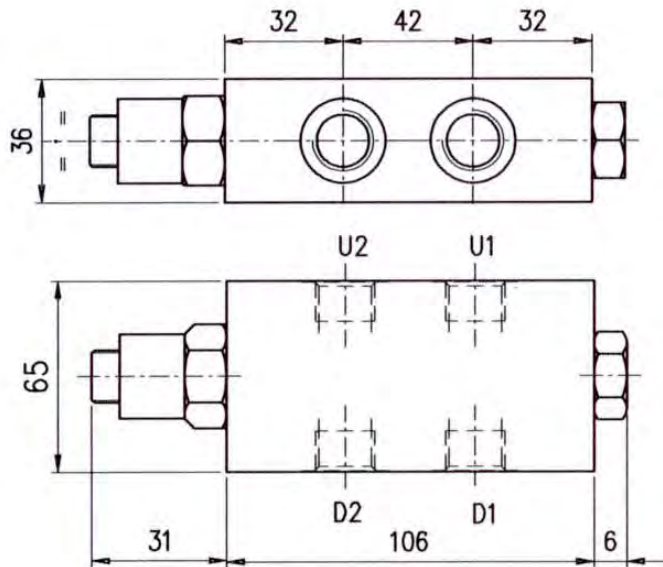
Differenzialventile



Bestellnr.	Typ	Bezeichnung	Gehäuse	Code
230-0540-2060	VRCL 38/gh	1/2"-Einstellb. 5-50bar-Hutmutter	Alu	1245023100
230-0540-2065	VRCL 38/TS/ac TIPO KD	1/2"-Einstellb. 5-50bar-Handrad	Stahl	1245023102
230-0540-2070	VRCL 18/MET/ac TIPO KD	1/2"-Einstellb. 40-110bar-Hutmutter		1245023401

SEQUENCE
VRCL/38

• **DIMENSIONS (mm)**



D1-D2	U1-U2
G3/8	G3/8

• **DESCRIPTION**

Regenerative valve

• **OPERATION**

Feeding the valve from D2, in neutral position, the valve regenerates the return flow coming back from U1. When the pressure exceeds the pressure setting, the valve's spool shifts to open from U1 to D1 while it close the passage from U1 to U2, feeding from D1 the cylinder is going back. The setting pressure should be at least 40 bar less then the max circuit pressure.

• **PERFORMANCE**

Maximum flow: 30 l/min.

Maximum Pressure: 210 bar (cast iron body)

Application range with standard springs: 30 + 140 bar (test setting 100 bar at 15 l/min.) 38 bar/turn

Working temperature:

- min. -25°C max. 90°C with standard BUNAN gaskets
- min. -20°C max. 200°C with optional VITON gaskets

• **RECOMMENDATIONS**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight: cast iron body 2,2 kg

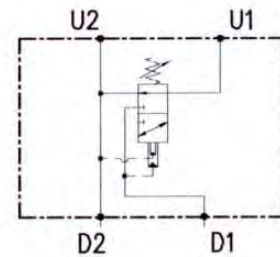
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office .

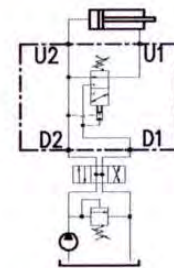
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 **OLEOSTAR**

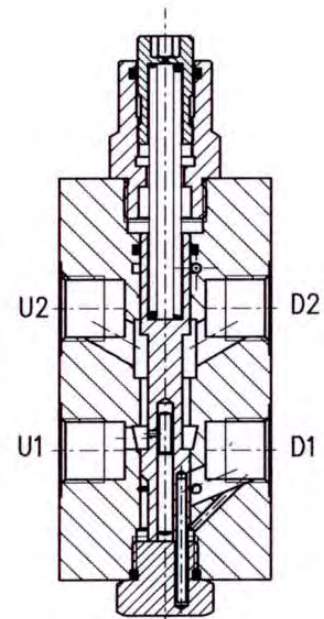
• **HYDRAULIC DIAGRAM**



• **ASSEMBLY DIAGRAM**



• **CROSS SECTION**



Rückschlagventile

– G 3/8", G 1/8", G 1/2" –

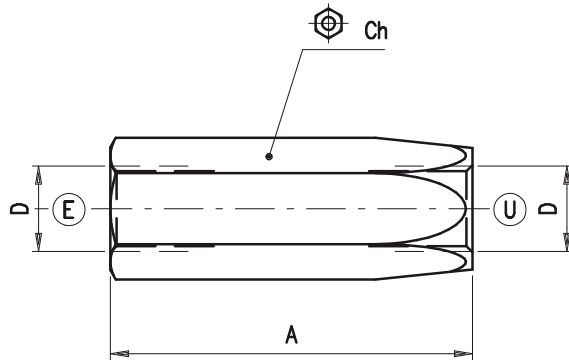


Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code		
230-0590-2170	VUC 38/Pa1,5	3/8"-Öffnungsdruck 1,5bar-fest eingestellt	Stahl	400	40	1311020101		
230-0590-2175	VUC 38/Pa2,5	3/8"-Öffnungsdruck 2,5bar-fest eingestellt				1311020102		
230-0590-2180	VUC 38/Pa5	3/8"-Öffnungsdruck 5bar-fest eingestellt				1311020103		
230-0590-2185	VUC 38/Pa15	3/8"-Öffnungsdruck 15bar-fest eingestellt				1311020104		
230-0590-2190	VUC 38/Pa10	3/8"-Öffnungsdruck 10bar-fest eingestellt				1311020106		
230-0590-2195	VUC 38/Pa3	3/8"-Öffnungsdruck 3bar-fest eingestellt				1311020109		
230-0590-2200	VUC 38/Pa8	3/8"-Öffnungsdruck 8bar-fest eingestellt				1311020113		
230-0590-2205	VUC 38/Pa34	3/8"-Öffnungsdruck 34bar-fest eingestellt				1311020114		
230-0590-2210	VUC 38/Pa20	3/8"-Öffnungsdruck 20bar-fest eingestellt				1311020115		
230-0590-2215	VUC 38/Pa28	3/8"-Öffnungsdruck 28bar-fest eingestellt				1311020125		
230-0590-2220	VUC 12/Pa5	1/2"-Öffnungsdruck 5bar-fest eingestellt				350	60	1311030101
230-0590-2225	VUC 12/Pa100	1/2"-Öffnungsdruck 100bar-fest eingestellt						1311030102
230-0590-2230	VUC 12/Pa50	1/2"-Öffnungsdruck 50bar-fest eingestellt	1311030103					
230-0590-2235	VUC 12/Pa2,5	1/2"-Öffnungsdruck 2,5bar-fest eingestellt	1311030104					
230-0590-2240	VUC 12/Pa10	1/2"-Öffnungsdruck 10bar-fest eingestellt	1311030105					
230-0590-2245	VUC 12/Pa1,5	1/2"-Öffnungsdruck 1,5bar-fest eingestellt	1311030106					
230-0590-2250	VUC 12/Pa8	1/2"-Öffnungsdruck 8bar-fest eingestellt	1311030107					
230-0590-2255	VUC 12/Pa15	1/2"-Öffnungsdruck 15bar-fest eingestellt	1311030108					
230-0590-2260	VUC 12/Pa20	1/2"-Öffnungsdruck 20bar-fest eingestellt	1311030109					
230-0590-2265	VUC 12/Pa2	1/2"-Öffnungsdruck 2bar-fest eingestellt	1311030111					
230-0590-2270	VUC 12/Pa30	1/2"-Öffnungsdruck 30bar-fest eingestellt	1311030112					

230-0590

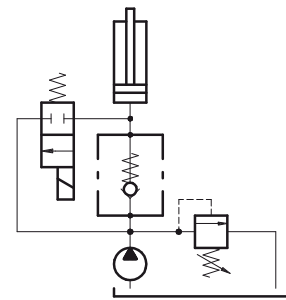
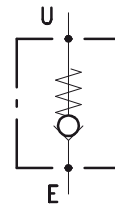
CHECK VALVES
VUC 38 VUC 12

• DIMENSIONS (mm)



VUC	A	Ch	D
38	64	24	G 3/8
18	64	24	M18x1.5
12	72	28	G 1/2

• HYDRAULIC DIAGRAM



• DESCRIPTION

Check valve. Poppet type.

• OPERATION

Free oil flow is allowed from E to U while oil flow is stopped in the opposite direction.

• PERFORMANCE

Maximum flow:

- VUC 38 and 18 = 40 l/min.
- VUC 12 = 60 l/min.

Maximum Pressure:

- VUC 38 and 18 = 400 bar
- VUC 12 = 350 bar

Opening pressure: 0.5, 1.5, 2.5, 5 and 10 bar.

Oil leaks from U to E: 0.25 cc per minute (5 drops) at 210 bar.

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight:

- VUC 38 and 18 = 0.17 kg
- VUC 12 = 0.25 kg

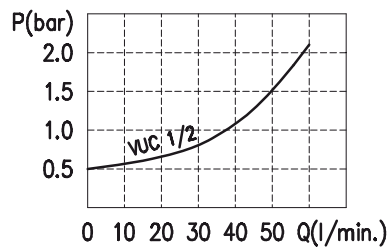
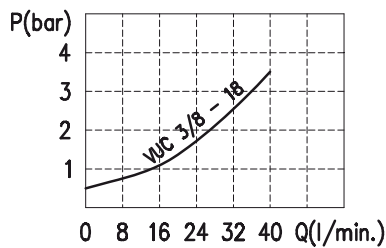
Material: internal components made out of high grade steel duly treated and fabricated.

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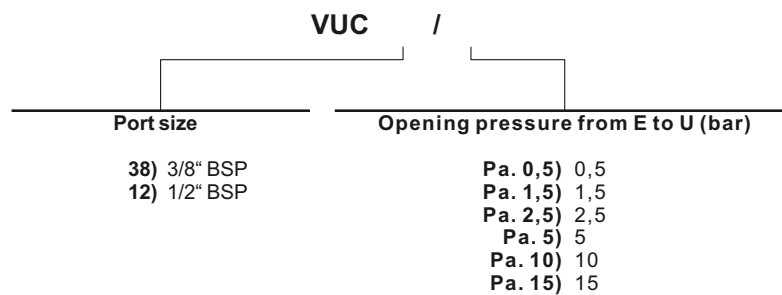
230-0590

• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER



Rückschlagventile

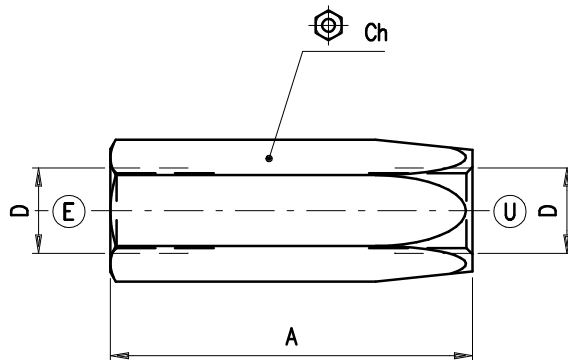
– G 3/4" und G 1" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0600-2275	VUC 34/Pa2,5	3/4"-Öffnungsdruck 2,5bar-fest eingestellt	Stahl	300	100	1311040101
230-0600-2280	VUC 34/Pa15	3/4"-Öffnungsdruck 15bar-fest eingestellt				1311040102
230-0600-2285	VUC 34/Pa5	3/4"-Öffnungsdruck 5bar-fest eingestellt				1311040103
230-0600-2290	VUC 34/Pa10	3/4"-Öffnungsdruck 10bar-fest eingestellt				1311040104
230-0600-2295	VUC 34/Pa1,5	3/4"-Öffnungsdruck 1,5bar-fest eingestellt				1311040105
230-0600-2300	VUC 34/Pa8	3/4"-Öffnungsdruck 8bar-fest eingestellt				1311040106
230-0600-2305	VUC 34/Pa2	3/4"-Öffnungsdruck 2bar-fest eingestellt			1311040109	
230-0600-2310	VUC 34/Pa 1	1"-Öffnungsdruck 1bar-fest eingestellt			150	1311040117
230-0600-2315	VUC 100/Pa5	1"-Öffnungsdruck 5bar-fest eingestellt				1311050101
230-0600-2320	VUC 100/Pa2,5	1"-Öffnungsdruck 2,5bar-fest eingestellt				1311050103
230-0600-2325	VUC 100/Pa8	1"-Öffnungsdruck 8bar-fest eingestellt				1311050104
230-0600-2330	VUC 100/Pa10	1"-Öffnungsdruck 10bar-fest eingestellt				1311050105
230-0600-2335	VUC 100/Pa1,5	1"-Öffnungsdruck 1,5bar-fest eingestellt				1311050106

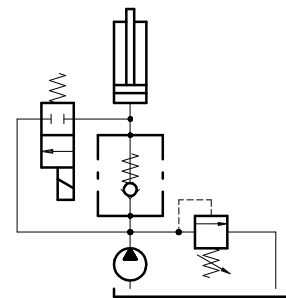
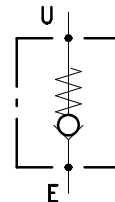
CHECK VALVES
VUC 34 VUC 100

• DIMENSIONS (mm)



VUC	A	Ch	D
34	84	36	G 3/4
100	102	46	G 1"

• HYDRAULIC DIAGRAM



• DESCRIPTION

Check valve, Poppet type.

• OPERATION

Free oil flow is allowed from E to U while oil flow is stopped in the opposite direction.

• PERFORMANCE

Maximum flow:

- VUC 34 = Qmax. 100 l/min.

- VUC 100 = Qmax. 150 l/min.

Maximum Pressure: 300 bar.

Opening pressure:

- VUC 34 = 0.5, 1.5, 2.5 and 5 bar

- VUC 100 = 0.5, 1.5, 2.5, 5 and 10 bar

Oil leaks from U to E: 0.25 cc per minute (5 drops) at 210 bar.

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight:

- VUC 34 = 0.48 kg

- VUC 100 = 0.96 kg

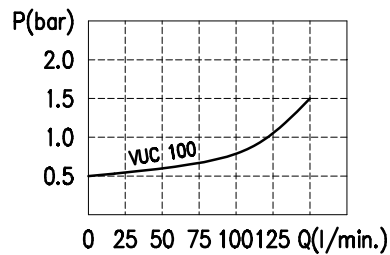
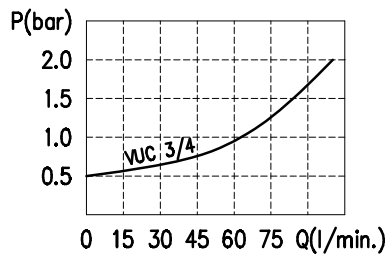
Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our technical office .

230-0600

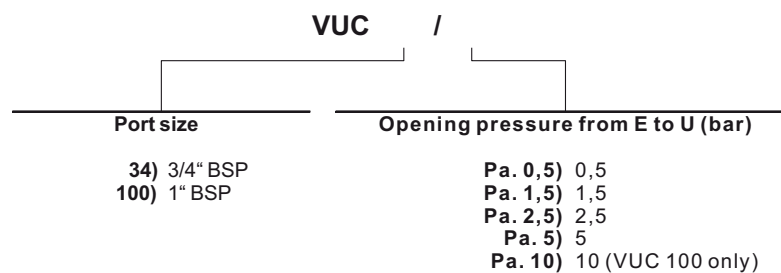
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• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER



Rückschlagventile – G 1 1/4" und G 1 1/2" –

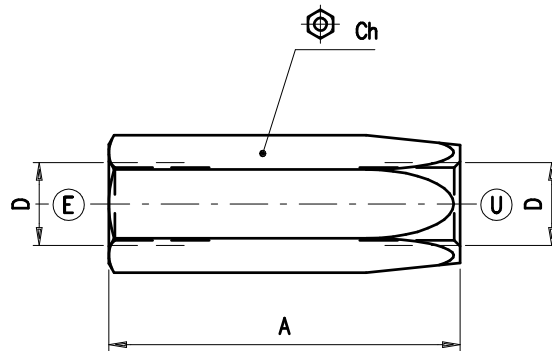


Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0610-2340	VUC 114/Pa10	1 1/4"-Öffnungsdruck 10bar-fest eingestellt	Stahl	250	250	1311060101
230-0610-2345	VUC 114/Pa8	1 1/4"-Öffnungsdruck 8bar-fest eingestellt				1311060102
230-0610-2350	VUC 114/Pa5	1 1/4"-Öffnungsdruck 5bar-fest eingestellt				1311060103
230-0610-2355	VUC 114/Pa2,5	1 1/4"-Öffnungsdruck 2,5bar-fest eingestellt				1311060104
230-0610-2360	VUC 114/Pa1,5	1 1/4"-Öffnungsdruck 1,5bar-fest eingestellt				1311060106
230-0610-2365	VUC 112/Pa 5	1 1/2"-Öffnungsdruck 5bar-fest eingestellt				350
230-0610-2370	VUC 112/Pa 3	1 1/2"-Öffnungsdruck 3bar-fest eingestellt			1311070102	
230-0610-2375	VUC 112/Pa 1,5	1 1/2"-Öffnungsdruck 1,5bar-fest eingestellt			1311070103	
230-0610-2380	VUC 112/Pa 2,5	1 1/2"-Öffnungsdruck 2,5bar-fest eingestellt			1311070104	

CHECK VALVES

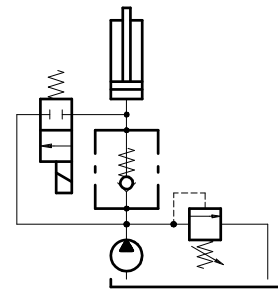
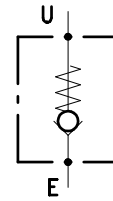
VUC 114 VUC 112

• DIMENSIONS (mm)



VUC	A	Ch	D
114	130	55	G 1" 1/4
112	147	60	G 1" 1/2

• HYDRAULIC DIAGRAM



• DESCRIPTION

Check valve. Poppet type.

• OPERATION

Free oil flow is allowed from E to U while oil flow is stopped in the opposite direction.

• PERFORMANCE

Maximum flow:

- VUC 114 = Qmax. 250 l/min.

- VUC 112 = Qmax. 350 l/min.

Maximum Pressure: 250 bar.

Opening pressure:

- VUC 114 = 0.5, 1.5, 2.5, 5 and 10 bar

- VUC 112 = 0.5, 1.5, 2.5, and 5 bar

Oil leaks from U to E: 0.25 cc per minute (5 drops) at 210 bar.

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight:

- VUC 114 = 1.62 kg

- VUC 112 = 2.00 kg

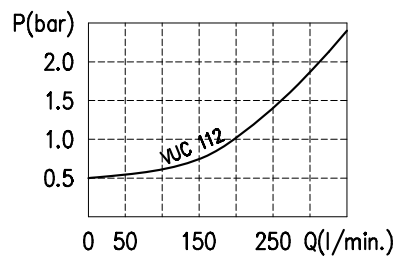
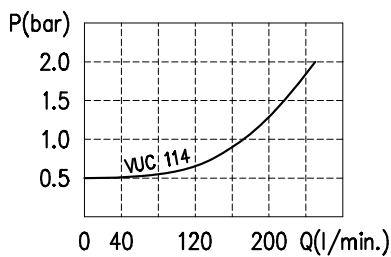
Material: internal components made out of high grade steel duly treated and fabricated.

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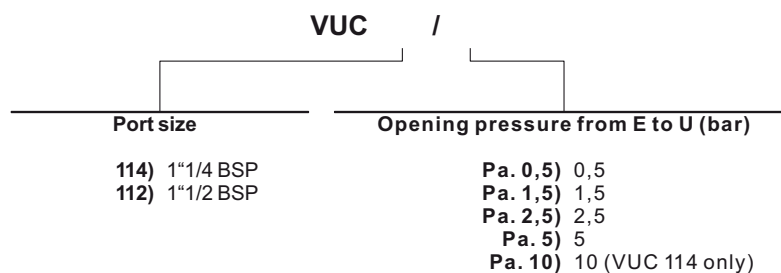
230-0610

• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER



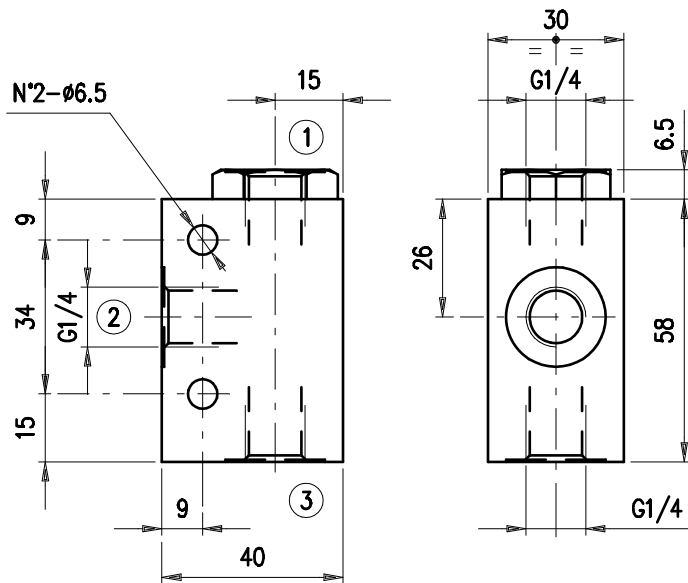
Wechselventile - G 1/4" -



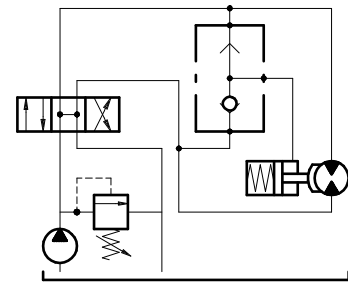
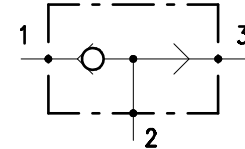
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0620-2385	VT 14/ac	1/4"	Stahl	400	20	1320012100

CHECK VALVES
VT 14

• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• DESCRIPTION

Shuttle valve, ball type.

• OPERATION

Oil flow is produced from 1 to 2 or 3 to 2 with priority to the way with the bigger pressure.

• PERFORMANCE

Maximum flow: 20 l/min.

Maximum Pressure: 400 bar.

Working temperature:

- minimum 25°C and max +90°C with standard BUNA gaskets
- minimum 20°C and max +120°C with special VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight: 0.48 kg

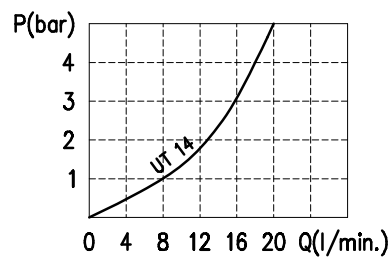
Material: internal components made out of high grade steel duly treated and fabricated.

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• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER

VT 14 /ac

Wechselventile

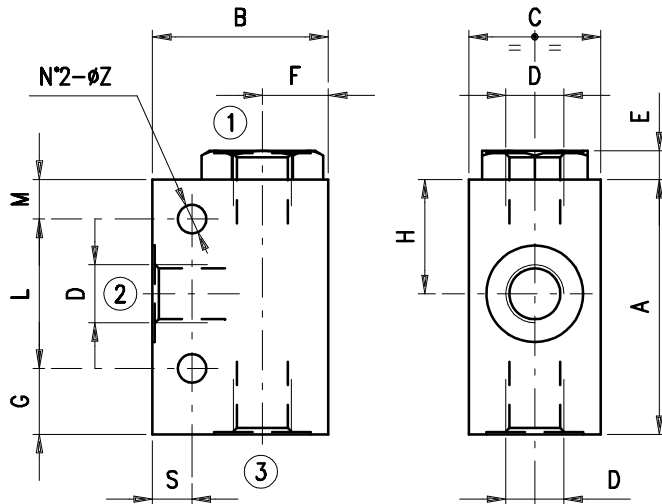
– G 3/8" und G 1/2" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0630-2390	VT 38/ac	3/8"	Stahl	400	35	1320022100
230-0630-2395	VT 12/ac	1/2"			50	1320032100

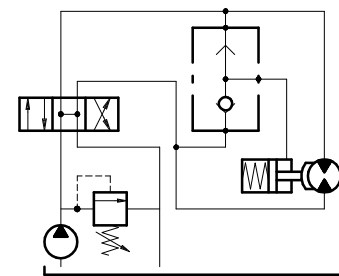
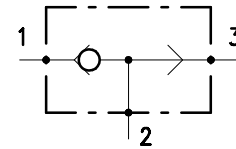
VT 38 VT12

• DIMENSIONS (mm)



VT	A	B	C	D	E	F	G	H	L	M	S	Z
38	70	50	35	G 3/8	6.5	19	16	31.5	45	9	9	6.5
12	80	60	43	G 1/2	8	23	18	36	52	10	10	8.5

• HYDRAULIC DIAGRAM



• DESCRIPTION

Shuttle valve, ball type.

• OPERATION

Oil flow is produced from 1 to 2 or 3 to 2 with priority to the way with the bigger pressure.

• PERFORMANCE

Maximum flow:

- VT 38 = 35 l/min.
- VT 12 = 50 l/min.

Maximum Pressure: 400 bar.

Working temperature:

- minimum 25°C and max +90°C with standard BUNA gaskets
- minimum 20°C and max +120°C with special VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight:

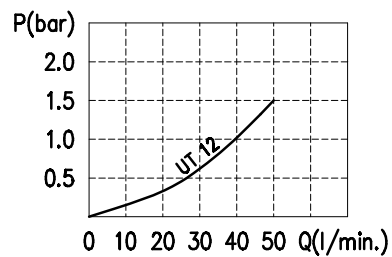
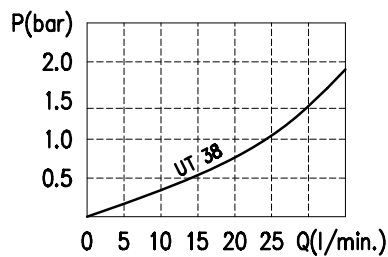
- VT 38 = 0.84 kg
- VT 12 = 1.35 kg

Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our technical office .

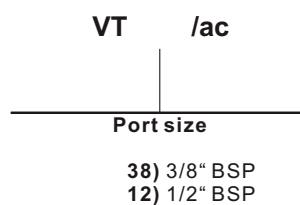
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• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER



Wechselventile

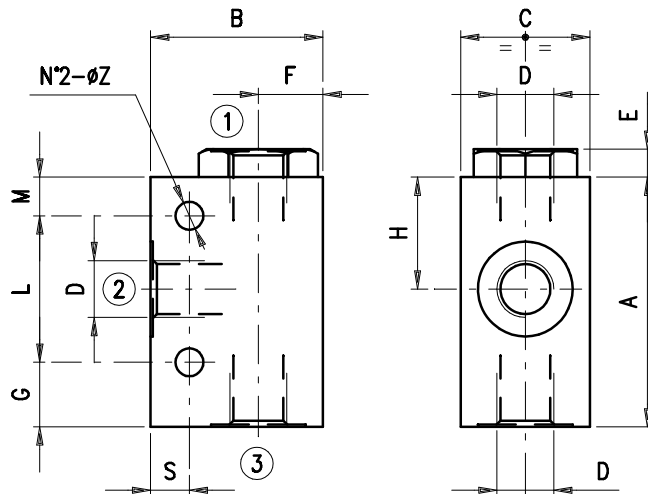
– G 3/4" und G 1" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0640-2400	VT 34/ac	3/4"	Stahl	400	100	1320042100
230-0640-2405	VT 100/ac	1"			150	1320052100

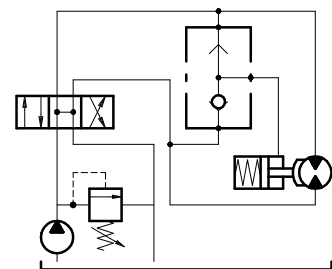
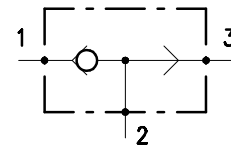
CHECK VALVES
VT 34 VT 100

• DIMENSIONS (mm)



VT	A	B	C	D	E	F	G	H	L	M	S	Z
34	90	68	50	G 3/4	8.5	26	19	41	60	11	11	8.5
100	100	82	60	G 1"	10	32	22	45	66	12	11	10.5

• HYDRAULIC DIAGRAM



• DESCRIPTION

Shuttle valve, ball type.

• OPERATION

Oil flow is produced from 1 to 2 or 3 to 2 with priority to the way with the bigger pressure.

• PERFORMANCE

Maximum flow:

- VT 34 = 100 l/min.

- VT 100 = 150 l/min.

Maximum Pressure: 400 bar.

Working temperature:

- minimum 25°C and max +90°C with standard BUNA gaskets

- minimum 20°C and max +120°C with special VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight:

- VT 34 = 1.95 kg

- VT 100 = 3.12 kg

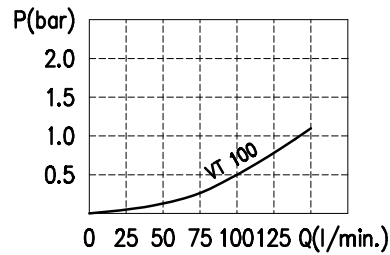
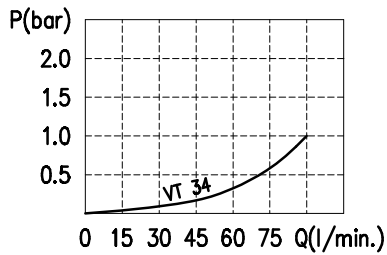
Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our technical office .

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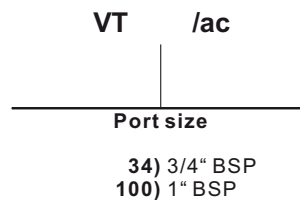
230-0640

• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER



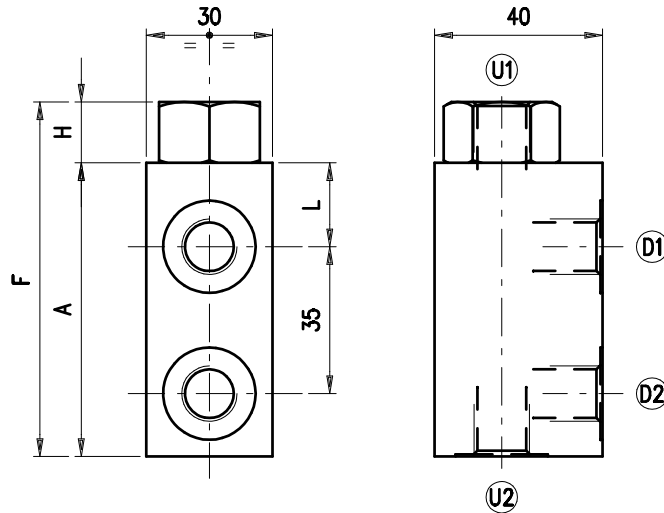
Entsperrbares Rückschlagventil – einfachwirkend G 1/4" und G 3/8" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0660-2415	VBPSL 14/p4	1/4"-Öffnungsverh.1:4,5	Alu	210	15	1410011100
230-0660-2420	VBPSL 14/p3	1/4"-Öffnungsverh.1:3				1410011105
230-0660-2430	VBPSL 14/p4/ac	1/4"-Öffnungsverh.1:4,5	Stahl	350		1410012100
230-0670-2425	VBPSL/VP 38/p4	3/8"-Öffnungsverh.1:4,5	Alu	210	25	1410011150
230-0670-2435	VBPSL/VP 38/p4/ac	3/8"-Öffnungsverh.1:4,5	Stahl	350		1410012150

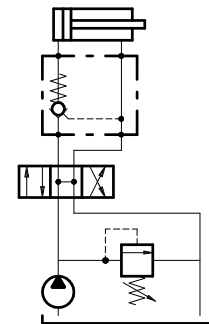
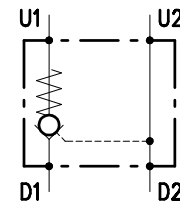
PILOT CHECK AND OVERCENTER VALVES
VBPSL 14 (/VP 38)

• DIMENSIONS (mm)



VBPSL	D1-D2	U1-U2	A	F	H	L
14	G 1/4	G 1/4	70	84.5	14.5	20
VP/38	G 3/8	G 3/8	80	99.5	19.5	22.5

• HYDRAULIC DIAGRAM



• DESCRIPTION

Pilot operated check valves, single acting, line mounting.

• OPERATION

Allows oil flow from D1 to U1 and stops it in the opposite way (from U1 to D1). Free oil flow from U1 to D1 is strictly possible when the pilot pressure in U2 and D2 is strong enough to open the valve poppet. To assert the minimum opening pressure divide the value of pressure in U1 by the pilot ratio. To provide best valve performance from U1 to D1 make sure that no counterpressure arises in D1.

• PERFORMANCE

Maximum flow:

- VBPSL 14=15l/min.
- VBPSL/VP 38=25l/min.

Maximum Pressure:

- 210 bar aluminium valve
- 350 bar steel valve

Oil leak from U1 to D1: 0,25 cc/minute (5 drops) at 210 bar.

Pilot ratio:

- 1:4.5 (standard version)
- 1:3 (on request)

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

• RECOMMENDATIONS:

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

230-0660

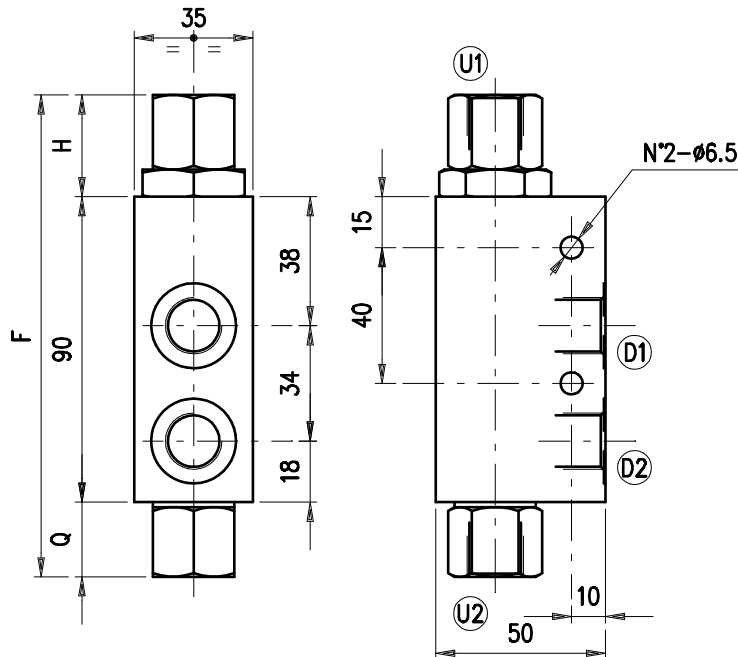
Entsperrbares Rückschlagventil – einfachwirkend G 3/8" und G 1/2" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0670-2440	VBPSL 38/p4	3/8"-Öffnungsverh.1:4,5	Alu	210	35	1410021100
230-0670-2445	VBPSL 38/p4/ac	3/8"-Öffnungsverh.1:4,5	Stahl	350		1410022100
230-0670-2450	VBPSL 12/p4	1/2"-Öffnungsverh.1:4,5	Alu	210	50	1410031100
230-0670-2455	VBPSL 12/p4/ac	1/2"-Öffnungsverh.1:4,5	Stahl	350		1410032100

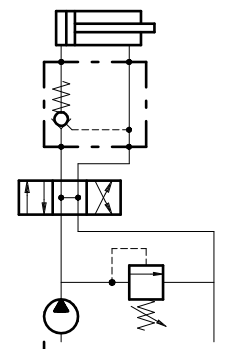
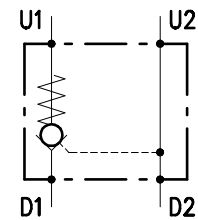
PILOT CHECK AND OVERCENTER VALVES
VBPSL 38 - (12)

• DIMENSIONS (mm)



VBPSL	D1-D2	U1-U2	F	H	Q
38	G 3/8	G 3/8	142	30	22
12	G 1/2	G 1/2	148	33	25

• HYDRAULIC DIAGRAM



• DESCRIPTION

Pilot operated check valves, single acting, line mounting.

• OPERATION

Allows oil flow from D1 to U1 and stops it in the opposite way (from U1 to D1). Free oil flow from U1 to D1 is strictly possible when the pilot pressure in U2 and D2 is strong enough to open the valve poppet. To assert the minimum opening pressure divide the value of pressure in U1 by the pilot ratio. To provide best valve performance from U1 to D1 make sure that no counterpressure arises in D1.

• PERFORMANCE

Maximum flow:

- VBPSL 38=35 l/min.
- VBPSL 12=50 l/min.

Maximum Pressure:

- 210 bar aluminium valve
- 350 bar steel valve

Oil leak from U1 to D1: 0,25 cc/minute (5 drops) at 210 bar.

Pilot ratio:

- 1:4 (standard version)
- 1:6.3 (on request)
- 1:7.5 (on request)

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

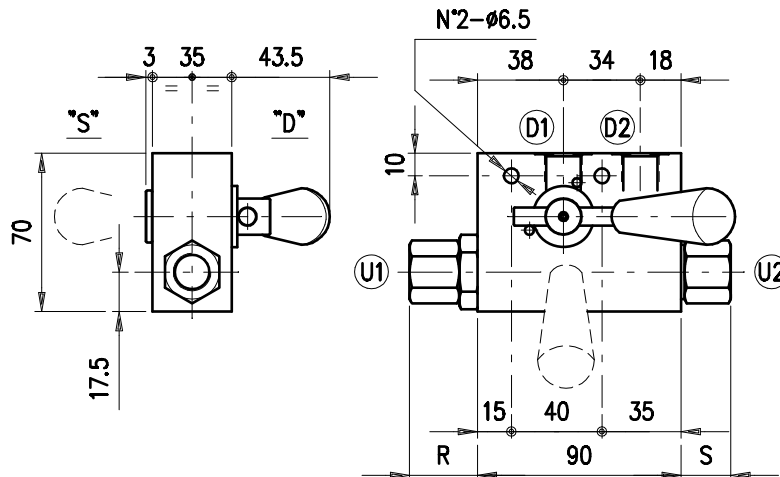
Entsperrbares Rückschlagventil – einfachwirkend mit Absperrhahn G 3/8" und G 1/2" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0740-2515	VBPSL/R/D 38/p4/ac	3/8"-Öff.-v.1:4,5-re. Version	Stahl	350	35	1415022102
230-0740-2520	VBPSL/R/S 38/p4/ac	3/8"-Öff.-v.1:4,5-li. Version				1415022103
230-0740-2525	VBPSL/R/D 12/p4	1/2"-Öff.-v.1:4,5-re. Version	Alu	210	50	1415031100
230-0740-2530	VBPSL/R/S 12/p4	1/2"-Öff.-v.1:4,5-li. Version				1415031101
230-0740-2535	VBPSL/R/D 12/p4/ac	1/2"-Öff.-v.1:4,5-re. Version	Stahl	350	50	1415032100
230-0740-2540	VBPSL/R/S 12/p4/ac	1/2"-Öff.-v.1:4,5-li. Version				1415032101

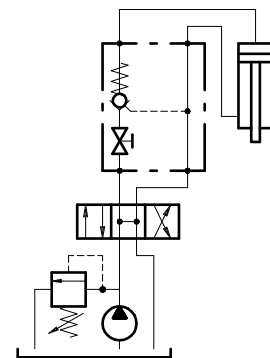
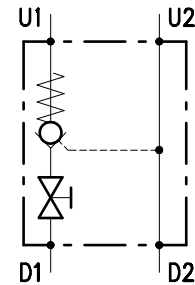
PILOT CHECK AND OVERCENTER VALVES
VBPSL /R /38 (12)

• DIMENSIONS (mm)



VBPSL	D1	D2	R	S
R 38	G 3/8	G 3/8	30	22
R 12	G 1/2	G 1/2	33	25

• HYDRAULIC DIAGRAM



• DESCRIPTION

Pilot operated check valves, single acting, line mounting, complete with built-in shut-off valve.

• OPERATION

Allows oil flow from D1 to U1 and stops it in the opposite way (from U1 to D1). Free oil flow from U1 to D1 is strictly possible when the pilot pressure in U2 and D2 is strong enough to open the valve poppet. To assert the minimum opening pressure divide the value of pressure in U1 by the pilot ratio. To provide best valve performance from U1 to D1 make sure that no counterpressure arises in D1. A built-in shut-off valve allows for flow break from D1 to U1 and viceversa, so that - at wish - the operator may cut the check valve off the hydraulic system.

• PERFORMANCE

Maximum flow:

- VBPSL/R 38=35 l/min.
- VBPSL/R 12=50 l/min.

Maximum pressure:

- 210 bar aluminium valve
- 350 bar steel valve

Oil leak from U1 to D1: 0,25 cc/minute (5 drops) at 210 bar.

Pilot ratio:

- 1:4 (standard)
- 1:6.3 (on request)
- 1:7.5 (on request)

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets
- min. -20°C max. 120°C with optional VITON gaskets

230-0740

• RECOMMENDATIONS:

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight:

- VBPSL/R 38=w. aluminium housing 0.94 kg - w. steel housing 1.76 kg

- VBPSL/R 12=w. aluminium housing 0.95 kg - w. steel housing 1.77 kg

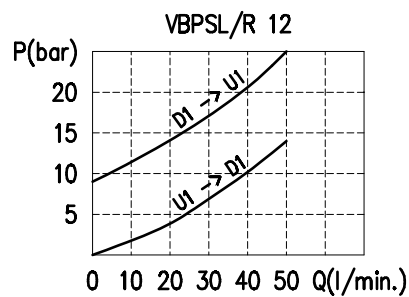
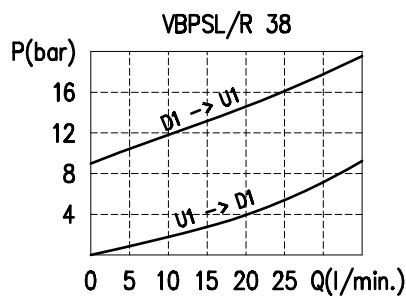
Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our technical office .

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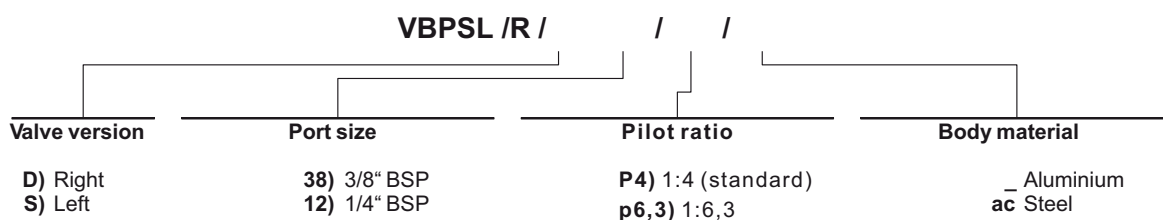
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• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER



230-0740

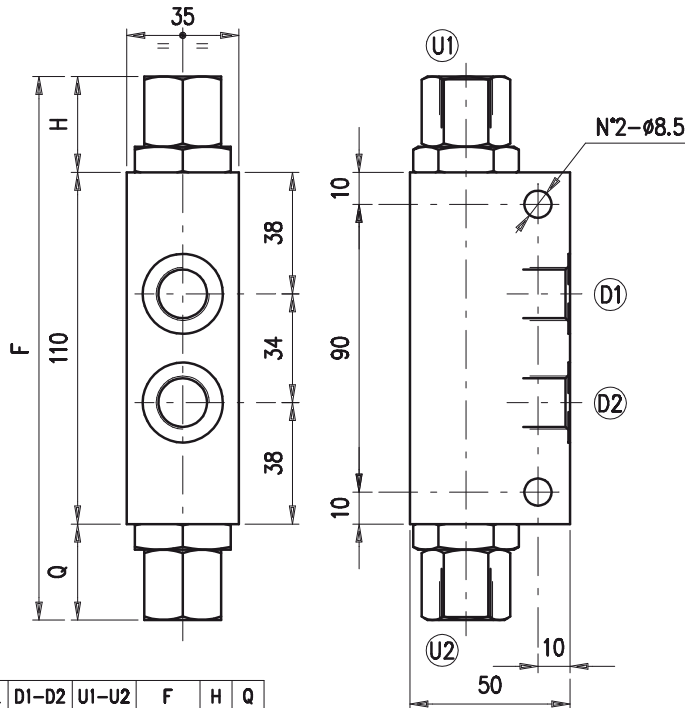
Entsperrbares Rückschlagventil – doppelwirkend G 3/8" und G 1/2" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0790-2585	VBPDL/VP 38/p4/ac	3/8"-Öffnungsverh.1:4,5	Stahl	350	25	1420012150
230-0790-2590	VBPDL 38/p4	3/8"-Öffnungsverh.1:4,5	Alu	210	35	1420021100
230-0790-2595	VBPDL 38/p4/ac	3/8"-Öffnungsverh.1:4,5	Stahl	350	35	1420022100
230-0790-2600	VBPDL 12/p4	1/2"-Öffnungsverh.1:4,5	Alu	210	50	1420031100
230-0790-2605	VBPDL 12/p4/ac	1/2"-Öffnungsverh.1:4,5	Stahl	350	50	1420032100

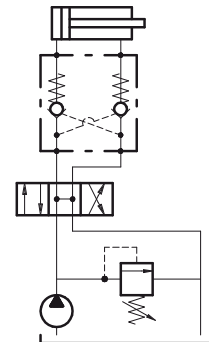
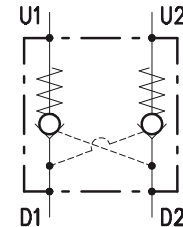
PILOT CHECK AND OVERCENTER VALVES
VBPDL 38 (12)

• DIMENSIONS (mm)



VBPDL	D1-D2	U1-U2	F	H	Q
38	G 3/8	G 3/8	170	30	30
12	G 1/2	G 1/2	176	33	33

• HYDRAULIC DIAGRAM



• DESCRIPTION

Pilot operated check valves, double acting, line mounting.

• OPERATION

Allows oil flow from D1(D2) to U1 (U2) and stops it in the opposite way (from U1/U2 to D1/D2). Free oil flow from U1/U2 to D1/D2 is strictly possible when the pilot pressure in the opposite way is strong enough to open the valve poppet. To assert the minimum opening pressure divide the value of pressure in U1/U2 by the pilot ratio. To provide best valve performance from U1/U2 to D1/D2 make sure that no counterpressure arises in D1/D2.

• PERFORMANCE

Maximum flow:

- VBPD 38=35 l/min.
- VBPD 12=50 l/min.

Maximum pressure:

- 210 bar aluminium valve
- 350 bar steel valve

Oil leak from U1/U2 to D1/D2: 0,25 cc/minute (5 drops) at 210 bar.

Pilot ratio:

- 1:4 (standard)
- 1:6.3 (on request only)
- 1:7.5 (on request only)

Working temperature:

- min. -25°C max. 90°C with standard BUNAN gaskets
- min. -20°C max. 120°C with optional VITON gaskets

• RECOMMENDATIONS:

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

230-0790

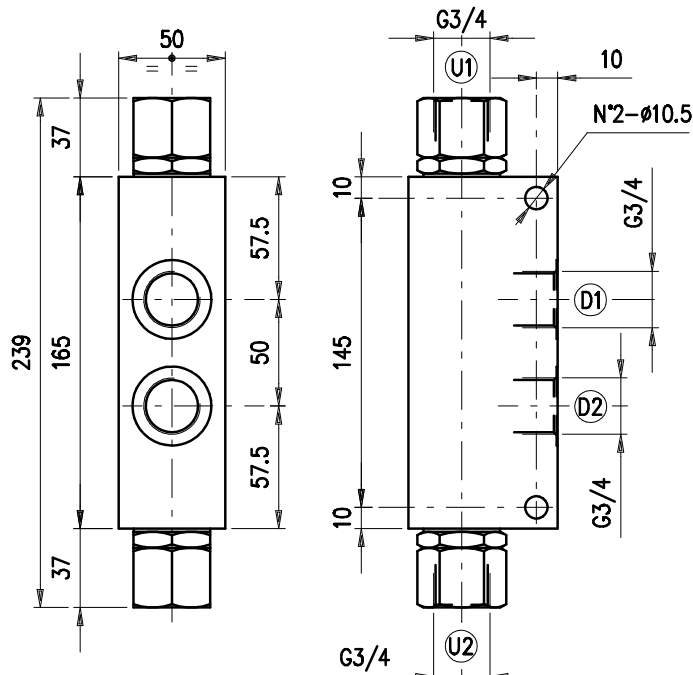
Entsperrbares Rückschlagventil – doppelwirkend G 3/4" –



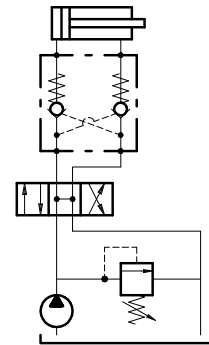
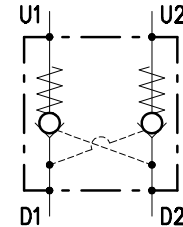
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0800-2610	VBPDL 34/p4	3/4"-Öffnungsverh.1:4,5	Alu	210	100	1420041100
230-0800-2615	VBPDL 34/p4/ac	3/4"-Öffnungsverh.1:4,5	Stahl	350	100	1420042100

PILOT CHECK AND OVERCENTER VALVES
VBPDL 34

• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• DESCRIPTION

Pilot operated check valves, double acting, line mounting.

• OPERATION

Allows oil flow from D1(D2) to U1 (U2) and stops it in the opposite way (from U1/U2 to D1/D2). Free oil flow from U1/U2 to D1/D2 is strictly possible when the pilot pressure in the opposite way is strong enough to open the valve poppet. To assert the minimum opening pressure divide the value of pressure in U1/U2 by the pilot ratio. To provide best valve performance from U1/U2 to D1/D2 make sure that no counterpressure arises in D1/D2.

• PERFORMANCE

Maximum flow: 100 l/min.

Maximum pressure:

- 210 bar aluminium valve

- 350 bar steel valve

Oil leak from U1/U2 to D1/D2: 0,25 cc/minute (5 drops) at 210 bar.

Pilot ratio: 1:4.3

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets

- min. -20°C max. 120°C with optional VITON gaskets

• RECOMMENDATIONS:

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight:

- w. aluminium housing 2.14 kg

- w. steel housing 4.30 kg

Material: internal components made out of high grade steel duly treated and fabricated.

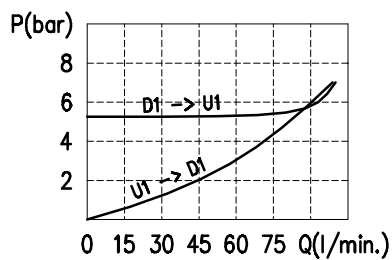
230-0800

For more information please ask our technical office .

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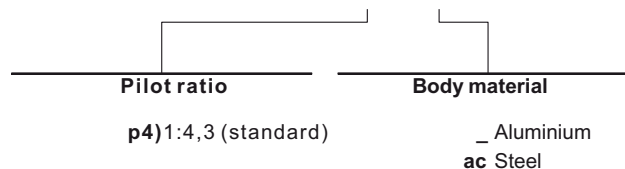
• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER

VBPDL 34 /



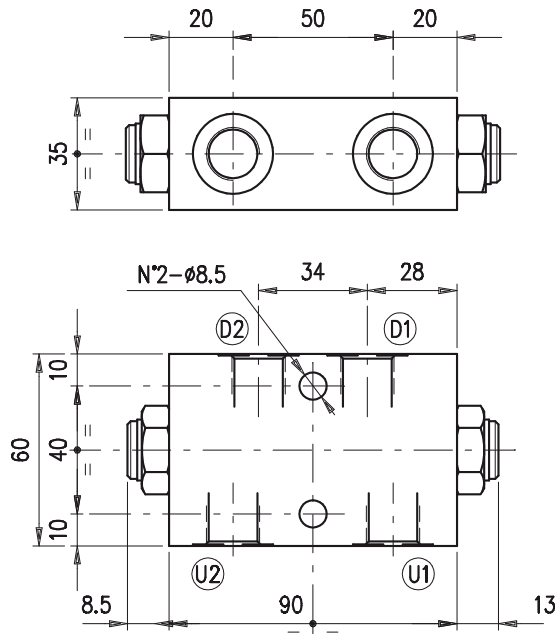
Entsperrbares Rückschlagventil – doppelwirkend G 3/8" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0820-2625	VBPDL/T 38/p4	3/8"-Öffnungsverh.1:4,5	Alu	210	35	1422021100

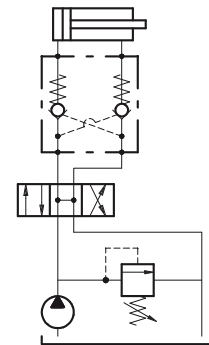
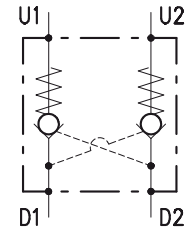
PILOT CHECK AND OVERCENTER VALVES
VBPDL/T 38

• DIMENSIONS (mm)



VBPDL/T	D1-D2	U1-U2
38	G 3/8	G 3/8

• HYDRAULIC DIAGRAM



• DESCRIPTION

Pilot operated check valve, double acting with cross outlets.

• OPERATION

Allows oil flow from D1/ D2 to U1/U2 and stops it in the opposite way (from U1/U2 to D1/D2). Oil can still flow in the opposite direction when pressure in the opposite way to the checked one is strong enough to open the pilot passage. Suitable opening pressure is found by calculation of the pilot ratio. To provide best valve performance make sure that no backpressure arises on the release way, causing the valve to shut again.

• PERFORMANCE

Maximum flow: 25 l/min.

Maximum pressure:

- 210 bar aluminium valve

- 350 bar steel valve

Oil leak from U1/U2 to D1/D2: 0,25 cc/minute (5 drops) at 210 bar.

Pilot ratio:

- 1:4,5 (standard)

- 1:3 (on request)

Working temperature:

- min. -25°C max. 90°C with standard BUNAN gaskets

- min. -20°C max. 200°C with optional VITON gaskets

• RECOMMENDATIONS:

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight:

- w. aluminium housing 0.63 kg

230-0820

- w. steel housing 1.41 kg

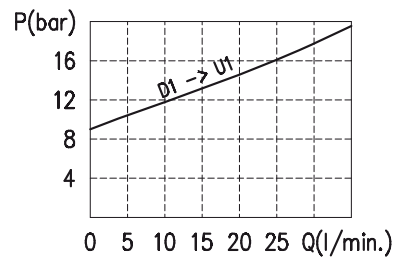
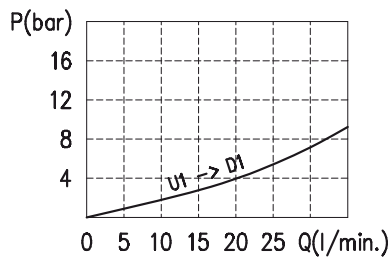
Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our technical office .

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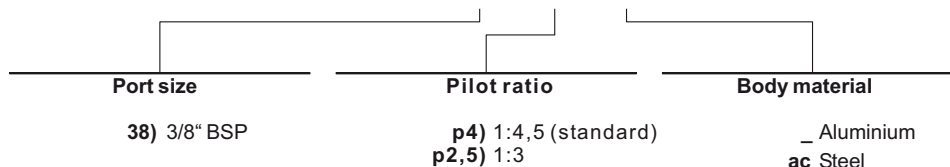
• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER

VBPD / T 38 /



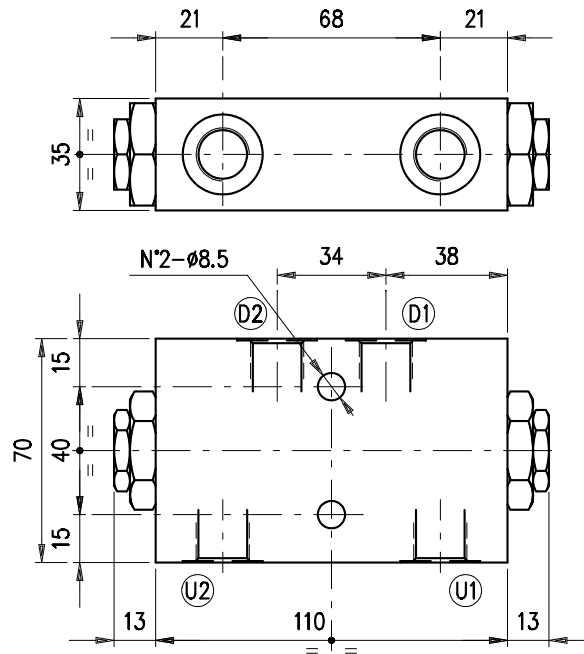
Entsperrbares Rückschlagventil – doppelwirkend G 1/2" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0830-2630	VBPDL/T 12/p4	1/2"-Öffnungsverh.1:4,5	Alu	210	50	1422031100
230-0830-2635	VBPDL/T 12/p4/ac	1/2"-Öffnungsverh.1:4,5	Stahl	350	50	1422032100

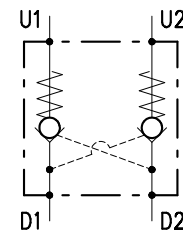
PILOT CHECK AND OVERCENTER VALVES
VBPDL /T 12

• DIMENSIONS (mm)

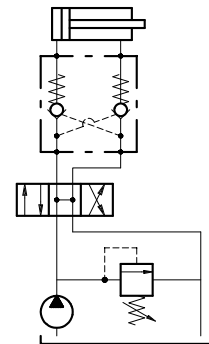


VBPDL/T	D1-D2	U1-U2
12	G 1/2	G 1/2

• HYDRAULIC DIAGRAM



• ASSEMBLY DIAGRAM



• DESCRIPTION

Pilot operated check valve, double acting with cross outlets.

• OPERATION

Allows oil flow from D1/D2 to U1/U2 and stops it in the opposite way (from U1/U2 to D1/D2). Free oil flow from U1/U2 to D1/D2 is strictly possible when the pilot pressure in the opposite way is strong enough to open the valve poppet. To assert the minimum opening pressure divide the value of pressure in U1/U2 by the pilot ratio. To provide best valve performance from U1/U2 to D1/D2 make sure that no backpressure arises in D1/D2.

• PERFORMANCE

Maximum flow: 50 l/min.

Maximum pressure:

- 210 bar aluminium valve

- 350 bar steel valve

Oil leak from U1/U2 to D1/D2: 0,25 cc/minute (5 drops) at 210 bar.

Pilot ratio:

- 1:4 (standard)

- 1:6.3 (on request)

- 1:7.5 (on request)

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets

- min. -20°C max. 120°C with optional VITON gaskets

• RECOMMENDATIONS:

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight:

- w. aluminium housing 0.87 kg
- w. steel housing 1.824 kg

Cartridge used: see page 4. 1000.200.

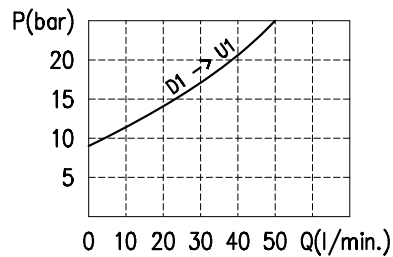
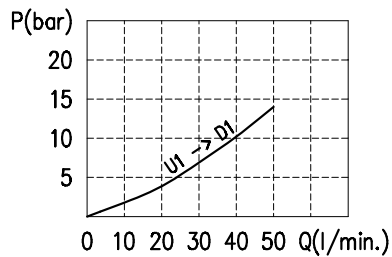
Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our technical office .

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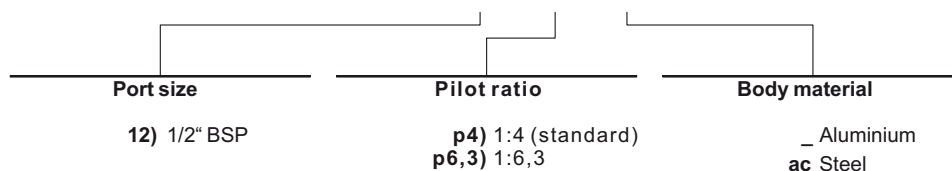
• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER

VBPDL / T 12 /



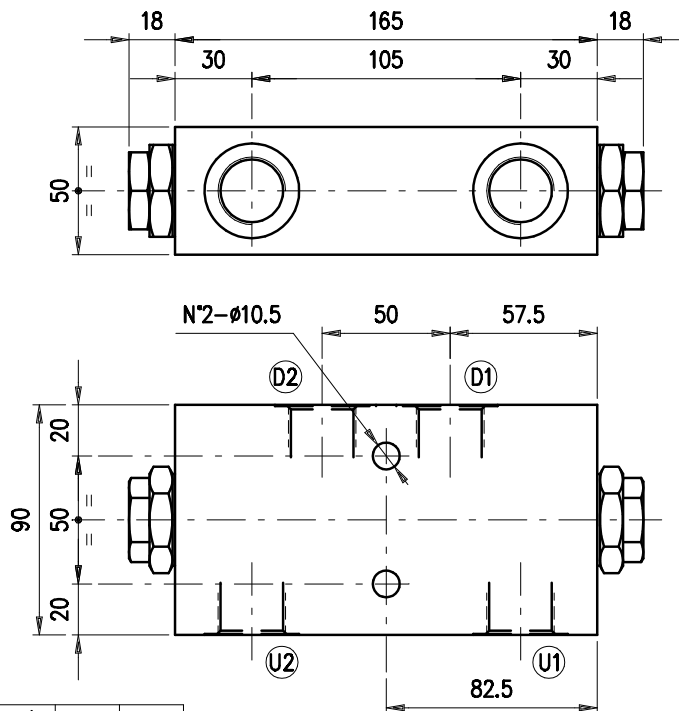
Entsperrbares Rückschlagventil – doppelwirkend G 3/4" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0840-2640	VBPDL/T 34/p4	3/4"-Öffnungsverh.1:4,5	Alu	210	100	1422041100
230-0840-2645	VBPDL/T 34/p4/ac	3/4"-Öffnungsverh.1:4,5	Stahl	350		1422042100

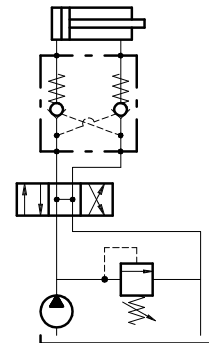
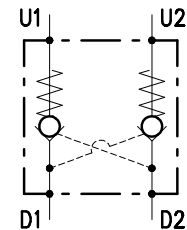
PILOT CHECK AND OVERCENTER VALVES
VBPDL /T 34

• DIMENSIONS (mm)



VBPD/L/T	D1-D2	U1-U2
34	G 3/4	G 3/4

• HYDRAULIC DIAGRAM



• DESCRIPTION

Pilot operated check valve, double acting with cross outlets.

• OPERATION

Allows oil flow from D1(D2) to U1(U2) and stops it in the opposite way (from U1/U2 to D1/D2). Free oil flow from U1/U2 to D1/D2 is strictly possible when the pilot pressure in the opposite way is strong enough to open the valve poppet. To assert the minimum opening pressure divide the value of pressure in U1/U2 by the pilot ratio. To provide best valve performance from U1/U2 to D1/D2 make sure that no backpressure arises in D1/D2.

• PERFORMANCE

Maximum flow: 100 l/min.

Maximum pressure:

- 210 bar aluminium valve

- 350 bar steel valve

Oil leak from U1/U2 to D1/D2: 0,25 cc/minute (5 drops) at 210 bar.

Pilot ratio: 1:4.3

Working temperature:

- min. -25°C max. 90°C with standard BUNA N gaskets

- min. -20°C max. 120°C with optional VITON gaskets

• RECOMMENDATIONS:

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt.

Filter: see page Z.9000.000.

Weight: w. aluminium housing 2.30 kg - w. steel housing 5.23 kg

Cartridge used: see page 4.1000.300.

Material: internal components made out of high grade steel duly treated and fabricated.

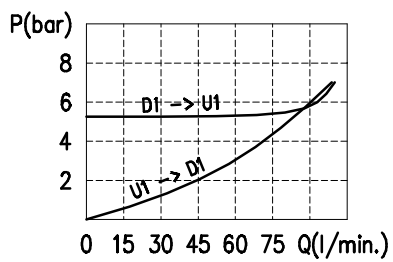
For more information please ask our technical office .

230-0840

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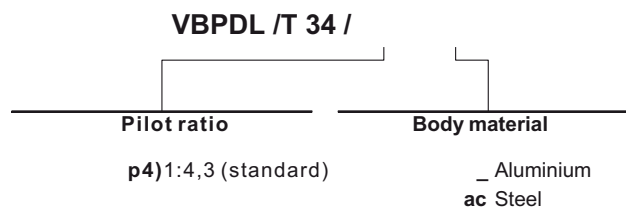
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• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER



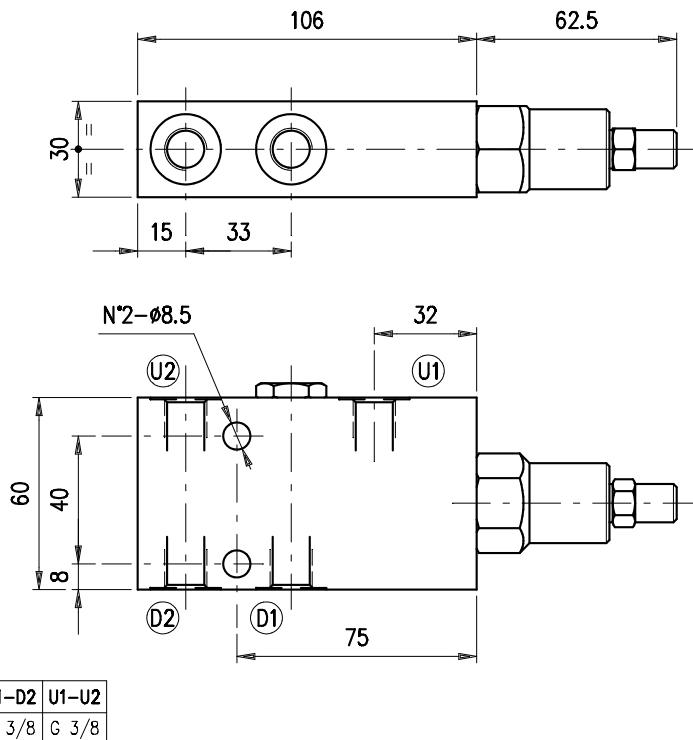
Senkbremsventil – einfachwirkend G 3/8" –



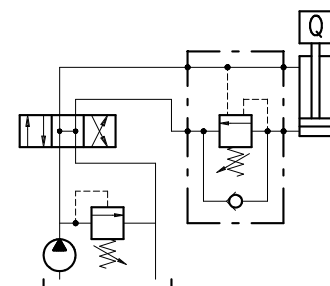
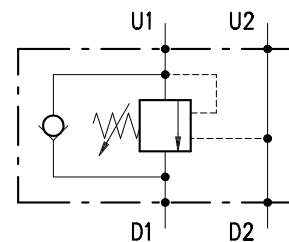
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0890-2720	VOSL/SC 38/TS.S.p4.PG	3/8"-Öff.v. 1:4 / 5-210bar	Alu	210	40	1520021100
230-0890-2725	VOSL/SC 38/TS.S.p3.PG	3/8"-Öff.v. 1:3 / 5-210bar				1520021101
230-0890-2730	VOSL/SC 38/TR.S.p3.PG	3/8"-Öff.v. 1:3 / 50-350bar				1520021103
230-0890-2735	VOSL/SC 38/TG.S.p4.PG	3/8"-Öff.v. 1:4 / 100-700bar				1520021104
230-0890-2740	VOSL/SC 38/TG.S.p3.PG	3/8"-Öff.v. 1:3 / 100-700bar				1520021105
230-0890-2745	VOSL/SC 38/TR.S.p7.PG	3/8"-Öff.v. 1:7 / 50-350bar				1520021106
230-0890-2750	VOSL/SC 38/TR.S.p4.PG	3/8"-Öff.v. 1:4 / 50-350bar				1520021108
230-0890-2755	VOSL/SC 38/TR.S.p4 PG/ac	3/8"-Öff.v. 1:4 / 50-350bar	Stahl	350		1520022100

OVERCENTER VALVES
VOSL /SC 38

• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• DESCRIPTION

Single overcenter valves, line mounting.

• OPERATION

The oil flow is allowed from D1 to U1 and is stopped in the opposite way (from U1 to D1) up to the spring setting value. Free oil flow from U1 to D1 is strictly possible when the pilot pressure in D2 and U2 is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

$$(\text{valve setting} - \text{load pressure}) \div \text{pilot ratio} = \text{pilot pressure}$$

For example:

If your pilot ratio is 1:4, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. $[(250 \text{ bar} - 130 \text{ bar}) \div 4 = 30 \text{ bar}]$.

Should counterpressure arise in D1, the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

• PERFORMANCE

Maximum flow: 40 l/min

Maximum Pressure:

- Aluminium body: 210 bar
- Steel body: 350 bar

Application range with standard springs:

- 5 - 210 bar (test setting: 150 bar at 5 l/min)
- 50 - 350 bar (test setting: 280 bar at 5 l/min)
- 100 - 700 bar (test setting: 350 bar at 5 l/min)

Oil leak from U1 to D1: 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt

Pilot ratio:

- 1:4 (standard type)
- 1:3 (on request only)

230-0890

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

• **RECOMMENDATIONS:**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body 0.68 kg
- steel body 1.44 kg

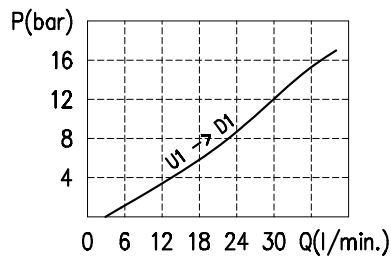
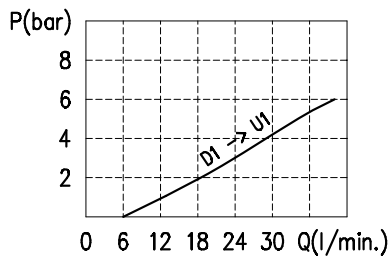
Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our technical office.

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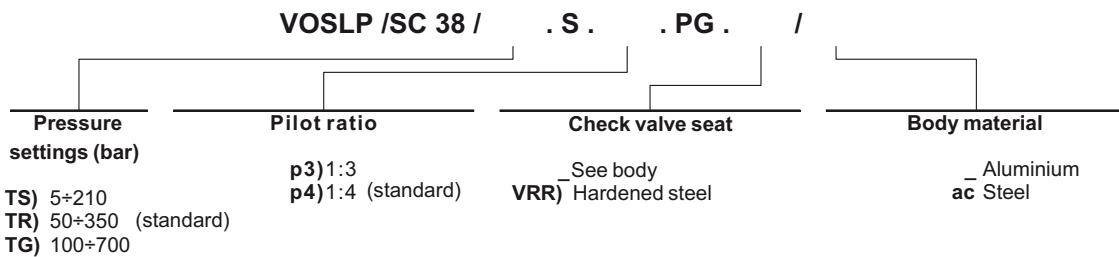
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• **RATING DIAGRAMS**



Oil viscosity 46 cSt

• **CODE NUMBER**



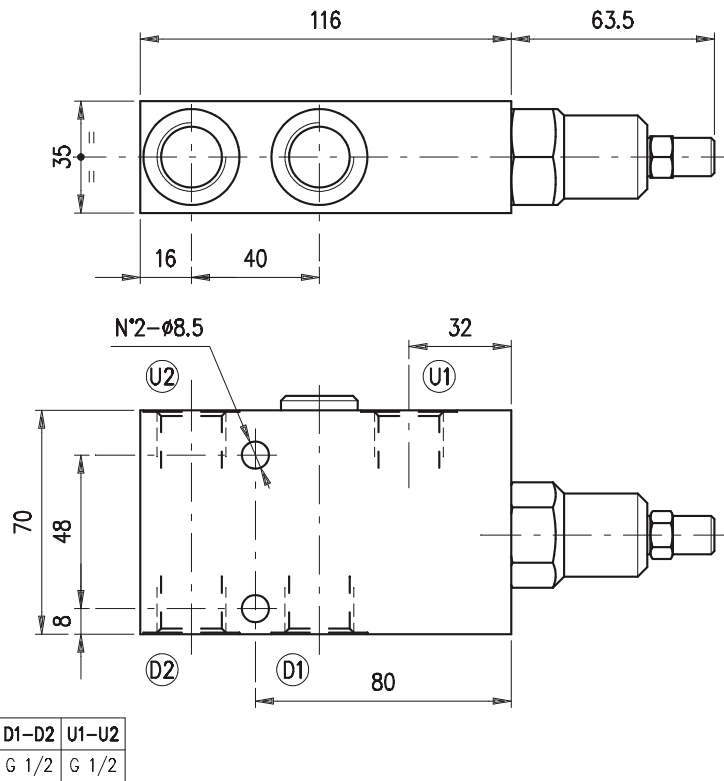
Senkbremsventil – einfachwirkend G 1/2" –



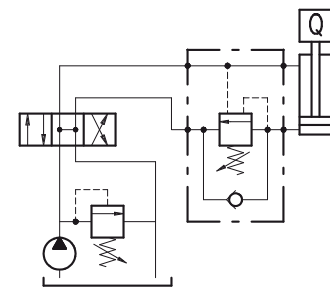
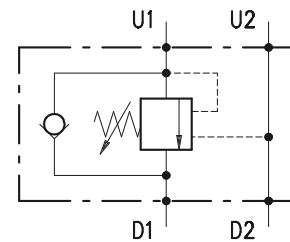
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0910-2770	VOSL/SC 12/TS.S.p7.PG	1/2"-Öff.v. 1:7 / 5-210bar	Alu	210	75	1520031100
230-0910-2775	VOSL/SC 12/TS.S.p3.PG	1/2"-Öff.v. 1:3 / 5-210bar				1520031101
230-0910-2780	VOSL/SC 12/TR.S.p3.PG	1/2"-Öff.v. 1:3 / 50-350bar				1520031103
230-0910-2785	VOSL/SC 12/TG.S.p3.PG	1/2"-Öff.v. 1:3 / 100-700bar				1520031105
230-0910-2790	VOSL/SC 12/TG.S.p7.PG	1/2"-Öff.v. 1:7 / 100-700bar				1520031106
230-0910-2795	VOSL/SC 12/TR.S.p7.PG	1/2"-Öff.v. 1:7 / 50-350bar				1520031107
230-0910-2800	VOSL/SC 12/TR.S.p7.PG/ac	1/2"-Öff.v. 1:7 / 50-350bar	Stahl	350		1520032100
230-0910-2805	VOSL/SC 12/TR.S.p3.PG/ac	1/2"-Öff.v. 1:3 / 50-350bar				1520032101
230-0910-2810	VOSL/SC 12/TG.S.p7.PG/ac	1/2"-Öff.v. 1:7 / 100-700bar				1520032102

OVERCENTER VALVES
VOSL /SC 12

• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• DESCRIPTION

Single overcenter valves, line mounting.

• OPERATION

The oil flow is allowed from D1 to U1 and is stopped in the opposite way (from U1 to D1) up to the spring setting value. Free oil flow from U1 to D1 is strictly possible when the pilot pressure in D2 and U2 is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

$$(\text{valve setting} - \text{load pressure}) \div \text{pilot ratio} = \text{pilot pressure}$$

For example:

If your pilot ratio is 1:4, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. $[(250 \text{ bar} - 130 \text{ bar}) \div 4 = 30 \text{ bar}]$.

Should counterpressure arise in D1, the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

• PERFORMANCE

Maximum flow: 75 l/min

Maximum Pressure:

- Aluminium body: 210 bar
- Steel body: 350 bar

Application range with standard springs:

- 5 - 210 bar (test setting: 150 bar at 5 l/min)
- 50 - 350 bar (test setting: 280 bar at 5 l/min)
- 100 - 700 bar (test setting: 350 bar at 5 l/min)

Oil leak from U1 to D1: 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt

Pilot ratio:

- 1:7 (standard type)
- 1:3 (on request only)

230-0910

Working temperature:

- Minimum -25°C max 90°C with standard BUNAN gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

• **RECOMMENDATIONS**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body 0.95 kg
- steel body 2.03 kg

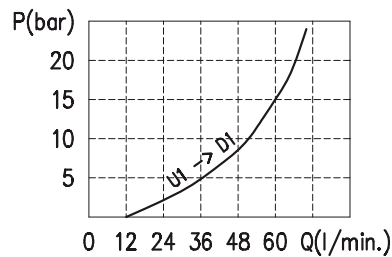
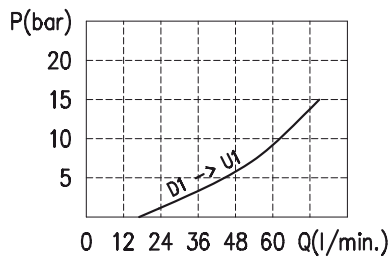
Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our technical office.

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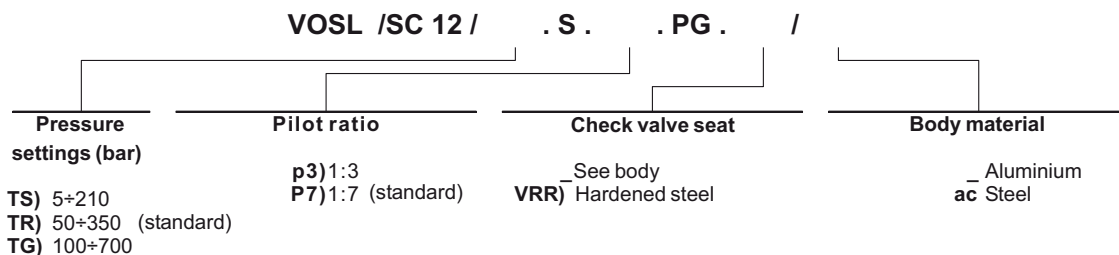
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• **RATING DIAGRAMS**



Oil viscosity 46 cSt

• **CODE NUMBER**



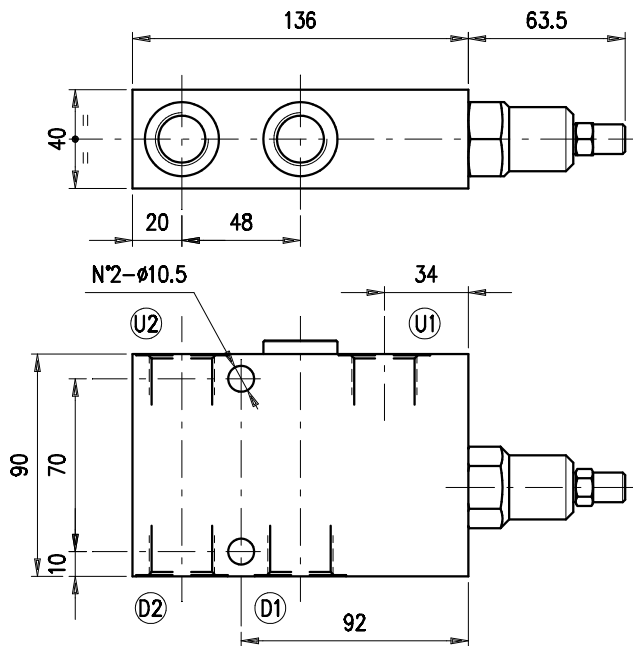
Senkbremsventil – einfachwirkend G 3/4" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0920-2815	VOSL/SC 34/TS.S.p7.PG	3/4"-Öff.v. 1:7 / 5-210bar	Alu	210	100	1520041100
230-0920-2820	VOSL/SC 34/TS.S.p3.PG	3/4"-Öff.v. 1:3 / 5-210bar				1520041101
230-0920-2825	VOSL/SC 34/TR.S.p7.PG	3/4"-Öff.v. 1:7 / 50-350bar				1520041102
230-0920-2830	VOSL/SC 34/TR.S.p3.PG	3/4"-Öff.v. 1:3 / 50-350bar				1520041103
230-0920-2835	VOSL/SC 34/TG.S.p7.PG	3/4"-Öff.v. 1:7 / 100-700bar				1520041104
230-0920-2840	VOSL/SC 34/TG.S.p3.PG	3/4"-Öff.v. 1:3 / 100-700bar				1520041105
230-0920-2845	VOSL/SC/34/TR.S.p7.PG/ac	3/4"-Öff.v. 1:7 / 50-350bar	Stahl	350		1520042100
230-0920-2850	VOSL/SC 34/TR.S.p3.PG/ac	3/4"-Öff.v. 1:3 / 50-350bar				1520042101

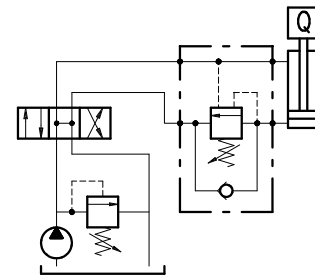
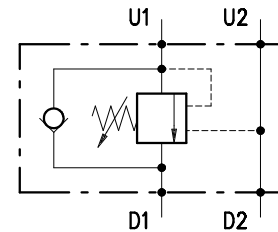
OVERCENTER VALVES
VOSL /SC 34

• DIMENSIONS (mm)



D1-D2	U1-U2
G 3/4	G 3/4

• HYDRAULIC DIAGRAM



• DESCRIPTION

Single overcenter valves, line mounting.

• OPERATION

The oil flow is allowed from D1 to U1 and is stopped in the opposite way (from U1 to D1) up to the spring setting value. Free oil flow from U1 to D1 is strictly possible when the pilot pressure in D2 and U2 is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

$$(\text{valve setting} - \text{load pressure}) \div \text{pilot ratio} = \text{pilot pressure}$$

For example:

If your pilot ratio is 1:4, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. $[(250 \text{ bar} - 130 \text{ bar}) \div 4 = 30 \text{ bar}]$.

Should counterpressure arise in D1, the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

• PERFORMANCE

Maximum flow: 120 l/min

Maximum Pressure:

- Aluminium body: 210 bar

- Steel body: 350 bar

Application range with standard springs:

- 5 - 210 bar (test setting: 150 bar at 5 l/min)

- 50 - 350 bar (test setting: 280 bar at 5 l/min)

- 100 - 700 bar (test setting: 350 bar at 5 l/min)

Oil leak from U1 to D1: 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt

Pilot ratio:

- 1:7 (standard type)

- 1:3 (on request only)

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body 1.45 kg
- steel body 3.28 kg

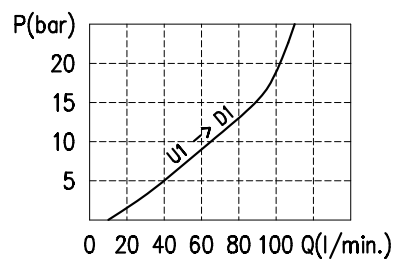
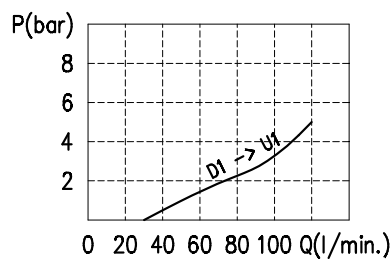
Material: internal components made out of high grade steel duly treated and fabricated.

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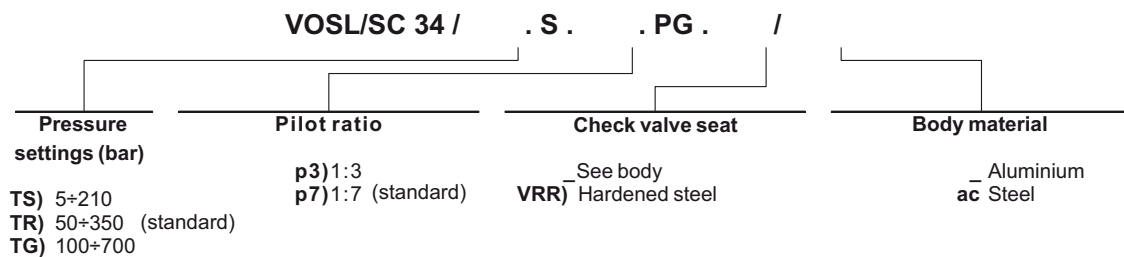
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• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER



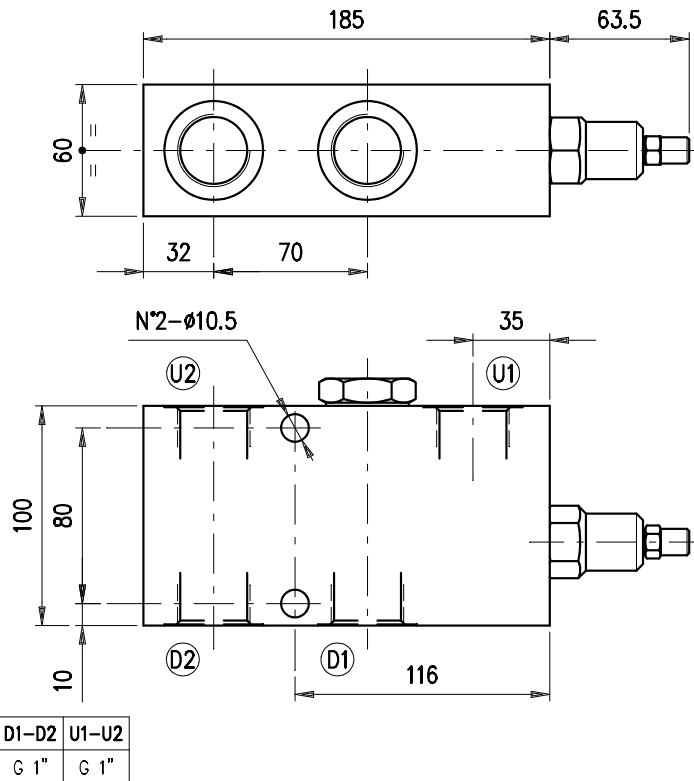
Senkbremsventil – einfachwirkend G 1" –



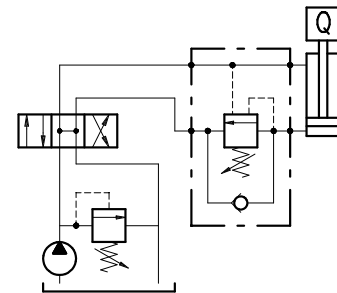
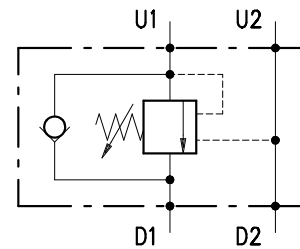
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0930-2855	VOSL/SC 100/TS.S.p7.PG	1"-Öff.v. 1:7 / 5-210bar	Alu	210	180	1520051100
230-0930-2860	VOSL/SC 100/TS.S.p3.PG	1"-Öff.v. 1:3 / 5-210bar				1520051101
230-0930-2865	VOSL/SC 100/TR.S.p7.PG	1"-Öff.v. 1:7 / 50-350bar				1520051102
230-0930-2870	VOSL/SC 100/TR.S.p3.PG	1"-Öff.v. 1:3 / 50-350bar				1520051103
230-0930-2875	VOSL/SC 100/TG.S.p7.PG	1"-Öff.v. 1:7 / 100-700bar				1520051104
230-0930-2880	VOSL/SC 100/TG.S.p3.PG	1"-Öff.v. 1:3 / 100-700bar				1520051105
230-0930-2885	VOSL/SC 100/TR.S.p7.PG/ac	1"-Öff.v. 1:7 / 50-350bar	Stahl	350	180	1520052100
230-0930-2890	VOSL/SC 100/TG.S.p7.PG/ac	1"-Öff.v. 1:7 / 100-700bar				1520052101

OVERCENTER VALVES
VOSL /SC 100

• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• DESCRIPTION

Single overcenter valves, line mounting.

• OPERATION

The oil flow is allowed from D1 to U1 and is stopped in the opposite way (from U1 to D1) up to the spring setting value. Free oil flow from U1 to D1 is strictly possible when the pilot pressure in D2 and U2 is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

$$(\text{valve setting} - \text{load pressure}) \div \text{pilot ratio} = \text{pilot pressure}$$

For example:

If your pilot ratio is 1:4, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. $[(250 \text{ bar} - 130 \text{ bar}) \div 4 = 30 \text{ bar}]$.

Should counterpressure arise in D1, the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

• PERFORMANCE

Maximum flow: 180 l/min

Maximum Pressure:

- Aluminium body: 210 bar

- Steel body: 350 bar

Application range with standard springs:

- 5 - 210 bar (test setting: 150 bar at 5 l/min)

- 50 - 350 bar (test setting: 280 bar at 5 l/min)

230-0930

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

• **RECOMMENDATIONS:**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body 3.10 kg
- steel body 7.54 kg

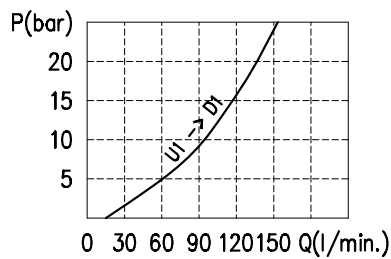
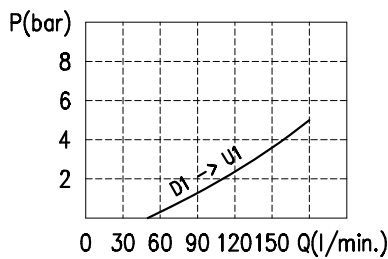
Material: internal components made out of high grade steel duly treated and fabricated.

For more information please ask our technical office.

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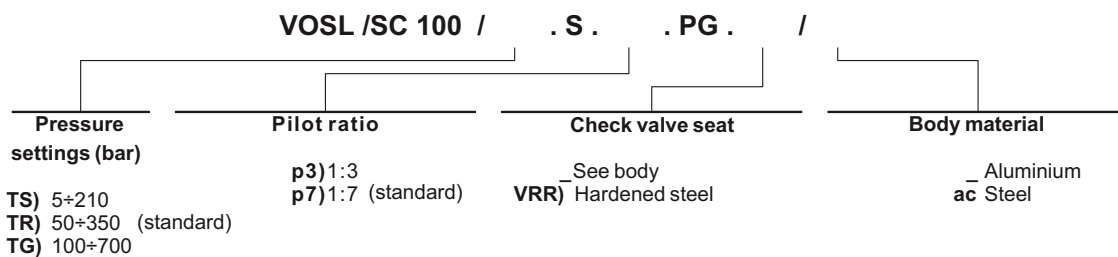
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• **RATING DIAGRAMS**



Oil viscosity 46 cSt

• **CODE NUMBER**



Senkbremsventil – doppelwirkend G 3/8" –

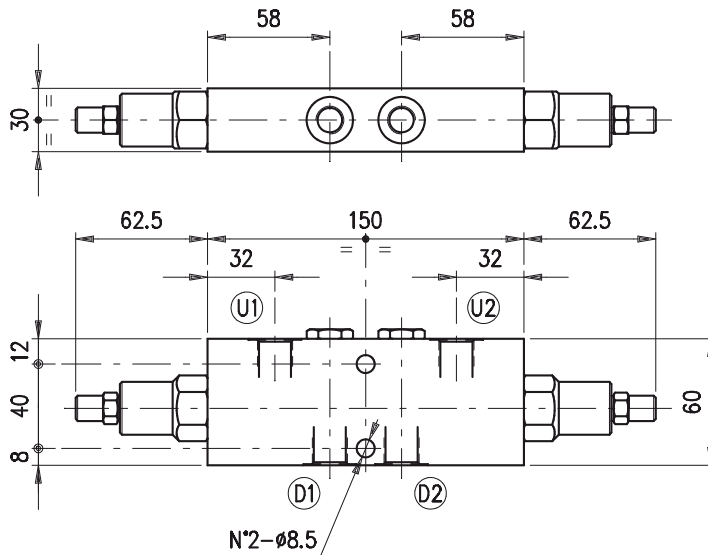


Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0970-2955	VODL/SC 38/TS.S.p4	3/8"-Öff.v. 1:4 / 5-210bar	Alu	210	40	1560021100
230-0970-2960	VODL/SC 38/TS.S.p3	3/8"-Öff.v. 1:3 / 5-210bar				1560021101
230-0970-2965	VODL/SC 38/TR.S.p4	3/8"-Öff.v. 1:4 / 50-350bar				1560021102
230-0970-2970	VODL/SC 38/TR.S.p3	3/8"-Öff.v. 1:3 / 50-350bar				1560021103
230-0970-2975	VODL/SC 38/TG.S.p4	3/8"-Öff.v. 1:4 / 100-700bar				1560021104
230-0970-2980	VODL/SC 38/TG.S.p3	3/8"-Öff.v. 1:3 / 100-700bar				1560021105
230-0970-2985	VODL/SC 38/TG.S.p4.PG	3/8"-Öff.v. 1:4 / 100-700bar				1560021108
230-0970-2990	VODL/SC 38/TR.S.p4.PG	3/8"-Öff.v. 1:4 / 50-350bar				1560021109
230-0970-2995	VODL/SC 38/TR.W.p4	3/8"-Öff.v. 1:4 / 50-350bar				1560021112
230-0970-3000	VODL/SC 38/TS.S.p3.PG	3/8"-Öff.v. 1:3 / 5-210bar				1560021114
230-0970-3005	VODL/SC 38/TR.S.p4/ac	3/8"-Öff.v. 1:4 / 50-350bar				Stahl
230-0970-3010	VODL/SC 38/TR.S.p4.PG/ac	3/8"-Öff.v. 1:4 / 50-350bar	1560022101			
230-0970-3015	VODL/SC 38/TG.S.p4/ac	3/8"-Öff.v. 1:4 / 100-700bar	1560022102			

230-0970

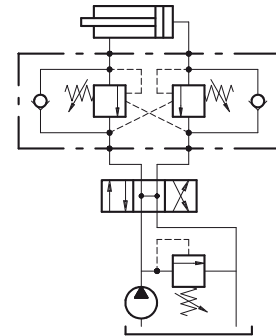
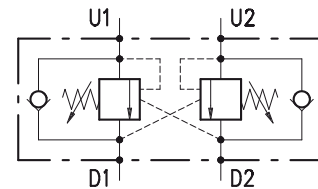
OVERCENTER VALVES
VODL /SC 38

• DIMENSIONS (mm)



D1-D2	U1-U2
G 3/8	G 3/8

• HYDRAULIC DIAGRAM



• DESCRIPTION

Dual overcenter valves, line mounting.

• OPERATION

The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

(valve setting – load pressure) ÷ pilot ratio = pilot pressure

For example:

If your pilot ratio is 1:4, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. $[(250 \text{ bar} - 130 \text{ bar}) \div 4 = 30 \text{ bar}]$.

Should counterpressure arise in D1 (D2), the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

Lack of overcenter stability and troublesome motion even after complete valve assembly, will suggest that the valve application may require a PG version. Please contact our technical service for action.

• PERFORMANCE

Maximum flow: 40 l/min

Maximum Pressure:

- Aluminium body: 210 bar

- Steel body: 350 bar

Application range with standard springs:

- 5 - 210 bar (test setting: 150 bar at 5 l/min)

- 50 - 350 bar (test setting: 280 bar at 5 l/min)

- 100 - 700 bar (test setting: 350 bar at 5 l/min)

Oil leak from U1 (U2) to D1 (D2): 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt

Pilot ratio:

230-0970

- 1:3 (on request only)

Working temperature:

- Minimum -25°C max 90°C with standard BUNAN gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

• **RECOMMENDATIONS**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body 1.13 kg
- steel body 2.16 kg

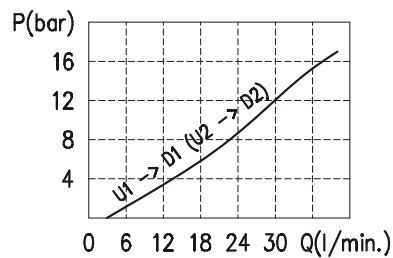
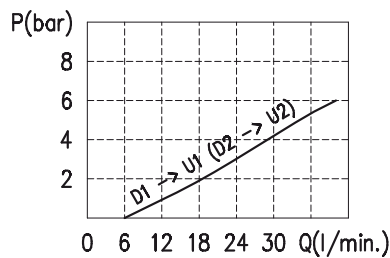
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

Variations and modifications of technical features and dimensions are reserved. **OLEOSTAR S.p.A.** also reserves the right to stop production of each and any model listed in the catalogue with no notice.

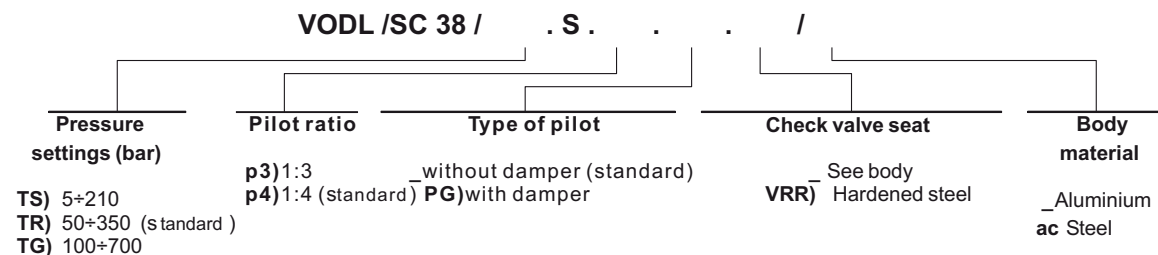
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• **RATING DIAGRAMS**



Oil viscosity 46 cSt

• **CODE NUMBER**



Senkbremsventil – doppelwirkend G 1/2" –

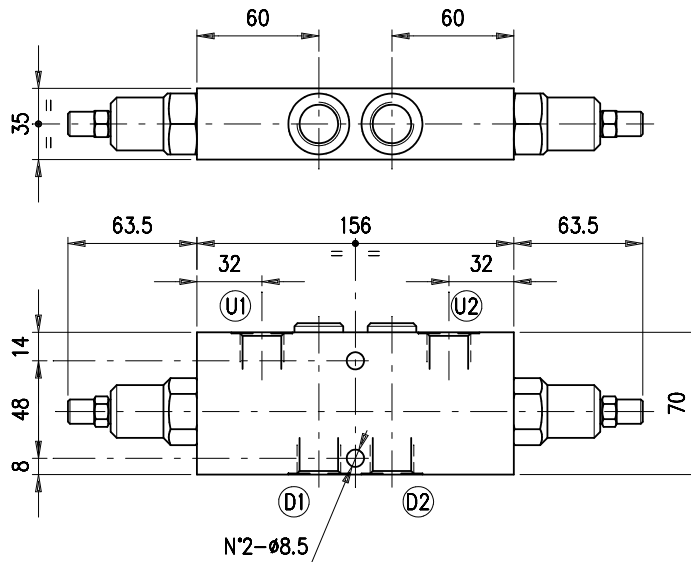


Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0980-3020	VODL/SC 12/TS.S.p7	1/2"-Öff.v. 1:7 / 5-210bar	Alu	210	75	1560031100
230-0980-3025	VODL/SC 12/TS.S.p3	1/2"-Öff.v. 1:3 / 5-210bar				1560031101
230-0980-3030	VODL/SC 12/TR.S.p7	1/2"-Öff.v. 1:7 / 50-350bar				1560031102
230-0980-3035	VODL/SC 12/TR.S.p3	1/2"-Öff.v. 1:3 / 50-350bar				1560031103
230-0980-3040	VODL/SC 12/TG.S.p7	1/2"-Öff.v. 1:7 / 100-700bar				1560031104
230-0980-3045	VODL/SC 12/TG.S.p3	1/2"-Öff.v. 1:3 / 100-700bar				1560031105
230-0980-3050	VODL/SC 12/TG.S.p7.PG	1/2"-Öff.v. 1:7 / 100-700bar				1560031110
230-0980-3055	VODL/SC 12/TR.S.p7.PG	1/2"-Öff.v. 1:7 / 50-350bar				1560031111
230-0980-3060	VODL/SC 12/TR.S.p3.PG	1/2"-Öff.v. 1:3 / 5-210bar				1560031112
230-0980-3065	VODL/SC 12/TG.S.p3.PG	1/2"-Öff.v. 1:3 / 100-700bar				1560031118
230-0980-3070	VODL/SC 12/TR.S.p7/ac	1/2"-Öff.v. 1:7 / 50-350bar				Stahl
230-0980-3075	VODL/SC 12/TG.S.p7/ac	1/2"-Öff.v. 1:7 / 100-700bar	1560032102			
230-0980-3080	VODL/SC 12/TR.S.p3/ac	1/2"-Öff.v. 1:3 / 50-350bar	1560032103			

OVERCENTER VALVES
VODL /SC 12

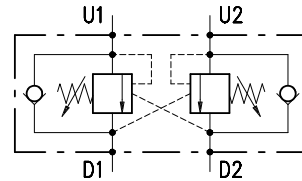


• **DIMENSIONS (mm)**

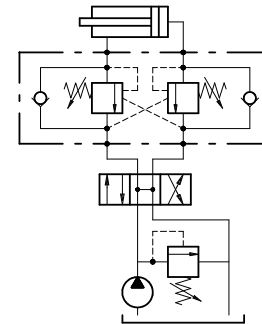


D1-D2	U1-U2
G 1/2	G 1/2

• **HYDRAULIC DIAGRAM**



• **ASSEMBLY DIAGRAM**



• **DESCRIPTION**

Dual overcenter valves, line mounting.

• **OPERATION**

The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

$$(\text{valve setting} - \text{load pressure}) \div \text{pilot ratio} = \text{pilot pressure}$$

For example:

If your pilot ratio is 1:4, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. [(250 bar - 130 bar) ÷ 4 = 30 bar].

Should counterpressure arise in D1 (D2), the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

Lack of overcenter stability and troublesome motion even after complete valve assembly, will suggest that the valve application may require a PG version. Please contact our technical service for action.

• **PERFORMANCE**

Maximum flow: 75 l/min

Maximum Pressure:

- Aluminium body: 210 bar
- Steel body: 350 bar

Application range with standard springs:

- 5 - 210 bar (test setting: 150 bar at 5 l/min)
- 50 - 350 bar (test setting: 280 bar at 5 l/min)
- 100 - 700 bar (test setting: 350 bar at 5 l/min)

Oil leak from U1 (U2) to D1 (D2): 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt

Pilot ratio:

- 1:7 (standard type)

230-0980



- 1:3 (on request only)

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body 1.47 kg
- steel body 2.89 kg

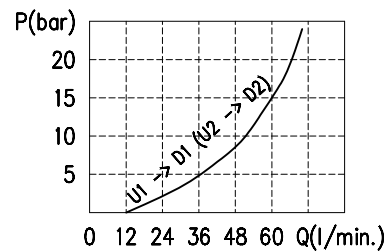
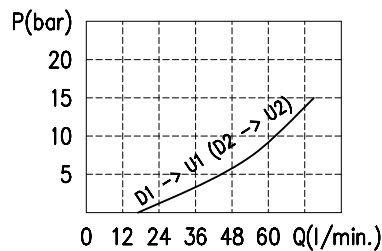
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

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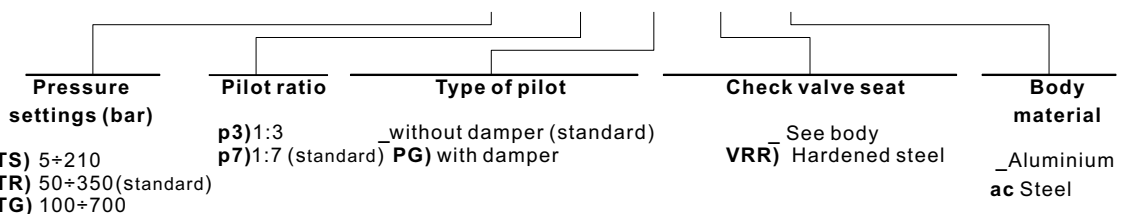
• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER

VODL / SC 12 / □□ . S . □□ . □□ . □□ / □□



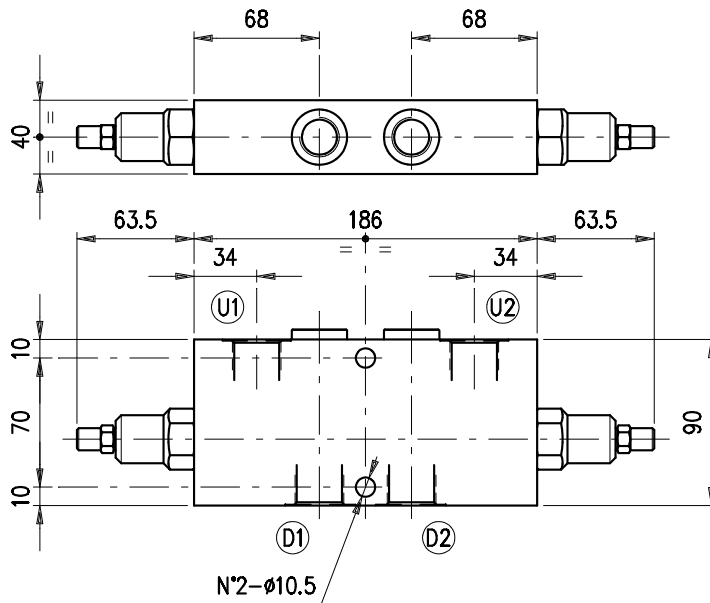
Senkbremsventil – doppelwirkend G 3/4" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-0990-3085	VODL/SC 34/TS.S.p7	3/4"-Öff.v. 1:7 / 5-210bar	Alu	210	120	1560041100
230-0990-3090	VODL/SC 34/TS.S.p3	3/4"-Öff.v. 1:3 / 5-210bar				1560041101
230-0990-3095	VODL/SC 34/TR.S.p7	3/4"-Öff.v. 1:7 / 50-350bar				1560041102
230-0990-3100	VODL/SC 34/TR.S.p3	3/4"-Öff.v. 1:3 / 50-350bar				1560041103
230-0990-3105	VODL/SC 34/TG.S.p7	3/4"-Öff.v. 1:7 / 100-700bar				1560041104
230-0990-3110	VODL/SC 34/TG.S.p3	3/4"-Öff.v. 1:3 / 100-700bar				1560041105
230-0990-3115	VODL/SC 34/TS.S.p7.PG	3/4"-Öff.v. 1:7 / 5-210bar				1560041107
230-0990-3120	VODL/SC 34/TR.S.p7.PG	3/4"-Öff.v. 1:7 / 50-350bar				1560041108
230-0990-3125	VODL/SC 34/TR.S.p7/ac	3/4"-Öff.v. 1:7 / 50-350bar	Stahl	350	120	1560042100
230-0990-3130	VODL/SC 34/TG.S.p7/ac	3/4"-Öff.v. 1:7 / 100-700bar				1560042101

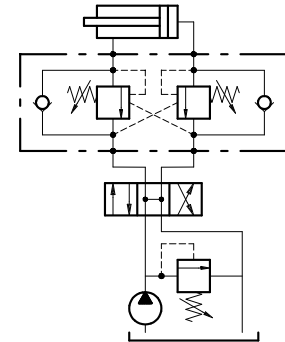
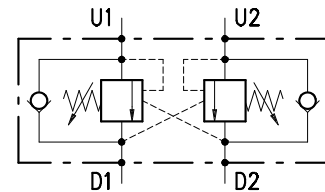
OVERCENTER VALVES
VODL /SC 34

• DIMENSIONS (mm)



D1-D2	U1-U2
G 3/4	G 3/4

• HYDRAULIC DIAGRAM



• DESCRIPTION

Dual overcenter valves, line mounting.

• OPERATION

The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

$$(\text{valve setting} - \text{load pressure}) \div \text{pilot ratio} = \text{pilot pressure}$$

For example:

If your pilot ratio is 1:4, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. $[(250 \text{ bar} - 130 \text{ bar}) \div 4 = 30 \text{ bar}]$.

Should counterpressure arise in D1 (D2), the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

Lack of overcenter stability and troublesome motion even after complete valve assembly, will suggest that the valve application may require a PG version. Please contact our technical service for action.

• PERFORMANCE

Maximum flow: 120 l/min

Maximum Pressure:

- Aluminium body: 210 bar

- Steel body: 350 bar

Application range with standard springs:

- 5 - 210 bar (test setting: 150 bar at 5 l/min)

- 50 - 350 bar (test setting: 280 bar at 5 l/min)

- 100 - 700 bar (test setting: 350 bar at 5 l/min)

Oil leak from U1 (U2) to D1 (D2): 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt

230-0990

Pilot ratio:

- 1:7 (standard type)
- 1:3 (on request only)

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with optional VITON gaskets

• **RECOMMENDATIONS**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body 2.22 kg
- steel body 4.75 kg

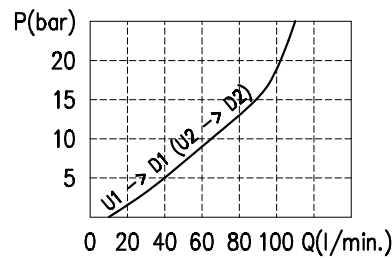
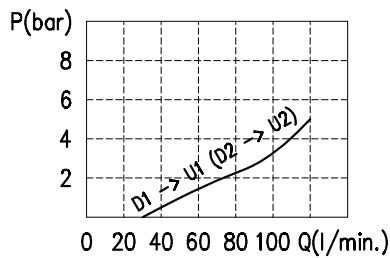
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

Variations and modifications of technical features and dimensions are reserved. **OLEOSTAR S.p.A.** also reserves the right to stop production of each and any model listed in the catalogue with no notice.

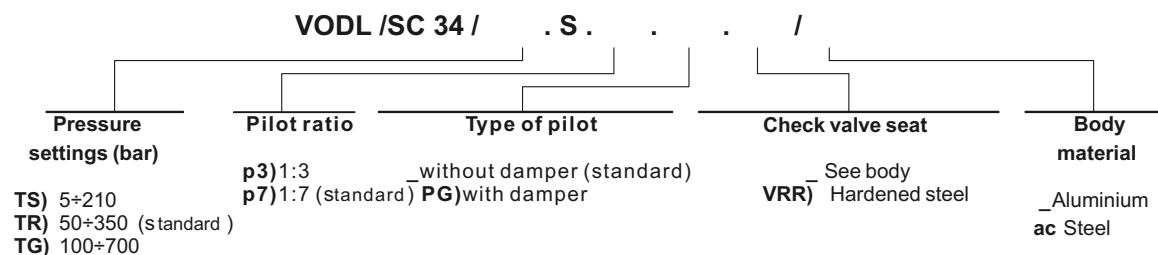
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• **RATING DIAGRAMS**



Oil viscosity 46 cSt

• **CODE NUMBER**



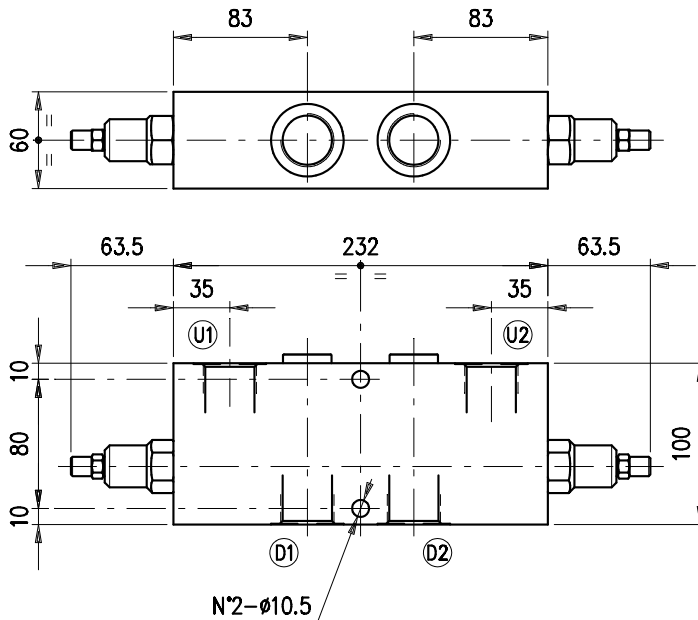
Senkbremsventil – doppelwirkend G 1" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1000-3135	VODL/SC 100/TS.S.p7	1"-Öff.v. 1:7 / 5-210bar	Alu	210	180	1560051100
230-1000-3140	VODL/SC 100/TS.S.p3	1"-Öff.v. 1:3 / 5-210bar				1560051101
230-1000-3145	VODL/SC 100/TR.S.p7	1"-Öff.v. 1:7 / 50-350bar				1560051102
230-1000-3150	VODL/SC 100/TR.S.p3	1"-Öff.v. 1:3 / 50-350bar				1560051103
230-1000-3155	VODL/SC 100/TG.S.p7	1"-Öff.v. 1:7 / 100-700bar				1560051104
230-1000-3160	VODL/SC 100/TG.S.p3	1"-Öff.v. 1:3 / 100-700bar				1560051105
230-1000-3165	VODL/SC 100/TR.S.p7.PG	1"-Öff.v. 1:7 / 50-350bar				1560051109
230-1000-3170	VODL/SC 100/TR.S.p7/ac	1"-Öff.v. 1:7 / 50-350bar				Stahl
230-1000-3175	VODL/SC 100/TG.S.p7/ac	1"-Öff.v. 1:7 / 100-700bar	1560052101			
230-1000-3180	VODL/SC 100/TS.S.p3.PG/ac	1"-Öff.v. 1:3 / 5-210bar	1560052102			

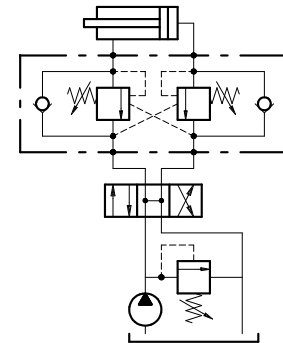
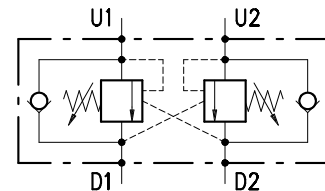
OVERCENTER VALVES
VODL /SC 100

• DIMENSIONS (mm)



D1-D2	U1-U2
G 1"	G 1"

• HYDRAULIC DIAGRAM



• DESCRIPTION

Dual overcenter valves, line mounting.

• OPERATION

The oil flow is allowed from D1 (D2) to U1 (U2) and is stopped in the opposite way from U1 (U2) to D1 (D2) up to the spring setting value. Free oil flow from U1 (U2) to D1 (D2) is strictly possible when the pilot pressure in D2 and U2 (D1 and U1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

$$(\text{valve setting} - \text{load pressure}) \div \text{pilot ratio} = \text{pilot pressure}$$

For example:

If your pilot ratio is 1:4, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. $[(250 \text{ bar} - 130 \text{ bar}) \div 4 = 30 \text{ bar}]$.

Should counterpressure arise in D1 (D2), the setting value of valve poppet (1:1 ratio) will increase and the pilot pressure be negatively affected (1:1 ratio).

Lack of overcenter stability and troublesome motion even after complete valve assembly, will suggest that the valve application may require a PG version. Please contact our technical service for action.

• PERFORMANCE

Maximum flow: 180 l/min

Maximum Pressure:

- Aluminium body: 210 bar

- Steel body: 350 bar

Application range with standard springs:

- 5 - 210 bar (test setting: 150 bar at 5 l/min)

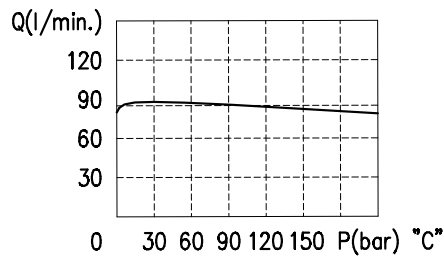
- 50 - 350 bar (test setting: 280 bar at 5 l/min)

- 100 - 700 bar (test setting: 350 bar at 5 l/min)

Oil leak from U1 (U2) to D1 (D2): 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt

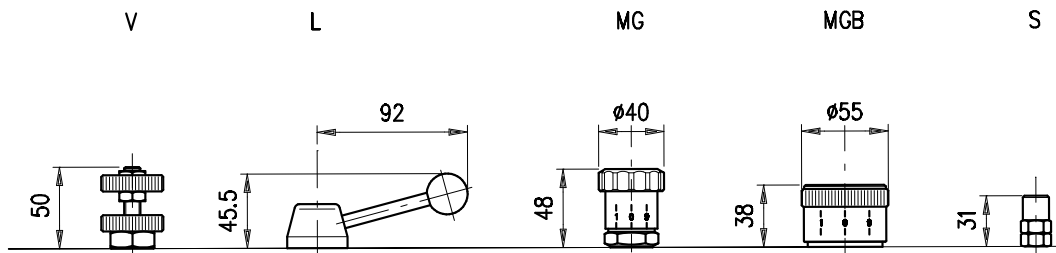
230-1000

• RATING DIAGRAMS

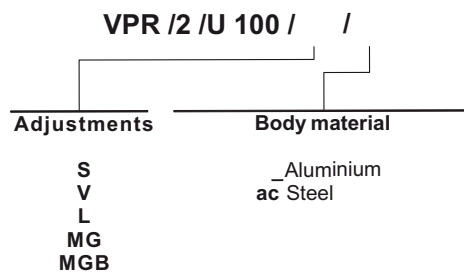


Oil viscosity 46 cSt

• ADJUSTMENTS



• CODE NUMBER

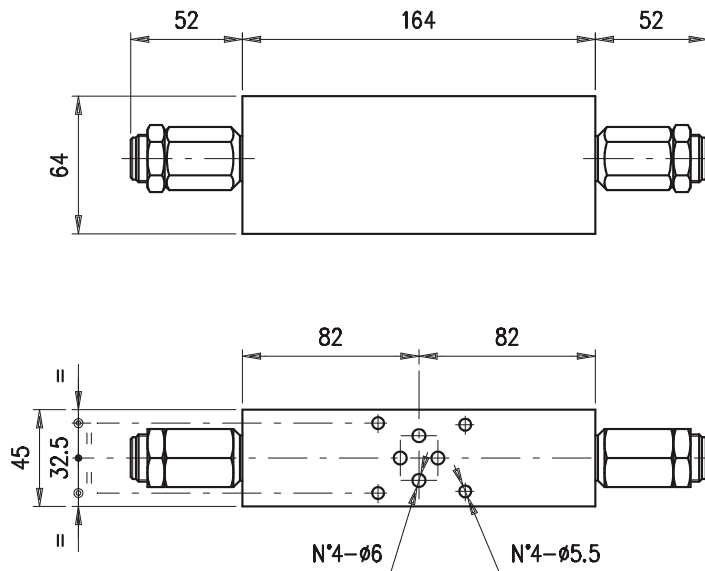


Senkbremsventil – doppelwirkend Zwischenplatte Cetop 03 –

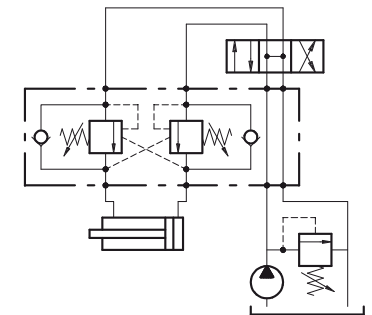
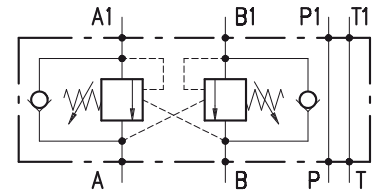
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1020-3205	VODL/ML 6-38/TS.S.p4	3/8"-Öff.v. 1:4 / 5-210bar	Alu	210	35	1558021800
230-1020-3210	VODL/ML 6-38/TR.S.p4	3/8"-Öff.v. 1:4 / 50-350bar				1558021802

OVERCENTER VALVES
VODL /ML 6-38

• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• DESCRIPTION

Dual overcenter valves, sandwich mounting NG6, cartridge construction.

• OPERATION

The oil flow is allowed from A (B) to A1 (B1) and is stopped in the opposite way from A1 (B1) to A (B) up to the spring setting value. Free oil flow from A1 (B1) to A (B) is strictly possible when the pilot pressure in B and B1 (A and A1) is strong enough to pilot the valve poppet.

Use the following formula to assert the applicable pilot pressure:

$$(\text{valve setting} - \text{load pressure}) \div \text{pilot ratio} = \text{pilot pressure}$$

For example:

If your pilot ratio is 1:4, your setting pressure is 250 bar and your load pressure is 130 bar then you will need 30 bar pilot pressure in order to displace the load. [(250 bar – 130 bar) ÷ 4 = 30 bar].

Counterpressure in A (B) increase the setting value (1:1 ratio) of the poppet spring and negatively affect the pilot pressure (1:1 ratio).

Lack of overcenter stability and troublesome motion even after complete valve assembly, will suggest that the valve application may require a PG version. Please contact our technical service for action.

• PERFORMANCE

Maximum flow: 35 l/min.

Maximum Pressure:

- Aluminium body 210 bar
- Steel body 350 bar

Application range with standard springs:

- 5 - 210 bar (test setting: 170 bar at 5 l/min)
- 50 - 350 bar (test setting: 280 bar at 5 l/min)
- 100 - 700 bar (test setting: 350 bar at 5 l/min)

Oil leak from U1 to D1: 0.25 cc/minute (5 drops) at 210 bar and 80% of the spring setting value with oil viscosity of 46 cSt.

Pilot ratio:

- 1:4 (standard type)

- 1:3 (on request only)

Working temperature:

- Minimum -25°C max 90°C with standard BUNAN gaskets
- Minimum -20°C max 200°C with optional VITON gaskets

• **RECOMMENDATIONS**

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight: aluminium body 1.75 kg - steel body 3.75 kg

Overcenter cartridge: see page 1.2000.100.

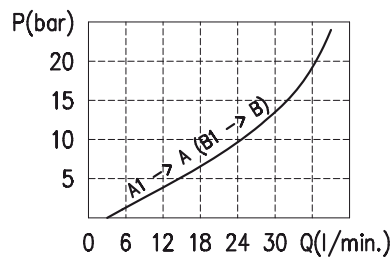
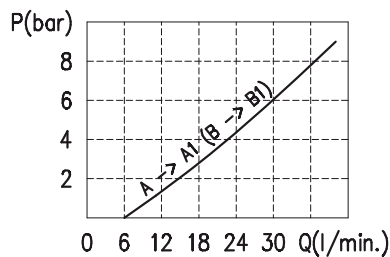
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

Variations and modifications of technical features and dimensions are reserved. **OLEOSTAR S.p.A.** also reserves the right to stop production of each and any model listed in the catalogue with no notice.

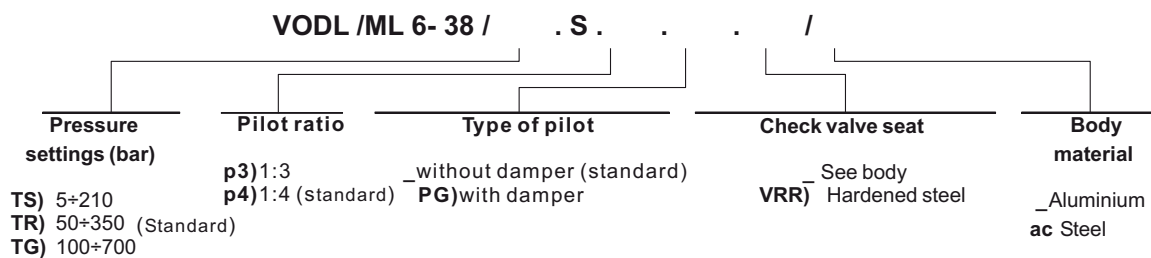
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• **RATING DIAGRAMS**



Oil viscosity 46 cSt

• **CODE NUMBER**



Stromregelventil

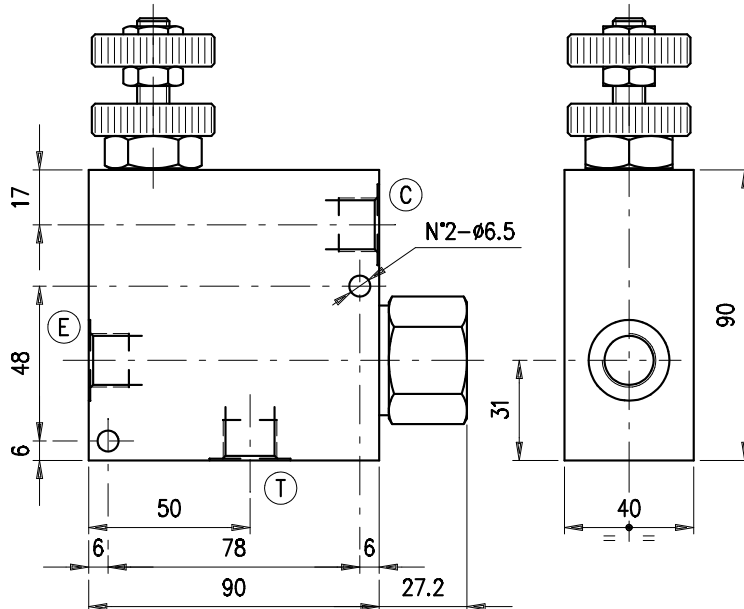
– 3 Wege druckkompensiert, G 3/8" und G 1/2" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1140-3470	VPR/3/ET 38/V	3/8"-Handrad	Alu	210	50/30	1620021100
230-1140-3475	VPR/3/ET 38/MG	3/8"-Skalenknauf				1620021101
230-1140-3480	VPR/3/ET 38/L	3/8"-Hebelverstellung				1620021102
230-1140-3485	VPR/3/ET 38/V/ac	3/8"-Handrad	Stahl	350	50/30	1620022100
230-1140-3490	VPR/3/ET 38/L/ac	3/8"-Hebelverstellung				1620022103
230-1140-3495	VPR/3/ET 38/V.SB/ac					1620022104
230-1140-3500	VPR/3/ET 38/MG/ac	3/8"-Skalenknauf				1620022106
230-1140-3505	VPR/3/ET 12/V	1/2"-Handrad	Alu	210	90/50	1620031100
230-1140-3510	VPR/3/ET 12/MG	1/2"-Skalenknauf				1620031101
230-1140-3515	VPR/3/ET 12/L	1/2"-Hebelverstellung				1620031102
230-1140-3520	VPR/3/ET 12/V/ac	1/2"-Handrad	Stahl	350	90/50	1620032100
230-1140-3525	VPR/3/ET 12/MG/ac	1/2"-Skalenknauf				1620032101
230-1140-3530	VPR/3/ET 12/L/ac	1/2"-Hebelverstellung				1620032103

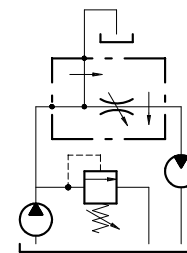
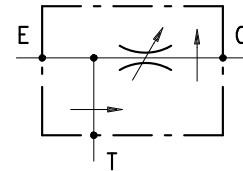
FLOW REGULATOR PRESSURE COMPENSATED
VPR /3 /ET 38 (12)

• DIMENSIONS (mm)



VPR/3/ET	E	T	C
38	G 3/8	G 3/8	G 3/8
12	G 1/2	G 1/2	G 1/2

• HYDRAULIC DIAGRAM



• DESCRIPTION

3-ways flow regulator, pressure compensated, exceeding flow to tank.

• OPERATION

The valve is designed to provide flow adjustment from E to C by a variation of the oil flow section. Exceeding flow is concurrently sent to tank T. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C do not alter the checked oil flow. On the contrary, eventual back pressure in T may cause inconstant capacity in C. Use of a pressure relief valve between the pump and the flow regulator is strictly recommended.

• PERFORMANCE

Maximum flow:

- VPR/3/ET 38: E = 50 l/min. C = 30 l/min.
- VPR/3/ET 12: E = 90 l/min. C = 50 l/min.

Maximum Pressure:

- Aluminium body: 210 bar
- Steel body: 350 bar

Maximum pressure compensation error: see performance graphs.

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

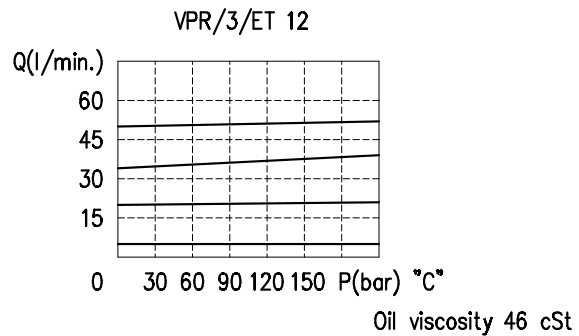
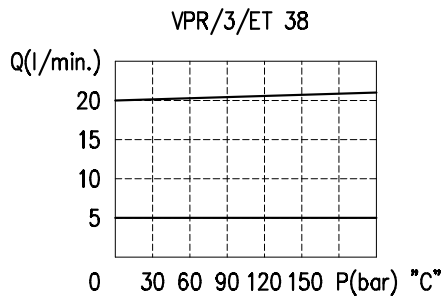
Filter: see page Z.9000.000.

Weight:

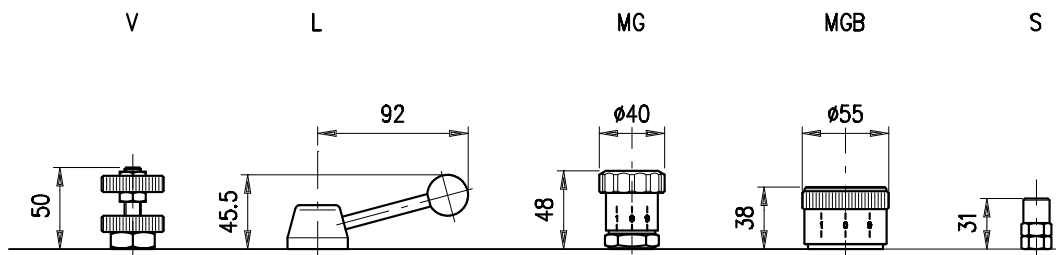
- VPR/3/ET 38: aluminium body 1.07 kg - steel body 2.48 kg

230-1140

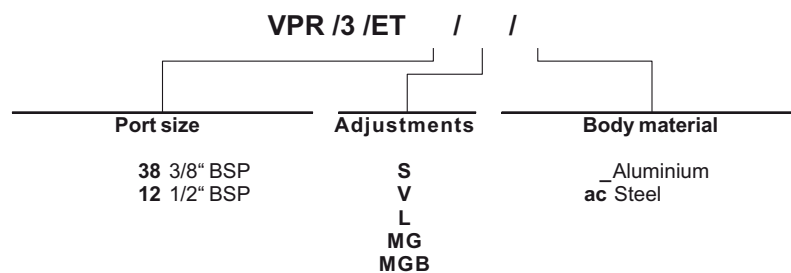
• RATING DIAGRAMS



• ADJUSTMENTS



• CODE NUMBER



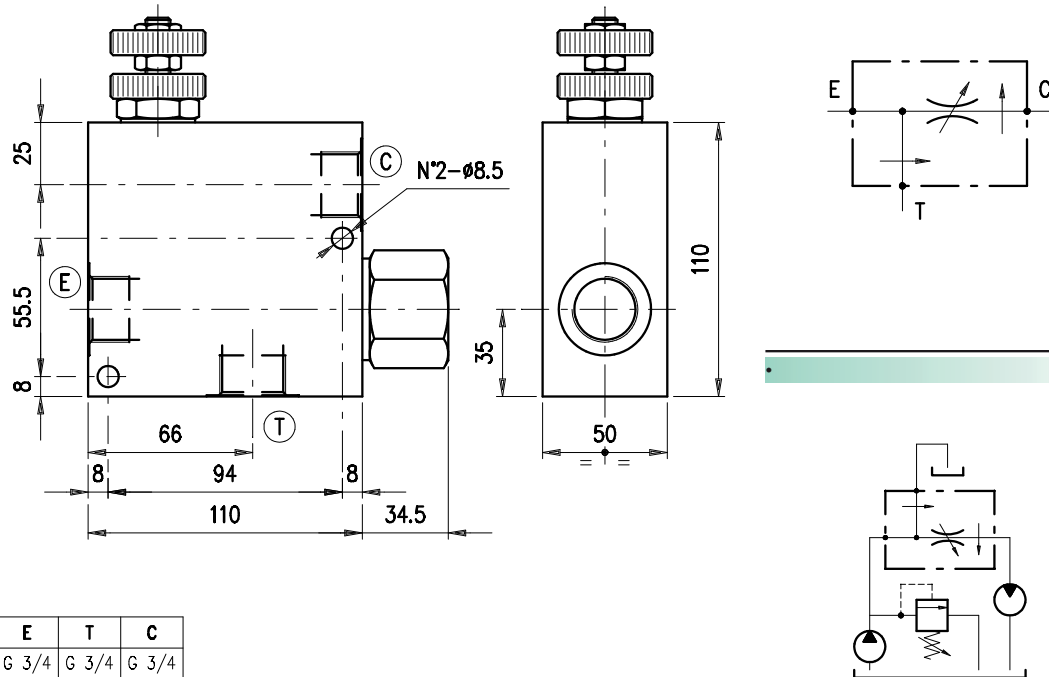
Stromregelventil

– 3 Wege druckkompensiert, G 3/4" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1150-3535	VPR/3/ET 34/V	3/4"-Handrad	Alu	210	150/90	1620041100
230-1150-3540	VPR/3/ET 34/MG	3/4"-Skalenknauf				1620041101
230-1150-3545	VPR/3/ET 34/L	3/4"-Hebelverstellung				1620041102
230-1150-3550	VPR/3/ET 34/V/ac	3/4"-Handrad	Stahl	350		1620042100
230-1150-3555	VPR/3/ET 34/MG/ac	3/4"-Skalenknauf				1620042103
230-1150-3560	VPR/3/ET 34/L/ac	3/4"-Hebelverstellung				1620042105

FLOW REGULATOR PRESSURE COMPENSATED
VPR /3 /ET 34



• DESCRIPTION

3-ways flow regulator, pressure compensated, exceeding flow to tank.

• OPERATION

The valve is designed to provide flow adjustment from E to C by a variation of the oil flow section. Exceeding flow is concurrently sent to tank T. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C do not alter the checked oil flow. On the contrary, eventual back pressure in T may cause inconstant capacity in C. Use of a pressure relief valve between the pump and the flow regulator is strictly recommended.

• PERFORMANCE

Maximum flow: E = 1 50 l/min. C = 90 l/min.

Maximum Pressure:

- Aluminium body 210 bar
- Steel body 350 bar

Maximum pressure compensation error: see performance graphs.

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight: aluminium body 2.22 kg - steel body 4.42 kg

Material: internal components made out of high-grade steel duly treated and fabricated.

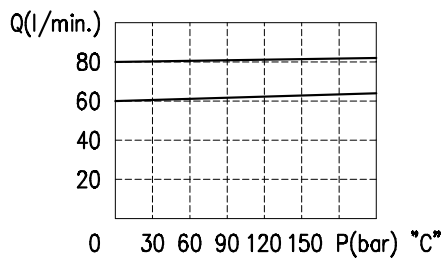
For more information please ask our technical office.

Variations and modifications of technical features and dimensions are reserved. OLEOSTAR S.p.A. also reserves the right to stop production of each

230-1150

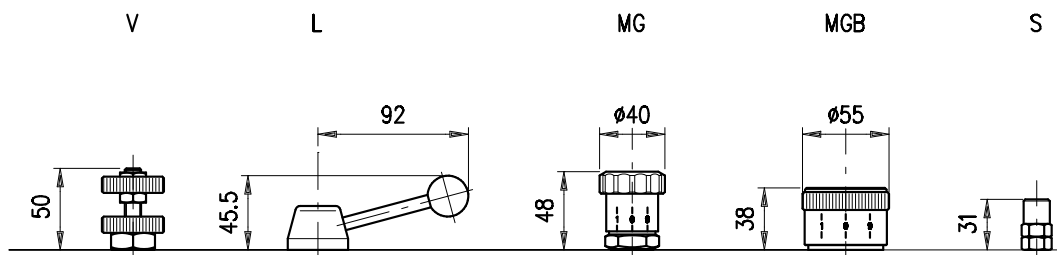
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• RATING DIAGRAMS

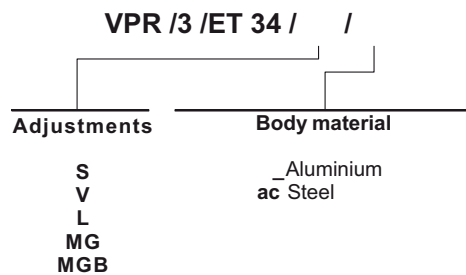


Oil viscosity 46 cSt

• ADJUSTMENTS



• CODE NUMBER



Stromregelventil

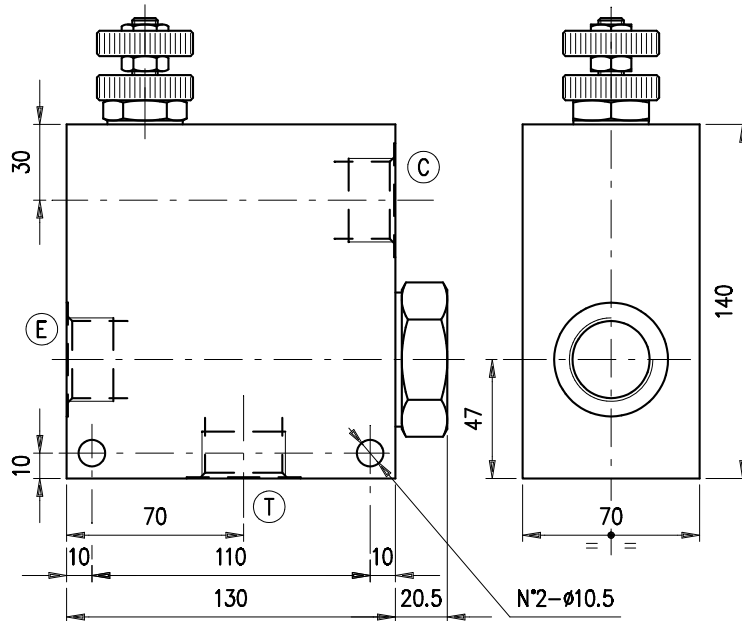
– 3 Wege druckkompensiert, G 1" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1160-3565	VPR/3/ET 100/V	1"-Handrad	Alu	210	240/150	1620051100
230-1160-3570	VPR/3/ET 100/MG	1"-Skalenknauf				1620051101
230-1160-3575	VPR/3/ET 100/L	1"-Hebelverstellung				1620051102
230-1160-3580	VPR/3/ET 100/S/ac	1"-Hutmutter	Stahl	350	240/150	1620052100
230-1160-3585	VPR/3/ET 100/V/ac	1"-Handrad				1620052101
230-1160-3590	VPR/3/ET 100/MG/ac	1"-Skalenknauf				1620052102
230-1160-3595	VPR/3/ET 100/L/ac	1"-Hebelverstellung				1620052103

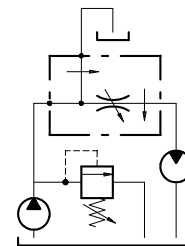
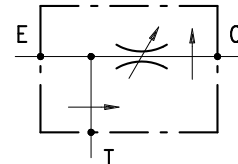
FLOW REGULATOR PRESSURE COMPENSATED
VPR /3 /ET 100

• DIMENSIONS (mm)



E	T	C
G 1"	G 1"	G 1"

• HYDRAULIC DIAGRAM



• DESCRIPTION

3-ways flow regulator, pressure compensated, exceeding flow to tank.

• OPERATION

The valve is designed to provide flow adjustment from E to C by a variation of the oil flow section. Exceeding flow is concurrently sent to tank T. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C do not alter the checked oil flow. On the contrary, eventual back pressure in T may cause inconstant capacity in C. Use of a pressure relief valve between the pump and the flow regulator is strictly recommended.

• PERFORMANCE

Maximum flow: E = 240 l/min. C = 150 l/min.

Maximum Pressure:

- Aluminium body: 210 bar
- Steel body: 350 bar

Maximum pressure compensation error: see performance graphs.

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body: 4.00 kg
- steel body: 9.00 kg

Material: internal components made out of high-grade steel duly treated and fabricated.

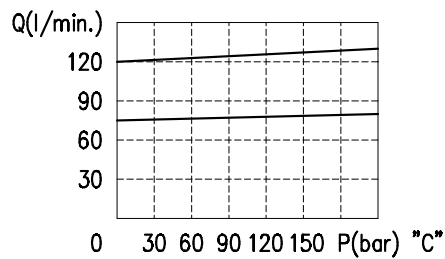
230-1160

For more information please ask our technical office.

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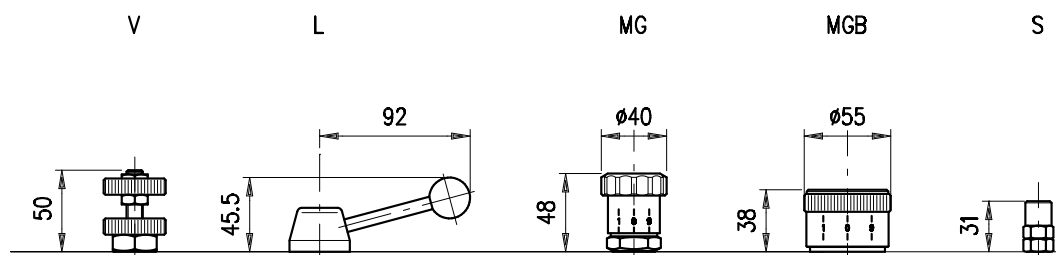
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• RATING DIAGRAMS

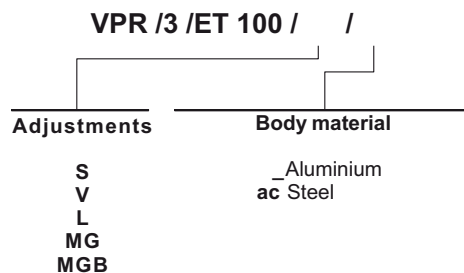


Oil viscosity 46 cSt

• ADJUSTMENTS



• CODE NUMBER



Stromregelventil

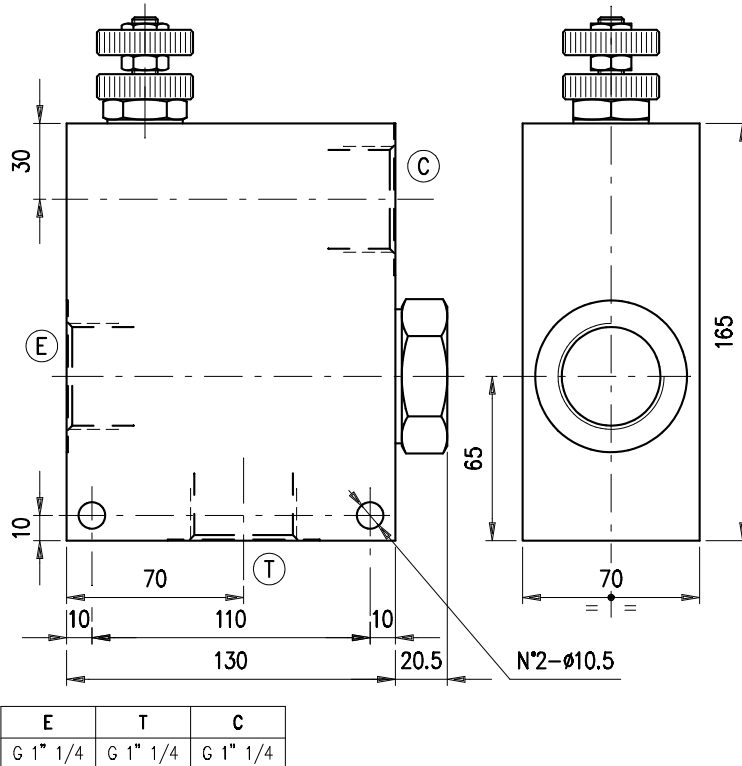
– 3 Wege druckkompensiert, G 1 1/4" –



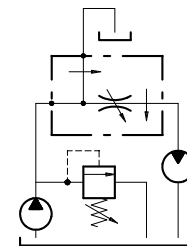
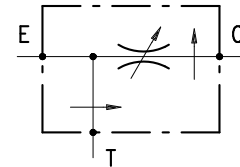
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1170-3600	VPR/3/ET 114/V	1 1/4"-Handrad	Alu	210	350/250	1620061100
230-1170-3605	VPR/3/ET 114/MG	1 1/4"-Skalenknauf				1620061101
230-1170-3610	VPR/3/ET 114/L	1 1/4"-Hebelverstellung				1620061102
230-1170-3615	VPR/3/ET 114/V/ac	1 1/4"-Handrad	Stahl	350	350/250	1620062101
230-1170-3620	VPR/3/ET 114/MG/ac	1 1/4"-Skalenknauf				1620062102
230-1170-3625	VPR/3/ET 114/L/ac	1 1/4"-Hebelverstellung				1620062103

FLOW REGULATOR PRESSURE COMPENSATED
VPR /3 /ET 114

• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• DESCRIPTION

3-ways flow regulator, pressure compensated, exceeding flow to tank.

• OPERATION

The valve is designed to provide flow adjustment from E to C by a variation of the oil flow section. Exceeding flow is concurrently sent to tank T. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C do not alter the checked oil flow. On the contrary, eventual back pressure in T may cause inconstant capacity in C. Use of a pressure relief valve between the pump and the flow regulator is strictly recommended.

• PERFORMANCE

Maximum flow: E = 350 l/min. C = 250 l/min.

Maximum Pressure:

- Aluminium body: 210 bar
- Steel body: 350 bar

Maximum pressure compensation error: see performance graphs.

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body: 9.50 kg
- steel body: 23.90 kg

Material: internal components made out of high-grade steel duly treated and fabricated.

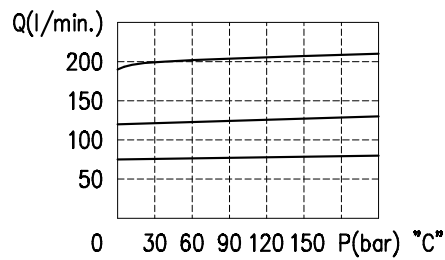
230-1170

For more information please ask our technical office.

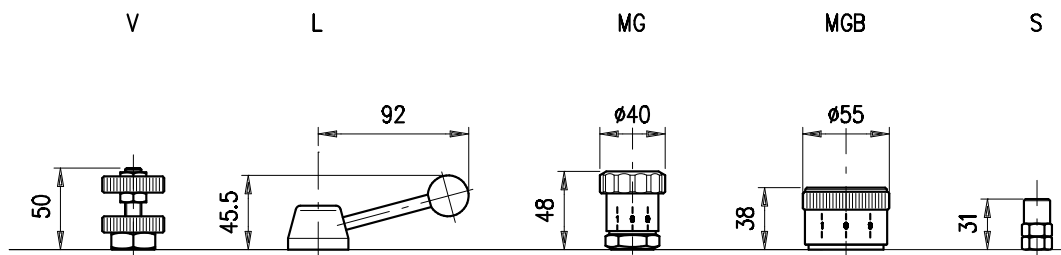
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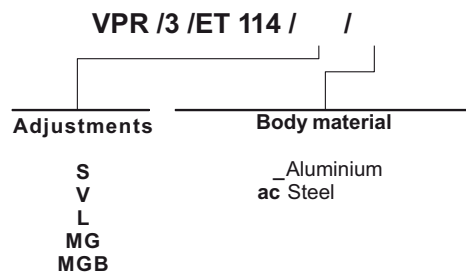
• RATING DIAGRAMS



Oil viscosity 46 cSt



• CODE NUMBER



Stromregelventil

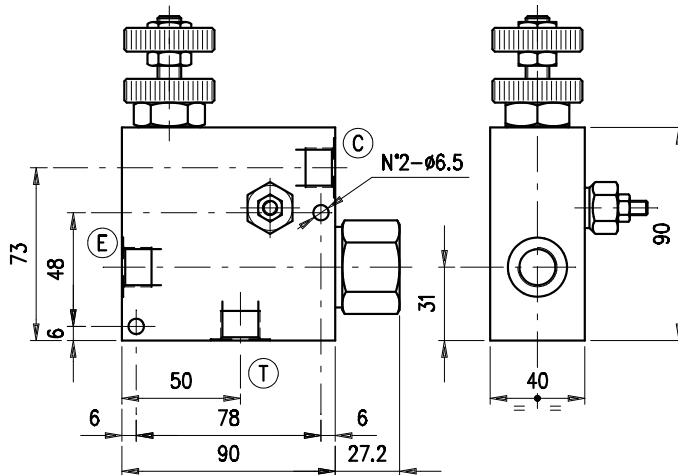
– 3 Wege druckkompensiert, mit Druckbegrenzungsventil G 3/8" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1200-3700	VPR/3/ET/VMP 38/V/02.TS	3/8"-EB: 50-220bar-Handrad	Alu	210	50/30	1623021100
230-1200-3705	VPR/3/ET/VMP 38/MG/02.TS	3/8"-EB: 50-220bar-Skalenknauf				1623021101
230-1200-3710	VPR/3/ET/VMP 38/L/02.TS	3/8"-EB: 50-220bar-Hebelv.				1623021102
230-1200-3715	VPR/3/ET/VMP 38/V/02.TV	3/8"-EB: 5-80bar-Handrad				1623021105
230-1200-3720	VPR/3/ET/VMP 38/S/02.TS	3/8"-EB: 50-220bar-Hutmutter				1623021107
230-1200-3725	VPR/3/ET/VMP 38/V/02.TS/ac	3/8"-EB: 50-220bar-Handrad	Stahl	350	50/30	1623022100
230-1200-3730	VPR/3/ET/VMP 38/V/02.TR/ac	3/8"-EB: 180-350bar-Handrad				1623022101
230-1200-3735	VPR/3/ET/VMP 12/V/02.TS	1/2"-EB: 50-220bar-Handrad	Alu	210	90/50	1623031100
230-1200-3740	VPR/3/ET/VMP 12/MG/02.TS	1/2"-EB: 50-220bar-Skalenknauf				1623031101
230-1200-3745	VPR/3/ET/VMP 12/L/02.TS	1/2"-EB: 50-220bar-Hebelv.				1623031102
230-1200-3750	VPR/3/ET/VMP 12/L/02.TV	1/2"-EB: 5-80bar-Hebelv.				1623031103
230-1200-3755	VPR/3/ET/VMP 12/V/02.TB	1/2"-EB: 5-40bar-Handrad				1623031111
230-1200-3760	VPR/3/ET/VMP 12/V/02.TS/ac	1/2"-EB: 50-220bar-Handrad	Stahl	350	90/50	1623032100
230-1200-3765	VPR/3/ET/VMP 12/MG/02.TS/ac	1/2"-EB: 50-220bar-Skalenknauf				1623032101
230-1200-3770	VPR/3/ET/VMP 12/V/02.TR/ac	1/2"-EB: 180-350bar-Handrad				1623032104

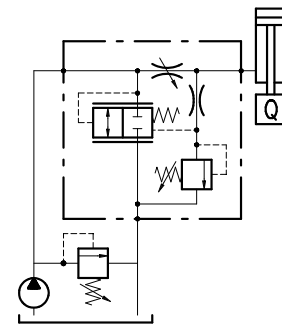
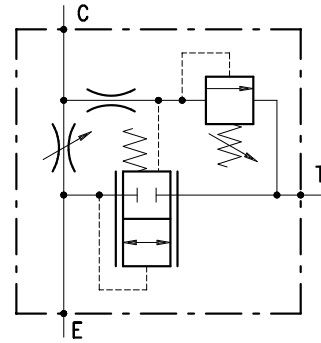
FLOW REGULATOR PRESSURE COMPENSATED
VPR /3 /ET /VMP 38 (12)

• DIMENSIONS (mm)



VPR/3/ET/VMP	E	T	C
38	G 3/8	G 3/8	G 3/8
12	G 1/2	G 1/2	G 1/2

• HYDRAULIC DIAGRAM



• DESCRIPTION

3-ways flow regulator, pressure compensated, with built-in relief valve on the checked way and exceeding flow to tank

• OPERATION

The valve is designed to provide flow adjustment from E to C by a variation of the oil flow section. Exceeding flow is concurrently discharged in T while a pressure built-in relief valve provides operative pressure control in C. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C do not alter the checked oil flow. On the contrary, eventual back pressure in T may cause inconstant capacity in conto

• PERFORMANCE

Maximum flow:

- VPR/3/ET/VMP 38: E = 50 l/min. C = 30 l/min.
- VPR/3/ET/VMP 12: E = 90 l/min. C = 50 l/min.

Maximum Pressure:

- Aluminium body: 210 bar
- Steel body: 350 bar

Maximum pressure compensation error: see performance graphs.

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- VPR/3/ET/VMP 38: aluminium body 1.10 kg - steel body 2.31 kg

- VPR/3/ET/RL 12: aluminium body 1.20 kg - steel body 2.42 kg

Relief cartridge valve: see page 1.1000.000.

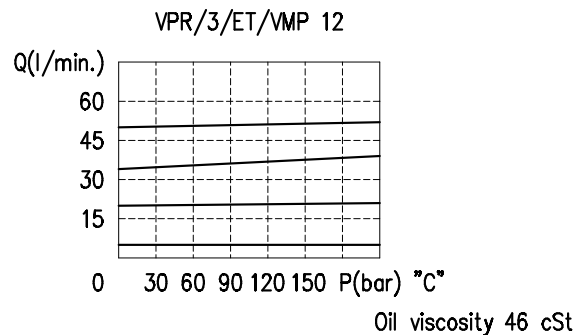
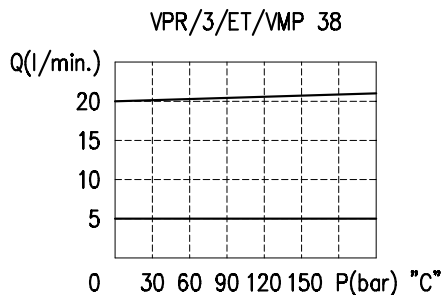
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

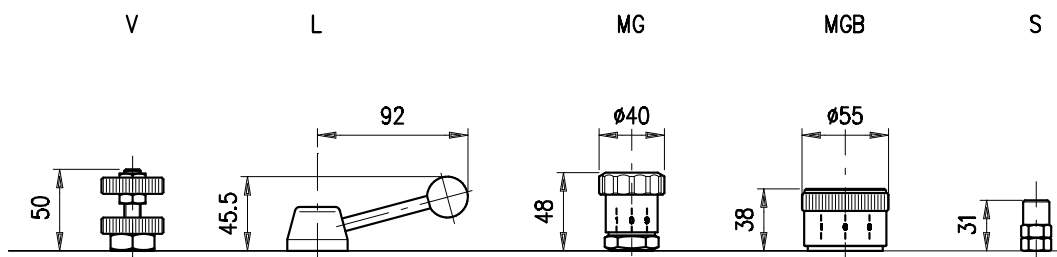
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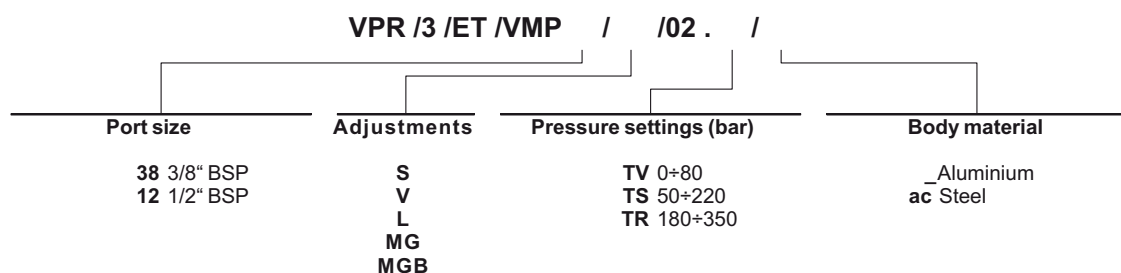
RATING DIAGRAMS



ADJUSTMENTS



CODE NUMBER



Stromregelventil

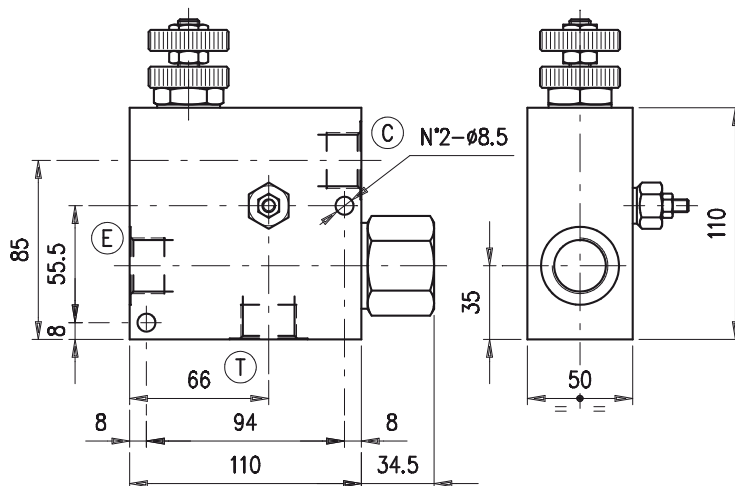
– 3 Wege druckkompensiert, mit Druckbegrenzungsventil G 3/4" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1210-3775	VPR/3/ET/VMP 34/V/02.TS	3/4"-EB: 50-220bar-Handrad	Alu	210	150/90	1623041100
230-1210-3780	VPR/3/ET/VMP 34/MG/02.TS	3/4"-EB: 50-220bar-Skalenknauf				1623041101
230-1210-3785	VPR/3/ET/VMP 34/L/02.TS	3/4"-EB: 50-220bar-Hebelv.				1623041102

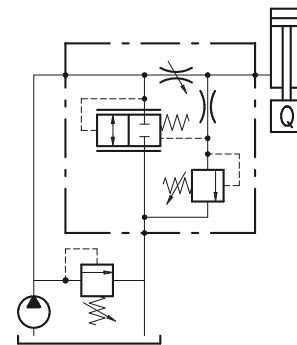
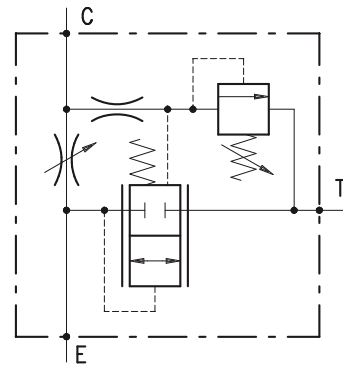
FLOW REGULATOR PRESSURE COMPENSATED
VPR /3 /ET /VMP 34/.../02

• DIMENSIONS (mm)



E	T	C
G 3/4	G 3/4	G 3/4

• HYDRAULIC DIAGRAM



• DESCRIPTION

3-ways flow regulator, pressure compensated, with built-in relief valve on the checked way and exceeding flow to tank

• OPERATION

The valve is designed to provide flow adjustment from E to C by a variation of the oil flow section. Exceeding flow is concurrently discharged in T while a pressure built-in relief valve provides operative pressure control in C. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C do not alter the checked oil flow. On the contrary, eventual back pressure in T may cause inconstant capacity in C.

• PERFORMANCE

Maximum flow: E = 150 l/min. C = 90 l/min.

Maximum Pressure: 210 bar

Maximum pressure compensation error: see performance graphs.

Working temperature:

- Minimum -25°C max 90°C with standard BUNAN gaskets
- Minimum -20°C max 200°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight: aluminium body 2.10 kg

Relief cartridge valve: see page 1.1000.000.

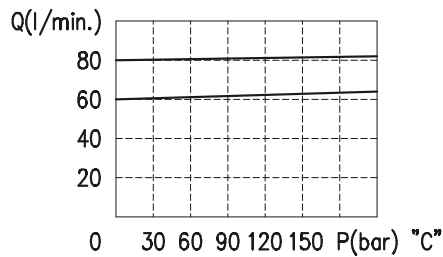
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

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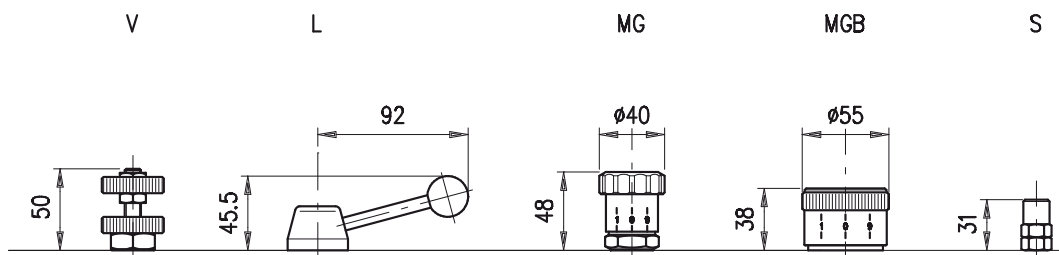
230-1210

• RATING DIAGRAMS

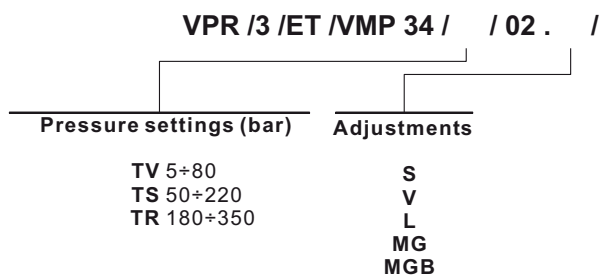


Oil viscosity 46 cSt

• ADJUSTMENTS



• CODE NUMBER



Stromregelventil

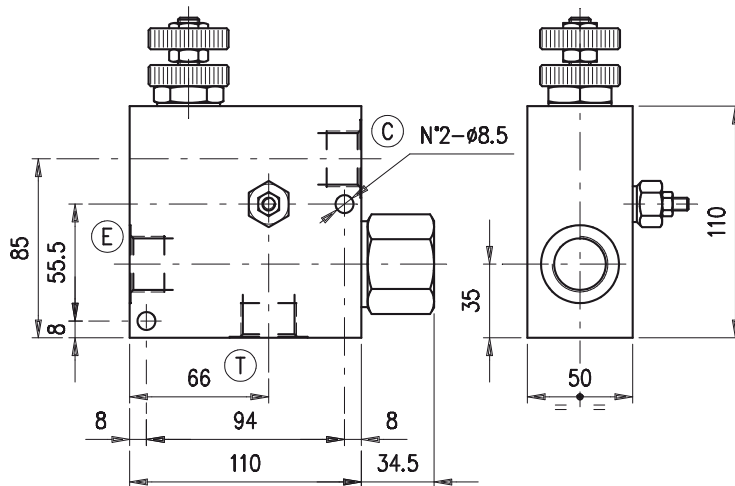
– 3 Wege druckkompensiert, mit Druckbegrenzungsventil G 3/4" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1220-3790	VPR/3/ET/VMP 34/V/03.TS/ac	3/4"-EB: 50-220bar-Handrad	Stahl	350	150/90	1623042102
230-1220-3795	VPR/3/ET/VMP 34/MG/03.TS/ac	3/4"-EB: 50-220bar-Skalenknauf				1623042103
230-1220-3800	VPR/3/ET/VMP 34/V/03.TR/ac	3/4"-EB: 180-350bar-Handrad				1623042104
230-1220-3805	VPR/3/ET/VMP 34/L/03.TR/ac	3/4"-EB: 180-350bar-Hebelv.				1623042106

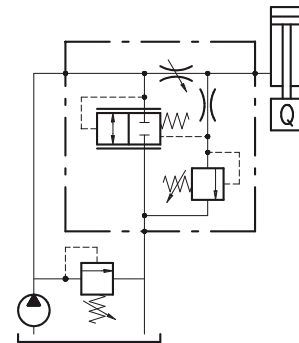
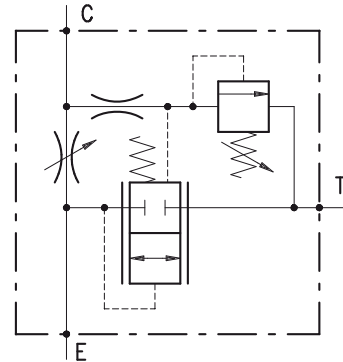
FLOW REGULATOR PRESSURE COMPENSATED
VPR /3 /ET /VMP 34/.../03

• DIMENSIONS (mm)



E	T	C
G 3/4	G 3/4	G 3/4

• HYDRAULIC DIAGRAM



• DESCRIPTION

3-ways flow regulator, pressure compensated, with built-in relief valve on the checked way and exceeding flow to tank

• OPERATION

The valve is designed to provide flow adjustment from E to C by a variation of the oil flow section. Exceeding flow is concurrently discharged in T while a pressure built-in relief valve provides operative pressure control in C. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C do not alter the checked oil flow. On the contrary, eventual back pressure in T may cause inconstant capacity in C.

• PERFORMANCE

Maximum flow: E = 150 l/min. C = 90 l/min.

Maximum Pressure: 350 bar (for steel body).

Maximum pressure compensation error: see performance graphs.

Working temperature:

- Minimum -25°C max 90°C with standard BUNAN gaskets
- Minimum -20°C max 200°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight: aluminium body 4.37 kg

Relief cartridge valve: see page D.1000.050.

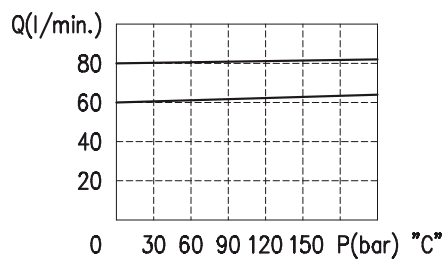
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

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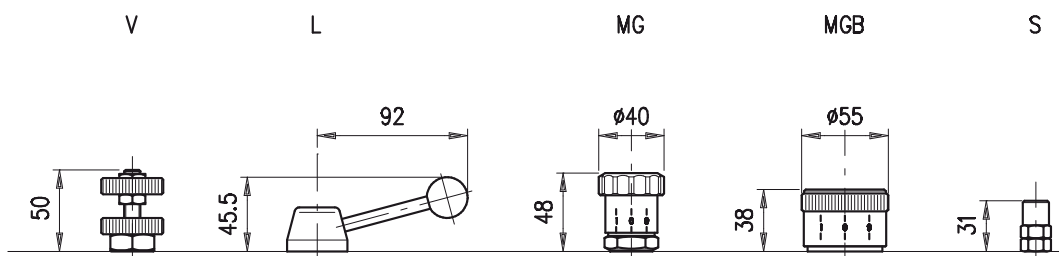
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• RATING DIAGRAMS

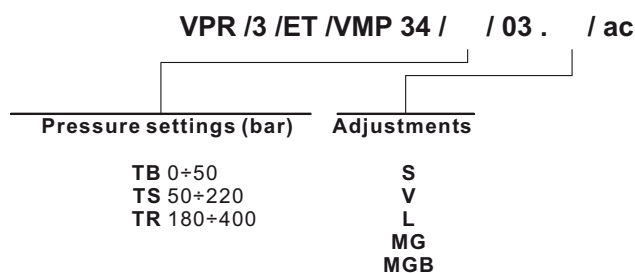


Oil viscosity 46 cSt

• ADJUSTMENTS



• CODE NUMBER



230-1220

Stromregelventil

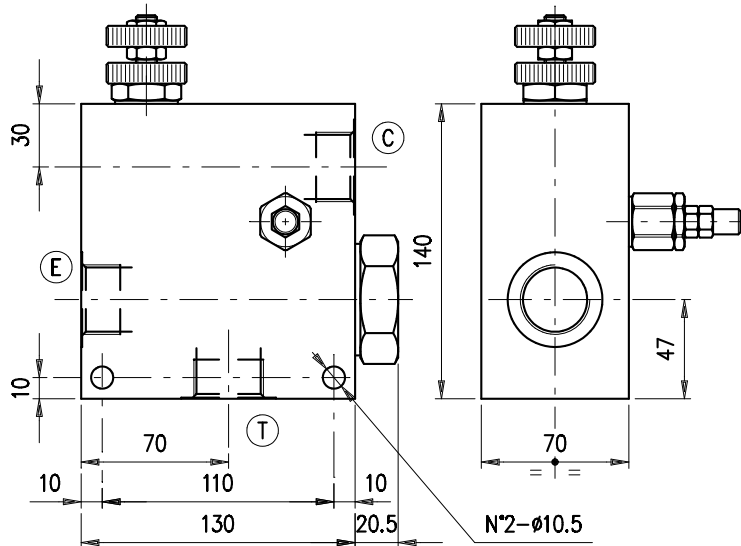
– 3 Wege druckkompensiert, mit Druckbegrenzungsventil G 1" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1230-3810	VPR/3/ET/VMP 100/MG/03.TS	1"-EB: 50-220bar-Skalenknauf	Alu	210	240/150	1623051101
230-1230-3815	VPR/3/ET/VMP 100/L/03.TS	1"-EB: 50-220bar-Hebelv.				1623051102
230-1230-3820	VPR/3/ET/VMP 100/V/03.TS.S	1"-EB: 50-220bar-Handrad				1623051103
230-1230-3825	VPR/3/ET/VMP 100/V/03.TB.S	1"-EB: 5-40bar-Handrad				1623051104
230-1230-3830	VPR/3/ET/VMP 100/V/03.TR.S	1"-EB: 180-350bar-Handrad				1623051106
230-1230-3835	VPR/3/ET/VMP 100/W/03.TS/ac	1"-EB: 50-220bar-IS	Stahl	350	240/150	1623052100
230-1230-3840	VPR/3/ET/VMP 100/V/03.TS/ac	1"-EB: 50-220bar-Handrad				1623052104
230-1230-3845	VPR/3/ET/VMP 100/MG/03.TS/ac	1"-EB: 50-220bar-Skalenknauf				1623052105
230-1230-3850	VPR/3/ET/VMP 100/V/03.TR/ac	1"-EB: 180-350bar-Handrad				1623052106

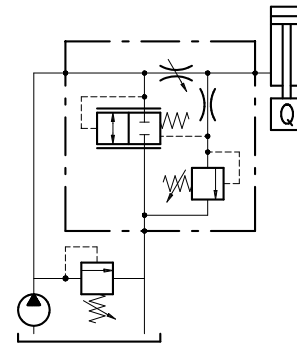
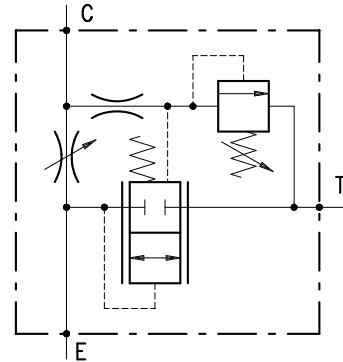
FLOW REGULATOR PRESSURE COMPENSATED
VPR /3 /ET /VMP 100

• DIMENSIONS (mm)



E	T	C
G 1"	G 1"	G 1"

• HYDRAULIC DIAGRAM



• DESCRIPTION

3-ways flow regulator, pressure compensated, with built-in relief valve on the checked way and exceeding flow to tank

• OPERATION

The valve is designed to provide flow adjustment from E to C by a variation of the oil flow section. Exceeding flow is concurrently discharged in T while a pressure built-in relief valve provides operative pressure control in C. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C do not alter the checked oil flow. On the contrary, eventual back pressure in T may cause inconstant capacity in C.

• PERFORMANCE

Maximum flow: E = 240 l/min. C = 150 l/min.

Maximum Pressure:

- aluminium body: 210 bar

- steel body: 350 bar

Maximum pressure compensation error: see performance graphs.

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets

- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body: 4.10 kg

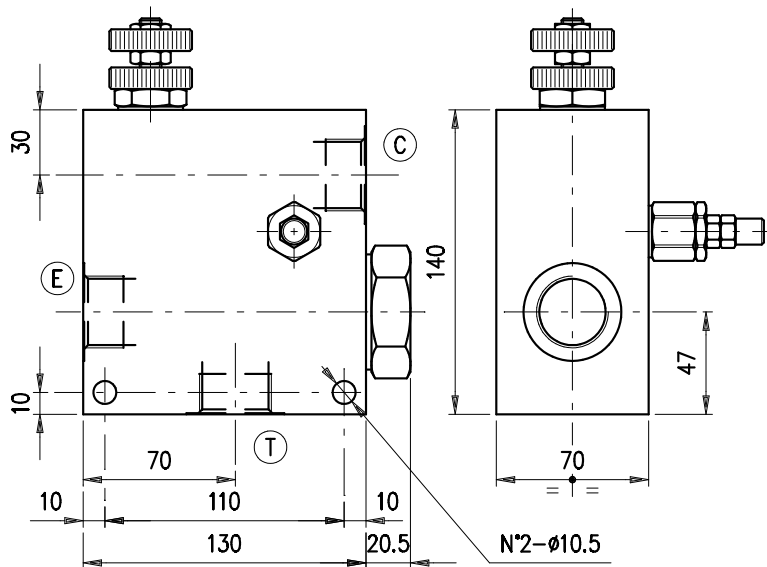
- steel body: 8.25 kg

Relief cartridge valve: see page D.1000.050.

230-1230

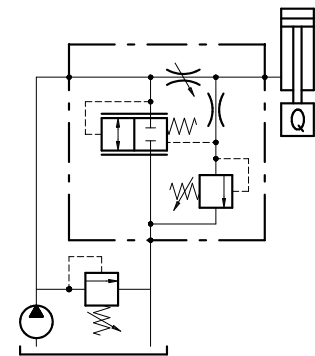
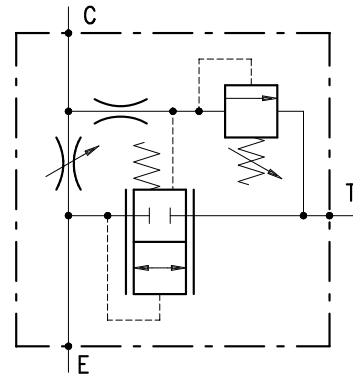
FLOW REGULATOR PRESSURE COMPENSATED
VPR /3 /ET /VMP 100

• DIMENSIONS (mm)



E	T	C
G 1"	G 1"	G 1"

• HYDRAULIC DIAGRAM



• DESCRIPTION

3-ways flow regulator, pressure compensated, with built-in relief valve on the checked way and exceeding flow to tank

• OPERATION

The valve is designed to provide flow adjustment from E to C by a variation of the oil flow section. Exceeding flow is concurrently discharged in T while a pressure built-in relief valve provides operative pressure control in C. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C do not alter the checked oil flow. On the contrary, eventual back pressure in T may cause inconstant capacity in C.

• PERFORMANCE

Maximum flow: E = 240 l/min. C = 150 l/min.

Maximum Pressure:

- aluminium body: 210 bar
- steel body: 350 bar

Maximum pressure compensation error: see performance graphs.

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body: 4.10 kg
- steel body: 8.25 kg

230-1230

Stromregelventil

– 3 Wege druckkompensiert, mit Druckbegrenzungsventil
und 2/2 Wege Entlastungsventil G 3/8" und G 1/2" –

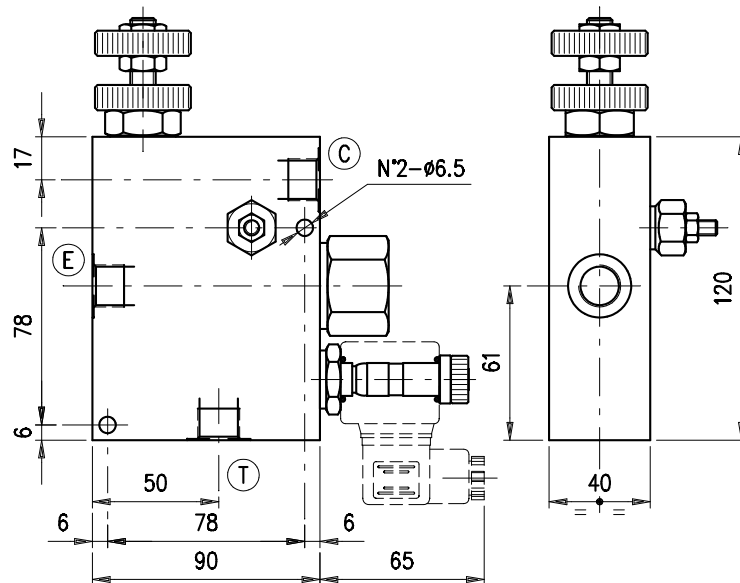


Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1280-3940	VPR/3/ET 38+VMP+VE.NA/V/02.TS	3/8"-EB: 50-220bar-Handrad	Alu	210	50/30	1624021100
230-1280-3945	VPR/3/ET 38+VMP+VE.NA/MG/02.TS	3/8"-EB: 50-220bar-Skalenknauf				1624021101
230-1280-3950	VPR/3/ET 38+VMP+VE.NA/L/02.TS	3/8"-EB: 50-220bar-Hebelv.				1624021102
230-1280-3955	VPR/3/ET 38+VMP+VE.NC/V/02.TS	3/8"-EB: 50-220bar-Handrad				1624021103
230-1280-3960	VPR/3/ET 38+VMP+VE.NC/MG/02.TS	3/8"-EB: 50-220bar-Skalenknauf				1624021104
230-1280-3965	VPR/3/ET 38+VMP+VE.NC/L/02.TS	3/8"-EB: 50-220bar-Hebelv.				1624021105
230-1280-3970	VPR/3/ET 38+VMP+VSE40.NA/V/02.TR/ac	3/8"-EB: 180-350bar-Handrad	Stahl	350		1624022100
230-1280-3975	VPR/3/ET 12+VMP+VE.NA/V/02.TS	1/2"-EB: 50-220bar-Handrad	Alu	210	90/50	1624031100
230-1280-3980	VPR/3/ET 12+VMP+VE.NA/MG/02.TS	1/2"-EB: 50-220bar-Skalenknauf				1624031101
230-1280-3985	VPR/3/ET 12+VMP+VE.NA/L/02.TS	1/2"-EB: 50-220bar-Hebelv.				1624031102
230-1280-3990	VPR/3/ET 12+VMP+VE.NC/V/02.TS	1/2"-EB: 50-220bar-Handrad				1624031103
230-1280-3995	VPR/3/ET 12+VMP+VE.NC/MG/02.TS	1/2"-EB: 50-220bar-Skalenknauf				1624031104
230-1280-4000	VPR/3/ET 12+VMP+VE.NC/L/02.TS	1/2"-EB: 50-220bar-Hebelv.				1624031105
230-1280-4005	VPR/3/ET 12+VMP+VE.NA/V/02.TV	1/2"-EB: 0-80bar-Handrad				1624031106
230-1280-4010	VPR/3/ET 12+VMP+VE.NC/MG/02.TS.V	1/2"-EB: 50-220bar-Skalenknauf				1624031107
230-1280-4015	VPR/3/ET 12+VMP+VE.NA/MG/02.TS/ac	1/2"-EB: 50-220bar-Skalenknauf	Stahl	350		1624032100
230-1280-4020	VPR/3/ET 12+VMP+VE.NA/V/02.TS/ac	1/2"-EB: 50-220bar-Handrad				1624032102

230-1280

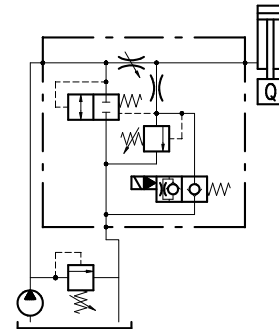
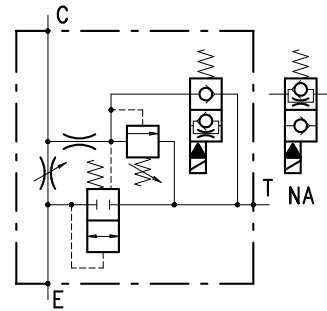
FLOW REGULATOR PRESSURE COMPENSATED
VPR /3 /ET 38 (12) + VMP

• DIMENSIONS (mm)



VPR/3/ET ...+VMP+VE	E	T	C
38	G 3/8	G 3/8	G 3/8
12	G 1/2	G 1/2	G 1/2

• HYDRAULIC DIAGRAM



• DESCRIPTION

3-ways flow regulator, pressure compensated and exceeding flow to tank, with built-in relief valve and discharge on the checked way.

• OPERATION

The valve is designed to provide flow adjustment from E to C by a variation of the oil flow section. Exceeding flow is concurrently discharged in T. A pressure built-in relief valve provides operative pressure control in C while the solenoid allows oil discharge of the checked flow. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C do not alter the checked oil flow. On the contrary, eventual back pressure in T may cause inconstant capacity in C.

• PERFORMANCE

Maximum flow:

- VPR/3/ET 38/VMP+VE: E = 50 l/min. C = 30 l/min.

- VPR/3/ET 12/VMP+VE: E = 90 l/min. C = 50 l/min.

Maximum Pressure:

- aluminium body: 210 bar

- steel body: 350 bar

Maximum pressure compensation error: see performance graphs.

Solenoids:

- BE/... (210 bar): see page Z.2001.100

- BE/... (350 bar): see page Z.2001.200

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets

- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body: 1.45 kg
- steel body: 3.08 kg

Cartridge valve:

- Pressure relief: see page 1.1000.000
- Solenoid (210 bar): see page L.1100.100
- Solenoid (350 bar): see page L.1100.250

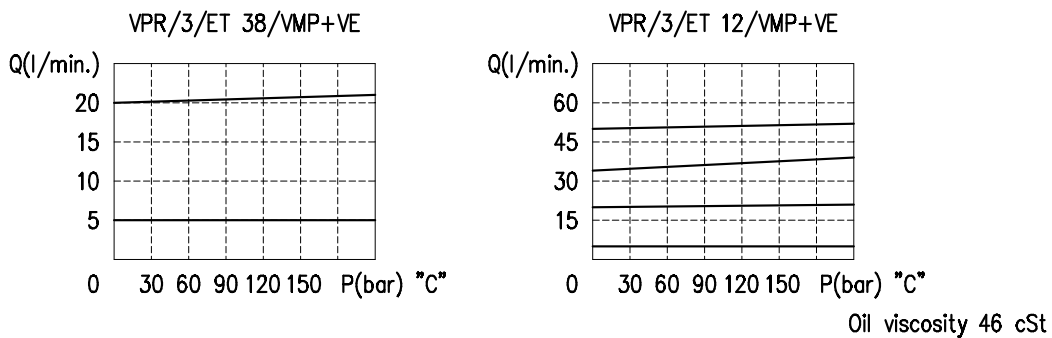
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

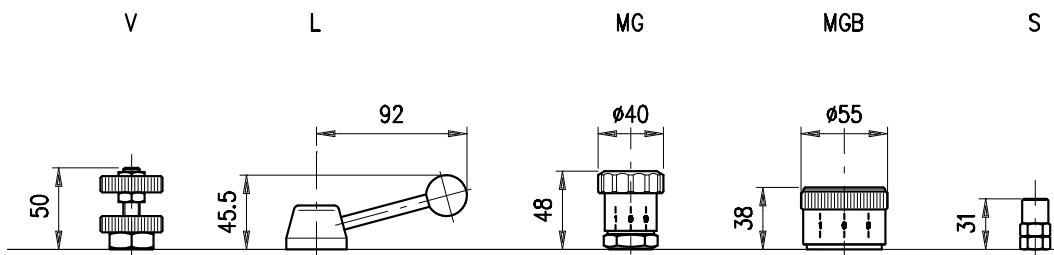
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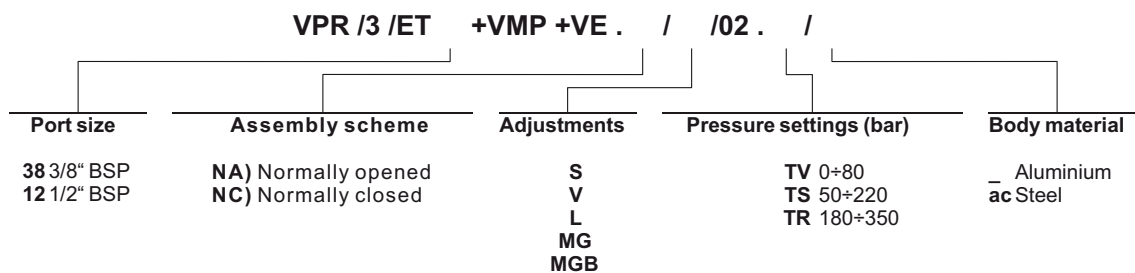
RATING DIAGRAMS



ADJUSTMENTS



CODE NUMBER



Stromregelventil

– 3 Wege druckkompensiert G 3/8" und G 1/2" –

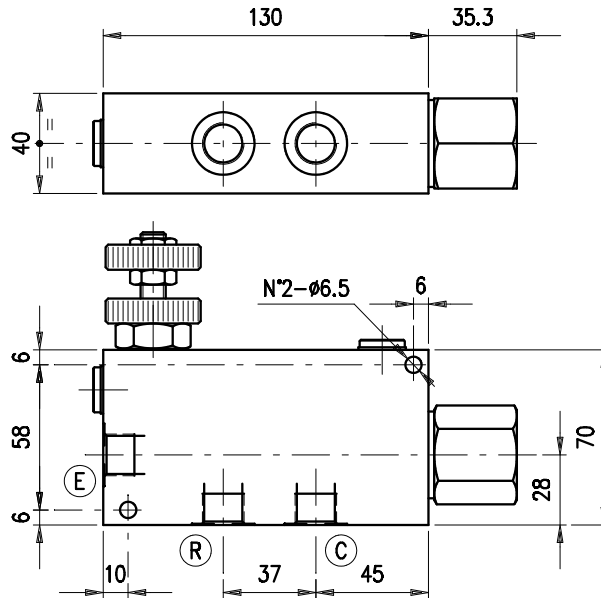


Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1320-4145	VPR/3/EP 38/V	3/8"-Handrad	Alu	210	50/30	1630021100
230-1320-4150	VPR/3/EP 38/MG	3/8"-Skalenknauf				1630021101
230-1320-4155	VPR/3/EP 38/L	3/8"-Hebelverstellung				1630021102
230-1320-4160	VPR/3/EP 38/V/ac	3/8"-Handrad	Stahl	350		1630022100
230-1320-4165	VPR/3/EP 38/MG/ac	3/8"-Skalenknauf				1630022101
230-1320-4170	VPR/3/EP 38/L/ac	3/8"-Hebelverstellung				1630022104
230-1320-4175	VPR/3/EP 12/V	1/2"-Handrad	Alu	210	90/50	1630031100
230-1320-4180	VPR/3/EP 12/MG	1/2"-Skalenknauf				1630031101
230-1320-4185	VPR/3/EP 12/L	1/2"-Hebelverstellung				1630031102
230-1320-4190	VPR/3/EP 12/V/ac	1/2"-Handrad	Stahl	350		1630032100
230-1320-4195	VPR/3/EP 12/MG/ac	1/2"-Skalenknauf				1630032103
230-1320-4200	VPR/3/EP 12/L/ac	1/2"-Hebelverstellung				1630032107
230-1320-4205	VPR/3/EP 12/S/ac	1/2"-Hutmutter			1630032109	

230-1320

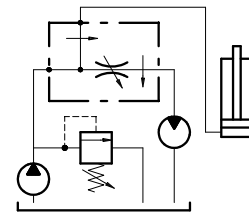
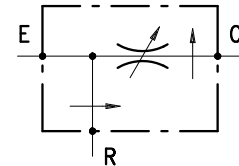
FLOW REGULATOR PRESSURE COMPENSATED
VPR /3 /EP 38 (12)

• DIMENSIONS (mm)



VPR/3/EP	E	R	U
38	G 3/8	G 3/8	G 3/8
12	G 1/2	G 1/2	G 1/2

• HYDRAULIC DIAGRAM



• DESCRIPTION

3-ways flow regulator, pressure compensated and exceeding flow to pressure.

• OPERATION

The valve is designed to keep constant flow in C and concurrently discharge exceeding flow in R for other applications. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C and R do not alter the constant flow in C. Make sure that a pressure relief valve is always used between the pump and the valve.

• PERFORMANCE

Maximum flow:

VPR/3/EP 38: E = 50 l/min. Qmax in C = 30 l/min.

VPR/3/EP 12: E = 90 l/min. Qmax in C = 50 l/min.

Maximum Pressure:

- aluminium body 210 bar

- steel body 350 bar

Maximum pressure compensation error: see performance graphs.

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets

- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- VPR/3/EP 38: aluminium body 1.25 kg - steel body 2.85 kg

230-1320

- VPR/3/EP 12: aluminium body 1.35 kg - steel body 2.80 kg

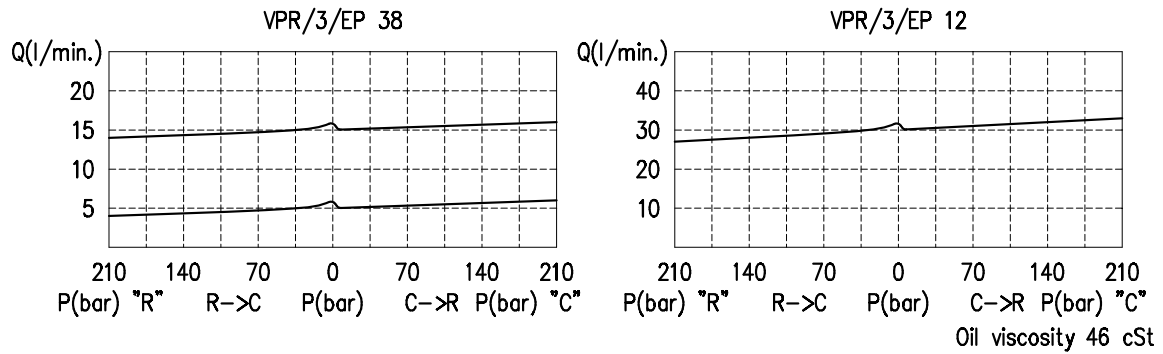
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

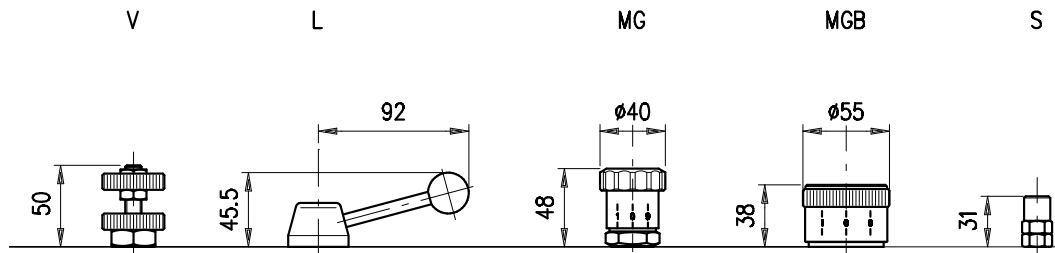
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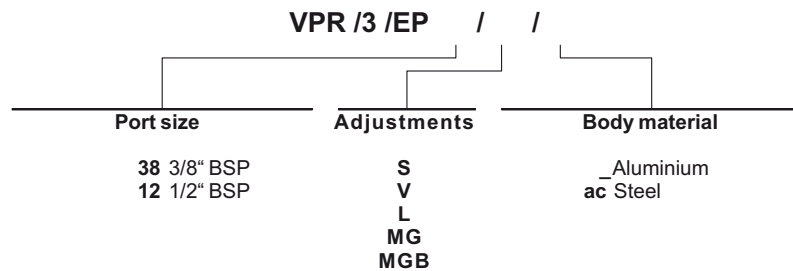
• RATING DIAGRAMS



• ADJUSTMENTS



• CODE NUMBER



Stromregelventil

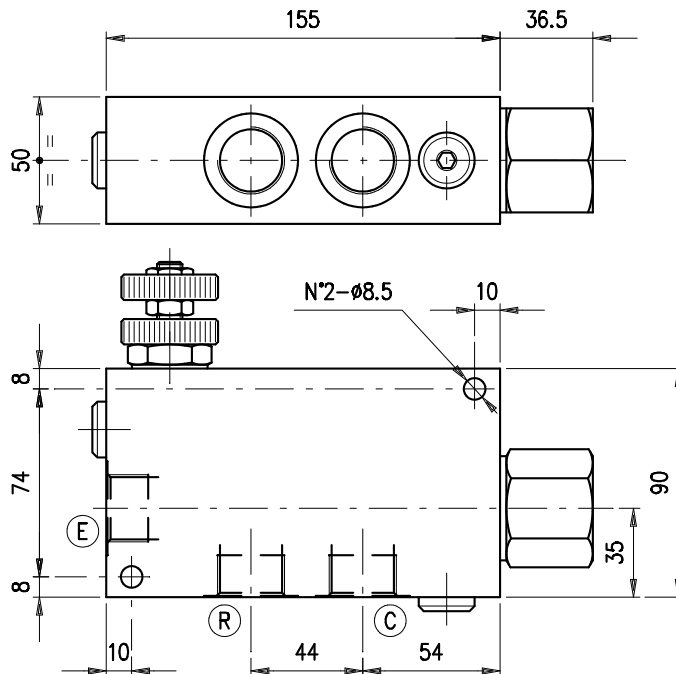
– 3 Wege druckkompensiert, Restmenge druckbeaufschlagbar, G 3/4" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1330-4210	VPR/3/EP 34/V	3/4"-Handrad	Alu	210	150/90	1630041100
230-1330-4215	VPR/3/EP 34/MG	3/4"-Skalenknauf				1630041101
230-1330-4220	VPR/3/EP 34/L	3/4"-Hebelverstellung				1630041102
230-1330-4225	VPR/3/EP 34/V/ac	3/4"-Handrad	Stahl	350	150/90	1630042100
230-1330-4230	VPR/3/EP 34/MG/ac	3/4"-Skalenknauf				1630042103
230-1330-4235	VPR/3/EP 34/L/ac	3/4"-Hebelverstellung				1630042106
230-1330-4240	VPR/3/EP 34/V/ac SAE	3/4"-SAEHandrad				1630042200

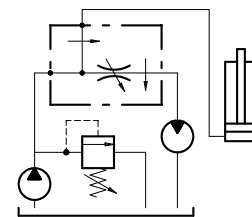
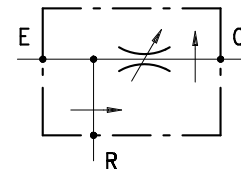
FLOW REGULATOR PRESSURE COMPENSATED
VPR /3 /EP 34

• DIMENSIONS (mm)



E	R	U
G 3/4	G 3/4	G 3/4

• HYDRAULIC DIAGRAM



• DESCRIPTION

3-ways flow regulator, pressure compensated and exceeding flow to pressure.

• OPERATION

The valve is designed to keep constant flow in C and concurrently discharge exceeding flow in R for other applications. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C and R do not alter the constant flow in C. Make sure that a pressure relief valve is always used between the pump and the valve.

• PERFORMANCE

Maximum flow: E = 150 l/min. Qmax in C = 90 l/min.

Maximum Pressure:

- aluminium body: 210 bar
- steel body: 350 bar

Maximum pressure compensation error: see performance graphs.

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body: 2.46 kg
- steel body: 4.95 kg

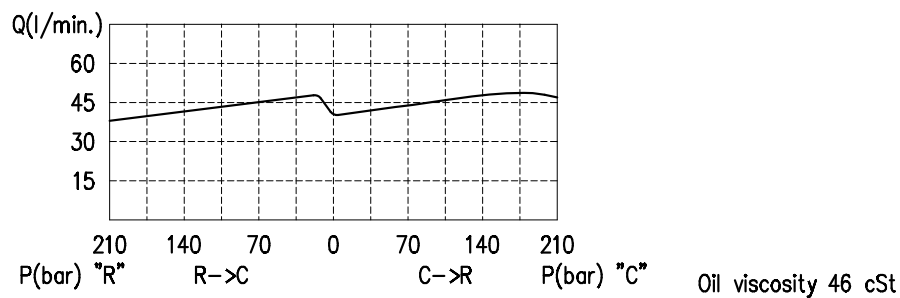
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

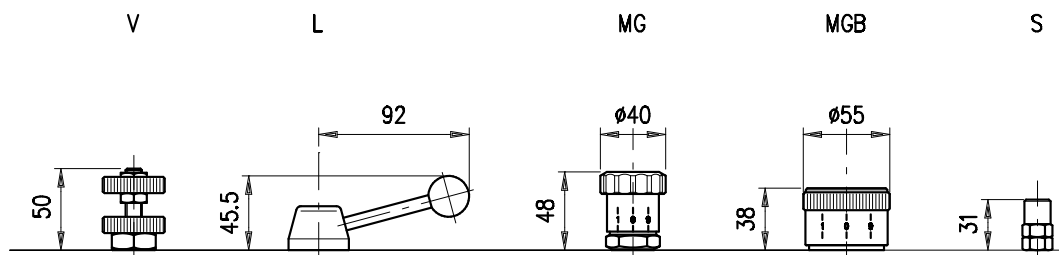
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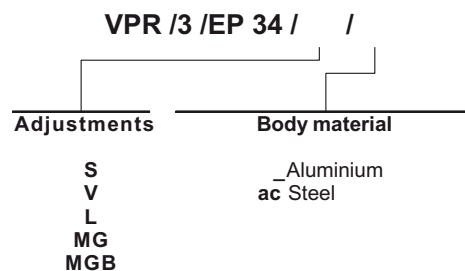
• RATING DIAGRAMS



• ADJUSTMENTS



• CODE NUMBER



Stromregelventil

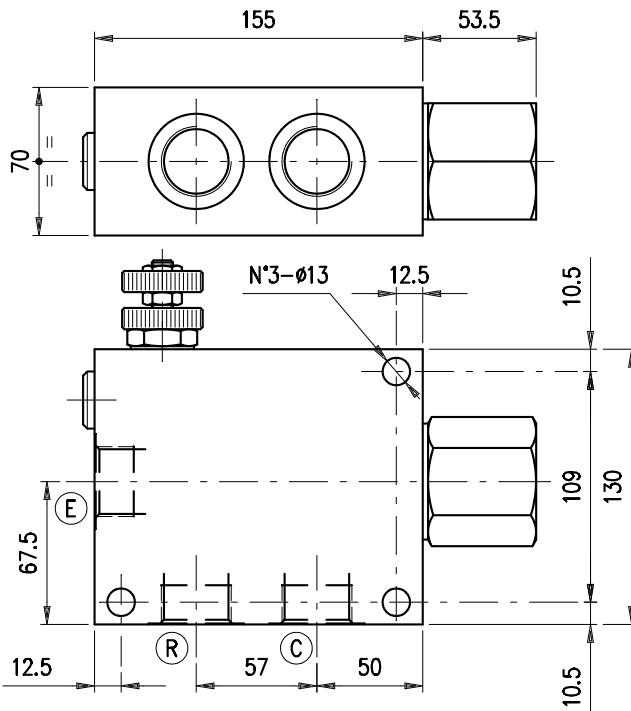
– 3 Wege druckkompensiert, Restmenge druckbeaufschlagbar, G 1" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1340-4245	VPR/3/EP 100/V	1"-Handrad	Alu	210	240/150	1630051100
230-1340-4250	VPR/3/EP 100/MG	1"-Skalenknauf				1630051101
230-1340-4255	VPR/3/EP 100/L	1"-Hebelverstellung				1630051102
230-1340-4260	VPR/3/EP 100/V/ac	1"-Handrad	Stahl	350		1630052100
230-1340-4265	VPR/3/EP 100/MG/ac	1"-Skalenknauf				1630052101
230-1340-4270	VPR/3/EP 100/L/ac	1"-Hebelverstellung				1630052102

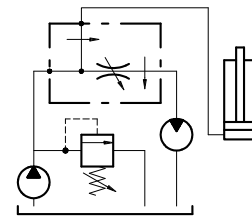
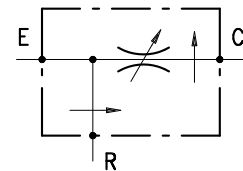
FLOW REGULATOR PRESSURE COMPENSATED
VPR /3 /EP 100

• DIMENSIONS (mm)



E	R	U
G 1"	G 1"	G 1"

• HYDRAULIC DIAGRAM



• DESCRIPTION

3-ways flow regulator, pressure compensated and exceeding flow to pressure.

• OPERATION

The valve is designed to keep constant flow in C and concurrently discharge exceeding flow in R for other applications. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C and R do not alter the constant flow in C. Make sure that a pressure relief valve is always used between the pump and the valve.

• PERFORMANCE

Maximum flow: E = 240 l/min. Qmax in C = 150 l/min.

Maximum Pressure:

- aluminium body: 210 bar
- steel body: 350 bar

Maximum pressure compensation error: see performance graphs.

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body: 5.15 kg
- steel body: 9.45 kg.

230-1340

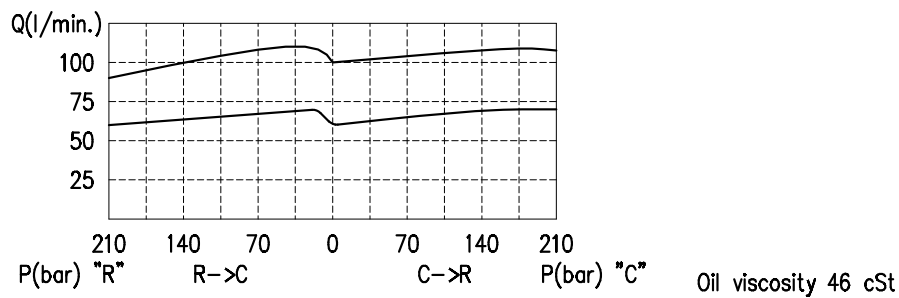
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

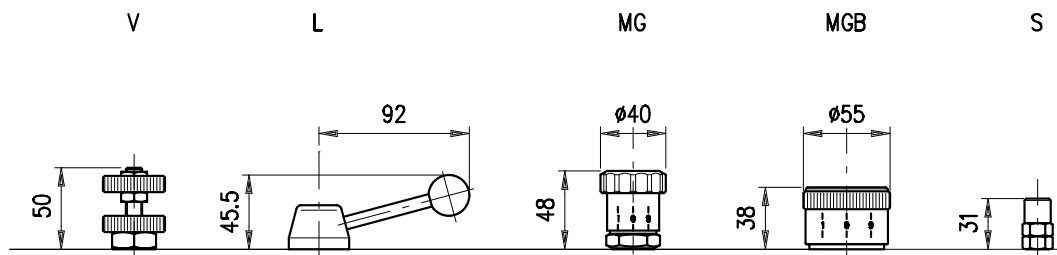
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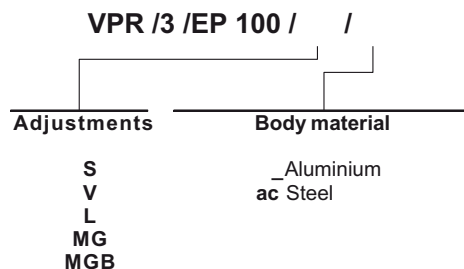
• RATING DIAGRAMS



• ADJUSTMENTS



• CODE NUMBER



Stromregelventil

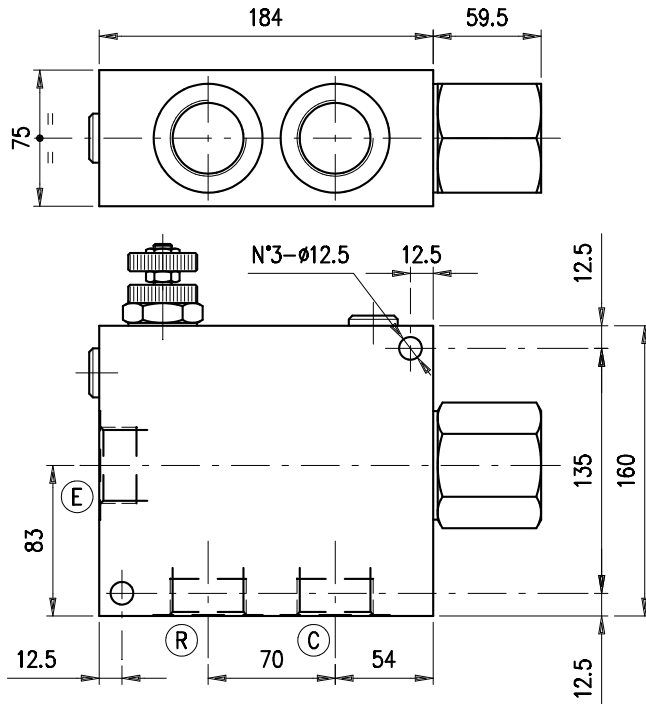
– 3 Wege druckkompensiert, Restmenge druckbeaufschlagbar, G 1 1/4" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1350-4275	VPR/3/EP 114/V	1 1/4"-Handrad	Alu	210	450/250	1630061100
230-1350-4280	VPR/3/EP 114/MG	1 1/4"-Skalenknauf				1630061101
230-1350-4285	VPR/3/EP 114/L	1 1/4"-Hebelverstellung				1630061102
230-1350-4290	VPR/3/EP 114/V/ac	1 1/4"-Handrad	Stahl	350		1630062100
230-1350-4295	VPR/3/EP 114/MG/ac	1 1/4"-Skalenknauf				1630062101
230-1350-4300	VPR/3/EP/RL 38/V					1631021100

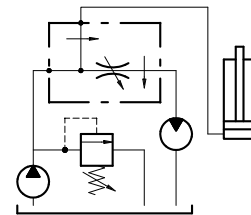
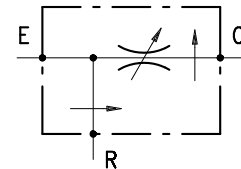
FLOW REGULATOR PRESSURE COMPENSATED
VPR /3 /EP 114

• DIMENSIONS (mm)



E	R	U
G 1" 1/4	G 1" 1/4	G 1" 1/4

• HYDRAULIC DIAGRAM



• DESCRIPTION

3-ways flow regulator, pressure compensated and exceeding flow to pressure.

• OPERATION

The valve is designed to keep constant flow in C and concurrently discharge exceeding flow in R for other applications. Best performance of the valve is assured when the flow in E is at least 10% bigger than in C. Pressure variations in C and R do not alter the constant flow in C. Make sure that a pressure relief valve is always used between the pump and the valve.

• PERFORMANCE

Maximum flow: E = 450 l/min. Qmax in C = 250 l/min.

Maximum Pressure:

- aluminium body: 210 bar
- steel body: 350 bar

Maximum pressure compensation error: see performance graphs.

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body: 7.45 kg
- steel body: 15.80 kg

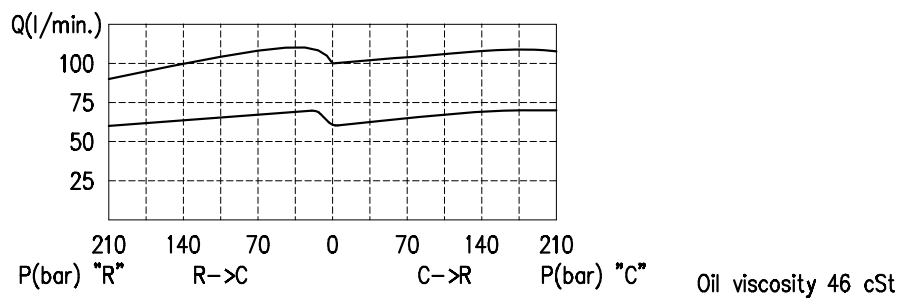
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

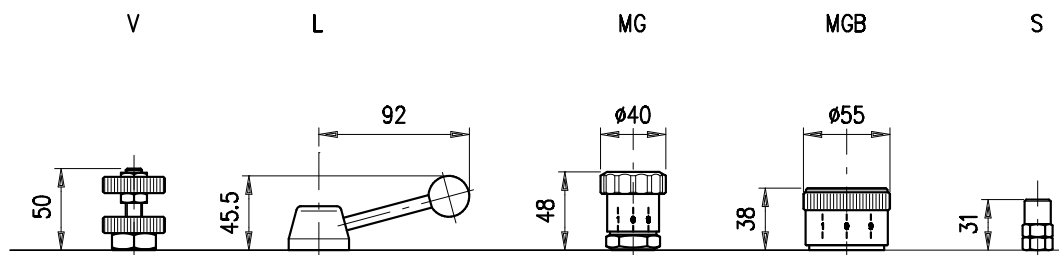
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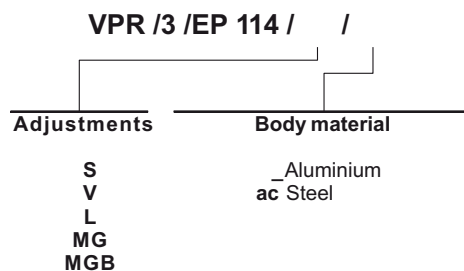
• RATING DIAGRAMS



• ADJUSTMENTS



• CODE NUMBER



Stromteiler

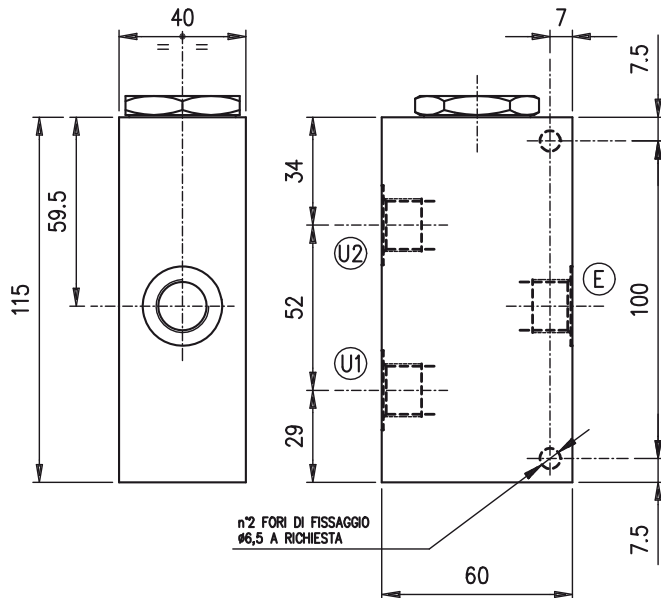
– G 3/8" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1410-4625	VDFR 38-12	3/8"-Teilung 1:1-fest eingestellt	Alu	210	4 - 12	1650021100
230-1410-4635	VDFR 38-12/ac	3/8"-Teilung 1:1-fest eingestellt	Stahl	350		1650022100

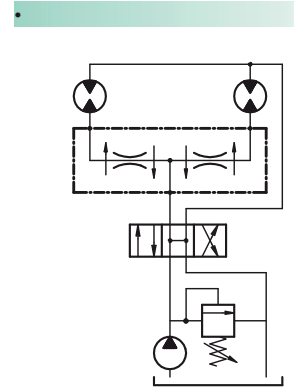
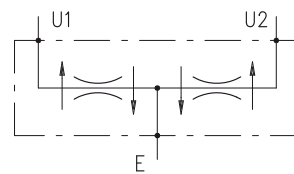
FLOW REGULATOR PRESSURE COMPENSATED
VDFR 38-12

• DIMENSIONS (mm)



E	U1-U2
G 3/8	G 3/8

• HYDRAULIC DIAGRAM



• DESCRIPTION

Flow dividers/combiners, pressure compensated.

• OPERATION

The valve is designed to divide the incoming flow in E into two separate deliveries U1 and U2 depending on the valve divide ratio. Pressure variations in U1 and U2 do not alter the outlet delivery. In the opposite direction, the valve works combining together the inlet flows U1 and U2.

• PERFORMANCE

Maximum flow: 4-12 l/min.

Maximum pressure:

- aluminium body: 210 bar
- steel body: 350 bar

Standard division ratio:

- 50%-50% (standard)
- 33%-66% (on request)
- 30%-70% (on request)
- 20%-80% (on request)
- 25%-75% (on request)
- 40%-60% (on request)

Maximum division error: - 5% of the oil flow in U1 or U2 and 120 bar pressure difference between U1 and U2. (Division rate 50%+50%).

Working temperature:

- Minimum -25°C max 90°C with standard BUNAN gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

230-1410

Filter: see page Z.9000.000.

Weight:

- aluminium body: 0.85 kg
- steel body: 1.86 kg

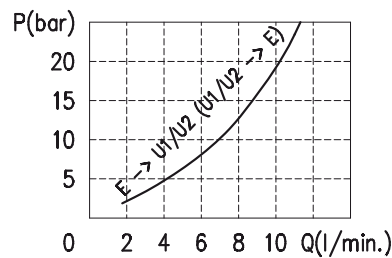
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

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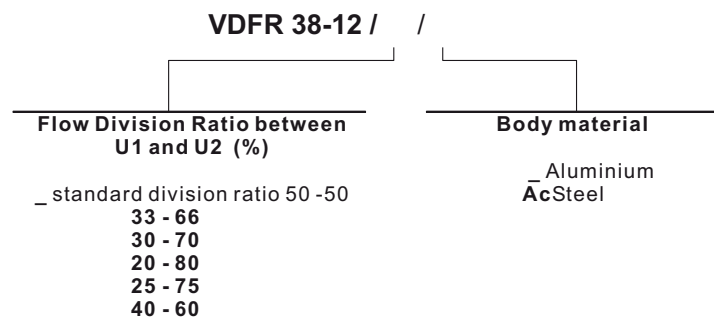
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• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER



Stromteiler

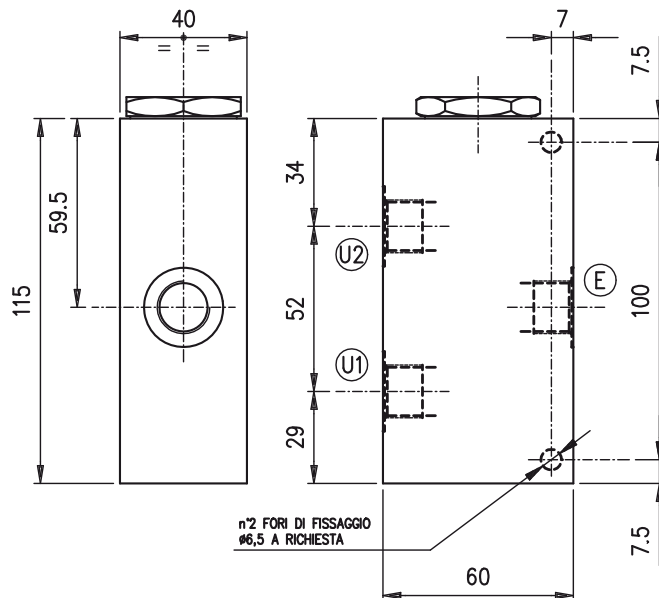
– G 3/8" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1420-4630	VDFR 38-24	3/8"-Teilung 1:1-fest eingestellt	Alu	210	12 - 24	1650021101
230-1420-4640	VDFR 38-24/ac	3/8"-Teilung 1:1-fest eingestellt	Stahl	350		1650022101

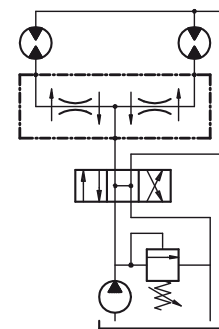
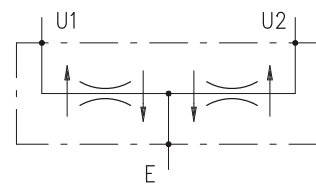
FLOW REGULATOR PRESSURE COMPENSATED
VDFR 38-24

• DIMENSIONS (mm)



E	U1-U2
G 3/8	G 3/8

• HYDRAULIC DIAGRAM



• DESCRIPTION

Flow dividers/combiners, pressure compensated.

• OPERATION

The valve is designed to divide the incoming flow in E into two separate deliveries U1 and U2 depending on the valve divide ratio. Pressure variations in U1 and U2 do not alter the outlet delivery. In the opposite direction, the valve works combining together the inlet flows U1 and U2.

• PERFORMANCE

Maximum flow: 12-24 l/min.

Maximum pressure:

- aluminium body: 210 bar
- steel body: 350 bar

Standard division ratio:

- 50%-50% (standard)
- 33%-66% (on request)
- 30%-70% (on request)
- 20%-80% (on request)
- 25%-75% (on request)
- 40%-60% (on request)

Maximum division error: -5% of the oil flow in U1 or U2 and 120 bar pressure difference between U1 and U2. (Division rate 50%+50%).

Working temperature:

- Minimum -25°C max 90°C with standard BUNAN gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

230-1420

Filter: see page Z.9000.000.

Weight:

- aluminium body: 0.85 kg
- steel body: 1.86 kg

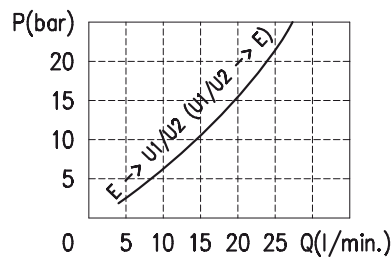
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

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• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER

VDFR 38-24 / /

Flow Division Ratio between U1 and U2 (%)

- _ standard division ratio 50 -50
- 33 - 66
- 30 - 70
- 20 - 80
- 25 - 75
- 40 - 60

Body material

- _ Aluminium
- ac Steel

Stromteiler

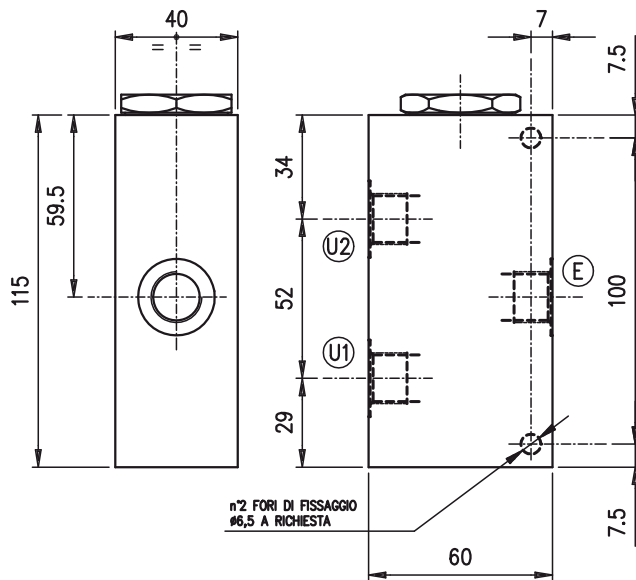
– G 1/2" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1430-4645	VDFR 12-40	1/2"-Teilung 1:1-fest eingestellt	Alu	210	24 - 40	1650031100
230-1430-4650	VDFR 12-40/ac	1/2"-Teilung 1:1-fest eingestellt	Stahl	350		1650032100

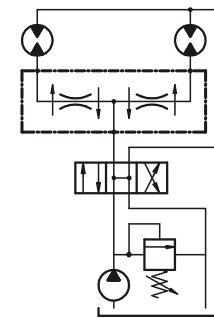
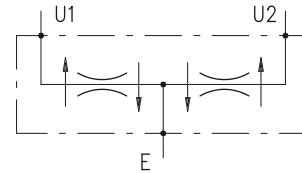
FLOW REGULATOR PRESSURE COMPENSATED
VDFR 12-40

• DIMENSIONS (mm)



E	U1-U2
G 1/2	G 3/8

• HYDRAULIC DIAGRAM



• DESCRIPTION

Flow dividers/combiners, pressure compensated.

• OPERATION

The valve is designed to divide the incoming flow in E into two separate deliveries U1 and U2 depending on the valve divide ratio. Pressure variations in U1 and U2 do not alter the outlet delivery. In the opposite direction, the valve works combining together the inlet flows U1 and U2.

• PERFORMANCE

Maximum flow: 24-40 l/min.

Maximum pressure:

- aluminium body: 210 bar
- steel body: 350 bar

Standard division ratio:

- 50%-50% (standard)
- 33%-66% (on request)
- 30%-70% (on request)
- 20%-80% (on request)
- 25%-75% (on request)
- 40%-60% (on request)

Maximum division error: - 5% of the oil flow in U1 or U2 and 120 bar pressure difference between U1 and U2. (Division rate 50%+50%).

Working temperature:

- Minimum -25°C max 90°C with standard BUNAN gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

230-1430

Filter: see page Z.9000.000.

Weight:

- aluminium body: 0.85 kg
- steel body: 1.86 kg

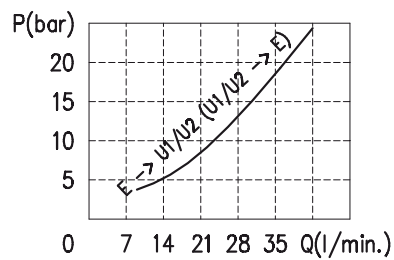
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

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• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER

VDFR 12-40 / /

Flow Division Ratio between U1 and U2 (%)

- _ standard division ratio 50 -50
- 33 - 66**
- 30 - 70**
- 20 - 80**
- 25 - 75**
- 40 - 60**

Body material

- _ Aluminium
- ac Steel**

Stromteiler

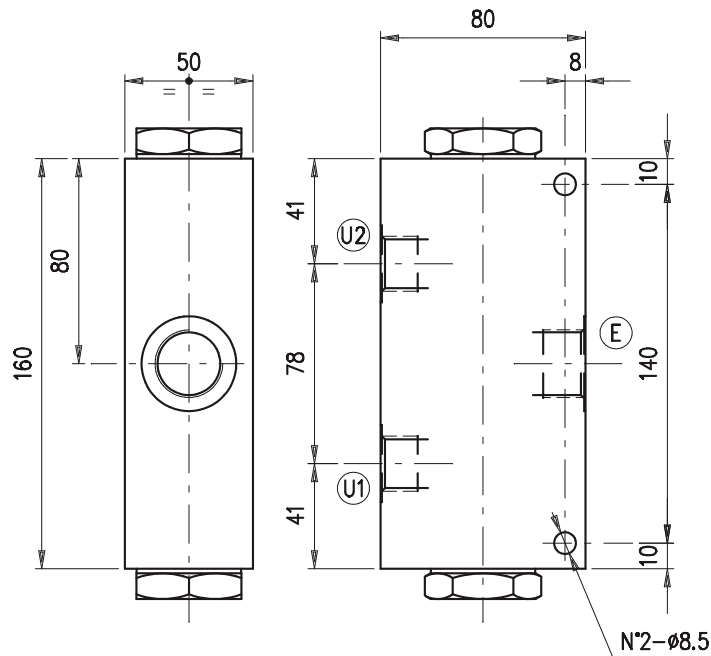
– G 3/4" –



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1440-4655	VDFR 34-90	3/4"-Teilung 1:1-fest eingestellt	Alu	210	40 - 90	1650041100
230-1440-4660	VDFR 34-90/ac	3/4"-Teilung 1:1-fest eingestellt	Stahl	350		1650042101

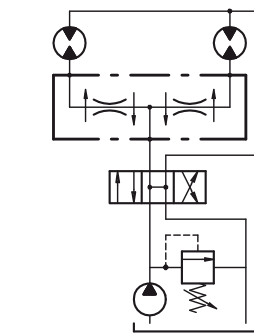
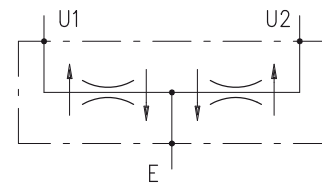
FLOW REGULATOR PRESSURE COMPENSATED
VDFR 34-90

• DIMENSIONS (mm)



E	U1-U2
G 3/4	G 1/2

• HYDRAULIC DIAGRAM



• DESCRIPTION

Flow dividers/combiners, pressure compensated.

• OPERATION

The valve is designed to divide the incoming flow in E into two separate deliveries U1 and U2 depending on the valve divide ratio. Pressure variations in U1 and U2 do not alter the outlet delivery. In the opposite direction, the valve works combining together the inlet flows U1 and U2.

• PERFORMANCE

Maximum flow: 40-90 l/min.

Maximum pressure:

- aluminium body: 210 bar

- steel body: 350 bar

Standard division ratio:

- 50%-50% (standard)

- 33%-66% (on request)

- 30%-70% (on request)

- 20%-80% (on request)

- 25%-75% (on request)

- 40%-60% (on request)

Maximum division error: - 5% of the oil flow in U1 or U2 and 120 bar pressure difference between U1 and U2. (Division rate 50%+50%).

Working temperature:

- Minimum -25°C max 90°C with standard BUNAN gaskets

- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

230-1440

Filter: see page Z.9000.000.

Weight:

- aluminium body: 2.10 kg
- steel body: 4.42 kg

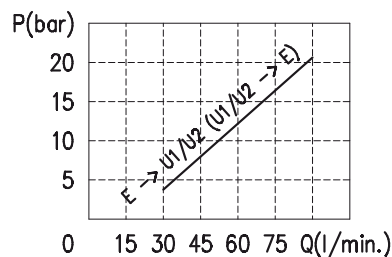
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

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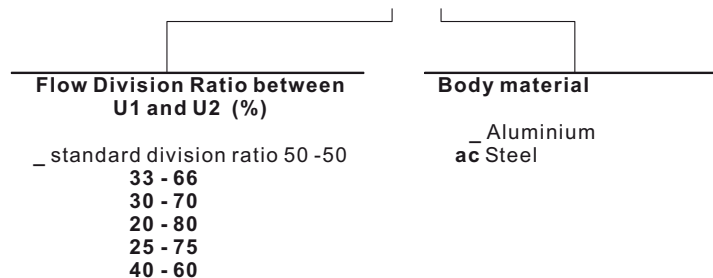
• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER

VDFR 34-90 / /



Stromteiler

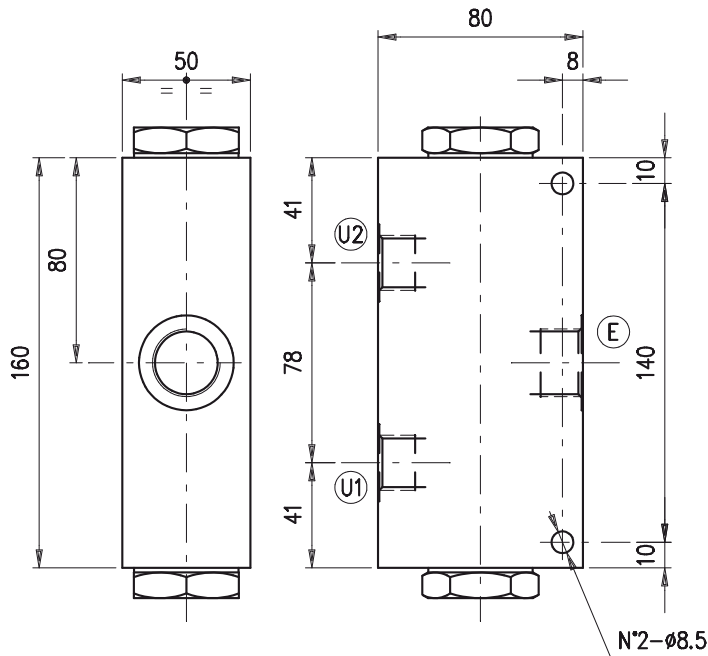
- G 1" -



Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1450-4665	VDFR 100-150	1"-Teilung 1:1-fest eingestellt	Alu	210	90 - 150	1650051100
230-1450-4670	VDFR 100-150/ac	1"-Teilung 1:1-fest eingestellt	Stahl	350		1650052100

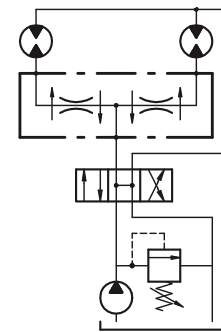
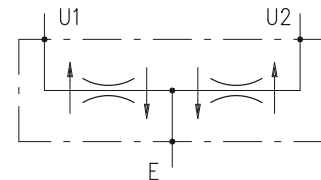
FLOW REGULATOR PRESSURE COMPENSATED
VDFR 100-150

• DIMENSIONS (mm)



E	U1-U2
G 1"	G 3/4

• HYDRAULIC DIAGRAM



• DESCRIPTION

Flow dividers/combiners, pressure compensated.

• OPERATION

The valve is designed to divide the incoming flow in E into two separate deliveries U1 and U2 depending on the valve divide ratio. Pressure variations in U1 and U2 do not alter the outlet delivery. In the opposite direction, the valve works combining together the inlet flows U1 and U2.

• PERFORMANCE

Maximum flow: 90-150 l/min.

Maximum pressure:

- aluminium body: 210 bar

- steel body: 350 bar

Standard division ratio:

- 50%-50% (standard)

- 33%-66% (on request)

- 40%-60% (on request)

Maximum division error: - 5% of the oil flow in U1 or U2 and 120 bar pressure difference between U1 and U2. (Division rate 50%+50%).

Working temperature:

- Minimum -25°C max 90°C with standard BUNAN gaskets

- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- aluminium body 2.07 kg

230-1450

- steel body 4.27 kg

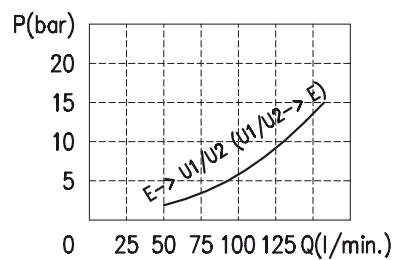
Material: internal components made out of high-grade steel duly treated and fabricated.

For more information please ask our technical office.

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• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER

VDFR 100-150 / /

**Flow Division Ratio between
U1 and U2 (%)**

_ standard division ratio 50 -50
33 - 66
40 - 60

Body material

_ Aluminium
ac Steel

Sitzventile

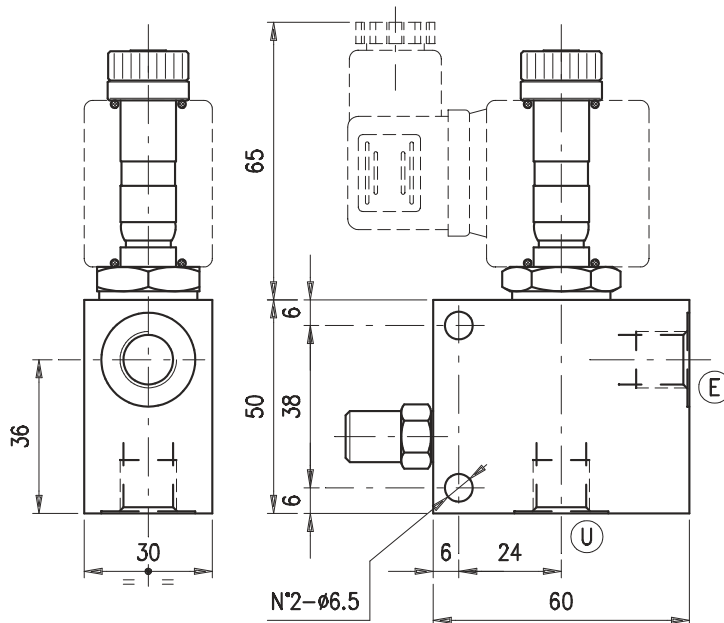
– 2/2 Wege Sitzventil mit Nothand G 1/4" –

Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1600-4890	VE/B 14/NC	1/4"	Alu	210	20	1720011100
230-1600-4895	VE/B 14/NA	1/4"				1720011101
230-1600-4900	VE/B 14 NC/ac	1/4"	Stahl	350		1720012100
230-1600-4905	VE/B 14 NA/ac	1/4"				1720012101

230-1600

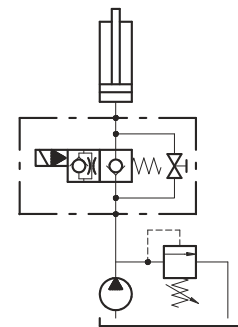
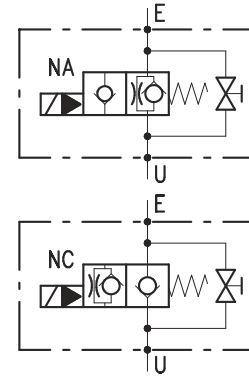
SOLENOID VALVES
VE /B 14 (38/VP)

• DIMENSIONS (mm)



VE/B	E-U
14	G 1/4
38/VP	G 3/8

• HYDRAULIC DIAGRAM



• DESCRIPTION

2-way electric valves, pilot-operated, poppet type.

• OPERATION

With the NA (normally opened) valve version and dropped-out solenoid, the oil flow is free from E to U and is restricted by a 0.4mm large hole in the opposite direction. When the solenoid is energized the flow is stopped from E to U and is free from U to E.

With the NC (normally closed) valve version and dropped out solenoid, the oil flow is stopped from E to U and is free from U to E. When the solenoid is energized the flow is free from E to U and is restricted by a 0.4mm large hole in the opposite direction.

• PERFORMANCE

Maximum flow: 20 l/min.

Maximum pressure: 210 bar (both with aluminium and steel body)

Solenoids: BE/... see page Z.2001.100.

Oil leaks from E to U: 0.10 cc/minute (2 drops) at 210 bar and oil viscosity of 46 cSt

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- 0.32 kg (aluminium body)
- 0.69 kg (steel body)

Cartridge used: see page L.1100.100.

Material: high-grade steel duly treated and fabricated.

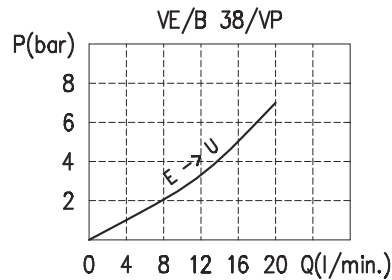
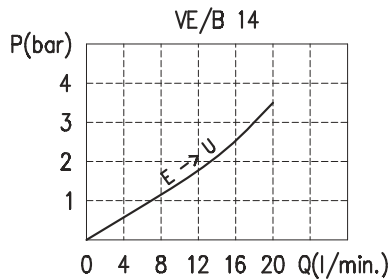
230-1600

For more information please ask our technical office.

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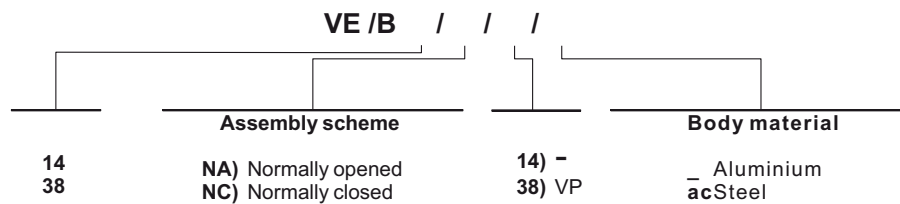
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• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER



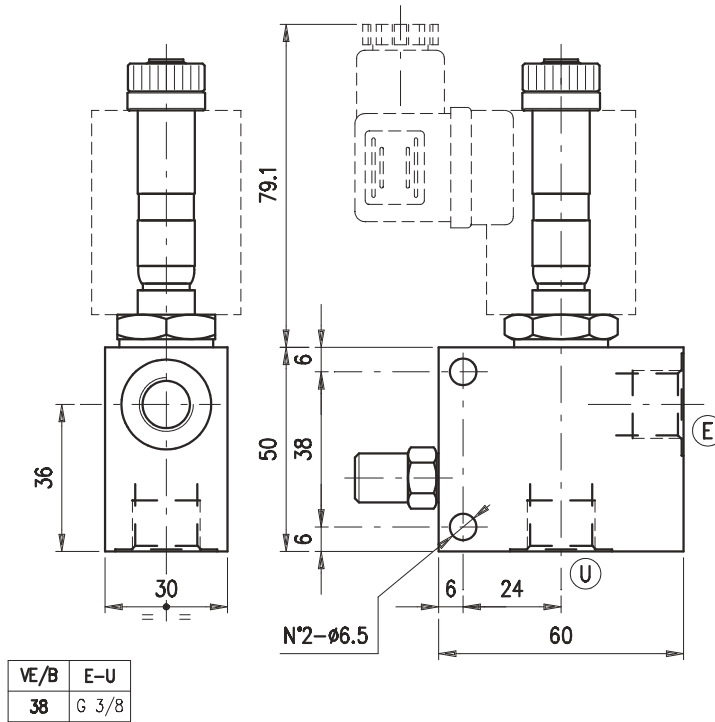
Sitzventile

– 2/2 Wege Sitzventil mit Nothand G 3/8" –

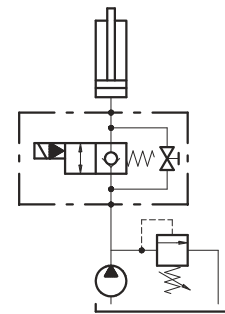
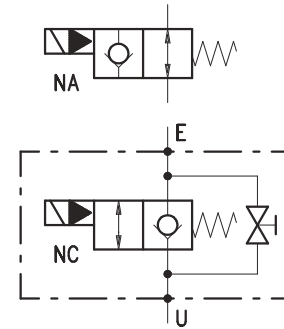
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1610-4910	VE/B 38 NC	3/8"	Alu	210	40	1720021105
230-1610-4915	VE/B 38/NA	3/8"				1720021106
230-1610-4920	VE/B 38/NC/ac	3/8"	Stahl	1720022102		
230-1610-4925	VE/B 38/NA/ac	3/8"		1720022101		

SOLENOID VALVES
VE /B 38

• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• DESCRIPTION

2-way electric valves, pilot-operated, poppet type.

• OPERATION

With the NA (normally opened) valve version and dropped-out solenoid, the oil flow is free from E to U and vice versa. When the solenoid is energized the flow is stopped from E to U and is free from U to E.

With the NC (normally closed) valve version and dropped out solenoid, the oil flow is stopped from E to U and is free from U to E. When the solenoid is energized the flow is free both from E to U and vice versa.

• PERFORMANCE

Maximum flow: 40 l/min.

Maximum pressure:

- Aluminium body 210 bar
- Steel body 350 bar

Solenoids: BE/... see page Z.2001.100. NOTE: BT...RAC solenoids and special connector should be strictly used with the NA version powered by AC current

Oil leaks from E to U: 0.10 cc/minute (2 drops) at 210 bar and oil viscosity of 46 cSt

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- 0.34 kg (aluminium body)
- 0.71 kg (steel body)

230-1610

Cartridge used: see page L.1100.250.

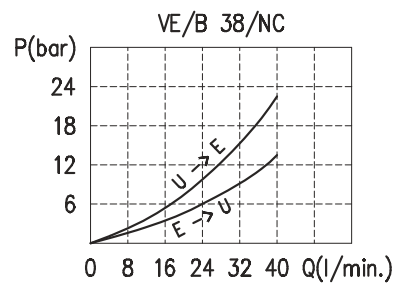
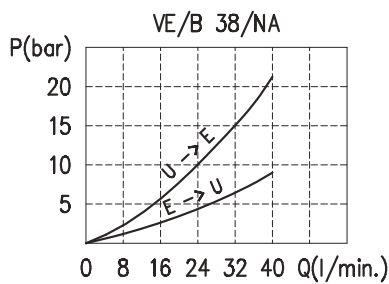
Material: high-grade steel duly treated and fabricated.

For more information please ask our technical office.

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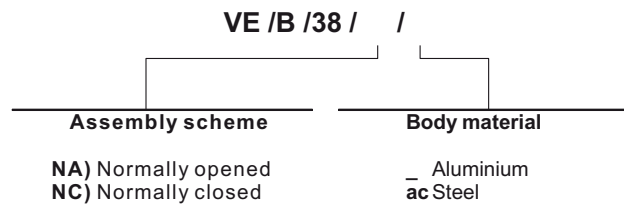
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• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER



Sitzventile

– 2/2 Wege Sitzventil mit Nothand G 1/2" und G 3/4" –

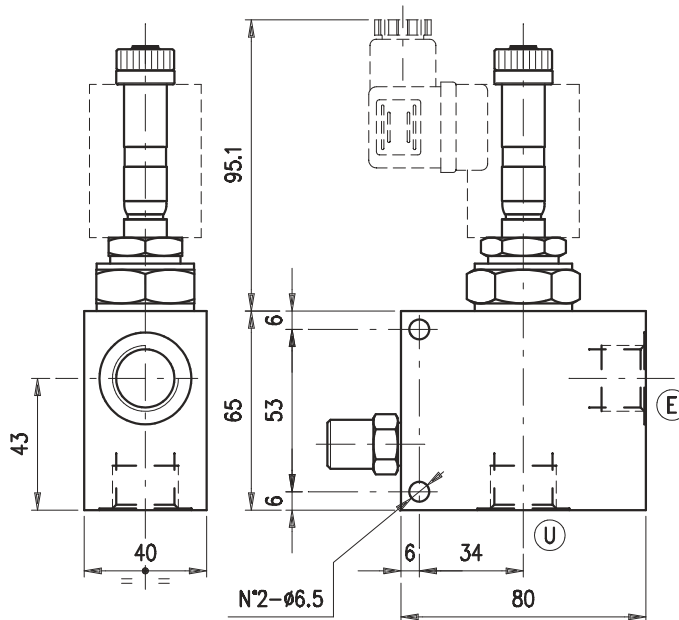


Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1620-4930	VE/B 12/NC	1/2"	Alu	210	60	1720031102
230-1620-4935	VE/B 12/NA	1/2"				1720031103
230-1620-4940	VE/B 12/NC/ac	1/2"	Stahl	350		1720032101
230-1620-4945	VE/B 12/NA/ac	1/2"		1720032102		
230-1620-4950	VE/B 34 NC	3/4"	Alu	210	75	1720041104
230-1620-4955	VE/B 34 NA	3/4"				1720041105
230-1620-4960	VE/B 34/NC/ac	3/4"	Stahl	350		1720042102
230-1620-4965	VE/B 34/NA/ac	3/4"				1720042103
230-1620-4990	VE/B 114 NC/VEI					1720061101
230-1620-4995	VE/B 114 NA/VEI					1720061102

230-1620

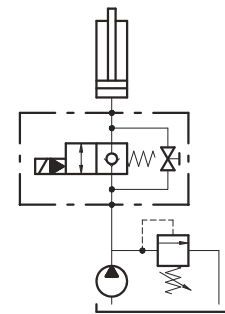
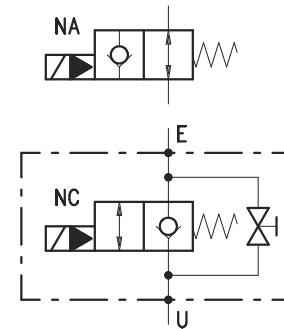
SOLENOID VALVES
VE /B 12 (34)

• DIMENSIONS (mm)



VE/B	E-U
12	G 1/2
34	G 3/4

• HYDRAULIC DIAGRAM



• DESCRIPTION

2-way electric valves, pilot-operated, poppet type.

• OPERATION

With the NA (normally opened) valve version and dropped-out solenoid, the oil flow is free from E to U and vice versa. When the solenoid is energized the flow is stopped from E to U and is free from U to E.

With the NC (normally closed) valve version and dropped out solenoid, the oil flow is stopped from E to U and is free from U to E. When the solenoid is energized the flow is free both from E to U and vice versa.

• PERFORMANCE

Maximum flow:

- VE/B 12: 60 l/min
- VE/B 34: 75 l/min.

Maximum pressure:

- Aluminium body 210 bar
- Steel body 350 bar

Solenoids: BT/... see page Z.2001.200. NOTE: BT...RAC solenoids and special connector should be strictly used with the NA version powered by AC current

Oil leaks from E to U: 0.10 cc/minute (2 drops) at 210 bar and oil viscosity of 46 cSt

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- VE/B 12: aluminium body: 0.78 kg - steel body: 1.59 kg
- VE/B 34: aluminium body: 0.76 kg - steel body: 1.55 kg

Cartridge used: see page 9.1000.300.

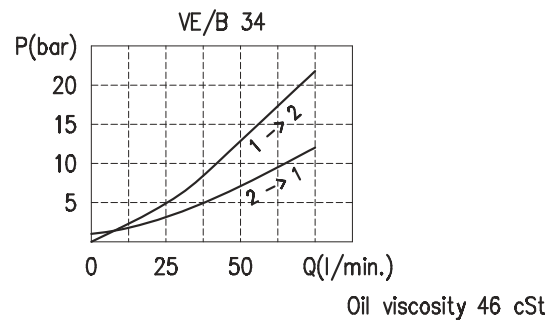
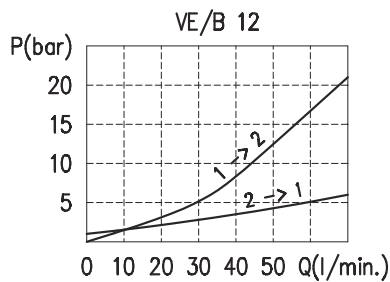
Material: high-grade steel duly treated and fabricated.

For more information please ask our technical office.

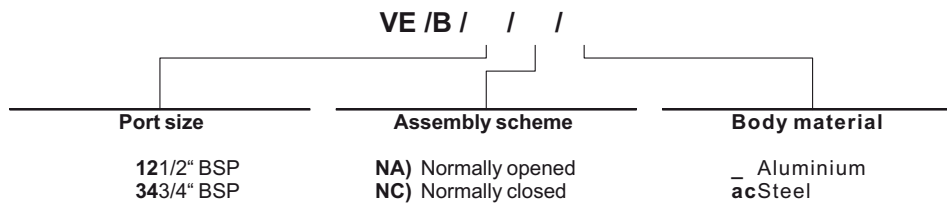
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• RATING DIAGRAMS



• CODE NUMBER



Sitzventile

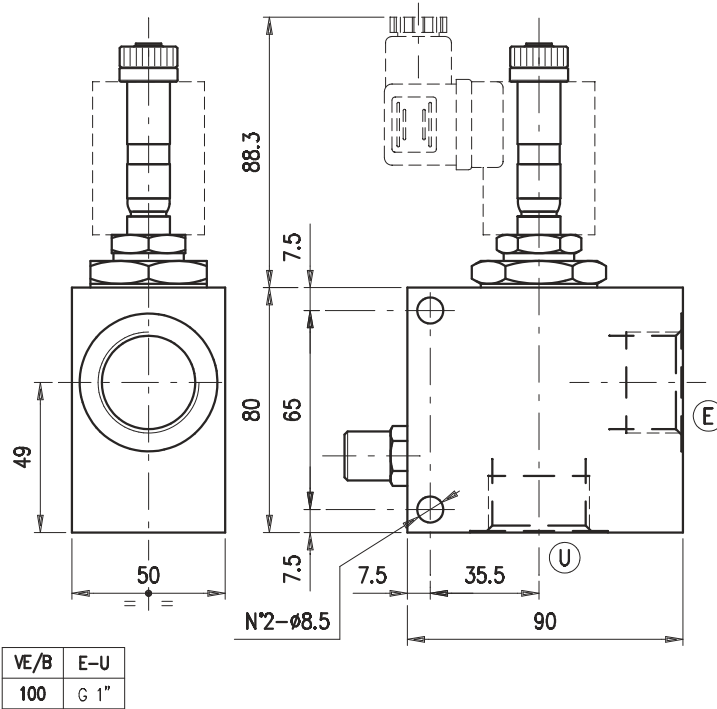
– 2/2 Wege Sitzventil mit Nothand G 1" –



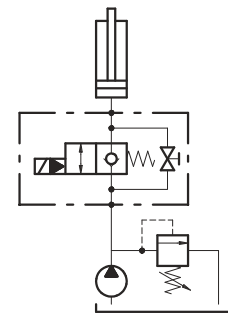
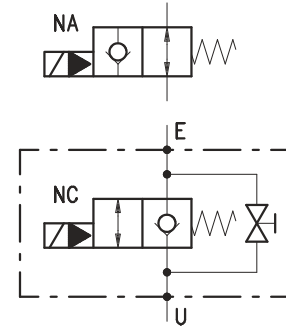
Bestellnr.	Typ	Bezeichnung	Gehäuse	max. Betriebsdruck bar	max. Durchfluss l/min	Code
230-1630-4970	VE/B 100/NC	1"	Alu	210	160	1720051102
230-1630-4975	VE/B 100 NA	1"				1720051103
230-1630-4980	VE/B 100/NC/ac	1"	Stahl	350		1720052102
230-1630-4985	VE/B 100/NA/ac	1"				1720052103

SOLENOID VALVES
VE /B 100

• DIMENSIONS (mm)



• HYDRAULIC DIAGRAM



• DESCRIPTION

2-way electric valves, pilot-operated, poppet type.

• OPERATION

With the NA (normally opened) valve version and dropped-out solenoid, the oil flow is free from E to U and vice versa. When the solenoid is energized the flow is stopped from E to U and is free from U to E.

With the NC (normally closed) valve version and dropped out solenoid, the oil flow is stopped from E to U and is free from U to E. When the solenoid is energized the flow is free both from E to U and vice versa.

• PERFORMANCE

Maximum flow: 160 l/min

Maximum pressure:

- Aluminium body 210 bar
- Steel body 350 bar

Solenoids: BT/... see page Z.2001.200. NOTE: BT...RAC solenoids and special connector should be strictly used with the NA version powered by AC current

Oil leaks from E to U: 0.10 cc/minute (2 drops) at 210 bar and oil viscosity of 46 cSt

Working temperature:

- Minimum -25°C max 90°C with standard BUNA N gaskets
- Minimum -20°C max 120°C with VITON gaskets on request

• RECOMMENDATIONS

Fluid: best use mineral oil with viscosity ranging between 10 and 200 cSt

Filter: see page Z.9000.000.

Weight:

- 1.15 kg (aluminium body)
- 2.45 kg. (steel body)

230-1630

Cartridge used: see page 9.1000.400.

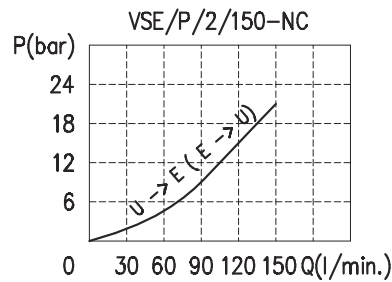
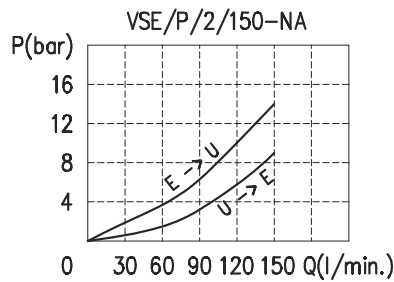
Material: high-grade steel duly treated and fabricated.

For more information please ask our technical office.

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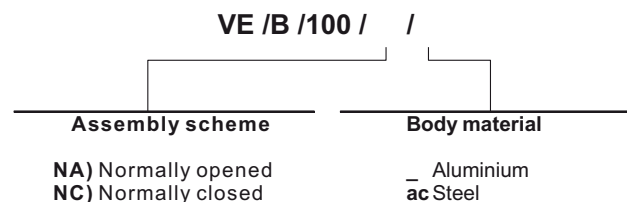
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• RATING DIAGRAMS



Oil viscosity 46 cSt

• CODE NUMBER



SPERR-, DROSSEL-,
DROSSELRÜCKSCHLAG- UND
RÜCKSCHLAGVENTILE

WERKSTOFFE

BESTELLBEISPIEL

FT 257/2



Drosselventile für Volumenstrom- Regelung in beiden Durchflußrichtungen

Die Präzisions- Ventilspindel garantiert:

- wirksame metallische Abdichtung ohne Leckage;
 - Linearer Öffnungsquerschnitt;
 - genaue Drosselung in einem großen Durchflußbereich.
- Die Einstellregelung erfolgt über eine Dezimalskala von 0-9 an der Unterseite des Einstellknopfes und einer Referenzskala A bis bis C von 0 bis 4 am Ventilschaft für genauest wiederholbare Einstellungen. Die Inbusschraube im Einstellknopf dient zur Arettierung und wirksamem Schutz vor Vibrationen, Stößen oder unbeabsichtigter Verstellung.

Für die Schalltafelmontage ist eine zusätzliche Kontermutter (G) lieferbar.

Auf Wunsch

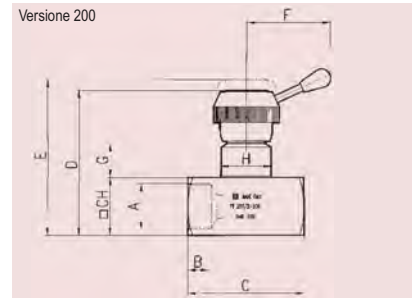
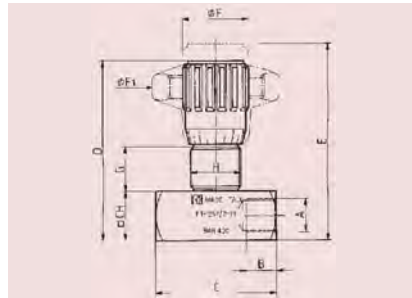
Gehäuse	9 S Mn Pb 23 - UNI 5105
Ventilspindel	1 C 40 - UNI 8373
O-Ring	Nitrilgummi
Stützring	PTFE
Einstellknopf	GD - Al Si 12 - UNI 5706
Kunststoffknopf (mp)	ABS

- Ausführung AISI 316, Ventilscode FT 2257/2
- Vitondichtung (V)
- NTP-Anschlußgewinde
- mit Kontermutter (G)
- ABS Kunststoffknopf (mp)



Zubehör auf Wunsch

	Bestellcode	Größe	Kontermutter	Vitondichtung	Kunststoffknopf
Stahl	FT 257/2	18	G	V	mp
Edelstahl	FT 2257/2	38	G	-	mp



**CODE
FT 257/2**

Bestell-Nr. code	Typ type	A Uni 338	B	C	D	E	F	F1	G	H	CH	kg
240-010-01000	FT257-2-18	1/8"G	8,5	38	59	64	22	40	13,5	M17x1	16	0,110
240-010-01050	FT257-2-14	1/4"G	12,5	49	71	78	27	50	17	M20x1	20	0,200
240-010-01100	FT257-2-38	3/8"G	12,5	59	84	93	33	70	19,5	M25x1,5	25	0,375
240-010-01150	FT257-2-12	1/2"G	15,5	68	97	107	38	80	21	M30x1,5	30	0,600
240-010-01200	FT257-2-34	3/4"G	17	86	120,5	132,5	47	100	26,5	M40x1,5	40	1,250
240-010-01250	FT257-2-100	1"G	20	105	151,5	167,5	58	120	35	M50x1,5	50	2,550
240-010-01300	FT257-2-114	1 1/4"G	22	120	156,5	172,5	58	120	35	M50x1,5	55	3,000
240-010-01350	FT257-2-112	1 1/2"G	24	134	167	181	58	120	35	M55x2	65	4,217
240-010-01400	FT257-2-200	2"G	27	150	188	202	85	/	44	M65x2	75	7,300

Einbauanleitungen für Schalltafelmontage finden Sie auf Seite 17

	FT.....	/	2	-	02	-	18	-	G-V-T-mp
VENTILCODE									
FUNKTIONSCODE			2 = Drosselventil 5 = Drosselrückschlagventil 6 = Rückschlagventil						
					01 = Innengewinde/Innengewinde 02 = Außengewinde/Innengewinde 04 = Rohranschluß DIN 2353 05 = Schlauchanschluß DIN 3861				
							18 = G 1/8 14 = G 1/4 38 = G 3/8 12 = G 1/2 34 = G 3/4 100 = G 1 114 = G 1 1/4 112 = G 1 1/2 200 = G 2		
ANSCHLUSSCODE ZUBEHÖR (AUF WUNSCH)									G = Kontermutter für Schalttafeleinbau V = Vitondichtung T = Schalttafel mp = ABS-Sterngriff
ANSCHLUSSGEWINDE									

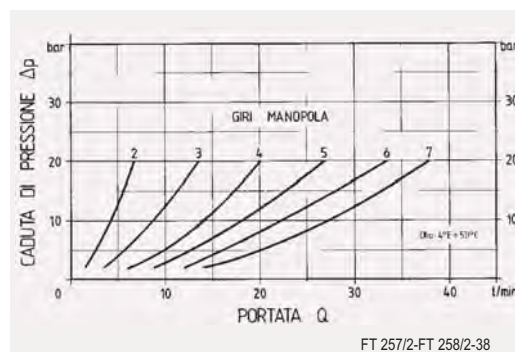
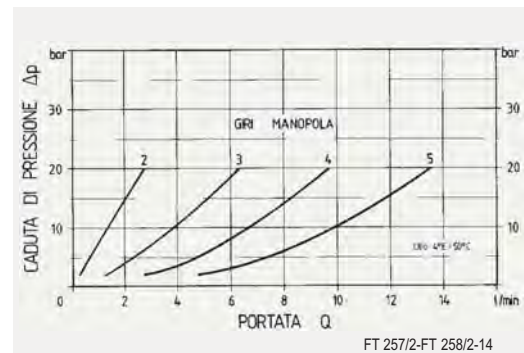
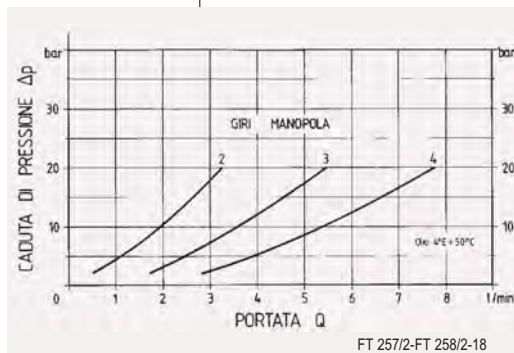
FT202/3	Kontermutter M 17x1
FT202/4	Kontermutter M 20x1
FT202/5	Kontermutter M25x1,5
FT202/6	Kontermutter M30x1,5
FT202/8	Kontermutter M40x1,5
FT202/10	Kontermutter M50x1,5

FT 257/2 - 258/2

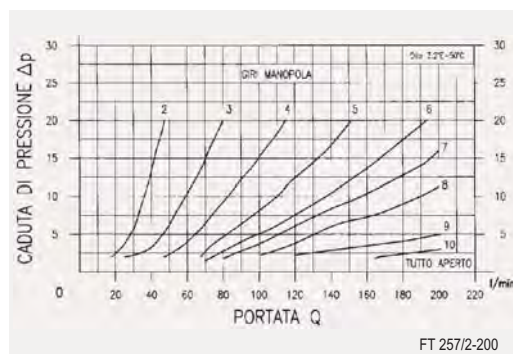
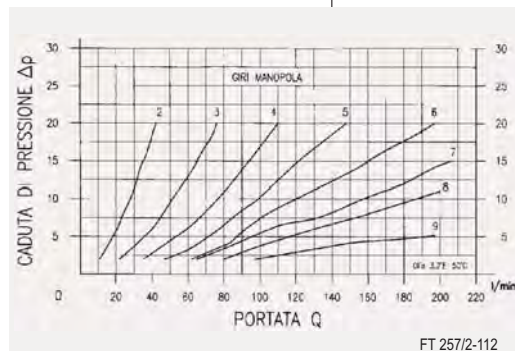
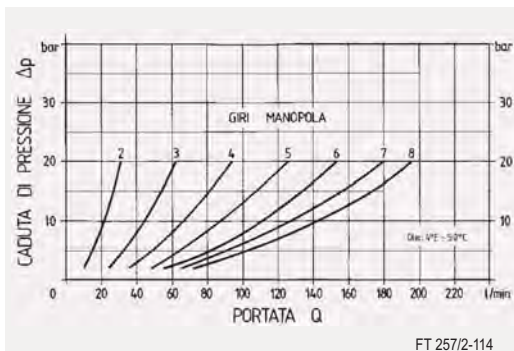
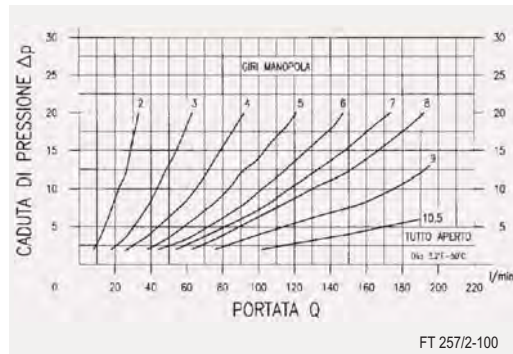
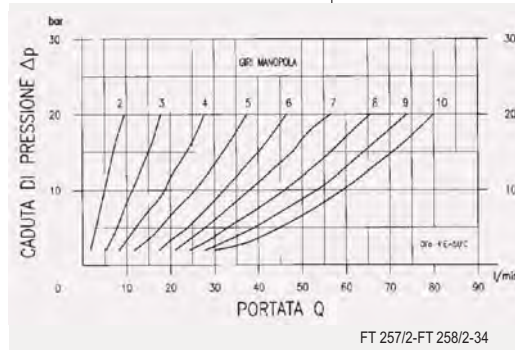
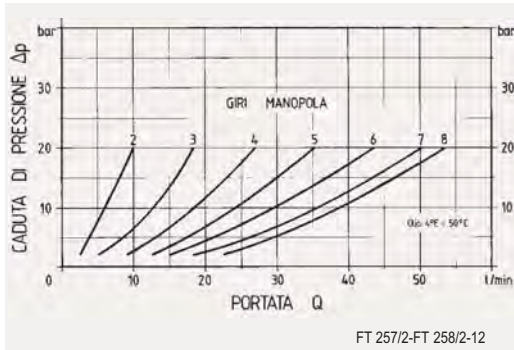
TECHNISCHE DATEN

Bestell-Nr. code	Typ type	Durchmesser cm ³	Betriebsdruck bar	Min. Berstdruck bar	Betriebstemp. °C	Filtrierung µm
240-010-01000	FT257-2-18	0,12	400	1600	-20°/+100°	25
240-010-01050	FT257-2-14	0,19	400	1600	-20°/+100°	25
240-010-01100	FT257-2-38	0,39	400	1600	-20°/+100°	25
240-010-01150	FT257-2-12	0,68	400	1600	-20°/+100°	25
240-010-01200	FT257-2-34	1,13	400	1600	-20°/+100°	25
240-010-01250	FT257-2-100	2,09	320	1300	-20°/+100°	25
240-010-01300	FT257-2-114	2,09	320	1300	-20°/+100°	25
240-010-01350	FT257-2-112	3,14	320	1300	-20°/+100°	25
240-010-01400	FT257-2-200	4,91	320	1300	-20°/+100°	25

DURCHFLUSSKURVEN



FT 257/2 - 258/2

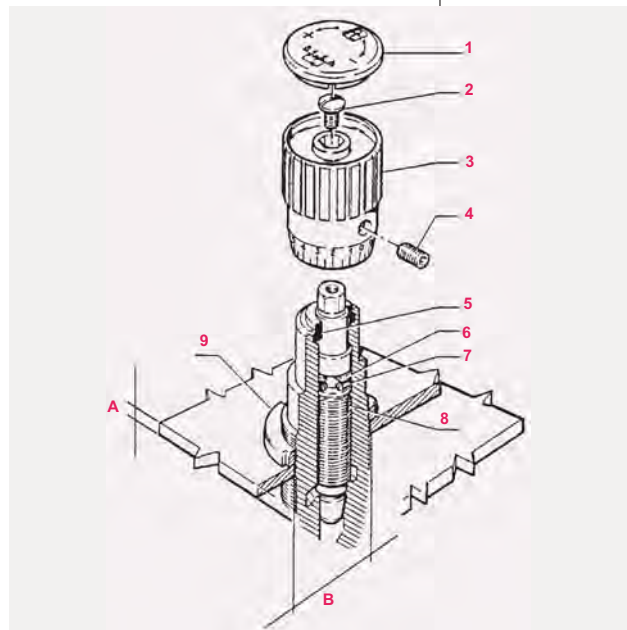


SERIE FT 257 - FT 258

MONTAGEANLEITUNG

Schalttafelmontage

- 1° Inbusschraube (4) lösen
- 2° Deckel (1) entfernen
- 3° Griffschraube (2) lösen
- 4° Einstellknopf (3) mit Kraft abziehen
- 5° Kontermutter KM (9) nach Größe auswählen, (auf Wunsch wird sie mit Ventil geliefert)



Ersatzteile Dichtungen und Kontermuttern									
Größe	18	14	38	12	34	100	114	112	200
(7) O-Ring	2018	2021	108	2043	115	123	123	128	3106
(6) Stützring	2018	2021	108	2043	115	123	123	128	3106
(9) Kontermutter (KM)	KM 3 (FT 2023)	KM 4 (FT 2024)	KM 5 (FT 2025)	KM 6 (FT 2026)	KM 8 (FT 2028)	KM 10 (FT 20210)	KM 10 (FT 20210)	KM 11	KM 13
A max Dichte	6	8	10	10	10	10	10	12	12
B Tafelloch ⁿ	18	21	26	31	41	51	51	56	66



**Drosselventile für Volumenstrom-
Regelung in beiden
Durchflußrichtungen rechtwinklig**

Drosselventile, rechtwinklig
Die Präzisions- Ventilspindel garantiert:
 wirksame metallische Abdichtung ohne Leckage;
 Linearer Öffnungsquerschnitt;
 genaue Drosselung in einem großen Durchflußbereich.
 Die Einstellregelung erfolgt über eine Dezimalskala von 0-9 an der Unterseite des Einstellknopfes und einer Referenzskala A bis C von 0 bis 4 am Ventilschaft für genauest wiederholbare Einstellungen. Die Inbusschraube im Einstellknopf dient zur Arettierung und wirksamem Schutz vor Vibrationen, Stößen oder unbeabsichtigter Verstellung.
 Für die Schalttafelmontage ist eine zusätzliche Kontermutter (G) lieferbar.

FT 258/2

- Auf Wunsch
- Ausführung AISI 316 Ventilscode FT 2258/2
 - Vitondichtung (V)
 - NTP-Anschlußgewinde
 - mit Kontermutter (G)
 - ABS Kunststoffknopf (mp)

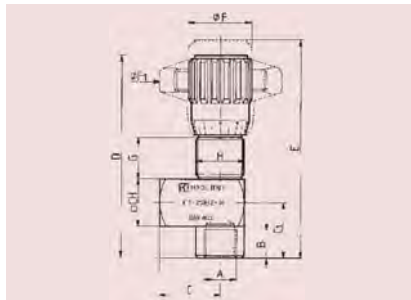


**SPERR-, DROSSEL-,
DROSSELRÜCKSCHLAG-
UND RÜCKSCHLAGVENTILE**

Zubehör auf Wunsch

	Bestellcode	Größe	Kontermutter	Vitondichtung	Kunststoffknopf
Stahl	FT 258/2		G	V	mp
Edelstahl	FT2258/2	12	G	-	mp

BESTELLBEISPIEL

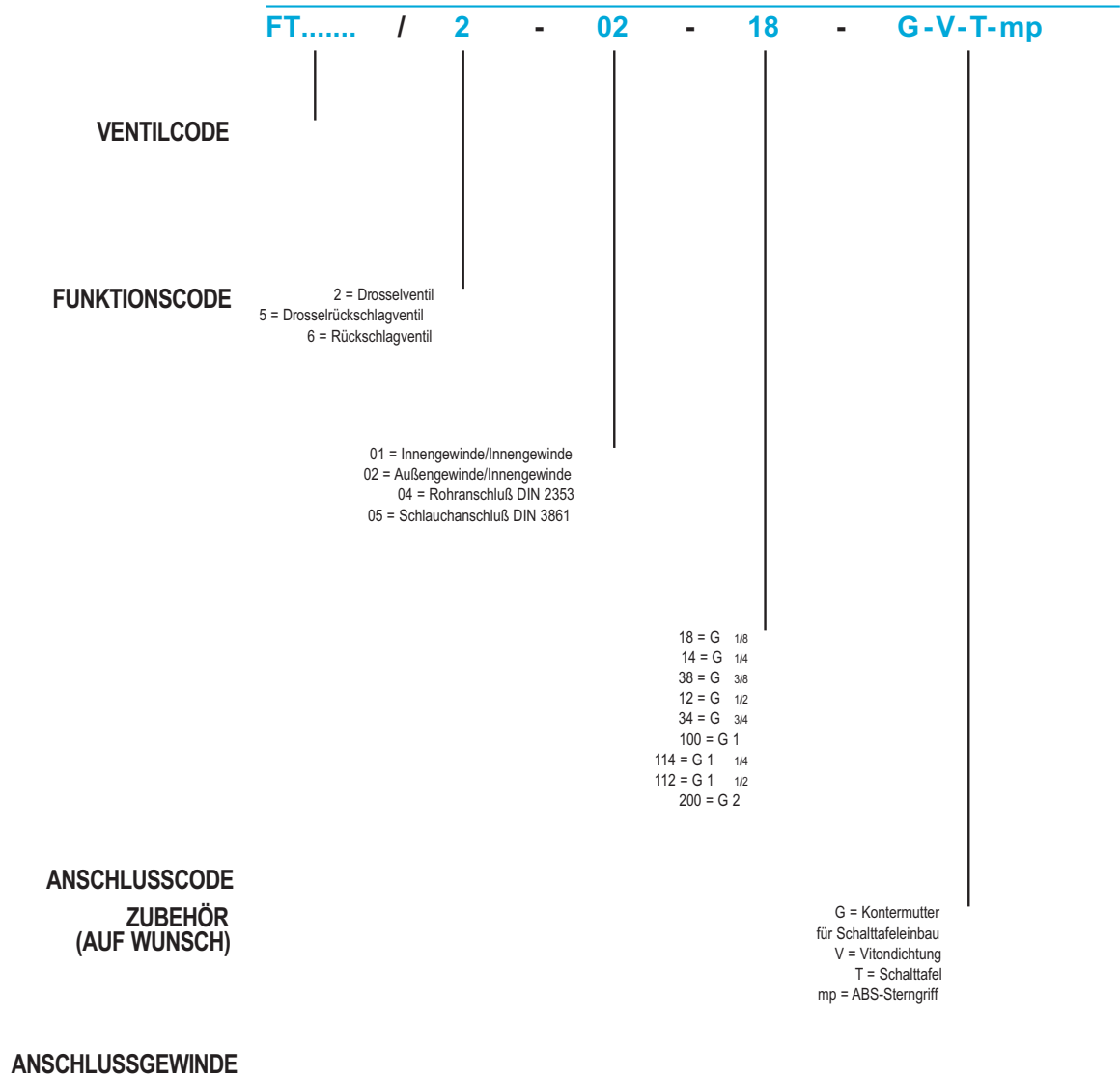


Gehäuse	9 S Mn Pb 23 - UNI 5105
Ventilspindel	1 C 40 - UNI 8373
O-Ring	Buna N Nitrilgummi
Stützring	PTFE
Einstellknopf	GD - Al Si 12 - UNI 5706
Kunststoffknopf (mp)	ABS

WERKSTOFFE

Bestell-Nr. code	Type type	A Uni 338	B	C	C1	D	E	F	F1	G	H	CH	kg
240-020-01000	FT258-2-14	1/4"G	13,5	25	27	86,5	93,5	27	50	17	M20x1	20	0,200
240-020-01050	FT258-2-38	3/8"G	12,5	29,5	31,5	101,5	110,5	33	70	19,5	M25x1,5	25	0,360
240-020-01100	FT258-2-12	1/2"G	15,5	35	37	117	127	38	80	21	M30x1,5	30	0,580
240-020-01150	FT258-2-34	3/4"G	17	42	46	142,5	154,5	47	100	26,5	M40x1,5	40	1,265

**CODE
FT 258/2**



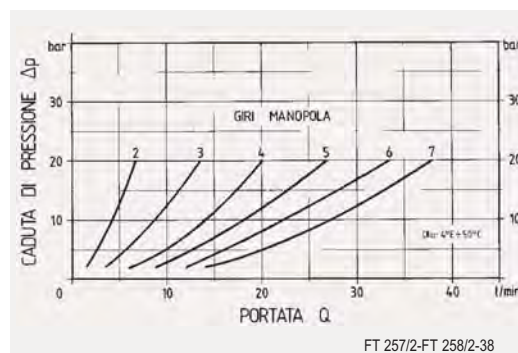
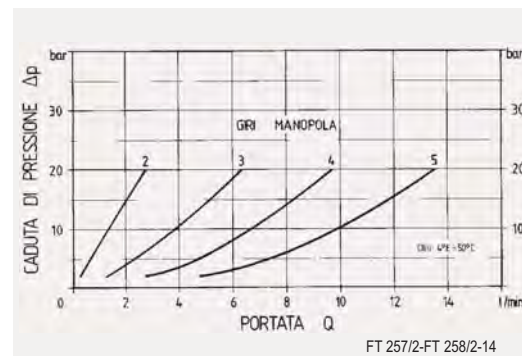
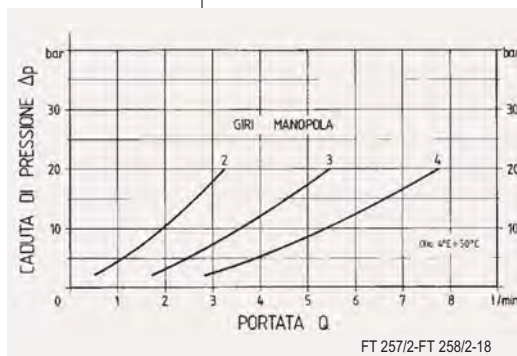
FT202/3	Kontermutter M 17x1
FT202/4	Kontermutter M 20x1
FT202/5	Kontermutter M25x1,5
FT202/6	Kontermutter M30x1,5
FT202/8	Kontermutter M40x1,5
FT202/10	Kontermutter M50x1,5

FT 257/2 - 258/2

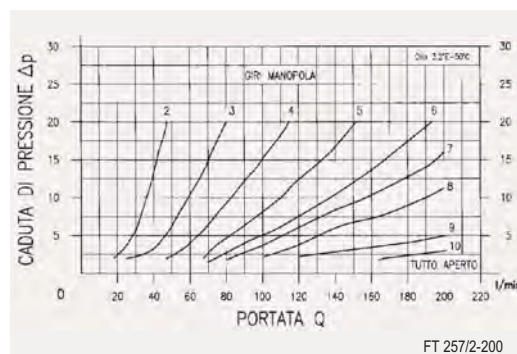
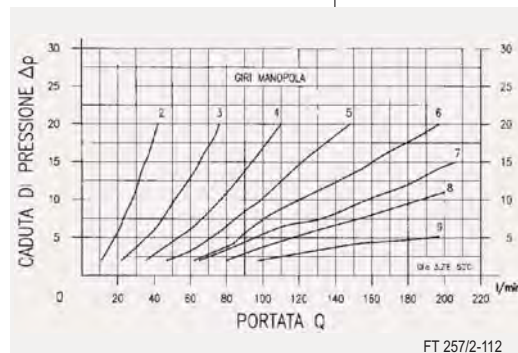
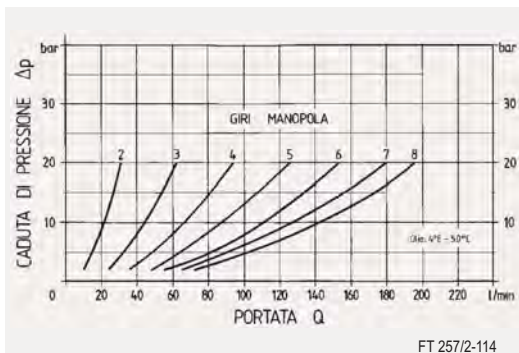
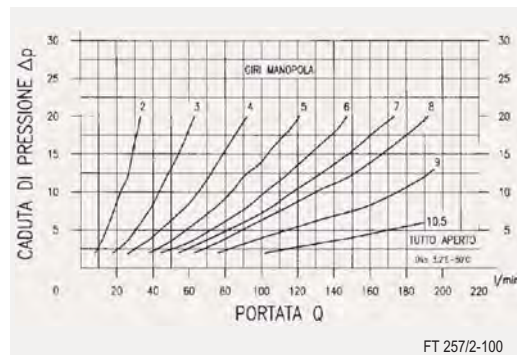
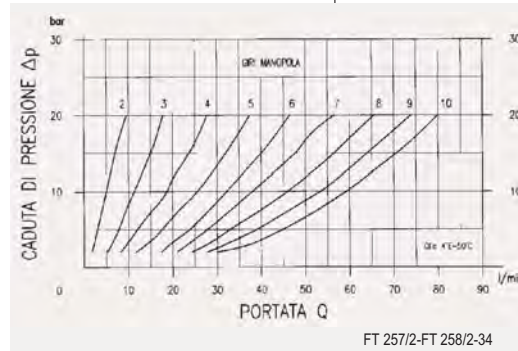
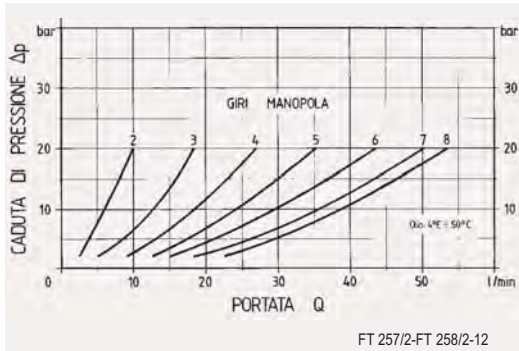
TECHNISCHE DATEN

Größe	Durchmesser cm ²	Betriebsdruck bar	Min. Berstdruck bar	Betriebstemp. °C	Filtrierung µm
18	0,12	400	1600	-20°/+100°	25
14	0,19	400	1600	-20°/+100°	25
38	0,39	400	1600	-20°/+100°	25
12	0,68	400	1600	-20°/+100°	25
34	1,13	400	1600	-20°/+100°	25
100	2,09	320	1300	-20°/+100°	25
114	2,09	320	1300	-20°/+100°	25
112	3,14	320	1300	-20°/+100°	25
200	4,91	320	1300	-20°/+100°	25

DURCHFLUSSKURVEN



FT 257/2 - 258/2

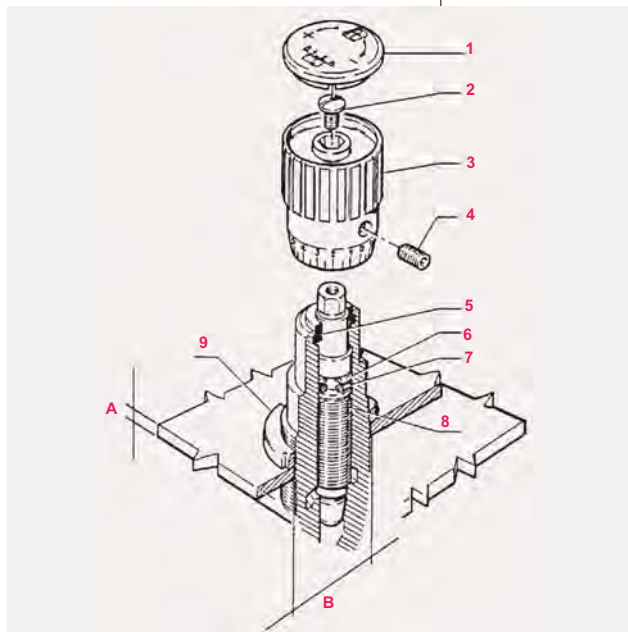


SERIE FT 257 - FT 258

MONTAGEANLEITUNG

Schalttafelmontage

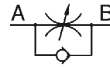
- 1° Inbusschraube (4) lösen
- 2° Deckel (1) entfernen
- 3° Griffschraube (2) lösen
- 4° Einstellknopf (3) mit Kraft abziehen
- 5° Kontermutter KM (9) nach Größe auswählen, (auf Wunsch wird sie mit Ventil geliefert)



Ersatzteile Dichtungen und Kontermuttern

Größe	18	14	38	12	34	100	114	112	200
(7) O-Ring	2018	2021	108	2043	115	123	123	128	3106
(6) Stützring	2018	2021	108	2043	115	123	123	128	3106
(9) Kontermutter (KM)	KM 3 (FT 2023)	KM 4 (FT 2024)	KM 5 (FT 2025)	KM 6 (FT 2026)	KM 8 (FT 2028)	KM 10 (FT 20210)	KM 10 (FT 20210)	KM 11	KM 13
A max Dichte	6	8	10	10	10	10	10	12	12
B Tafelloch ¹⁾	18	21	26	31	41	51	51	56	66

FT 257/5



Drosselrückschlagventile

Für genaue und zuverlässige Volumenstrom-Regelung bzw. Absperrung in einer Durchflußrichtung, in Gegenrichtung freier Durchfluß.

Die optische schöne Design erhöht den qualitativen Anspruch der gesamten Anlage. Trotz kompakter Bauform wurde eine hohe mechanische Stabilität der Komponenten verwirklicht.

Die besondere Form der Rückschlagfeder und des Steuerkolbens aus hochwertigem Herstellungsmaterial verhindert ein Verkanten oder Blockieren in der Öffnungsphase.

Die Präzisions- Ventilspindel garantiert:

- wirksame metallische Abdichtung ohne Leckage;
- Linearer Öffnungsquerschnitt;
- genaue Drosselung in einem großen Durchflußbereich;

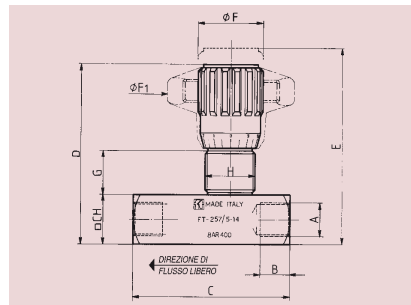
- einfache Regeleinstellung;
 - absolute Sicherheit gegen Lösen der Ventilspindel;
 - stabile Einstellsicherung durch Inbus-Arettierschraube im Einstellknopf;
 - Möglichkeit der Schalltafelmontage durch zusätzliche Kontermutter (G).
- Das Rückschlagventil ist auf einen Öffnungsdruck von 0,35 bar geeicht.

Auf Wunsch

- Ausführung AISI 316 Ventilcode FT 2257/5
- Vitondichtung (V)
- NTP-Anschlußgewinde
- mit Kontermutter (G)
- ABS Kunststoffknopf (mp)

WERKSTOFFE

Gehäuse	9 S Mn Pb 23 - UNI 5105
Ventilspindel	1 C 40 - UNI 8373
O-Ring	Nitrilgummi
Stützring	PTFE
Rückschlagventil	38 Ni Cr Mo 4 - UNI - EN 10083
Feder	72 UUNI 3545
Federhalter	35 S Mn Pb 10 - UNI 5105
Einstellknopf	GD Al Si 12 - UNI 5706
Kunststoffknopf (mp)	ABS



BESTELLBEISPIEL

Zubehör auf Wunsch

	Bestellcode	Größe	Kontermutter	Vitondichtung	Kunststoffknopf
Stahl	FT 257/5	18	G	V	mp
Edelstahl	FT 2257/5	34	G	V	mp

CODE FT 257/5

Bestell-Nr. code	Typ type	A Uni 338	B	C	D	E	F	F1	G	H	CH	kg
240-030-01000	FT257-5-18	1/8"G	8,5	50	59	64	22	40	13,5	M17x1	16	0,130
240-030-01050	FT257-5-14	1/4"G	12,5	66	71	78	27	50	17	M20x1	20	0,250
240-030-01100	FT257-5-38	3/8"G	12,5	79	84	93	33	70	19,5	M25x1,5	25	0,500
240-030-01150	FT257-5-12	1/2"G	15,5	94,5	97	107	38	80	21	M30x1,5	30	0,750
240-030-01200	FT257-5-34	3/4"G	17	115	120,5	132,5	47	100	26,5	M40x1,5	40	1,600
240-030-01250	FT257-5-100	1"G	20	138,5	151,5	167,5	58	120	35	M50x1,5	50	3,050
240-030-01300	FT257-5-114	1 1/4"G	22	157	156,5	172,5	25	120	35	M50x1,5	55	3,750
240-030-01350	FT257-5-112	1 1/2"G	24	190	167	181	58	120	35	M55x2	65	5,760
240-030-01400	FT257-5-200	2"G	27	228	188	202	85	-	44	M65x2	75	10,000

Einbauanleitungen für Schalltafelmontage finden Sie auf Seite 17

	FT.....	/	2	-	02	-	18	-	G-V-T-mp
VENTILCODE									
FUNKTIONSCODE									
			2 = Drosselventil 5 = Drosselrückschlagventil 6 = Rückschlagventil						
				01 = Innengewinde/Innengewinde 02 = Außengewinde/Innengewinde 04 = Rohranschluß DIN 2353 05 = Schlauchanschluß DIN 3861					
							18 = G 1/8 14 = G 1/4 38 = G 3/8 12 = G 1/2 34 = G 3/4 100 = G 1 114 = G 1 1/4 112 = G 1 1/2 200 = G 2		
ANSCHLUSSCODE ZUBEHÖR (AUF WUNSCH)									G = Kontermutter für Schalttafeleinbau V = Vitondichtung T = Schalttafel mp = ABS-Sterngriff

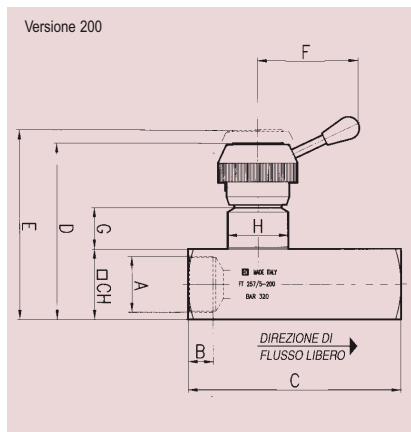
ANSCHLUSSGEWINDE

FT202/3	Kontermutter M 17x1
FT202/4	Kontermutter M 20x1
FT202/5	Kontermutter M25x1,5
FT202/6	Kontermutter M30x1,5
FT202/8	Kontermutter M40x1,5
FT202/10	Kontermutter M50x1,5

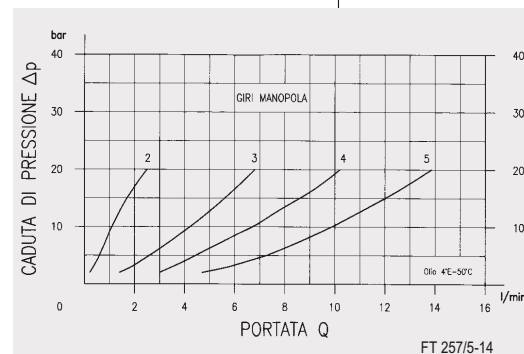
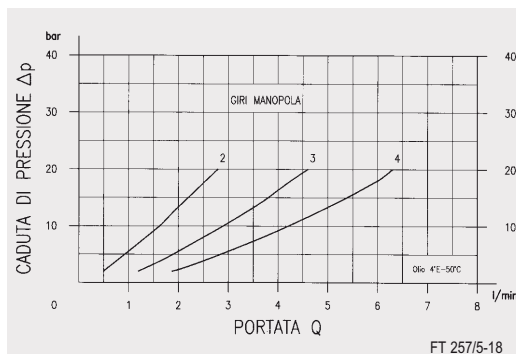
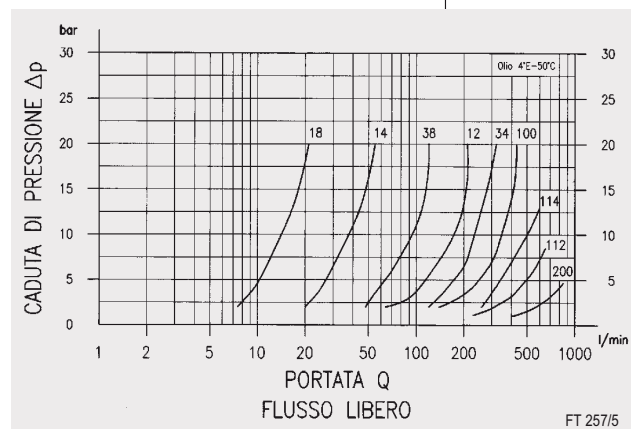
FT 257/5

Größe	Durchmesser Durchfluß cm ²	Betriebsdruck bar	Min. Betriebsdruck bar	Betriebstemp. °C	Filtrierung µm
18	0,12	400	1600	-20°/+100°	25
14	0,19	400	1600	-20°/+100°	25
38	0,39	400	1600	-20°/+100°	25
12	0,68	400	1600	-20°/+100°	25
34	1,13	400	1600	-20°/+100°	25
100	2,09	320	1300	-20°/+100°	25
114	2,09	320	1300	-20°/+100°	25
112	3,14	320	1300	-20°/+100°	25
200	4,91	320	1300	-20°/+100°	25

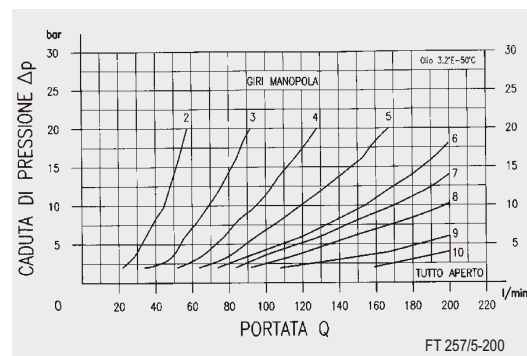
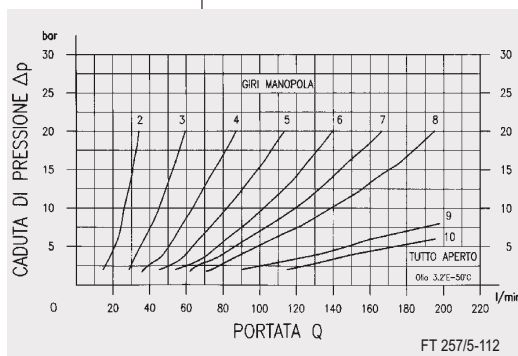
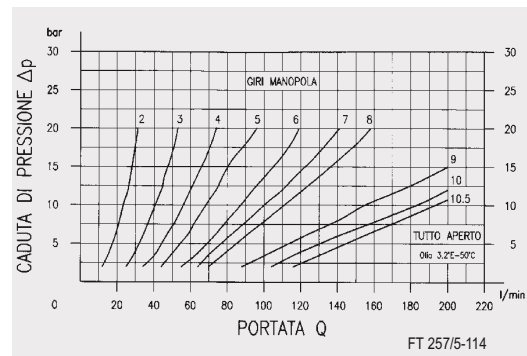
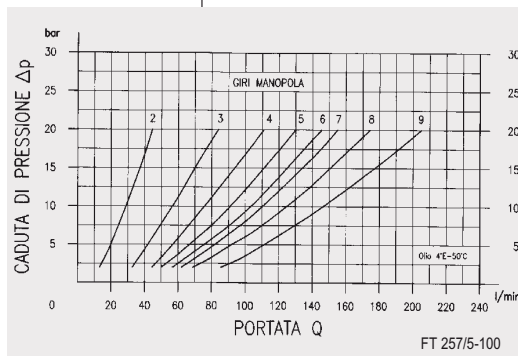
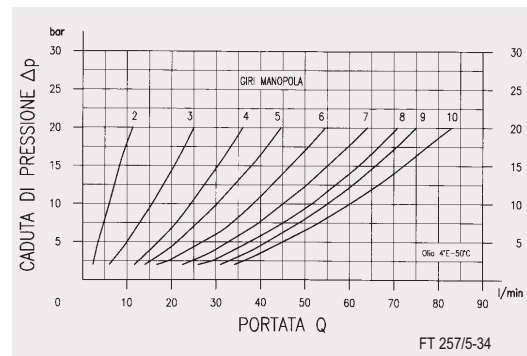
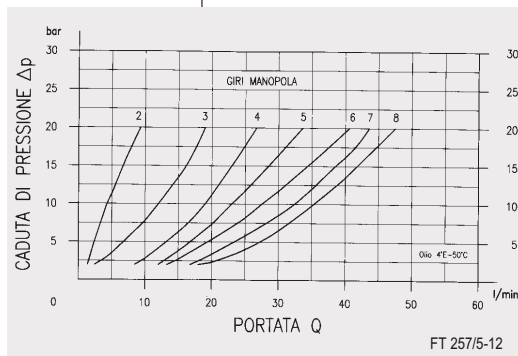
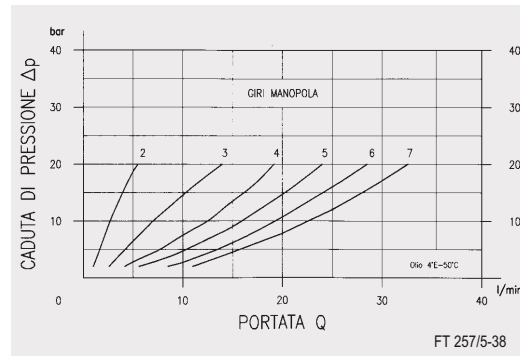
TECHNISCHE DATEN



DURCHFLUSSKURVEN



FT 257/5

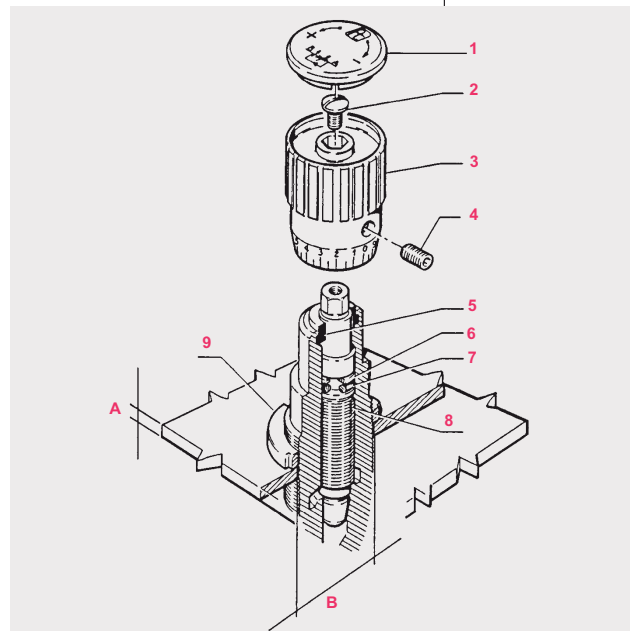


SERIE FT 257 - FT 258

MONTAGEANLEITUNG

Schalttafelmontage

- 1° Inbusschraube (4) lösen
- 2° Deckel (1) entfernen
- 3° Griffschraube (2) lösen
- 4° Einstellknopf (3) mit Kraft abziehen
- 5° Kontermutter KM (9) nach Größe auswählen, (auf Wunsch wird sie mit Ventil geliefert)



Ersatzteile Dichtungen und Kontermuttern									
Größe	18	14	38	12	34	100	114	112	200
(7) O-Ring	2018	2021	108	2043	115	123	123	128	3106
(6) Stützring	2018	2021	108	2043	115	123	123	128	3106
(9) Kontermutter (KM)	KM 3 (FT 202/3)	KM 4 (FT 202/4)	KM 5 (FT 202/5)	KM 6 (FT 202/6)	KM 8 (FT 202/8)	KM 10 (FT 202/10)	KM 10 (FT 202/10)	KM 11	KM 13
A max Dichte	6	8	10	10	10	10	10	12	12
B Tafelloch ⁿ	18	21	26	31	41	51	51	56	66

**REGELVENTILE
AUS
PRESSMESSING MS
58**

FT 1251/2-01



Drosselventile für Leitungseinbau (Innengewinde/Innengewinde)

Die Drosselventile FT 1251/2-01 dienen zur Drosselung und Absperrung in beiden Durchflußrichtungen.

Das ästhetisch ansprechende Design, verbunden mit sorgfältiger Materialauswahl, erlaubt zusätzlich zur Ölhydraulik den Einsatz in Verbindung mit Druckluft und Gasen sowie werkstoffkompatiblen Medien.

Der Einsatzdruckbereich ist vorgesehen für Systeme bis 210 bar, z.B. auch dort, wo Stahlventile nicht eingesetzt werden können.

Für Anwendung bis 400 bar Betriebsdruck sind die Stahlventile FT 257/2 vorzusehen.

Die Präzisionsausführung weist folgende Merkmale wie bei der Serie FT 257 auf:

- genaue Volumenstrom-Regelung;

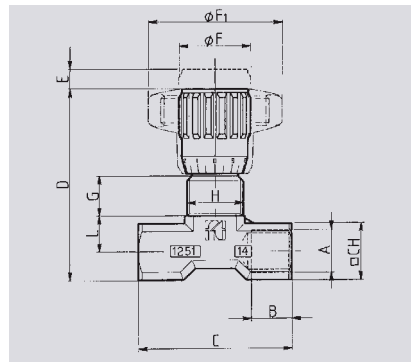
- wirksame metallische Abdichtung ohne Leckage;
 - einfache Regeleinrichtung;
 - absolute Sicherheit gegen Lösen der Ventilspindel;
 - stabile Einstellsicherung durch Inbus-Arettierschraube im Einstellknopf;
 - Möglichkeit der Schalttafelmontage durch zusätzliche Kontermutter (G).
- Max. Betriebsdruck 210 bar.

Auf Wunsch

- Ausführung in Edelstahl AISI 316 Ventiltcode FT 2251/2-01
- Vitondichtung (V)
- NPT-Anschlußgewinde
- ABS-Kunststoffknopf (mp)
- mit Kontermutter (G)

WERKSTOFFE

Gehäuse	Pressmessing MS 58 UNI 5705, vernickelt
Ventilspindel	X 10 Cr Ni S 1809 UNI 6900
O-Ring	NBR Nitrilgummi
Stützring	PTFE
Einstellknopf	GD - Al Si 12 - UNI 5706
Kunststoffgriff	ABS



BESTELLBEISPIEL

Zubehör auf Wunsch					
Bestellcode	Größe	Kontermutter	Vitondichtung	ABS-Griff	
Messing	FT1251/2-01	38	G	V	mp
Edelstahl	FT2251/2-01	14	G	V	mp

**CODE
FT 1251/2-01**

Bestell-Nr. code	Typ type	A Uni 338	B	C	D	E	F	F1	G	H	L	CH	kg
240-040-01000	FT1251-2-01-18	1/8"G	8	40	55	4	22	40	12	M15x1	9,5	15	0,105
240-040-01050	FT1251-2-01-14	1/4"G	12	46	57	4,5	22	40	11,5	M17x1	11	17	0,122
240-040-01100	FT1251-2-01-38	3/8"G	13	55	69	7	27	50	12,5	M20x1	15	22	0,233
240-040-01150	FT1251-2-01-12	1/2"G	16	70	82	10	33	70	13	M25x1,5	19	27	0,455
240-040-01200	FT1251-2-01-34	3/4"G	20	91	100	12	38	80	15	M30x1,5	22	34	0,860

Einbauleitungen für Schalttafelmontage finden Sie auf Seite 86



FT 1251/2-02

Drosselventile für Leitungseinbau (Außengewinde/Innengewinde)

Die Drosselventile FT 1251/2-02 dienen zur Drosselung und Absperrung in beiden Durchflussrichtungen.

Das ästhetisch ansprechende Design, verbunden mit sorgfältiger Materialauswahl, erlaubt zusätzlich zur Öhydraulik den Einsatz in Verbindung mit Druckluft und Gasen sowie werkstoffkompatiblen Medien.

Der Einsatzdruckbereich ist vorgesehen für Systeme bis 210 bar, z.B. auch dort, wo Stahlventile nicht eingesetzt werden können.

Für Anwendung bis 400 bar Betriebsdruck sind die Stahlventile FT 257/2 vorzusehen.

Die Präzisionsausführung weist folgende Merkmale wie bei der Serie FT 257 auf:

- genaue Volumenstrom-Regelung;

- wirksame metallische Abdichtung ohne Leckage;
 - einfache Regeleinstellung;
 - absolute Sicherheit gegen Lösen der Ventilspindel;
 - stabile Einstellsicherung durch Inbus-Arettierschraube im Einstellknopf;
 - Möglichkeit der Schalttafelmontage durch zusätzliche Kontermutter (G).
- Max. Betriebsdruck 210 bar.

Auf Wunsch

- Ausführung in Edelstahl AISI 316 Ventilscode FT 2251/2-02
- Vitondichtung (V)
- NPT-Anschlußgewinde
- ABS-Kunststoffknopf (mp)
- mit Kontermutter (G)

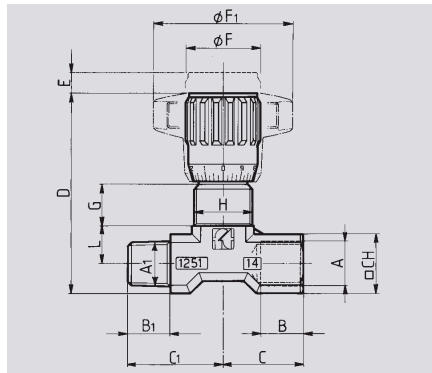
Gehäuse	Pressmessing MS 58 UNI 5705, vernickelt
Ventilspindel	X 10 Cr Ni S 1809 UNI 6900
O-Ring	NBR Nitrilgummi
Stützring	PTFE
Einstellknopf	GD - Al Si 12 - UNI 5706
Kunststoffgriff	ABS

**REGLVENTILE
AUS
PRESSMESSING
MS 58**

WERKSTOFFE

BESTELLBEISPIEL

Zubehör auf Wunsch					
	Bestellcode	Größe	Kontermutter	Vitondichtung	ABS-Griff
Messing	FT1251/2-02	12	G	V	mp
Edelstahl	FT2251/2-02	14	G	V	mp



Bestell-Nr. code	Type type	A Uni 338	A1 Uni 339	B	B1	C	C1	D	E	F	F1	G	H	L	CH	kg
240-040-01250	FT1251-2-02-18	1/8"G	1/8"Gc	8	9	20	24	55	4	22	40	12	M15x1	9,5	15	0,105
240-040-01300	FT1251-2-02-14	1/4"G	1/4"Gc	12	12	23	27	57	4,5	22	40	11,5	M17x1	11	17	0,130
240-040-01350	FT1251-2-02-38	3/8"G	3/8"Gc	13	13	27,5	32,5	69	7	27	50	12,5	M20x1	15	22	0,246
240-040-01400	FT1251-2-02-12	1/2"G	1/2"Gc	16	16	35	39,5	82	10	33	70	13	M25x1,5	19	27	0,448
240-040-01450	FT1251-2-02-34	3/4"G	3/4"Gc	20	20	45,5	49,5	100	12	38	80	15	M30x1,5	22	34	0,845

**CODE
FT 1251/2-02**

Einbauleitungen für Schalttafelmontage finden Sie auf Seite 86

	FT.....	/	2	-	02	-	18	-	G-V-T-mp
VENTILCODE									
FUNKTIONSCODE			2 = Drosselventil 5 = Drosselrückschlagventil 6 = Rückschlagventil						
					01 = Innengewinde/Innengewinde 02 = Außengewinde/Innengewinde 04 = Rohranschluß DIN 2353 05 = Schlauchanschluß DIN 3861				
							18 = G 1/8 14 = G 1/4 38 = G 3/8 12 = G 1/2 34 = G 3/4 100 = G 1 114 = G 1 1/4 112 = G 1 1/2 200 = G 2		
ANSCHLUSSCODE ZUBEHÖR (AUF WUNSCH)									G = Kontermutter für Schalttafeleinbau V = Vitondichtung T = Schalttafel mp = ABS-Sterngriff
ANSCHLUSSGEWINDE									

FT202/3	Kontermutter M 17x1
FT202/4	Kontermutter M 20x1
FT202/5	Kontermutter M25x1,5
FT202/6	Kontermutter M30x1,5
FT202/8	Kontermutter M40x1,5
FT202/10	Kontermutter M50x1,5

FT 1251/2-FT 1252/2 - FT 1251/5

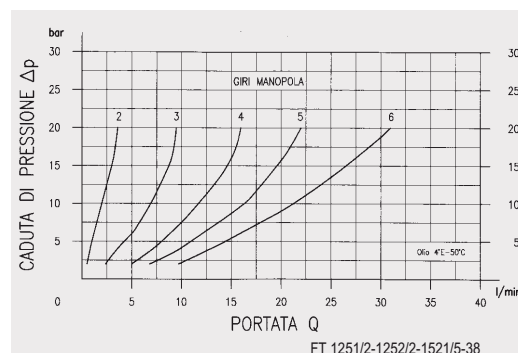
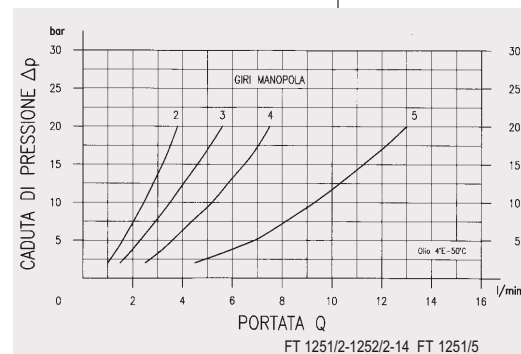
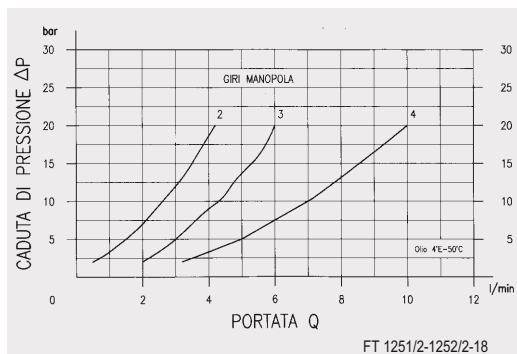
Größe	Durchmesser mm ²	max. Betriebsdruck bar	Betriebstemperatur °C	Filtrierung µm
18	7,07	210	-20°/+100°	25
14	12,57	210	-20°/+100°	25
38	19,64	210	-20°/+100°	25
12	50,27	210	-20°/+100°	25
34	78,54	210	-20°/+100°	25

**TECHNISCHE
DATEN DER
SERIE
FT 1251/2
FT 1252/2**

Größe	Durchmesser mm ²	max. Betriebsdruck bar	Betriebstemperatur °C	Filtrierung µm
14	12,57	210	-20°/+100°	25
38	19,64	210	-20°/+100°	25
12	50,27	210	-20°/+100°	25
34	78,54	210	-20°/+100°	25

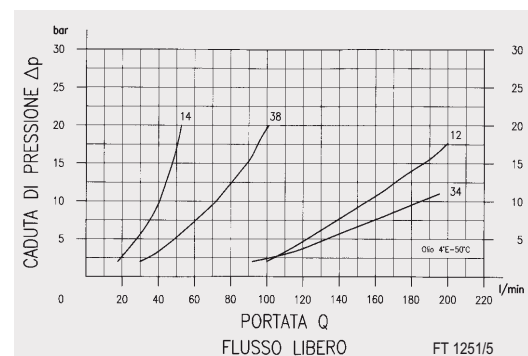
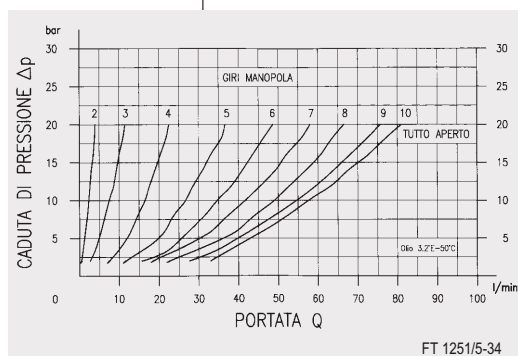
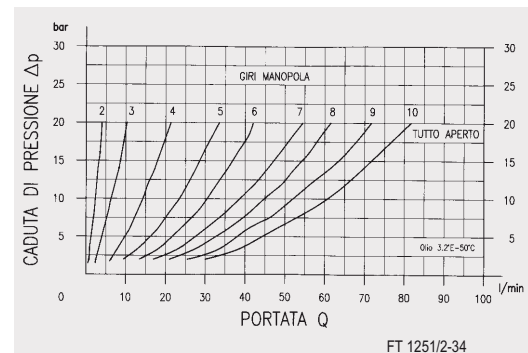
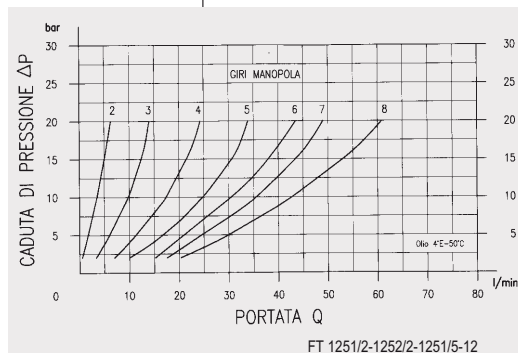
**TECHNISCHE
DATEN DER
SERIE
FT 1251/5**

DURCHFLUSSKURVEN



FT 1251/2-FT 1252/2 - FT 1251/5

DURCHFLUSSKURVEN



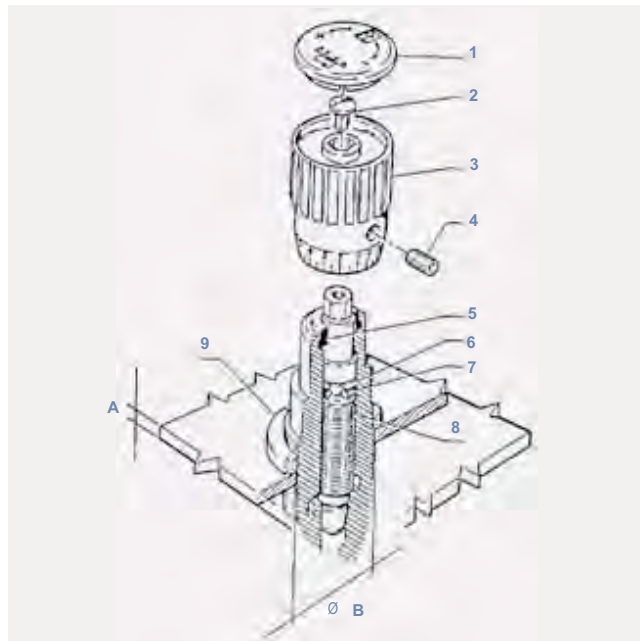
SERIE FT 1250

MONTAGEANLEITUNGEN

Schalttafelmontage

- 1° Inbusschraube (4) lösen
- 2° Kunststoffdeckel (1) entfernen
- 3° Deckelschraube (2) lösen
- 4° Einstellknopf (3) mit Kraft ziehen
- 5° Kontermutter FT 1203 (9) je nach Größe auswählen (auf Wunsch wird sie mit dem Ventil geliefert)

- (A) max. Dichte
(B) Tafelloch Ø



Ersatzdichtungen und Kontermuttern					
Größe	OR (7)	Bk (6)	Kontermutter (9)	A max	Ø B
18	2018	2018	FT 1203/18	5	16
14	2018	2018	FT 1203/14	5	18
38	2021	2021	FT 1203/38	5	21
12	108	108	FT 1203/12	6	26
34	2018	2018	FT 1203/34	6	31

**REGELVENTILE
AUS
PRESSMESSING
MS 58**

FT 1252/2-01



Drosselventile für Leitungseinbau rechtwinklig (Innengewinde/Innengewinde)

Die Drosselventile FT 1252/2-01 dienen zur Drosselung und Absperrung in beiden Durchflußrichtungen. Das ästhetisch ansprechende Design, verbunden mit sorgfältiger Materialauswahl, erlaubt zusätzlich zur Ölhydraulik den Einsatz in Verbindung mit Druckluft und Gasen sowie werkstoffkompatiblen Medien. Der Einsatzdruckbereich ist vorgesehen für Systeme bis 210 bar, z.B. auch dort, wo Stahlventile nicht eingesetzt werden können. Für Anwendung bis 400 bar Betriebsdruck sind die Stahlventile FT 257/2 vorzusehen. Die Präzisionsausführung weist folgende Merkmale wie bei der Serie FT 257 auf:

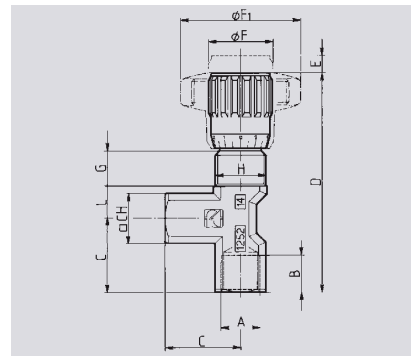
- genaue Volumenstrom-Regelung;
 - wirksame metallische Abdichtung ohne Leckage;
 - einfache Regeleinstellung;
 - absolute Sicherheit gegen Lösen der Ventilspindel;
 - stabile Einstellsicherung durch Inbus-Arettierschraube im Einstellknopf;
 - Möglichkeit der Schalttafelmontage durch zusätzliche Kontermutter (G);
- Max. Betriebsdruck 210 bar.

Auf Wunsch

- Ausführung in Edelstahl AISI 316 Ventilcode FT 2252/2-01
- Vitondichtung (V)
- NPT-Anschlußgewinde
- ABS-Kunststoffknopf (mp)
- mit Kontermutter (G)

WERKSTOFFE

Gehäuse	Pressmessing MS 58 UNI 5705, vernickelt
Ventilspindel	X 10 Cr Ni S 1809 - UNI 6900
O-Ring	NBR Nitrilgummi
Stützring	PTFE
Einstellknopf	GD - Al Si 12 - UNI 5706
Kunststoffgriff	ABS



BESTELLBEISPIEL

Zubehör auf Wunsch

	Bestellcode	Größe	Kontermutter	Vitondichtung	ABS-Griff
Ottone	FT 1252/2-01	38	G	V	mp

CODE FT 1252/2-01

Bestell-Nr. code	Typ type	A Uni 338	B	C	D	E	F	F1	G	H	L	CH	kg
240-050-01000	FT1252-2-01-18	1/8"G	8	21	69	4	22	40	12	M15x1	9,5	15	0,105
240-050-01050	FT1252-2-01-14	1/4"G	12	25	74	4,5	22	40	12	M17x1	11	17	0,136
240-050-01100	FT1252-2-01-38	3/8"G	13	29,5	88	7	27	50	11,5	M20x1	15	22	0,248
240-050-01150	FT1252-2-01-12	1/2"G	16	36	105	10	33	70	13	M25x1,5	19	27	0,454

Einbauleitungen für Schalttafelmontage finden Sie auf Seite 86



**Drosselventile für Leitungseinbau
rechtwinklig
(Außengewinde/Innengewinde)**

Die Drosselventile FT 1252/2-02 dienen zur Drosselung und Absperrung in beiden Durchflußrichtungen. Das ästhetisch ansprechende Design, verbunden mit sorgfältiger Materialauswahl, erlaubt zusätzlich zur Ölhydraulik den Einsatz in Verbindung mit Druckluft und Gasen sowie werkstoffkompatiblen Medien. Der Einsatzdruckbereich ist vorgesehen für Systeme bis 210 bar, z.B. auch dort, wo Stahlventile nicht eingesetzt werden können. Für Anwendung bis 400 bar Betriebsdruck sind die Stahlventile FT 257/2 vorzusehen. Die Präzisionsausführung weist folgende Merkmale wie bei der Serie FT 257 auf:



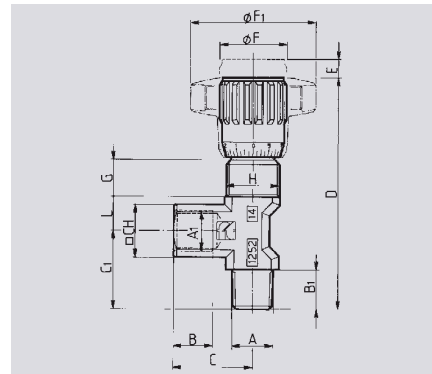
FT 1252/2-02

- genaue Volumenstrom-Regelung;
 - wirksame metallische Abdichtung ohne Leakage;
 - einfache Regeleinstellung;
 - absolute Sicherheit gegen Lösen der Ventilspindel;
 - stabile Einstellsicherung durch Inbus-Areттierschraube im Einstellknopf;
 - Möglichkeit der Schalttafelmontage durch zusätzliche Kontermutter (G).
- Max. Betriebsdruck 210 bar.

Auf Wunsch

- Ausführung in Edelstahl AISI 316 Ventilcode FT 2252/2-02
- Vitondichtung (V)
- NPT-Anschlußgewinde
- ABS-Kunststoffknopf (mp)
- mit Kontermutter (G)

**REGELVENTILE
AUS
PRESSMESSING
MS 58**



Gehäuse	Pressmessing MS 58 UNI 5705, vernickelt
Ventilspindel	X 10 Cr Ni S 1809 UNI 6900
O-Ring	NBR Nitrilgummi
Stützring	PTFE
Einstellknopf	GD - Al Si - UNI 5706
Kunststoffgriff	ABS

WERKSTOFFE

Zubehör auf Wunsch

Bestellcode	Größe	Kontermutter	Vitondichtung	ABS-Griff	
Messing	FT1252/2-02	12	G	V	mp

BESTELLBEISPIEL

Bestell-Nr. code	Typ type	A Uni 338	A1 Uni 339	B	B1	C	C1	D	E	F	F1	G	H	L	CH	kg
240-050-01200	FT1252-2-02-18	1/8"G	1/8"Gc	8	9	21	21	70	4	22	40	12	M15x1	9,5	15	0,102
240-050-01250	FT1252-2-02-14	1/4"G	1/4"Gc	12	12	25	25	74	4,5	22	40	12	M17x1	11	17	0,132
240-050-01300	FT1252-2-02-38	3/8"G	3/8"Gc	13	13	29,5	29,5	88	7	27	50	11,5	M20x1	15	22	0,245
240-050-01350	FT1252-2-02-12	1/2"G	1/2"Gc	16	16	36	36	105	10	33	70	13	M25x1,5	19	27	0,440

**CODE
FT 1252/2-02**

Einbauleitungen für Schalttafelmontage für alle Serien finden Sie auf Seite 86

	FT.....	/	2	-	02	-	18	-	G-V-T-mp
VENTILCODE									
FUNKTIONSCODE			2 = Drosselventil 5 = Drosselrückschlagventil 6 = Rückschlagventil						
					01 = Innengewinde/Innengewinde 02 = Außengewinde/Innengewinde 04 = Rohranschluß DIN 2353 05 = Schlauchanschluß DIN 3861				
							18 = G 1/8 14 = G 1/4 38 = G 3/8 12 = G 1/2 34 = G 3/4 100 = G 1 114 = G 1 1/4 112 = G 1 1/2 200 = G 2		
ANSCHLUSSCODE									
ZUBEHÖR (AUF WUNSCH)									G = Kontermutter für Schalttafeleinbau V = Vitondichtung T = Schalttafel mp = ABS-Sterngriff
ANSCHLUSSGEWINDE									

FT202/3	Kontermutter M 17x1
FT202/4	Kontermutter M 20x1
FT202/5	Kontermutter M25x1,5
FT202/6	Kontermutter M30x1,5
FT202/8	Kontermutter M40x1,5
FT202/10	Kontermutter M50x1,5

FT 1251/2-FT 1252/2 - FT 1251/5

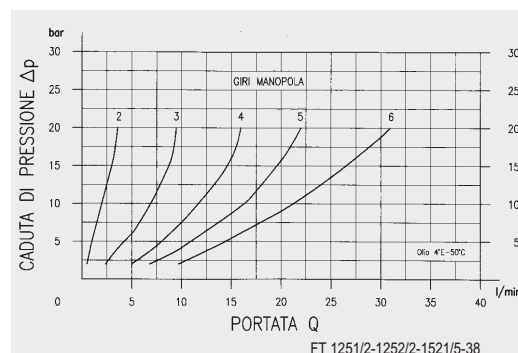
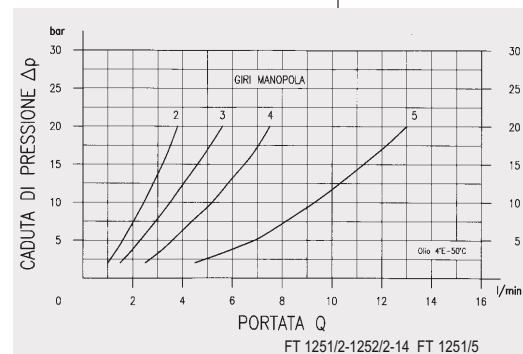
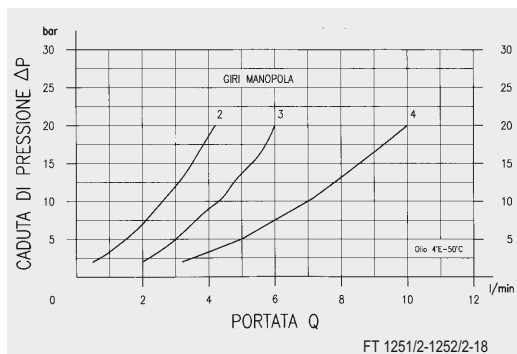
Größe	Durchmesser mm ²	max. Betriebsdruck bar	Betriebstemperatur °C	Filtrierung µm
18	7,07	210	-20°/+100°	25
14	12,57	210	-20°/+100°	25
38	19,64	210	-20°/+100°	25
12	50,27	210	-20°/+100°	25
34	78,54	210	-20°/+100°	25

**TECHNISCHE
DATEN DER
SERIE
FT 1251/2
FT 1252/2**

Größe	Durchmesser mm ²	max. Betriebsdruck bar	Betriebstemperatur °C	Filtrierung µm
14	12,57	210	-20°/+100°	25
38	19,64	210	-20°/+100°	25
12	50,27	210	-20°/+100°	25
34	78,54	210	-20°/+100°	25

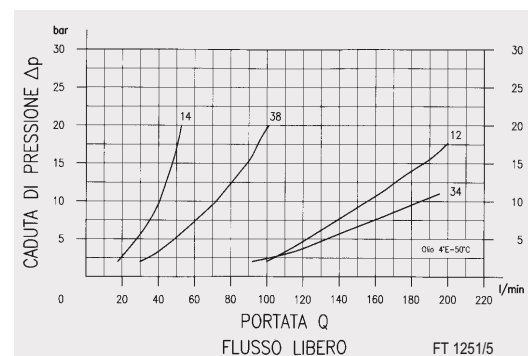
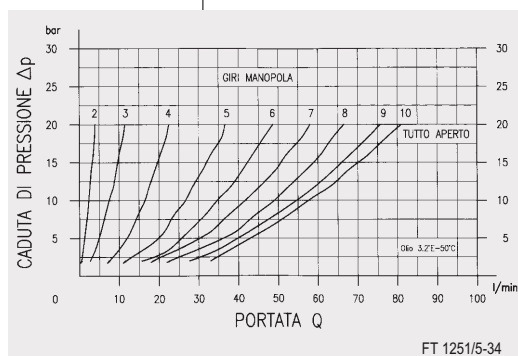
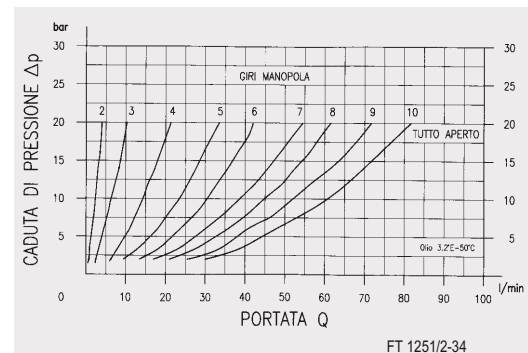
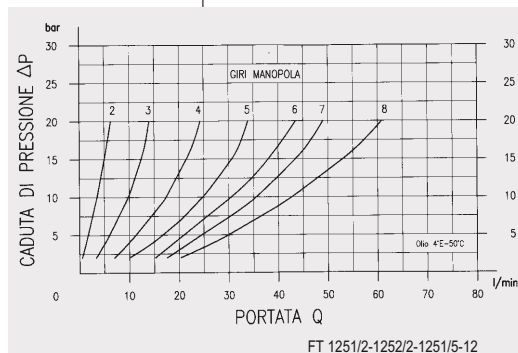
**TECHNISCHE
DATEN DER
SERIE
FT 1251/5**

DURCHFLUSSKURVEN



FT 1251/2-FT 1252/2 - FT 1251/5

DURCHFLUSSKURVEN



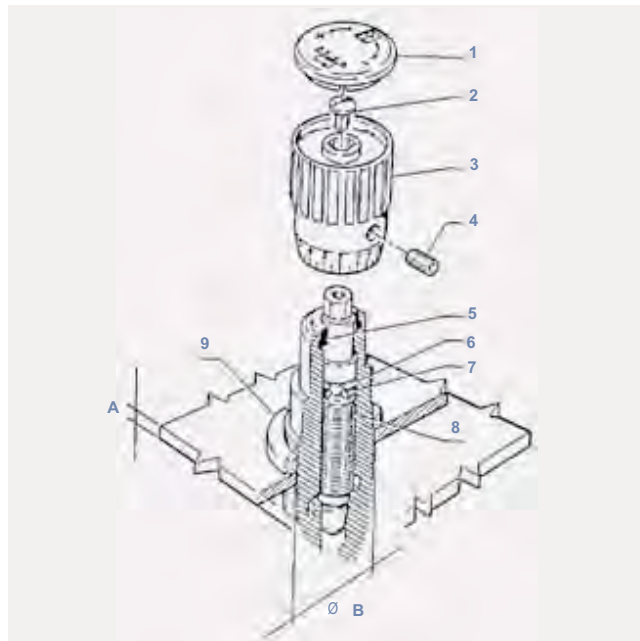
SERIE FT 1250

MONTAGEANLEITUNGEN

Schalttafelmontage

- 1° Inbusschraube (4) lösen
- 2° Kunststoffdeckel (1) entfernen
- 3° Deckelschraube (2) lösen
- 4° Einstellknopf (3) mit Kraft ziehen
- 5° Kontermutter FT 1203 (9) je nach Größe auswählen (auf Wunsch wird sie mit dem Ventil geliefert)

- (A) max. Dichte
(B) Tafelloch Ø



Ersatzdichtungen und Kontermuttern					
Größe	OR (7)	Bk (6)	Kontermutter (9)	A max	Ø B
18	2018	2018	FT 1203/18	5	16
14	2018	2018	FT 1203/14	5	18
38	2021	2021	FT 1203/38	5	21
12	108	108	FT 1203/12	6	26
34	2018	2018	FT 1203/34	6	31

**REGELVENTILE
AUS
PRESSMESSING
MS 58**

FT 1251/5-01

Drosselrückschlagventile für Leitungseinbau (Innengewinde/Innengewinde)

Für genaue und zuverlässige Volumenstrom-Regelung bzw. Absperrung in einer Durchflußrichtung, in Gegenrichtung freier Durchfluß.

Das ästhetisch ansprechende Design, verbunden mit sorgfältiger Materialauswahl, erlaubt zusätzlich zur Ölhydraulik den Einsatz in Verbindung mit Druckluft und Gasen sowie werkstoffkompatiblen Medien.

Der Einsatzdruckbereich ist vorgesehen für Systeme bis 210 bar, z.B. auch dort, wo Stahlventile nicht eingesetzt werden können.

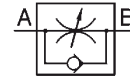
Die Präzisionsausführung weist folgende Merkmale wie bei der Serie FT 257 auf:

- genaue Volumenstrom-Regelung;

- wirksame metallische Abdichtung ohne Leckage;
 - linearer Öffnungsquerschnitt;
 - einfache Regeleinrichtung;
 - absolute Sicherheit gegen Lösen der Ventilspindel;
 - stabile Einstellsicherung durch Inbus-Aretierschraube im Einstellknopf;
 - Möglichkeit der Schalttafelmontage durch zusätzliche Kontermutter (G).
- Max. Betriebsdruck 210 bar.

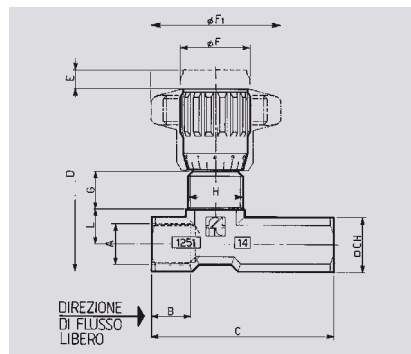
Auf Wunsch

- Vitondichtung (V)
- NPT-Anschlußgewinde
- ABS-Kunststoffknopf (mp)
- mit Kontermutter (G)



WERKSTOFFE

Gehäuse	Pressmessing MS 58 UNI 5705, vernickelt
Ventilspindel	X 10 Cr Ni S 1809 - UNI 6900
O-Ring	NBR Nitrilgummi
Stützring	PTFE
Einstellknopf	GD - Al Si 12 - UNI 5706
Kunststoffgriff	ABS
Feder	AISI 302
Kugel	UNI 100 C 6
Kugelhalterung	Nylon 66, kohlefaserverstärkt



BESTELLBEISPIEL

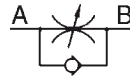
Zubehör auf Wunsch					
	Bestellcode	Größe	Kontermutter	Vitondichtung	ABS-Griff
Messing	FT1251/5-01	38	G	V	mp

CODE FT 1251/5-01

Bestell-Nr. code	Typ type	A Uni 338	B	C	D	E	F	F1	G	H	L	CH	kg
240-060-01000	FT1251-5-01-14	1/4"G	12	56	57	4,5	22	40	11,5	M17x1	11	17	0,138
240-060-01050	FT1251-5-01-38	3/8"G	13	64,5	69	7	27	50	12,5	M20x1	15	22	0,259
240-060-01100	FT1251-5-01-12	1/2"G	16	87	82	10	300	70	13	M25x1,5	19	27	0,499
240-060-01150	FT1251-5-01-34	3/4"G	20	115	100	12	38	80	15	M30x1,5	22	34	0,975

Einbauleitungen für Schalttafelmontage finden Sie auf Seite 86

FT 1254/5-01



Drosselrückschlagventile rechtwinklig

für genaue und zuverlässige Volumenstrom-Regelung in einer Durchflußrichtung, in Gegenrichtung freier Durchfluß, über Rückschlagventil, integriert in Spindel. Das ästhetisch ansprechende Design, verbunden mit sorgfältiger Materialauswahl, erlaubt zusätzlich zur Ölhydraulik den Einsatz in Verbindung mit Druckluft und Gasen sowie werkstoffkompatiblen Medien. Der Einsatzdruckbereich ist vorgesehen für Systeme bis 210 bar, z.B. auch dort, wo Stahlventile nicht eingesetzt werden können. Sie sind eine gute Alternative für die der Serie FT 257/5. Die Präzisionsausführung weist folgende Merkmale wie bei der Serie FT 257 auf:

- genaue Volumenstrom-Regelung;
- wirksame metallische Abdichtung ohne Leckage;
- linearer Öffnungsquerschnitt;

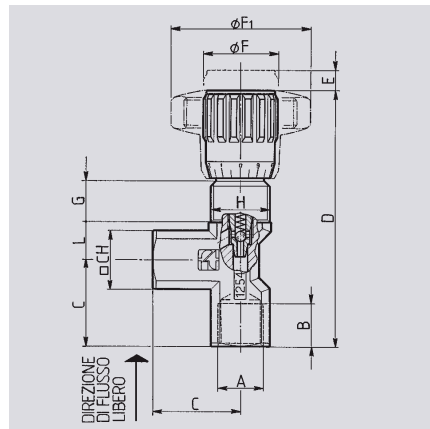
- einfache Regeleinstellung;
 - absolute Sicherheit gegen Lösen der Ventilspindel;
 - stabile Einstellsicherung durch Inbus-Arettierschraube im Einstellknopf;
 - Möglichkeit der Schalttafelmontage durch zusätzliche Kontermutter (G).
- Max. Betriebsdruck 210 bar.

Auf Wunsch

- Vitondichtung (V)
- NPT-Anschlußgewinde
- ABS-Kunststoffknopf (mp)
- mit Kontermutter (G)

WERKSTOF

Gehäuse	Pressmessing MS 58 UNI 5705, vernickelt
Ventilspindel	X 10 Cr Ni S 1809 UNI 6900
O-Ring	NBR Nitrilgummi
Stützring	PTFE
Einstellknopf	GD - Al Si 12 - UNI 5706
Kunststoffgriff	ABS



BESTELLBEISPIEL

Ausführungen auf Wunsch			Zubehör auf Wunsch			
Bestellcode	AG/IG-Anschluß	Größe	Kontermutter	Vitondichtung	ABS-Griff	
Messing	FT 1254/5	02	38	G	V	mp

CODE FT 1254/5-01

Bestell-Nr. code	Typ type	A Uni 338	B	C	D	E	F	F1	G	H	L	CH	kg
240-060-01200	FT1254-5-01-18	1/8"G	8	21	69	4	22	40	12	M15x1	9,5	15	0,105
240-060-01250	FT1254-5-01-14	1/4"G	12	25	74	4,5	22	40	11,5	M17x1	11	17	0,137
240-060-01300	FT1254-5-01-38	3/8"G	13	29,5	88	7	27	50	12,5	M20x1	15	22	0,251
240-060-01350	FT1254-5-01-12	1/2"G	16	36	105	10	33	70	13	M25x1,5	19	27	0,450

Einbauleitungen für Schalttafelmontage finden Sie auf Seite 86

	FT.....	/	2	-	02	-	18	-	G-V-T-mp
VENTILCODE									
FUNKTIONSCODE			2 = Drosselventil 5 = Drosselrückschlagventil 6 = Rückschlagventil		01 = Innengewinde/Innengewinde 02 = Außengewinde/Innengewinde 04 = Rohranschluß DIN 2353 05 = Schlauchanschluß DIN 3861		18 = G 1/8 14 = G 1/4 38 = G 3/8 12 = G 1/2 34 = G 3/4 100 = G 1 114 = G 1 1/4 112 = G 1 1/2 200 = G 2		
ANSCHLUSSCODE									
ZUBEHÖR (AUF WUNSCH)									G = Kontermutter für Schalttafeleinbau V = Vitondichtung T = Schalttafel mp = ABS-Sterngriff
ANSCHLUSSGEWINDE									

FT202/3	Kontermutter M 17x1
FT202/4	Kontermutter M 20x1
FT202/5	Kontermutter M25x1,5
FT202/6	Kontermutter M30x1,5
FT202/8	Kontermutter M40x1,5
FT202/10	Kontermutter M50x1,5

FT 1251/2-FT 1252/2 - FT 1251/5

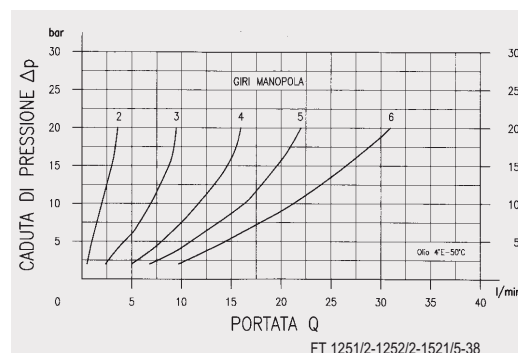
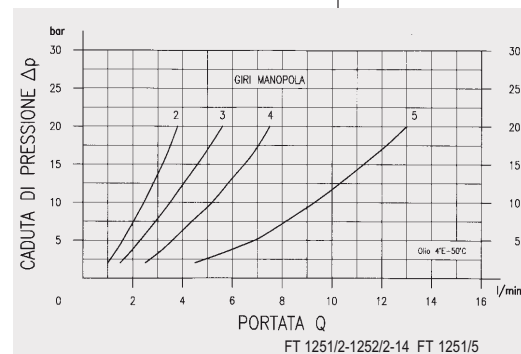
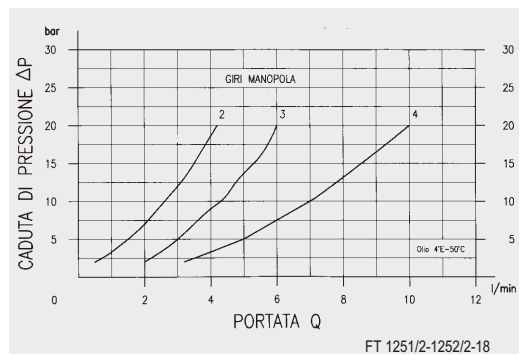
Größe	Durchmesser mm ²	max. Betriebsdruck bar	Betriebstemperatur °C	Filtrierung µm
18	7,07	210	-20°/+100°	25
14	12,57	210	-20°/+100°	25
38	19,64	210	-20°/+100°	25
12	50,27	210	-20°/+100°	25
34	78,54	210	-20°/+100°	25

**TECHNISCHE
DATEN DER
SERIE
FT 1251/2
FT 1252/2**

Größe	Durchmesser mm ²	max. Betriebsdruck bar	Betriebstemperatur °C	Filtrierung µm
14	12,57	210	-20°/+100°	25
38	19,64	210	-20°/+100°	25
12	50,27	210	-20°/+100°	25
34	78,54	210	-20°/+100°	25

**TECHNISCHE
DATEN DER
SERIE
FT 1251/5**

DURCHFLUSSKURVEN



FT 1251/2-FT 1252/2 - FT 1251/5

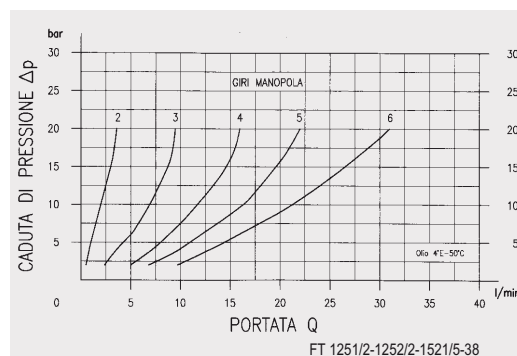
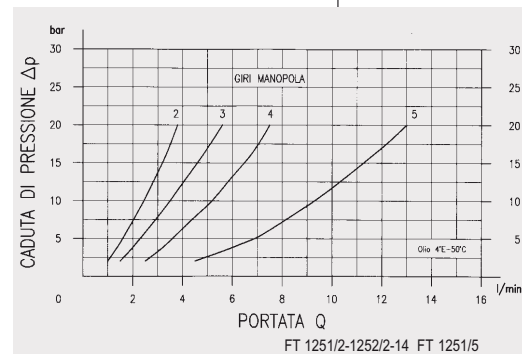
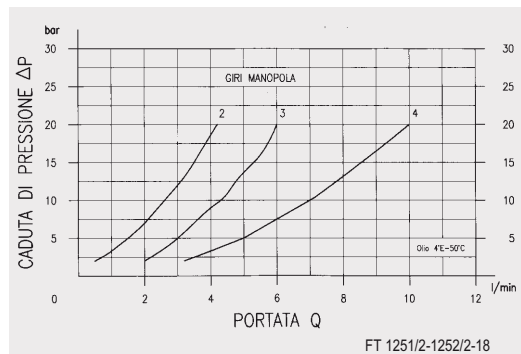
Größe	Durchmesser mm ²	max. Betriebsdruck bar	Betriebstemperatur °C	Filtrierung µm
18	7,07	210	-20°/+100°	25
14	12,57	210	-20°/+100°	25
38	19,64	210	-20°/+100°	25
12	50,27	210	-20°/+100°	25
34	78,54	210	-20°/+100°	25

**TECHNISCHE
DATEN DER
SERIE
FT 1251/2
FT 1252/2**

Größe	Durchmesser mm ²	max. Betriebsdruck bar	Betriebstemperatur °C	Filtrierung µm
14	12,57	210	-20°/+100°	25
38	19,64	210	-20°/+100°	25
12	50,27	210	-20°/+100°	25
34	78,54	210	-20°/+100°	25

**TECHNISCHE
DATEN DER
SERIE
FT 1251/5**

DURCHFLUSSKURVEN



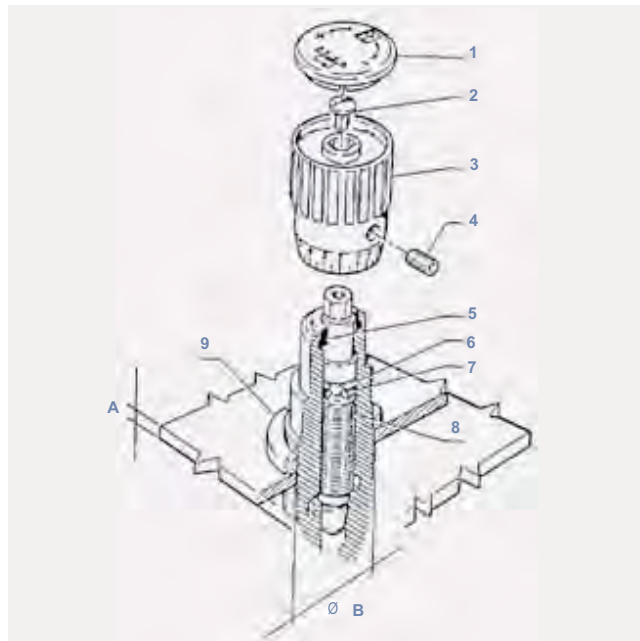
SERIE FT 1250

MONTAGEANLEITUNGEN

Schalttafelmontage

- 1° Inbusschraube (4) lösen
- 2° Kunststoffdeckel (1) entfernen
- 3° Deckelschraube (2) lösen
- 4° Einstellknopf (3) mit Kraft ziehen
- 5° Kontermutter FT 1203 (9) je nach Größe auswählen (auf Wunsch wird sie mit dem Ventil geliefert)

- (A) max. Dichte
(B) Tafelloch Ø



Ersatzdichtungen und Kontermuttern					
Größe	OR (7)	Bk (6)	Kontermutter (9)	A max	Ø B
18	2018	2018	FT 1203/18	5	16
14	2018	2018	FT 1203/14	5	18
38	2021	2021	FT 1203/38	5	21
12	108	108	FT 1203/12	6	26
34	2018	2018	FT 1203/34	6	31

FT 1237/2



MIKRO-REGELVENTILE

Mikro-Drosselventile

Miniatur-Nadelventile für alle Ansprüche, die genaueste Regelung bei kleinem Volumenstrom erfordern. Neben Ölhydraulik sind diese Ventile auch für Pneumatik-Anlagen mit Durchflüssen bis ca. 3 l/min. einsetzbar. Diese Serie eignet sich ausgezeichnet auch für den Einsatz mit Gasen und anderen werkstoffkompatiblen Medien. Die Ausführung ähnelt der Serie FT 1250 und garantiert die folgenden Merkmale:

- wirksame metallische Abdichtung ohne Leckage;
- Möglichkeit der Schalttafelmontage;
- mechanischer Anschlag gegen Ausreißen der Ventilspindel.

Auf Wunsch

- NPT-Anschlußgewinde
- Vitondichtung (V)

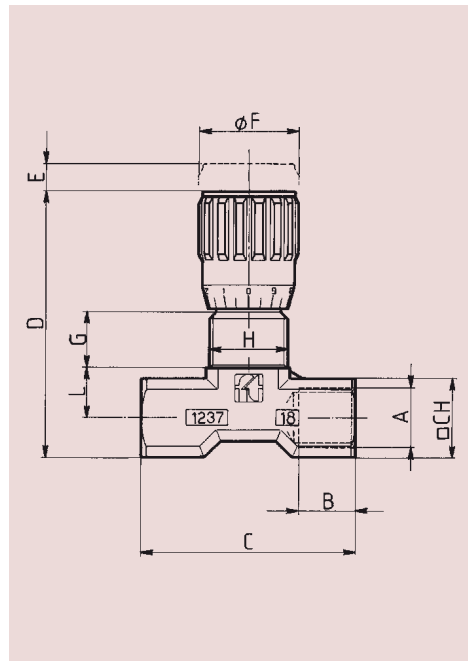


WERKSTOFFE

Gehäuse	MS 58 - UNI 5705, passiviert
Ventilspindel	X 10 Cr Ni S 1809 UNI 6900
O-Ring	NBR Nitrilgummi
Stützring	PTFE
Einstellknopf	GD Al Si 12 - UNI 5706

BESTELLBEISPIEL

Zubehör auf Wunsch				
Bestellcode	Größe	Kontermutter	Vitondichtung	
Messing FT 1237/2	18	G	V	



CODE
1237/2

Bestell-Nr. code	Typ type	A Uni 338	B	C	D	E	F	G	H	L	CH	kg
240-070-01000	FT1237-2-01-18	1/8"G	8	40	55	4	22	12	M15x1	9,5	15	0,105



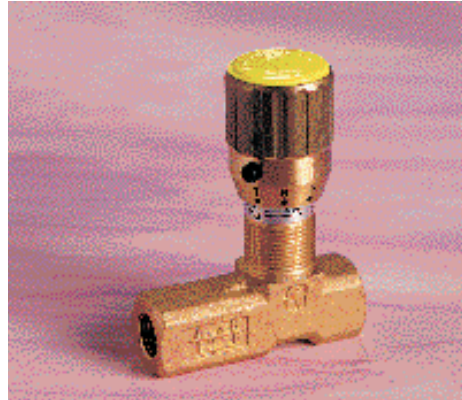
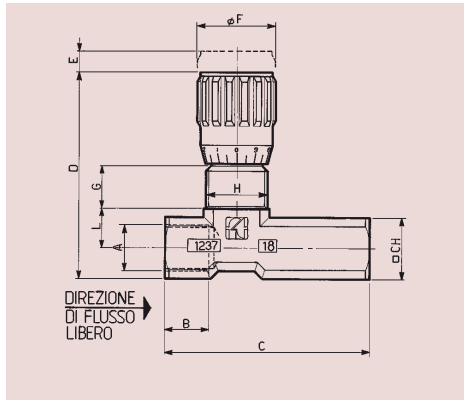
Mikro-Drosselrückschlagventile

Miniatur-Nadelventile für alle Ansprüche, die genaueste Regelung bei kleinem Volumenstrom erfordern. Neben Ölhydraulik sind diese Ventile auch für Pneumatik-Anlagen mit Durchflüssen bis ca. 3 l/min. einsetzbar. Diese Serie eignet sich ausgezeichnet auch für den Einsatz mit Gasen und anderen werkstoffkompatiblen Medien. Die Ausführung ähnelt der Serie FT 1250 und garantiert die folgenden Merkmale:

- wirksame metallische Abdichtung ohne Leckage;
- Möglichkeit der Schalttafelmontage;
- mechanischer Anschlag gegen Ausreißen der Ventilspindel.

Auf Wunsch

- NPT-Anschlußgewinde
- Vitondichtung (V)



Gehäuse	MS 58 - UNI 5705, passiviert
Ventilspindel	X 10 Cr Ni S 1809 - UNI 6900
O-Ring	NBR Nitrilgummi
Stützring	PTFE
Einstellknopf	GD Al Si 12 - UNI 5706
Feder	AISI 302
Kugel	UNI 100 C 6
Kugelhalterung	Nylon 66, kohlefaserverstärkt

MIKRO-REGELVENTILE

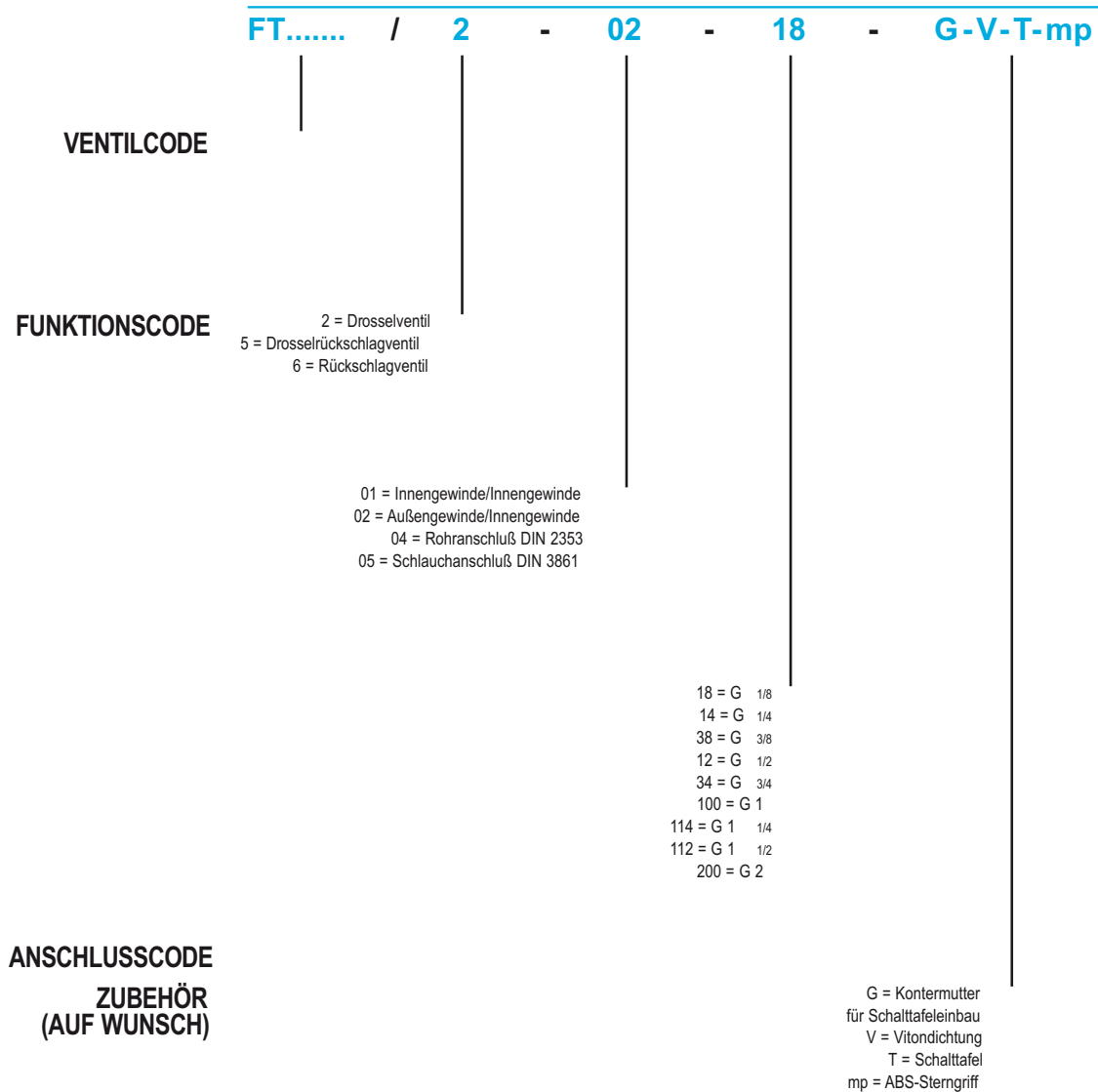
WERKSTOFFE

Zubehör auf Wunsch				
	Bestellcode	Größe	Kontermutter	Vitondichtung
Messing	FT1237/5	18	G	V

BESTELLBEISPIEL

Bestell-Nr. code	Typ type	A Uni 338	B	C	D	E	F	G	H	L	CH	kg
240-070-01050	FT1237-5-01-18	1/8"G	8	46,5	55	4	22	12	M15x1	9,5	15	0,110

CODE
1237/5



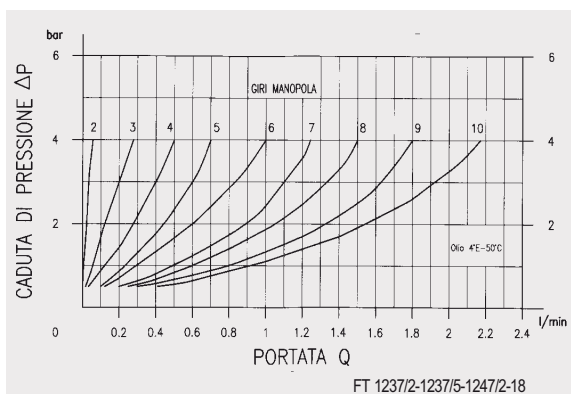
ANSCHLUSSGEWINDE

- FT202/3 Kontermutter M 17x1
- FT202/4 Kontermutter M 20x1
- FT202/5 Kontermutter M25x1,5
- FT202/6 Kontermutter M30x1,5
- FT202/8 Kontermutter M40x1,5
- FT202/10 Kontermutter M50x1,5

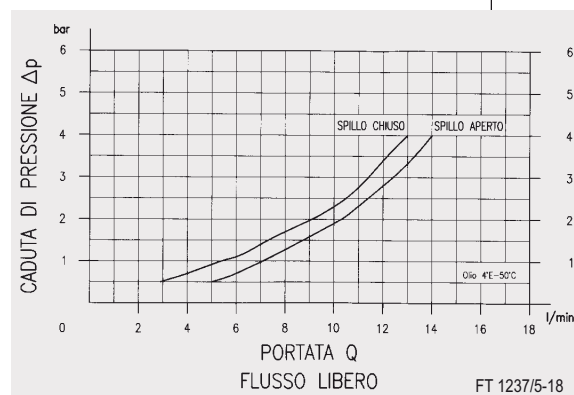
FT 1237/2-FT 1237/5-FT 1247/2

Größe	Durchmesser mm ²	Betriebsdruck bar	Betriebstemperatur °C	Filtrierung µm
18	3,14	210	-20°/+100°	25

TECHNISCHE DATEN



DURCHFLUSSKURVEN

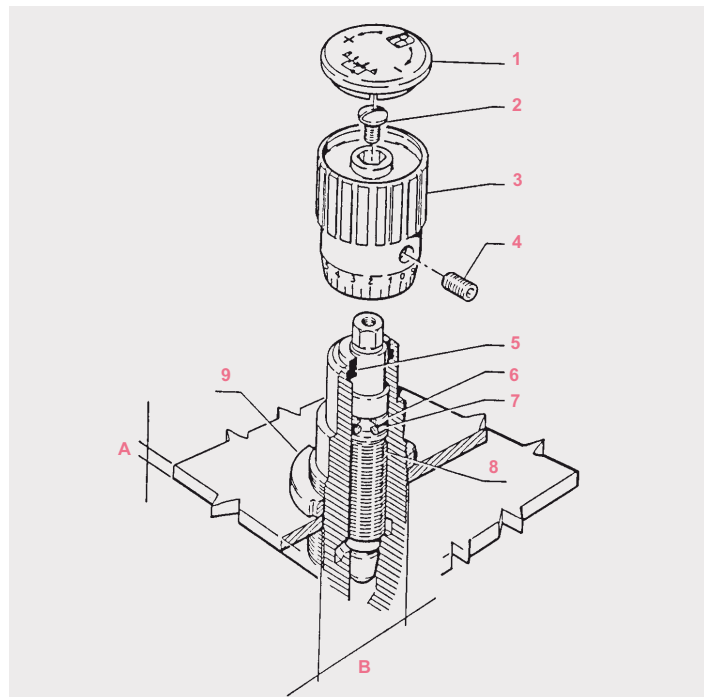


SERIE FT 1237

MONTAGEANLEITUNG

Schalttafelmontage

- 1° Inbusschraube (4) lösen
- 2° Deckel (1) entfernen
- 3° Griffschraube (2) lösen
- 4° Einstellknopf (3) mit Kraft abziehen
- 5° Kontermutter FT 1203 (9) je nach Größe auswählen
(auf Wunsch wird sie mit dem Ventil geliefert)



Ersatzteile Dichtungen und Kontermuttern

Größe	18
(7) O-Ring	2018
(6) Stützring	2018
(9) Kontermutter (KM)	KM2 (FT 202/2)
Tafeldichte A max	6
Tafelloch n B	16

FT 290



MANOMETER-
ABSPERR- UND
SCHUTZVENTILE

Manometer-Absperrventile

Manometer-Absperrventile der Serie FT 290 werden zum Schutz von Manometern eingesetzt. Sie erfüllen eine Doppelfunktion, Druckstöße in der Startphase abzufangen und das Manometer von der Druckleitung zu trennen. Die Absperrventile werden aus hochwertigem Stahl geschmiedet und präzise bearbeitet. 100%ige Prüfung bietet größte Zuverlässigkeit und Lebensdauer.

Die drehbare Überwurfmutter erlaubt die Manometerpositionierung in die gewünschte Richtung. Die eingelegte O-Ring-Dichtung gehört zum Lieferumfang und dichtet zuverlässig zum Manometer ab.

Für Manometer mit konischem Anschlußgewinde ist eine Kupferdichtung FT 1201 lieferbar, siehe Seite 104. Die Manometer-Absperrventile sind für Betriebsdrücke bis

400 bar und Temperaturen von -20°C +100°C einsetzbar. Kontermuttern (G) für die Schalltafelmontage sind separat lieferbar.

Auf Wunsch

- Anschlußausführung Innengewinde/Innengewinde (01)
- Rohranschluß (04)
- Schlauchanschluß (05)
- Vitondichtungen (V)
- Komplet mit Kontermuttern (G)

WERKSTOFF

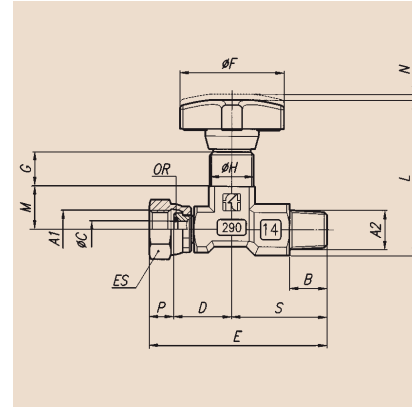
Gehäuse	9 SMn Pb 23 - UNI 5105 geschmiedet
Ventilspindel	35 S Mn Pb 10 - UNI 5105 gehärtet
O-Ring	NBR Nitrilgummi
Stützring	PTFE
Sterngriff	Nylon 66



BESTELLBEISPIEL

Bestellcode		Größe AG/IG	Anschluß	Kontermutter	Vitondichtung
FT 290		14	01	G	V
FT 290		12	-	G	-

Code FT 290



CODE FT 290

Größe	A1	A2	B	C	D	E	F	G	H	L	M	N	P	S	OR	ES	Gewicht kg
	UNI 338	UNI 339															
14	1/4 "G	1/4 "Gc	13	5,6	20	61,5	34	12	M15x1	53	15	2	8,5	33	2018	18	0,125
12	1/2 "G	1/2 "Gc	16	6,5	32	83	40	12,5	M20x1	82,5	19	6	11	40	2021	27	0,413

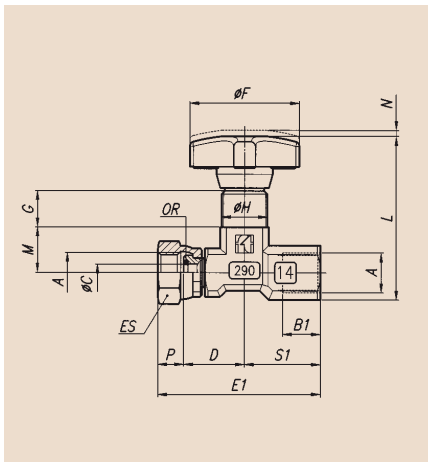
Bestell-Nr. code	Bezeichnung	Typ type
240-080-01000	Manometerabsperrhahn 1/4 AG Stahl	FT290-14
240-080-01050	Manometerabsperrhahn 1/4 IG Stahl	FT290-01-14
240-080-01100	Manometerabsperrhahn 1/2 AG Stahl	FT290-12
240-080-01150	Manometerabsperrhahn 1/4 ÜW Stahl	FT290-05-14

FT 290

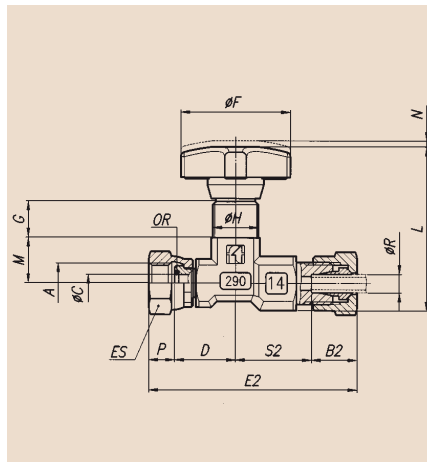
Sonderausführungen für Type 14 werden für Mindestmengen ab 200 Stück auf Anfrage gefertigt

MANOMETER-
ABSPERR- UND
SCHUTZVENTILE

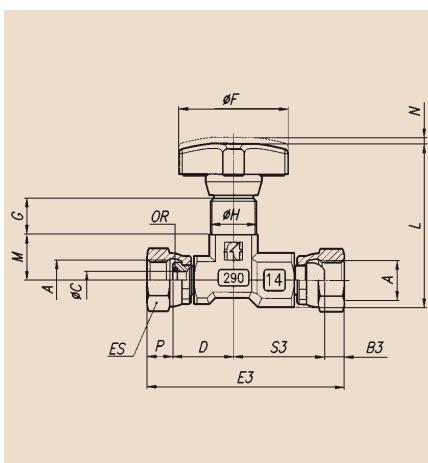
Code FT 290-01
Innengewinde/Innengewinde



Code FT 290-04
Rohranschluß - DIN 2353



Code FT 290-05
Schlauchanschluß
DIN 3861
DIN 7611



Bestell-Nr. code	Bezeichnung	Typ type
240-080-01000	Manometerabsperrhahn 1/4 AG Stahl	FT290-14
240-080-01050	Manometerabsperrhahn 1/4 IG Stahl	FT290-01-14
240-080-01100	Manometerabsperrhahn 1/2 AG Stahl	FT290-12
240-080-01150	Manometerabsperrhahn 1/4 ÜW Stahl	FT290-05-14

A	B1	B2	B3	C	D	E1	E2	E3	F	G	H	L	M	N	P	R	S1	S2	S3	OR	E	Gewicht kg
1/4	11	15	6,5	5,6	20	54,5	69,5	66	34	12	M15x1	53	15	2	8,5	6	25	25	30	2108	18	01 0,125 04 0,150 05 0,145

**MANOMETER-
ABSPERR- UND
SCHUTZVENTILE**

FT 291



Manometer-Absperrventile, rechtwinklig

Manometer-Absperrventile der Serie FT 291 werden zum Schutz von Manometern eingesetzt. Sie erfüllen eine Doppelfunktion, Druckstöße in der Startphase abzufangen und das Manometer von der Druckleitung zu trennen.

Die Absperrventile werden aus hochwertigem Stahl geschmiedet und präzise bearbeitet. 100%ige Prüfung bietet größte Zuverlässigkeit und Lebensdauer.

Die drehbare Überwurfmutter erlaubt die Manometerpositionierung in die gewünschte Richtung. Die eingelegte O-Ring-Dichtung gehört zum Lieferumfang und dichtet zuverlässig zum Manometer ab.

Für Manometer mit konischem Anschlußgewinde ist eine Kupferdichtung FT 1201 lieferbar (siehe Seite 104). Für

Manometer NG 100 mit Anschluß G1/2 ist ein Adapter FT 299-24 (siehe Seite 103) lieferbar, alternativ Type FT 290-12.

Die Manometer-Absperrventile sind für Betriebsdrücke bis 400 bar und Temperaturen von -20°C +100°C einsetzbar. Kontermuttern (G) für die Schalltafelmontage sind separat lieferbar.

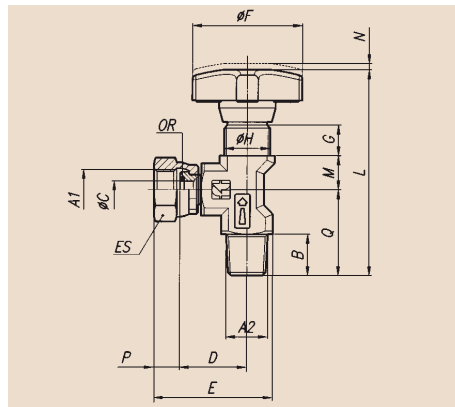
Auf Wunsch

- Anschlußausführung Innengewinde/Innengewinde (01)
- Rohranschluß (04)
- Schlauchanschluß (05)
- Vitondichtungen (V)
- Komplett mit Kontermuttern (G)

WERKSTOFFE

Gehäuse	9 SMn Pb 23 - UNI 5105 geschmiedet
Ventilspindel	35 S Mn Pb 10 - UNI 5105 gehärtet
O-Ring	NBR Nitrilgummi
Stützring	PTFE
Sterngriff	Nylon 66

Code FT 291



BESTELLBEISPIEL

Bestellcode	Anschluß AG/IG	Zubehör auf Wunsch	
		Kontermutter	Vitondichtung
FT 291	01	G	V

CODE FT 291

A1	A2	B	C	D	E	F	G	H	L	M	N	P	Q	ES	OR	Gewicht kg.
UNI 338	UNI 339															
1/4 °G	1/4 °Gc	13,5	5,6	22	40	34	10	M15x1	66	11	2	8,5	28	18	2108	0,105

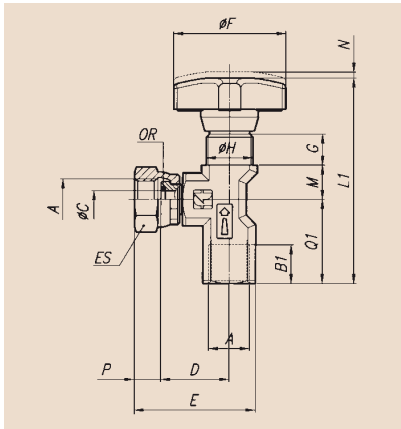
Bestell-Nr. code	Bezeichnung	Typ type
240-090-01000	Manometerabsperrrhahn 1/4 90° AG Stahl	FT291-14
240-090-01050	Manometerabsperrrhahn 1/4 90° IG Stahl	FT291-01-14
240-090-01100	Manometerabsperrrhahn 1/4 90° ÜW Stahl	FT291-05-14

FT 291

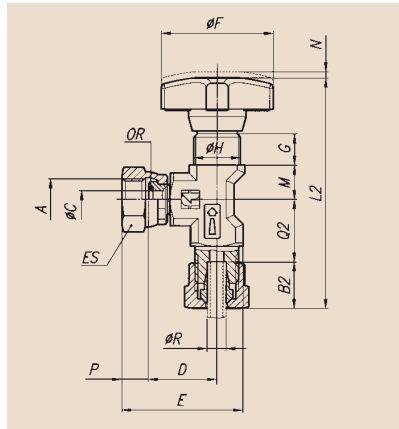
Sonderausführungen werden für Mindestmengen ab 200 Stück auf Anfrage gefertigt

MANOMETER-
ABSPERR- UND
SCHUTZVENTILE

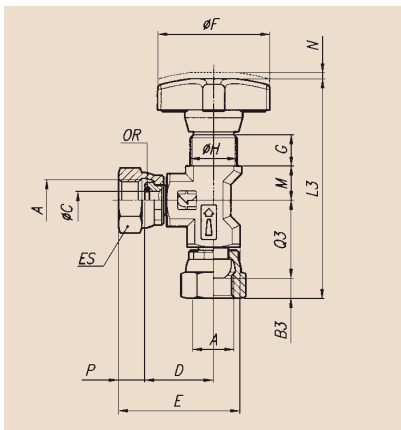
FT 291-01
Innengewinde/Innengewinde



FT 291-04
Rohranschluß DIN 2353



FT 291-05
Schlauchanschluß
DIN 3861
DIN 7611



A	B1	B2	B3	C	D	E	F	G	H	L1	L2	L3	M	N	P	Q1	Q2	Q3	R	ES	OR	Gewicht kg
14	11	15	6,5	5,6	22	40	34	10	M15x1	65	73	69,5	11	2	9,5	27	20	25	6	18	2018	01 0,125 04 0,135 06 0,130

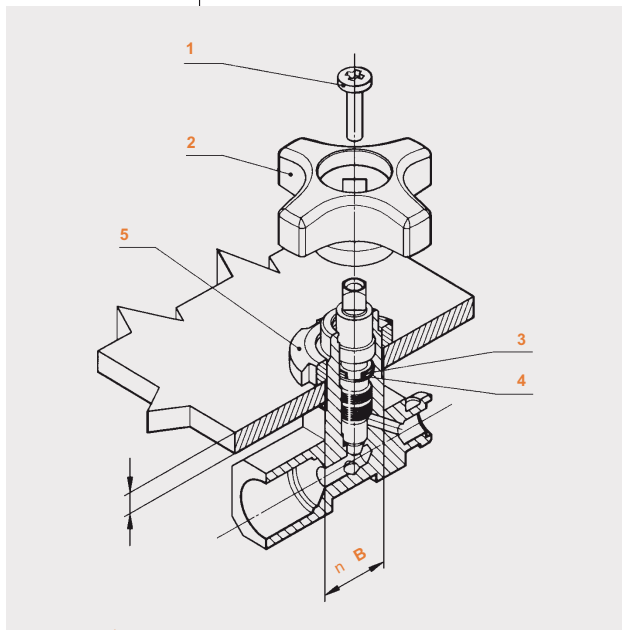
Bestell-Nr. code	Bezeichnung	Typ type
240-090-01000	Manometerabsperrhahn 1/4 90° AG Stahl	FT291-14
240-090-01050	Manometerabsperrhahn 1/4 90° IG Stahl	FT291-01-14
240-090-01100	Manometerabsperrhahn 1/4 90° ÜW Stahl	FT291-05-14

	FT.....	/	2	-	02	-	18	-	G-V-T-mp
VENTILCODE									
FUNKTIONSCODE			2 = Drosselventil 5 = Drosselrückschlagventil 6 = Rückschlagventil		01 = Innengewinde/Innengewinde 02 = Außengewinde/Innengewinde 04 = Rohranschluß DIN 2353 05 = Schlauchanschluß DIN 3861		18 = G 1/8 14 = G 1/4 38 = G 3/8 12 = G 1/2 34 = G 3/4 100 = G 1 114 = G 1 1/4 112 = G 1 1/2 200 = G 2		
ANSCHLUSSCODE ZUBEHÖR (AUF WUNSCH)									G = Kontermutter für Schalttafeleinbau V = Vitondichtung T = Schalttafel mp = ABS-Sterngriff
ANSCHLUSSGEWINDE									

FT202/3	Kontermutter M 17x1
FT202/4	Kontermutter M 20x1
FT202/5	Kontermutter M25x1,5
FT202/6	Kontermutter M30x1,5
FT202/8	Kontermutter M40x1,5
FT202/10	Kontermutter M50x1,5

SERIE FT 290 - 291

MONTAGEANLEITUNGEN



Schalttafelmontage

- 1° Griffschraube (1) lösen
- 2° Sterngriff (2) abziehen
- 3° KM-Nutmutter (FT 202) (5) oder sechswinklige Nutmutter (FT 205) einsetzen

Ersatzdichtungen und Kontermuttern

(3) O-Ring	(4) Stützring	(5) Kontermuttern auf Wunsch	A max	n B
2018	2018	KM2 Sechskantmutter	5	16
(FT 202/2)	FT 205			

FT 290



MANOMETER-
ABSPERR- UND
SCHUTZVENTILE

Manometer-Absperrventile

Manometer-Absperrventile der Serie FT 290 werden zum Schutz von Manometern eingesetzt. Sie erfüllen eine Doppelfunktion, Druckstöße in der Startphase abzufangen und das Manometer von der Druckleitung zu trennen. Die Absperrventile werden aus hochwertigem Stahl geschmiedet und präzise bearbeitet. 100%ige Prüfung bietet größte Zuverlässigkeit und Lebensdauer.

Die drehbare Überwurfmutter erlaubt die Manometerpositionierung in die gewünschte Richtung. Die eingelegte O-Ring-Dichtung gehört zum Lieferumfang und dichtet zuverlässig zum Manometer ab.

Für Manometer mit konischem Anschlußgewinde ist eine Kupferdichtung FT 1201 lieferbar, siehe Seite 104.

Die Manometer-Absperrventile sind für Betriebsdrücke bis

400 bar und Temperaturen von -20°C +100°C einsetzbar. Kontermuttern (G) für die Schalltafelmontage sind separat lieferbar.

Auf Wunsch

- Anschlußausführung Innengewinde/Innengewinde (01)
- Rohranschluß (04)
- Schlauchanschluß (05)
- Vitondichtungen (V)
- Komplett mit Kontermuttern (G)

WERKSTOFF

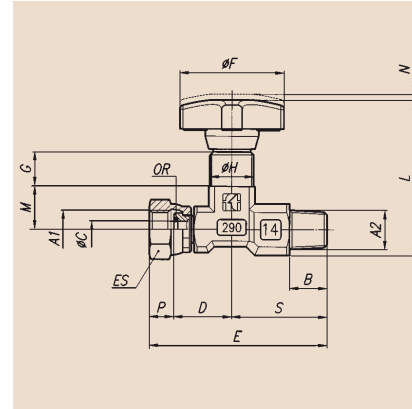
Gehäuse	9 SMn Pb 23 - UNI 5105 geschmiedet
Ventilspindel	35 S Mn Pb 10 - UNI 5105 gehärtet
O-Ring	NBR Nitrilgummi
Stützring	PTFE
Sterngriff	Nylon 66

BESTELLBEISPIEL

Besondere Ausführung		Zubehör auf Wunsch		
Bestellcode	Größe AG/IG	Anschluß	Kontermutter	Vitondichtung
FT 290	14	01	G	V
FT 290	12	-	G	-

CODE FT 290

Code FT 290



Größe	A1	A2	B	C	D	E	F	G	H	L	M	N	P	S	OR	ES	Gewicht kg
	UNI 338	UNI 339															
14	1/4 "G	1/4 "Gc	13	5,6	20	61,5	34	12	M15x1	53	15	2	8,5	33	2018	18	0,125
12	1/2 "G	1/2 "Gc	16	6,5	32	83	40	12,5	M20x1	82,5	19	6	11	40	2021	27	0,413

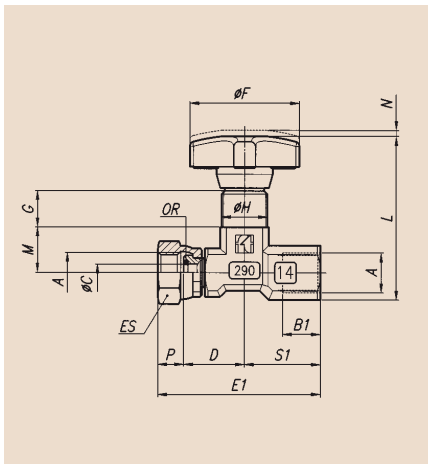
Bestell-Nr. code	Bezeichnung	Typ type
240-080-01000	Manometerabsperrhahn 1/4 AG Stahl	FT290-14
240-080-01050	Manometerabsperrhahn 1/4 IG Stahl	FT290-01-14
240-080-01100	Manometerabsperrhahn 1/2 AG Stahl	FT290-12
240-080-01150	Manometerabsperrhahn 1/4 ÜW Stahl	FT290-05-14

FT 290

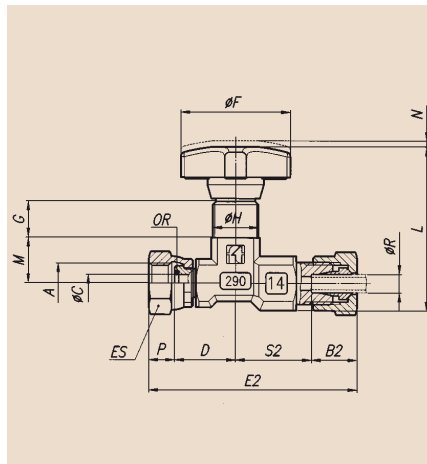
Sonderausführungen für Type 14 werden für Mindestmengen ab 200 Stück auf Anfrage gefertigt

MANOMETER-
ABSPERR- UND
SCHUTZVENTILE

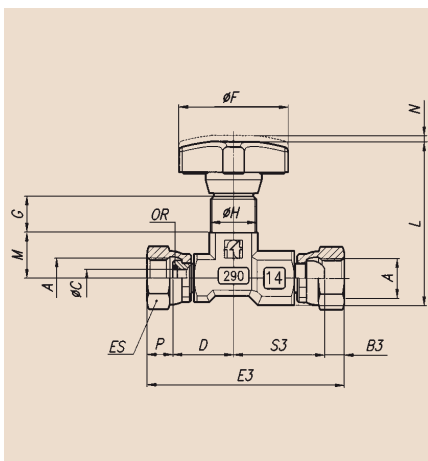
Code FT 290-01
Innengewinde/Innengewinde



Code FT 290-04
Rohranschluß - DIN 2353



Code FT 290-05
Schlauchanschluß
DIN 3861
DIN 7611



Bestell-Nr. code	Bezeichnung	Typ type
240-080-01000	Manometerabsperrhahn 1/4 AG Stahl	FT290-14
240-080-01050	Manometerabsperrhahn 1/4 IG Stahl	FT290-01-14
240-080-01100	Manometerabsperrhahn 1/2 AG Stahl	FT290-12
240-080-01150	Manometerabsperrhahn 1/4 ÜW Stahl	FT290-05-14

A	B1	B2	B3	C	D	E1	E2	E3	F	G	H	L	M	N	P	R	S1	S2	S3	OR	E3	Gewicht kg
1/4	11	15	6,5	5,6	20	54,5	69,5	66	34	12	M15x1	53	15	2	8,5	6	25	25	30	2108	18	01 0,125 04 0,150 05 0,145

**MANOMETER-
ABSPERR- UND
SCHUTZVENTILE**

FT 291



Manometer-Absperrventile, rechtwinklig

Manometer-Absperrventile der Serie FT 291 werden zum Schutz von Manometern eingesetzt. Sie erfüllen eine Doppelfunktion, Druckstöße in der Startphase abzufangen und das Manometer von der Druckleitung zu trennen.

Die Absperrventile werden aus hochwertigem Stahl geschmiedet und präzise bearbeitet. 100%ige Prüfung bietet größte Zuverlässigkeit und Lebensdauer.

Die drehbare Überwurfmutter erlaubt die Manometerpositionierung in die gewünschte Richtung. Die eingelegte O-Ring-Dichtung gehört zum Lieferumfang und dichtet zuverlässig zum Manometer ab.

Für Manometer mit konischem Anschlußgewinde ist eine Kupferdichtung FT 1201 lieferbar (siehe Seite 104). Für

Manometer NG 100 mit Anschluß G1/2 ist ein Adapter FT 299-24 (siehe Seite 103) lieferbar, alternativ Type FT 290-12.

Die Manometer-Absperrventile sind für Betriebsdrücke bis 400 bar und Temperaturen von -20°C +100°C einsetzbar. Kontermuttern (G) für die Schalltafelmontage sind separat lieferbar.

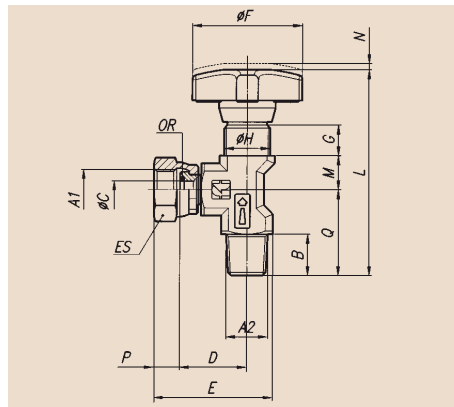
Auf Wunsch

- Anschlußausführung Innengewinde/Innengewinde (01)
- Rohranschluß (04)
- Schlauchanschluß (05)
- Vitondichtungen (V)
- Komplett mit Kontermuttern (G)

WERKSTOFFE

Gehäuse	9 SMn Pb 23 - UNI 5105 geschmiedet
Ventilspindel	35 S Mn Pb 10 - UNI 5105 gehärtet
O-Ring	NBR Nitrilgummi
Stützring	PTFE
Sterngriff	Nylon 66

Code FT 291



BESTELLBEISPIEL

Bestellcode	Anschluß AG/IG	Zubehör auf Wunsch	
		Kontermutter	Vitondichtung
FT 291	01	G	V

CODE FT 291

A1	A2	B	C	D	E	F	G	H	L	M	N	P	Q	ES	OR	Gewicht kg.
UNI 338	UNI 339															
1/4 °G	1/4 °Gc	13,5	5,6	22	40	34	10	M15x1	66	11	2	8,5	28	18	2108	0,105

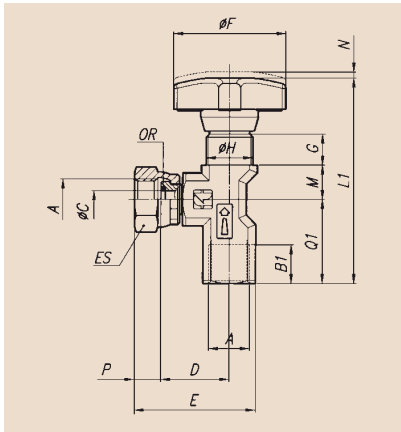
Bestell-Nr. code	Bezeichnung	Typ type
240-090-01000	Manometerabsperrrhahn 1/4 90° AG Stahl	FT291-14
240-090-01050	Manometerabsperrrhahn 1/4 90° IG Stahl	FT291-01-14
240-090-01100	Manometerabsperrrhahn 1/4 90° ÜW Stahl	FT291-05-14

FT 291

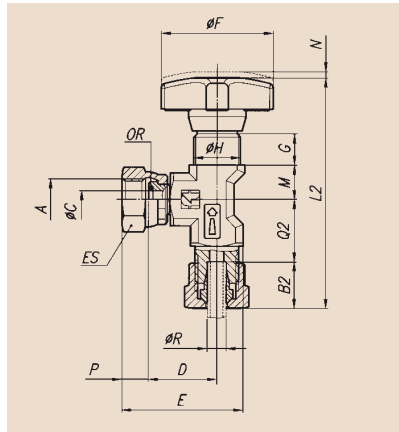
Sonderausführungen werden für Mindestmengen ab 200 Stück auf Anfrage gefertigt

MANOMETER-
ABSPERR- UND
SCHUTZVENTILE

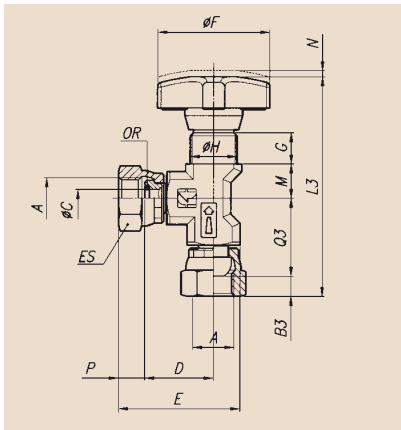
FT 291-01
Innengewinde/Innengewinde



FT 291-04
Rohranschluß DIN 2353



FT 291-05
Schlauchanschluß
DIN 3861
DIN 7611



A	B1	B2	B3	C	D	E	F	G	H	L1	L2	L3	M	N	P	Q1	Q2	Q3	R	ES	OR	Gewicht kg
14	11	15	6,5	5,6	22	40	34	10	M15x1	65	73	69,5	11	2	9,5	27	20	25	6	18	2018	01 0,125 04 0,135 06 0,130

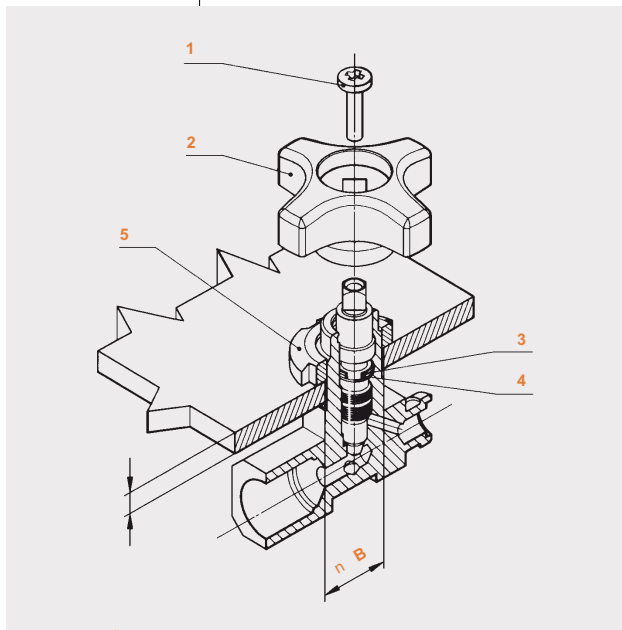
Bestell-Nr. code	Bezeichnung	Typ type
240-090-01000	Manometerabsperrhahn 1/4 90° AG Stahl	FT291-14
240-090-01050	Manometerabsperrhahn 1/4 90° IG Stahl	FT291-01-14
240-090-01100	Manometerabsperrhahn 1/4 90° ÜW Stahl	FT291-05-14

	FT.....	/	2	-	02	-	18	-	G-V-T-mp
VENTILCODE									
FUNKTIONSCODE			2 = Drosselventil 5 = Drosselrückschlagventil 6 = Rückschlagventil		01 = Innengewinde/Innengewinde 02 = Außengewinde/Innengewinde 04 = Rohranschluß DIN 2353 05 = Schlauchanschluß DIN 3861		18 = G 1/8 14 = G 1/4 38 = G 3/8 12 = G 1/2 34 = G 3/4 100 = G 1 114 = G 1 1/4 112 = G 1 1/2 200 = G 2		
ANSCHLUSSCODE ZUBEHÖR (AUF WUNSCH)									G = Kontermutter für Schalttafeleinbau V = Vitondichtung T = Schalttafel mp = ABS-Sterngriff
ANSCHLUSSGEWINDE									

FT202/3	Kontermutter M 17x1
FT202/4	Kontermutter M 20x1
FT202/5	Kontermutter M25x1,5
FT202/6	Kontermutter M30x1,5
FT202/8	Kontermutter M40x1,5
FT202/10	Kontermutter M50x1,5

SERIE FT 290 - 291

MONTAGEANLEITUNGEN



Schalttafelmontage

- 1° Griffschraube (1) lösen
- 2° Sterngriff (2) abziehen
- 3° KM-Nutmutter (FT 202) (5) oder sechswinklige Nutmutter (FT 205) einsetzen

Ersatzdichtungen und Kontermuttern

(3) O-Ring	(4) Stützring	(5) Kontermuttern auf Wunsch	A max	n B
2018	2018	KM2 Sechskantmutter	5	16
(FT 202/2)	FT 205			

Umschaltventile

– DFE 052/2 und DFE052/3 –



– Magnet –

Bestellnr.	Typ	Code
254-010-01000	DFE052/2A18ES-W201-12VDC	12A210009
254-010-01050	DFE052/2A18ES-W201-24VDC	12A210010
254-010-01100	DFE052/2B18ES-W201-12VDC	12A210014
254-010-01150	DFE052/2B18ES-W201-24VDC	12A210011
254-010-01200	DFE052/2B18ES-Y201-24VDC	12A210016
254-010-01250	DFE052/3A18ES-W201-12VDC	12A240020
254-010-01300	DFE052/3A18ES-W201-24VDC	12A240040
254-010-01350	DFE052/3A18ES-W201-24VDC-Viton	12A240016
254-010-01400	DFE052/3A18ES-Y201-12VDC	12A240021
254-010-01450	DFE052/3A18ES-Y201-24VDC	12A240041
254-010-01500	DFE052/3B18ES-W201-12VDC	12A240023
254-010-01550	DFE052/3B18ES-W201-24VDC	12A240044
254-010-01600	DFE052/3D18ES-W201-12VDC	12A240011

DFE

with solenoid control

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

		DFE052	DFE10	DFE20
N. of available ways		2-3-6-8	3-6	3-6
Nominal flow rating	in steady conditions	60 l/min	90 l/min	140 l/min
Operating pressure (maximum)*	without drain	200 bar 2900 psi	200 bar 2900 psi	200 bar 2900 psi
	with drain	315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi
Available nominal voltage	VDC	12-24 48-110	12-24-48	12-24
	VAC 50Hz (with C04 connector)	24-110-220	110-220	24-110-220
Potenza nominale	W	40	60	60
Internal leakage A(B)→T	Δp=100 bar 1450 psi with fluid and valve at 40°C	7 cm ³ /min 0.43 in ³ /min	10 cm ³ /min 0.61 in ³ /min	15 cm ³ /min 0.92 in ³ /min
Fluid		Mineral base oil		
Fluid temperature	with NBR seals	da -20° a 80°C		
	with FPM seals	da -20° a 100°C		
Viscosity	operating range	da 15 a 75 mm ² /s - from 15 to 75 cSt		
	minimum	12 mm ² /s - 12 cSt		
	maximum	400 mm ² /s - 400 cSt		
Max. level of contamination		19/16 - ISO 4406		
Ambient temperature		da -40° a 60°C		

NOTE - For different working conditions please contact Customer Service.

(*) - This value is reachable only in steady conditions; for dynamic working conditions see the pages from 49 to 52.

Standard threads

ALL PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)
DFE052	G 3/8	3/4-16 UNF-2B (SAE 8)
DFE10	G 1/2	7/8-14 UNF-2B (SAE 10)
DFE20	G 3/4	1 1/16-12 UN-2B (SAE 12)
DRAIN PORT		
L	G 1/4	7/16-20 UNF-2B (SAE 4)

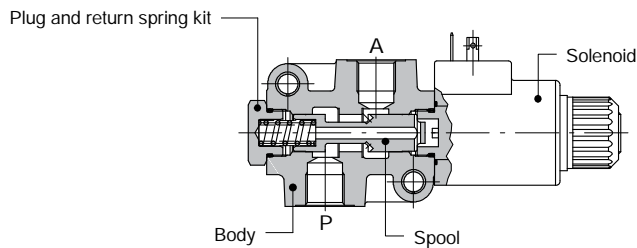
with solenoid control

DFE

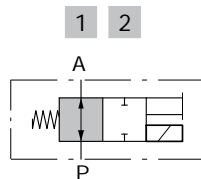
Hydraulic circuit

2-way

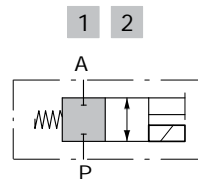
Available as body only in DFE052/2 execution; for other executions 3-way body is used.



Spool type A

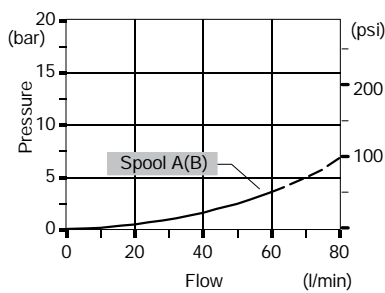


Spool type B

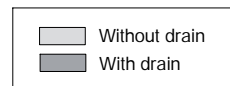
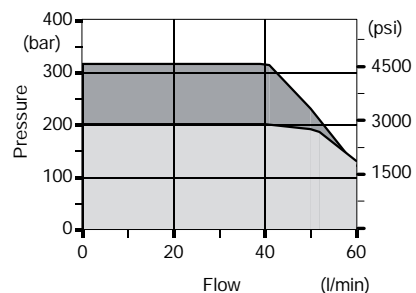


Performance data

Pressure drop versus flow
P→A



Minimum dynamic conditions
(supply = Vn-10%, coil at 70 °C)



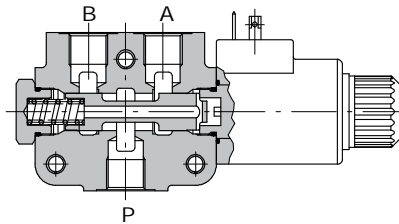
DFE

with solenoid control

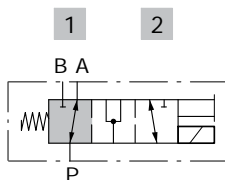
Hydraulic circuit

3-way

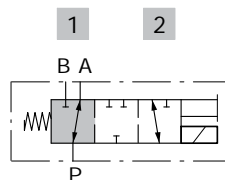
It's possible to obtain 2-way diverter valve plugging port A or B.



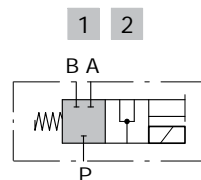
Spool type A



Spool type B

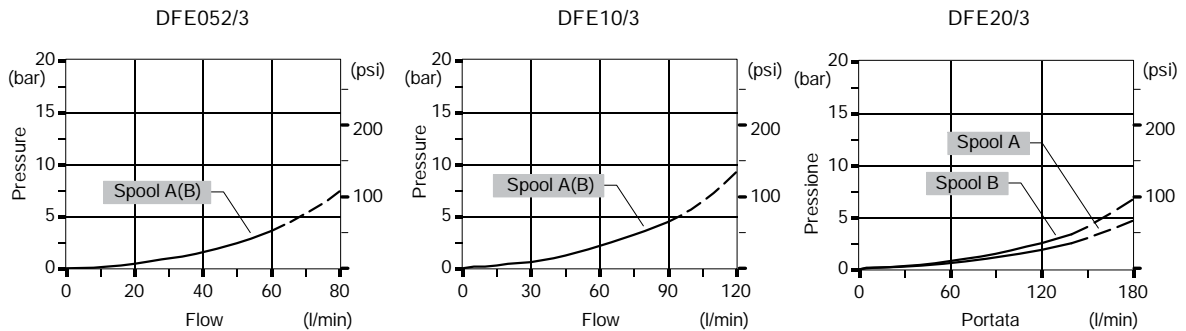


Spool type D

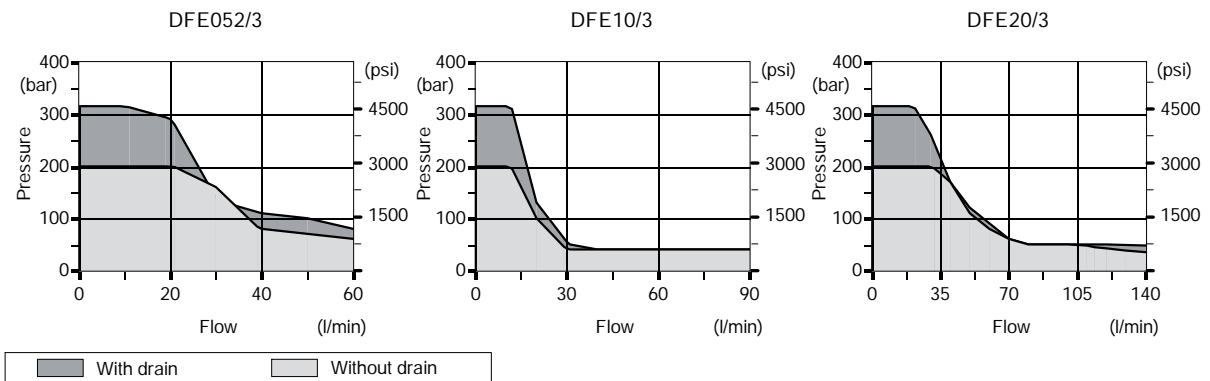


Performance data

Pressure drop versus flow: P→A(B)



Minimum dynamic conditions: (supply = Vn-10%, coil at 70 °C)

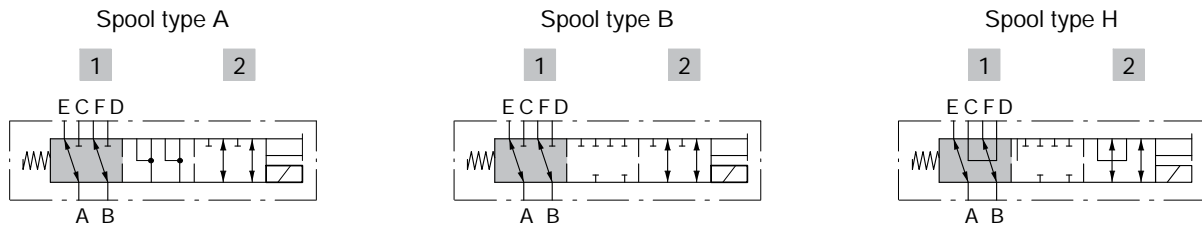
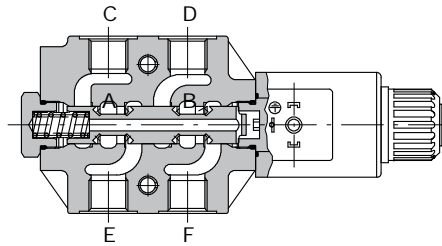


with solenoid control

DFE

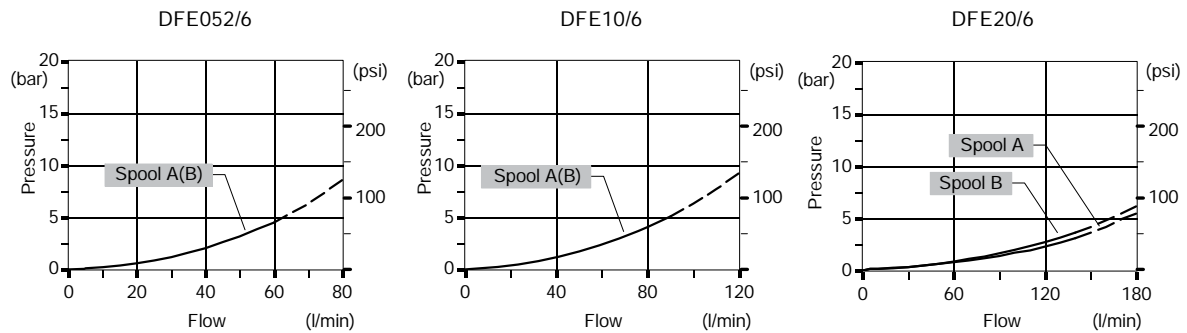
Hydraulic circuit

6-way

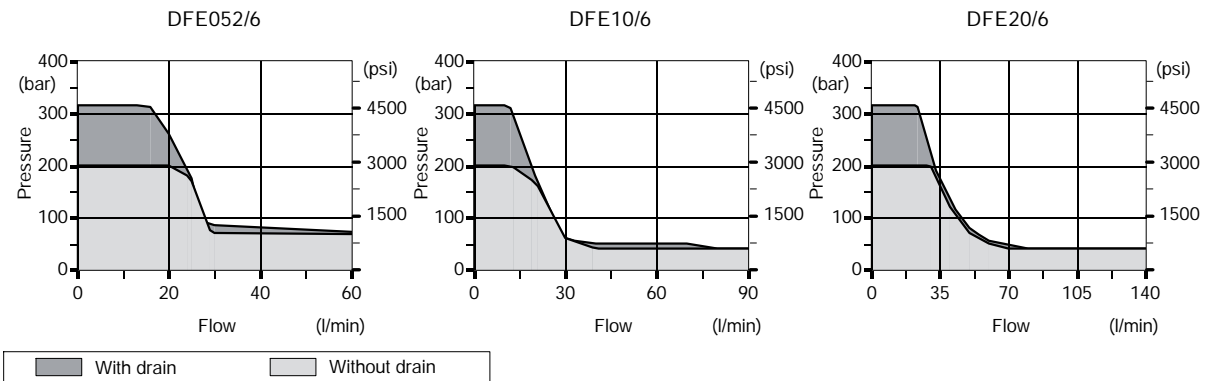


Performance data

Pressure drop versus flow: A→E(C).



Minimum dynamic conditions: (supply = Vn-10%, coil at 70 °C)



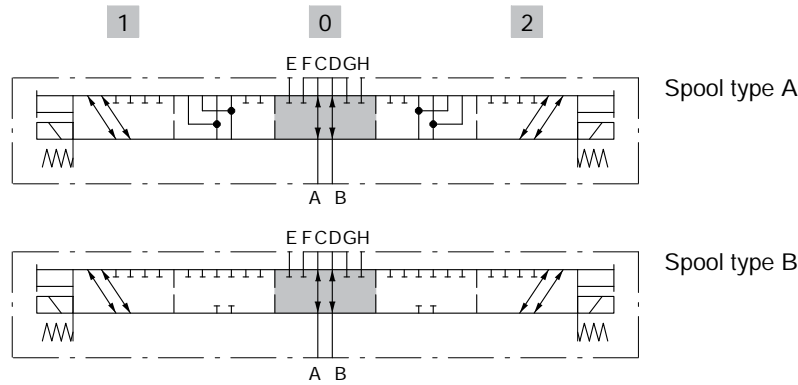
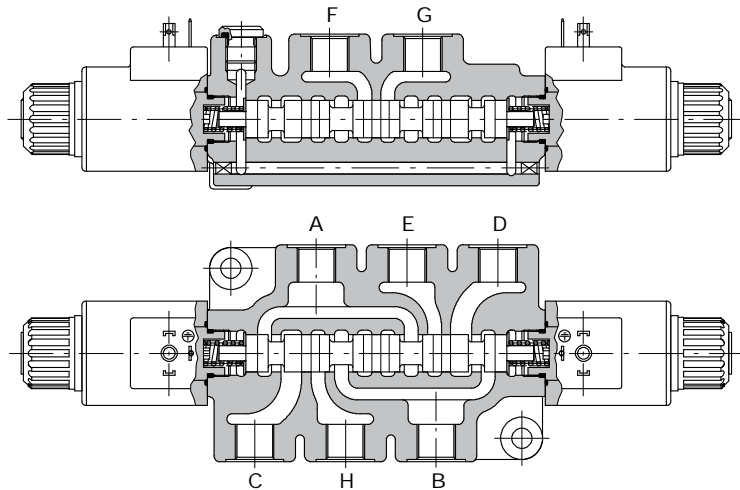
254-010

DFE

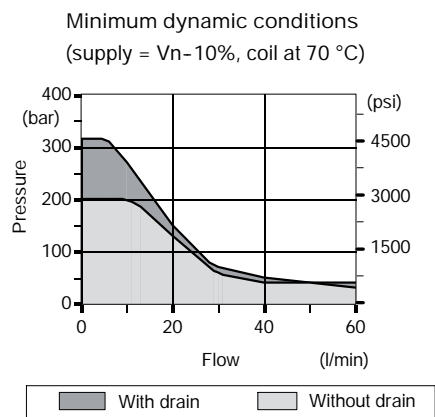
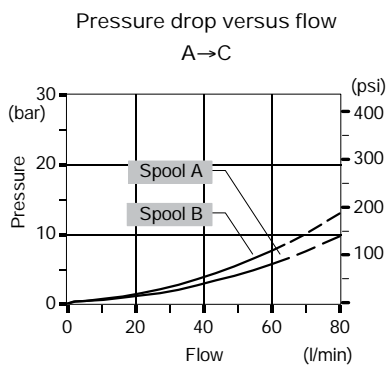
with solenoid control

Hydraulic circuit

8-way



Performance data

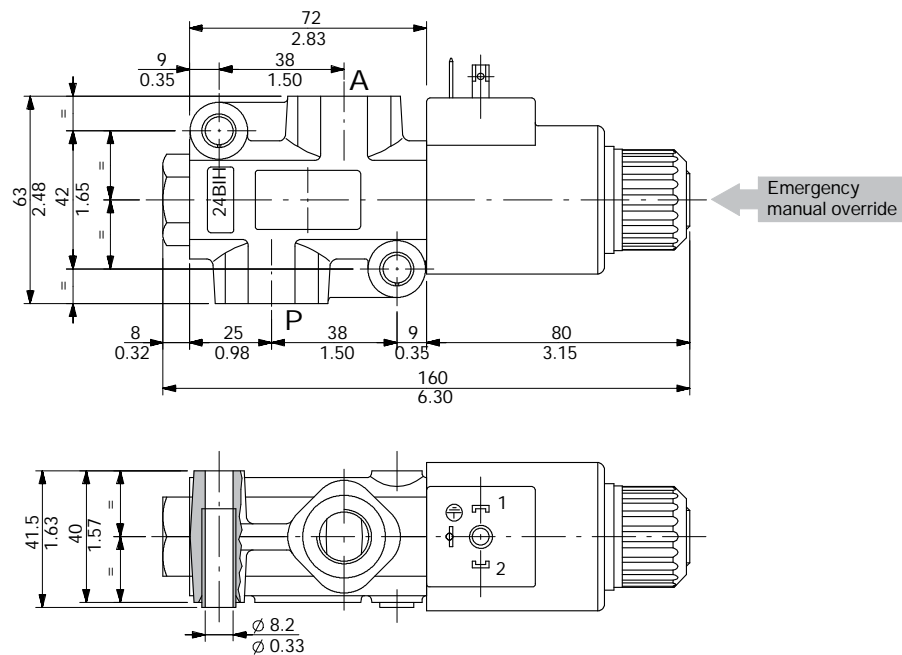


with solenoid control

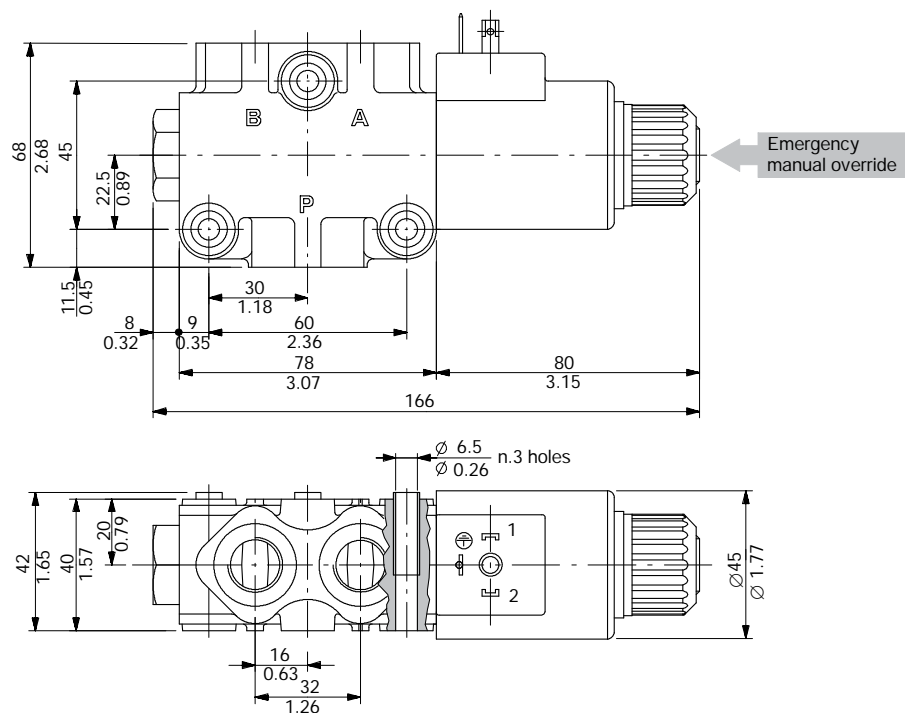
DFE052

Dimensional data

2-way DFE052/2 valve



3-way DFE052/3 valve

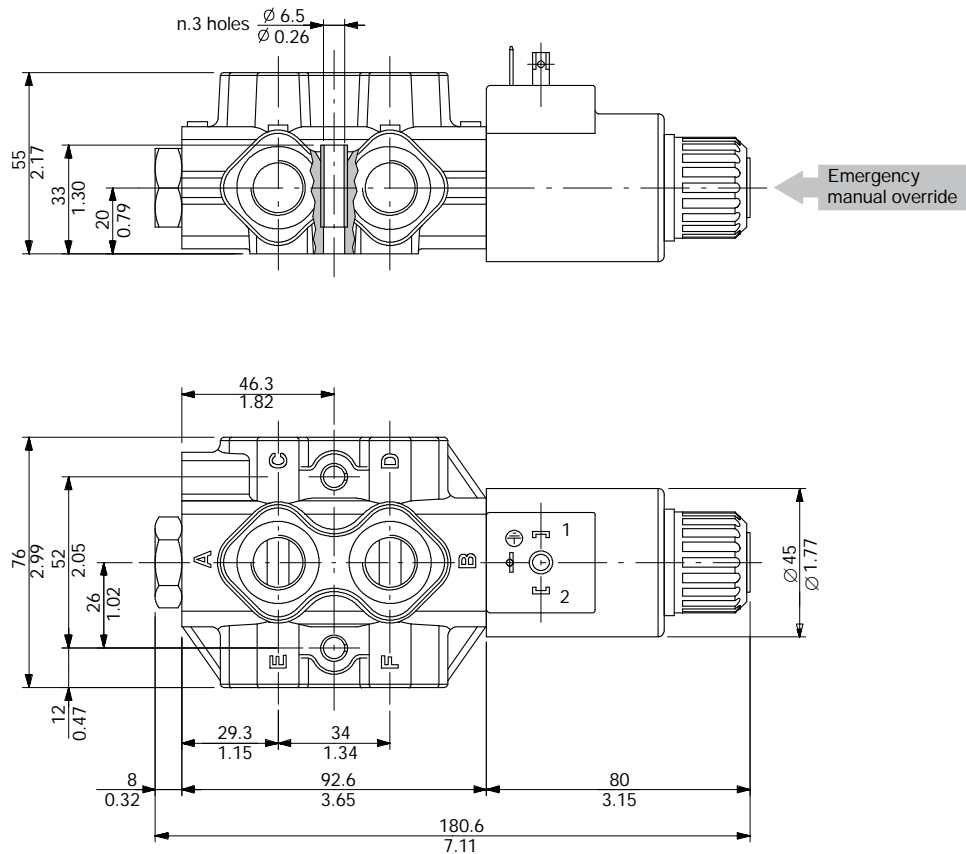


DFE052

with solenoid control

Dimensional data

6-way DFE052/6 valve

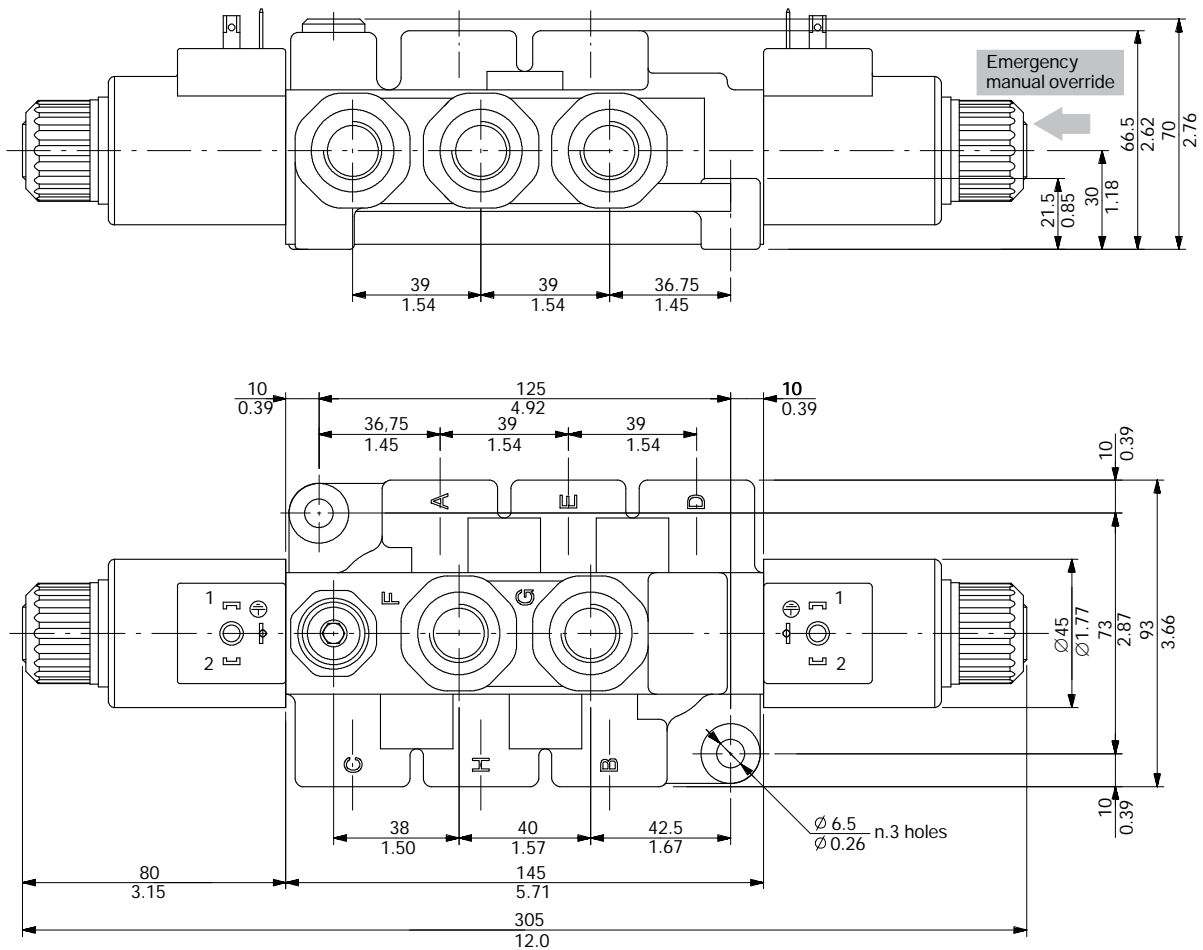


with solenoid control

DFE052

Dimensional data

8-way DFE52/8 valve



DFE052

with solenoid control

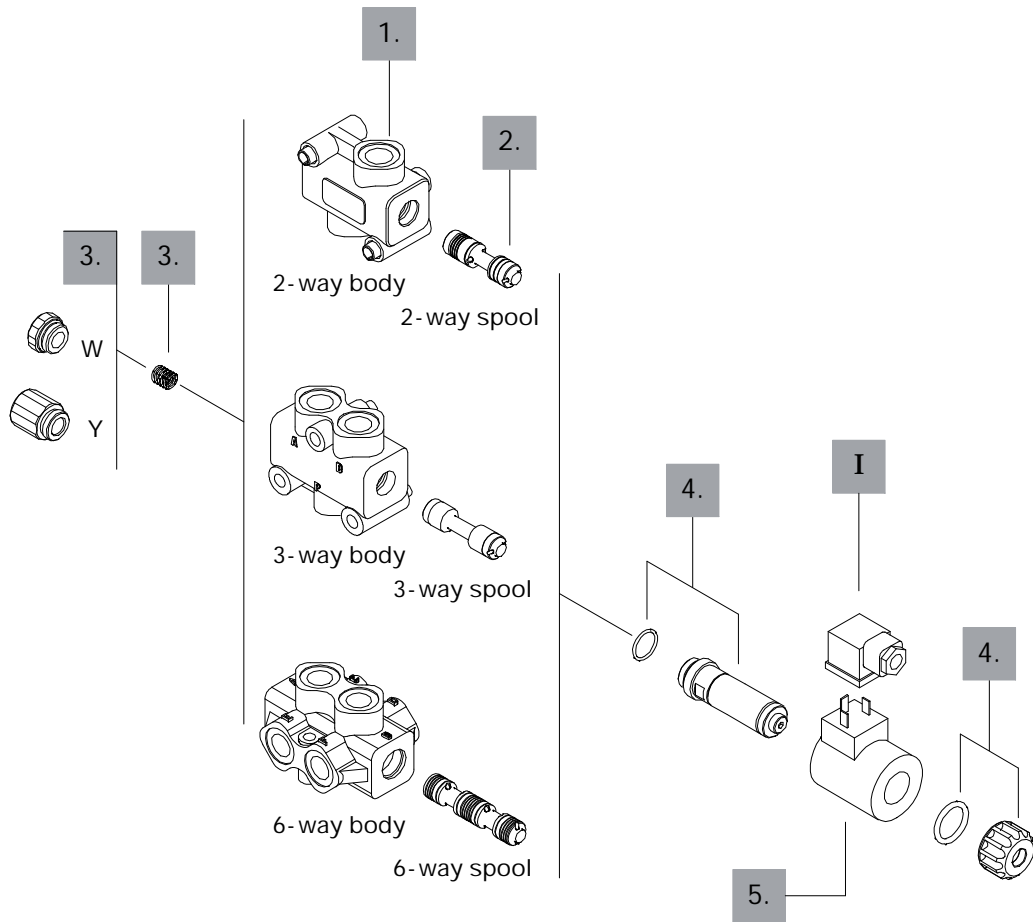
Ordering codes

Description example :

Diverter valve DFE052/2 A 18 ES - W 201-12VDC - <CVN>



Valve is supplied painted as standard, with one coat of Primer black antirust paint



with solenoid control

DFE052

Ordering codes

2-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE052/2	3CO2220321	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105245	2 positions with open centre in neutral
B	3CAS105145	2 positions with closed centre in neutral

3-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE052/3	3CO2220321	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105245	3-way, 2 positions with ports connected in transit position
B	3CAS105145	3-way, 2 positions with ports closed in transit position
D	3CAS105546	3-way, 2 positions, without transit position, with ports closed in rest position

6-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE052/6	3CO2222326	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105645	6-way, 2 positions with ports connected in transit position
B	3CAS105746	6-way, 2 positions with ports closed in transit position
H	3CAS105845	6-way, 2 positions, D↔C in position 1, F↔E in position 2, ports closed in transit position

3. Positioner kits page 59

TYPE	CODE	DESCRIPTION
18...W	5TAP001	Spring return in position 1
18...Y	5GIU001 *	Spring return in position 1, with G1/4 drain port

4. Tube assembly page 60

TYPE	CODE	DESCRIPTION
ES	5SOL515000	Spring return in position 1 (without coil)

5. Coil options page 60

TYPE	CODE	DESCRIPTION
101	-	Without coil (only with tube kit)
201-12VDC	4SOL515012	Without coil (only with tube kit)
201-24VDC	4SOL515024	Coil with 24VDC nominal voltage
221-12VDC	4SOL515010	Coil with 12VDC nominal voltage and "AMP Junior Timer" connection
231-12VDC	4SOL515011	Coil with 12VDC nominal voltage and "DEUTSCH DT06-2S" connection

I Optional connectors page 80

TYPE	CODE	DESCRIPTION
C02	2X1001010	According to ISO4400
C08	5CON003	Type AMP "Junior-Power-Timer"
C09	5CON130020	Type DEUTSCH "DT04-2P"

DFE052

with solenoid control

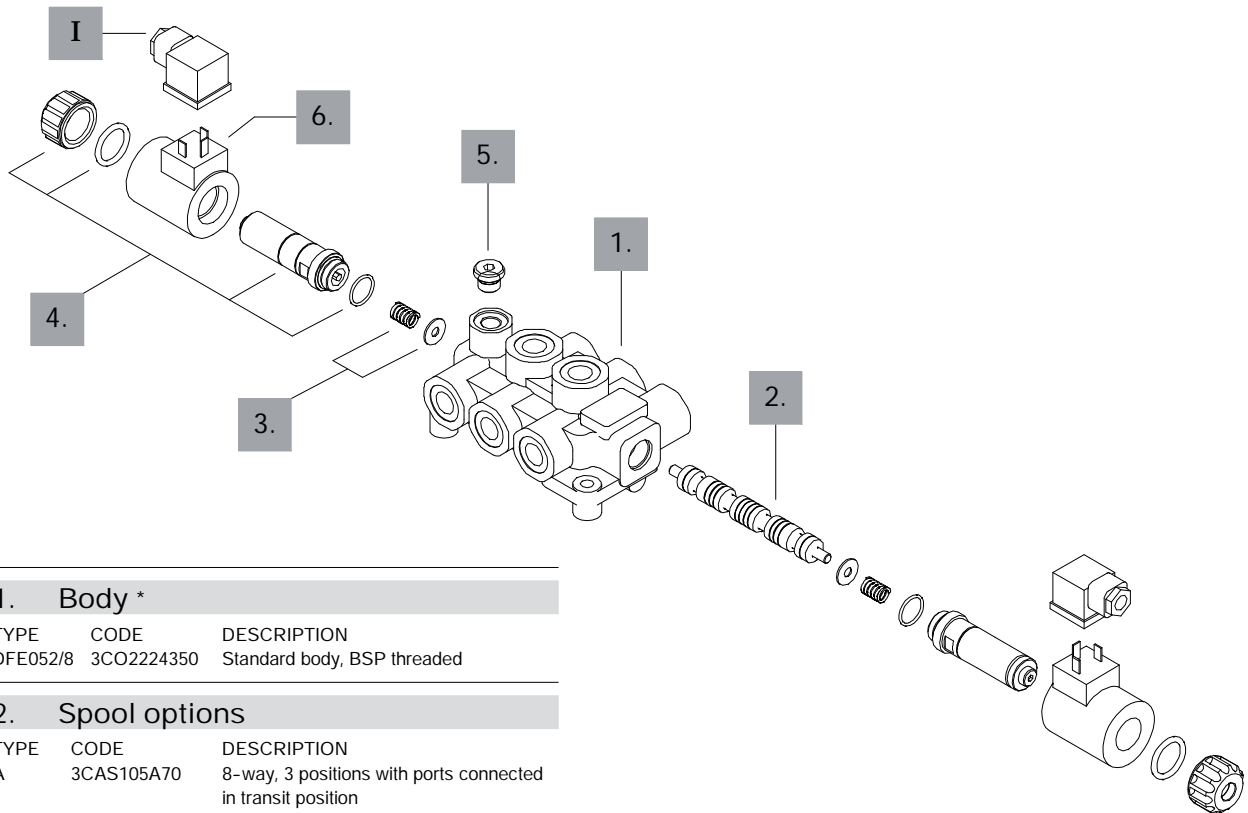
Ordering codes

Description example :

Diverter valve DFE052/8 B 8 ES3 - W 201-12VDC - <CVN>

1. 2. 3. 4. 5. 6.

Valve is supplied painted as standard, with one coat of Primer black antirust paint



1. Body *

TYPE	CODE	DESCRIPTION
DFE052/8	3CO2224350	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105A70	8-way, 3 positions with ports connected in transit position
B	3CAS105B70	8-way, 3 positions with ports closed in transit position

3. Positioner kit page 59

TYPE	CODE	DESCRIPTION
8	5V08001	Spring return in neutral position

4. Tube assembly page 60

TYPE	CODE	DESCRIPTION
ES3	5SOL515000	With spring return in neutral position (without coil)

5. Drain options * page 59

TYPE	CODE	DESCRIPTION
W	3XTAP719150	With drain plugged
Y	-	With G 1/4 drain port

6. Coil options page 60

TIPO	CODICE	DESCRIZIONE
101	-	Without coil (only with tube kit)
201-12VDC	4SOL515012	Without coil (only with tube kit)
201-24VDC	4SOL515024	Coil with 24VDC nominal voltage
221-12VDC	4SOL515010	Coil with 12VDC nominal voltage and "AMP Junior Timer" connection
231-12VDC	4SOL515011	Coil with 12VDC nominal voltage and "DEUTSCH DT06-2S" connection

I Optional connectors page 80

TYPE	CODE	DESCRIPTION
C02	2X1001010	According to ISO4400
C08	5CON003	Type AMP "Junior-Power-Timer"
C09	5CON130020	Type DEUTSCH "DT04-2P"

with solenoid control

DFE052

Positioner kits

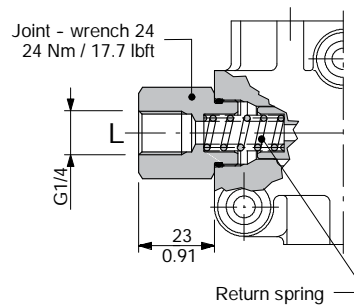
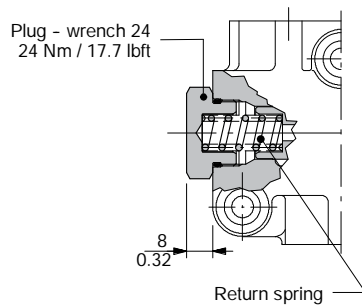
DFE052/2 - /3 - /6

18W kit

Spring return in position 1 with plug.

18Y kit

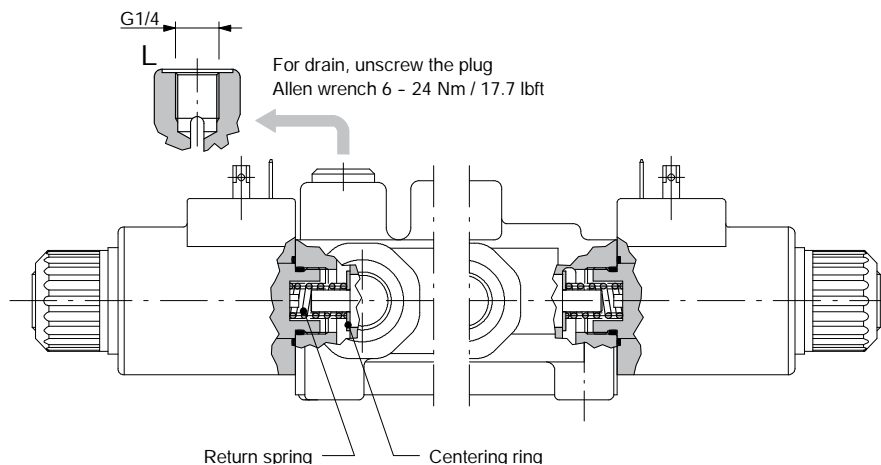
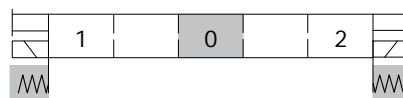
Spring return in position 1, with G1/4 joint for drain.



DFE052/8

8 kit

Spring return in position 0.



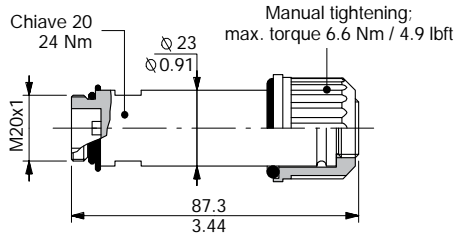
254-010

DFE052

with solenoid control

Solenoid parts

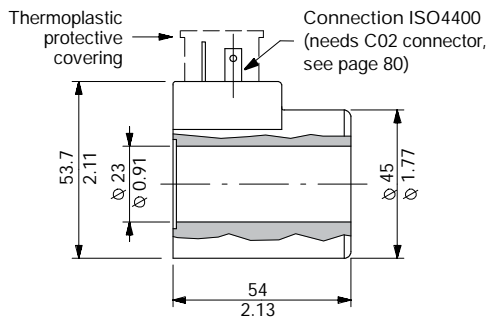
ES tube assembly



Operating features

Plunger stroke : 7.1 mm / 0.28 in

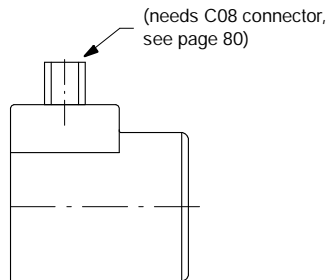
Coil options



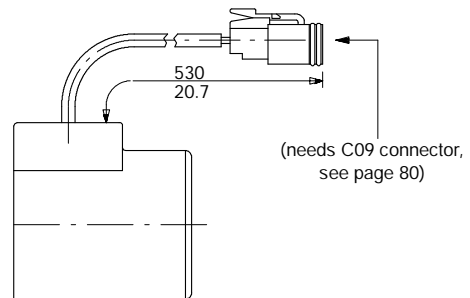
Operating features

Nominal voltage : 12VDC / 24VDC
Nominal voltage tolerance . . . : $\pm 10\%$
Power rating : 38 W
Duty cycle : 100%
Weather protection : IP66
Coil insulation : Class H

Optional coil with connector type
AMP "Junior Timer"



Optional coil with connector type
DEUTSCH "DT06-2S"



Umschaltventile – DFE10/3 –



– Magnet –

Bestellnr.	Typ	Code
254-020-01000	DFE10/3A18ES-W202-12VDC	12A440013
254-020-01050	DFE10/3A18ES-W202-24VDC	12A440025
254-020-01100	DFE10/3A18ES-Y202-12VDC	12A440019
254-020-01150	DFE10/3A18ES-Y202-24VDC	12A440037
254-020-01200	DFE10/3B18ES-W202-24VDC	12A440003
254-020-01250	DFE10/3B18ES-Y202-12VDC	12A450019
254-020-01300	DFE10/3D18ES-W202-12VDC	12A460013
254-020-01350	DFE10/3D18ES-W202-24VDC	12A460025

254-020

DFE

with solenoid control

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

		DFE052	DFE10	DFE20
N. of available ways		2-3-6-8	3-6	3-6
Nominal flow rating	in steady conditions	60 l/min	90 l/min	140 l/min
Operating pressure (maximum)*	without drain	200 bar 2900 psi	200 bar 2900 psi	200 bar 2900 psi
	with drain	315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi
Available nominal voltage	VDC	12-24 48-110	12-24-48	12-24
	VAC 50Hz (with C04 connector)	24-110-220	110-220	24-110-220
Potenza nominale	W	40	60	60
Internal leakage A(B)→T	Δp=100 bar 1450 psi with fluid and valve at 40°C	7 cm ³ /min 0.43 in ³ /min	10 cm ³ /min 0.61 in ³ /min	15 cm ³ /min 0.92 in ³ /min
Fluid		Mineral base oil		
Fluid temperature	with NBR seals	da -20° a 80°C		
	with FPM seals	da -20° a 100°C		
Viscosity	operating range	da 15 a 75 mm ² /s - from 15 to 75 cSt		
	minimum	12 mm ² /s - 12 cSt		
	maximum	400 mm ² /s - 400 cSt		
Max. level of contamination		19/16 - ISO 4406		
Ambient temperature		da -40° a 60°C		

NOTE - For different working conditions please contact Customer Service.

(*) - This value is reachable only in steady conditions; for dynamic working conditions see the pages from 49 to 52.

Standard threads

ALL PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)
DFE052	G 3/8	3/4-16 UNF-2B (SAE 8)
DFE10	G 1/2	7/8-14 UNF-2B (SAE 10)
DFE20	G 3/4	1 1/16-12 UN-2B (SAE 12)
DRAIN PORT		
L	G 1/4	7/16-20 UNF-2B (SAE 4)

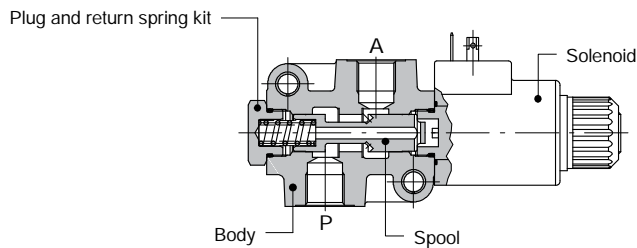
with solenoid control

DFE

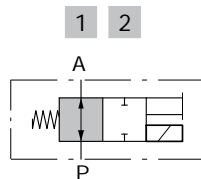
Hydraulic circuit

2-way

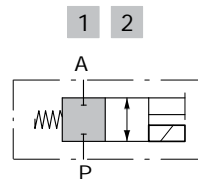
Available as body only in DFE052/2 execution; for other executions 3-way body is used.



Spool type A

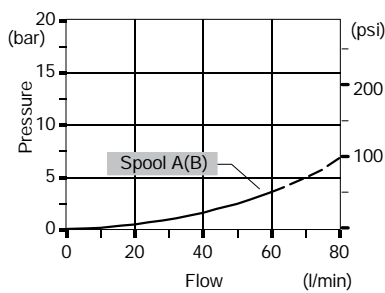


Spool type B

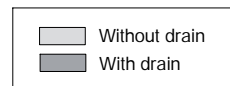
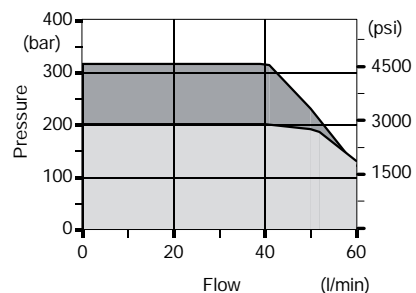


Performance data

Pressure drop versus flow
P→A



Minimum dynamic conditions
(supply = Vn-10%, coil at 70 °C)



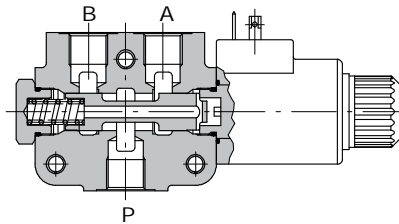
DFE

with solenoid control

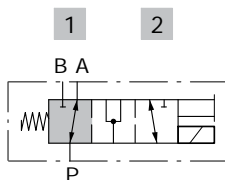
Hydraulic circuit

3-way

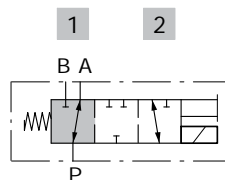
It's possible to obtain 2-way diverter valve plugging port A or B.



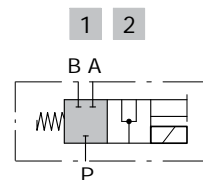
Spool type A



Spool type B

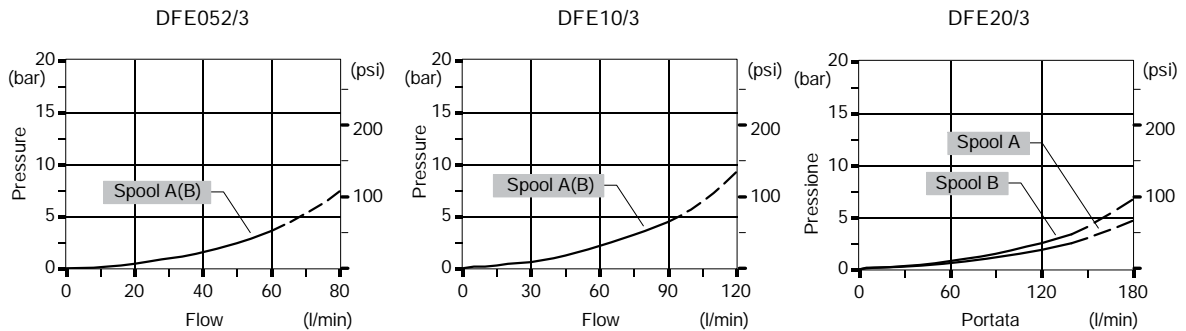


Spool type D

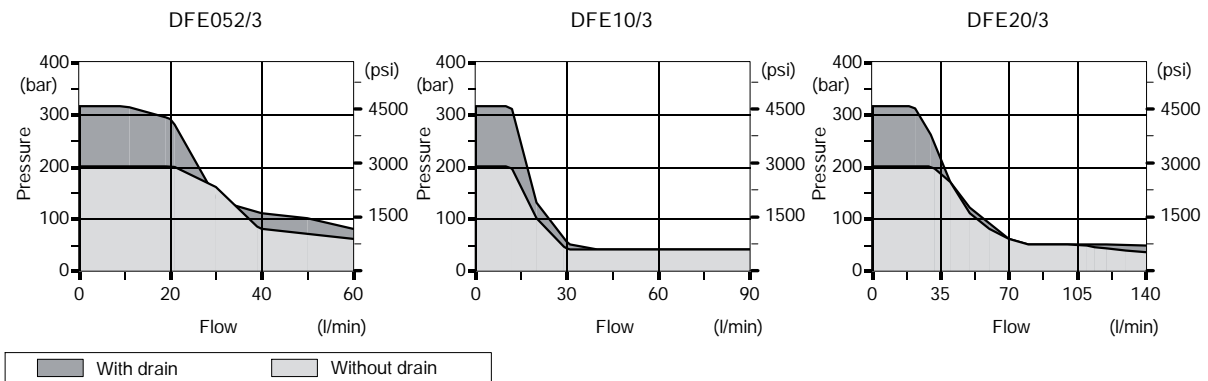


Performance data

Pressure drop versus flow: P→A(B)



Minimum dynamic conditions: (supply = Vn-10%, coil at 70 °C)

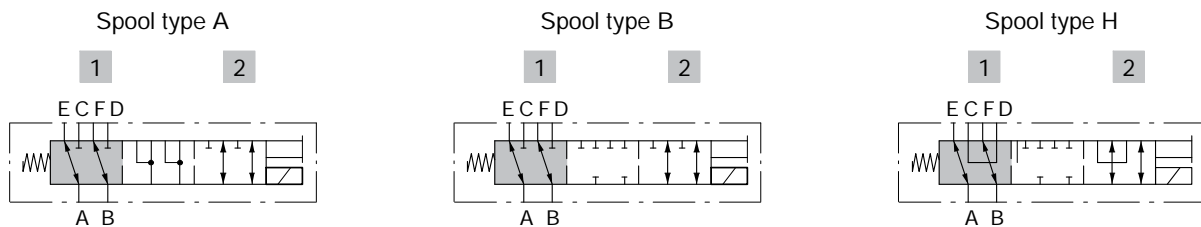
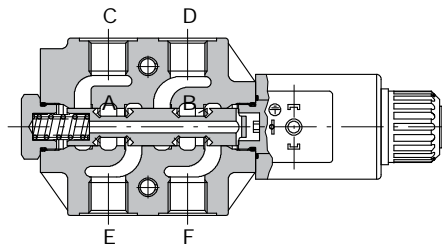


with solenoid control

DFE

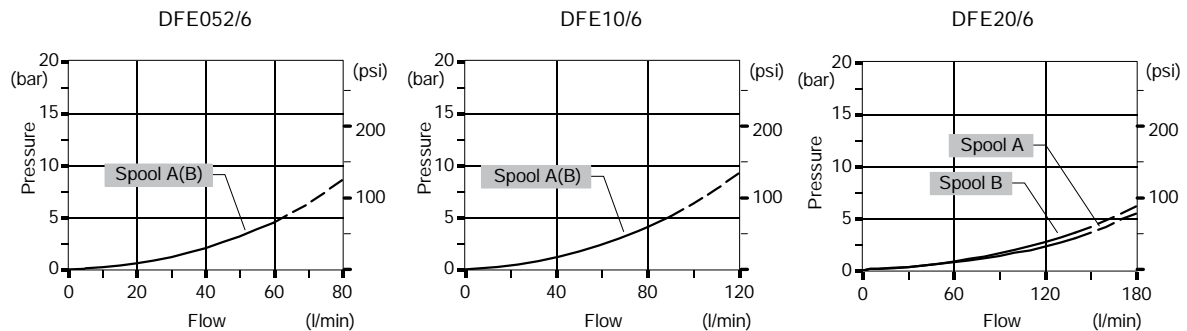
Hydraulic circuit

6-way

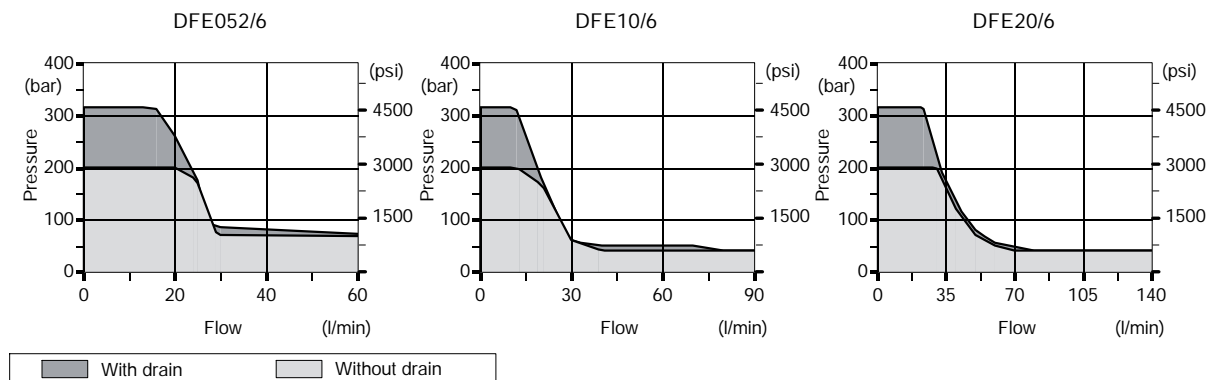


Performance data

Pressure drop versus flow: A→E(C).



Minimum dynamic conditions: (supply = Vn-10%, coil at 70 °C)



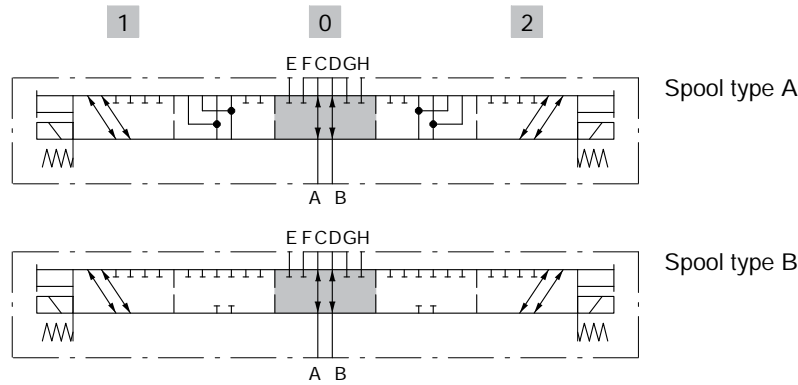
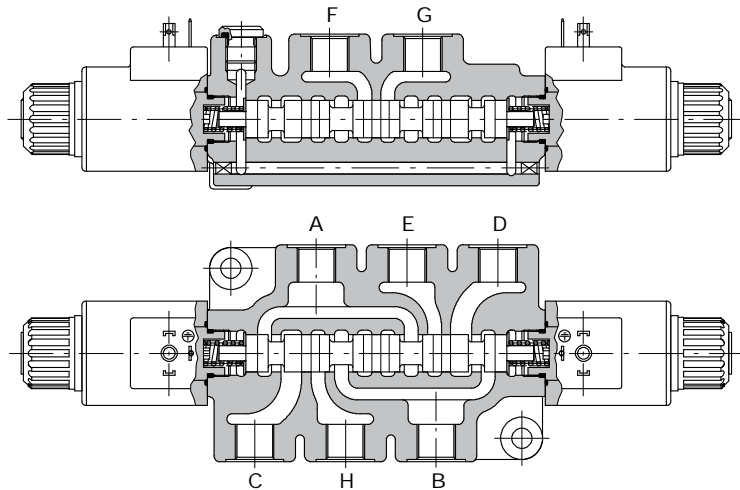
254-020

DFE

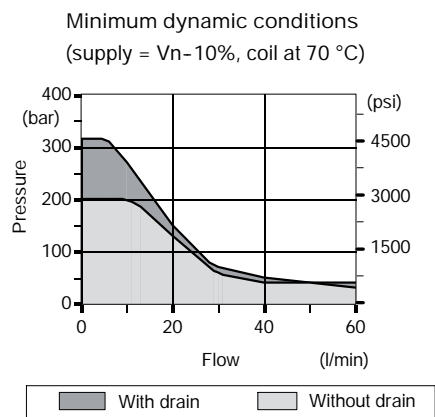
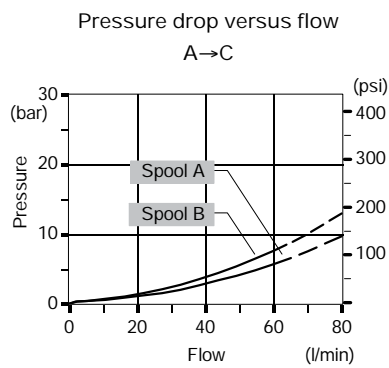
with solenoid control

Hydraulic circuit

8-way



Performance data

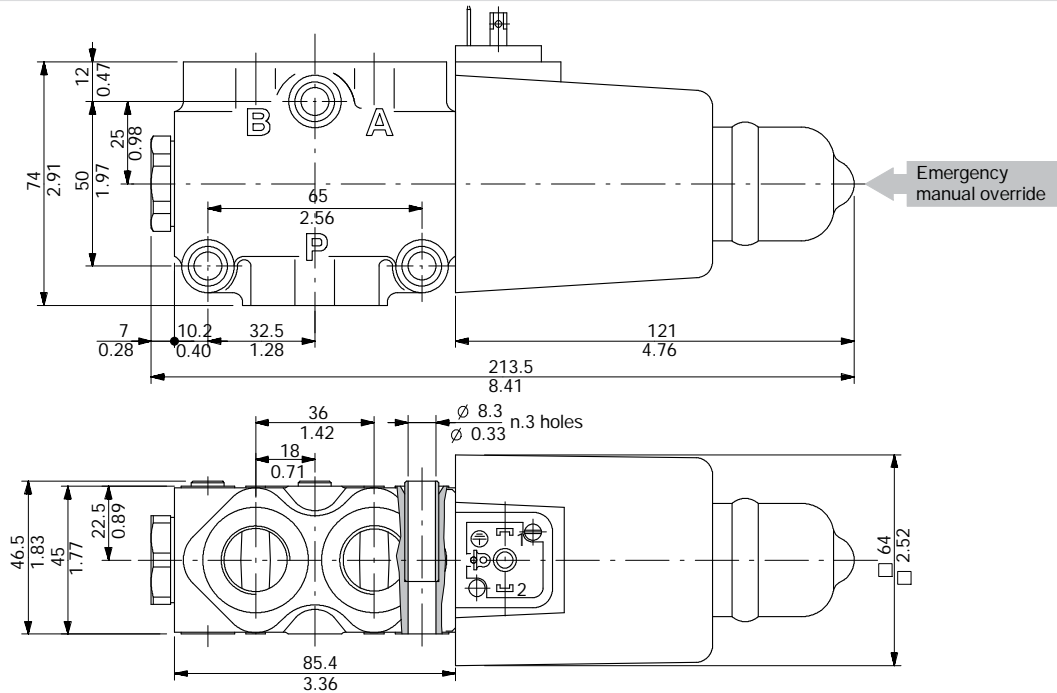


with solenoid control

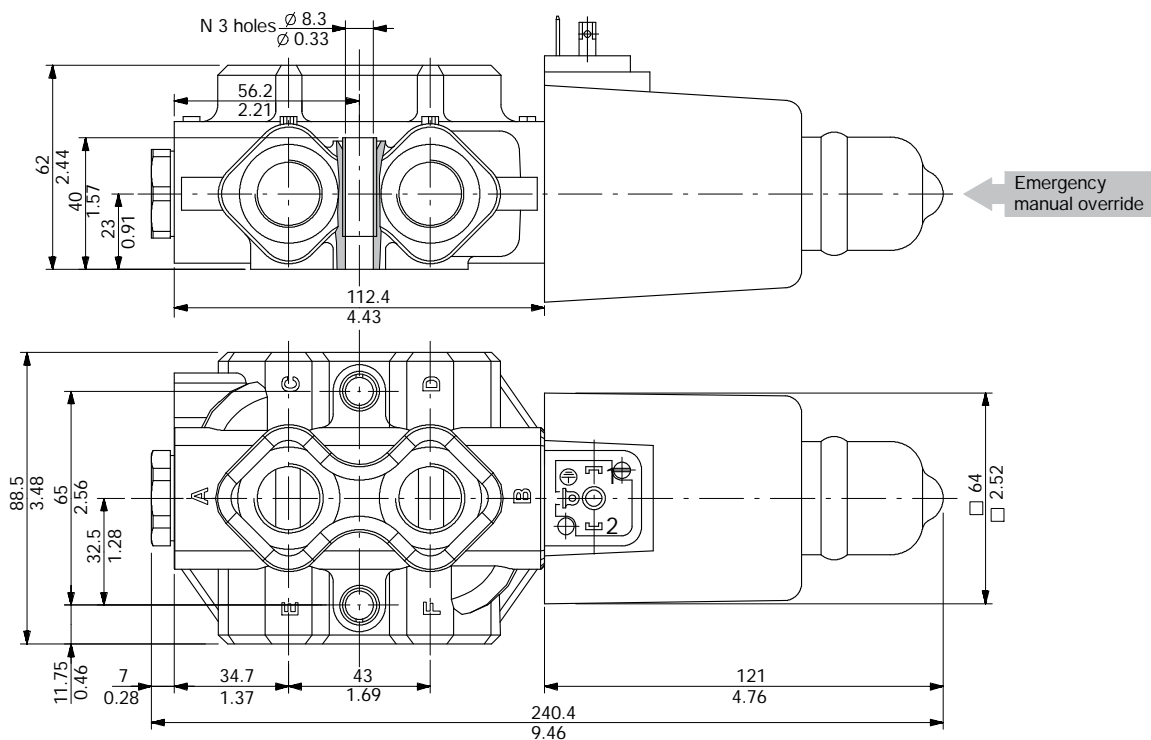
DFE10

Dimensional data

3-way DFE10/3 valve



6-way DFE10/6 valve



254-020

DFE10

with solenoid control

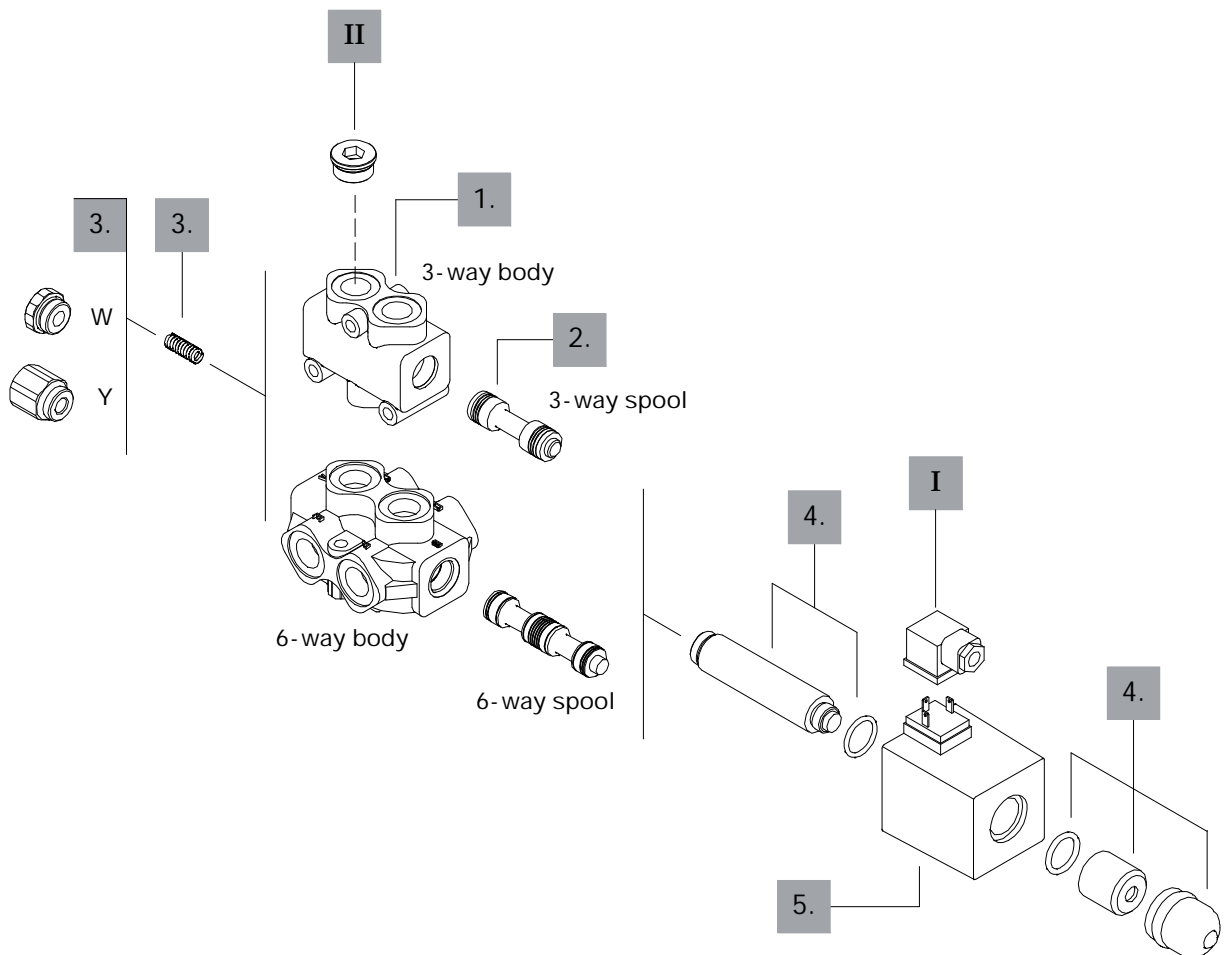
Ordering codes

Description example :

Diverter valve DFE10/3 A 18 ES - W 202-12VDC - <CVN>

1.
 2.
 3.
 4.
 3.
 5.

Valve is supplied painted as standard, with one coat of Primer black antirust paint



with solenoid control

DFE10

Ordering codes

3-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE10/3	3CO2241320	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS110341	3-way, 2 positions with ports connected in transit position
B	3CAS110441	3-way, 2 positions with ports closed in transit position
D	3CAS110540	3-way, 2 positions, without transit position, with ports closed in rest position

6-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE10/6	3CO2242322	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS110641	6-way, 2 positions with ports connected in transit position
B	3CAS110741	6-way, 2 positions with ports closed in transit position
H	3CAS110840	6-way, 2 positions, D↔C in position 1, F↔E in position 2, ports closed in transit position
N	3CAS110952	6-way, 2 positions with ports closed in transit position, with check valve

3. Positioner kits page 64

TYPE	CODE	DESCRIPTION
18...W	5TAP002	Spring return in position 1
18...Y	5GIU004 *	Spring return in position 1, with G1/4 drain port

4. Tube assembly page 64

TYPE	CODE	DESCRIPTION
ES	5SOL516000	Spring return in position 1 (without coil)

5. Coil options page 64

TYPE	CODE	DESCRIPTION
102	-	Without coil (only with tube kit)
VDC supply (connector C02)		
202-12VDC	4SOL516012	Coil with 12VDC nominal voltage
202-24VDC	4SOL516024	Coil with 24VDC nominal voltage
202-48VDC	4SOL516048	Coil with 48VDC nominal voltage
VAC supply (connector C04)		
202-92VDC	4SOL516094	Coil with 92VDC nominal voltage (for 110VAC)
202-192VDC	4SOL516192	Coil with 192VDC nominal voltage (for 220VAC)

I Optional connectors page 80

TYPE	CODE	DESCRIPTION
C02	2X1001010	According ISO4400
C04	2X1001040	According to ISO4400 with rectifier

II Ports plug

TYPE	CODE	DESCRIPTION
G1/2	3XTAP727180*	Body conversion from 3-way to 2-way circuit

NOTE (*) - Codes are referred to BSP thread.

254-020

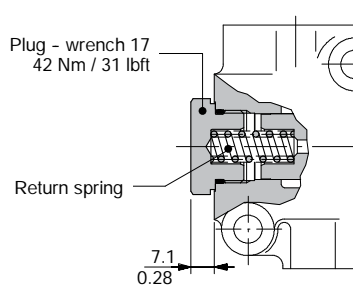
DFE10

with solenoid control

Positioner kits

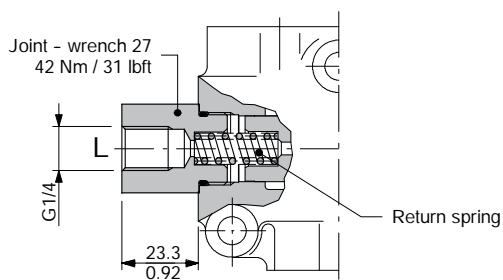
18W kit

Spring return in position 1 with plug.



18Y kit

Spring return in position 1, with G1/4 joint for drain.

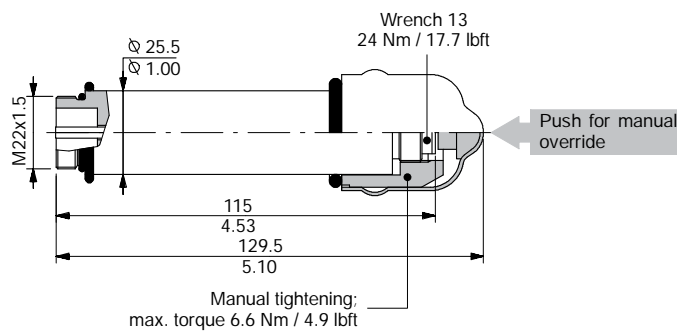


with solenoid control

DFE10

Solenoid parts

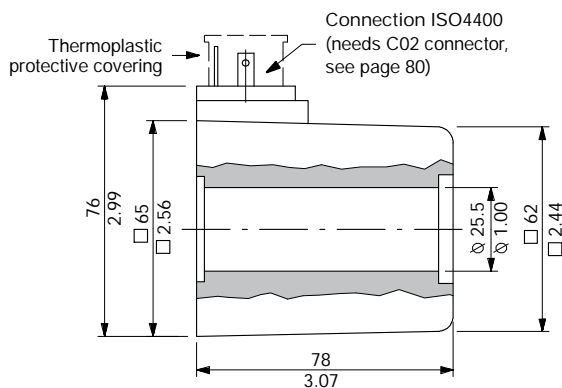
ES tube assembly



Operating features

Plunger stroke : 10.2 mm / 0.40 in

Coil options



Operating features

Nominal voltage : 12-24-48-92-192VDC

Nominal voltage tolerance . . . : $\pm 10\%$

Power rating : 60 W

Duty cycle : 100%

Weather protection : IP66

Coil insulation : Class H

Umschaltventile – DFE20/3 –



– Magnet –

Bestellnr.	Typ	Code
254-030-01000	DFE20/3A18ES-W201-12VDC	12A640014
254-030-01050	DFE20/3A18ES-W201-24VDC	12A640026
254-030-01100	DFE20/3A18ES-Y201-12VDC	12A640020
254-030-01150	DFE20/3A18ES-Y201-24VDC	12A640038
254-030-01200	DFE20/3B18ES-W201-12VDC	12A650014
254-030-01250	DFE20/3B18ES-W201-24VDC	12A650026
254-030-01300	DFE20/3B18ES-Y201-12VDC	12A650020
254-030-01350	DFE20/3A18ES-W201-192VDC	12A640494

DFE

with solenoid control

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

		DFE052	DFE10	DFE20
N. of available ways		2-3-6-8	3-6	3-6
Nominal flow rating	in steady conditions	60 l/min	90 l/min	140 l/min
Operating pressure (maximum)*	without drain	200 bar 2900 psi	200 bar 2900 psi	200 bar 2900 psi
	with drain	315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi
Available nominal voltage	VDC	12-24 48-110	12-24-48	12-24
	VAC 50Hz (with C04 connector)	24-110-220	110-220	24-110-220
Potenza nominale	W	40	60	60
Internal leakage A(B)→T	Δp=100 bar 1450 psi with fluid and valve at 40°C	7 cm ³ /min 0.43 in ³ /min	10 cm ³ /min 0.61 in ³ /min	15 cm ³ /min 0.92 in ³ /min
Fluid		Mineral base oil		
Fluid temperature	with NBR seals	da -20° a 80°C		
	with FPM seals	da -20° a 100°C		
Viscosity	operating range	da 15 a 75 mm ² /s - from 15 to 75 cSt		
	minimum	12 mm ² /s - 12 cSt		
	maximum	400 mm ² /s - 400 cSt		
Max. level of contamination		19/16 - ISO 4406		
Ambient temperature		da -40° a 60°C		

NOTE - For different working conditions please contact Customer Service.

(*) - This value is reachable only in steady conditions; for dynamic working conditions see the pages from 49 to 52.

Standard threads

ALL PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)
DFE052	G 3/8	3/4-16 UNF-2B (SAE 8)
DFE10	G 1/2	7/8-14 UNF-2B (SAE 10)
DFE20	G 3/4	1 1/16-12 UN-2B (SAE 12)
DRAIN PORT		
L	G 1/4	7/16-20 UNF-2B (SAE 4)

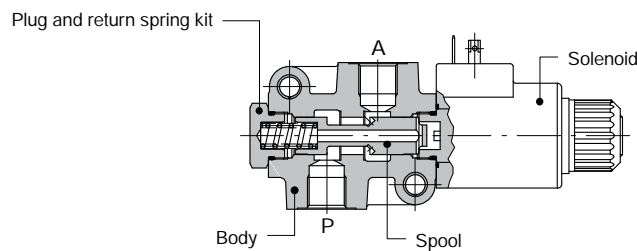
with solenoid control

DFE

Hydraulic circuit

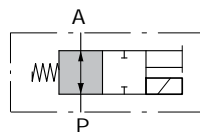
2-way

Available as body only in DFE052/2 execution; for other executions 3-way body is used.



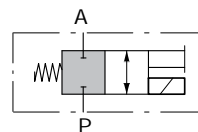
Spool type A

1 2



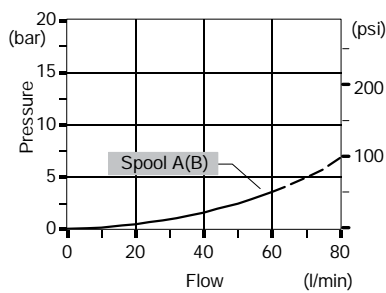
Spool type B

1 2

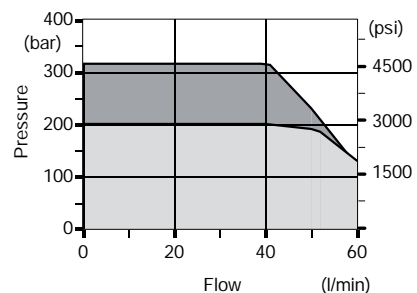


Performance data

Pressure drop versus flow
P→A



Minimum dynamic conditions
(supply = Vn - 10%, coil at 70 °C)



Without drain
With drain

254-030

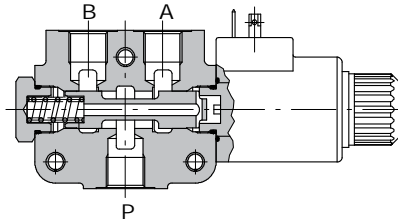
DFE

with solenoid control

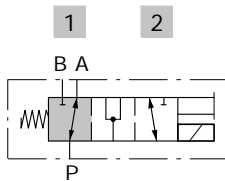
Hydraulic circuit

3-way

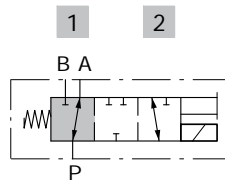
It's possible to obtain 2-way diverter valve plugging port A or B.



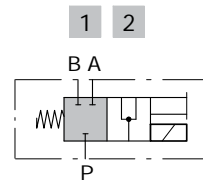
Spool type A



Spool type B

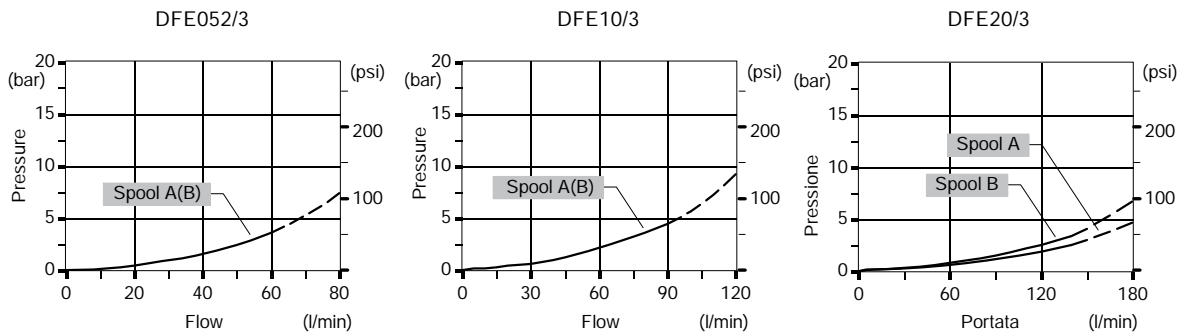


Spool type D

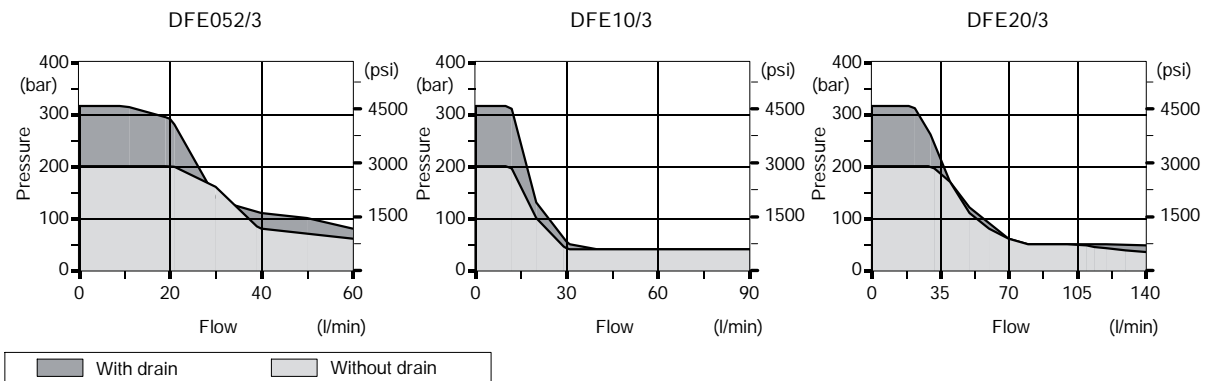


Performance data

Pressure drop versus flow: P→A(B)



Minimum dynamic conditions: (supply = Vn-10%, coil at 70 °C)

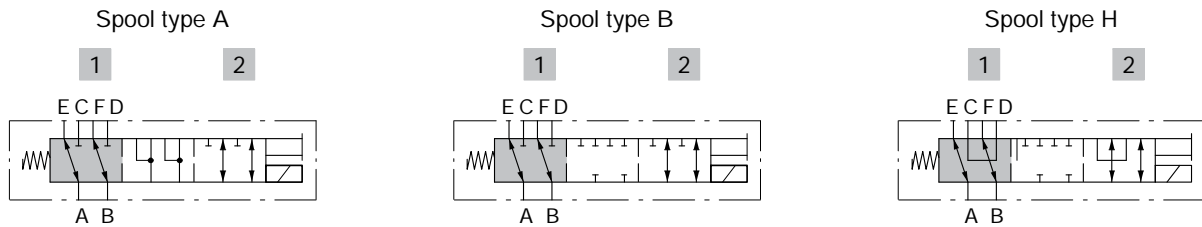
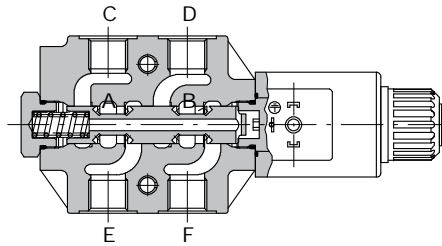


with solenoid control

DFE

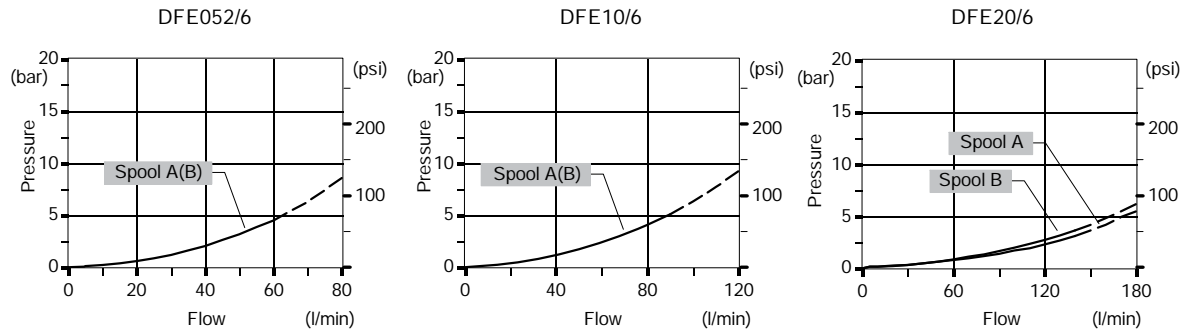
Hydraulic circuit

6-way

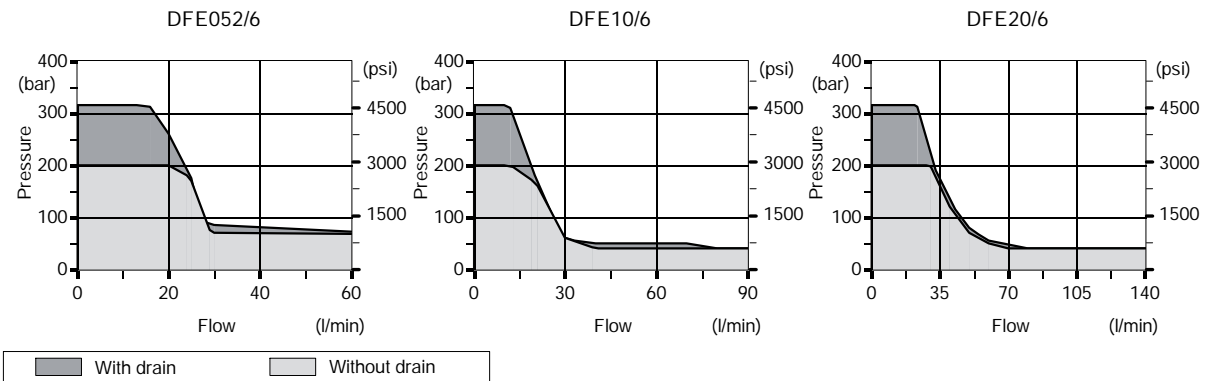


Performance data

Pressure drop versus flow: A→E(C).



Minimum dynamic conditions: (supply = Vn-10%, coil at 70 °C)



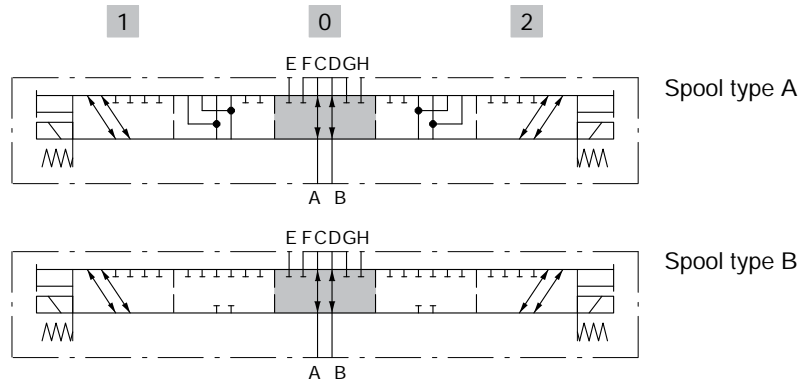
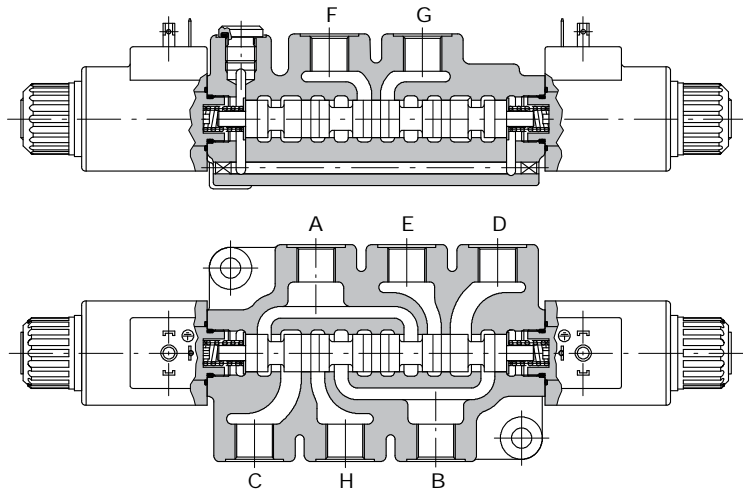
254-030

DFE

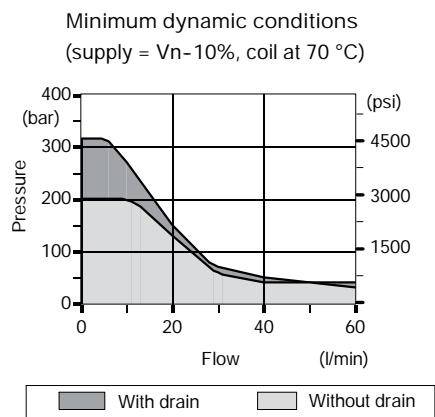
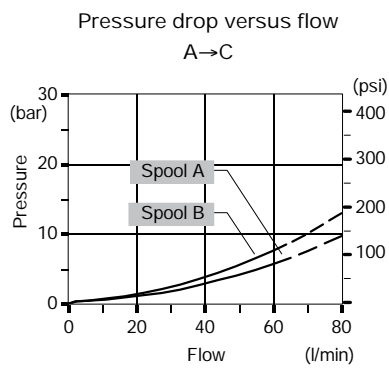
with solenoid control

Hydraulic circuit

8-way



Performance data

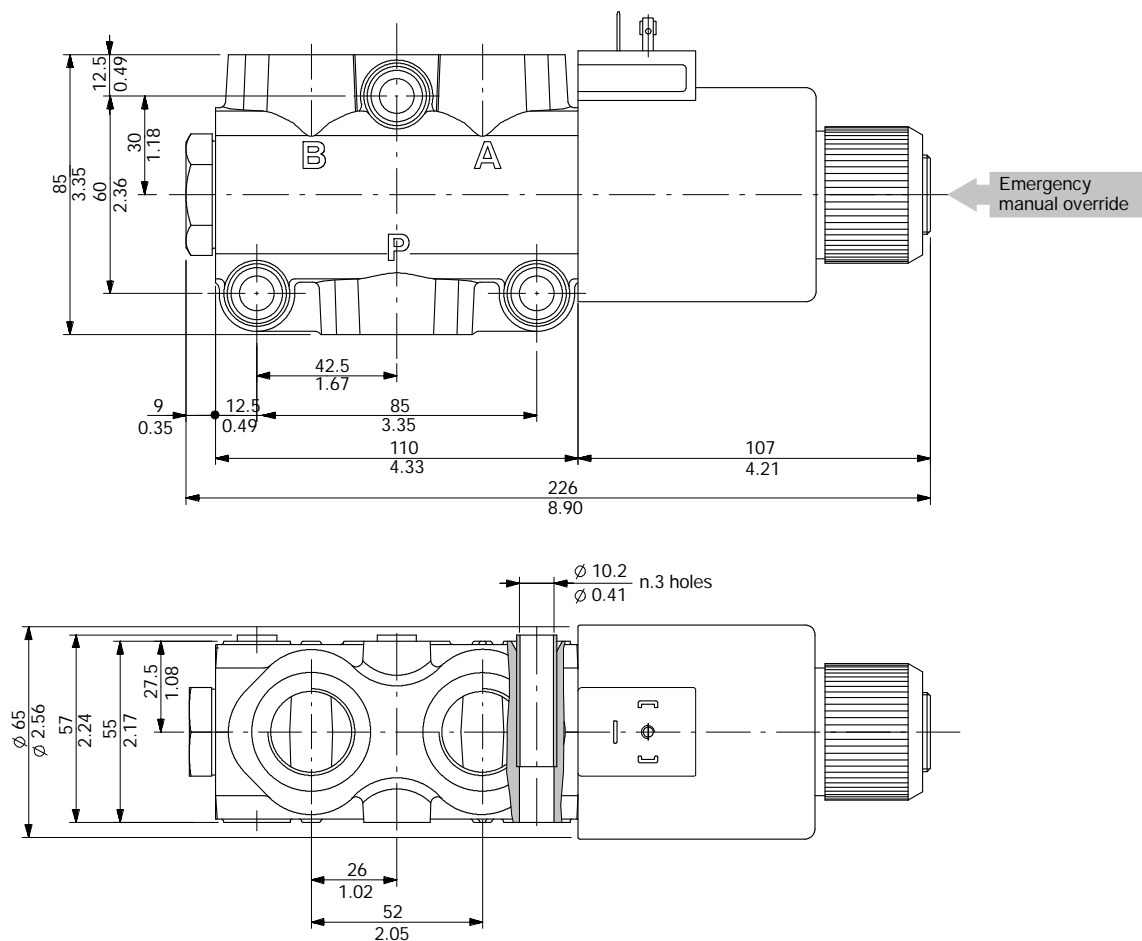


DFE20

with solenoid control

Dimensional data

3-way DFE20/3 valve



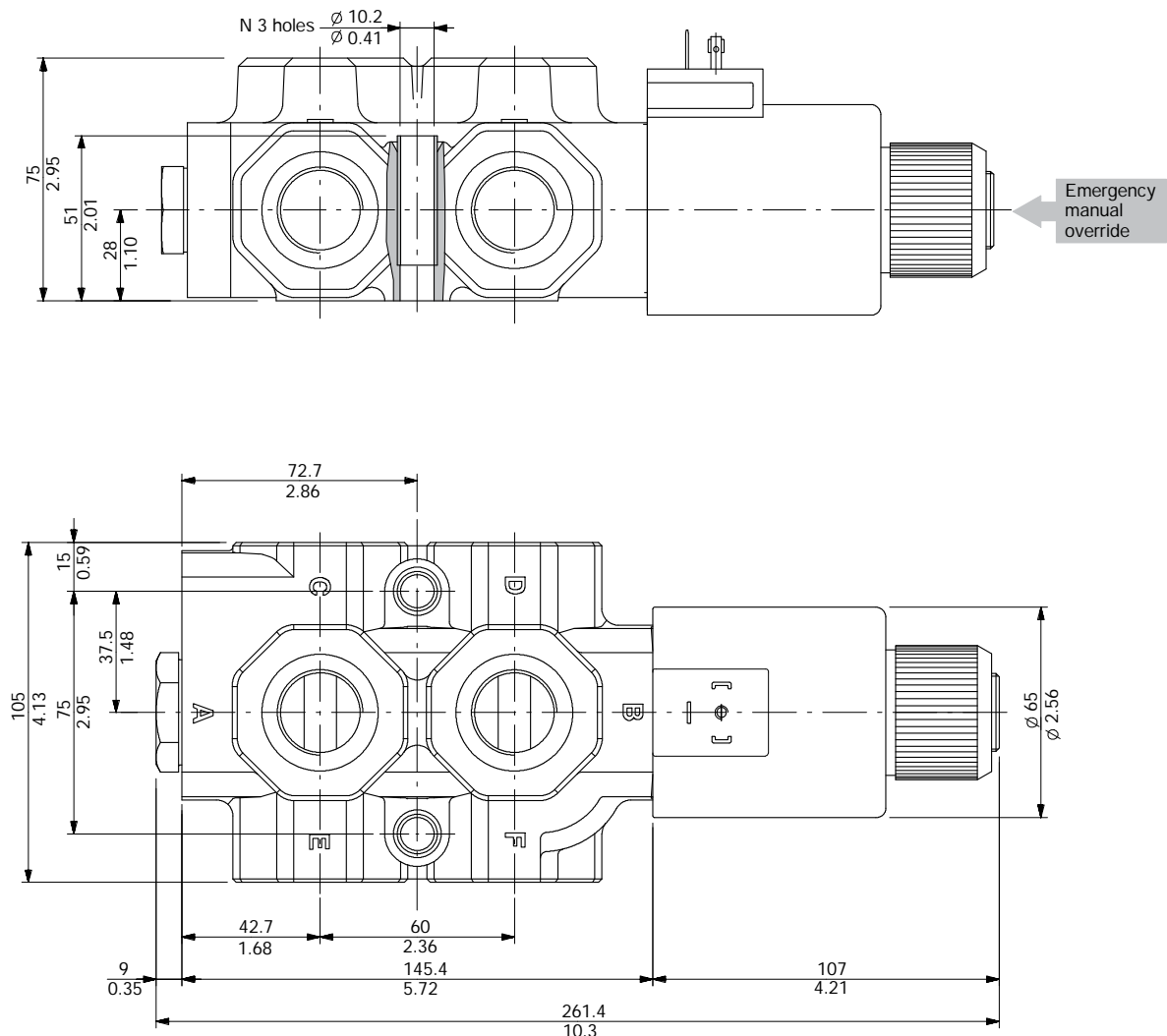
254-030

with solenoid control

DFE20

Dimensional data

6-way DFE20/6 valve



DFE20

with solenoid control

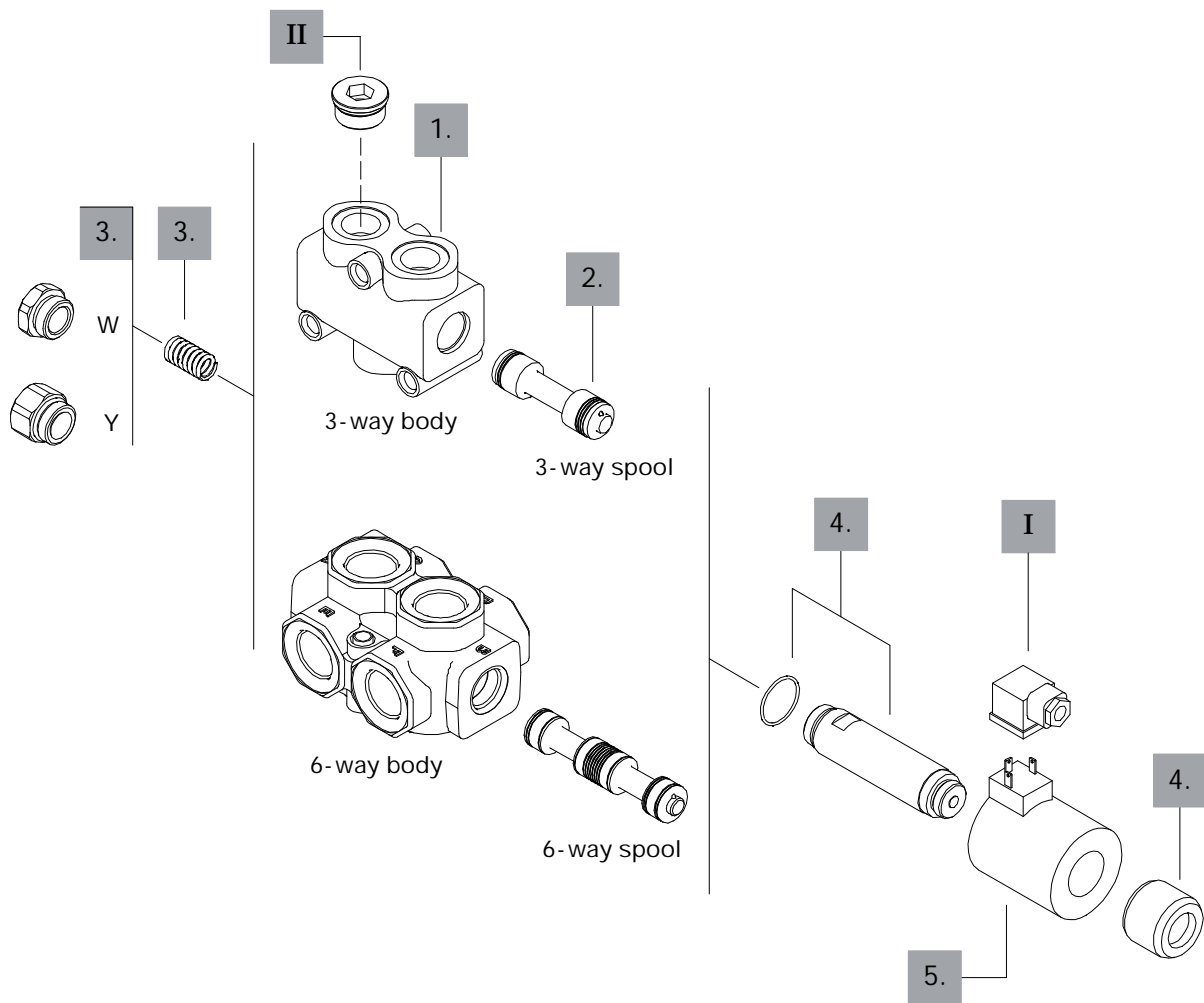
Ordering codes

Description example :

Diverter valve DFE20/3 A 18 ES - W 201-12VDC - <CVN>

1
 2
 3
 4
 3.
 5
 <CVN>

Valve is supplied painted as standard, with one coat of Primer black antirust paint



with solenoid control

DFE20

Ordering codes

3-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE20/3	3CO2261320	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS120341	3-way, 2 positions with ports connected in transit position
B	3CAS120441	3-way, 2 positions with ports closed in transit position

6-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE20/6	3CO2263820	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS120641	6-way, 2 positions with ports connected in transit position
B	3CAS120741	6-way, 2 positions with ports closed in transit position
H	3CAS120841	6-way, 2 positions, D↔C in position 1, F↔E in position 2, ports closed in transit position

3. Positioner kits page 70

TYPE	CODE	DESCRIPTION
18...W	5TAP003	Spring return in position 1
18...Y	5GIU007 *	Spring return in position 1, with G1/4 drain port

4. Tube assembly page 70

TYPE	CODE	DESCRIPTION
ES	5SOL519001	Spring return in position 1 (without coil)

5. Coil options page 70

TYPE	CODE	DESCRIPTION
101		Without coil (only with tube kit)
VDC supply (connector C02)		
201-12VDC	4SOL519112	Coil with 12VDC nominal voltage
201-24VDC	4SOL519124	Coil with 24VDC nominal voltage
VAC supply (connector C04)		
201-20VDC	4SOL519020	Coil with 20VDC nominal voltage (for 24VAC)
201-94VDC	4SOL519094	Coil with 94VDC nominal voltage (for 110VAC)
201-192VDC	4SOL519192	Coil with 192VDC nominal voltage (for 220VAC)

I Optional connectors page 80

TYPE	CODE	DESCRIPTION
C02	2X1001010	According to ISO4400
C04	2X1001040	According to ISO4400 with rectifier

II Ports plug

TYPE	CODE	DESCRIPTION
G3/4	3XTAP732200*	Body conversion from 3-way to 2-way circuit

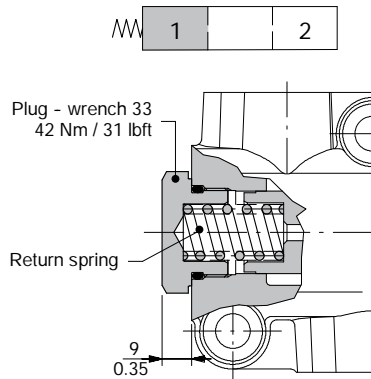
DFE20

with solenoid control

Positioner kits

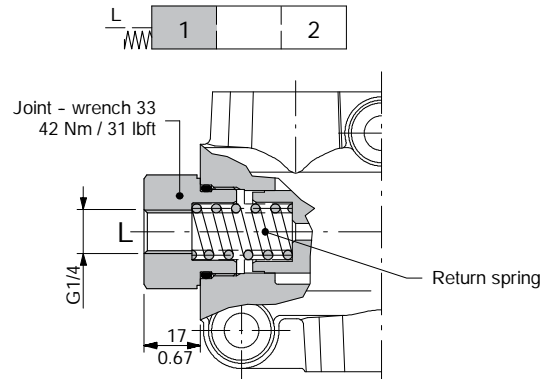
18W kit

Spring return in position 1 with plug.



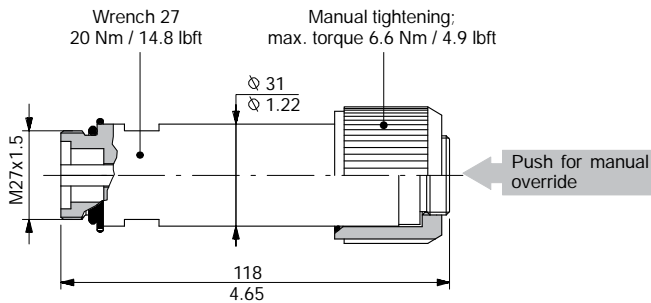
18Y kit

Spring return in position 1, with G1/4 joint for drain.



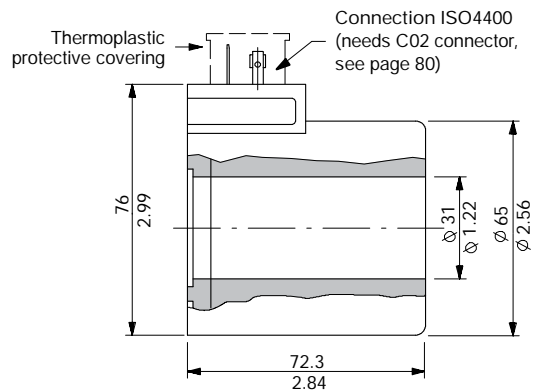
Solenoid parts

ES tube assembly



Operating features
Plunger stroke : 10.2 mm / 0.40 in

Coil options



Operating features
Nominal voltage : 12-20-24-94-192VDC
Nominal voltage tolerance . . . : ±10%
Power rating : 60 W
Duty cycle : 100%
Weather protection : IP66
Coil insulation : Class H

Umschaltventile

– DFE052/6 –



– Magnet –

Bestellnr.	Typ	Code
254-040-01000	DFE052/6A18ES-W201-12VDC	12A270033
254-040-01050	DFE052/6A18ES-W201-24VDC	12A270023
254-040-01100	DFE052/6A18ES-Y201-12VDC	12A270061
254-040-01150	DFE052/6A18ES-Y201-24VDC	12A270060
254-040-01200	DFE052/6B18ES-W201-12VDC	12A270026
254-040-01250	DFE052/6B18ES-W201-24VDC	12A270031
254-040-01300	DFE052/6B18ES-Y201-12VDC	12A270028
254-040-01350	DFE052/6B18ES-Y201-24VDC	12A270036
254-040-01400	DFE052/6B18ES-W201-48VDC	12A270065

DFE

with solenoid control

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

		DFE052	DFE10	DFE20
N. of available ways		2-3-6-8	3-6	3-6
Nominal flow rating	in steady conditions	60 l/min	90 l/min	140 l/min
Operating pressure (maximum)*	without drain	200 bar 2900 psi	200 bar 2900 psi	200 bar 2900 psi
	with drain	315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi
Available nominal voltage	VDC	12-24 48-110	12-24-48	12-24
	VAC 50Hz (with C04 connector)	24-110-220	110-220	24-110-220
Potenza nominale	W	40	60	60
Internal leakage A(B)→T	Δp=100 bar 1450 psi with fluid and valve at 40°C	7 cm ³ /min 0.43 in ³ /min	10 cm ³ /min 0.61 in ³ /min	15 cm ³ /min 0.92 in ³ /min
Fluid		Mineral base oil		
Fluid temperature	with NBR seals	da -20° a 80°C		
	with FPM seals	da -20° a 100°C		
Viscosity	operating range	da 15 a 75 mm ² /s - from 15 to 75 cSt		
	minimum	12 mm ² /s - 12 cSt		
	maximum	400 mm ² /s - 400 cSt		
Max. level of contamination		19/16 - ISO 4406		
Ambient temperature		da -40° a 60°C		

NOTE - For different working conditions please contact Customer Service.

(*) - This value is reachable only in steady conditions; for dynamic working conditions see the pages from 49 to 52.

Standard threads

ALL PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)
DFE052	G 3/8	3/4-16 UNF-2B (SAE 8)
DFE10	G 1/2	7/8-14 UNF-2B (SAE 10)
DFE20	G 3/4	1 1/16-12 UN-2B (SAE 12)
DRAIN PORT		
L	G 1/4	7/16-20 UNF-2B (SAE 4)

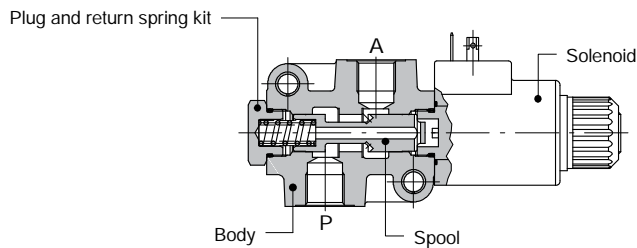
with solenoid control

DFE

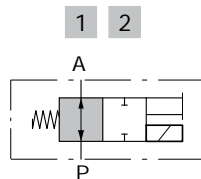
Hydraulic circuit

2-way

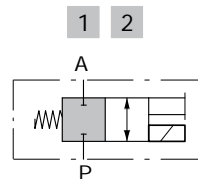
Available as body only in DFE052/2 execution; for other executions 3-way body is used.



Spool type A

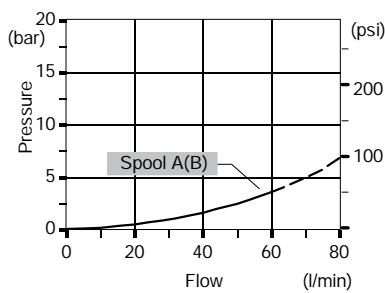


Spool type B

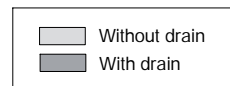
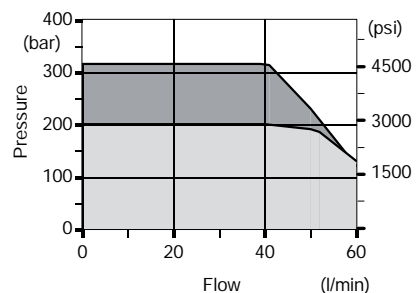


Performance data

Pressure drop versus flow
P→A



Minimum dynamic conditions
(supply = Vn - 10%, coil at 70 °C)



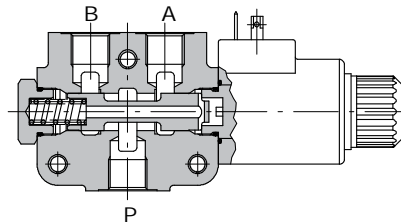
DFE

with solenoid control

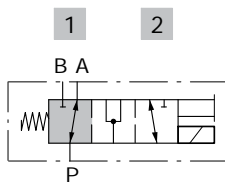
Hydraulic circuit

3-way

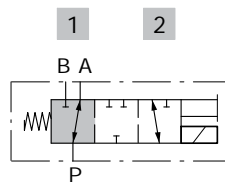
It's possible to obtain 2-way diverter valve plugging port A or B.



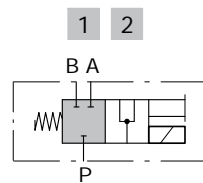
Spool type A



Spool type B

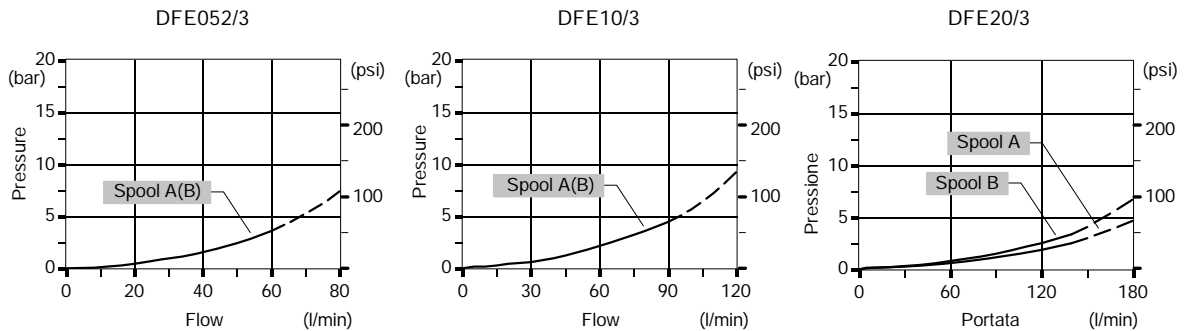


Spool type D

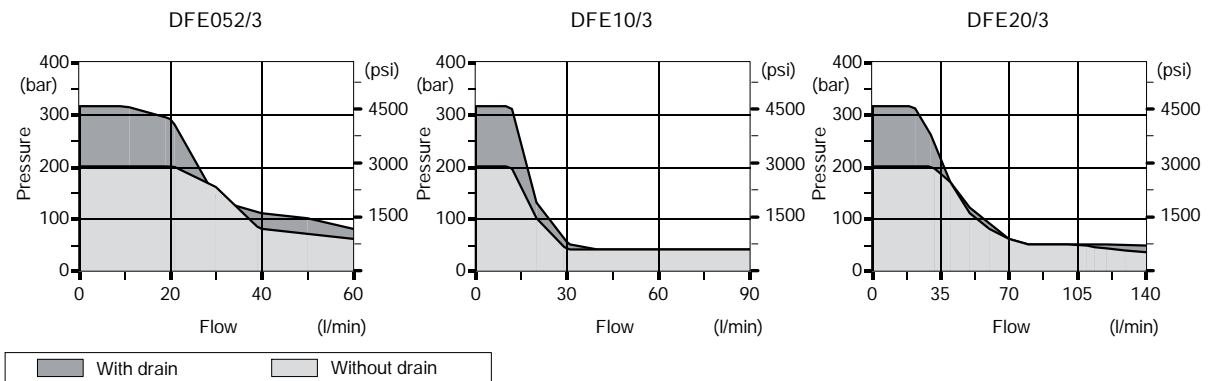


Performance data

Pressure drop versus flow: P→A(B)



Minimum dynamic conditions: (supply = Vn-10%, coil at 70 °C)

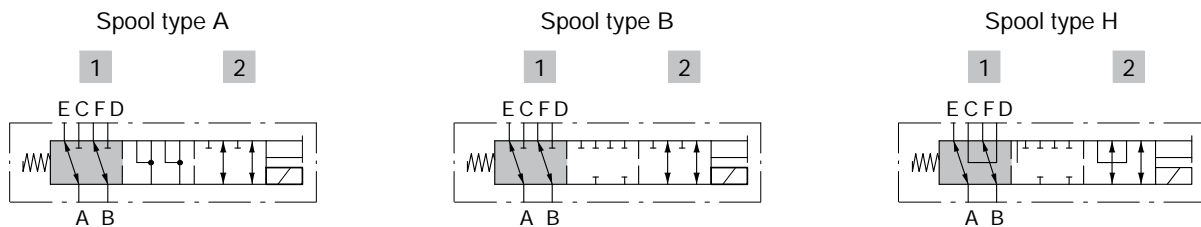
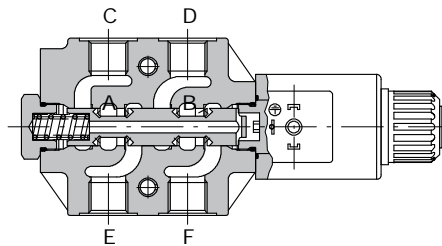


with solenoid control

DFE

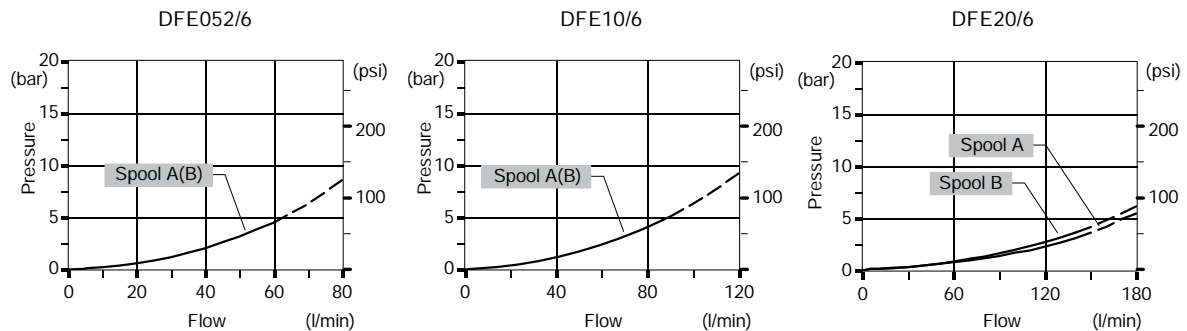
Hydraulic circuit

6-way

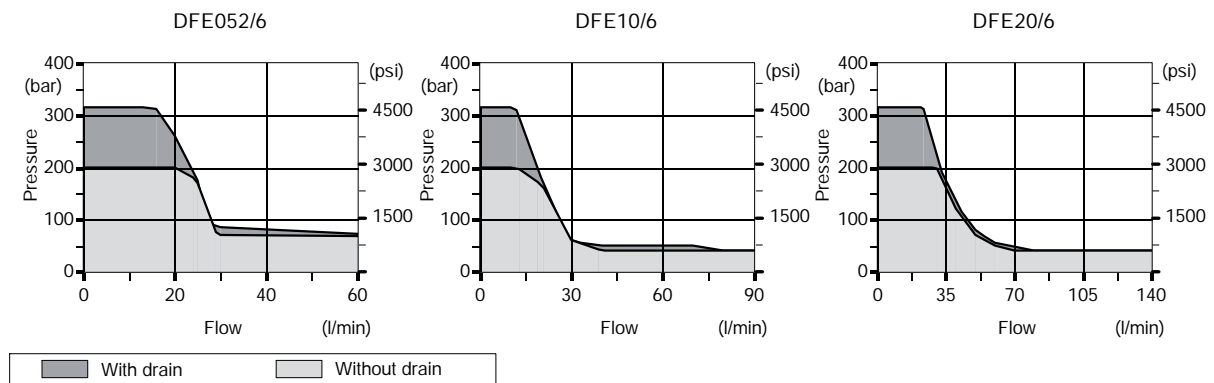


Performance data

Pressure drop versus flow: A→E(C).



Minimum dynamic conditions: (supply = Vn-10%, coil at 70 °C)



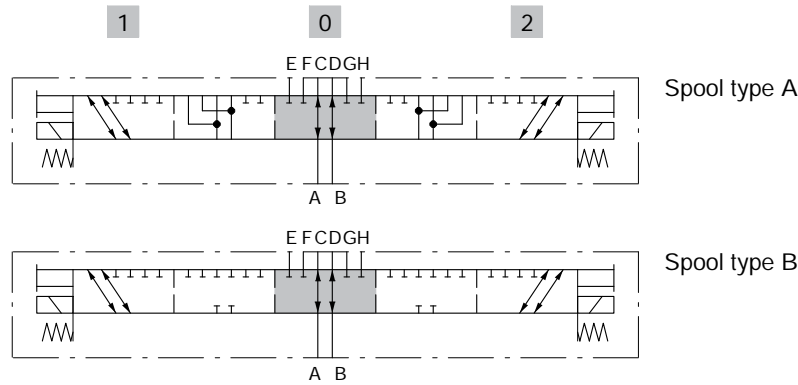
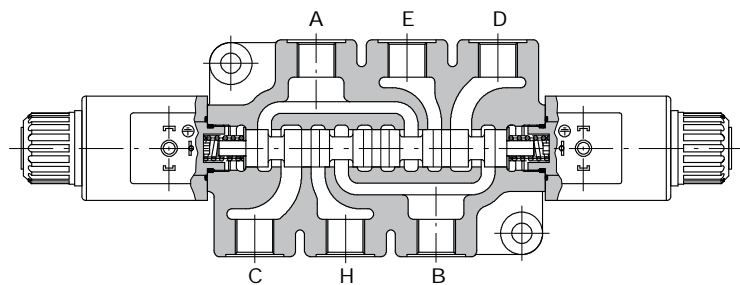
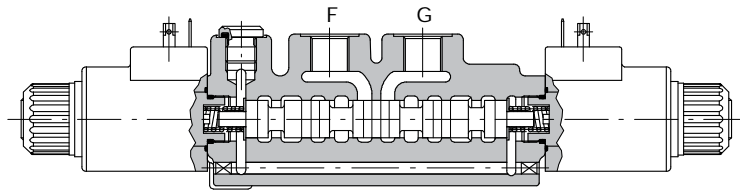
254-040

DFE

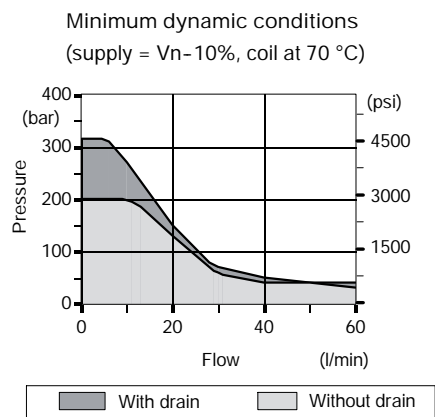
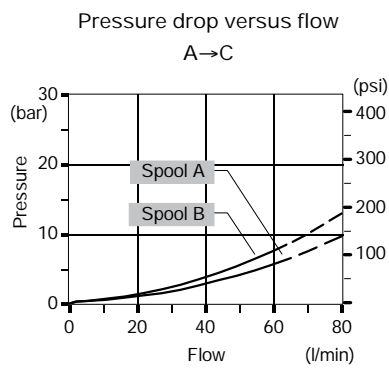
with solenoid control

Hydraulic circuit

8-way



Performance data

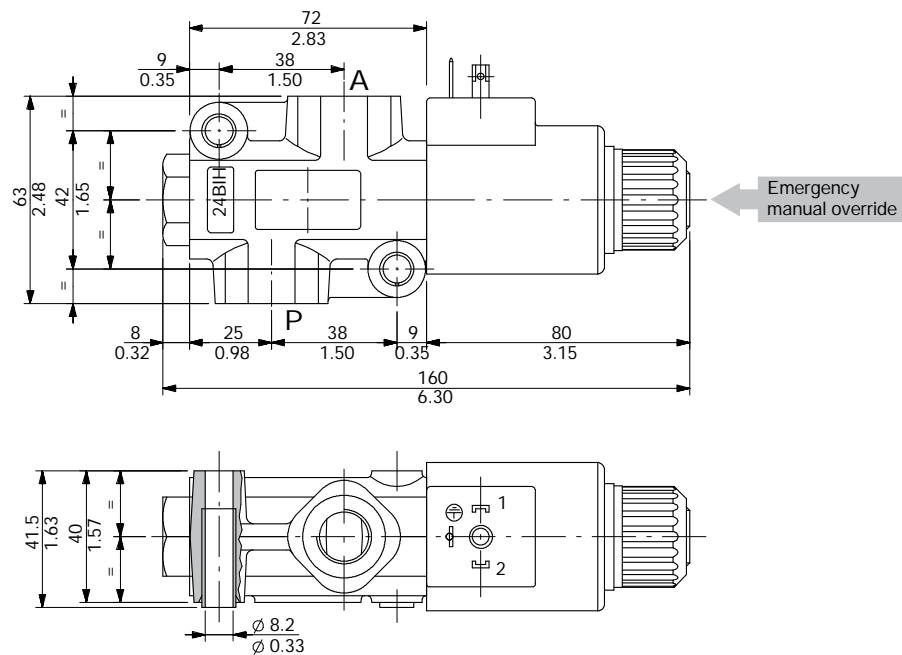


with solenoid control

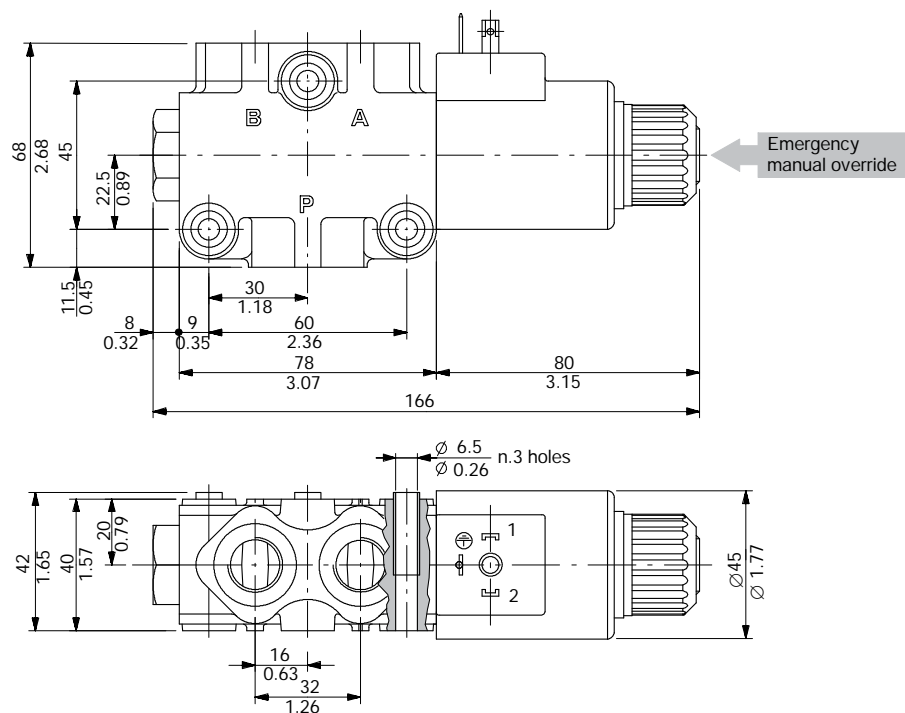
DFE052

Dimensional data

2-way DFE052/2 valve



3-way DFE052/3 valve

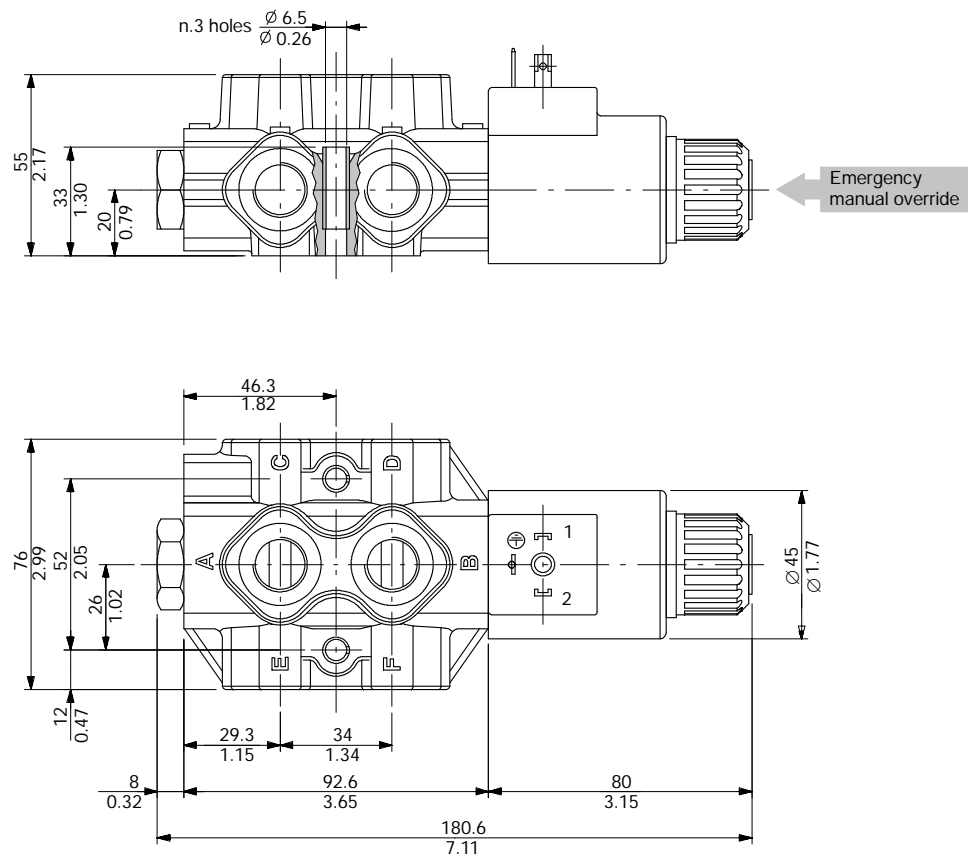


DFE052

with solenoid control

Dimensional data

6-way DFE052/6 valve



DFE052

with solenoid control

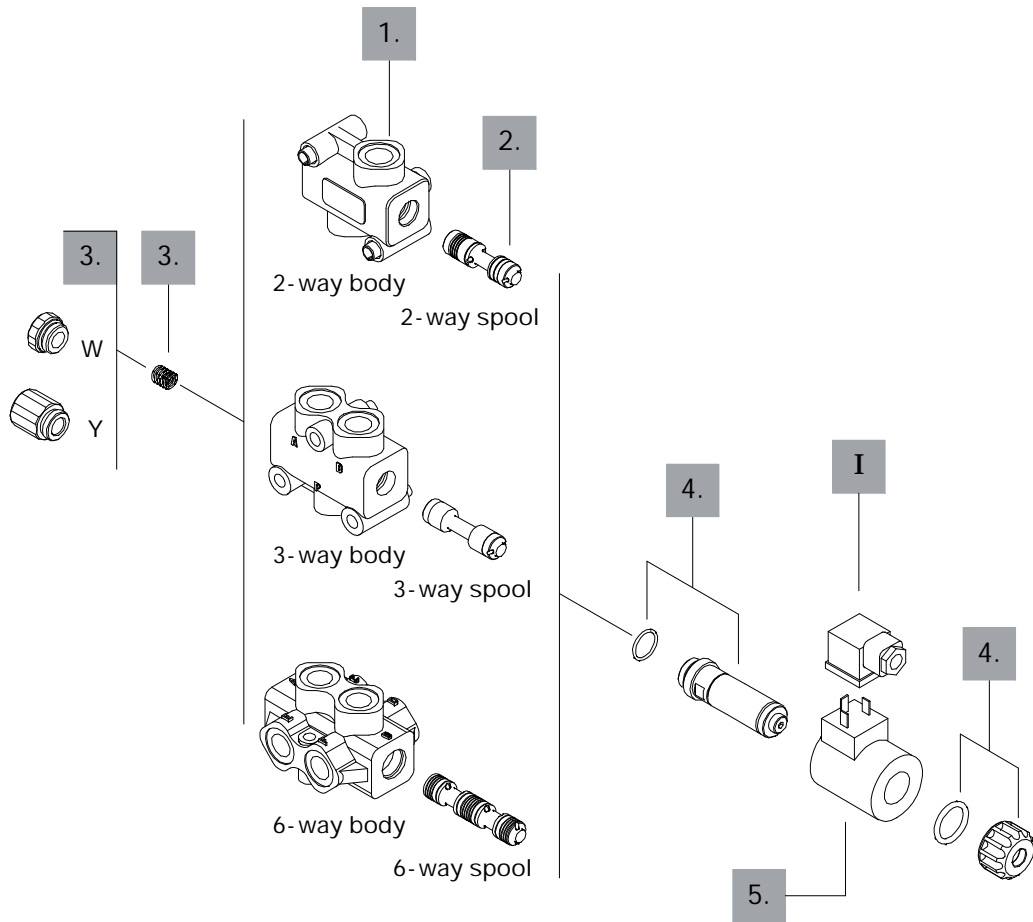
Ordering codes

Description example :

Diverter valve DFE052/2 A 18 ES - W 201-12VDC - <CVN>



Valve is supplied painted as standard, with one coat of Primer black antirust paint



with solenoid control

DFE052

Ordering codes

2-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE052/2	3CO2220321	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105245	2 positions with open centre in neutral
B	3CAS105145	2 positions with closed centre in neutral

3-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE052/3	3CO2220321	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105245	3-way, 2 positions with ports connected in transit position
B	3CAS105145	3-way, 2 positions with ports closed in transit position
D	3CAS105546	3-way, 2 positions, without transit position, with ports closed in rest position

6-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE052/6	3CO2222326	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105645	6-way, 2 positions with ports connected in transit position
B	3CAS105746	6-way, 2 positions with ports closed in transit position
H	3CAS105845	6-way, 2 positions, D↔C in position 1, F↔E in position 2, ports closed in transit position

3. Positioner kits page 59

TYPE	CODE	DESCRIPTION
18...W	5TAP001	Spring return in position 1
18...Y	5GIU001 *	Spring return in position 1, with G1/4 drain port

4. Tube assembly page 60

TYPE	CODE	DESCRIPTION
ES	5SOL515000	Spring return in position 1 (without coil)

5. Coil options page 60

TYPE	CODE	DESCRIPTION
101	-	Without coil (only with tube kit)
201-12VDC	4SOL515012	Without coil (only with tube kit)
201-24VDC	4SOL515024	Coil with 24VDC nominal voltage
221-12VDC	4SOL515010	Coil with 12VDC nominal voltage and "AMP Junior Timer" connection
231-12VDC	4SOL515011	Coil with 12VDC nominal voltage and "DEUTSCH DT06-2S" connection

I Optional connectors page 80

TYPE	CODE	DESCRIPTION
C02	2X1001010	According to ISO4400
C08	5CON003	Type AMP "Junior-Power-Timer"
C09	5CON130020	Type DEUTSCH "DT04-2P"

DFE052

with solenoid control

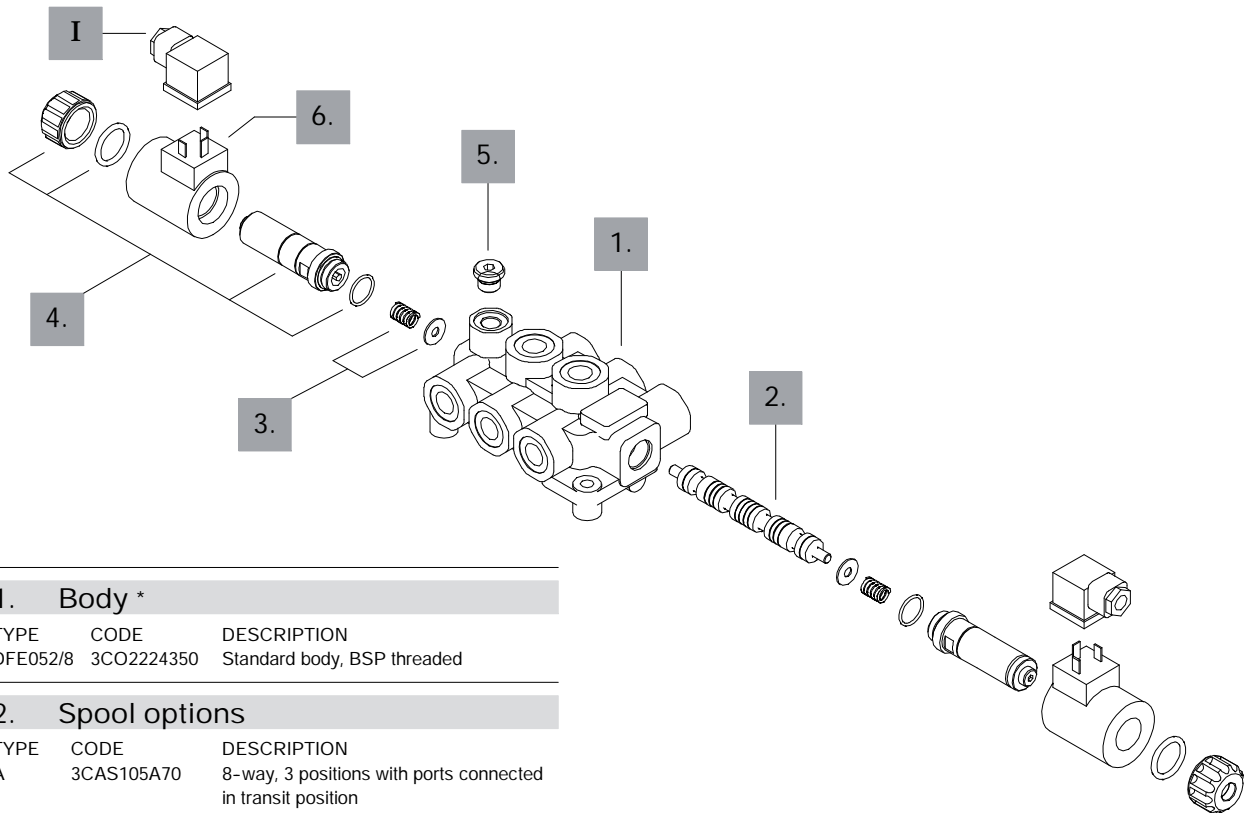
Ordering codes

Description example :

Diverter valve DFE052/8 B 8 ES3 - W 201-12VDC - <CVN>

1. 2. 3. 4. 5. 6.

Valve is supplied painted as standard, with one coat of Primer black antirust paint



1. Body *

TYPE	CODE	DESCRIPTION
DFE052/8	3CO2224350	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105A70	8-way, 3 positions with ports connected in transit position
B	3CAS105B70	8-way, 3 positions with ports closed in transit position

3. Positioner kit page 59

TYPE	CODE	DESCRIPTION
8	5V08001	Spring return in neutral position

4. Tube assembly page 60

TYPE	CODE	DESCRIPTION
ES3	5SOL515000	With spring return in neutral position (without coil)

5. Drain options * page 59

TYPE	CODE	DESCRIPTION
W	3XTAP719150	With drain plugged
Y	-	With G 1/4 drain port

6. Coil options page 60

TIPO	CODICE	DESCRIZIONE
101	-	Without coil (only with tube kit)
201-12VDC	4SOL515012	Without coil (only with tube kit)
201-24VDC	4SOL515024	Coil with 24VDC nominal voltage
221-12VDC	4SOL515010	Coil with 12VDC nominal voltage and "AMP Junior Timer" connection
231-12VDC	4SOL515011	Coil with 12VDC nominal voltage and "DEUTSCH DT06-2S" connection

I Optional connectors page 80

TYPE	CODE	DESCRIPTION
C02	2X1001010	According to ISO4400
C08	5CON003	Type AMP "Junior-Power-Timer"
C09	5CON130020	Type DEUTSCH "DT04-2P"

with solenoid control

DFE052

Positioner kits

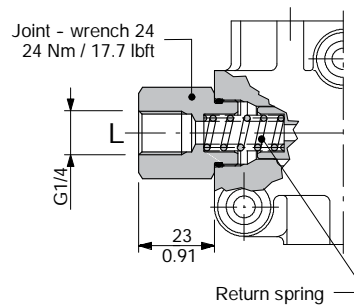
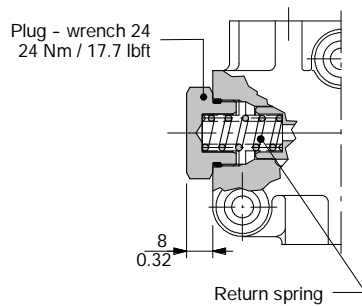
DFE052/2 - /3 - /6

18W kit

Spring return in position 1 with plug.

18Y kit

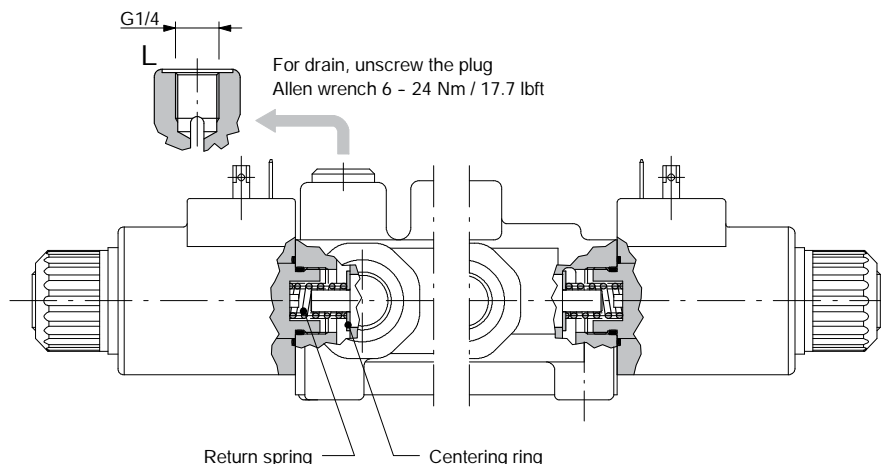
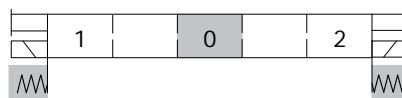
Spring return in position 1, with G1/4 joint for drain.



DFE052/8

8 kit

Spring return in position 0.



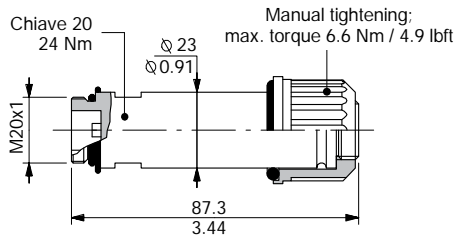
254-040

DFE052

with solenoid control

Solenoid parts

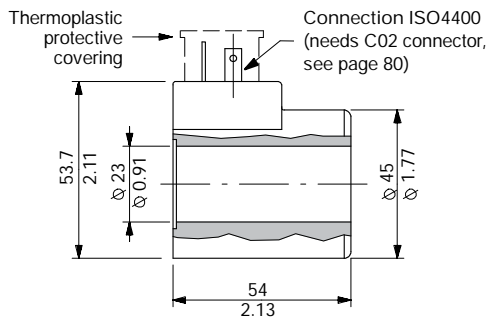
ES tube assembly



Operating features

Plunger stroke : 7.1 mm / 0.28 in

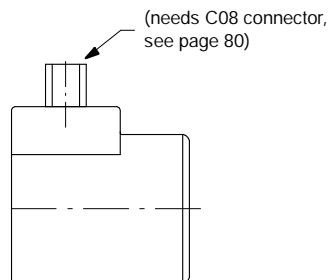
Coil options



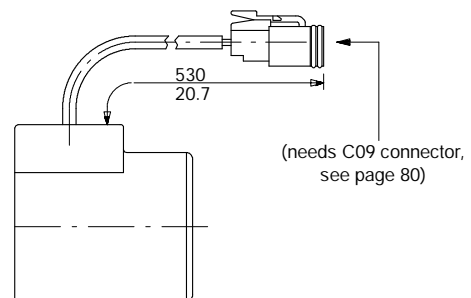
Operating features

Nominal voltage : 12VDC / 24VDC
Nominal voltage tolerance . . . : $\pm 10\%$
Power rating : 38 W
Duty cycle : 100%
Weather protection : IP66
Coil insulation : Class H

Optional coil with connector type
AMP "Junior Timer"



Optional coil with connector type
DEUTSCH "DT06-2S"



Umschaltventile – DFE10/6 –



– Magnet –

Bestellnr.	Typ	Code
254-050-01000	DFE10/6A18ES-W202-12VDC	12A470013
254-050-01050	DFE10/6A18ES-W202-24VDC	12A470025
254-050-01100	DFE10/6A18ES-Y202-12VDC	12A470019
254-050-01150	DFE10/6A18ES-Y202-24VDC	12A470015
254-050-01200	DFE10/6B18ES-W202-12VDC	12A480013
254-050-01250	DFE10/6B18ES-W202-24VDC	12A480025
254-050-01300	DFE10/6B18ES-Y202-12VDC	12A480019

DFE

with solenoid control

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

		DFE052	DFE10	DFE20
N. of available ways		2-3-6-8	3-6	3-6
Nominal flow rating	in steady conditions	60 l/min	90 l/min	140 l/min
Operating pressure (maximum)*	without drain	200 bar 2900 psi	200 bar 2900 psi	200 bar 2900 psi
	with drain	315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi
Available nominal voltage	VDC	12-24 48-110	12-24-48	12-24
	VAC 50Hz (with C04 connector)	24-110-220	110-220	24-110-220
Potenza nominale	W	40	60	60
Internal leakage A(B)→T	Δp=100 bar 1450 psi with fluid and valve at 40°C	7 cm ³ /min 0.43 in ³ /min	10 cm ³ /min 0.61 in ³ /min	15 cm ³ /min 0.92 in ³ /min
Fluid		Mineral base oil		
Fluid temperature	with NBR seals	da -20° a 80°C		
	with FPM seals	da -20° a 100°C		
Viscosity	operating range	da 15 a 75 mm ² /s - from 15 to 75 cSt		
	minimum	12 mm ² /s - 12 cSt		
	maximum	400 mm ² /s - 400 cSt		
Max. level of contamination		19/16 - ISO 4406		
Ambient temperature		da -40° a 60°C		

NOTE - For different working conditions please contact Customer Service.

(*) - This value is reachable only in steady conditions; for dynamic working conditions see the pages from 49 to 52.

Standard threads

ALL PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)
DFE052	G 3/8	3/4-16 UNF-2B (SAE 8)
DFE10	G 1/2	7/8-14 UNF-2B (SAE 10)
DFE20	G 3/4	1 1/16-12 UN-2B (SAE 12)
DRAIN PORT		
L	G 1/4	7/16-20 UNF-2B (SAE 4)

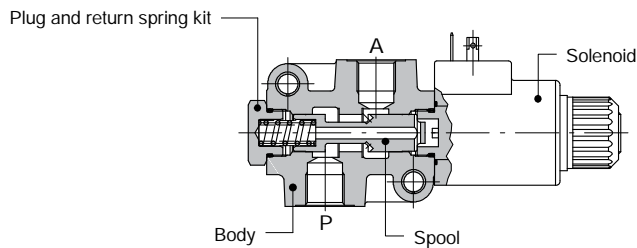
with solenoid control

DFE

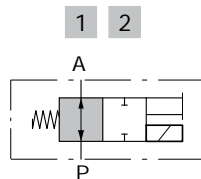
Hydraulic circuit

2-way

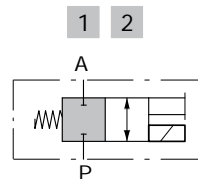
Available as body only in DFE052/2 execution; for other executions 3-way body is used.



Spool type A

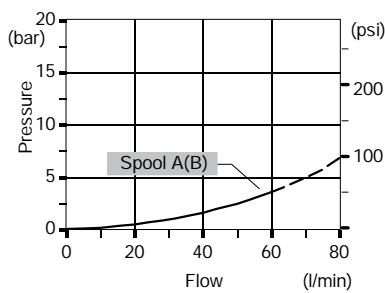


Spool type B

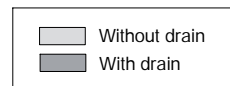
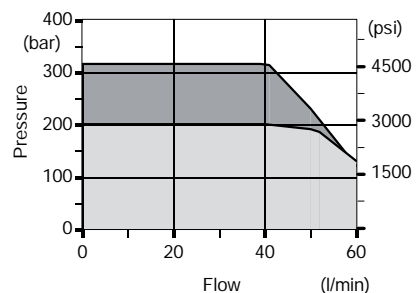


Performance data

Pressure drop versus flow
P→A



Minimum dynamic conditions
(supply = Vn-10%, coil at 70 °C)



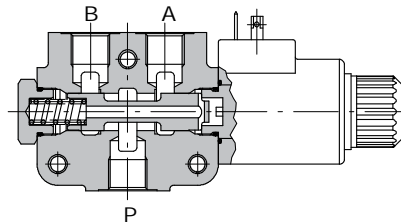
DFE

with solenoid control

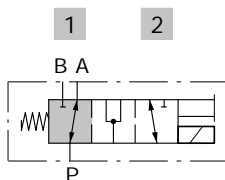
Hydraulic circuit

3-way

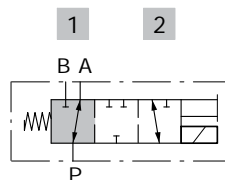
It's possible to obtain 2-way diverter valve plugging port A or B.



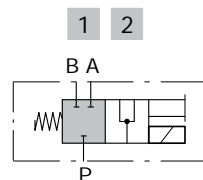
Spool type A



Spool type B

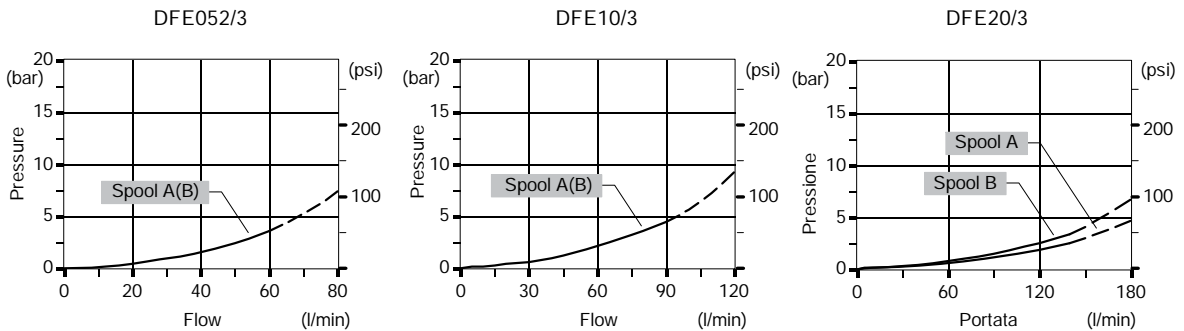


Spool type D

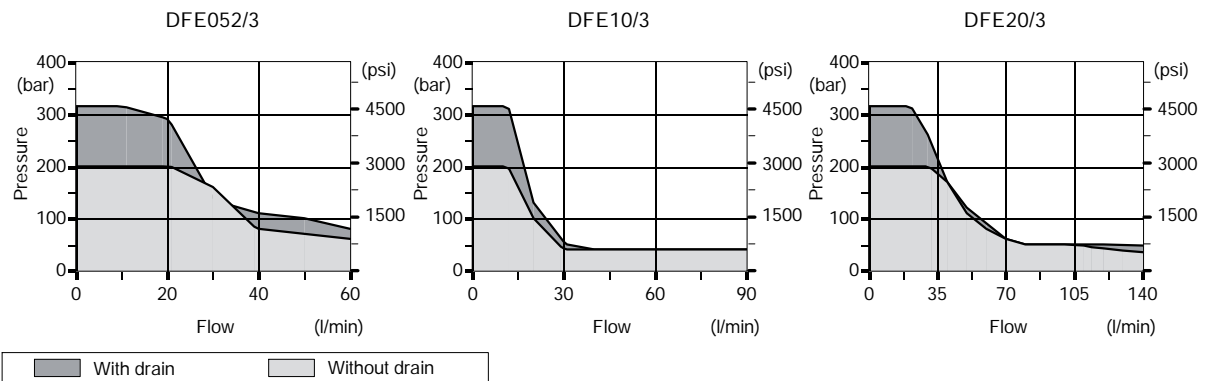


Performance data

Pressure drop versus flow: P→A(B)



Minimum dynamic conditions: (supply = Vn-10%, coil at 70 °C)

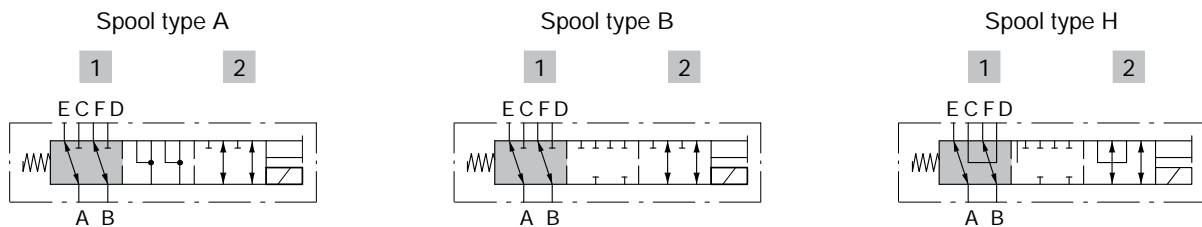
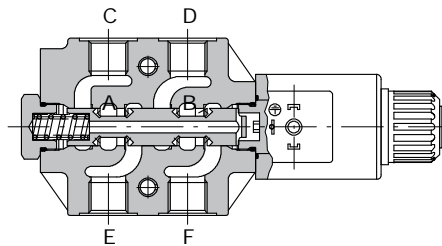


with solenoid control

DFE

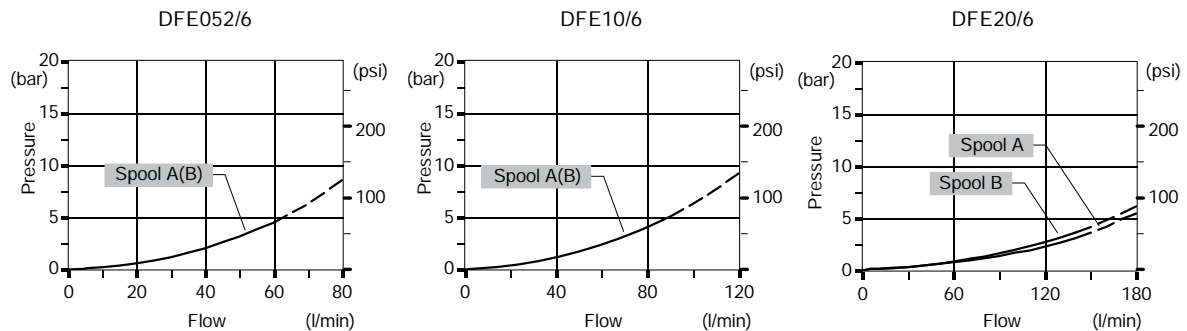
Hydraulic circuit

6-way

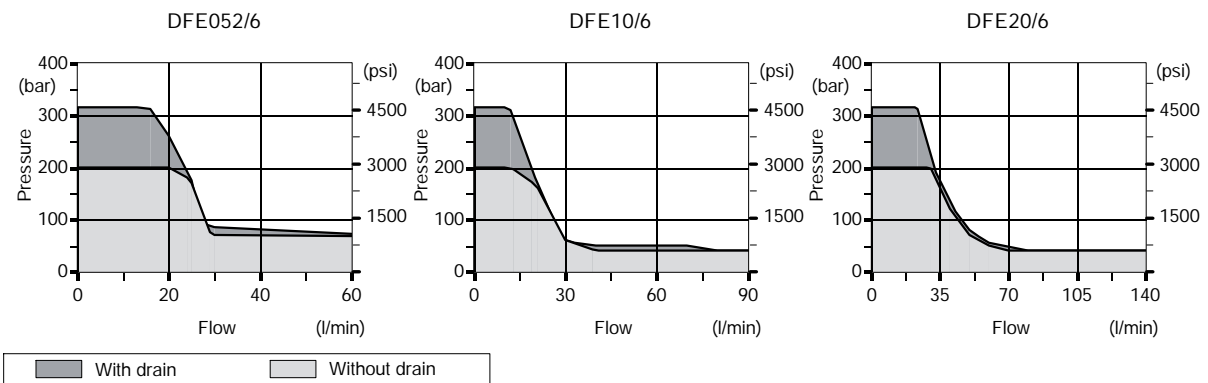


Performance data

Pressure drop versus flow: A→E(C).



Minimum dynamic conditions: (supply = Vn-10%, coil at 70 °C)



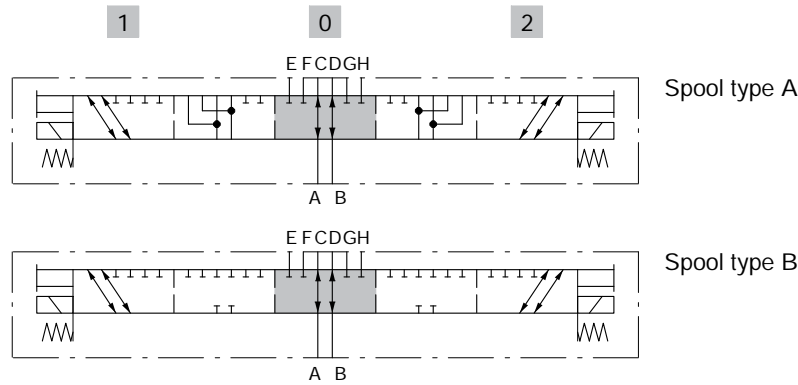
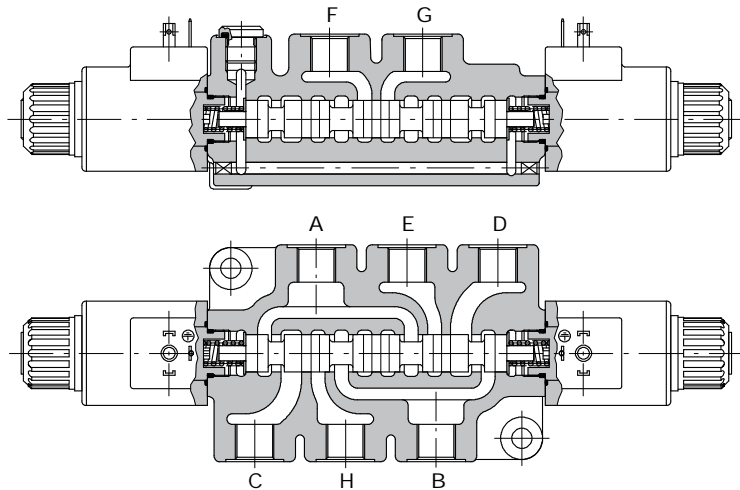
254-050

DFE

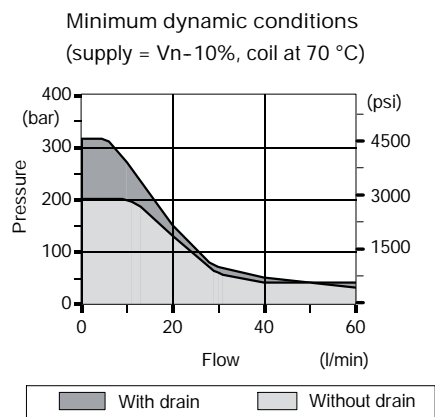
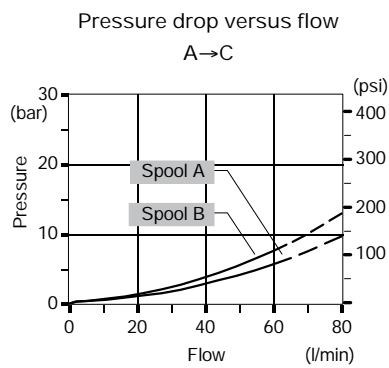
with solenoid control

Hydraulic circuit

8-way



Performance data

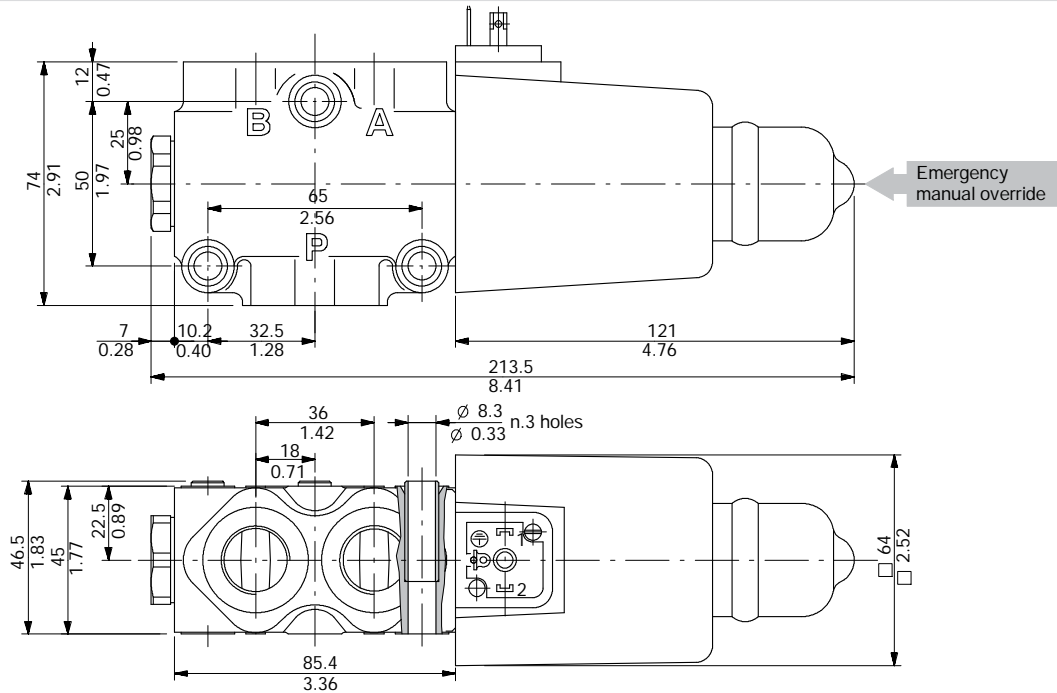


with solenoid control

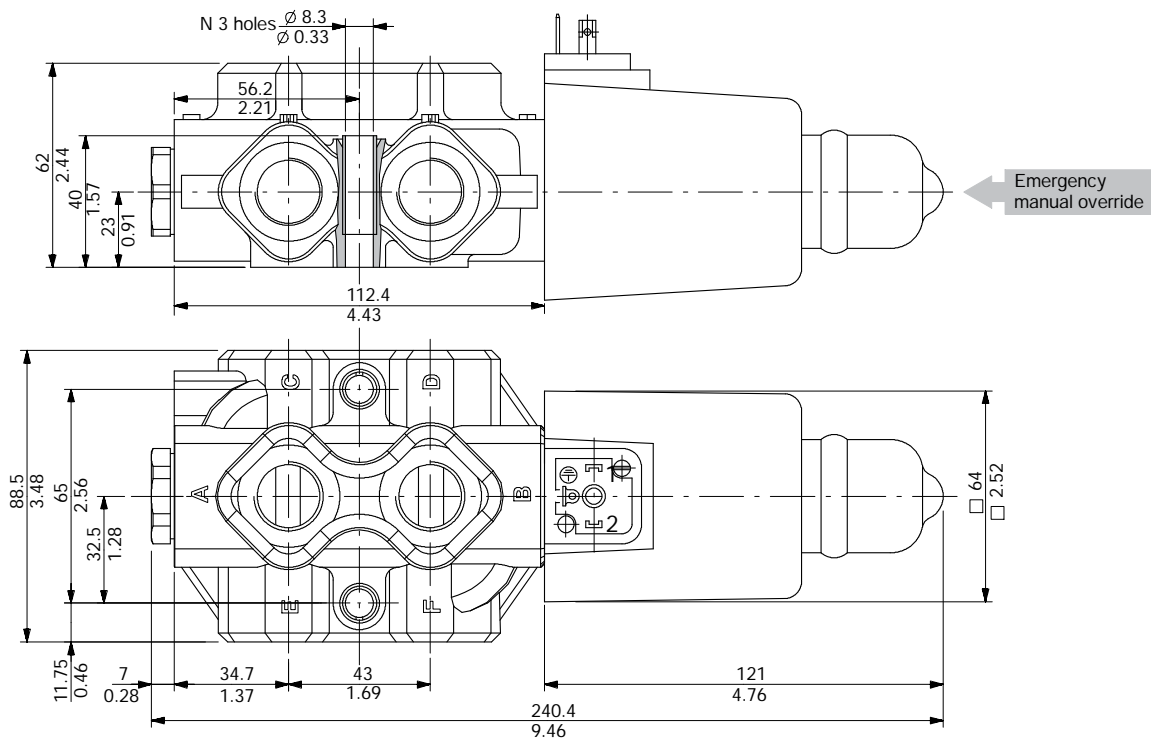
DFE10

Dimensional data

3-way DFE10/3 valve



6-way DFE10/6 valve



254-050

DFE10

with solenoid control

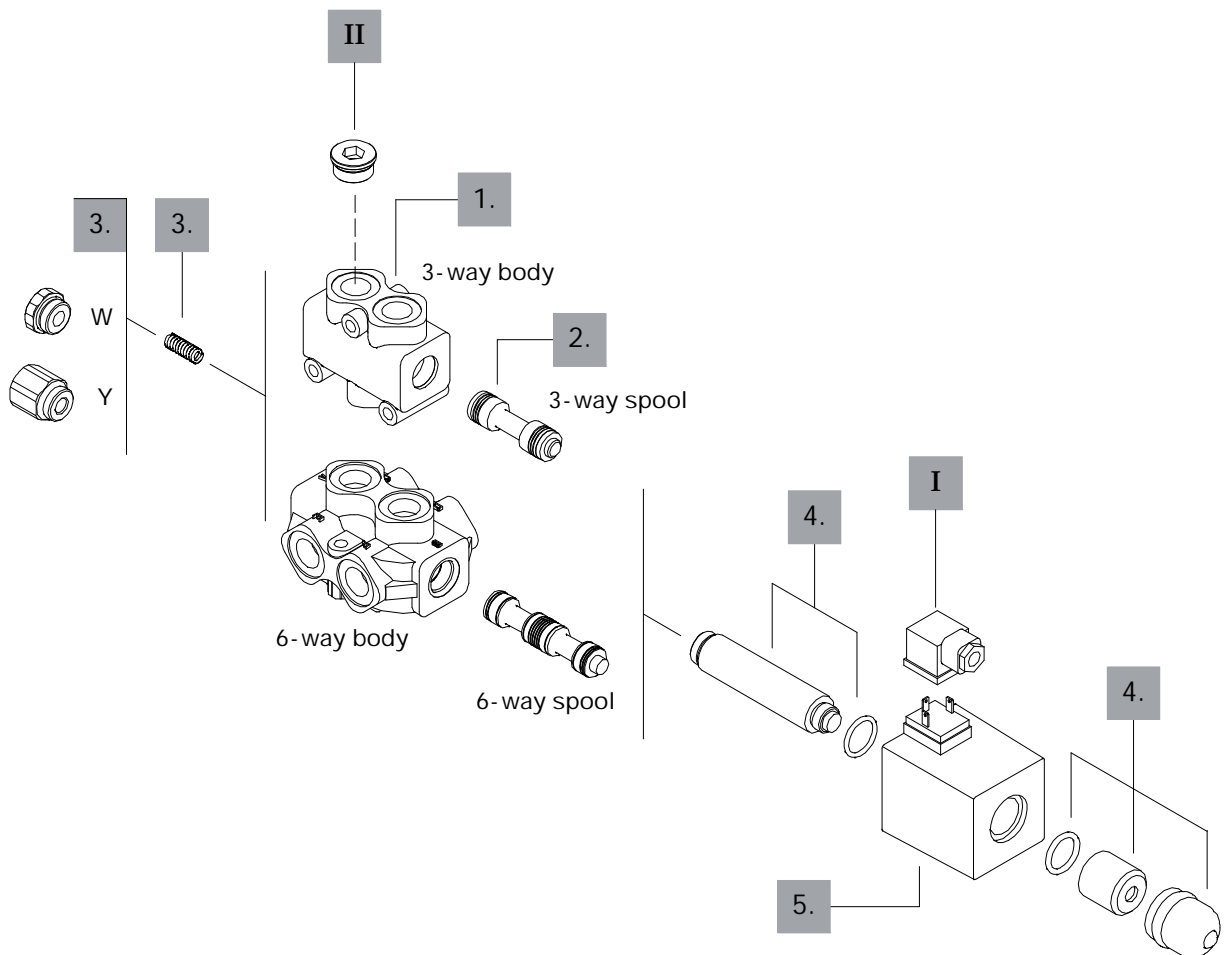
Ordering codes

Description example :

Diverter valve DFE10/3 A 18 ES - W 202-12VDC - <CVN>

1. 2. 3. 4. 3. 5.

Valve is supplied painted as standard, with one coat of Primer black antirust paint



with solenoid control

DFE10

Ordering codes

3-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE10/3	3CO2241320	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS110341	3-way, 2 positions with ports connected in transit position
B	3CAS110441	3-way, 2 positions with ports closed in transit position
D	3CAS110540	3-way, 2 positions, without transit position, with ports closed in rest position

6-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE10/6	3CO2242322	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS110641	6-way, 2 positions with ports connected in transit position
B	3CAS110741	6-way, 2 positions with ports closed in transit position
H	3CAS110840	6-way, 2 positions, D↔C in position 1, F↔E in position 2, ports closed in transit position
N	3CAS110952	6-way, 2 positions with ports closed in transit position, with check valve

3. Positioner kits page 64

TYPE	CODE	DESCRIPTION
18...W	5TAP002	Spring return in position 1
18...Y	5GIU004 *	Spring return in position 1, with G1/4 drain port

4. Tube assembly page 64

TYPE	CODE	DESCRIPTION
ES	5SOL516000	Spring return in position 1 (without coil)

5. Coil options page 64

TYPE	CODE	DESCRIPTION
102	-	Without coil (only with tube kit)
VDC supply (connector C02)		
202-12VDC	4SOL516012	Coil with 12VDC nominal voltage
202-24VDC	4SOL516024	Coil with 24VDC nominal voltage
202-48VDC	4SOL516048	Coil with 48VDC nominal voltage
VAC supply (connector C04)		
202-92VDC	4SOL516094	Coil with 92VDC nominal voltage (for 110VAC)
202-192VDC	4SOL516192	Coil with 192VDC nominal voltage (for 220VAC)

I Optional connectors page 80

TYPE	CODE	DESCRIPTION
C02	2X1001010	According ISO4400
C04	2X1001040	According to ISO4400 with rectifier

II Ports plug

TYPE	CODE	DESCRIPTION
G1/2	3XTAP727180*	Body conversion from 3-way to 2-way circuit

NOTE (*) - Codes are referred to BSP thread.

254-050

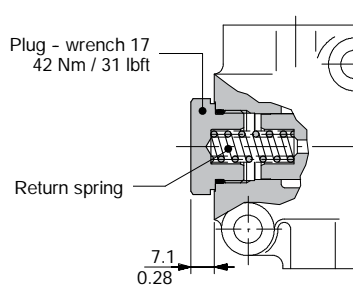
DFE10

with solenoid control

Positioner kits

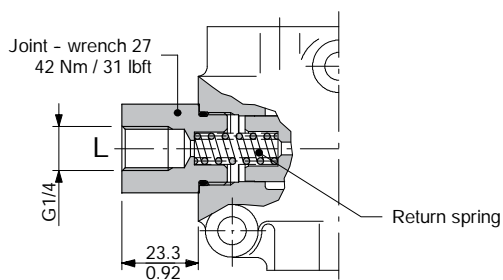
18W kit

Spring return in position 1 with plug.



18Y kit

Spring return in position 1, with G1/4 joint for drain.

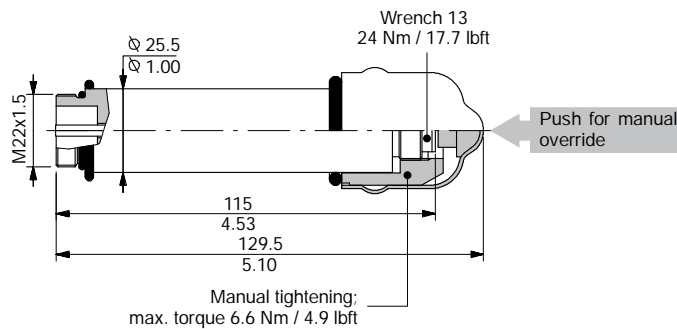


with solenoid control

DFE10

Solenoid parts

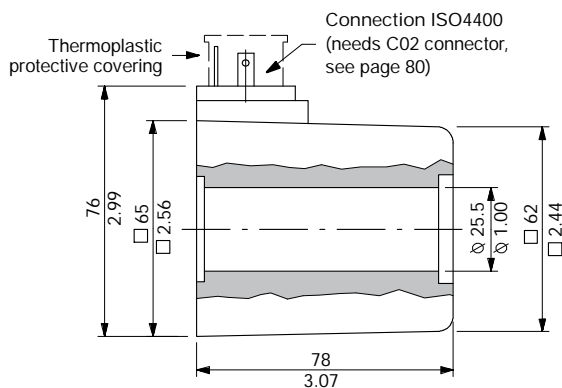
ES tube assembly



Operating features

Plunger stroke : 10.2 mm / 0.40 in

Coil options



Operating features

Nominal voltage : 12-24-48-92-192VDC
Nominal voltage tolerance . . . : $\pm 10\%$
Power rating : 60 W
Duty cycle : 100%
Weather protection : IP66
Coil insulation : Class H

Umschaltventile – DFE20/6 –



– Magnet –

Bestellnr.	Typ	Code
254-060-01000	DFE20/6A18ES-W201-12VDC	12A670014
254-060-01050	DFE20/6A18ES-W201-24VDC	12A670026
254-060-01100	DFE20/6A18ES-Y201-12VDC	12A670020
254-060-01140	DFE20/6A18ES-Y201-24VDC	12A670038
254-060-01150	DFE20/6B18ES-Y201-24VDC	12A680038
254-060-01200	DFE20/6B18ES-W201-12VDC	12A680014
254-060-01250	DFE20/6B18ES-W201-24VDC	12A680026
254-060-01300	DFE20/6B18ES-Y201-12VDC	12A670005

DFE

with solenoid control

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

		DFE052	DFE10	DFE20
N. of available ways		2-3-6-8	3-6	3-6
Nominal flow rating	in steady conditions	60 l/min	90 l/min	140 l/min
Operating pressure (maximum)*	without drain	200 bar 2900 psi	200 bar 2900 psi	200 bar 2900 psi
	with drain	315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi
Available nominal voltage	VDC	12-24 48-110	12-24-48	12-24
	VAC 50Hz (with C04 connector)	24-110-220	110-220	24-110-220
Potenza nominale	W	40	60	60
Internal leakage A(B)→T	Δp=100 bar 1450 psi with fluid and valve at 40°C	7 cm ³ /min 0.43 in ³ /min	10 cm ³ /min 0.61 in ³ /min	15 cm ³ /min 0.92 in ³ /min
Fluid		Mineral base oil		
Fluid temperature	with NBR seals	da -20° a 80°C		
	with FPM seals	da -20° a 100°C		
Viscosity	operating range	da 15 a 75 mm ² /s - from 15 to 75 cSt		
	minimum	12 mm ² /s - 12 cSt		
	maximum	400 mm ² /s - 400 cSt		
Max. level of contamination		19/16 - ISO 4406		
Ambient temperature		da -40° a 60°C		

NOTE - For different working conditions please contact Customer Service.

(*) - This value is reachable only in steady conditions; for dynamic working conditions see the pages from 49 to 52.

Standard threads

ALL PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)
DFE052	G 3/8	3/4-16 UNF-2B (SAE 8)
DFE10	G 1/2	7/8-14 UNF-2B (SAE 10)
DFE20	G 3/4	1 1/16-12 UN-2B (SAE 12)
DRAIN PORT		
L	G 1/4	7/16-20 UNF-2B (SAE 4)

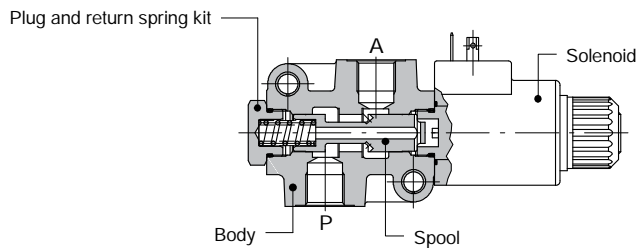
with solenoid control

DFE

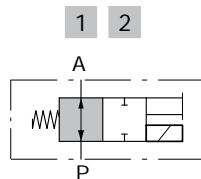
Hydraulic circuit

2-way

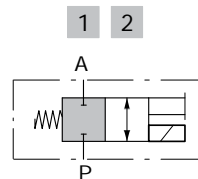
Available as body only in DFE052/2 execution; for other executions 3-way body is used.



Spool type A

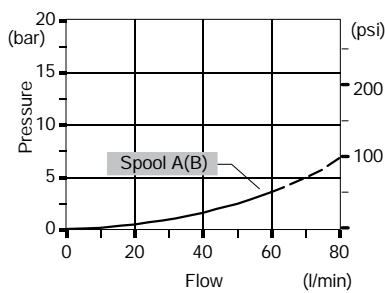


Spool type B

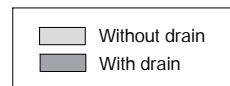
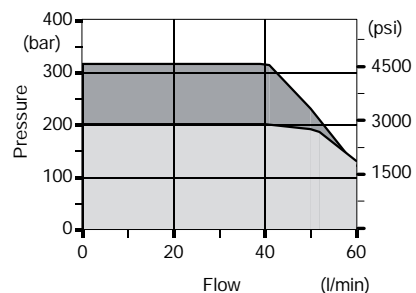


Performance data

Pressure drop versus flow
P→A



Minimum dynamic conditions
(supply = Vn-10%, coil at 70 °C)



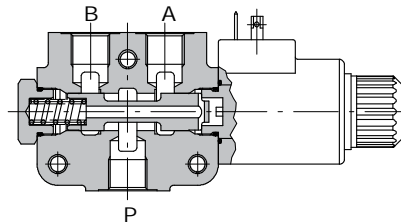
DFE

with solenoid control

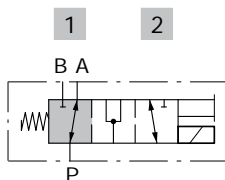
Hydraulic circuit

3-way

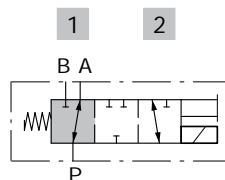
It's possible to obtain 2-way diverter valve plugging port A or B.



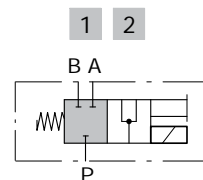
Spool type A



Spool type B

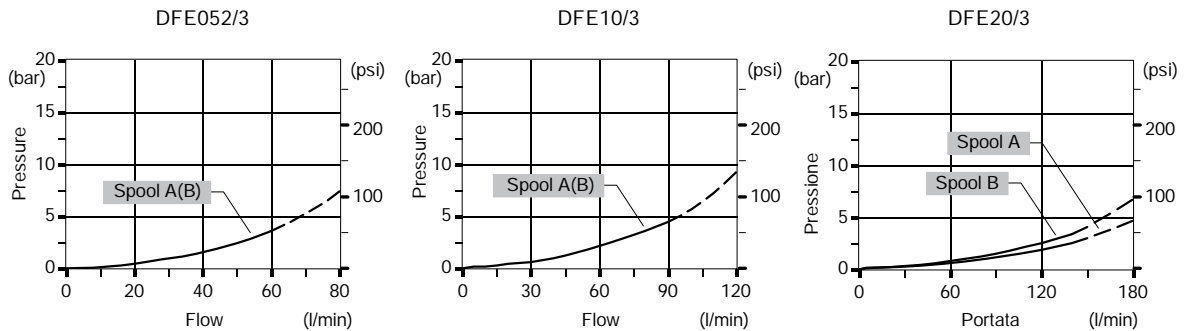


Spool type D

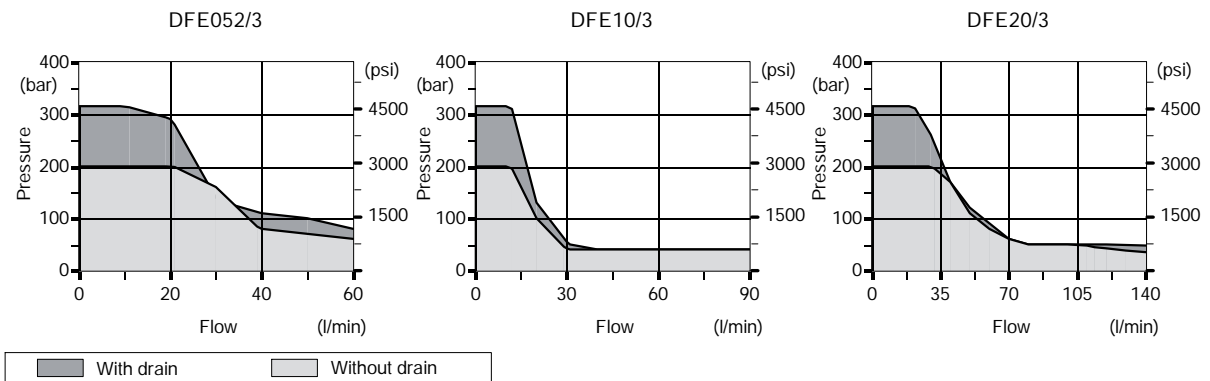


Performance data

Pressure drop versus flow: P→A(B)



Minimum dynamic conditions: (supply = Vn-10%, coil at 70 °C)

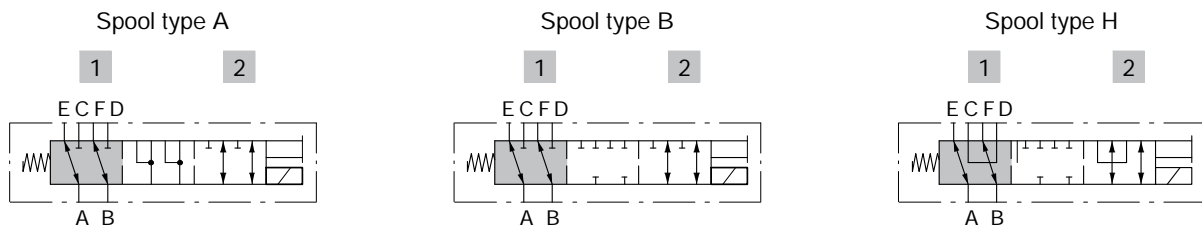
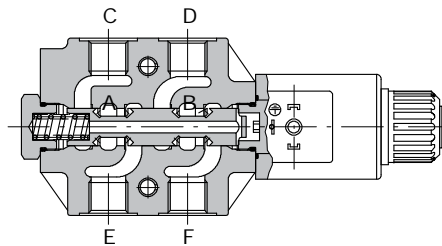


with solenoid control

DFE

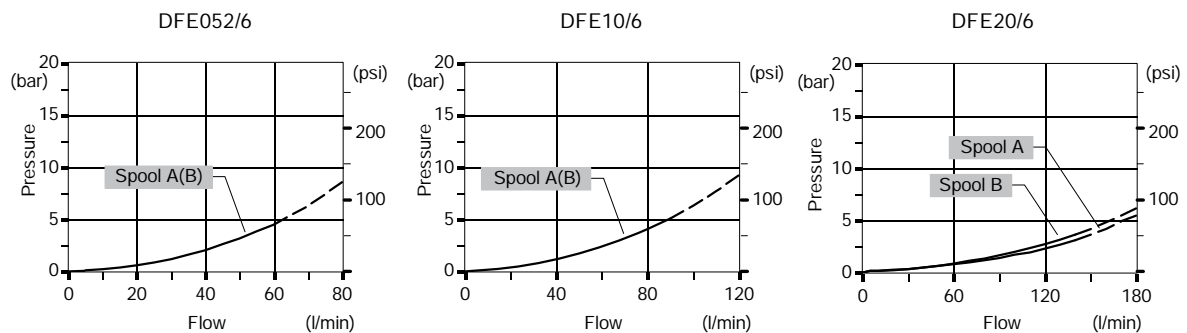
Hydraulic circuit

6-way

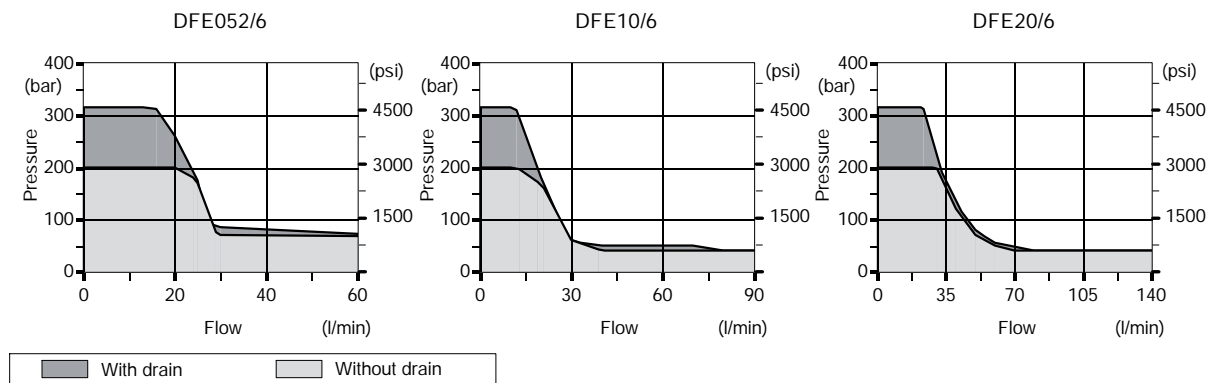


Performance data

Pressure drop versus flow: A→E(C).



Minimum dynamic conditions: (supply = Vn-10%, coil at 70 °C)



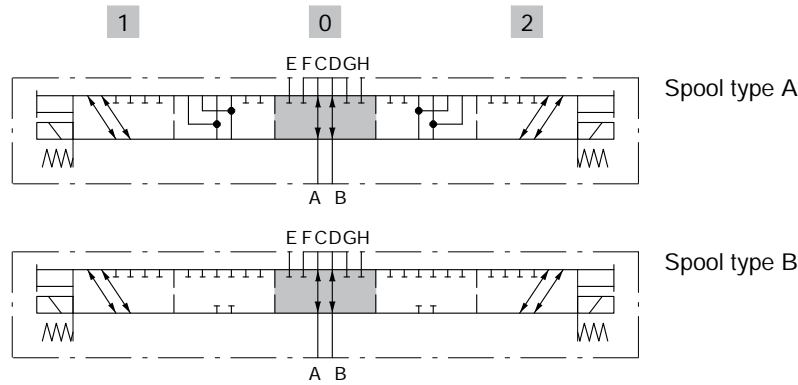
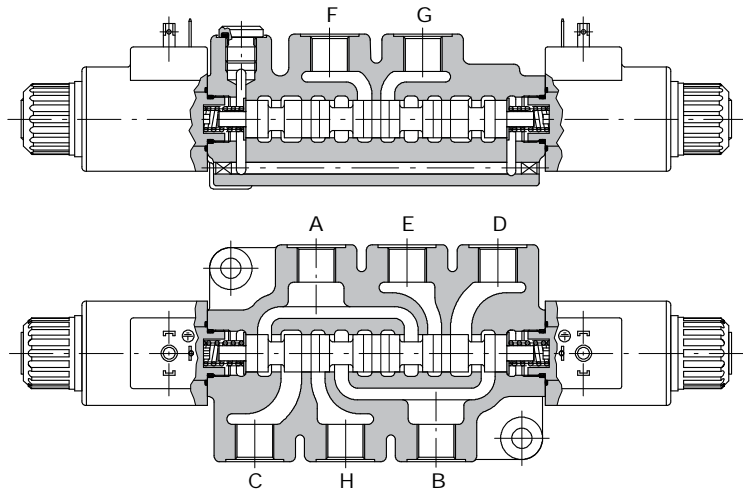
254-060

DFE

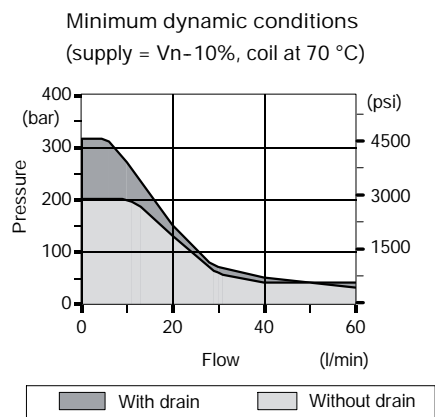
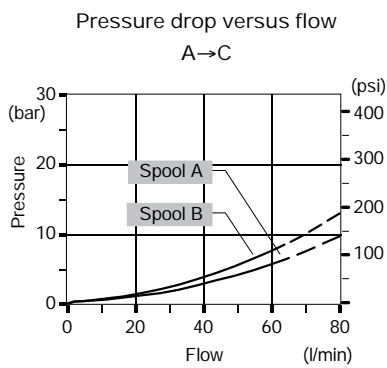
with solenoid control

Hydraulic circuit

8-way



Performance data

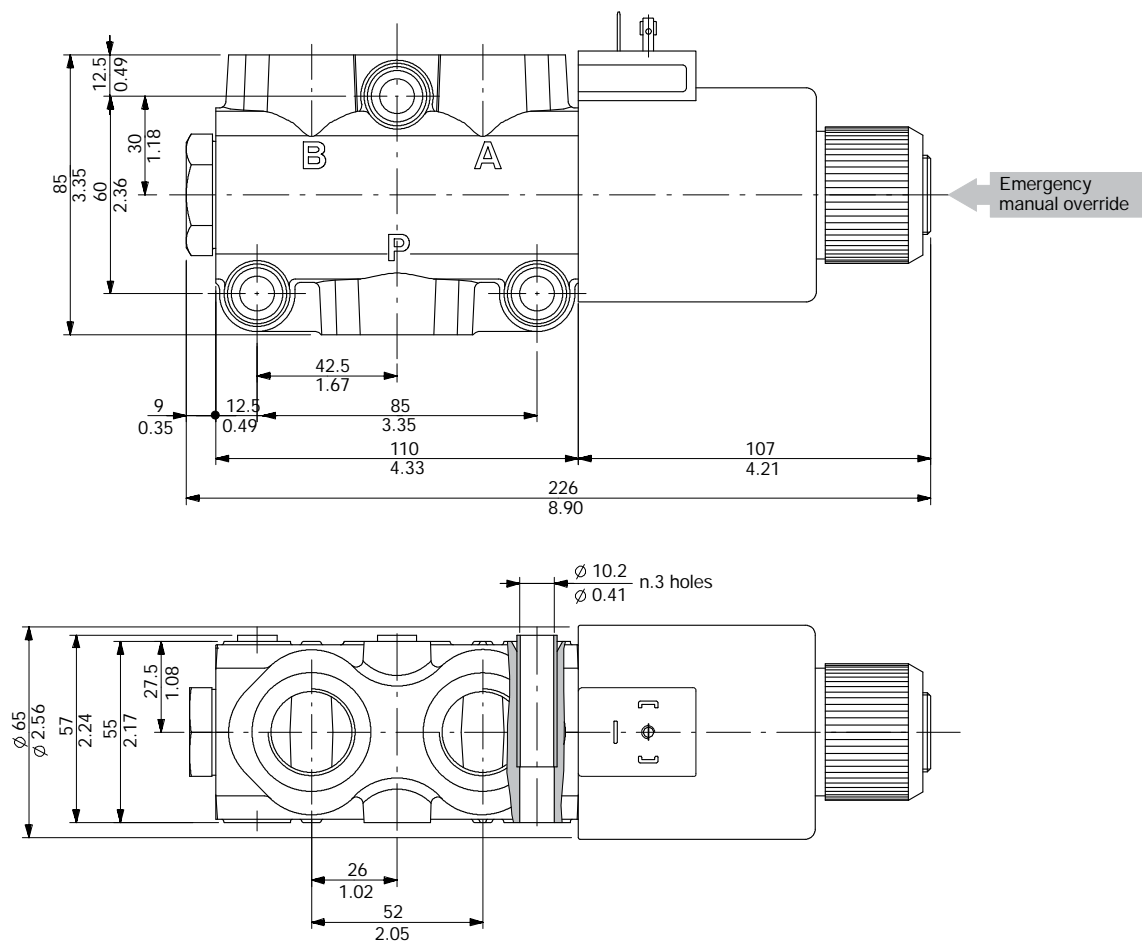


DFE20

with solenoid control

Dimensional data

3-way DFE20/3 valve

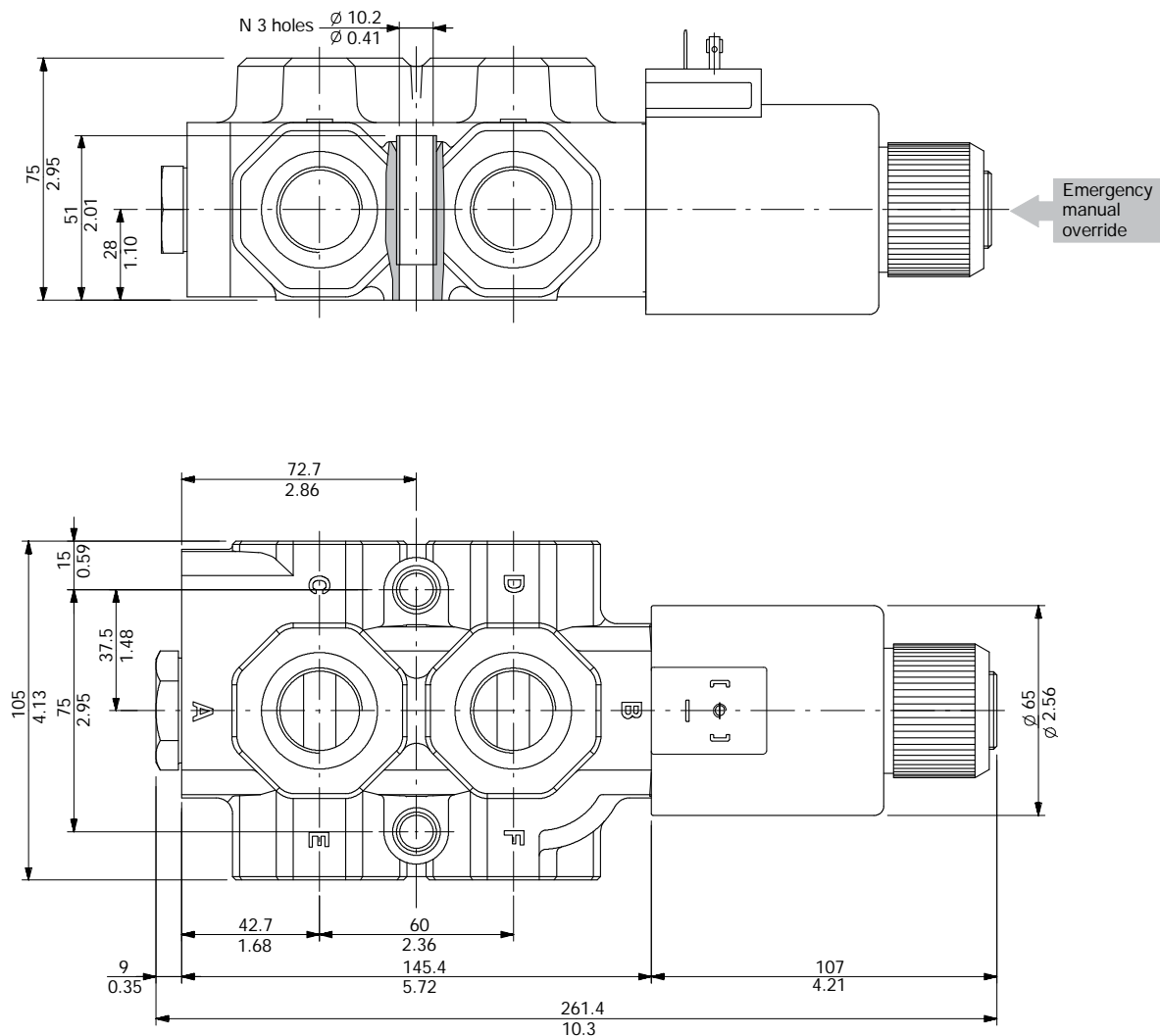


with solenoid control

DFE20

Dimensional data

6-way DFE20/6 valve



254-060

DFE20

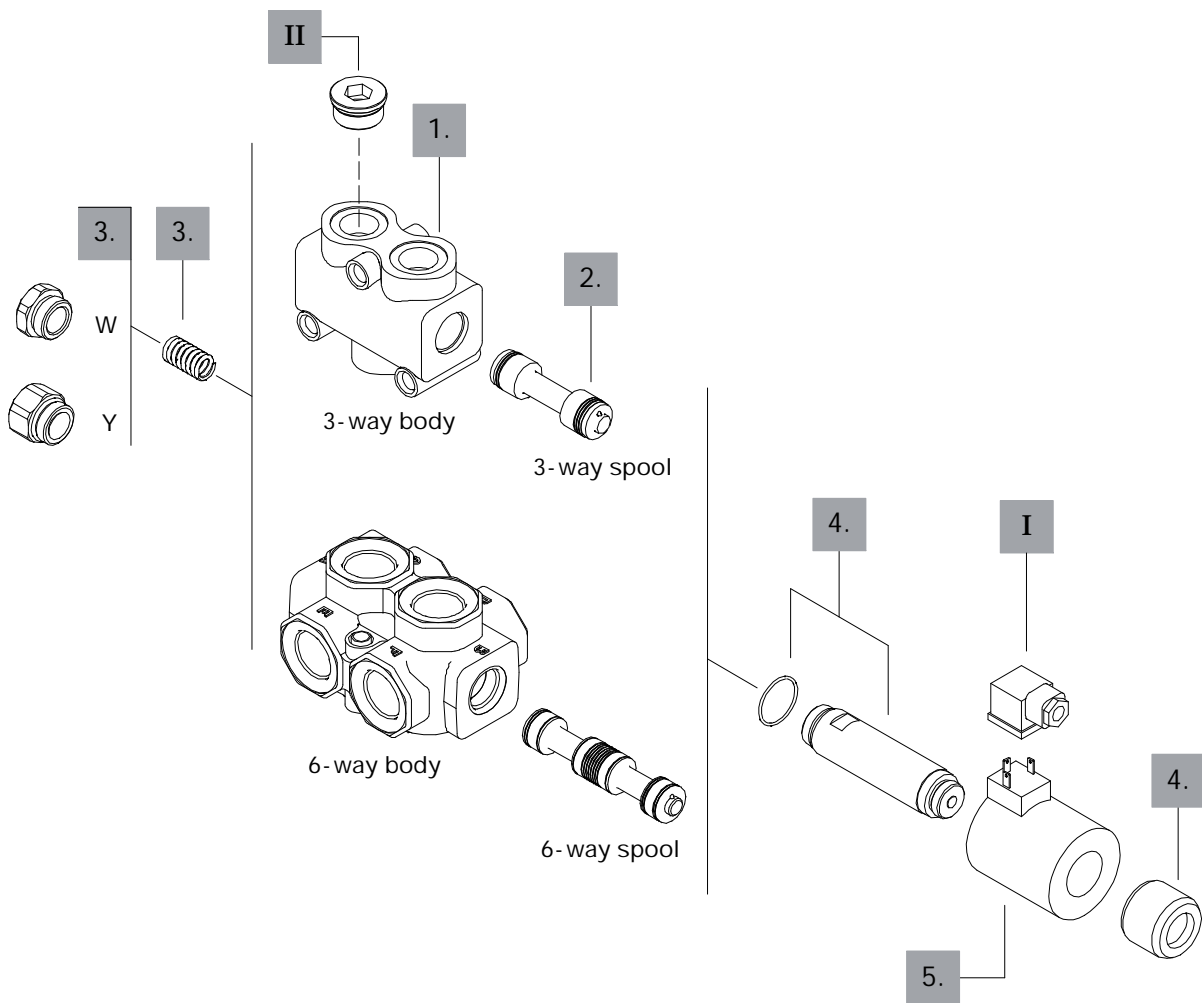
with solenoid control

Ordering codes

Description example :

Diverter valve DFE20/3 A 18 ES - W 201-12VDC - <CVN>

1
 2
 3
 4
 -
 3.
 5
 Valve is supplied painted as standard, with one coat of Primer black antirust paint



with solenoid control

DFE20

Ordering codes

3-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE20/3	3CO2261320	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS120341	3-way, 2 positions with ports connected in transit position
B	3CAS120441	3-way, 2 positions with ports closed in transit position

6-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE20/6	3CO2263820	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS120641	6-way, 2 positions with ports connected in transit position
B	3CAS120741	6-way, 2 positions with ports closed in transit position
H	3CAS120841	6-way, 2 positions, D↔C in position 1, F↔E in position 2, ports closed in transit position

3. Positioner kits page 70

TYPE	CODE	DESCRIPTION
18...W	5TAP003	Spring return in position 1
18...Y	5GIU007 *	Spring return in position 1, with G1/4 drain port

4. Tube assembly page 70

TYPE	CODE	DESCRIPTION
ES	5SOL519001	Spring return in position 1 (without coil)

5. Coil options page 70

TYPE	CODE	DESCRIPTION
101		Without coil (only with tube kit)
VDC supply (connector C02)		
201-12VDC	4SOL519112	Coil with 12VDC nominal voltage
201-24VDC	4SOL519124	Coil with 24VDC nominal voltage
VAC supply (connector C04)		
201-20VDC	4SOL519020	Coil with 20VDC nominal voltage (for 24VAC)
201-94VDC	4SOL519094	Coil with 94VDC nominal voltage (for 110VAC)
201-192VDC	4SOL519192	Coil with 192VDC nominal voltage (for 220VAC)

I Optional connectors page 80

TYPE	CODE	DESCRIPTION
C02	2X1001010	According to ISO4400
C04	2X1001040	According to ISO4400 with rectifier

II Ports plug

TYPE	CODE	DESCRIPTION
G3/4	3XTAP732200*	Body conversion from 3-way to 2-way circuit

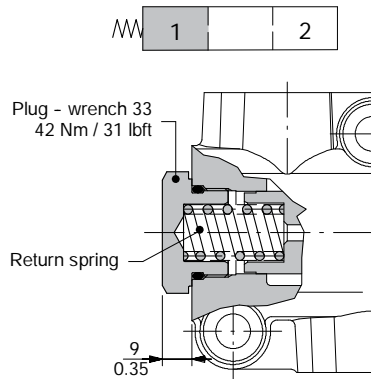
DFE20

with solenoid control

Positioner kits

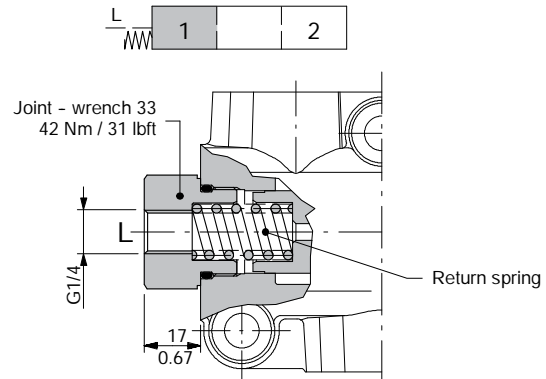
18W kit

Spring return in position 1 with plug.



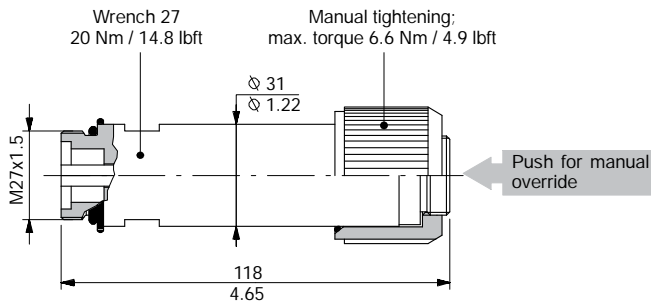
18Y kit

Spring return in position 1, with G1/4 joint for drain.



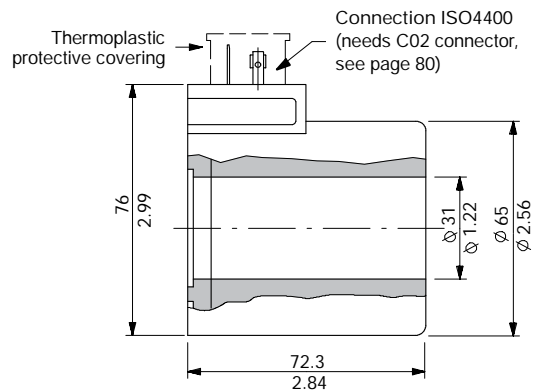
Solenoid parts

ES tube assembly



Operating features
Plunger stroke : 10.2 mm / 0.40 in

Coil options



Operating features
Nominal voltage : 12-20-24-94-192VDC
Nominal voltage tolerance . . . : ±10%
Power rating : 60 W
Duty cycle : 100%
Weather protection : IP66
Coil insulation : Class H

Umschaltventile – DFE052/8 –



– Magnet –

Bestellnr.	Typ	Code
254-080-01000	DFE052/8A8ES3-W201-12VDC	12B010006
254-080-01050	DFE052/8A8ES3-W201-24VDC	12B010004
254-080-01100	DFE052/8B8ES3-W201-12VDC	12B010005
254-080-01150	DFE052/8B8ES3-W201-24VDC	12B020025

DFE

with solenoid control

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

		DFE052	DFE10	DFE20
N. of available ways		2-3-6-8	3-6	3-6
Nominal flow rating	in steady conditions	60 l/min	90 l/min	140 l/min
Operating pressure (maximum)*	without drain	200 bar 2900 psi	200 bar 2900 psi	200 bar 2900 psi
	with drain	315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi
Available nominal voltage	VDC	12-24 48-110	12-24-48	12-24
	VAC 50Hz (with C04 connector)	24-110-220	110-220	24-110-220
Potenza nominale	W	40	60	60
Internal leakage A(B)→T	Δp=100 bar 1450 psi with fluid and valve at 40°C	7 cm ³ /min 0.43 in ³ /min	10 cm ³ /min 0.61 in ³ /min	15 cm ³ /min 0.92 in ³ /min
Fluid		Mineral base oil		
Fluid temperature	with NBR seals	da -20° a 80°C		
	with FPM seals	da -20° a 100°C		
Viscosity	operating range	da 15 a 75 mm ² /s - from 15 to 75 cSt		
	minimum	12 mm ² /s - 12 cSt		
	maximum	400 mm ² /s - 400 cSt		
Max. level of contamination		19/16 - ISO 4406		
Ambient temperature		da -40° a 60°C		

NOTE - For different working conditions please contact Customer Service.

(*) - This value is reachable only in steady conditions; for dynamic working conditions see the pages from 49 to 52.

Standard threads

ALL PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)
DFE052	G 3/8	3/4-16 UNF-2B (SAE 8)
DFE10	G 1/2	7/8-14 UNF-2B (SAE 10)
DFE20	G 3/4	1 1/16-12 UN-2B (SAE 12)
DRAIN PORT		
L	G 1/4	7/16-20 UNF-2B (SAE 4)

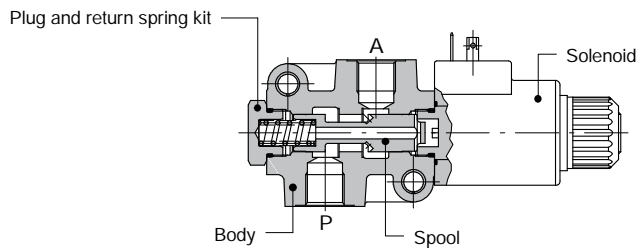
with solenoid control

DFE

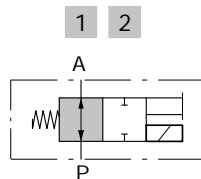
Hydraulic circuit

2-way

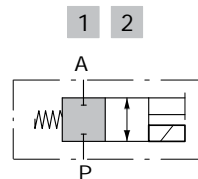
Available as body only in DFE052/2 execution; for other executions 3-way body is used.



Spool type A

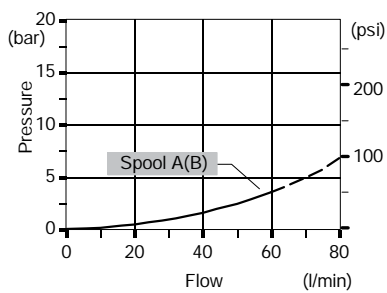


Spool type B

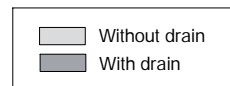
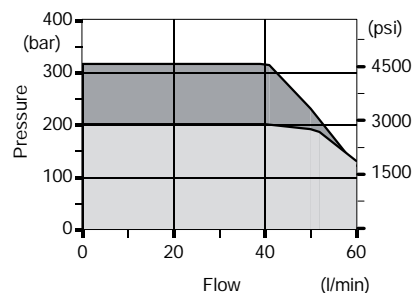


Performance data

Pressure drop versus flow
P→A



Minimum dynamic conditions
(supply = Vn-10%, coil at 70 °C)



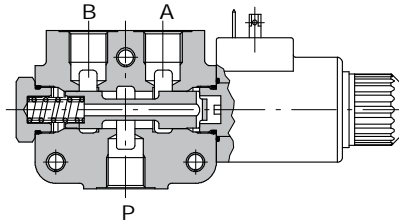
DFE

with solenoid control

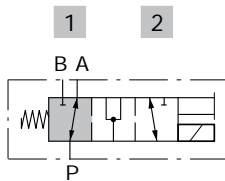
Hydraulic circuit

3-way

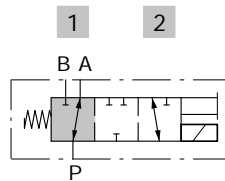
It's possible to obtain 2-way diverter valve plugging port A or B.



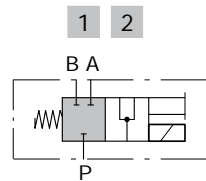
Spool type A



Spool type B

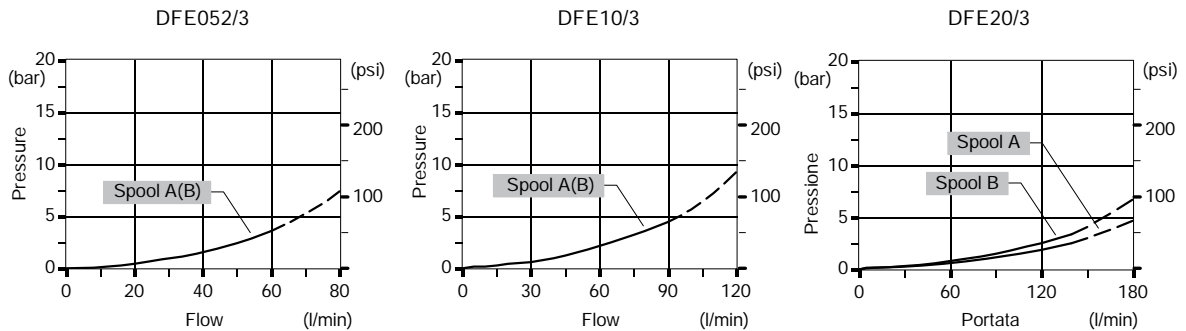


Spool type D

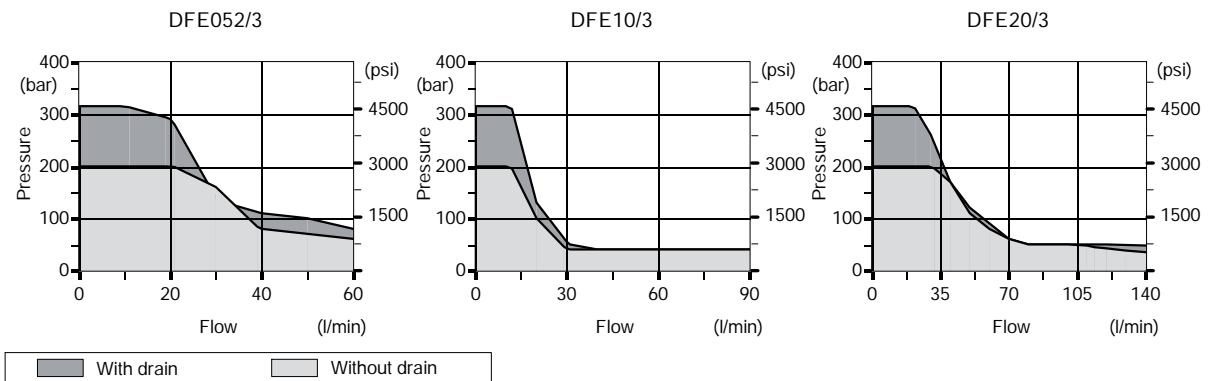


Performance data

Pressure drop versus flow: P→A(B)



Minimum dynamic conditions: (supply = Vn-10%, coil at 70 °C)

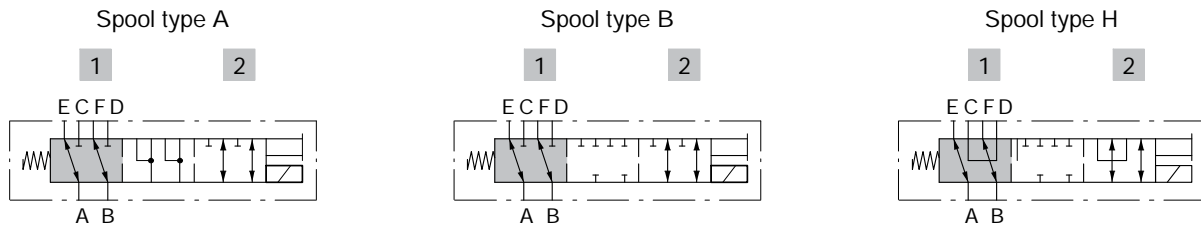
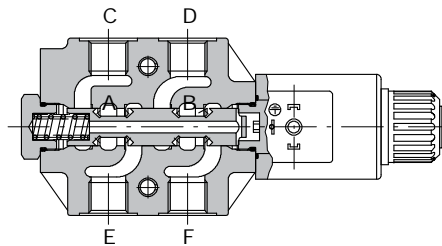


with solenoid control

DFE

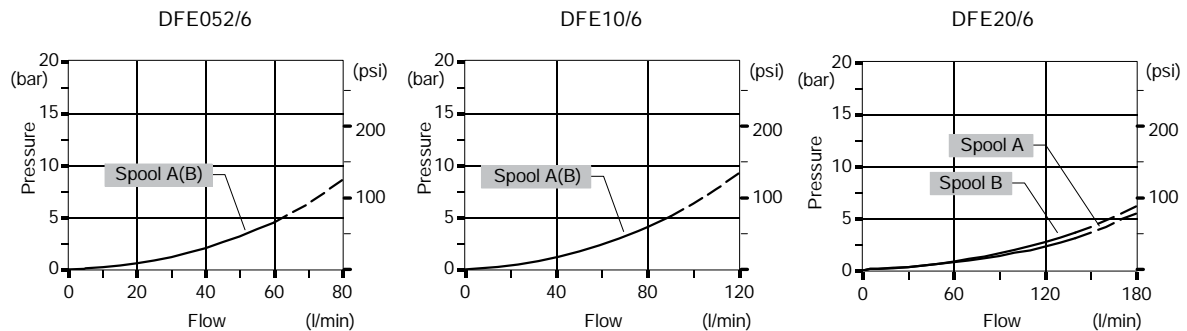
Hydraulic circuit

6-way

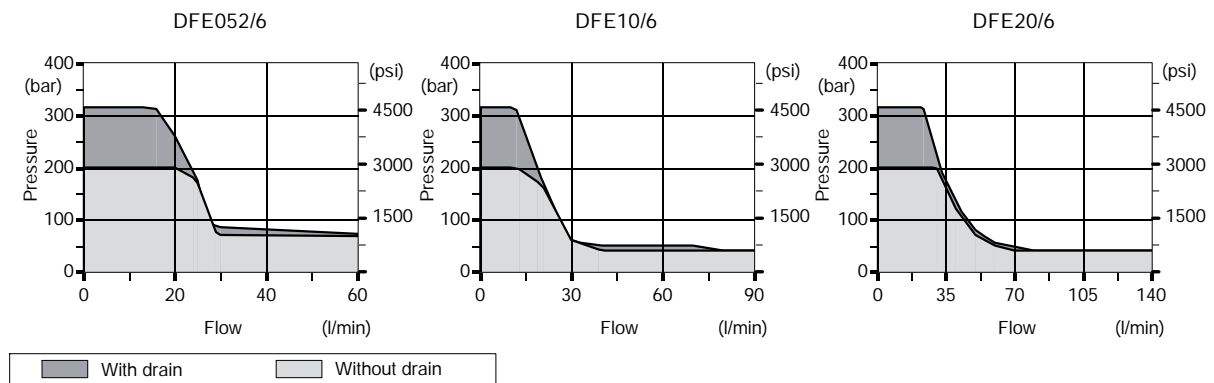


Performance data

Pressure drop versus flow: A→E(C).



Minimum dynamic conditions: (supply = Vn-10%, coil at 70 °C)



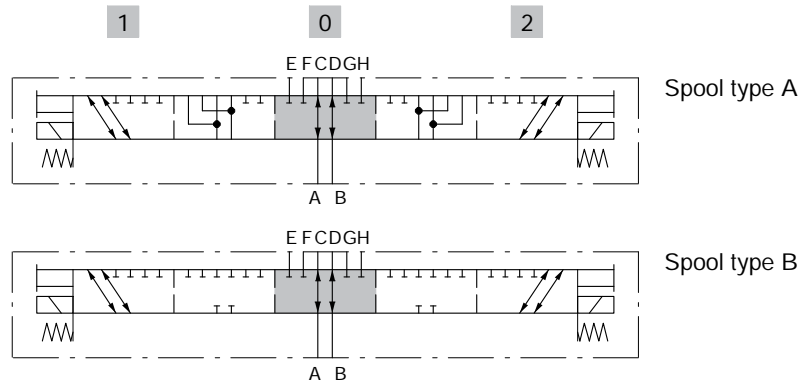
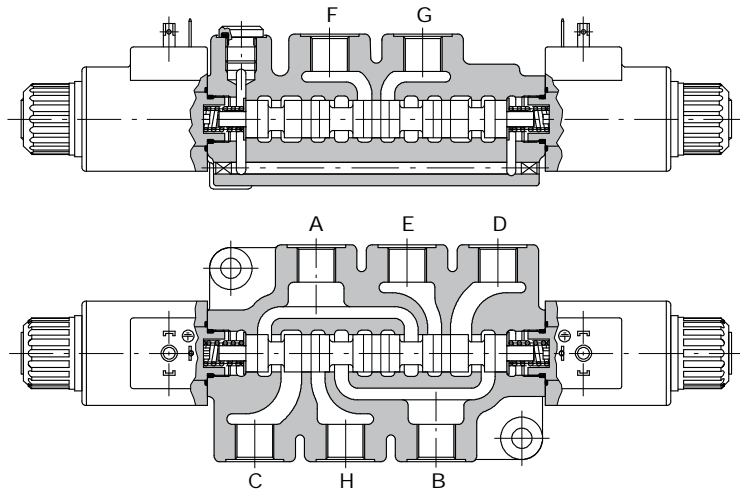
254-080

DFE

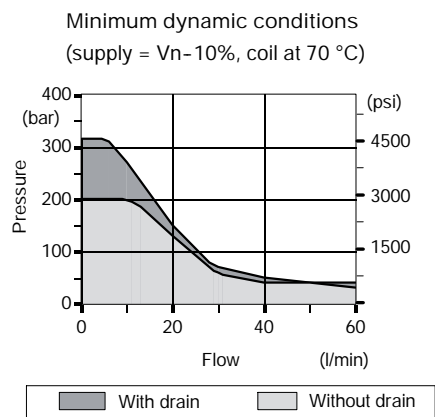
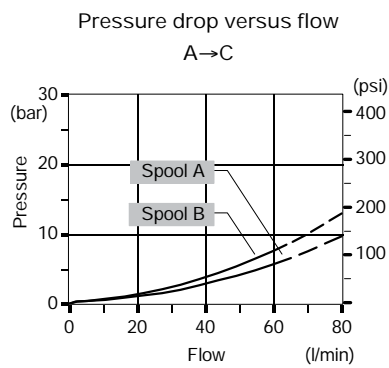
with solenoid control

Hydraulic circuit

8-way



Performance data

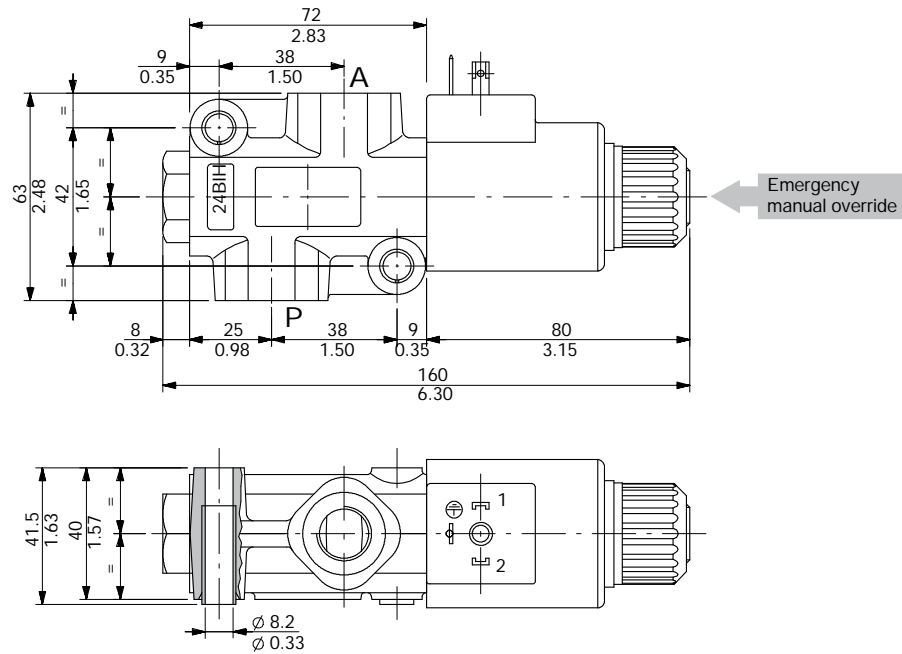


with solenoid control

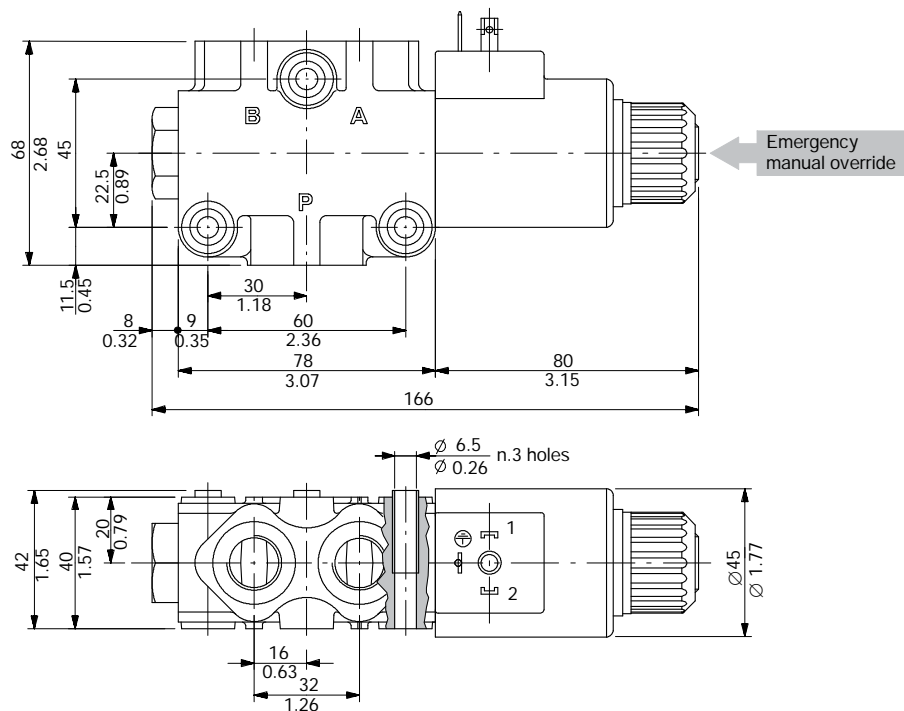
DFE052

Dimensional data

2-way DFE052/2 valve



3-way DFE052/3 valve

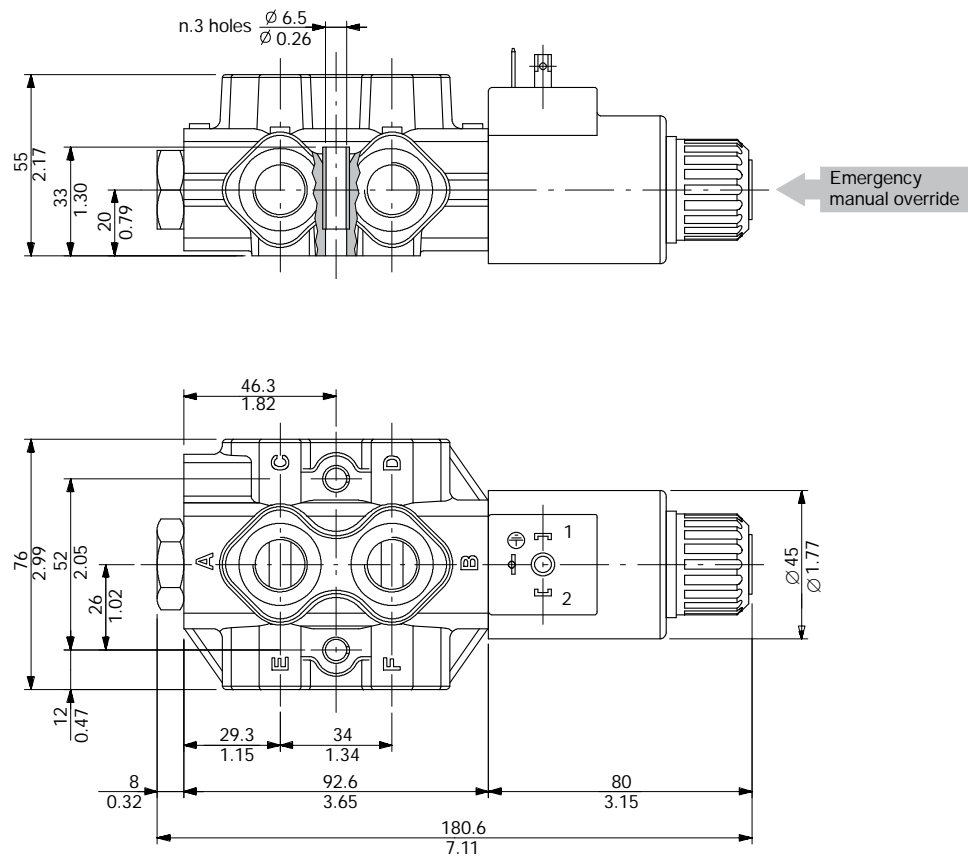


DFE052

with solenoid control

Dimensional data

6-way DFE052/6 valve



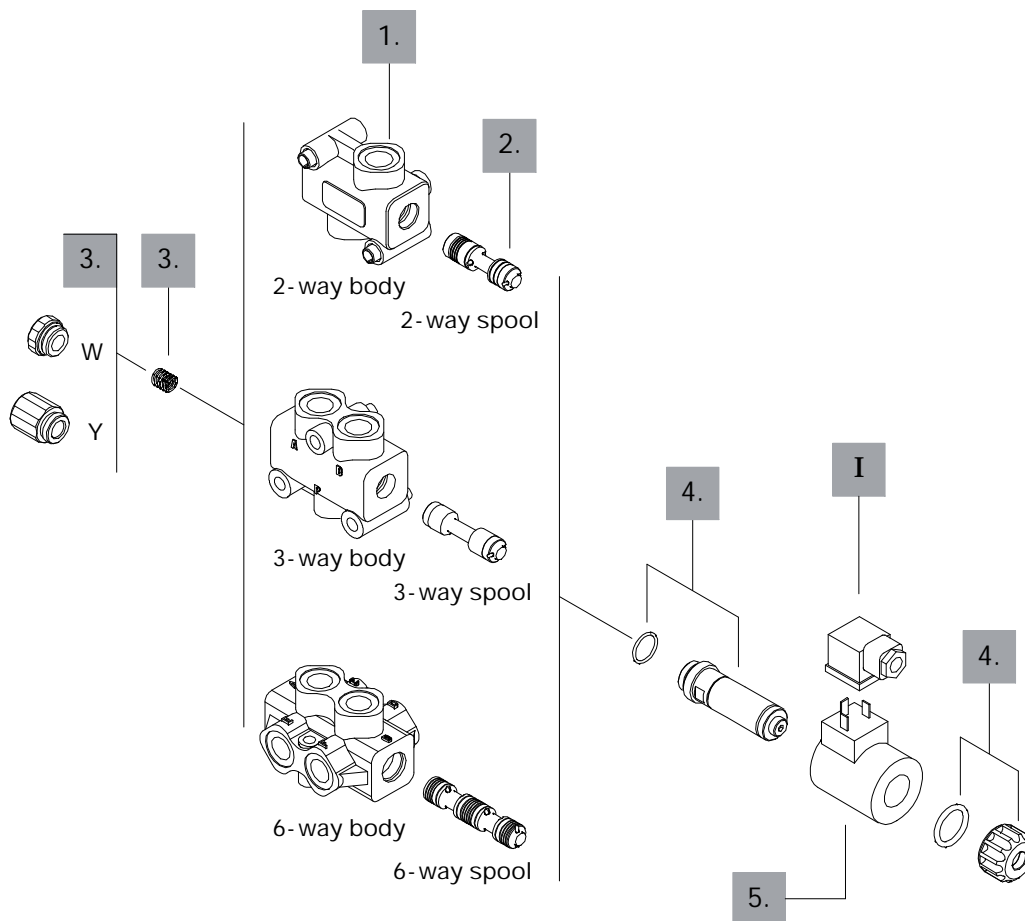
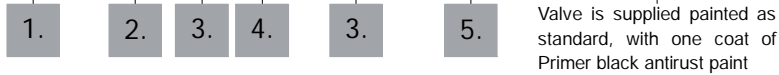
DFE052

with solenoid control

Ordering codes

Description example :

Diverter valve DFE052/2 A 18 ES - W 201-12VDC - <CVN>



with solenoid control

DFE052

Ordering codes

2-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE052/2	3CO2220321	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105245	2 positions with open centre in neutral
B	3CAS105145	2 positions with closed centre in neutral

3-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE052/3	3CO2220321	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105245	3-way, 2 positions with ports connected in transit position
B	3CAS105145	3-way, 2 positions with ports closed in transit position
D	3CAS105546	3-way, 2 positions, without transit position, with ports closed in rest position

6-way

1. Body *

TYPE	CODE	DESCRIPTION
DFE052/6	3CO2222326	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105645	6-way, 2 positions with ports connected in transit position
B	3CAS105746	6-way, 2 positions with ports closed in transit position
H	3CAS105845	6-way, 2 positions, D↔C in position 1, F↔E in position 2, ports closed in transit position

3. Positioner kits page 59

TYPE	CODE	DESCRIPTION
18...W	5TAP001	Spring return in position 1
18...Y	5GIU001 *	Spring return in position 1, with G1/4 drain port

4. Tube assembly page 60

TYPE	CODE	DESCRIPTION
ES	5SOL515000	Spring return in position 1 (without coil)

5. Coil options page 60

TYPE	CODE	DESCRIPTION
101	-	Without coil (only with tube kit)
201-12VDC	4SOL515012	Without coil (only with tube kit)
201-24VDC	4SOL515024	Coil with 24VDC nominal voltage
221-12VDC	4SOL515010	Coil with 12VDC nominal voltage and "AMP Junior Timer" connection
231-12VDC	4SOL515011	Coil with 12VDC nominal voltage and "DEUTSCH DT06-2S" connection

I Optional connectors page 80

TYPE	CODE	DESCRIPTION
C02	2X1001010	According to ISO4400
C08	5CON003	Type AMP "Junior-Power-Timer"
C09	5CON130020	Type DEUTSCH "DT04-2P"

DFE052

with solenoid control

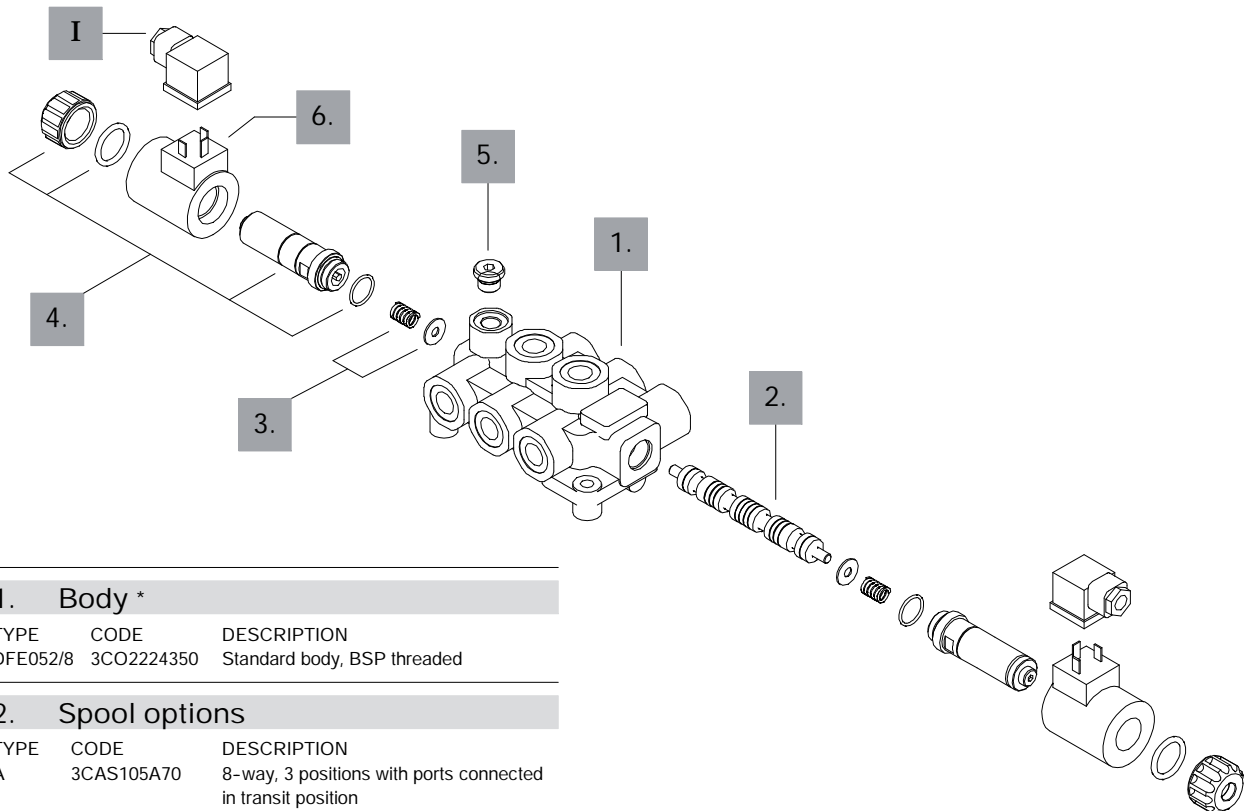
Ordering codes

Description example :

Diverter valve DFE052/8 B 8 ES3 - W 201-12VDC - <CVN>



Valve is supplied painted as standard, with one coat of Primer black antirust paint



1. Body *

TYPE	CODE	DESCRIPTION
DFE052/8	3CO2224350	Standard body, BSP threaded

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105A70	8-way, 3 positions with ports connected in transit position
B	3CAS105B70	8-way, 3 positions with ports closed in transit position

3. Positioner kit page 59

TYPE	CODE	DESCRIPTION
8	5V08001	Spring return in neutral position

4. Tube assembly page 60

TYPE	CODE	DESCRIPTION
ES3	5SOL515000	With spring return in neutral position (without coil)

5. Drain options * page 59

TYPE	CODE	DESCRIPTION
W	3XTAP719150	With drain plugged
Y	-	With G 1/4 drain port

6. Coil options page 60

TIPO	CODICE	DESCRIZIONE
101	-	Without coil (only with tube kit)
201-12VDC	4SOL515012	Without coil (only with tube kit)
201-24VDC	4SOL515024	Coil with 24VDC nominal voltage
221-12VDC	4SOL515010	Coil with 12VDC nominal voltage and "AMP Junior Timer" connection
231-12VDC	4SOL515011	Coil with 12VDC nominal voltage and "DEUTSCH DT06-2S" connection

I Optional connectors page 80

TYPE	CODE	DESCRIPTION
C02	2X1001010	According to ISO4400
C08	5CON003	Type AMP "Junior-Power-Timer"
C09	5CON130020	Type DEUTSCH "DT04-2P"

with solenoid control

DFE052

Positioner kits

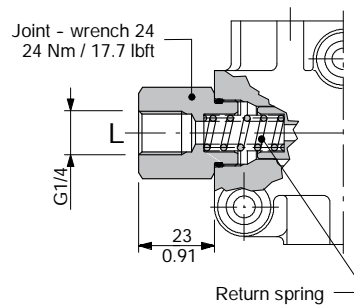
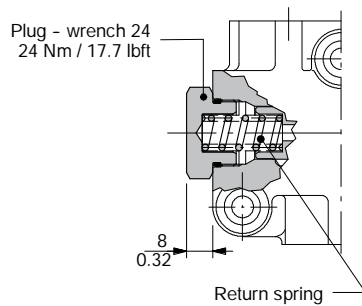
DFE052/2 - /3 - /6

18W kit

Spring return in position 1 with plug.

18Y kit

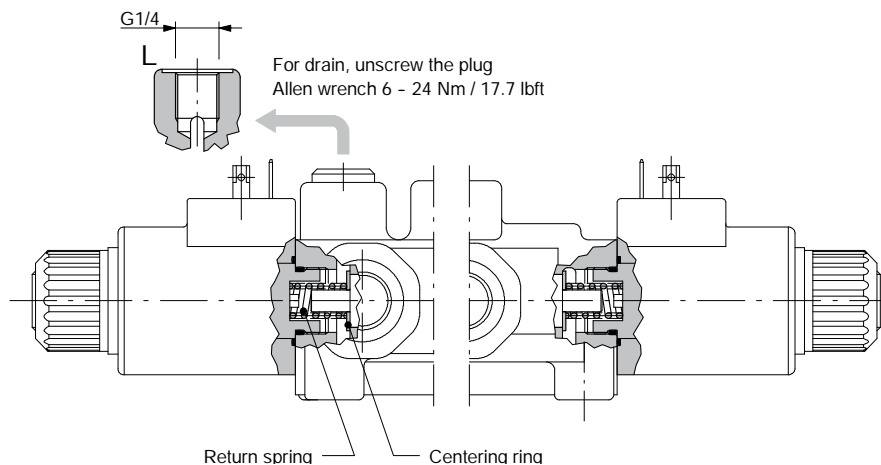
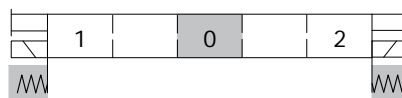
Spring return in position 1, with G1/4 joint for drain.



DFE052/8

8 kit

Spring return in position 0.



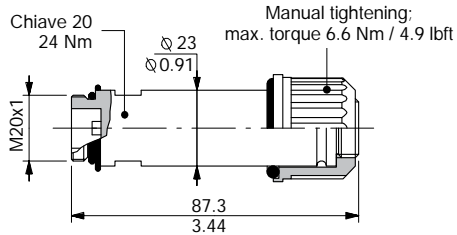
254-080

DFE052

with solenoid control

Solenoid parts

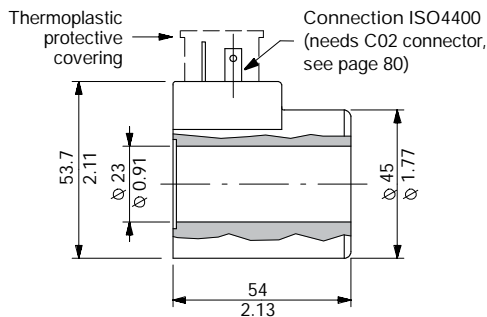
ES tube assembly



Operating features

Plunger stroke : 7.1 mm / 0.28 in

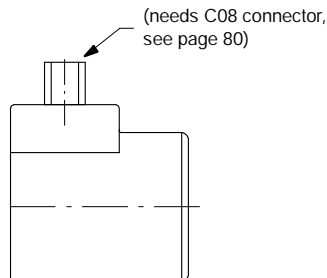
Coil options



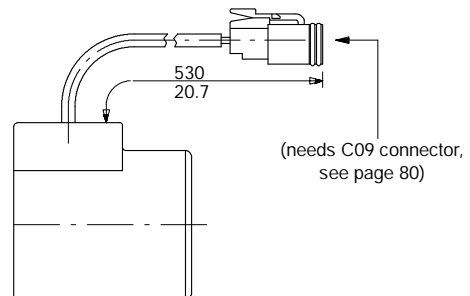
Operating features

Nominal voltage : 12VDC / 24VDC
Nominal voltage tolerance . . . : $\pm 10\%$
Power rating : 38 W
Duty cycle : 100%
Weather protection : IP66
Coil insulation : Class H

Optional coil with connector type
AMP "Junior Timer"



Optional coil with connector type
DEUTSCH "DT06-2S"



Umschaltventile

– DFE5/2 –



– mit Hebel –

Bestellnr.	Typ	Code
254-120-01000	DF5/2A17SLP	122034020
254-120-01050	DF5/2AT17SLP	122034010
254-120-01100	DF5/2A18SLP	122035020
254-120-01150	DF5/2A18PSLC	122035130
254-120-01200	DF5/2A18IA1L	122035240
254-120-01250	DF5/2B17L	122014040
254-120-01300	DF5/2B17SLP	122014020
254-120-01350	DF5/2BT17SLP	122014010
254-120-01400	DF5/2BC17CB	122014050
254-120-01450	DF5/2B18L	122010018
254-120-01500	DF5/2B18SLP	122010025
254-120-01550	DF5/2AC17CA	122010007
254-120-01600	DF5/2AT17MESLP	122010011
254-120-01650	DF5/2AC17SLP	122010023
254-120-01700	DF5/2B17YMEIA2	122010028
254-120-01750	DF5/2B12L	122012040
254-120-01800	DF5/2BC17CA	122014055
254-120-01850	DF5/2B17SL	122014060
254-120-01900	DF5/2B18SLP	122015020
254-120-01950	DF5/2A18L	122015040
254-120-02000	DF5/2B18IA1SLC	122015330
254-120-02050	DF5/2A12L	122032040
254-120-02100	DF5/2A17L	122034040
254-120-02150	DF5/2NA17C	122034050
254-120-02200	DF5/2NA17MEIA2	122034080
254-120-02250	DF5/2NA18PL	122035140
254-120-02300	DF10/2NA17T	124034010

254-120

DF

with mechanical control

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

		DF5	DF10	DF20	DF25
N. of available ways		2-3-6	2-3-6	2-3-6	3
Nominal flow rating		60 l/min	90 l/min	140 l/min	280 l/min
Operating pressure (maximum)		315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi
Internal leakage A(B)→T	Δp=100 bar 1450 psi with fluid and valve at 40°C	5 cm ³ /min 0.31 in ³ /min	5 cm ³ /min 0.31 in ³ /min	8 cm ³ /min 0.49 in ³ /min	8 cm ³ /min 0.49 in ³ /min
Hydraulic fluid		Mineral base oil			
Fluid temperature		with NBR seals from -20° to 80°C			
		with FPM seals from -20° to 100°C			
Viscosity		operating range from 15 to 75 mm ² /s - from 15 to 75 cSt			
		minimum 12 mm ² /s - 12 cSt			
		maximum 400 mm ² /s - 400 cSt			
Max. level of contamination		19/16 - ISO 4406			
Ambient temperature		from -40° to 60°C			

NOTE - For different working conditions please contact Customer Service.

Standard threads

ALL PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)
DF5	G 3/8	3/4-16 UNF-2B (SAE 8)
DF10	G 1/2	7/8-14 UNF-2B (SAE 10)
DF20	G 3/4	1 1/16-12 UN-2B (SAE 12)
DF25	G 1	1 5/16-12 UN-2B (SAE 16)
PILOT PORTS		
Pneumatic	NPT 1/8-27	NPT 1/8-27
Hydraulic	G 1/4	9/16-18 UNF-2B (SAE 6)

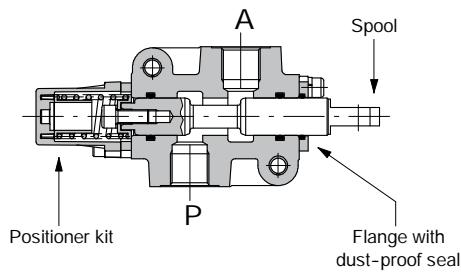
with mechanical control

DF

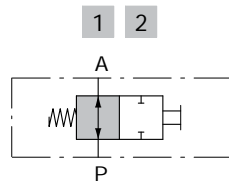
Hydraulic circuit

2-way

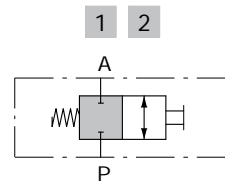
Available as body only in DF5/2 execution; for other executions 3-way body is used.



Spool type A

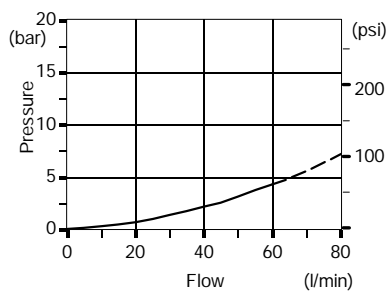


Spool type B



Performance data

Pressure drop versus flow
P→A



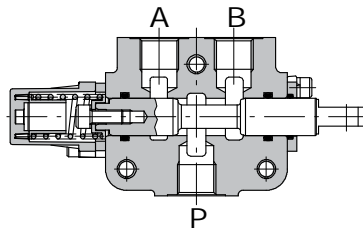
DF

with mechanical control

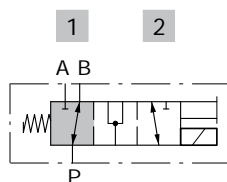
Hydraulic circuit

3-way

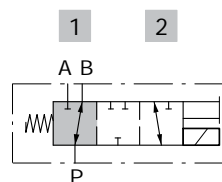
It's possible to obtain 2-way diverter valve plugging port A or B.



Spool type A



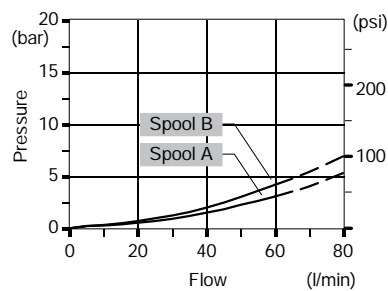
Spool type B B



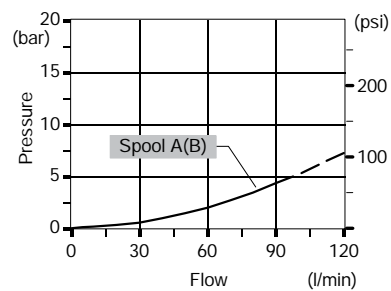
Performance data

Pressure drop versus flow: P→A(B)

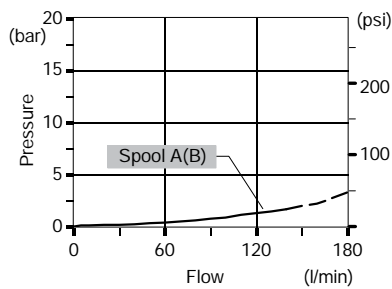
DF5/3



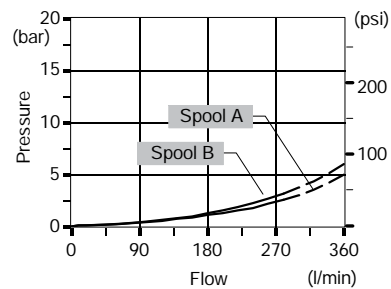
DF10/3



DF20/3



DF25/3

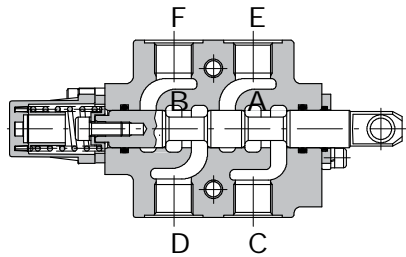


with mechanical control

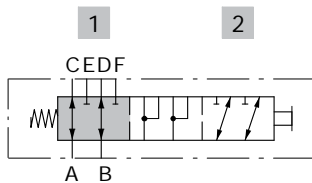
DF

Hydraulic circuit

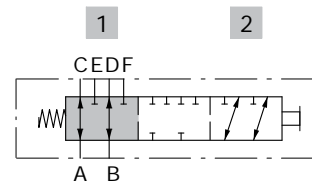
6-way



Spool type A



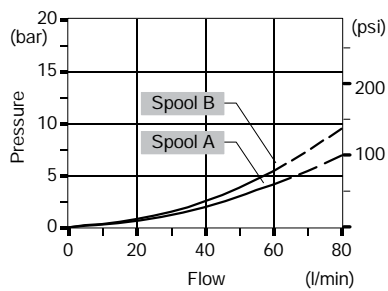
Spool type B



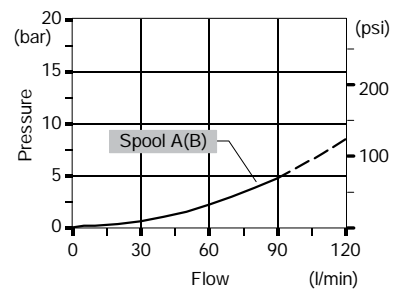
Performance data

Pressure drop versus flow: A→C(E).

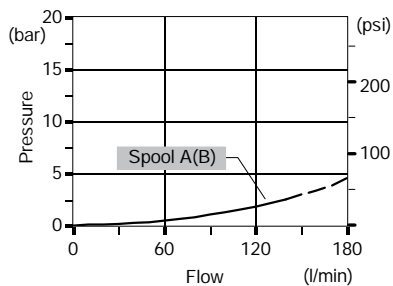
DF5/6



DF10/6



DF20/6

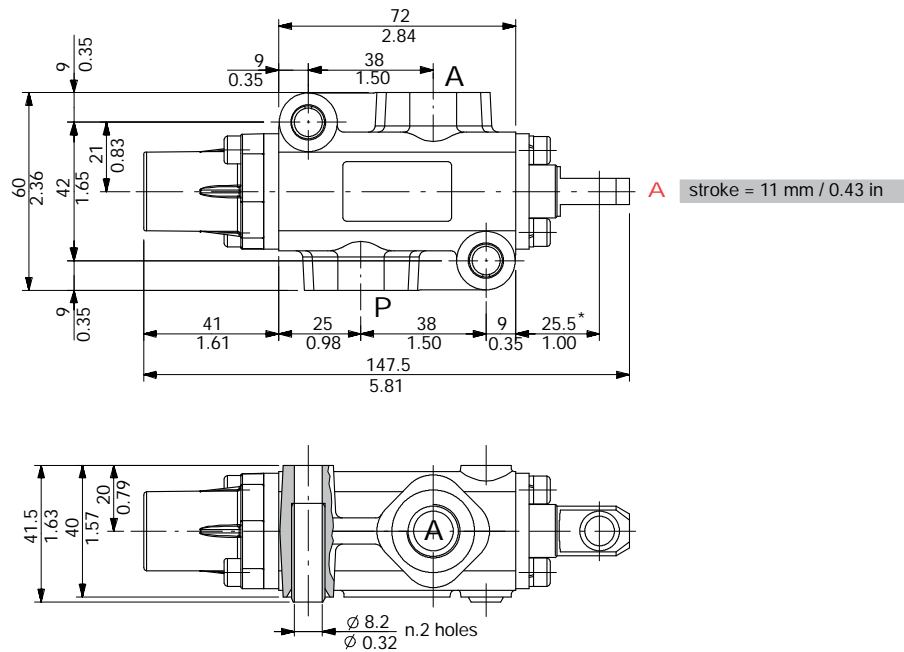


DF5

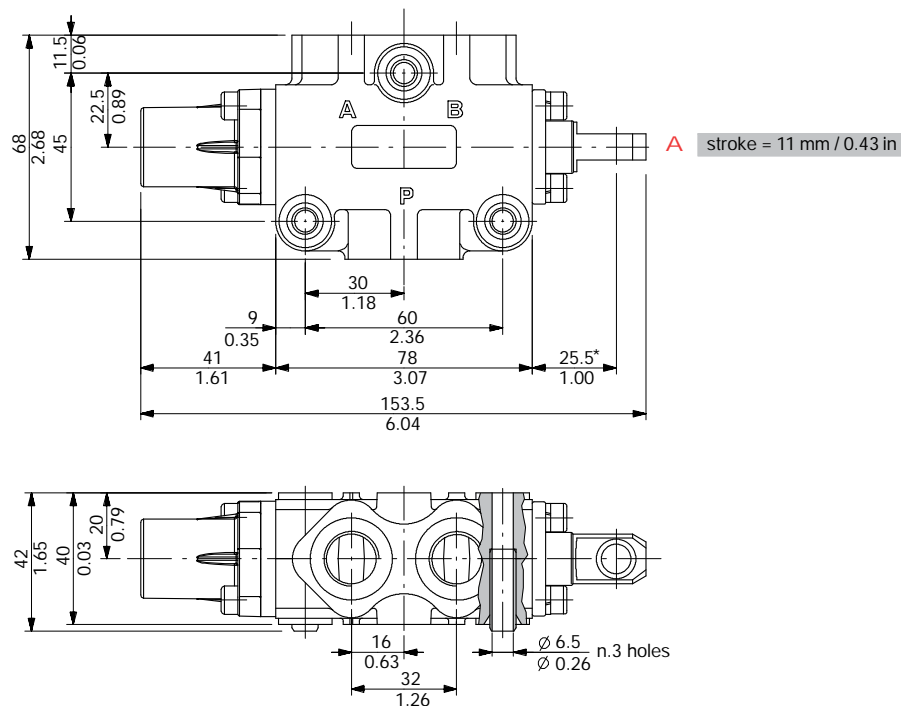
with mechanical control

Dimensional data

2-way DF5/2 valve



3-way DF5/3 valve

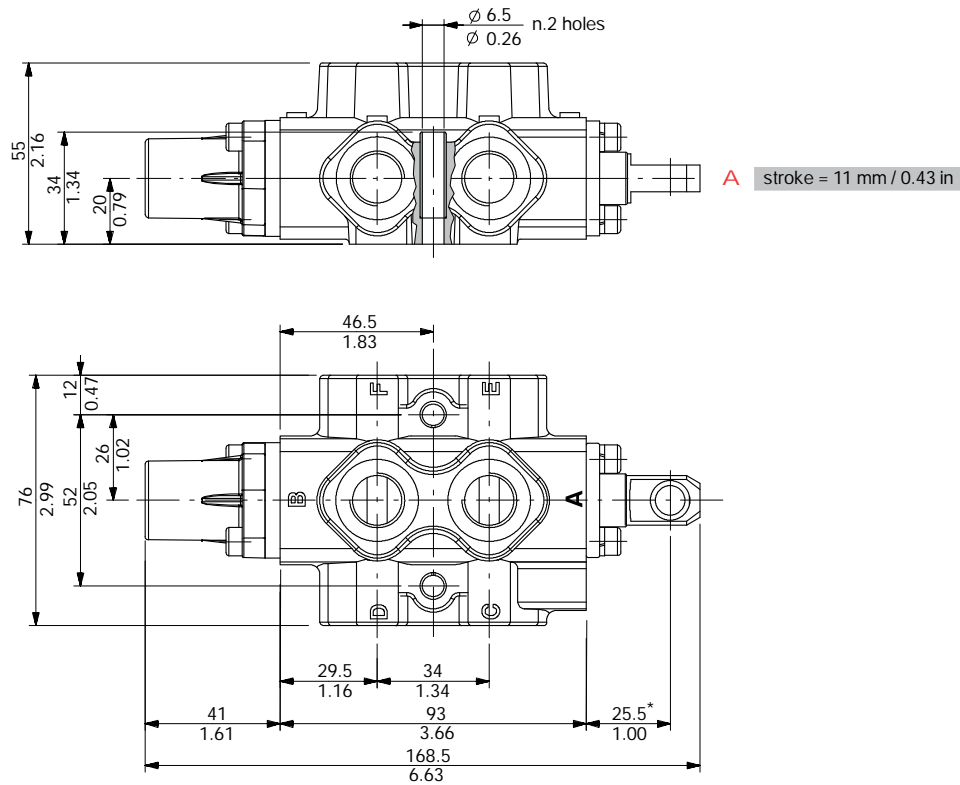


With mechanical control

DF5

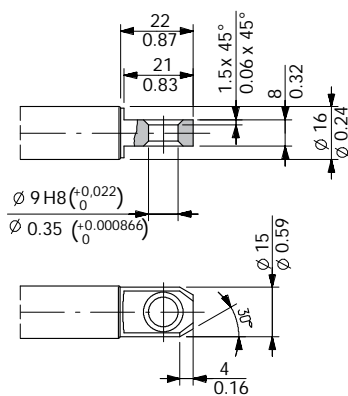
Dimensional data

6-way DF5/6 valve



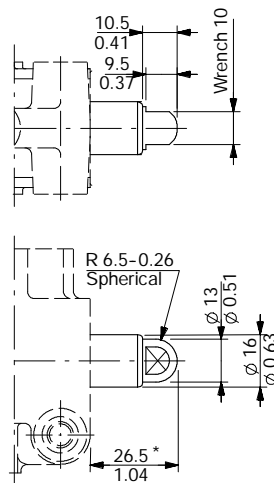
Spool end

Standard end

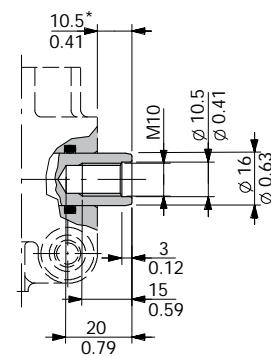


NOTE (*) - With spool out
(positioner kit type 17)

Spherical end type T



Rotary cam prearrangement



DF5

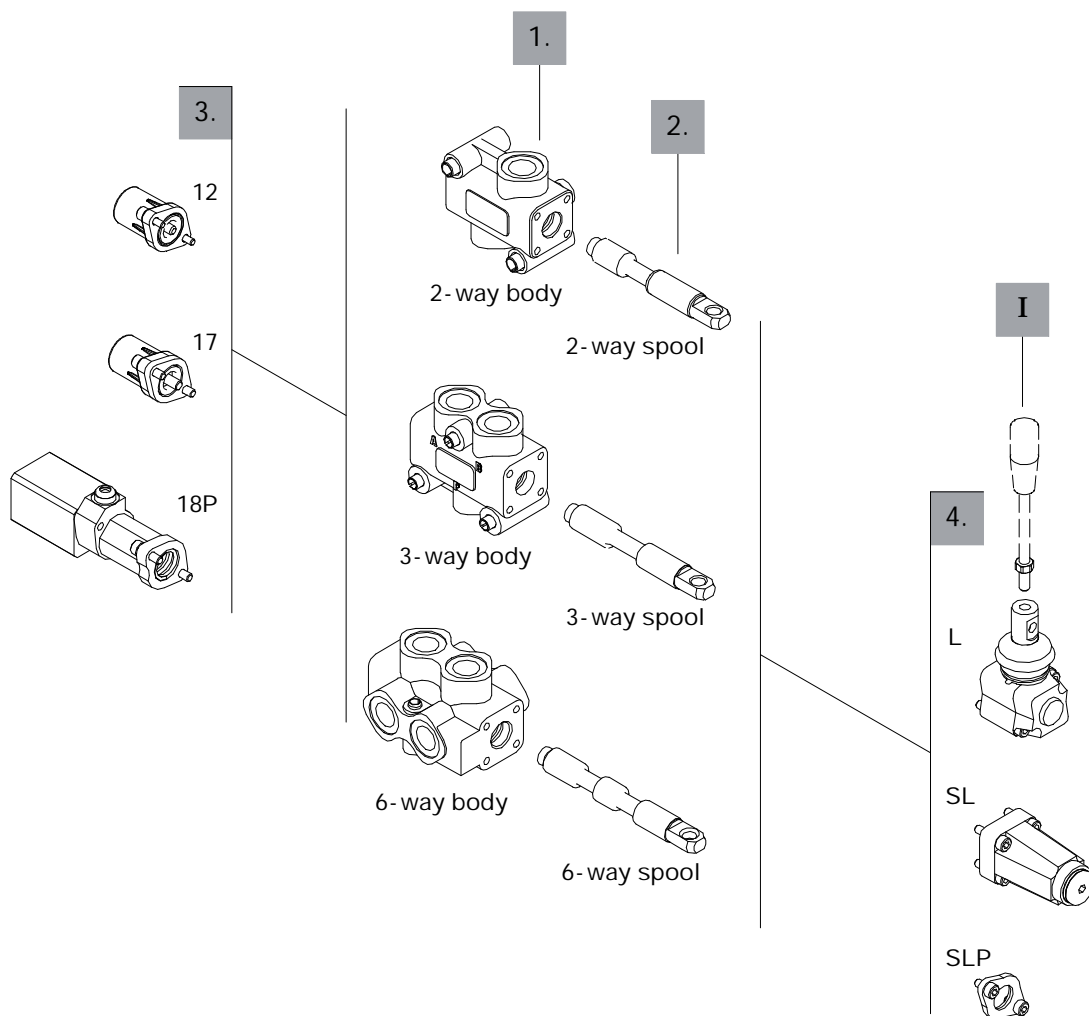
with mechanical control

Ordering codes

Description example:

Diverter valve DF5/3 A 17 SLP

1. 2. 3. 4.



With mechanical control

DF5

Ordering codes

2-way

1. Body kit *

TYPE	BODY	DESCRIPTION
DF5/2	5CO2220300	Standard body kit, BSP threaded

Include body and seals

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105210	2 positions with open centre in neutral
B	3CAS105110	2 positions with closed centre in neutral
AT	3CAS105230	As type A with spherical end
BT	3CAS105130	As type B with spherical end
AC	3CAS105220	As type A prearranged for cam control
BC	3CAS105120	As type B prearranged for cam control

3-way

1. Body kit *

TYPE	CODE	DESCRIPTION
DF5/3	5CO2221300	Standard body kit, BSP threaded

Include body and seal

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105310	3-way, 2 positions with ports connected in transit position
B	3CAS105410	3-way, 2 positions with ports closed in transit position
AT	3CAS105330	As type A with spherical end
AC	3CAS105320	As type A prearranged for cam control
BC	3CAS105420	As type B prearranged for cam control

6-way

1. Body kit *

TYPE	CODE	DESCRIPTION
DF5/6	5CO2222300	Standard body kit, BSP threaded

Include body and seals

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105610	6-way, 2 positions with ports connected in transit position
B	3CAS105710	6-way, 2 positions with ports closed in transit position
AC	3CAS105620	As type A prearranged for cam control
BC	3CAS105720	As type B prearranged for cam control

3. Positioner kits page 14

TYPE	CODE	DESCRIPTION
12	5V12105000	Detent in positions 1 and 2
17	5V17105000	Spring return in position 1
17Y	5V17105010	As type 17, it must be coupled to IA2 control
18ME	5V18405110	Spring return in position 2
18P	5V18105700	ON/OFF pneumatic kit with spring return in position 2
18IA1	5V18105820*	ON/OFF high pressure hydraulic kit with spring return in position 2

4. Control kits page 16

TYPE	CODE	DESCRIPTION
SLP	5COP105000	Without lever box with dust-proof plate kit
SLC	5COP205000	Without lever box with endcap
TQ	5TEL105110	Flexible cable connection
L	5LEV105000	Standard kever box
IA2	5IDR505000*	ON/OFF high pressure kit
CB	5CAM105020	Cam kit

I Optional handlever

TYPE	CODE	DESCRIPTION
AL01/M8x120	170011012	For lever L: height 120 mm / 4.72 in

DF5

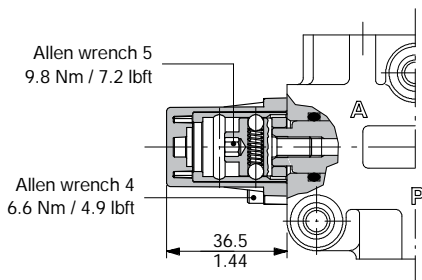
with mechanical control

Positioner kits

With detent

12 kit

Detent in positions 1 and 2.



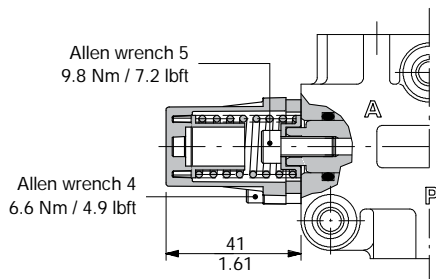
Operating features

Locking and unlocking force : 100 N / 22.5 lbf ±10%

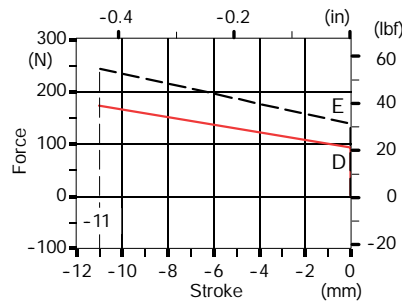
With spring return

17 kit

Spring return in position 1; it's supplied with standard spring type D (see force-stroke diagram). Available also with heavier spring type E (17ME code 5V17305000)



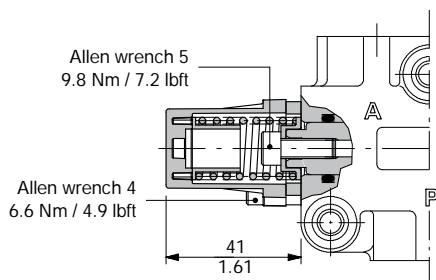
Force-Stroke diagram



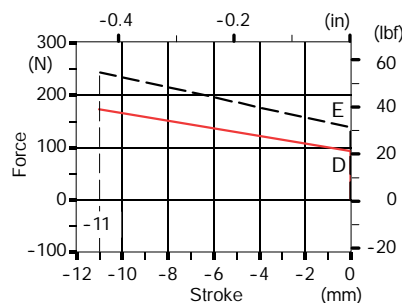
Kit 17Y

As kit 17, it must be coupled to IA2 control on page 17

It's available also with heavier spring type E (17YME code: 5V17305003).



Force-Stroke diagram



With mechanical control

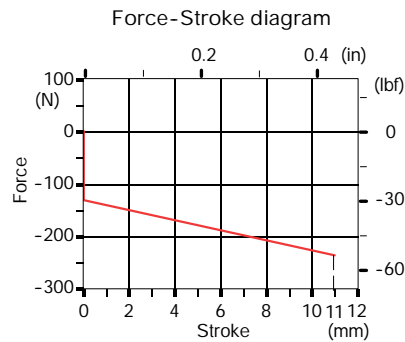
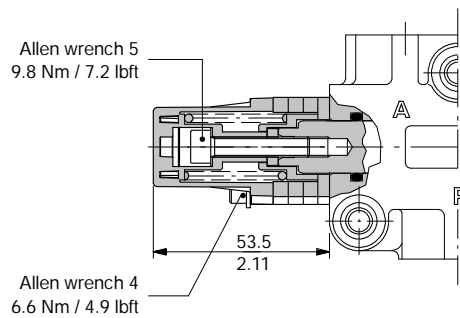
DF5

Positioner kits

With spring return

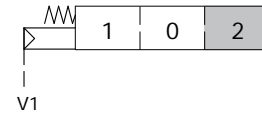
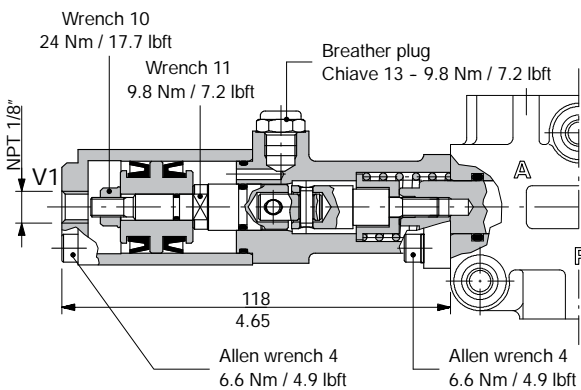
18ME kit

Spring return in position 2.



18P: ON/OFF pneumatic kit

With spring return in position 2.

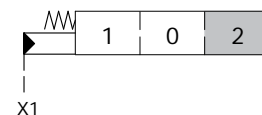
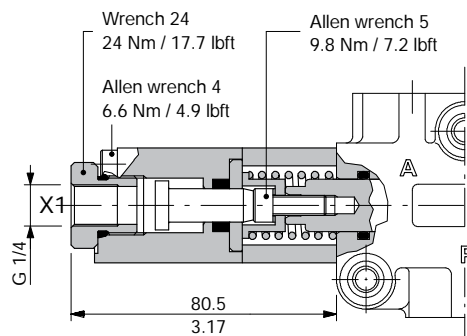


Operating features

Pilot pressure : min 6 bar / 87 psi
max. 10 bar / 145 psi

18IA1: ON/OFF hydraulic kit

With high pressure pilot and spring return to position 2.



Operating features

Pilot pressure : min. 30 bar / 435 psi
max. 250 bar / 3600 psi

DF5

with mechanical control

Control kits

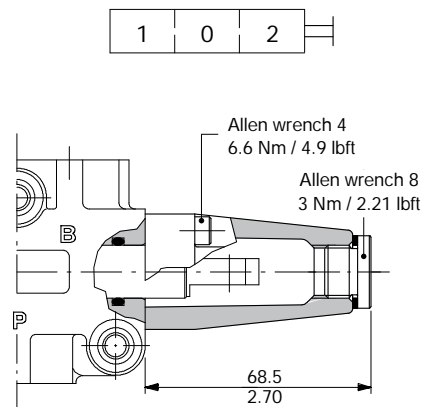
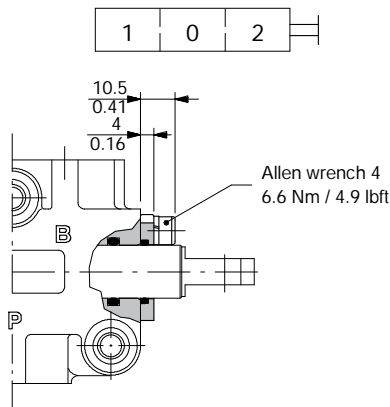
Controls prearrangemet

SLP kit

Mechanical control with dust-proof plate.

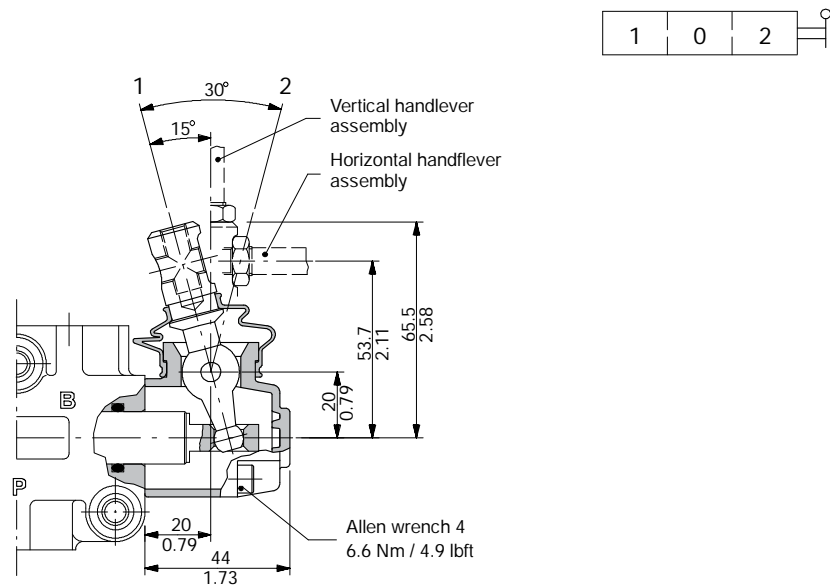
SLC kit

Protection cap usable with pneumatic and hydraulic spool positioner kits.



L lever control

Alumium with protection boot lever pivot box; it can be rotated 180° (execution L180).



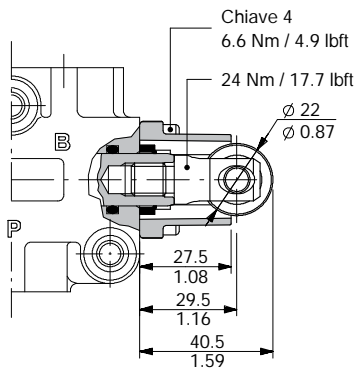
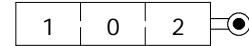
With mechanical control

DF5

Control kits

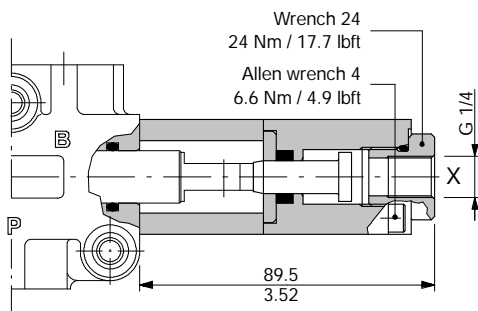
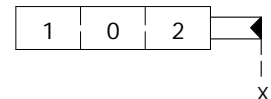
CB cam control

With bronze bearing; it must be coupled to 17 kit.



IA2: ON/OFF hydraulic control

With high pressure pilot; it must be coupled to 17Y kit (see page 14).



Operating features

Pilot pressure : min. 30 bar / 435 psi
max. 250 bar / 3600 psi

DF5

with mechanical control

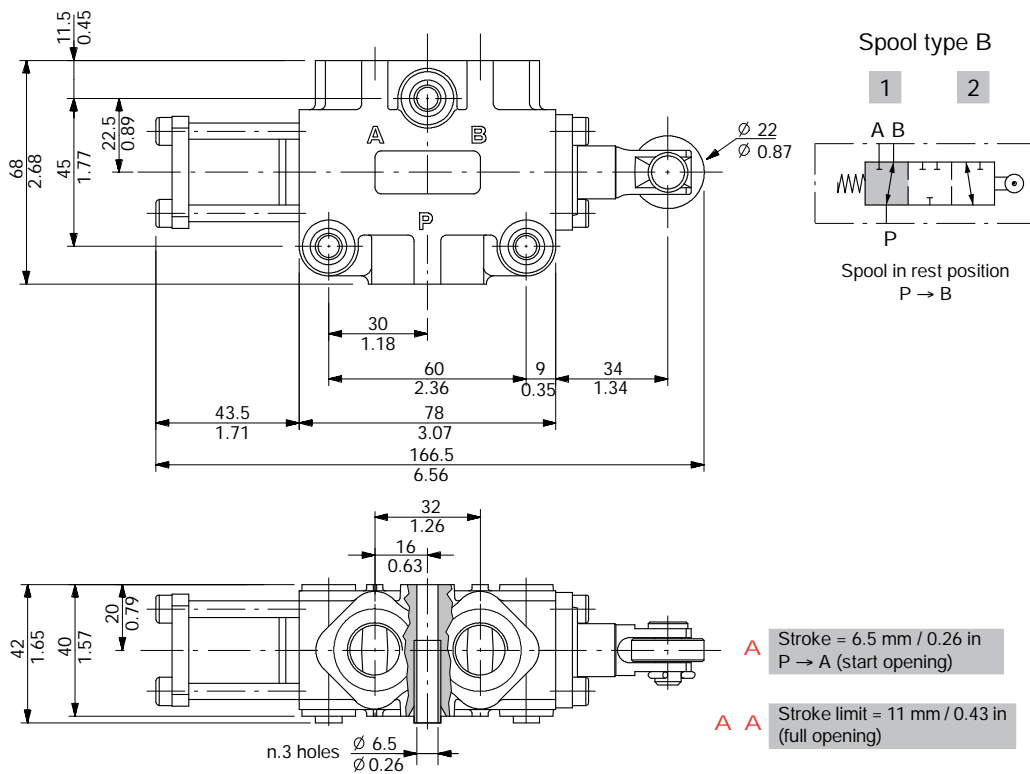
Other executions

Cam spool control suggested for severe applications; it requires a special body, spool and control kit.

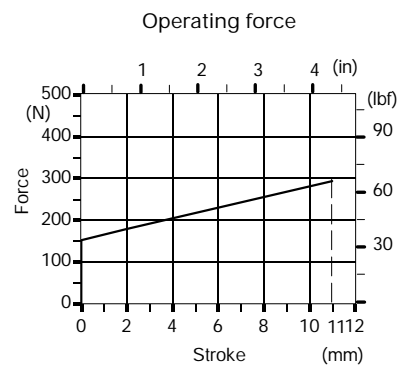
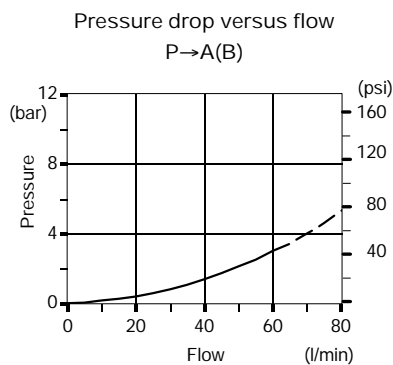
3-way DFC050/3 valve

Complete description: DFC050/3B17GSLP-<CVN> code: 122050023

Valve is supplied painted as standard, with one coat of Primer black antirust paint



Performance data



With mechanical control

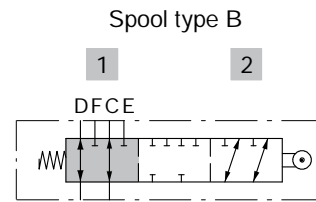
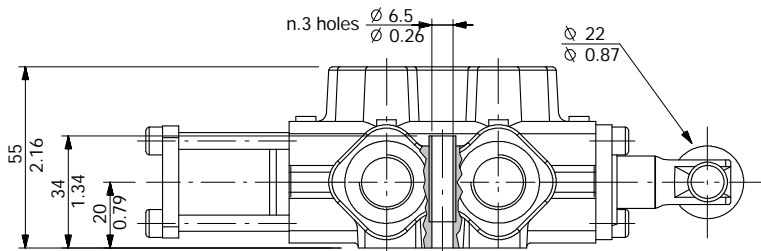
DF5

Other executions

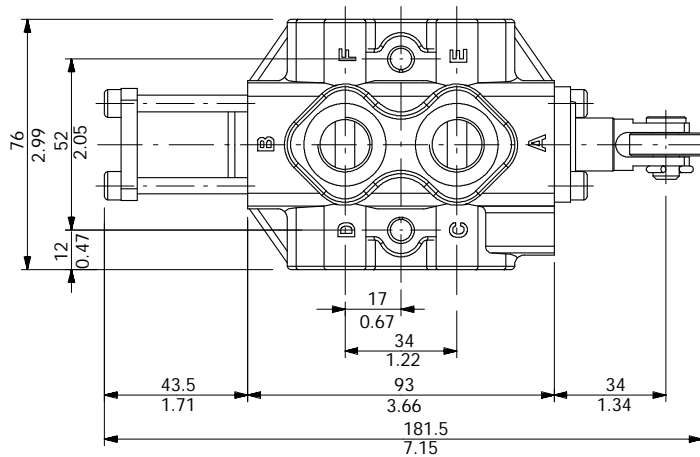
6-way DFC050/6 valve

Complete description: DFC050/6B17GSLP-<<CVN> code: 122080018

Valve is supplied painted as standard, with one coat of Primer black antirust paint



Spool in rest position
A → C / B → D

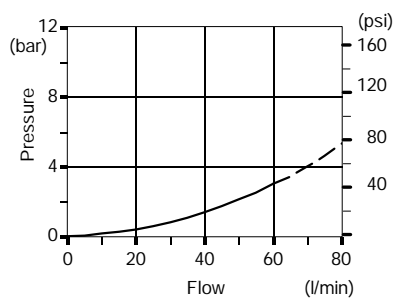


- A Stroke = 6.8 mm / 0.27 in
A → E / B → F (start opening)
- A A Stroke limit = 11 mm / 0.43 in
(full opening)

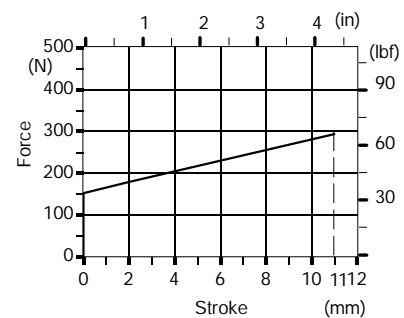
Performance data

Pressure drop versus flow

P→A(B)



Operating force



Umschaltventile – DF10/3 –



– mit Hebel –

Bestellnr.	Typ	Code
254-140-01000	DF10/3A12L	124052040
254-140-01050	DF10/3A17L	124054040
254-140-01100	DF10/3A17SLP	124054020
254-140-01150	DF10/3AT17SLP	124054010
254-140-01200	DF10/3A18IA1SLC	124055330
254-140-01250	DF10/3A18IA1L	124055340
254-140-01300	DF10/3B12L	124050009
254-140-01350	DF10/3B17L	124050010
254-140-01400	DF10/3BC17CB	124074050
254-140-01450	DF10/3B18L	124075040
254-140-01500	DF10/3A8L	124050008
254-140-01550	DF10/3AC17MECA-TAP(A)	124050012
254-140-01600	DF10/3A18IA3NA	124050024
254-140-01650	DF10/3AMA	124051000
254-140-01700	DF10/3AMB	124051010
254-140-01750	DF10/3AC17SLP	124054021
254-140-01800	DF10/3A17CB	124054050
254-140-01850	DF10/3AC17CA	124054051
254-140-01900	DF10/3A17IA2	124054080
254-140-01950	DF10/3A17IB2	124054090
254-140-02000	DF10/3A17PSLC	124054130
254-140-02050	DF10/3A18PL	124055140
254-140-02100	DF10/3B8L	124071040
254-140-02150	DF10/3B12L	124072040
254-140-02200	DF10/3B17L	124074040
254-140-02250	DF10/3B17IA2	124074080
254-140-02300	DF10/3BC17CB-TAP(B)	124014050
254-140-02350	DF10/3AC17CA-TAP(B)	124014051
254-140-02400	DF10/3B17IA2-TAP(B)	124014080
254-140-02450	DF10/3AC17SLP-TAP(A)	124034021
254-140-02500	DF10/3AC17CB-TAP(A)	124034050
254-140-02550	DF10/3A17MCSLP	124050002

254-140

DF

with mechanical control

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

		DF5	DF10	DF20	DF25
N. of available ways		2-3-6	2-3-6	2-3-6	3
Nominal flow rating		60 l/min	90 l/min	140 l/min	280 l/min
Operating pressure (maximum)		315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi
Internal leakage A(B)→T	Δp=100 bar 1450 psi with fluid and valve at 40°C	5 cm ³ /min 0.31 in ³ /min	5 cm ³ /min 0.31 in ³ /min	8 cm ³ /min 0.49 in ³ /min	8 cm ³ /min 0.49 in ³ /min
Hydraulic fluid		Mineral base oil			
Fluid temperature		with NBR seals from -20° to 80°C			
		with FPM seals from -20° to 100°C			
Viscosity		operating range from 15 to 75 mm ² /s - from 15 to 75 cSt			
		minimum 12 mm ² /s - 12 cSt			
		maximum 400 mm ² /s - 400 cSt			
Max. level of contamination		19/16 - ISO 4406			
Ambient temperature		from -40° to 60°C			

NOTE - For different working conditions please contact Customer Service.

Standard threads

ALL PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)
DF5	G 3/8	3/4-16 UNF-2B (SAE 8)
DF10	G 1/2	7/8-14 UNF-2B (SAE 10)
DF20	G 3/4	1 1/16-12 UN-2B (SAE 12)
DF25	G 1	1 5/16-12 UN-2B (SAE 16)
PILOT PORTS		
Pneumatic	NPT 1/8-27	NPT 1/8-27
Hydraulic	G 1/4	9/16-18 UNF-2B (SAE 6)

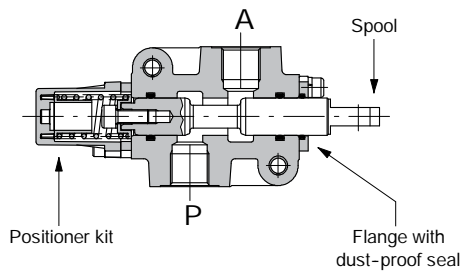
with mechanical control

DF

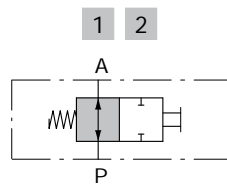
Hydraulic circuit

2-way

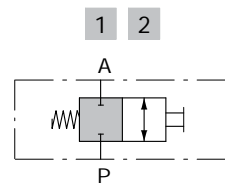
Available as body only in DF5/2 execution; for other executions 3-way body is used.



Spool type A

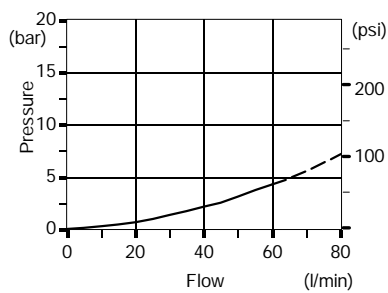


Spool type B



Performance data

Pressure drop versus flow
P→A



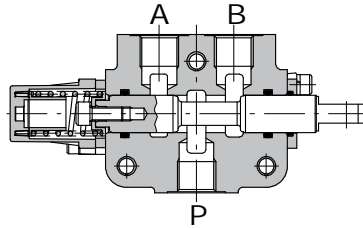
DF

with mechanical control

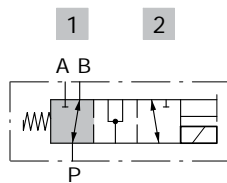
Hydraulic circuit

3-way

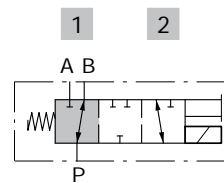
It's possible to obtain 2-way diverter valve plugging port A or B.



Spool type A



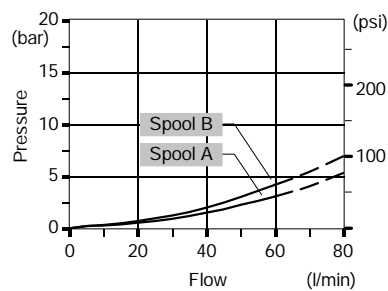
Spool type B B



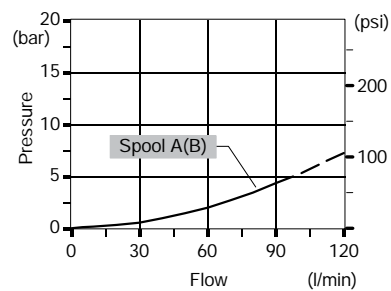
Performance data

Pressure drop versus flow: P→A(B)

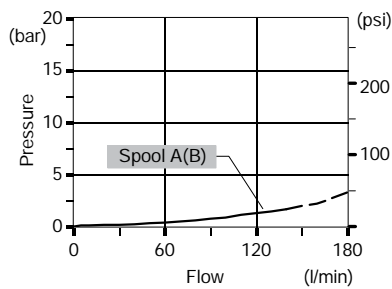
DF5/3



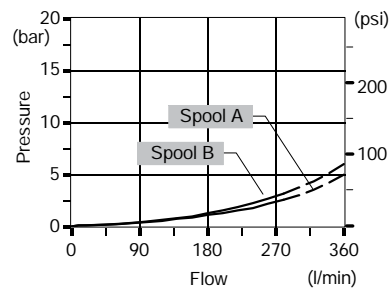
DF10/3



DF20/3



DF25/3

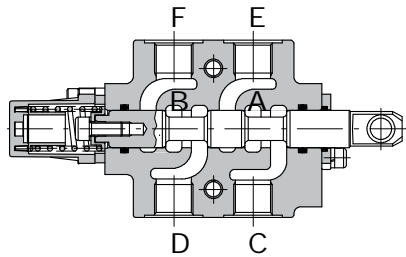


with mechanical control

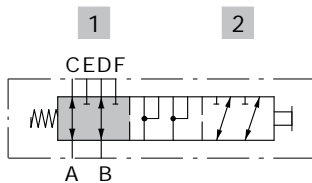
DF

Hydraulic circuit

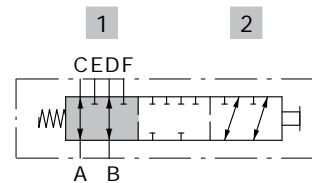
6-way



Spool type A



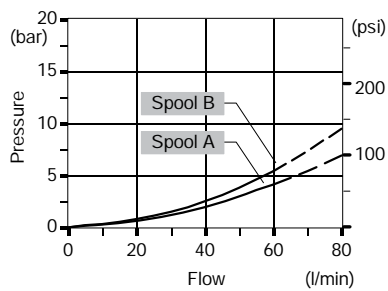
Spool type B



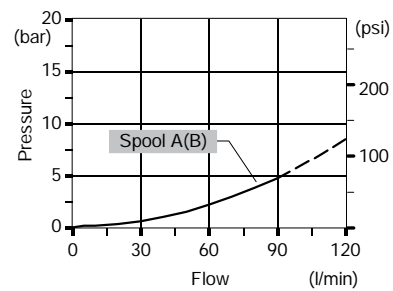
Performance data

Pressure drop versus flow: A→C(E).

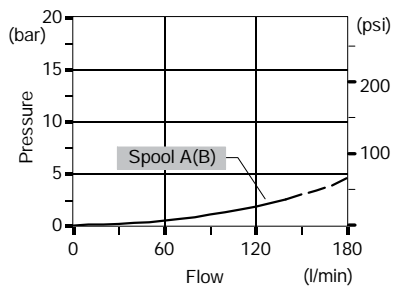
DF5/6



DF10/6



DF20/6

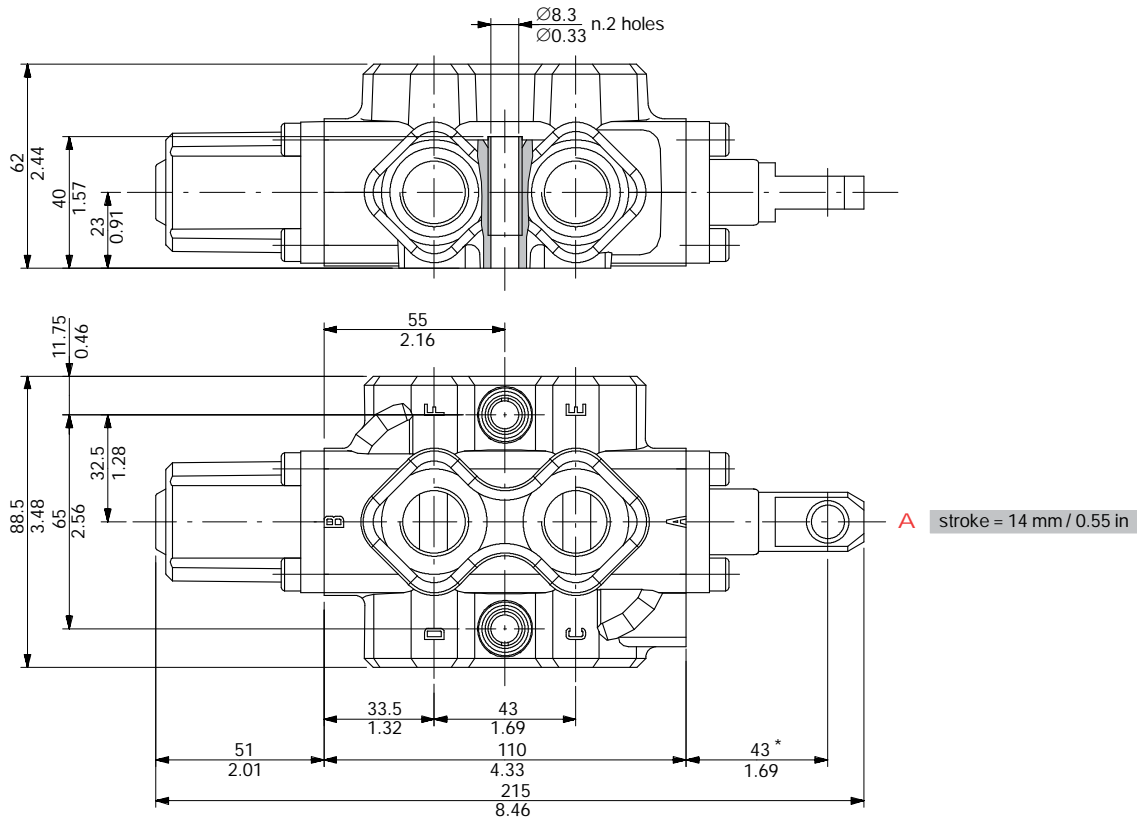


with mechanical control

DF10

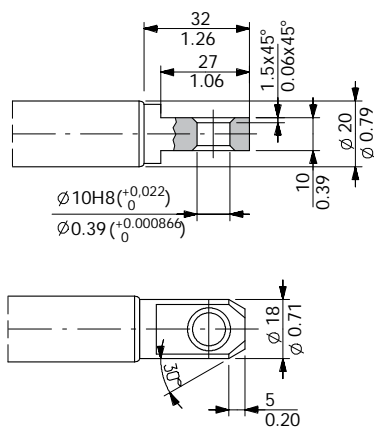
Dimensional data

6-way DF10/6 valve



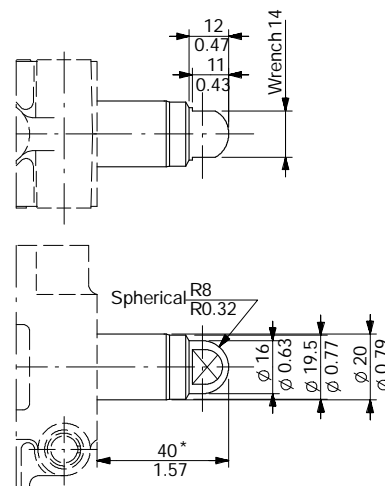
Spool end

Standard end

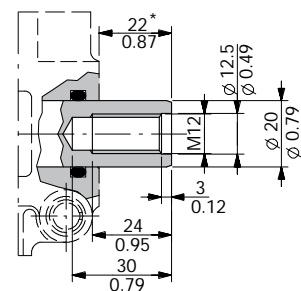


NOTE (*) - With spool out (positioner kit type 17)

Spherical end type T



Rotary cam prearrangement



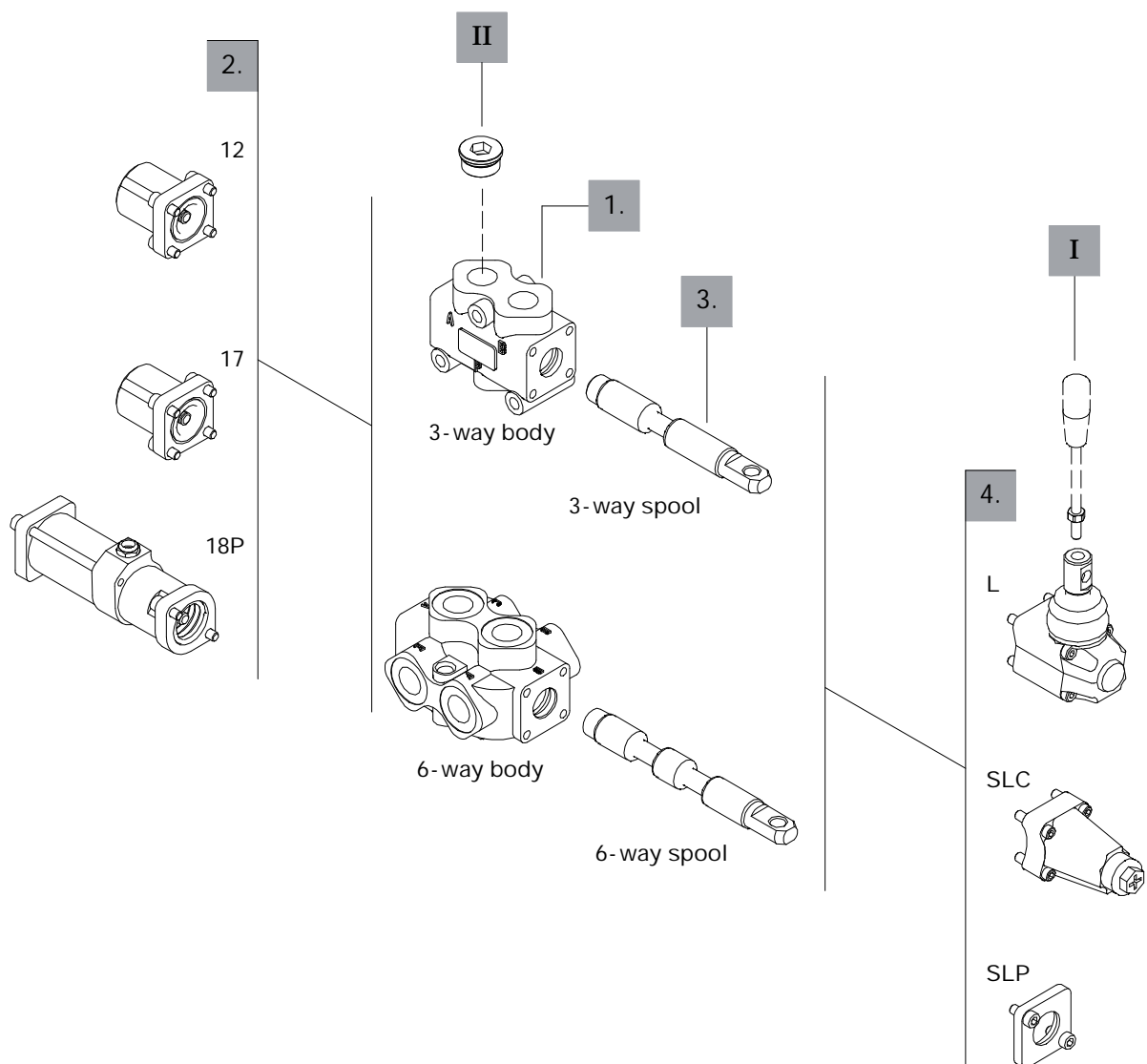
DF10

with mechanical control

Ordering codes

Description example:

Diverter valve DF10/3 A 17 SLP
 1.
 3.
 2.
 4.



with mechanical control

DF10

Ordering codes

3-way

1. body kit *

TYPE	CODE	DESCRIPTION
DF10/3	5CO2241300	Standard body kit, BSP threaded

Include body and seals

3. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS110310	3-way, 2 positions with ports connected in transit position
B	3CAS110410	3-way, 2 positions with ports closed in transit position
AT	3CAS110330	As type A with spherical end
AC	3CAS110320	As type A prearranged for cam control
BC	3CAS110420	As type B prearranged for cam control

6-way

1. Body kit *

TYPE	CODE	DESCRIPTION
DF10/6	5CO2242300	Standard body kit, BSP threaded

Include body and seals

3. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS110610	6-way, 2 positions with ports connected in transit positions
B	3CAS110710	6-way, 2 positions with ports closed in transit positions
AC	3CAS110620	As type A prearranged for cam control
BC	3CAS110720	As type B prearranged for cam control

2. Positioner kits page 24

TYPE	CODE	DESCRIPTION
12	5V12110000	Detent in positions 1 and 2
17	5V17110000	Spring return in position 1
18	5V18110000	Spring return in position 2
18P	5V18110710	ON/OFF pneumatic kit with spring return in position 2
18IA1	5V18110821*	ON/OFF high pressure hydraulic kit with spring return in position 2

4. Control kits page 26

TYPE	CODE	DESCRIPTION
SLP	5COP110000	Without lever box with dust-proof plate kit
SLC	5COP210000	Without lever box with endcap
L	5LEV110000	Standard lever box
IA2	5IDR510001*	ON/OFF high pressure kit
CB	5CAM110020	Cam kit

I Optional handlever

TYPE	CODE	DESCRIPTION
AL01/M10x200	170012020	For lever L, height 200 mm / 7.87 in

II Ports plug

TYPE	CODE	DESCRIPTION
G1/2	3XTAP727180*	Body conversion from 3-way to 2-way circuit

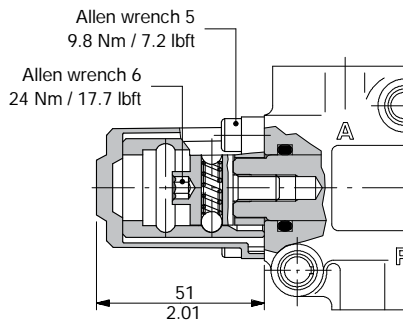
DF10

with mechanical control

Positioner kits

12 kit: with detent

Detent in positions 1 and 2.



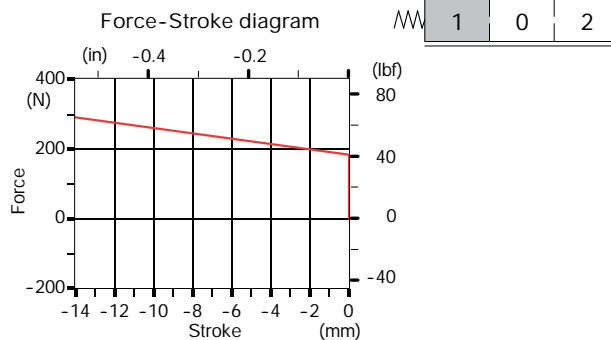
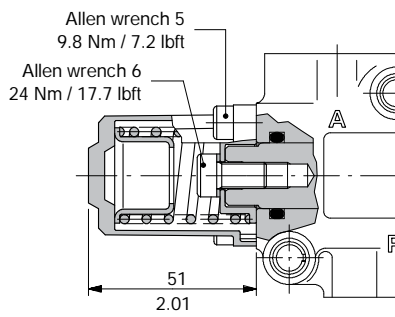
Operating features

Locking and unlocking force : ±10%

With spring return

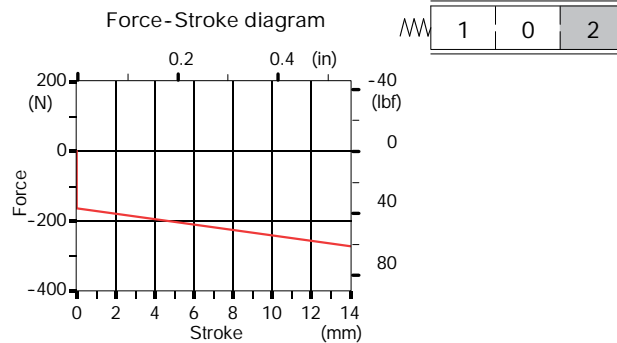
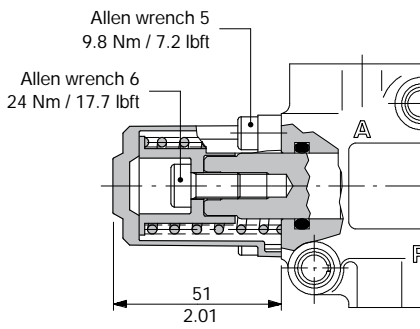
17 kit

Spring return in position 1.



18 kit

Spring return in position 2.



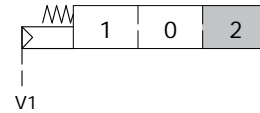
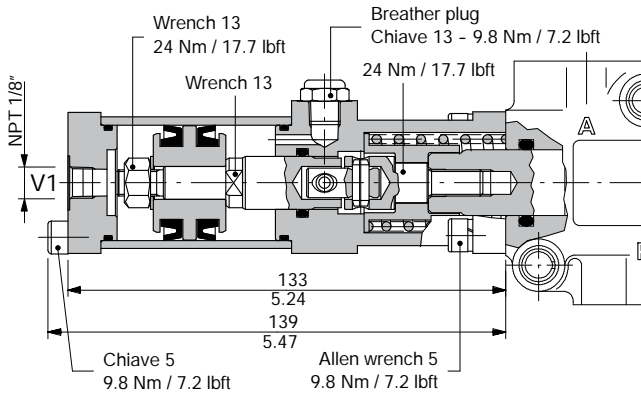
with mechanical control

DF10

Positioner kits

18P: ON/OFF pneumatic kit

With spring return in position 2.

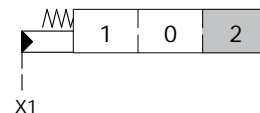
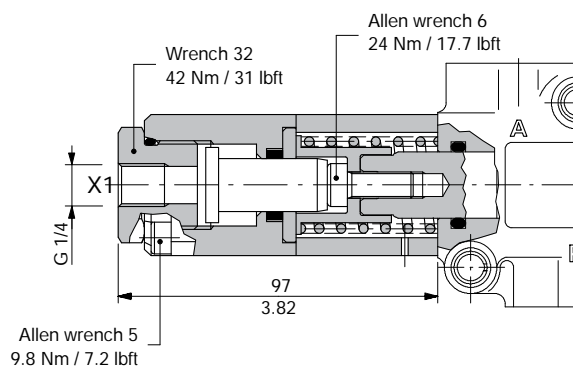


Operating features

Pilot pressure : min. 6 bar / 87 psi
max. 10 bar / 145 psi

18IA1: ON/OFF hydraulic kit

With high pressure pilot and spring return to position 2.



Operating features

Pilot pressure : min. 30 bar / 435 psi
max. 250 bar / 3600 psi

DF10

with mechanical control

Control kits

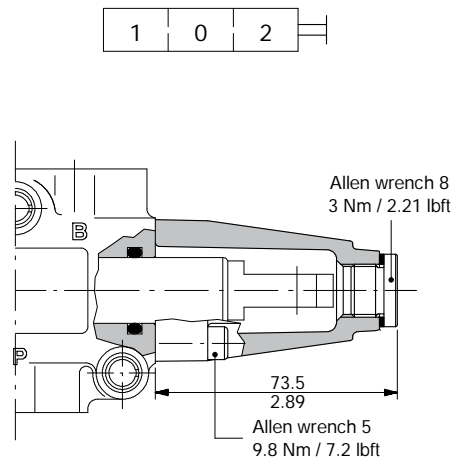
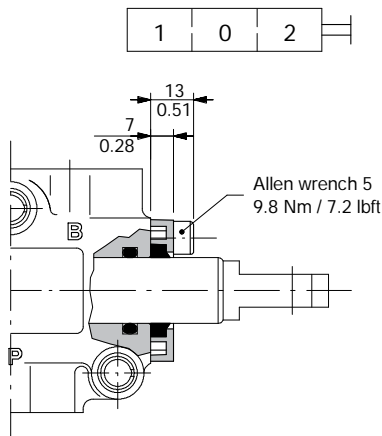
Controls prearranged

SLP kit

Mechanical control with dust-proof plate.

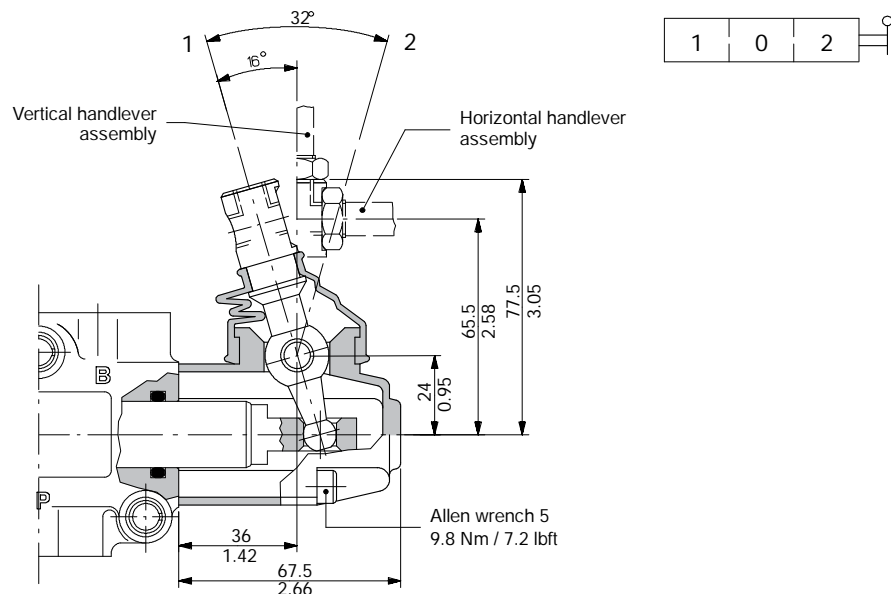
SLC kit

Protection cap usable with pneumatic and hydraulic spool positioner kits.



L lever control

Aluminum with protection boot lever pivot box; it can be rotated 180° (execution L180).



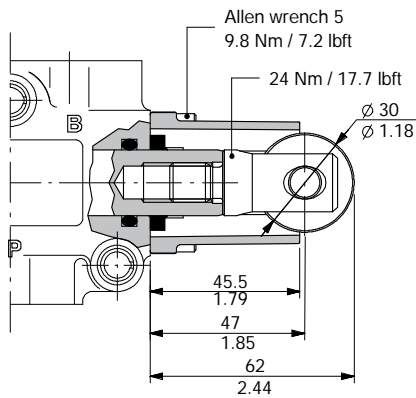
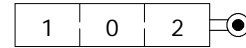
with mechanical control

DF10

Control kits

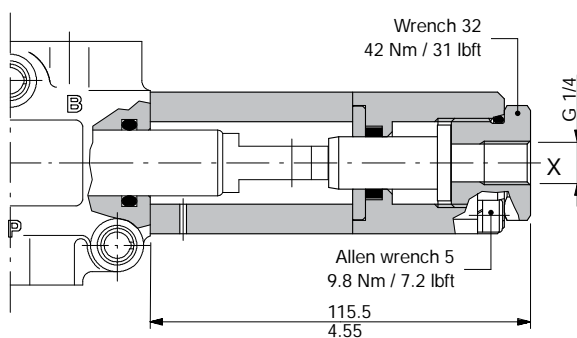
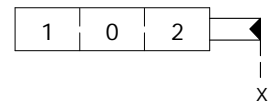
CB cam control

With bronze bearing; it must be coupled to 17 kit.



IA2: ON/OFF hydraulic control

With high pressure pilot; it must be coupled to 17 kit.



Operating features

Pilot pressure : min. 30 bar / 435 psi
max. 250 bar / 3600 psi

DF10

with mechanical control

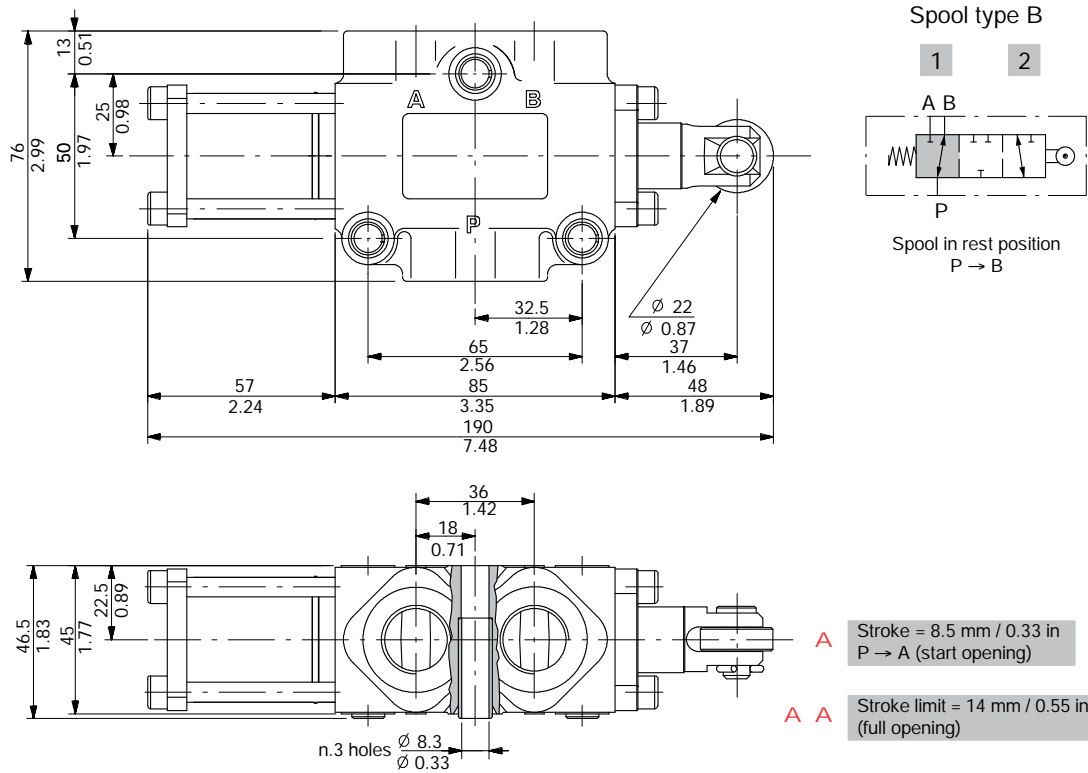
Other executions

Cam spool control suggested for severe applications; it requires a special body, spool and control kit.

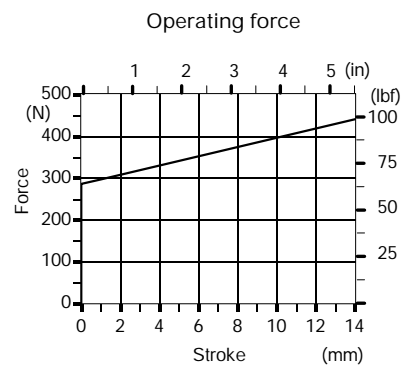
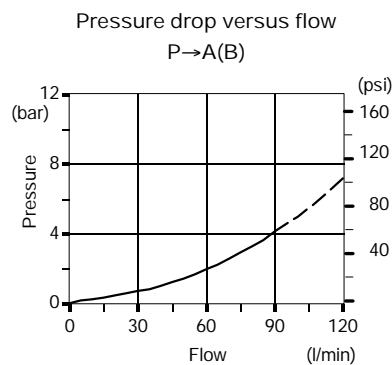
3-way DFC100/3 valve

Complete description: DFC100/3B17GSLP-<CVN> code: 124050016

Valve is supplied painted as standard, with one coat of Primer black antirust paint



Performance data



with mechanical control

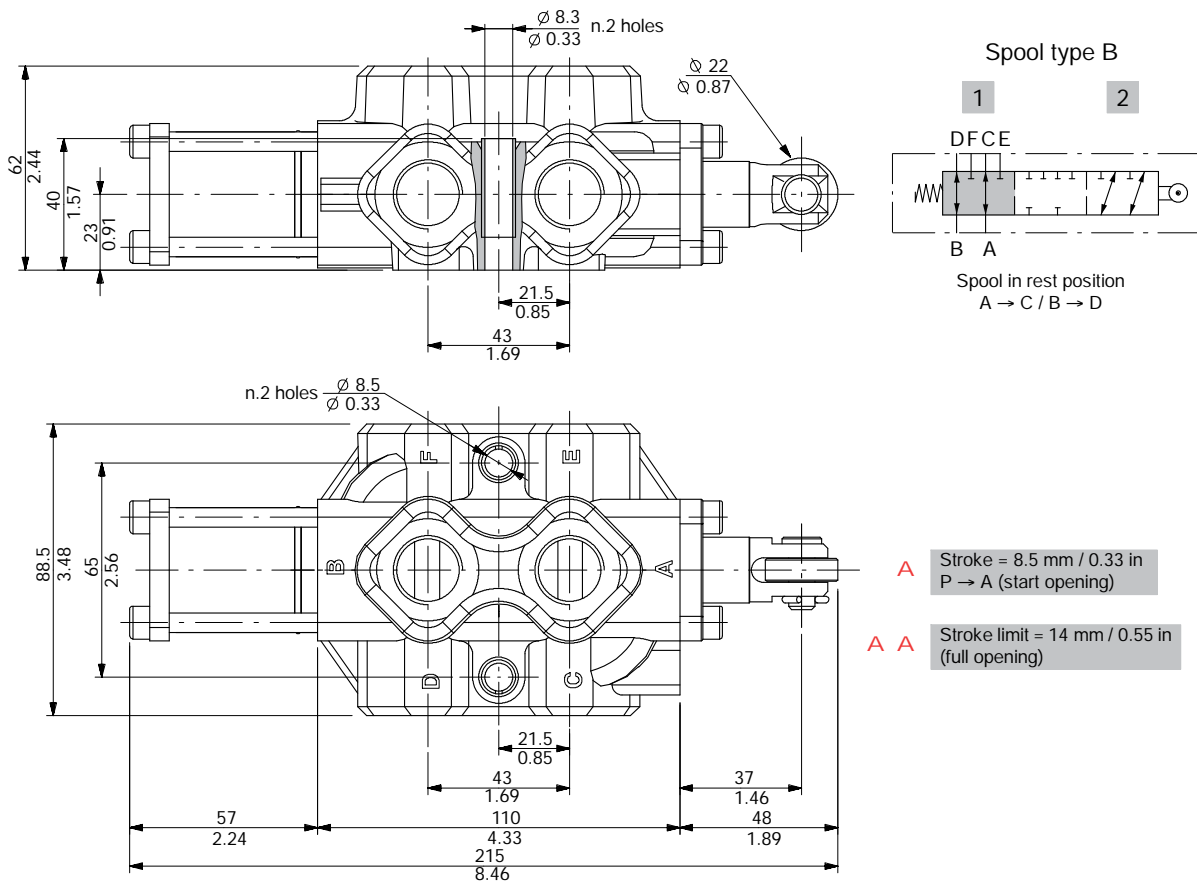
DF10

Other executions

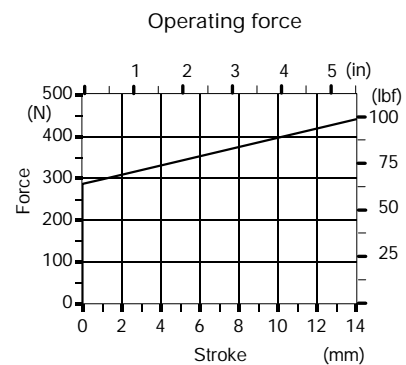
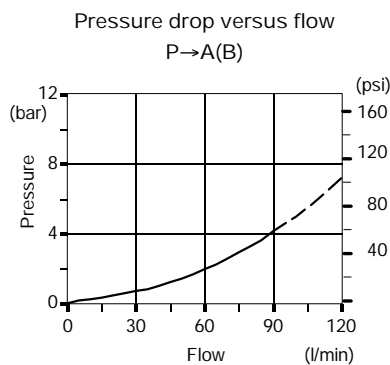
6-way DFC100/6 valve

Complete description: DFC100/6B17GSLP-<<CVN> code: 124080013

Valve is supplied painted as standard, with one coat of Primer black antirust paint



Performance data



Umschaltventile

– DF20/3 –



– mit Hebel –

Bestellnr.	Typ	Code
254-150-01000	DF20/3A12L	126052040
254-150-01050	DF20/3A17L	126074040
254-150-01100	DF20/3A17SLP	126054020
254-150-01150	DF20/3AT17SLP	126054010
254-150-01200	DF20/3BC17CB	126074050
254-150-01250	DF20/3AC17CA-TAP(A)	126014050
254-150-01300	DF20/3B17MEIA2-TAP(B)	126014080
254-150-01400	DF20/3AMB	126051010
254-150-01450	DF20/3A12DL	126052640
254-150-01500	DF20/3A17L	126054040
254-150-01550	DF20/3A17C	126054050
254-150-01600	DF20/3A17IA2	126054080
254-150-01650	DF20/3A17IB2	126054090
254-150-01700	DF20/3A17PSLC	126054130
254-150-01750	DF20/3A18E11SLP-KE1S0-12VDC	126055021
254-150-01800	DF20/3A18PSLC	126055130
254-150-01850	DF20/3A18PL	126055140
254-150-01900	DF20/3A18PNL	126055141
254-150-01950	DF20/3A18IB1L	126055240
254-150-02000	DF20/3A18E11L-KE1S0-24VDC	126055741
254-150-02050	DF20/3B12	126072040
254-150-02100	DF20/3B17IA2	126074080

254-150

DF

with mechanical control

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

		DF5	DF10	DF20	DF25
N. of available ways		2-3-6	2-3-6	2-3-6	3
Nominal flow rating		60 l/min	90 l/min	140 l/min	280 l/min
Operating pressure (maximum)		315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi
Internal leakage A(B)→T	Δp=100 bar 1450 psi with fluid and valve at 40°C	5 cm ³ /min 0.31 in ³ /min	5 cm ³ /min 0.31 in ³ /min	8 cm ³ /min 0.49 in ³ /min	8 cm ³ /min 0.49 in ³ /min
Hydraulic fluid		Mineral base oil			
Fluid temperature		with NBR seals from -20° to 80°C			
		with FPM seals from -20° to 100°C			
Viscosity		operating range from 15 to 75 mm ² /s - from 15 to 75 cSt			
		minimum 12 mm ² /s - 12 cSt			
		maximum 400 mm ² /s - 400 cSt			
Max. level of contamination		19/16 - ISO 4406			
Ambient temperature		from -40° to 60°C			

NOTE - For different working conditions please contact Customer Service.

Standard threads

ALL PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)
DF5	G 3/8	3/4-16 UNF-2B (SAE 8)
DF10	G 1/2	7/8-14 UNF-2B (SAE 10)
DF20	G 3/4	1 1/16-12 UN-2B (SAE 12)
DF25	G 1	1 5/16-12 UN-2B (SAE 16)
PILOT PORTS		
Pneumatic	NPT 1/8-27	NPT 1/8-27
Hydraulic	G 1/4	9/16-18 UNF-2B (SAE 6)

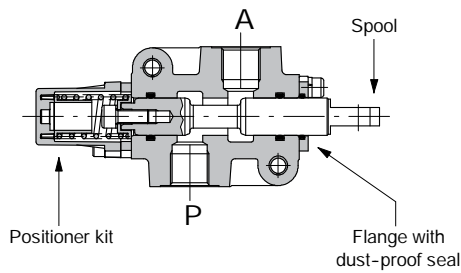
with mechanical control

DF

Hydraulic circuit

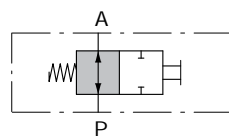
2-way

Available as body only in DF5/2 execution; for other executions 3-way body is used.



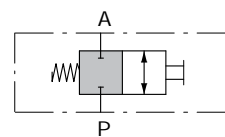
Spool type A

1 2



Spool type B

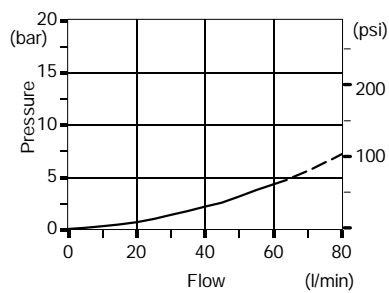
1 2



Performance data

Pressure drop versus flow

P→A



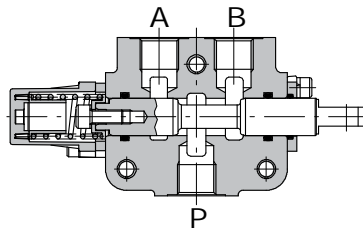
DF

with mechanical control

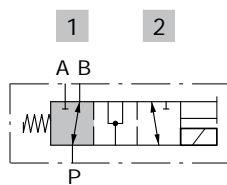
Hydraulic circuit

3-way

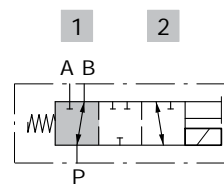
It's possible to obtain 2-way diverter valve plugging port A or B.



Spool type A



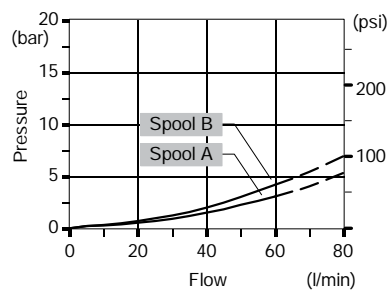
Spool type B B



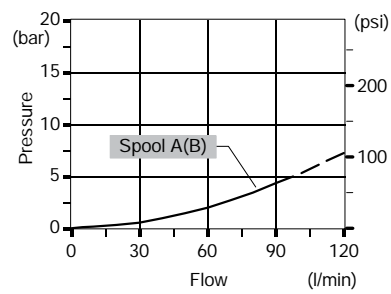
Performance data

Pressure drop versus flow: P→A(B)

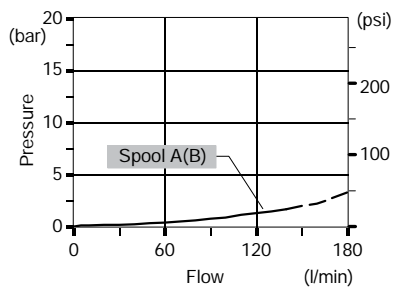
DF5/3



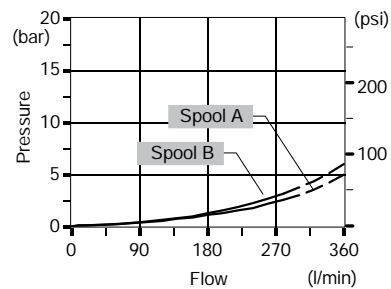
DF10/3



DF20/3



DF25/3

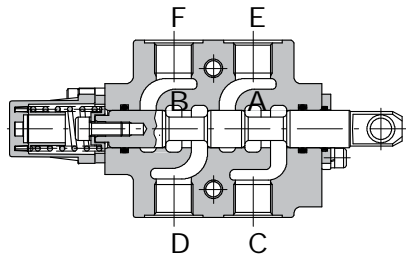


with mechanical control

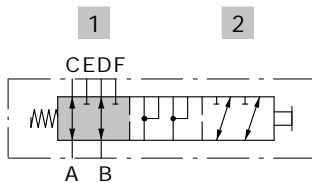
DF

Hydraulic circuit

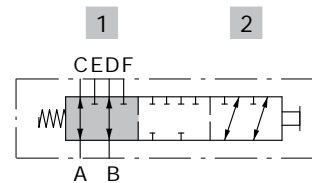
6-way



Spool type A



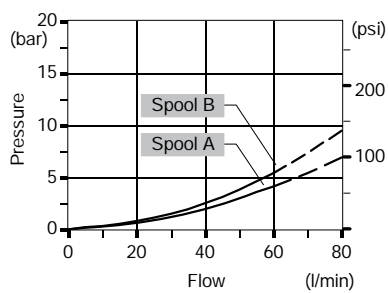
Spool type B



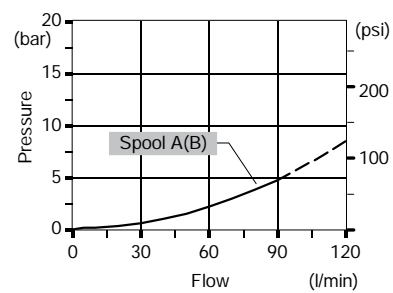
Performance data

Pressure drop versus flow: A→C(E).

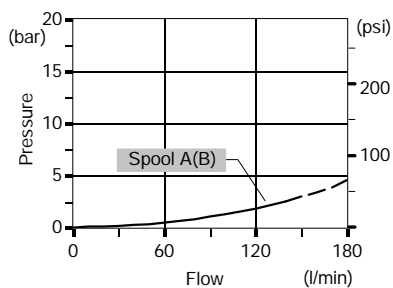
DF5/6



DF10/6



DF20/6

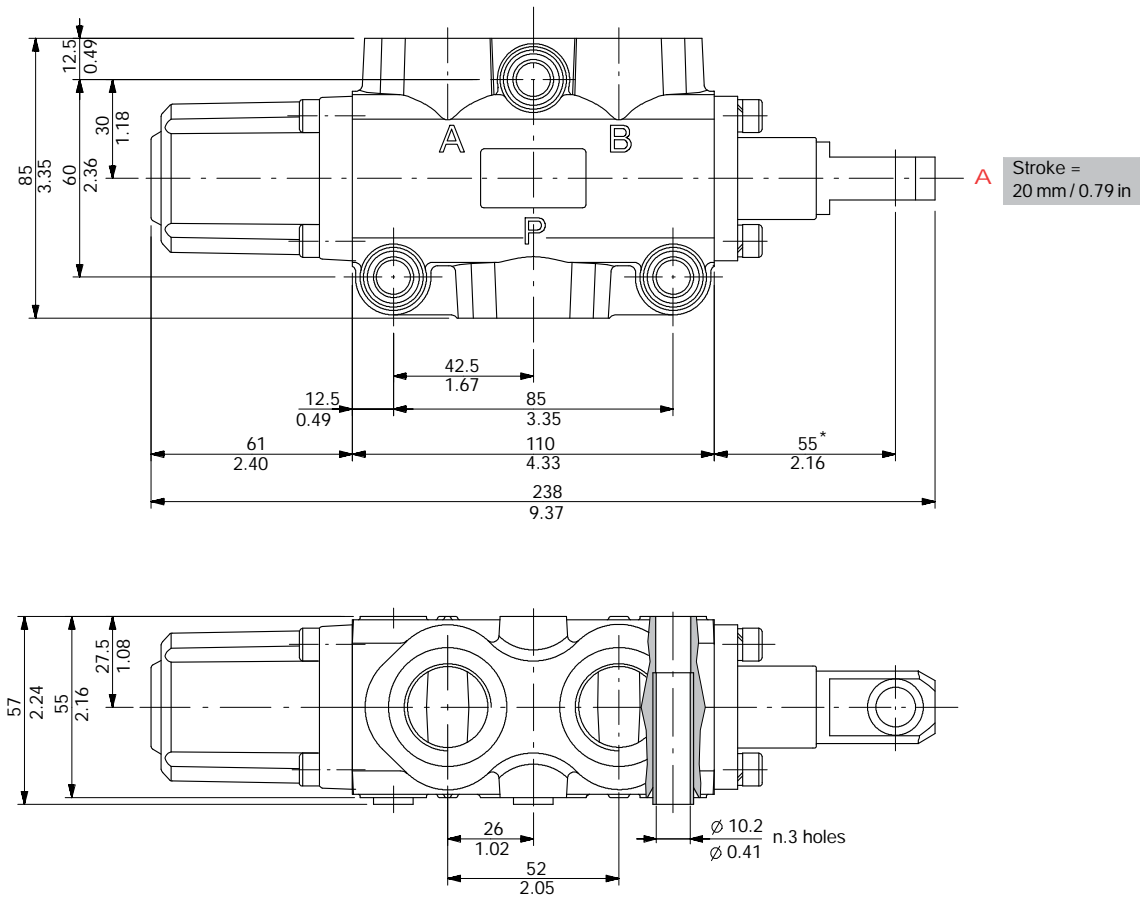


DF20

with mechanical control

Dimensional data

3-way DF20/3 valve

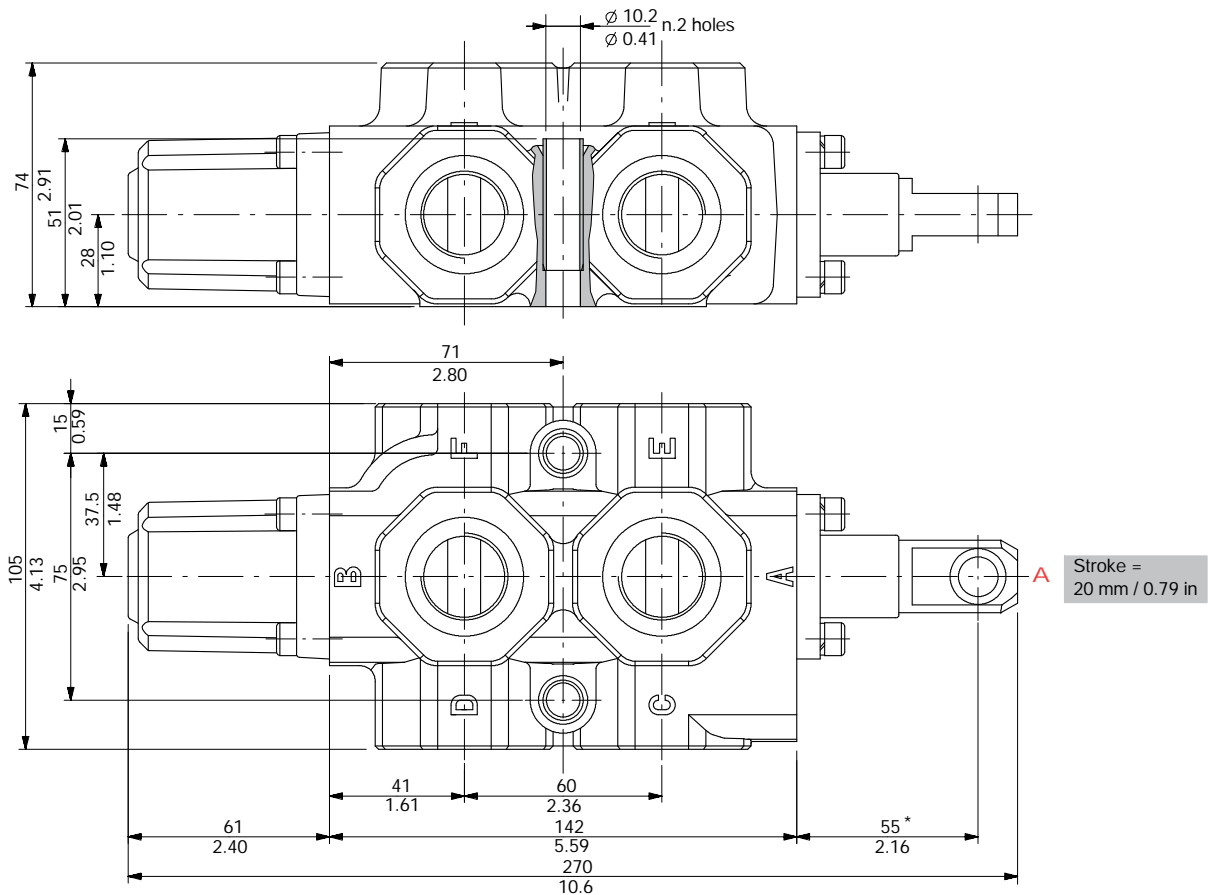


with mechanical control

DF20

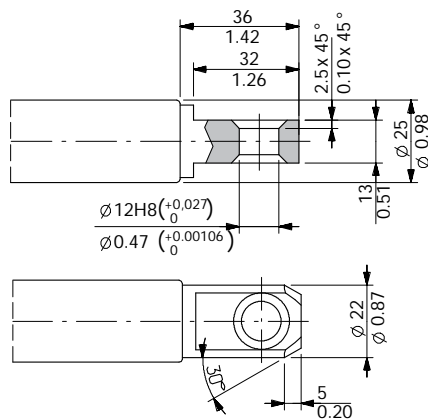
Dimensional data

6-way DF20/6 valve

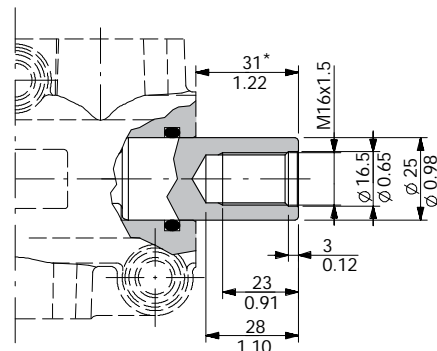


Spool end

Standard end



Rotary cam prearrangement



NOTA (*) - With spool out (positioner kit type 17)

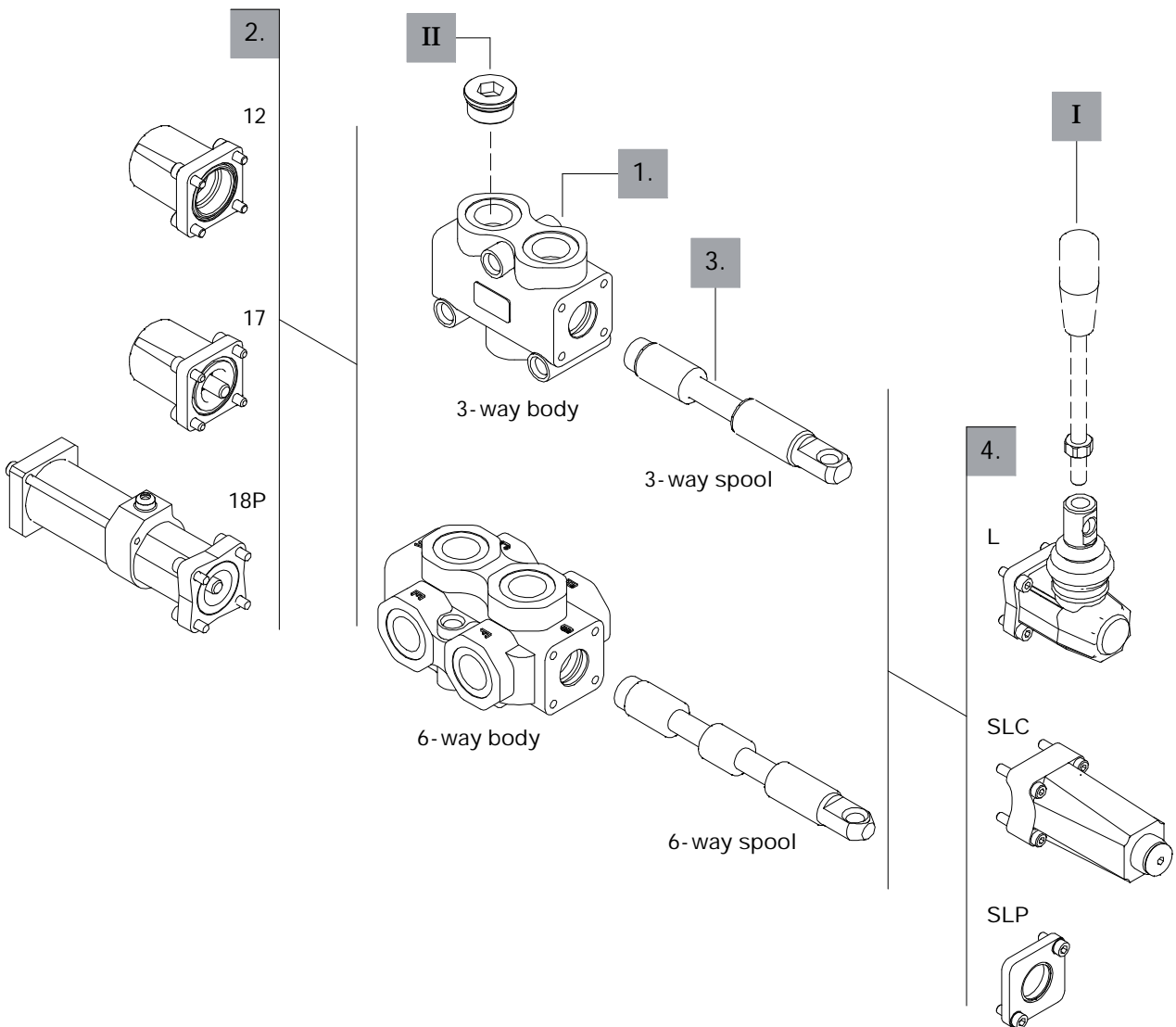
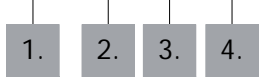
DF20

with mechanical control

Ordering codes

Description example:

Diverter valve DF20/3 A 17 SLP



with mechanical control

DF20

Ordering codes

3 - way

1. Body kit *

TYPE	CODE	DESCRIPTION
DF20/3	5CO2261300	Standard body kit, BSP threaded

Include body and seals

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS120310	3-way, 2 positions with ports connected in transit position
B	3CAS120410	3-way, 2 positions with ports closed in transit position
AC	3CAS120320	As type A prearranged for cam control
BC	3CAS120420	As type B prearranged for cam control

6 - way

1. Body kit *

TYPE	CODE	DESCRIPTION
DF20/6	5CO2262300	Standard body kit, BSP threaded

Include body and seals

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS120610	6-way, 2 positions with ports connected in transit position
B	3CAS120710	6-way, 2 positions with ports closed in transit position
AC	3CAS120620	As type A prearranged for cam control
BC	3CAS120720	As type B prearranged for cam control

3. Positioner kits page 34

TIPO	CODICE	DESCRIZIONE
12	5V12120000	Detent in positions 1 and 2
17	5V17120000	Spring return in position 1
18MB	5V18120000	Spring return in position 2
18P	5V18120700	ON/OFF pneumatic kit with spring return in position 2
18IA1	5V18120820*	ON/OFF high pressure hydraulic kit with spring return in position 2
18E11	5V18120350	12VDC ON/OFF electro-hydraulic kit with spring return in position 2
	5V18120351	24VDC ON/OFF electro-hydraulic kit with spring return in position 2

4. Control kits page 37

TYPE	CODE	DESCRIPTION
SLP	5COP120000	Without lever box with dust-proof plate kit
SLC	5COP220000	Without lever box with endcap
L	5LEV120000	Standard lever box
IA2	5IDR520000*	ON/OFF high pressure kit
CB	5CAM120020	Cam kit

I Optional handlever

TYPE	CODE	DESCRIPTION
AL01/M10x200	170013020	For lever L, height 200 mm / 7.87 in

II Ports plug

TYPE	CODE	DESCRIPTION
G3/4	3XTAP732200*	Body conversion from 3-way to 2-way circuit

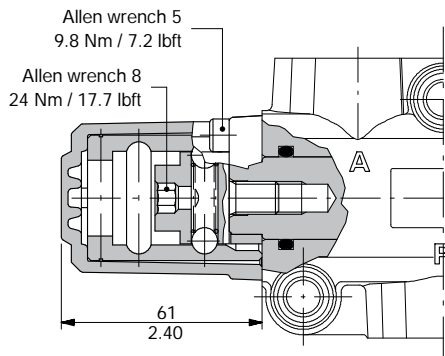
DF20

with mechanical control

Positioner kits

12 kit: with detent

Detent in positions 1 and 2.

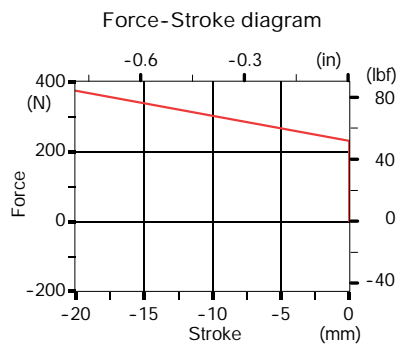
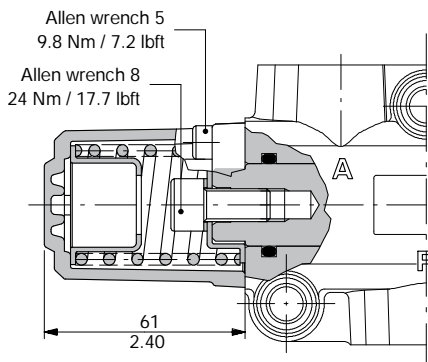


Operating features
Locking and unlocking force : ±10%

With spring return

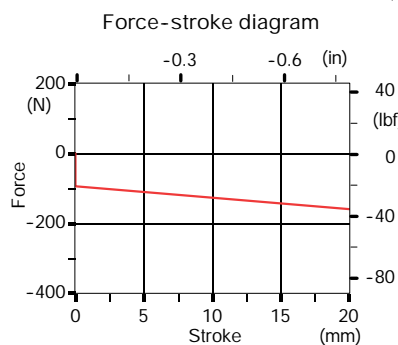
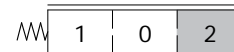
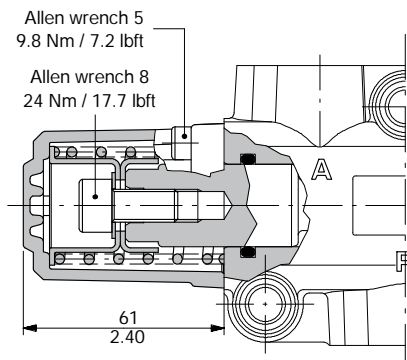
17 kit

Spring return in position 1.



18MB kit

Spring return in position 2.



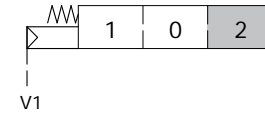
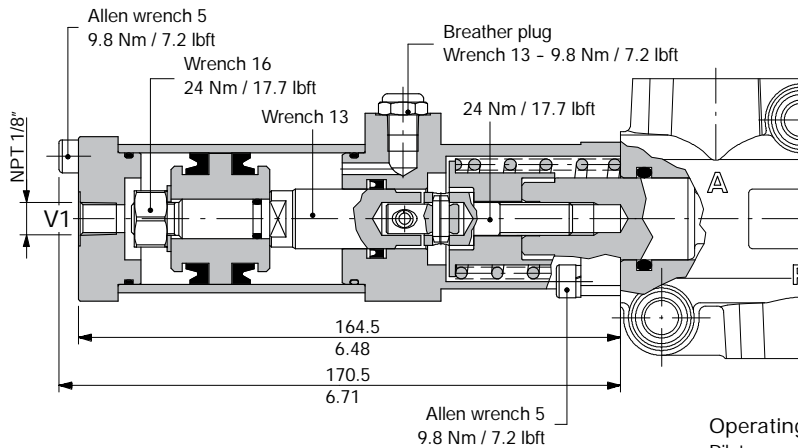
with mechanical control

DF20

Positioner kits

18P: ON/OFF pneumatic kit

With spring return in position 2.

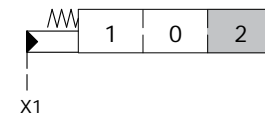
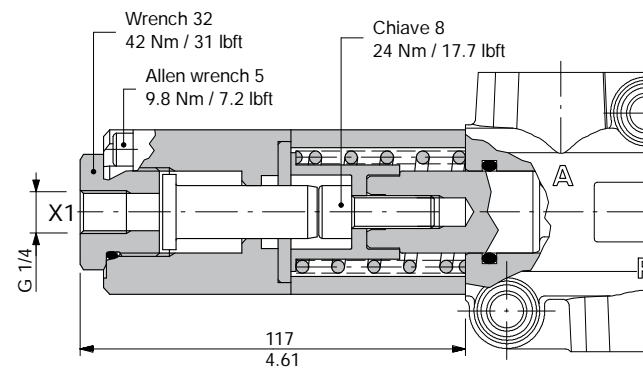


Operating features

Pilot pressure : min. 6 bar / 87 psi
max. 10 bar / 145 psi

18IA1: ON/OFF hydraulic kit

With high pressure pilot and spring return to position 2.



Operating features

Pilot pressure : min. 30 bar / 435 psi
max. 250 bar / 3600 psi

DF20

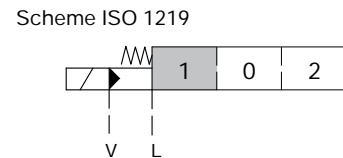
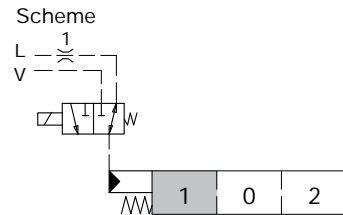
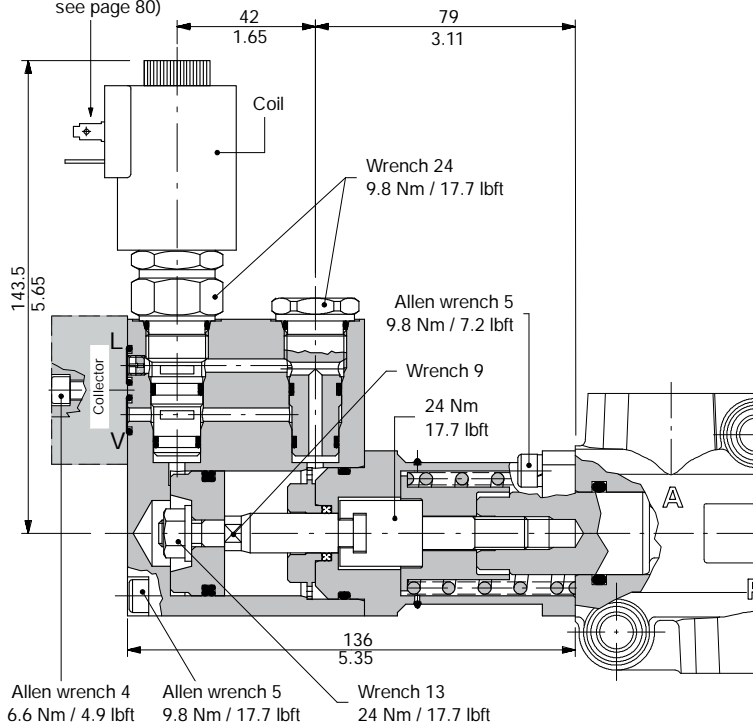
with mechanical control

Positioner kits

18E11: ON/OFF electro-hydraulic control

External pilot and drain, with spring return in position 2.

Connection ISO4400
(needs C02 connector,
see page 80)



Operating features

Pilot pressure : min.10 bar / 145 psi
: max.50 bar / 725 psi

Max. backpressure on
drain port L : 4 bar / 58 psi

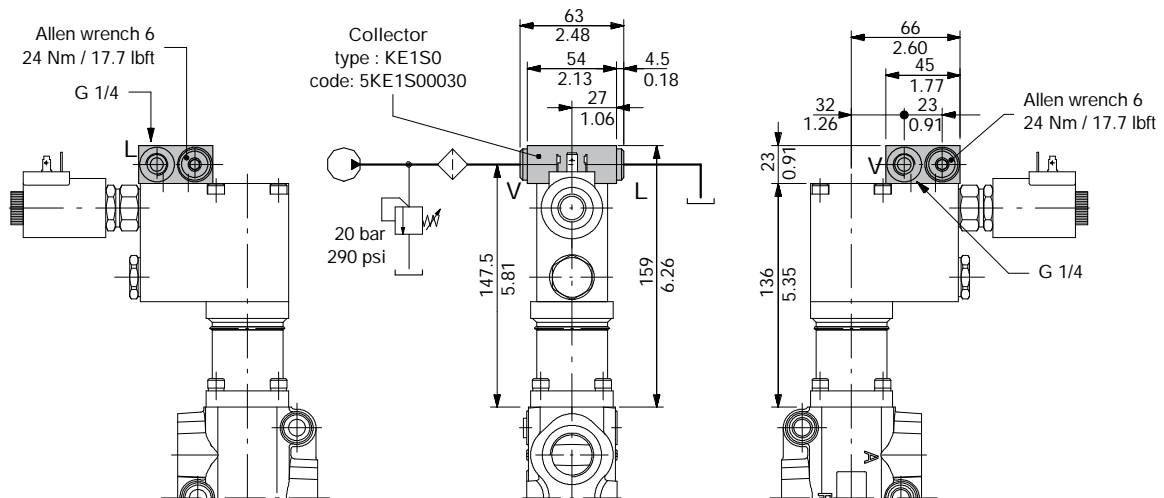
Solenoid operating features

Voltage tolerance : ±10%
Power rating : 21 W
Duty cycle : 100%

Ordering codes

CODE	DESCRIPTION
2S0EJ08002013	3-way solenoid valve
2X4350012	12VDC coil
2X4350024	24VDC coil

Collector kit for external pilot and drain



Ex: DF20/3A18E11SLC/KE1S0-12VDC

with mechanical control

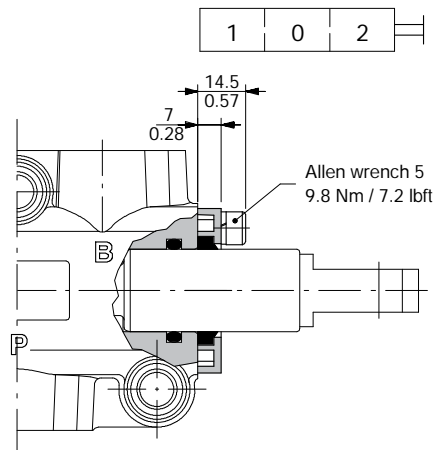
DF20

Control kits

Controls prearranged

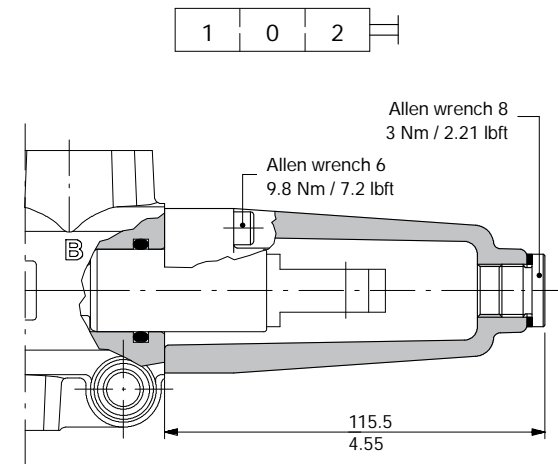
SLP kit

Mechanical control with dust-proof plate.



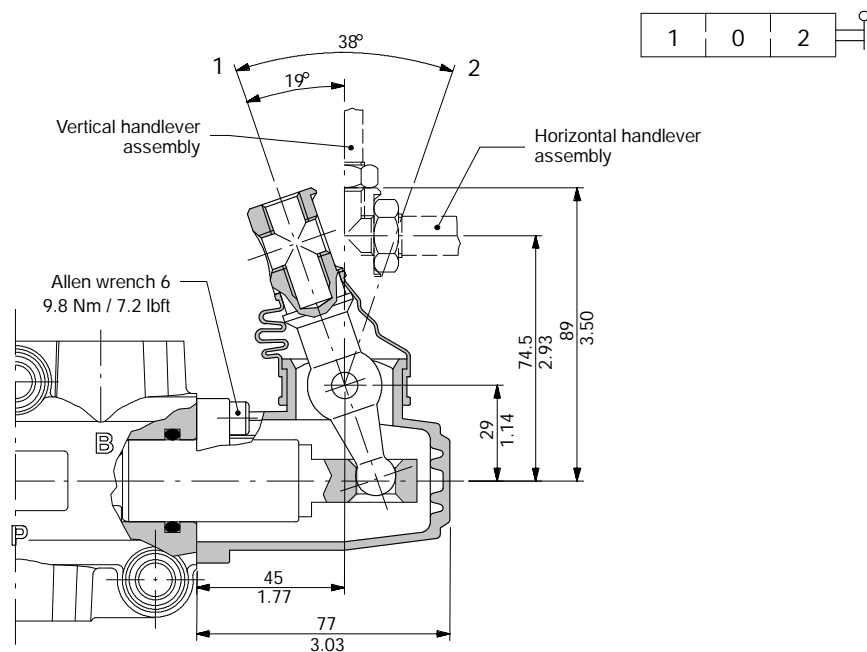
SLC kit

Protection cap usable with pneumatic and hydraulic spool positioner kits.



L lever control

Alumium with protection boot lever pivot box; it can be rotated 180° (execution L180).



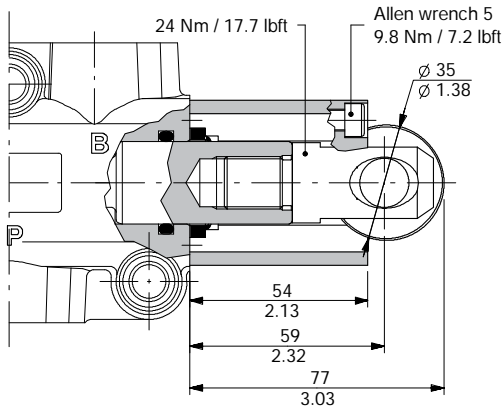
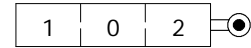
DF20

with mechanical control

Control kits

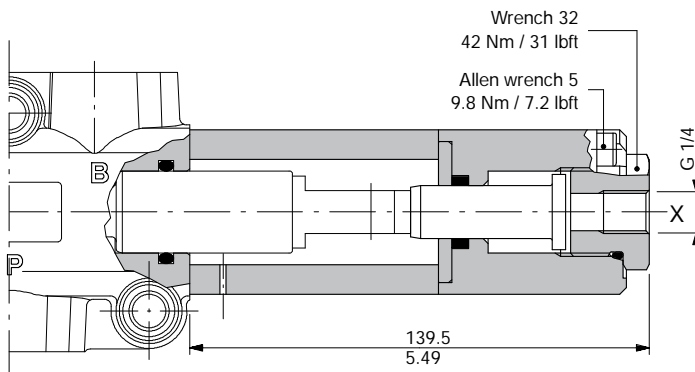
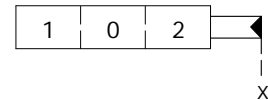
CB cam control

With bronze bearing; it must be coupled to 17 kit.



IA2: ON/OFF hydraulic control

With high pressure pilot; it must be coupled to 17 kit.



Operating features

Pilot pressure : min. 30 bar / 435 psi
max. 250 bar / 3600 psi

Umschaltventile

– DF25/3 –



– mit Hebel –

Bestellnr.	Typ	Code
254-160-01000	DF25/3A17SLP	127054020
254-160-01050	DF25/3A18PL	127055140
254-160-01100	DF25/3A8IB3	127050006
254-160-01150	DF25/3A17MEIA2-TAP(B)	127050013
254-160-01200	DF25/3A17MEIA2	127050014
254-160-01250	DF25/3B17MEIB2	127050015
254-160-01300	DF25/3A8IA3	127051380
254-160-01350	DF25/3A12L	127052040
254-160-01400	DF25/3A11L	127052041
254-160-01450	DF25/3A17L	127054040
254-160-01500	DF25/3A17C	127054050
254-160-01550	DF25/3A17MEIB2	127054090
254-160-01600	DF25/3A17IA2	127054380
254-160-01650	DF25/3B12L	127072040
254-160-01700	DF25/3B17IA2-ME	127074091
254-160-01750	DF25/3B18E11L-KE1R0-24VDC	127075040

DF

with mechanical control

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

		DF5	DF10	DF20	DF25
N. of available ways		2-3-6	2-3-6	2-3-6	3
Nominal flow rating		60 l/min	90 l/min	140 l/min	280 l/min
Operating pressure (maximum)		315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi
Internal leakage A(B)→T	Δp=100 bar 1450 psi with fluid and valve at 40°C	5 cm ³ /min 0.31 in ³ /min	5 cm ³ /min 0.31 in ³ /min	8 cm ³ /min 0.49 in ³ /min	8 cm ³ /min 0.49 in ³ /min
Hydraulic fluid		Mineral base oil			
Fluid temperature	with NBR seals	from -20° to 80°C			
	with FPM seals	from -20° to 100°C			
Viscosity	operating range	from 15 to 75 mm ² /s - from 15 to 75 cSt			
	minimum	12 mm ² /s - 12 cSt			
	maximum	400 mm ² /s - 400 cSt			
Max. level of contamination		19/16 - ISO 4406			
Ambient temperature		from -40° to 60°C			

NOTE - For different working conditions please contact Customer Service.

Standard threads

ALL PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)
DF5	G 3/8	3/4-16 UNF-2B (SAE 8)
DF10	G 1/2	7/8-14 UNF-2B (SAE 10)
DF20	G 3/4	1 1/16-12 UN-2B (SAE 12)
DF25	G 1	1 5/16-12 UN-2B (SAE 16)
PILOT PORTS		
Pneumatic	NPT 1/8-27	NPT 1/8-27
Hydraulic	G 1/4	9/16-18 UNF-2B (SAE 6)

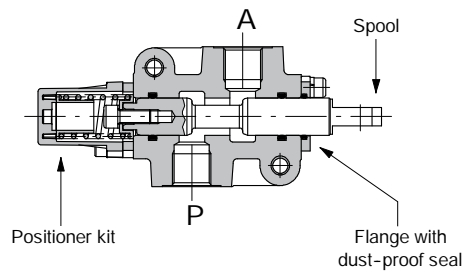
with mechanical control

DF

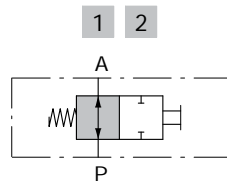
Hydraulic circuit

2-way

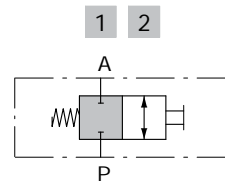
Available as body only in DF5/2 execution; for other executions 3-way body is used.



Spool type A

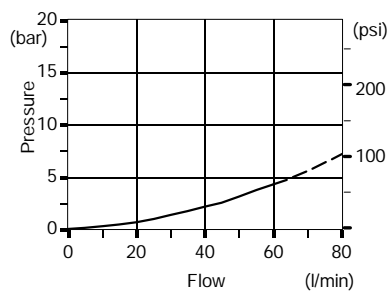


Spool type B



Performance data

Pressure drop versus flow
P→A



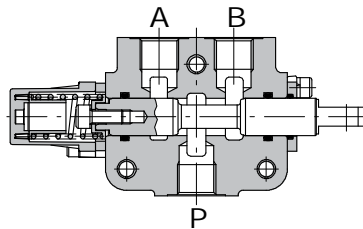
DF

with mechanical control

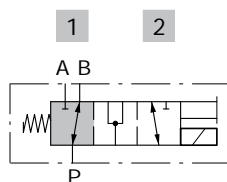
Hydraulic circuit

3-way

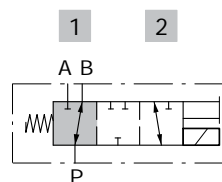
It's possible to obtain 2-way diverter valve plugging port A or B.



Spool type A



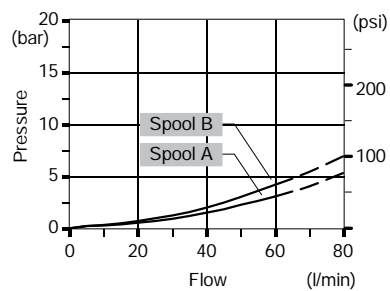
Spool type B B



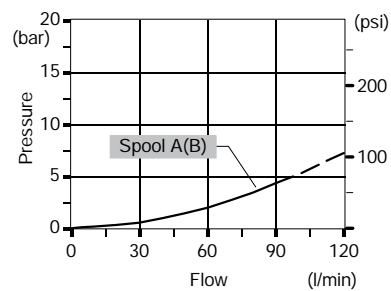
Performance data

Pressure drop versus flow: P→A(B)

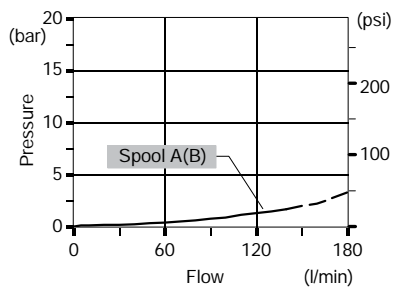
DF5/3



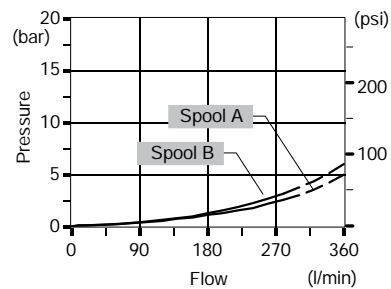
DF10/3



DF20/3



DF25/3

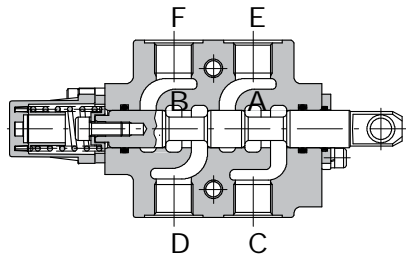


with mechanical control

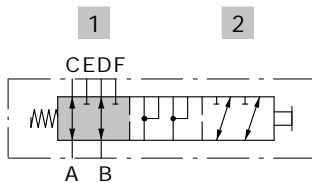
DF

Hydraulic circuit

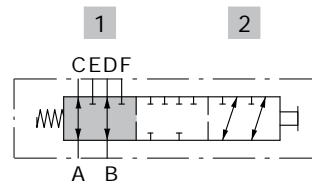
6-way



Spool type A



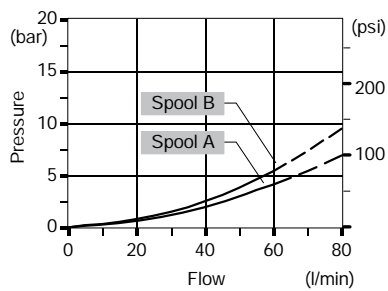
Spool type B



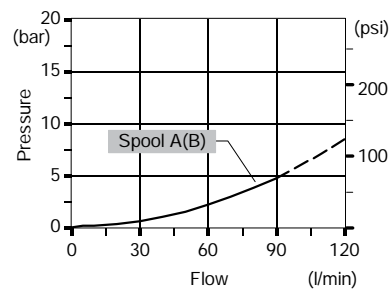
Performance data

Pressure drop versus flow: A→C(E).

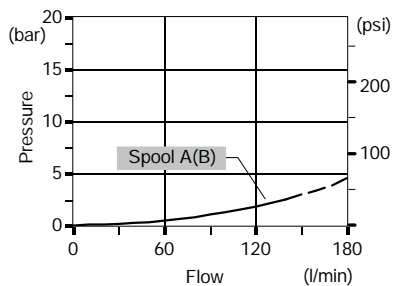
DF5/6



DF10/6



DF20/6

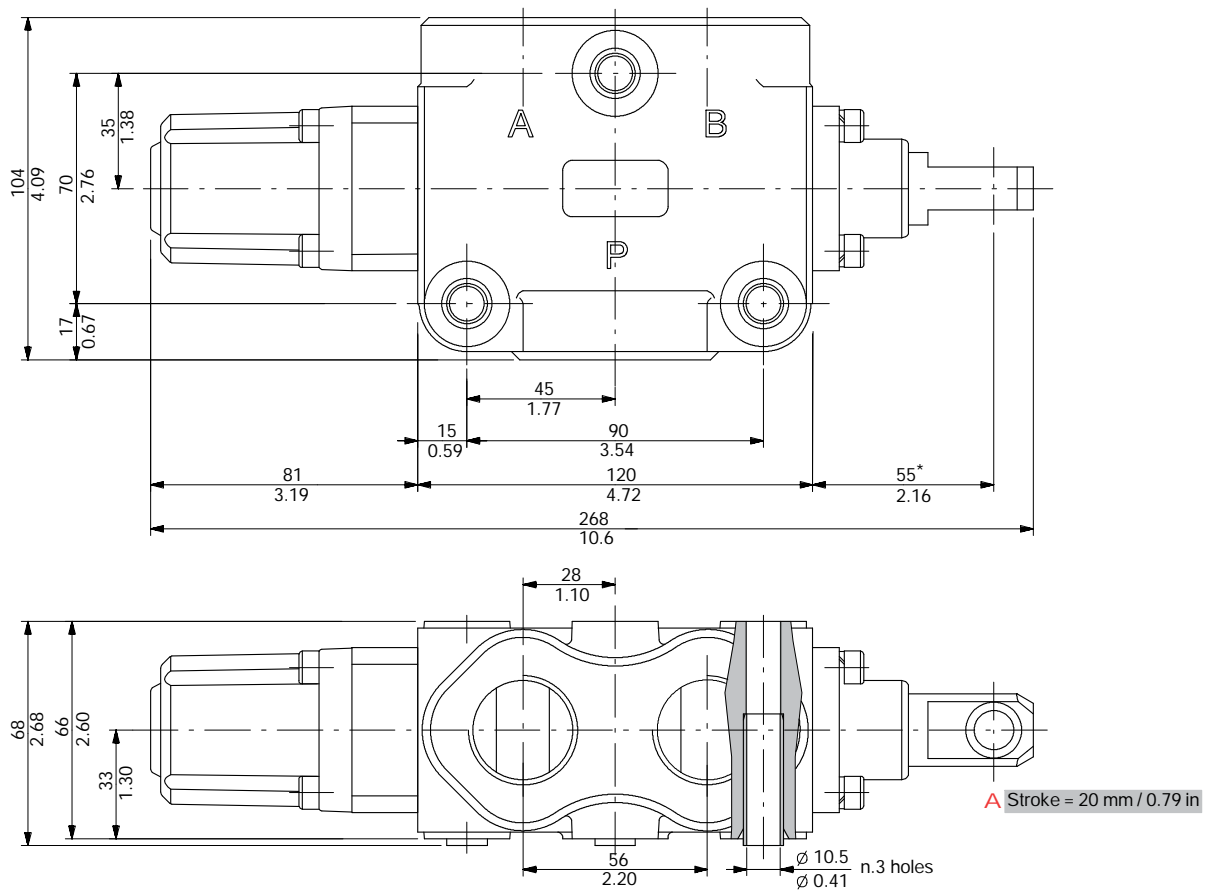


with mechanical control

DF25

Dimensional data

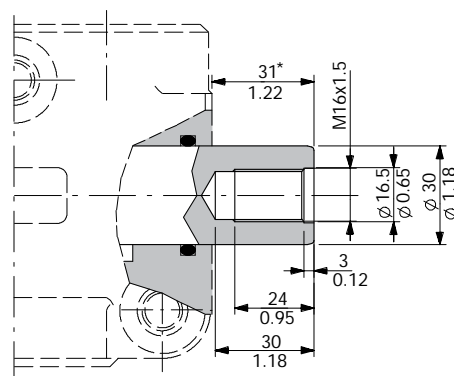
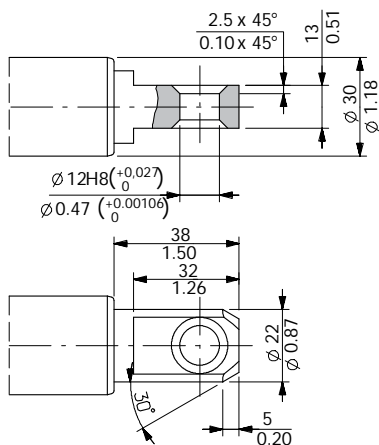
3-way DF25/3 valve



Spool end

Standard end

Rotary cam prearrangement



NOTA (*) - With spool out (positioner kit type 17)

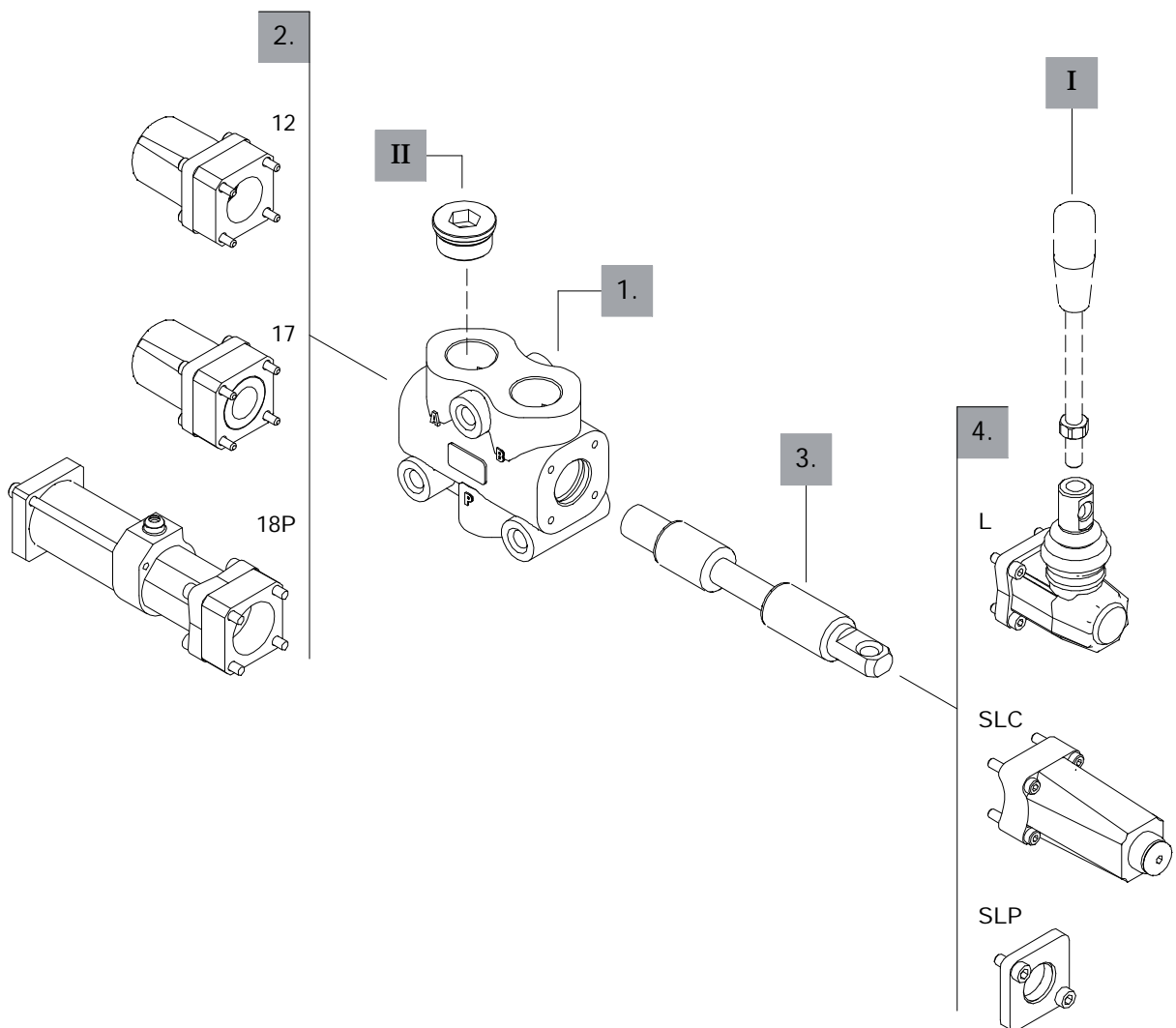
DF25

with mechanical control

Ordering codes

Description example :

Diverter valve DF25/3 A 17 SLP
 1. 2. 3. 4.



with mechanical control

DF25

Ordering codes

3-way

1. Body kit *

TYPE	CODE	DESCRIPTION
DF25/3	5CO2271300	Standard body kit, BSP threaded

Include body and seals

2. Spool options

TIPO	CODICE	DESCRIZIONE
A	3CAS125310	3-way, 2 positions with ports connected in transit position
B	3CAS125410	3-way, 2 positions with ports closed in transit position
AC	3CAS125320	As type A prearranged for cam control
BC	3CAS125420	As type B prearranged for cam control

3. Positioner kits page 42

TYPE	CODE	DESCRIPTION
12	5V12125000	Detent in positions 1 and 2
17	5V17125000	Spring return in position 1
18P	5V18125700	ON/OFF pneumatic kit with spring return in position 2
18E11	5V18125350	12VDC ON/OFF electro-hydraulic kit with spring return in position 2
	5V18125351	24VDC ON/OFF electro-hydraulic kit with spring return in position 2

4. Control kits page 45

TYPE	CODE	DESCRIPTION
SLP	5COP125000	Without lever box with dust-proof plate kit
SLC	5COP220000	Without lever box with endcap
L	5LEV120000	Standard lever box
IA2	5IDR520000*	ON/OFF high pressure kit
CB	5CAM125020	Cam kit

I Optional handlever

TYPE	CODE	DESCRIPTION
AL01/M10x200	170012020	For lever L, height 200 mm / 7.87 in

II Ports plug

TYPE	CODE	DESCRIPTION
G1	3XTAP740210*	Body conversion from 3-way to 2-way circuit

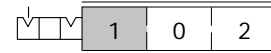
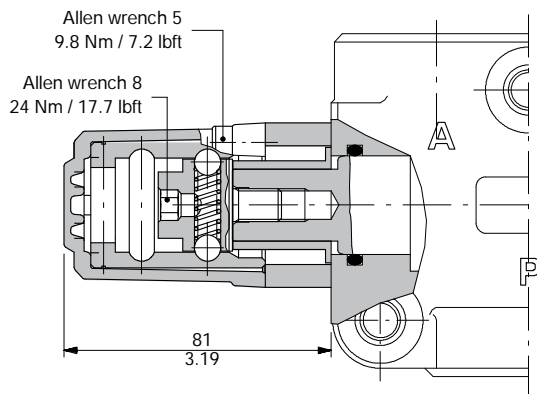
DF25

with mechanical control

Positioner kits

12 kit: with detent

Detent in positions 1 and 2.

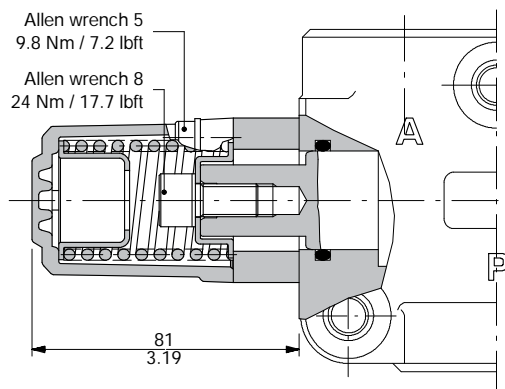


Operating features

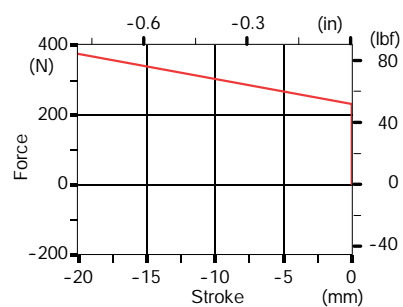
Locking and unlocking force : ±10%

17 kit: with spring return

Spring return in position 1.



Force-Stroke diagram



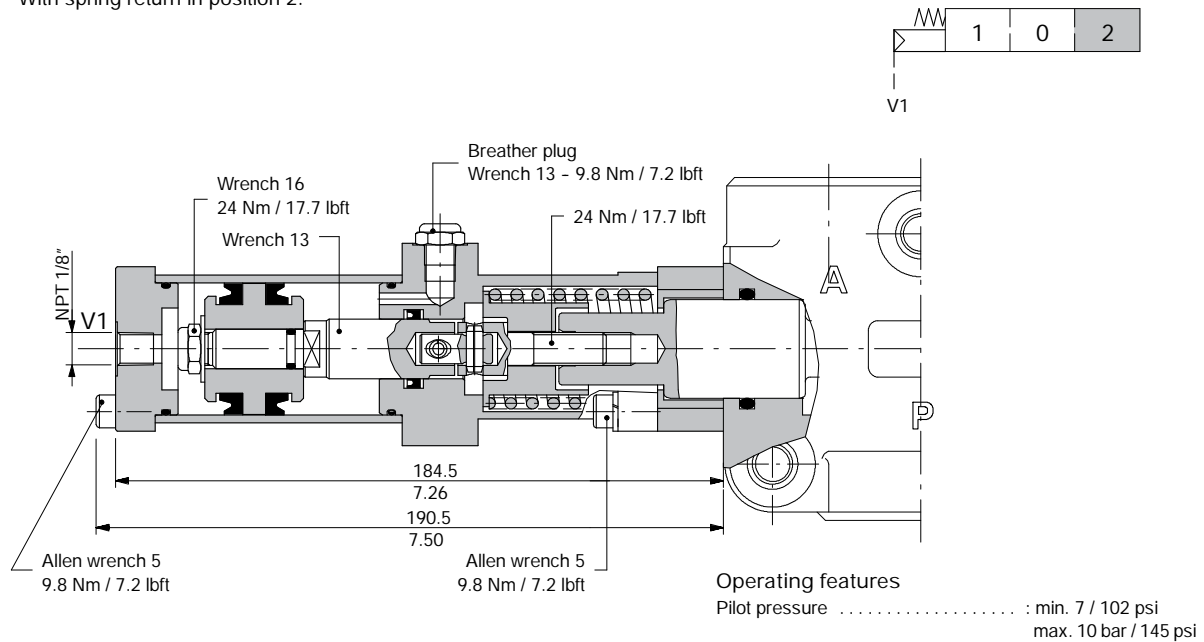
with mechanical control

DF25

Positioner kits

18P: ON/OFF pneumatic kit

With spring return in position 2.



DF25

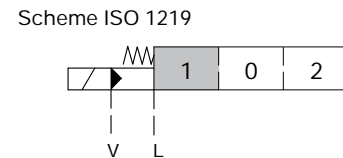
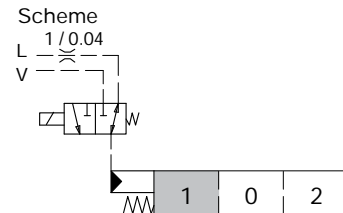
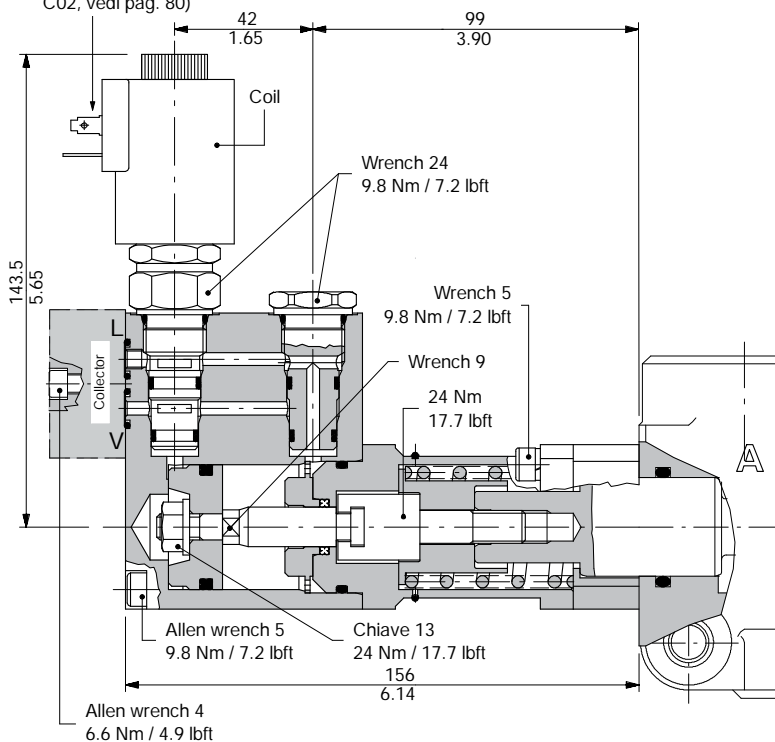
with mechanical control

Positioner kits

18E11: ON/OFF electro-hydraulic control

External pilot and drain, with spring return in position 2.

Connessione ISO4400
(richiede connettore tipo
C02, vedi pag. 80)



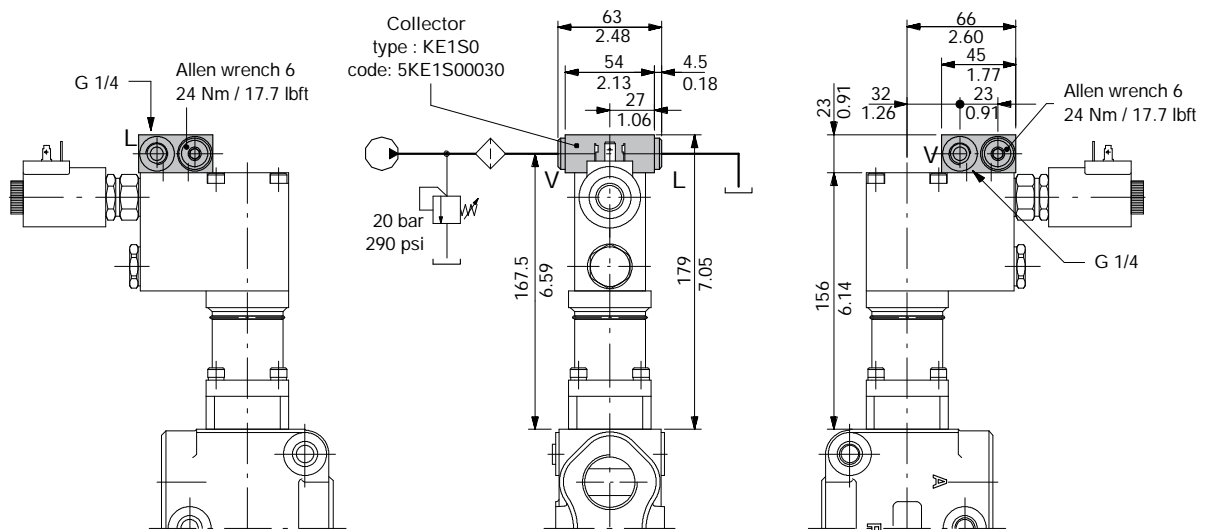
Operating features
 Pilot pressure : min.10 bar / 145 psi
 : max.50 bar / 725 psi
 Max. backpressure on
 drain port L : 4 bar / 58 psi

Solenoid operating features
 Voltage tolerance : ±10%
 Power rating : 21 W
 Duty cycle : 100%

Ordering codes

CODE	DESCRIPTION
2S0EJ08002013	3-way solenoid valve
2X4350012	12VDC coil
2X4350024	24VDC coil

Collector kit for external pilot and drain



Ex: DF25/3A18E11SLC/KE1S0-12VDC

with mechanical control

DF25

Control kits

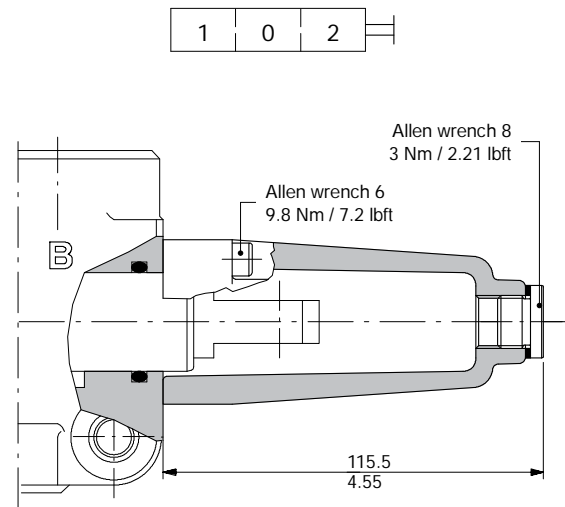
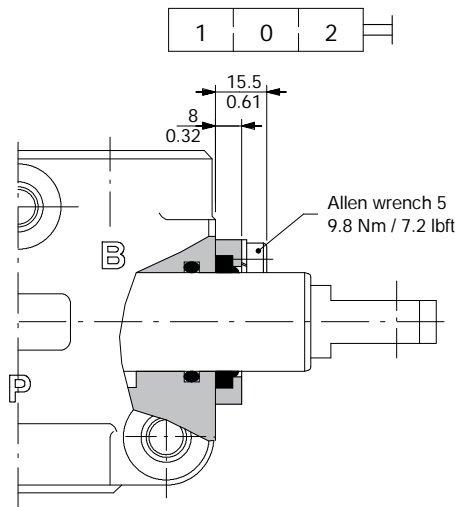
Controls prearrangemet

SLP kit

Mechanical control with dust-proof plate.

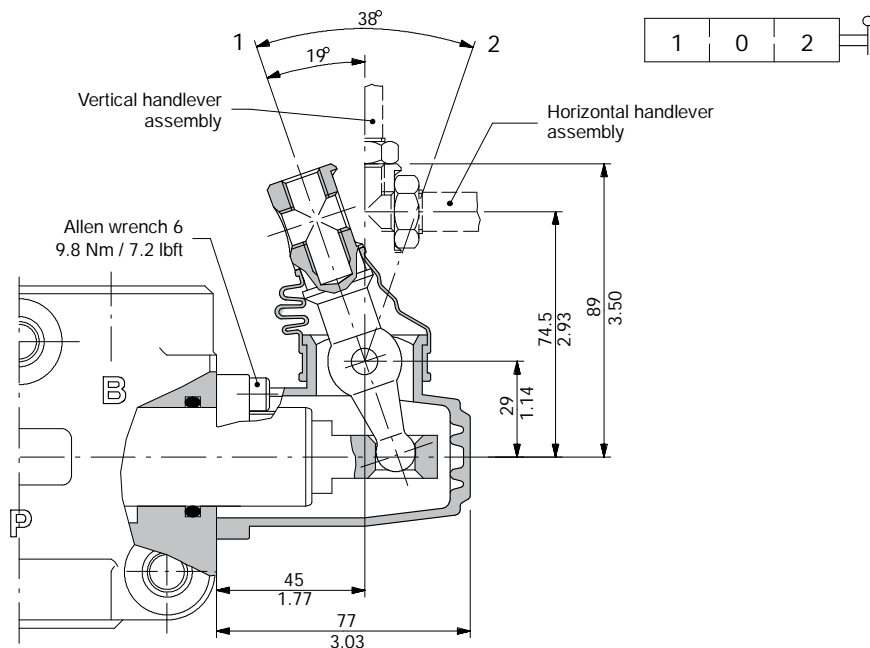
SLC kit

Protection cap usable with pneumatic and hydraulic spool positioner kits.



L lever control

Alumium with protection boot lever pivot box; it can be rotated 180° (execution L180).



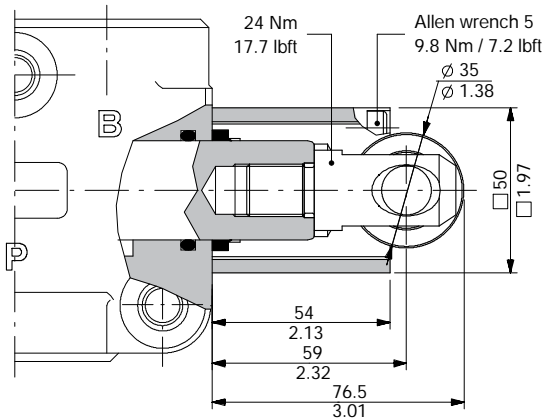
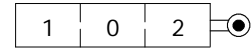
DF25

with mechanical control

Control kits

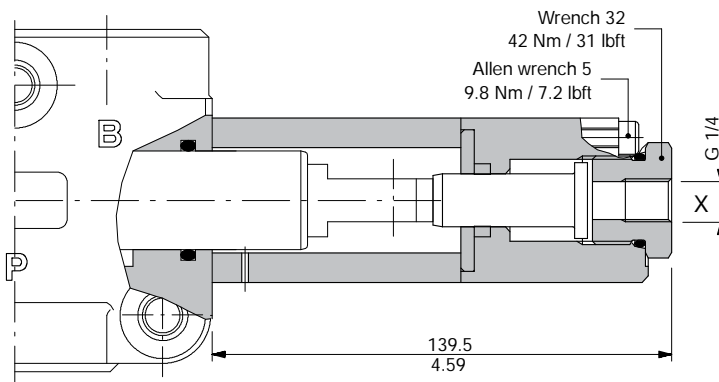
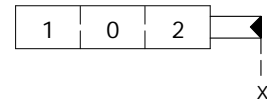
CB cam control

With bronze bearing; it must be coupled to 17 kit.



IA2: ON/OFF hydraulic control

With high pressure pilot; it must be coupled to 17 kit.



Operating features
Pilot pressure : min. 30 bar / 435 psi
max. 250 bar / 3600 psi

Umschaltventile

– DF5/6 –



– mit Hebel –

Bestellnr.	Typ	Code
254-170-01000	DF5/6A12L	122082040
254-170-01050	DF5/6A17L	122084040
254-170-01100	DF5/6A17SLP	122084020
254-170-01150	DF5/6AT17SLP	122084010
254-170-01200	DF5/6A18PSLC	122085130
254-170-01250	DF5/6A18IA1SLC	122080028
254-170-01300	DF5/6A18IA1L	122085340
254-170-01350	DF5/6B12L	122092040
254-170-01400	DF5/6B12SL	122092060
254-170-01450	DF5/6B17YIA2	122080007
254-170-01500	DF5/6B17YMEIA2	122080034
254-170-01550	DF5/6A17YMEIA2	122080036
254-170-01600	DF5/6A11L	122082045
254-170-01650	DF5/6A17IA2	122084080
254-170-01700	DF5/6A17IB2	122084090
254-170-01750	DF5/6B17L	122094040
254-170-01800	DF5/6B17C	122094050
254-170-01850	DF5/6B17PL-MC	122094141

DF

with mechanical control

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

		DF5	DF10	DF20	DF25
N. of available ways		2-3-6	2-3-6	2-3-6	3
Nominal flow rating		60 l/min	90 l/min	140 l/min	280 l/min
Operating pressure (maximum)		315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi
Internal leakage A(B)→T	Δp=100 bar 1450 psi with fluid and valve at 40°C	5 cm ³ /min 0.31 in ³ /min	5 cm ³ /min 0.31 in ³ /min	8 cm ³ /min 0.49 in ³ /min	8 cm ³ /min 0.49 in ³ /min
Hydraulic fluid		Mineral base oil			
Fluid temperature		with NBR seals from -20° to 80°C			
		with FPM seals from -20° to 100°C			
Viscosity		operating range from 15 to 75 mm ² /s - from 15 to 75 cSt			
		minimum 12 mm ² /s - 12 cSt			
		maximum 400 mm ² /s - 400 cSt			
Max. level of contamination		19/16 - ISO 4406			
Ambient temperature		from -40° to 60°C			

NOTE - For different working conditions please contact Customer Service.

Standard threads

ALL PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)
DF5	G 3/8	3/4-16 UNF-2B (SAE 8)
DF10	G 1/2	7/8-14 UNF-2B (SAE 10)
DF20	G 3/4	1 1/16-12 UN-2B (SAE 12)
DF25	G 1	1 5/16-12 UN-2B (SAE 16)
PILOT PORTS		
Pneumatic	NPT 1/8-27	NPT 1/8-27
Hydraulic	G 1/4	9/16-18 UNF-2B (SAE 6)

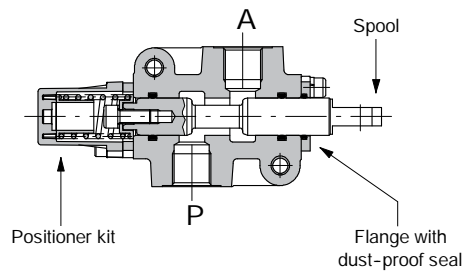
with mechanical control

DF

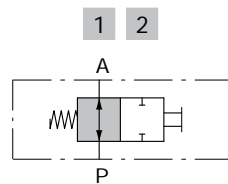
Hydraulic circuit

2-way

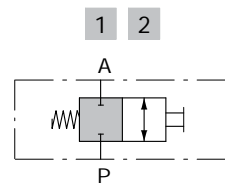
Available as body only in DF5/2 execution; for other executions 3-way body is used.



Spool type A

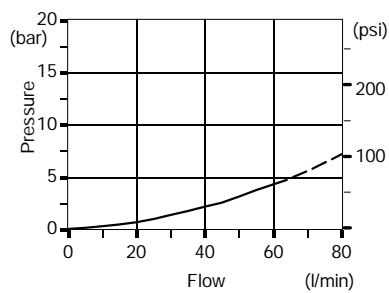


Spool type B



Performance data

Pressure drop versus flow
P→A



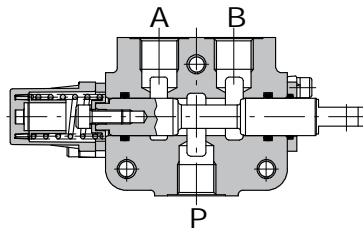
DF

with mechanical control

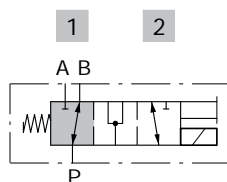
Hydraulic circuit

3-way

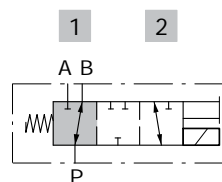
It's possible to obtain 2-way diverter valve plugging port A or B.



Spool type A



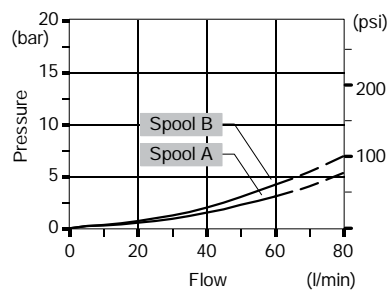
Spool type B



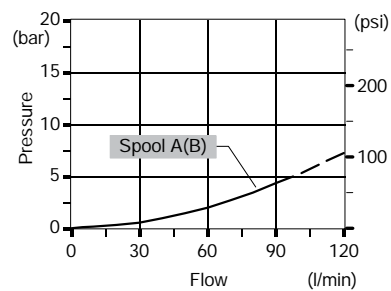
Performance data

Pressure drop versus flow: P→A(B)

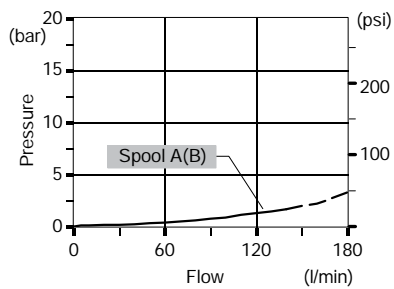
DF5/3



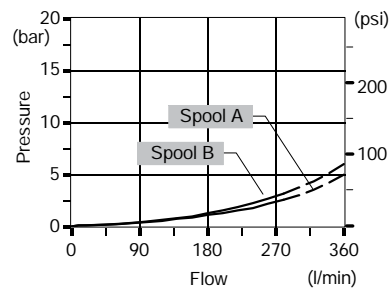
DF10/3



DF20/3



DF25/3

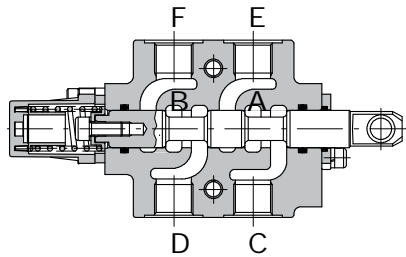


with mechanical control

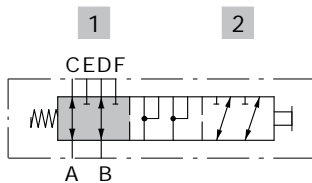
DF

Hydraulic circuit

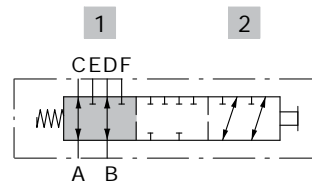
6-way



Spool type A



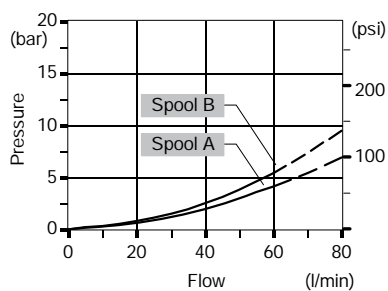
Spool type B



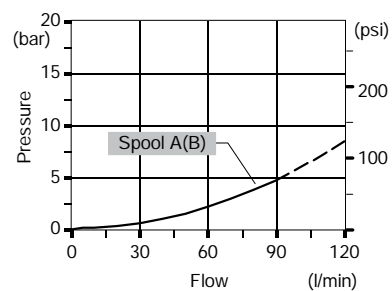
Performance data

Pressure drop versus flow: A→C(E).

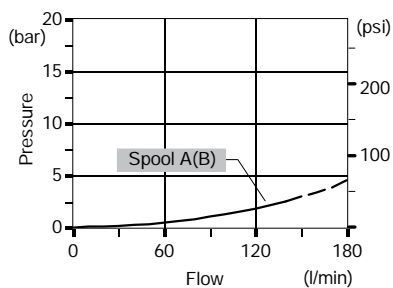
DF5/6



DF10/6



DF20/6

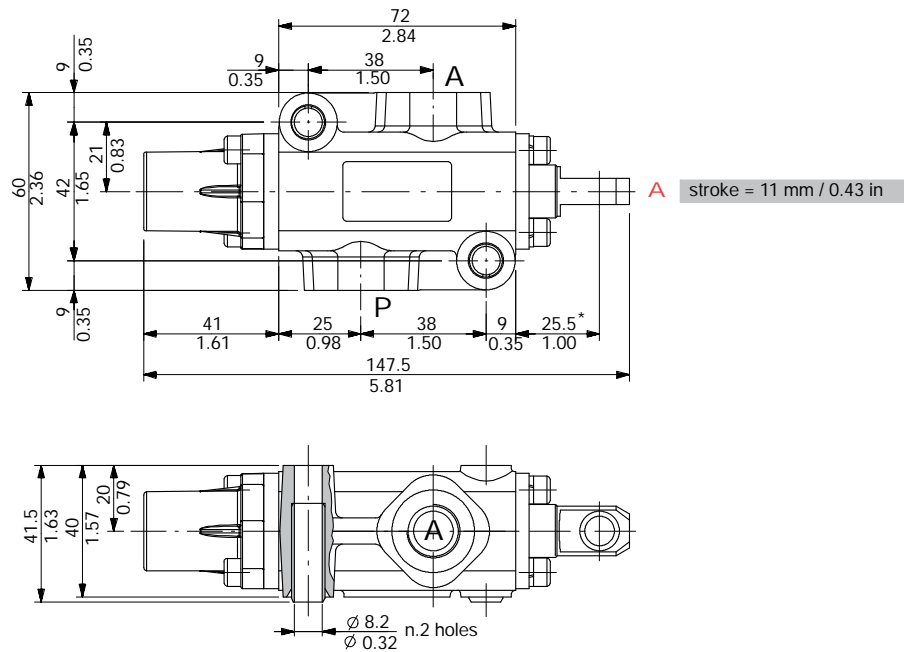


DF5

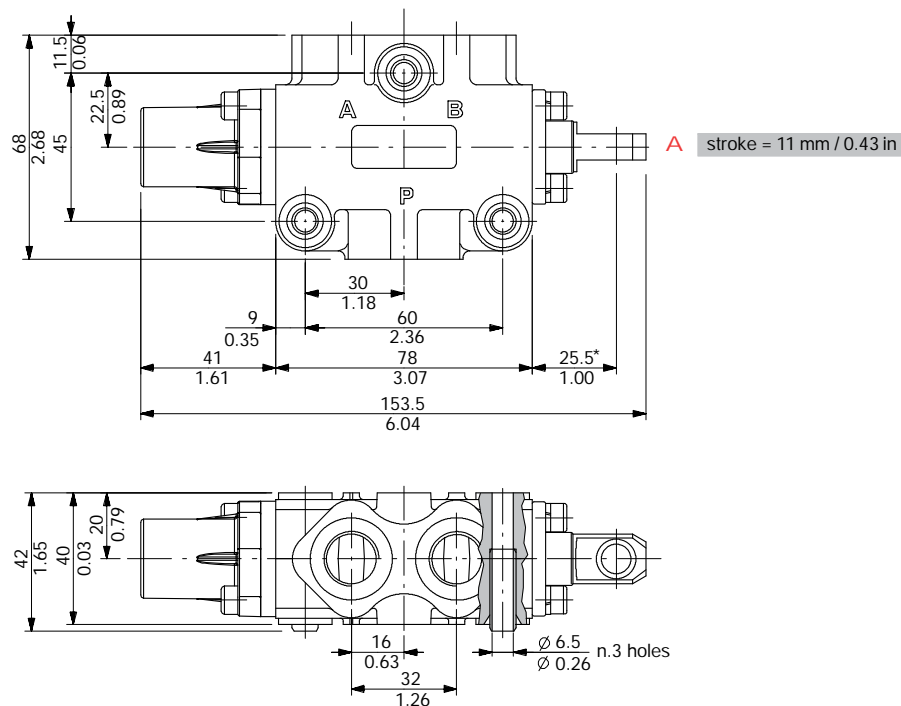
with mechanical control

Dimensional data

2-way DF5/2 valve



3-way DF5/3 valve

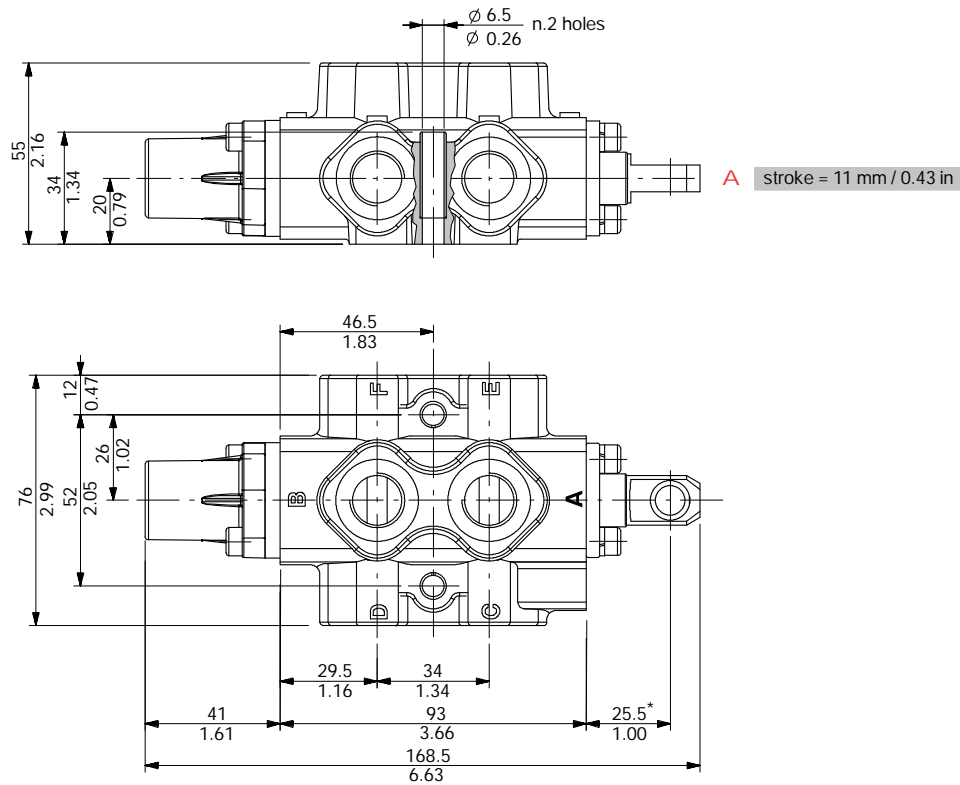


With mechanical control

DF5

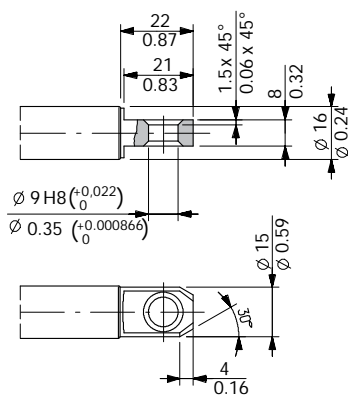
Dimensional data

6-way DF5/6 valve



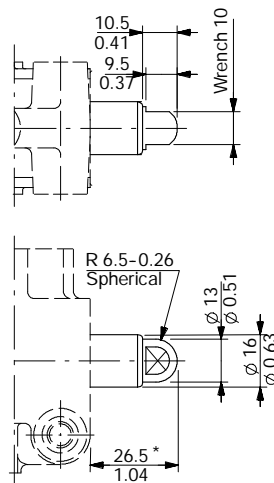
Spool end

Standard end

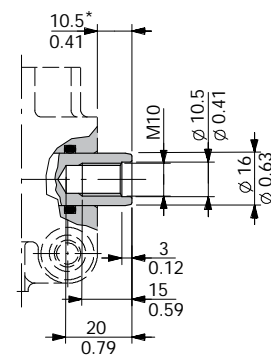


NOTE (*) - With spool out
(positioner kit type 17)

Spherical end type T



Rotary cam prearrangement



DF5

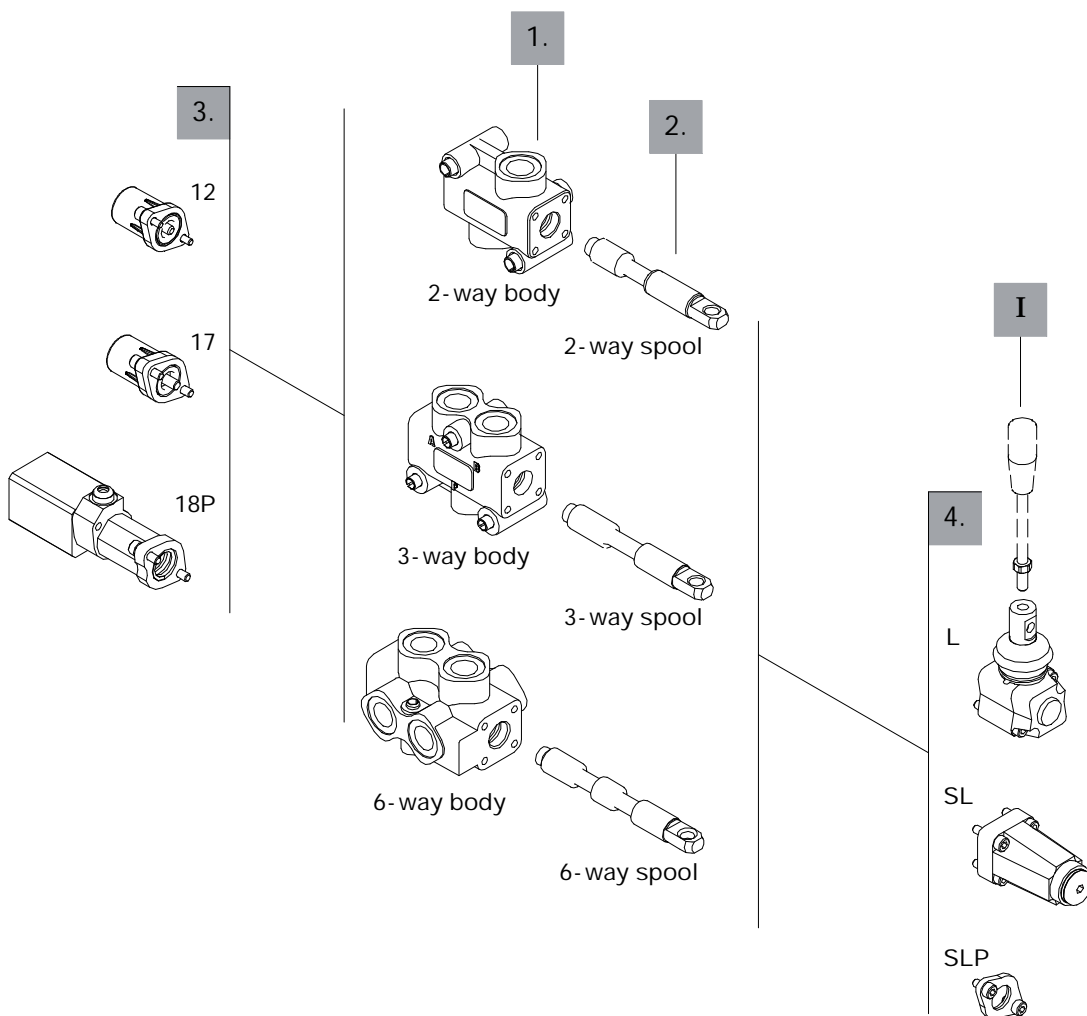
with mechanical control

Ordering codes

Description example:

Diverter valve DF5/3 A 17 SLP

1. 2. 3. 4.



With mechanical control

DF5

Ordering codes

2-way

1. Body kit *

TYPE	BODY	DESCRIPTION
DF5/2	5CO2220300	Standard body kit, BSP threaded

Include body and seals

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105210	2 positions with open centre in neutral
B	3CAS105110	2 positions with closed centre in neutral
AT	3CAS105230	As type A with spherical end
BT	3CAS105130	As type B with spherical end
AC	3CAS105220	As type A prearranged for cam control
BC	3CAS105120	As type B prearranged for cam control

3-way

1. Body kit *

TYPE	CODE	DESCRIPTION
DF5/3	5CO2221300	Standard body kit, BSP threaded

Include body and seal

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105310	3-way, 2 positions with ports connected in transit position
B	3CAS105410	3-way, 2 positions with ports closed in transit position
AT	3CAS105330	As type A with spherical end
AC	3CAS105320	As type A prearranged for cam control
BC	3CAS105420	As type B prearranged for cam control

6-way

1. Body kit *

TYPE	CODE	DESCRIPTION
DF5/6	5CO2222300	Standard body kit, BSP threaded

Include body and seals

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS105610	6-way, 2 positions with ports connected in transit position
B	3CAS105710	6-way, 2 positions with ports closed in transit position
AC	3CAS105620	As type A prearranged for cam control
BC	3CAS105720	As type B prearranged for cam control

3. Positioner kits page 14

TYPE	CODE	DESCRIPTION
12	5V12105000	Detent in positions 1 and 2
17	5V17105000	Spring return in position 1
17Y	5V17105010	As type 17, it must be coupled to IA2 control
18ME	5V18405110	Spring return in position 2
18P	5V18105700	ON/OFF pneumatic kit with spring return in position 2
18IA1	5V18105820*	ON/OFF high pressure hydraulic kit with spring return in position 2

4. Control kits page 16

TYPE	CODE	DESCRIPTION
SLP	5COP105000	Without lever box with dust-proof plate kit
SLC	5COP205000	Without lever box with endcap
TQ	5TEL105110	Flexible cable connection
L	5LEV105000	Standard kever box
IA2	5IDR505000*	ON/OFF high pressure kit
CB	5CAM105020	Cam kit

I Optional handlever

TYPE	CODE	DESCRIPTION
AL01/M8x120	170011012	For lever L: height 120 mm / 4.72 in

DF5

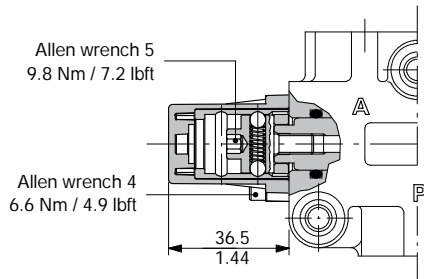
with mechanical control

Positioner kits

With detent

12 kit

Detent in positions 1 and 2.



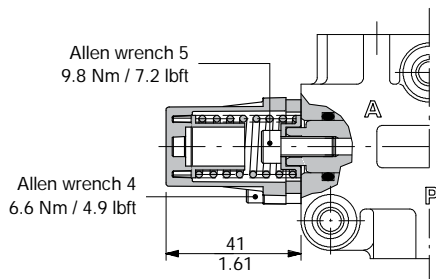
Operating features

Locking and unlocking force : 100 N / 22.5 lbf ±10%

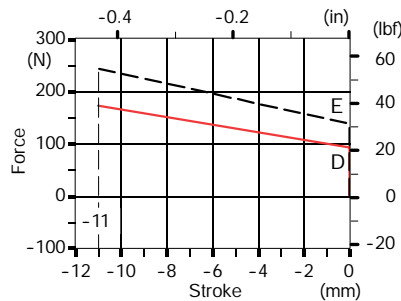
With spring return

17 kit

Spring return in position 1; it's supplied with standard spring type D (see force-stroke diagram). Available also with heavier spring type E (17ME code 5V17305000)



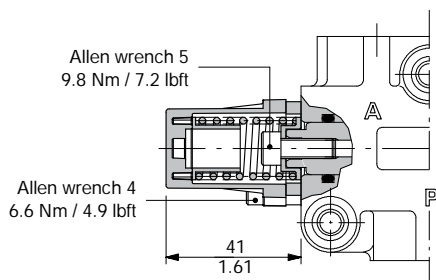
Force-Stroke diagram



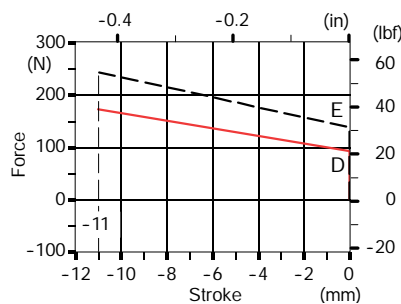
Kit 17Y

As kit 17, it must be coupled to IA2 control on page 17

It's available also with heavier spring type E (17YME code: 5V17305003).



Force-Stroke diagram



With mechanical control

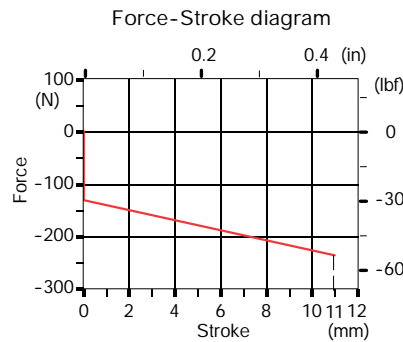
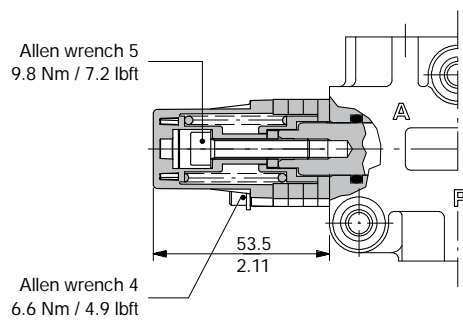
DF5

Positioner kits

With spring return

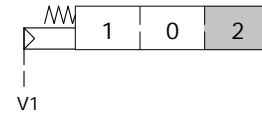
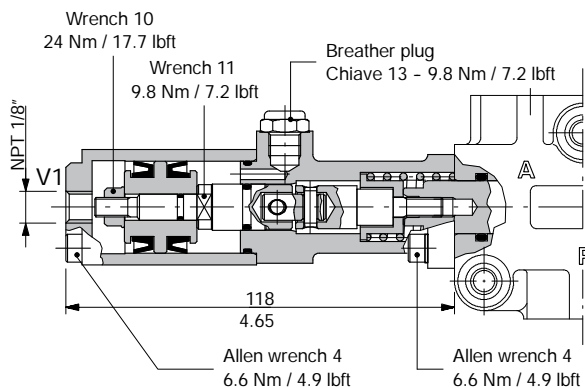
18ME kit

Spring return in position 2.



18P: ON/OFF pneumatic kit

With spring return in position 2.

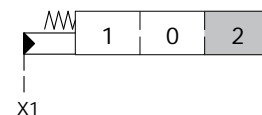
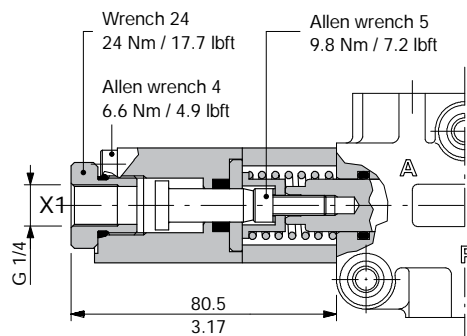


Operating features

Pilot pressure : min 6 bar / 87 psi
max. 10 bar / 145 psi

18IA1: ON/OFF hydraulic kit

With high pressure pilot and spring return to position 2.



Operating features

Pilot pressure : min. 30 bar / 435 psi
max. 250 bar / 3600 psi

DF5

with mechanical control

Control kits

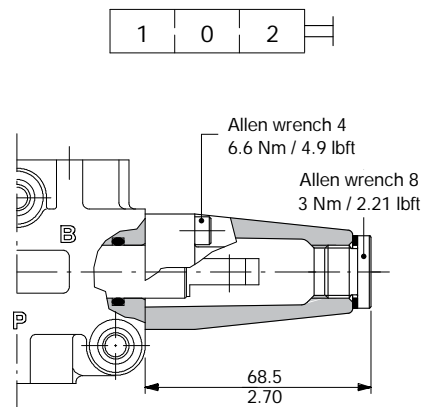
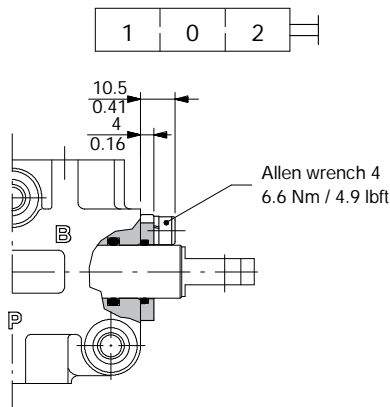
Controls prearranged

SLP kit

Mechanical control with dust-proof plate.

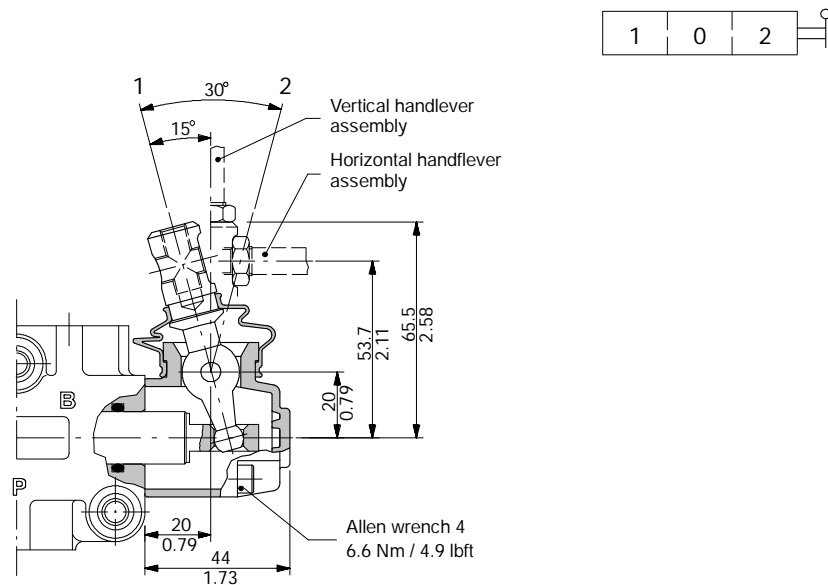
SLC kit

Protection cap usable with pneumatic and hydraulic spool positioner kits.



L lever control

Alumium with protection boot lever pivot box; it can be rotated 180° (execution L180).



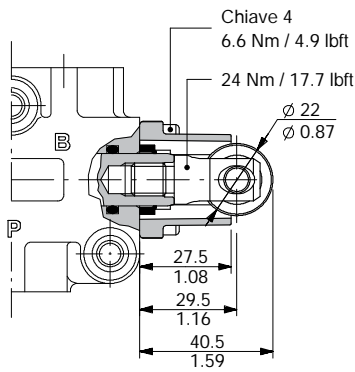
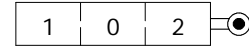
With mechanical control

DF5

Control kits

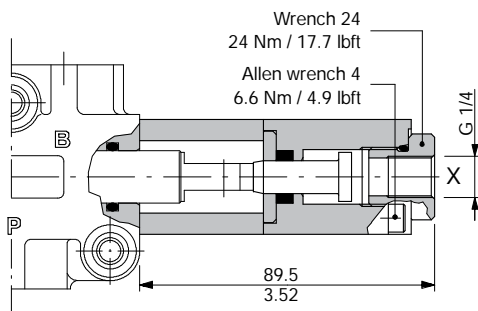
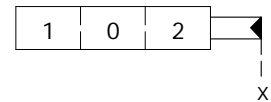
CB cam control

With bronze bearing; it must be coupled to 17 kit.



IA2: ON/OFF hydraulic control

With high pressure pilot; it must be coupled to 17Y kit (see page 14).



Operating features

Pilot pressure : min. 30 bar / 435 psi
max. 250 bar / 3600 psi

DF5

with mechanical control

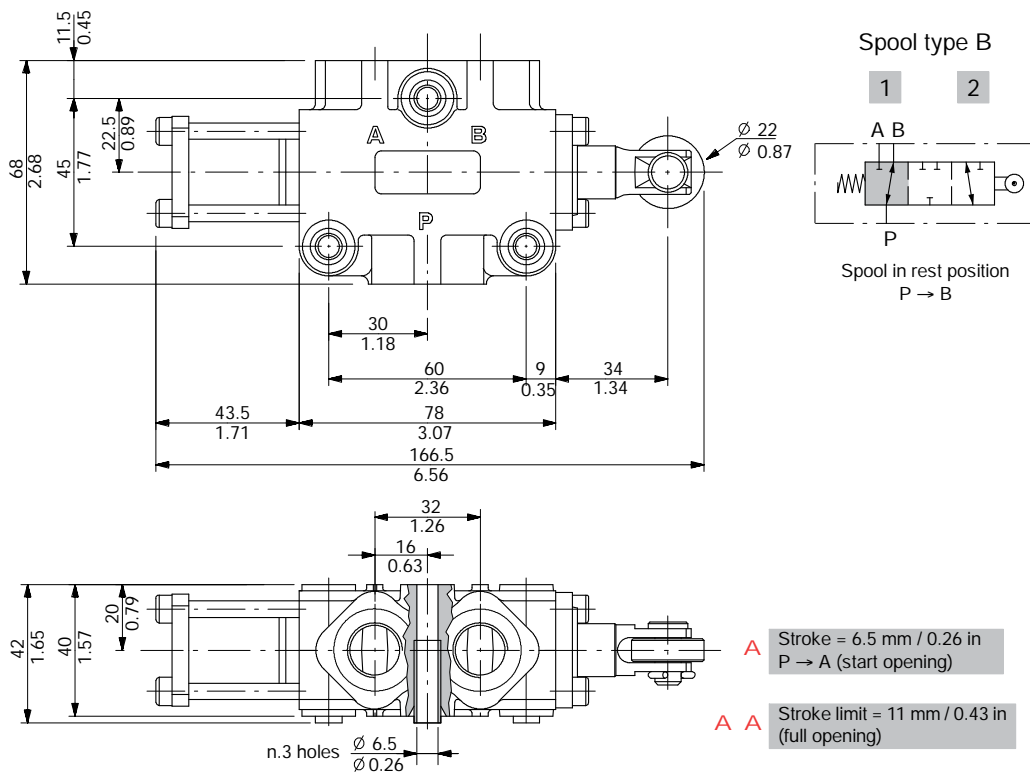
Other executions

Cam spool control suggested for severe applications; it requires a special body, spool and control kit.

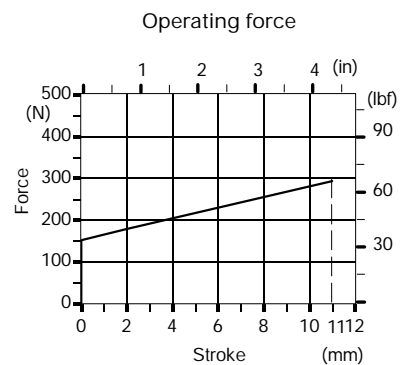
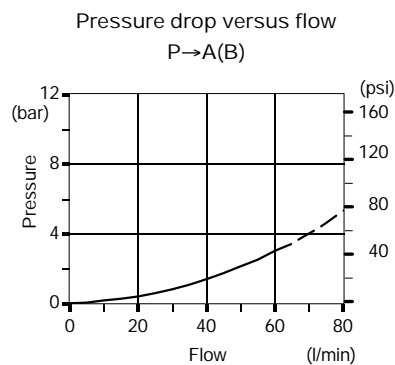
3-way DFC050/3 valve

Complete description: DFC050/3B17GSLP-<CVN> code: 122050023

Valve is supplied painted as standard, with one coat of Primer black antirust paint



Performance data



With mechanical control

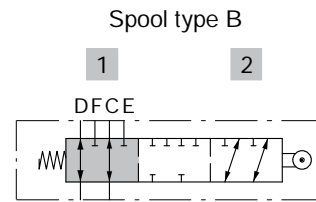
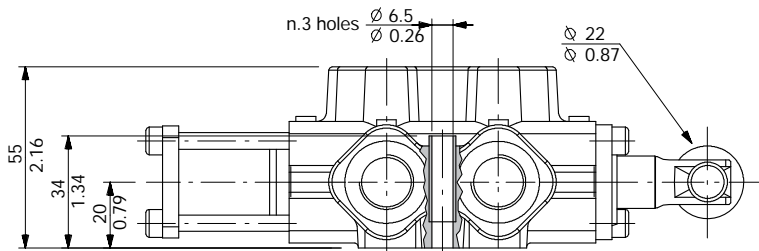
DF5

Other executions

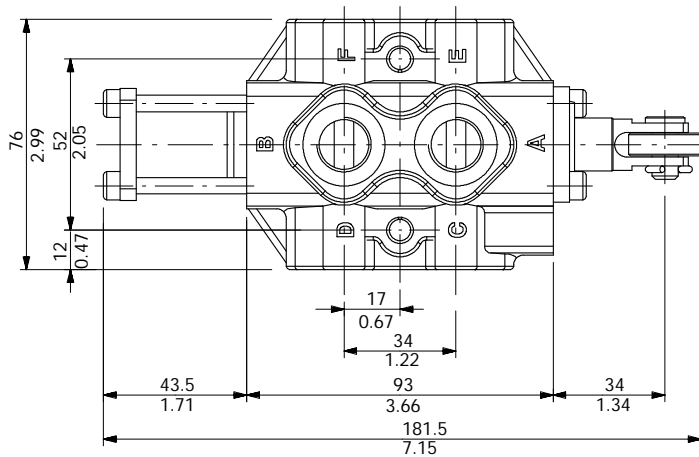
6-way DFC050/6 valve

Complete description: DFC050/6B17GSLP-<<CVN> code: 122080018

Valve is supplied painted as standard, with one coat of Primer black antirust paint



Spool in rest position
A → C / B → D



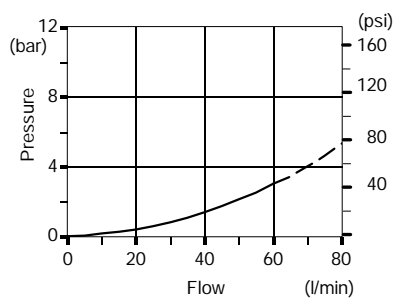
A Stroke = 6.8 mm / 0.27 in
A → E / B → F (start opening)

A A Stroke limit = 11 mm / 0.43 in
(full opening)

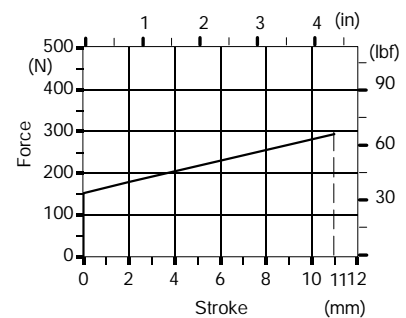
Performance data

Pressure drop versus flow

P→A(B)



Operating force



Umschaltventile – DF10/6 –



– mit Hebel –

Bestellnr.	Typ	Code
254-180-01000	DF10/6A12L	124082040
254-180-01050	DF10/6A17L	124084040
254-180-01100	DF10/6A17SLP	124084020
254-180-01150	DF10/6AT17SLP	124080011
254-180-01200	DF10/6A18PSLC	124085130
254-180-01250	DF10/6A18IA1SLC	124080025
254-180-01300	DF10/6B12L	124092040
254-180-01350	DF10/6B17SLP	124094020
254-180-01400	DF10/6B18PL	124080009
254-180-01450	DF10/6A[XS]12L	124082042
254-180-01500	DF10/6A17IB2	124084000
254-180-01550	DF10/6A17-VV	124084041
254-180-01600	DF10/6A17L180	124084042
254-180-01650	DF10/6AC17CB	124084050
254-180-01700	DF10/6A17MEIA2	124084080
254-180-01750	DF10/6A17IB2	124084090
254-180-01800	DF10/6B17L	124094040
254-180-01850	DF10/6BC17CB	124094050
254-180-01900	DF10/6B17MEIB2	124094090

254-180

DF

with mechanical control

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

		DF5	DF10	DF20	DF25
N. of available ways		2-3-6	2-3-6	2-3-6	3
Nominal flow rating		60 l/min	90 l/min	140 l/min	280 l/min
Operating pressure (maximum)		315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi
Internal leakage A(B)→T	Δp=100 bar 1450 psi with fluid and valve at 40°C	5 cm ³ /min 0.31 in ³ /min	5 cm ³ /min 0.31 in ³ /min	8 cm ³ /min 0.49 in ³ /min	8 cm ³ /min 0.49 in ³ /min
Hydraulic fluid		Mineral base oil			
Fluid temperature		with NBR seals from -20° to 80°C			
		with FPM seals from -20° to 100°C			
Viscosity		operating range from 15 to 75 mm ² /s - from 15 to 75 cSt			
		minimum 12 mm ² /s - 12 cSt			
		maximum 400 mm ² /s - 400 cSt			
Max. level of contamination		19/16 - ISO 4406			
Ambient temperature		from -40° to 60°C			

NOTE - For different working conditions please contact Customer Service.

Standard threads

ALL PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)
DF5	G 3/8	3/4-16 UNF-2B (SAE 8)
DF10	G 1/2	7/8-14 UNF-2B (SAE 10)
DF20	G 3/4	1 1/16-12 UN-2B (SAE 12)
DF25	G 1	1 5/16-12 UN-2B (SAE 16)
PILOT PORTS		
Pneumatic	NPT 1/8-27	NPT 1/8-27
Hydraulic	G 1/4	9/16-18 UNF-2B (SAE 6)

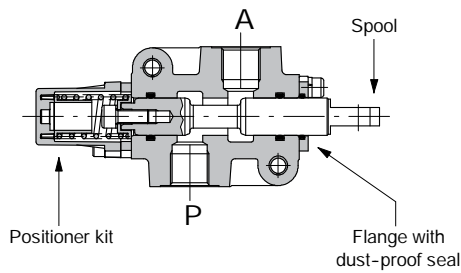
with mechanical control

DF

Hydraulic circuit

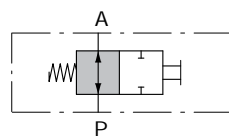
2-way

Available as body only in DF5/2 execution; for other executions 3-way body is used.



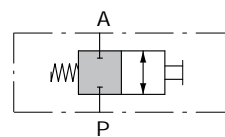
Spool type A

1 2



Spool type B

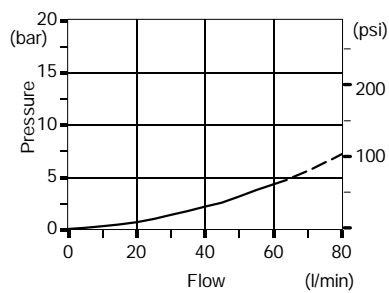
1 2



Performance data

Pressure drop versus flow

P→A



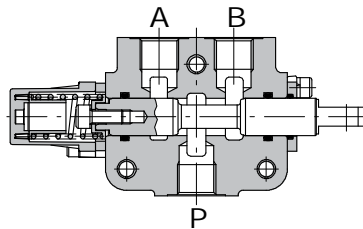
DF

with mechanical control

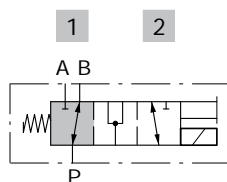
Hydraulic circuit

3-way

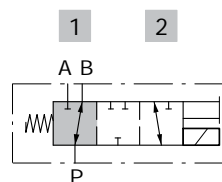
It's possible to obtain 2-way diverter valve plugging port A or B.



Spool type A



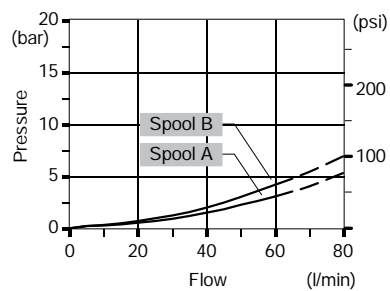
Spool type B



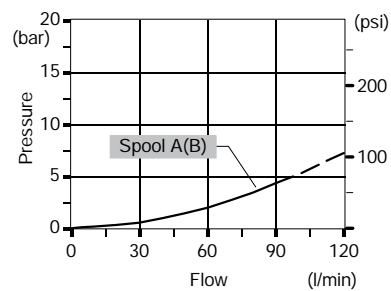
Performance data

Pressure drop versus flow: P→A(B)

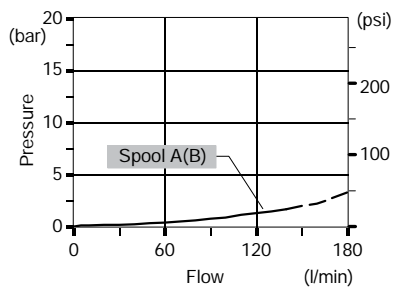
DF5/3



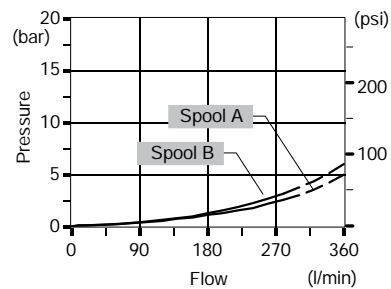
DF10/3



DF20/3



DF25/3

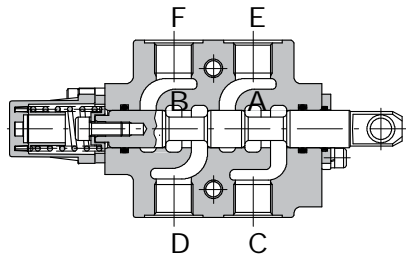


with mechanical control

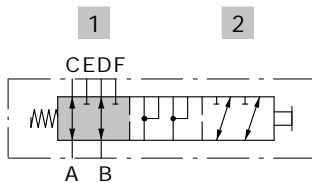
DF

Hydraulic circuit

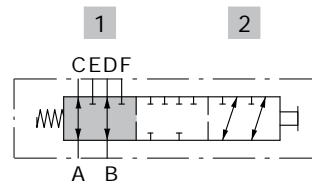
6-way



Spool type A



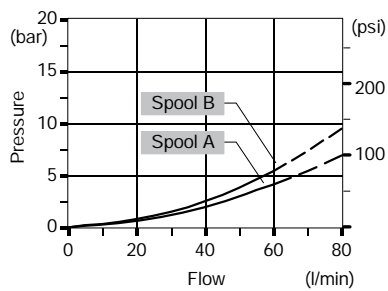
Spool type B



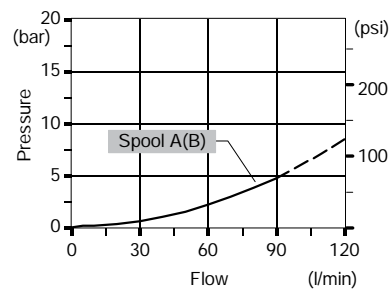
Performance data

Pressure drop versus flow: A→C(E).

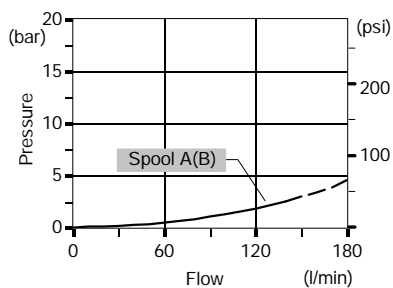
DF5/6



DF10/6



DF20/6

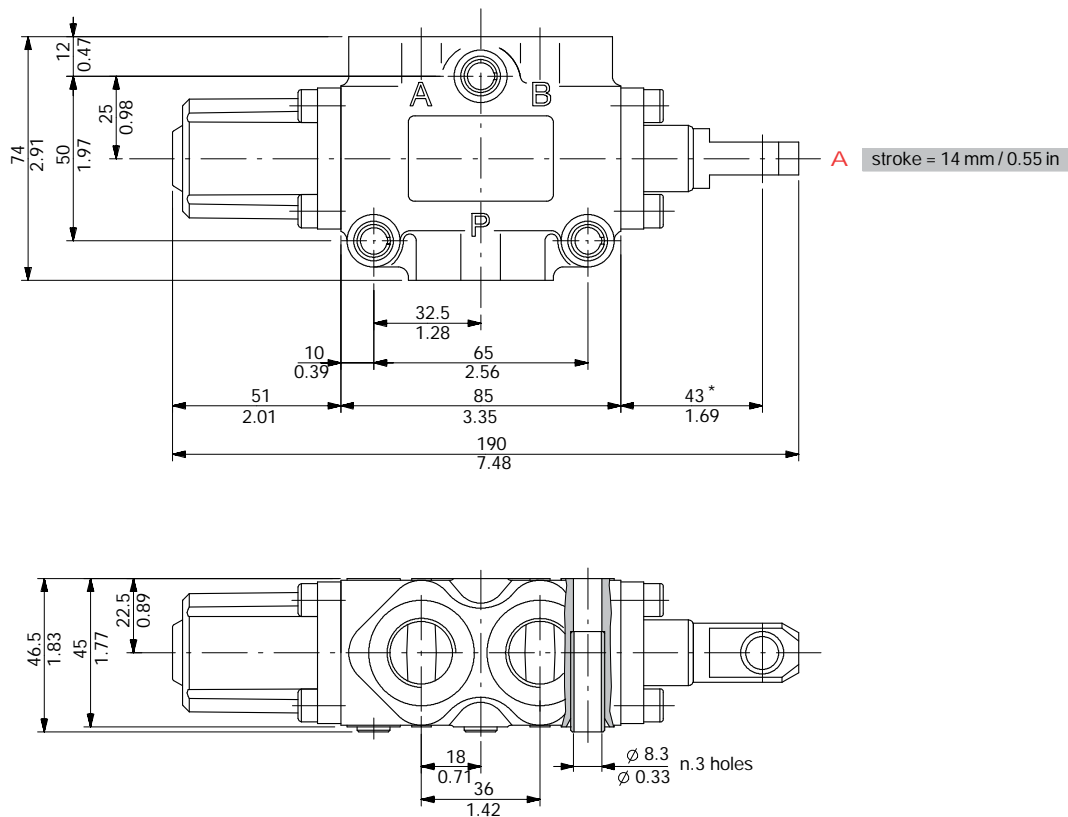


DF10

with mechanical control

Dimensional data

3-way DF10/3 valve

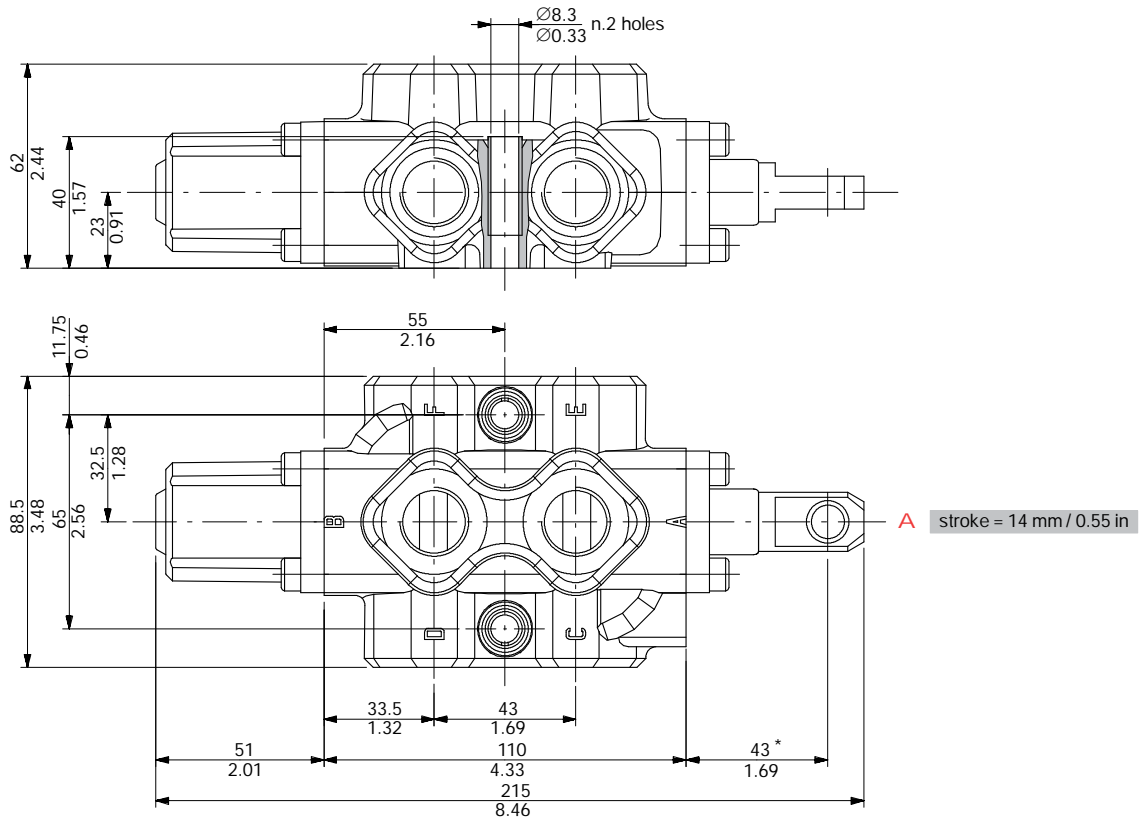


with mechanical control

DF10

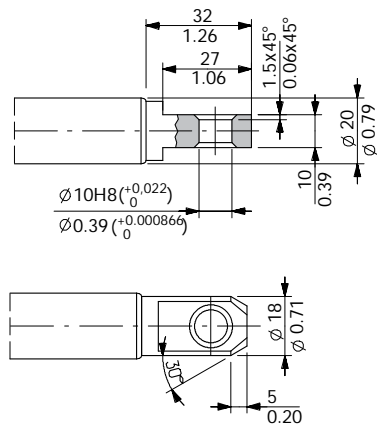
Dimensional data

6-way DF10/6 valve



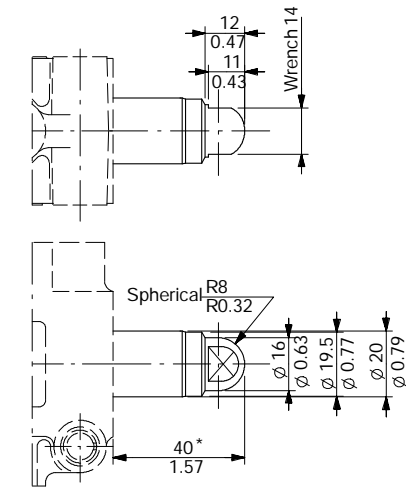
Spool end

Standard end

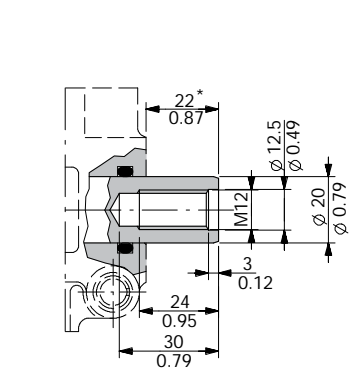


NOTE (*) - With spool out (positioner kit type 17)

Spherical end type T



Rotary cam prearrangement



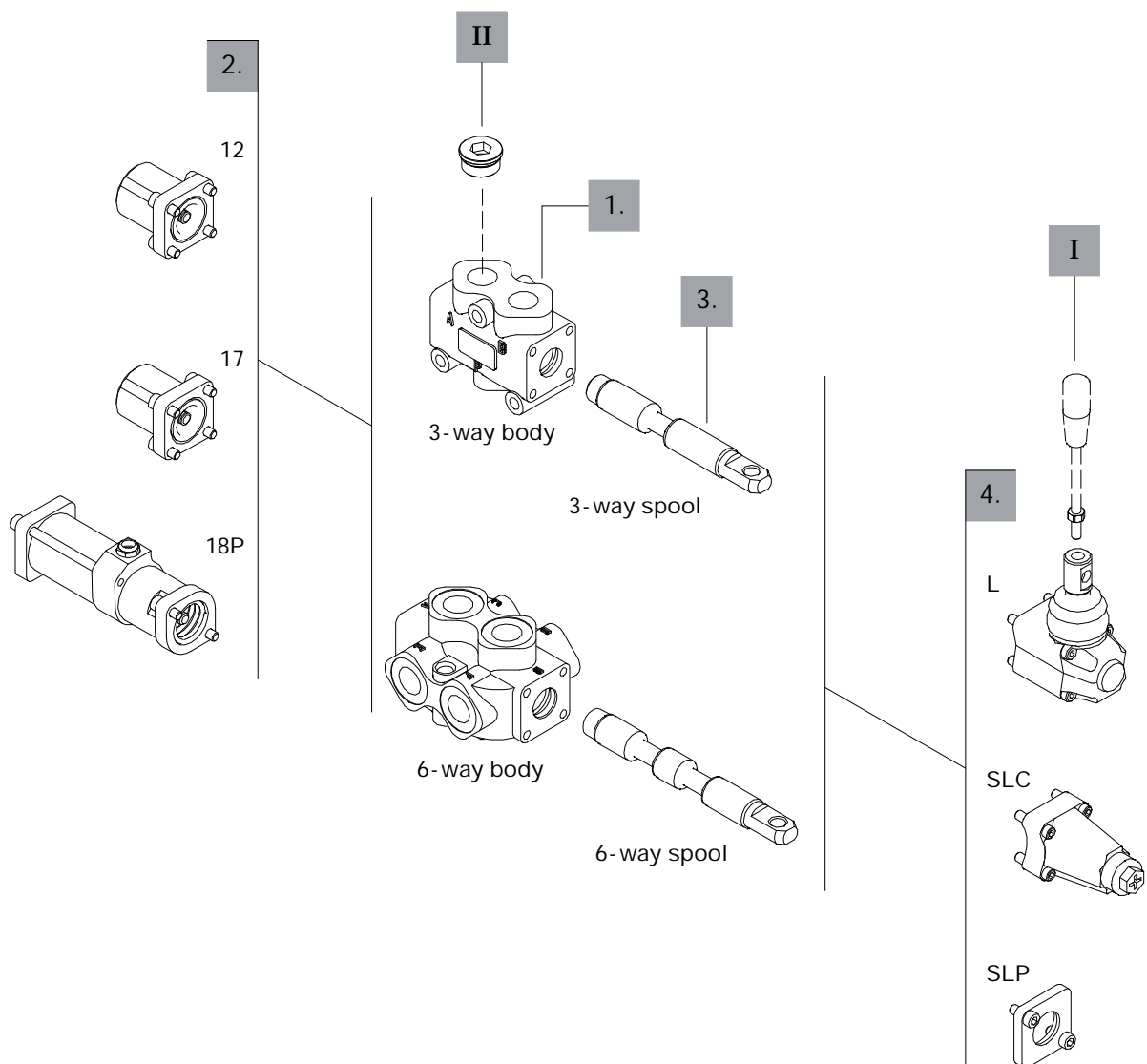
DF10

with mechanical control

Ordering codes

Description example:

Diverter valve DF10/3 A 17 SLP
1. 3. 2. 4.



with mechanical control

DF10

Ordering codes

3-way

1. body kit *

TYPE	CODE	DESCRIPTION
DF10/3	5CO2241300	Standard body kit, BSP threaded

Include body and seals

3. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS110310	3-way, 2 positions with ports connected in transit position
B	3CAS110410	3-way, 2 positions with ports closed in transit position
AT	3CAS110330	As type A with spherical end
AC	3CAS110320	As type A prearranged for cam control
BC	3CAS110420	As type B prearranged for cam control

6-way

1. Body kit *

TYPE	CODE	DESCRIPTION
DF10/6	5CO2242300	Standard body kit, BSP threaded

Include body and seals

3. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS110610	6-way, 2 positions with ports connected in transit positions
B	3CAS110710	6-way, 2 positions with ports closed in transit positions
AC	3CAS110620	As type A prearranged for cam control
BC	3CAS110720	As type B prearranged for cam control

2. Positioner kits page 24

TYPE	CODE	DESCRIPTION
12	5V12110000	Detent in positions 1 and 2
17	5V17110000	Spring return in position 1
18	5V18110000	Spring return in position 2
18P	5V18110710	ON/OFF pneumatic kit with spring return in position 2
18IA1	5V18110821*	ON/OFF high pressure hydraulic kit with spring return in position 2

4. Control kits page 26

TYPE	CODE	DESCRIPTION
SLP	5COP110000	Without lever box with dust-proof plate kit
SLC	5COP210000	Without lever box with endcap
L	5LEV110000	Standard lever box
IA2	5IDR510001*	ON/OFF high pressure kit
CB	5CAM110020	Cam kit

I Optional handlever

TYPE	CODE	DESCRIPTION
AL01/M10x200	170012020	For lever L, height 200 mm / 7.87 in

II Ports plug

TYPE	CODE	DESCRIPTION
G1/2	3XTAP727180*	Body conversion from 3-way to 2-way circuit

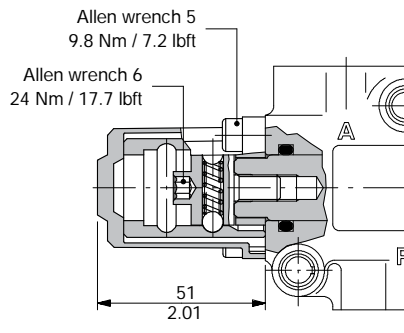
DF10

with mechanical control

Positioner kits

12 kit: with detent

Detent in positions 1 and 2.



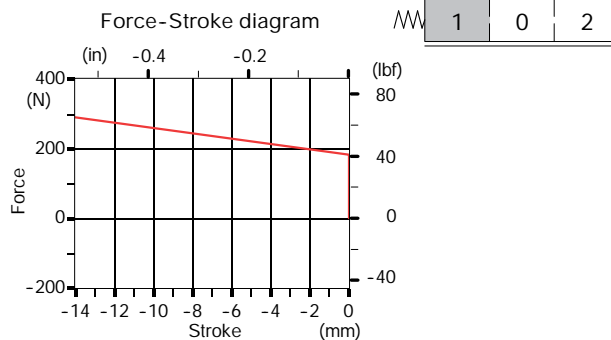
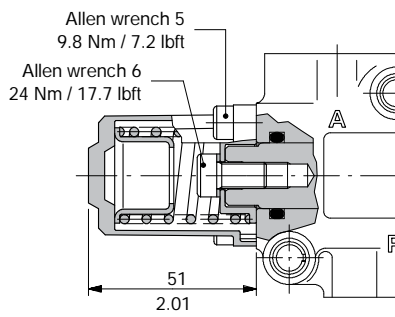
Operating features

Locking and unlocking force : ±10%

With spring return

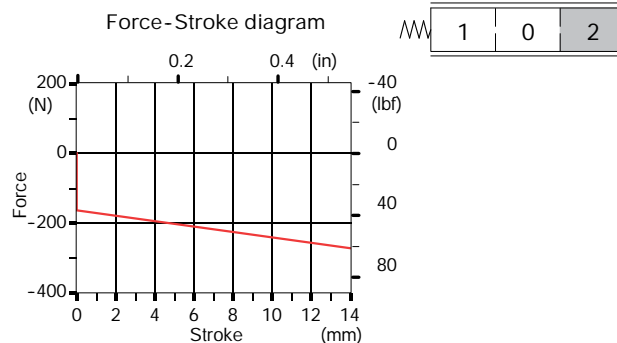
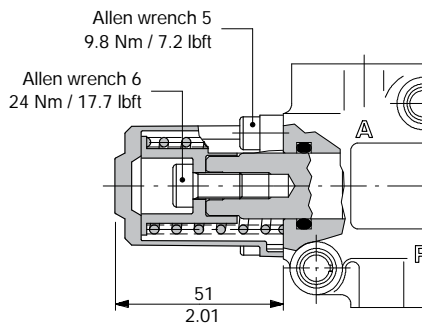
17 kit

Spring return in position 1.



18 kit

Spring return in position 2.



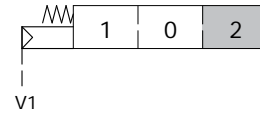
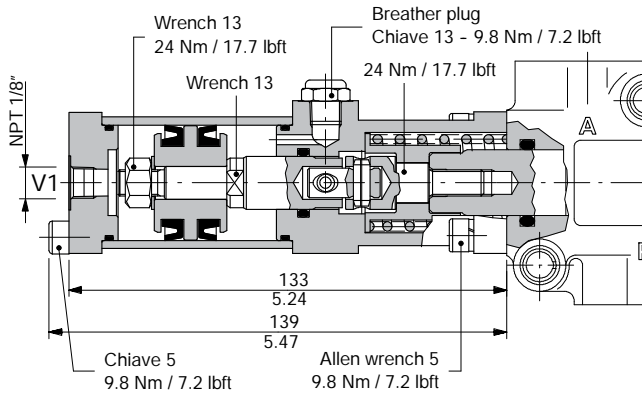
with mechanical control

DF10

Positioner kits

18P: ON/OFF pneumatic kit

With spring return in position 2.

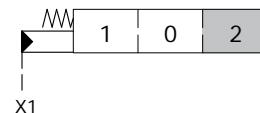
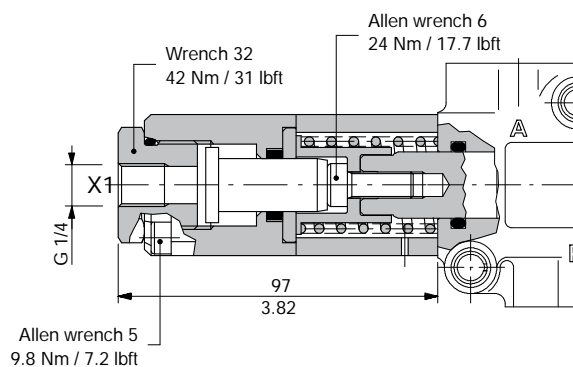


Operating features

Pilot pressure : min. 6 bar / 87 psi
max. 10 bar / 145 psi

18IA1: ON/OFF hydraulic kit

With high pressure pilot and spring return to position 2.



Operating features

Pilot pressure : min. 30 bar / 435 psi
max. 250 bar / 3600 psi

DF10

with mechanical control

Control kits

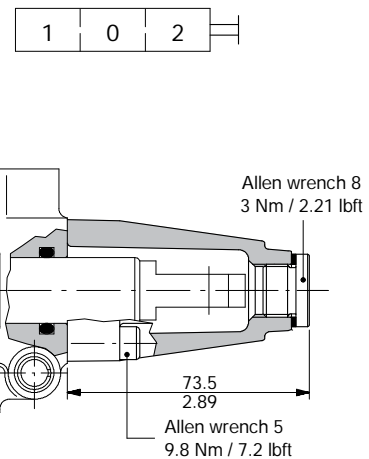
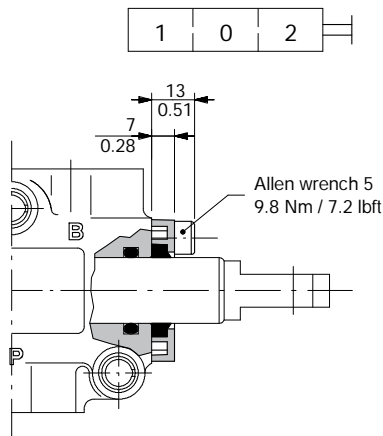
Controls prearranged

SLP kit

Mechanical control with dust-proof plate.

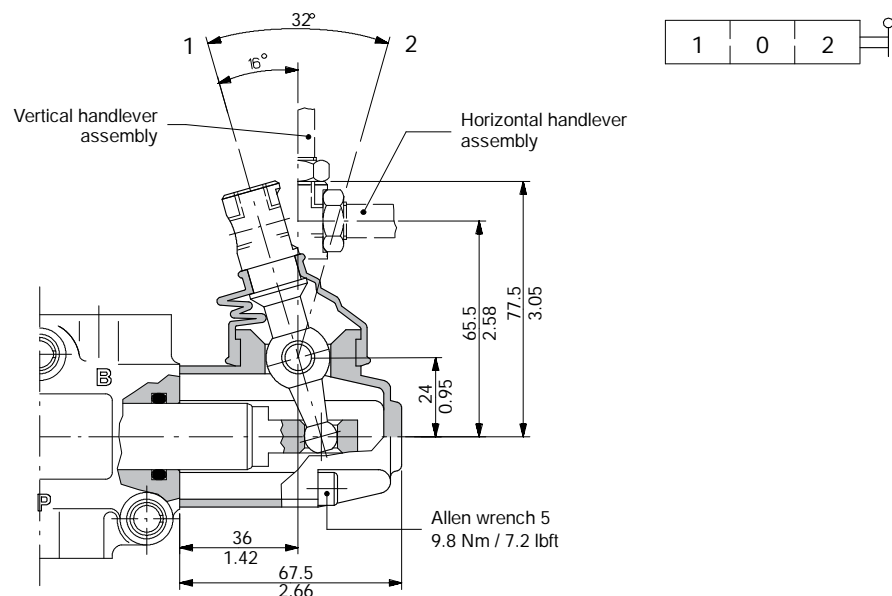
SLC kit

Protection cap usable with pneumatic and hydraulic spool positioner kits.



L lever control

Alumium with protection boot lever pivot box; it can be rotated 180° (execution L180).



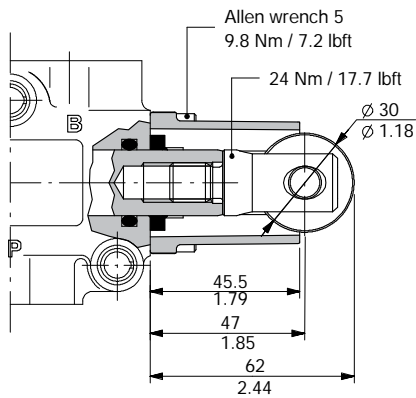
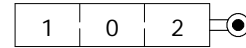
with mechanical control

DF10

Control kits

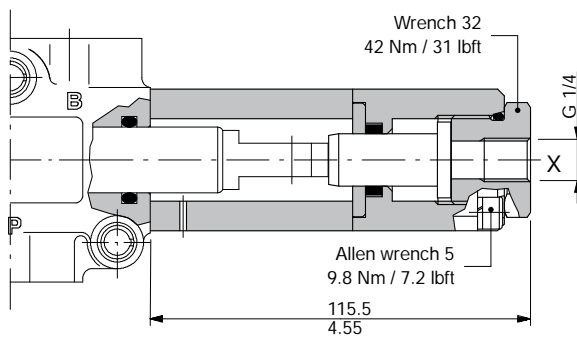
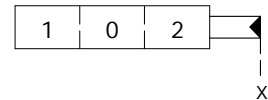
CB cam control

With bronze bearing; it must be coupled to 17 kit.



IA2: ON/OFF hydraulic control

With high pressure pilot; it must be coupled to 17 kit.



Operating features
Pilot pressure : min. 30 bar / 435 psi
max. 250 bar / 3600 psi

DF10

with mechanical control

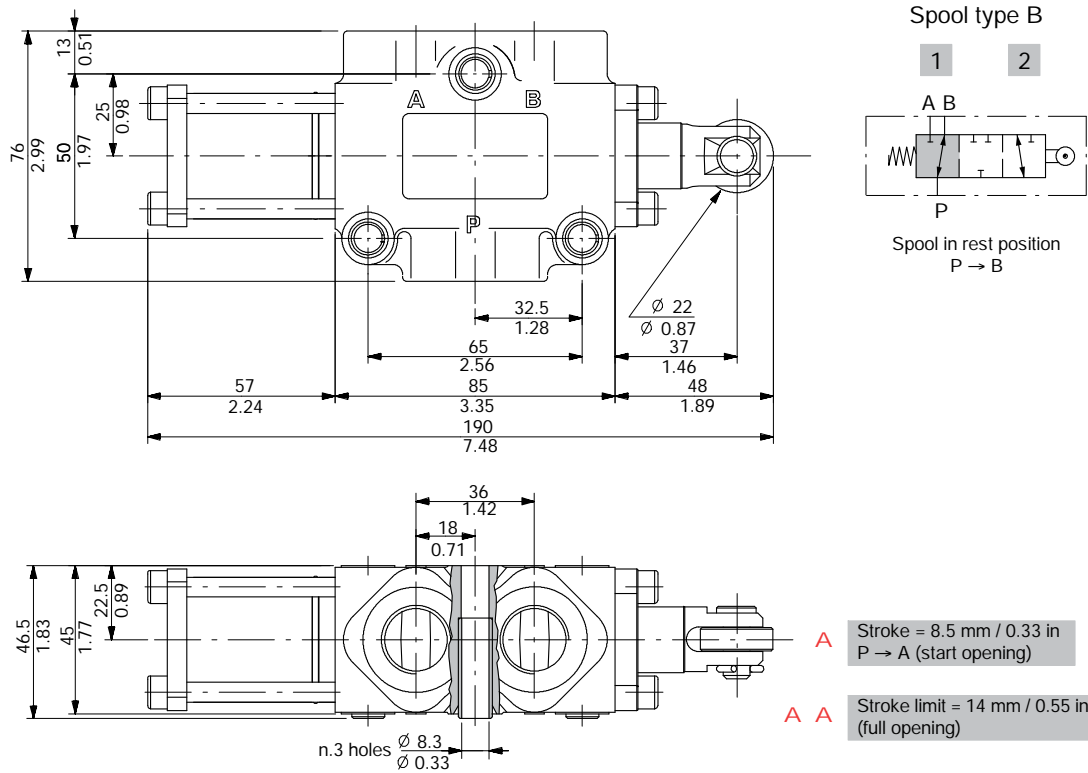
Other executions

Cam spool control suggested for severe applications; it requires a special body, spool and control kit.

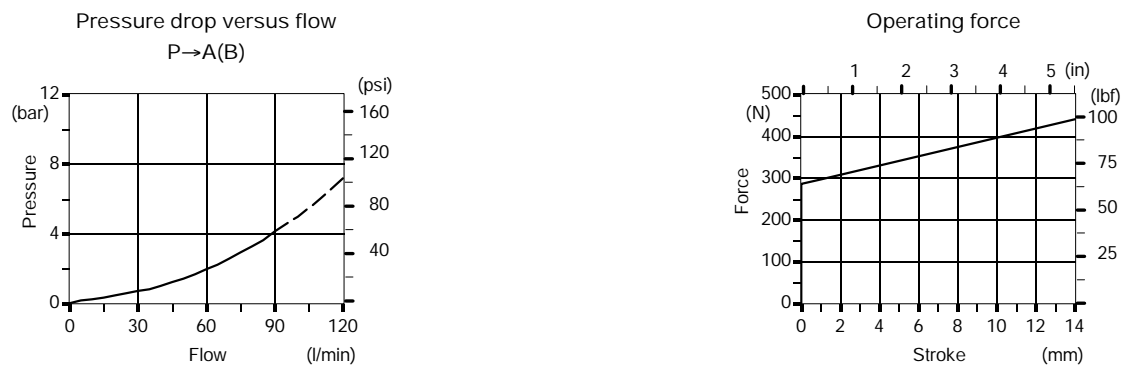
3-way DFC100/3 valve

Complete description: DFC100/3B17GSLP-<CVN> code: 124050016

Valve is supplied painted as standard, with one coat of Primer black antirust paint



Performance data



with mechanical control

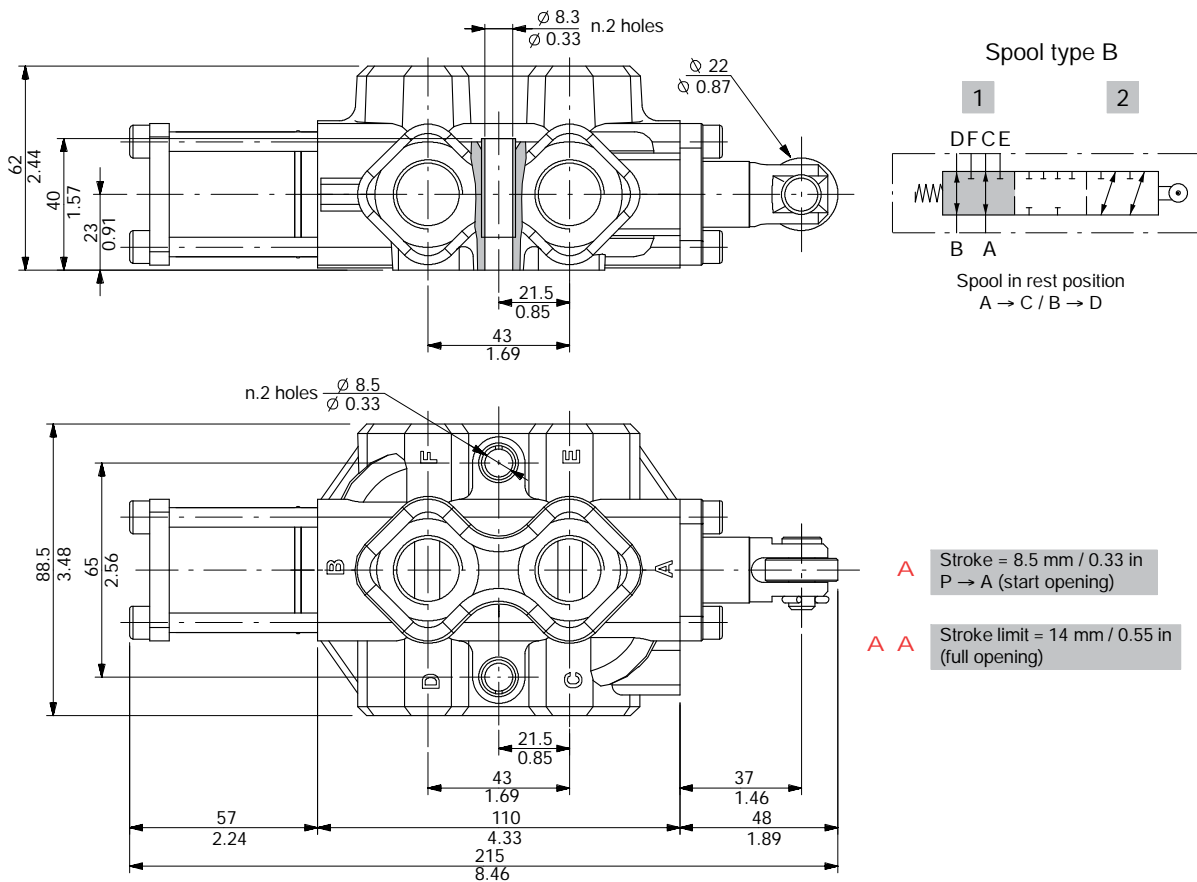
DF10

Other executions

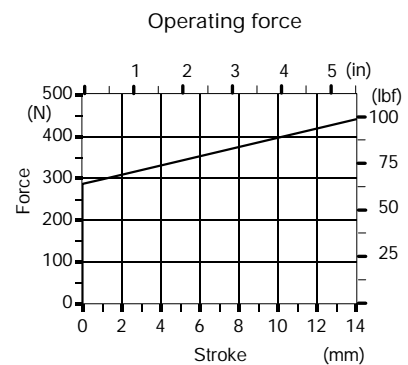
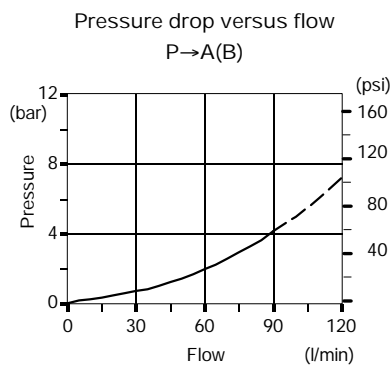
6-way DFC100/6 valve

Complete description: DFC100/6B17GSLP-<<CVN> code: 124080013

Valve is supplied painted as standard, with one coat of Primer black antirust paint



Performance data



Umschaltventile

– DF20/6 –



– mit Hebel –

Bestellnr.	Typ	Code
254-190-01000	DF20/6A12L	126082040
254-190-01050	DF20/6A17L	126084040
254-190-01100	DF20/6A17SLP	126084020
254-190-01150	DF20/6A12NASL-BSP1	126080012
254-190-01200	DF20/6A12NALB3	126084041
254-190-01250	DF20/6A17C	126084050
254-190-01300	DF20/6A17IA2	126084080
254-190-01350	DF20/6A17IA2	126084082
254-190-01400	DF20/6A17PSLC	126084130
254-190-01450	DF20/6A17IB2	126084291
254-190-01500	DF20/6A18PNL	126085141
254-190-01550	DF20/6A18EI1SLP-KE1S0-24VDC	126085725
254-190-01600	DF20/6A8PNSLC	126080004
254-190-01650	DF20/6B12L	126092040
254-190-01700	DF20/6BC17C	126094050
254-190-01750	DF20/6B17MEIB2	126094090
254-190-01800	DF20/6B18EI1L-KE1S0-24VDC	126095740
254-190-01850	DF20/6A18IB1L-BSP1	126485240
254-190-01900	DF20/6A18EI1SLP-KE1R0-24VDC-BSP1	126485727

DF

with mechanical control

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

		DF5	DF10	DF20	DF25
N. of available ways		2-3-6	2-3-6	2-3-6	3
Nominal flow rating		60 l/min	90 l/min	140 l/min	280 l/min
Operating pressure (maximum)		315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi	315 bar 4600 psi
Internal leakage A(B)→T	Δp=100 bar 1450 psi with fluid and valve at 40°C	5 cm ³ /min 0.31 in ³ /min	5 cm ³ /min 0.31 in ³ /min	8 cm ³ /min 0.49 in ³ /min	8 cm ³ /min 0.49 in ³ /min
Hydraulic fluid		Mineral base oil			
Fluid temperature		with NBR seals from -20° to 80°C			
		with FPM seals from -20° to 100°C			
Viscosity		operating range from 15 to 75 mm ² /s - from 15 to 75 cSt			
		minimum 12 mm ² /s - 12 cSt			
		maximum 400 mm ² /s - 400 cSt			
Max. level of contamination		19/16 - ISO 4406			
Ambient temperature		from -40° to 60°C			

NOTE - For different working conditions please contact Customer Service.

Standard threads

ALL PORTS	BSP (ISO 228/1)	UN-UNF (ISO 11926-1)
DF5	G 3/8	3/4-16 UNF-2B (SAE 8)
DF10	G 1/2	7/8-14 UNF-2B (SAE 10)
DF20	G 3/4	1 1/16-12 UN-2B (SAE 12)
DF25	G 1	1 5/16-12 UN-2B (SAE 16)
PILOT PORTS		
Pneumatic	NPT 1/8-27	NPT 1/8-27
Hydraulic	G 1/4	9/16-18 UNF-2B (SAE 6)

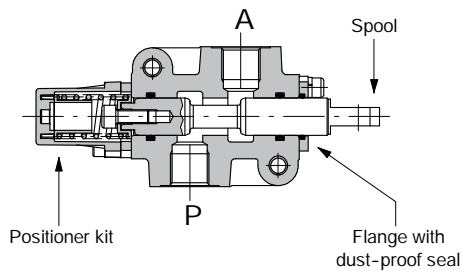
with mechanical control

DF

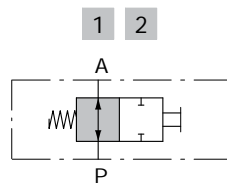
Hydraulic circuit

2-way

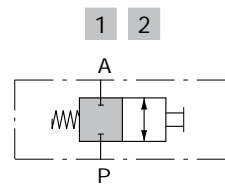
Available as body only in DF5/2 execution; for other executions 3-way body is used.



Spool type A

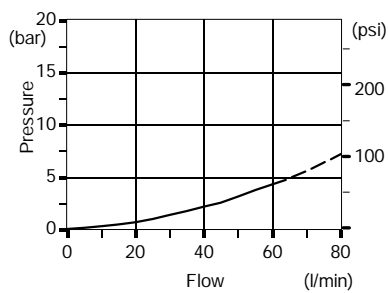


Spool type B



Performance data

Pressure drop versus flow
P→A



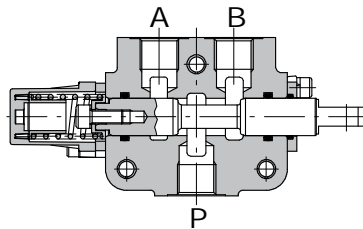
DF

with mechanical control

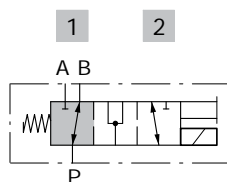
Hydraulic circuit

3-way

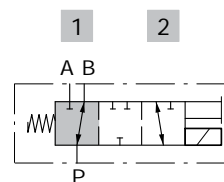
It's possible to obtain 2-way diverter valve plugging port A or B.



Spool type A



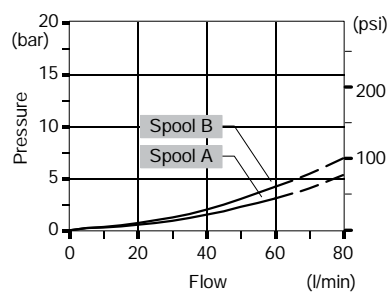
Spool type B B



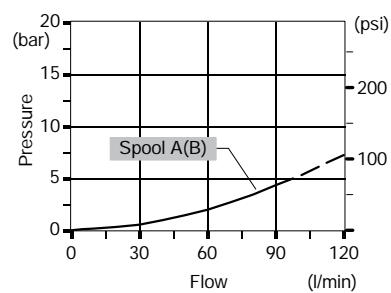
Performance data

Pressure drop versus flow: P→A(B)

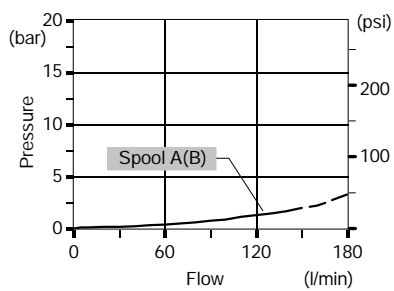
DF5/3



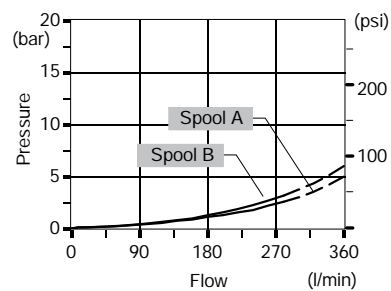
DF10/3



DF20/3



DF25/3

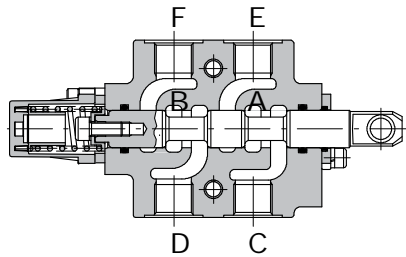


with mechanical control

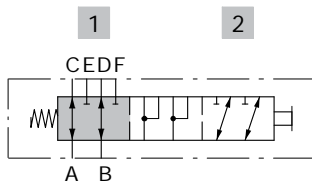
DF

Hydraulic circuit

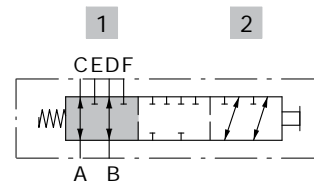
6-way



Spool type A



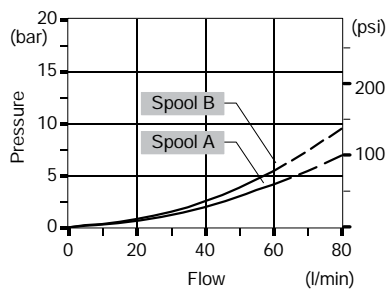
Spool type B



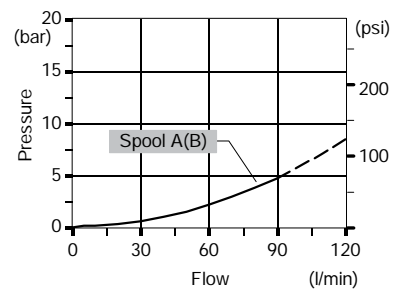
Performance data

Pressure drop versus flow: A→C(E).

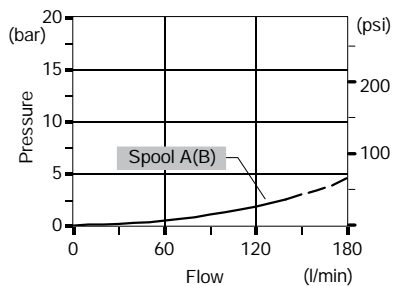
DF5/6



DF10/6



DF20/6

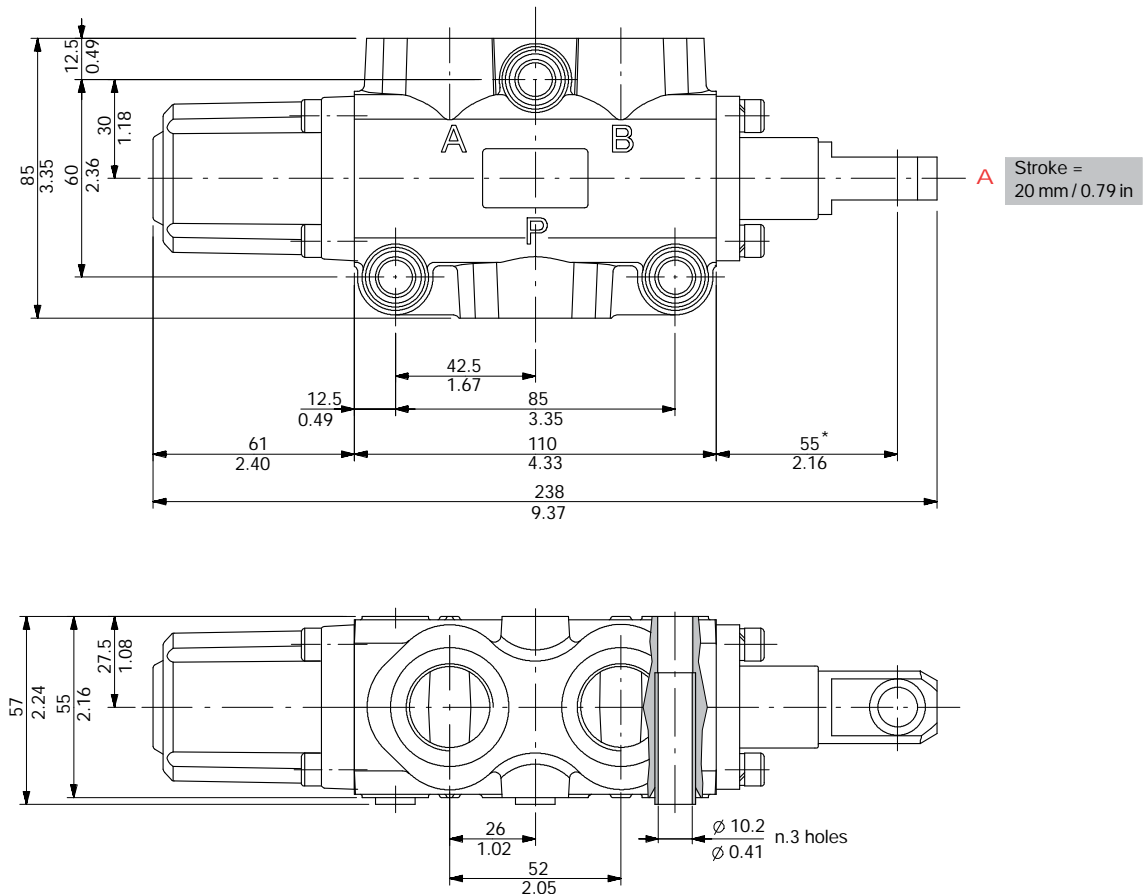


DF20

with mechanical control

Dimensional data

3-way DF20/3 valve



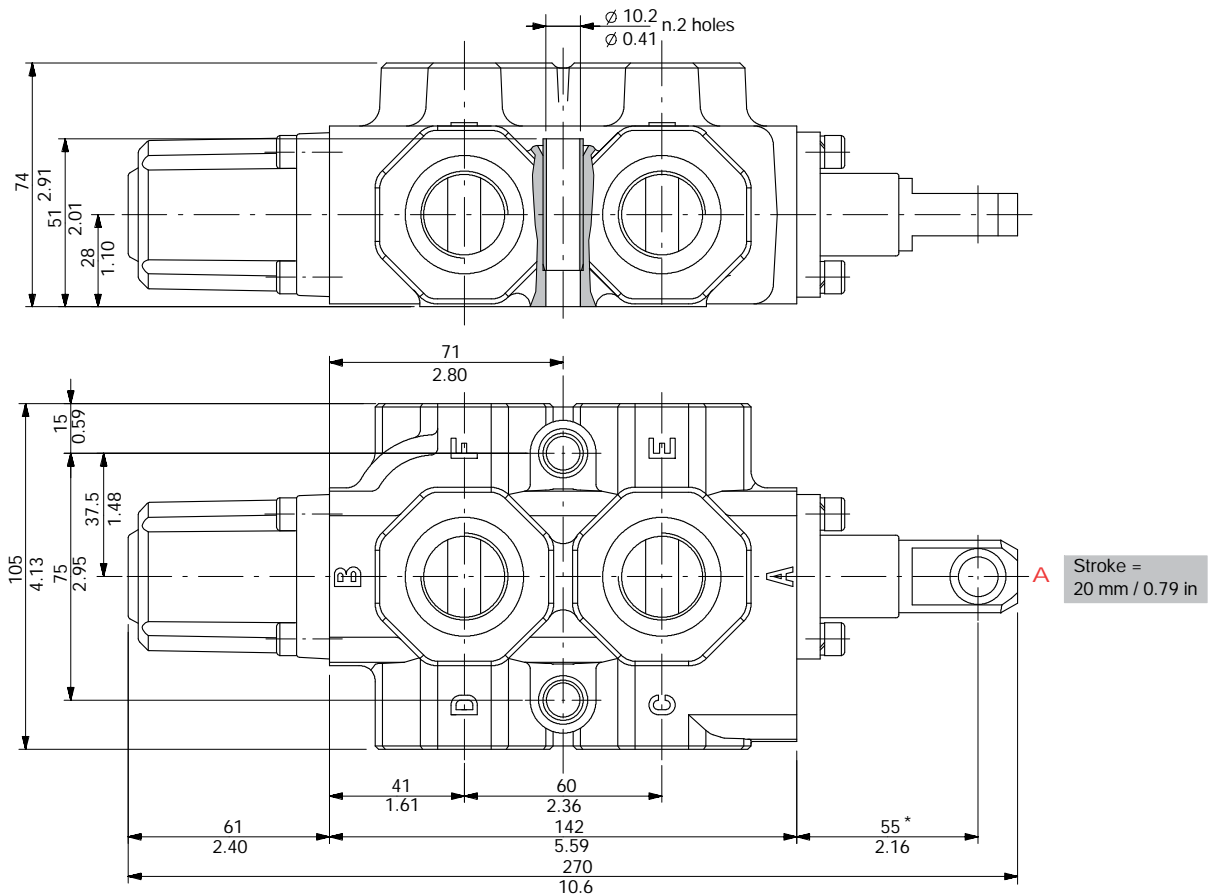
254-190

with mechanical control

DF20

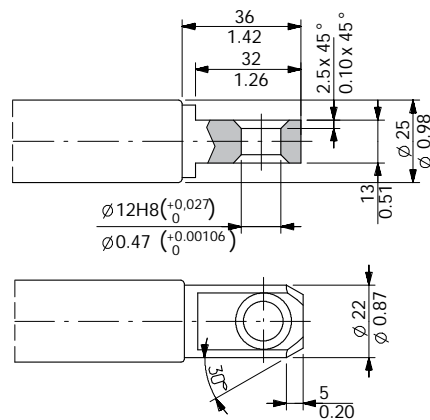
Dimensional data

6-way DF20/6 valve

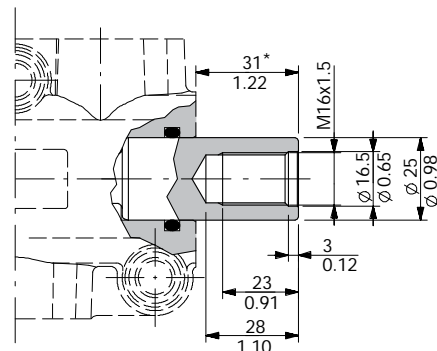


Spool end

Standard end



Rotary cam prearrangement



NOTA (*) - With spool out (positioner kit type 17)

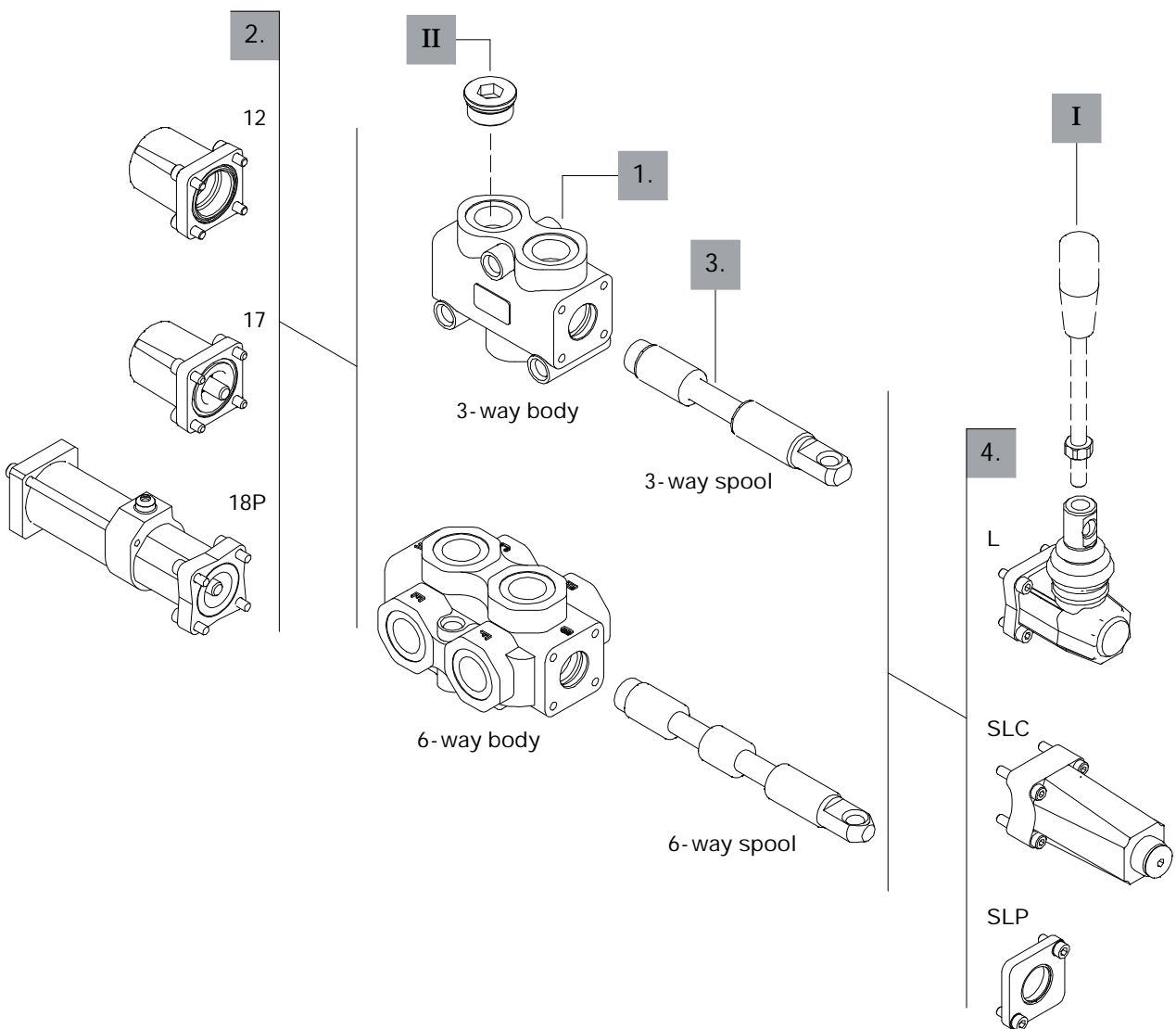
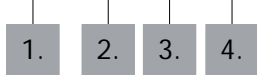
DF20

with mechanical control

Ordering codes

Description example:

Diverter valve DF20/3 A 17 SLP



with mechanical control

DF20

Ordering codes

3 - way

1. Body kit *

TYPE	CODE	DESCRIPTION
DF20/3	5CO2261300	Standard body kit, BSP threaded

Include body and seals

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS120310	3-way, 2 positions with ports connected in transit position
B	3CAS120410	3-way, 2 positions with ports closed in transit position
AC	3CAS120320	As type A prearranged for cam control
BC	3CAS120420	As type B prearranged for cam control

6 - way

1. Body kit *

TYPE	CODE	DESCRIPTION
DF20/6	5CO2262300	Standard body kit, BSP threaded

Include body and seals

2. Spool options

TYPE	CODE	DESCRIPTION
A	3CAS120610	6-way, 2 positions with ports connected in transit position
B	3CAS120710	6-way, 2 positions with ports closed in transit position
AC	3CAS120620	As type A prearranged for cam control
BC	3CAS120720	As type B prearranged for cam control

3. Positioner kits page 34

TIPO	CODICE	DESCRIZIONE
12	5V12120000	Detent in positions 1 and 2
17	5V17120000	Spring return in position 1
18MB	5V18120000	Spring return in position 2
18P	5V18120700	ON/OFF pneumatic kit with spring return in position 2
18IA1	5V18120820*	ON/OFF high pressure hydraulic kit with spring return in position 2
18E11	5V18120350	12VDC ON/OFF electro-hydraulic kit with spring return in position 2
	5V18120351	24VDC ON/OFF electro-hydraulic kit with spring return in position 2

4. Control kits page 37

TYPE	CODE	DESCRIPTION
SLP	5COP120000	Without lever box with dust-proof plate kit
SLC	5COP220000	Without lever box with endcap
L	5LEV120000	Standard lever box
IA2	5IDR520000*	ON/OFF high pressure kit
CB	5CAM120020	Cam kit

I Optional handlever

TYPE	CODE	DESCRIPTION
AL01/M10x200	170013020	For lever L, height 200 mm / 7.87 in

II Ports plug

TYPE	CODE	DESCRIPTION
G3/4	3XTAP732200*	Body conversion from 3-way to 2-way circuit

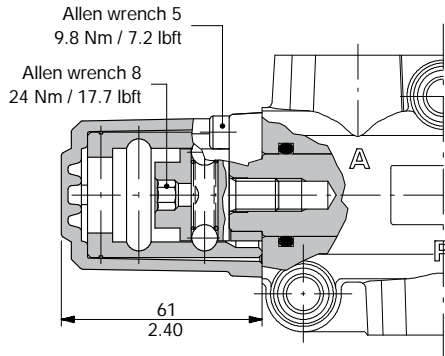
DF20

with mechanical control

Positioner kits

12 kit: with detent

Detent in positions 1 and 2.

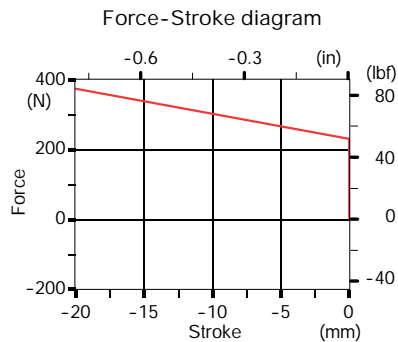
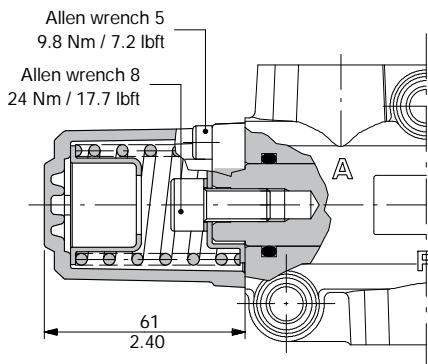


Operating features
Locking and unlocking force : $\pm 10\%$

With spring return

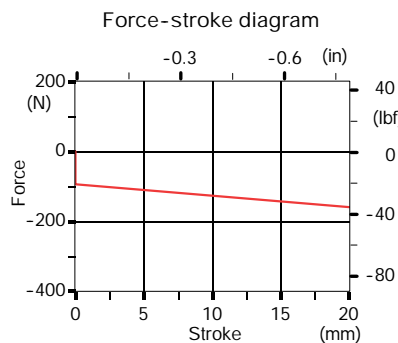
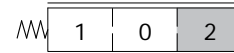
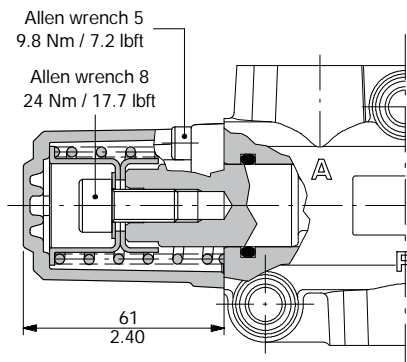
17 kit

Spring return in position 1.



18MB kit

Spring return in position 2.



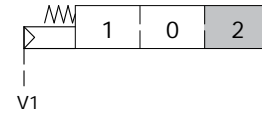
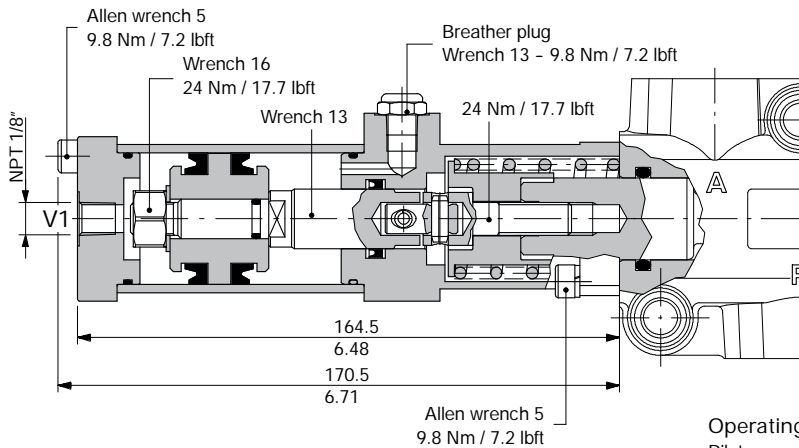
with mechanical control

DF20

Positioner kits

18P: ON/OFF pneumatic kit

With spring return in position 2.

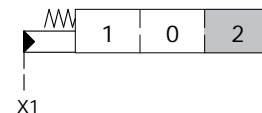
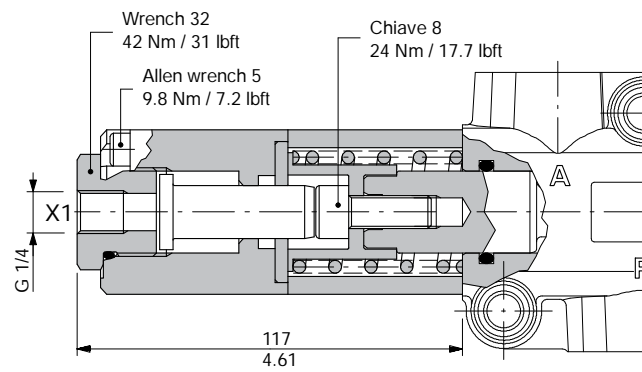


Operating features

Pilot pressure : min. 6 bar / 87 psi
max. 10 bar / 145 psi

18IA1: ON/OFF hydraulic kit

With high pressure pilot and spring return to position 2.



Operating features

Pilot pressure : min. 30 bar / 435 psi
max. 250 bar / 3600 psi

DF20

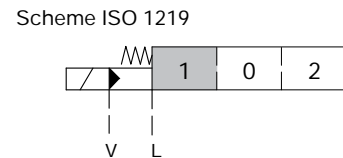
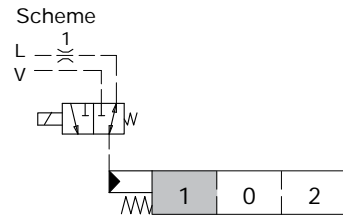
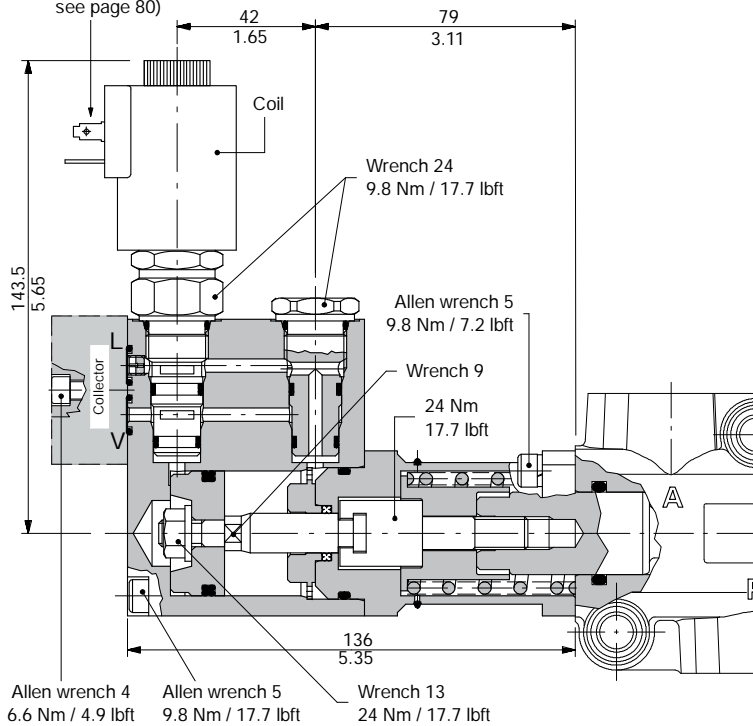
with mechanical control

Positioner kits

18E11: ON/OFF electro-hydraulic control

External pilot and drain, with spring return in position 2.

Connection ISO4400
(needs C02 connector,
see page 80)



Operating features

Pilot pressure : min.10 bar / 145 psi
: max.50 bar / 725 psi

Max. backpressure on
drain port L : 4 bar / 58 psi

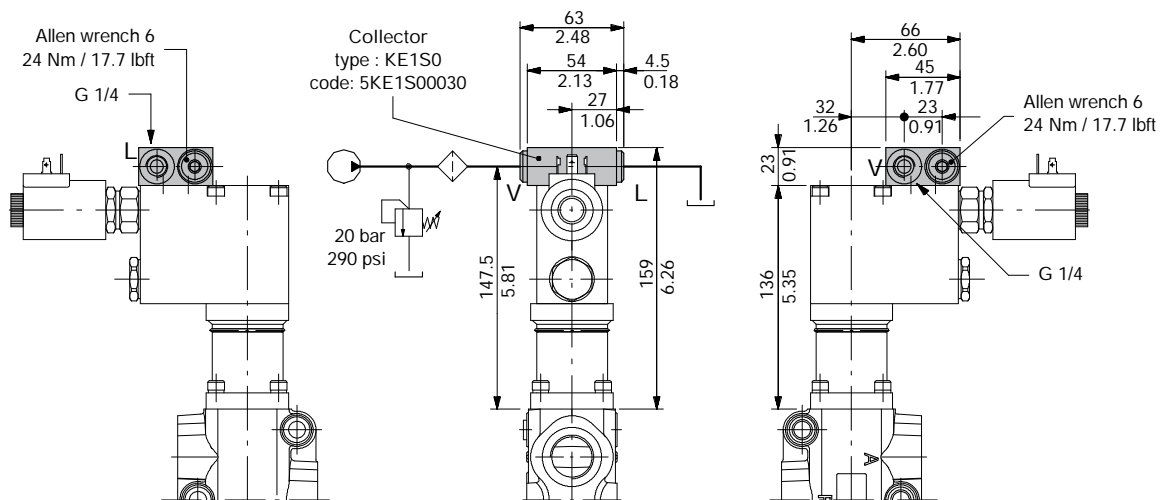
Solenoid operating features

Voltage tolerance : ±10%
Power rating : 21 W
Duty cycle : 100%

Ordering codes

CODE	DESCRIPTION
2S0EJ08002013	3-way solenoid valve
2X4350012	12VDC coil
2X4350024	24VDC coil

Collector kit for external pilot and drain



Ex: DF20/3A18E11SLC/KE1S0-12VDC

with mechanical control

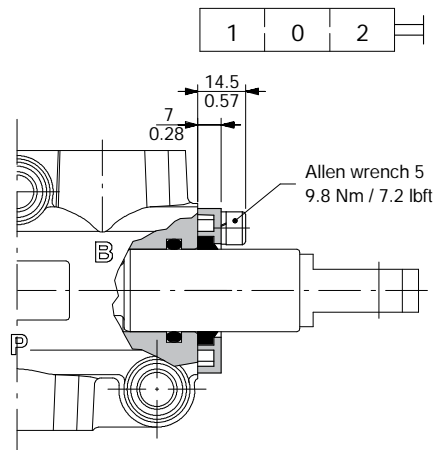
DF20

Control kits

Controls prearranged

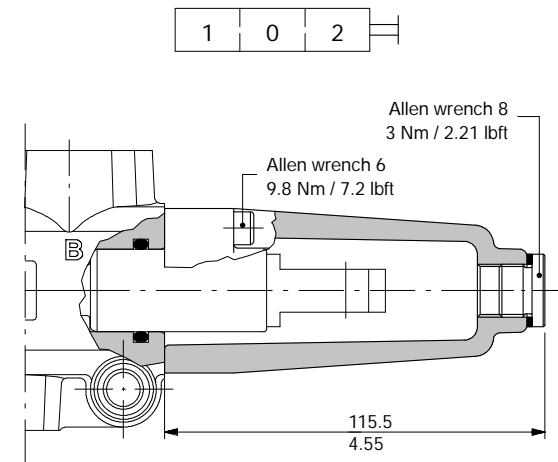
SLP kit

Mechanical control with dust-proof plate.



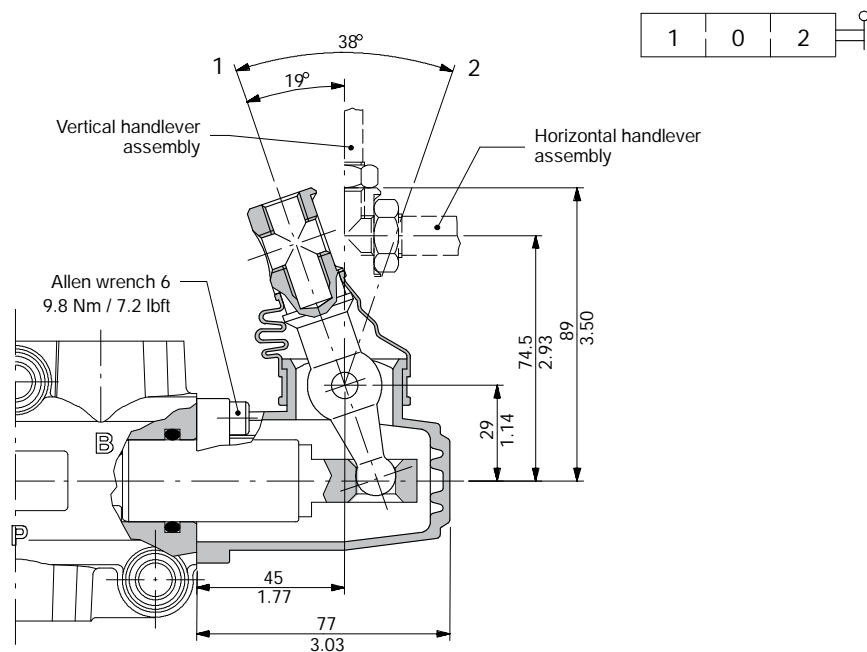
SLC kit

Protection cap usable with pneumatic and hydraulic spool positioner kits.



L lever control

Alumium with protection boot lever pivot box; it can be rotated 180° (execution L180).



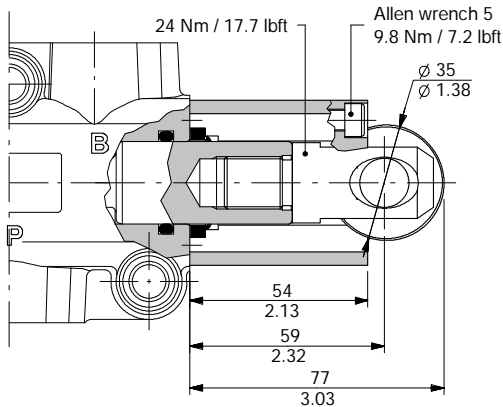
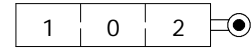
DF20

with mechanical control

Control kits

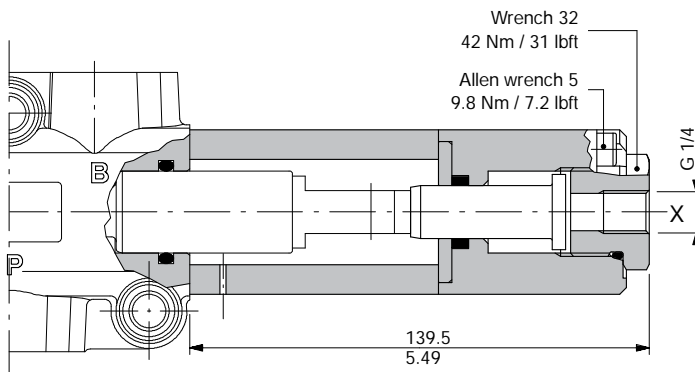
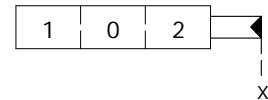
CB cam control

With bronze bearing; it must be coupled to 17 kit.



IA2: ON/OFF hydraulic control

With high pressure pilot; it must be coupled to 17 kit.



Operating features

Pilot pressure : min. 30 bar / 435 psi
max. 250 bar / 3600 psi

Wegeventil Cetop 03 -Magnetgesteuert



Wegeventil NG 6

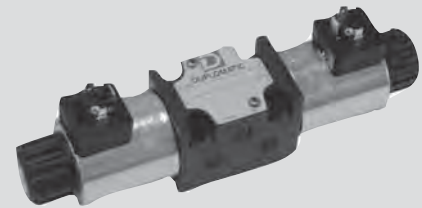
Bestellnr.	Typ	Code	
260-010-01000	4/2 Wegeventil parallel-gekreuzt - 12 VDC	DS3-TA/10N-D12K1	
260-010-01050	4/2 Wegeventil parallel-gekreuzt - 24 VDC	DS3-TA/10N-D24K1	
260-010-01100	4/2 Wegeventil parallel-gekreuzt 220 RAC	DS3-TA/10N-D220K1	
260-010-01200	4/2 Wegeventil gekreuzt-parallel - 12 VDC	DS3-TB/10N-D12K1	
260-010-01250	4/2 Wegeventil gekreuzt-parallel - 24 VDC	DS3-TB/10N-D24K1	
260-010-01300	4/2 Wegeventil gekreuzt-parallel 220 RAC	DS3-TB/10N-D220K1	
260-010-01400	4/2 Wegeventil parallel-gekreuzt - 12 VDC	DS3-TA02/10N-D12K1	
260-010-01450	4/2 Wegeventil parallel-gekreuzt - 24 VDC	DS3-TA02/10N-D24K1	
260-010-01500	4/2 Wegeventil parallel-gekreuzt 220 RAC	DS3-TA02/10N-D220K1	
260-010-01600	4/2 Wegeventil gekreuzt-parallel - 12 VDC	DS3-TB02/10N-D12K1	
260-010-01650	4/2 Wegeventil gekreuzt-parallel - 24 VDC	DS3-TB02/10N-D24K1	
260-010-01700	4/2 Wegeventil gekreuzt-parallel 220 RAC	DS3-TB02/10N-D220K1	
260-010-01800	4/2 Wegeventil alles geschlossen-gekreuzt - 12 VDC	DS3-SA1/10N-D12K1	
260-010-01850	4/2 Wegeventil alles geschlossen-gekreuzt - 24 VDC	DS3-SA1/10N-D24K1	
260-010-01900	4/2 Wegeventil alles geschlossen-gekreuzt 220 RAC	DS3-SA1/10N-D220K1	
260-010-02000	4/2 Wegeventil alles verbunden-gekreuzt - 12 VDC	DS3-SA2/10N-D12K1	
260-010-02050	4/2 Wegeventil alles verbunden-gekreuzt - 24 VDC	DS3-SA2/10N-D24K1	
260-010-02100	4/2 Wegeventil alles verbunden-gekreuzt 220 RAC	DS3-SA2/10N-D220K1	
260-010-02200	4/2 Wegeventil A+B+T verbunden-gekreuzt - 12 VDC	DS3-SA3/10N-D12K1	
260-010-02250	4/2 Wegeventil A+B+T verbunden-gekreuzt - 24 VDC	DS3-SA3/10N-D24K1	
260-010-02300	4/2 Wegeventil A+B+T verbunden-gekreuzt 220 RAC	DS3-SA3/10N-D220K1	
260-010-02400	4/2 Wegeventil P+T verbunden-parallel- 12 VDC	DS3-SA4/10N-D12K1	
260-010-02450	4/2 Wegeventil P+T verbunden-parallel- 24 VDC	DS3-SA4/10N-D24K1	
260-010-02500	4/2 Wegeventil P+T verbunden-parallel 220 RAC	DS3-SA4/10N-D220K1	
260-010-03400	4/2 Wegeventil parallel-gekr. 2 Magn. mit Rasten- 12 VDC	DS3-RK/10N-D12K1	
260-010-03450	4/2 Wegeventil parallel-gekr. 2 Magn. mit Rasten- 24 VDC	DS3-RK/10N-D24K1	
260-010-03500	4/2 Wegeventil parallel-gekr. 2 Magn. mit Rasten 220 RAC	DS3-RK/10N-D220K1	
260-010-02600	4/3 Wegeventil alles geschlossen - 12 VDC	DS3-S1/10N-D12K1	
260-010-02650	4/3 Wegeventil alles geschlossen - 24 VDC	DS3-S1/10N-D24K1	
260-010-02700	4/3 Wegeventil alles geschlossen 220 RAC	DS3-S1/10N-D220K1	
260-010-02800	4/3 Wegeventil alles verbunden - 12 VDC	DS3-S2/10N-D12K1	
260-010-02850	4/3 Wegeventil alles verbunden - 24 VDC	DS3-S2/10N-D24K1	
260-010-02900	4/3 Wegeventil alles verbunden 220 RAC	DS3-S2/10N-D220K1	
260-010-03000	4/3 Wegeventil A+B+T verbunden- 12 VDC	DS3-S3/10N-D12K1	
260-010-03050	4/3 Wegeventil A+B+T verbunden- 24 VDC	DS3-S3/10N-D24K1	
260-010-03100	4/3 Wegeventil A+B+T verbunden 220 RAC	DS3-S3/10N-D220K1	
260-010-03200	4/3 Wegeventil P+T verbunden- 12 VDC	DS3-S4/10N-D12K1	
260-010-03250	4/3 Wegeventil P+T verbunden- 24 VDC	DS3-S4/10N-D24K1	
260-010-03300	4/3 Wegeventil P+T verbunden 220 RAC	DS3-S4/10N-D220K1	

730-010-1000	Würfelstecker-schwarz
730-010-1050	Würfelstecker-grau
730-010-1100	Würfelstecker-m. Gleichrichter (230 AC-DC)-schwarz
730-010-1150	Würfelstecker-m. Gleichrichter (230 AC-DC)-grau
730-010-1200	Würfelstecker-m. LED (12-24 DC)-transparent
730-010-1300	Würfelstecker-m. LED+Gleichr. (230 AC-DC)-transp.

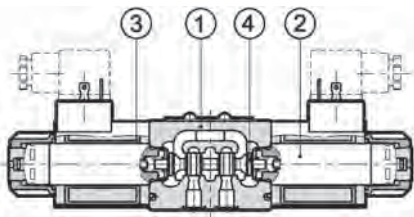
260-010

DS3 - direktgesteuertes Wegeventil

- Anschlussbild ISO 4401-03 (Cetop 03)
- p max 350 bar
- Q max 100 l/min (Kennlinie beachten)



FUNKTIONSPRINZIP



- direktgesteuertes Elektromagnetventil für eine Modularbauweise. Das Anschlussbild entspricht den Normen ISO 4401 (CETOP RP121H).
- der Ventilkörper ① besteht aus Eisenguss mit hoher Festigkeit und verfügt über breite Kammern, die die Strömungsverluste gering halten. Es werden Magnete mit austauschbaren Spulen ③ und Kerne im Ölbad ② verwendet. (siehe Abschnitt 7 für weitere Informationen über Magnetspulen).
- es wird in der Ausführung mit 3 und 4 Wegen, 2 oder 3 Stellungen und mit verschiedenen austauschbaren Kolben ④ geliefert, die verschiedene Einschaltsequenzen besitzen.

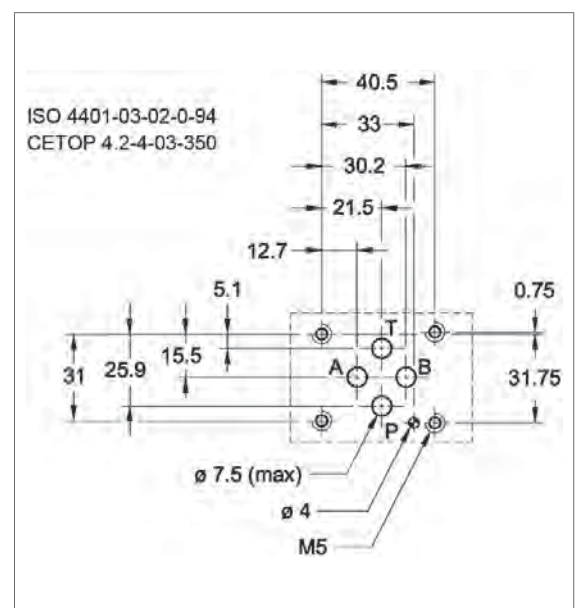
- es ist mit Gleichstrom- oder Wechselstrommagneten lieferbar; die Gleichstrommagneten können auch mit Wechselstrom durch Stecker mit Gleichrichter versorgt werden (siehe Abschnitt 7.2).
- Sonderausführungen sind wie folgt lieferbar:
 - Ausführung mit Plattenanschluss für Außenleckölleitung Y (siehe Abschnitt 13.2).
 - Ausführung mit fester Bohrung für Weichschaltung (siehe Abschnitt 13.3).

TECHNISCHE DATEN

(Werte für Mineralöl mit Viskosität 36 cSt u. 50°C)

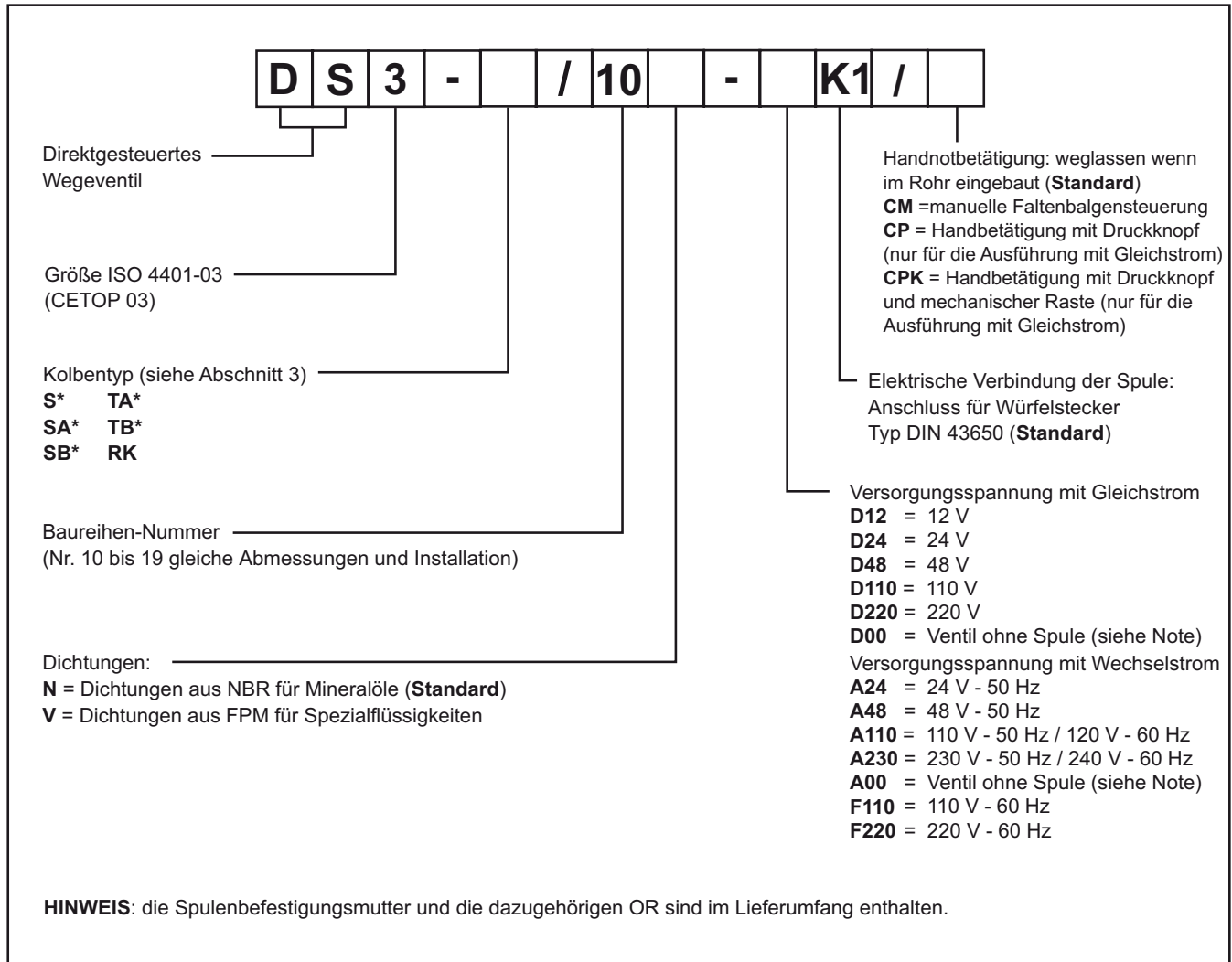
„max. Betriebsdruck Anschlüsse P - A - B Anschluss T Standard-Ausführung Anschluss T Ausführung mit Anschluss Y“	bar	GS	WS
		350	
		210	160
		320	-
max. Förderstrom	l/min	100	90
Strömungsverluste Δp-Q	siehe Abschn. 4		
Einsatzbereich	siehe Abschn. 6		
Elektrische Merkmale	siehe Abschn. 7		
Elektrische Verbindungen	Anschluss für Würfelstecker DIN 43650		
Umgebungstemperatur	°C	-20 / +50	
Flüssigkeitstemperatur	°C	-20 / +80	
Flüssigkeitsviskosität	cSt	10 ÷ 400	
empfohlene Viskosität	cSt	25	
Verschmutzungsgrad der Flüssigkeit	nach NAS 1638 Klasse 10		
Gewicht: mit einer Spule	kg	1,5	1,35
Gewicht: mit zwei Spulen	kg	2,0	1,8

BEFESTIGUNGSPLATTE



DS3 - direktgesteuertes Wegeventil

1 - BESTELLBEZEICHNUNG



2 - HYDRAULISCHE DRUCKMEDIEN

Verwenden Sie Hydraulikflüssigkeiten auf Mineralölbasis Typ HH, HL oder HM nach ISO 6743-4.

Für Flüssigkeiten Typ HFDR (Phosphorester) verwenden Sie Dichtungen aus FPM (Code V).

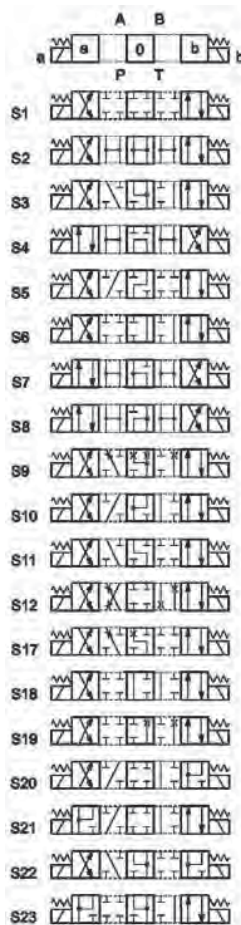
Bei einer Verwendung von anderen Druckmedien wie zum Beispiel HFA, HFB, HFC wenden Sie sich bitte an unser technisches Büro. Der Betrieb mit einer Flüssigkeitstemperatur höher als 70°C verursacht einen schnellen Verfall der Flüssigkeitsqualität und der Dichtungen.

Die physikalischen und chemischen Merkmale der Flüssigkeit sollen nicht verändert werden.

DS3 - direktgesteuertes Wegeventil

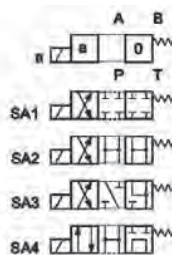
Ausführung **S***:

2 Magnetspulen - 3 Stellungen
mit Federzentrierung



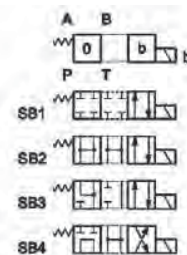
Ausführung **SA***:

1 Magnetspule Seite A
2 Stellungen (mittig + seitlich)
mit Federzentrierung



Ausführung **SB***:

1 Magnetspule Seite B
2 Stellungen (mittig + seitlich)
mit Federzentrierung



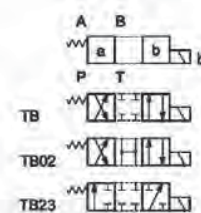
Ausführung **TA**:

1 Magnetspule Seite A
2 Aussenstellungen
mit Rückholfeder



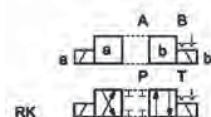
Ausführung **TB**:

1 Magnetspule Seite B
2 Aussenstellungen
mit Rückholfeder



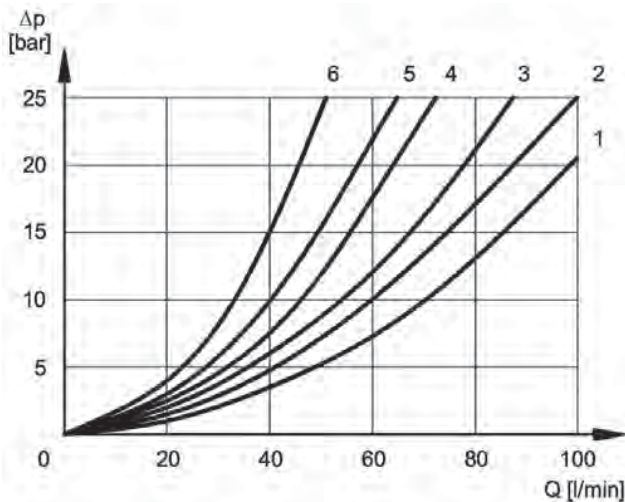
Ausführung **RK**:

2 Magnetspulen - 2 Stellungen
mit mechanischer Raste



Neben den hier angeführten Standardkolben sind auch Sonderkolben auf Anfrage lieferbar.
Für deren Umsetzung wenden Sie sich bitte an unser technisches Büro.

DS3 - direktgesteuertes Wegeventil



Für die Strömungsverluste zwischen den Leitungen A und B der Kolben S10, S20, S21, S22 und S23, die in Eilgangstellung arbeiten, gilt die Kennlinie 5.

DRUCKVERLUSTE DES UMGESCHALTETEN MAGNETVENTILS

AUSFÜHRUNG	FLÜSSIGKEITSRICHTUNG			
	P-A	P-B	A-T	B-T
	DIAGRAMMKENNLINIEN			
S1, SA1, SB1	2	2	3	3
S2, SA2, SB2	1	1	3	3
S3, SA3, SB3	3	3	1	1
S4, SA4, SB4	6	6	6	6
S5	2	1	3	3
S6	2	2	3	1
S7, S8	6	6	6	6
S9	2	2	3	3
S10	1	3	1	3
S11	2	2	1	3
S12	2	2	3	3
S17				
S18	1	2	3	3
S19				
S20	1	5	2	
S21	5	1		2
S22	1	5	2	
S23	5	1		2
TA, TB	2	2	2	2
TA02, TB02	2	2	2	2
TA23, TB23	3	3		
RK	2	2	2	2

DRUCKVERLUSTE DES MAGNETVENTILS IN MITTELSTELLUNG

AUSFÜHRUNG	FLÜSSIGKEITSRICHTUNG				
	P-A	P-B	A-T	B-T	P-T
	DIAGRAMMKENNLINIEN				
S2, SA2, SB2					2
S3, SA3, SB3			3	3	
S4, SA4, SB4					5
S5		4			
S6				3	
S7, S8					5
S10	3	3			
S11			3		
S17					
S18	4				
S19					
S22			3	3	
S23			3	3	

5 - UMSCHALTZEITEN

Die angegebenen Werte werden nach ISO 6403, mit Mineralöl mit Viskosität von 36 cSt bei 50°C aufgenommen.

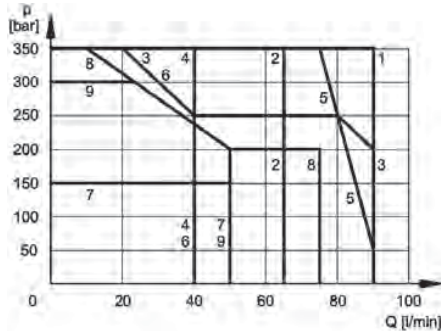
VERSORGUNGS-TYP	ZEITEN	
	EINSCHALTUNG	AUSSCHALTUNG
GS	25 + 75 ms	15 + 25 ms
WS	10 + 25 ms	15 + 40 ms

DS3 - direktgesteuertes Wegeventil

6 - EINSATZBEREICH

Die Kennlinien zeigen den Einsatzbereich des Ventils in Abhängigkeit des Durchflusses und des Drucks für die unterschiedlichen Ausführungen des Elektroventils. Die Werte werden nach dem ISO 6403 aufgenommen, mit Magnetspulen mit einer Ausgleichstemperatur und einer Spannung, die 90% der Nennspannung ist. Die Werte werden mit Mineralöl Viskosität 36 cSt um 50 °C und Filter NAS 1638 Klasse 7 aufgenommen.

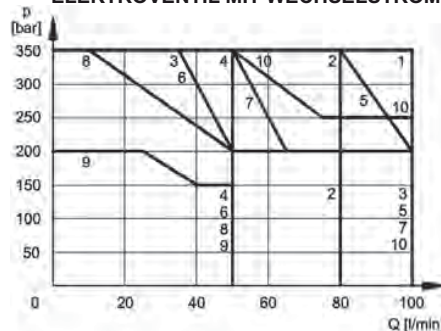
ELEKTROVENTIL MIT GLEICHSTROM



KOLBEN	KENNLINIE	
	P-A	P-B
S1,SA1,SB1	1	1
S2, SA2, SB2	2	2
S3, SA3, SB3	3	3
S4, SA4, SB4	4	4
S5	1	1
S6	6	7
S7	4	4
S8	4	4
S9	10	10
S10	1	1
S11	7	6
S12	1	1

KOLBEN	KENNLINIE	
	P-A	P-B
S17		
S18	1	1
S19		
S20	8*	8
S21	8	8*
S22	9*	8
S23	8	9*
TA, TB	5	5
TA02, TB02	1	1
TA23, TB23	2	2
RK	1	1

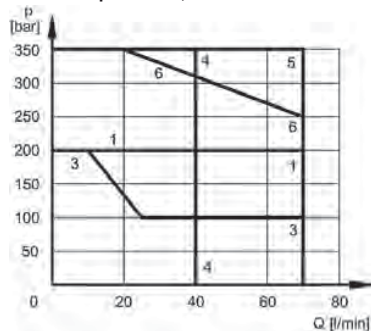
ELEKTROVENTIL MIT WECHSELSTROM



KOLBEN	KENNLINIE	
	P-A	P-B
S1,SA1,SB1	1	1
S2, SA2, SB2	2	2
S3, SA3, SB3	3	3
S4, SA4, SB4	4	4
S5	1	1
S6	3	1
S7	4	4
S8	4	4
S9	1	1
S10	1	1
S11	1	3
S12	1	1

KOLBEN	KENNLINIE	
	P-A	P-B
S17		
S18	1	1
S19		
S20	9*	8
S21	8	9*
S22	7*	6
S23	6	7*
TA, TB	1	1
TA02, TB02	1	1
TA23, TB23	5	5
RK	1	1

ELEKTROVENTIL MIT WECHSELSTROM und Spule A110, das mit 110V - 60 Hz versorgt wird



KOLBEN	KENNLINIE	
	P-A	P-B
S1,SA1,SB1	1	1
S2, SA2, SB2	5	5
S3, SA3, SB3	3	3
S4, SA4, SB4	4	4
S9	1	1
TA, TB	5	5
RK	6	6

* Leistung von einem Ventil, das Leitungen A und B hat, von denen eine zur Kolbenseite und die andere zur Kolbenstangenseite von einem Zylinder mit Flächenverhältnis 2:1 verbunden werden.

Hinweis: die in den Diagrammen bestätigten Werte beziehen sich auf die Standard-Ausführung. Die Werte des Einsatzbereichs können sinken, wenn ein 4-Wege Ventil mit dem Anschluss A oder B, der gedrosselt ist, benutzt wird.

Für die Leistungen des Durchflusses und des Drucks von der Ausführung mit Weichschaltung siehe Abschnitt 13.2.

Für die Elektroventile mit Gleichstrom, die mit Wechselstrom durch Stecker mit eingebautem Gleichrichter versorgt werden, siehe Abschnitt 7.2.

DS3 - direktgesteuertes Wegeventil

7 - ELEKTRISCHE MERKMALE

7.1 Magnetspulen

Magnetspulen bestehen aus zwei Teilen: dem Spulenhalter und der Spule. Der in das Ventilgehäuse eingeschraubte Spulenhalter enthält den verschleißfrei in Öl laufenden Anker. Der mit dem rücklaufenden Öl in Verbindung stehende Innenteil sichert eine gute Wärmeabführung. Die Spule wird mit einer Rändelmutter auf dem Spulenhalter befestigt und kann gedreht werden, sofern es die Einbauverhältnisse zulassen.

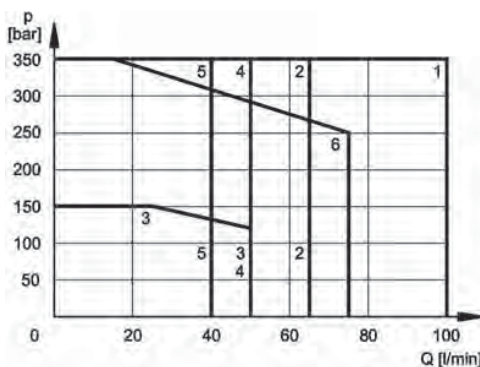
Hinweis: der IP65 Schutzgrad wird nur erreicht, wenn der Stecker verkabelt und richtig aufgebaut ist.

Änderung der Versorgungsspannung	± 10% V _{nenn}
max. Einschaltfrequenz	18.000 Ein/Stunde
Einschaltzeit	100%
elektromagnetische Verträglichkeit (EMC) - Abgaben (siehe Hinweis 1) EN 50081-1 - Immunität EN 50082-2	nach den Normen 89/336 CEE
niedrige Spannung	nach den Normen 73/23/CEE 96/68/CEE
Schutzklasse: Verwitterung (CEI EN 60529) Wicklungsisolierung (VDE 0580) Imprägnierung GS Ventil WS Ventil	IP 65 (siehe Hinw.) Klasse H Klasse F Klasse H

Spulen für Gleichstrom (Werte ± 5%)

Suffix	Nennspannung [V]	Widerstand um 20°C [ohm]	aufgen. Strom [A]	aufgen. Leistung [W]	Code
D12	12	4,4	2,72	32,6	1902860
D24	24	18,6	1,29	31	1902861
D48	48	78,6	0,61	29,3	1902863
D110	110	423	0,26	28,6	1902864
D220	220	1692	0,13	28,6	1902865

Verwendungsgrenzen für Elektroventile mit Gleichstrom, die mit Wechselstrom durch Stecker mit eingebautem Gleichrichter versorgt werden

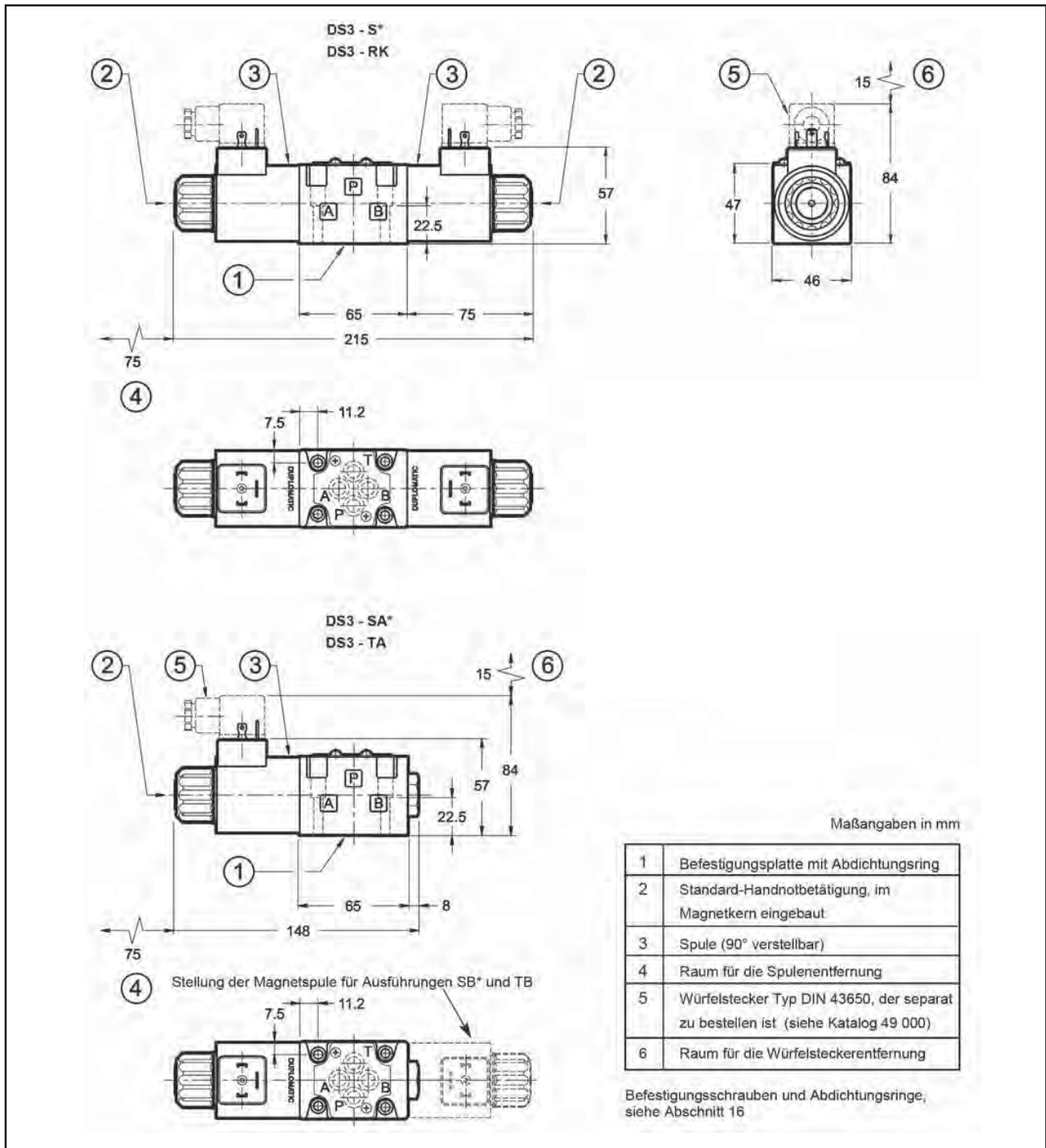


KOLBEN	KENNLINIE	
	P-A	P-B
S1, SA1, SB1	1	1
S2, SA2, SB2	2	2
S3, SA3, SB3	3	3
S4, SA4, SB4	4	4
S9	6	6
TA, TB	5	5
RK	1	1

Suffix	Nennspannung [V]	Frequenz [Hz]	Widerstand um 20°C [ohm]	aufgenomm. Anzugstrom [A]	aufgenomm. Dauerstrom [A]	aufgenomm. Anzugleistung [VA]	aufgenomm. Dauerleistung [VA]	Code
A24	24	50	1,46	8	2	192	48	1902830
A48	48	50	5,84	4,4	1,1	204	51	1902831
A110	110V-50Hz 120V-60Hz	50/60	32	1,84	0,46	192	48	1902832
				1,56	0,39	188	47	
A230	230V-50Hz 240V-60Hz		140	0,76	0,19	176	44	1902833
				0,6	0,15	144	36	
F110	110	60	26	1,6	0,4	176	44	1902834
F220	220		106	0,8	0,2	180	45	1902835

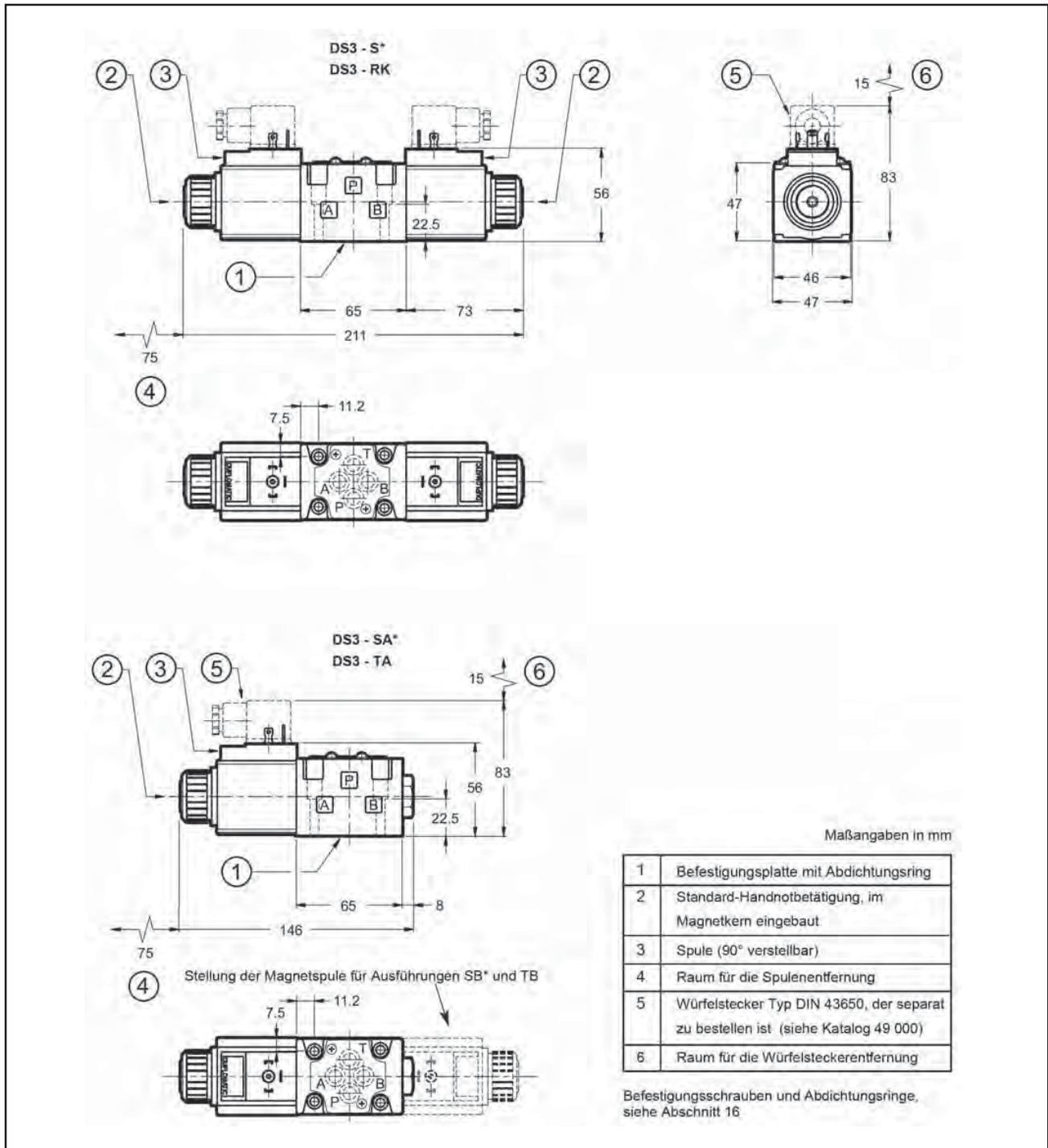
DS3 - direktgesteuertes Wegeventil

8 - ABMESSUNGEN UND ANSCHLÜSSE DES ELEKTROVENTILS MIT GLEICHSTROM



DS3 - direktgesteuertes Wegeventil

9 - ABMESSUNGEN UND ANSCHLÜSSE DES ELEKTROVENTILS MIT WECHSELSTROM

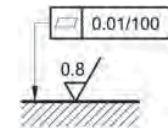


DS3 - direktgesteuertes Wegeventil

10 - INSTALLATION

Die Montage ist in den Ausführungen mit Federzentrierung und Rückholfeder frei; die Längsachse der Ventile in der Ausführung RK - ohne Feder und mit mechanischer Raste - soll waagrecht sein. Die Ventilbefestigung erfolgt durch Schrauben oder Zugstangen auf einer Planfläche dessen Ebenheits- und Rauheitswerte höher oder gleich zu denjenigen sind, wie nebenan gezeigt werden. Die Nichtbeachtung der minimalen Ebenheits- und Rauheitswerte kann Leckagen zwischen dem Ventil und der Befestigungsplatte verursachen.

Qualität der Oberfläche

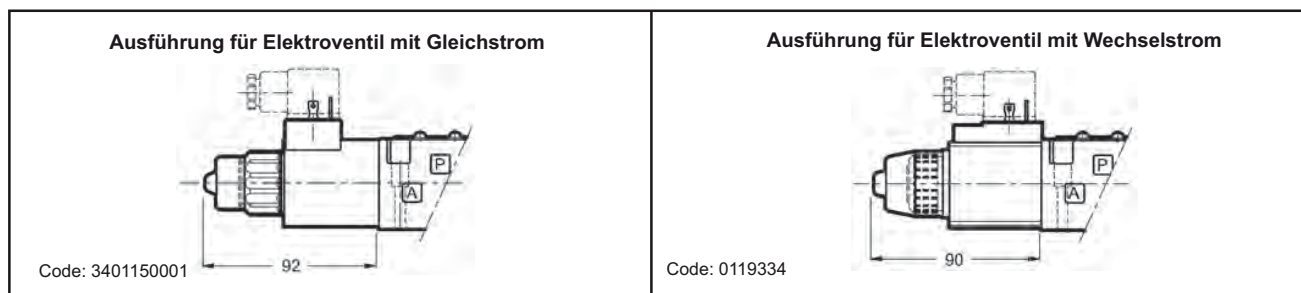


11 - WÜRFELSTECKER

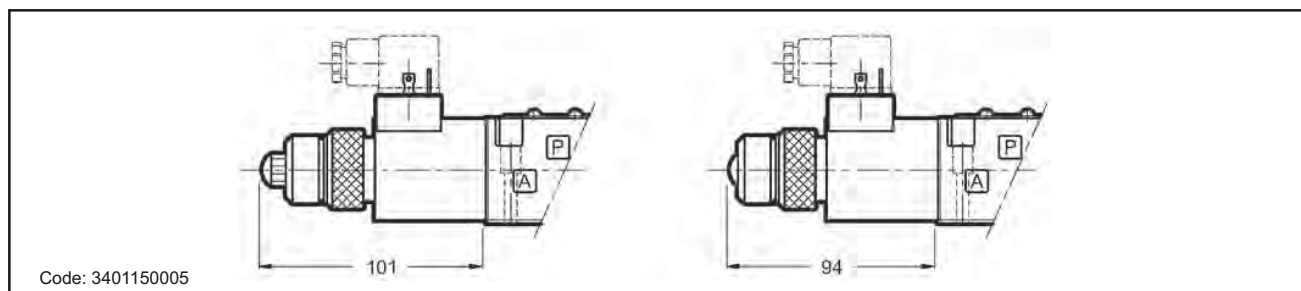
Die Elektroventile werden immer ohne Würfelstecker geliefert. Die Würfelstecker müssen separat bestellt werden.

12 - HANDBETÄTIGUNGEN

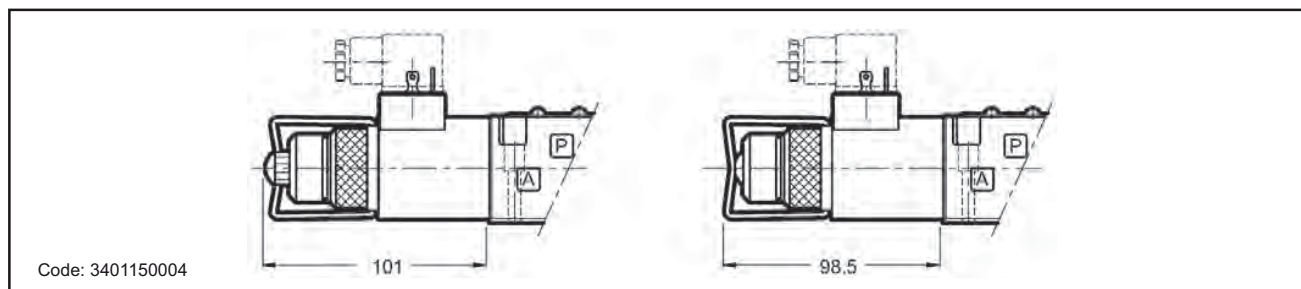
12.1 - CM-DS3/10 Manuelle Faltenbalgensteuerung



12.2 - CP-DS3/10 Handbetätigung mit Druckknopf (nur für Elektroventil mit Gleichstrom)



12.3 - CPK-DS3/10 Handbetätigung mit Druckknopf und mechanischer Raste (nur für Elektroventil mit Gleichstrom)



DS3 - direktgesteuertes Wegeventil

13 - SONDERAUSFÜHRUNGEN FÜR ELEKTROVENTILE MIT GLEICHSTROM

13.1 - Bestellbezeichnung

D	S	3	-	/	11	-	K1	/	
----------	----------	----------	---	---	-----------	---	-----------	---	--

Elektroventil mit direkter Steuerung

Größe ISO 4401-03 (CETOP 03)

Kolbentyp _____
Für die Ausführung **Y** siehe Abschn. 3
Für die Ausführung **F*** siehe Tabelle Abschn. 13.3

Baureihen-Nummer _____
(Nr. 10 bis 19 gleiche Abmessungen und Installation)

Dichtungen: _____
N = Dichtungen aus NBR für Mineralöle (**Standard**)
V = Dichtungen aus FPM für Spezialflüssigkeiten

Optionen:
Y = Plattenanschluss für Außenleckoilleitung (siehe Abschn. 13.2)
F* = Feste Bohrung für Weichschaltung (siehe Abschn. 13.3)

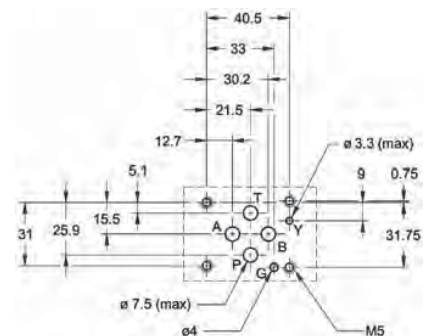
Elektrische Verbindung der Spule:
Anschluss für Würfelstecker
Typ DIN 43650 (**Standard**) HINWEIS 1: siehe Abschnitt 1

Versorgungsspannung
D12 = 12 V
D24 = 24 V
D110 = 110 V
D220 = 220 V

13.2 - Plattenanschluss für Außenleckoilleitung (Option /Y)

Diese Ausführung ermöglicht bei Druckwerten bis zu 320 bar auf der T-Leitung des Ventils zu arbeiten.

Es handelt sich um eine Leckoilbohrung (Y), auf der Ventilanschlussfläche laut ISO 4401-03-03-0-94 ausgeführt, die sich mit der mit den Magnetkernen verbundenen Kammer des Ventilgehäuses verbindet. Die Kerne werden somit nicht durch den Druck auf der T-Leitung des Magnetventils beansprucht.



13.3 - Feste Bohrung für Weichschaltung (Option /F*)

Durch diese Ausführung werden Beschleunigung und Verzögerung der Hydraulikzylinder durch eine verlangsamte Kolbenbewegung gedämpft erreicht. Die Geschwindigkeit wird mittels im Ventilgehäuse eingesetzten Schrauben mit Passloch beeinflusst.

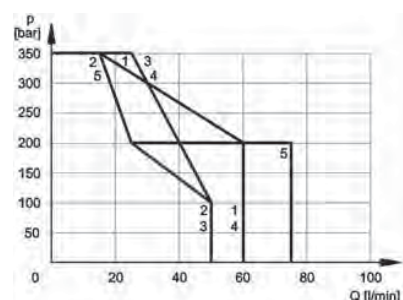
Die Schrauben sind nicht einstellbar.

Das nebenstehende Diagramm zeigt die Verwendungsgrenzen der Kolben, die in der Ausführung mit Weichschaltung verfügbar sind (Hinweis: Für diese Ausführung muss der Kolben S9 statt des Types S3 benutzt werden) und die betreffenden Einschaltzeiten. Die angegebenen Werte werden nach ISO 6403, mit Mineralöl mit Viskosität von 36 cSt bei 50°C aufgenommen.

Die Schaltzeit des Kolbens wird von der Viskosität und daher Temperatur der Flüssigkeit beeinflusst. Die Ausschaltzeiten ändern sich abhängig von den Durchflussstrom- und Betriebsdruckwerten des Ventils.

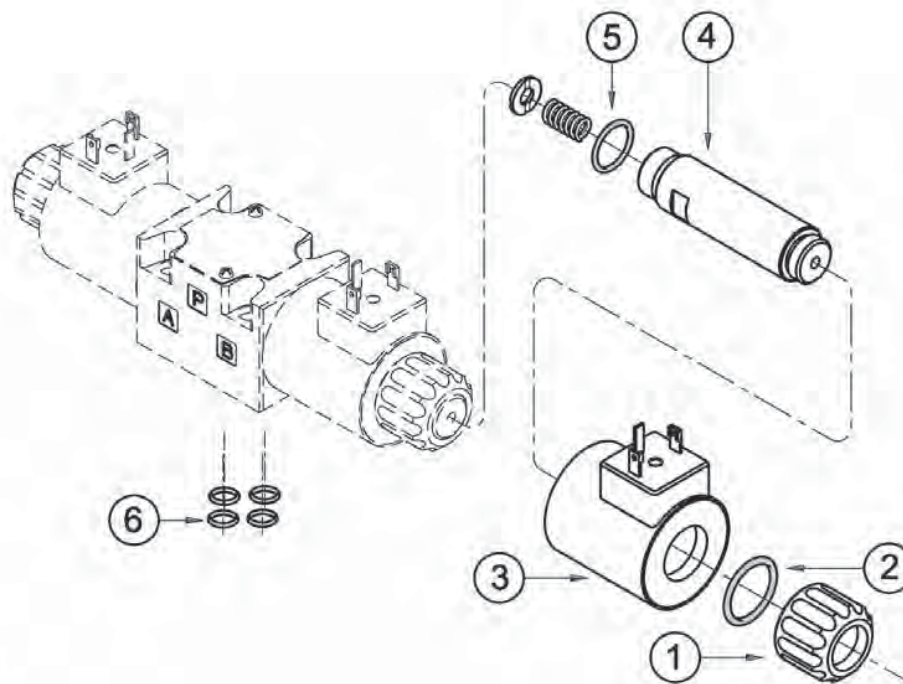
Für einen einwandfreien Betrieb der Weichschaltung sollte man sicher stellen, dass die Magnetspulen immer voll mit Öl sind. Dazu empfiehlt es sich, ein Gegendruckventil mit Eichtung 1 ÷ 2 bar auf der Leitung T einzubauen.

Kolben	Kennlinie		Schrauben- typ	Zeiten	
	P-A	P-B		Einschaltung	Ausschaltung
S1, S12	1	1	F 08	150	200 ÷ 400
S2	2	2	F 08	200	100 ÷ 400
S4, S7,	3	3	F 06	150	200 ÷ 500
S9	4	4	F 08	150	150 ÷ 400
TA, TB	5	5	F 08	100 ÷ 400	100 ÷ 900
TA02, TB02	2	2	F 08	100 ÷ 700	150 ÷ 900



DS3 - direktgesteuertes Wegeventil

14 - ERSATZTEILE FÜR ELEKTROVENTIL MIT GLEICHSTROM



①	Spulennutmutter mit eingebauter Dichtung, Code-Nr. 0119412
②	O-Ring Typ ORM-0220-20 - 70 shore
③	Spule (s. nebenstehende Bestellbezeichnung)
④	Magnetkern TD22-DS3/10N (Dichtungen aus NBR) TD22-DS3/10V (Dichtungen aus FPM) Hin.: der Kern wird mit O-Ring ⑤ komplett geliefert.
⑤	O-Ring Typ 2062 - 70 shore
⑥	4 O-Ring Typ 2037 - 90 shore

BESTELLBEZEICHNUNG DER GLEICHSTROMSPULEN

C 22 - K1 / 10	
Versorgungsspannung D12 = 12 V D24 = 24 V D48 = 48 V D110 = 110 V D220 = 220 V	Baureihen-Nummer (Nr. 10 bis 19 gleiche Abmessungen und Installation) Spulenschaltung: Anschluss für Stecker nach DIN 43650 (Standard)

DICHTUNGSSATZ

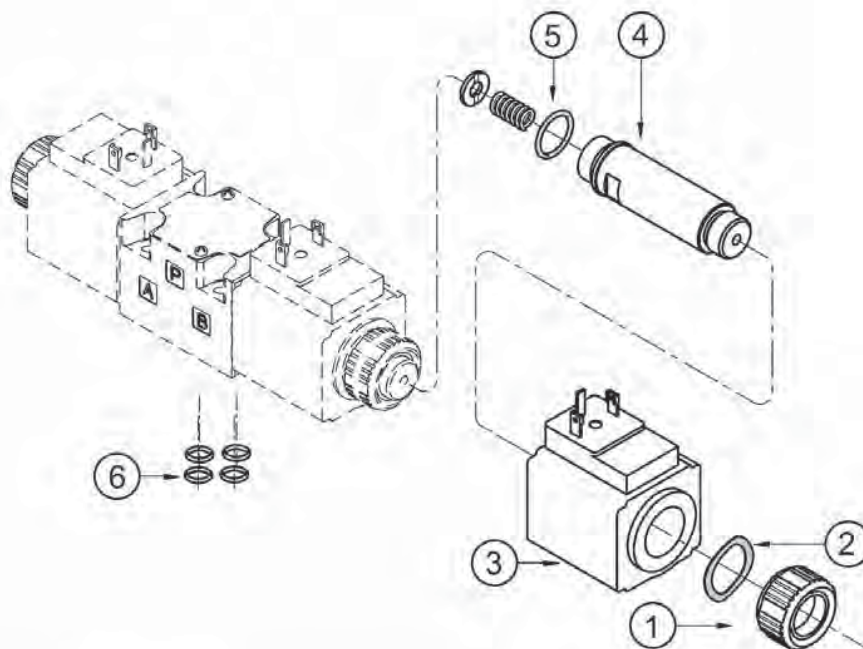
Nachfolgende Code-Nr. enthalten die O-Ringe ② ⑤ ⑥

Code-Nr. **1985406** Dichtungen aus NBR

Code-Nr. **1985410** Dichtungen aus FPM (Viton)

DS3 - direktgesteuertes Wegeventil

15 - ERSATZTEILE FÜR ELEKTROVENTIL MIT WECHSELSTROM



①	Spulennutmutter Code-Nr. 0119333
②	Sprengring Code-Nr. 0550483
③	Spule (s. nebenstehende Bestellbezeichnung)
④	Magnetkern TA20.6-DS3/10N (Dichtungen aus NBR) TD20.6-DS3/10V (Dichtungen aus FPM) Hin.: der Kern wird mit O-Ring ⑥ komplett geliefert.
⑤	O-Ring Typ 2062 - 70 shore
⑥	4 O-Ring Typ 2037 - 90 shore

DICHTUNGSSATZ

Nachfolgende Code-Nr. enthalten die O-Ringe ② ⑤ ⑥

Code-Nr. 1985411 Dichtungen aus NBR

Code-Nr. 1985412 Dichtungen aus FPM (Viton)

BESTELLBEZEICHNUNG DER WECHSELSTROMSPULEN

C 20.6 - K1 / 10

Versorgungsspannung

A24 = 24 V - 50 Hz
A48 = 48 V - 50 Hz
A110 = 110 V - 50 Hz
120 V - 60 Hz
A230 = 230 V - 50 Hz
240 V - 60 Hz
F110 = 110 V - 60 Hz
F220 = 220 V - 60 Hz

Baureihen-Nummer
(Nr. 10 bis 19 gleiche
Abmessungen und
Installation)

Spulenschaltung: Anschluss für
Stecker nach DIN 43650
(Standard)

16 - BEFESTIGUNGSSCHRAUBE DES VENTILS

N. 4 Schrauben Typ TCEI M5x30 (empfohlene Klasse 12.9)
Anzugsmoment 5 Nm



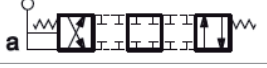

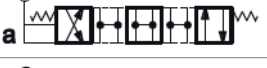





17 - GRUNDPLATTEN (Siehe Katalog 51 000)

Typ PMMD-AI3G mit rückseitigen Anschlüssen 3/8" BSP
Typ PMMD-AL3G mit seitlichen Anschlüssen 3/8" BSP

Wegeventil Cetop 03 -Handbetätigt



Wegeventil NG 6

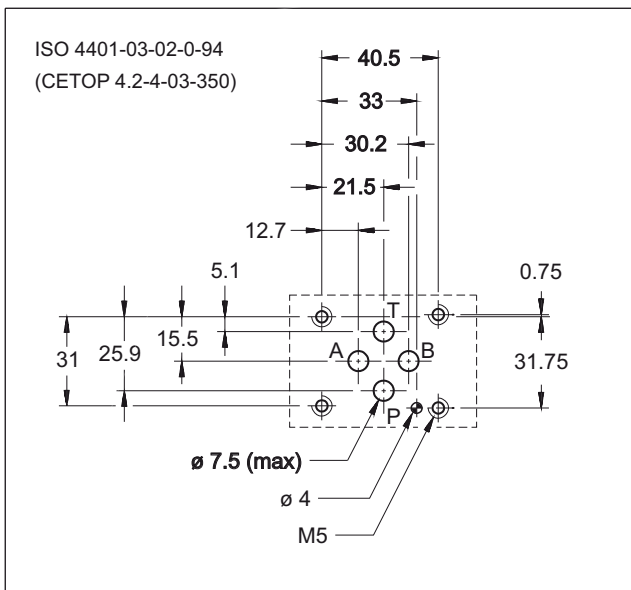
Bestellnr.	Typ	Code	
260-020-01000	4/2 Handhebel-Wegev. parallel-gekr. betätigt	DSH3-TA/10N	
260-020-01050	4/2 Handhebel-Wegev. parallel-gekr.-2xgerastet betätigt	DSH3-TAK/10N	
260-020-01100	4/3 Handhebel-Wegev. alles geschlossenbetätigt	DSH3-S1/10N	
260-020-01150	4/3 Handhebel-Wegev. alles geschl.-3xgerastetbetätigt	DSH3-SK1/10N	
260-020-01200	4/3 Handhebel-Wegev. alles verbunden betätigt	DSH3-S2/10N	
260-020-01250	4/3 Handhebel-Wegev. alles verbunden-3xgerastetbetätigt	DSH3-SK2/10N	
260-020-01300	4/3 Handhebel-Wegev. A+B+T verbunden betätigt	DSH3-S3/10N	
260-020-01350	4/3 Handhebel-Wegev. A+B+T verbunden-3xgerastetbetätigt	DSH3-SK3/10N	
260-020-01400	4/3 Handhebel-Wegev. P+T verbunden betätigt	DSH3-S4/10N	
260-020-01450	4/3 Handhebel-Wegev. P+T verbunden-3xgerastetbetätigt	DSH3-SK4/10N	

DSH - Wegeventil mit Hebelsteuerung

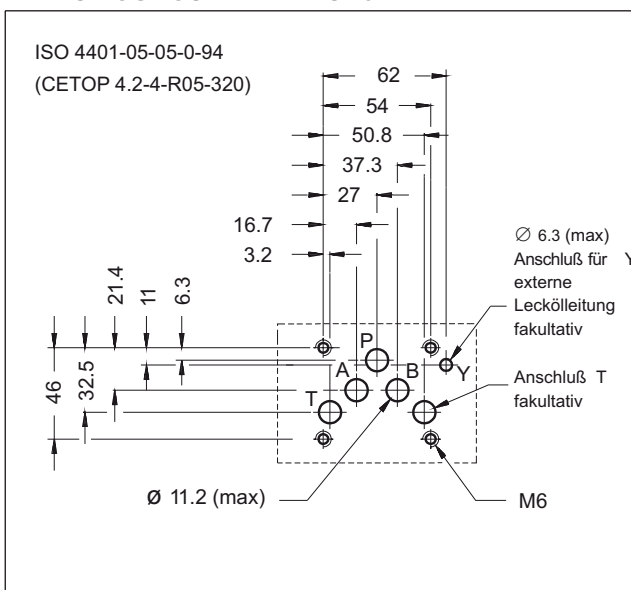
DSH3 ISO 4401-03 (Cetop 03)
DSH5 ISO 4401-05 (Cetop R05)



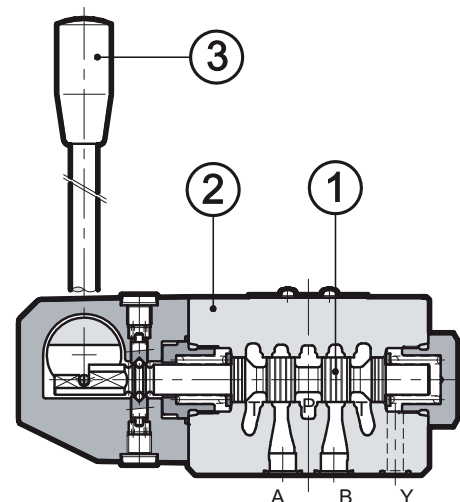
BEFESTIGUNGSPLATTE DSH3



BEFESTIGUNGSPLATTE DSH5



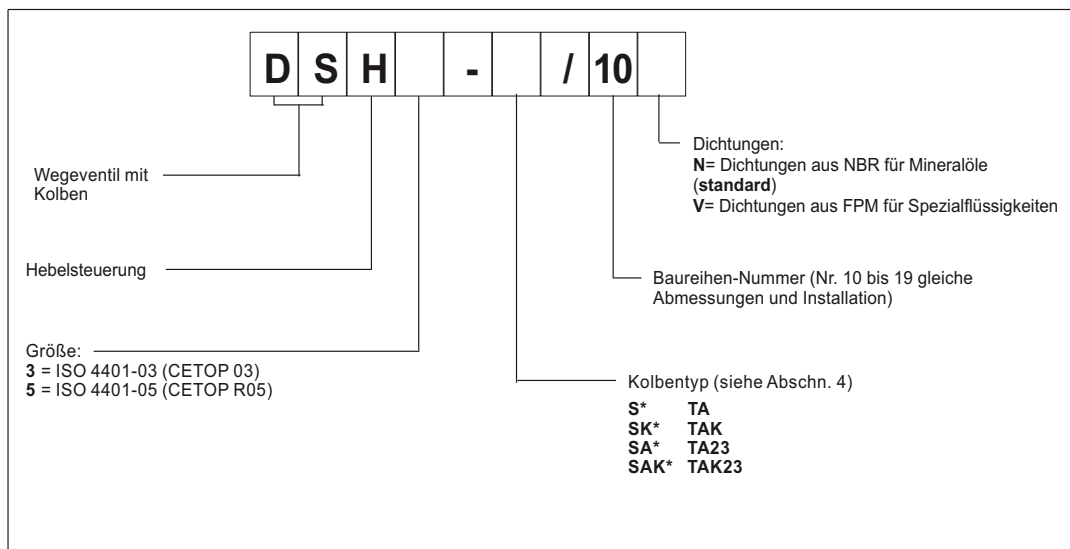
FUNKTIONSPRINZIP



- Die Ventile Typ DSH* sind Wegeventile mit Hebelsteuerung; sie sind in den Ausführungen mit 3 und 4 Wegen und mit verschiedenen austauschbaren Kolbentypen verfügbar ①, Ihre Befestigungsplatte entspricht den Normen ISO 4401 (CETOP RP121H).
- Der Ventilkörper ② besteht aus Eisenguss mit hoher Festigkeit und verfügt über breite Kammern, die die Strömungsverluste gering halten.
- Es ist in den Ausführungen mit zwei oder drei Stellungen, mit Rückholfeder oder mechanischer Raste der gesteuerten Stellung verfügbar.
- Die Stellung des Steuerungshebels ③ kann, in Funktion der verschiedenen Anwendungen, 90° (nur DSH5) oder 180° (DSH5 und DSH3) Grad im Vergleich zur Standardstellung gedreht werden.
- Mit der Größe ISO 4401-05 (CETOP R05) ist die externe Leckölleitung Y serienmässig verfügbar; sie muss verbunden werden, wenn es Gegendruck in der Rücklaufleitung T höher als 25 bar gibt.
- Mit der Größe ISO 4401-03 (CETOP 03) ist es möglich, die Ausführung mit der externen Leckölleitung Y zu bestellen, wenn es Gegendruck in der Rücklaufleitung T höher als 25 bar gibt (siehe Abschn. 2).

DSH - Wegeventil mit Hebelsteuerung

DSH3 ISO 4401-03 (Cetop 03)
DSH5 ISO 4401-05 (Cetop R05)



2 - TECHNISCHE DATEN (Werte für Mineralöl m. Viskosität 36 cSt u. 50°C)		DSH3	DSH5
Max. Betriebsdruck			
- Anschlüsse P A B	bar	350	320
- Anschluss T ohne externe Leckölleitung Y (standard)		25	25
- Anschluss T mit externer Leckölleitung Y (siehe Abschn.)		320	320
Nennförderstrom	l/min	75	120
Umgebungstemperatur	°C	-20 / +50	
Flüssigkeitstemperatur	°C	-20 / +80	
Flüssigkeitsviskosität	cSt	10 ÷ 400	
Empfohlene Viskosität	cSt	25	
Verschmutzungsgrad der Flüssigkeit		nach ISO 4406:1999 Klasse 20/18/15	
Gewicht	kg	2,1	4,2

HINWEIS: Was das Ventil DSH3 betrifft, ist es möglich, die Ausführung mit Anschluss Y für externe Leckölleitung zu bestellen, indem man /Y am Ende der Bestellbezeichnung hinzufügt (siehe Abschn. 9). Was das Ventil DSH5 betrifft, ist der Anschluss Y serienmässig verfügbar.

3 - HYDRAULISCHE DRUCKMEDIEN

Verwenden Sie Hydraulikflüssigkeiten auf Mineralölbasis Typ HL oder HM nach ISO 6743-4. Diese Flüssigkeiten fordern die Benutzung von Dichtungen aus NBR (Code N). Für Flüssigkeiten Typ HFDR (Phosphorester) verwenden Sie Dichtungen aus FPM (Code V). Bei einer Verwendung von anderen Druckmedien wie zum Beispiel HFA, HFB, HFC wenden Sie sich bitte an unser technisches Büro.

Der Betrieb mit einer Flüssigkeitstemperatur höher als 80 °C verursacht einen schnellen Verfall der Flüssigkeitsqualität und der Dichtungen. Die physischen und chemischen Merkmale der Flüssigkeit sollen nicht verändert werden.

DSH - Wegeventil mit Hebelsteuerung

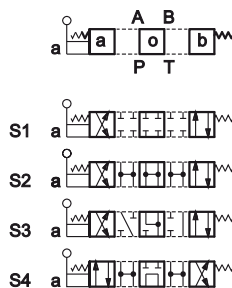
DSH3 ISO 4401-03 (Cetop 03)
DSH5 ISO 4401-05 (Cetop R05)



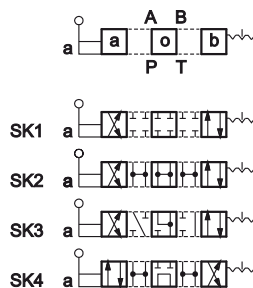
DSH*
BAUREIHE 10

4 - KOLBENTYP

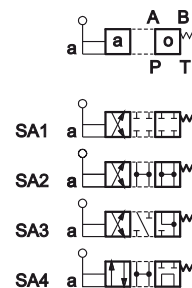
Ausführung **S***:
3 Stellungen mit
Federzentrierung



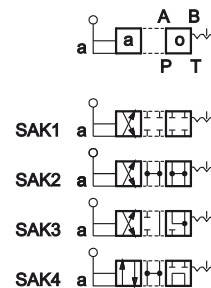
Ausführung **SK***:
3 Stellungen mit
mechanischer Raste



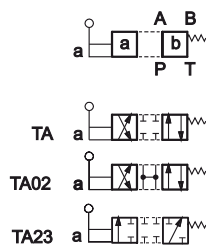
Ausführung **SA***:
2 Stellungen
(mittel + extern)
mit Federzentrierung



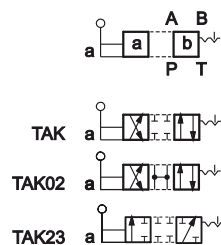
Ausführung **SAK***:
2 Stellungen
(mittel + extern)
mit mechanischer Raste



Ausführung **TA**:
2 externe Stellungen
mit Rückholfeder



Ausführung **TAK**:
2 externe Stellungen
mit mechanischer Raste



DSH - Wegeventil mit Hebelsteuerung

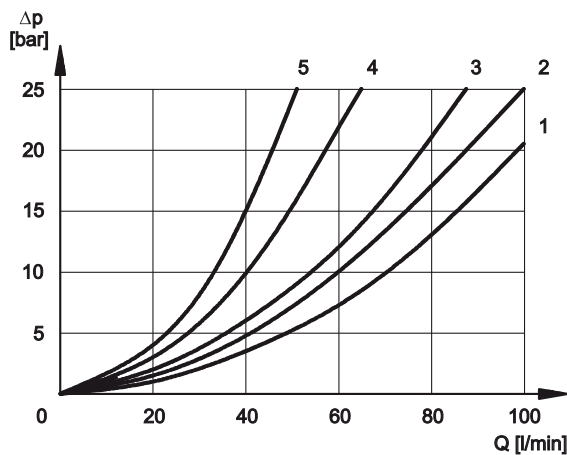
DSH3 ISO 4401-03 (Cetop 03)
DSH5 ISO 4401-05 (Cetop R05)



DSH*
BAUREIHE 10

5 - STRÖMUNGSVERLUSTE Δp -Q (Werte für Viskosität 36 cSt u. 50 °C)

5.1 - Strömungsverluste Δp -Q DSH3



STRÖMUNGSVERLUSTE DES UMGESCHALTETEN VENTILS

KOLBEN	FLUSSRICHTUNG			
	P-A	P-B	A-T	B-T
	DIAGRAMMKENNLINIEN			
S1, SA1, SAK1	2	2	3	3
S2, SA2, SAK2	1	1	3	3
S3, SA3, SAK3	3	3	1	1
S4, SA4, SAK4	5	5	5	5
TA, TAK	2	2	2	2
TA02, TAK 02	2	2	2	2
TA23, TAK23	3	3		

STRÖMUNGSVERLUSTE DES VENTILS IN ZENTRALPOSITION

KOLBEN	FLUSSRICHTUNG				
	P-A	P-B	A-T	B-T	P-T
	DIAGRAMMKENNLINIEN				
S2, SA2, SAK2					2
S3, SA3, SAK3			3	3	
S4, SA4, SAK4					4

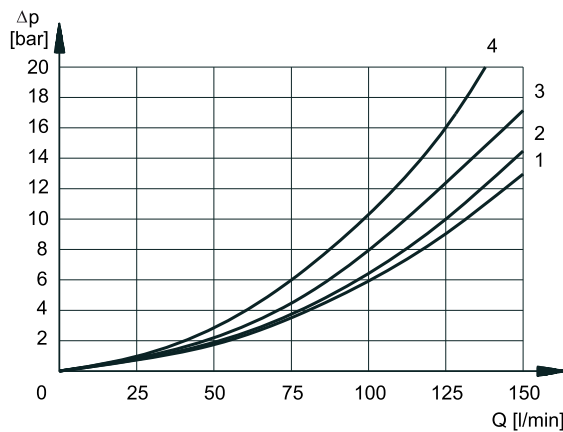
DSH - Wegeventil mit Hebelsteuerung

DSH3 ISO 4401-03 (Cetop 03)
DSH5 ISO 4401-05 (Cetop R05)



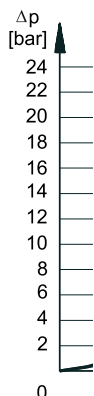
DSH*
BAUREIHE 10

5.2 - Strömungsverluste Δp -Q DSH5



STRÖMUNGSVERLUSTE DES UMGESCHALTETEN VENTILS

KOLBEN	FLUSSRICHTUNG			
	P-A	P-B	A-T	B-T
	DIAGRAMMKENNLINIEN			
S1, SA1, SAK1	2	2	1	1
S2, SA2, SAK2	3	3	1	1
S3, SA3, SAK3	3	3	2	2
S4, SA4, SAK4	1	1	2	2
TA, TAK	3	3	2	2
TA02, TAK 02	3	3	2	2
TA23, TAK23	4	4		



STRÖMUNGSVERLUSTE DES VENTILS IN ZENTRALPOSITION

BEN	FLUSSRICHTUNG				
	P-A	P-B	A-T	B-T	P-T
	DIAGRAMMKENNLINIEN				
2, SAK2					5
3, SAK3			6	6	
4, SAK4					5

DSH - Wegeventil mit Hebelsteuerung

DSH3 ISO 4401-03 (Cetop 03)
DSH5 ISO 4401-05 (Cetop R05)

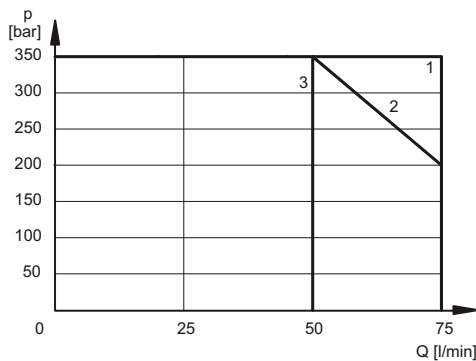


DSH*
BAUREIHE 10

6 - EINSATZBEREICH

Die Kennlinien bestätigen die Einsatzbereiche des Förderstroms abhängig von dem Druck für die verschiedenen Ausführungen des Ventils. Die Werte werden nach dem ISO 6403 mit Mineralöl Viskosität 36 cSt um 50 °C und Filter ISO 4406:1999 Klasse 18/16/13 aufgenommen.

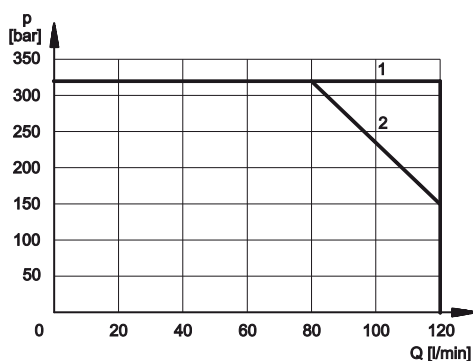
6.1 - Einsatzbereich DSH3



KOLBEN	KENNLINIE	
	P-A	P-B
S1, SA1, SAK1	1	1
S2, SA2, SAK2	1	1
S3, SA3, SAK3	2	2
S4, SA4, SAK4	3	3

KOLBEN	KENNLINIE	
	P-A	P-B
TA, TAK	1	1
TA02, TAK02	1	1
TA23, TAK23	1	1

6.2 - Einsatzbereich DSH5



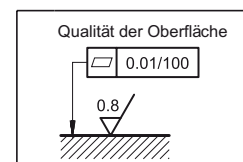
KOLBEN	KENNLINIE	
	P-A	P-B
S1, SA1, SAK1	1	1
S2, SA2, SAK2	1	1
S3, SA3, SAK3	1	1
S4, SA4, SAK4	2	2

KOLBEN	KENNLINIE	
	P-A	P-B
TA, TAK	1	1
TA02, TAK02	1	1
TA23, TAK23	1	1

Hinweis: Die in den Diagrammen bestätigten Werte beziehen sich auf die Standard-Ausführung. Die Werte des Einsatzbereichs können sinken, wenn ein 4-Wege Ventil mit dem Anschluss A oder B, der gedrosselt ist, benutzt wird.

7 - INSTALLATION

Die Montage ist in den Ausführungen mit Federzentrierung und Rückholfeder frei. Die Längsachse der Ventile mit mechanischer Raste soll waagrecht sein. Die Ventilbefestigung erfolgt durch Schrauben oder Zugstangen auf einer Planfläche dessen Ebenheits- und Rauheitswerte höher oder gleich zu denjenigen sind, wie nebenan gezeigt werden. Die Nichtbeachtung der minimalen Ebenheits- und Rauheitswerte kann Leckagen zwischen dem Ventil und der Befestigungsplatte verursachen.



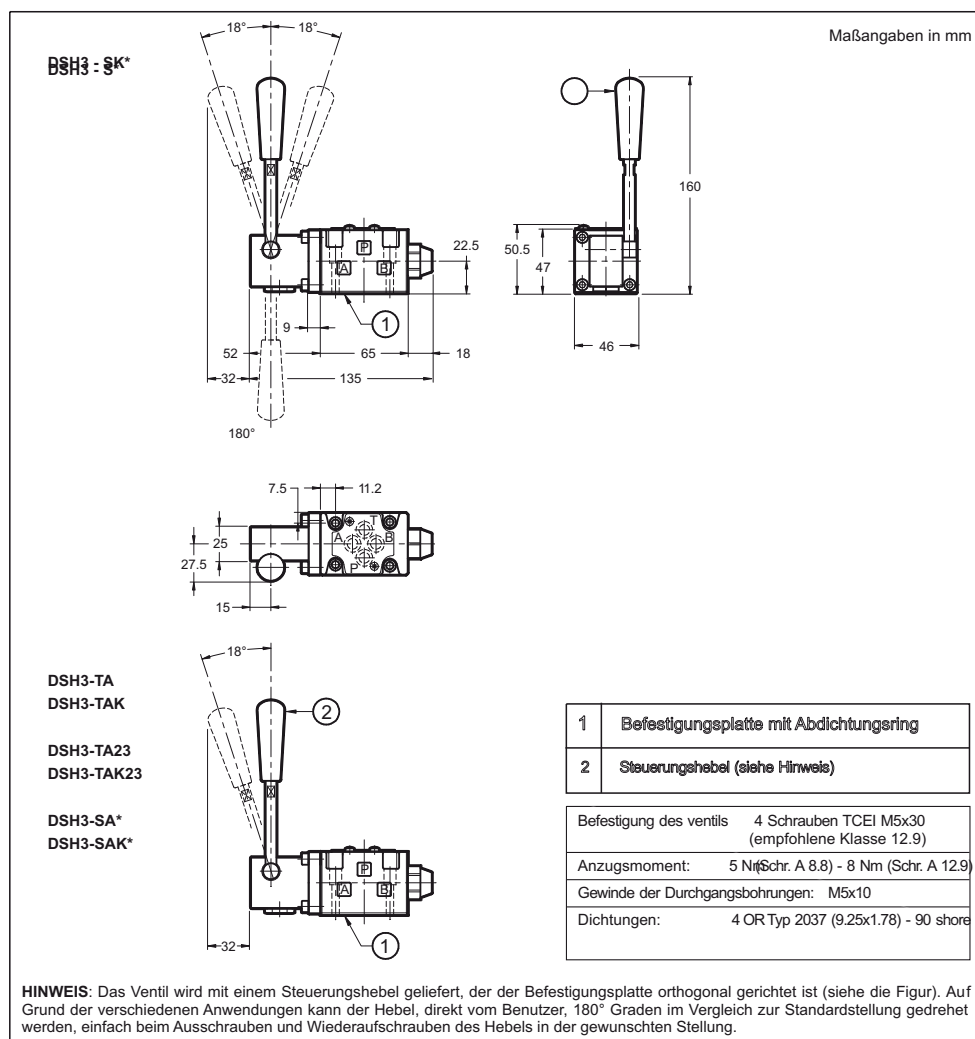
DSH - Wegeventil mit Hebelsteuerung

DSH3 ISO 4401-03 (Cetop 03)
DSH5 ISO 4401-05 (Cetop R05)



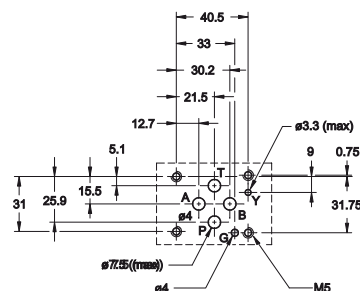
DSH* BAUREIHE 10

8 - ABMESSUNGEN UND ANSCHLÜSSE DSH3



9 - Plattenanschluss für Außenleckölleitung (Option Y)

Diese Ausführung ermöglicht bei Druckwerten bis zu 320 bar auf der T-Leitung des Ventils zu arbeiten.
Es handelt sich um eine auf der Ventilanschlussfläche laut ISO 4401-03-03-0-94 ausgeführte Leckölbohrung (Y), die sich mit der Kammer des Ventilgehäuses verbindet. Solche Kammer ist ihrerseits mit den Federgehäusen verbunden.



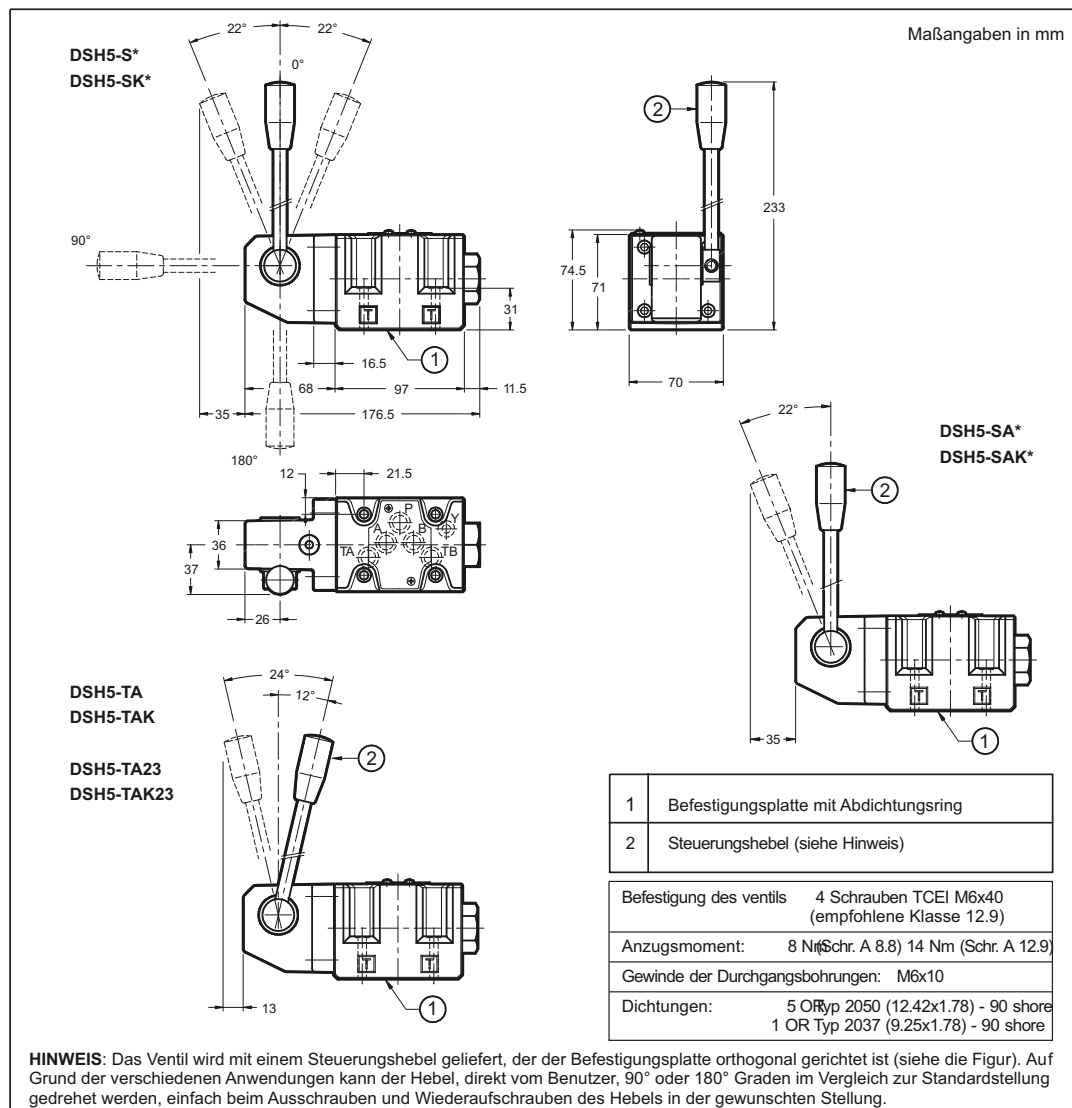
DSH - Wegeventil mit Hebelsteuerung

DSH3 ISO 4401-03 (Cetop 03)
DSH5 ISO 4401-05 (Cetop R05)



DSH* BAUREIHE 10

10 - ABMESSUNGEN UND ANSCHLÜSSE DSH5



11 - GRUNDPLATTEN (Siehe Katalog 51 000)	DSH3	DSH5
Typ mit rückseitigen Anschlüssen	PMMD-AI3G	PMD4-AI4G
Typ mit seitlichen Anschlüssen	PMMD-AL3G	PMD4-AL4G
Anschlüsse P, T, A, B,	3/8" BSP	1/2" BSP

Zwischenplattenventil Cetop 03 – Druckbegrenzungsventil NG 6 –



Bestellnr.	Typ	Code
260-030-01000	Zwischenpl. Druckbegr.ventil (direkt) P zu Ts 350bar	MCD6-SP
260-030-01050	Zwischenpl. Druckbegr.ventil (direkt) A+B zu Ts 350bar	MCD6-DT
260-030-01100	Zwischenpl. Druckbegr.ventil (direkt) A zu Ts 350bar	MCD6-SAT
260-030-01150	Zwischenpl. Druckbegr.ventil (direkt) B zu Ts 350bar	MCD6-SBT
260-030-01200	Zwischenpl. Druckbegr.ventil (direkt) A+B gegens.s 350bar	MCD6-D

MCD - direktgesteuertes Druckbegrenzungsventil

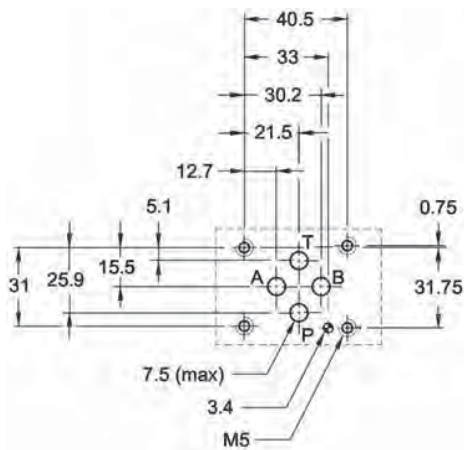
Modularausführung

- CETOP 03
- p max 350 bar
- Q max (siehe technische Daten)

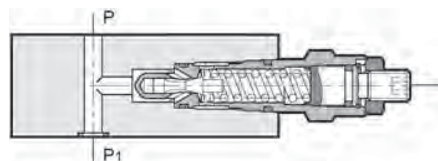


BEFESTIGUNGSPLATTE

CETOP 4.2-4-03-350
ISO/CD 4401-03



FUNKTIONSPRINZIP



- das Ventil MCD ist ein direktgesteuertes Überdruckventil in Modularausführung, dessen Befestigungsplatte den Normen CETOP und ISO entspricht.
- es kann mit allen Modularventilen CETOP 03 verwendet werden, indem man längere Schrauben verwendet.
- es ist für eine einfache Regelung in einer Leitung oder für Doppelregelung in zwei Leitungen und mit vier verschiedenen Druck-Einstellbereichen lieferbar.
- dieses Ventil wird normalerweise als Überdruckventil des hydraulischen Kreises oder als Spitzenüberdruckventil benutzt. Solche Druckspitzen werden während der Bewegungsänderung von hydraulischen Antrieben verursacht.
- es wird mit Inbusschraube, Befestigungsmutter und Begrenzung des höchsten Regelhub geliefert.

AUSFÜHRUNGEN (siehe Tabelle Hydraulische Symbole)

- Ausführung "SP": Druckregelung auf der Leitung P mit Ablauf in T
- Ausführung "SAT": Druckregelung auf der Leitung A mit Ablauf in T
- Ausführung "SBT": Druckregelung auf der Leitung B mit Ablauf in T

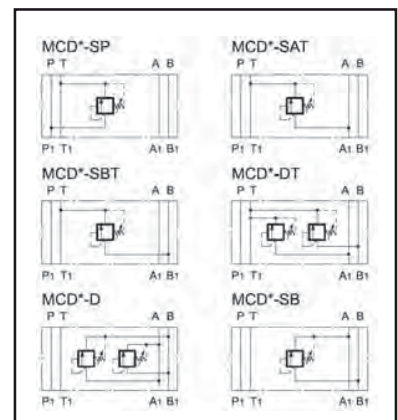
- Ausführung "DT": Druckregelung auf den Leitungen A-B mit Ablauf in T
- Ausführung "D": Druckregelung auf den Leitungen A-B mit gekreuzten Abläufen
- Ausführung "SB": Druckregelung auf der Leitung B mit Ablauf in A

TECHNISCHE DATEN

(Werte für Mineralöl mit Viskosität 36 cST u. 50°C)

max. Betriebsdruck	bar	350
minimaler geregelter Druck	siehe Diagramm $\Delta p-Q$	
max. Förderstrom in den gesteuerten Leitungen	l/min	50
max. Förderstrom in den freien Leitungen	l/min	75
Umgebungstemperatur	°C	-20 / +50
Flüssigkeitstemperatur	°C	-20 / +80
Flüssigkeitsviskosität	cST	10 / 400
empfohlene Viskosität	cST	25
Verschmutzungsgrad der Flüssigkeit	nach NAS 1638 Klasse 10	
Gewicht: MC-SP / MCD-SAT / MCD-SBT / MCD-SB MCD-DT / MCD-D	kg	1,4
	kg	2,0

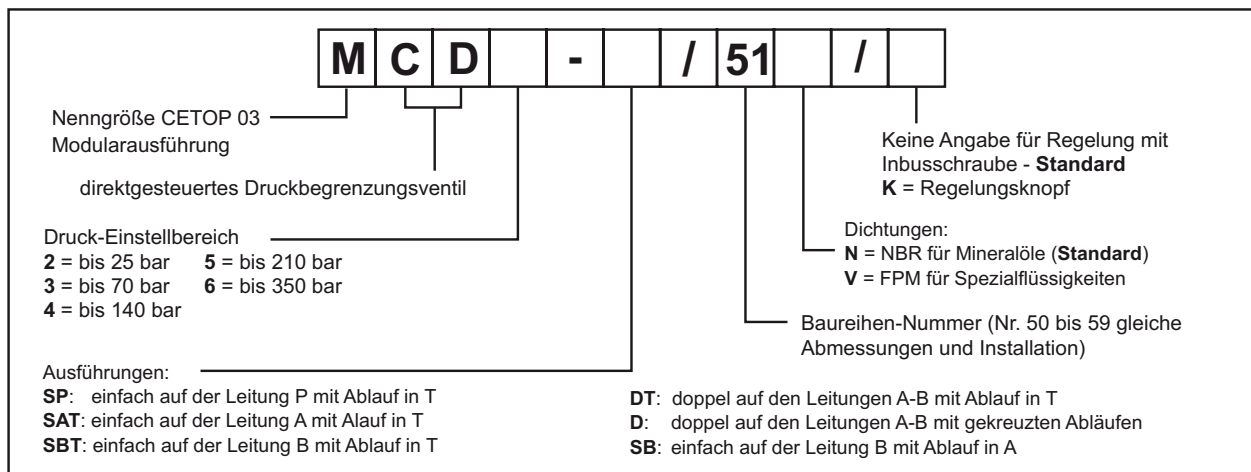
HYDRAULISCHE SYMBOLE



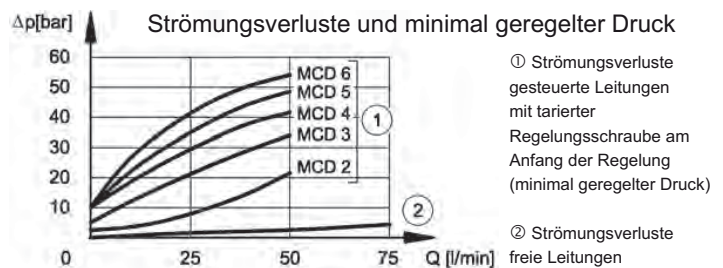
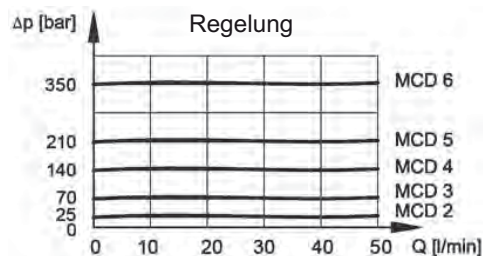
MCD - direktgesteuertes Druckbegrenzungsventil

Modularausführung

- CETOP 03
- p max 350 bar
- Q max (siehe technische Daten)



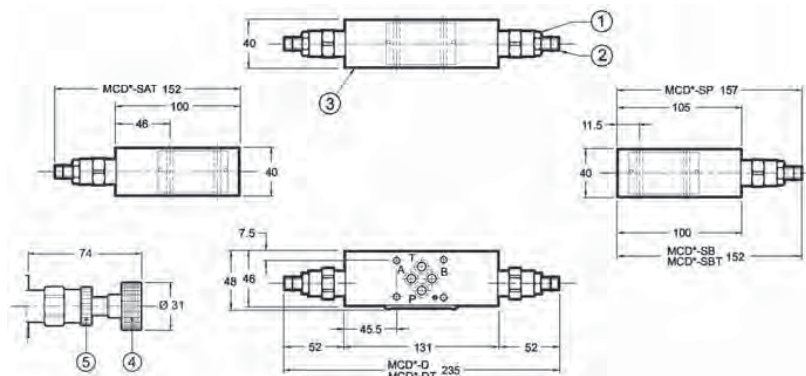
2 - Kennlinien (Werte für Viskosität 36 cST und 50°)



3 - hydraulische Druckmedien

Verwenden Sie Hydraulikflüssigkeiten auf Mineralölbasis mit Zusätzen gegen Schaumbildung und Alterung. Bei Verwendung sonstiger Druckmedien (Wasser-Glykol, Phosphorester usw.) fragen Sie bitte unser technisches Büro.

4 - Abmessungen und Anschlüsse



1	Befestigungsmutter: Schlüsselgröße 19
2	Inbusschraube: Schlüsselgröße 6 (Standard) durch Drehen im Uhrzeigersinn wird der Förderstrom erhöht
3	Befestigungsplatte mit Abdichtungsring: 4 OR Typ 2037
4	Regelungskopf: K
5	Nutmutter

Zwischenplatte Cetop 03 – Druckminderventil NG 6



Bestellnr.	Typ	Code
260-040-01000	Zwischenpl. Druckminderventil in P - 3 Wege 3-35bar	MZD2
260-040-01050	Zwischenpl. Druckminderventil in P - 3 Wege 10-70bar	MZD3
260-040-01100	Zwischenpl. Druckminderventil in P - 3 Wege 0-140bar	MZD4
260-040-01150	Zwischenpl. Druckminderventil in P - 3 Wege 0-280bar	MZD5

MZD - direktgesteuertes Druckminderventil mit drei Wegen

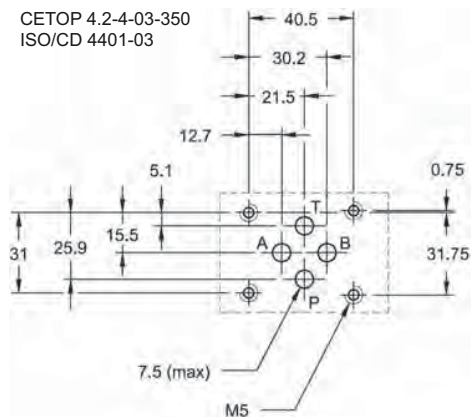
Modularausführung

- CETOP 03
- p max 350 bar
- Q max (siehe Leistungstabelle)

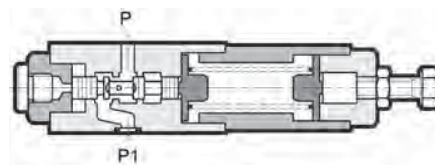


BEFESTIGUNGSPLATTE

CETOP 4.2-4-03-350
ISO/CD 4401-03



FUNKTIONSPRINZIP



- das Ventil MZD ist ein direktgesteuertes Druckminderventil mit einem Kolben mit drei Wegen. Im Ruhezustand ist es normalerweise offen und die hydraulische Flüssigkeit fließt aus Leitung P1 zur Leitung P. Der Kolben wird einerseits zu dem Druck der Leitung P und andererseits zu dem Regelungsfeder unterstellt. Wenn der Druck in der Leitung P höher als der von der Feder eingestellten Wert wird, schließt sich das Ventil bis der Druck (vermindert) in P wieder dem Eichwert gleichkommt.
- die benutzten Einbaumethoden erlauben, eine gute Steuerungsempfindlichkeit mit einem niedrigen Leckförderstrom zu erreichen. Die Leckölleitung ist mit der Leitung T in der Innenseite des Ventils verbunden.
- die Ausführung mit drei Wegen erlaubt, den sekundären Stromkreis gegen Überdruck zu schützen, da sie einen umgekehrten Durchfluss von dem Verbraucher zur Leitung T erlaubt.
- Dank seiner Modularausführung und seinen CETOP und ISO Anschlüssen kann es einfach unter die Elektroventile CETOP 03 eingebaut werden, ohne Rohre zu benutzen.
- Lieferung mit einer Fixierschraube. Auf Anfrage kann es auch mit einem SICBLOC Regelungsknopf geliefert werden.

AUSFÜHRUNGEN (siehe Tabelle Hydraulische Symbole)

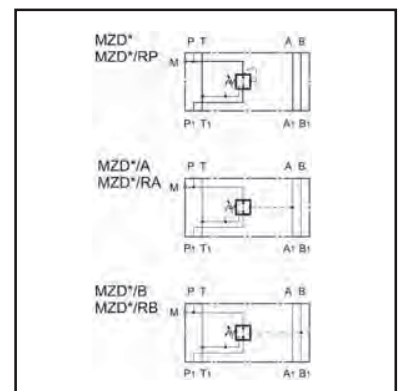
- MZD* und MZD*/RP: Druckverminderung auf der Leitung P, Verbindung der Leckölleitung mit der Leitung T.
- MZD*/A und MZD*/RA: Druckverminderung auf der Leitung A in der Richtung des Schiebers und Höchstdruck auf der Leitung B, Verbindung der Leckölleitung mit der Leitung T.
- MZD*/B und MZD*/RB: Druckverminderung auf der Leitung B in der Richtung des Schiebers und Höchstdruck auf der Leitung A, Verbindung der Leckölleitung mit der Leitung T.

TECHNISCHE DATEN

(Werte für Mineralöl mit Viskosität 36 cST u. 50°C)

max. Betriebsdruck	bar	350
max. Druck der Leitung T	bar	10
max. Förderstrom in der gesteuerten Leitungen	l/min	50
max. Förderstrom in den freien Leitungen	l/min	75
Leckförderstrom	l/min	≤0,08
Umgebungstemperatur	°C	-20 - +50
Flüssigkeitstemperatur	°C	-20 - +80
Flüssigkeitsviskosität	cST	10 - 400
empfohlene Viskosität	cST	25
Verschmutzungsgrad der Flüssigkeit	nach NAS 1638 Klasse 10	
Gewicht:	kg	1,4

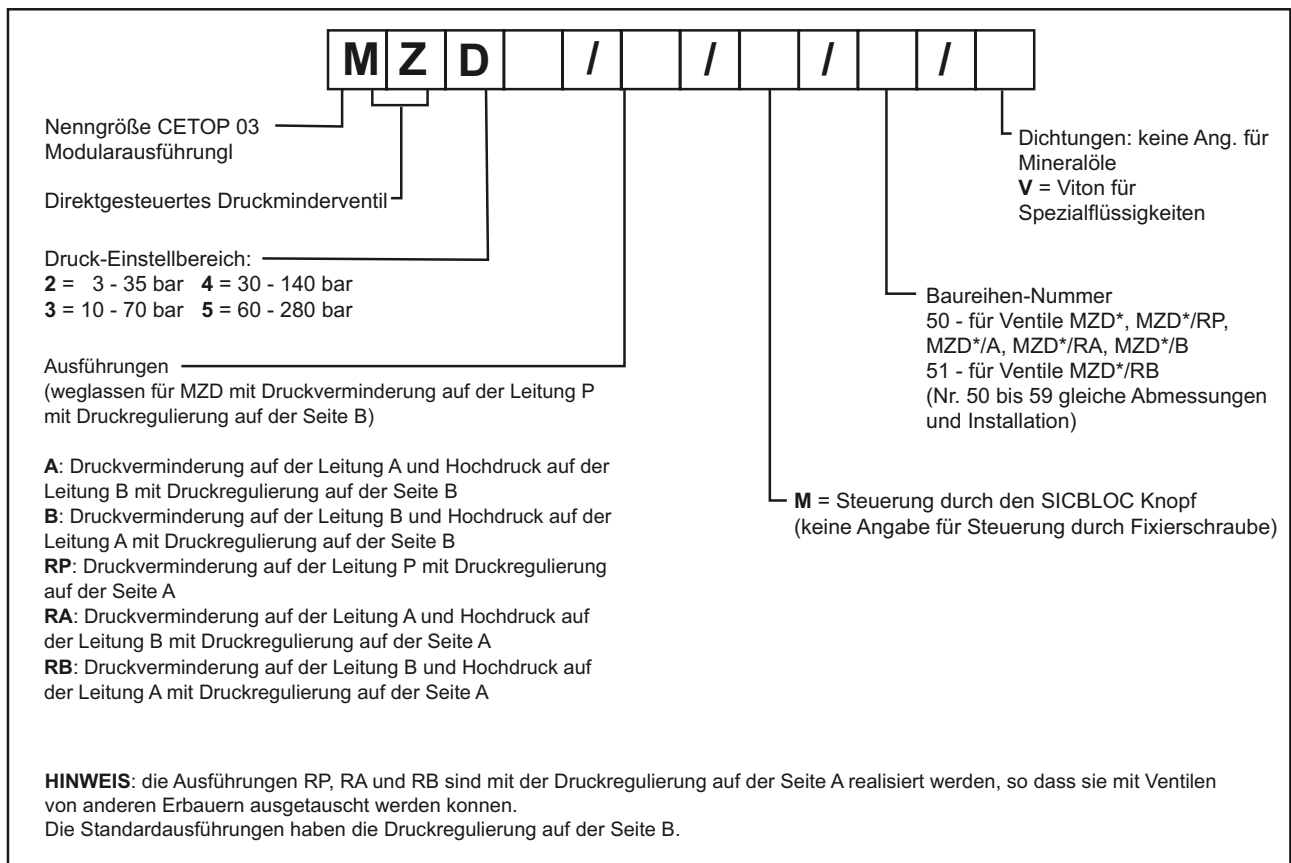
HYDRAULISCHE SYMBOLE



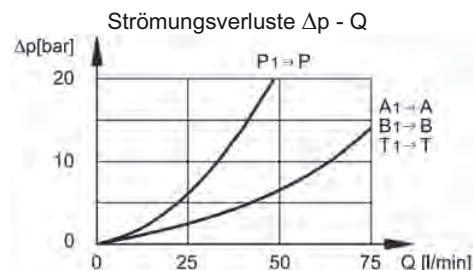
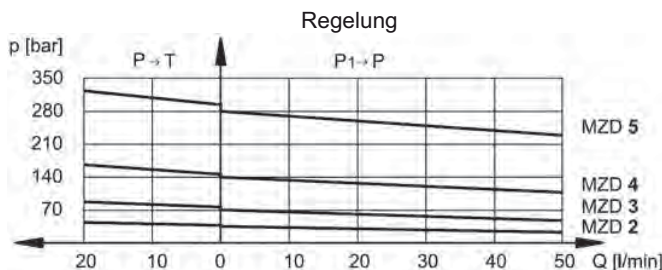
MZD - direktgesteuertes Druckminderventil mit drei Wegen

Modularausführung

- CETOP 03
- p max 350 bar
- Q max (siehe Leistungstabelle)



2 - Kennlinien (Werte für Viskosität 36 cST und 50°)



3 - hydraulische Druckmedien

Verwenden Sie Hydraulikflüssigkeiten auf Mineralölbasis mit Zusätzen gegen Schaumbildung und Alterung.
 Bei Verwendung sonstiger Druckmedien (Wasser-Glykol, Phosphorester usw.) fragen Sie bitte unser technisches Büro.

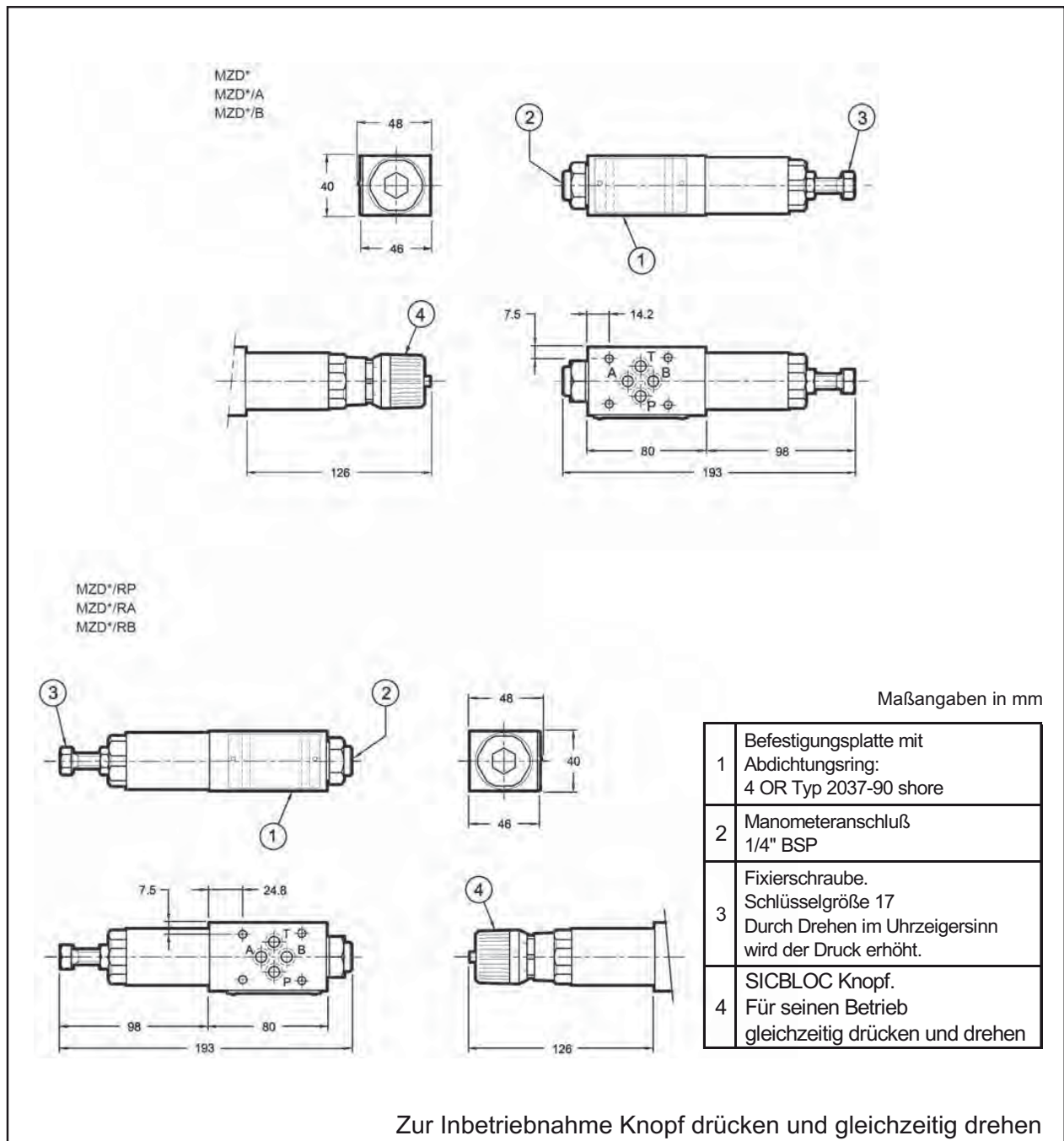
MZD - direktgesteuertes Druckminderventil mit drei Wegen

Modularausführung

- CETOP 03
- p max 350 bar
- Q max (siehe Leistungstabelle)



4 - Abmessungen und Anschlüsse



Zwischenplatte Cetop 03 – Druckzuschaltventil NG 6 –



Bestellnr.	Typ	Code
260-050-01000	Zwischenpl. Zuschaltventil (direkt) in P10-70bar	MSD3
260-050-01050	Zwischenpl. Zuschaltventil (direkt) in P0-140bar	MSD4
260-050-01100	Zwischenpl. Zuschaltventil (direkt) in P0-280bar	MSD5

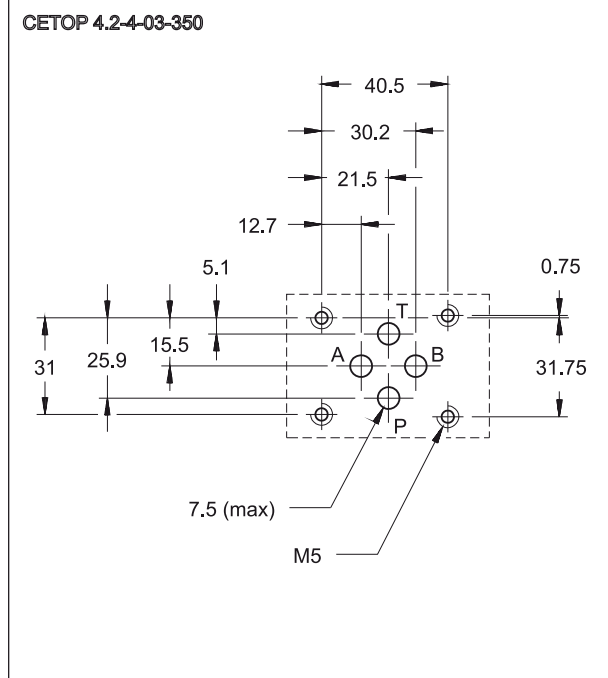
MSD - direktgesteuertes Zuschaltventil

Modularausführung

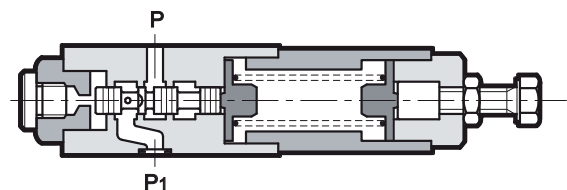
- CETOP 03
- p max 350 bar
- Q max (siehe Leistungstabelle)



BEFESTIGUNGSPLATTE



FUNKTIONSPRINZIP

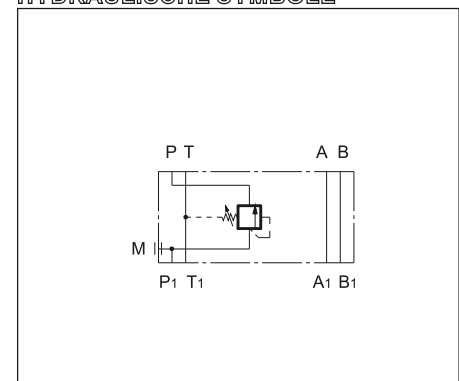


- Das Ventil MSD ist ein Kolbenzuschaltventil direktgesteuert, das zwei oder mehr Verbraucher einen nach dem anderen steuern kann. In Ruhestellung ist es normalerweise geschlossen. Wenn der Druck in der Leitung P1 den Einstellungswert der Feder erreicht, öffnet sich das Ventil und erlaubt den Durchfluß in der Druckleitung des Hauptkreises.
- Das Ventil bleibt geöffnet bis der Druck in dem Kreis einen Wert erreicht, der niedriger als der von der Feder eingestellte Einstellungswert ist.
- Es wird in Modularausführung mit CETOP und ISO Befestigungsplatte ausgeführt und kann einfach unter die direktgesteuerten Wegeventile CETOP 03 ohne Rohrleitungen eingebaut werden.
- Normalerweise wird es mit einer Sechskantschraube geliefert. Auf Wunsch ist ein SICBLOC Regelungsknopf mit automatischer Sperre verfügbar.

TECHNISCHE DATEN (Werte für Mineralöl m. Viskosität 36 cSt u. 50°C)

Max. Betriebsdruck	bar	350
Max. Druck der Leitung T	bar	10
Max. Förderstrom in den gesteuerten Leitungen	l/min	50
Max. Förderstrom in den freien Leitungen	l/min	75
Umgebungstemperatur	°C	-20 + +50
Flüssigkeitstemperatur	°C	-20 + +80
Flüssigkeitsviskosität	cSt	10 + 400
Empfohlene Viskosität	cSt	25
Verschmutzungsgrad der Flüssigkeit	Nach NAS 1638 Klasse 10	
Gewicht	kg	1,4

HYDRAULISCHE SYMBOLE



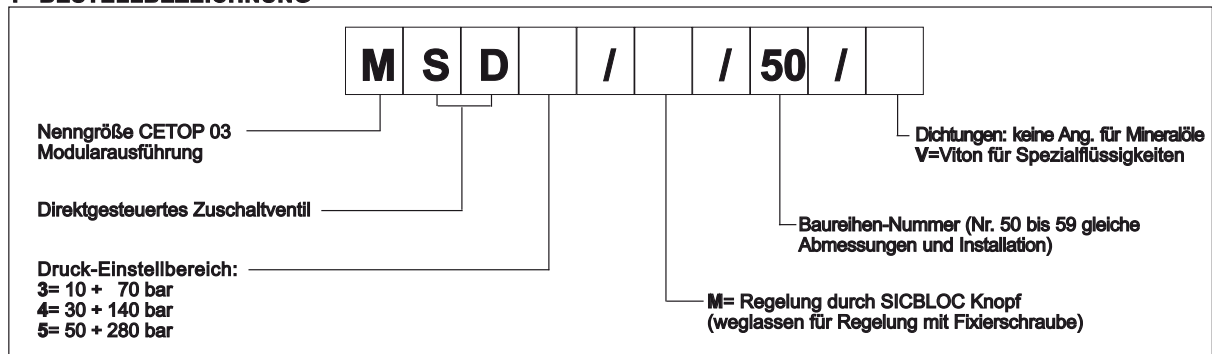
MSD - direktgesteuertes Zuschaltventil

Modularausführung

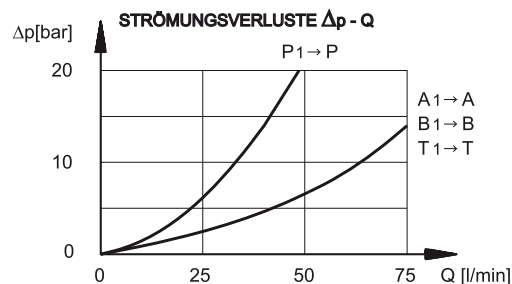
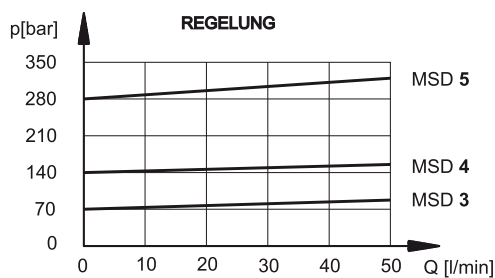
- CETOP 03
- p max 350 bar
- Q max (siehe Leistungstabelle)



1 - BESTELLBEZEICHNUNG



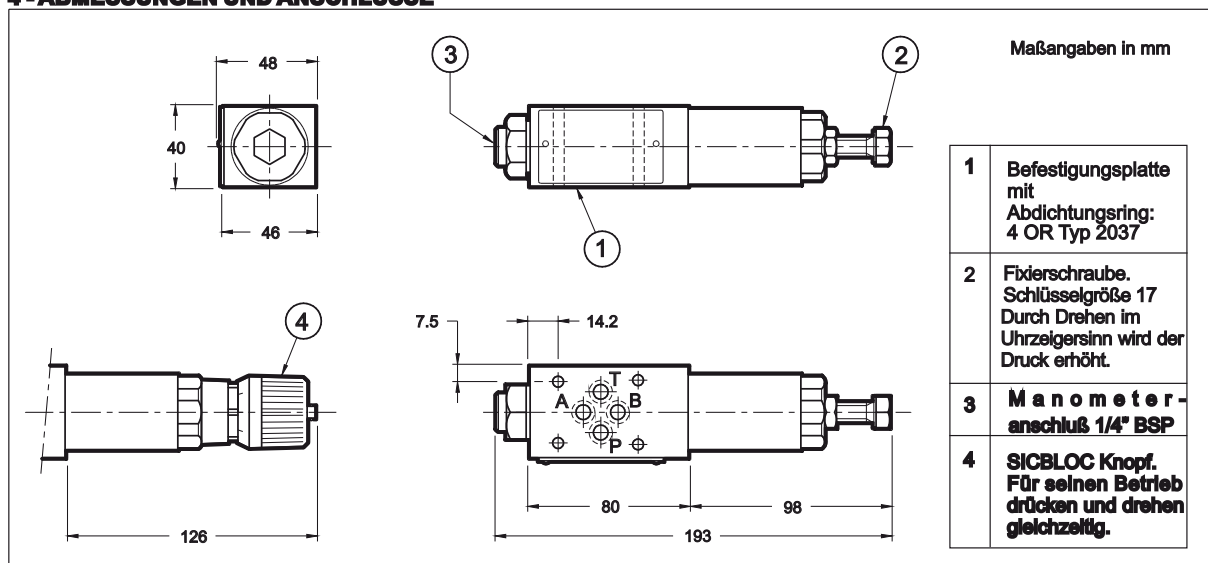
2 - KENNLINIEN (Werte für Viskosität 36 cSt u. 50°C)



3 - HYDRAULISCHE DRUCKMEDIEN

Verwenden Sie Hydraulikflüssigkeiten auf Mineralölbasis mit Zusätzen gegen Schaumbildung und Alterung.
Bei Verwendung sonstiger Druckmedien (Wasser-Glykol, Phosphorester usw.) fragen Sie bitte unser technisches Büro.

4 - ABMESSUNGEN UND ANSCHLÜSSE



Zwischenplatte Cetop 03 – Drosselrückschlagventil NG 6



Bestellnr.	Typ	Code
260-060-01000	Zwischenpl. Drossel-Rückschlagventil (Ablauf) in ACetop 03	MERS-SA
260-060-01050	Zwischenpl. Drossel-Rückschlagventil (Ablauf) in BCetop 03	MERS-SB
260-060-01100	Zwischenpl. Drossel-Rückschlagv. (Ablauf) in A+BCetop 03	MERS-D
260-060-01150	Zwischenpl. Drossel-Rückschlagv. (Zulauf) in A+BCetop 03	MERS-RD

MERS - Drosselrückschlagventil

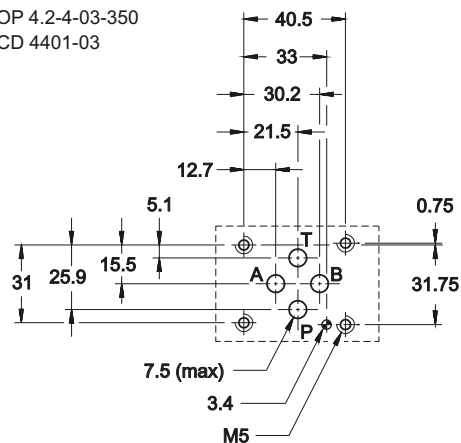
Modularausführung

- CETOP 03
- p max 350 bar
- Q max (siehe technische Daten)

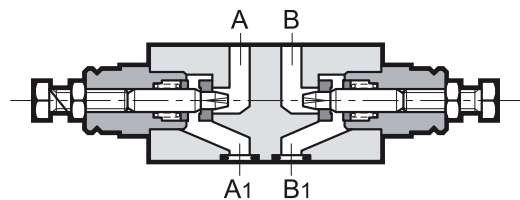


BEFESTIGUNGSPLATTE

CETOP 4.2-4-03-350
ISO/CD 4401-03



FUNKTIONSPRINZIP



Einstellbares Zwischenplatten-Drosselrückschlagventil für Drosselung in die eine Richtung und freiem Durchfluss in die Gegenrichtung.

Es kann einfach unter alle Ventile CETOP 03 eingebaut werden, indem man längere Schrauben benutzt.

Es wird mit einer Fixierschraube geliefert.

AUSFÜHRUNGEN (siehe Tabelle Hydraulische Symbole)

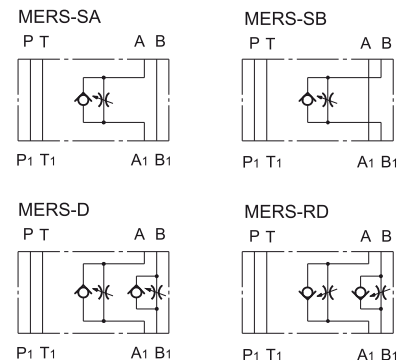
- Ausführung SA : Rücklaufdrosselung in A.
- Ausführung SB : Rücklaufdrosselung in B.
- Ausführung D : Rücklaufdrosselung in A + B.
- Ausführung RD : Vorlaufdrosselung in A + B.

Alle Ausführungen mit ein eingebautem Rückschlagventil, das den freien Durchfluss in umgekehrter Richtung erlaubt (Öffnungsdruck)

TECHNISCHE DATEN (Werte für Mineralöl m. Viskosität 36 cSt u. 50°C)

Max. Betriebsdruck	bar	350
Öffnungsdruck des Rückschlagventils	bar	0,5
Max. Förderstrom in den gesteuerten Leitungen	l/min	50
Max. Förderstrom in den freien Leitungen	l/min	75
Durch Δp 10 bar gesteuerter minimaler Förderstrom	l/min	$\leq 0,060$
Umgebungstemperatur	°C	-20 ÷ +50
Flüssigkeitstemperatur	°C	-20 ÷ +80
Flüssigkeitsviskosität	cSt	10 ÷ 400
Empfohlene Viskosität	cSt	25
Verschmutzungsgrad der Flüssigkeit	Nach NAS 1638 Klasse 10	
Gewicht	kg	1,3

HYDRAULISCHE SYMBOLE



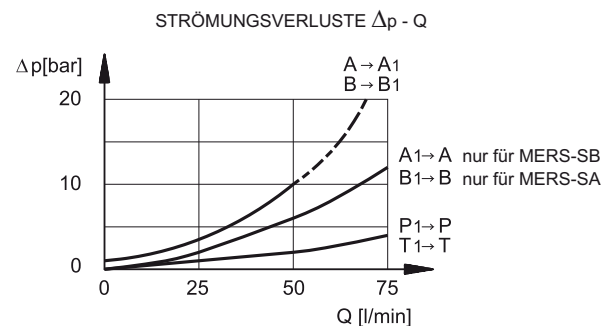
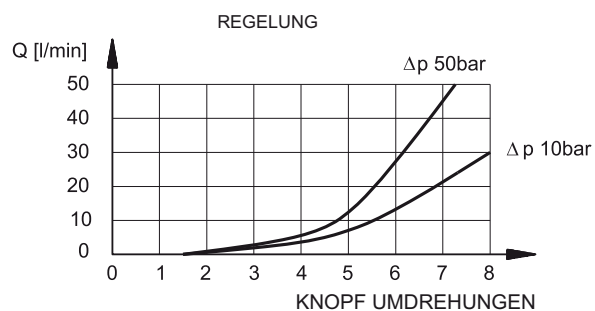
MERS - Drosselrückschlagventil

Modularausführung

- CETOP 03
- p max 350 bar
- Q max (siehe technische Daten)



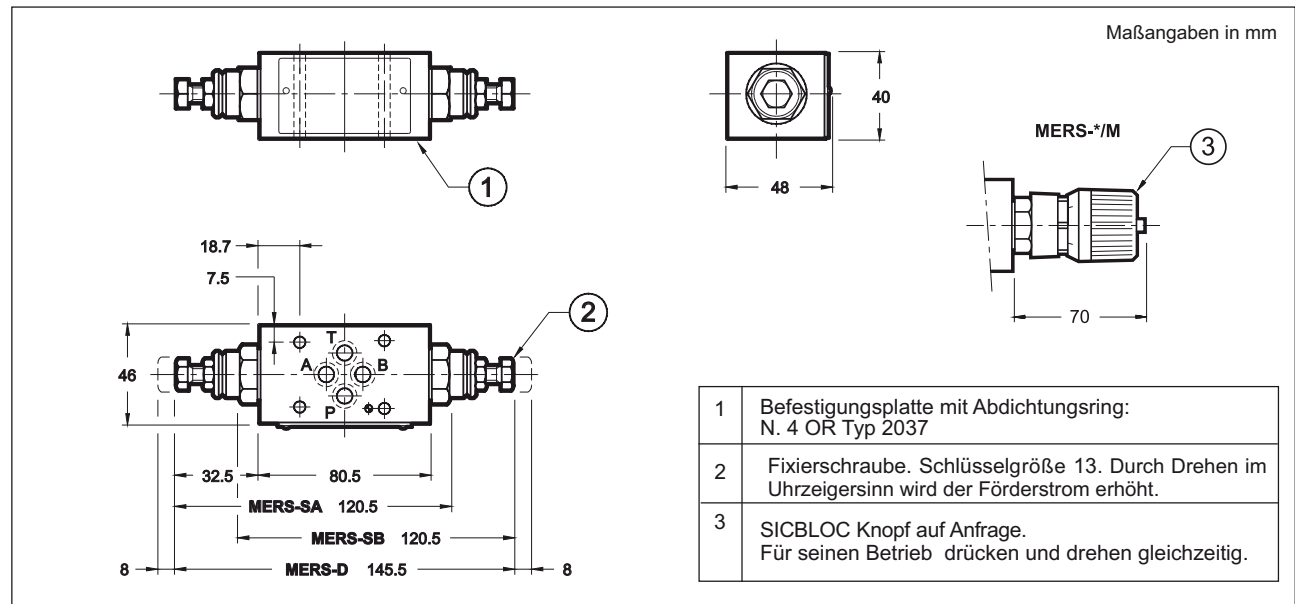
2 - KENNLINIEN (Werte für Viskosität 36 cSt u. 50°C)



3 - HYDRAULISCHE DRUCKMEDIEN

Verwenden Sie Hydraulikflüssigkeiten auf Mineralölbasis mit Zusätzen gegen Schaumbildung und Alterung.
Bei Verwendung sonstiger Druckmedien (Wasser-Glykol, Phosphorester usw.) fragen Sie bitte unser technisches Büro.

4 - ABMESSUNGEN UND ANSCHLÜSSE



Zwischenplatte Cetop 03 – Rückschlagventil NG 6 –



Bestellnr.	Typ	Code
260-070-01000	Zwischenpl. Rückschlagventil in PCetop 03	MVR1-SP
260-070-01050	Zwischenpl. Rückschlagventil in TCetop 03	MVR1-ST
260-070-01100	Zwischenpl. Rückschlagventil in P+TCetop 03	MVR1-SPT
260-070-01150	Zwischenpl. Rückschlagventil in ACetop 03	MVR1-SA
260-070-01200	Zwischenpl. Rückschlagventil in BCetop 03	MVR1-SB

MVR - Rückschlagventil

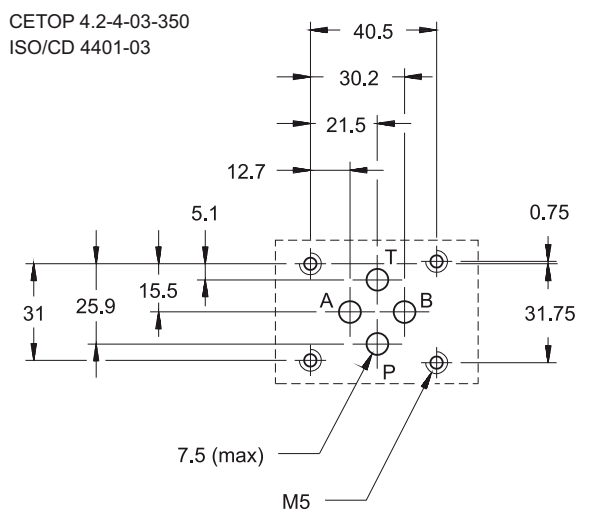
Modularausführung

- CETOP 03
- p max 350 bar
- Q max (siehe technische Daten)

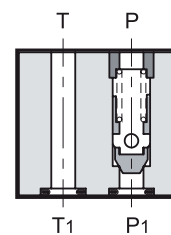


BEFESTIGUNGSPLATTE

CETOP 4.2-4-03-350
ISO/CD 4401-03



FUNKTIONSPRINZIP



- Das Ventil MVR ist ein Rückschlagventil in Modularausführung, dessen Befestigungsplatte den Normen CETOP und ISO entspricht.
- Es wird benutzt, um Ölrückgänge oder die automatische Entleerung der Leitungen zu vermeiden; es kann auch Gegendrucke verursachen.
- Es kann einfach unter die direktgesteuerten Wegeventile CETOP 03 eingebaut werden, indem man längere Schrauben benutzt.
- Es ist in der Ausführung mit Sperrventil auf der Leitung P oder T oder auf beiden Leitungen verfügbar.

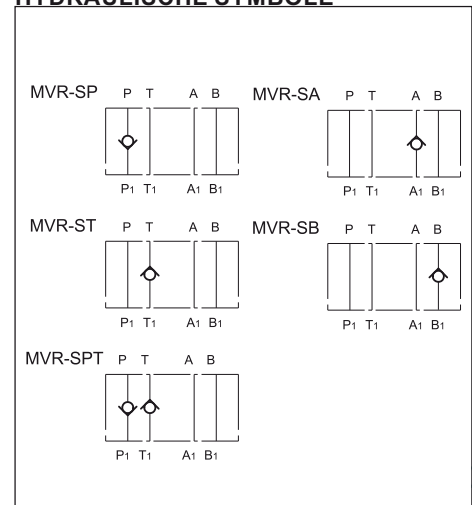
AUSFÜHRUNGEN (siehe Tabelle Hydraulische Symbole)

- MVR-SP: Sperrventil auf der Leitung P.
- MVR-SA: Sperrventil auf der Leitung A.
- MVR-ST: Sperrventil auf der Leitung T.
- MVR-SB: Sperrventil auf der Leitung B.
- MVR-SPT: Sperrventil auf den Leitungen P und T.

TECHNISCHE DATEN (Werte für Mineralöl m. Viskosität 36 cSt u. 50°C)

Max. Betriebsdruck	bar	350
Öffnungsdruck des Rückschlagventils	bar	3,5 - 0,5 - 5,2
Max. Förderstrom in den gesteuerten Leitungen	l/min	50
Max. Förderstrom in den freien Leitungen	l/min	75
Umgebungstemperatur	°C	-20 ÷ +50
Flüssigkeitstemperatur	°C	-20 ÷ +80
Flüssigkeitsviskosität	cSt	10 ÷ 400
Empfohlene Viskosität	cSt	25
Verschmutzungsgrad der Flüssigkeit	Nach NAS 1638 Klasse 10	
Gewicht	kg	1

HYDRAULISCHE SYMBOLE



Zwischenplatte Cetop 03 – Entsperrbares Rückschlagventil NG 6 –



Bestellnr.	Typ	Code
260-080-01000	Zwischenpl. entsperrb. Rückschlagventil in ACetop 03	MVPP-SA
260-080-01050	Zwischenpl. entsperrb. Rückschlagventil in BCetop 03	MVPP-SB
260-080-01100	Zwischenpl. entsperrb. Rückschlagventil in A+BCetop 03	MVPP-D

MVPP - hydraulisch entsperbares Rückschlagventil

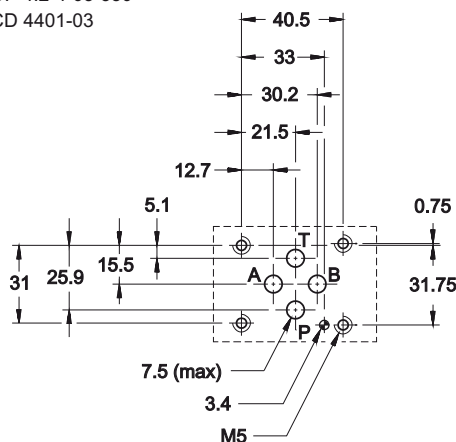
Modularausführung

- CETOP 03
- p max 350 bar
- Q max (siehe technische Daten)

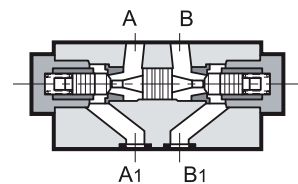


BEFESTIGUNGSPLATTE

CETOP 4.2-4-03-350
ISO/CD 4401-03



FUNKTIONSPRINZIP



- Rückschlagventil mit hydraulischem Entsperren, mit Federschliessung und Ventilkegel. Befestigungsplatte nach den Normen CETOP und ISO.
- Seine Verwendung erlaubt:
 - den Durchfluß in einer Richtung zu sperren;
 - den Durchfluß in derselben Richtung zu erlauben, wenn das Ventil von einem Steuerdruck geöffnet wird;
 - den freien Durchfluß in der Gegenrichtung zu erlauben.
- Die Ventile MVPP werden immer stromabwärts der direktgesteuerten Wegeventile CETOP 03 eingebaut und können mit allen anderen Ventilen CETOP 03 verwendet werden.

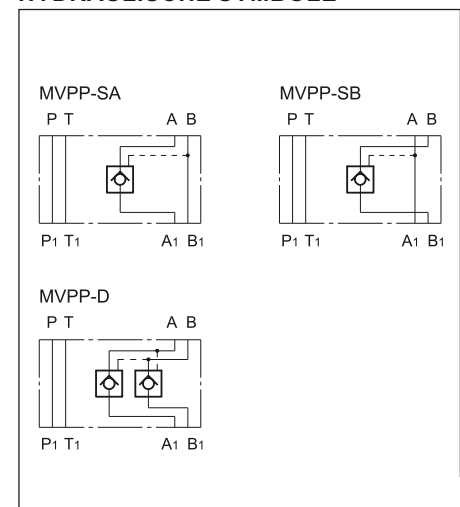
AUSFÜHRUNGEN (siehe Tabelle Hydraulische Symbole)

- Ausführung "SA" - "SB": sie werden benutzt, um den Antrieb in einer einzigen Richtung zu sperren.

TECHNISCHE DATEN (Werte für Mineralöl m. Viskosität 36 cSt u. 50°C)

Max. Betriebsdruck	bar	350
Max. Förderstrom in den gesteuerten Leitungen	l/min	50
Max. Förderstrom in den freien Leitungen	l/min	75
Verhältnis zwischen dem Druck der Dichtkammern und dem Steuerdruck		3,4 : 1
Öffnungsdruck des Rückschlagventils	bar	3
Umgebungstemperatur	°C	-20 ÷ +50
Flüssigkeitstemperatur	°C	-20 ÷ +80
Flüssigkeitsviskosität	cSt	10 ÷ 400
Empfohlene Viskosität	cSt	25
Verschmutzungsgrad der Flüssigkeit	Nach NAS 1638 Klasse 10	
Gewicht	kg	1,3

HYDRAULISCHE SYMBOLE



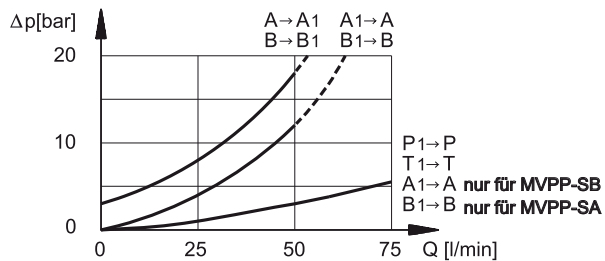
MVPP - hydraulisch entsperres Rückschlagventil

Modularausführung

- CETOP 03
- p max 350 bar
- Q max (siehe technische Daten)



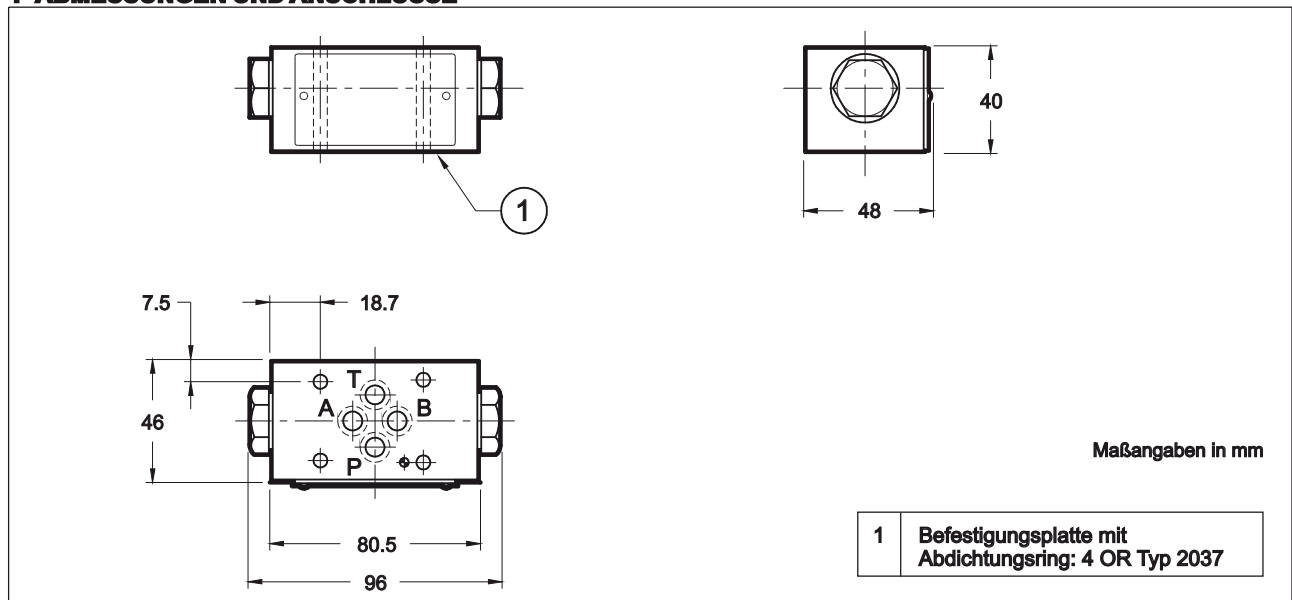
2 - KENNLINIEN (Werte für Viskosität 36 cSt u. 50°C)



3 - HYDRAULISCHE DRUCKMEDIEN

Verwenden Sie Hydraulikflüssigkeiten auf Mineralölbasis mit Zusätzen gegen Schaumbildung und Alterung. Bei Verwendung sonstiger Druckmedien (Wasser-Glykol, Phosphorester usw.) fragen Sie bitte unser technisches Büro.

4 - ABMESSUNGEN UND ANSCHLÜSSE



Anschlussplatte Cetop 03 – Wegeventil NG 6 –

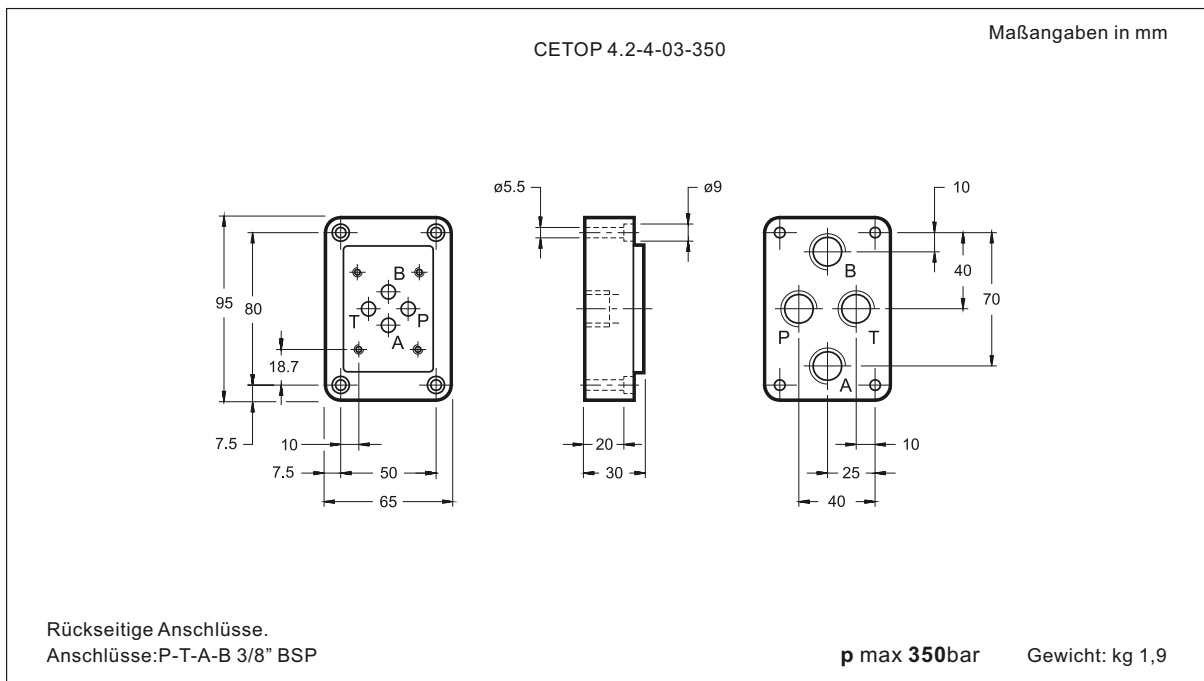


Bestellnr.	Typ	Code
260-090-01000	Grundplatte 3/8" Anschlüsse unten Cetop 03	PMMD-AI3G
260-090-01050	Grundplatte 3/8" Anschlüsse seitlich Cetop 03	PMMD-AL3G

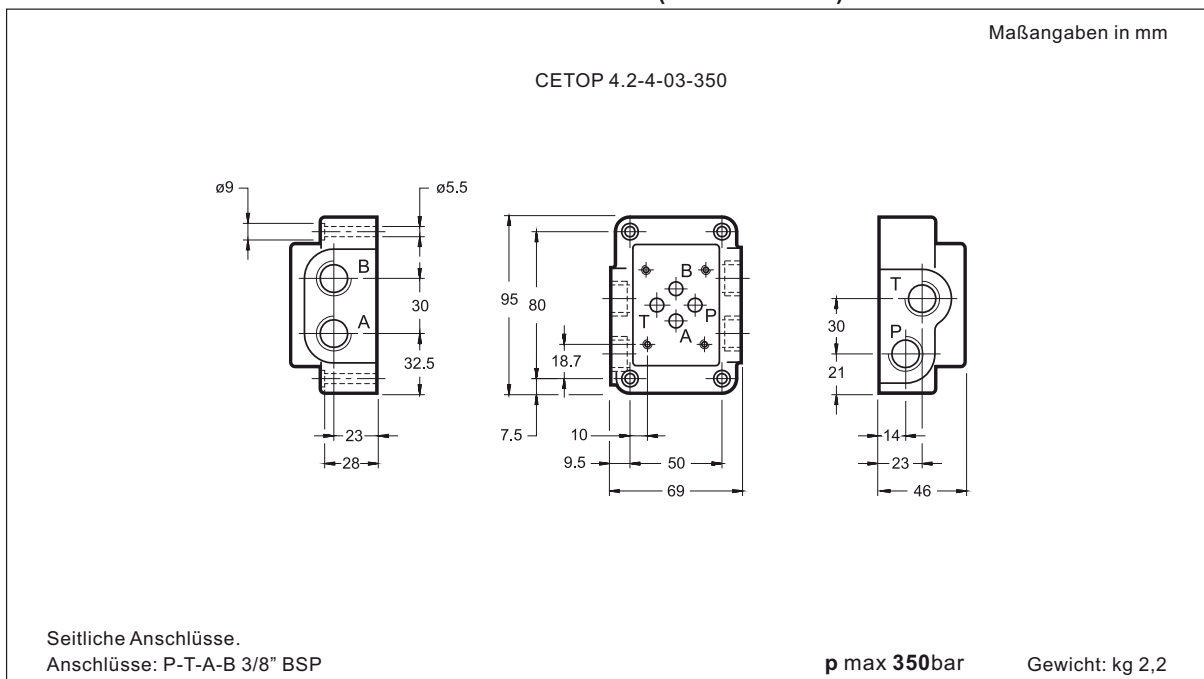
PMMD - Anschlussplatte für Ventile Cetop 03



14 - EINBAUMASSE UND ANSCHLÜSSE PMMD-AI3G/20 (Code 1961261)



15 - EINBAUMASSE UND ANSCHLÜSSE PMMD-AL3G/11 (Code 1961251)



Zwischenplatte Cetop 03 – Messplatte, auch für Druckschalter, NG 6 –



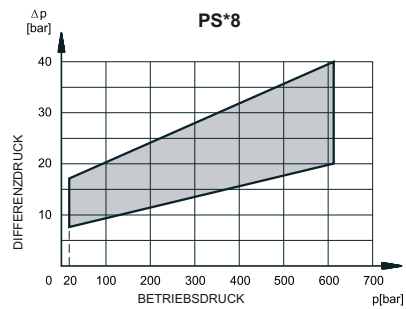
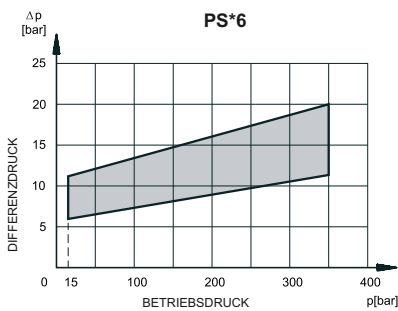
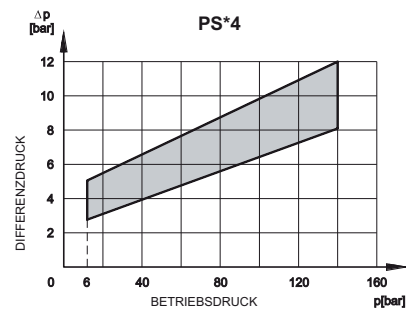
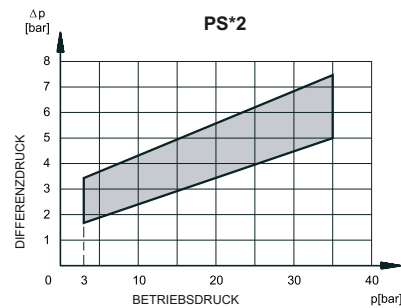
Bestellnr.	Typ	Code
260-100-01000	Messzwischenplatte in PCetop 03	PM-PSP-P/10N
260-100-01050	Messzwischenpl. in A+B (einseitig verschließbar) Cetop 03	PM-PSP-AB/10N

PS - Modular Einbauplatten



BAUREIHE 20

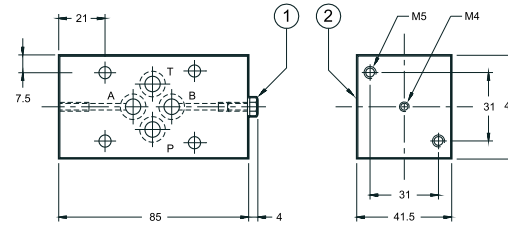
5 - HYSTERESEKENNLINIEN (für Viskosität 36 cSt und 50°C)



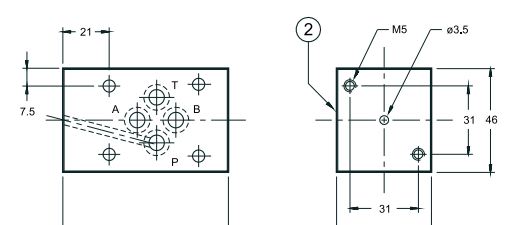
6 - MODULAR- EINBAUPLATTEN

Die Druckwächter Typ PSP können modular eingebaut werden, indem man die Platten Kode-Nr. 1950611 und 1950621 mit Befestigungsplatte CETOP 03 benutzt. Die Platte Kode-Nr. 1950611 erlaubt, den Druckwächter mit den Leitungen A, B oder beide gemäß der Stellung der Schraube ① zu verbinden. Die Platte Kode-Nr. 1950621 erlaubt die Druckwächterverbindung mit der Leitung P.

PLATTE KODE-Nr. 1950611 (Verbindung der Leitungen A und B)

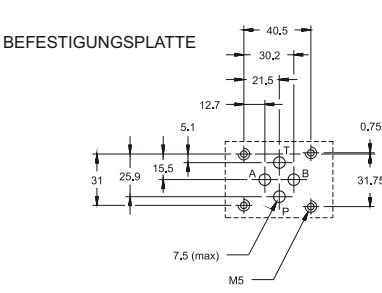


PLATTE KODE-Nr. 1950621 (Verbindung der Leitung P)



MAX. DRUCK: 350 BAR

BEFESTIGUNGSPLATTE



Maßangaben in mm

1	Sechskantschraube M4x12 mit Dichtung bonded seal Typ 400-002 (Dowty) Die Entfernung der Schraube und der Dichtung erfolgt auf der Installationsseite des Druckwächters
2	Befestigungsplatte mit 4 OR 2037

Blind- und Umlenkplatte Cetop 03 – Wegeventile NG 6 –



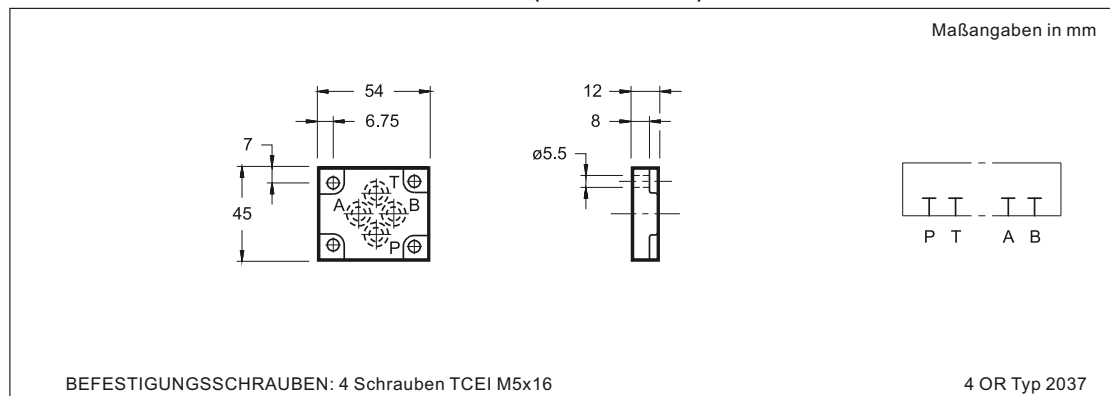
Bestellnr.	Typ	Code
260-110-01000	Blindplatte Cetop 03	PE-MD1/20
260-110-01050	Umlenkplatte P zu A und B zu TCetop 03	PE-C/PA/MD1/20
260-110-01100	Umlenkplatte P zu B und A zu TCetop 03	PE-C/PB/MD1/21

PE - Sonderplatten Sperr-, Umlenk- und Reduzierplatten

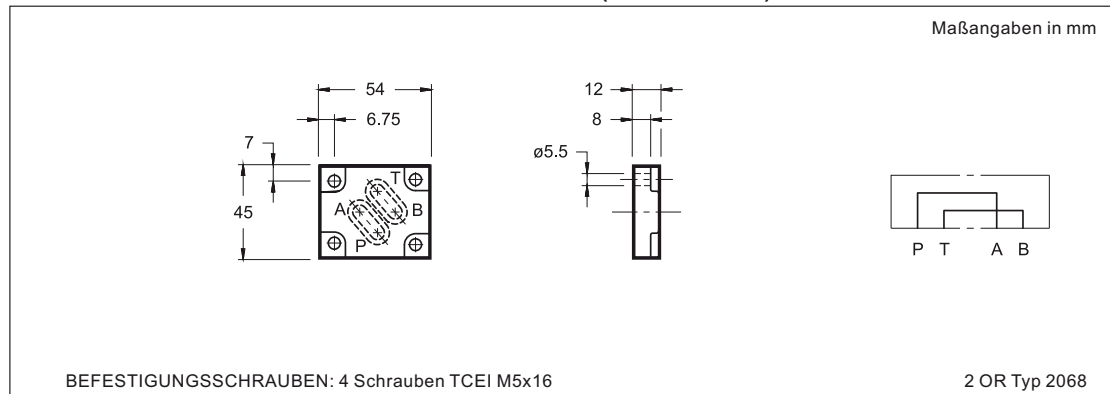
p max 350 bar



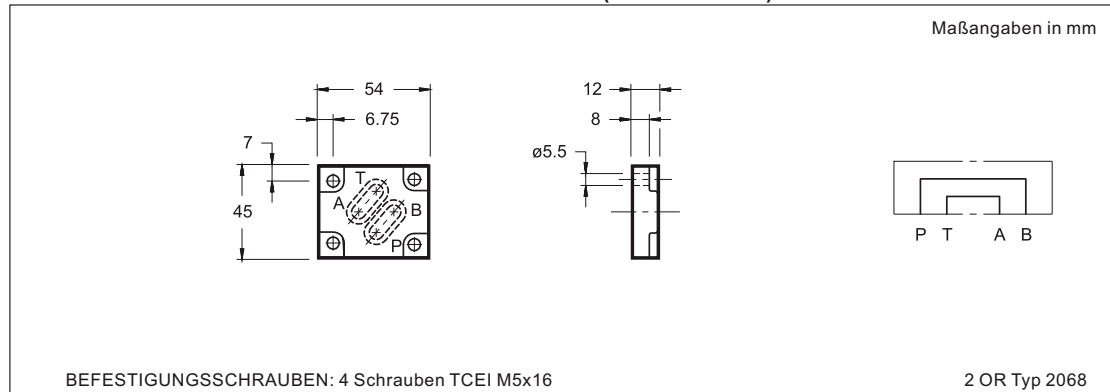
1 - EINBAUMASSE UND ANSCHLÜSSE PE-MD1/20 (Code 1950591)



2 - EINBAUMASSE UND ANSCHLÜSSE PE-C/PA/MD1/20 (Code 1950751)



3 - EINBAUMASSE UND ANSCHLÜSSE PE-C/PB/MD1/20 (Code 1950601)

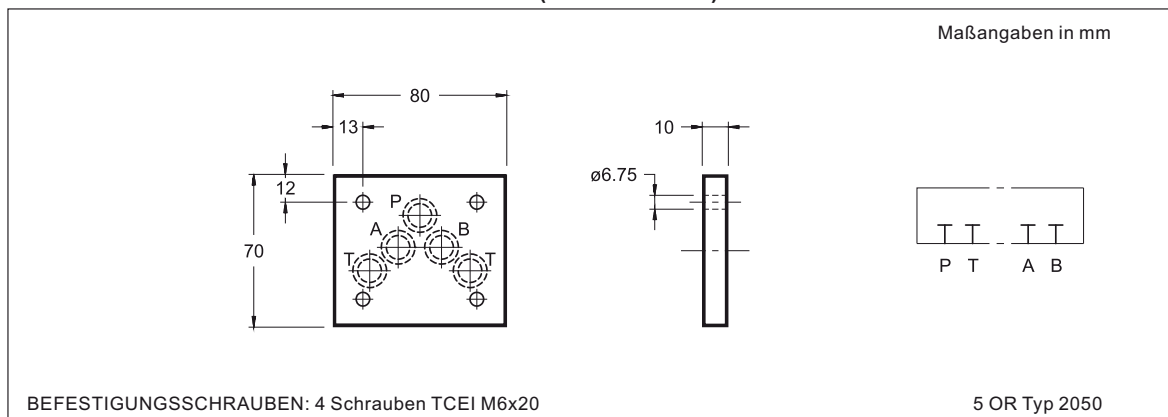


PE - Sonderplatten Sperr-, Umlenk- und Reduzierplatten

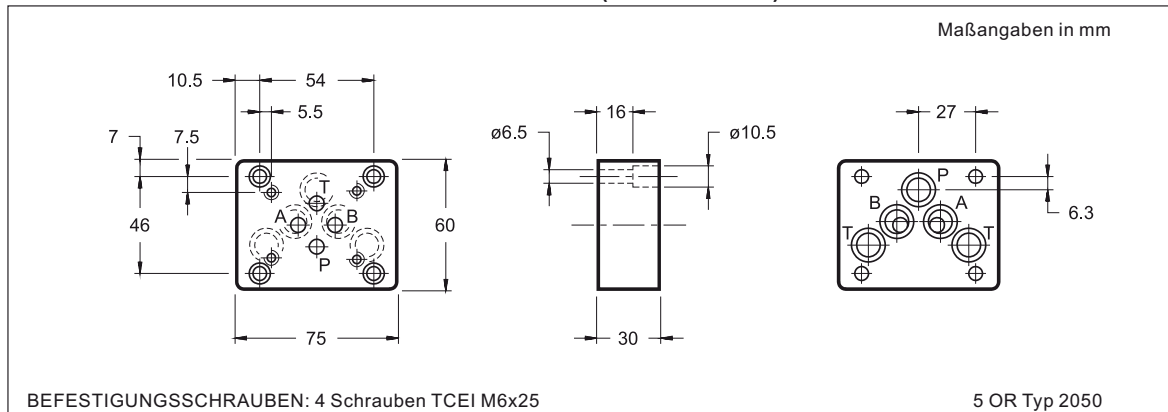
p max 350 bar



4 - EINBAUMASSE UND ANSCHLÜSSE PE-D4-M (Code 1950042)



5 - EINBAUMASSE UND ANSCHLÜSSE PC-D4-MD1-M (Code 1950222)



















N.B.: Auf Anfrage gibt es die Möglichkeit die Platten mit O-Ring Dichtungen aus Viton zu liefern. Schreiben sie die Benennung /V am Ende jedes Plattencodes.

Wegeventil Cetop 05
- Magnetgesteuert -

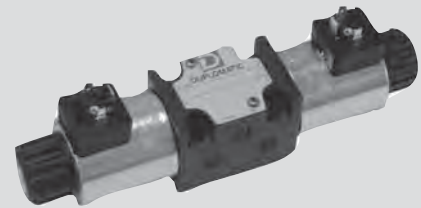


Wegeventil NG 10

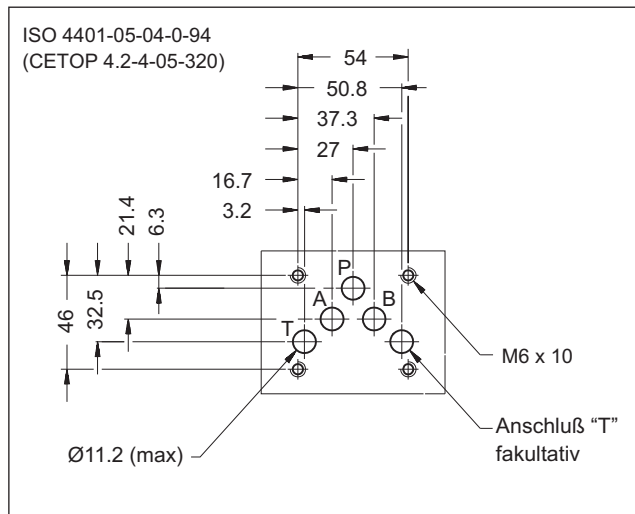
Bestellnr.	Typ	Code	
262-010-01000	4/2 Wegeventil parallel-gekreuzt - 12 VDC	DS5-TA/12N-D12K1	
262-010-01050	4/2 Wegeventil parallel-gekreuzt - 24 VDC	DS5-TA/12N-D24K1	
262-010-01100	4/2 Wegeventil parallel-gekreuzt 220 RAC	DS5-TA/12N-D220K1	
262-010-01200	4/2 Wegeventil gekreuzt-parallel - 12 VDC	DS5-TB/12N-D12K1	
262-010-01250	4/2 Wegeventil gekreuzt-parallel - 24 VDC	DS5-TB/12N-D24K1	
262-010-01300	4/2 Wegeventil gekreuzt-parallel 220 RAC	DS5-TB/12N-D220K1	
262-010-01400	4/2 Wegeventil parallel-gekreuzt - 12 VDC	DS5-TA02/12N-D12K1	
262-010-01450	4/2 Wegeventil parallel-gekreuzt - 24 VDC	DS5-TA02/12N-D24K1	
262-010-01500	4/2 Wegeventil parallel-gekreuzt 220 RAC	DS5-TA02/12N-D220K1	
262-010-01600	4/2 Wegeventil alles geschlossen-gekreuzt - 12 VDC	DS5-SA1/12N-D12K1	
262-010-01650	4/2 Wegeventil alles geschlossen-gekreuzt - 24 VDC	DS5-SA1/12N-D24K1	
262-010-01700	4/2 Wegeventil alles geschlossen-gekreuzt 220 RAC	DS5-SA1/12N-D220K1	
262-010-01800	4/2 Wegeventil alles verbunden-gekreuzt - 12 VDC	DS5-SA2/12N-D12K1	
262-010-01850	4/2 Wegeventil alles verbunden-gekreuzt - 24 VDC	DS5-SA2/12N-D24K1	
262-010-01900	4/2 Wegeventil alles verbunden-gekreuzt 220 RAC	DS5-SA2/12N-D220K1	
262-010-02000	4/2 Wegeventil A+B+T verbunden-gekreuzt - 12 VDC	DS5-SA3/12N-D12K1	
262-010-02050	4/2 Wegeventil A+B+T verbunden-gekreuzt - 24 VDC	DS5-SA3/12N-D24K1	
262-010-02100	4/2 Wegeventil A+B+T verbunden-gekreuzt 220 RAC	DS5-SA3/12N-D220K1	
262-010-02200	4/2 Wegeventil P+T verbunden-parallel- 12 VDC	DS5-SA4/12N-D12K1	
262-010-02250	4/2 Wegeventil P+T verbunden-parallel- 24 VDC	DS5-SA4/12N-D24K1	
262-010-02300	4/2 Wegeventil P+T verbunden-parallel 220 RAC	DS5-SA4/12N-D220K1	
262-010-02400	4/3 Wegeventil alles geschlossen - 12 VDC	DS5-S1/12N-D12K1	
262-010-02450	4/3 Wegeventil alles geschlossen - 24 VDC	DS5-S1/12N-D24K1	
262-010-02500	4/3 Wegeventil alles geschlossen 220 RAC	DS5-S1/12N-D220K1	
262-010-02600	4/3 Wegeventil alles verbunden - 12 VDC	DS5-S2/12N-D12K1	
262-010-02650	4/3 Wegeventil alles verbunden - 24 VDC	DS5-S2/12N-D24K1	
262-010-02700	4/3 Wegeventil alles verbunden 220 RAC	DS5-S2/12N-D220K1	
262-010-02800	4/3 Wegeventil A+B+T verbunden- 12 VDC	DS5-S3/12N-D12K1	
262-010-02850	4/3 Wegeventil A+B+T verbunden- 24 VDC	DS5-S3/12N-D24K1	
262-010-02900	4/3 Wegeventil A+B+T verbunden 220 RAC	DS5-S3/12N-D220K1	
262-010-03000	4/3 Wegeventil P+T verbunden- 12 VDC	DS5-S4/12N-D12K1	
262-010-03050	4/3 Wegeventil P+T verbunden- 24 VDC	DS5-S4/12N-D24K1	
262-010-03100	4/3 Wegeventil P+T verbunden 220 RAC	DS5-S4/12N-D220K1	

DS5 - direktgesteuertes Wegeventil

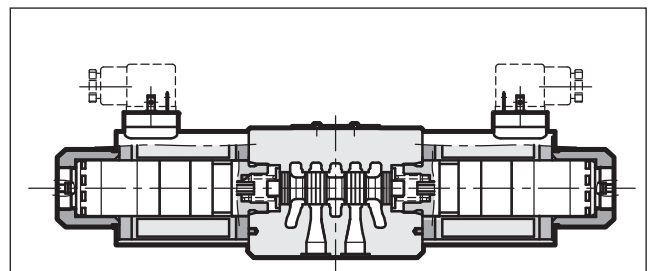
- Anschlussbild ISO 4401-05 (Cetop 05)
- p max 320 bar
- Q max 150 l/min (Kennlinie beachten)



BEFESTIGUNGSPLATTE



FUNKTIONSPRINZIP



— Direktgesteuertes Elektromagnetventil für eine Modularbauweise. Das Anschlussbild entspricht den Normen ISO 4401 (CETOP RP121H).

— Der Ventilkörper besteht aus Eisenguss mit hoher Festigkeit und verfügt über breite Kammern, die die Strömungsverluste gering halten. Es werden Magnete mit austauschbaren Spulen und Kerne im Ölbad verwendet. (siehe Abschnitt 7 für weitere Informationen über Magnetspulen).

— Es wird in der Ausführung mit 3 und 4 Wegen, 2 oder 3 Stellungen und mit verschiedenen austauschbaren Kolben geliefert, die verschiedene Einschaltsschemen besitzen.

— Es ist mit Gleichstrom- oder Wechselstrommagneten lieferbar; die Gleichstrommagneten können auch mit Wechselstrom durch Stecker mit Gleichrichter versorgt werden (s. Prospekt Nr. 49000).

— Sonderausführungen sind wie folgt lieferbar:

- Ausführung mit Plattenanschluss für Außenleckölleitung Y (siehe Abschnitt 12.1).
- Ausführung mit fester Bohrung für Weichschaltung (siehe Abschnitt 12.4).
- Ausführung mit einstellbarer Vorrichtung für geregelte Weichschaltung (siehe Abschnitt 12.5)

TECHNISCHE DATEN (Werte für Mineralöl m. Viskosität 36 cSt u. 50°C)

		GS	WS
Max. Betriebsdruck:		320	
Anschlüsse P - A - B	bar	210	140
Anschluss T Standard-Ausführung		320	-
Anschluss T Ausführung mit Anschluss Y			
Max. Förderstrom	l/min	150	120
Strömungsverluste $\Delta p-Q$		siehe Abschn. 4	
Einsatzbereich		siehe Abschn. 6	
Elektrische Merkmale		siehe Abschn. 7	
Elektrische Verbindungen		Anschlüsse für Würfelstecker DIN 43650	
Umgebungstemperatur	°C	-20 / +50	
Flüssigkeitstemperatur	°C	-20 / +80	
Flüssigkeitsviskosität	cSt	10 ÷ 400	
Flüssigkeit-Kontaminationsgrad		nach ISO 4406:1999 Klasse 20/18/15	
Empfohlene Viskosität	cSt	25	
Gewicht: mit einer Spule mit zwei Spulen	kg	4,4	3,6
		5,9	4,3

DS5 - direktgesteuertes Wegeventil



1 - BESTELLBEZEICHNUNG

D	S	5	-	/	12	-	K1	/			
Direktgesteuertes Wegeventil			Größe ISO 4401-05 (CETOP 05)			Kolbentyp (siehe Abschnitt 3)			Handnotbetätigung: weglassen wenn im Rohr eingebaut (Standard) CM = Manuelle Faltenbalgensteuerung (nur für GS Ausführung)		
Baureihen-Nummer (Nr. 10 bis 19 gleiche Abmessungen und Installation)			Dichtungen: N = Dichtungen aus NBR für Mineralöle (Standard) V = Dichtungen aus FPM für Spezialflüssigkeiten			Elektrische Verbindung der Spule: Anschluss für Würfelstecker Typ DIN 43650 (Standard)			Versorgungsspannung mit Gleichstrom D12 = 12 V D24 = 24 V D110 = 110 V D220 = 220 V D00 = Ventil ohne Spule (siehe HINWEIS)		
						Versorgungsspannung mit Wechselstrom A24 = 24 V - 50 Hz A48 = 48 V - 50 Hz A110 = 110 V - 50 Hz / 120 V - 60 Hz A230 = 230 V - 50 Hz / 240 V - 60 Hz A00 = Ventil ohne Spule (siehe HINWEIS) F110 = 110 V - 60 Hz F220 = 220 V - 60 Hz					

HINWEIS: Die Spulenbefestigungsmutter und die dazugehörigen OR sind im Lieferumfang enthalten.

2 - HYDRAULISCHE DRUCKMEDIEN

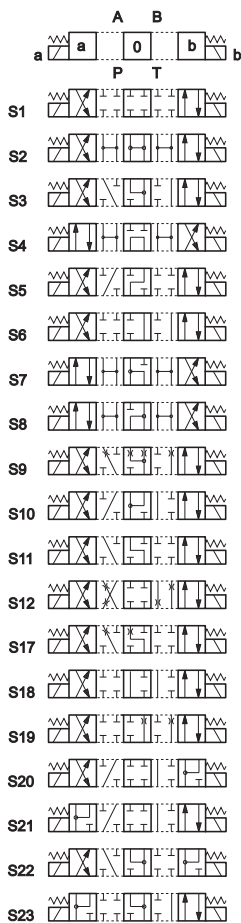
Verwenden Sie Hydraulikflüssigkeiten auf Mineralölbasis Typ HL oder HM nach ISO 6743-4. Für diese Flüssigkeiten verwenden Sie Dichtungen aus NBR (Code N). Für Flüssigkeiten vom Typ HFDR (Phosphorester) verwenden Sie Dichtungen aus FPM (Code V). Wenn Sie andere Druckmedien verwenden, zum Beispiel HFA, HFB, HFC, wenden Sie sich bitte an unser technisches Büro. Der Betrieb mit Flüssigkeitstemperaturen über 80 °C führt zum schnellen Verfall der Qualität der Flüssigkeiten und Dichtungen. Die physikalischen und chemischen Merkmale der Flüssigkeit müssen beibehalten werden.

DS5 - direktgesteuertes Wegeventil

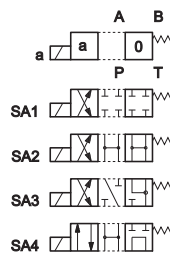


3 - KOLBENTYP

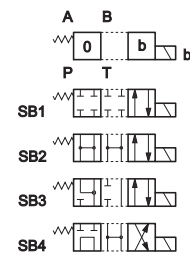
Ausführung S*:
2 Magnetspulen - 3 Stellungen
mit Federzentrierung



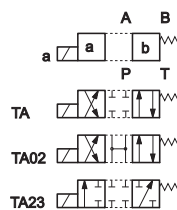
Ausführung SA*:
1 Magnetspule Seite A
2 Stellungen (mittig + seitlich)
mit Federzentrierung



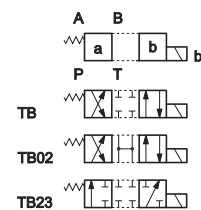
Ausführung SB*:
1 Magnetspule Seite B
2 Stellungen (mittig + seitlich)
mit Federzentrierung



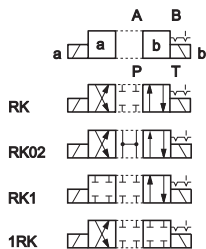
Ausführung TA:
1 Magnetspule Seite A
2 Aussenstellungen
mit Rückholfeder



Ausführung TB:
1 Magnetspule Seite B
2 Aussenstellungen
mit Rückholfeder

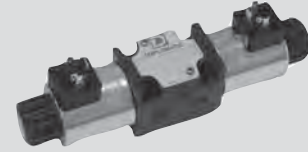


Ausführung RK:
2 Magnetspulen - 2 Stellungen
mit mechanischer Raste

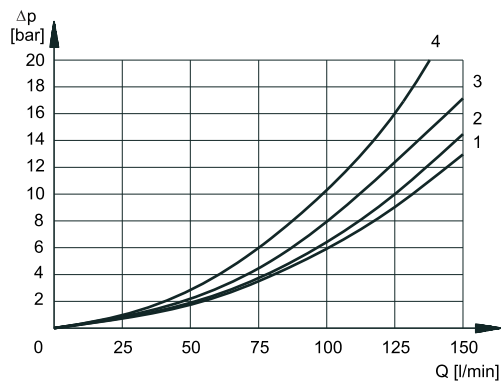


Neben den hier angeführten Standardkolben sind auch Sonderkolben auf Anfrage lieferbar. Für deren Umsetzung wenden Sie sich bitte an unser technisches Büro.

DS5 - direktgesteuertes Wegeventil

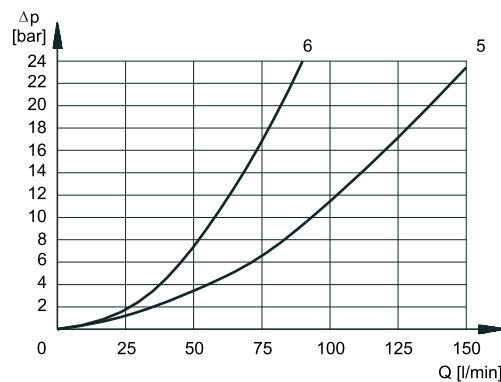


4 - STRÖMUNGSVERLUSTE Δp -Q (Werte für Viskosität 36 cSt und 50°C)



DRUCKVERLUSTE DES UMGESCHALTETEN MAGNETVENTILS

KOLBEN	FLÜSSIGKEITSRICHTUNG			
	P-A	P-B	A-T	B-T
DIAGRAMMKENNLINIEN				
S1, SA1, SB1	2	2	1	1
S2, SA2, SB2	3	3	1	1
S3, SA3, SB3	3	3	2	2
S4, SA4, SB4	1	1	2	2
S5	2	1	1	1
S6, S11	3	3	2	2
S7, S8	1	1	2	2
S9	3	3	2	2
S10	1	1	1	1
S12	2	2	1	1
S17, S19	2	2	1	1
S18	1	2	1	1
S20, S21				
S22, S23				
TA, TB	3	3	2	2
TA02, TB02	3	3	2	2
TA23, TB23	4	4		
RK	3	3	2	2
RK02	3	3	2	2
RK1, 1RK	3	3	2	2



DRUCKVERLUSTE DES MAGNETVENTILS IN MITTELSTELLUNG

KOLBEN	FLÜSSIGKEITSRICHTUNG				
	P-A	P-B	A-T	B-T	P-T
DIAGRAMMKENNLINIEN					
S2, SA2, SB2					5
S3, SA3, SB3			6	6	
S4, SA4, SB4					5
S5		3			
S6				6	
S7					5
S8					5
S10	3	3			
S11			6		
S18	3				
S22					
S23					

5 - UMSCHALTZEITEN

Die angegebenen Werte werden nach ISO 6403, mit Mineralöl mit Viskosität von 36 cSt bei 50°C aufgenommen.

VERSORGUNGSTYP	ZEITEN	
	EINSCHALTUNG	AUSSCHALTUNG
GS	100 ÷ 150 ms	20 ÷ 50 ms
WS	15 ÷ 30 ms	20 ÷ 50 ms

DS5 - direktgesteuertes Wegeventil



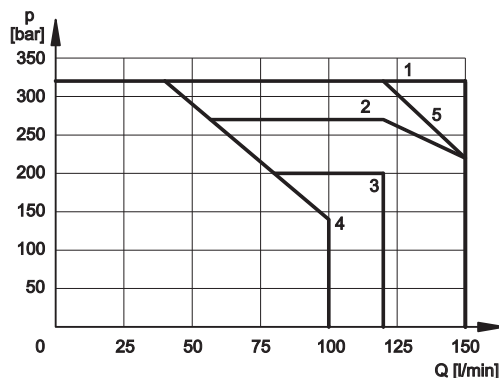
6 - EINSATZBEREICH

Die Kennlinien bestätigen die Einsatzbereiche des Förderstroms abhängig von dem Druck für die verschiedenen Ventilausführungen des Elektroventils.

Die Werte werden nach dem ISO 6403 aufgenommen, mit Magnetspulen mit einer Ausgleichtemperatur und eine Spannung die 90% der Nennspannung ist.

Die Werte werden mit Mineralöl Viskosität 36 cSt um 50 °C und Filter ISO 4406:1999 Klasse 18/16/13 aufgenommen.

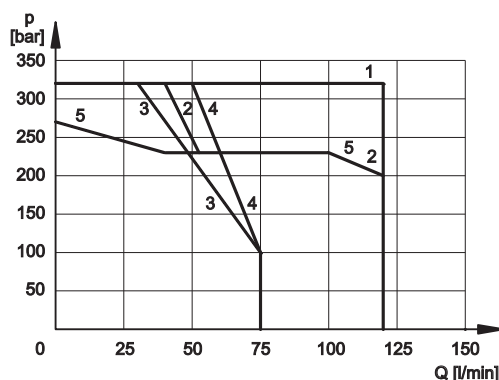
ELEKTROVENTIL MIT GLEICHSTROM



KOLBEN	KENNLINIE	
	P-A	P-B
S1, SA1, SB1	1	1
S2, SA2, SB2	1	1
S3, SA3, SB3	2	2
S4, SA4, SB4	3	3
S5	1	1
S6	2	1
S7	4	4
S8	4	4
S9	1	1
S10	1	1
S11	1	2
S12	1	1

KOLBEN	KENNLINIE	
	P-A	P-B
S17	1	3
S18	1	1
S19	3	1
S20		
S21		
S22		
S23		
TA, TB	5	5
TA02, TB02	3	3
TA23, TB23	1	1
RK	1	1
RK02	1	1
RK1, 1RK	1	1

ELEKTROVENTIL MIT WECHSELSTROM



KOLBEN	KENNLINIE	
	P-A	P-B
S1, SA1, SB1	1	1
S2, SA2, SB2	2	2
S3, SA3, SB3	2	2
S4, SA4, SB4	4	4
S5	1	1
S6	2	1
S7	3	3
S8	3	3
S9	2	2
S10	1	1
S11	1	2
S12	1	1

KOLBEN	KENNLINIE	
	P-A	P-B
S17	1	5
S18	1	1
S19	5	1
S20		
S21		
S22		
S23		
TA, TB	1	1
TA02, TB02	5	5
TA23, TB23	1	1
RK	1	1
RK02	1	1
RK1, 1RK	1	1

HINWEIS: Die in den Diagrammen angeführten Werte beziehen sich auf die Standard-Ausführung. Die Werte des Einsatzbereiches können beträchtlich sinken, wenn ein 4-Wege Ventil mit dem Anschluss A oder B der gedrosselt ist, benutzt wird. Für die Förderstrom- und Druckleistungen der Ausführung mit Weichschaltung (Option F) siehe Abschnitt 12.4. Für die Ausführungen mit regulierbarer Vorrichtung für geregelte Weichschaltung (Option S) sind die Förderstrom- und Druckleistungen vom eingestellten Verlangsamungsgrad beeinflusst.

DS5 - direktgesteuertes Wegeventil



7 - ELEKTRISCHE MERKMALE

7.1 Magnetspulen

Magnetspulen bestehen aus zwei Teilen: dem Spulenhalter und der Spule. Der in das Ventilegehäuse eingeschraubte Spulenhalter enthält den verschleißfrei in Öl laufenden Anker. Der mit dem rücklaufenden Öl in Verbindung stehende Innenteil sichert eine gute Wärmeabführung.

Die Spule wird mit einer Rändelmutter auf dem Spulenhalter befestigt, und kann gedreht werden, sofern es die Einbaueverhältnisse zulassen.

Hinweis 1: Um die Abgaben weiter zu vermindern, empfiehlt man die Benutzung von Verbindern Typ H, die die Überspannungen durch die Öffnung des elektrischen Kreises für die Spulenversorgung vermeiden. (siehe Kat. 49 000).

7.2 Strom und aufgenommene elektrische Leistung des Elektroventils mit Gleichstrom

Die Tabelle zeigt die Aufnahmewerte der verschiedenen Spulen für eine elektrische Versorgung mit Gleichstrom.

Die Speisung mit Richtstrom erfolgt, wenn das Ventil anfangs mit Wechselstrom versorgt (50 oder 60 Hz) wird. Danach wird solcher Strom durch einen Brückengleichrichter berichtigt, der aussen oder in den Würfelsteckern Typ "D" eingebaut ist. (siehe Kat. 49 000).

7.3 Strom und aufgenommene elektrische Leistung des Elektroventils mit Wechselstrom

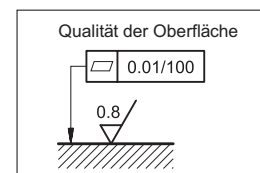
Die Tabelle zeigt die Anlass- und Drehzahlaufnahmewerte für eine elektrische Versorgung mit Wechselstrom.

Spulen für Wechselstrom (Werte ± 5%)

Suffix	Nennspannung [V]	Frequenz [Hz]	Widerstand um 20°C [ohm]	aufgenom. Anlassstrom [A]	aufgenom. Drehzahlstrom [A]	aufgenom. Anlassleistung [VA]	aufgenom. Drehzahlleistung [VA]	Spulen Code
A24	24	50	0,53	25	3,96	600	95	1902890
A48	48		2,09	12,5	2,3	600	110	1902891
A110	110V-50Hz 120V-60Hz	50/60	10,9	5,2	0,96	572	105	1902892
A230	230V-50Hz 240V-60Hz		52,7	2,8	0,46	644	105	1902893
F110	110	60	8,80	5,2	0,95	572	105	1902894
F220	220		35,2	2,7	0,48	594	105	1902895

8 - INSTALLATION

Die Montage ist in den Ausführungen mit Federzentrierung und Rückholfeder frei; die Längsachse der Ventile in der Ausführung RK - ohne Feder und mit mechanischer Raste - soll waagrecht sein. Die Ventilbefestigung erfolgt durch Schrauben oder Zugstangen auf einer Planfläche dessen Ebenheits- und Rauheitswerte höher oder gleich zu denjenigen sind, wie nebenan gezeigt werden. Die Nichtbeachtung der minimalen Ebenheits- und Rauheitswerte kann Leckagen zwischen dem Ventil und der Befestigungsplatte verursachen.



9 - WÜRFELSTECKER

Die Elektroventile werden immer ohne Würfelstecker geliefert. Die Würfelstecker müssen separat bestellt werden.

Was die Bezeichnung des Würfelsteckers betrifft, der zu bestellen ist, siehe Katalog 49 000.

ÄNDERUNG DER VERSORGUNGSSPANNUNG	± 10% Vnenn
MAX. EINSCHALTFREQUENZ	15.000 Ein/Stunde
EINSCHALTZEIT	100%
ELEKTROMAGNETISCHE VERTRÄGLICHKEIT (EMC)	nach den Normen 89/336 CEE
Abgaben (Hinweis 1)	EN 50081-1
Immunität	EN 50082-2
NIEDRIGE SPANNUNG	nach den Normen 73/23/CEE 96/68/CEE
SCHUTZKLASSE :	IP 65 (Hinweis 2)
Verwitterung (CEI EN 60529)	Klasse H
Wicklungsisolierung (VDE 0580)	Klasse F
Imprägnierung:	

Hinweis 2: Der IP65 Schutzgrad wird nur versichert, wenn der Stecker verkabelt und richtig aufgebaut ist.

Spulen für Gleichstrom (Werte ± 5%)

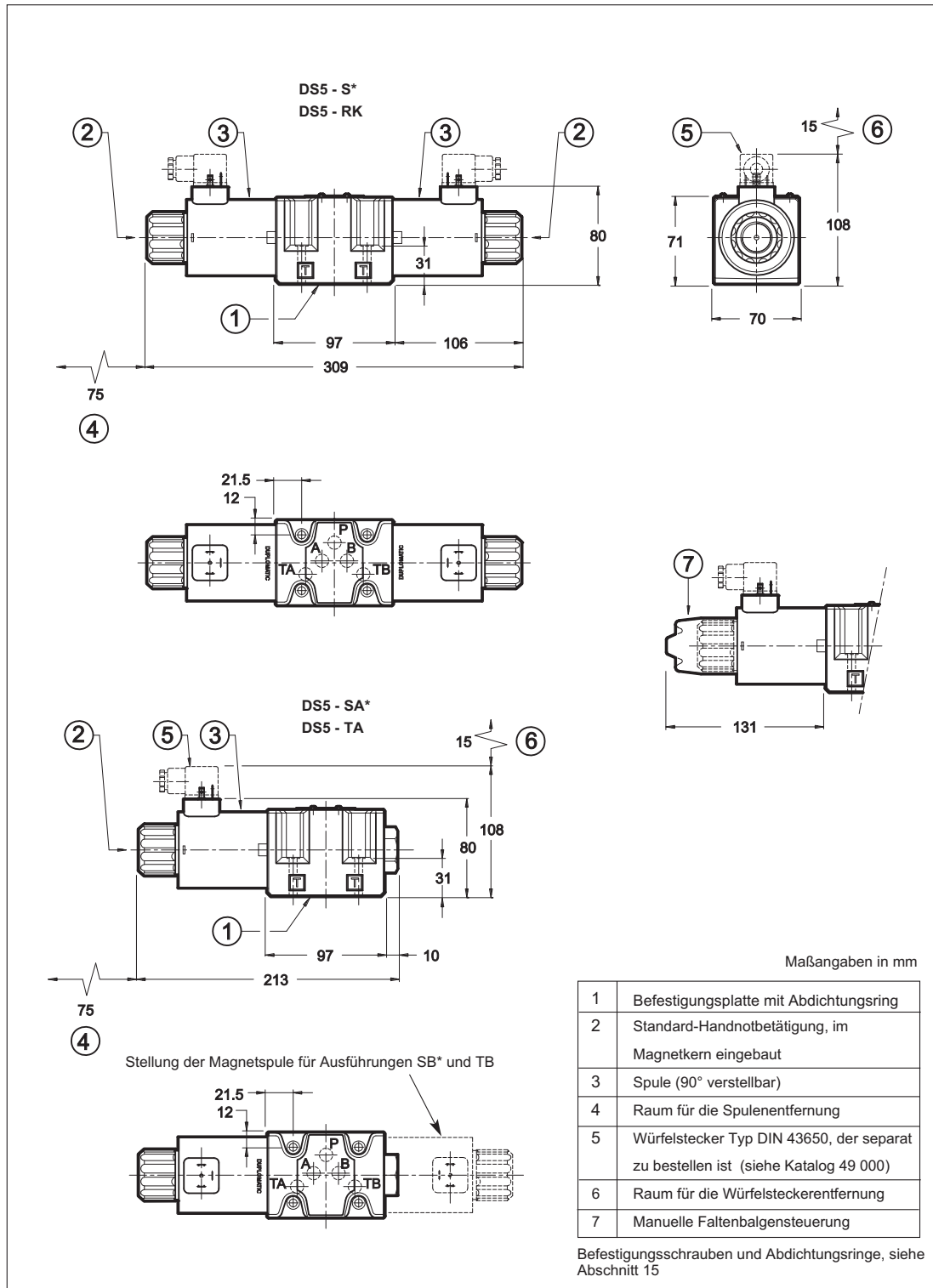
Suffix	Nennspannung [V]	Widerstand um 20°C [Ω]	aufgenom. Strom [A]	aufgenom. Leistung [W]	spulen Code
D12	12	3 - 3,4	3,81	45,8	1902870
D24	24	12 - 14	1,90	45,3	1902871
D110	110	235 - 270	0,44	48,4	1902872
D220	220	960 - 1110	0,21	47,1	1902873

Anmerkung: Wenn das Ventil mit Richtstrom gespeist wird, reduzieren sich die Verwendungsgrenzen um 5- 10% .

DS5 - direktgesteuertes Wegeventil



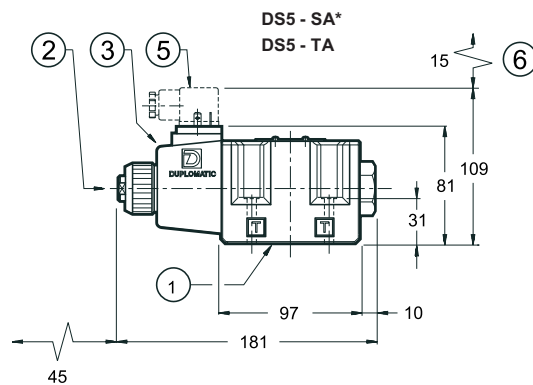
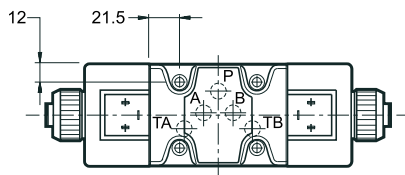
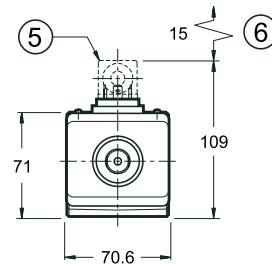
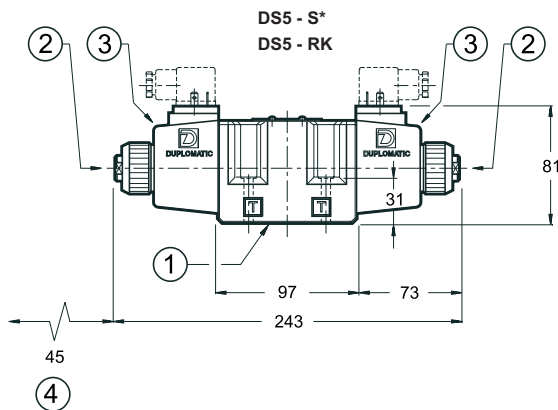
10 - ABMESSUNGEN UND ANSCHLÜSSE DES ELEKTROVENTILS MIT GLEICHSTROM



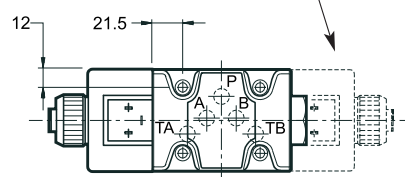
DS5 - direktgesteuertes Wegeventil



11 - ABMESSUNGEN UND ANSCHLÜSSE DES ELEKTROVENTILS MIT WECHSELSTROM



Stellung der Magnetspule für Ausführungen SB* und TB



Maßangaben in mm

1	Befestigungsplatte mit Abdichtungsring
2	Standard-Handnotbetätigung, im Magnetkern eingebaut
3	Spule (360° verstellbar)
4	Raum für die Spulenterfernung
5	Würfelstecker Typ DIN 43650, der separat zu bestellen ist (siehe Katalog 49 000)
6	Raum für die Würfelsteckerentfernung

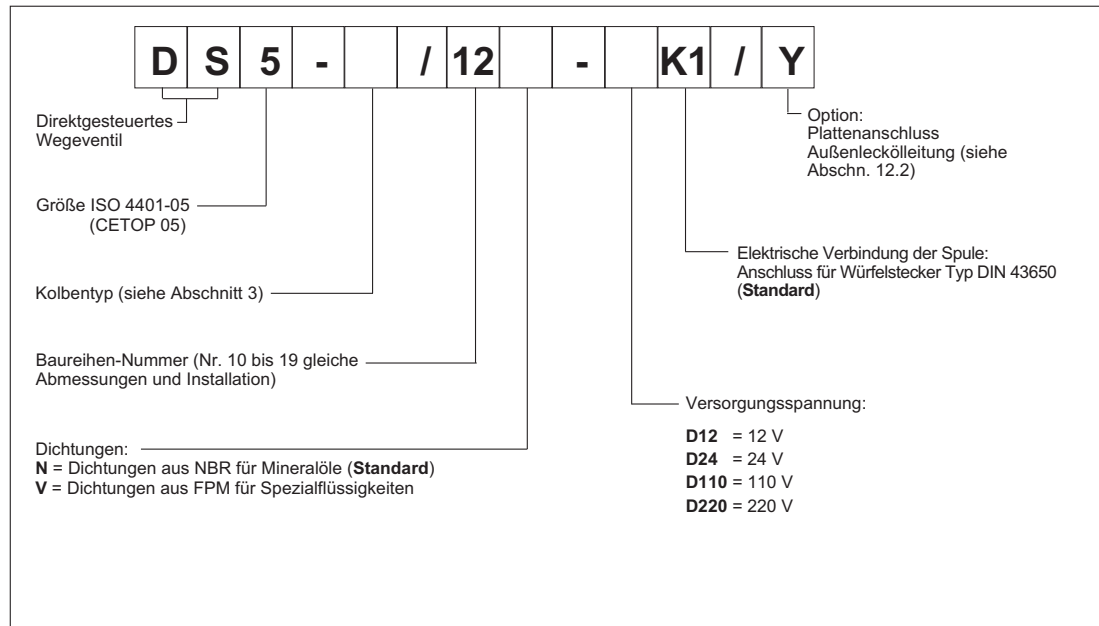
Befestigungsschrauben und Abdichtungsringe, siehe Abschnitt 15

DS5 - direktgesteuertes Wegeventil



12 - SONDERAUSFÜHRUNGEN FÜR ELEKTROVENTILE MIT GLEICHSTROM

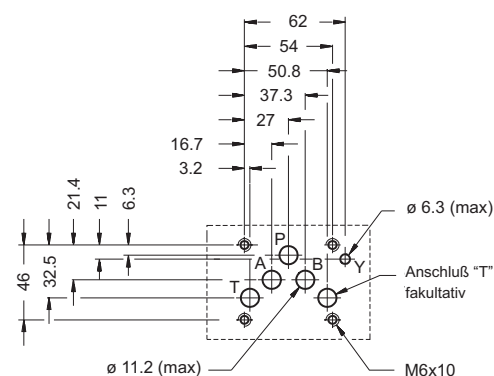
12.1 - Bestellbezeichnung der Ausführung mit Anschluss Außenleckölleitung



12.2 - Plattenanschluss für Außenleckölleitung (Option /Y)

Diese Ausführung ermöglicht bei Druckwerten bis zu 320 bar auf der T-Leitung des Ventils zu arbeiten.

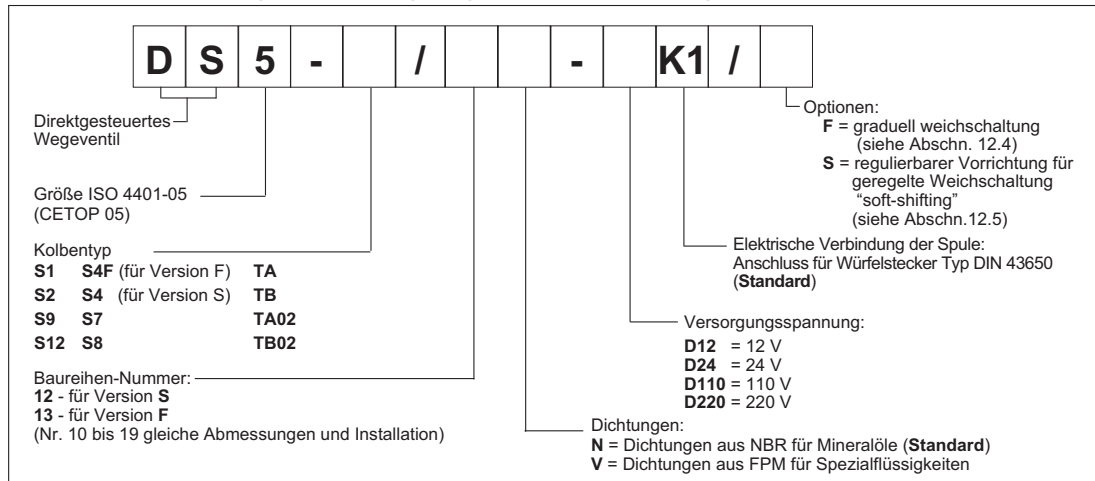
Es handelt sich um eine Leckölbohrung (Y), auf der Ventilanschlussfläche laut ISO 4401-05-05-0-94 (CETOP 4.2-4-R05) ausgeführt, die sich mit der mit den Magnetkernen verbundenen Kammer des Ventilgehäuses verbindet. Die Kerne werden somit nicht durch den Druck auf der T-Leitung des Magnetventils beansprucht.



DS5 - direktgesteuertes Wegeventil



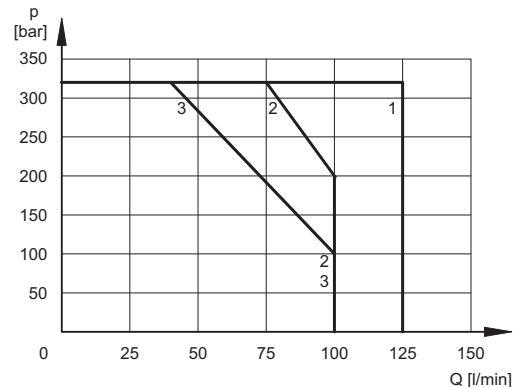
12.3 - Bestellbezeichnung der Ausführung mit graduell Weichschaltung



12.4 - Feste Bohrung für Weichschaltung (Option /F)

Durch diese Ausführung werden Abfahrt und Haltung der Hydraulikzylinder durch eine verlangsamt Kolbenbewegung weich gemacht.

Am Rande befindet sich das Diagramm bezüglich der Grenzen der Kolbenanwendung, erhältlich in der Ausführung mit Weichschaltung (Anmerkung: für diese Ausführung verwendet man anstatt des Kolbens S3 den Typ S9) und die entsprechenden Umschaltzeiten. Die angegebenen Werte werden nach ISO 6403, mit Mineralöl mit Viskosität von 36 cST bei 50 °C aufgenommen. Die Schaltzeit des Kolbens wird von der Viskosität und daher der Temperatur der Flüssigkeit beeinflusst. Die Ausschaltzeiten ändern sich aufgrund der Durchflussstrom- und Betriebsdruckwerte des Ventils.



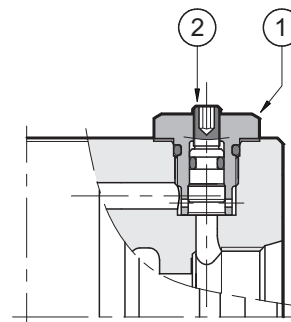
AUSFUHRUNG	Kennlinie		ZEITEN	
	P-A	P-B	EINSCHALTUNG	AUSSCHALTUNG
S1, S12	1	1	300 + 500	300 + 500
S2	2	2	450	200 + 300
S4F, S7, S8	3	3	400	400 + 200
S9	1	1	300 + 500	300 + 500
TA, TB	2	2	300 + 400	300 + 400
TA02, TB02	2	2	400	200 + 300

12.5 - Magnetventil mit einstellbarer Vorrichtung für geregelte Weichschaltung "soft-shifting" (Option /S)

Dieses Magnetventil wird mit einer einstellbaren Vorrichtung für die Regelung der Kolbenverschiebungszeiten geliefert.

Die Bewegungen der geregelten Hydraulikzylinder können durch die Regelung der Magnetventils Umschaltzeit abhängig vom Maschinenzklus und von den Schwingkräften weich gemacht werden.

EINWEIS: Bei der ersten Inbetriebnahme muss das Ventilgehäuse mit der Betriebsflüssigkeit durch den Einfülldeckel erfüllt werden. (1)

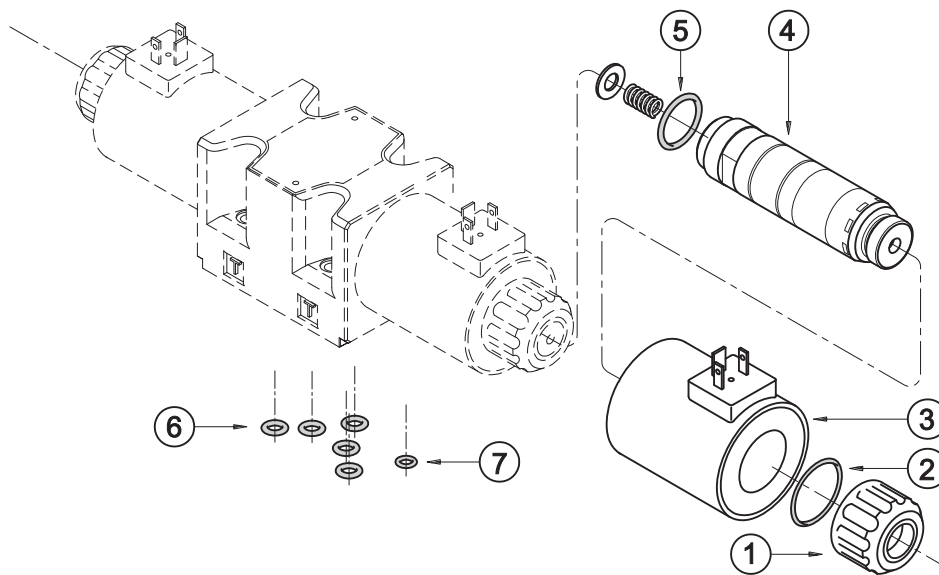


1	Einfülldeckel Schlüssel 17 mm Anzugsmoment 20 Nm
2	Schraube für die Regelung der Umschaltzeit, Sechskanteinsteckschlüssel 2,5 mm

DS5 - direktgesteuertes Wegeventil



13 - ERSATZTEILE DES ELEKTROVENTILS MIT GLEICHSTROM



BESTELLBEZEICHNUNG DER GLEICHSTROMSPULEN

C 31 - K1 / 20

Betriebsspannung

D12 = 12 V
D24 = 24 V
D110 = 110 V
D220 = 220 V

Baureihen-Nummer (Nr. 20 bis 29 gleiche Abmessungen und Installation)

Spulenschaltung: Anschluss für Stecker nach DIN 43650 (Standard)

DICHTUNGSSATZ

Nachfolgende Kode-Nr. enthalten die O-Ringe n° 2, 5, 6 und 7.

Kode-Nr. 1984418
Kode-Nr. 1984419

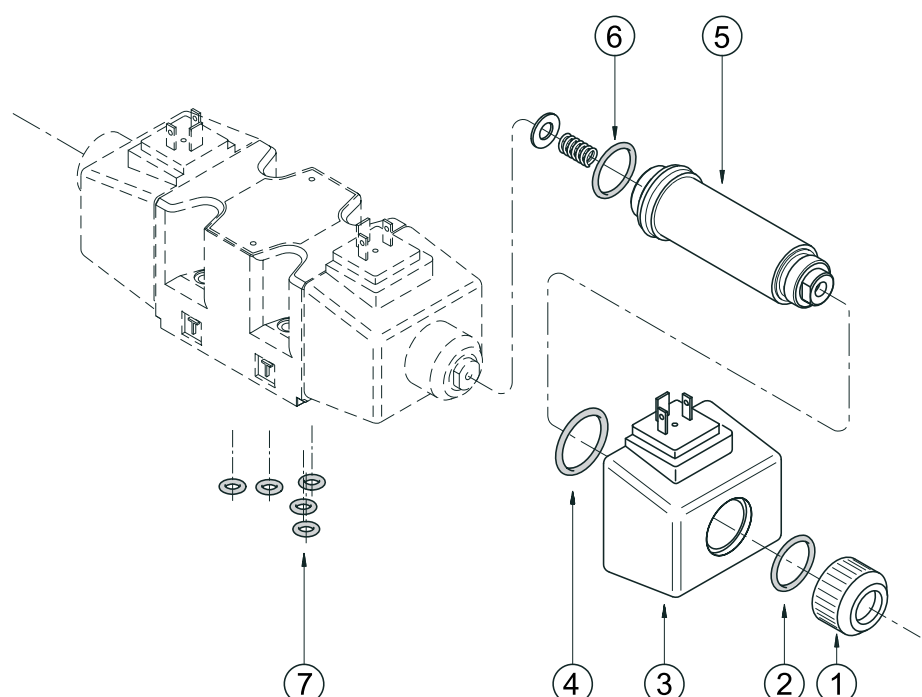
Dichtungen aus NBR
Dichtungen aus FPM (viton)

1	Spulennutmutter mit eingebauter Dichtung, Kode-Nr. 0119383
2	ORM Typ 0320-25 (32x2.5) - 70 Shore
3	Spule (s. nebenstehende Bestellbezeichnung)
4	Magnetkern TD31-M27/20N (Dichtungen aus NBR) TD31-M27/20V (Dichtungen aus FPM) Hin.: der Kern wird mit O-Ring Nr.5 geliefert.
5	OR Typ 3-912 (23.47x2.95) - 70 Shore
6	N. 5 OR Typ 2050 (12.42x1.78) - 90 Shore
7	nur für Ausführung mit Außenleckölleitung (Y): OR Typ 2037 (9.25x1.78) - 90 Shore

DS5 - direktgesteuertes Wegeventil



14 - ERSATZTEILE DES ELEKTROVENTILS MIT WECHSELSTROM



BESTELLBEZEICHNUNG DER WECHSELSTROMSPULEN

C 25.4	-	K1	/	11
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Betriebsspannung

Baureihen-Nummer (Nr. 10 bis 19 gleiche Abmessungen und Installation)

Spulenschaltung: Anschluss für Stecker nach DIN 43650 (Standard)

A24 = 24 V - 50 Hz
A48 = 48 V - 50 Hz
A110 = 110 V - 50 Hz
 120 V - 60 Hz
A230 = 230 V - 50 Hz
 240 V - 60 Hz
F110 = 110 V - 60 Hz
F220 = 220 V - 60 Hz

1	Spulennutmutter Kode-Nr. 0119402
2	O-Ring Typ 4100 (24.99x3.53) - 90 Shore
3	Spule (s. nebenstehende Bestellbezeichnung)
4	O-Ring Typ 2112 (28.3x1.78) - 90 Shore
5	Magnetkern TA25.4-M27/11N (Dichtungen aus NBR) TA25.4-M27/11V (Dichtungen aus FPM) Hin.: der Kern wird mit O-Ring Nr. 6 geliefert.
6	O-Ring Typ 3-912 (23.47x2.95) - 70 Shore
7	Nr. 5 O-Ring Typ 2050 (12.42x1.78) - 90 Shore

DICHTUNGSSATZ

Nachfolgende Kode-Nr. enthalten die O-Ringe n° 2, 4, 6 und 7.

Kode-Nr. 1984420 Dichtungen aus NBR
Kode-Nr. 1984421 Dichtungen aus FPM (viton)

15 - BEFESTIGUNGSSCHRAUBE DES VENTIL

N. 4 Schrauben Typ TCEI M6x40 (empfohlene Klasse 12.9)
Anzugsmoment 8 Nm

16 - GRUNDPLATTEN (Siehe Katalog 51 000)

Typ PMD4-AI4G mit rückseitigem Anschluss 1/2" BSP
Typ PMD4-AL4G mit seitlichem Anschluss 1/2" BSP

Zwischenplattenventil Cetop 05
– Druckbegrenzungsventil NG 10 –



Bestellnr.	Typ	Code
262-020-01000	Zwischenpl. Druckbegr.ventil (vorgest.) P zu T 320 bar	RQ4M6-SP
262-020-01050	Zwischenpl. Druckbegr.ventil (vorgest.) A zu T 320 bar	RQ4M6-SAT
262-020-01100	Zwischenpl. Druckbegr.ventil (vorgest.) A+B zu T 320 bar	RQ4M6-DT
262-020-01150	Z-pl.Druckbegr.ventil (vorgest.) A+B gegenseitig 320 bar	RQ4M6-D

RQ4M - vorgesteuertes Druckbegrenzungsventil

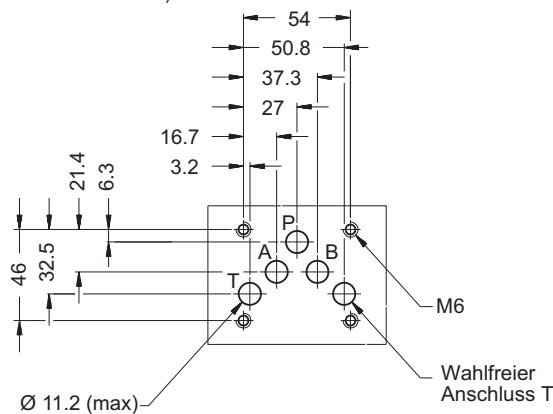
Modularausführung

- CETOP 05
- p max 350 bar
- Q max 100l/min

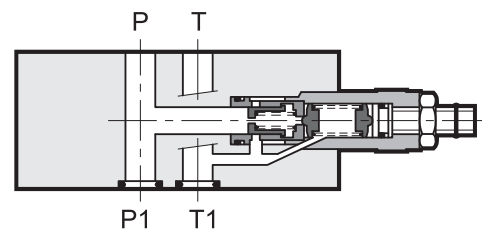


BEFESTIGUNGSPLATTE

ISO 4401-05-04-0-94
(CETOP 4.2-4-05-320)



FUNKTIONSPRINZIP



- Das Ventil RQ4M ist ein vorgesteuertes Druckventil in Modularausführung, dessen Befestigungsplatte den Normen ISO 4401 (CETOP RP121H) entspricht.
- Es kann mit allen ISO 4401-05 (CETOP 05) Modularventilen verwendet werden mit der Verwendung of nur geeignete Stangen oder Schrauben.
- Es ist für eine einfache Regelung in einer Leitung oder für Doppelregelung in zwei Leitungen und mit vier verschiedenen Druck-Einstellbereichen lieferbar.
- Dieses Ventil wird normalerweise als Druckventil des hydraulischen Kreises benutzt.
- Es wird normalerweise mit Innusschraube, Befestigungsmutter und Begrenzung des höchsten Regelhub geliefert

AUSFÜHRUNGEN (siehe Tabelle Hydraulische Symbole)

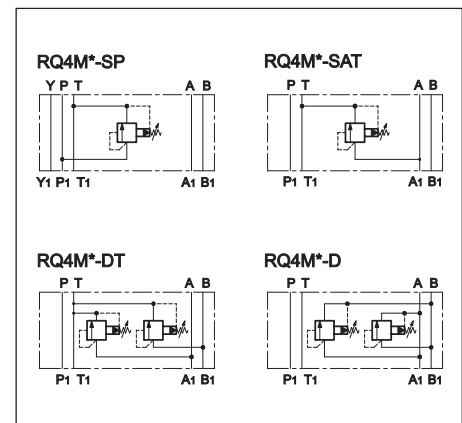
- Ausführung "SP": Druckregelung auf der Leitung P mit Ablauf in T.
- Ausführung "SAT": Druckregelung auf der Leitung A mit Ablauf in T
- Ausführung "DT": Druckregelung auf den Leitungen A-B mit Ablauf in T.

- Ausführung "D": Druckregelung auf den Leitungen A-B mit gekreuzten Abläufen.

TECHNISCHE DATEN (Werte für Mineralöl m. Viskosität 36 cSt u. 50°C)

Max. Betriebsdruck	bar	320
Minimaler geregelter Druck	siehe Diagramm Δp -Q	
Max. Förderstrom in der gesteuerten und in den freien Leitungen	l/min	100
Umgebungstemperatur	°C	-20 / +50
Flüssigkeitstemperatur	°C	-20 / +80
Flüssigkeitsviskosität	cSt	10 ÷ 400
Flüssigkeit-Kontaminationsgrad	nach ISO 4406:1999 Klasse 20/18/15	
Empfohlene Viskosität	cSt	25
Gewicht RQ4M-SP / RQ4M-SAT	kg	2,8
RQ4M-DT / RQ4M-D	kg	3,6

HYDRAULISCHE SYMBOLE



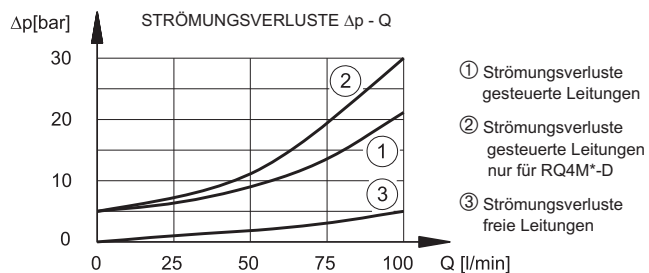
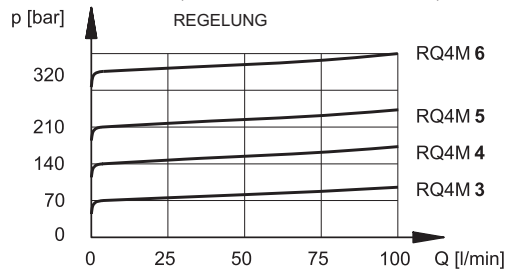
RQ4M - vorgesteuertes Druckbegrenzungsventil



1 - BESTELLBEZEICHNUNG

R	Q	4	M	-	/	/	51	/
Vorgesteuertes Druckbegrenzungsventil						Dichtungen: keine Ang. für Mineralöle V = Viton für Spezialflüssigkeiten		
Nenngröße ISO 4401-05 (CETOP 05)						Baureihen-Nummer (Nr. 50 bis 59 gleiche Abmessungen und Installation)		
Modularausführung						M1 = Regelungsknopf (weglassen für Regelung mit Inbusschraube)		
Druck-Einstellbereich: 3 = bis 70 bar 5 = bis 210 bar 4 = bis 140 bar 6 = bis 320 bar								
Ausführungen: SP : einfach auf der Leitung P mit Ablauf in T SAT : einfach auf der Leitung A mit Ablauf in T				DT : doppel auf den Leitungen A-B mit Ablauf in T D : doppel auf den Leitungen A-B mit gekreuzten Abläufen				

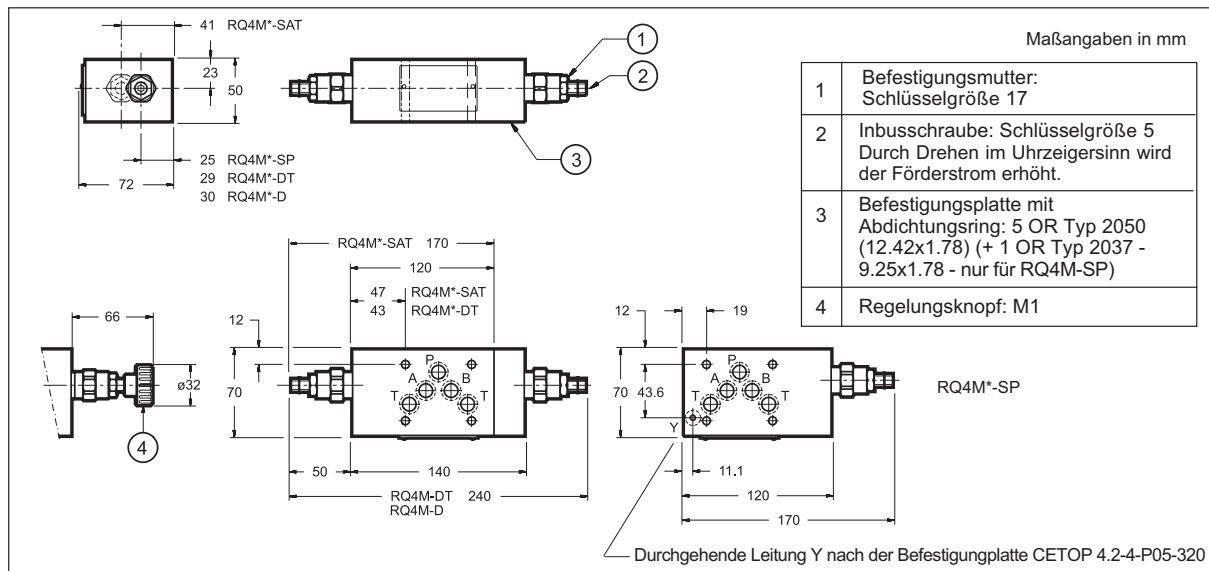
2 - KENNLINIEN (Werte für Viskosität 36 cSt u. 50°C)



3 - HYDRAULISCHE DRUCKMEDIEN

Verwenden Sie Hydraulikflüssigkeiten auf Mineralölbasis Typ HL oder HM nach ISO 6743-4. Für diese Flüssigkeiten verwenden Sie Dichtungen aus NBR. Für Flüssigkeiten vom Typ HFDR (Phosphorester) verwenden Sie Dichtungen aus FPM (Code V). Wenn Sie andere Druckmedien verwenden, zum Beispiel HFA, HFB, HFC, wenden Sie sich bitte an unser technisches Büro. Der Betrieb mit Flüssigkeitstemperaturen über 80 °C führt zum schnellen Verfall der Qualität der Flüssigkeiten und Dichtungen. Die physikalischen und chemischen Merkmale der Flüssigkeit müssen beibehalten werden.

4 - ABMESSUNGEN UND ANSCHLÜSSE



Zwischenplatte Cetop 05 – Druckminderventil NG 10 –



Bestellnr.	Typ	Code
262-030-01000	Zwischenpl. Druckminderventil (vorgest.) in P s 70 bar	Z4M3-I
262-030-01050	Zwischenpl. Druckminderventil (vorgest.) in P 140 bar	Z4M4-I
262-030-01100	Zwischenpl. Druckminderventil (vorgest.) in P 210 bar	Z4M5-I
262-030-01150	Zwischenpl. Druckminderventil (vorgest.) in P 320 bar	Z4M6-I
262-030-01200	Zwischenpl. Druckminderventil (vorgest.) in A s 70 bar	Z4M3-A
262-030-01250	Zwischenpl. Druckminderventil (vorgest.) in A 140 bar	Z4M4-A
262-030-01300	Zwischenpl. Druckminderventil (vorgest.) in A 210 bar	Z4M5-A
262-030-01350	Zwischenpl. Druckminderventil (vorgest.) in A 320 bar	Z4M6-A
262-030-01400	Zwischenpl. Druckminderventil (vorgest.) in B s 70 bar	Z4M3-B
262-030-01450	Zwischenpl. Druckminderventil (vorgest.) in B 140 bar	Z4M4-B
262-030-01500	Zwischenpl. Druckminderventil (vorgest.) in B 210 bar	Z4M5-B
262-030-01550	Zwischenpl. Druckminderventil (vorgest.) in B 320 bar	Z4M6-B

Z4M - vorgesteuertes Druckminderventil

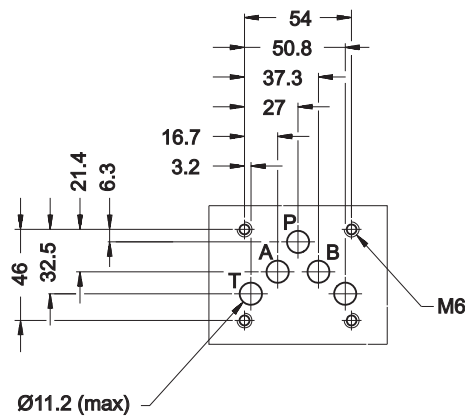
Modularausführung

- CETOP 05
- p max 320 bar
- Q max (siehe technische Daten)

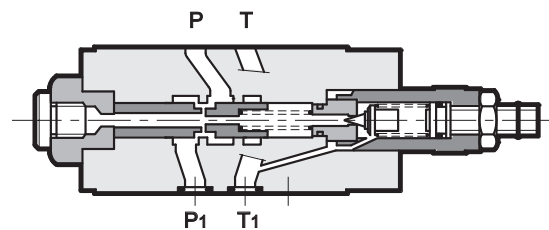


BEFESTIGUNGSPLATTE

ISO 4401-05-04-0-94
(CETOP 4.2-4-05-320)



FUNKTIONSPRINZIP



- Das Ventil Z4M ist ein vorgesteuertes Druckminderventil in Modularausführung, dessen Befestigungsplatte den Normen ISO 4401(CETOP RP121H) entspricht.
- Es wird benutzt, um den Druck auf dem sekundären Kreis zu vermindern. Auf diese Weise wird die Stabilität des geregelten Drucks auch mit dem Änderung des durch das Ventil fließenden Förderstroms gesichert.
- Es kann einfach unter die direktgesteuerten Wegeventile ISO 4401-05 (CETOP 05) eingebaut werden, ohne Rohrleitungen zu benutzen.
- Es wird mit Inbusschraube, Befestigungsmutter und Begrenzung des höchsten Regelunhub geliefert.
- Es ist mit vier verschiedenen Druckregelungen bis 320 bar lieferbar.

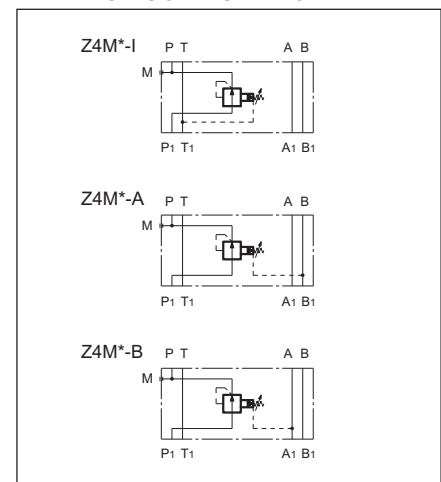
AUSFÜHRUNGEN (siehe Tabelle Hydraulische Symbole)

- Z4M^{-I}: Druckverminderung auf der Leitung P - mit der Leitung T verbundene Leckölleitung.
- Z4M^{-A}: Druckverminderung auf der Leitung A und Normaldruck auf der Leitung B.
- Z4M^{-B}: Druckverminderung auf der Leitung B und Normaldruck auf der Leitung A.

TECHNISCHE DATEN (Werte für Mineralöl m. Viskosität 36 cSt u. 50°C)

Max. Betriebsdruck	bar	320
Max. Förderstrom in den gesteuerten Leitung P	l/min	80
Max. Förderstrom in den freien Leitungen		100
Leckförderstrom		≤0,7
Umgebungstemperatur	°C	-20 / +50
Flüssigkeitstemperatur	°C	-20 / +80
Flüssigkeitsviskosität	cSt	10 ÷ 400
Flüssigkeit-Kontaminationsgrad	nach ISO 4406:1999 Klasse 20/18/15	
Empfohlene Viskosität	cSt	25
Gewicht	kg	2,7

HYDRAULISCHE SYMBOLE



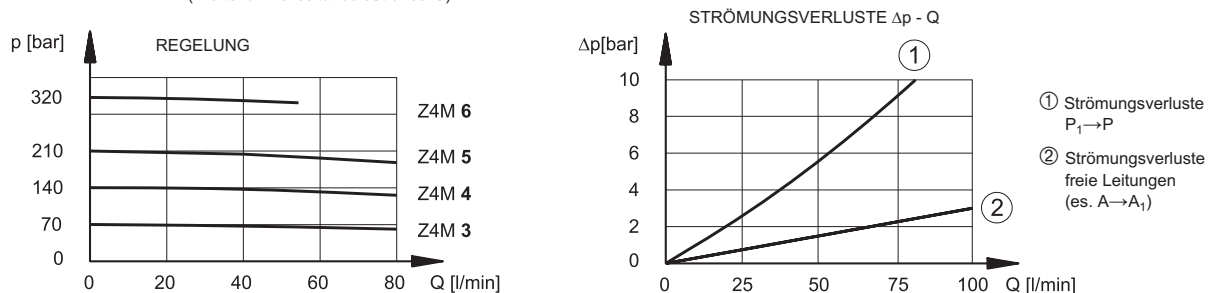
Z4M - vorgesteuertes Druckminderventil



1 - BESTELLBEZEICHNUNG

Z	4	M	-	/	/	50	/	/
Druckminderventil	Nenngröße ISO 4401-05 (CETOP 05)	Modularausführung				Baureihen-Nummer (Nr. 50 bis 59 gleiche Abmessungen und Installation)		
Eichungsbereich: 3 = 5 ÷ 70 bar 4 = 8 ÷ 140 bar 5 = 10 ÷ 210 bar 6 = 15 ÷ 320 bar						Dichtungen: keine Ang. für Mineralöle V = Viton für Spezialflüssigkeiten		
Ausführungen: I: Druckverminderung in der Leitung P. Mit der Leitung T verbundene Innenleckkölleitung A: Druckverminderung in der Leitung A und Normaldruck in der Leitung B B: Druckverminderung in der Leitung B und Normaldruck in der Leitung A						M1 = Regelungsknopf (weglassen für Regelung mit Inbusschraube)		

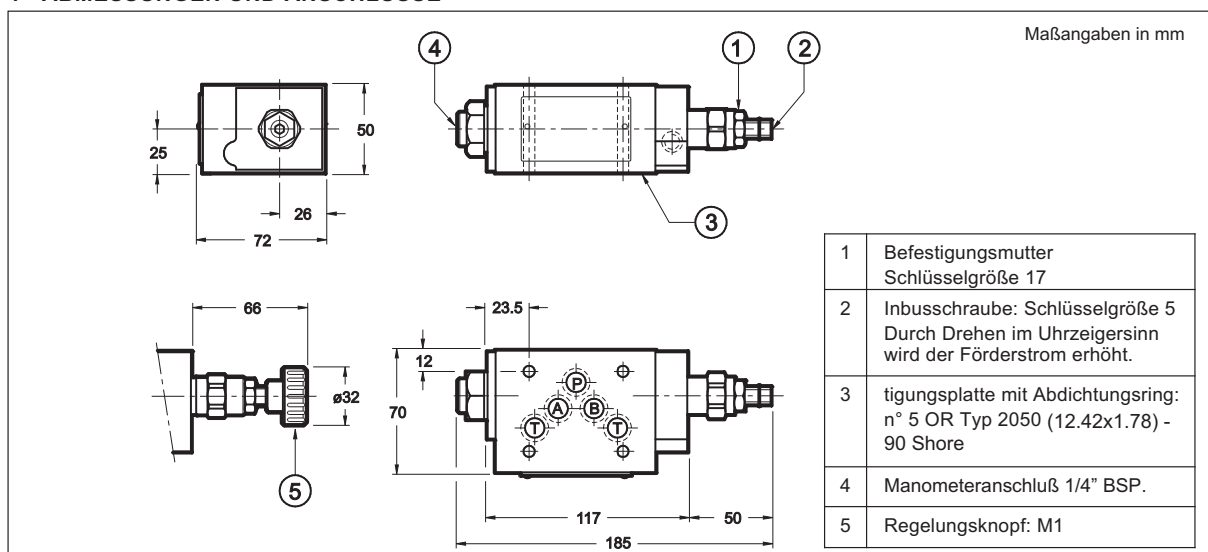
2 - KENNLINIEN (Werte für Viskosität 36 cSt u. 50°C)



3 - HYDRAULISCHE DRUCKMEDIEN

Verwenden Sie Hydraulikflüssigkeiten auf Mineralölbasis Typ HL oder HM nach ISO 6743-4. Für diese Flüssigkeiten verwenden Sie Dichtungen aus NBR. Für Flüssigkeiten vom Typ HFDR (Phosphorester) verwenden Sie Dichtungen aus FPM (Code V). Wenn Sie andere Druckmedien verwenden, zum Beispiel HFA, HFB, HFC, wenden Sie sich bitte an unser technisches Büro. Der Betrieb mit Flüssigkeitstemperaturen über 80 °C führt zum schnellen Verfall der Qualität der Flüssigkeiten und Dichtungen. Die physikalischen und chemischen Merkmale der Flüssigkeit müssen beibehalten werden.

4 - ABMESSUNGEN UND ANSCHLÜSSE



Zwischenplatte Cetop 05 – Drosselrückschlagventil NG 10 –



Bestellnr.	Typ	Code
262-040-01000	Zwischenpl. Drossel-Rückschlagventil (Ablauf) in ACetop 05	ERS4M-SA
262-040-01050	Zwischenpl. Drossel-Rückschlagventil (Ablauf) in BCetop 05	ERS4M-SB
262-040-01100	Zwischenpl. Drossel-Rückschlagv. (Ablauf) in A+BCetop 05	ERS4M-D
262-040-01150	Zwischenpl. Drossel-Rückschlagv. (Zulauf) in A+BCetop 05	ERS4M-RD

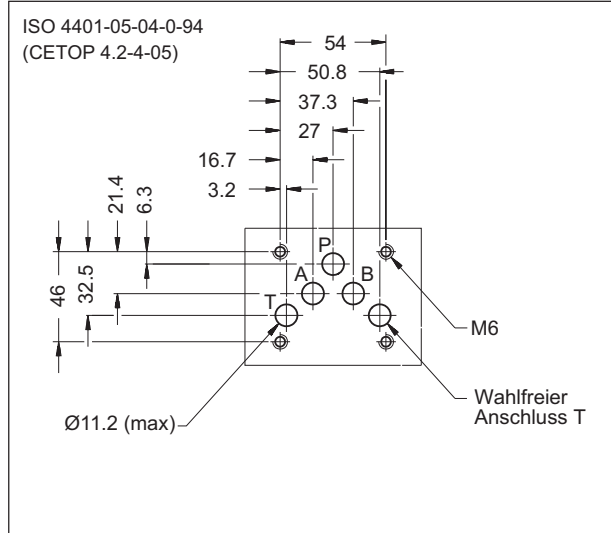
ERS4M - Drosselrückschlagventil

Modularausführung

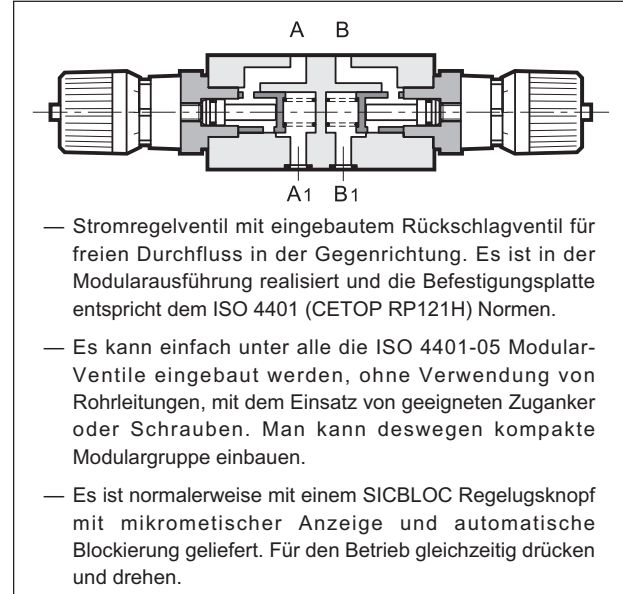
- CETOP 05
- p max 320 bar
- Q max (siehe technische Daten)



BEFESTIGUNGSPLATTE



FUNKTIONSPRINZIP



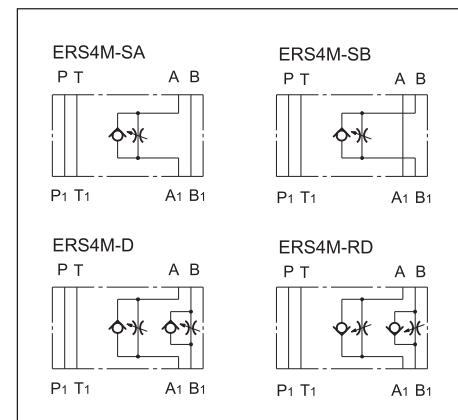
AUSFÜHRUNGEN (siehe Tabelle Hydraulische Symbole)

- Ausführung "SA": sie wird benutzt, um den Ausgangsförderstrom von dem Antrieb zur Leitung A zu steuern.
- Ausführung "SB": sie wird benutzt, um den Ausgangsförderstrom von dem Antrieb zur Leitung B zu steuern.
- Ausführung "D": sie steuert, unabhängig, den Ausgangsförderstrom von den zwei Kammern des Antriebes.
- Ausführung "RD": sie steuert, unabhängig, den Eingangsförderstrom der zwei Kammern des Antriebes.
- Alle Ausführungen sehen ein eingebautes Rückschlagventil vor, das den Durchfluß in der Gegenrichtung erlaubt (Öffnungsdruck 0,5 bar).

TECHNISCHE DATEN (Werte für Mineralöl m. Viskosität 36 cSt u. 50°C)

Max. Betriebsdruck	bar	320
Öffnungsdruck des Rückschlagventils		0,5
Max. Förderstrom in den gesteuerten Leitungen	l/min	80
Max. Förderstrom in den freien Leitungen		100
Umgebungstemperatur	°C	-20 / +50
Flüssigkeitstemperatur	°C	-20 / +80
Flüssigkeitsviskosität	cSt	10 ÷ 400
Flüssigkeit-Kontaminationsgrad	nach ISO 4406:1999 Klasse 20/18/15	
Empfohlene Viskosität	cSt	25
Gewicht	kg	3,1

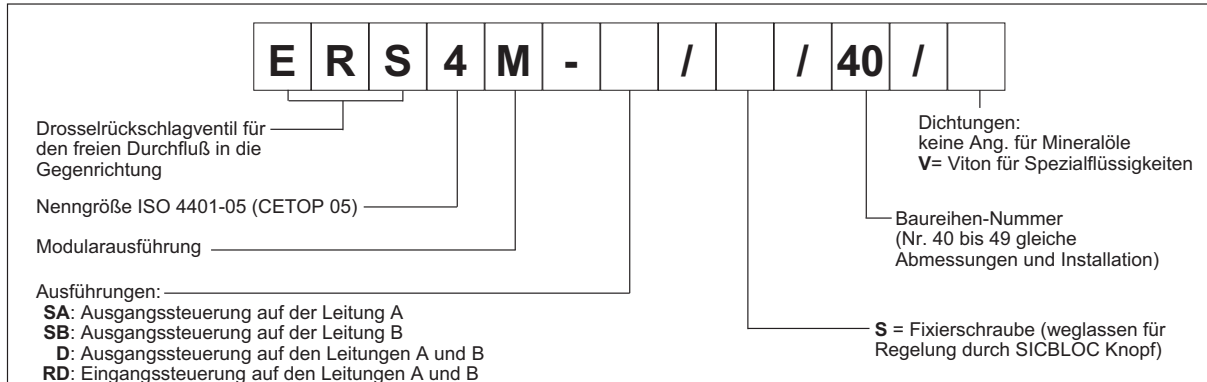
HYDRAULISCHE SYMBOLE



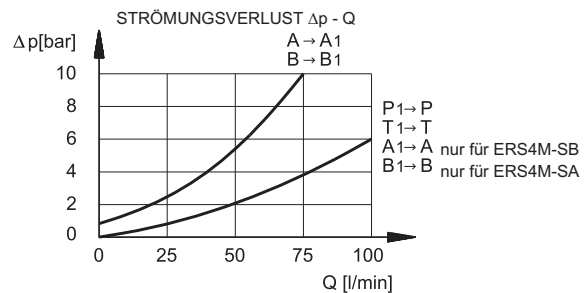
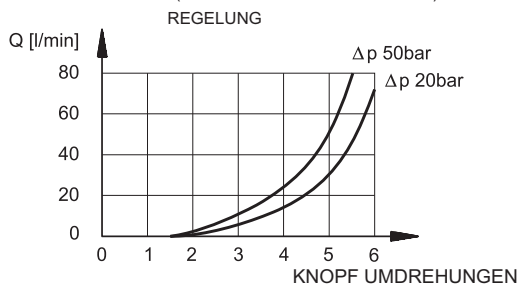
ERS4M - Drosselrückschlagventil



1 - BESTELLBEZEICHNUNG



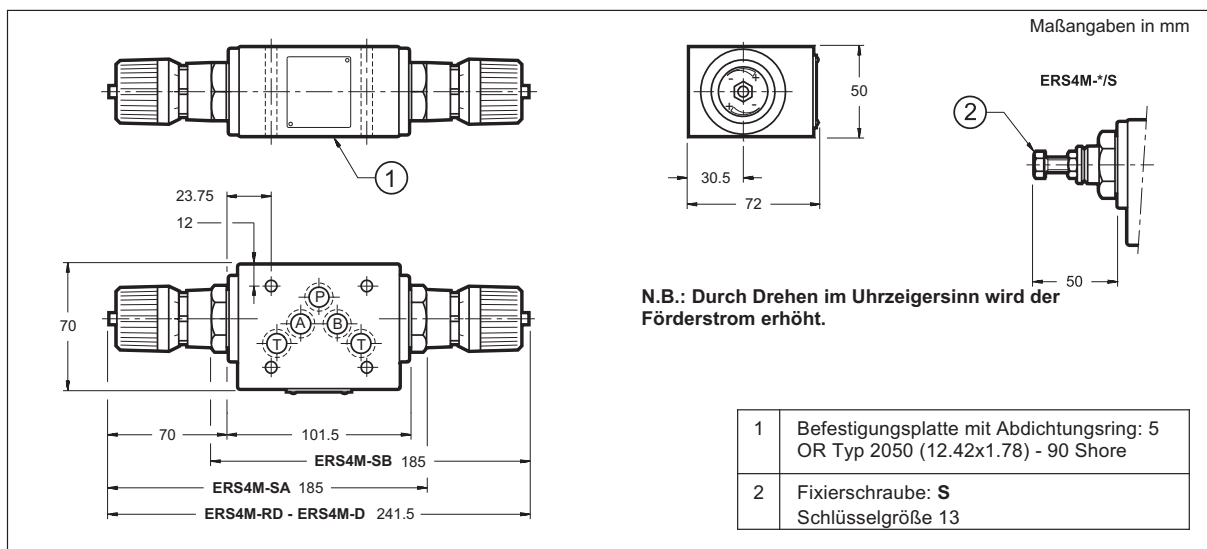
2 - KENNLINIEN (Werte für Viskosität 36 cSt u. 50°C)



3 - HYDRAULISCHE DRUCKMEDIEN

Verwenden Sie Hydraulikflüssigkeiten auf Mineralölbasis Typ HL oder HM nach ISO 6743-4. Für diese Flüssigkeiten verwenden Sie Dichtungen aus NBR. Für Flüssigkeiten vom Typ HFDR (Phosphorester) verwenden Sie Dichtungen aus FPM (Code V). Wenn Sie andere Druckmedien verwenden, zum Beispiel HFA, HFB, HFC, wenden Sie sich bitte an unser technisches Büro. Der Betrieb mit Flüssigkeitstemperaturen über 80 °C führt zum schnellen Verfall der Qualität der Flüssigkeiten und Dichtungen. Die physikalischen und chemischen Merkmale der Flüssigkeit müssen beibehalten werden.

4 - ABMESSUNGEN UND ANSCHLÜSSE



Zwischenplatte Cetop 05 – entsperbares Rückschlagventil NG 10 –

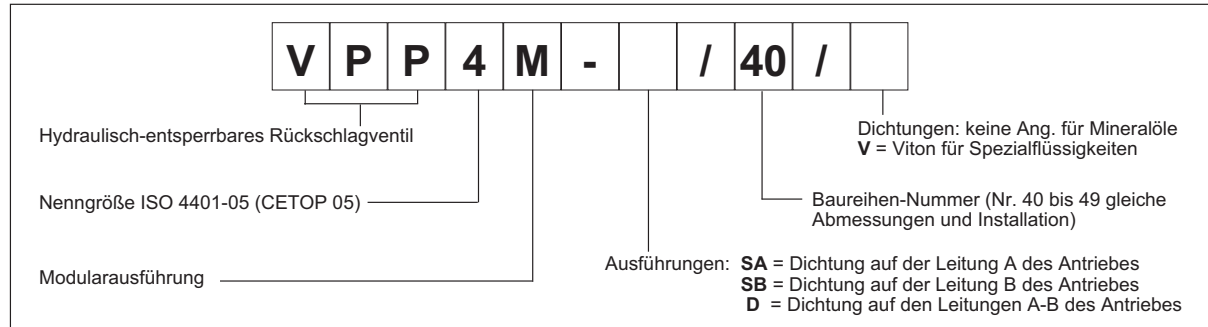


Bestellnr.	Typ	Code
262-050-01000	Zwischenpl. entsperrb. Rückschlagventil in ACetop 05	VPP4M-SA
262-050-01050	Zwischenpl. entsperrb. Rückschlagventil in BCetop 05	VPP4M-SB
262-050-01100	Zwischenpl. entsperrb. Rückschlagventil in A+BCetop 05	VPP4M-D

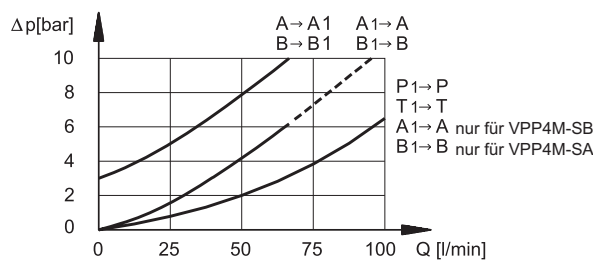
VPP4M - hydraulisch entsperbares Rückschlagventil



1 - BESTELLBEZEICHNUNG



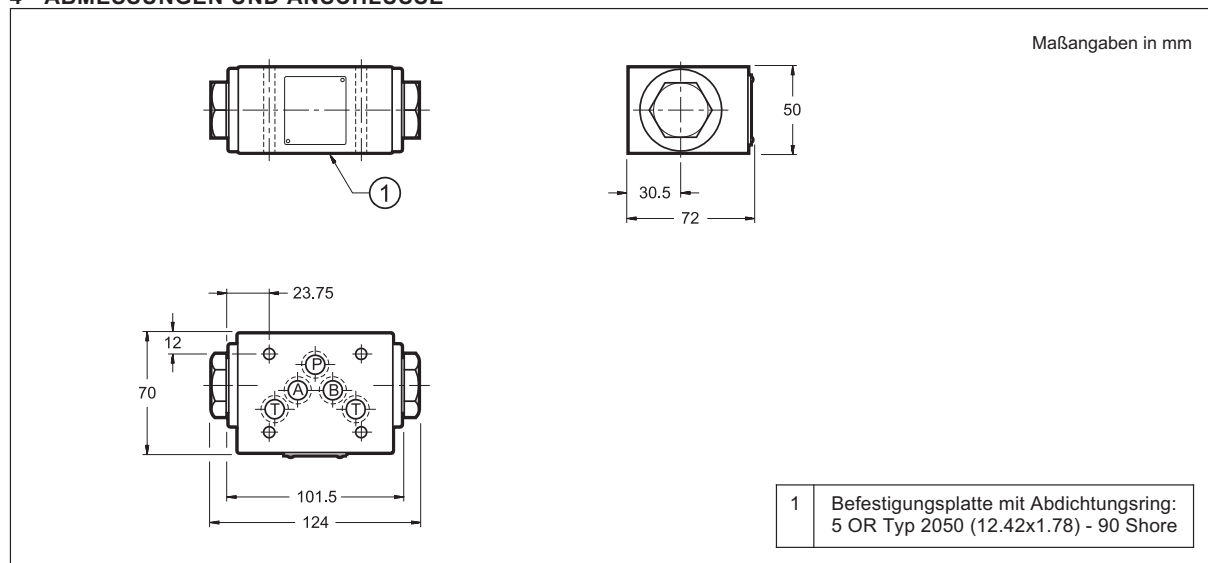
2 - KENNLINIEN (Werte für Viskosität 36 cSt u. 50°C)



3 - HYDRAULISCHE DRUCKMEDIEN

Verwenden Sie Hydraulikflüssigkeiten auf Mineralölbasis Typ HL oder HM nach ISO 6743-4. Für diese Flüssigkeiten verwenden Sie Dichtungen aus NBR. Für Flüssigkeiten vom Typ HFDR (Phosphorester) verwenden Sie Dichtungen aus FPM (Code V). Wenn Sie andere Druckmedien verwenden, zum Beispiel HFA, HFB, HFC, wenden Sie sich bitte an unser technisches Büro. Der Betrieb mit Flüssigkeitstemperaturen über 80 °C führt zum schnellen Verfall der Qualität der Flüssigkeiten und Dichtungen. Die physikalischen und chemischen Merkmale der Flüssigkeit müssen beibehalten werden.

4 - ABMESSUNGEN UND ANSCHLÜSSE



Anschlussplatte Cetop 05 – Wegeventil NG 10 –

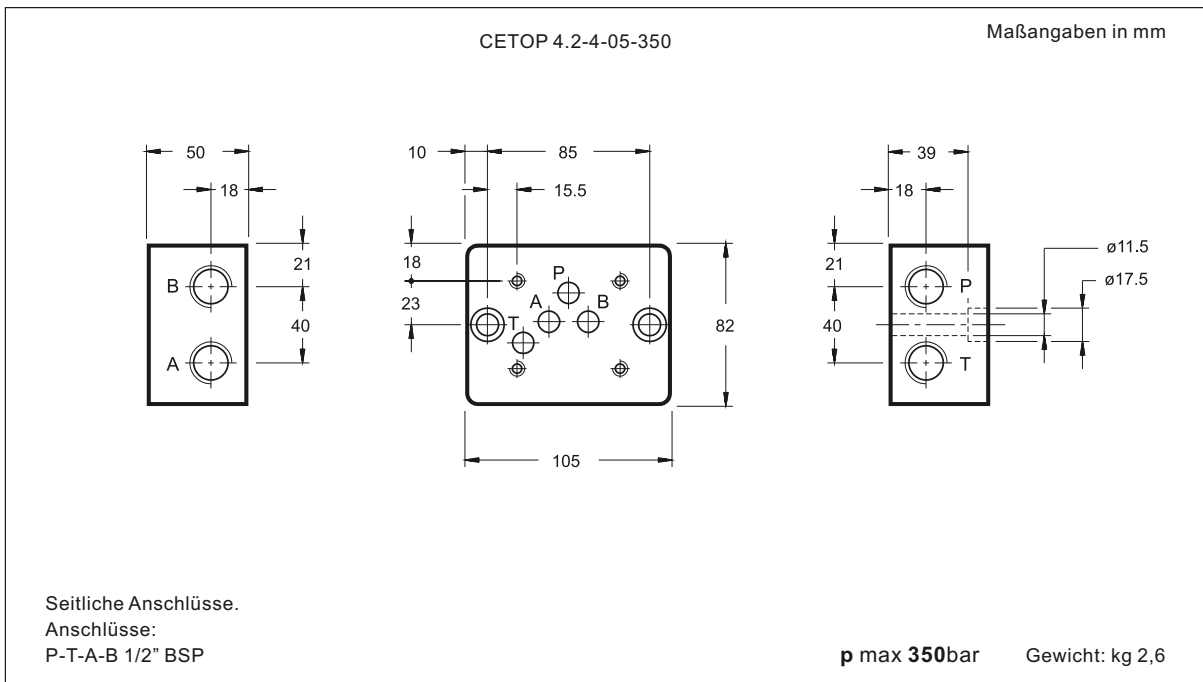


Bestellnr.	Typ	Code
262-060-01000	Grundplatte 1/2" Anschlüsse seitlich Cetop 05	PME4-AL4G
262-060-01050	Grundplatte 1/2" Anschlüsse unten Cetop 05	PME4-AI4G
262-060-01100	Grundplatte 1/2" Anschlüsse seitlich-mit X+Y Cetop 05	PME4-AL5G
262-060-01150	Grundplatte 3/4" Anschlüsse unten-mit X+Y Cetop 05	PME4-AI5G

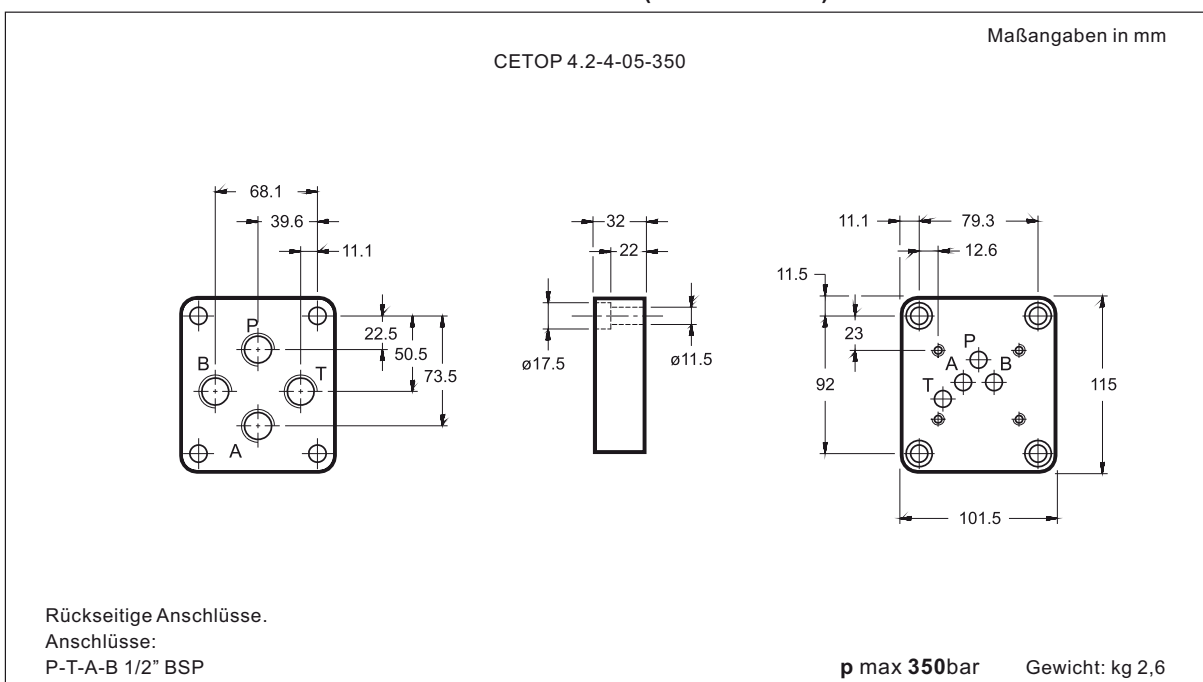
PMD4 - Grundplatte für Ventile Cetop 05



16 - EINBAUMASSE UND ANSCHLÜSSE PMD4-AL4G/10 (Code 1960981)



17 - EINBAUMASSE UND ANSCHLÜSSE PMD4-AI4G/10 (Code 1960961)



Zwischenplatte Cetop 05 – Blind-, Umlenk- und Reduzierplatte, NG 10 –



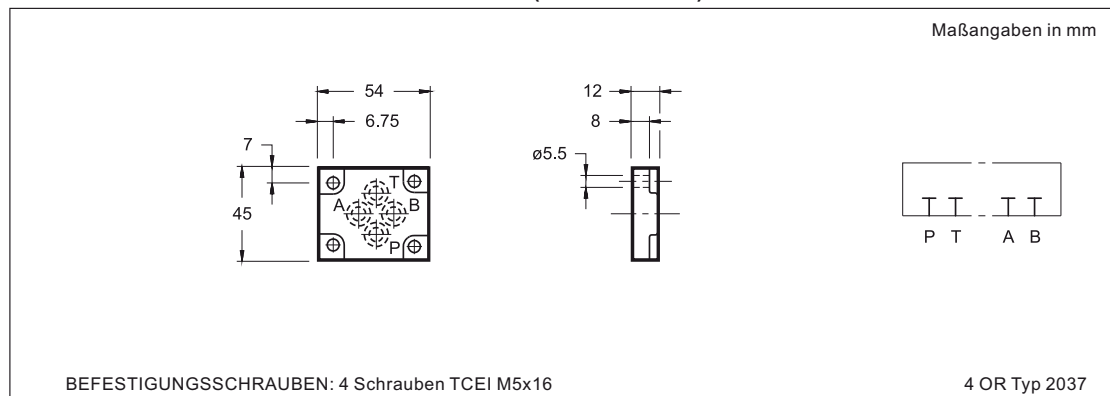
Bestellnr.	Typ	Code
262-070-01000	Blindplatte Cetop 05	PE-D4-M
262-070-01050	Reduzierplatte 5 auf 03	PC-D4-MD1-M

PE - Sonderplatten Sperr-, Umlenk- und Reduzierplatten

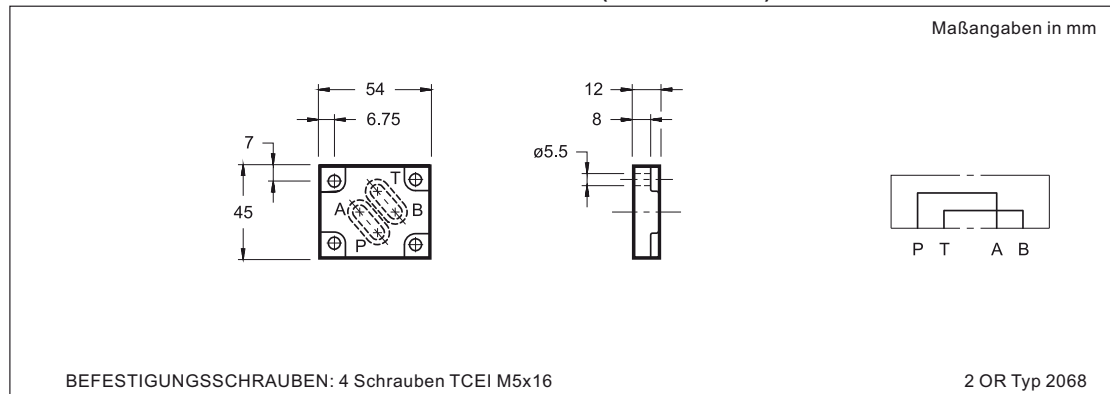
p max 350 bar



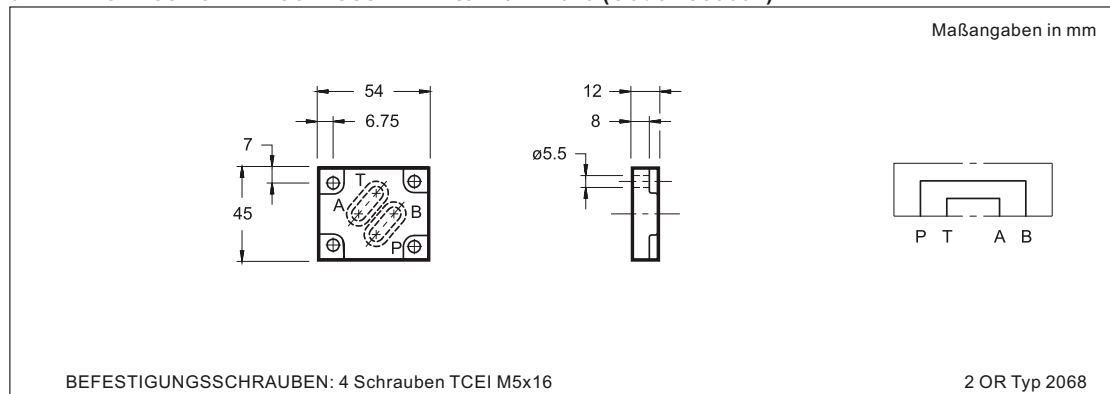
1 - EINBAUMASSE UND ANSCHLÜSSE PE-MD1/20 (Code 1950591)



2 - EINBAUMASSE UND ANSCHLÜSSE PE-C/PA/MD1/20 (Code 1950751)



3 - EINBAUMASSE UND ANSCHLÜSSE PE-C/PB/MD1/20 (Code 1950601)

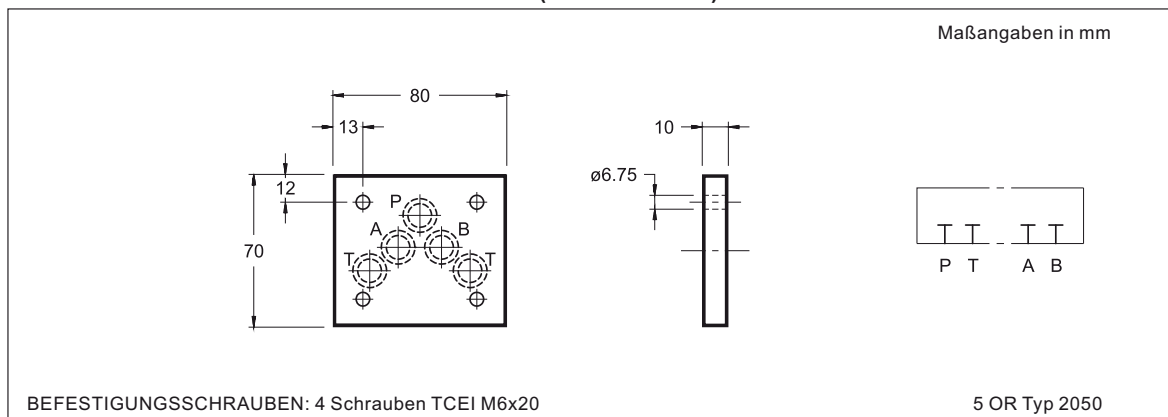


PE - Sonderplatten Sperr-, Umlenk- und Reduzierplatten

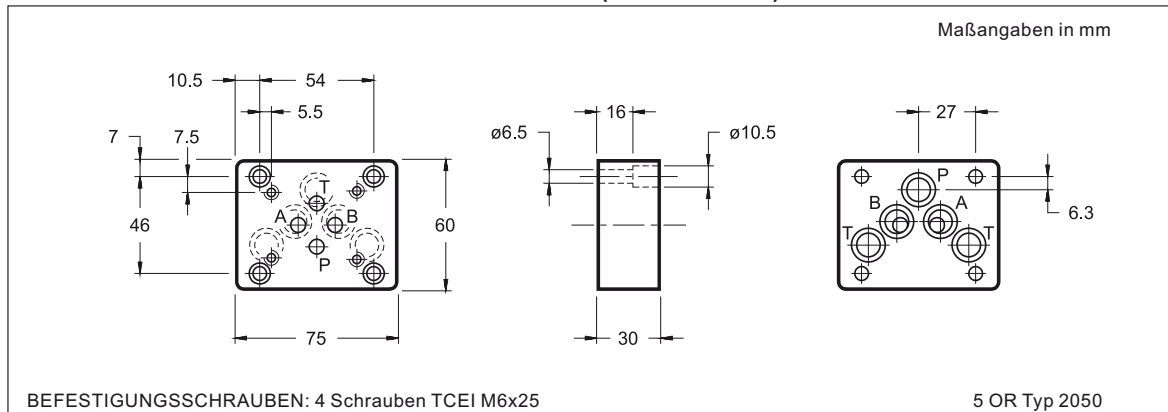
p max 350 bar



4 - EINBAUMASSE UND ANSCHLÜSSE PE-D4-M (Code 1950042)



5 - EINBAUMASSE UND ANSCHLÜSSE PC-D4-MD1-M (Code 1950222)



N.B.: Auf Anfrage gibt es die Möglichkeit die Platten mit O-Ring Dichtungen aus Viton zu liefern. Schreiben sie die Benennung **/V** am Ende jedes Plattencodes.