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Further sandwich valves are presented in chapter 8 „slip-in cartridge valves“, see „accessories, pilot valves“

Characteristics

Direct operated, spool-type sandwich DC valves series Z1DW size NG06 are used for shutting off the flow in stack systems.

For shut off secondary ports A and B, body version A is applied. P and T are drilled through.

For applications with port B drained in a switching position to tank, body version B is used. P and A are drilled through.

Valves are sealed to the manifold side.

The valves can be ordered with inductive position control optionally.

Attention:

The adjustment of the position control is factory set and sealed. Replacement and repairs can only be undertaken by the manufacturer.

Technical Features

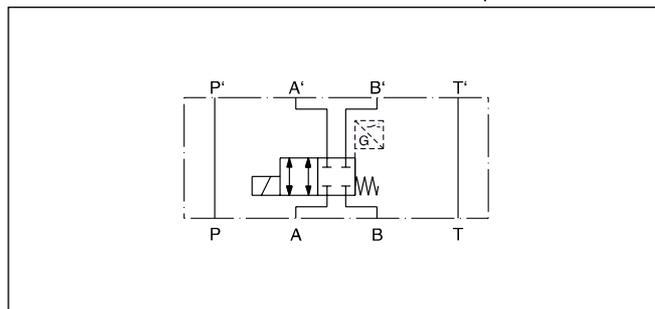
- Shut-off sandwich valve NG06
- Inductive position control optional



Z1DW*E standard



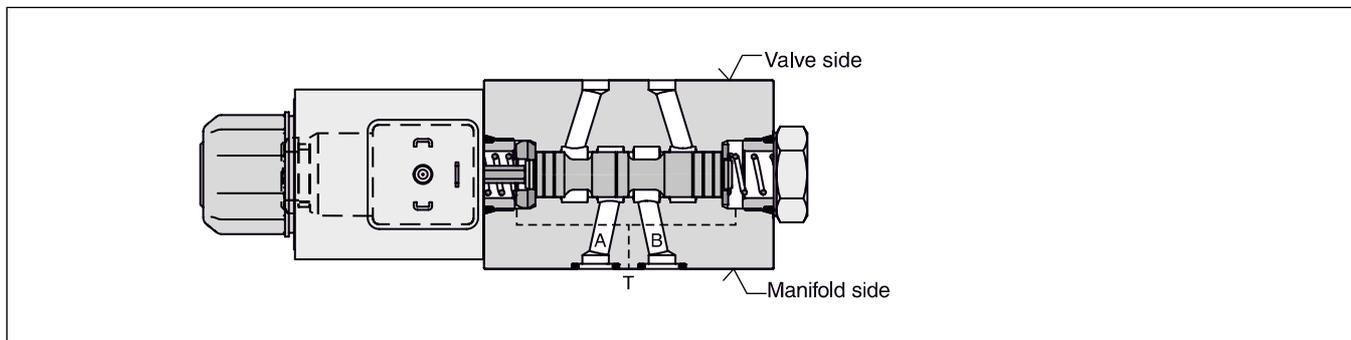
Z1DW*E ind. position control



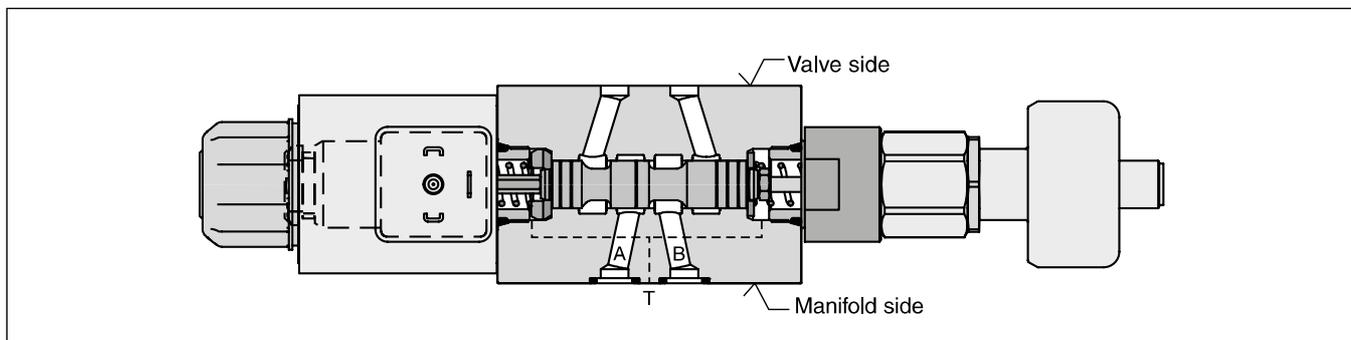
Z1DWA02E

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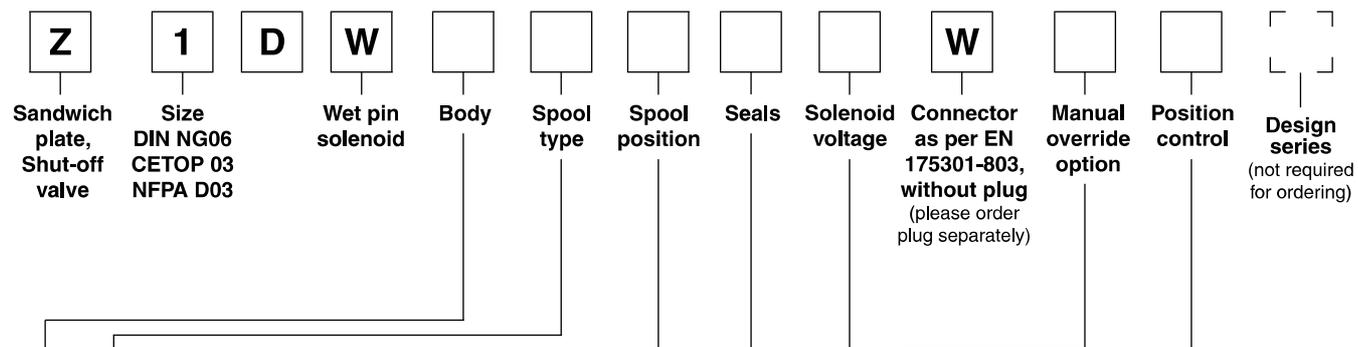
Z1DW*E without inductive position control



Z1DW*E with inductive position control



Ordering Code



Code	Code	Code	
A	01	C ¹⁾	
A	01	E	
A	01	K	
A	02	C ¹⁾	
A	02	E	
A	02	K	
A	03	K	
A	04	E	
B	37	B	

Code	Position control	Spool position
omit	Standard	C, E, B, K
I2N ⁴⁾	End position monitored side B	E, B (Solenoid on a-side)
I5N ³⁾⁴⁾	Start position monitored side B	
I1N ⁴⁾	End position monitored side A	K (Solenoid on b-side)
I4N ³⁾⁴⁾	Start position monitored side A	

Code	Manual override
omit	Standard valve with manual override
T ³⁾	without manual override

Code	Voltage
K	12 V =
J	24 V =
U ²⁾	98 V =
G ²⁾	205 V =

Code	Seals
N	NBR
V	FPM

Further spool types and voltages on request.

- ¹⁾ Without position control.
- ²⁾ To be used in combination with rectifier plugs at 120 VAC / 230 VAC power supply.
- ³⁾ For hydraulic presses according to the safety regulations EN 693, manual override code "T" (without manual override) and position control "I4N" or "I5N" (start position monitored) are required.
- ⁴⁾ Please order female connector M12x1 separately (see accessories in chapter 2, female connector M12x1 (order no.: 5004109).



Technical Data

General					
Design	Directional spool valve, sandwich type				
Actuation	Solenoid				
Size	DIN NG06 / CETOP 03 / NFPA D03				
Mounting interface	DIN 24340 A6 / ISO 4401 / CETOP RP 121-H / NFPA D03				
Mounting position	unrestricted, preferably horizontal				
Ambient temperature	[°C]	-20...+60			
MTTF _D value	[years]	150			
Weight	[kg]	1.8 (1 solenoid), 2.3 (2 solenoids) w/o position control			
	[kg]	2 with position control			
Hydraulic					
Max. operating pressure	[bar]	P, A B: 350 ; T: 210			
Fluid	Hydraulic oil in accordance with DIN 51524				
Fluid temperature	[°C]	-20...+70 (NBR: -25...+70)			
Viscosity, permitted	[cSt] / [mm ² /s]	20...400			
Viscosity, recommended	[cSt] / [mm ² /s]	30...80			
Filtration	ISO 4406 (1999); 18/16/13				
Flow max.	[l/min]	50			
Leakage at 50 bar	[ml/min]	Up to 10 per flow path, depending on spool			
Static / Dynamic					
Step response at 95 %	[ms]	Energized: 32 ; De-energized: 40			
Electrical characteristics					
Duty ratio	100 % ED; CAUTION: coil temperature up to 150 °C possible				
Max. switching frequency	[1/h]	15000			
Protection class	IP 65 in accordance with EN 60529 (with correctly mounted plug-in connector)				
	Code	K	J	U	G
Supply voltage	[V]	12 V =	24 V =	98 V =	205 V =
Tolerance supply voltage	[%]	±10	±10	±10	±10
Current consumption	[A]	2.72	1.29	0.33	0.13
Power consumption	[W]	32.7	31	31.9	28.2
Solenoid connection	Connector as per EN 175301-803, solenoid identification as per ISO 9461.				
Wiring min.	[mm ²]	3 x 1.5 recommended			
Wiring length max.	[m]	50 recommended			

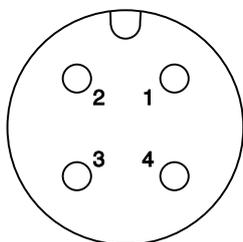
With electrical connections the protective conductor (PE \perp) must be connected according to the relevant regulations.

Position Control

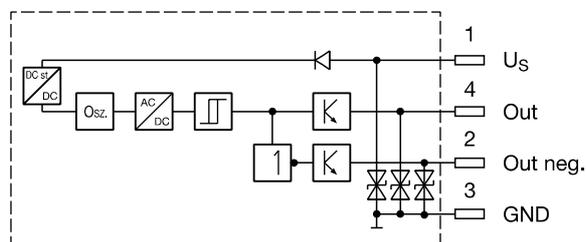
Electrical characteristics of position control as per IEC 61076-2-101 (M12x1)

Supply voltage	[VDC]	24
Tolerance supply voltage	[%]	±20
Ripple supply voltage	[%]	≤10
Polarity protection	[V]	300
Current consumption without load	[mA]	≤20
Switching hysteresis	[mm]	<0.06
Max. output current per channel, ohmic	[mA]	250
Ambient temperature	[°C]	-20 ... +60
Protection		IP65 acc. EN 60529 (with correctly mounted plug-in connector)
Min. distance to next AC solenoid	[m]	0.1
Interface		M12x1 to IEC 61076-2-101
CE conform		EN 61000-4-2 / EN 61000-4-4 / EN 61000-4-6 ¹⁾ / ENV 50140 / ENV 50204

M12 pin assignment



- 1 + U_S 19.2...28.8 V
- 2 Out B: normally open
- 3 0V
- 4 Out A: normally closed



Outputs: Open collector

Definitions

Start position monitored:

The valve is de-energized. The inductive switch gives a signal at the moment when the spool leaves the spring offset position (below 25 % spool stroke).

At the switching point the spool is located within the closed position. It is secured that only the flow paths of the offset position are granted.

End position monitored:

The inductive switch gives a signal before the end position is reached (above 75 % spool stroke).

The switch can only be located on the opposite side of the solenoid for direct operated valves. Please order plug M12 x 1 separately (see accessories, plug M12x1; order no.: 5004109).

¹⁾ Only guaranteed with screened cable and female connector

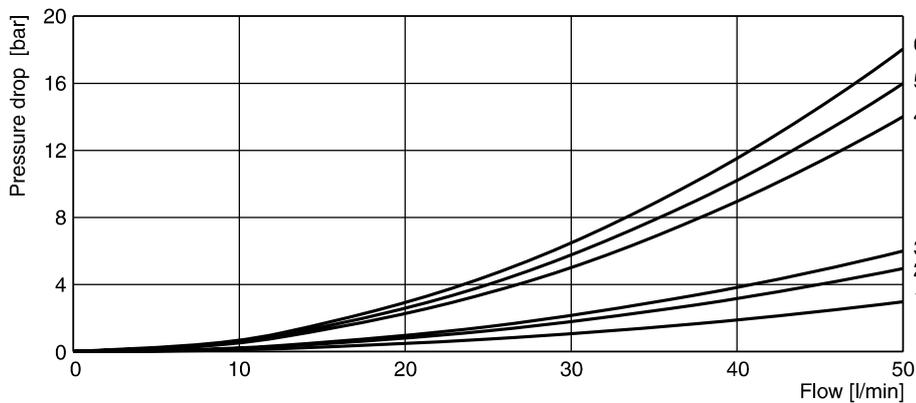
The flow curve diagram shows the flow versus pressure drop curves for all spool types. The relevant curve number

for each spool type, operating position and flow direction is given in the table below.

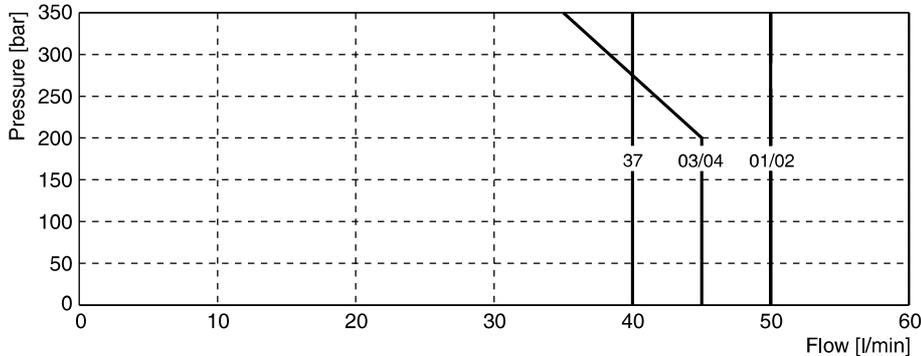
Spool	Symbol	A-A'	A'-A	B-B'	B'-B	T-T'	T-T' Start position	T-T' End position	P-P'	B-T	A-B	B-A
A01C A01K		5	5	5	5	1	—	—	1	—	5	5
A02C A02E		5	5	5	5	1	—	—	1	—	5	5
A03K		4	4	6	6	1	—	—	1	—	6	6
A04E		6	6	4	4	1	—	—	1	—	6	6
B37B		2	2	4	4	—	3	1	1	6	—	—

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Flow curves



Shift limits



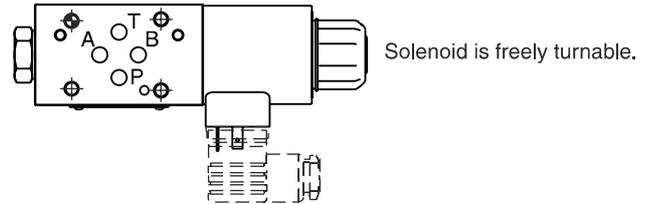
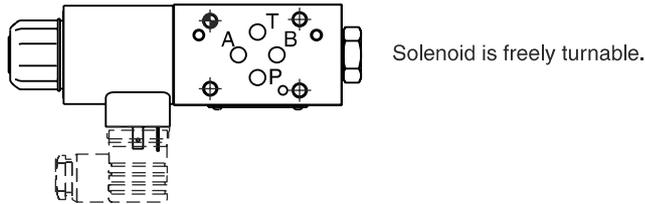
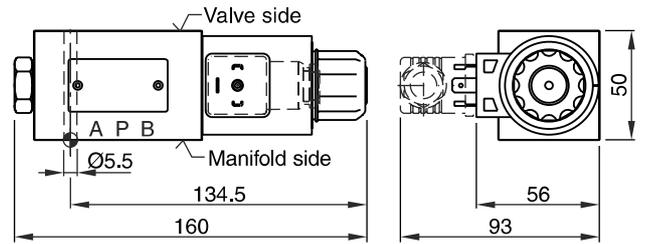
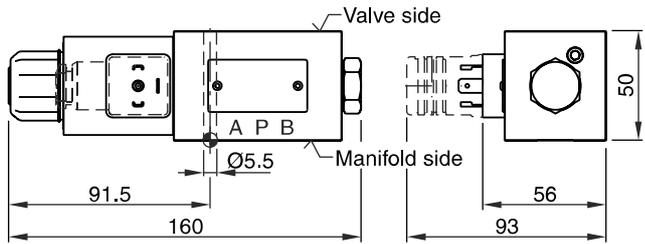
Measured with HLP46 at 50 °C, 90 % U_{nom} and warm solenoids.

Dimensions

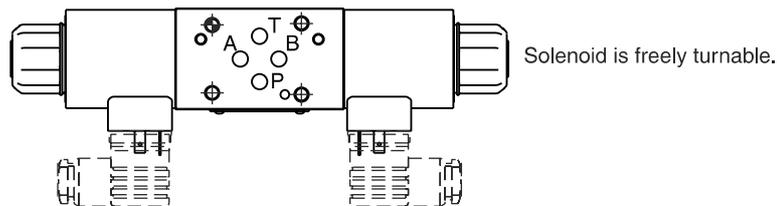
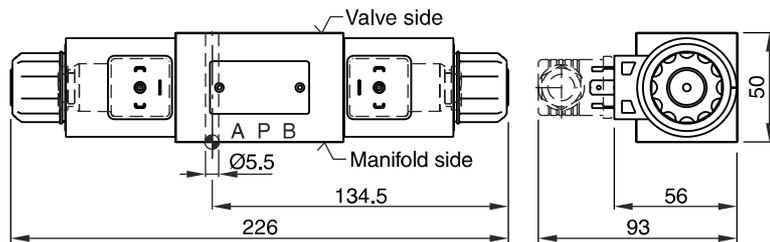
**Shut-off Valve
Series Z1DW**

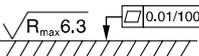
**Z1DW Standard
B, E -style**

K -style



C -style



Surface finish		 Kit
$\sqrt{R_{max}6.3}$ 	7.6 Nm ±15 %	NBR: SK-D1VW-N91 FPM: SK-D1VW-V91

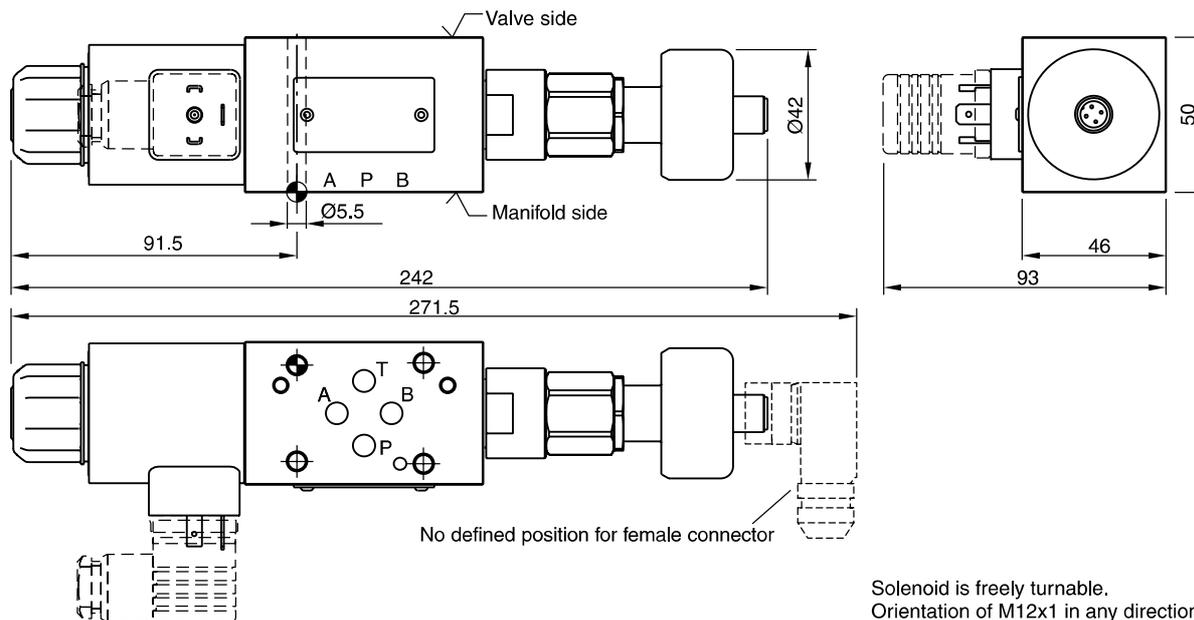
The space necessary to remove the plug per EN 175301-803, design type AF is at least 15 mm.

The torque for the screw M3 of the plug has to be 0.5 to 0.6 Nm.

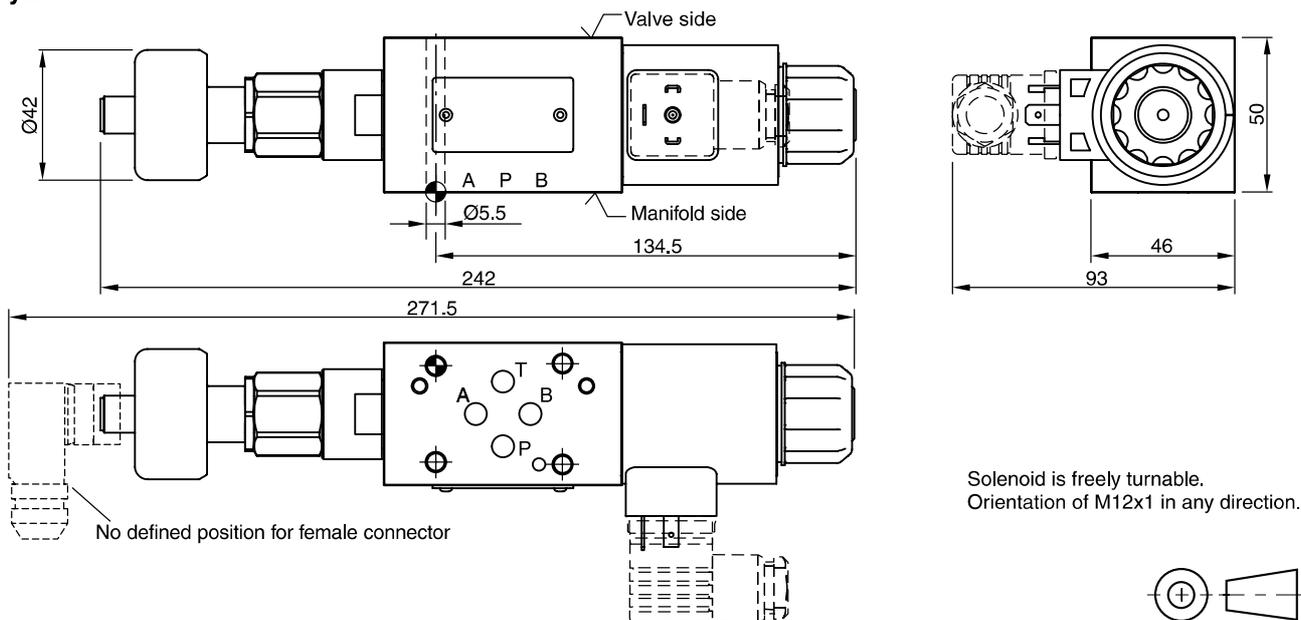
Dimensions

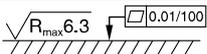
Z1DW with inductive position control
Interface EN 175301-803, DC solenoid, without plug M12x1 ¹⁾

B, E -style



K -style



Surface finish		 Kit
	7.6 Nm ±15 %	NBR: SK-D1VW-N91 FPM: SK-D1VW-V91

The space necessary to remove the plug per EN 175301-803, design type AF is at least 15 mm.

The torque for the screw M3 of the plug has to be 0.5 to 0.6 Nm.

Attention: The adjustment of the position control is factory set and sealed. Replacement and repairs can only be undertaken by the manufacturer.

¹⁾ Please order plug M12 x 1 separately (see accessories, plug M12x1; order no.: 5004109).

The direct operated pressure relief valves series RDM are in sandwich design for easy configuration of stock systems.

They relieve the pressure of the hydraulic system to the adjusted value.

Function

PT... pressure is relieved from P to T.

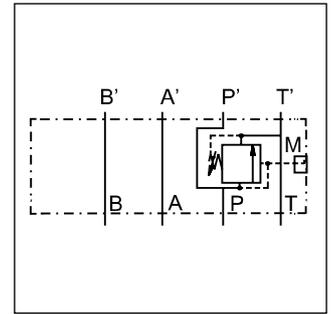
TT... pressure pre-loading in T.

Features

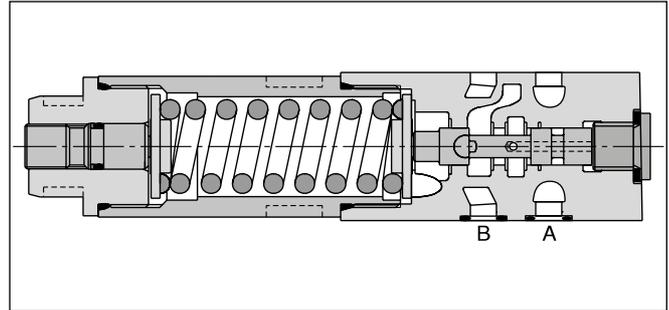
- The direct operated, cushioned piston design results in fast response, low leakage and minimal hysteresis.
- Pressure settings:
bar 25, 64, 160, 210, 350 for RDM2,
bar 19, 50, 100, 150, 210 for RDM3.
- Adjustment modes:
- Hexagon socket
- Cylinder lock
- Turning knob
- Gauge port
- RDM2 - NG06 (CETOP 03)
RDM3 - NG10 (CETOP 05)



RDM2



Example PT



RDM2

Ordering code

RD	M					V		
Pressure relief valve, direct operated	Manapak	Size	Pressure relief	Pressure range	Adjustment	Seal FPM	Gauge port	Design series (not required for ordering)

Code	Size						Code	Gauge port
2	NG06						G ²⁾	G ¹ / ₄
3	NG10						C	Coupling M16

Code	Pressure relief						Code	Adjustment
PT	P						S	Hexagon socket
TT ¹⁾	T						L	Cylinder lock
							K	Turning knob ³⁾

Pressure range	
Code	RDM2
02	1.5 to 25 bar
06	1.5 to 64 bar
16	3 to 160 bar
21	3 to 210 bar
35	5 to 350 bar
Code	RDM3
01	1.5 to 19 bar
05	1.5 to 50 bar
10	3 to 100 bar
15	3 to 150 bar
21	3 to 210 bar

Bold letters = Short-term availability

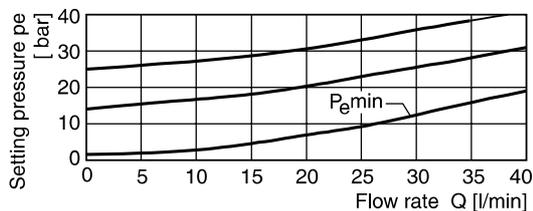
¹⁾ NG06 only, max. 160 bar.
²⁾ Standard in housing.
³⁾ NG06 only.

Technical data

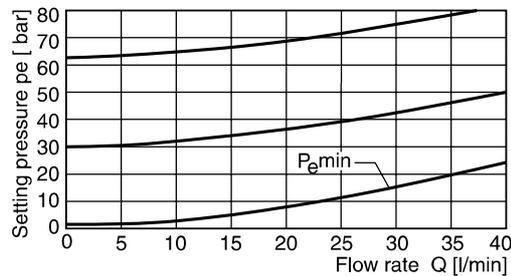
General			
Series		RDM2	RDM3
Size		NG06	NG10
Mounting interface		ISO 4401	
Weight	[kg]	1.3	2.6
MTTF _D value	[years]	150	
Ambient temperature	[°C]	-20...+60	
Hydraulic			
Max. operating pressure	P, A, B [bar]	350	315
	T [bar]	50	10
Fluid		Hydraulic oil according to DIN 51524	
Fluid temperature	[°C]	-20...+70	
Viscosity, permitted	[cSt] / [mm ² /s]	20 ... 400	
Viscosity, recommended	[cSt] / [mm ² /s]	30 ... 80	
Filtration		ISO 4406 (1999); 18/16/13	
Max. flow	[l/min]	40	80

Performance curves

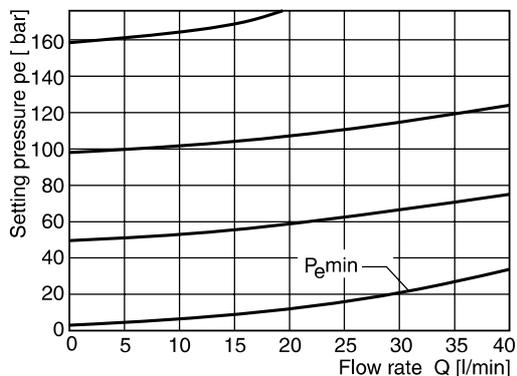
RDM2 02



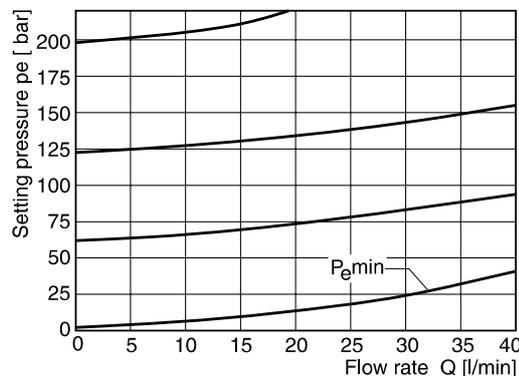
RDM2 06



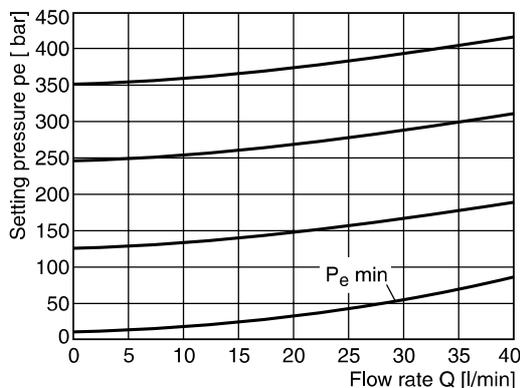
RDM2 16



RDM2 21



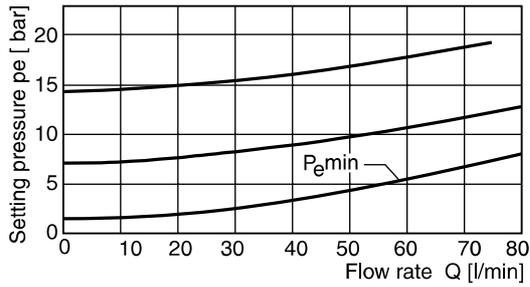
RDM2 35



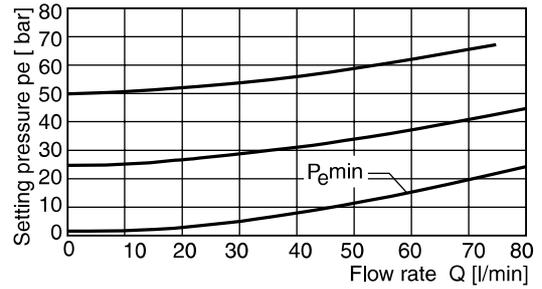
All characteristic curves measured with HLP46 at 50 °C.

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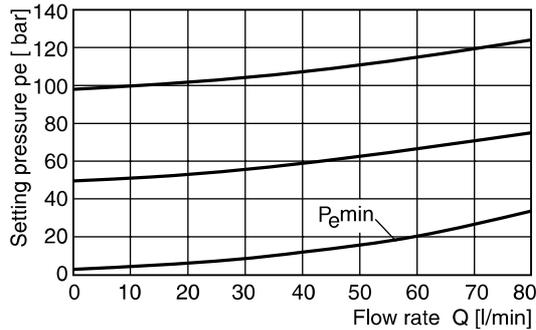
RDM3 01



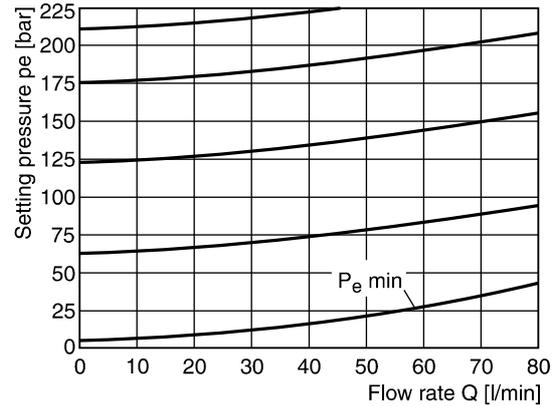
RDM3 05



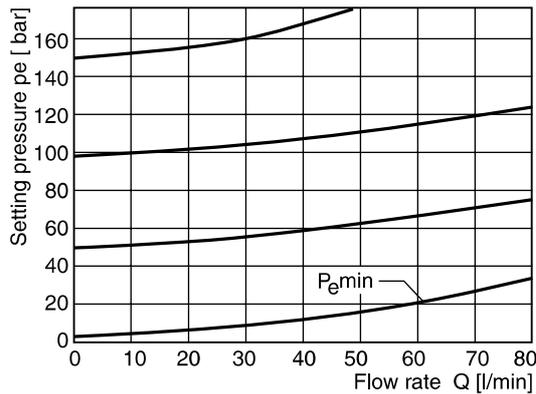
RDM3 10



RDM3 21



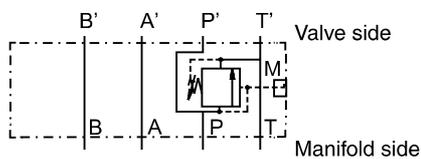
RDM3 15



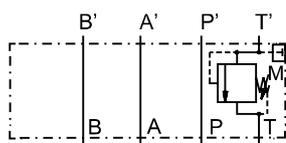
All characteristic curves measured with HLP46 at 50 °C.

Schematics

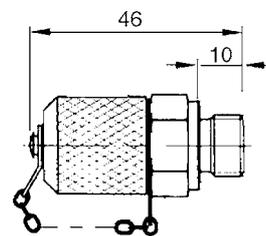
RDM*PT



RDM*TT

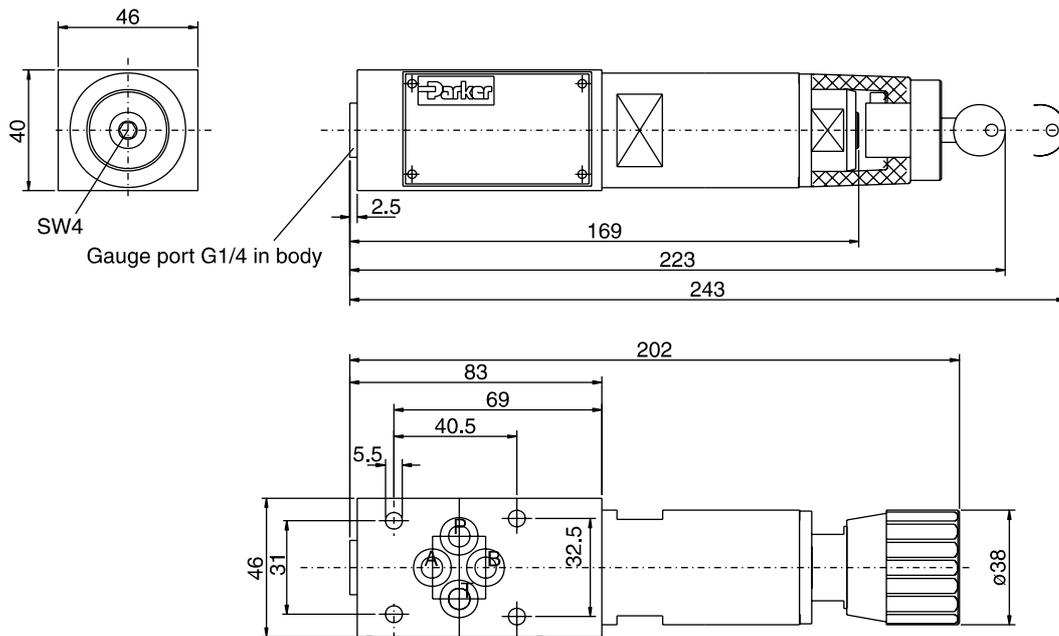


Gauge port option C



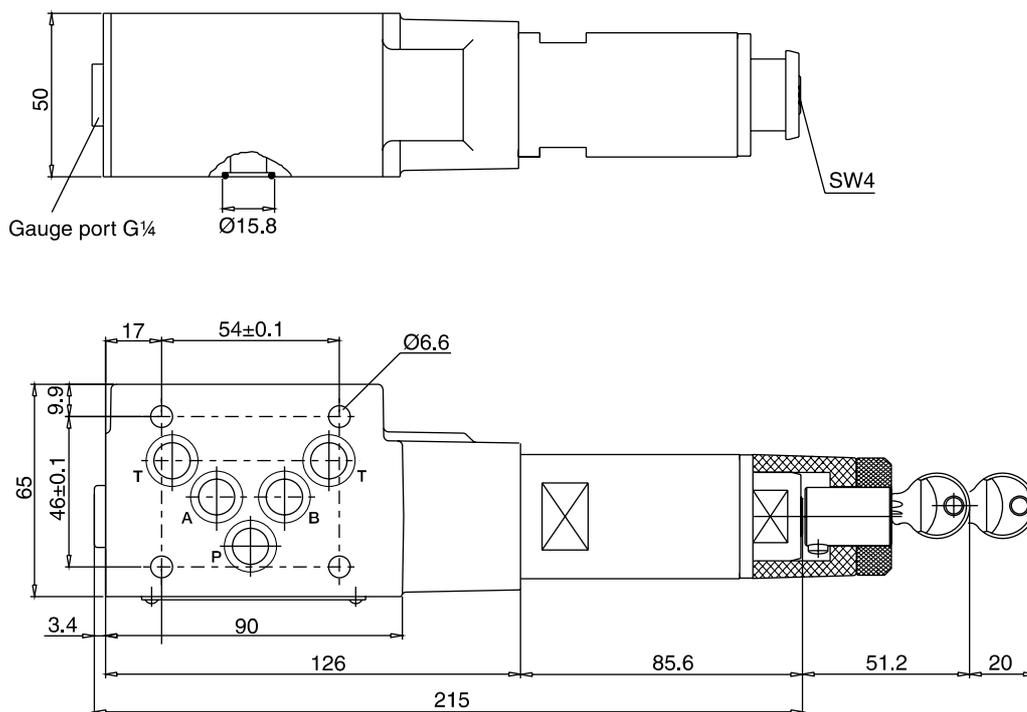
Dimensions

RDM2



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RDM3



Seal kit order code		
Seal	RDM2	RDM3
V	SK-RDM2-V	SK-RDM3-V



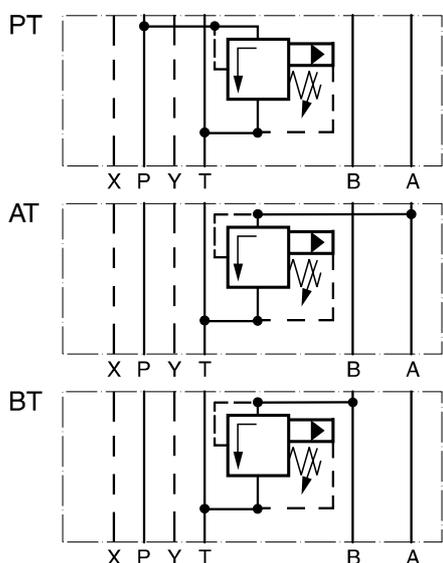
The pilot operated pressure relief valves from the Parker Manapak series RM are in sandwich design for easy configuration of stack systems. Depending on type, pressure limiting can be achieved in ports P, A or B with unloading to port T.

RM valves may only be mounted in the defined mounting position.

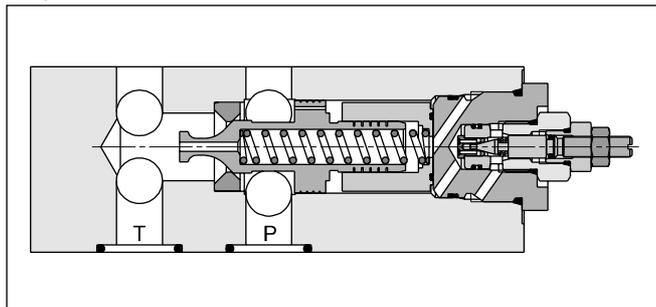
Features

- The valve bodies of the Parker Manapak valve series RM are made of steel.
- The pressure can be set by hexagon socket screw (RM4), hexagon socket screw or knob with cylinder lock (RM6). Piloting results in a flat p/Q performance curve.
- Piloting results in a flat p/Q performance curve.
- The orifices located in the main spool limit the pilot oil flow.

Schematics RM4-NG16, RM6-NG25 (only PT)



RM6



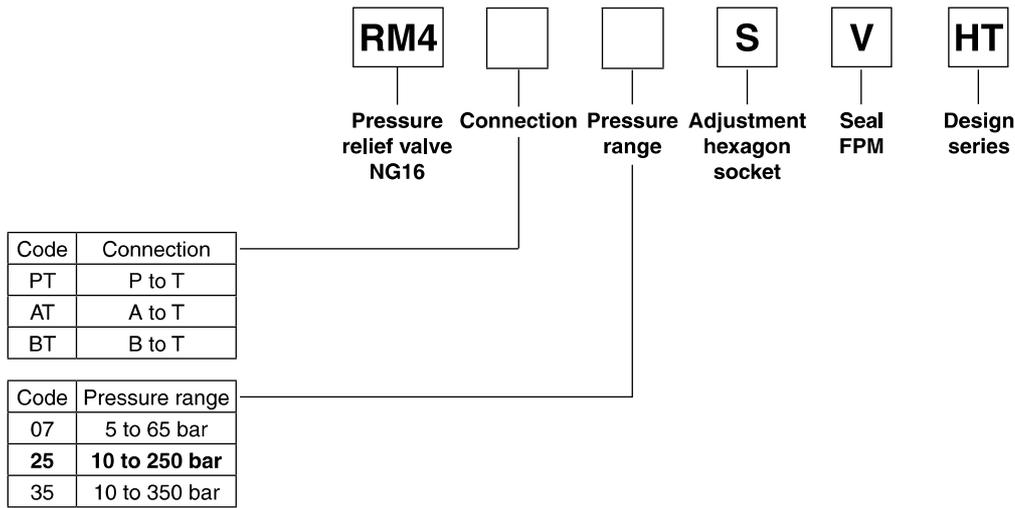
RM6



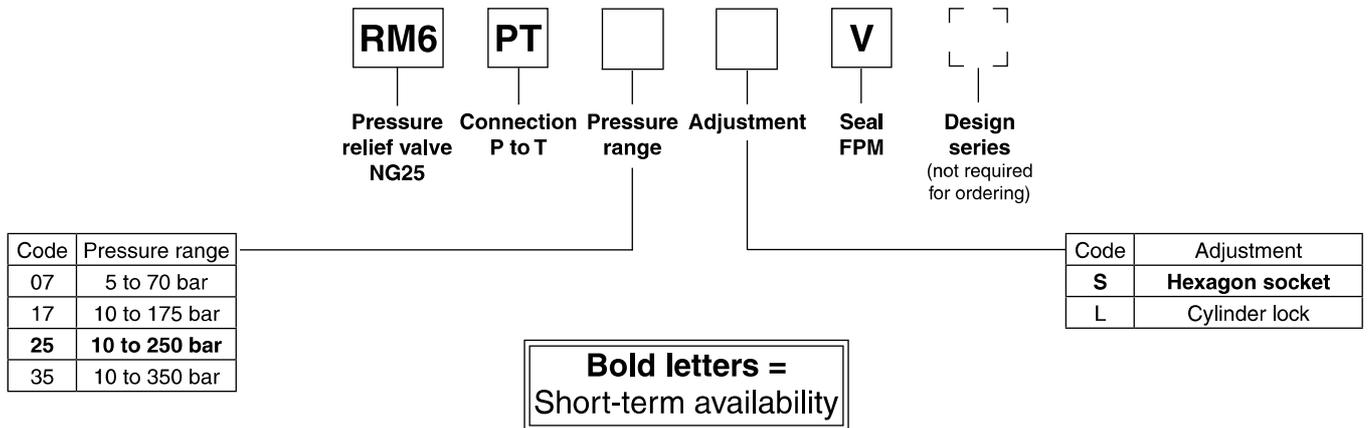
Technical data

General			
Design		Pilot operated pressure relief valve	
Actuation		hydraulic	
Size		NG16	NG25
Mounting interface		ISO 4401	
Mounting position		unrestricted	
Ambient temperature	[°C]	-20...+60	
MTTF _D value	[years]	150	
Weight	[kg]	4.9	5.9
Hydraulic			
Max. operating pressure	[bar]	350	
Fluid		Hydraulic oil according to DIN 51524	
Fluid temperature	[°C]	-20...+70	
Viscosity,	permitted	20 ... 400	
	recommended	30 ... 80	
Filtration		ISO 4406 (1999); 18/16/13	

Ordering Code

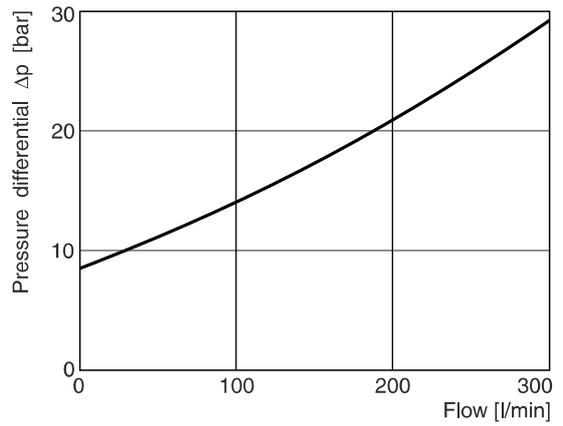
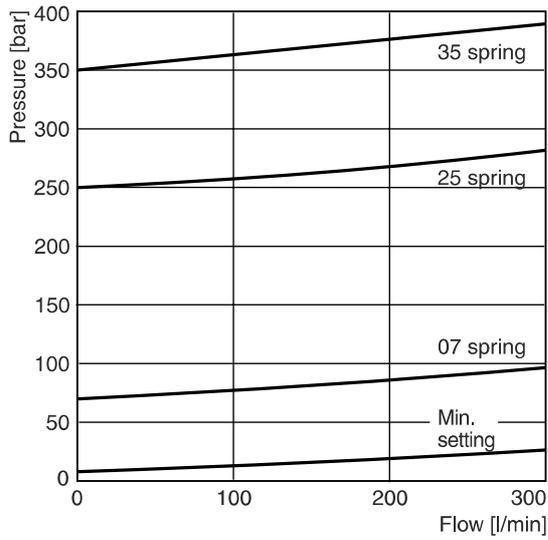


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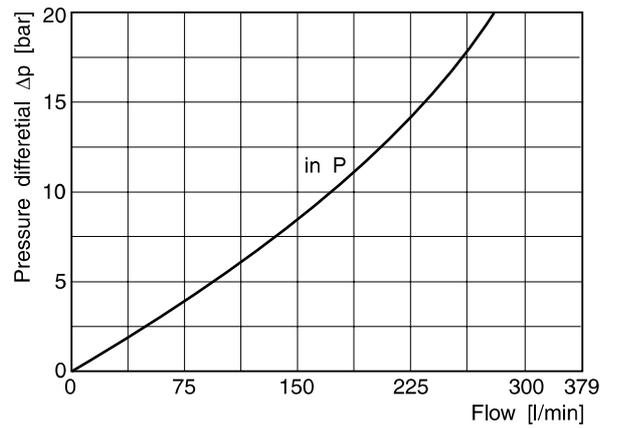
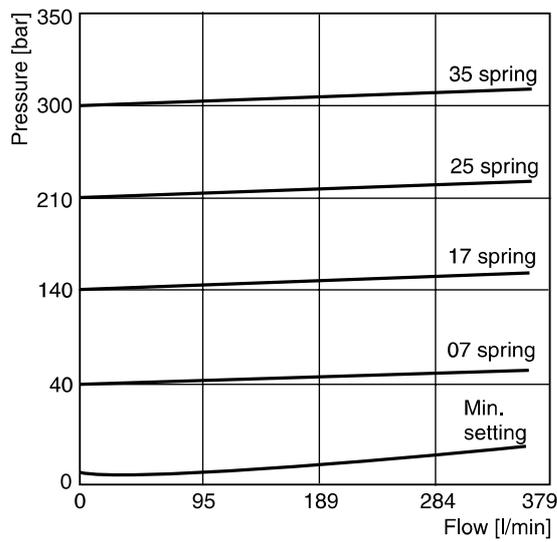


p/Q performance curves

RM4



RM6



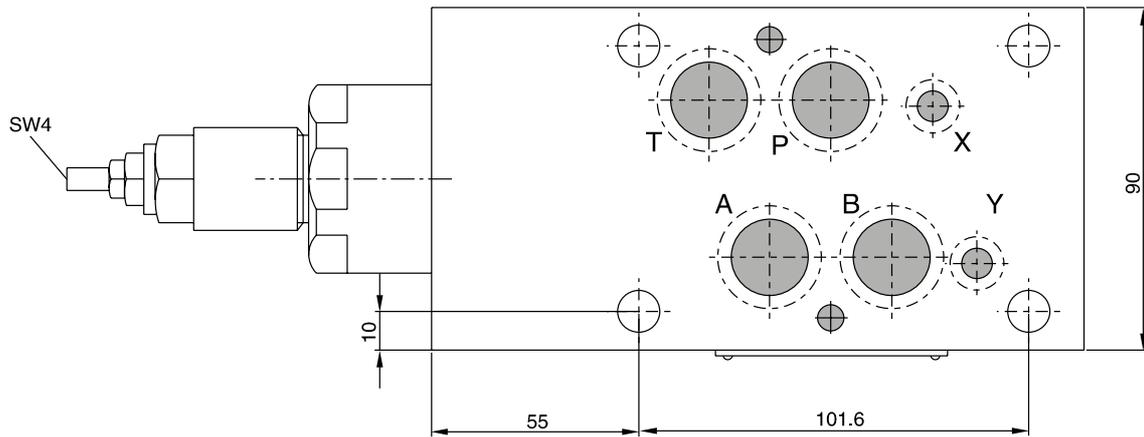
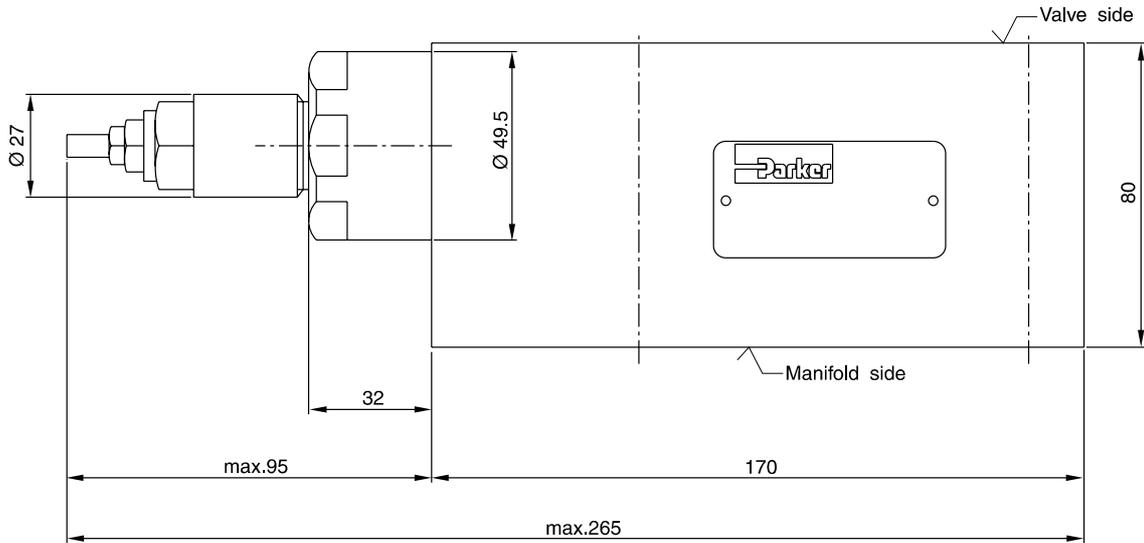
All characteristic curves measured with HLP46 at 50 °C.

7

Dimensions

RM4

Adjustment code S

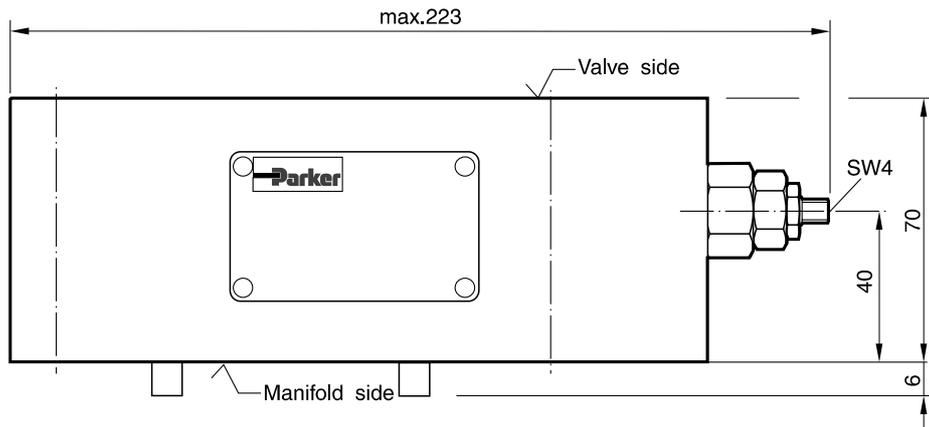


7

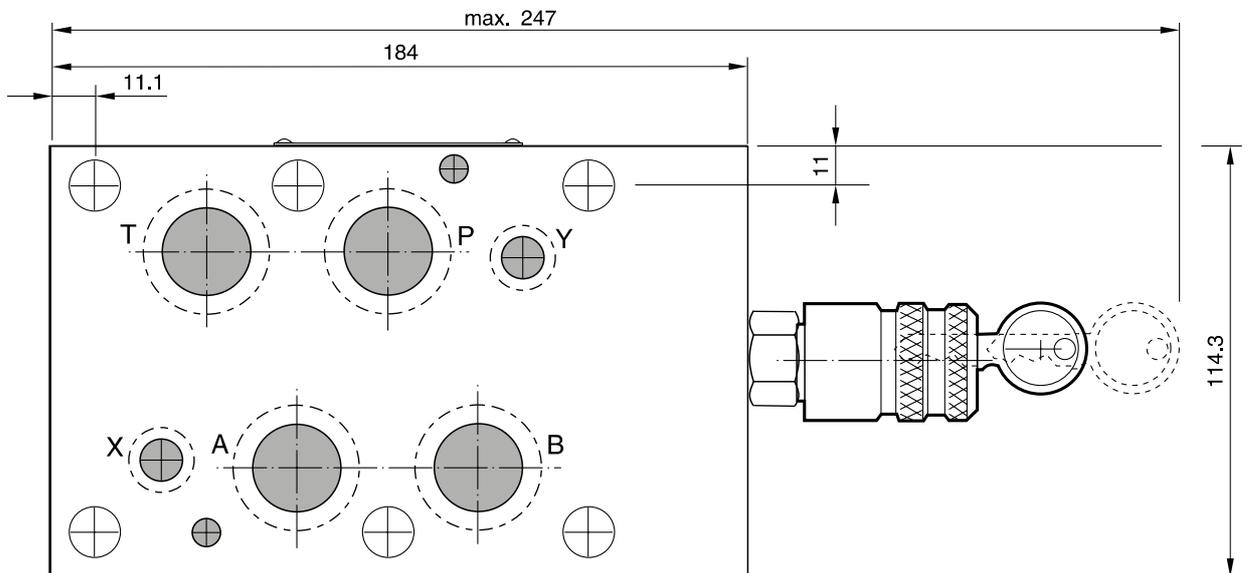
Seal kit RM4	
Seal	Order code
V	SK-RM4-V-HT

RM6

Adjustment Code S



Adjustment Code L



7

Seal kit RM6	
Seal	Order code
V	SK-RM6-V-11

Pilot operated pressure relief valves series ZDV are designed for maximum flow rates.

The relief function can be located between P and T, A and T, B and T or A and T + B and T for typical pressure relief functions.

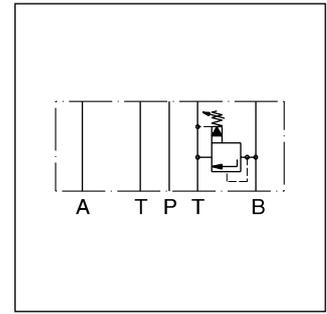
For a pre-charge function the ZDV can be ordered with pressure function between A and B + B and A.

Features

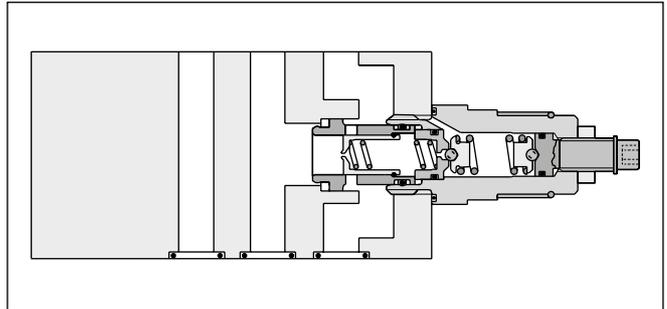
- High flow capacity
- Pressure function in P, A, B or A + B
- Sizes
ZDV01 - NG06 (CETOP 03)
ZDV02 - NG10 (CETOP 05)



ZDV-P01



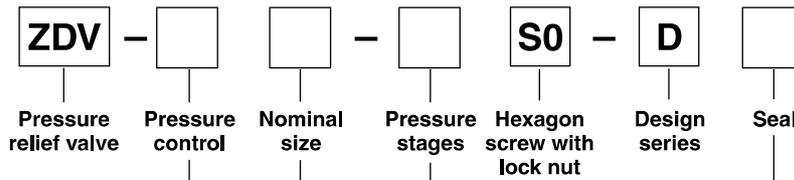
ZDV-B02



ZDV-B02

Ordering code

7



Code	Size	Pressure control
P	NG06/10	P - T
A	NG06/10	A - T
B	NG06/10	B - T
AB	NG06/10	A - T & B - T
ABS	NG06/10	A - B & B - A

Code	Seal
1	NBR
5	FPM

Code	Pressure stages
1	up to 70 bar
5 ¹⁾	up to 350 bar

Code	Nominal size
01	NG06
02	NG10

Ordering code details see end of chapter.

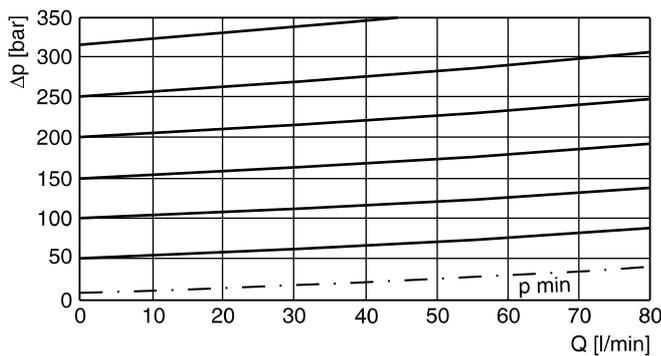
¹⁾ Code ABS and size 10 up to 315 bar.

Technical data

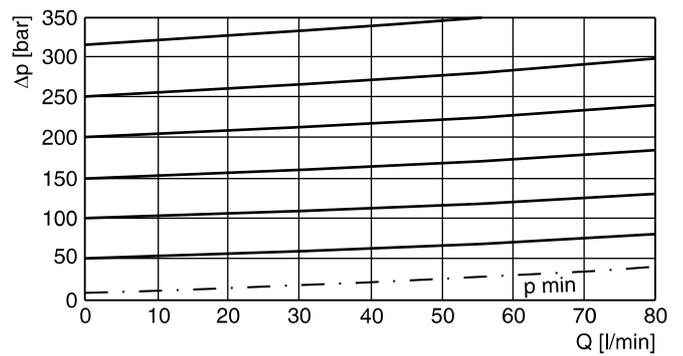
General			NG06	NG10
Size				
Mounting interface			DIN 24340 A6 ISO 4401 NFPA D03	DIN 24340 A10 ISO 4401 NFPA D05
			CETOP RP 121	
Mounting position			unrestricted	
Ambient temperature	[°C]		-20...+60	
MTTF _D value	[years]		150	
Weight	1 cartridge [kg]		1.6	3.0
	2 cartridges [kg]		2.5	3.7
Hydraulic				
Max. operating pressure	[bar]		350 (ZDV-ABS 315)	315
Nominal flow	[l/min]		80	140
Fluid			Hydraulic oil according to DIN 51524	
Fluid temperature	[°C]		-20...+70 (NBR: -25...+70)	
Viscosity	permitted [cSt] / [mm ² /s]		20 ... 400	
	recommended [cSt] / [mm ² /s]		30 ... 80	
Filtration			ISO 4406 (1999); 18/16/13	

p/Q performance curves

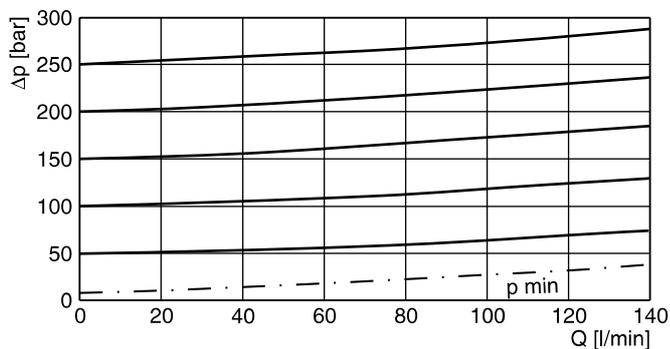
ZDV-P/A/B/ABS01



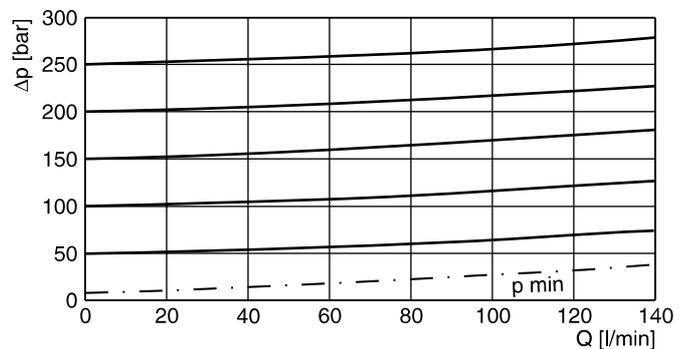
ZDV-AB01



ZDV-P/A/B/AB02



ZDV-ABS02



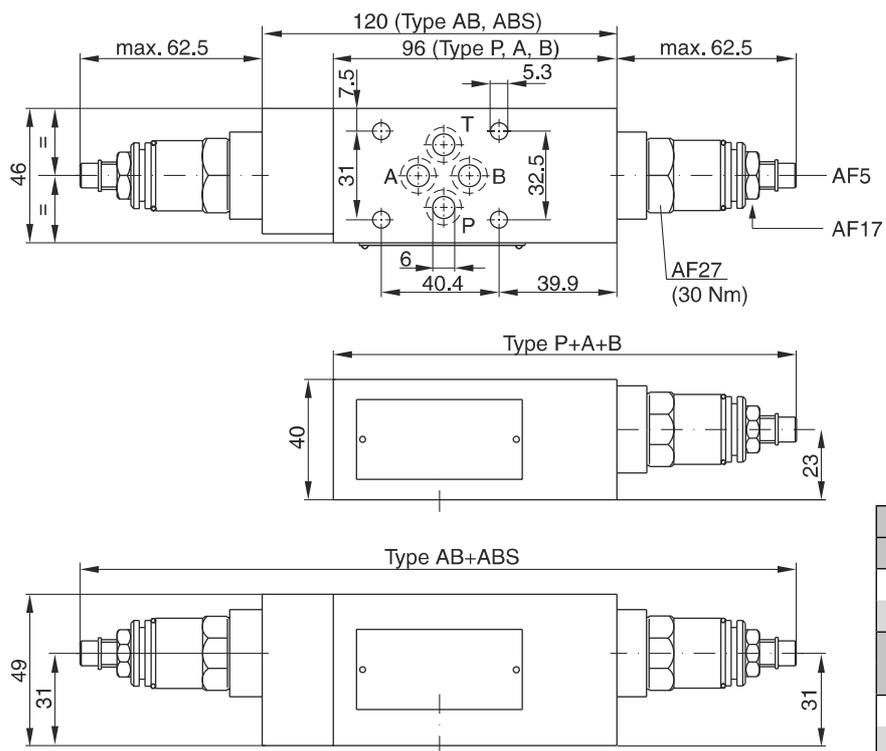
All characteristic curves measured with HLP46 at 50 °C.

ZDV UK.indd 25.04.19



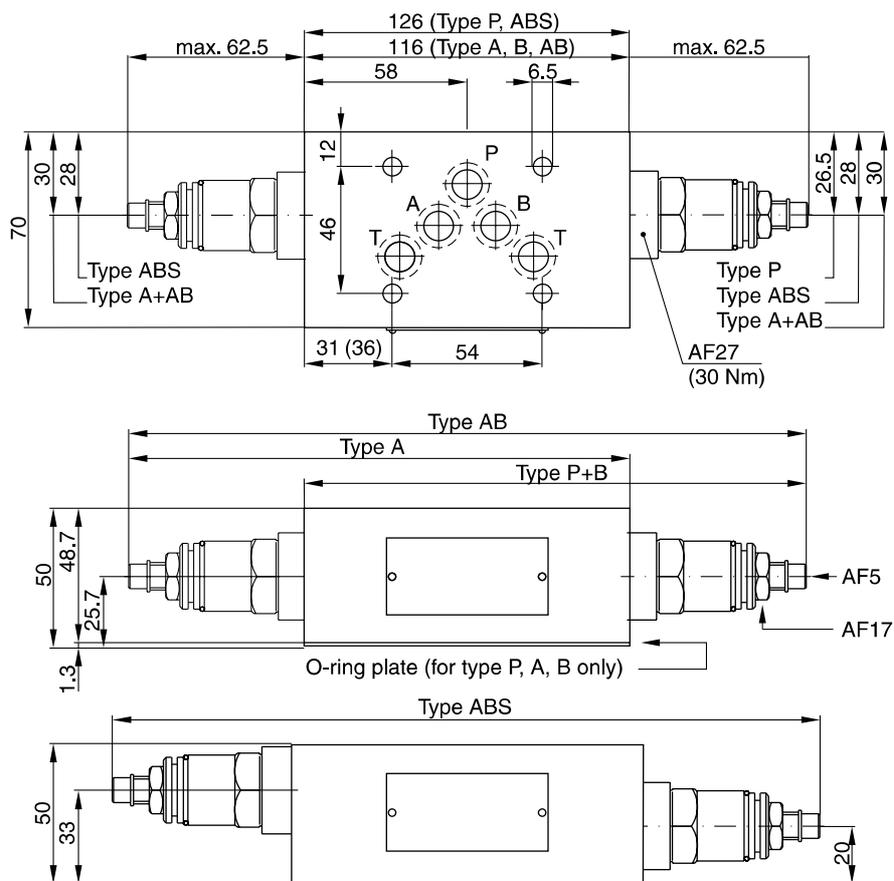
Dimensions

ZDV01

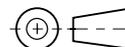


Seal kit	
Seal	Order code
1	098-91182-0
5	098-91183-0
Complete cartridge	
Pressure stage	Order code
1	098-91116-0
5	098-91117-0

7 ZDV02

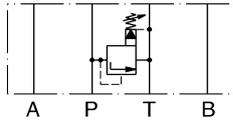


Seal kit	
Seal	Order code
1	098-91076-0
5	098-91077-0
Complete cartridge	
Pressure stage	Order code
1	098-91116-0
5	098-91117-0



ZDV01

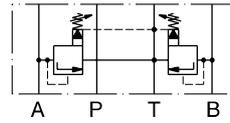
Pressure control P-T



Series
 ZDV-P01-1-S0-D1
 ZDV-P01-5-S0-D1

Order No.
 098-91201-0
 098-91202-0

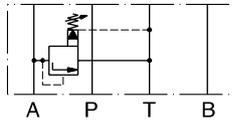
Pressure control A-T & B-T



Series
 ZDV-AB01-1-S0-D1
 ZDV-AB01-5-S0-D1

Order No.
 098-91207-0
 098-91208-0

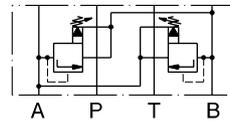
Pressure control A-T



Series
 ZDV-A01-1-S0-D1
 ZDV-A01-5-S0-D1

Order No.
 098-91203-0
 098-91204-0

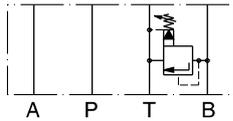
Pressure control A-B & B-A



Series
 ZDV-ABS01-1-S0-D1
 ZDV-ABS01-5-S0-D1

Order No.
 098-91209-0
 098-91210-0

Pressure control B-T

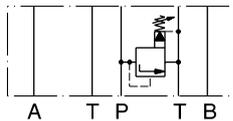


Series
 ZDV-B01-1-S0-D1
 ZDV-B01-5-S0-D1

Order No.
 098-91205-0
 098-91206-0

ZDV02

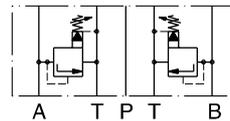
Pressure control P-T



Series
 ZDV-P02-1-S0-D1
 ZDV-P02-5-S0-D1

Order No.
 098-91034-0
 098-91035-0

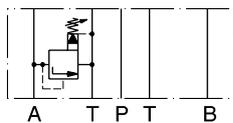
Pressure control A-T & B-T



Series
 ZDV-AB02-1-S0-D1
 ZDV-AB02-5-S0-D1

Order No.
 098-91040-0
 098-91041-0

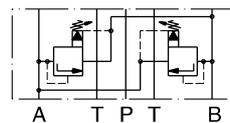
Pressure control A-T



Series
 ZDV-A02-1-S0-D1
 ZDV-A02-5-S0-D1

Order No.
 098-91036-0
 098-91037-0

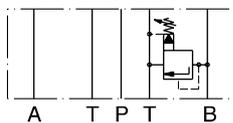
Pressure control A-B & B-A



Series
 ZDV-ABS02-1-S0-D1
 ZDV-ABS02-5-S0-D1

Order No.
 098-91042-0
 098-91043-0

Pressure control B-T



Series
 ZDV-B02-1-S0-D1
 ZDV-B02-5-S0-D1

Order No.
 098-91038-0
 098-91039-0



Characteristics

Series PRDM are direct operated pressure reducing valves to regulate pressure in one area of a hydraulic circuit at a predetermined level below normal system pressure. Additionally, an integral pressure relieving function for the secondary reduced pressure circuit is incorporated into the design.

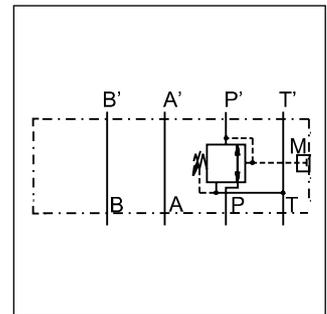
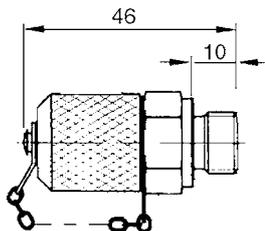
Function

These valves are "normally open" devices that allow fluid to flow through the controlled port during their non-actuated or "at rest" condition. When downstream pressure exceeds the value set by the spring force, the control piston moves off its seat, closing off the flow path and thus reducing the fluid passing through from the main system. The cushioned piston modulates to maintain the preset pressure in this branch of the hydraulic circuit. If, due to external forces, the pressure continues to rise in this branch circuit, the piston will keep moving against the spring force allowing fluid to be drained to the tank, thereby limiting maximum pressure to the valve's setting.

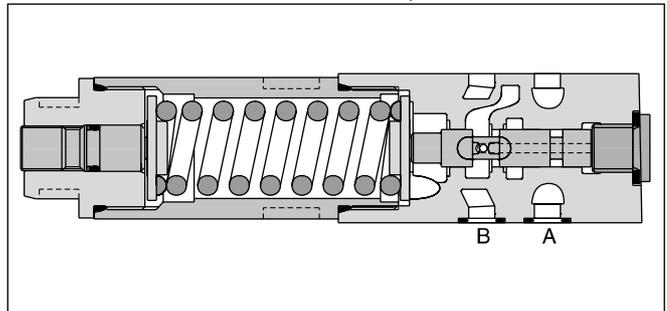
Features

- 3-way design for pressure relieving of the secondary side
- The direct operated, cushioned piston design results in fast response, low leakage and minimal hysteresis.
- Reduced pressure in the 'P', 'A' or 'B' port.
- Pressure settings:
25, 64, 160, 210, 350 bar for PRDM2,
19, 50, 100, 150, 210 bar for PRDM3.
- Gauge port
- PRDM2 - NG06 (CETOP 03)
PRDM3 - NG10 (CETOP 05)

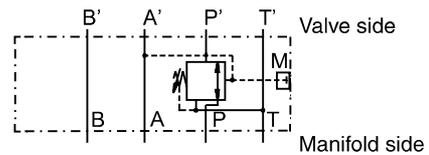
Gauge port option C



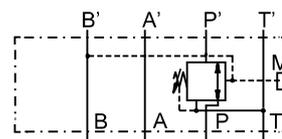
Example PP



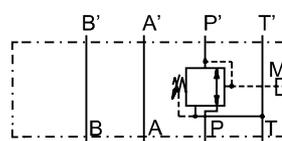
**Schematics
PRDM*AA**



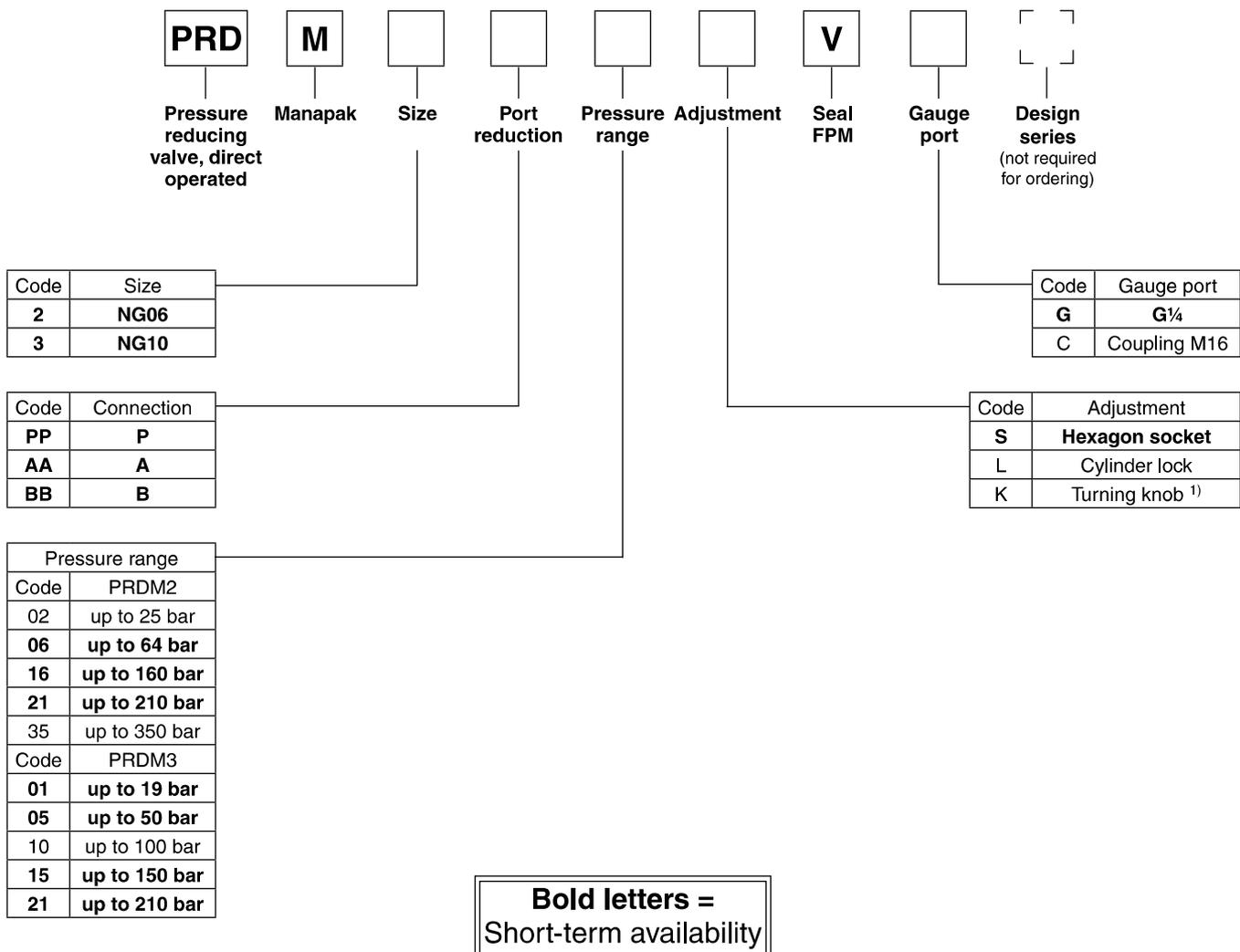
PRDM*BB



PRDM*PP



Ordering code

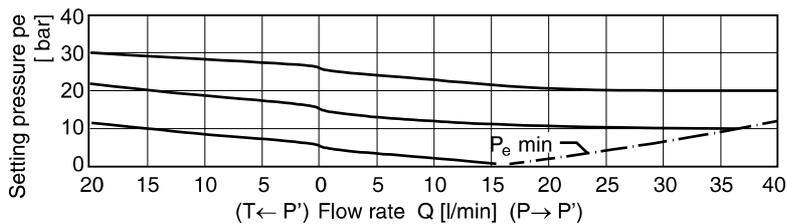


Technical data

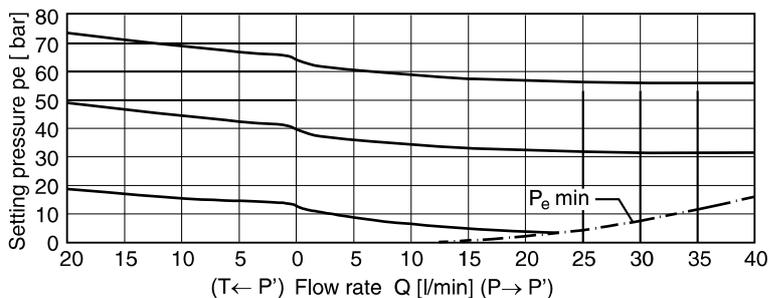
General		
Series		PRDM2 PRDM3
Size		NG06 NG10
Mounting interface		ISO 4401
Ambient temperature	[°C]	-20...+60
Weight	[kg]	1.3 2.6
MTTF _D value	[years]	150
Hydraulic		
Max. operating pressure	P, A, B T [bar]	350 50 315 50
Fluid		Hydraulic oil according to DIN 51524
Fluid temperature	[°C]	-20...+70
Viscosity, permitted	[cSt] / [mm ² /s]	20 ... 400
recommended	[cSt] / [mm ² /s]	30 ... 80
Filtration		ISO 4406 (1999); 18/16/13

¹⁾ NG06 only.

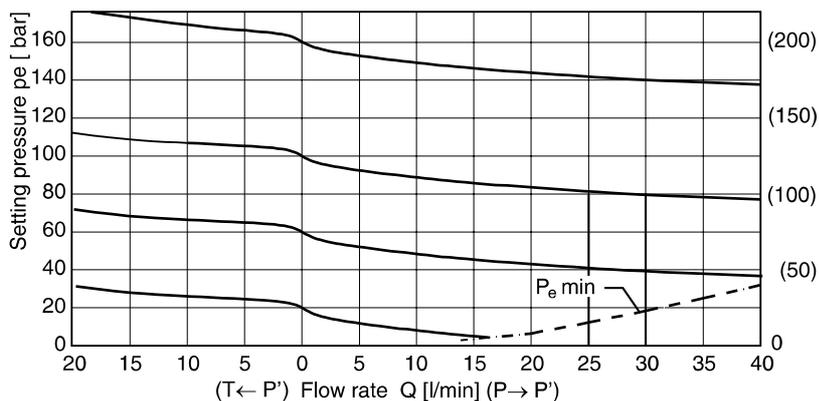
PRDM2 02



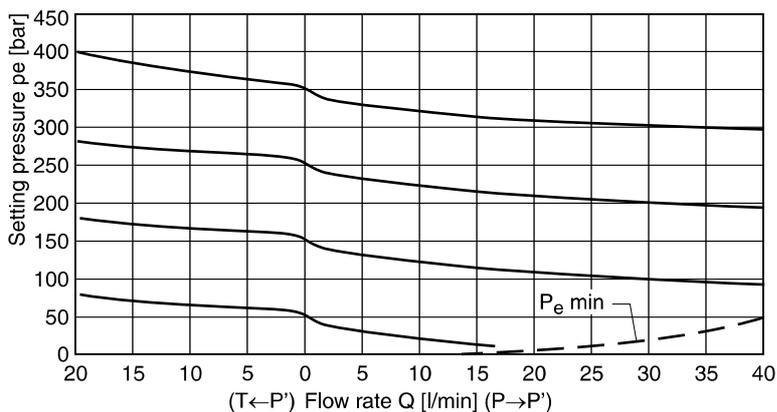
PRDM2 06



PRDM2 16/21



PRDM2 35

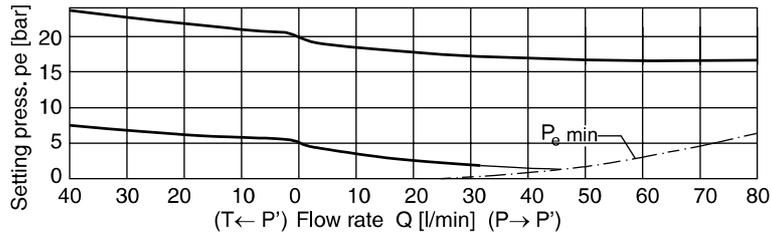


All characteristic curves measured with HLP46 at 50 °C.

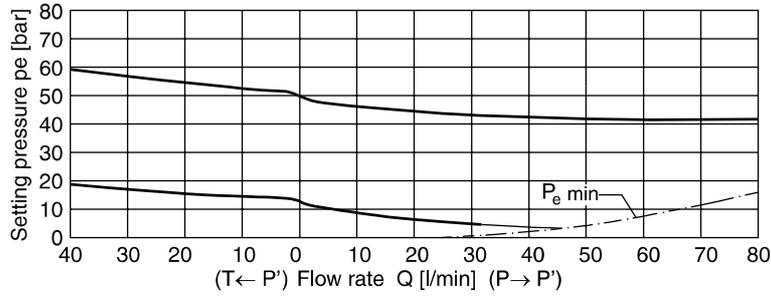
PRDM UK.indd 25.04.19



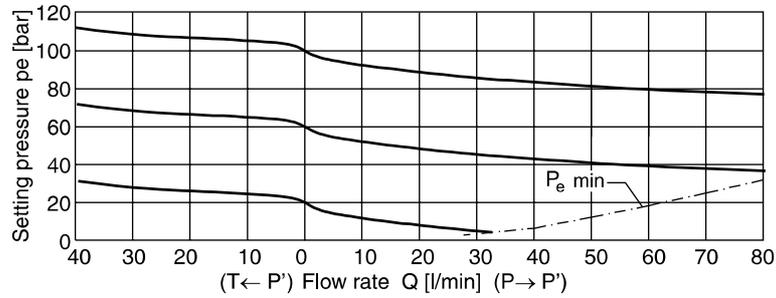
PRDM3 01



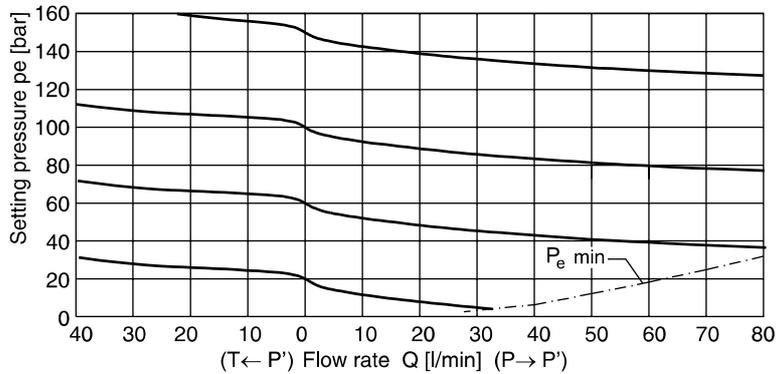
PRDM3 05



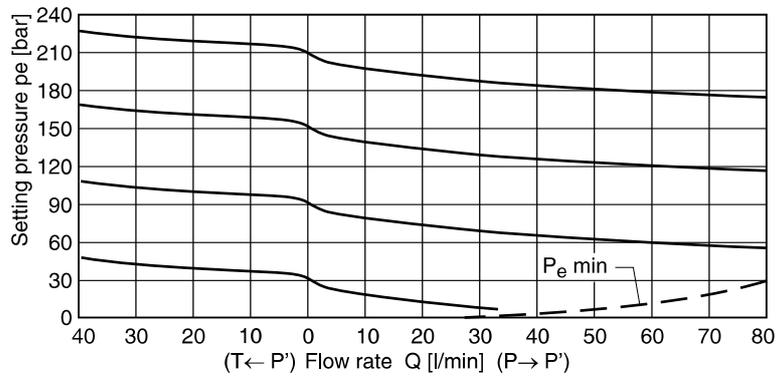
PRDM3 10



PRDM3 15



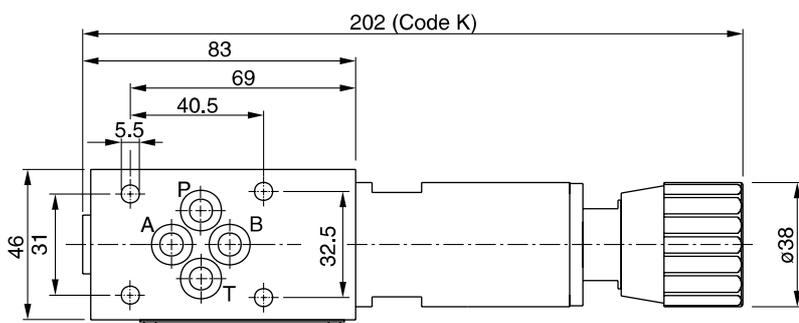
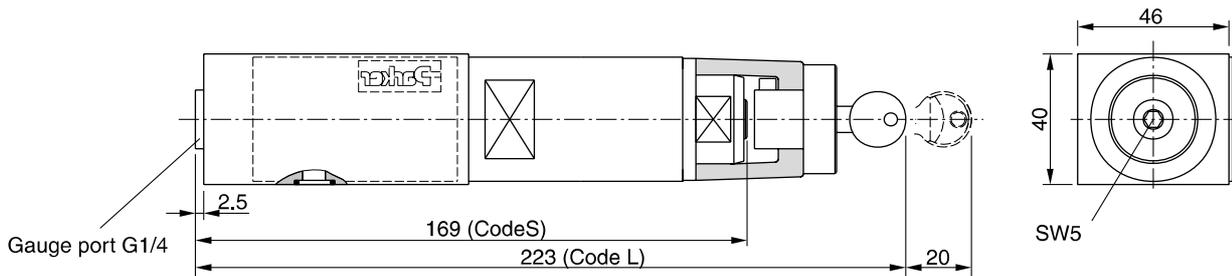
PRDM3 21



All characteristic curves measured with HLP46 at 50 °C.

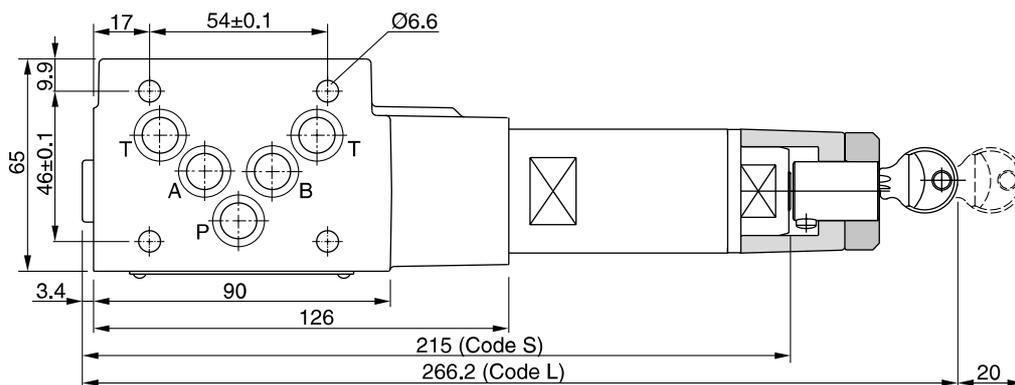
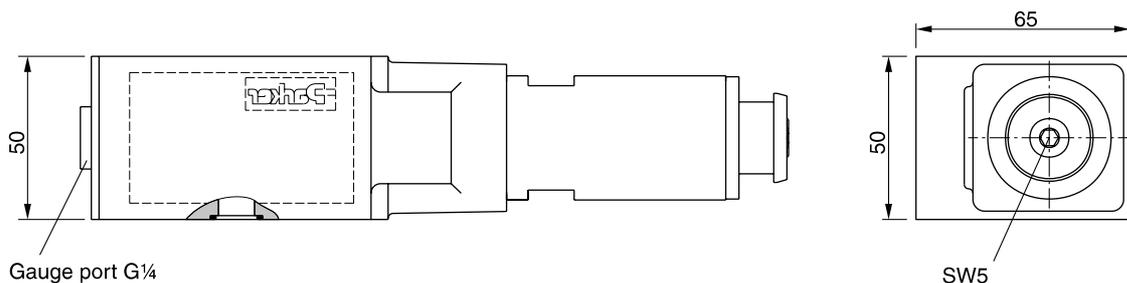
Dimensions

PRDM2



PRDM3

7



Seal kit order code		
Seal	PRDM2	PRDM3
V	SK-PRDM2-V	SK-PRDM3-V



The pilot operated pressure reducing valves series PRM are in sandwich design for easy configuration of stack systems. The reducing function is located in port P.

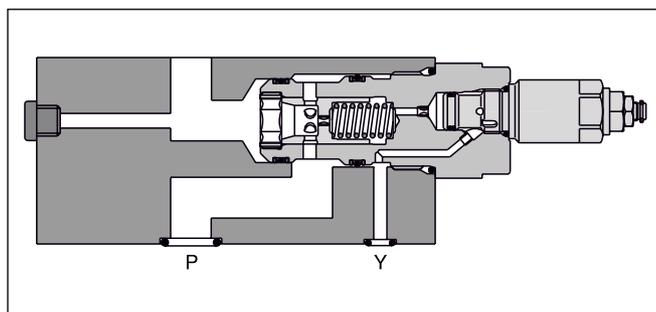
The pressure reduction for the desired connecting port is achieved by internal connections of the pilot and drain lines with the corresponding channels.

Features

- The valve bodies of the Parker Manapak valve series PRM are made of steel.
- The control pressure range can be set by hexagon socket screw (PRM4), knob, or knob with cylinder lock (PRM6).
- Pressure gauge/measuring connections are available in the valve body.
- Piloting results in a flat p/Q performance curve.
- PRM4 - NG16 (CETOP 07)
- PRM6 - NG25 (CETOP 08)

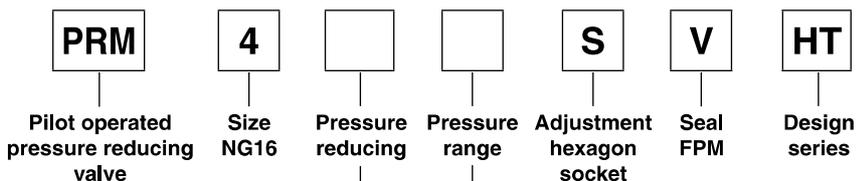


PRM6



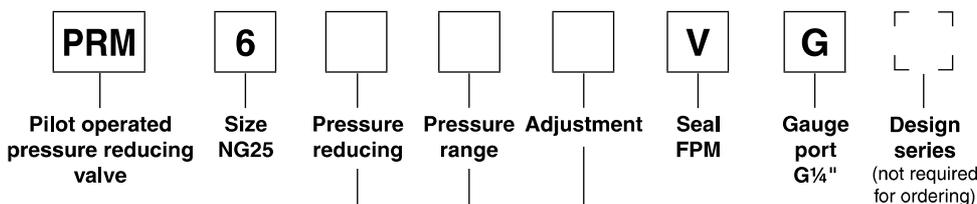
PRM4

Ordering code



Code	Pressure reducing
PP	Function in P, reduced pressure in P
PA	Function in P, reduced pressure in A
PB	Function in P, reduced pressure in B

Code	Pressure range
07	4 to 70 bar
25	10 to 250 bar
35	10 to 350 bar



Code	Connection
PA	P
AP	A

Code	Adjustment
L	Cylinder lock
K	Turning knob

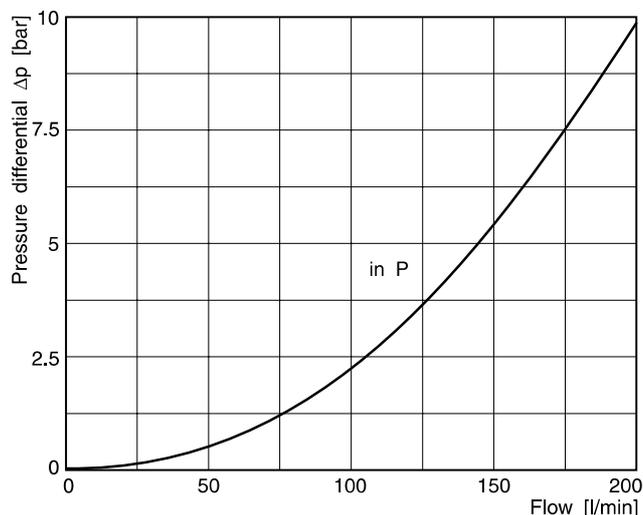
Code	Pressure range
07	10 to 70 bar
17	10 to 175 bar
25	10 to 250 bar

Technical data

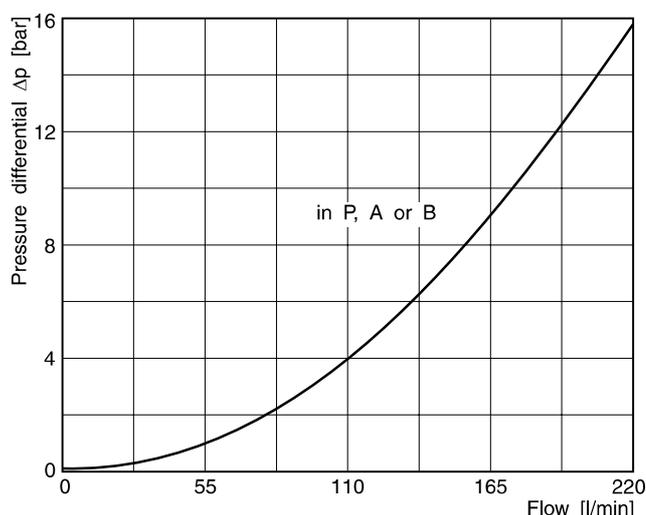
General			
Series		PRM4	PRM6
Size		NG16	NG25
Mounting interface		ISO 4401	
Ambient temperature	[°C]	-20...+60	
Weight	[kg]	5.0	5.6
MTTF _D value	[years]	75	
Hydraulic			
Max. operating pressure	[bar]	350	250
Pressure reduction in channel		P, A, B	P, A
Fluid		Hydraulic oil according to DIN 51524	
Fluid temperature	[°C]	-20...+70	
Viscosity,	permitted	[cSt] / [mm²/s]	20 ... 400
	recommended	[cSt] / [mm²/s]	30 ... 80
Filtration		ISO 4406 (1999); 18/16/13	

Δp/Q performance curves

PRM4



PRM6



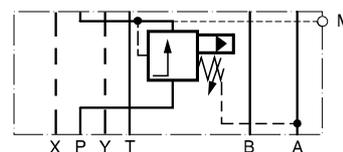
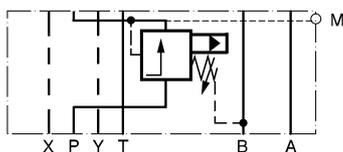
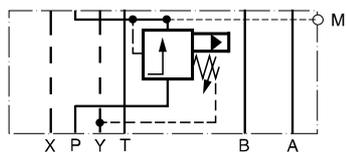
All characteristic curves measured with HLP46 at 50 °C.

Schematics

**PRM4PP
 PRM6PA**

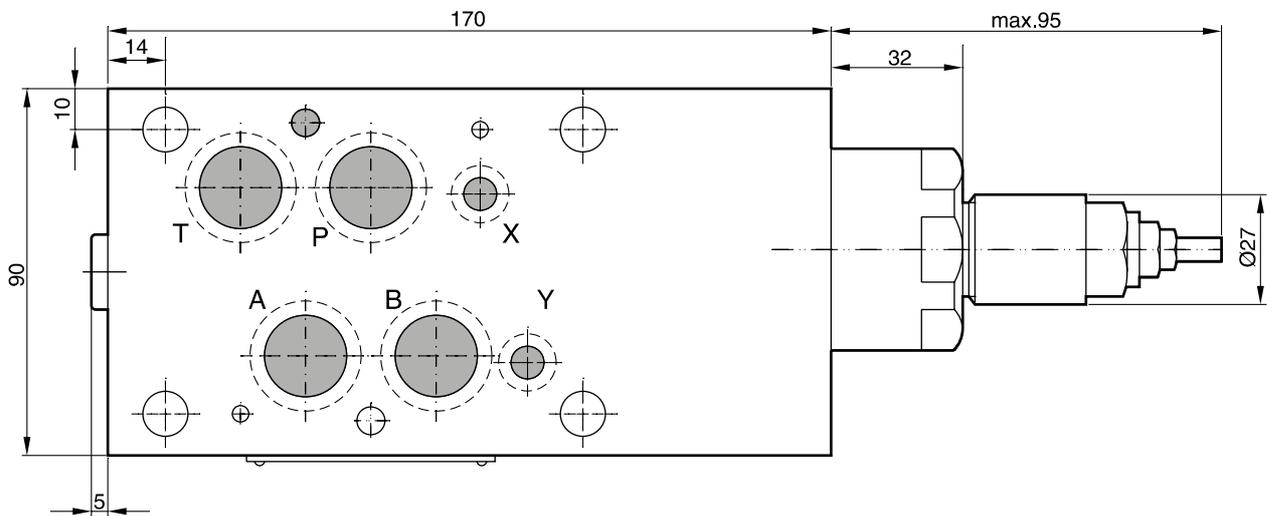
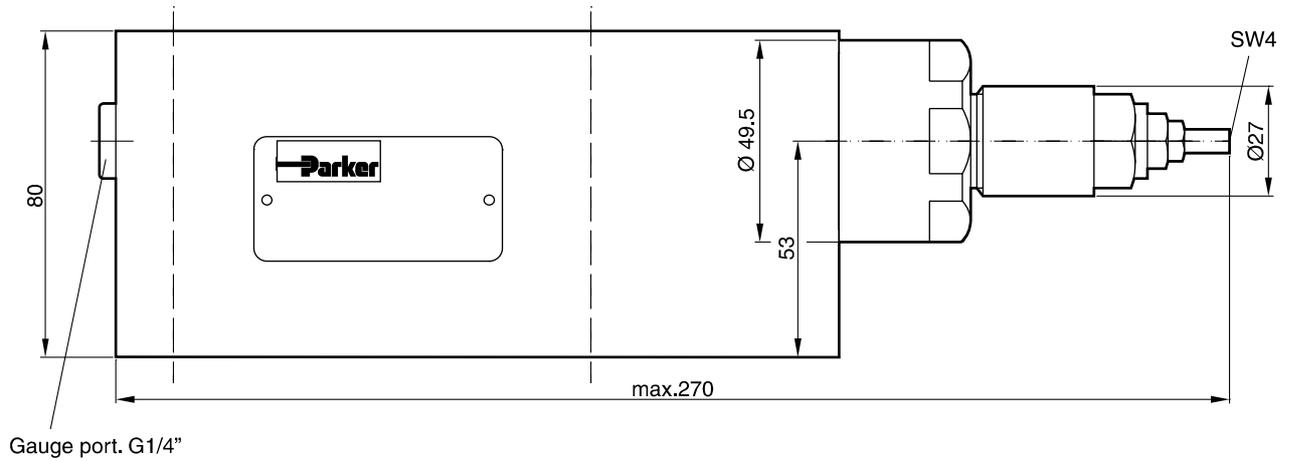
**PRM4PA
 PRM6AP**

PRM4PB



PRM4

Adjustment code S



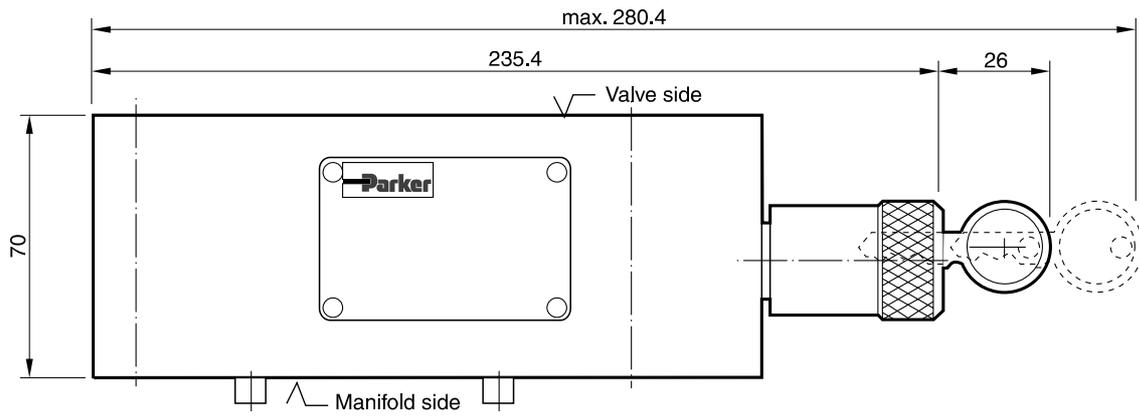
7

Seal kit PRM4	
Seal	Order code
V	SK-PRM4-V-10

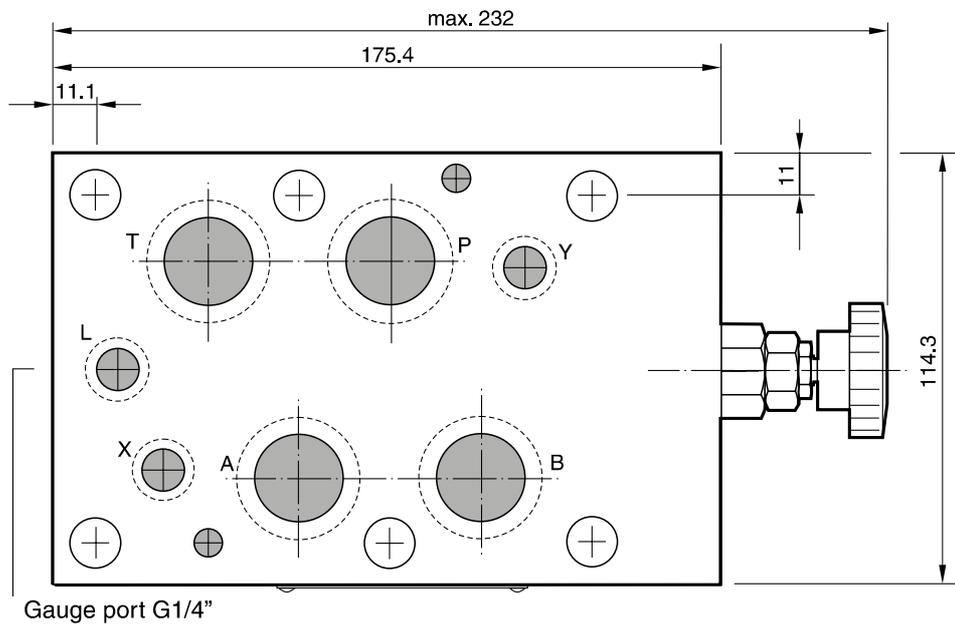
Dimensions

PRM6

Adjustment code L



Adjustment code K



7

Seal kit PRM6	
Seal	Order code
V	SK-PRM6-V-25

Pilot operated pressure reducing valves series ZDR are designed for maximum flow rates.

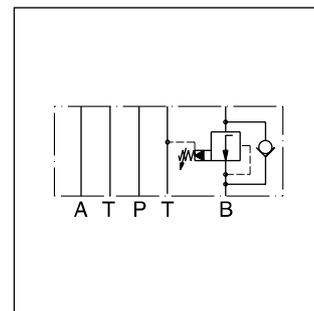
The reducing function can be located in the ports P, A or B. The sizes NG06 and NG10 are equipped with an integral return flow check valve (reducing function in A or B).

Features

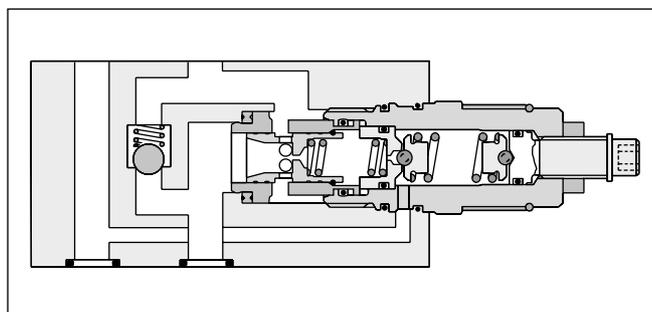
- High flow capacity
- Pressure function in P, A or B
- With integral return flow check valve
- Sizes:
ZDR01 - NG06 (CETOP 03)
ZDR02 - NG10 (CETOP 05)



ZDR-P01



ZDR-B02



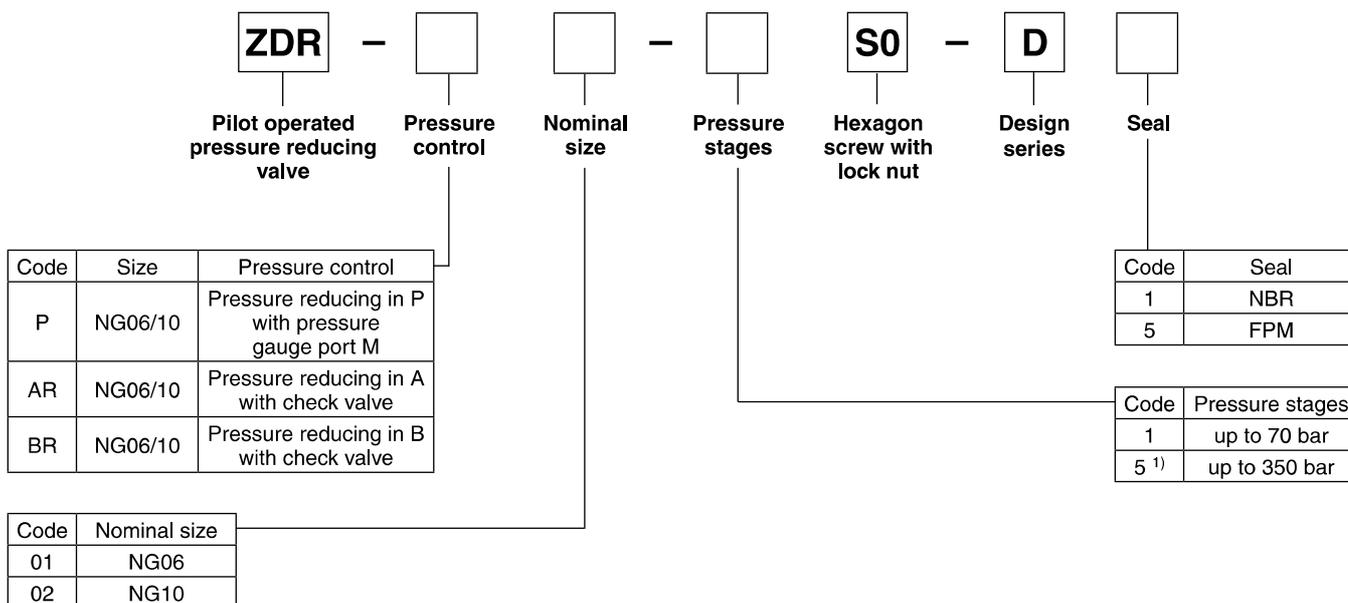
ZDR-B02

Technical data

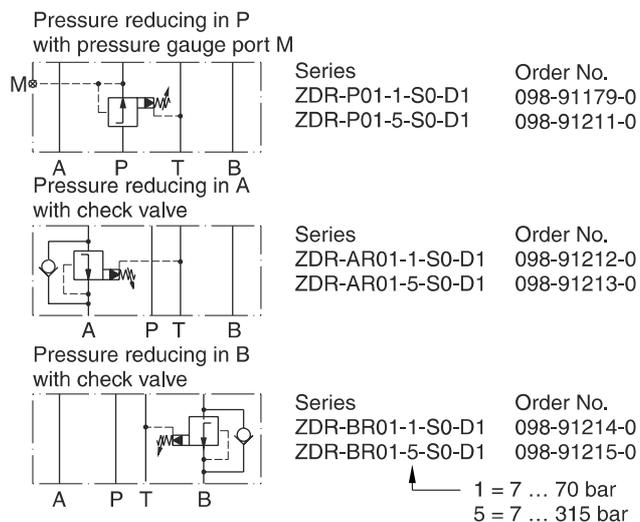
General			
Size		NG06	NG10
Mounting interface		DIN 24340 A6 ISO 4401 NFPA D03	DIN 24340 A10 ISO 4401 NFPA D05
		CETOP RP 121	
Mounting position		unrestricted	
Ambient temperature	[°C]	-20...+60	
MTTF _D value	[years]	150	
Weight	ZDR-P	[kg]	1.6
	ZDR-AR / BR	[kg]	1.8
			2.9
			3.0
Hydraulic			
Max. operating pressure	[bar]	350 (ZDR-AR / BR 315)	315
Nominal flow	[l/min]	80	120
Pilot oil	[l/min]	0.3	0.3
Fluid		Hydraulic oil according to DIN 51524	
Fluid temperature	[°C]	-20...+70 (NBR: -25...+70)	
Viscosity	permitted	[cSt] / [mm ² /s]	20 ... 400
	recommended	[cSt] / [mm ² /s]	30 ... 80
Filtration		ISO 4406 (1999); 18/16/13	

Ordering Code

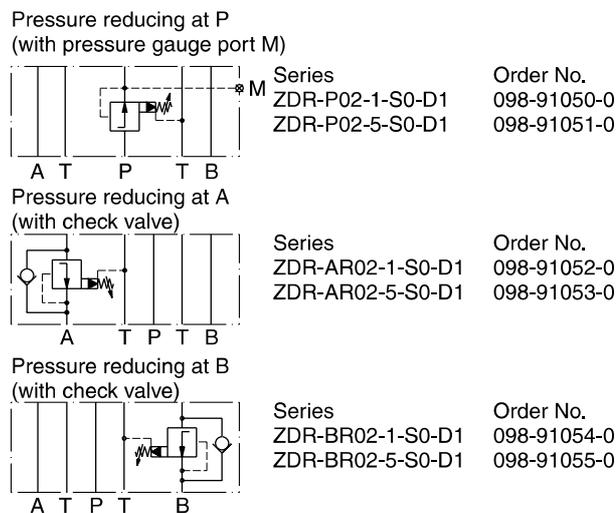
Ordering code



7 Ordering Code Details
ZDR01

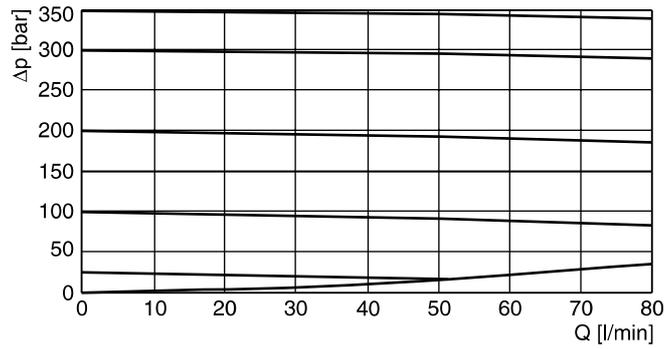


ZDR02

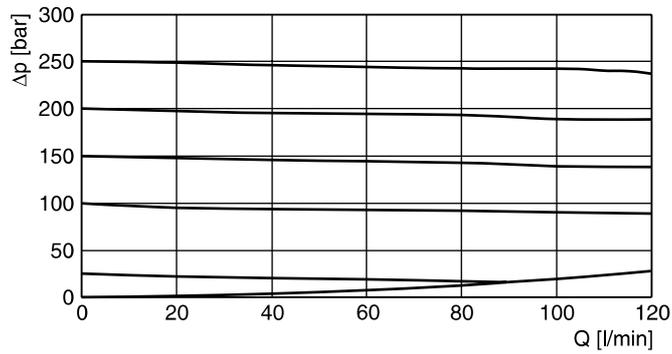


¹⁾ Code AR, BR and size 10 up to 315 bar.

**p/Q performance curves
ZDR-P/AR/BR01**



ZDR-P/AR/BR02

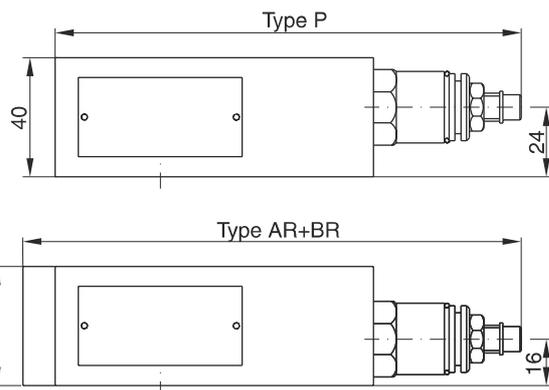
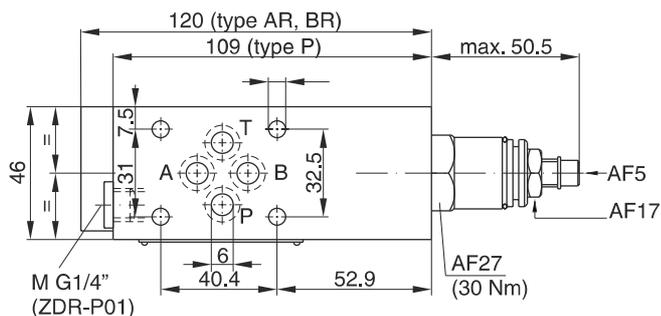


All characteristic curves measured with HLP46 at 50°C.



Dimensions

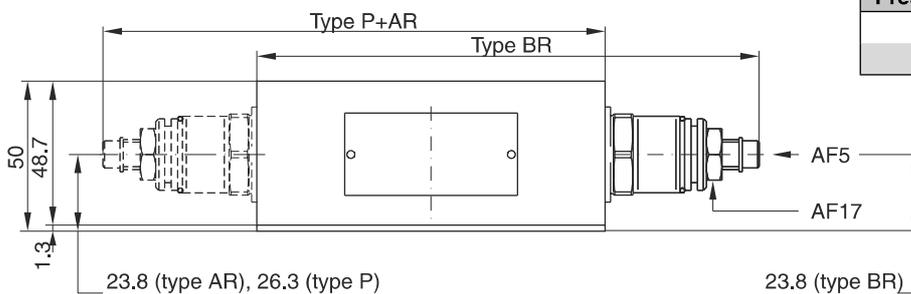
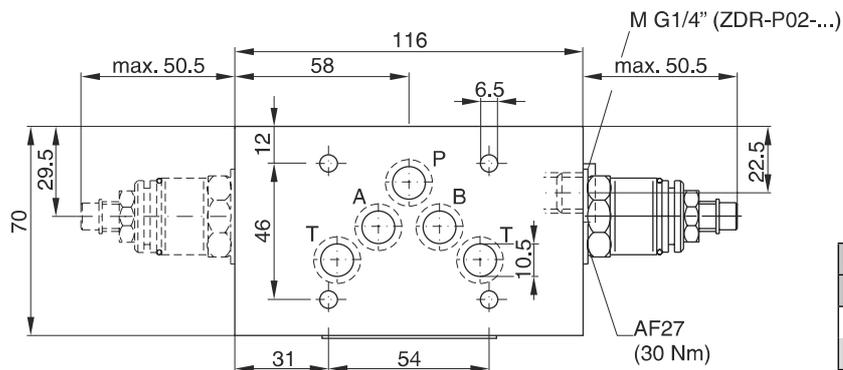
ZDR01



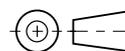
Seal kit	
Seal	Order code
1	098-91184-0
5	098-91185-0
Complete cartridge	
Pressure stage	Order code
1	098-91102-0
5	098-91103-0

7

ZDR02



Seal kit	
Seal	Order code
1	098-91082-0
5	098-91083-0
Complete cartridge	
Pressure stage	Order code
1	098-91102-0
5	098-91103-0



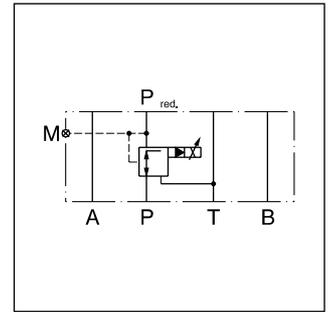
Proportional pressure reducing valves series PRPM keep a constant pressure p_{red} on the secondary side – independent of pressure fluctuations on the primary side. The integrated pressure relief function obviates the need for an additional pressure relief valve on the secondary side and reliefs to tank, if the reduced pressure rises above the setting pressure.

The proportional pressure reducing valve reduces the pressure in output port p_{red} in proportion to the solenoid current. The PRPM works practically independent of the inlet pressure. In non-activated mode, the connection to the tank is fully open with a min. pressure corresponding to the spring force.

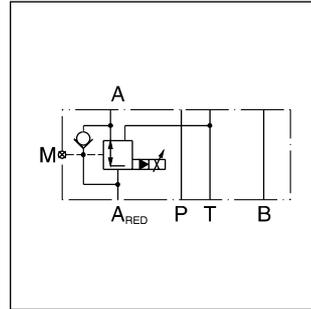
The gauge port is connected to the secondary side. Types A and B have an integrated bypass check valve. The PRPM provides optimum performance in combination with a digital amplifier module PCD00A-400.



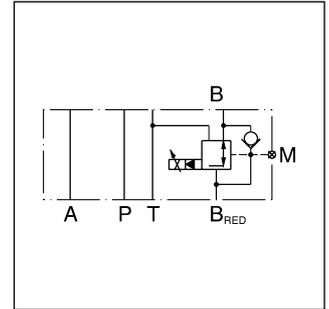
PRPM2PP



PRPM*PP

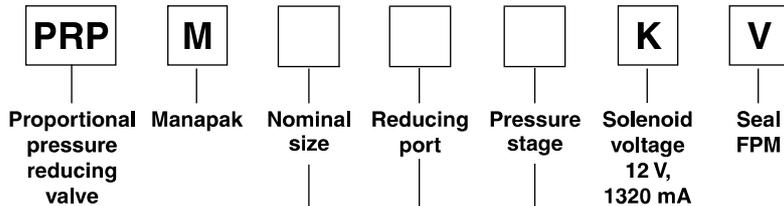


PRPM*AA



PRPM*BB

Ordering code



Code	Nominal size
2	NG06
3	NG10

Code	Port
AA	A
BB	B
PP	P

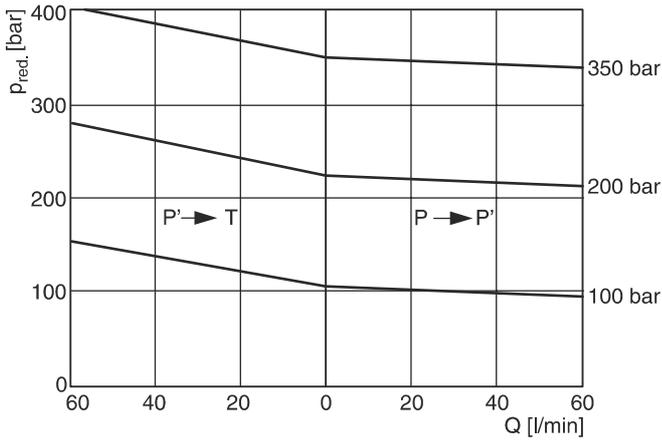
Code	Pressure stage [bar]
10	100
20	200
35	350

Technical Data

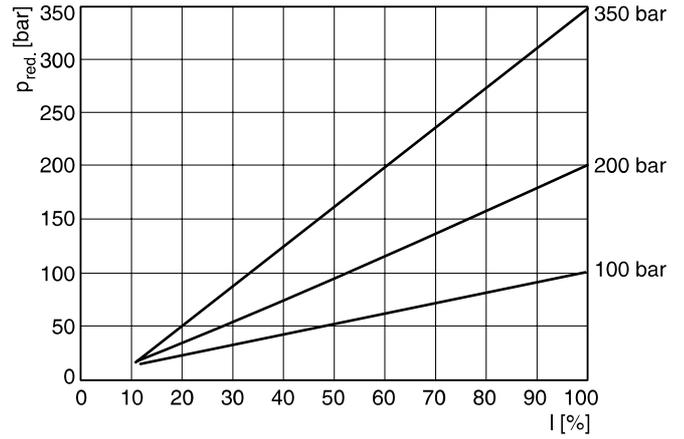
General			
Design	Pilot operated proportional pressure reducing valve		
Construction	Sandwich type		
Operation	Proportional solenoid		
Size	NG06		NG10
Mounting interface	ISO 4401		
Mounting position	unrestricted		
Ambient temperature	[°C]	-20 ... +60	
MTTF _D value	[years]	75	
Weight	[kg]	2.0	3.2
Hydraulic			
Fluid	Hydraulic oil according to DIN 51524		
Fluid temperature	[°C]	-20 ... +70	
Viscosity, permitted	[cSt] / [mm ² /s]	20 ... 400	
recommended	[cSt] / [mm ² /s]	30 ... 80	
Max. operating pressure	[bar]	350	
Reduced nom. pressure	[bar]	100; 200; 350	
Max. flow	[l/min]	60	60
Pilot flow	see performance curves		
Filtration	ISO 4406 (1999); 18/16/13		
Resolution	[mA]	1 mA	
Repeatability	[%]	≤1 (with optimal dither signal)	
Hysteresis	[%]	≤4 (with optimal dither signal)	
Electrical			
Solenoid	Proportional solenoid, wet-pin push type, pressure tight		
Duty ratio	[%]	100 ED	
Protection class	IP65 in accordance with EN 60529 (with correctly mounted plug-in connector)		
Supply voltage	[V]	12 (1320 mA)	
Solenoid connection	Connector as per EN 175301-803		
Amplifier	PCD00A-400		

7

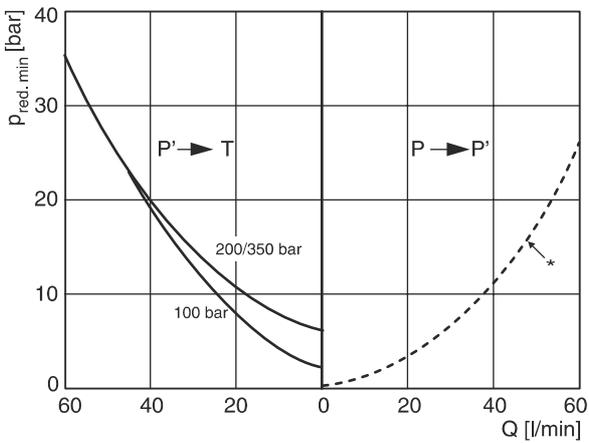
Pressure/flow NG06/NG10



Pressure/adjustment at Q=0l/min (static)

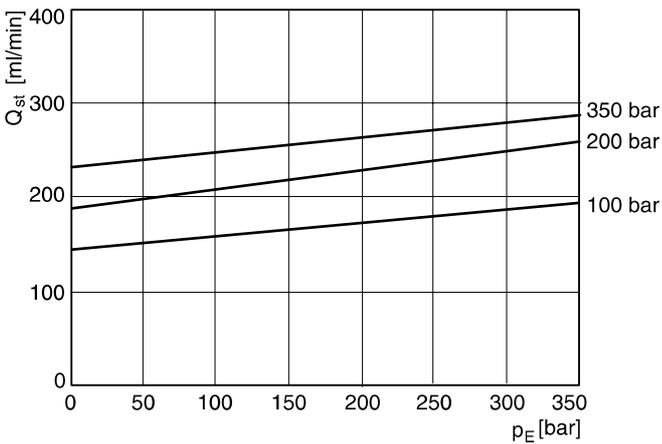


Pressure/flow (min. adjustable)

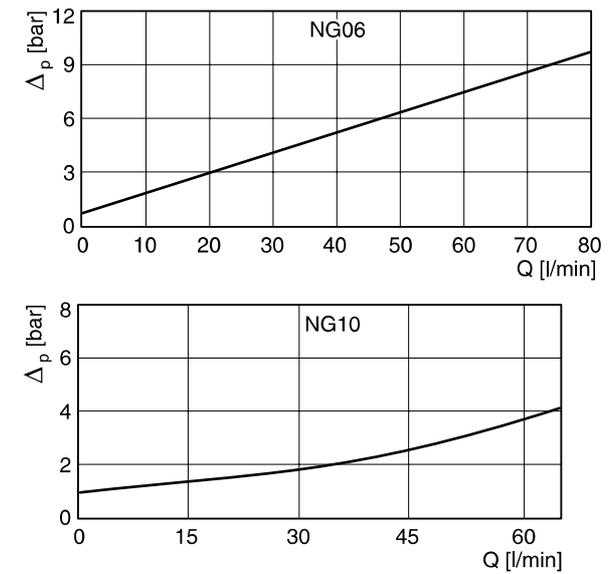


* Consumption resistance depends on system.

Pilot flow NG06/NG10



Pressure drop/flow over check valve



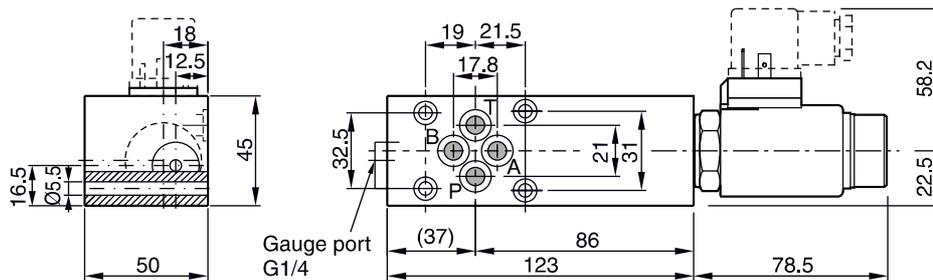
All characteristic curves measured with HLP46 at 50 °C.

PRPM UK.indd 25.04.19

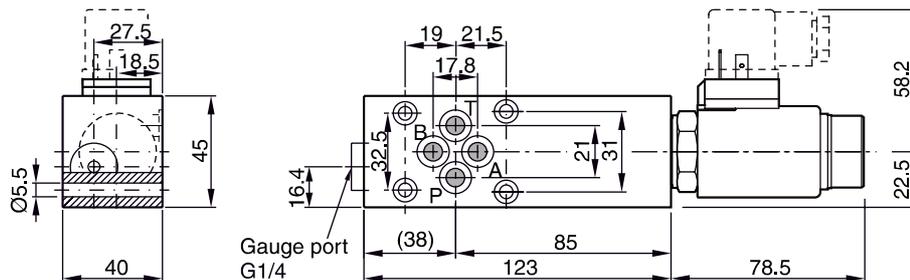
7

Dimensions

PRPM2AA*, BB**

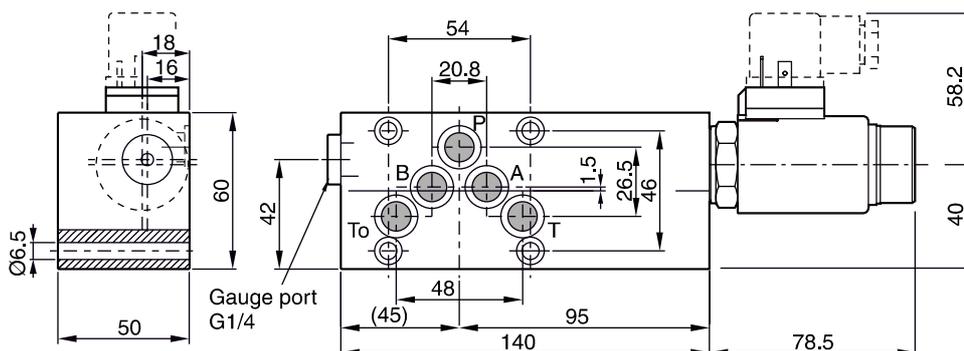


PRPM2PP*

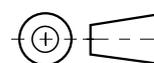
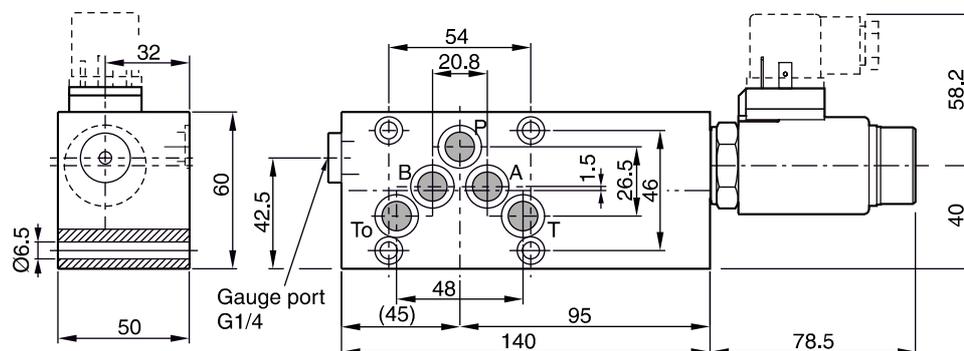


7

PRPM3AA*, BB**

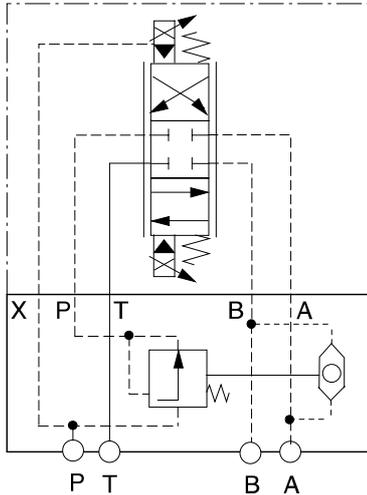


PRPM3PP*



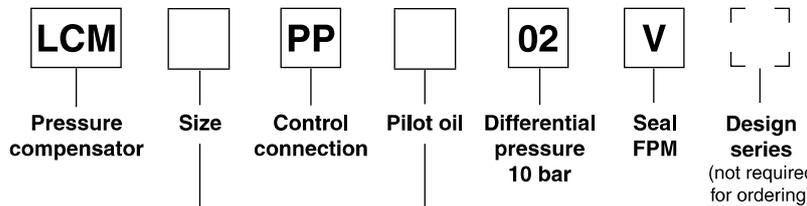
2-way pressure compensators in sandwich design maintain a constant pressure differential between ports P and A or P and B. Thus achieves a constant flow rate by a steady cross sectional opening of a directional control valve. The control pressure applied to the spring side of the compensator spool is supplied from port A or B via a shuttle valve. Flow rate regulation is automatically effective in the port with the highest pressure.

Application example



Proportional DC valve model D31FB with 2 way pressure compensator LCM3 maintains a constant flow rate. The diagram shows the design according to code X.

Ordering Code



Code	Size
2	NG06
3	NG10

Code	Pilot oil
omit	internal
X ¹⁾	external

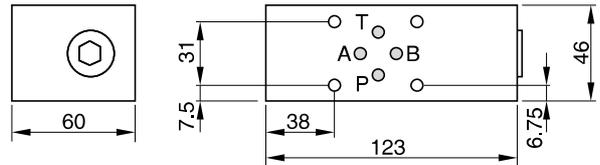
¹⁾ NG10 only

Technical data

General		LCM2	LCM3
Series		LCM2	LCM3
Size		NG06	NG10
Mounting interface		NFPA D03 CETOP 03	NFPA D05 CETOP 05
Ambient temperature	[°C]	-20...+60	
MTTF _D value	[years]	150	
Hydraulic			
Max. operating pressure	[bar]	350	350
Pressure differential	[bar]	10	10
Fluid		Hydraulic oil according to DIN 51524	
Fluid temperature	[°C]	-20...+70	
Viscosity, permitted	[cSt] / [mm ² /s]	20 ... 400	
Viscosity, recommended	[cSt] / [mm ² /s]	30 ... 80	
Filtration		ISO 4406 (1999); 18/16/13	

Dimensions

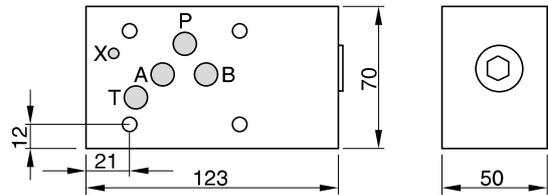
LCM2



Mounting screws: BK 403 (4 x M5 x 90)

For mounting screws connected with the directional valves D1 or D31.

LCM3



Mounting screws: BK 412 (4 x M6x 90)

The views show the mounting surface for the directional valve.



Characteristics

Double-throttle check valves from the Parker Manapak series FM are in sandwich design for easy configuration of stack systems. Throttle and check valves are located in ports A and B.

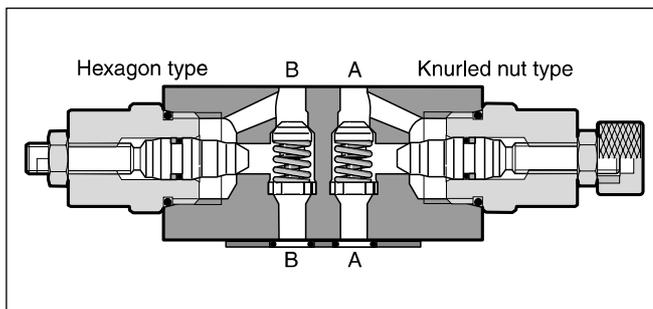
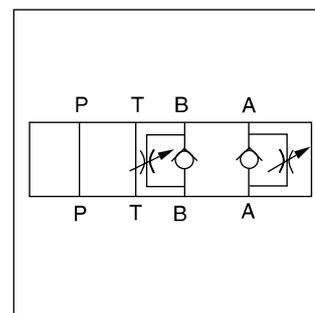
FM2 and FM3 can be used as meter-in or meter-out throttle by changing the mounting position.

FM4 can be selected by ordering code as meter-in or meter-out throttle. FM6 is only available as meter-out control.

The throttle check valve can also be used to influence the switching time of pilot operated directional valves. In this case, the valve is positioned between the pilot stage (CETOP 03, NG06) and the main stage (CETOP 05, NG10 up to CETOP 10, NG32).

Features

- Two types of metering needle design can be selected when ordering FM2 and FM3 valves to achieve the throttle characteristics required to suit the application.
- Large bypass check valves allow high flow at low pressure drop.
- NG06 - FM2 (CETOP 03)
NG10 - FM3 (CETOP 05)
NG16 - FM4 (CETOP 07)
NG25 - FM6 (CETOP 08)

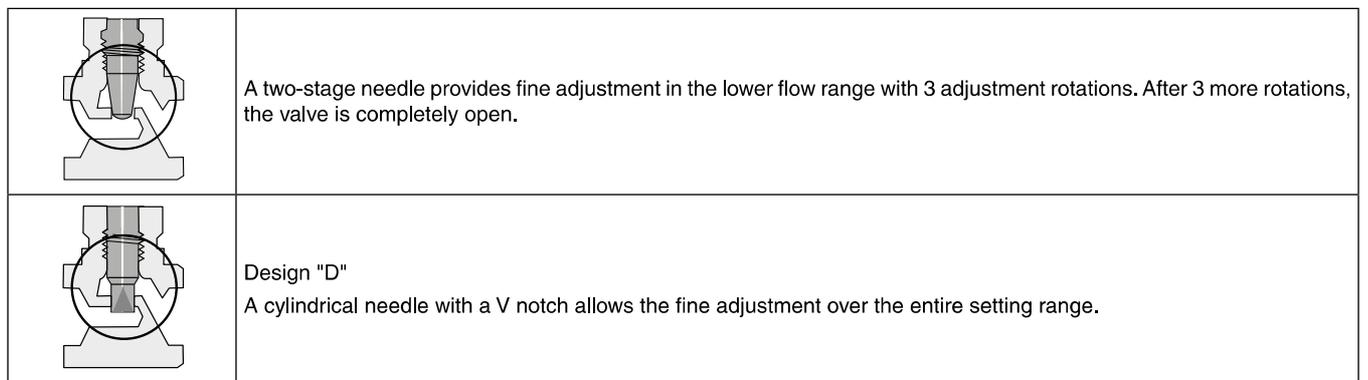
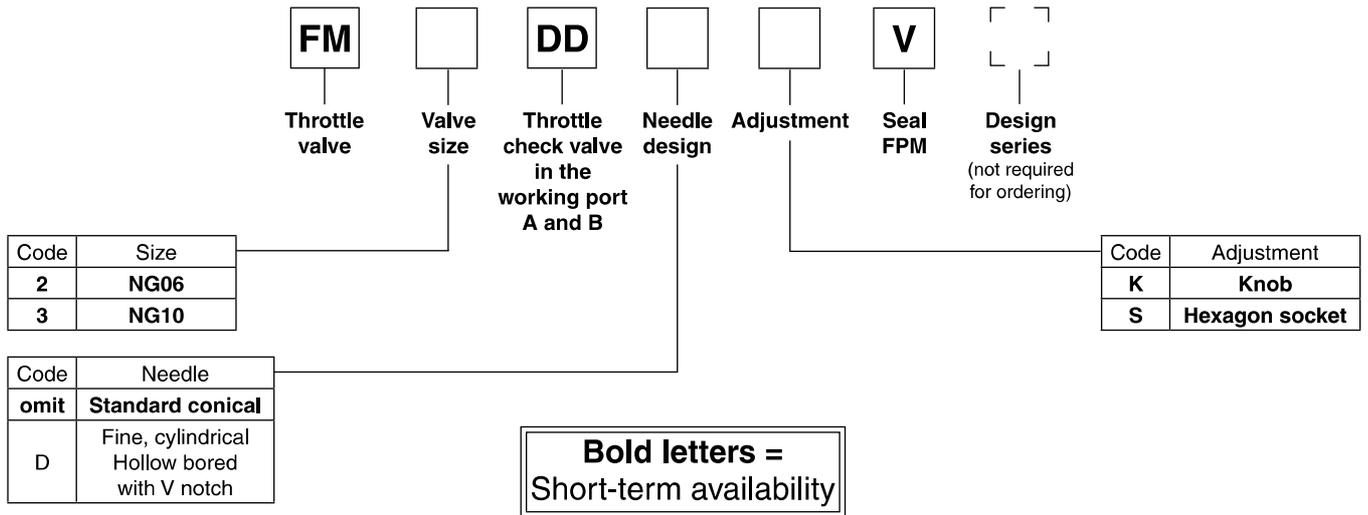


Technical data

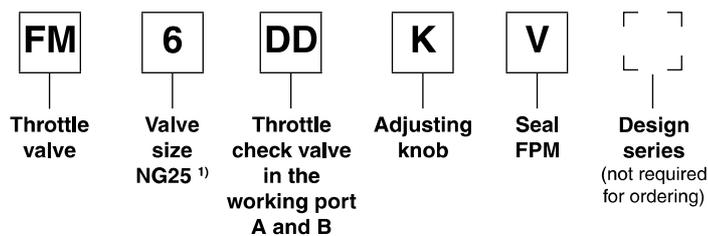
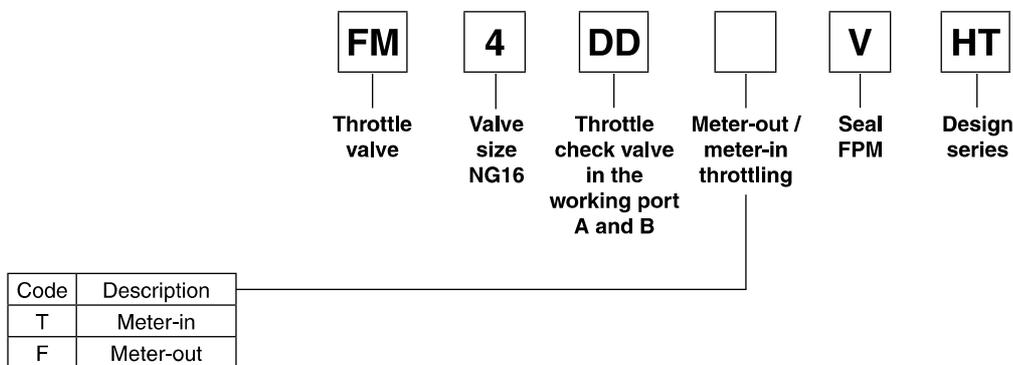
General			FM2	FM3	FM4	FM6
Series			FM2	FM3	FM4	FM6
Size			NG06	NG10	NG16	NG25
Mounting interface			NFPA D03 CETOP 03	NFPA D05 CETOP 05	NFPA D07 CETOP07	NFPA D08 CETOP 08
Mounting position			unrestricted			
Ambient temperature	[°C]		-20...+60			
MTTF _D value	[years]		150			
Weight	[kg]		1.3	2.4	5.4	7.9
Hydraulic						
Max. operating pressure	[bar]		350	350	350	210
Max. Flow	[l/min]		53	76	200	341
Opening pressure	[bar]		0.3	0.3	0.3	0.3
Meter-in throttle			•	•	•	—
Meter-out throttle			•	•	•	•
Fluid			Hydraulic oil according to DIN 51524			
Fluid temperature	[°C]		-20...+70			
Viscosity permitted	[cSt] / [mm²/s]		20...400			
Viscosity recommended	[cSt] / [mm²/s]		30...80			
Filtration			ISO 4406 (1999); 18/16/13			

Throttle Check Valve Series FM

Ordering Code

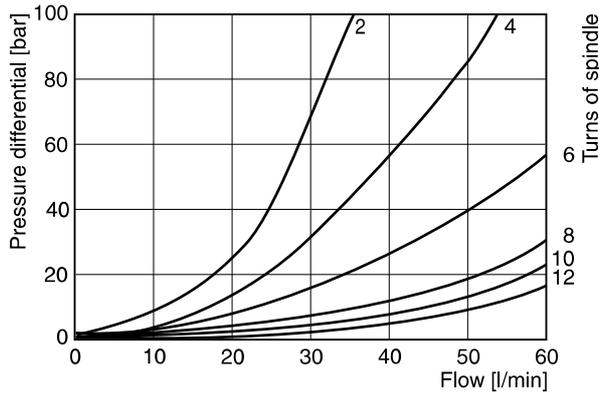


7

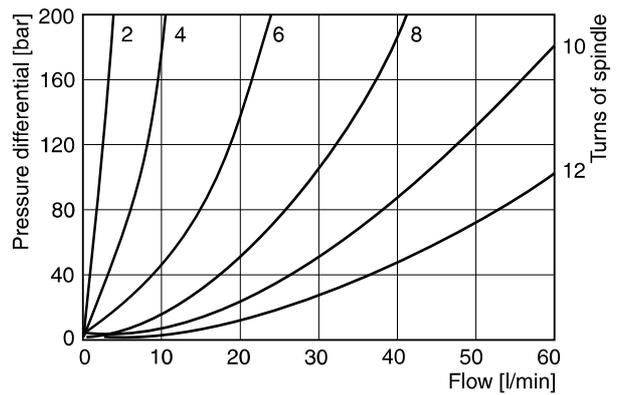


¹⁾ Only meter-out available.

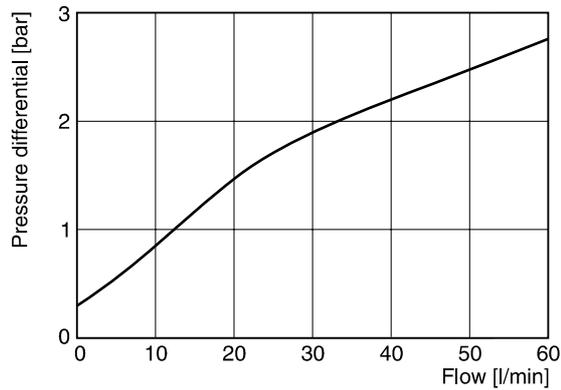
FM2 standard needle



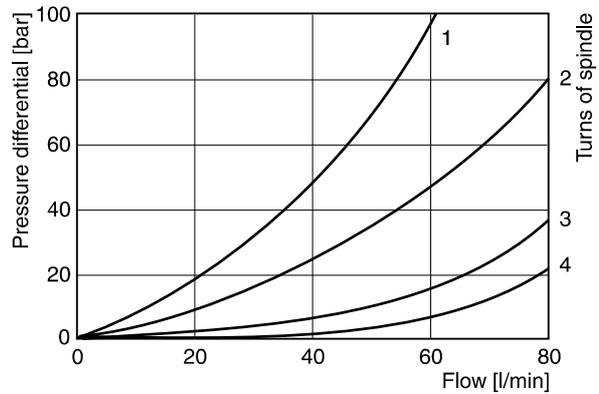
FM2D needle with V notch



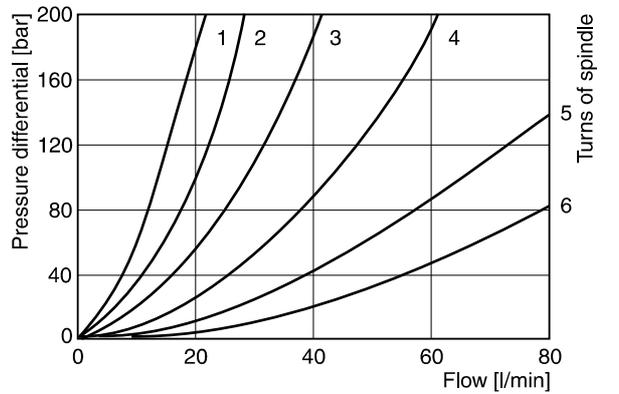
FM2 flow, check valve



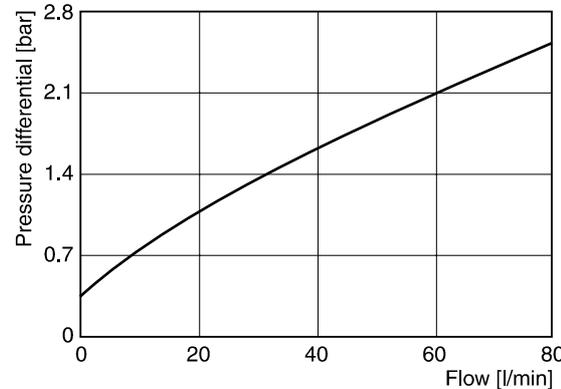
FM3 standard needle



FM3D needle with V notch



FM3 flow, check valve

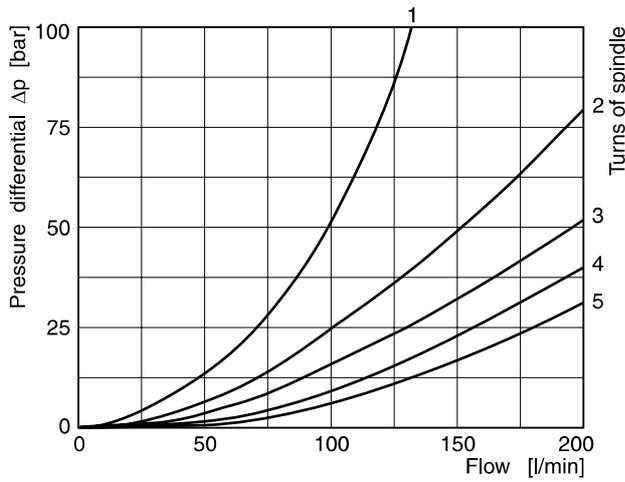


All characteristic curves measured with HLP46 at 50 °C.

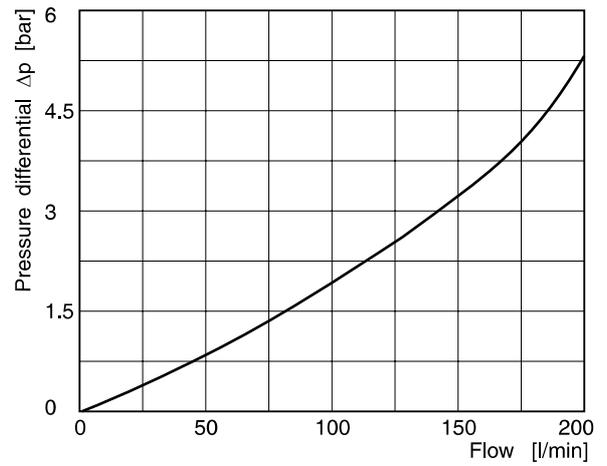
7

FM4 with standard needle

1 to 5 number of needle rotations

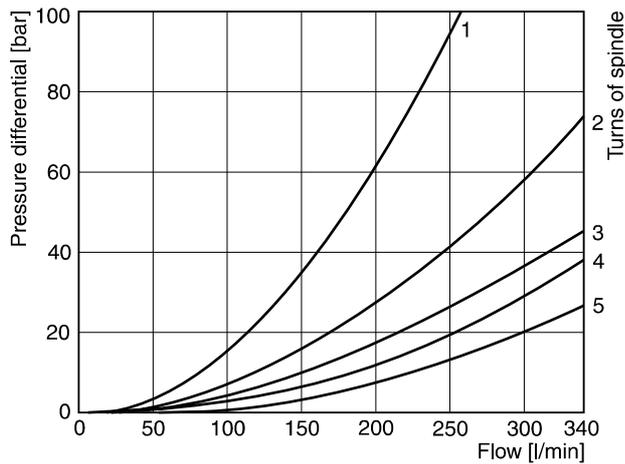


FM4 flow, check valve

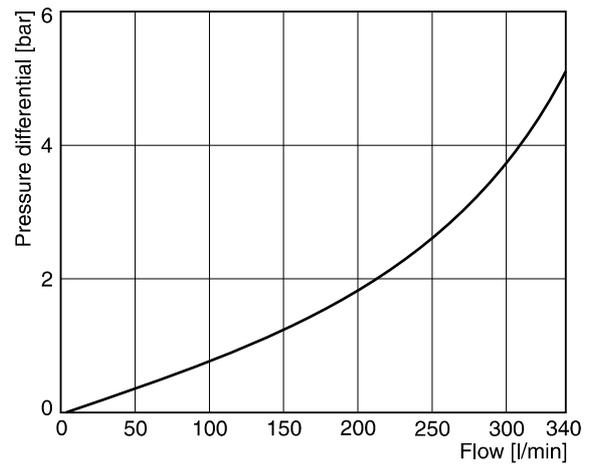


FM6 with standard needle

1 to 5 number of needle rotations



FM6 flow, check valve



All characteristic curves measured with HLP46 at 50 °C.

FM UK.indd 25.04.19

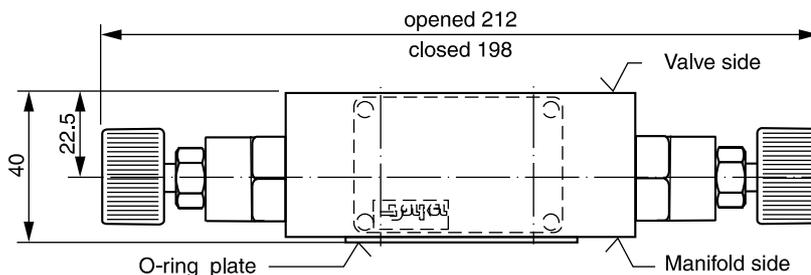
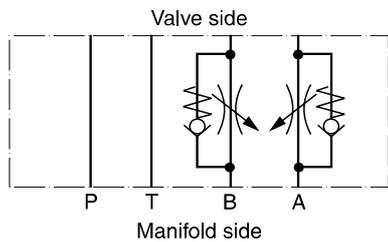


Dimensions

FM2

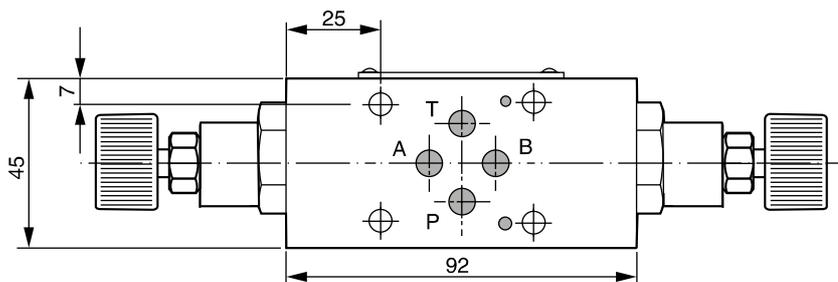
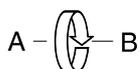
Adjustment code K

Meter-in

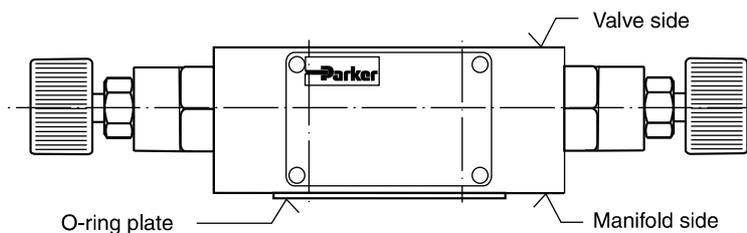
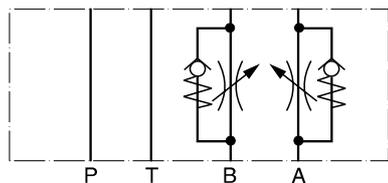


Meter-in or meter-out

A functional change is achieved by rotating the mounting position of the valve 180° about the longitudinal axis (A-B).

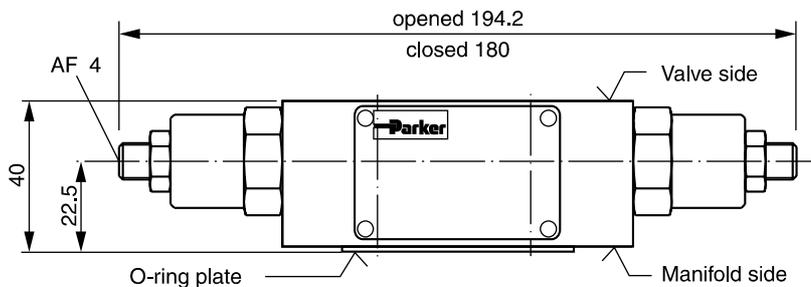


Meter-out



Adjustment code S

(Meter-out shown)



Seal kit FM2	
Seal	Order code
V	SK-FM2-V-20

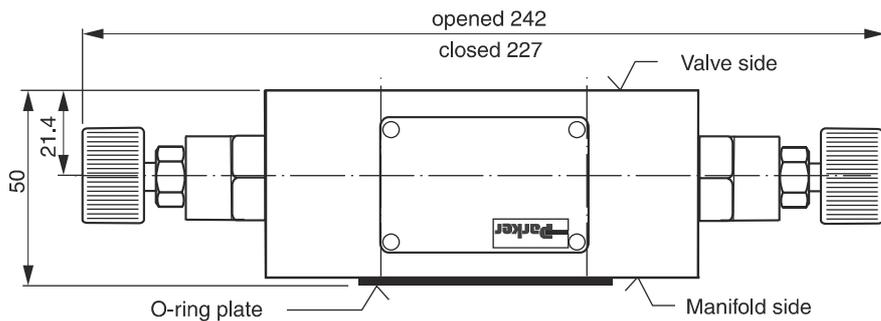
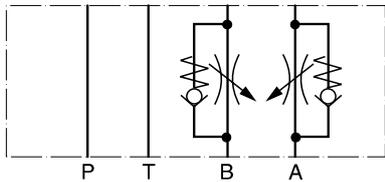
Note:

The O-ring plate (with O-rings) for sealing the connecting surface of the manifold side is included. The O-ring plate is always mounted on the manifold side.

FM3

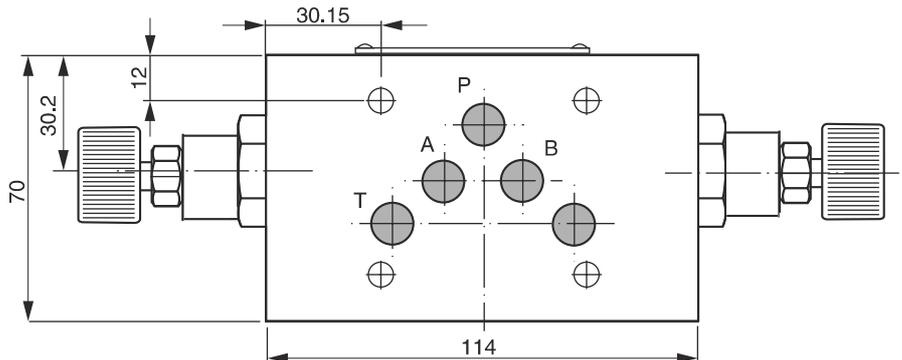
Adjustment code K

Meter-in

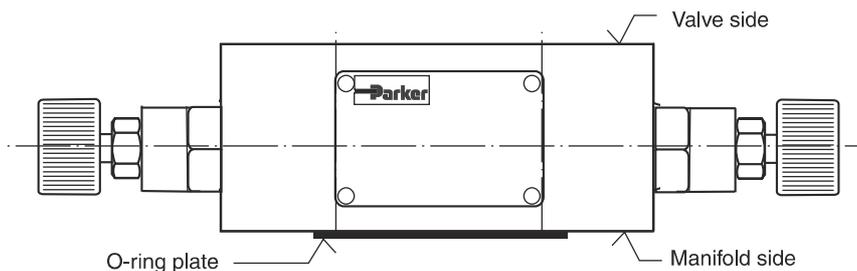
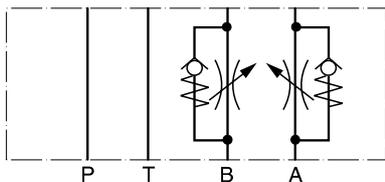


Meter-in or meter-out

A functional change is achieved by rotating the mounting position of the valve 180° about the transverse axis (P).

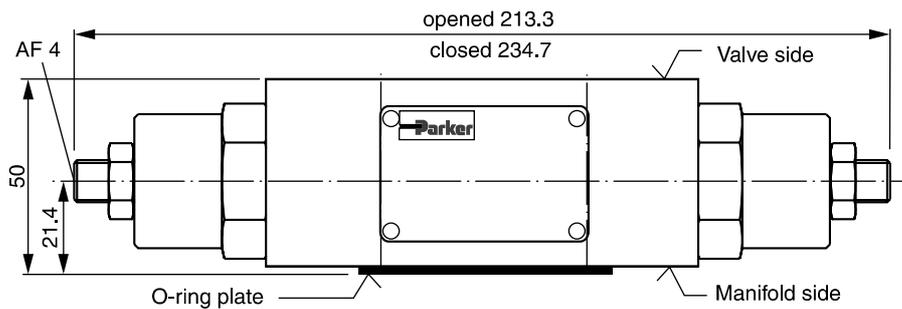


Meter-out



Adjustment code S

(Meter-out shown)

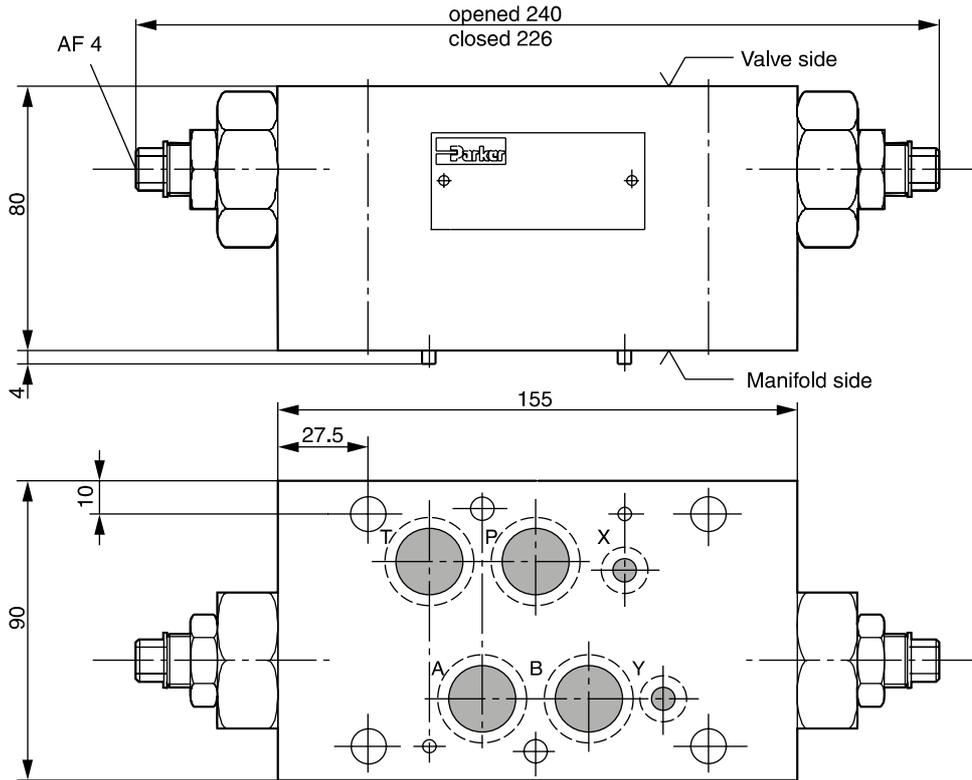


Seal kit FM3	
Seal	Order code
V	SK-FM3-V-20

Note:

The O-ring plate (with O-rings) for sealing the connecting surface of the manifold side is included. The O-ring plate is always mounted on the manifold side.

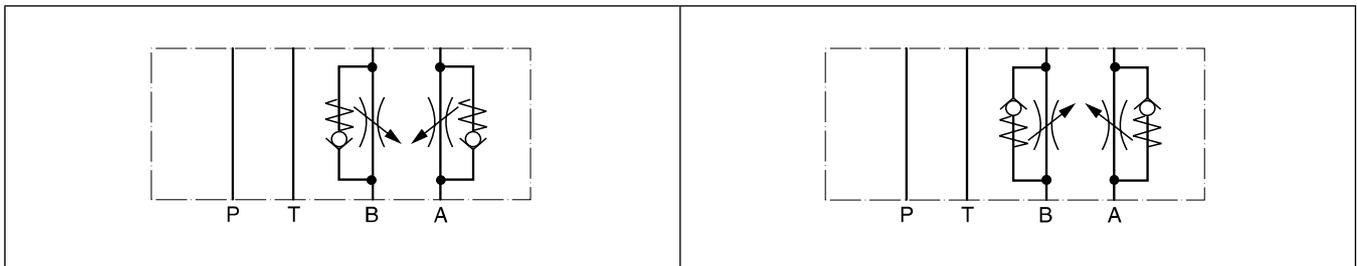
FM4



7

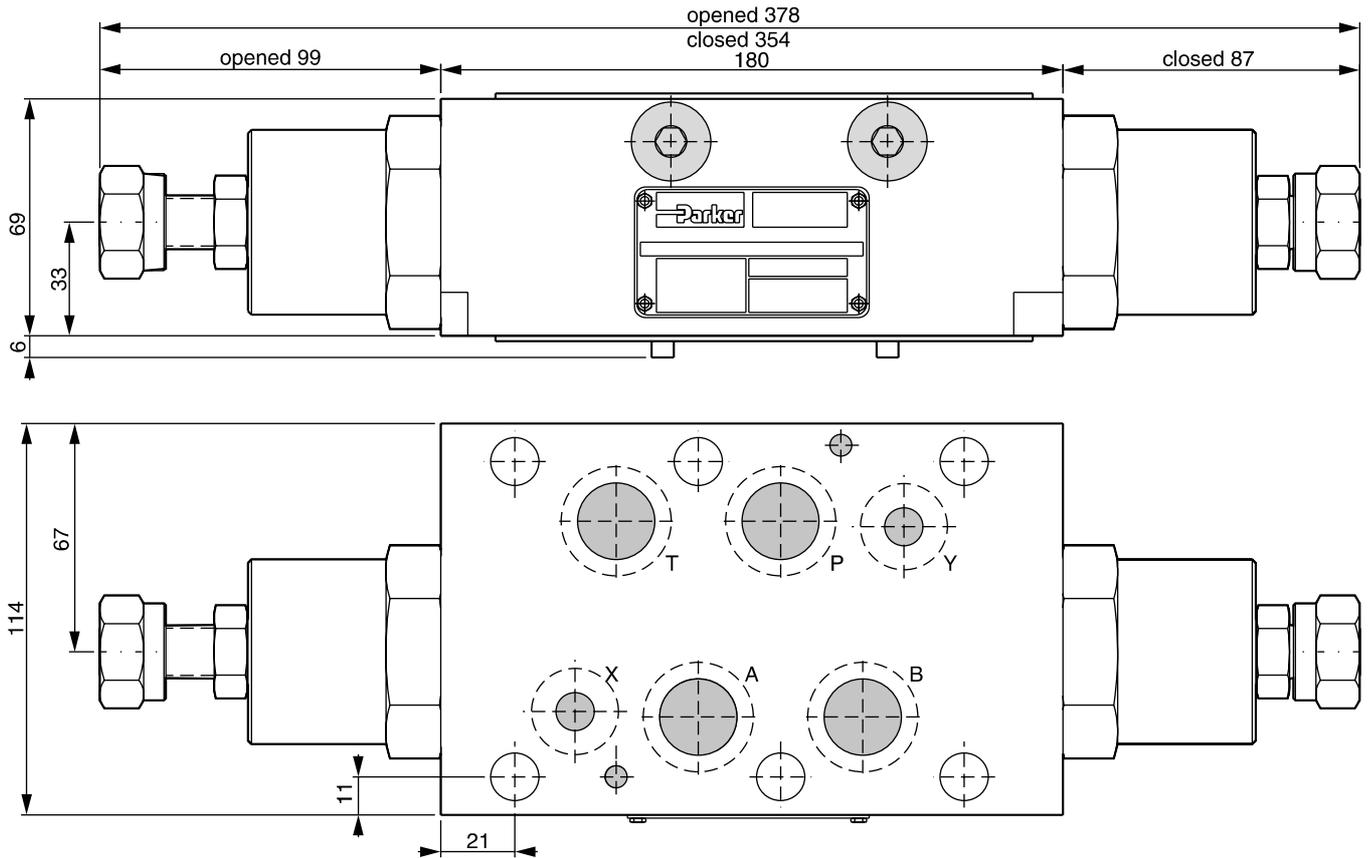
Meter-in

Meter-out



Seal kit FM4	
Seal	Order code
V	SK-FM4VHT

FM6



7

Meter-out

Adjustment: knob

Meter-in is not available for FM6

The schematic diagram shows a pressure line (P) and a tank line (T). Two flow paths, B and A, are shown with adjustable valves (indicated by arrows) and flow meters. The flow direction is from P through the valves to B and A, and then back to T.

Seal kit FM6	
Seal	Order code
V	SK-FM6-V-12

Characteristics / Technical Data

Throttle check valves series ZRD are designed for maximum flow rates.

The throttle check function can be located in port A or B as well as in A + B. Meter-in or meter-out functionality can be selected by model code.

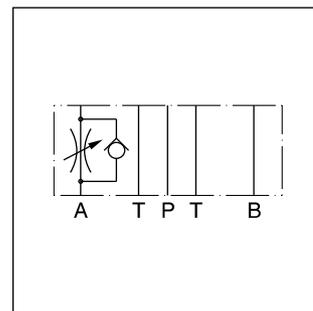
A low flow / high resolution version in NG06 for sensitive shifting time adjustment of pilot operated directional control valves is available on request.

Features

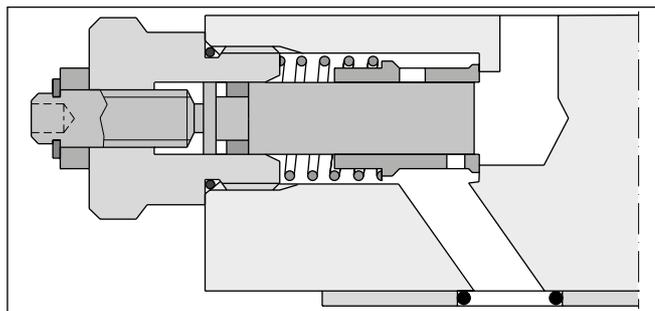
- High flow capacity
- Various functional arrangements
- ZRD01 - NG06 (CETOP 03)
- ZRD02 - NG10 (CETOP 05)



ZRD-ABZ01



ZRD-AA02



ZRD-AA02

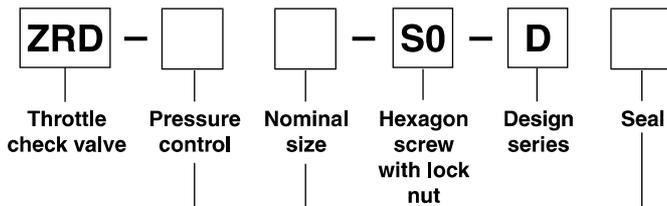
7

Technical data

General		NG06	NG10
Size			
Mounting interface		DIN 24340 A6 ISO 4401 NFFPA D03	DIN 24340 A10 ISO 4401 NFFPA D05
		CETOP RP 121	
Mounting position		unrestricted	
Ambient temperature	[°C]	-20...+60	
MTTF _D value	[years]	150	
Weight	1 cartridge [kg]	1.2	2.8
	2 cartridges [kg]	1.3	2.9
Hydraulic			
Max. operating pressure	[bar]	350	315
Nominal flow	[cSt] / [l/min]	80	160
Leakage	[cSt] / [l/min]	0.1...0.2 (at closed throttle)	0.1...0.2 (at closed throttle)
Opening pressure	[bar]	0.7	0.7
Fluid		Hydraulic oil according to DIN 51524	
Fluid temperature	[°C]	-20...+70 (NBR: -25...+70)	
Viscosity, permitted	[cSt] / [mm ² /s]	20 ... 400	
recommended	[cSt] / [mm ² /s]	30 ... 80	
Filtration		ISO 4406 (1999); 18/16/13	

Ordering Code

**Throttle Check Valve
Series ZRD**



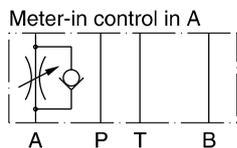
Code	Pressure control
AA	Meter-out control in A
AZ	Meter-in control in A
BA	Meter-out control in B
BZ	Meter-in control in B
ABA	Meter-out control in A and B
ABZ	Meter-in control in A and B

Code	Seal
1	NBR
5	FPM

Code	Nominal size
01	NG06
02	NG10

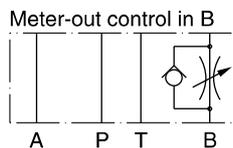
Ordering code details

ZRD*01



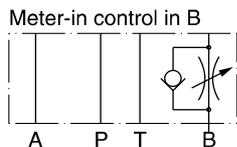
Series ZRD-AZ01-S0-D1

Order No. 098-91056-0



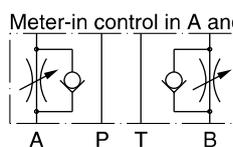
Series ZRD-BA01-S0-D1

Order No. 098-91013-0



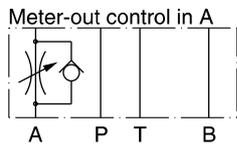
Series ZRD-BZ01-S0-D1

Order No. 098-91057-0



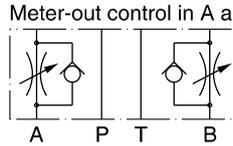
Series ZRD-ABZ01-S0-D1

Order No. 098-91058-0



Series ZRD-AA01-S0-D1

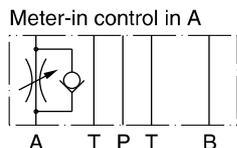
Order No. 098-91012-0



Series ZRD-ABA01-S0-D1

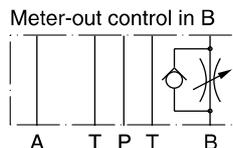
Order No. 098-91014-0

ZRD*02



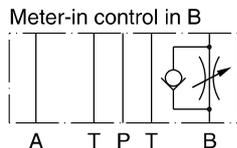
Series ZRD-AZ02-S0-D1

Order No. 098-91059-0



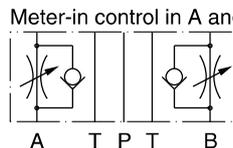
Series ZRD-BA02-S0-D1

Order no. 098-91016-0



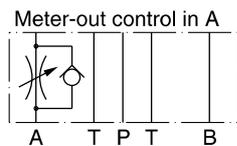
Series ZRD-BZ02-S0-D1

Order No. 098-91060-0



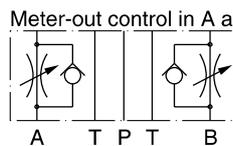
Series ZRD-ABZ02-S0-D1

Order no. 098-91061-0



Series ZRD-AA02-S0-D1

Order no. 098-91015-0

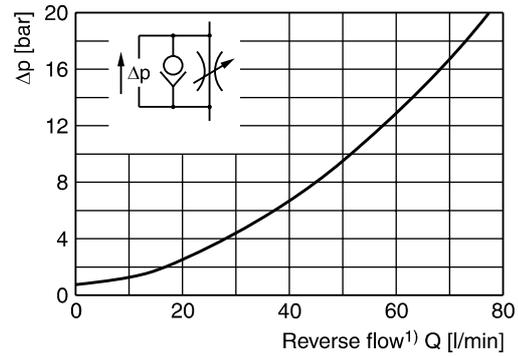
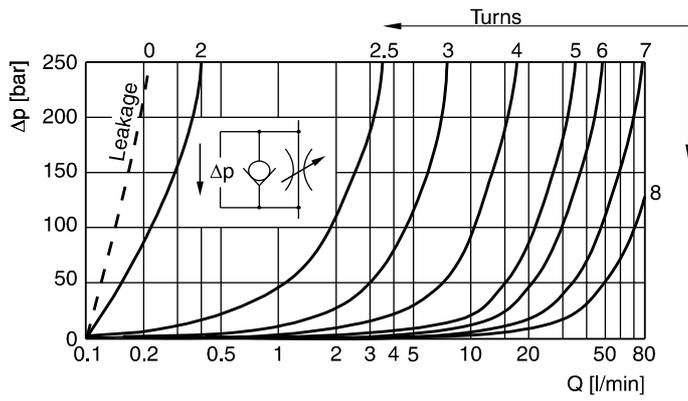


Series ZRD-ABA02-S0-D1

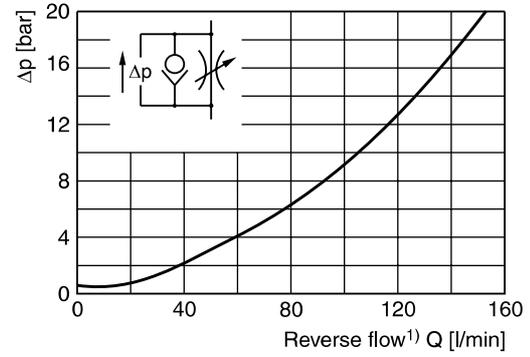
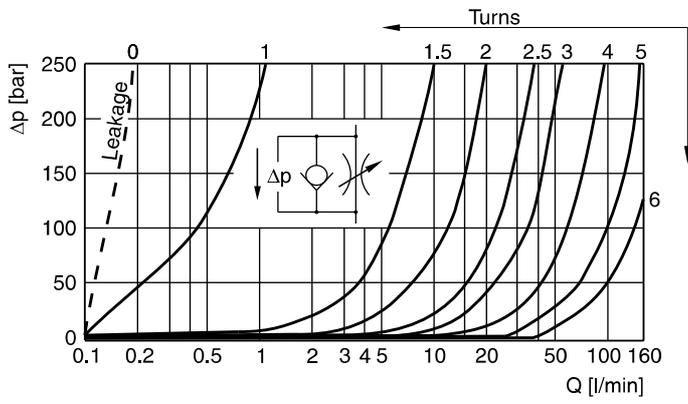
Order no. 098-91017-0

p/Q performance curves

ZRD*01



ZRD*02

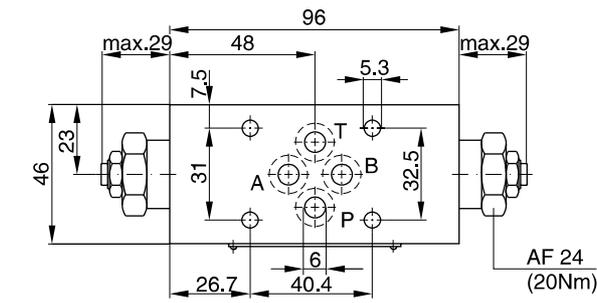


¹⁾ Throttle closed.

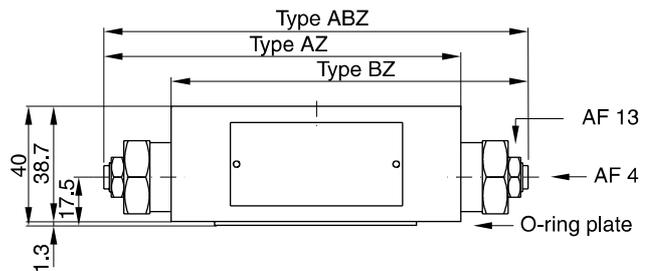
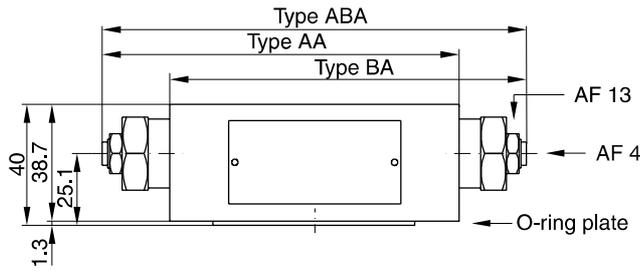
All characteristic curves measured with HLP46 at 50 °C.

7

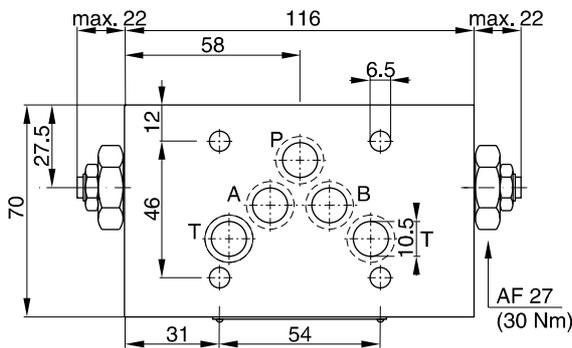
ZRD*01



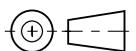
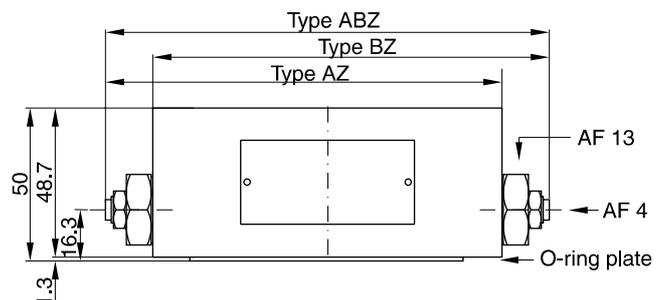
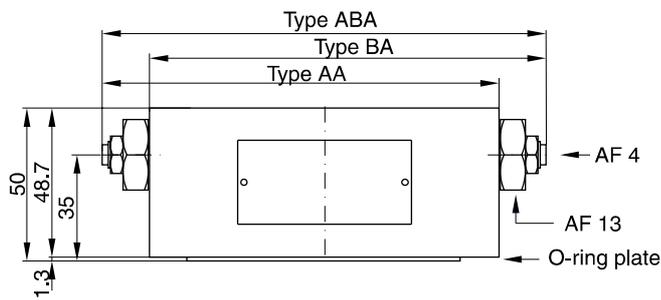
Seal kit	
Seal	Order code
1	098-91096-0
5	098-91097-0
Complete cartridge	
Order code 098-91119-0	
O-ring plate	Order code
1	SK-CM2-10
5	SK-CM2-V-10



ZRD*02



Seal kit	
Seal	Order code
1	098-91098-0
5	098-91099-0
Complete cartridge	
Order code 098-91120-0	
O-ring plate	Order code
1	SK-CM3-10
5	SK-CM3-V-10

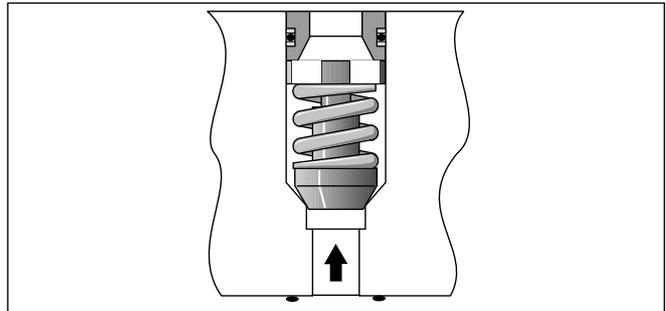
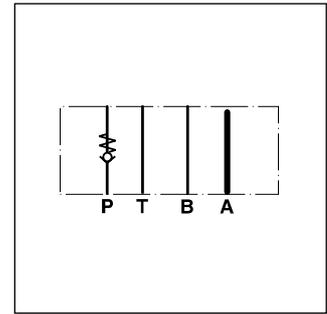


Characteristics / Ordering Code

Check valves from the Parker Manapak series CM are in sandwich design for easy configuration of stack systems. Depending on the function required, one or two check valves are arranged in ports P, T, A, and B. Number and flow direction can be selected from the ordering code.

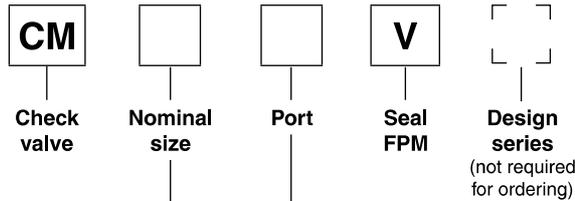
Features

- The valve bodies of the Parker Manapak valve series CM are made of steel.
- Eight options for the arrangement of the check valve in the body offer a multitude of uses for hydraulic switching.
- The function can be changed by turning the valve.
- CM2 - NG06 (CETOP 03)
- CM3 - NG10 (CETOP 05)



Ordering code

7



Code	Nominal size
2	Intermediate plate DIN NG06
3	Intermediate plate DIN NG10

Code	Free flow polarity	Check valve in channel
AA	From directional valve to manifold	A
BB	From directional valve to manifold	B
DD	From directional valve to manifold	A and B
PP	From manifold to directional valve	P
TT	From manifold to directional valve	T
AAF	From manifold to directional valve	A
BBF	From manifold to directional valve	B
DDF	From manifold to directional valve	A and B

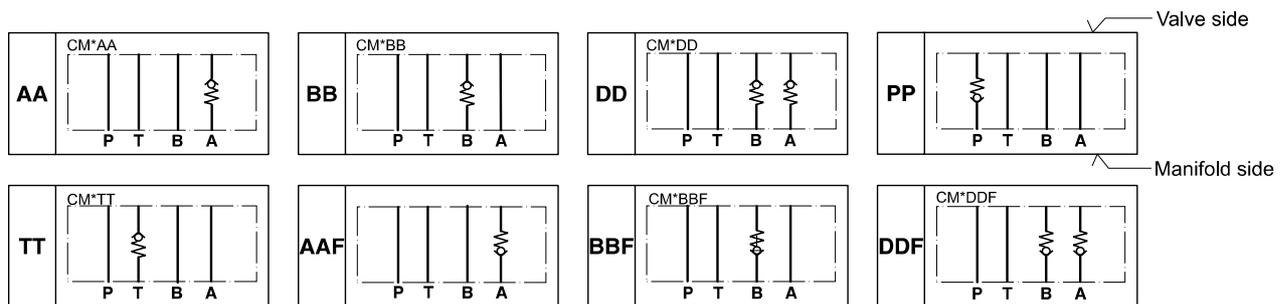
**Bold letters =
Short-term availability**

Technical data

General			
Series		CM2	CM3
Size		NG06	NG10
Mounting interface		DIN 24340 A6 ISO 4401 NFA D03	DIN 24340 A10 ISO 4401 NFA D05
Mounting position		unrestricted	
Ambient temperature	[°C]	-20...+60	
MTTF _D value	[years]	150	
Weight	[kg]	0.9	1.7
Hydraulic			
Max. operating pressure	[bar]	350	350
Max. flow	[l/min]	53	76
Opening pressure	[bar]	0.3	0.3
Fluid		Hydraulic oil according to DIN 51524	
Fluid temperature	[°C]	-20...+70	
Viscosity , permitted	[cSt] / [mm ² /s]	20...400	
recommended	[cSt] / [mm ² /s]	30...80	
Filtration		ISO 4406 (1999); 18/16/13	

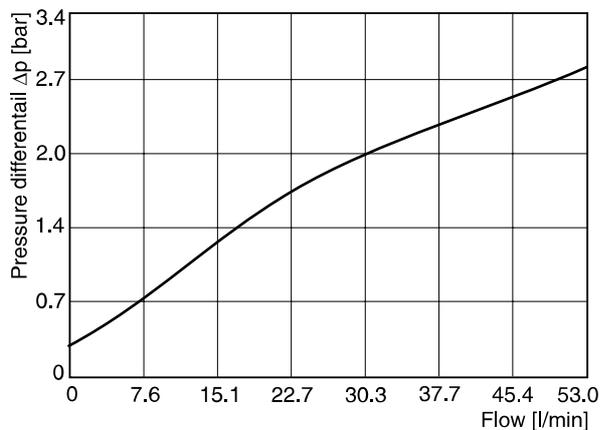
Schematics

The valve side is shown at the top of the symbols, the manifold side with channel designation is shown at the bottom.

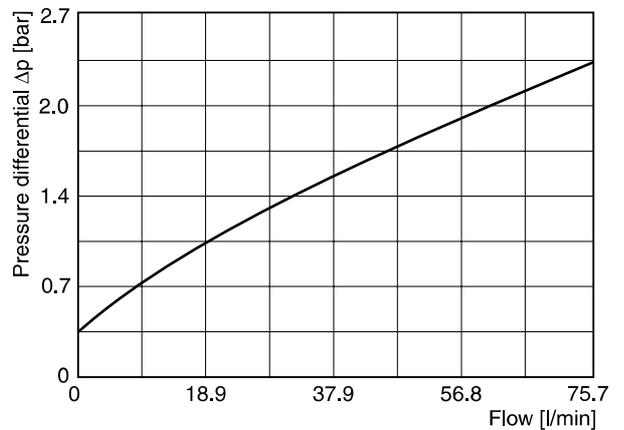


Δp/Q performance curves

CM2



CM3



All characteristic curves measured with HLP46 at 50 °C.

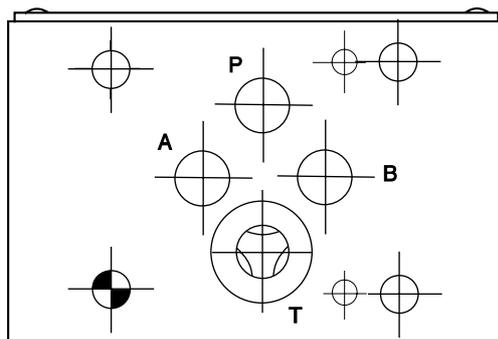
CM UK.indd 25.04.19



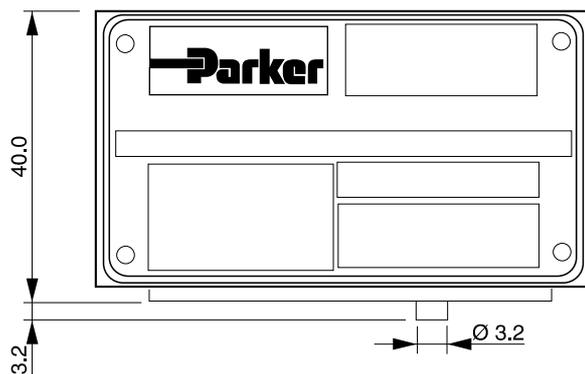
Dimensions

CM2

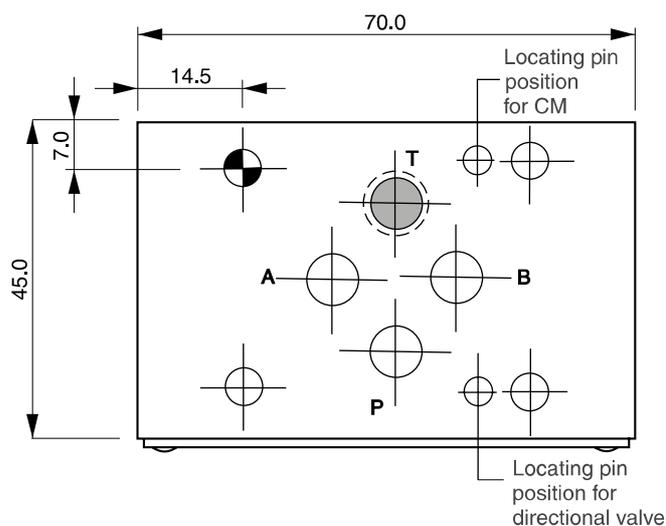
Bottom view¹⁾



Front side



Top view



7

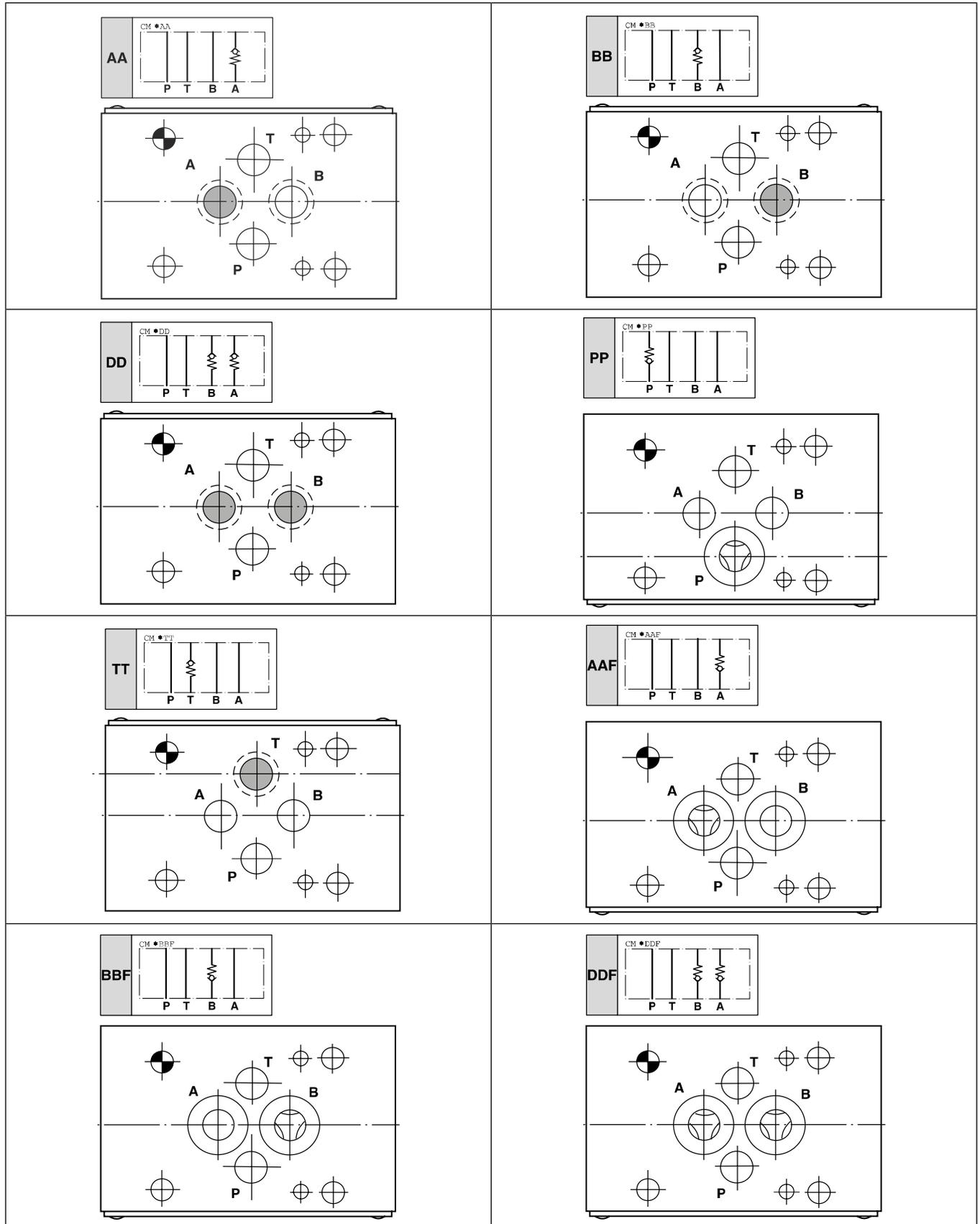
Seal kit CM2	
Seal	Order code
V	SK-CM2-V

Note:

The O-ring plate for sealing the connecting surface of the manifold side is included. The O-ring plate and the positioning pin are always mounted on the manifold side.

¹⁾ O-Ring plate is not shown! This view shows the TT model.

CM2 top views (from directional valve side)

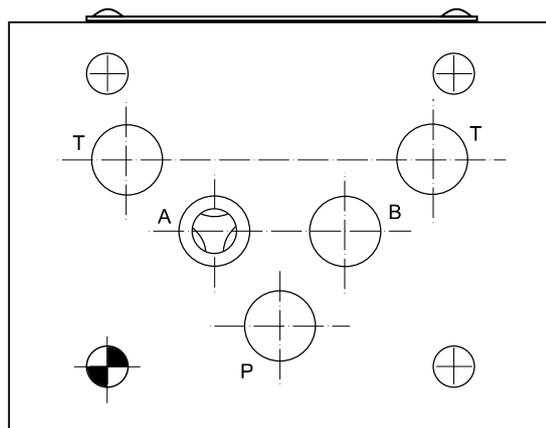


7

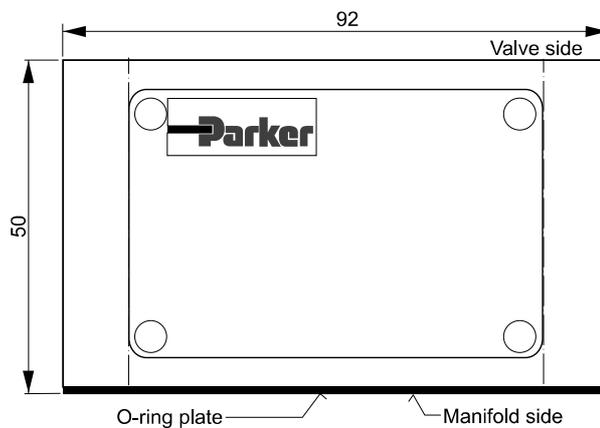
Dimensions

CM3

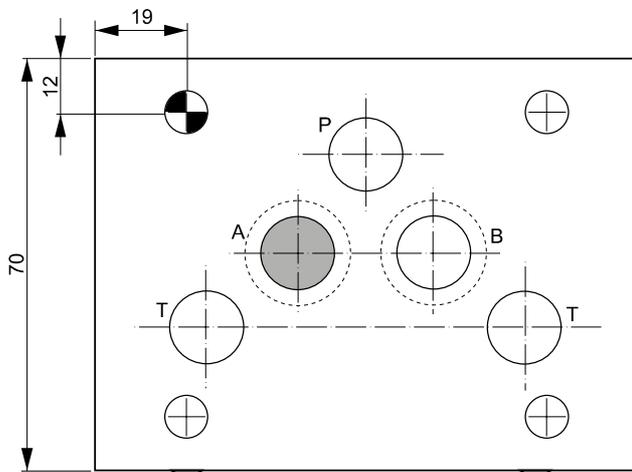
Bottom view¹⁾



Front side



Top view



Seal kit CM3	
Seal	Order code
V	SK-CM3-V

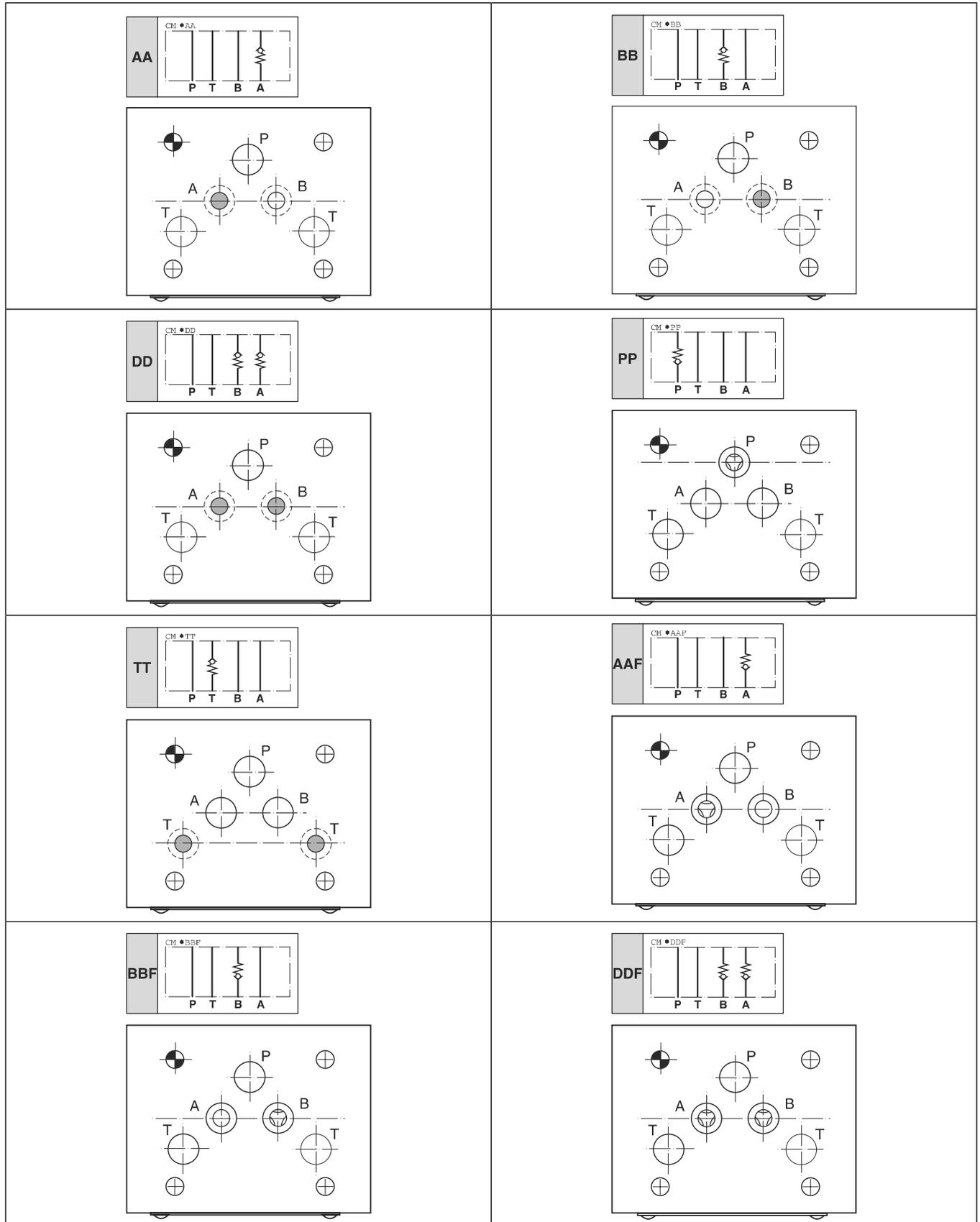
Note:

The O-ring plate for sealing the connecting surface of the manifold side is included. The O-ring plate and the positioning pin are always mounted on the manifold side.

¹⁾ O-ring plate is not shown! This view shows the AA model.

7

CM3 top views (from directional valve side)



7

Characteristics / Ordering Code

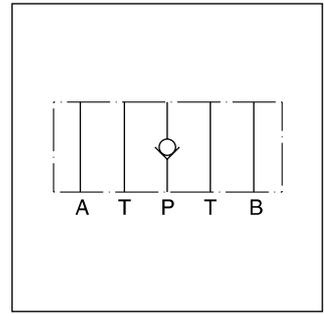
Direct operated check valves series ZRV have a cartridge type insert to provide zero leakage and high life time. The check function can be located in the P- or in the T-port.

Features

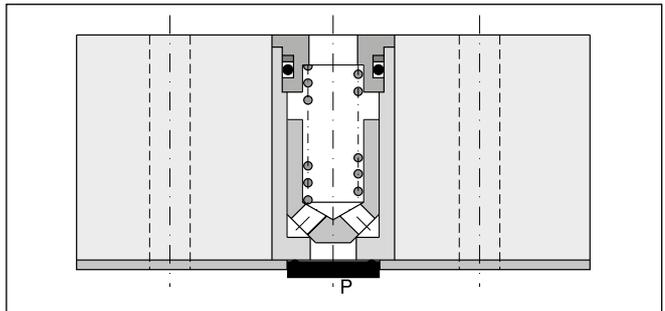
- Leakage-free seat
- High life time
- Opening pressure 0.5 bar
- ZRV01 - NG06 (CETOP 03)
- ZRV02 - NG10 (CETOP 05)



ZRV-P02



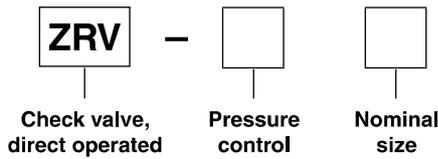
ZRV-P02



ZRV-P02

Ordering code

7



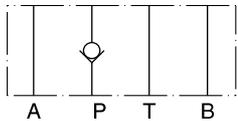
Code	Pressure control
P	Blocked in P
T	Blocked in T

Code	Nominal size
01	NG06
02	NG10

Ordering code details

ZRV01

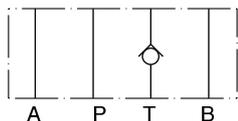
blocked in P



Series ZRV-P01

Order No. 098-90025-0

blocked in T

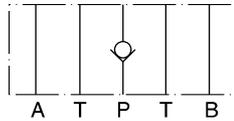


Series ZRV-T01

Order No. 098-90026-0

ZRV02

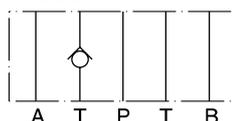
blocked in P



Series ZRV-P02

Order No. 098-90043-0

blocked in T



Series ZRV-T02

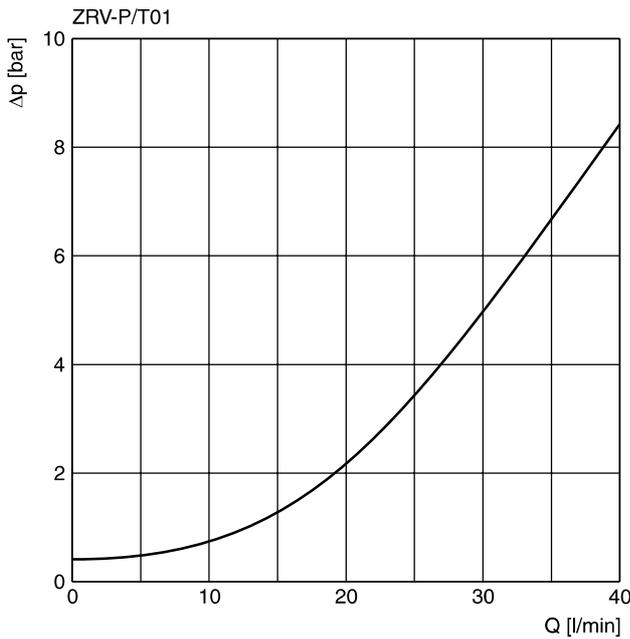
Order No. 098-90044-0

Technical data

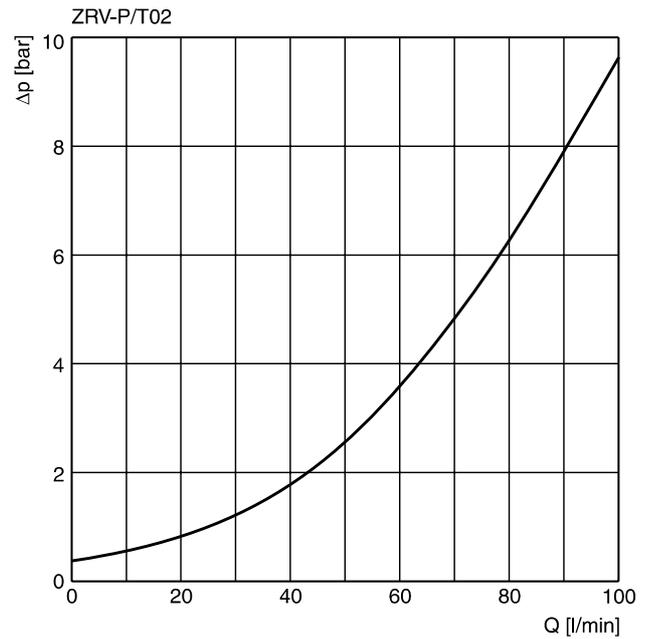
General			
Size		NG06	NG10
Mounting interface		DIN 24340 A6 ISO 4401 NFPA D03	DIN 24340 A10 ISO 4401 NFPA D05
		CETOP RP 121	
Mounting position		unrestricted	
Ambient temperature	[°C]	-20...+60	
MTTF _D value	[years]	150	
Weight	[kg]	0.7	2.0
Hydraulic			
Max. operating pressure	[bar]	350	315
Nominal flow	[l/min]	40	100
Opening pressure	[bar]	0.5	0.5
Fluid		Hydraulic oil according to DIN 51524	
Fluid temperature	[°C]	-20...+70 (NBR: -25...+70)	
Viscosity	permitted	[cSt] / [mm ² /s] 20 ... 400	
	recommended	[cSt] / [mm ² /s] 30 ... 80	
Filtration		ISO 4406 (1999); 18/16/13	

p/Q performance curves

ZRV*01



ZRV*02

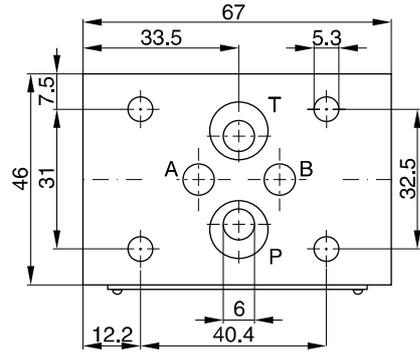


All characteristic curves measured with HLP46 at 50 °C.

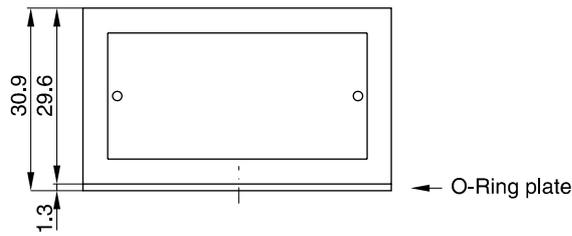
ZRV UK.indd 25.04.19



ZRV01

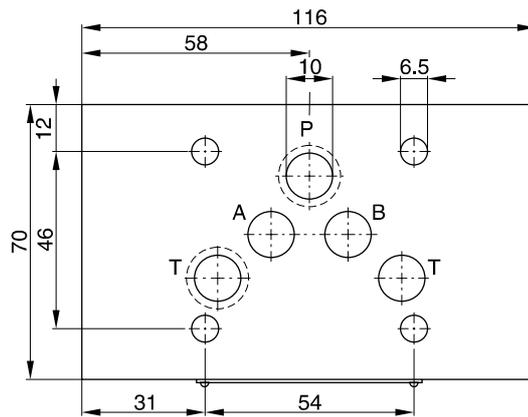


Seal kit	
Seal	Order code
NBR	SK-CM2-10
FPM	SK-CM2-V-10

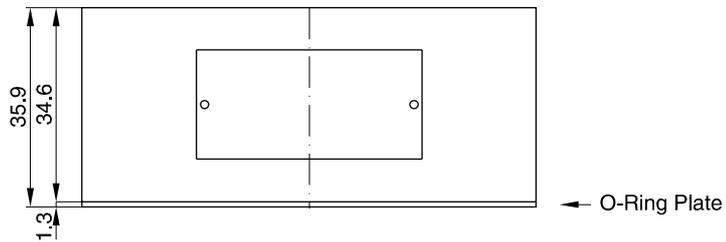


ZRV02

7



Seal kit	
Seal	Order code
NBR	SK-CM3-10
FPM	SK-CM3-V-50



Pilot operated check valves from the Parker Manapak series CPOM are in sandwich design for easy configuration of stack systems. Depending on the function required, one or two pilot operated check valves are arranged in the ports A and/or B. The free flow direction is always from the valve side to the manifold side.

Function

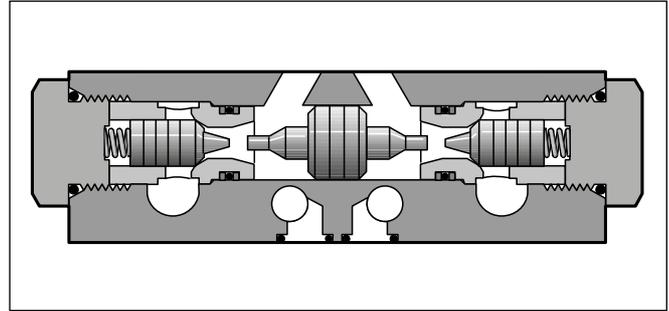
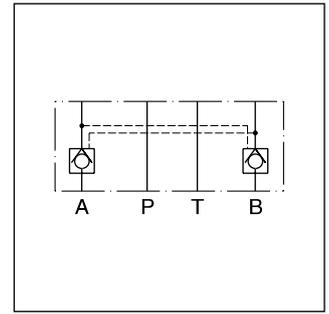
The check valves open when flowing to the consumer side, where the opposing check valve is hydraulically-mechanically pilot operated simultaneously by a control spool, and thus the return flow is enabled from other consumer sides.

Features

- The valve bodies of the Parker Manapak valve series CPOM are made of steel.
- The valve poppet is precisely guided into the steel sleeve and ensures a good seal on the seat.
- When the valve poppet is open, the large cross-section allows high flow rates at low differential pressure.
- Different control ratios can be chosen with the NG06 and NG10 valves.
- Pre-opening for CPOM*HT to achieve smooth opening.



CPOM3



Ordering code

Without pre-opening

Code	Size
2	NG06
3	NG10
6	NG25

CPOM

Hydraulically operated check valve pilot ratio 3 : 1

Size

Poppet style

Opening pressure

V

Seal FPM

Design series
(not required for ordering)

With pre-opening

Code	Connection
AA	only A
BB	only B
DD	A and B

CPOM

Hydraulically operated check valve

4

Size NG16

Poppet style

HT

Pilot ratio 13:1

V

Seal FPM

Design series
(not required for ordering)

Bold letters = Short-term availability

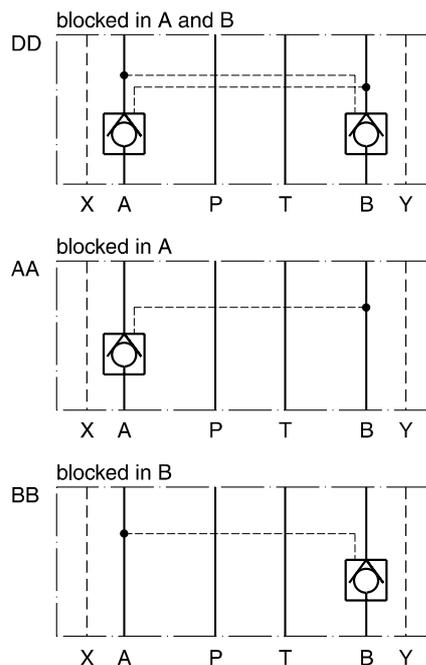
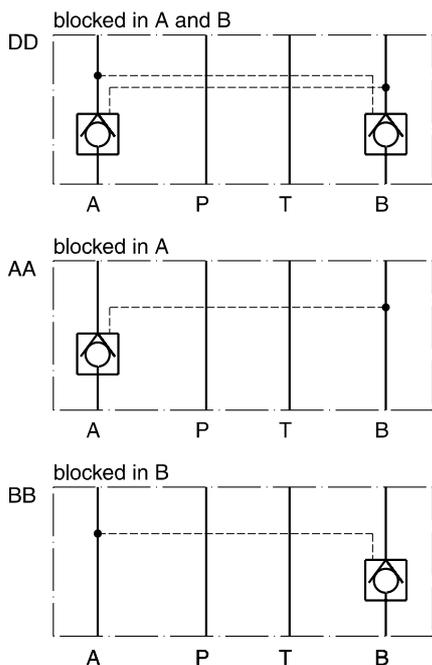
Technical data

General					
Series		CPOM2	CPOM3	CPOM4	CPOM6
Nominal size		NG06	NG10	NG16	NG25
Mounting interface		ISO 4401			
Ambient temperature	[°C]	-20...+60			
MTTF _D value	[years]	150			
Weight	[kg]	1.8	4.0	7.65	9.5
Hydraulic					
Max. operating pressure	[bar]	350	350	350	210
Opening pressure	[bar]	1.0	0.8	2.0	0.4
Opening ratio		1 : 3	1 : 3	1 : 13	1 : 3
Fluid		Hydraulic oil according to DIN 51524			
Fluid temperature	[°C]	-20...+70			
Viscosity,	permitted	20...400			
	recommended	30...80			
Filtration		ISO 4406 (1999); 18/16/13			

Schematics CPOM3

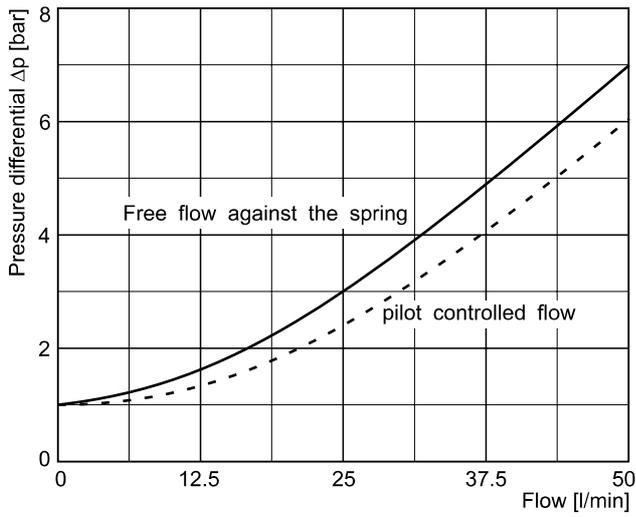
CPOM4 / CPOM6

7

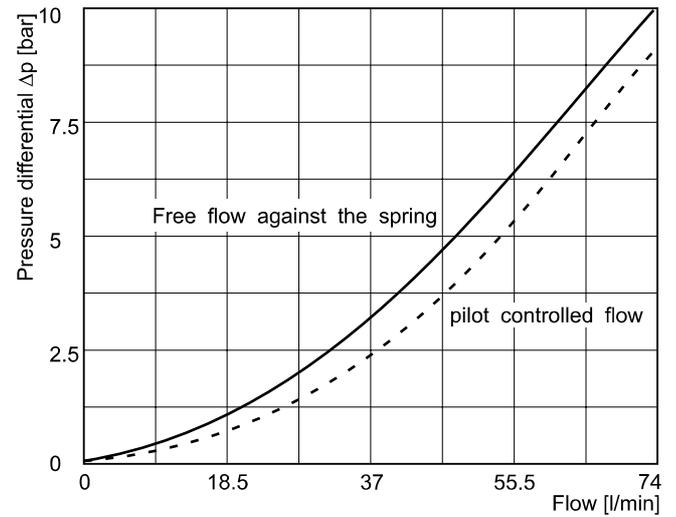


$\Delta p/Q$ performance curves

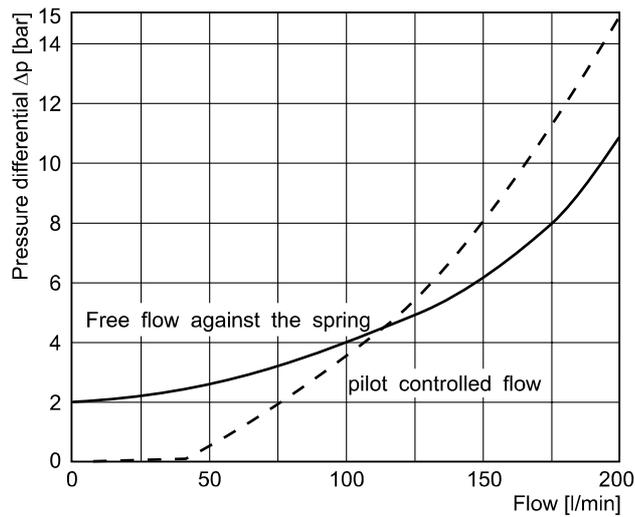
CPOM2



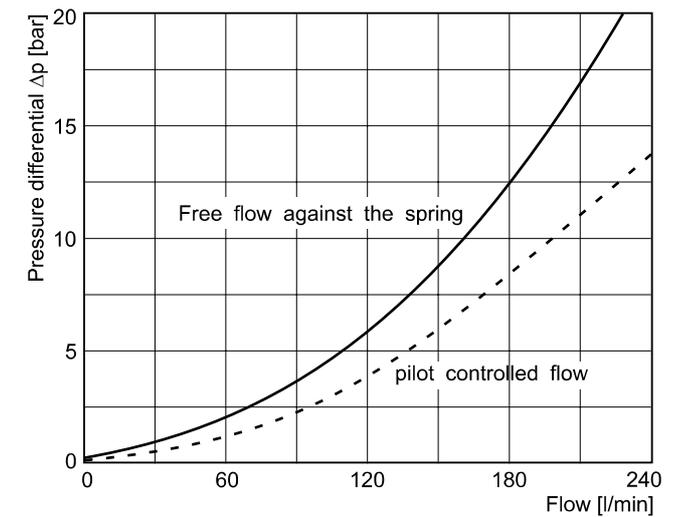
CPOM3



CPOM4 (type HT)



CPOM6



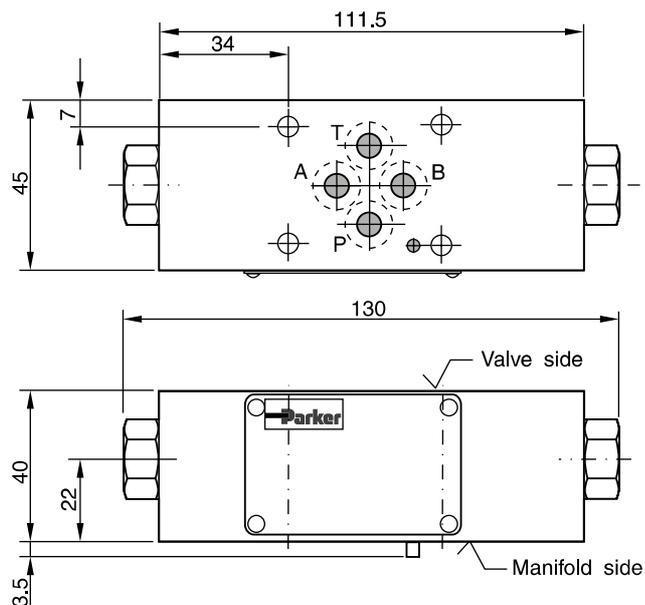
All characteristic curves measured with HLP46 at 50 °C.

CPOM UK.indd 25.04.19



Dimensions

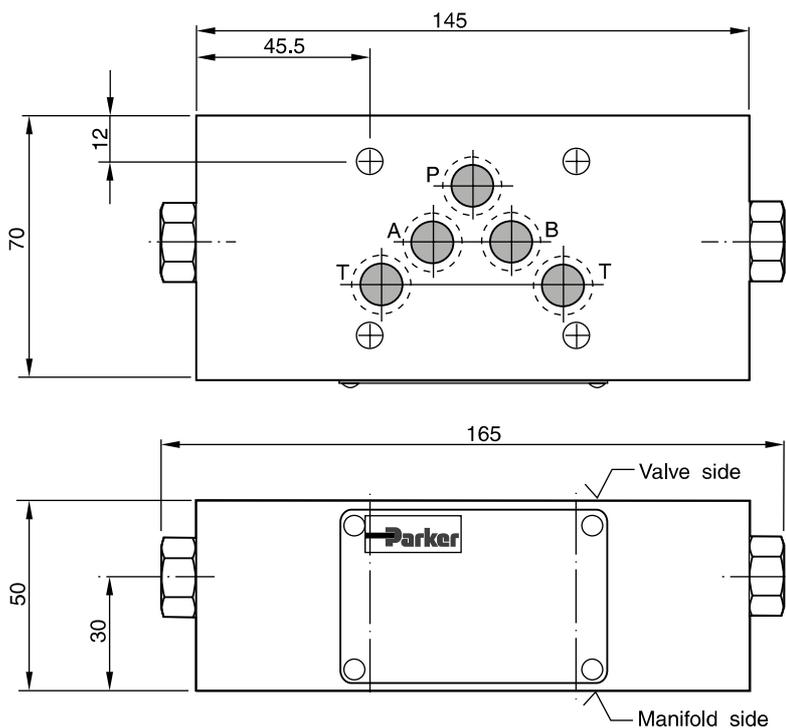
CPOM2



Seal kit CPOM2	
Seal	Order code
V	SK-CPOM2-V-11

7

CPOM3



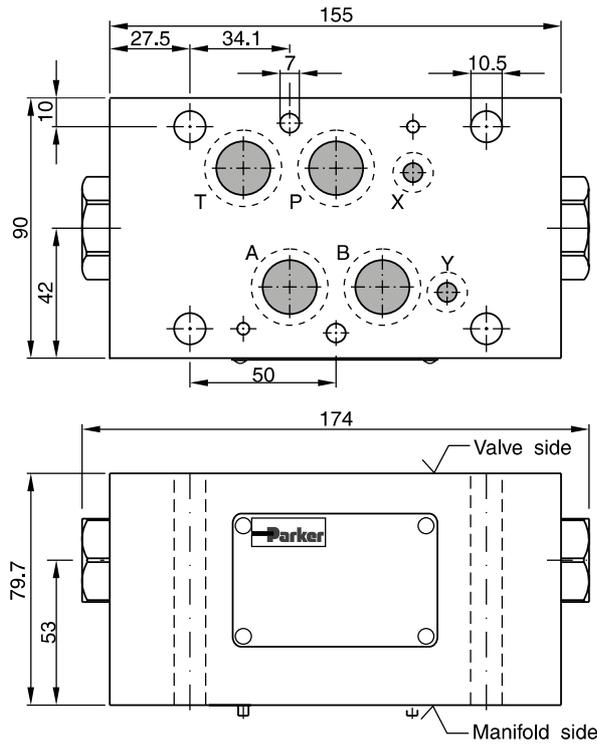
Seal kit CPOM3	
Seal	Order code
V	SK-CPOM3-V-11

Note:

The O-ring plate for sealing the connecting surface of the manifold side is included. The O-ring plate and the positioning pin are always mounted on the manifold side.

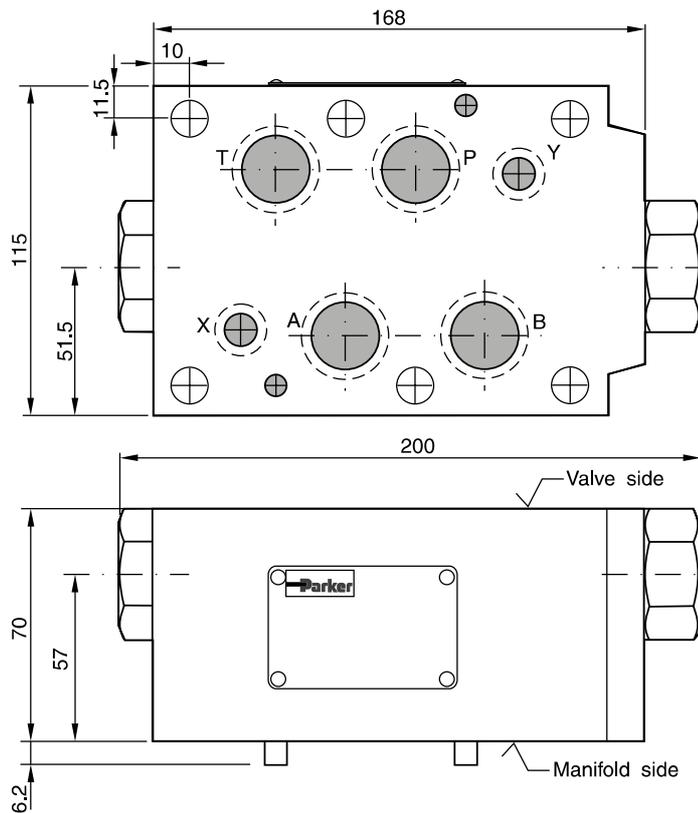


CPOM4



Seal kit CPOM4	
Seal	Order code
V	SK-CPOM4HTV

CPOM6



Seal kit CPOM6	
Seal	Order code
V	SK-CPOM6-V-20

Note:

The O-ring plate for sealing the connecting surface of the manifold side is included. The O-ring plate and the positioning pin are always mounted on the manifold side.



Characteristics / Ordering Code

Pilot operated check valves series ZRE are designed for maximum flow rates and long life time.

The valves are typically used in combination with spool type directional control valves to ensure nearly leak free positioning of the actuator.

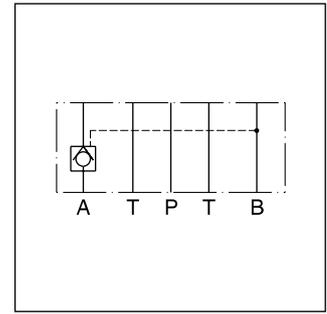
The inlet flow is free while the outlet flow is blocked. Pressure in the inlet line opens the check valve and allows free outlet flow.

Features

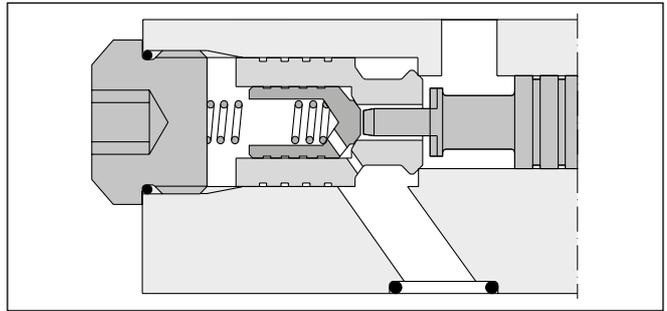
- High flow capacity
- High life time
- Check function in A, B or A + B
- ZRE01 - NG06 (CETOP 03)
- ZRE02 - NG10 (CETOP 05)



ZRE-B01



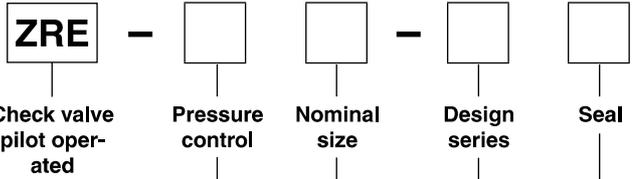
ZRE-A02



ZRE-A02

Ordering code

7



Code	Pressure control
A	Blocked in A
B	Blocked in B
AB	Blocked in A and B

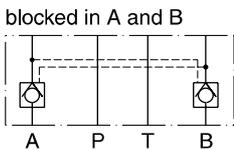
Code	Nominal size
01	NG06
02	NG10

Code	Seal
1	NBR
5	FPM

Code	Design series
D	NG06
E	NG10

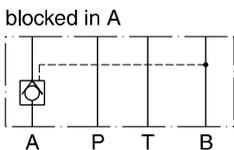
Ordering code details

ZRE*01



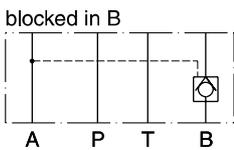
Series ZRE-AB01-D1

Order No. 098-91020-0



Series ZRE-A01-D1

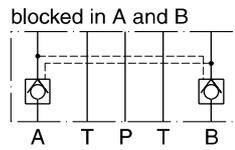
Order No. 098-91018-0



Series ZRE-B01-D1

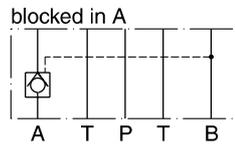
Order No. 098-91019-0

ZRE*02



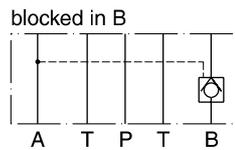
Series ZRE-AB02-E1

Order No. 098-91300-0



Series ZRE-A02-E1

Order No. 098-91298-0



Series ZRE-B02-E1

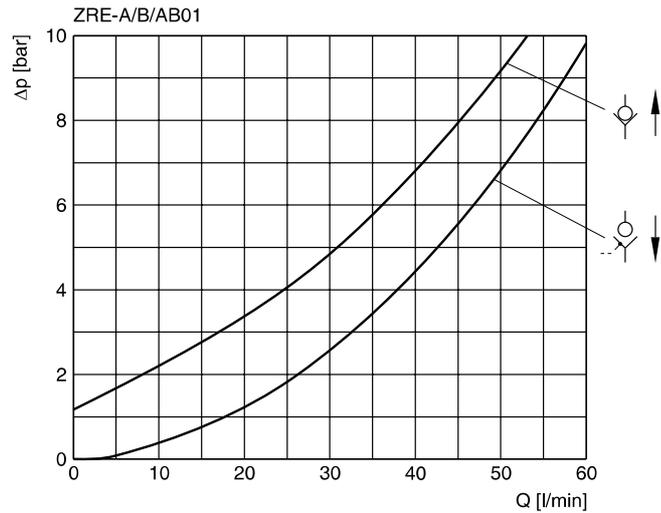
Order No. 098-91304-0

Technical data

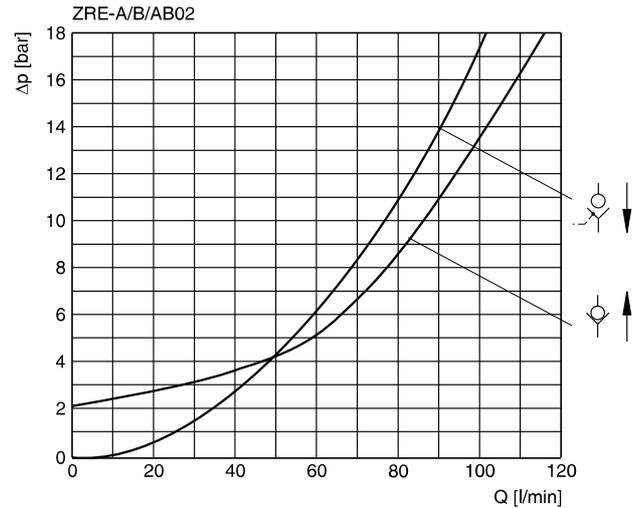
General		NG06	NG10
Size			
Mounting interface		DIN 24340 A6 ISO 4401 NFFPA D03	DIN 24340 A10 ISO 4401 NFFPA D05
		CETOP RP 121	
Mounting position		unrestricted	
Ambient temperature	[°C]	-20...+60	
MTTF _D value	[years]	150	
Weight	[kg]	1.2	3.1
Hydraulic			
Max. operating pressure	[bar]	up to 350	315
Nominal flow	[l/min]	60	120
Opening ratio (pilot cone / main cone)		1:6	1:6
Opening pressure	[bar]	1.2	2.0
Leakage		on request	
Fluid		Hydraulic oil according to DIN 51524	
Fluid temperature	[°C]	-20...+70 (NBR: -25...+70)	
Viscosity permitted	[cSt] / [mm ² /s]	20 ... 400	
Viscosity recommended	[cSt] / [mm ² /s]	30 ... 80	
Filtration		ISO 4406 (1999); 18/16/13	

p/Q performance curves

ZRE*01



ZRE*02

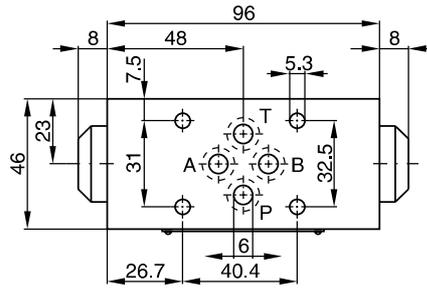


All characteristic curves measured with HLP46 at 50 °C.

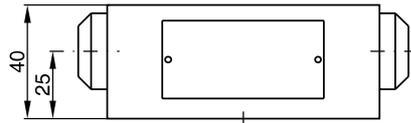
Dimensions

Dimensions

ZRE*01

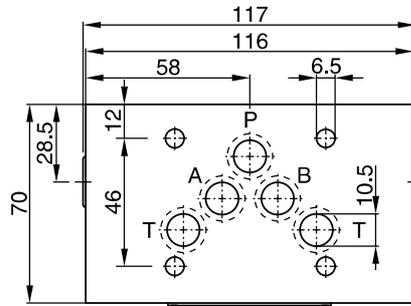


Seal kit	
Seal	Order code
1	098-91088-0
5	098-91089-0

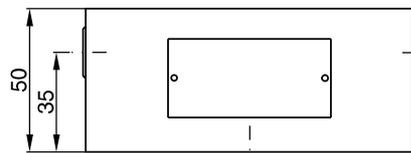


ZRE*02

7



Seal kit	
Seal	Order code
1	098-91090-0
5	098-91091-0



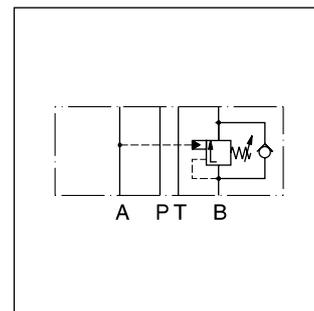
The counterbalance valve series ZNS controls the actuator movement at overrunning loads.

The return flow from the actuator is piloted and controlled by the inlet flow to the actuator, ensuring a cavitation-free lowering of the load.

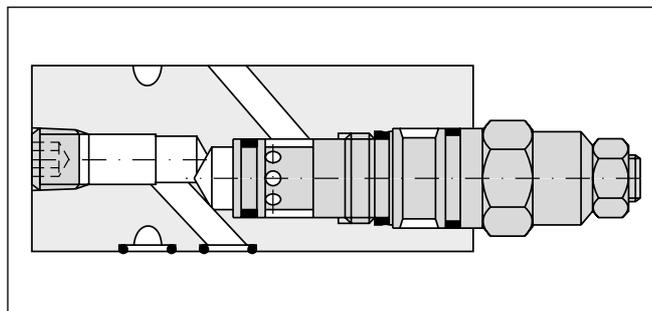
The counter balance valve operates as a pressure relief valve. The setting pressure is lowered by the pressure in the inlet line. To ensure safe load holding the setting pressure should be approximately 30 % higher than the max. load pressure.



ZNS-AB01



ZNS-B01



ZNS-B01

Features

- Controlled movement loads
- Load holding via leak-free poppet valve
- Secondary relief protection for the actuator
- ZNS*01 – NG06 (CETOP 03)
ZNS*02 – NG10 (CETOP 05)

Ordering code

ZNS				S0	D	
Counterbalance valve	Pressure control	Nominal size	Pressure stages	Hexagon screw with lock nut	Design series	Seal

Code	Pressure control
A	in A
B	in B
AB	in A and B

Code	Nominal size
01	NG06
02	NG10

Code	Seal
1	NBR
5	FPM

Code	Pressure stages
2	70 - 175 bar
5 ¹⁾	140 - 350 bar

¹⁾ NG10 to 315 bar.

Ordering code details

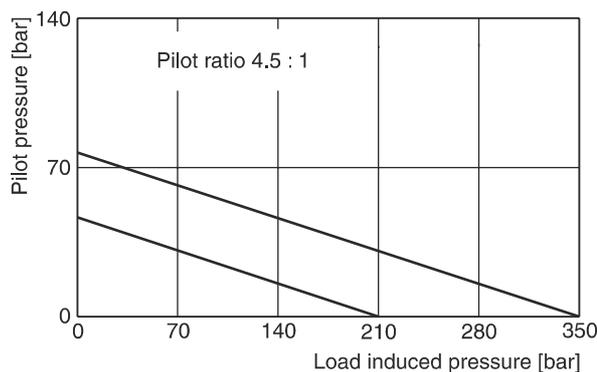
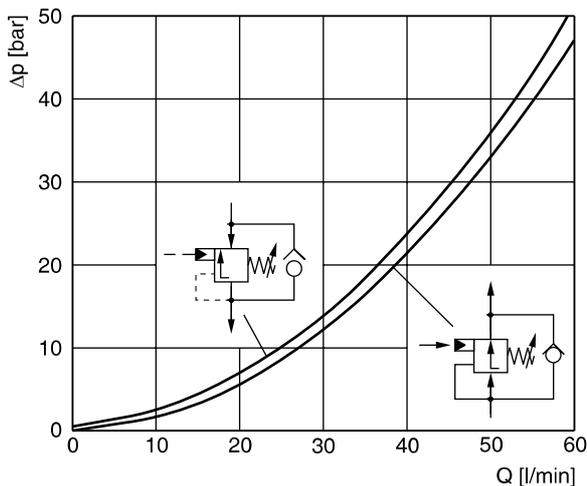
	ZNS*01		ZNS*02	
Counterbalance in A	Series ZNS-A01-2-S0-D1 ZNS-A01-5-S0-D1	Order no. 098-91126-0 098-91127-0	Series ZNS-A02-2-S0-D1 ZNS-A02-5-S0-D1	Order no. 098-91132-0 098-91133-0
Counterbalance in B	Series ZNS-B01-1-S0-D1 ZNS-B01-5-S0-D1	Order no. 098-91128-0 098-91129-0	Series ZNS-B02-1-S0-D1 ZNS-B02-5-S0-D1	Order no. 098-91134-0 098-91135-0
Counterbalance in A and B	Series ZNS-AB01-1-S0-D1 ZNS-AB01-5-S0-D1	Order no. 098-91130-0 098-91131-0	Series ZNS-AB02-1-S0-D1 ZNS-AB02-5-S0-D1	Order no. 098-91136-0 098-91137-0
		2 = 70 ... 175 bar 5 = 140... 350 bar		2 = 70 ... 175 bar 5 = 140 ...315 bar

Technical data

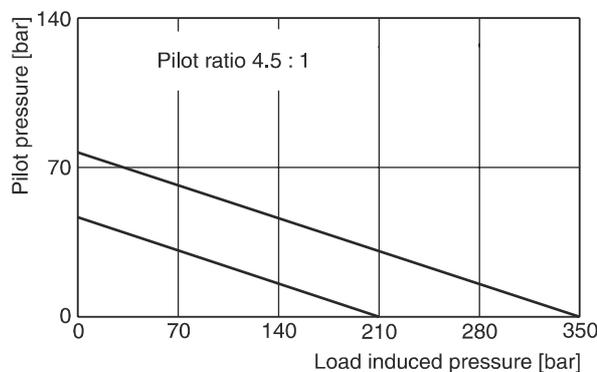
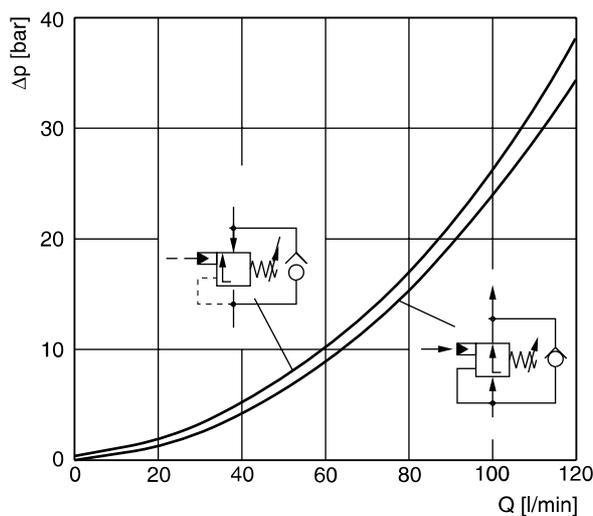
General			
Size		NG06	
Mounting interface		DIN 24340 A6 ISO 4401 NFFA D03	
Mounting position		unrestricted	
Ambient temperature	[°C]	-20...+60	
Weight	1 cartridge [kg]	1.3	1.6
	2 cartridges [kg]	3.0	3.9
Hydraulic			
Max. operating pressure	[bar]	350	315
Pressure stages	[bar]	175, 350	
Pilot ratio		4.5 : 1	
Leakage		on request	
Nominal flow	[l/min]	60	120
Opening pressure	[bar]	0.3	0.3
Fluid		Hydraulic oil according to DIN 51524	
Fluid temperature	[°C]	-20...+70 (NBR: -25...+70)	
Viscosity, permitted	[cSt] / [mm ² /s]	20 ... 400	
Viscosity, recommended	[cSt] / [mm ² /s]	30 ... 80	
Filtration		ISO 4406 (1999); 18/16/13	

p/Q performance curves

ZNS*01



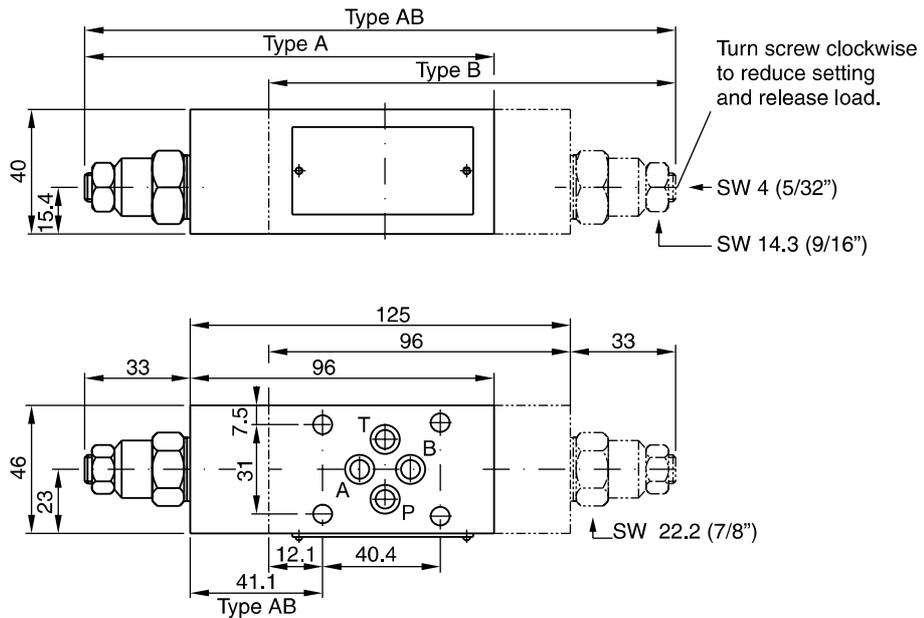
ZNS*02



All characteristic curves measured with HLP46 at 50 °C.

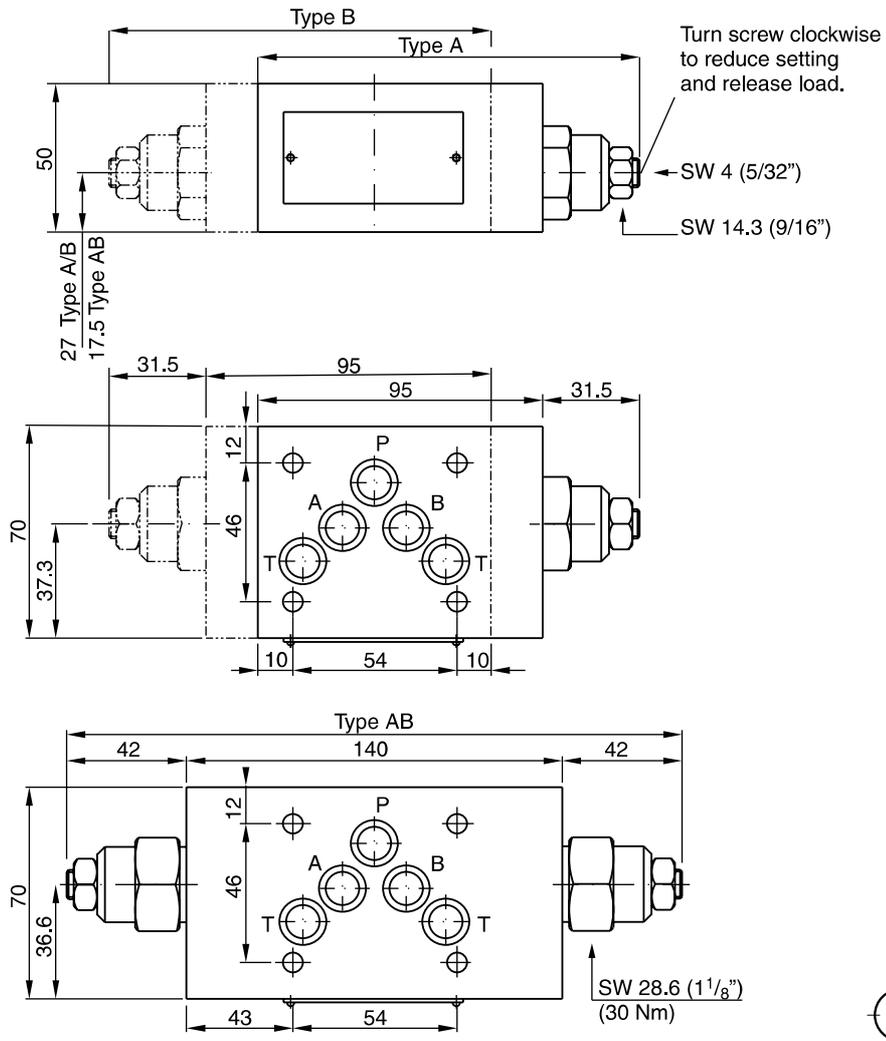
ZNS UK.indd 25.04.19

ZNS*01



Seal kit ZNS*01	
Seal	Order code
NBR	098-91153-0
FPM	098-91154-0
Complete cartridge ZNS*01	
Pressure stage	Order code
2	517-01017-2
5	517-00448-8

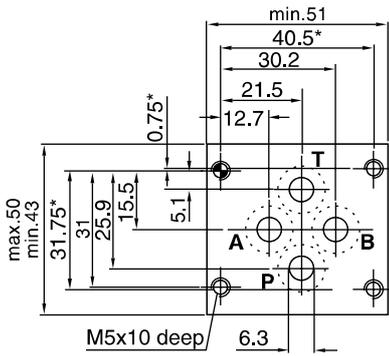
ZNS*02



Seal kit ZNS*02	
Seal	Order code
NBR	098-91155-0
FPM	098-91156-0
Complete cartridge ZNS*02	
Pressure stage	Order code
2	517-00449-8
5	517-00450-8

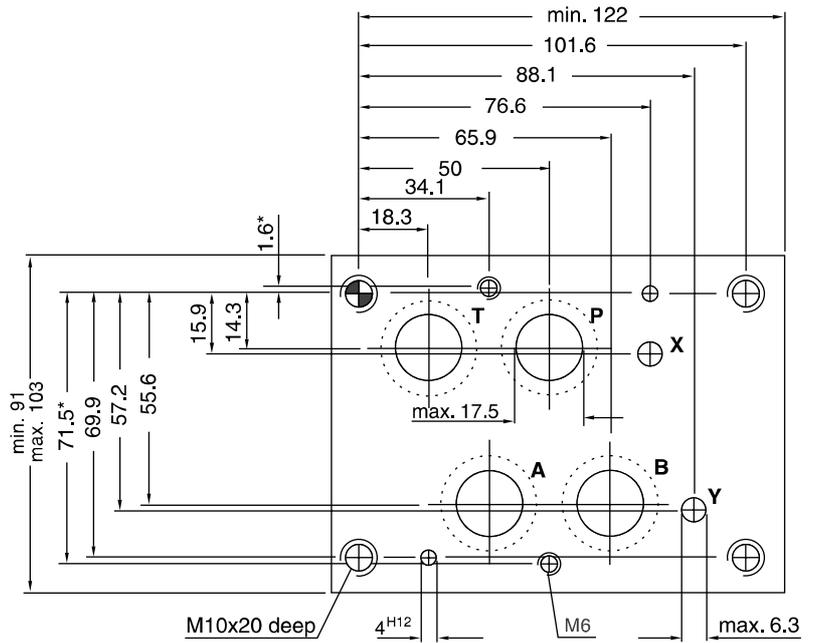
NG06

Code: ISO 4401-03-02-0-94



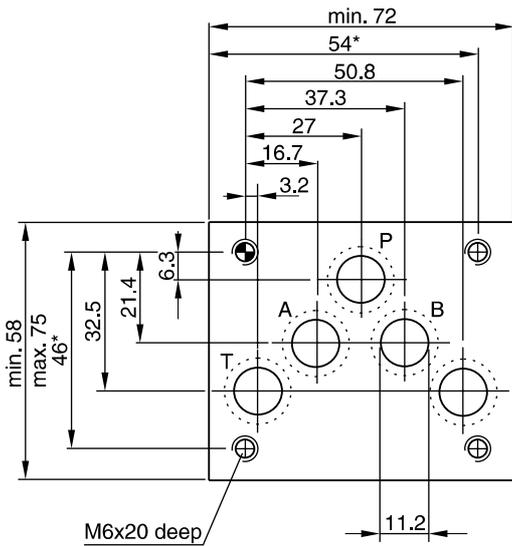
NG16

Code: ISO 4401-07-06-0-94



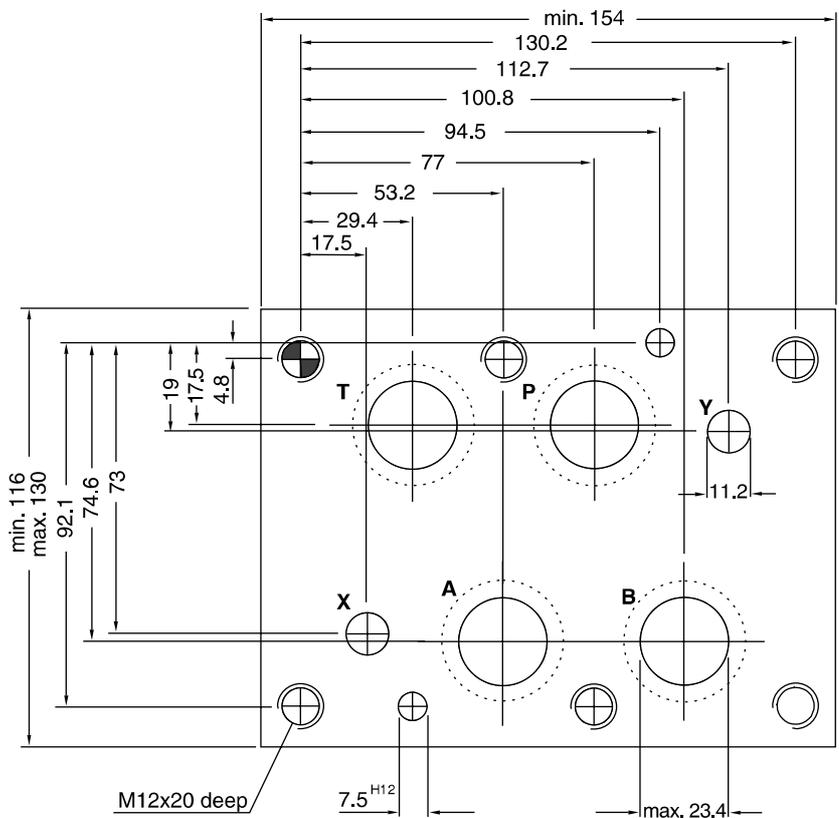
NG10

Code: ISO 4401-05-05-0-94



NG25

Code: ISO 4401-08-07-0-94 (Port diameter acc. to NFPA)



Dimensions marked with*: ± 0.1 mm.
 All other dimensions: ± 0.2 mm.

7

Mounting

Parker sandwich valves can be installed as desired. Each has a mounting pattern, whose dimensions correspond to the following standards.

- ISO 4401
- DIN 24430
- CETOP RP121
- NFPA

Mounting screws

Cylinder head bolts as per ISO 4762-12.9, or studs as per DIN 835 10.9 with cylindrical nuts are used to mount the height stacking Manapak sandwich valves.

Bolt kits and tie rods see chapter 12, "Accessories".

Length of the mounting screws

The screw length is the sum of the engagement depth plus the stacking length. The stud length is the sum of the stacking length plus the thread depth of the nut.

Torques

The mounting screws or studs must be tightened with the prescribed tightening torque so that safety and proper seal are ensured.

See chapter 12 "Accessories" for BK bolt kits and TK tie rod kits.

Threads length

Threads	M5	M6	M10	M12
thread length	1.5 x Ø thread			