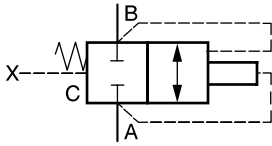


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Port identifications - graphics



Description

Depending on valve function and design, power ports A and B can be used for inlet or outlet.

The control port C is the connection between cover and cartridge unit.

Control ports

X control oil connection, inlet

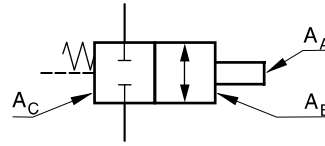
Y control oil connection, outlet

Further control ports

Z₁ control oil connection, preferred inlet

Z₂ control oil connection, preferred outlet

Control surfaces - graphics



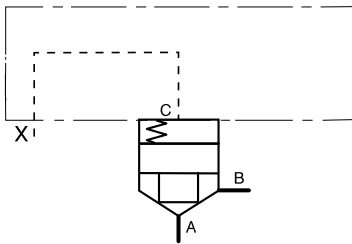
Description

A_A Area, which is subjected to the pressure at port A

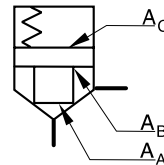
A_B Area, which is subjected to the pressure at port B

A_C Area, which is subjected to the pressure at port C

Port identifications - schematics

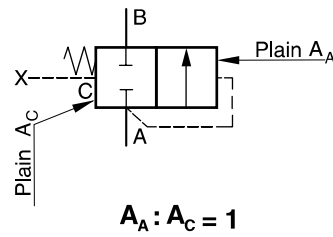
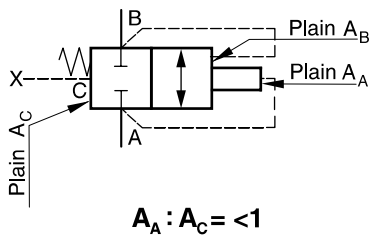


Control surfaces - schematics

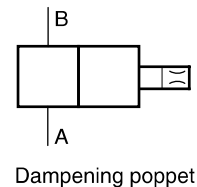
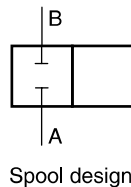
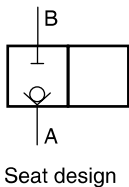


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Area representation

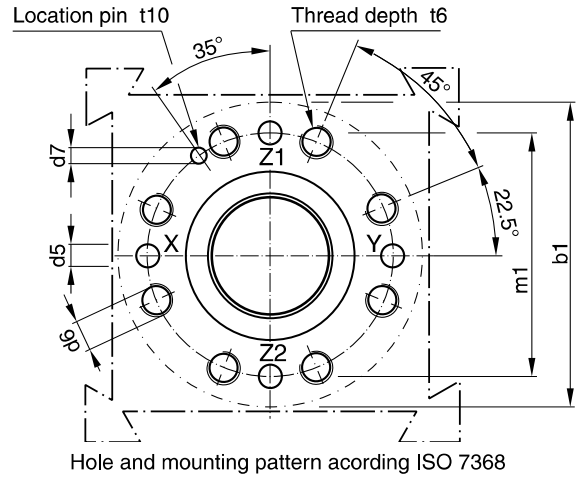
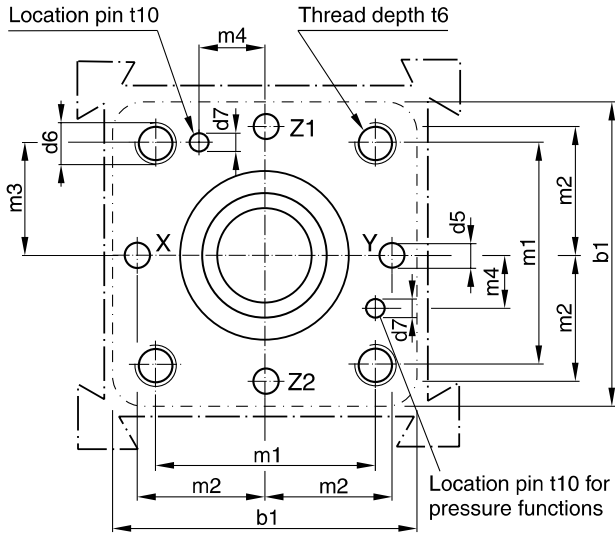


Design representation



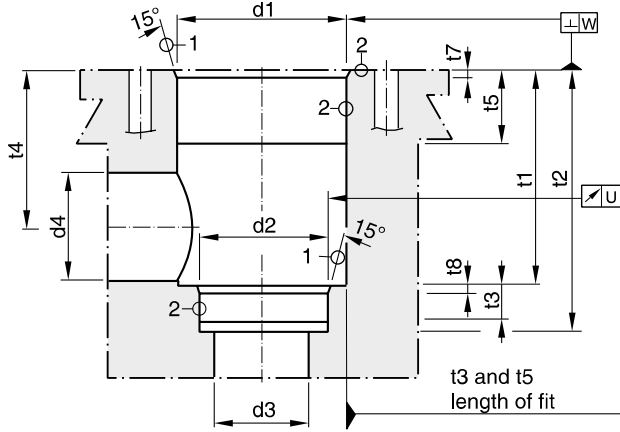
Code: ISO 7368-B*-*-2-A/B
NG16 to NG63

Code: ISO 7368-B*-*-2-A
NG80 to NG100



Required surface finish:

$$\textcircled{1} = \sqrt{R_{\max} 16}, \textcircled{2} = \sqrt{R_{\max} 8}$$



Cartridge manifold block series CB see chapter 12.

Nom. size	b1	d1 H7	d2 H7	d3	d3 max	d4	d4 max ¹⁾	d5 max	d6	d7 H13	m1±0.2	m2±0.2	m3±0.2
16	65	32	25	16	18	16	25	4	M 8	4	46	25	23
25	85	45	34	25	25.5	25	32	6	M 12	6	58	33	29
32	102	60	45	32	36	32	40	8	M 16	6	70	41	35
40	125	75	55	40	43	40	50	10	M 20	6	85	50	42.5
50	140	90	68	50	56	50	63	10	M 20	8	100	58	50
63	180	120	90	63	74	63	80	12	M 30	8	125	75	62.5
80	250	145	110	80	93	80	100	16	M 24	10	200	–	–
100	300	180	135	100	115	100	125	20	M 30	10	245	–	–

Nom. size	m4±0.2	t1+0.1	t2+0.1	t3	t4	t4 max ¹⁾	t5	t6	t7	t8	t10	U	W
16	10.5	43	56	11	34	29.5	20	20	2	2	10	0.03	0.05
25	16	58	72	12	44	40.5	30	25	2.5	2.5	10	0.03	0.05
32	17	70	85	13	52	48.0	30	35	2.5	2.5	10	0.03	0.1
40	23	87	105	15	64	59.0	30	45	3	3	10	0.05	0.1
50	30	100	122	17	72	65.5	35	45	4	3	10	0.05	0.1
63	38	130	155	20	95	86.5	40	65	4	4	10	0.05	0.2
80	–	175	205	25	130	120	40	50	5	5	10	0.05	0.2
100	–	210	245	29	155	142	50	53	5	5	10	0.05	0.2

¹⁾ Only together with d4_{max} and t4_{max}

Characteristics

2-way slip-in cartridge valves are hydraulically controlled seat valves that are designed for compact block installation. Slip-in cartridge, cover, and pilot system are valve elements that permit single and combined functions.

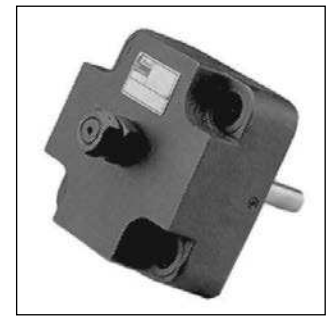
Series CE offers poppet and sleeve combinations for directional functions. Series CP offers a cartridge for pressure functions and has to be combined with corresponding covers.

Features

- Installation cavity and mounting pattern according to ISO 7368
- 5 poppet shapes
- 5 poppet springs
- Optional seal between ports B and C
- Cover with adjustable stroke limitation
- Cover with mounting pattern for pilot valve assembly
- Combinations for complex functions
- Normally open cartridge (CE*F*)



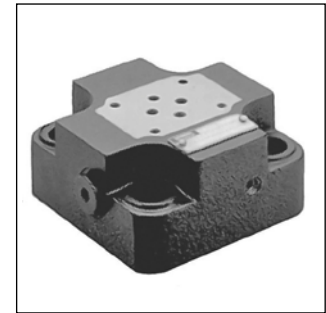
CE



C*B

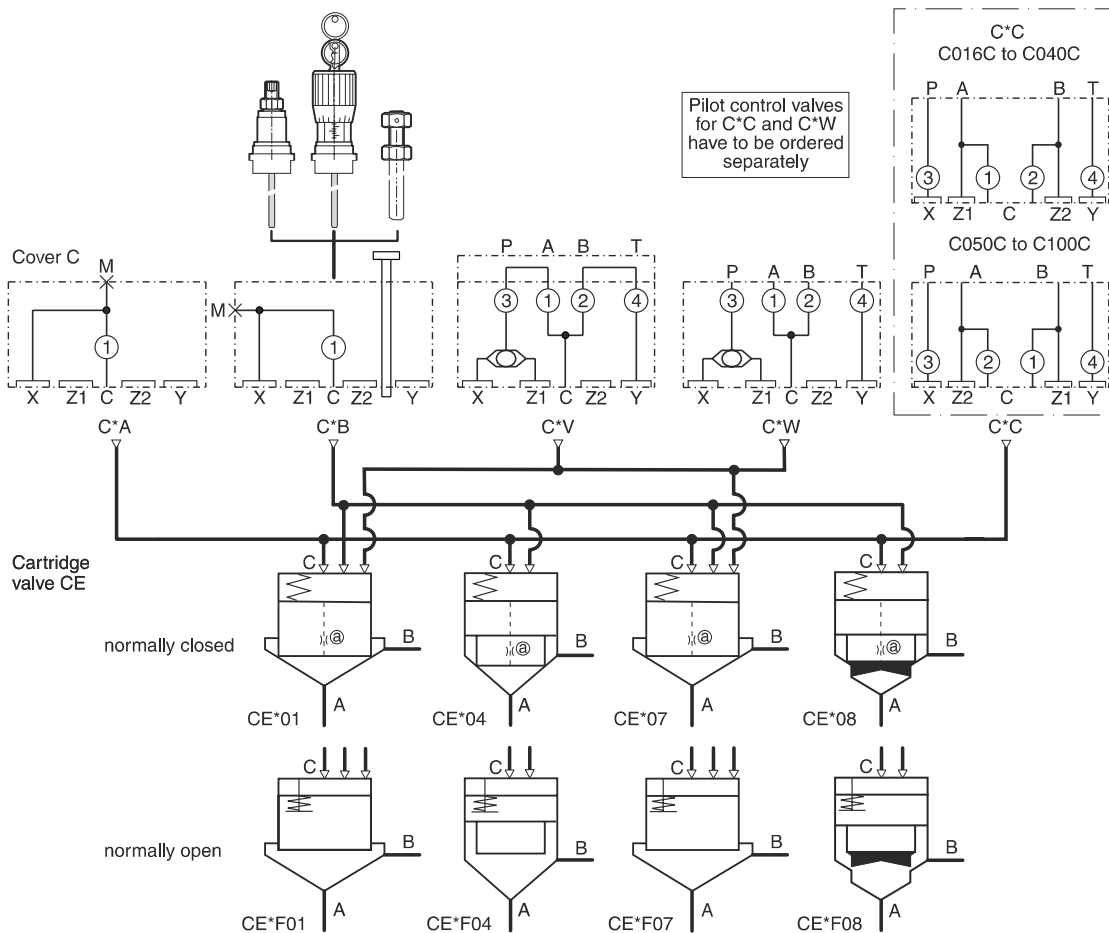


C*A

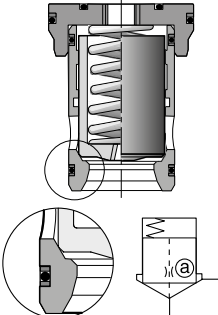
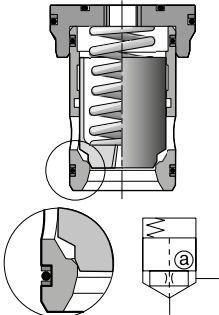
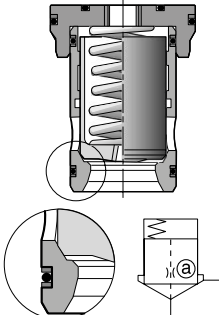
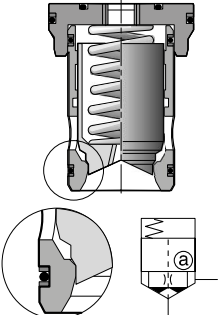


C*C

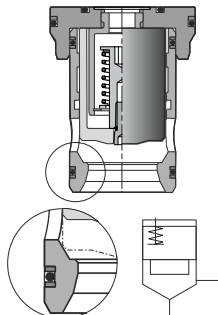
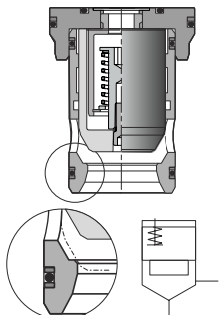
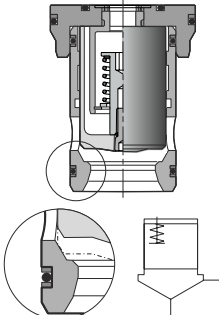
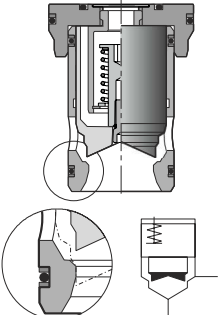
Pilot control for directional functions



Cartridge valve for directional function normally closed

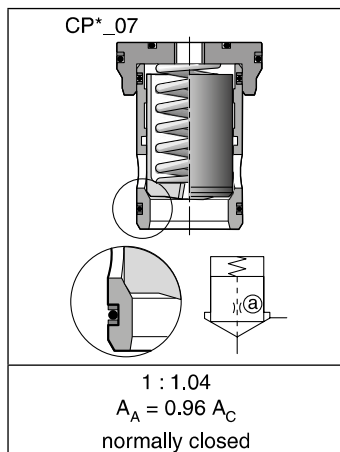
<p>CE*_01</p> 	<p>CE*_04</p> 	<p>CE*_07</p> 	<p>CE*_08</p> 
<p>1 : 1 $A_A = A_C$</p>	<p>1 : 1.67 $A_A = 0.6 A_C$ $A_B = 0.4 A_C$</p>	<p>1 : 1.04 $A_A = 0.96 A_C$</p>	<p>1 : 1.67 $A_A = 0.6 A_C$ $A_B = 0.4 A_C$ dampening poppet</p>

Normally open

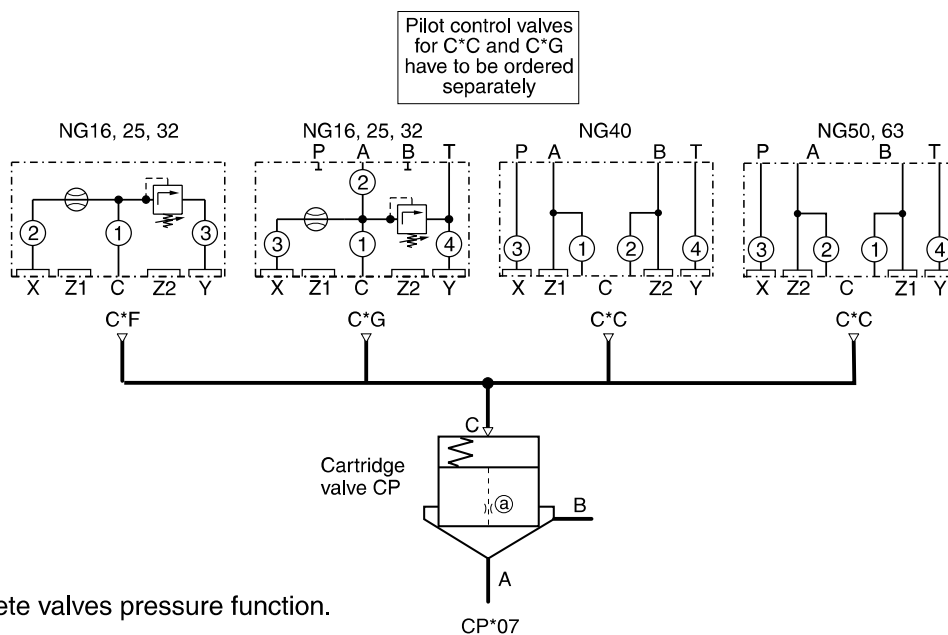
<p>CE*F01</p> 	<p>CE*F04</p> 	<p>CE*F07</p> 	<p>CE*F08</p> 
<p>1 : 1 $A_A = A_C$</p>	<p>1 : 1.67 $A_A = 0.6 A_C$ $A_B = 0.4 A_C$</p>	<p>1 : 1.04 $A_A = 0.96 A_C$</p>	<p>1 : 1.67 $A_A = 0.6 A_C$ $A_B = 0.4 A_C$ dampening poppet</p>

8

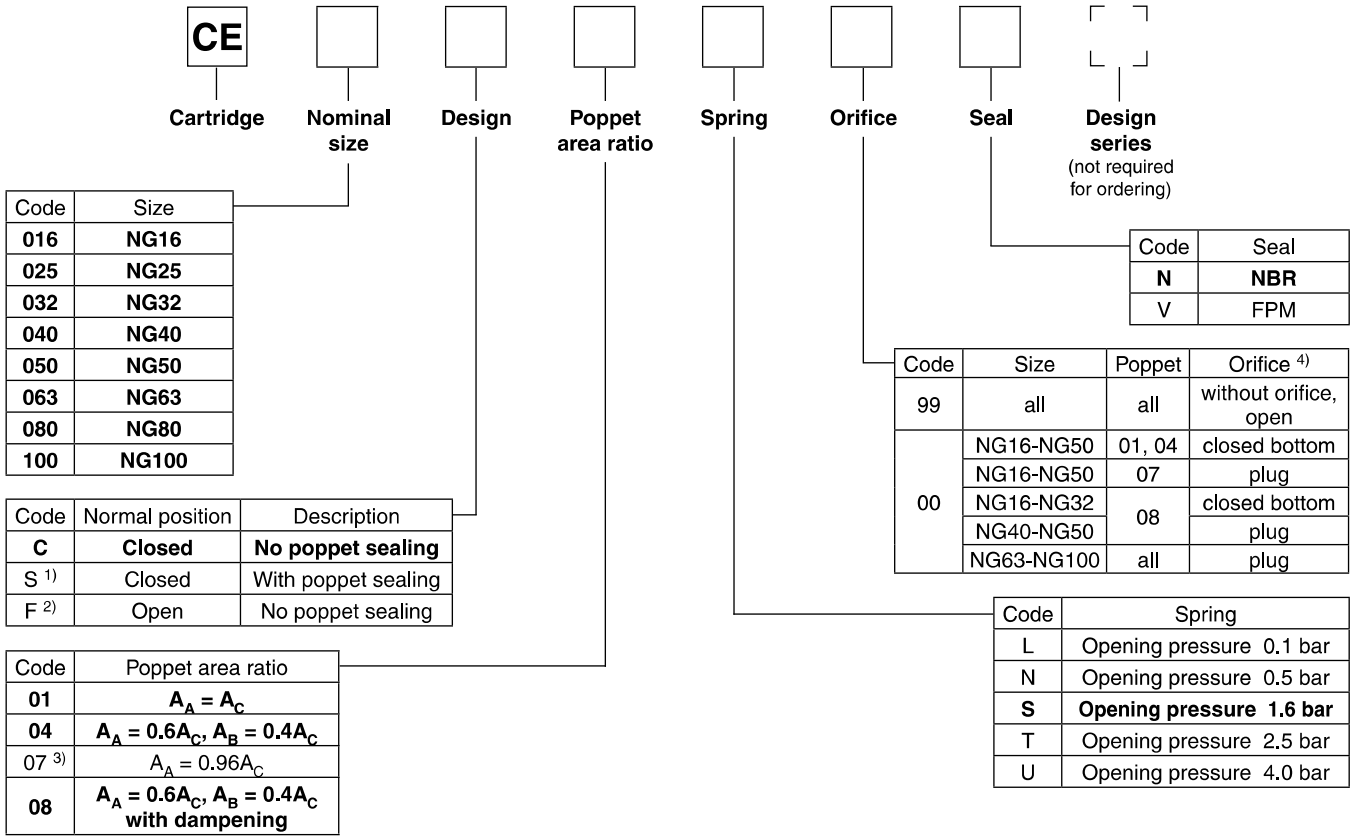
Cartridge valve for pressure function



Pilot control for pressure function

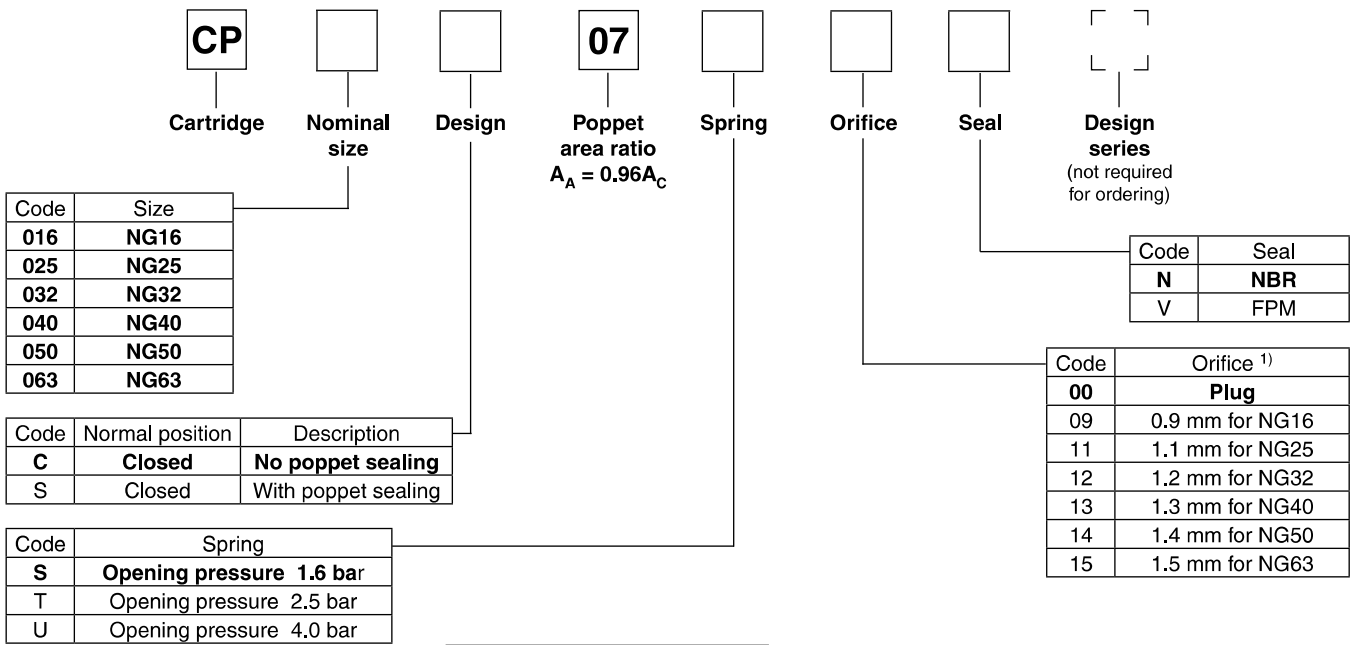


Characteristic curves see complete valves pressure function.



¹⁾ Only for spring S, T and U. Not for poppet code 01 (NG16 to NG63).
²⁾ Only with spring code L, only with closed bottom.
³⁾ Not for NG80 and NG100.
⁴⁾ Orifice size in 1/10 mm, eg. 1.2 mm orifice - code 12. Thread size 1/16 NPTF.

8



Bold letters =
Short-term availability

For spare parts see "Accessories" in this chapter.
 For orifice recommendations see "Combination Examples" in this chapter.

¹⁾ Recommended diameter.

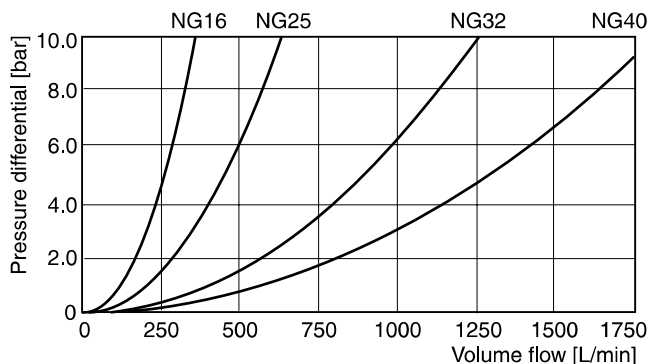


Technical data

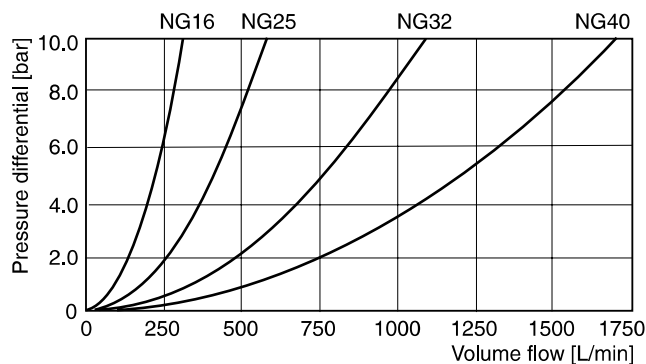
General											
Design type	2-way slip-in cartridge valves according to ISO 7368										
Actuation	hydraulic										
Mounting position	unrestricted										
Ambient temperature	[C°]	-20....+60									
MTTF _D value	[years]	150									
Nominal size		NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100		
Weight	cartridge	[kg]	0.3	0.6	1.1	1.7	3.7	7.1	12.8	27	
Hydraulic											
Operating pressure	without pilot valve	[bar]	420								
	port A, B, X, Z1, Z2	[bar]	350, 420 (depending on p _{max} of pilot valves)								
	port Y	[bar]	According to pilot system, max. 350 (depending on p _{max} of pilot valves)								
Nominal flow at Δp 5 bar	poppet 01, 04, 07	[l/min]	250	450	900	1350	1800	3600	5250	8000	
	poppet 08	[l/min]	230	400	800	1250	1625	3400	5000	7500	
Pilot volume requirement	at poppet 01	[cm ³]	2.0	6.5	10.2	17.4	34.5	77.4	190.1	342.6	
	at poppet 04		2.0	6.5	12.2	20.3	39.4	94.6	190.1	363.4	
	at poppet 07		2.0	6.5	10.2	17.4	34.5	77.4	—	—	
	at poppet 08		2.0	7.4	15.3	23.2	49.2	111.8	217.3	415.3	
Opening pressure	flow direction A → B	[bar]	Poppet 01 / 07		spring: L = 0.1	N = 0.5	S = 1.6	T = 2.5	U = 4.0		
			Poppet 04 / 08		spring: L = 0.2	N = 0.9	S = 2.7	T = 4	U = 6.6		
Opening pressure	flow direction B → A	[bar]	Poppet 01 / 07		not possible						
			Poppet 04 / 08		spring: L = 0.3	N = 1.3	S = 4.0	T = 6.3	U = 10.0		
Fluid	Hydraulic oil according to DIN 51524										
Fluid temperature		[C°]	-20...+70 (NBR: -25...+70)								
Viscosity,	permitted	[mm ² /s]	20...400								
	recommended	[mm ² /s]	30...80								
Filtration	ISO 4406 (1999); 18/16/13										

Performance curves (without spring and poppet seal, C-chamber unloaded)

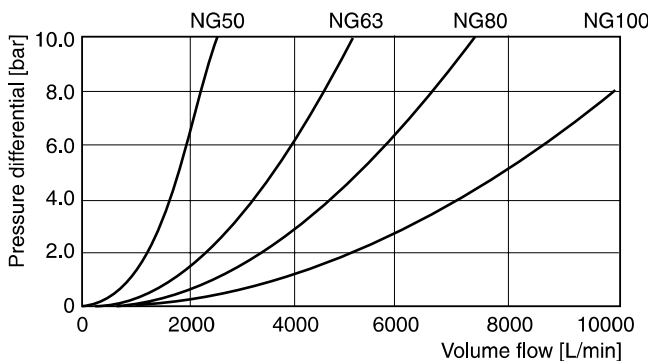
Poppet 01, 04, 07



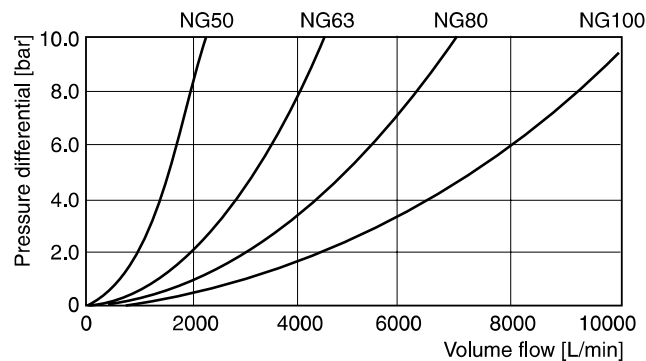
Poppet 08



Poppet 01, 04, 07



Poppet 08



All characteristic curves measured with HLP46 at 50 °C.

CE-C UK.INDD10.04.19



Ordering Code / Dimensions

C

A
A

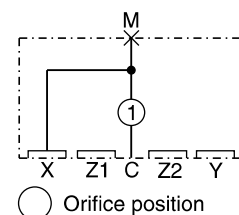
Cover **Nominal size** **Cover with X-connection and gauge port G¹/₄"** **Without auxiliary function** **Orifice** **Seal** **Design series** (not required for ordering)

Code	Size
016	NG16
025	NG25
032	NG32
040	NG40
050	NG50
063	NG63
080	NG80
100	NG100

Code	Seal
N	NBR
V	FPM

Code	Orifice
99	Without orifice, open

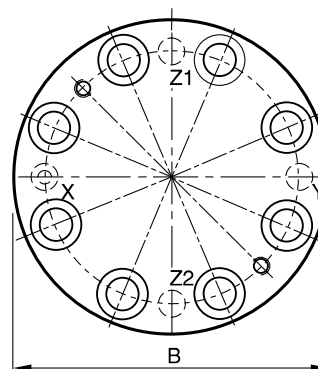
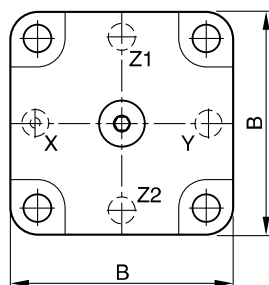
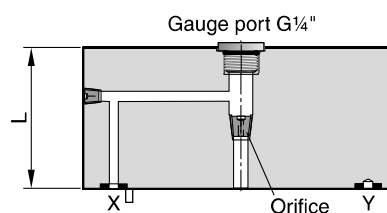
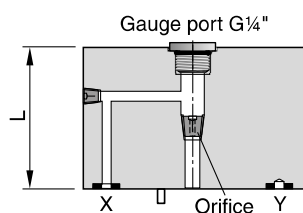
Bold letters = Short-term availability



For orifice recommendations, bolt and seal kits see "Accessories" in this chapter.

Dimensions NG16 to NG63

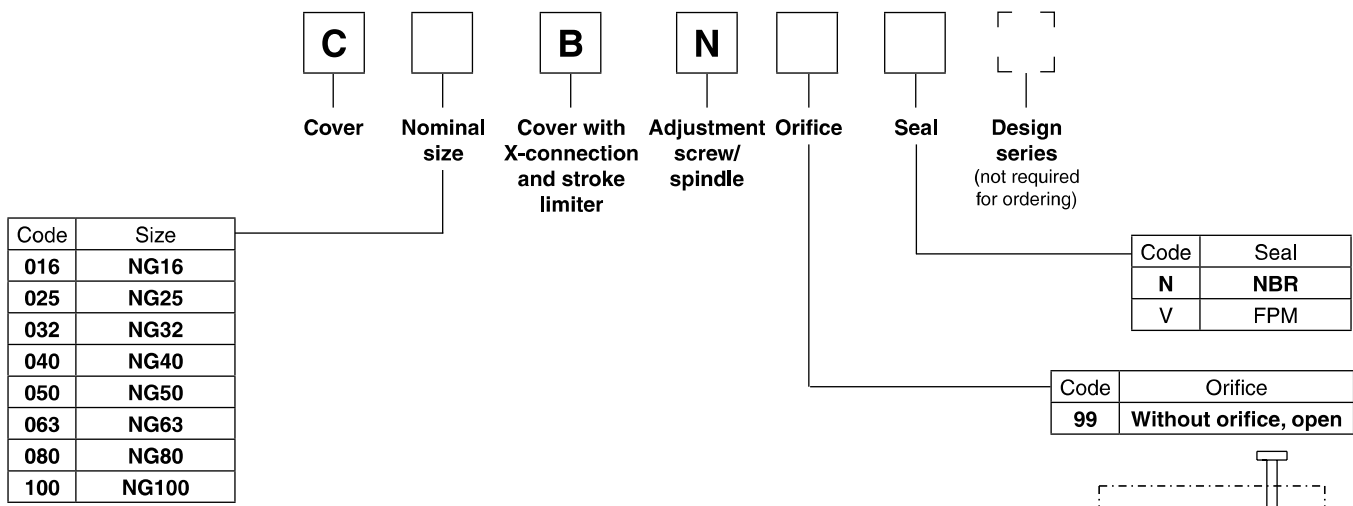
NG80 to NG100



Ports Y, Z1 and Z2: O-ring recess diameter on valve body

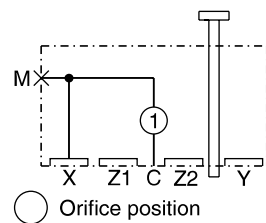
Size	B	L	Orifice thread	Weight [kg]
NG16	65	36	1/16 NPT	0.9
NG25	85	45	1/16 NPT	1.9
NG32	102	50	1/16 NPT	2.9
NG40	125	60	1/8 NPT	5.3
NG50	140	70	1/8 NPT	8.5
NG63	180	85	1/8 NPT	15.5
NG80	Ø 250	105	1/8 NPT	34
NG100	Ø 300	120	1/8 NPT	58

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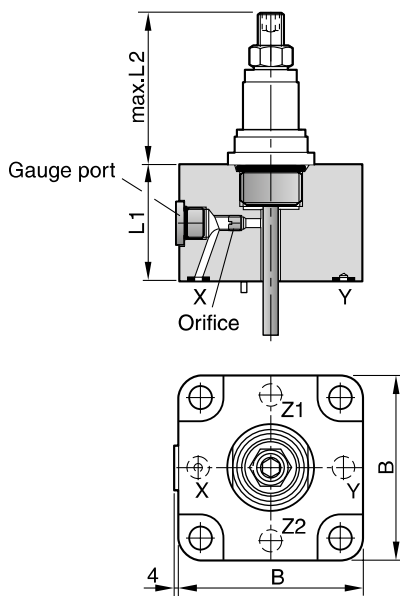


For orifice recommendations, bolt and seal kits see "Accessories" in this chapter.

Bold letters = Short-term availability



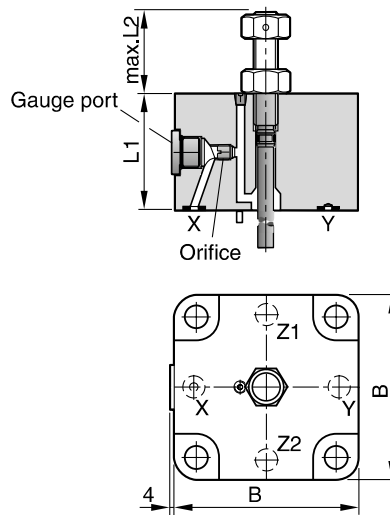
Dimensions NG16 - NG25



Ports Y, Z1 and Z2: O-ring recess diameter on valve body

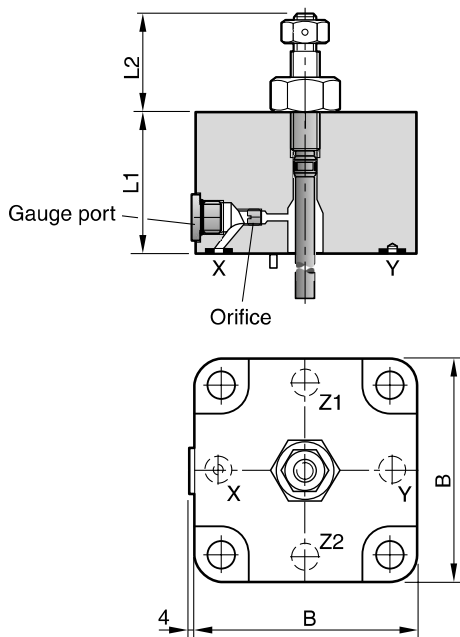
Size	B	L1	L2 max.	Gauge port	Orifice thread	Weight [kg]
NG16	65	36	72	G1/8"	M6	0.9
NG25	85	45	72	G1/4"	M6	1.9

Dimensions NG32 - NG50

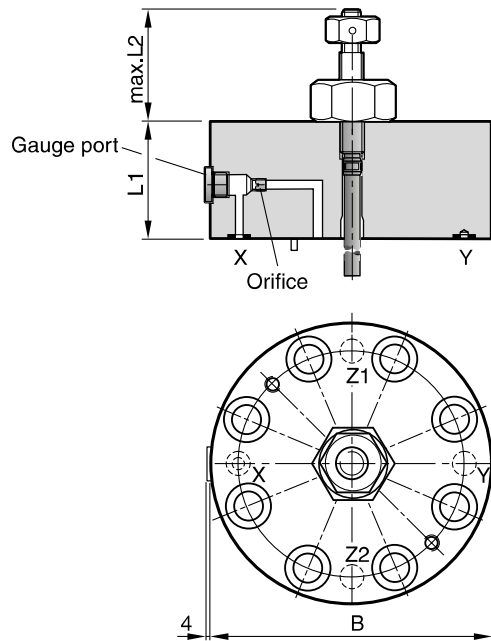


Ports Y, Z1 and Z2: O-ring recess diameter on valve body

Dimensions NG63



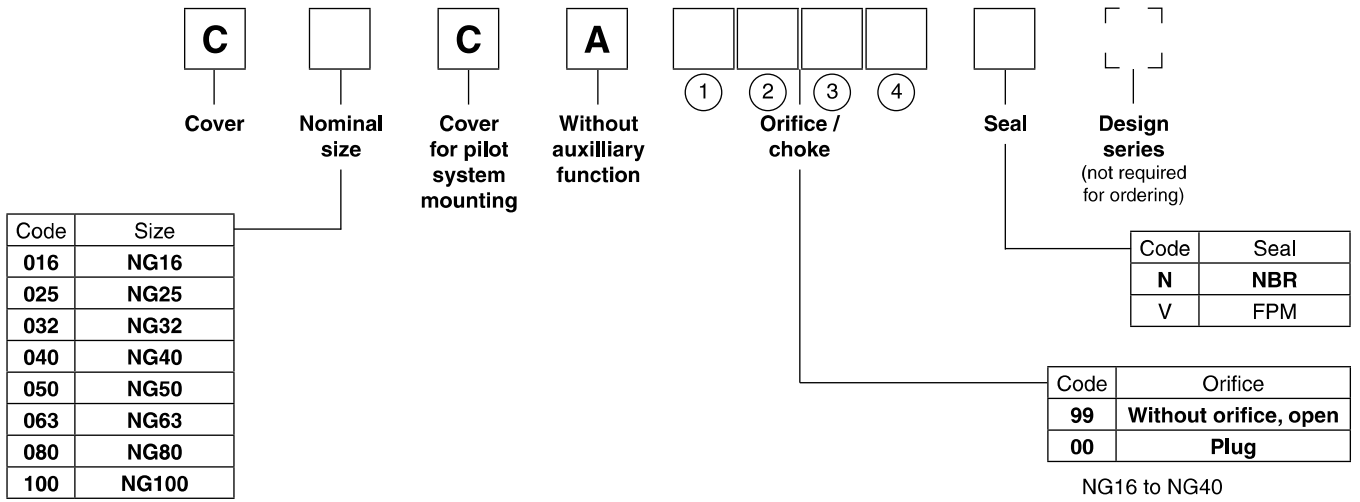
Dimensions NG80-100



Ports Y, Z1 and Z2: O-ring recess diameter on valve body

Size	B	L1	L2 max.	Gauge port	Orifice thread	Weight [kg]
NG32	102	50	48	G¼"	1/16 NPT	2.91
NG40	125	60	50	G¼"	1/16 NPT	5.39
NG50	140	70	50	G¼"	1/16 NPT	8.41
NG63	180	85	65	G¼"	1/8 NPT	15.1
NG80	Ø 250	105	95	G¼"	1/8 NPT	34.0
NG100	Ø 300	120	120	G¼"	1/8 NPT	60.0

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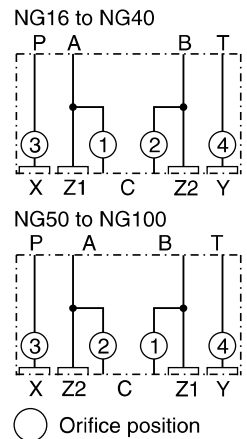
Attention:

For NG50 and larger:

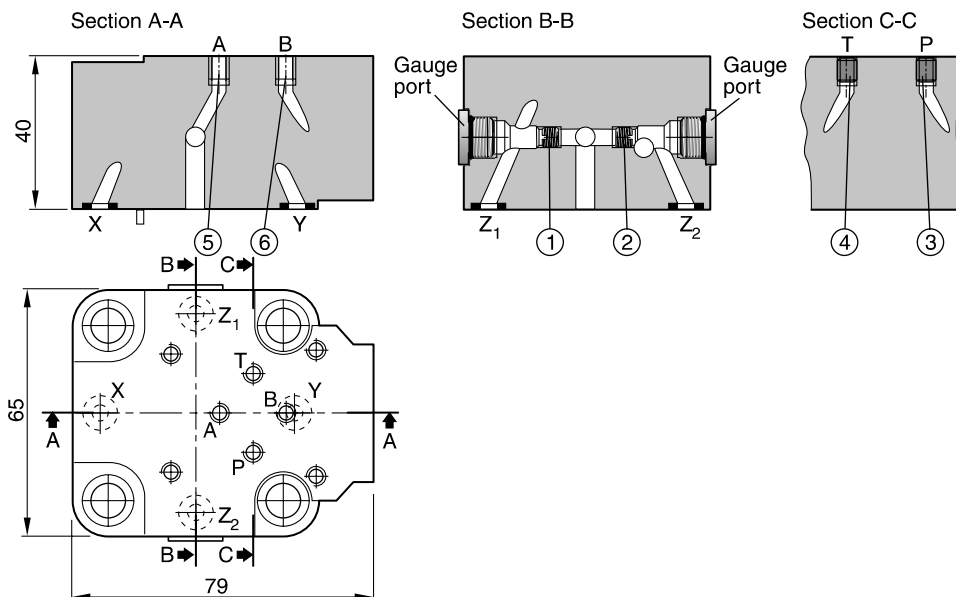
If pilot system NG06 should be used, mount adapter plate PADA 1007/A-B/B-A or PADA 1007/A-A/B-B (NG10 to NG06) see "Accessories" in this chapter.

For orifice recommendations, bolt and seal kits see "Accessories" in this chapter.

**Bold letters =
Short-term availability**

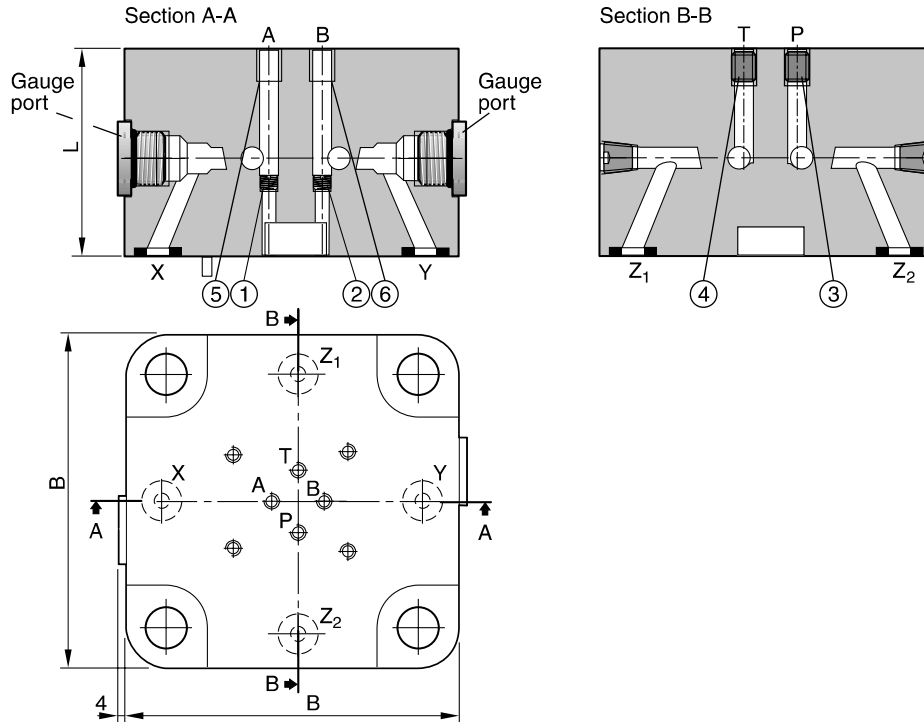


Dimensions NG16

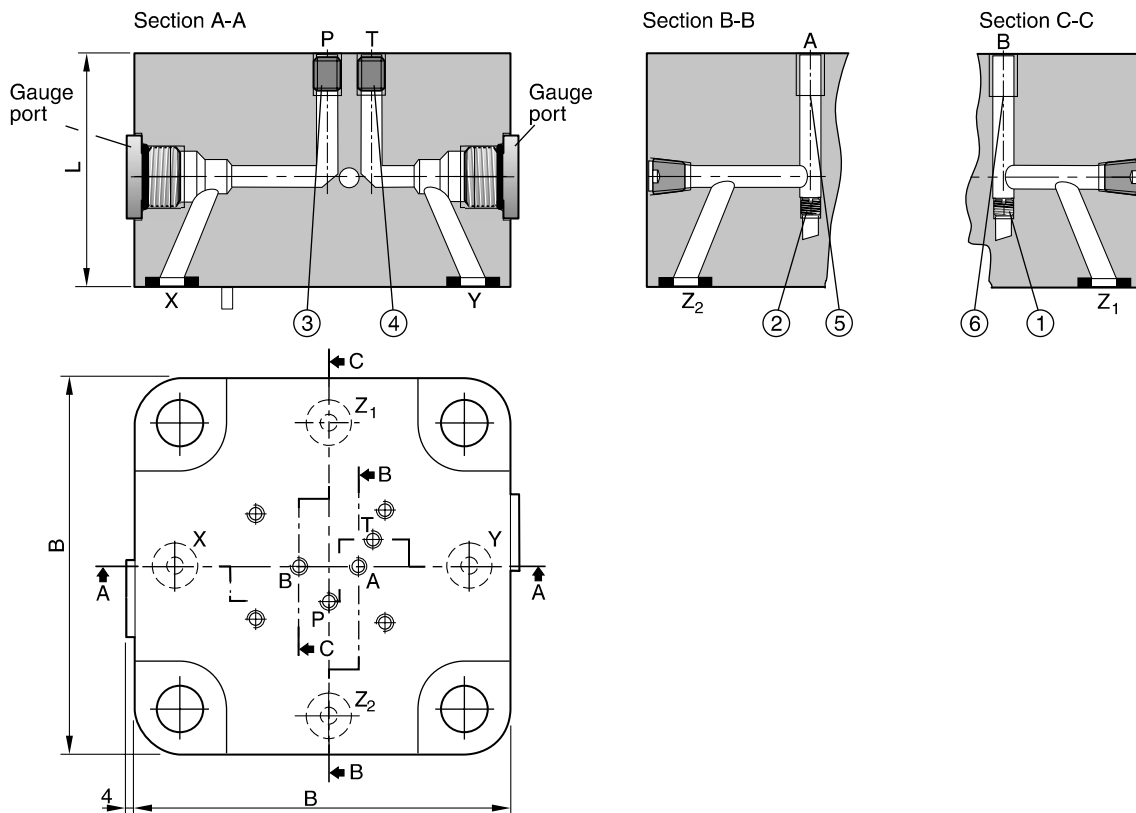


Dimensions

Dimensions NG25 to NG40



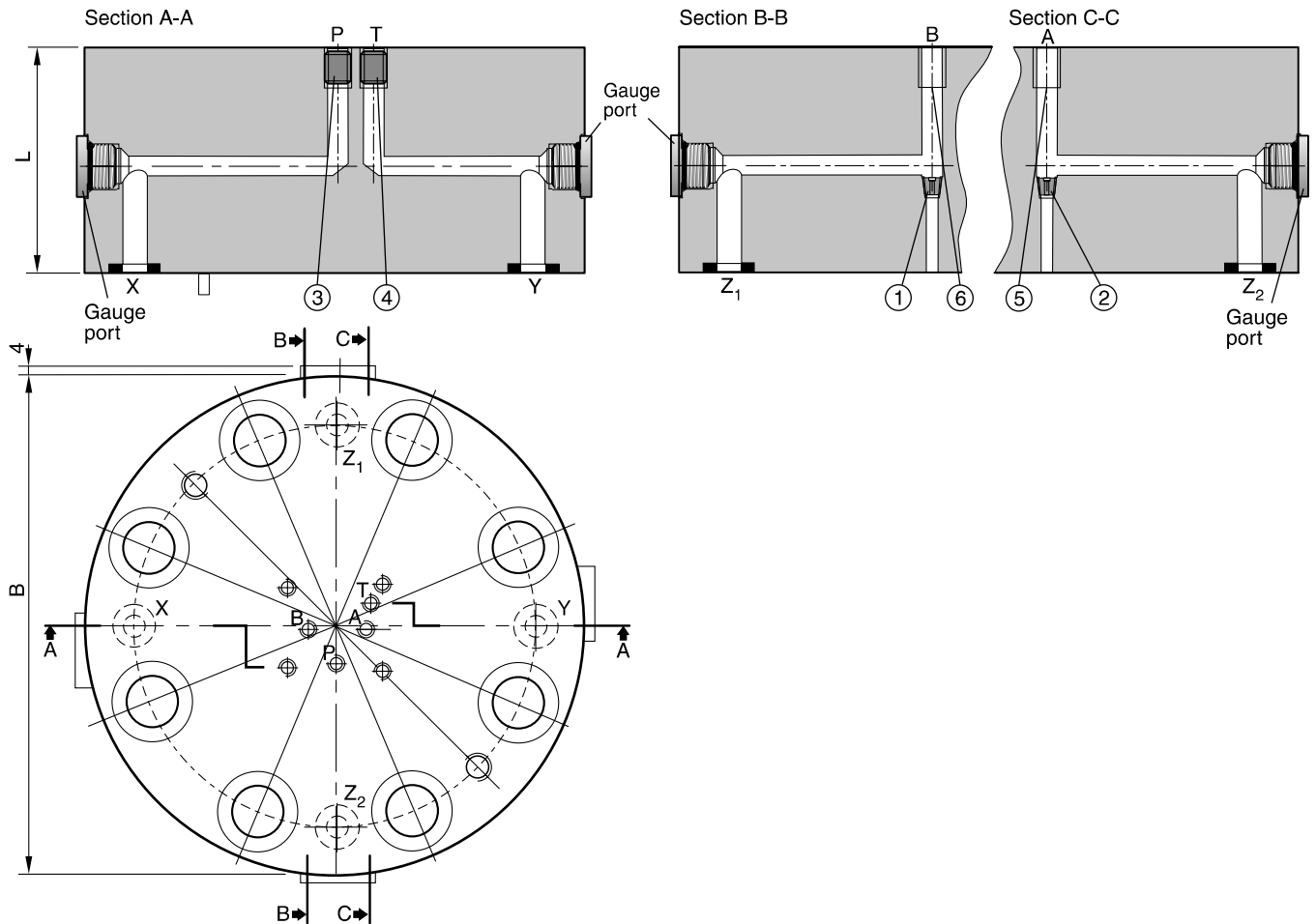
Dimensions NG50 to NG63



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Dimensions NG80 to NG100



Size	B	L	Gauge port	Weight [kg]	Orifice thread					
					①	②	③	④	⑤	⑥
NG16	79 ¹⁾	40	G 1/8"	1.0	M5	M5	M5	M5	M5	M5
NG25	85	45	G 1/4"	1.9	M5	M5	M6	M6	M6	M6
NG32	102	50	G 1/4"	2.9	M5	M5	M6	M6	M6	M6
NG40	125	60	G 1/4"	5.3	M5	M5	M6	M6	M6	M6
NG50	140	70	G 1/4"	8.5	M6	M6	M8	M8	M8	M8
NG63	180	85	G 1/4"	15.3	M6	M6	M8	M8	M8	M8
NG80	Ø 250	105	G 1/4"	34	1/16 NPT	1/16 NPT	1/8 NPT	1/8 NPT	1/8 NPT	1/8 NPT
NG100	Ø 300	120	G 1/4"	60	1/16 NPT	1/16 NPT	1/8 NPT	1/8 NPT	1/8 NPT	1/8 NPT

¹⁾ Width 65 mm.

Ordering Code / Dimensions

C		F			① ② ③		
Cover	Nominal size	Cover with pressure relief valve	Pressure range	Pressure adjustment	Orifice / choke	Seal	Design series (not required for ordering)

Code	Size
016	NG16
025	NG25
032	NG32

Code	Pressure range [bar]
07	75
10	105
17	175
21	210
25	250
35	350

Code	Adjustment
S	Hand knob (standard)
A	Acorn nut with lead seal
L	Cylinder lock

Code	Seal
N	NBR
V	FPM

Code	Orifice
99	Without orifice, open

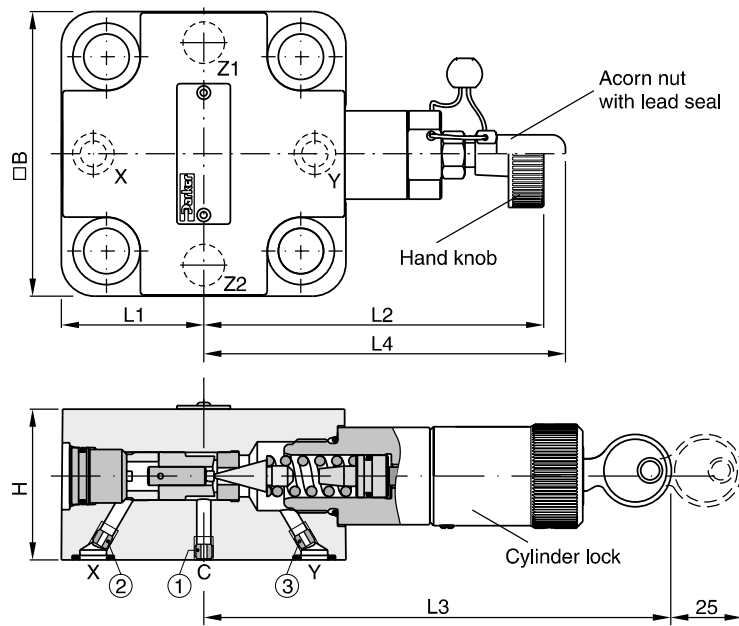
○ Orifice position

Bold letters = Short-term availability

For orifice recommendations, bolt and seal kits see "Accessories" in this chapter.

8

Dimensions



Ports Z1 and Z2: O-ring recess diameter on valve body

Size	B	H	L1	L2 max.	L3	L4	Orifice thread		
							①	②	③
NG16	65 ¹⁾	40	32.5	114	125.5	117	M5	M4	M5
NG25	85	45	42.5	102	114	105	M5	M5	M5
NG32	102	50	51	95	106	97.5	M6	M6	M6

¹⁾ Width 79 mm.

Ordering Code / Dimensions

C		G			① ② ③ ④		
Cover	Nominal size	Cover with pressure relief valve and pilot system mounting	Pressure range	Pressure adjustment	Orifice / choke	Seal	Design series (not required for ordering)

Code	Size
016	NG16
025	NG25
032	NG32

Code	Pressure range [bar]
07	75
10	105
17	175
21	210
25	250
35	350

Code	Adjustment
S	Hand knob (standard)
A	Acorn nut with lead seal
L	Cylinder lock

Code	Seal
N	NBR
V	FPM

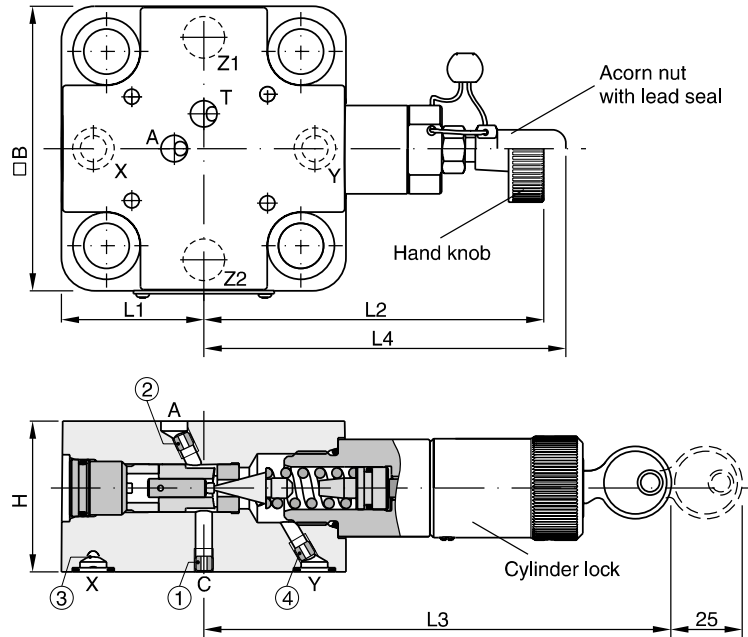
Code	Orifice
99	Without orifice, open

○ Orifice position

Bold letters = Short-term availability

For orifice recommendations, bolt and seal kits see "Accessories" in this chapter.

Dimensions



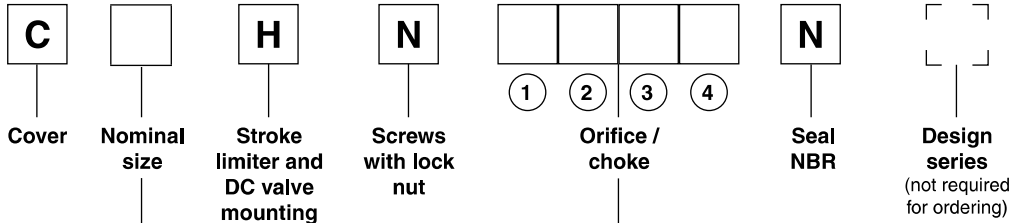
Ports Z1 and Z2: O-ring recess diameter on valve body

Size	B	H	L1	L2 max.	L3	L4	Orifice thread			
							①	②	③	④
NG16	65 ¹⁾	40	32.5	114	125.5	117	M5	M5	M4	M5
NG25	85	45	42.5	102	114	105	M5	M5	M5	M5
NG32	102	50	51	95	106	97.5	M6	M6	M6	M6

¹⁾ Width 79 mm.

Ordering Code / Dimensions

Ordering code



Code	Size
016	NG16
025	NG25
032	NG32
040	NG40
050	NG50
063	NG63
080	NG80
100	NG100

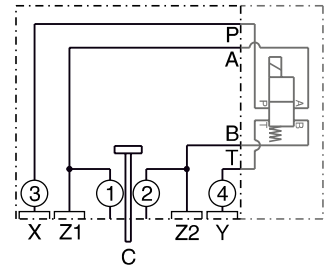
Code	Orifice
99	Without orifice, open
00	Plug

Attention:

For NG63, 80 and 100:

If pilot system NG06 should be used, mount adapter plate PADA 1007/A-B/B-A or PADA 1007/A-A/B-B (NG10 to NG06), see "Accessories" in this chapter.

For orifice recommendations, bolt and seal kits see "Accessories" in this chapter.

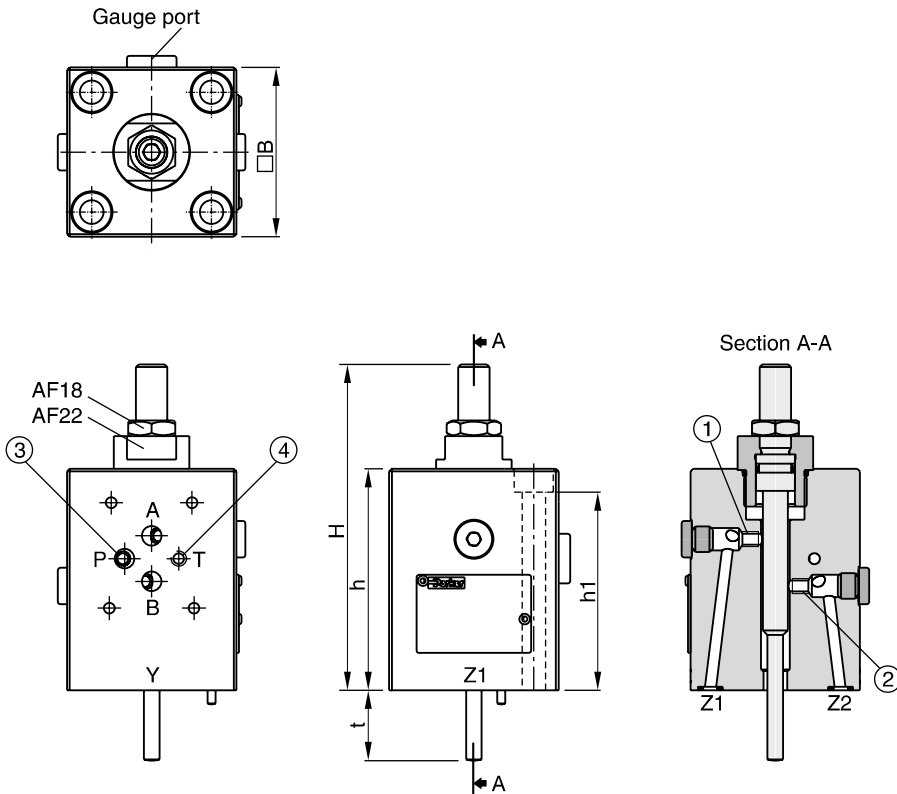


○ Orifice position

**Bold letters =
Short-term availability**

8

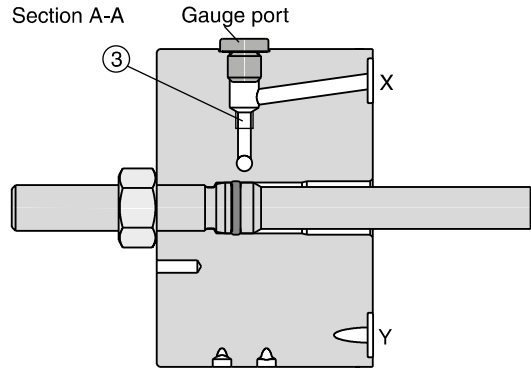
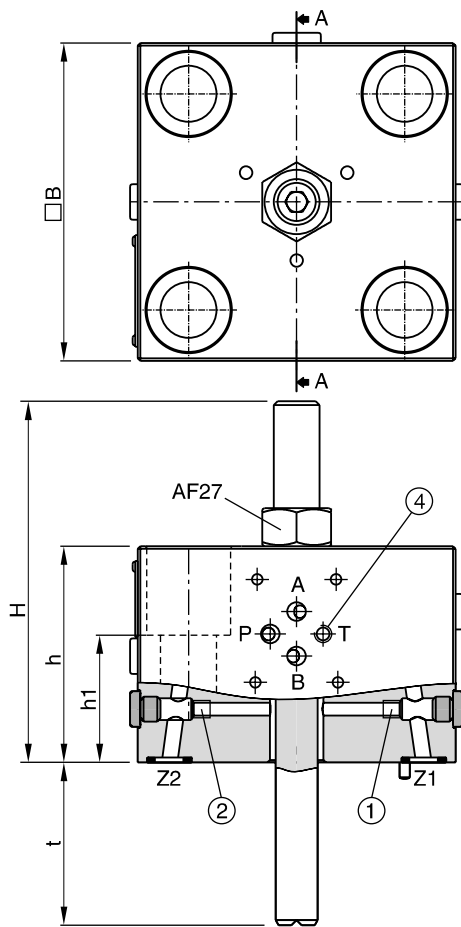
Dimensions NG16



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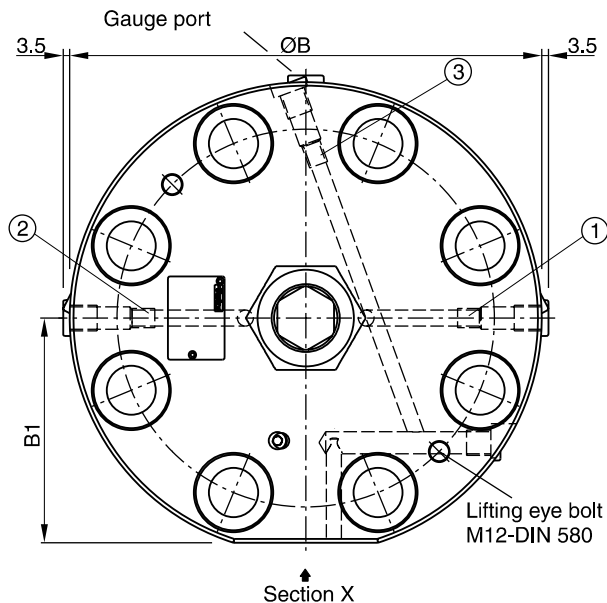
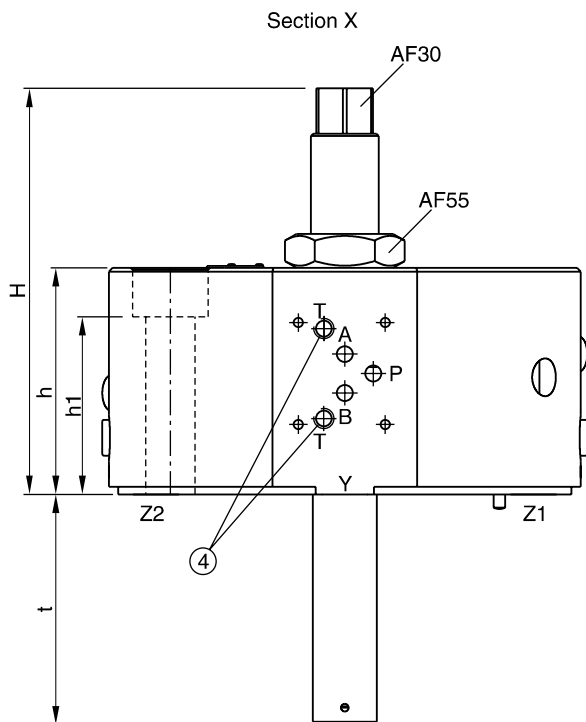


Dimensions NG25 to NG63



Dimensions

Dimensions NG80 to NG100

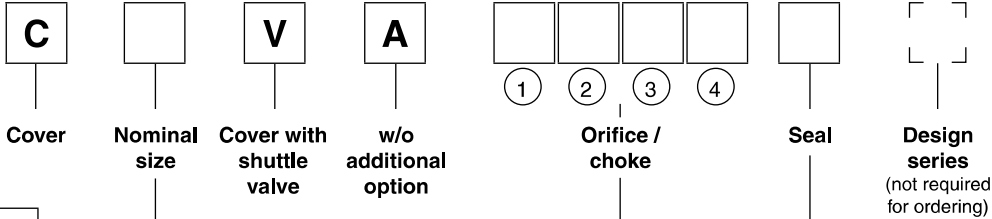


8

Size	B	B1	H	h	h1	t	Gauge port	Orifice thread			
								①	②	③	④
NG16	65	–	125	85	76	27	G1/4	M5	M5	M5	M5
NG25	85	–	114	85	70	36.5	G1/4	M6	M6	M6	M6
NG32	102	–	132.5	85	56	47.5	G1/4	M6	M6	M6	M6
NG40	125	–	142	85	50	64	G1/4	M6	M6	M6	M6
NG50	140	–	147.5	85	60	72.5	G1/4	M8	M8	M8	M8
NG63	180	–	161	110	75	90	G1/4	M8	M8	M8	M8
NG80	Ø 250	119	215	120	94	122	G1/4	1/8 NPT	1/8 NPT	1/8 NPT	1/8 NPT
NG100	Ø 300	144	240	120	85	145	G1/4	1/8 NPT	1/8 NPT	1/8 NPT	1/8 NPT

Ordering Code / Dimensions

Ordering code



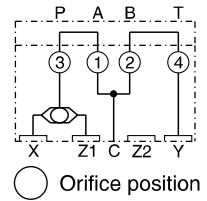
Code	Size
016	NG16
025	NG25
032	NG32
040	NG40
050	NG50
063	NG63

Bold letters = Short-term availability

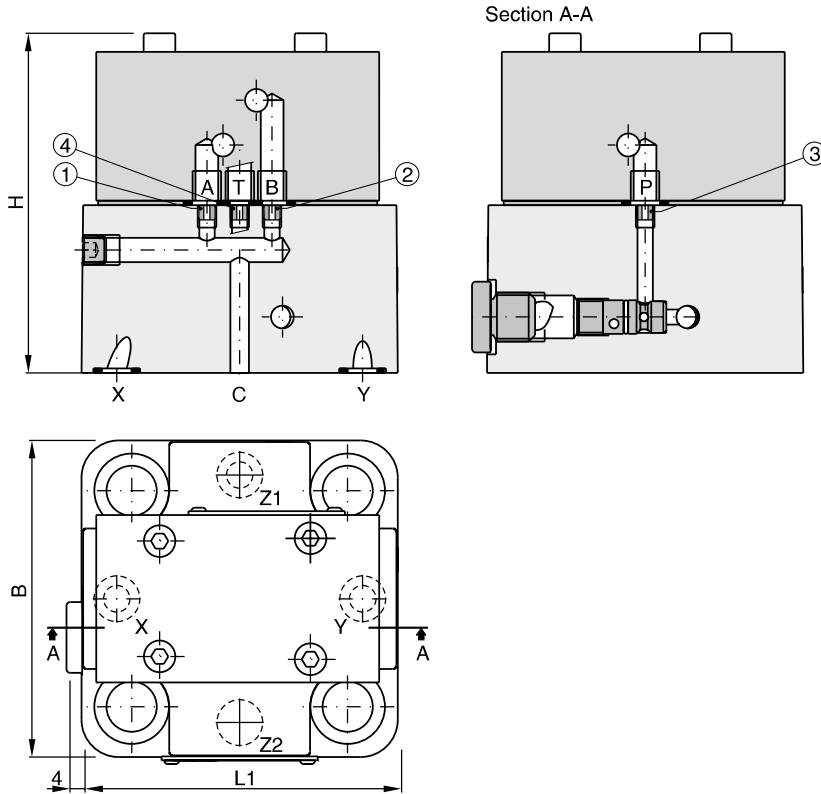
Code	Seal
N	NBR
V	FPM

Code	Orifice
99	Without orifice, open

For orifice recommendations, bolt and seal kits see "Accessories" in this chapter.



Dimensions



Port Z2: O-ring recess diameter on valve body



Size	B	H	L1	Orifice thread			
				①	②	③	④
NG16	65	86.5	85	M5	M5	M5	M5
NG25	85	91.5	85	M5	M5	M5	M5
NG32	102	96.5	102	M5	M5	M5	M5
NG40	125	106.5	125	M6	M6	M6	M6
NG50	140	126.5	140	M8	M8	M8	M8
NG63	180	141	180	M8	M8	M8	M8

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Ordering Code / Dimensions

C		W	A
Cover	Nominal size	Cover with shuttle valve and pilot system mounting	w/o additional option

①	②	③	④
Orifice / choke			

Seal	

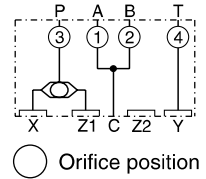
Design series (not required for ordering)	
Code	Seal
N	NBR
V	FPM

Code	Orifice
99	Without orifice, open

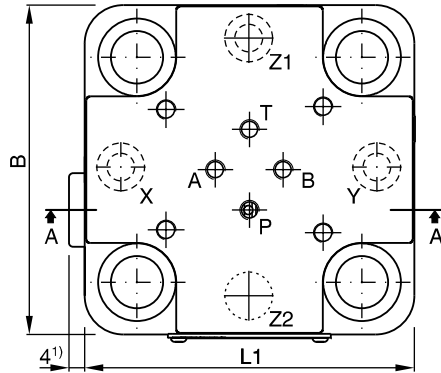
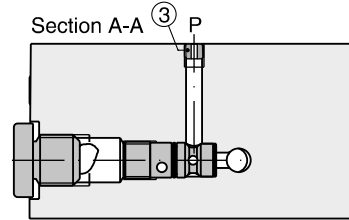
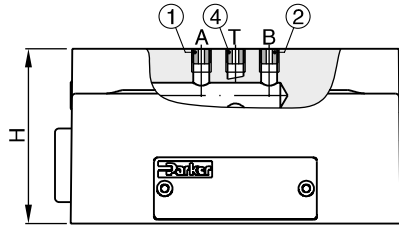
Code	Size
016	NG16
025	NG25
032	NG32
040	NG40
050	NG50
063	NG63

**Bold letters =
Short-term availability**

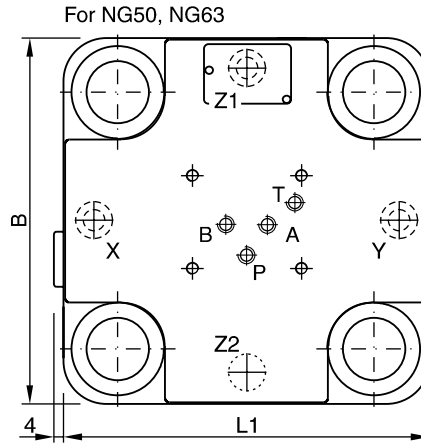
For orifice recommendations, bolt and seal kits see "Accessories" in this chapter.



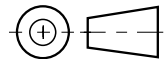
Dimensions



¹⁾ 2.5 mm at NG16

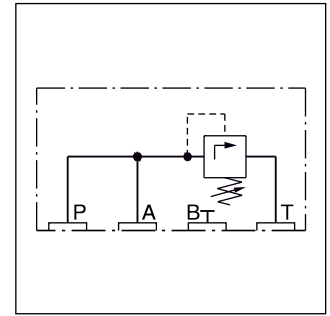


Port Z2: O-ring recess diameter on valve body

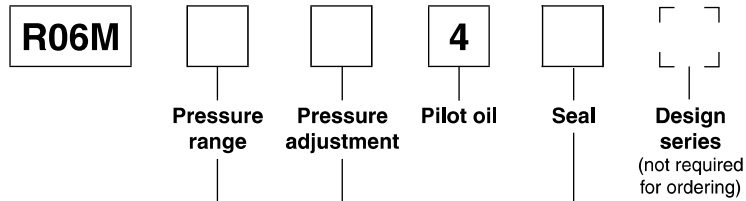


Size	B	H	L1	Orifice thread			
				①	②	③	④
NG16	65	40	77.5	M5	M5	M5	M5
NG25	85	45	85	M5	M5	M5	M5
NG32	102	50	102	M5	M5	M5	M5
NG40	125	60	125	M6	M6	M6	M6
NG50	140	70	140	M8	M8	M8	M8
NG63	180	85	180	M8	M8	M8	M8

Pilot valve with pressure relief function R06M, sub-plate mounting NG06, see combination examples. MTTF_D value 150 years, flow rate maximum 5 l/min.



Ordering code



Code	Pressure range [bar]
10	105
17	175
21	210
25	250
35	350

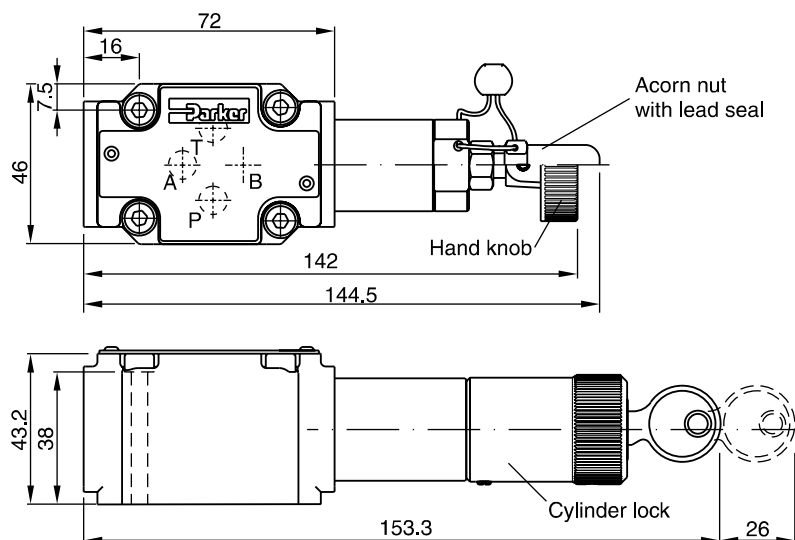
Code	Seal
N	NBR
V	FPM

Code	Adjustment
S	Hand knob (standard)
A	Acorn nut with lead seal
L	Cylinder lock

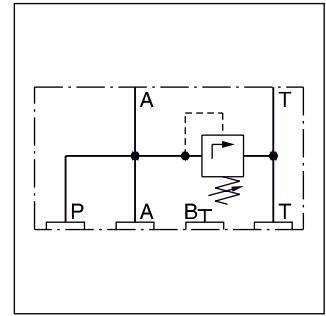
Bold letters = Short-term availability

8

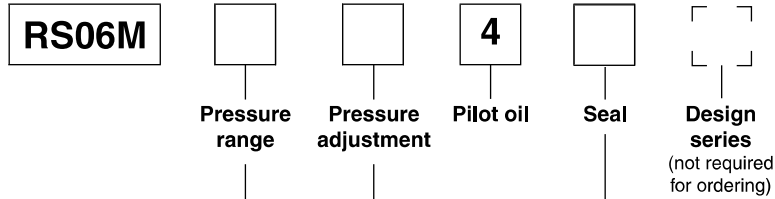
Dimensions



Pilot valve with pressure relief function RS06M, sandwich plate mounting NG06, see combination examples. MTTF_D value 150 years, flow rate maximum 5 l/min.



Ordering code



Code	Pressure range [bar]
10	105
17	175
21	210
25	250
35	350

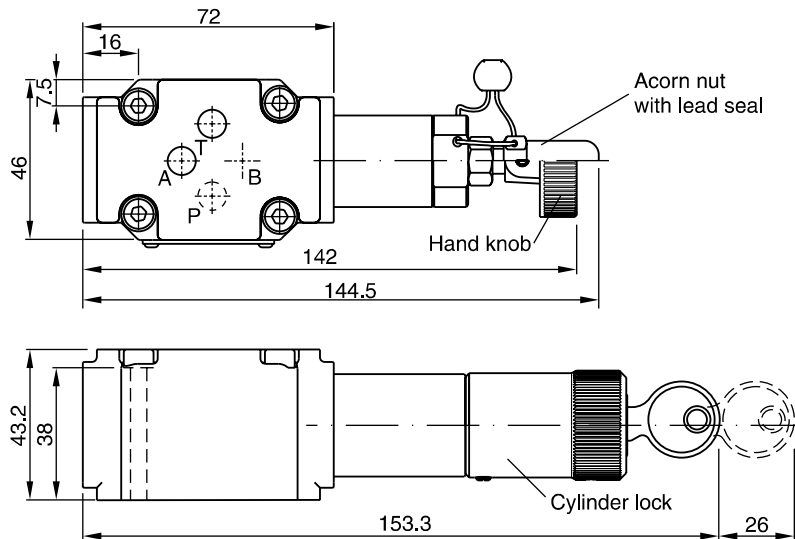
Code	Seal
N	NBR
V	FPM

Code	Adjustment
S	Hand knob (standard)
A	Acorn nut with lead seal
L	Cylinder lock

**Bold letters =
 Short-term availability**

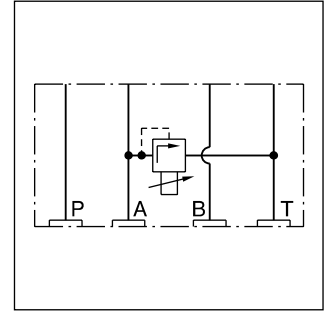
8

Dimensions

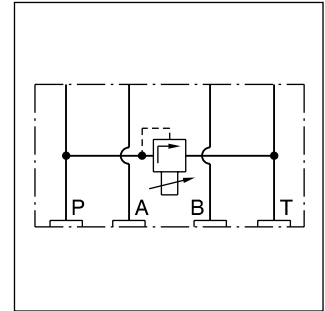


Pilot valve with proportional relief function RPDM2*, sandwich mounting NG06. MTTF_D value 150 years, flow rate maximum 5 l/min.

*For technical details see series RE06M*W.

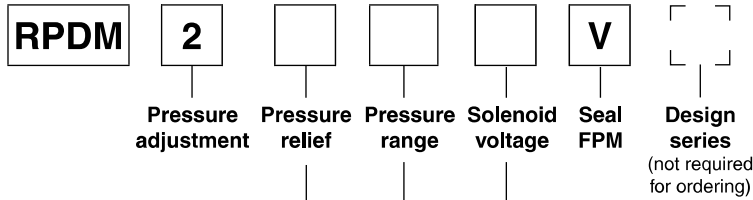


RPDM2AT



RPDM2PT

Ordering code



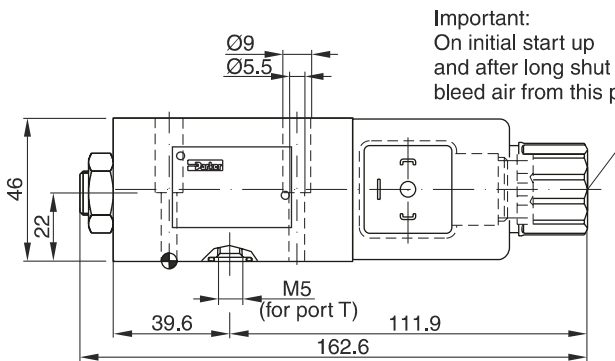
Code	Adjustment
AT	A to T
PT	P to T

Code	Solenoid voltage
K	12 V, 2.5 A
X	16 V, 1.3 A

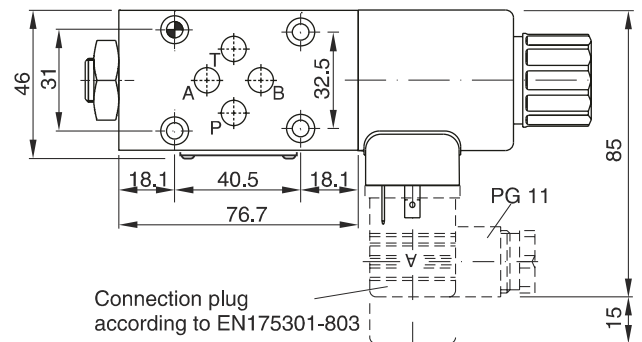
Code	Pressure range [bar]
10	105
17	175
25	250
35	350

**Bold letters =
Short-term availability**

Dimensions

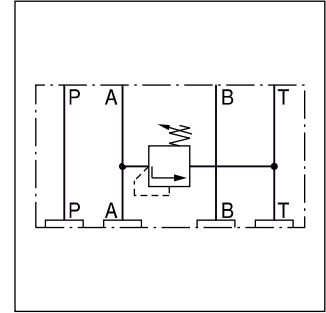


Important:
On initial start up
and after long shut down periods
bleed air from this plug

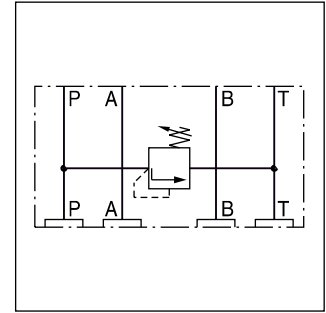


Connection plug according to EN175301-803

Sandwich valve with pressure relief function ZUDB, sandwich plate mounting NG06, see combination examples. MTTF_D value 150 years, flow rate maximum 5 l/min.



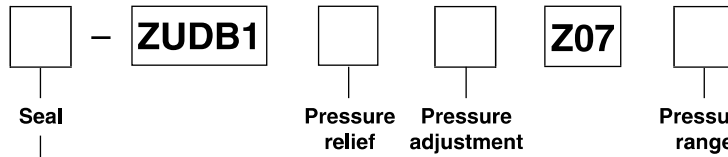
ZUDB1AT*



ZUDB1PT*

Ordering code

8



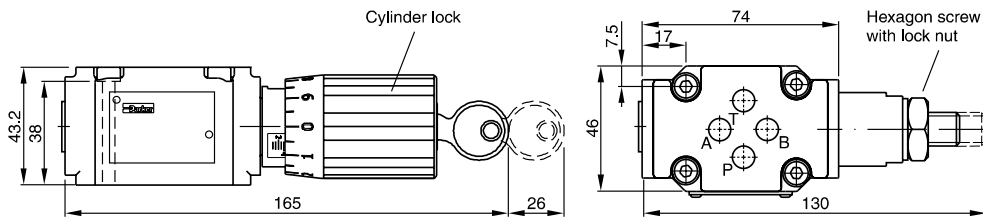
Code	Seal
omit	NBR
V	FPM

Code	Pressure relief
AT	A to T
PT	P to T

Code	Pressure range [bar]
B	70
E	175
G	250
K	350

Code	Adjustment
2	Hexagon screw with lock nut
61	Cylinder lock

Bold letters = Short-term availability



Pilot Valves

**2-Way Slip-In Cartridge Valves
Accessories**

Pilot valve with preload function DSB*P*, subplate mounting NG06, see combination examples.
MTTF_D value 150 years, flow rate maximum 5 l/min.

□ - **DSBA100** □ **P07** □

Seal

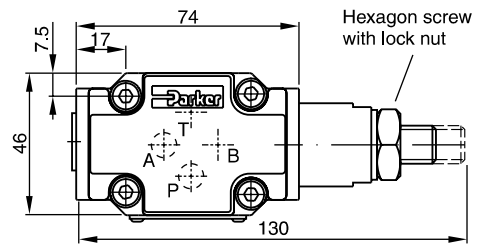
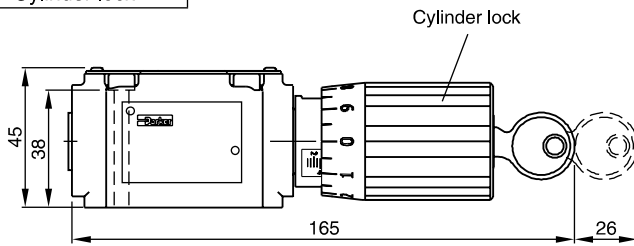
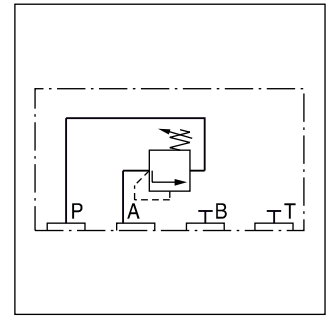
Pressure adjustment

Pressure range

Code	Seal
omit	NBR
V	FPM

Code	Pressure range [bar]
B	70
E	175
G	250
K	350

Code	Adjustment
2	Hexagon screw with lock nut
61	Cylinder lock



Pilot valve with preload function DSB*Z*, sandwich plate mounting NG06, see combination examples.
MTTF_D value 150 years, flow rate maximum 5 l/min.

□ - **DSBA100** □ **Z07** □

Seal

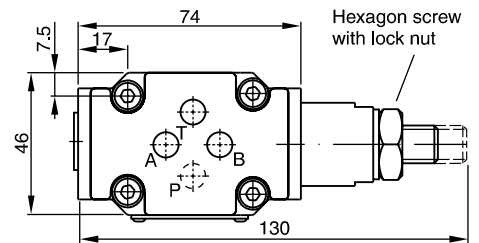
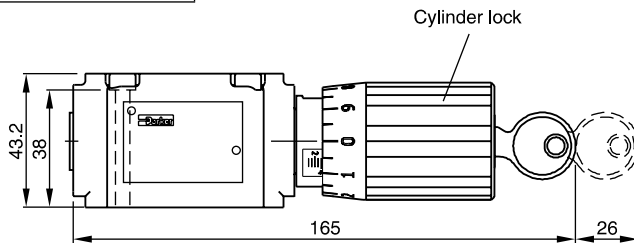
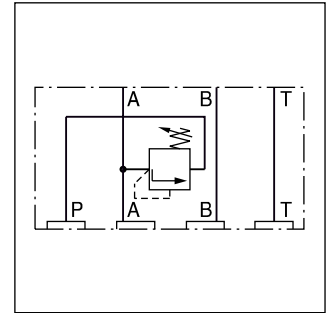
Pressure adjustment

Pressure range

Code	Seal
omit	NBR
V	FPM

Code	Pressure range [bar]
B	70
E	175
G	250
K	350

Code	Adjustment
2	Hexagon screw with lock nut
61	Cylinder lock



**Bold letters =
Short-term availability**

8

Pilot valve with unloading function UR06M, subplate mounting NG06, see combination examples. MTTF_D value 150 years, flow rate maximum 5 l/min.

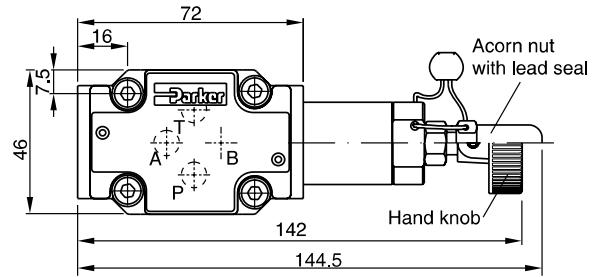
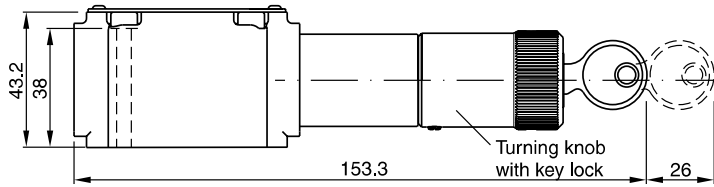
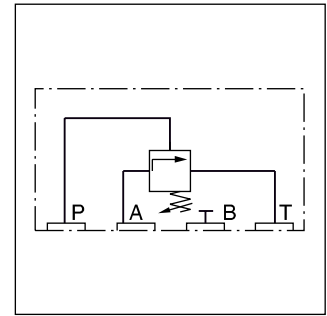
UR **06** **M** **4**

Pressure range Adjustment Pilot oil drain internal Seal

Code	Pressure range [bar]
07	70
17	175
25	250
35	350

Code	Seal
N	NBR
V	FPM

Code	Adjustment
S	Hand knob (standard)
A	Acorn nut with lead seal
L	Cylinder lock



8 **Pilot valve with unloading function US06M**, sandwich plate NG06, see combination examples. MTTF_D value 150 years, flow rate maximum 5 l/min.

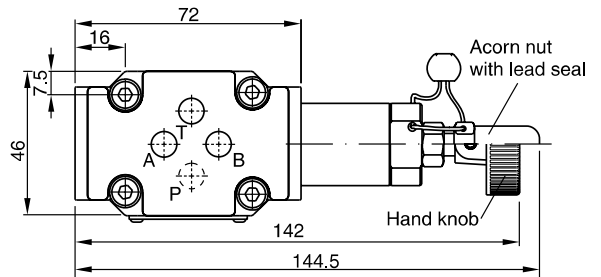
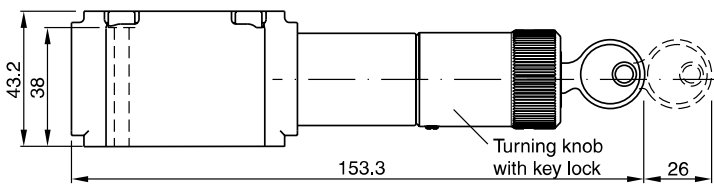
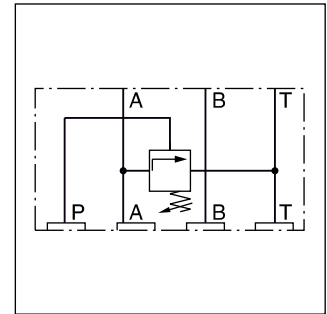
US **06** **M** **4**

Pressure range Adjustment Pilot oil drain internal Seal

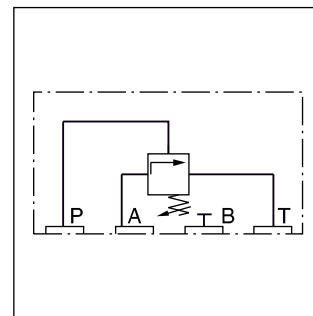
Code	Pressure range [bar]
07	70
17	175
25	250
35	350

Code	Seal
N	NBR
V	FPM

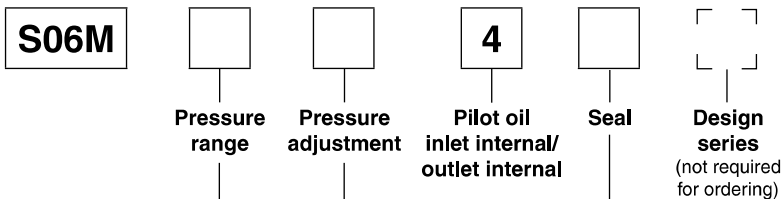
Code	Adjustment
S	Hand knob (standard)
A	Acorn nut with lead seal
L	Cylinder lock



Pilot valve for pressure sequence function S06M, subplate mounting NG06, see combination examples. MTTFD value 150 years, flow rate maximum 5 l/min.



Ordering code



Code	Pressure range [bar]
07	70
17	175
25	250
35	350

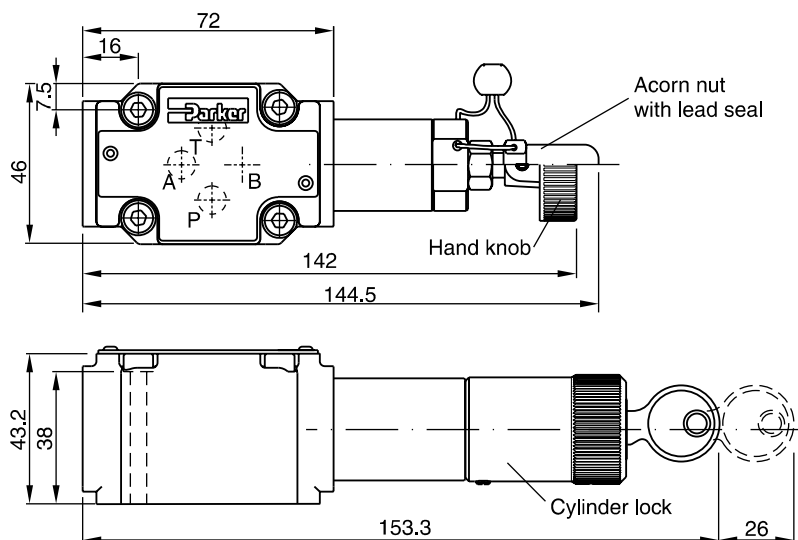
Code	Seal
N	NBR
V	FPM

Code	Adjustment
S	Hand knob (standard)
A	Acorn nut with lead seal
L	Cylinder lock

Bold letters = Short-term availability

8

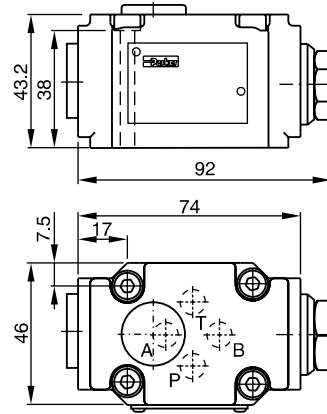
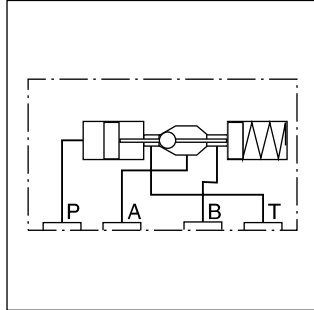
Dimensions



Check valve, hydraulically pilot operated NG06
 with pilot control, for subplate mounting.
 MTTFD value 75 years, flow rate maximum 5 l/min.

Ordering code

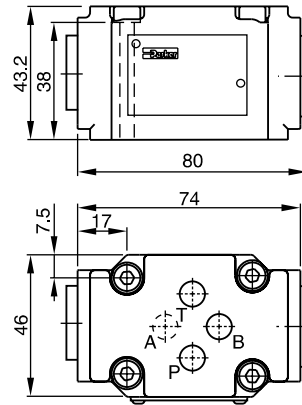
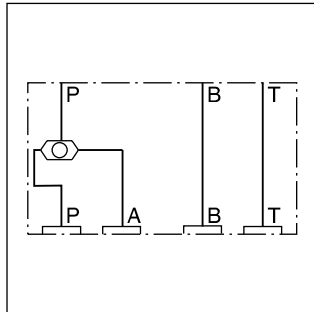
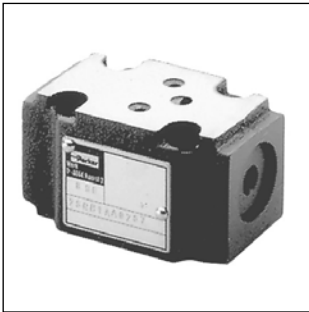
SVLA1006P07



Shuttle valve - sandwich plate mounting NG06
 MTTFD value 150 years, flow rate maximum 5 l/min.

Ordering code

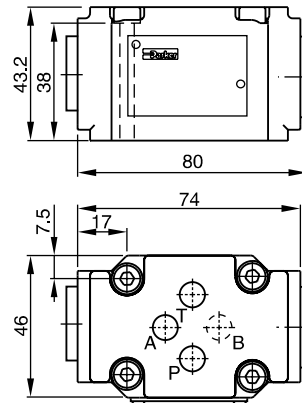
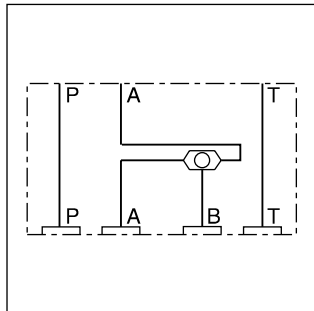
ZSRA1PP0Z07



Shuttle valve - sandwich plate mounting NG06
 MTTFD value 150 years, flow rate maximum 5 l/min.

Ordering code

ZSRB1AA0Z07



8

Symbol	Type	Size	Hight
	PADA 1007-AA-BB	NG10-NG06	25
	PADA 1007/A-B/B-A	NG10-NG06	25
	H06-1044	NG06	30
	H06-1039	NG06	30
	H06-504	NG06	30
	H06-711	NG06	30
	H06-1274	NG06	30
	H06-1040	NG06	30

**Bold letters =
 Short-term availability**

Attention: Details for cover-, sandwich- and adaptor plates see chapter 12.

access08.INDD 10.04.19



Cover-, Sandwich-, Adaptor Plates

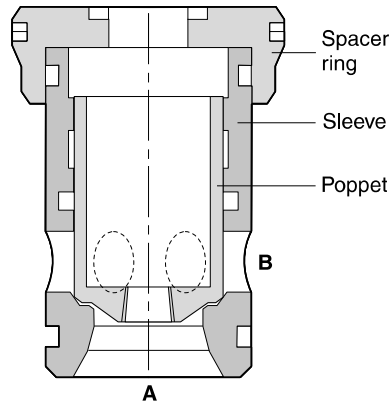
Symbol	Type	Size	Hight
	H06DO-1291	NG06	10
	H06DU-814	NG06	71.3
<p>All ports can be equipped with orifices or plugs (1/16NPT)</p>	CS06040N	NG06	40.3
<p>All ports can be equipped with orifices or plugs (1/16NPT)</p>	CS06082N	NG06	40.3
<p>All ports can be equipped with orifices or plugs (1/16NPT)</p>	CS06080N	NG06	40.3
	D51DC071D	NG06	26.3
	D51VP071C D51VP101D	NG06 NG10	26.3 26.9

Attention:
Details for cover-, sandwich- and adaptor plates see chapter 12.

Bold letters =
Short-term availability

8

Poppets, sleeves, spacer rings



Size	16	25	32	40	50	63	80	100
Poppet 01	RK-45036369	RK-45036379	RK-45036392	RK-45036409	RK-45036421	RK-45036437	RK-35036449	RK-35036467
Poppet 04	RK-45036370	RK-45036380	RK-45036395	RK-45036406	RK-45036422	RK-45036436	RK-35036460	RK-35036468
Poppet 07	RK-35037531	RK-45036964	RK-45036965	RK-45036966	RK-45036967	RK-45036968	—	—
Poppet 08	RK-45036368	RK-45036381	RK-45036391	RK-45036408	RK-45036424	RK-45036438	RK-35036459	RK-35036469
CE-sleeve	RK-35038871	RK-35038872	RK-35038873	RK-35036403	RK-35036417	RK-25036432	RK-25036452	RK-25036470
CP-sleeve	RK-35039384	RK-35039385	RK-35039386	RK-35039387	RK-35039388	RK-35039389	—	—
Spacer ring	RK-35036364	RK-35036375	RK-45036393	RK-35036402	RK-35036416	RK-35036435	RK-25036453	RK-25036471

Springs, seals, fitting bolts

Size	16	25	32	40	50	63	80	100
Spring ¹⁾								
Type L; 0.1 bar	FK-CE016-L	FK-CE025-L	FK-CE032-L	FK-CE040-L	FK-CE050-L	FK-CE063-L	FK-CE080-L	FK-CE100-L
Type N; 0.5 bar	FK-CE016-N	FK-CE025-N	FK-CE032-N	FK-CE040-N	FK-CE050-N	FK-CE063-N	FK-CE080-N	FK-CE100-N
Type S; 1.6 bar	FK-CE016-S	FK-CE025-S	FK-CE032-S	FK-CE040-S	FK-CE050-S	FK-CE063-S	FK-CE080-S	FK-CE100-S
Type T; 2.5 bar	FK-CE016-T	FK-CE025-T	FK-CE032-T	FK-CE040-T	FK-CE050-T	FK-CE063-T	FK-CE080-T	FK-CE100-T
Type U; 4.0 bar	FK-CE016-U	FK-CE025-U	FK-CE032-U	FK-CE040-U	FK-CE050-U	FK-CE063-U	FK-CE080-U	FK-CE100-U
Seal kits								
FPM	SK-CBE160V	SK-CBE250V	SK-CBE320V	SK-CBE400V	SK-CBE500V	SK-CBE630V	SK-CBE800V	SK-CBE1000V
NBR	SK-CBE160	SK-CBE250	SK-CBE320	SK-CBE400	SK-CBE500	SK-CBE630	SK-CBE800	SK-CBE1000
Bolt kits								
(ISO 4762-12.9)	BK414 4x M8x40	BK391 4x M12x50	BK415 4x M16x55	BK416 4x M20x70	BK417 4x M20x75	BK418 4x M30x100	BK419 8x M24x120	BK509 8x M30x130
Recommended torque [Nm]	31.8	108	264	517	517	1775	890	1775

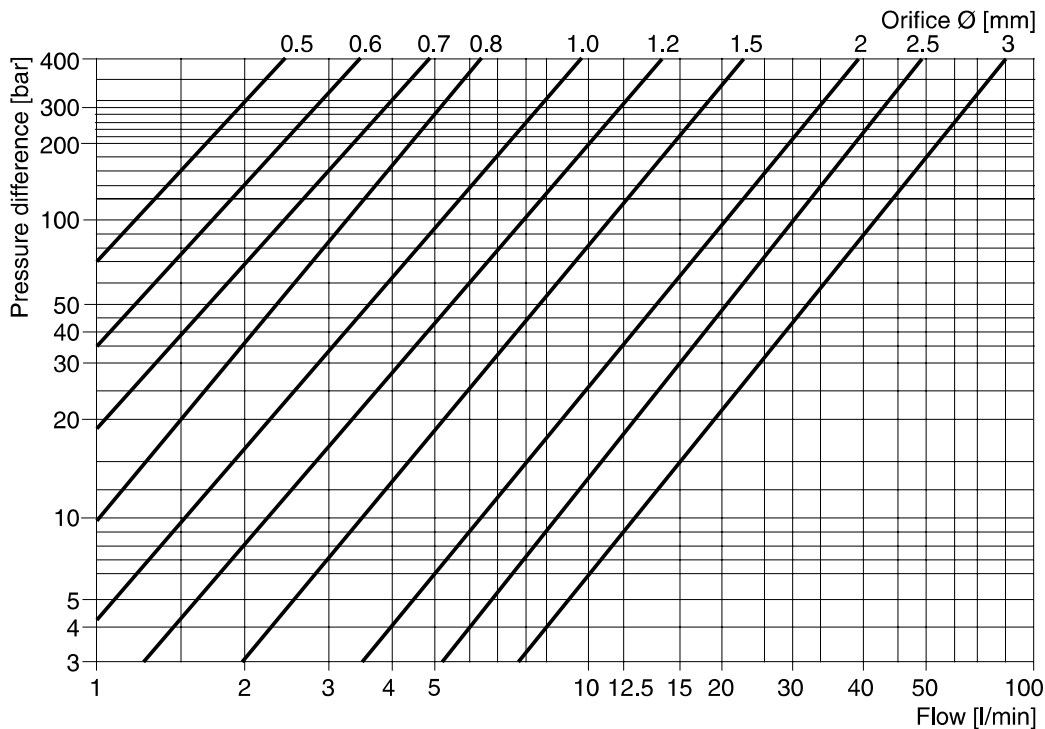
Ordering code example:

FK-CE016-U ⇒ 10 pcs., spring for NG16, type U

¹⁾ 1 spring kit contains 10 springs.

Orifice Diagram / Orifice Kits

Diagram to choose the orifice Ø



Values measured at a viscosity of 40 cST and a temperature of 50 °C.

Orifices

There are different orifices available to realize different opening / closing velocities.
The control volume of each nominal valve size can be found at the CE series.

Orifice kits, sorted by thread with different diameters

Orifice kit	Orifice kit, sorted by thread with different diameters, consisting of 2 pieces of each marked diameter												
Ø	0.0	0.8	0.9	1.0	1.1	1.2	1.3	1.5	1.8	2.0	2.2	2.5	3.0
DK-M4	•	•	•	•	•	•	•	•	–	•	–	–	–
DK-M5	•	•	•	•	•	•	•	•	–	•	–	–	–
DK-M6	•	•	•	•	•	•	•	•	–	•	–	–	–
DK-M8	•	–	–	•	–	•	–	•	•	•	•	•	–
DK-M10x1	•	–	–	•	–	•	–	•	•	•	–	•	•
DK-1/16NPT	•	•	•	•	•	•	•	•	–	•	–	–	–
DK-1/8NPT	•	–	–	•	–	•	–	•	•	•	–	•	•

Orifice kits, thread with one defined diameter 20 pcs per box

Orifice kits of one size:

Ordering Code Examples

DK-M4-08 ⇒ 20 pcs, orifice size 0.8 mm

DK-M5-10 ⇒ 20 pcs, orifice size 1.0 mm

DK-M8-12 ⇒ 20 pcs, orifice size 1.2 mm

Orifice gauge: Order no. DK-05-30

Removal CE016 to CE063

The extracting tools consist of tee bar, slide hammer, support handle, and expanding collet (fig. 1).

At first the spacer ring is removed. Next, spring and poppet are withdrawn. Finally, the expanding collet is inserted into the sleeve and braced by means of the tee bar. Using the slide hammer, collet and sleeve are extracted from the cavity.

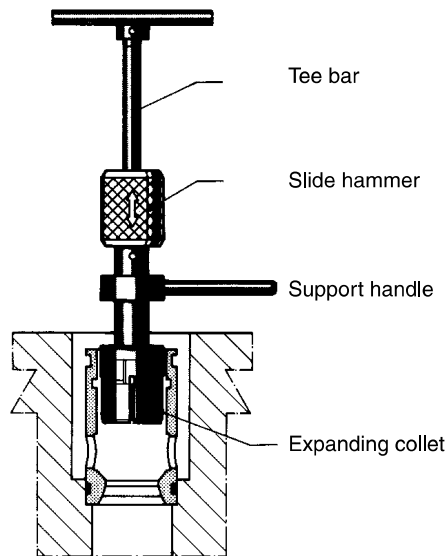


Figure 1

Ordering code

Valve size	Order no.:
CE016 *	090 4600 09779
CE025 *	090 4600 09780
CE032 *	090 4600 09781
CE040 *	090 4600 09782
CE050 *	090 4600 09783
CE063 *	090 4600 09784
CE016 to CE063 *	090 4600 09785

Removal CE080 to CE100

The extracting tools consist of spacer ring puller (fig. 4), puller (fig. 3), and puller thrust plate. At first the spacer ring is removed. Next the puller is inserted into the sleeve and aligned by the puller thrust plate. Tightening the nut then extracts the sleeve from the cavity.

Ordering Code

Valve size	Order no.:
CE080	090 4600 10628
CE100	090 4600 10629

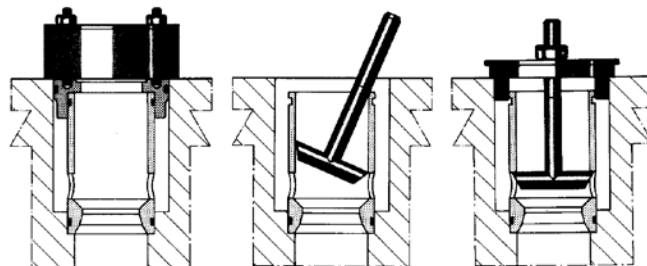


Figure 2

Figure 3

Figure 4

* CE/CP respectively

Spare parts.INDD 10.04.19

Characteristics

The pressure relief valve series R consists of a manual adjustment pilot stage and a cartridge main stage.

The pressure relief valve series RS consists of a manual adjusted pilot stage with a directional valve for an electrically controlled vent function and a cartridge main part.

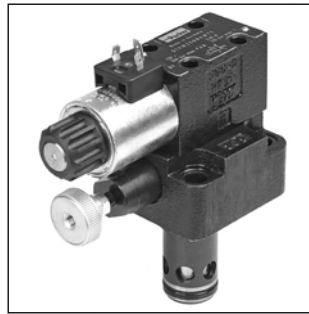
The R/RS*E model codes embrace the pilot valves, covers and cartridges that are also offered as separate items. See combination examples for details.

Features

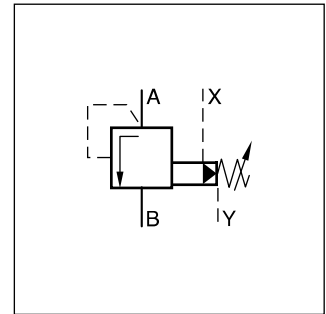
- Pilot operated with manual adjustment
- Cavity and mounting pattern according to ISO 7368
- 6 pressure stages
- 2 switching types (series RS*E)
- 3 adjustment modes
 - Hand knob
 - Acorn nut with lead seal
 - Cylinder lock
- 6 sizes, NG16 to NG63

Note

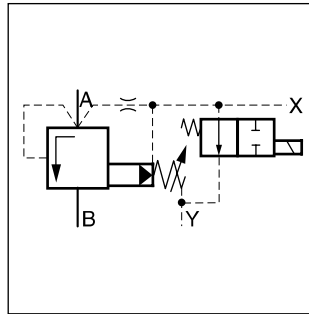
Port X only usable for remote control.



RS*E

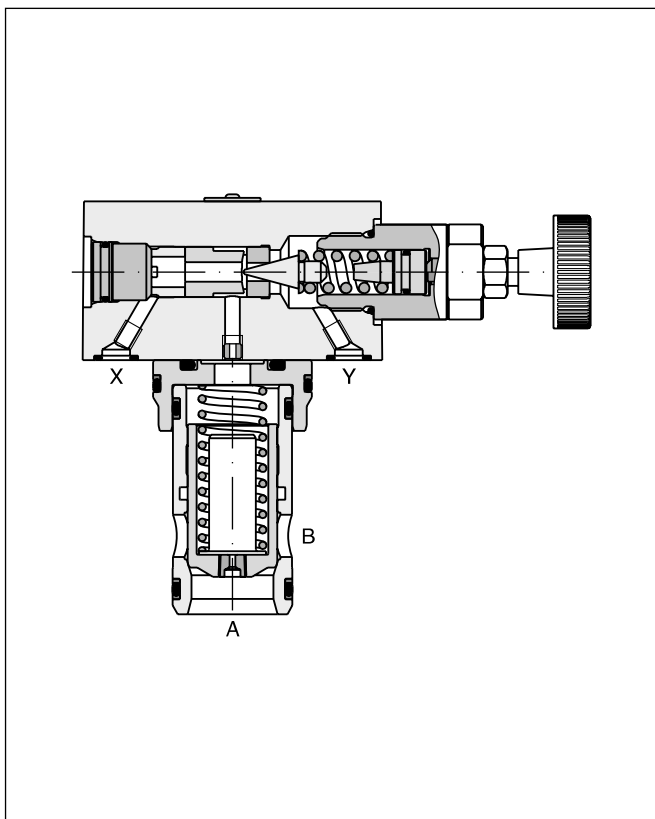


R*E

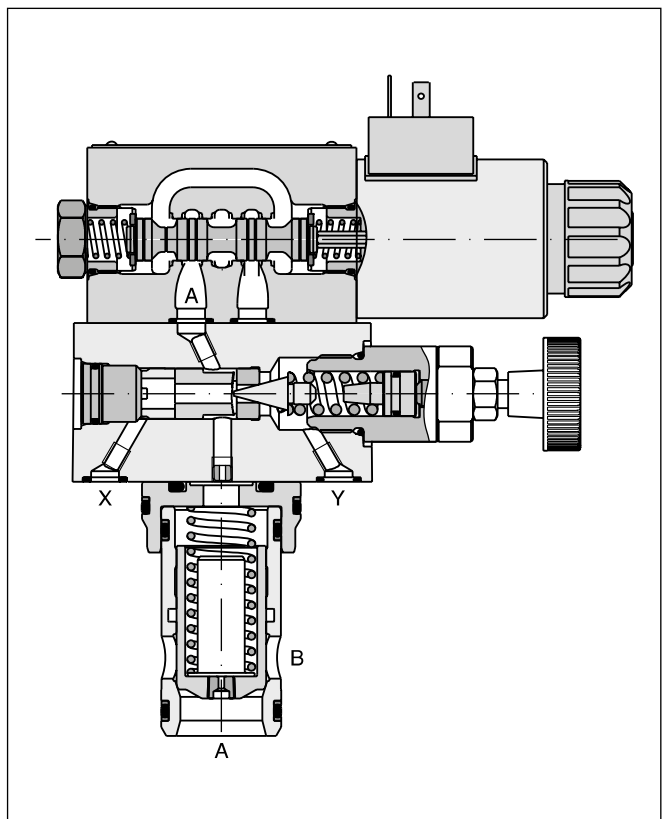


RS*E (simplified symbol)

R25E

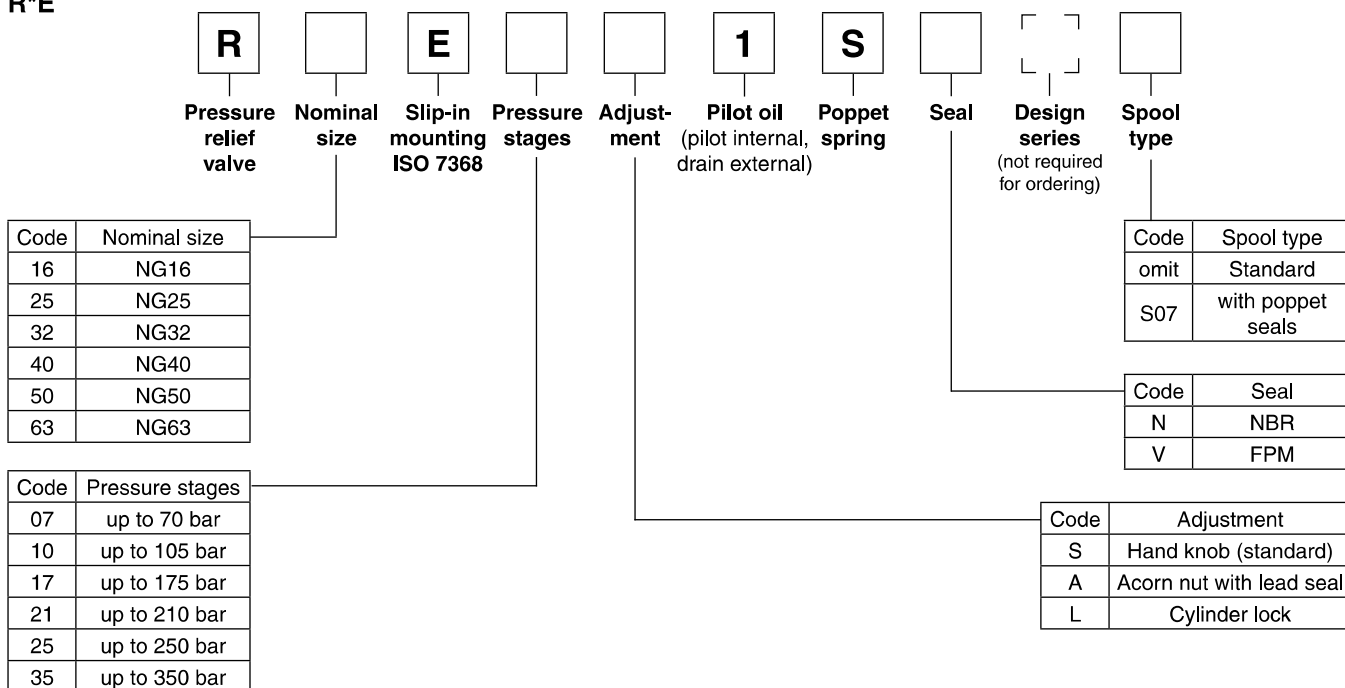


RS25E

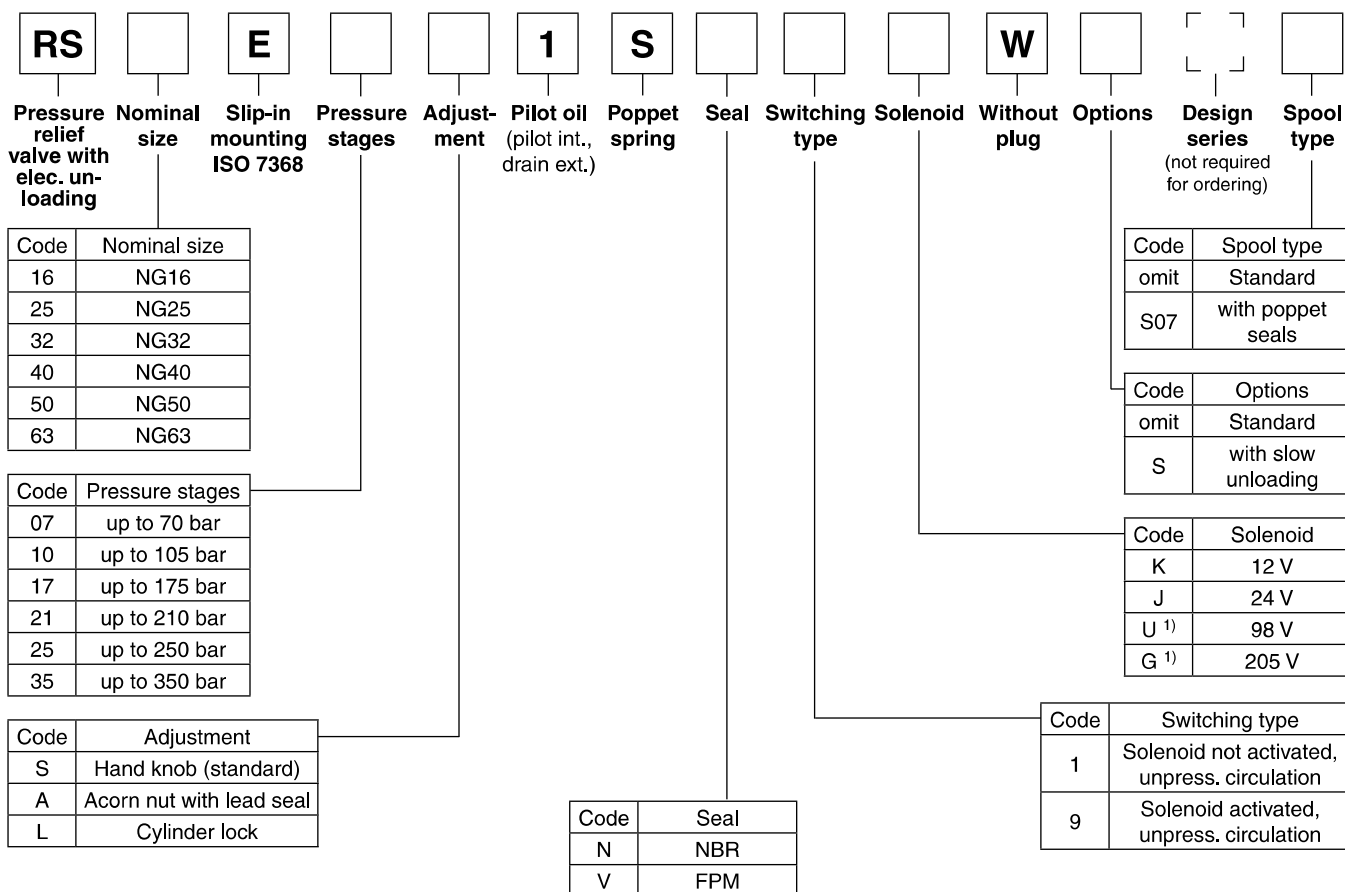


Ordering Code

R*E



RS*E



¹⁾ To be used in combination with rectifier plugs at 120 VAC / 230 VAC power supply.



Technical Data

R*E

General							
Nominal size		NG16	NG25	NG32	NG40	NG50	NG63
Interface	Slip-in mounting acc. ISO 7368						
Mounting position	as desired, horizontal mounting preferred						
Ambient temperature	[°C]	-20...+60					
MTTF _D value	[years]	75					
Weight	[kg]	2.2	3.5	4.9	8.0	13.7	22.8
Hydraulic							
Max. operating pressure	[bar]	Ports A and X up to 350, Ports B and Y 30					
Pressure stages	[bar]	75, 105, 175, 210, 250, 350					
Nominal flow	[l/min]	220	500	950	1400	2300	4000
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						

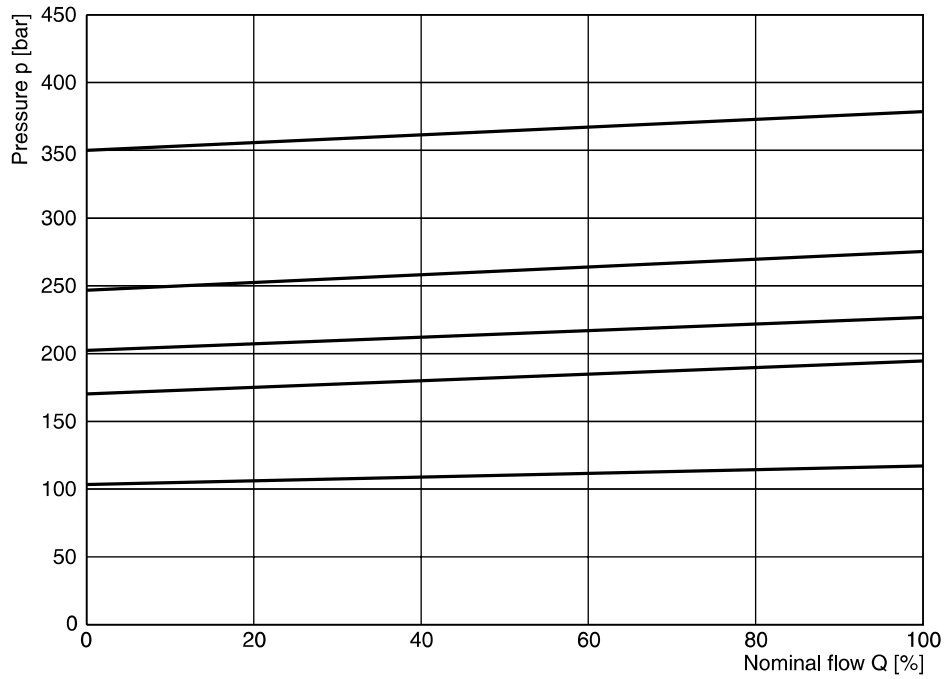
RS*E

General							
Nominal size		NG16	NG25	NG32	NG40	NG50	NG63
Interface	Slip-in mounting acc. ISO 7368						
Mounting position	as desired, horizontal mounting preferred						
Ambient temperature	[°C]	-20...+60					
MTTF _D value	[years]	75					
Weight	[kg]	2.7	5.2	6.4	9.5	15.2	24.3
Hydraulic							
Max. operating pressure	[bar]	Ports A and X 350, ports B and Y 30					
Pressure stages	[bar]	75, 105, 175, 210, 250, 350					
Nominal flow	[l/min]	220	500	950	1400	2300	4000
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						
Electrical (solenoid)							
Duty ratio	100 % ED; CAUTION: coil temperature up to 150 °C possible						
Protection class	IP65 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 EN175301-803, solenoid identification as per ISO 9461						
Wiring min.	[mm ²]	3 x 1.5 recommended					
Wiring length max.	[m]	50 recommended					



8

p/Q performance curve ¹⁾



All characteristic curves measured with HLP46 at 50 °C.

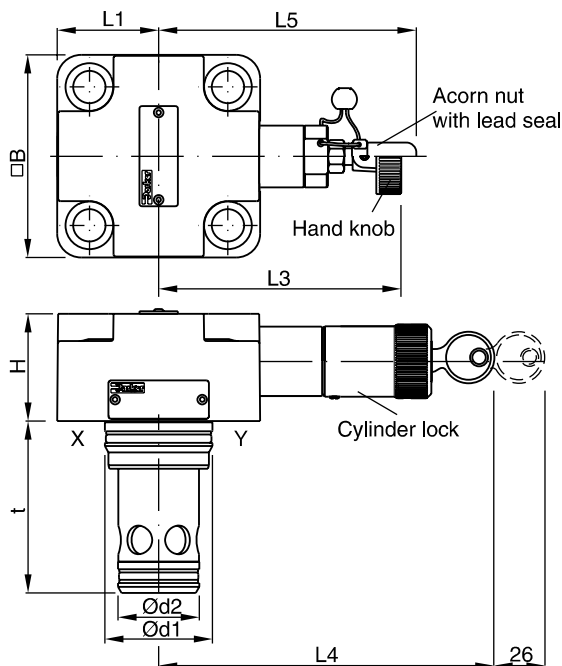


¹⁾ The performance curves are measured with external drain. For internal drain the tank pressure has to be added to curve.

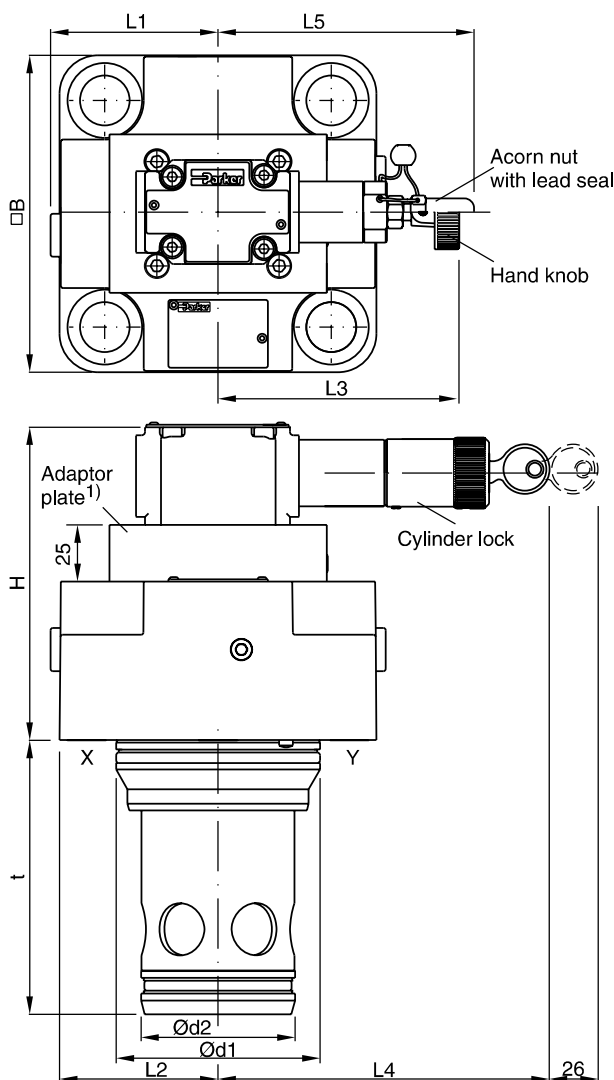
Dimensions

Dimensions R*E

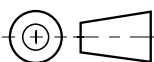
NG16 - NG32



NG40 - NG63 ¹⁾



8



Size	H	B	L1	L2	L3	L4	L5	d1	d2	t
NG16	40	65 ²⁾	32.5	–	114	125.5	117	32	25	56
NG25	47	85	42.5	–	102	114	105	45	34	71
NG32	50	102	51	–	95	106	97.5	60	45	85
NG40	106	125	62.5	66.5	106	144	110.5	75	55	105
NG50	141	140	70	74	106	144	110.5	90	68	121
NG63	155	180	90	94	106	144	110.5	120	90	155

NG	Kit	ISO 4762-12.9	[Nm]	Kit	
				NBR	FPM
16	BK414	4 x M8x40	31.8	SK-R16EN	SK-R16EV
25	BK391	4 x M12x50	108	SK-R25EN	SK-R25EV
32	BK415	4 x M16x55	264	SK-R32EN	SK-R32EV
40	BK416	4 x M20x70	517	SK-R40EN	SK-R40EV
50	BK417	4 x M20x75	517	SK-R50EN	SK-R50EV
63	BK418	4 x M30x100	1775	SK-R63EN	SK-R63EV

¹⁾ NG40 without adaptor plate.

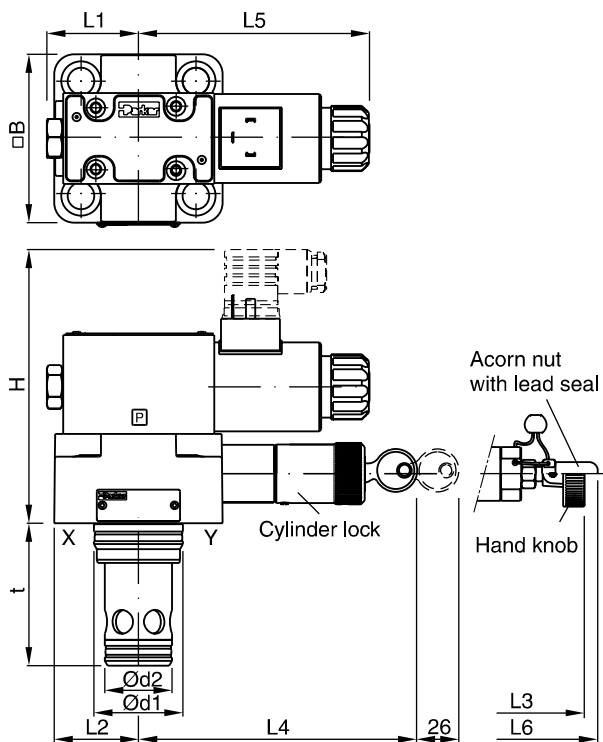
²⁾ Width 79 mm.

Dimensions

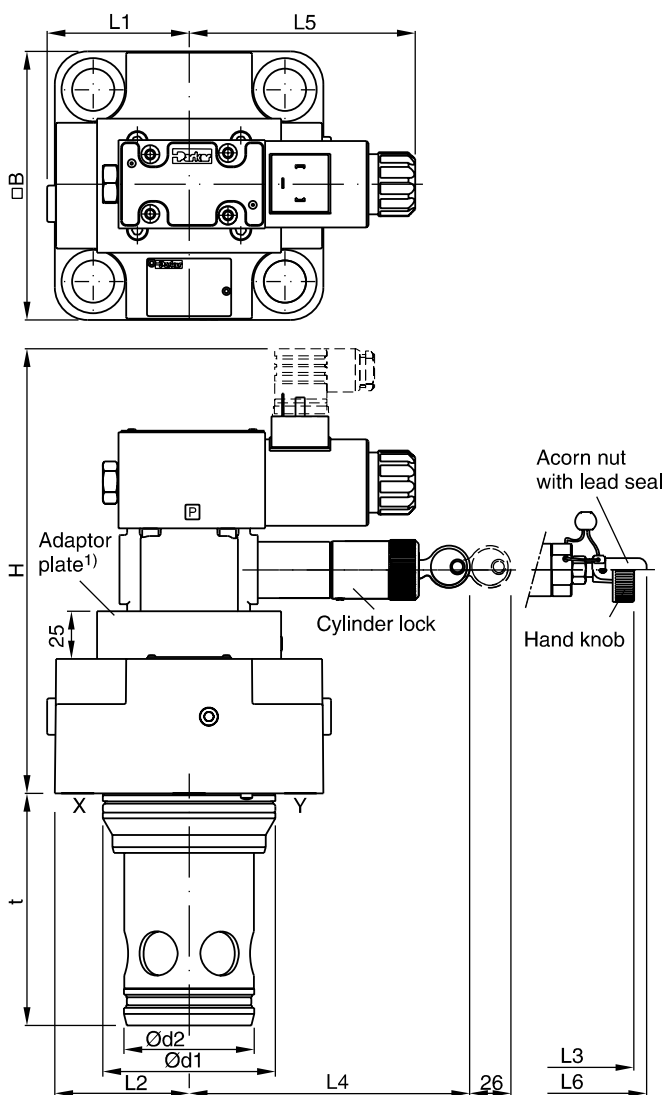
Pilot Operated Pressure Relief Valves Series R / RS*E

Dimensions RS*E

NG16 - NG32



NG40 - NG63 ¹⁾



Size	H	B	L1	L2	L3	L4	L5	L6	d1	d2	t
NG16	133	65 ²⁾	32.5	–	114	125.5	117	117	32	25	56
NG25	137	85	42.5	–	102	114	117	105	45	34	71
NG32	143	102	51	–	95	106	117	97.5	60	45	85
NG40	196	125	62.5	66.5	106	144	117	110.5	75	55	105
NG50	231	140	70	74	106	144	117	110.5	90	68	121
NG63	246	180	90	94	106	144	117	110.5	120	90	155

NG	Kit	ISO 4762-12.9	[Nm]	Kit	
				NBR	FPM
16	BK414	4 x M8x40	31.8	SK-RS16EN	SK-RS16EV
25	BK391	4 x M12x50	108	SK-RS25EN	SK-RS25EV
32	BK415	4 x M16x55	264	SK-RS32EN	SK-RS32EV
40	BK416	4 x M20x70	517	SK-RS40EN	SK-RS40EV
50	BK417	4 x M20x75	517	SK-RS50EN	SK-RS50EV
63	BK418	4 x M30x100	1775	SK-RS63EN	SK-RS63EV

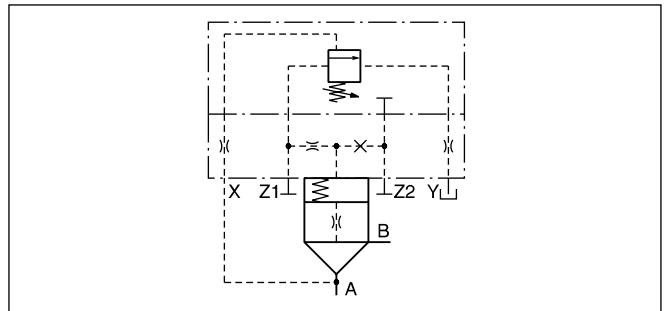
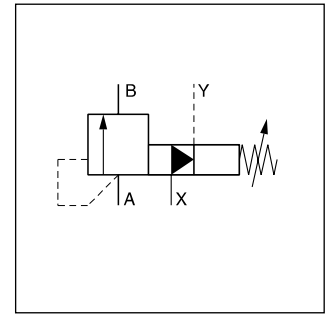
¹⁾ NG40 without adaptor plate.

²⁾ Width 79 mm.

The pilot operated pressure relief valves series DSDU limit the system pressure by opening the pressure port to tank. They are mostly used for accumulator pressure relief. The valve is set and sealed by the German technical monitoring association TÜV. The valve delivery includes a copy of the TÜV certificate of conformity.

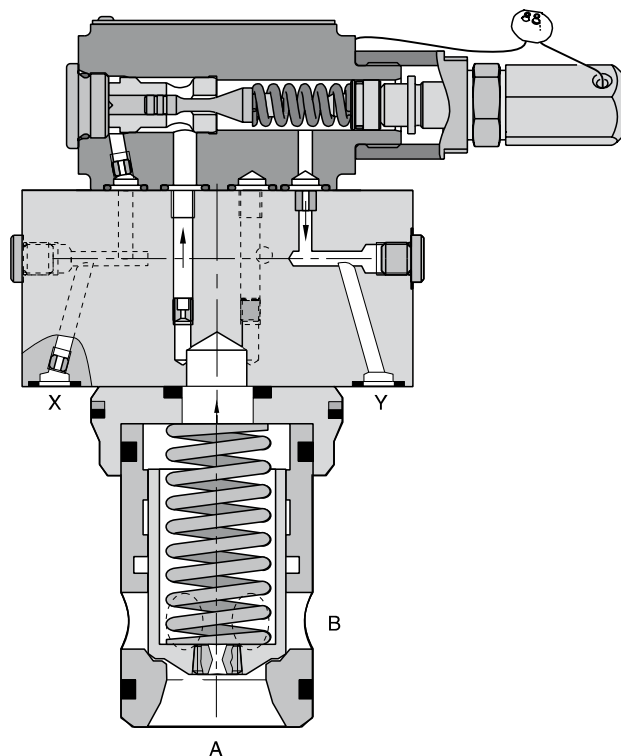
Features

- TÜV certificate
- CE certification (module G) according to directive 2014/68/EU
- Installation cavity and mounting pattern according to ISO 7368
- 3 sizes, NG16 to NG32
- Remote control via port X



Detailed symbol

8



Ordering code

	Seals	DSDU Pressure relief valve	Type code	Pressure stage	TÜV	Desired opening pressure in bar (please specify)
Code	Seals	Type Code			Pressure stage	Opening pressure ranges [bar]
omit	NBR	1078 E16	1078 E25	1078 E32		
V	FPM	Q _{max} [l/min] depending on opening pressure				
		150	215	500	B	50 - 75
		165	235	550	E	76 - 125
		190	280	640	G	126 - 175
		215	310	750	K	176 - 200
		230	355	800		201 - 250
		255	390	900		251 - 300
		280	400	950		301 - 350

Ordering examples

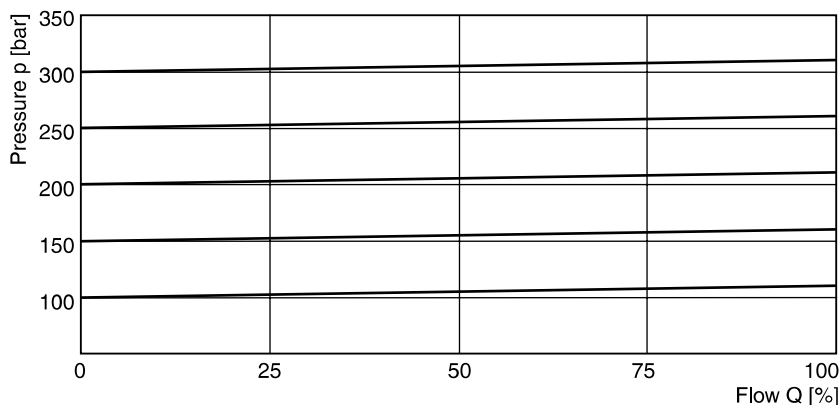
DSDU 1078 E32E - 120 bar matches Q_{max} 550 l/min, opening pressure 120 bar

DSDU 1078 E32E - 150 bar matches Q_{max} 640 l/min, opening pressure 150 bar

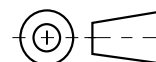
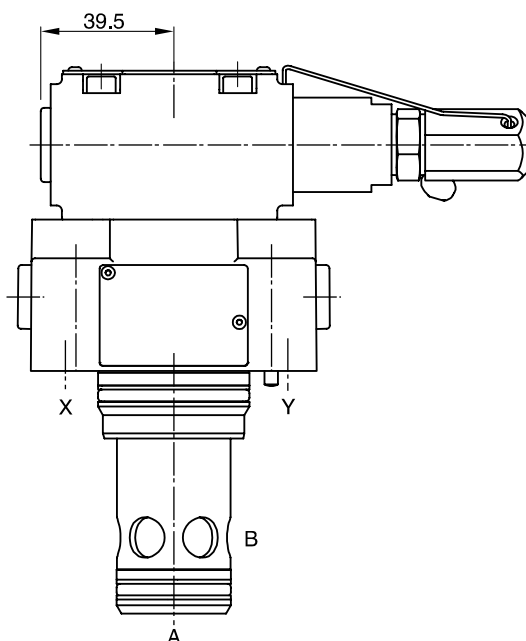
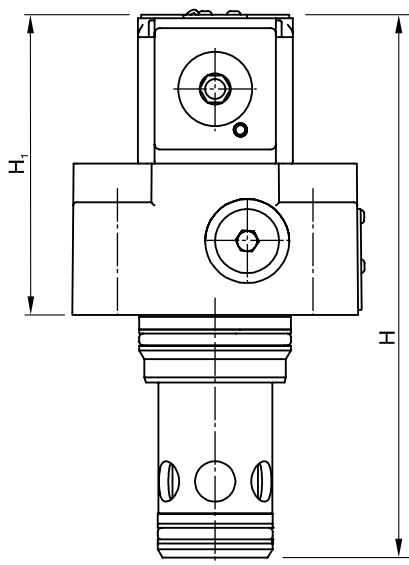
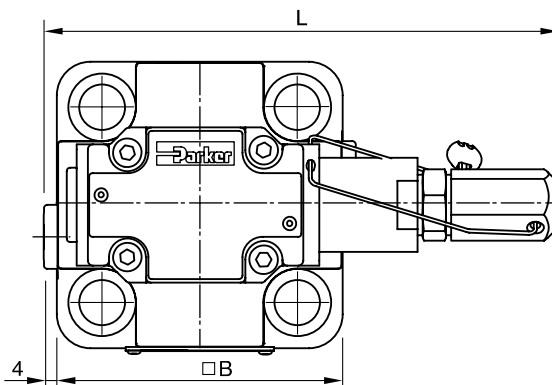
Technical data

General		NG16	NG25	NG32
Size				
Interface		Slip-in mounting according to ISO 7368		
Mounting position		as desired, horizontal mounting preferred		
Ambient temperature	[°C]	-20...+60		
MTTF _D value	[years]	150		
Weight	[kg]	2.2	3.5	4.9
Hydraulic				
Max. operating pressure	[bar]	Ports A and X 350, B and Y depressurized		
Pilot oil		External / external		
Adjustment pressure	[bar]	See ordering code		
Nominal flow	[l/min]	See ordering code		
Fluid		Hydraulic oil according to DIN 51524		
Fluid temperature	[°C]	-10...+70		
Viscosity, permitted	[cSt] / [mm²/s]	20...400		
Viscosity, recommended	[cSt] / [mm²/s]	30...80		
Filtration		ISO 4406; 18/16/13		

p/Q curve






Dimensions



8

NG	H	H ₁	B	L
16	141	85	79 *	162
25	162	90	85	156
32	182	97	102	162

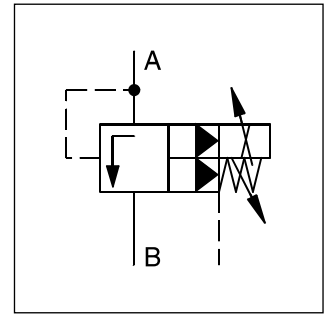
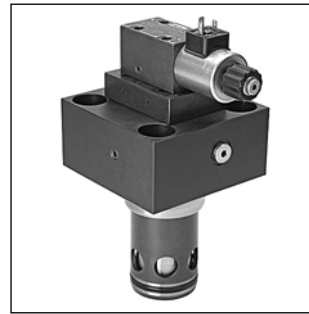
NG	Kit	 ISO 4762-12.9	 [Nm]	 Kit	
				NBR	FPM
16	BK414	4 x M8x40	31.8	SK-DSDU10-E16	SK-DSDU10-E16V
25	BK391	4 x M12x50	108	SK-DSDU10-E25	SK-DSDU10-E25V
32	BK415	4 x M16x55	264	SK-DSDU10-E32	SK-DSDU10-E32V

* Width 65 mm.

The proportional pressure relief valve series RE*E*W consists of a proportional pilot stage and a slip-in cartridge main stage. A mechanical maximum pressure stage is optionally available. For sizes NG25, NG32 and NG40 a screw-in cartridge is used, for sizes NG50 and NG63 an additional sandwich unit.

The RE*W model code embraces the pilot valves, covers and cartridges that are also offered as separate items. See combination examples for details.

In combination with the digital power amplifier PC-D00A-400 the valve parameters can be saved, changed and duplicated.

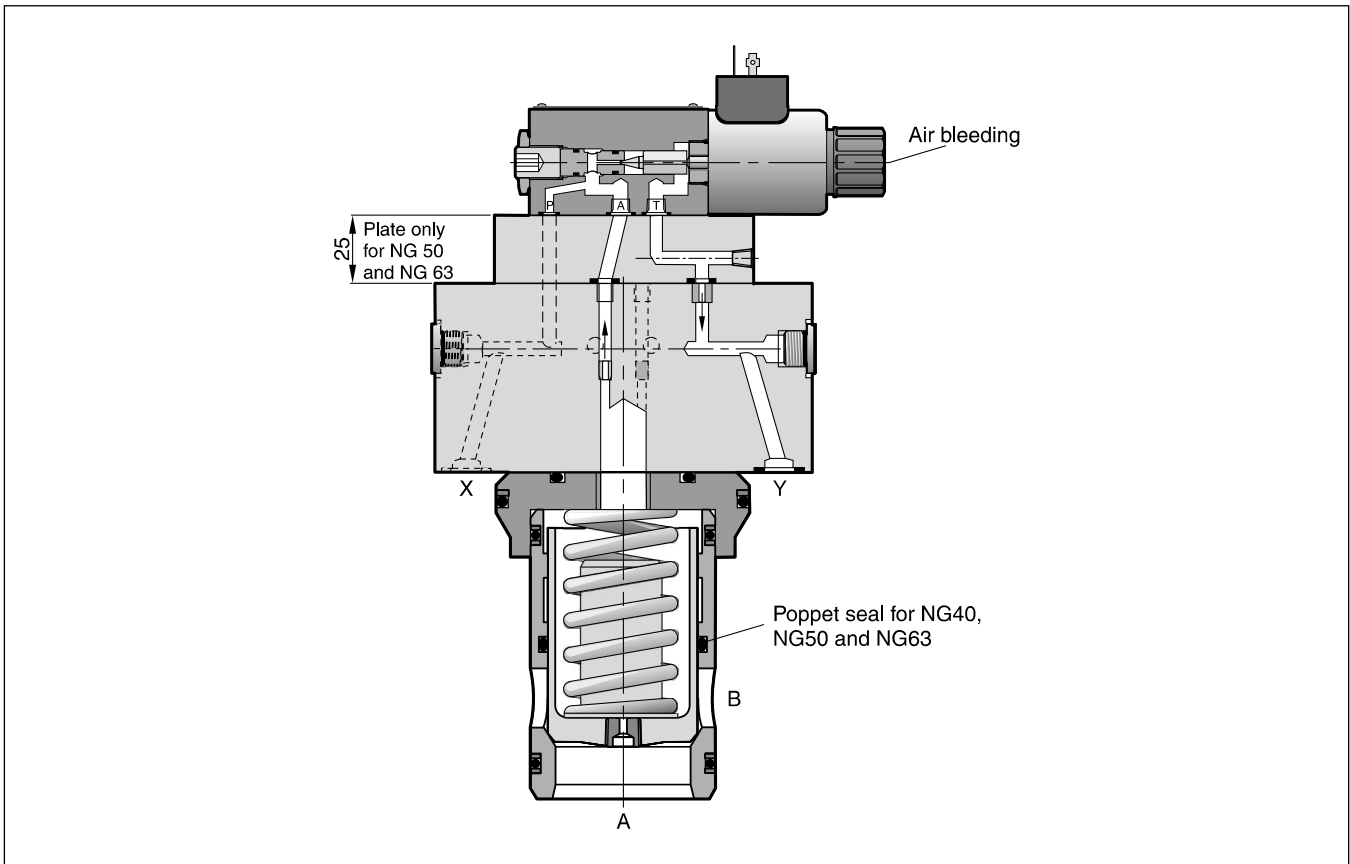


Features

- Pilot operated with proportional solenoid
- Continuous adjustment by proportional solenoid
- Optional mechanical max. pressure stage
- Cavity and mounting pattern according to ISO 7368
- 4 pressure stages
- 6 sizes, NG16 to NG63

Note

Port X only usable for remote control.



Ordering Code / Technical Data

Ordering code

RE		E		W	1	S		1		W			
Prop. pressure relief valve	Nominal size	Slip-in mounting ISO 7368	Pressure stages	Off-board electronics	Pilot oil (pilot int., drain ext.)	Poppet spring	Seal	Normally open	Solenoid	Without plug	Options	Design series	Spool type

Code	Nominal size
16	NG16
25	NG25
32	NG32
40 ¹⁾	NG40
50 ¹⁾	NG50
63 ¹⁾	NG63

Code	Pressure stages
10	up to 105 bar
17	up to 175 bar
25	up to 250 bar
35	up to 350 bar

Code	Spool type
omit	Standard
S07	with poppet seals

Code	Options
omit	Standard
M	Mech. max. adjustment

Code	Solenoid
K	12 V, 2.1 A
X	16 V, 1.3 A

Code	Seal
N	NBR
V	FPM

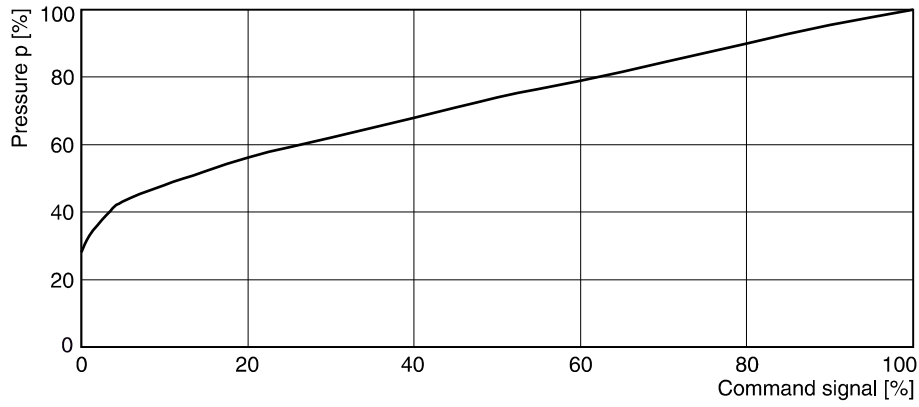
¹⁾ With poppet seal.

8 Technical data

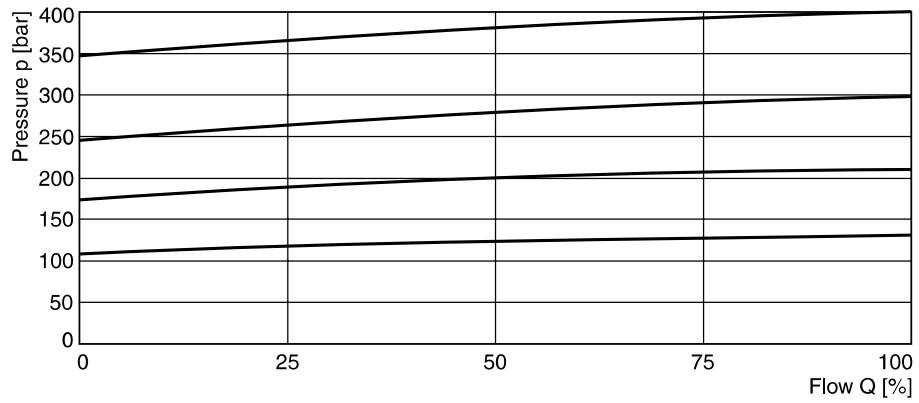
General							
Nominal size		NG16	NG25	NG32	NG40	NG50	NG63
Interface	Slip-in mounting acc. ISO 7368						
Mounting position	as desired, horizontal mounting preferred						
Ambient temperature	[°C]	-20...+60					
MTTF _D value	[years]	75					
Weight	[kg]	2.7	5.2	6.4	9.5	15.2	24.3
Hydraulic							
Max. operating pressure	[bar]	Ports A and X 350, ports B and Y 30					
Pressure stages	[bar]	105, 175, 250, 350					
Nominal flow	[l/min]	220	500	950	1400	2300	4000
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						
Electrical (proportional solenoid)							
Duty ratio	100 % ED; CAUTION: coil temperature up to 150 °C possible						
Protection class	IP65 in accordance with EN 60529 (with correctly mounted plug-in connector)						
Code		K			X		
Supply voltage	[V]	12 V =			16 V =		
Max. current	[A]	2.1			1.3		
Coil resistance at 20 °C	[Ohm]	4.28			12		
Solenoid connection	Connector as per EN 175301-803						
Power amplifier, recommended	PCD00A-400						



Signal/pressure curve



p/Q performance curve

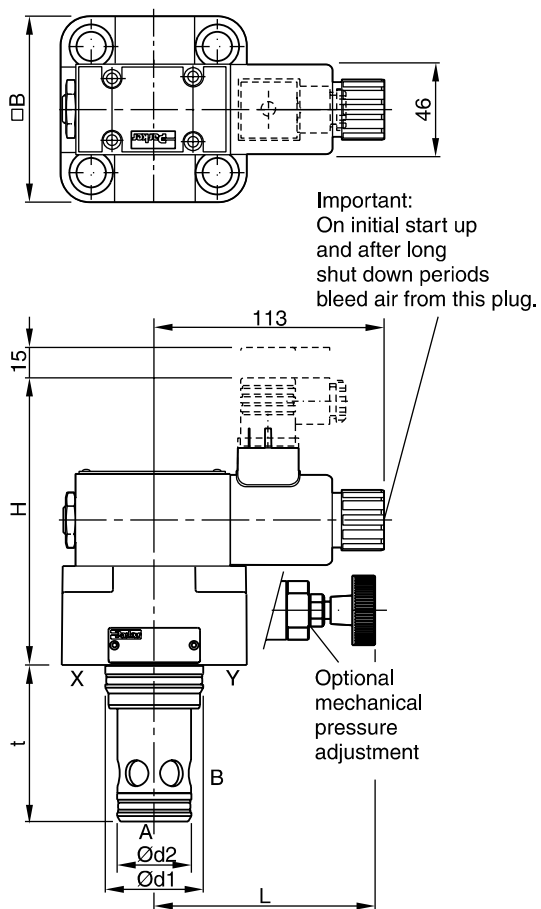


All characteristic curves measured with HLP46 at 50 °C.

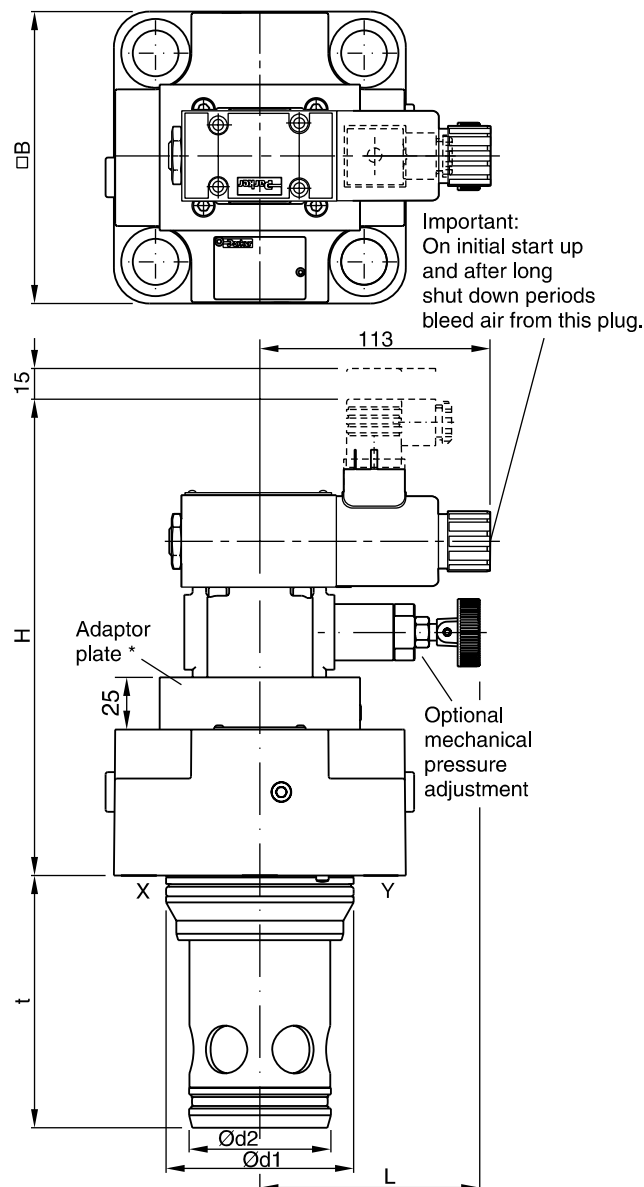
The performance curves are measured with external drain. For internal drain the tank pressure has to be added to curve.



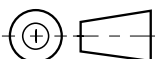
NG16 - NG32



NG40 - NG63 *)



8



NG	H	B	d ₁	d ₂	t	L
16	135	79 ¹⁾	32	25	56	114
25	140	85	45	34	72	102
32	145	102	60	45	85	95
40	137 (180.2) ²⁾	125	75	55	105	106
50	172 (215.2) ²⁾	140	90	68	122	106
63	187 (230.2) ²⁾	180	120	90	155	106

NG	Kit	ISO 4762-12.9	[Nm]	Kit	
				NBR	FPM
16	BK414	4 x M8x40	31.8	SK-RE16EN	SK-RE16EV
25	BK391	4 x M12x50	108	SK-RE25EN	SK-RE25EV
32	BK415	4 x M16x55	264	SK-RE32EN	SK-RE32EV
40	BK416	4 x M20x70	517	SK-RE40EN	SK-RE40EV
50	BK417	4 x M20x75	517	SK-RE50EN	SK-RE50EV
63	BK418	4 x M30x100	1775	SK-RE63EN	SK-RE63EV

* NG40 without adaptor plate.

¹⁾ Width 65 mm.

²⁾ With mechanical pressure adjustment.

The proportional pressure relief valves series RE*E*T with onboard electronics and a slip-in cartridge main stage is electronically based on the functionality of the digital amplifier PCD00.

The digital onboard electronics is situated in a robust metal housing and can be used in rough environments. The nominal values of the valves are factory set. Additionally the ProPxD software permits the editing of all parameters. The software is also used for the digital electronic modules. The cable for connection to a serial RS232C interface is available as accessory.

The valves are optionally available with a mechanical maximum pressure adjustment.

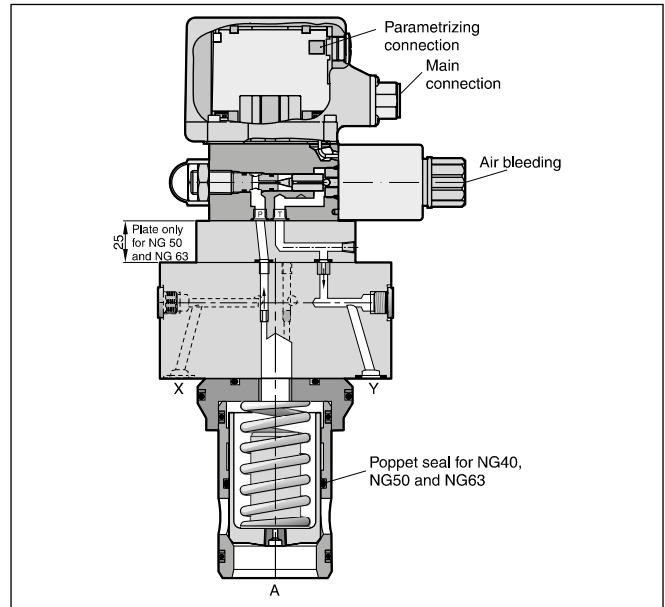
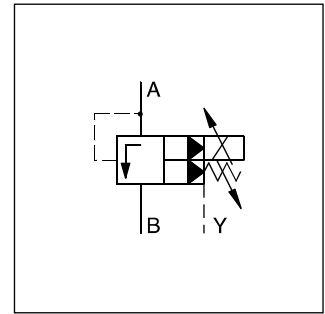
The RE*E*T model code embraces the pilot valves, covers and cartridges that are also offered as separate items.

Features

- Pilot operated pressure relief valve
- Onboard electronics
- Optional mechanical max. pressure stage
- Factory setting
- Ramp time adjustment
- Linearized characteristics
- 4 pressure stages
- Cavity and mounting pattern according to ISO 7368
- 6 sizes, NG16 to NG63

Note

Port X only usable for remote control.



Ordering code

RE		E		T	1	S		1		0			
Prop. pressure relief valve with elec. unloading	Nominal size	Slip-in mounting ISO 7368	Pressure stages	Onboard electronics	Pilot oil (pilot int., drain ext.)	Poppet spring	Seal	Normally open	Command signal	Electr. attachments	Options (not required for ordering)		Spool type
												Code Spool type	
												omit	Standard
												S07 ²⁾	with poppet seals
												Code Options	
												omit	Standard
												M	Mechanical max. adjustment
												Code Command signal	
												F	Voltage input 0...+10 V with ref. output +10 V
												R	Current input 4...20 mA
												Code Seal	
												N	NBR
												V	FPM

Code	Nominal size
16	NG16
25	NG25
32	NG32
40 ¹⁾	NG40
50 ¹⁾	NG50
63 ¹⁾	NG63

Code	Pressure stages
10	up to 105 bar
17	up to 175 bar
25	up to 250 bar
35	up to 350 bar

¹⁾ With poppet seal.
²⁾ Not for NG16.

Please order plugs separately, item no. 5004072
Parametrizing cable OBE -> RS-232: item no. 40982923



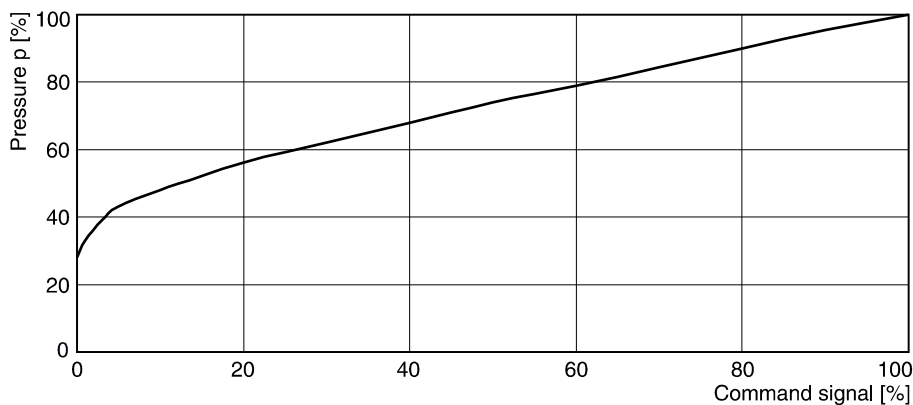
Technical Data

General							
Nominal size		NG16	NG25	NG32	NG40	NG50	NG63
Interface		Slip-in mounting acc. ISO 7368					
Mounting position		as desired, horizontal mounting preferred					
Ambient temperature	[°C]	-20...+60					
MTTF _D value ¹⁾	[years]	75					
Weight	[kg]	2.7	5.2	6.4	9.5	15.2	24.3
Vibration strength	[g]	10 sinus 5...2000 Hz acc. to IEC 68-2-6 10 (RMS) noise 20...2000 Hz acc. to IEC 68-2-36 15 shock acc. to IEC 68-2-27					
Hydraulic							
Max. operating pressure	[bar]	Ports A and X 350, ports B and Y 30					
Pressure stages	[bar]	105, 175, 250, 350					
Nominal flow	[l/min]	220	500	950	1400	2300	4000
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; 18/16/13					
Electrical							
Duty ratio ED	[%]	100					
Protection class		IP65 in accordance with EN 60529 (with correctly mounted plug-in connector)					
Supply voltage	VDC	18...30, ripple < 5 % eff., surge free					
Current consumption max.	[A]	2.0					
Pre-fusing	[A]	2.5 medium lag					
Potentiometer supply	[V]	+10 / ±5 % max. 10 mA					
Command signal	Code F voltage	[V]	0...+10, ripple < 0.01 % eff., surge free, Ri = 100 kOhm				
	Code R current	[mA]	4...20, ripple < 0.01 % eff., surge free, Ri = <250 Ohm < 3.6 mA = enable off, > 3.8 mA = enable on (acc. NAMUR NE43)				
Differential input voltage max.		[V]	30 for terminal D and E against PE (terminal G)				
		[V]	11 for terminal D and E against 0V (terminal B)				
Adjustment ranges	Min current	[%]	0...50				
	Max current	[%]	50...100				
	Ramp	[s]	0...32.5				
Interface		RS 232C, parametrizing connection 5-pole					
EMC		EN 61000-6-2, EN 61000-6-4					
Central connection		6 + PE acc. EN 175201-804					
Cable specification	[mm ²]	7 x 1.0 overall braid shield					
Cable length max.	[m]	50					

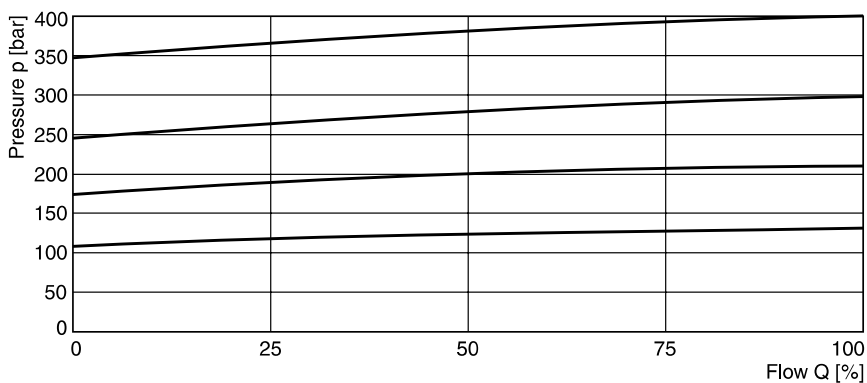
8

¹⁾ If valves with onboard electronics are used in safety-related parts of control systems, in case the safety function is requested, the valve electronics voltage supply is to be switched off by a suitable switching element with sufficient reliability.

Command pressure curve RE*E*T



p/Q performance curve RE*E*T



All characteristic curves measured with HLP46 at 50 °C.

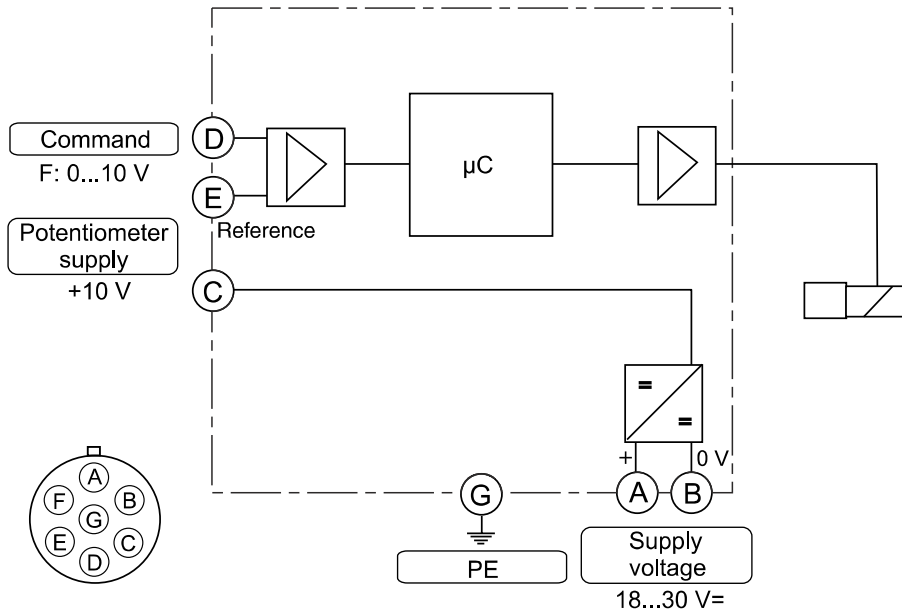
The performance curves are measured with external drain. For internal drain the tank pressure has to be added to curve.



Block diagram

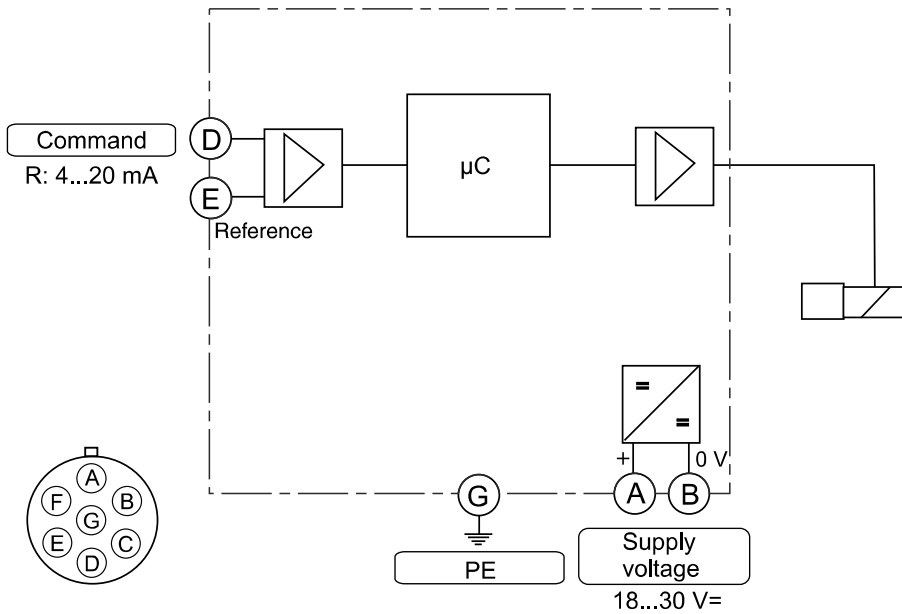
Code F

6 + PE acc. EN 175201-804



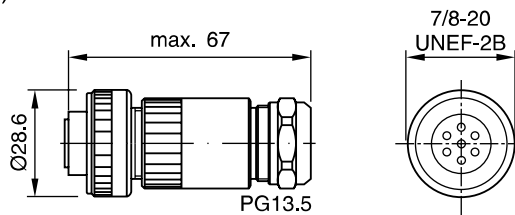
Code R

6 + PE acc. EN 175201-804



8

Female connector (EMC conform)



Please order plugs separately,
 ID no. 5004072

ProPxD interface program

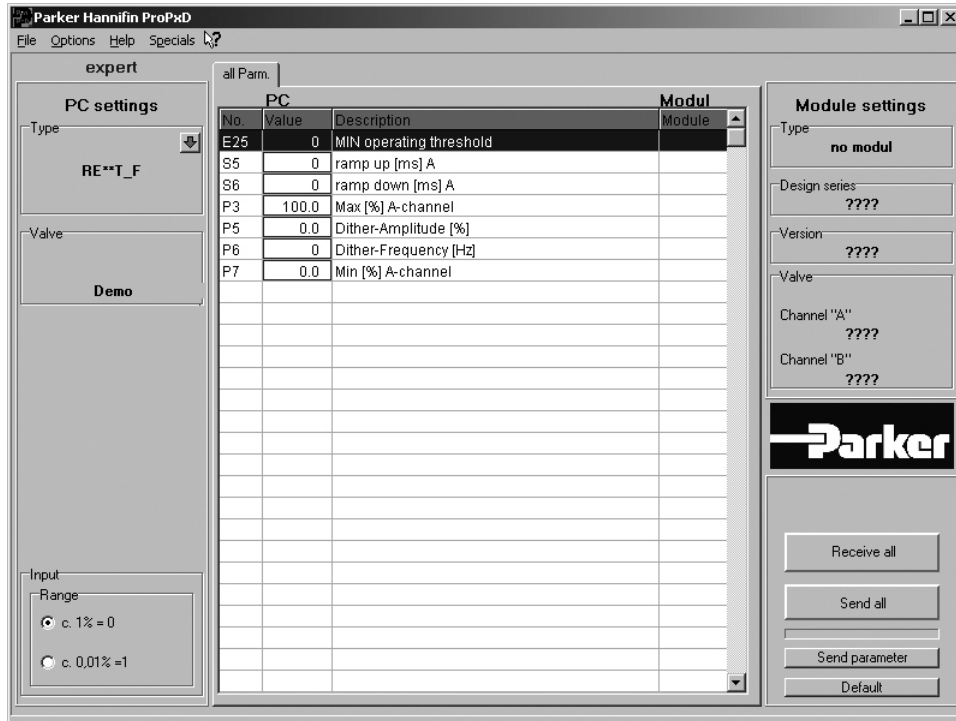
The ProPxD software permits comfortable parameter setting for the module electronics. Via the clearly arranged entry mask the parameters can be noticed and modified. Storage of complete parameter sets is possible as well as printout or record as a text file for further documentation. Stored parameter sets may be loaded anytime and transmitted to other valves. Inside the electronics a non-volatile memory stores the data with the option for recal-ling or modification.

The PC software can be downloaded free of charge at www.parker.com/isde – see page “Support“ or directly at www.parker.com/propxd.

Features

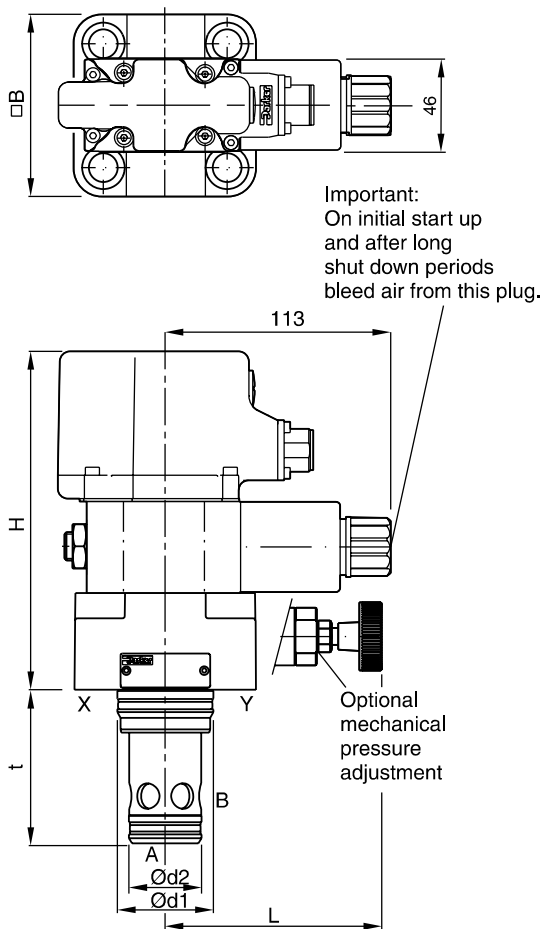
- Comfortable editing of all parameters
- Depiction and documentation of parameter sets
- Storage and loading of optimized parameter adjust-ments
- Executable with all actual Windows® operating systems from Windows® XP upwards
- Plain communication between PC and electronics via serial interface RS232C

The parametrizing cable may be ordered under item no. 40982923.

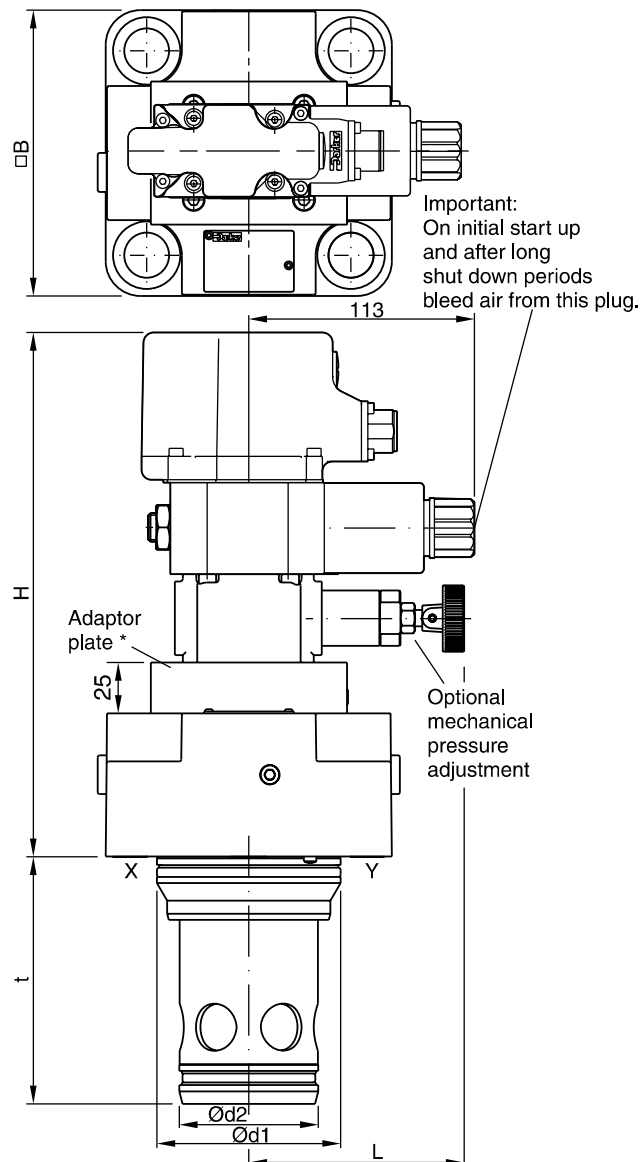


Dimensions

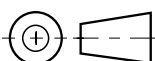
NG16 - NG32



NG40 - NG63 *



8



NG	H	B	d ₁	d ₂	t	L
16	179	79 ¹⁾	32	25	56	114
25	124	85	45	34	72	102
32	129	102	60	45	85	95
40	139 (182.2) ²⁾	125	75	55	105	106
50	174 (217.2) ²⁾	140	90	68	122	106
63	189 (232.2) ²⁾	180	120	90	155	106

NG	Kit	ISO 4762-12.9	[Nm]	Kit	
				NBR	FPM
16	BK414	4 x M8x40	31.8	SK-RE16EN	SK-RE16EV
25	BK391	4 x M12x50	108	SK-RE25EN	SK-RE25EV
32	BK415	4 x M16x55	264	SK-RE32EN	SK-RE32EV
40	BK416	4 x M20x70	517	SK-RE40EN	SK-RE40EV
50	BK417	4 x M20x75	517	SK-RE50EN	SK-RE50EV
63	BK418	4 x M30x100	1775	SK-RE63EN	SK-RE63EV

* NG40 without adaptor plate.

¹⁾ Width 65 mm.

²⁾ With mechanical pressure adjustment.

RE_E_T UK.INDD 10.04.19



Characteristics

Unloading valves series UR*E consist of a mechanical pilot stage and a slip-in cartridge main stage. These valves are used to unload a circuit at low pressure. The mechanically adjustable pressure signal to unload the main stage has to be applied to port X. The nominal pressure differential between opening and closing is 15 %.

In addition the series US*E is vented by electrical operation. The UR*E/US*E model codes embrace the pilot valves, covers and cartridges that are also offered as separate items. See combination examples for details.

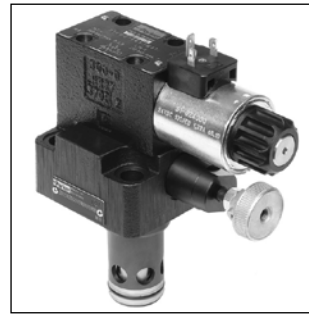
Features

- Pilot operated unloading valve
- Cavity and mounting pattern according to ISO 7368
- 4 pressure stages
- 2 switching types (series US*E)
- 3 adjustment modes
 - Hand knob
 - Acorn nut with lead seal
 - Cylinder lock
- 6 sizes NG16 to NG63

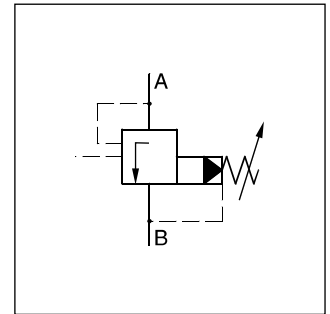
Note

Port X only usable for remote vent function

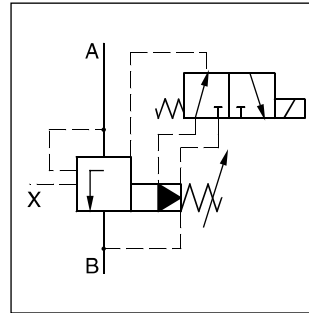
**Unloading Valves
Series UR*E / US*E**



US25E

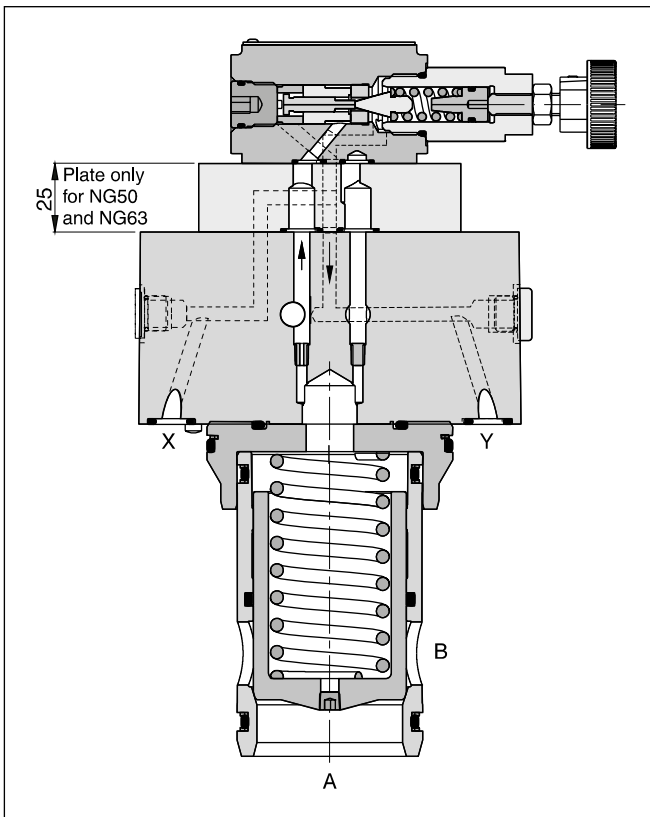


UR*E

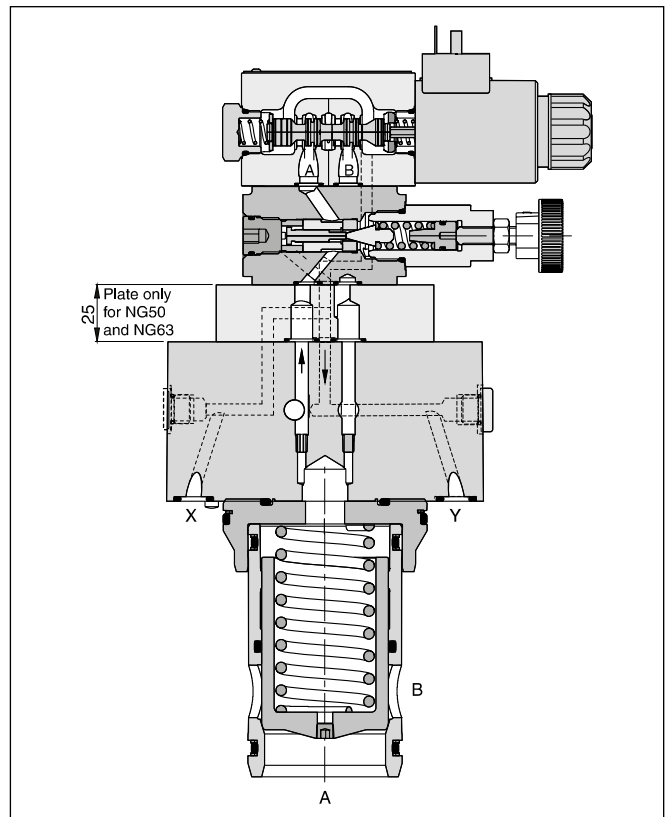


US*E

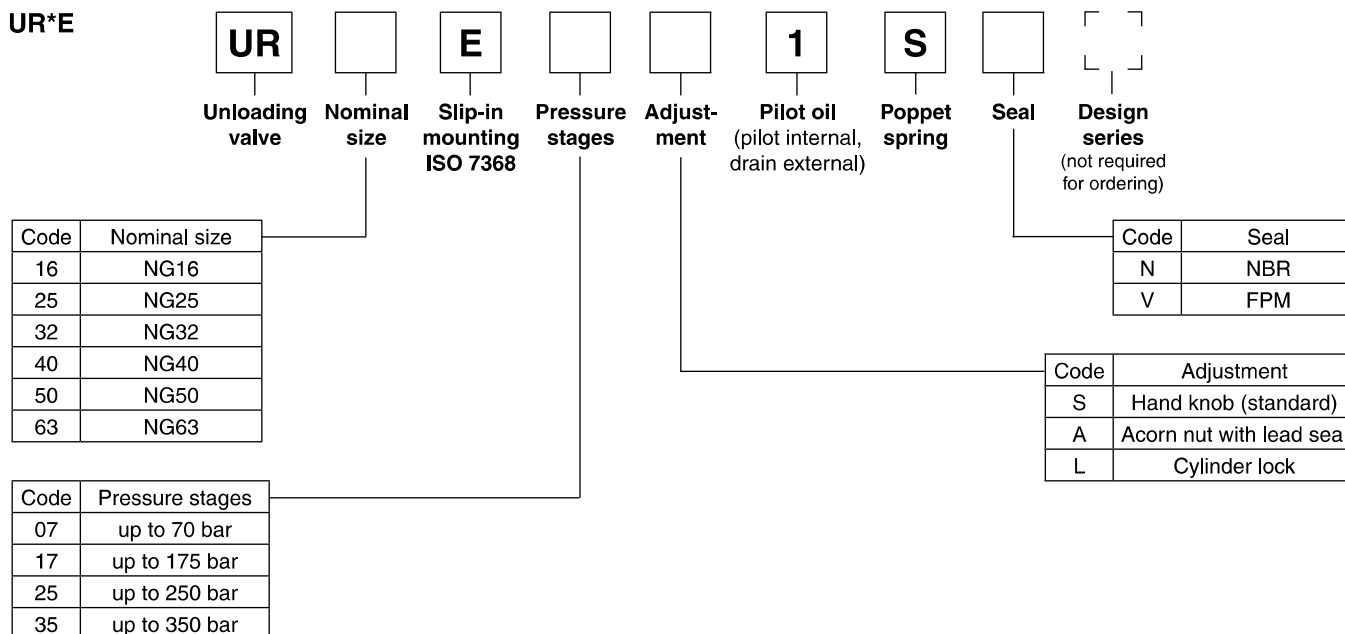
UR*E



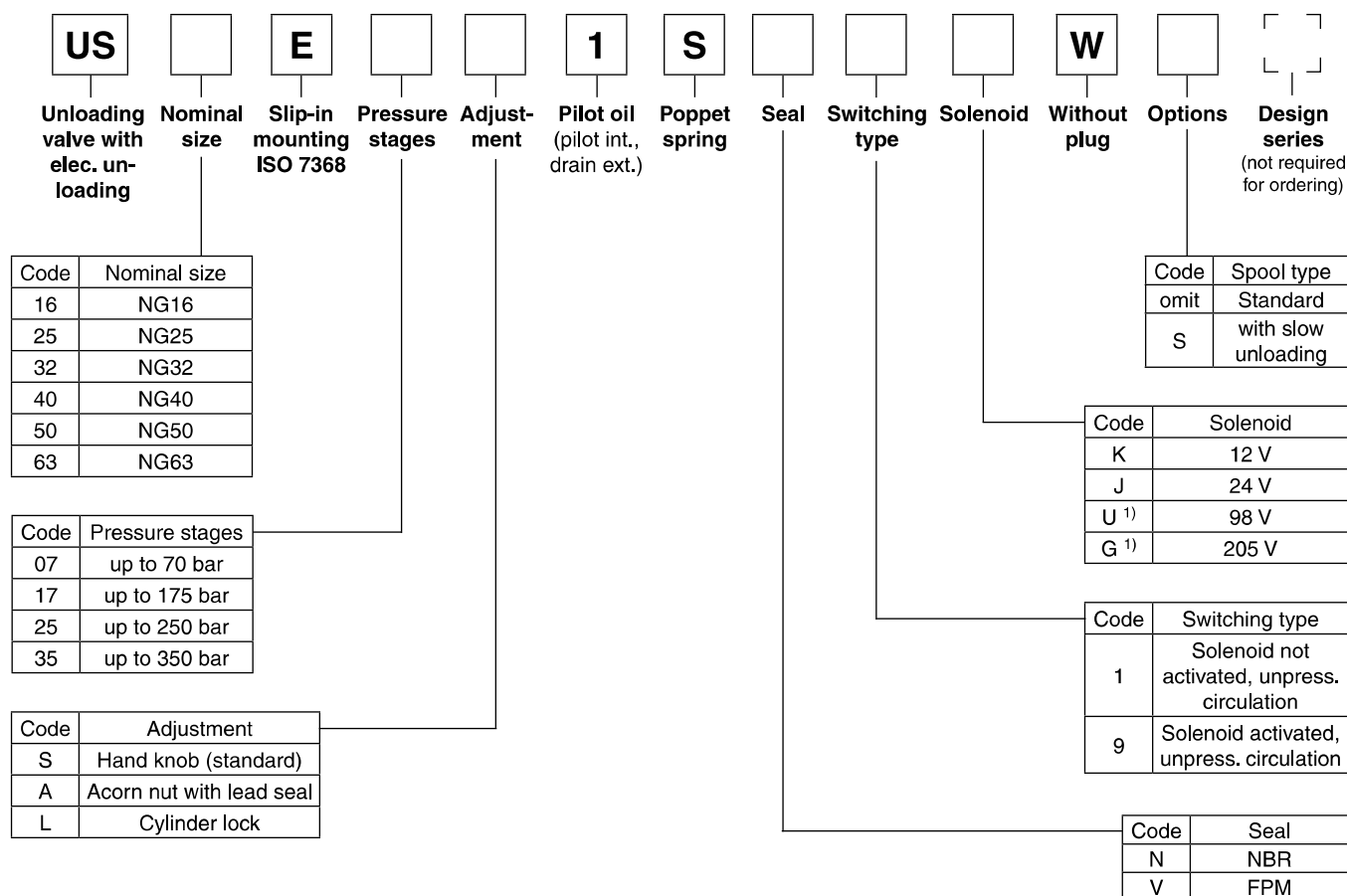
US*E



UR*E



US*E



¹⁾ To be used in combination with rectifier plugs at 120 VAC / 230 VAC power supply.

UR*E

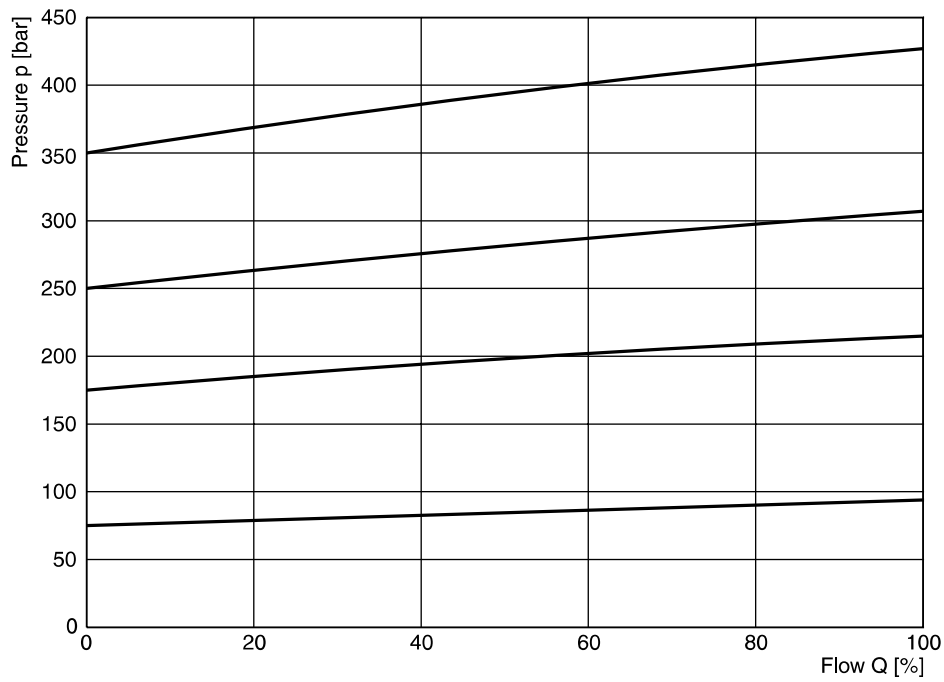
General							
Nominal size		NG16	NG25	NG32	NG40	NG50	NG63
Interface	Slip-in mounting acc. ISO 7368						
Mounting position	as desired, horizontal mounting preferred						
Ambient temperature	[°C]	-20...+60					
MTTF _D value	[years]	75					
Weight	[kg]	2.2	3.5	4.9	8.0	13.7	22.8
Hydraulic							
Max. operating pressure	[bar]	Ports A and X up to 350, Ports B and Y 30					
Pressure stages	[bar]	75, 175, 250, 350					
Pressure differential, nominal	[%]	15					
Nominal flow	[l/min]	220	500	950	1400	2300	4000
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						

US*E

General							
Nominal size		NG16	NG25	NG32	NG40	NG50	NG63
Interface	Slip-in mounting acc. ISO 7368						
Mounting position	as desired, horizontal mounting preferred						
Ambient temperature	[°C]	-20...+60					
MTTF _D value	[years]	75					
Weight	[kg]	2.7	5.2	6.4	9.5	15.2	24.3
Hydraulic							
Max. operating pressure	[bar]	Ports A and X 350, ports B and Y 30					
Pressure stages	[bar]	75, 175, 250, 350					
Pressure differential, nominal	[%]	15					
Nominal flow	[l/min]	220	500	950	1400	2300	4000
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						
Electrical (solenoid)							
Duty ratio	100 % ED; CAUTION: coil temperature up to 150 °C possible						
Protection class	IP65 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 EN175301-803, solenoid identification as per ISO 9461						
Wiring min.	[mm ²]	3 x 1.5 recommended					
Wiring length max.	[m]	50 recommended					



p/Q performance curve ¹⁾

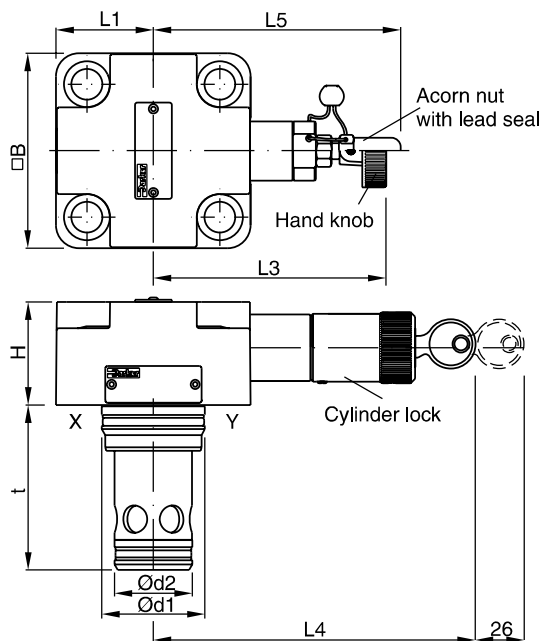


All characteristic curves measured with HLP46 at 50 °C.

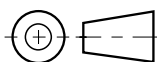
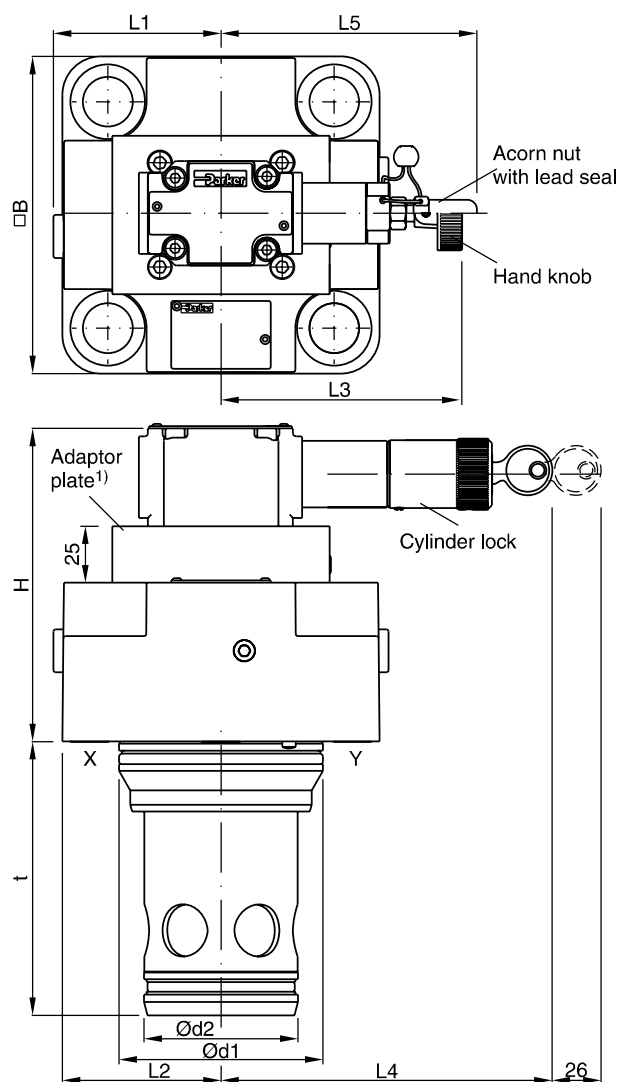
¹⁾ The performance curves are measured with external drain.
For internal drain the tank pressure has to be added to curve.

Dimensions UR*E

NG16 to NG32



NG40 to NG63 ¹⁾



NG	H	B	L1	L2	L3	L4	L5	d1	d2	t
16	40	65 ²⁾	32.5	—	114	152	117	32	25	56
25	47	85	42.5	—	102	139	106	45	34	71
32	50	102	51	—	95	131	97.5	60	45	85
40	106	125	62.5	66.5	106	144	108	75	55	105
50	141	140	70	74	106	144	108	90	68	121
63	155	180	90	94	106	144	108	120	90	155

NG	Kit	ISO 4762-12.9	[Nm]	Kit	
				NBR	FPM
16	BK414	4 x M8x40	31.8	SK-R16EN	SK-R16EV
25	BK391	4 x M12x50	108	SK-R25EN	SK-R25EV
32	BK415	4 x M16x55	264	SK-R32EN	SK-R32EV
40	BK416	4 x M20x70	517	SK-R40EN	SK-R40EV
50	BK417	4 x M20x75	517	SK-R50EN	SK-R50EV
63	BK418	4x M30x100	1775	SK-R63EN	SK-R63EV

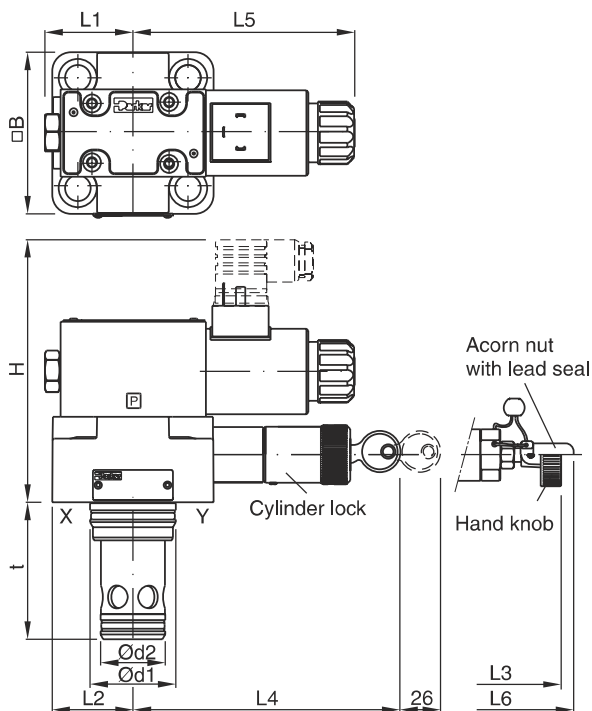
¹⁾ NG40 without adaptor plate.

²⁾ Width 79 mm.

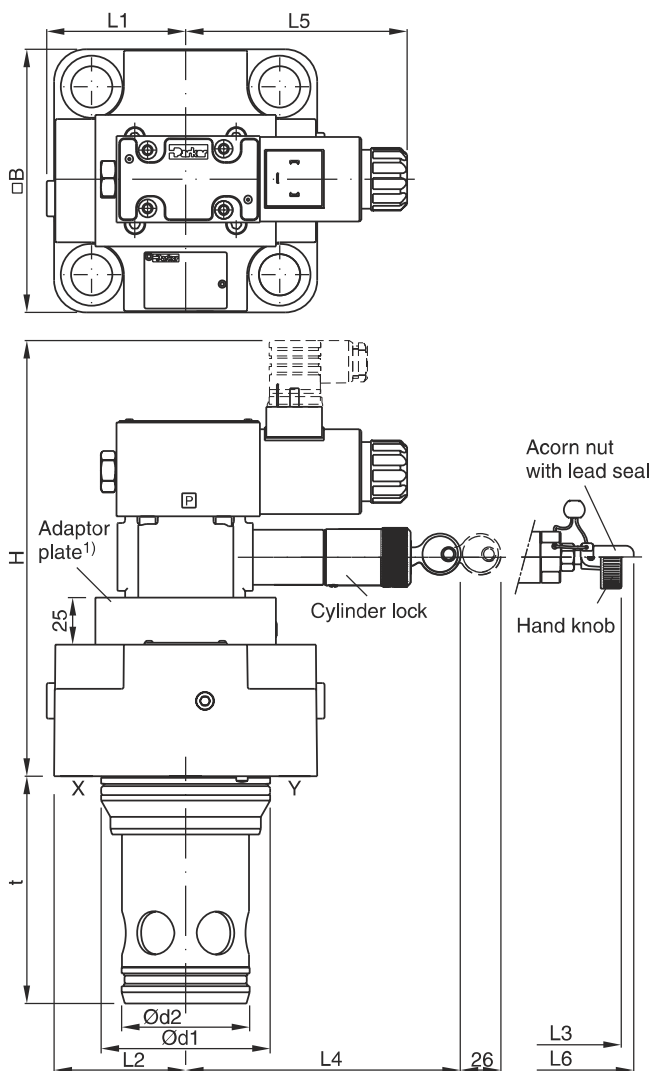
Dimensions

Dimensions US*E

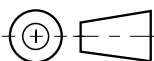
NG16 to NG32



NG40 to NG63 ¹⁾



8



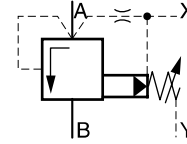
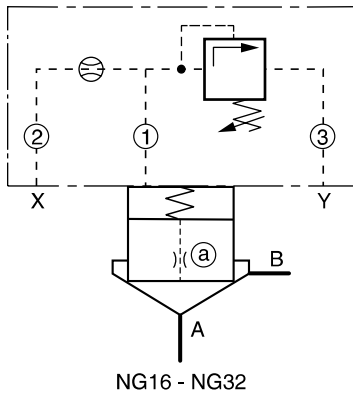
NG	H	B	L1	L2	L3	L4	L5	L6	d1	d2	t
16	40	65 ²⁾	32	32.5	114	152	127.5	117	32	25	56
25	47	85	46	42.5	102	139	117	106	45	34	71
32	50	102	51	51	95	131	112.5	97.5	60	45	85
40	106	125	66	62.5	106	144	114	108	75	55	105
50	141	140	74	70	106	144	114	108	90	68	121
63	155	180	94	90	106	144	114	108	120	90	155

NG	Kit	ISO 4762-12.9	[Nm]	Kit	
				NBR	FPM
16	BK414	4 x M8x40	31.8	SK-RS16EN	SK-RS16EV
25	BK391	4 x M12x50	108	SK-RS25EN	SK-RS25EV
32	BK415	4 x M16x55	264	SK-RS32EN	SK-RS32EV
40	BK416	4 x M20x70	517	SK-RS40EN	SK-RS40EV
50	BK417	4 x M20x75	517	SK-RS50EN	SK-RS50EV
63	BK418	4 x M30x100	1775	SK-RS63EN	SK-RS63EV

¹⁾ NG40 without adaptor plate.

²⁾ Width 79 mm.

Pressure relief valve with cover with integrated pressure relief function



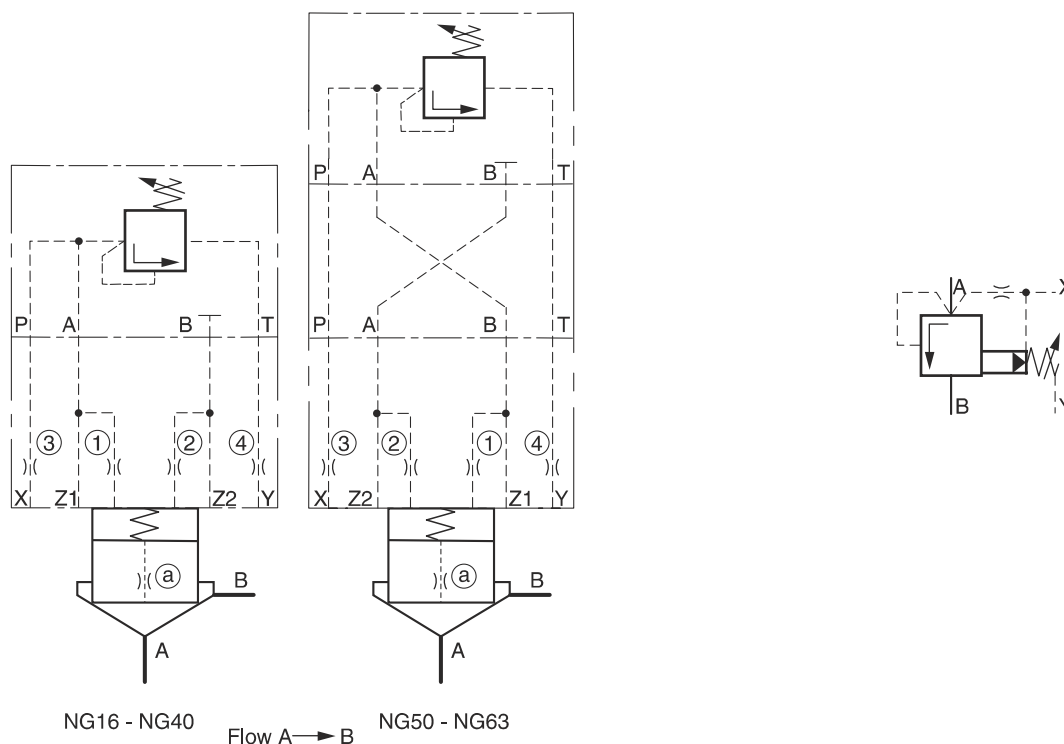
Description	Type		
	NG16	NG25	NG32
Cover incl. pressure valve ¹⁾	C016Fxxxxxxxxxx	C025Fxxxxxxxxxx	C032Fxxxxxxxxxx
Cover orifice ①	M5xØ1.0	M5xØ1.1	M6xØ1.2
Cover orifice ②	M4xØ0.8	M5xØ0.9	M6xØ1.0
Cover orifice ③	M5xØ99	M5xØ99	M6xØ99
Cartridge ²⁾	CP016C07S00X	CP025C07S00X	CP032C07S00X
Poppet orifice (a)	1/16NPT x Ø0.9	1/16NPT x Ø1.1	1/16NPT x Ø1.2
Spring	1.6 bar, typ S		
Volume reduction	45036578	45036579	45036580
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55

8

¹⁾ Complete type see ordering code C*F.
²⁾ Complete type see ordering code CP*.

Shown orifice Ø and springs are recommendations.
 xxØ00 = plug
 xxØ99 = open

Pressure relief valve with separate pilot



8

Adaptor plates see chapter 12

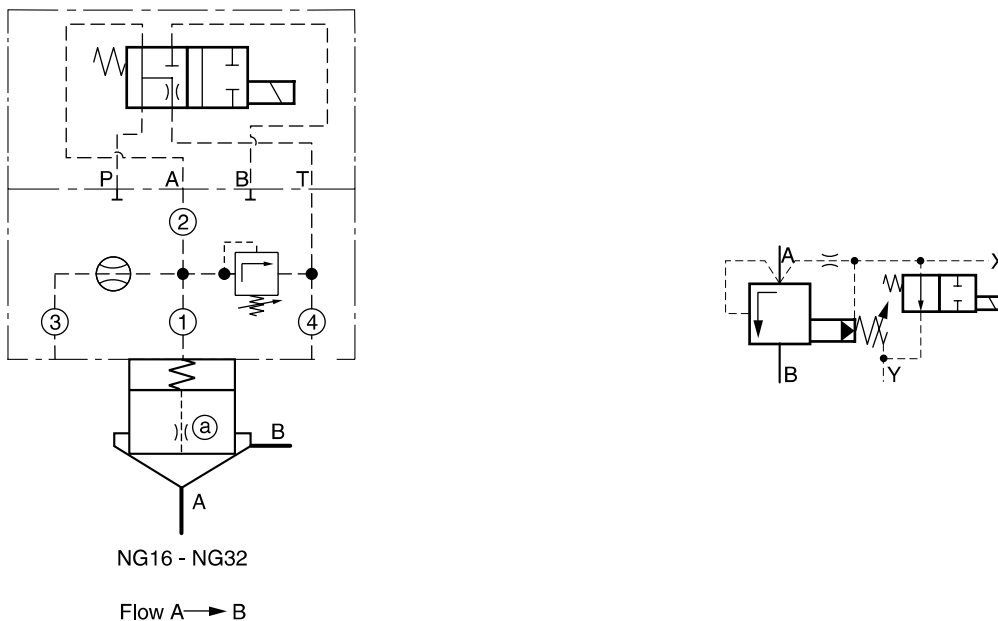
Description	Type					
	NG16	NG25	NG32	NG40	NG50	NG63
Pressure valve ¹⁾	R06Mxxx4x					
Adaptor plate ²⁾	without				PADA1007/A-B/B-A	
Cover ³⁾	C016CA*	C025CA*	C032CA*	C040CA*	C050CA*	C063CA*
Cover orifice ①	M5xØ1.1	M5xØ1.3	M5xØ1.4	M5xØ1.5	M6xØ1.6	M6xØ1.7
Cover orifice ②	M5xØ00				M6xØ00	
Cover orifice ③	M5xØ99	M6xØ99			M8xØ99	
Cover orifice ④	M5xØ1.3	M6xØ1.5	M6xØ1.7	M6xØ1.8	M8xØ2.0	M8xØ2.2
Cartridge ⁴⁾	CP016C07*	CP025C07*	CP032C07*	CP040C07*	CP050C07*	CP063C07*
Poppet orifice (a)	1/16NPT x Ø0.9	1/16NPT x Ø1.1	1/16NPT x Ø1.2	1/16NPT x Ø1.3	1/16NPT x Ø1.4	1/16NPT x Ø1.5
Spring	1.6 bar, type S					
Volume reduction	45036578	45036579	45036580	45036581	45036582	45036583
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55	BK416, 4x M20x70	BK417, 4x M20x75	BK418, 4x M30x100
Bolt kit pilot	BK443, 4x M5x45					

¹⁾ Complete type see pilot valves.
²⁾ Included O-rings and mounting bolts.
³⁾ Complete type see ordering code C*C.
⁴⁾ Complete type see ordering code CP*.

Shown orifice Ø and springs are recommendations.
xxØ00 = plug
xxØ99 = open

Examples pressure.INDD 10.04.19

Pressure relief valve with electrical vent function, normally open and cover with integrated pressure relief function



8

Description	Type		
	NG16	NG25	NG32
4/2 DC valve ¹⁾		D1VW104K*	
Cover incl. pressure valve ²⁾	C016Gxxxxxxxxxx	C025Gxxxxxxxxxx	C032Gxxxxxxxxxx
Cover orifice ①	M5xØ1.0	M5xØ1.1	M6xØ1.2
Cover orifice ②	M5xØ99	M5xØ99	M6xØ99
Cover orifice ③	M4xØ00	M5xØ00	M6xØ00
Cover orifice ④	M5xØ1.2	M5xØ1.3	M6xØ1.4
Cartridge ³⁾	CP016C07*	CP025C07*	CP032C07*
Poppet orifice ①a	1/16NPT x Ø0.8	1/16NPT x Ø0.8	1/16NPT x Ø1.0
Spring		1.6 bar, type S	
Volume reduction	45036578	45036579	45036580
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55
Bolt kit 4/2 DC valve		BK375, 4x M5x30	

¹⁾ Complete type see chapter "Directional Control Valves", series D1VW.

²⁾ Complete type see ordering code C*G.

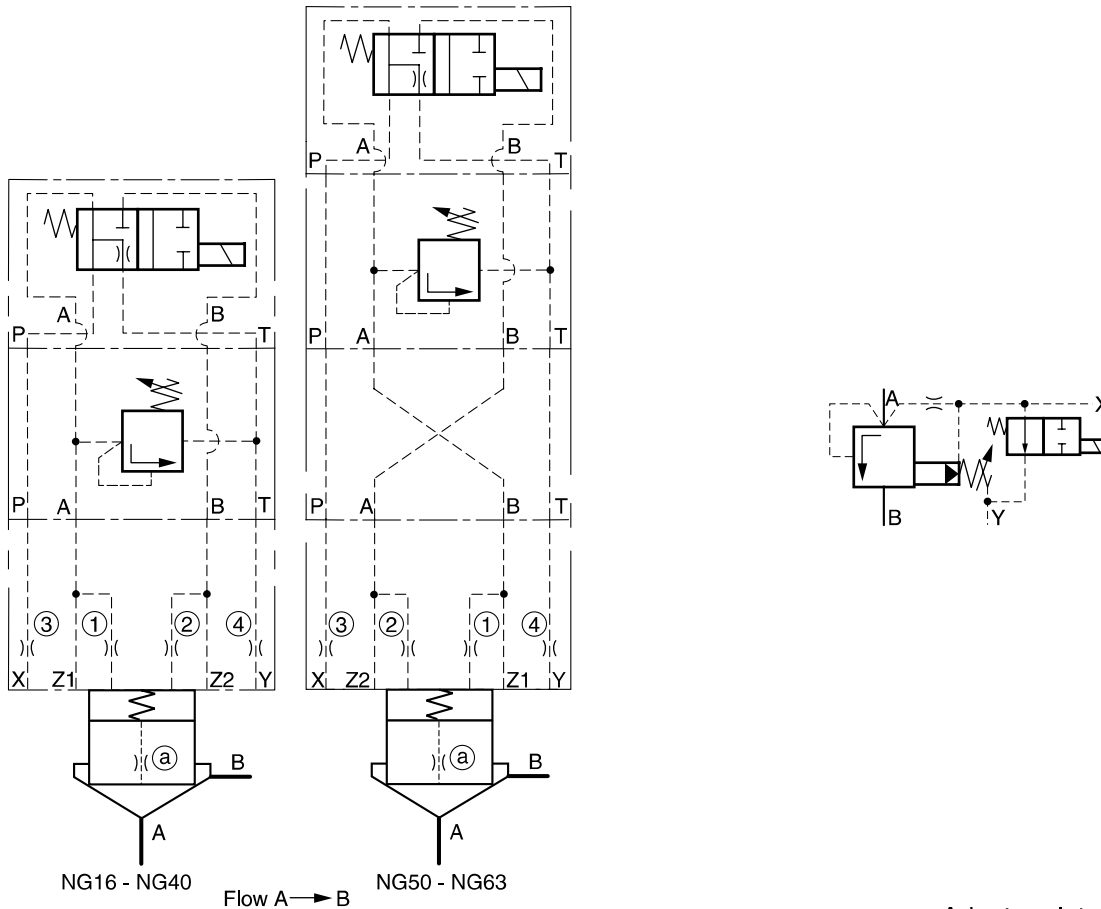
³⁾ Complete type see ordering code CP*.

Shown orifice Ø and springs are recommendations.

xxØ00 = plug

xxØ99 = open

Pressure relief valve with electrical vent function, normally open and pilot in sandwich design



8

Adaptor plates see chapter 12

Description	Type					
	NG16	NG25	NG32	NG40	NG50	NG63
4/2 DC valve ¹⁾	D1VW104K*					
Pressure valve ²⁾	V-ZUDB1ATxZ07x					
Adaptor plate NG10-NG06 ³⁾	without			PADA1007/A-B/B-A		
Cover ⁴⁾	C016CA*	C025CA*	C032CA*	C040CA*	C050CA*	C063CA*
Cover orifice ①	M5xØ1.1	M5xØ1.3	M5xØ1.4	M5xØ1.5	M6xØ1.6	M6xØ1.7
Cover orifice ②	M5xØ00				M6xØ00	
Cover orifice ③	M5xØ99	M6xØ99			M8xØ99	
Cover orifice ④	M5xØ1.3	M6xØ1.5	M6xØ1.5	M6xØ1.8	M8xØ2.0	M8xØ2.2
Cartridge ⁵⁾	CP016C07*	CP025C07*	CP032C07*	CP040C07*	CP050C07*	CP063C07*
Poppet orifice (a)	1/16NPT x Ø0.9	1/16NPT x Ø1.1	1/16NPT x Ø1.2	1/16NPT x Ø1.3	1/16NPT x Ø1.4	1/16NPT x Ø1.5
Spring	1.6 bar, type S					
Volume reduction	45036578	45036579	45036580	45036581	45036582	45036583
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55	BK416, 4x M20x70	BK417, 4x M20x75	BK418, 4x M30x100
Bolt kit pilot	TK1482					

¹⁾ Complete type see chapter "Directional Control Valves", series D1VW.

²⁾ Complete types see pilot valves.

³⁾ Included O-rings and mounting bolts.

⁴⁾ Complete type see ordering code C*C.

⁵⁾ Complete type see ordering code CP*.

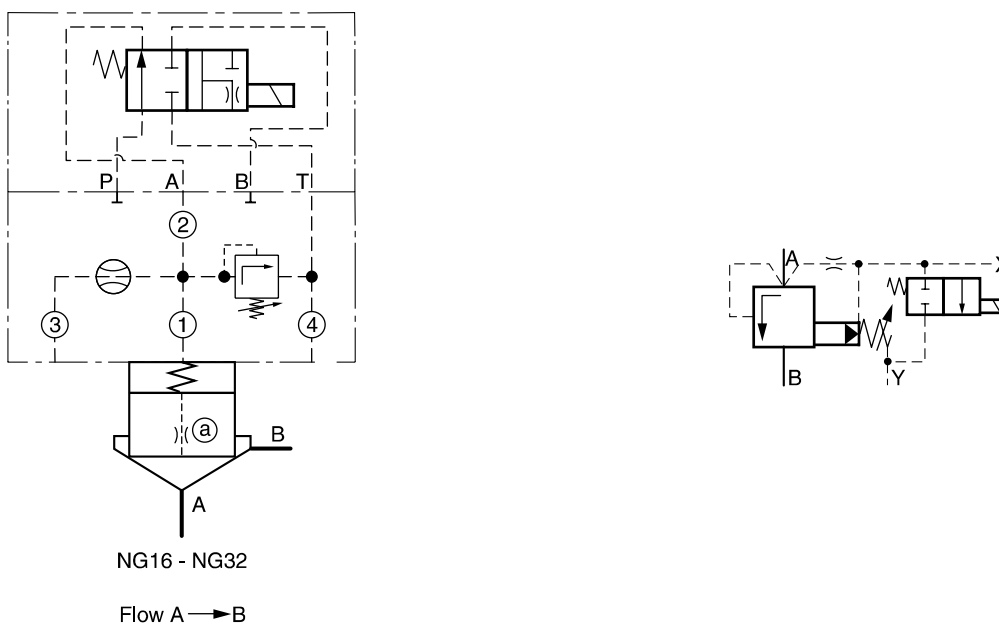
Shown orifice Ø and springs are recommendations.

xxØ00 = plug

xxØ99 = open

Examples pressure.INDD 10.04.19

Pressure relief valve with electrical vent function, normally closed and cover with integrated pressure relief function



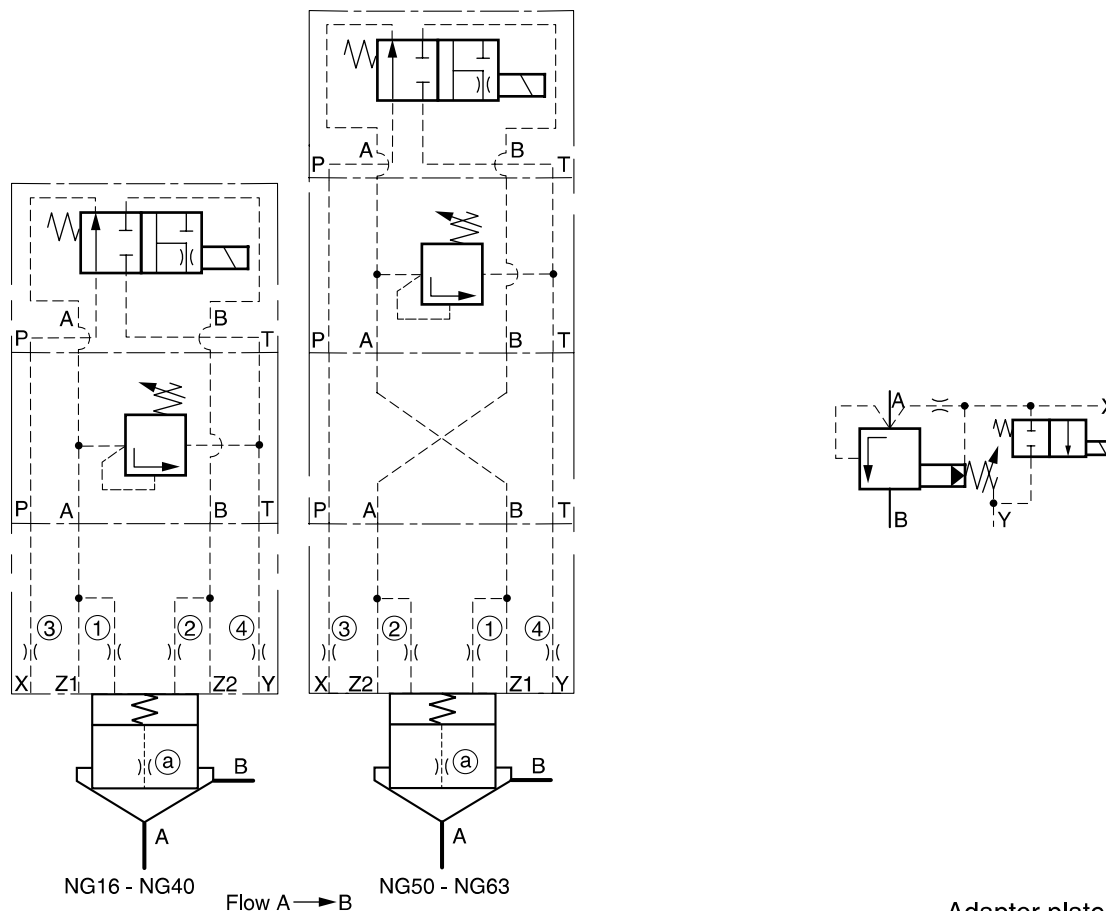
8

Description	Type		
	NG16	NG25	NG32
4/2 DC valve ¹⁾	D1VW105K*		
Cover incl. pressure valve ²⁾	C016Gxxxxxxxxxxx	C025Gxxxxxxxxxxx	C032Gxxxxxxxxxxx
Cover orifice ①	M5xØ1.0	M5xØ1.1	M6xØ1.4
Cover orifice ②	M5xØ99	M5xØ99	M6xØ99
Cover orifice ③	M4xØ00	M5xØ00	M6xØ00
Cover orifice ④	M5xØ1.2	M5xØ1.3	M6xØ1.4
Cartridge ³⁾	CP016C07*	CP025C07*	CP032C07*
Poppet orifice ①a	1/16NPT x Ø0.8	1/16NPT x Ø0.8	1/16NPT x Ø1.0
Spring	1.6 bar, type S		
Volume reduction	45036578	45036579	45036580
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55
Bolt kit pilot	BK375, 4x M5x30		

¹⁾ Complete type see chapter "Directional Control Valves", series D1VW.
²⁾ Complete type see ordering code C*G.
³⁾ Complete type see ordering code CP*.

Shown orifice Ø and springs are recommendations.
 xxØ00 = plug
 xxØ99 = open

Pressure relief valve with electrical vent function, normally closed and pilot in sandwich design



8

Adaptor plates see chapter 12

Description	Type					
	NG16	NG25	NG32	NG40	NG50	NG63
4/2 DC valve ¹⁾	D1VW105K*					
Pressure valve ²⁾	V-ZUDB1ATxZ07x					
Adaptor plate ³⁾	without			PADA1007/A-B/B-A		
Cover ⁴⁾	C016CA*	C025CA*	C032CA*	C040CA*	C050CA*	C063CA*
Cover orifice ①	M5xØ1.1	M5xØ1.3	M5xØ1.4	M5xØ1.5	M6xØ1.6	M6xØ1.7
Cover orifice ②	M5xØ00			M6xØ00		
Cover orifice ③	M5xØ99	M6xØ99			M8xØ99	
Cover orifice ④	M5xØ1.3	M6xØ1.5	M6xØ1.7	M6xØ1.8	M8xØ2.0	M8xØ2.2
Cartridge ⁵⁾	CP016C07*	CP025C07*	CP032C07*	CP040C07*	CP050C07*	CP063C07*
Poppet orifice (a)	1/16NPT x Ø0.9	1/16NPT x Ø1.1	1/16NPT x Ø1.2	1/16NPT x Ø1.3	1/16NPT x Ø1.4	1/16NPT x Ø1.5
Spring	1.6 bar, type S					
Volume reduction	45036578	45036579	45036580	45036581	45036582	45036583
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55	BK416, 4x M20x70	BK417, 4x M20x75	BK418, 4x M30x100
Bolt kit pilot	TK1482					

¹⁾ Complete type see chapter "Directional Control Valves", series D1VW.

²⁾ Complete types see pilot valves.

³⁾ Included O-rings and mounting bolts.

⁴⁾ Complete type see ordering code C*C.

⁵⁾ Complete type see ordering code CP*.

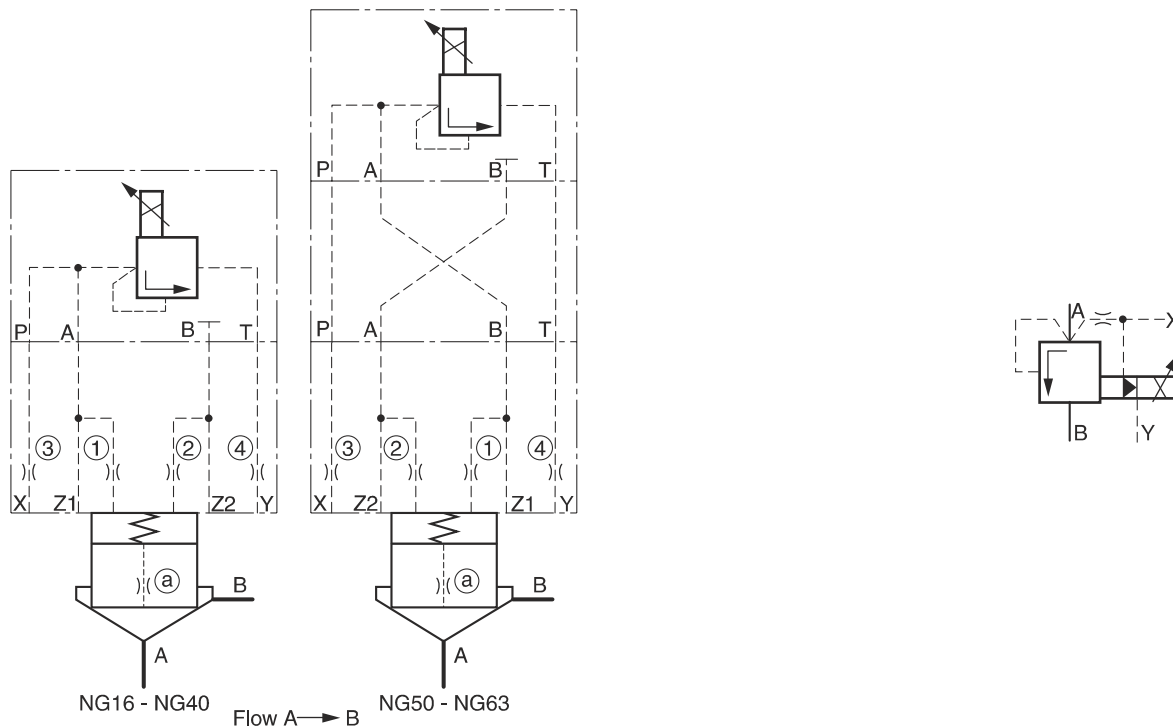
Shown orifice Ø and springs are recommendations.

xxØ00 = plug

xxØ99 = open

Examples pressure.INDD 10.04.19

Proportional pressure relief valve



Adaptor plates see chapter 12

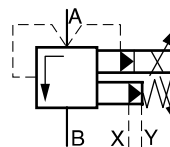
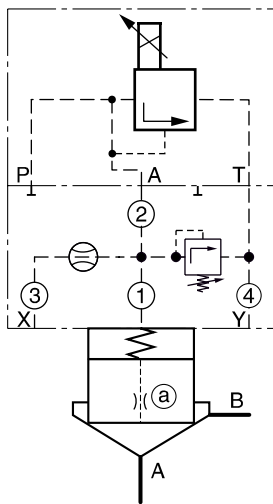


Description	Type					
	NG16	NG25	NG32	NG40	NG50	NG63
Prop. pressure valve ¹⁾	RE06MxW2V1KW					
Adaptor plate ²⁾	without				PADA1007/A-B/B-A	
Cover ³⁾	C016CA*	C025CA*	C032CA*	C040CA*	C050CA*	C063CA*
Cover orifice ①	M5xØ1.4	M5xØ1.4	M5xØ1.4	M5xØ1.4	M6xØ1.4	
Cover orifice ②	M5xØ00				M6xØ00	
Cover orifice ③	M5xØ99	M6xØ99			M8xØ99	
Cover orifice ④	M5xØ1.5	M6xØ1.5	M6xØ1.5	M6xØ1.5	M8xØ1.5	
Cartridge ⁴⁾	CP016C07*	CP025C07*	CP032C07*	CP040S07*	CP050S07*	CP063S07*
Poppet orifice ⑤	1/16NPT x Ø1.3	1/16NPT x Ø1.3	1/16NPT x Ø1.3	1/16NPT x Ø1.3	1/16NPT x Ø1.3	
Spring	0.5 bar, type S					
Volume reduction	45036578	45036579	45036580	45036581	45036582	45036583
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55	BK416, 4x M20x70	BK417, 4x M20x75	BK418, 4x M30x100
Bolt kit pilot	BK375, 4x M5x30					

¹⁾ Complete type see chapter "Pressure Valves", series RE06M*W.
²⁾ Inclusive O-Rings and mounting bolts.
³⁾ Complete type see ordering code C*C.
⁴⁾ Complete type see ordering code CP*.

Shown orifice Ø and springs are recommendations.
 xxØ00 = plug
 xxØ99 = open

Proportional pressure relief valve with mechanical maximum pressure protection and cover with integrated pressure relief function



Flow A → B

8

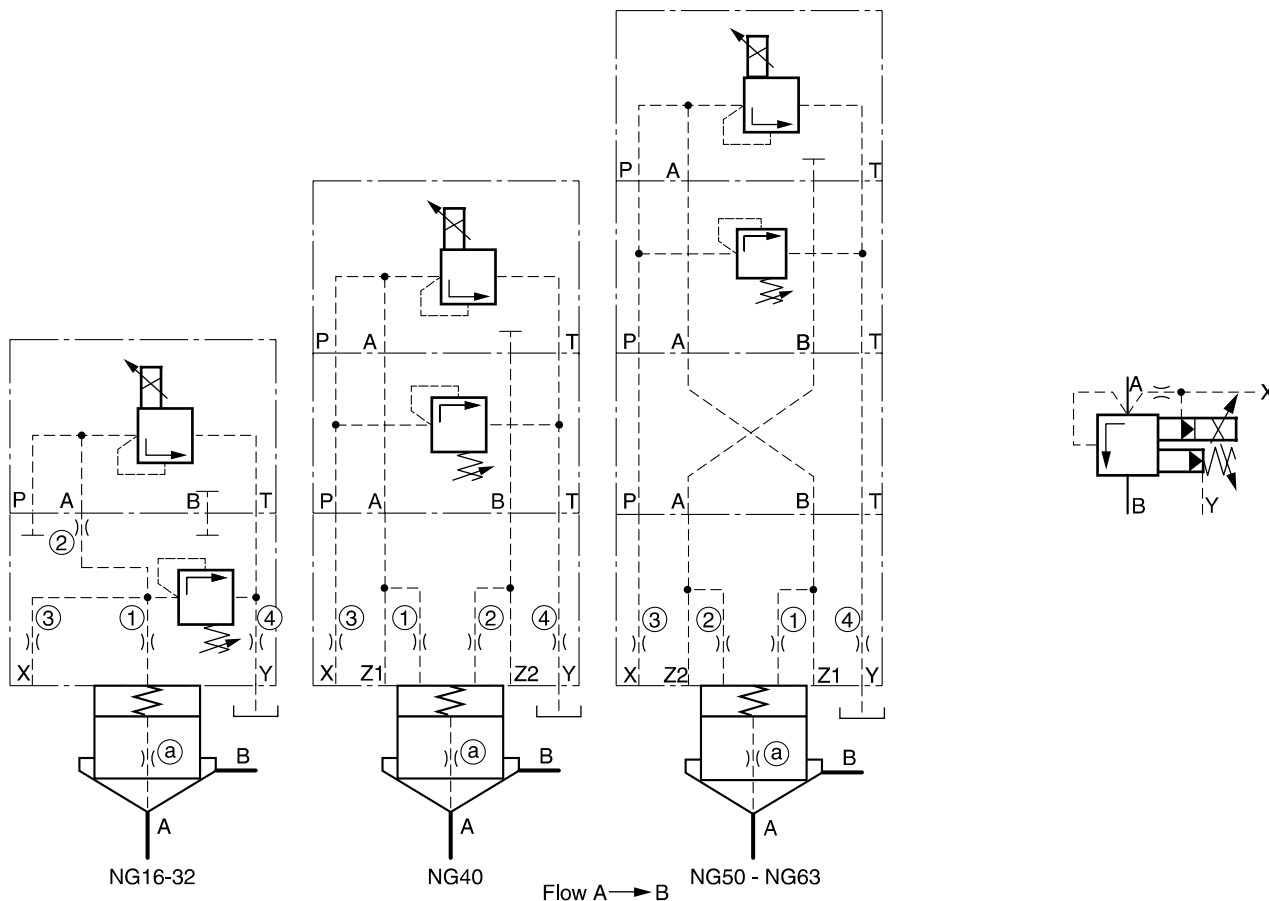
Description	Type		
	NG16	NG25	NG32
Prop. pressure valve ¹⁾	RE06MxW2V1xW		
Cover incl. pressure valve ²⁾	C016Gxxxxxxxxxxx	C025Gxxxxxxxxxxx	C032Gxxxxxxxxxxx
Cover orifice ①	M5xØ1.4	M5xØ1.4	M6xØ1.4
Cover orifice ②	M5xØ99	M5xØ99	M6xØ99
Cover orifice ③	M4xØ99	M5xØ99	M6xØ99
Cover orifice ④	M5xØ1.5	M5xØ1.5	M6xØ1.5
Cartridge ³⁾	CP016C07*	CP025C07*	CP032C07*
Poppet orifice (a)	1/16NPT x Ø1.3	1/16NPT x Ø1.3	1/16NPT x Ø1.3
Spring	1.6 bar, type S		
Volume reduction	45036578	45036579	45036580
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55
Bolt kit pilot	BK375, 4x M5x30		

¹⁾ Complete type see chapter "Pressure Valves", series RE06M*W.
²⁾ Complete type see ordering code C*G.
³⁾ Complete type see ordering code CP*.

Shown orifice Ø and springs are recommendations.
 xxØ00 = plug
 xxØ99 = open

Examples pressure.INDD 10.04.19

Proportional pressure relief valve with mechanical maximum pressure protection in sandwich design



Adaptor plates see chapter 12



Description	Type					
	NG16	NG25	NG32	NG40	NG50	NG63
Prop. pressure valve ¹⁾	RE06MxW2V1KW					
Max. pressure valve ²⁾	ZUDB1PTxZ07x					
Adaptor plate NG10-NG06 ³⁾	without				PADA1007/A-B/B-A	
Cover ⁴⁾	C016CA*	C025CA*	C032CA*	C040CA*	C050CA*	C063CA*
Cover orifice ①	M5xØ1.4	M5xØ1.4		M5xØ1.4	M6xØ1.4	
Cover orifice ②	M5xØ99					M6xØ00
Cover orifice ③	M5xØ99	M6xØ99			M8xØ99	
Cover orifice ④	M5xØ1.5	M6xØ1.5		M6xØ1.5	M8xØ1.5	
Cartridge ⁵⁾	CP016C07*	CP025C07*	CP032C07*	CP040S07*	CP050S07*	CP063S07*
Poppet orifice ①	1/16NPT x Ø1.3	1/16NPT x Ø1.3	1/16NPT x Ø1.3	1/16NPT x Ø1.3	1/16NPT x Ø1.3	
Spring	1.6 bar, type S					
Volume reduction	45036578	45036579	45036580	45036581	45036582	45036583
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55	BK416, 4x M20x70	BK417, 4x M20x75	BK418, 4x M30x100
Bolt kit pilot	TK1482					

¹⁾ Complete type see chapter "Pressure Valves", series RE06M*W.

²⁾ Complete types see pilot valves.

³⁾ Included O-rings and mounting bolts.

⁴⁾ Complete type see ordering code C*.

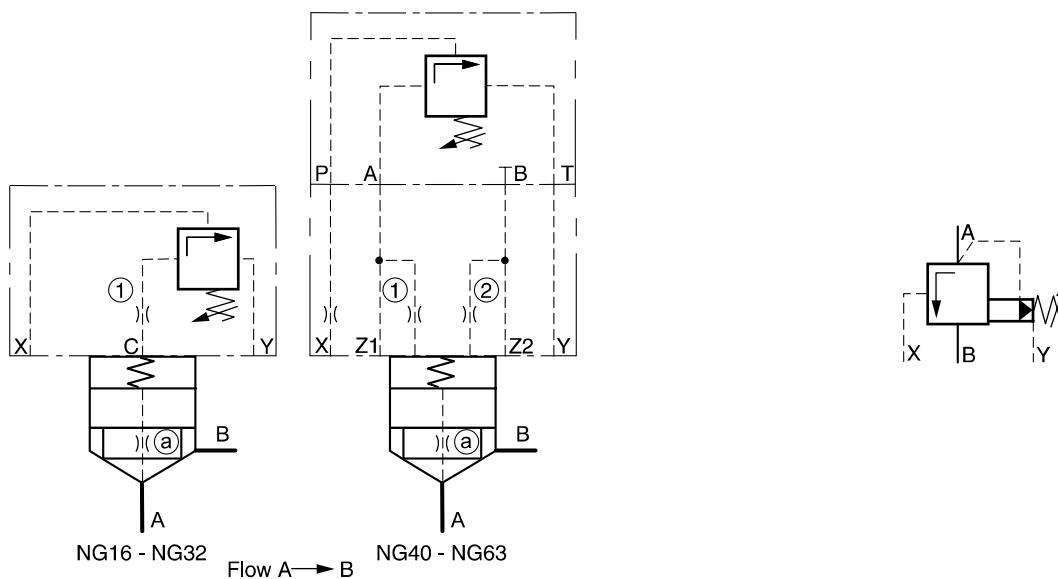
⁵⁾ Complete type see ordering code CP*.

Shown orifice Ø and springs are recommendations.xxØ00 = plug
 xxØ99 = open

Examples pressure.INDD 10.04.19



Unloading valve



8

Adaptor plates see chapter 12

Description	Type					
	NG16	NG25	NG32	NG40	NG50	NG63
Unloading valve ¹⁾		–			UR06Mxxx4x	
Adaptor plate NG10-NG06 ²⁾	–	–	–	–	PADA1007/A-B/B-A	
Cover ³⁾	on request			C040CA*	C050CA*	C063CA*
Cover orifice ①	M5xØ1.4				M6xØ1.4	
Cover orifice ②	M5xØ00				M6xØ00	
Cartridge ⁴⁾	CP16C07*	CP25C07*	CP032C07*	CP040S07*	CP050S07*	CP063S07*
Poppet orifice ③	1/16NPT x Ø1.2					
Spring	1.6 bar, type S					
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55	BK416, 4x M20x70	BK417, 4x M20x75	BK418, 4x M30x100
Bolt kit pilot	BK443, 4x M5x45					

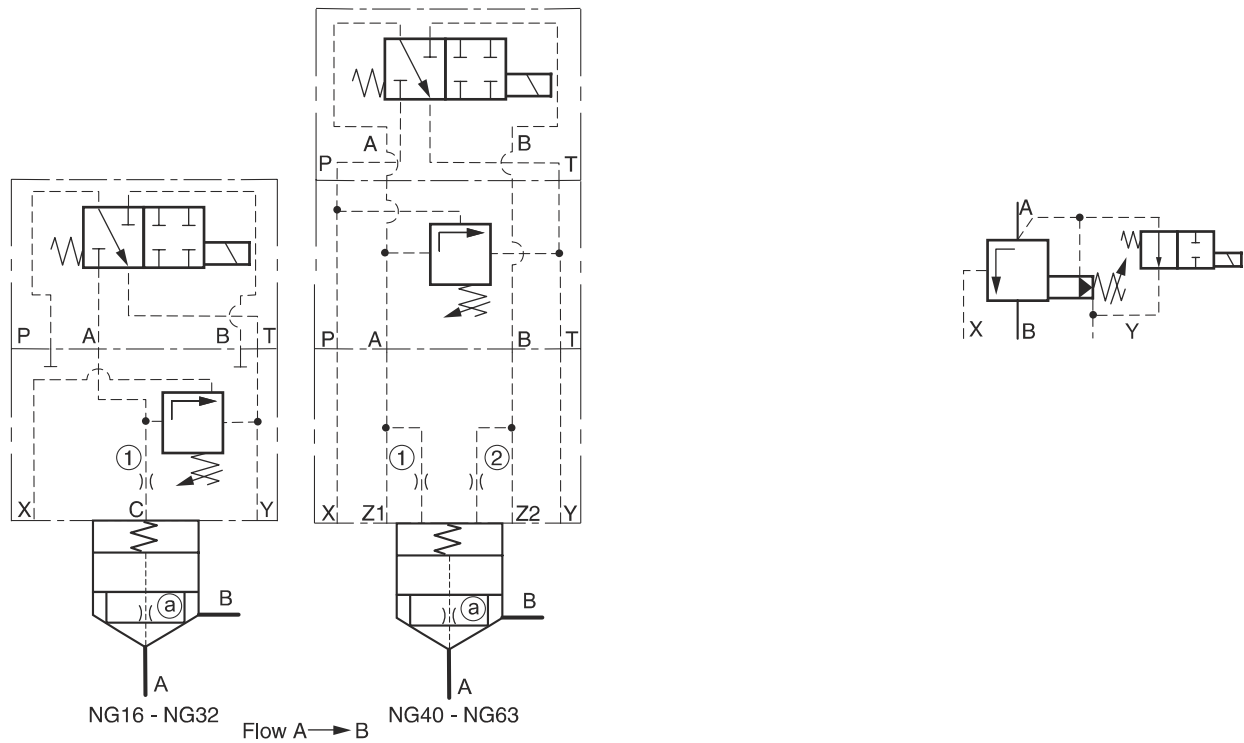
¹⁾ Complete types see pilot valves.
²⁾ Included O-rings and mounting bolts.
³⁾ Complete type see ordering code C*C.
⁴⁾ Complete type see ordering code CP*.

Shown orifice Ø and springs are recommendations.
 xxØ00 = plug
 xxØ99 = open

Examples pressure.INDD 10.04.19



Unloading valve with electrical vent function, normally open



Adaptor plates see chapter 12

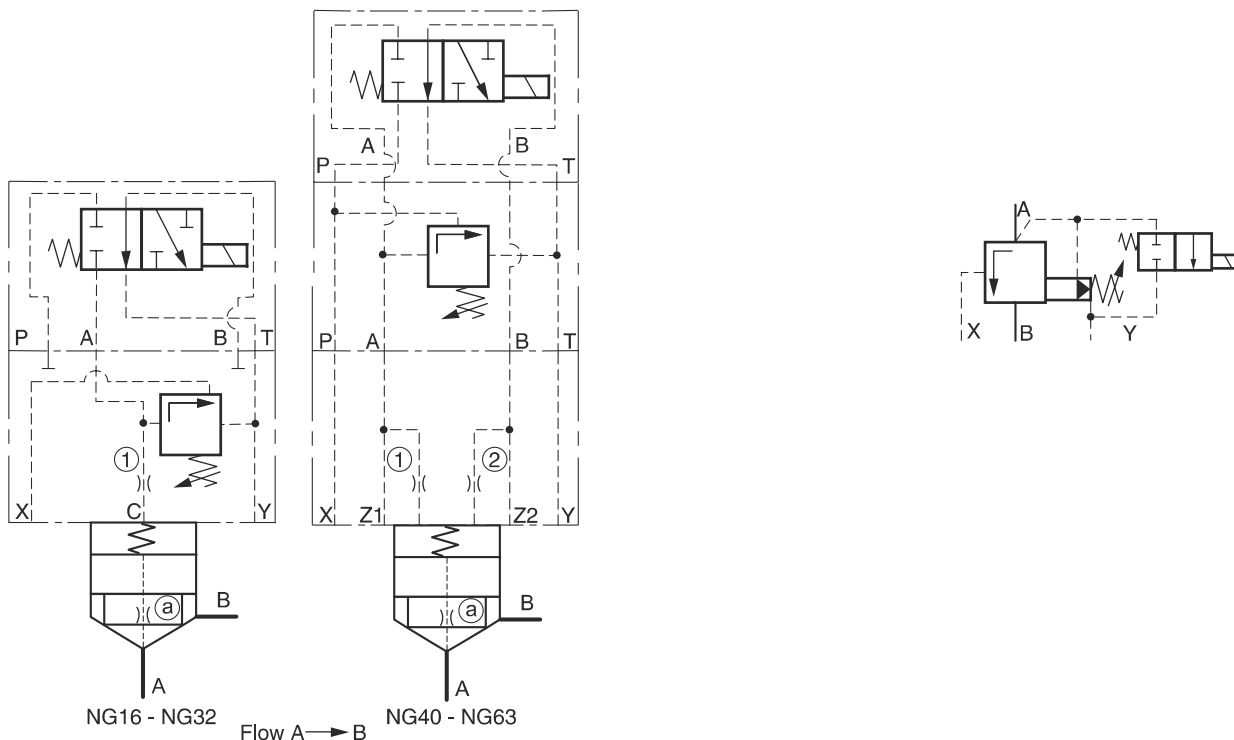
Description	Type					
	NG16	NG25	NG32	NG40	NG50	NG63
4/2 DC valve ¹⁾	-			D1VW076K*		
Pressure valve ²⁾	US06Mxxx4x					
Adaptor plate NG10-NG06 ³⁾	-	-	-	-	PADA1007/A-B/B-A	
Cover ⁴⁾	on request			C040CA*	C050CA*	C063CA*
Cover orifice ①	M5xØ1.4				M6xØ1.4	
Cover orifice ②	M5xØ00				M6xØ00	
Cartridge ⁵⁾	CP016C07*	CP025C07*	CP032C07*	CP040S07*	CP050S07*	CP063S07*
Poppet orifice ③	1/16NPT x Ø1.2					
Spring	1.6 bar, type S					
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55	BK416, 4x M20x70	BK417, 4x M20x75	BK418, 4x M30x100
Bolt kit pilot	BK401, 4x M5x75					

¹⁾ Complete type see chapter "Directional Control Valves", series D1VW.
²⁾ Complete types see pilot valves.
³⁾ Included O-rings and mounting bolts.
⁴⁾ Complete type see ordering code C*C.
⁵⁾ Complete type see ordering code CP*.

Shown orifice Ø and springs are recommendations.
 xxØ00 = plug
 xxØ99 = open

Examples pressure.INDD 10.04.19

Unloading valve with electrical vent function, normally closed



8

Adaptor plates see chapter 12

Description	Type					
	NG16	NG25	NG32	NG40	NG50	NG63
4/2 DC valve ¹⁾	D1VW078K*					
Pressure valve ²⁾	US06Mxxx4x					
Adaptor plate NG10-NG06 ³⁾	-	-	-	-	PADA1007/A-B/B-A	
Cover ⁴⁾	on request			C040CA*	C050CA*	C063CA*
Cover orifice ^①	M5xØ1.4				M6xØ1.4	
Cover orifice ^②	M5xØ00				M6xØ00	
Cartridge ⁵⁾	CP016C07*	CP025C07*	CP032C07*	CP040S07*	CP050S07*	CP063S07*
Poppet orifice [ⓐ]	1/16NPT x Ø1.2					
Spring	1.6 bar, type S					
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55	BK416, 4x M20x70	BK417, 4x M20x75	BK418, 4x M30x100
Bolt kit pilot	BK401, 4x M5x75					

¹⁾ Complete type see chapter "Directional Control Valves", series D1VW.

²⁾ Complete types see pilot valves.

³⁾ Included O-rings and mounting bolts.

⁴⁾ Complete type see ordering code C*C.

⁵⁾ Complete type see ordering code CP*.

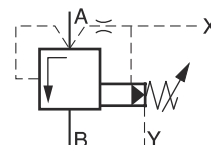
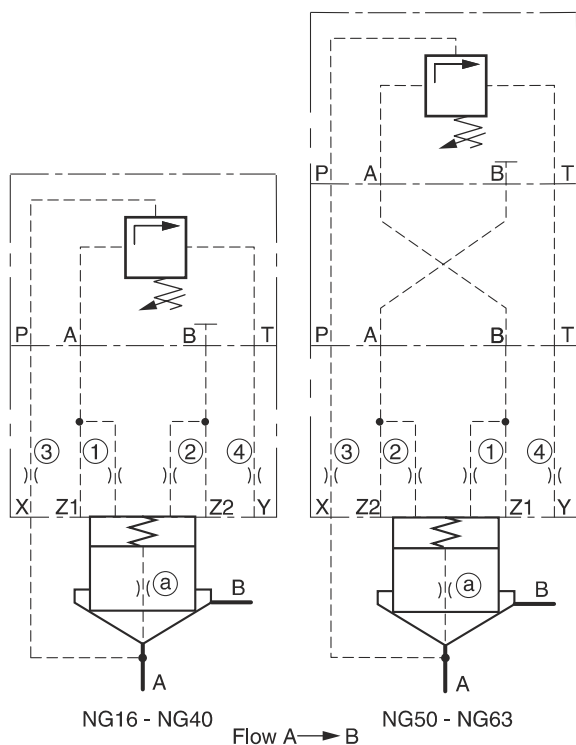
Shown orifice Ø and springs are recommendations.

xxØ00 = plug

xxØ99 = open

Examples pressure.INDD 10.04.19

Pressure sequence valve



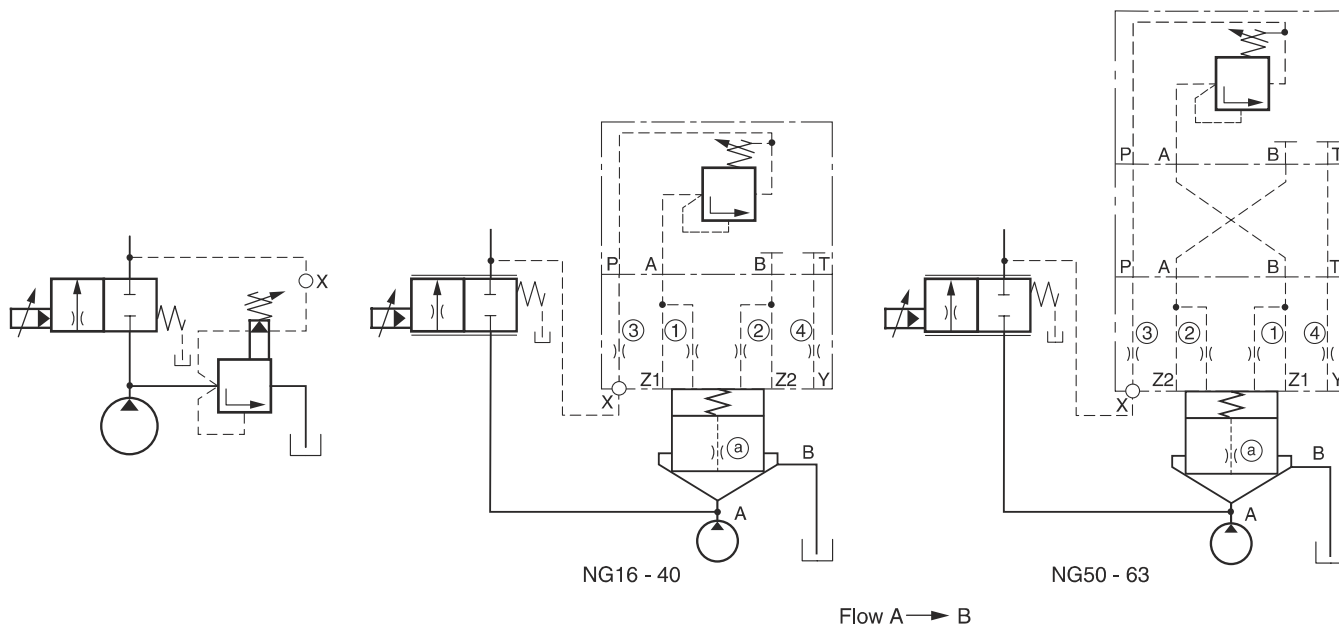
Adaptor plates see chapter 12

Description	Type					
	NG16	NG25	NG32	NG40	NG50	NG63
Press. sequ. valve ¹⁾	S06Mxxx4x					
Adaptor plate NG10-NG06 ²⁾	without				PADA1007/A-B/B-A	
Cover ³⁾	C016CA*	C025CA*	C032CA*	C040CA*	C050CA*	C063CA*
Cover orifice ①	M5xØ1.1	M5xØ1.3	M5xØ1.4	M5xØ1.5	M6xØ1.6	M6xØ1.7
Cover orifice ②	M5xØ00				M6xØ00	
Cover orifice ③	M5xØ0.9	M6xØ1.1	M6xØ1.2	M6xØ1.3	M8xØ1.4	M8xØ1.5
Cover orifice ④	M5xØ1.3	M6xØ1.5	M6xØ1.7	M6xØ1.8	M8xØ2.0	M8xØ2.2
Cartridge ⁴⁾	CE016C01*	CE025C01*	CE032C01*	CE040C01*	CE050C01*	CE063C01*
Poppet orifice ①	1/16NPT x Ø00					
Spring	1.6 bar, type S					
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55	BK416, 4x M20x70	BK417, 4x M20x75	BK418, 4x M30x100
Bolt kit pilot	BK443, 4x M5x45					

¹⁾ Complete types see pilot valves.
²⁾ Included O-rings and mounting bolts.
³⁾ Complete type see ordering code C*.
⁴⁾ Complete type see ordering code CE*.

Shown orifice Ø and springs are recommendations.
 xxØ00 = closed bottom NG16 - NG50, plug NG63
 xxØ99 = open

3-way compensator (in combination with proportional throttle valve)



8

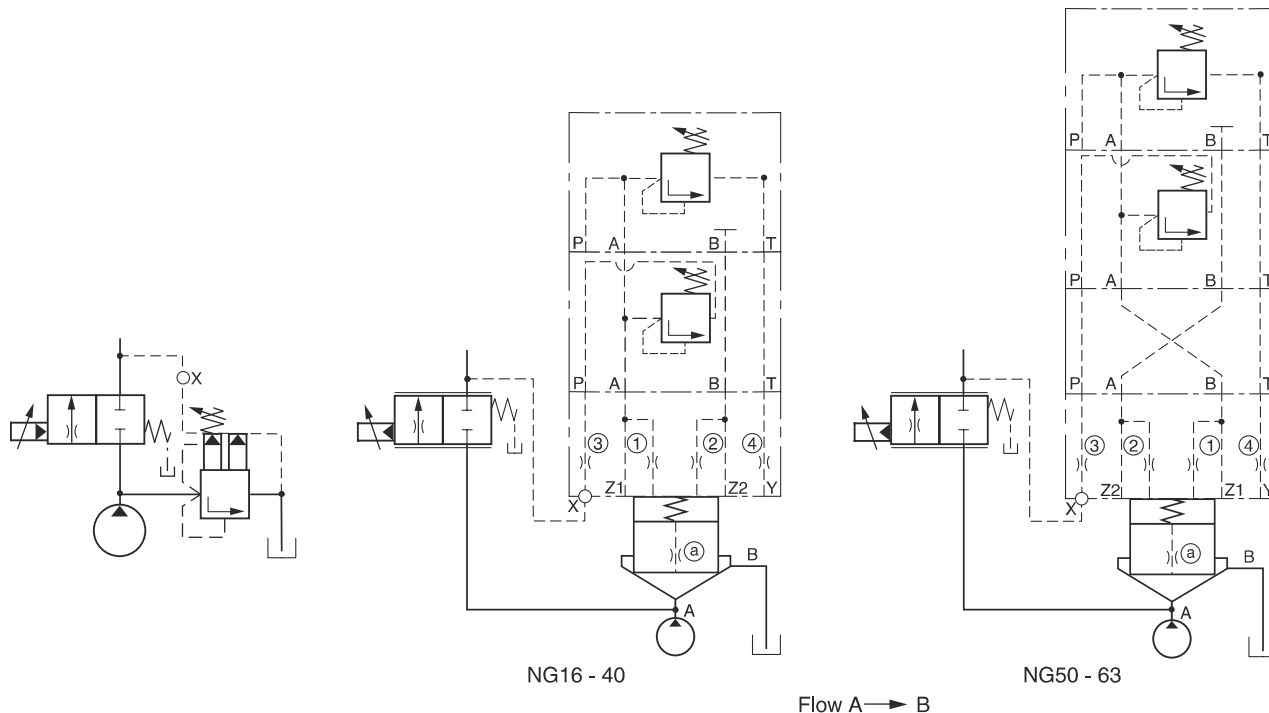
Adaptor plates see chapter 12

Description	Type					
	NG16	NG25	NG32	NG40	NG50	NG63
Preload valve ¹⁾	DSBA100xP07x					
Adaptor plate NG10-NG06 ²⁾	without				PADA1007/A-B/B-A	
Cover ³⁾	C016CA*	C025CA*	C032CA*	C040CA*	C050CA*	C063CA*
Cover orifice ①	M5xØ1.1	M5xØ1.3	M5xØ1.4	M5xØ1.5	M6xØ1.6	M6xØ1.7
Cover orifice ②	M5xØ00				M6xØ00	
Cover orifice ③	M5xØ99	M6xØ99			M8xØ99	
Cover orifice ④	M5xØ1.3	M6xØ1.5	M6xØ1.7	M6xØ1.8	M8xØ2.0	M8xØ2.2
Cartridge ⁴⁾	CE016C01*	CE025C01*	CE032C01*	CE040C01*	CE050C01*	CE063C01*
Poppet orifice ①	1/16NPT x Ø0.9	1/16NPT x Ø1.1	1/16NPT x Ø1.2	1/16NPT x Ø1.3	1/16NPT x Ø1.4	1/16NPT x Ø1.5
Spring	1.6 bar, type S					
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55	BK416, 4x M20x70	BK417, 4x M20x75	BK418, 4x M30x100
Bolt kit pilot	BK443, 4x M5x45					

¹⁾ Complete type see pilot valves.
²⁾ Included O-rings and mounting bolts.
³⁾ Complete type see ordering code C*.
⁴⁾ Complete type see ordering code CE*.

Shown orifice Ø and springs are recommendations.
 xxØ00 = closed bottom NG16 - NG50, plug NG63
 xxØ99 = open

3-way compensator with mechanical maximum pressure protection (in combination with proportional throttle valve)



Adaptor plates see chapter 12

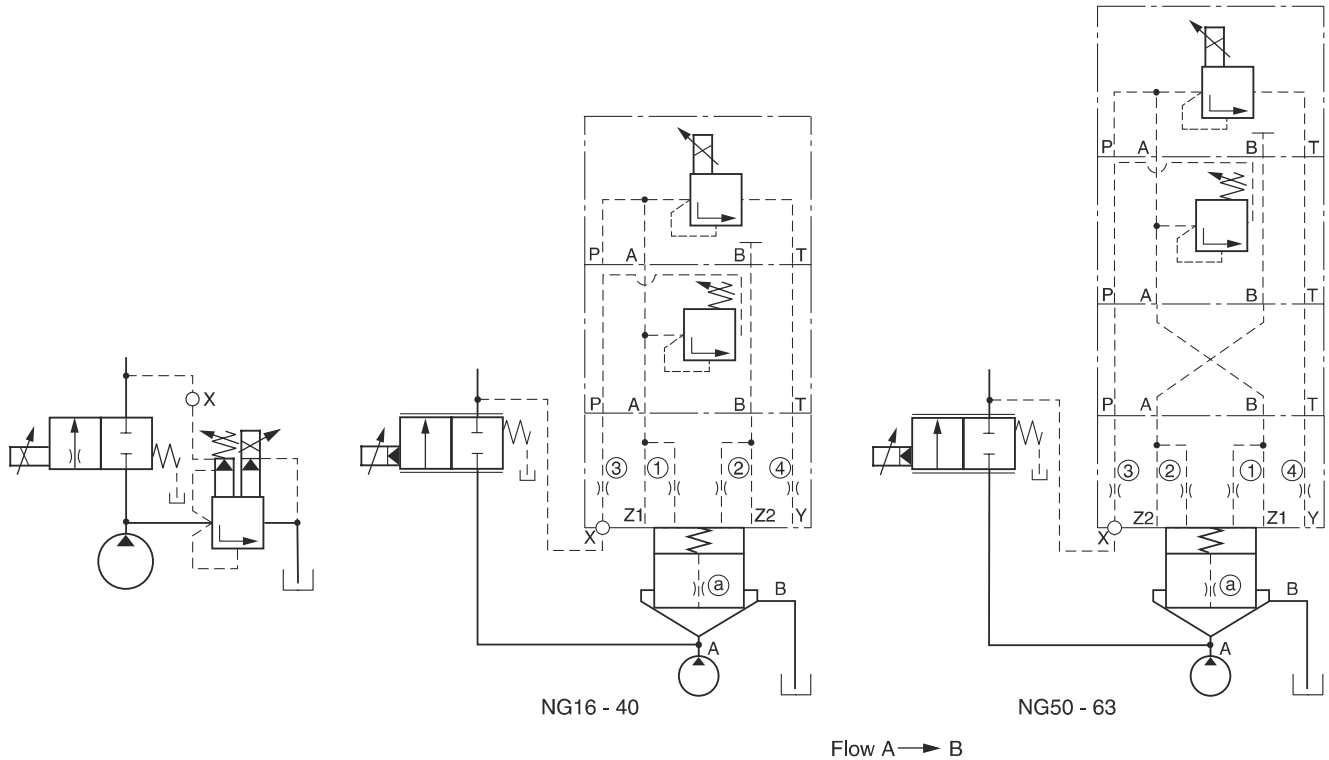


Description	Type					
	NG16	NG25	NG32	NG40	NG50	NG63
Pressure valve ¹⁾	R06Mxxx4x					
Preload valve ¹⁾	DSBA100xZ07x					
Adaptor plate NG10-NG06 ²⁾	without			PADA1007/A-B/B-A		
Cover ³⁾	C016CA*	C025CA*	C032CA*	C040CA*	C050CA*	C063CA*
Cover orifice ①	M5xØ1.1	M5xØ1.3	M5xØ1.4	M5xØ1.5	M6xØ1.6	M6xØ1.7
Cover orifice ②	M5xØ00				M6xØ00	
Cover orifice ③	M5xØ99	M6xØ99			M8xØ99	
Cover orifice ④	M5xØ1.3	M6xØ1.5	M6xØ1.7	M6xØ1.8	M8xØ2.0	M8xØ2.2
Cartridge ⁴⁾	CE016C01*	CE025C01*	CE032C01*	CE040C01*	CE050C01*	CE063C01*
Poppet orifice (a)	1/16NPT x Ø0.9	1/16NPT x Ø1.1	1/16NPT x Ø1.2	1/16NPT x Ø1.3	1/16NPT x Ø1.4	1/16NPT x Ø1.5
Spring	1.6 bar, type S					
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55	BK416, 4x M20x70	BK417, 4x M20x75	BK418, 4x M30x100
Bolt kit pilot	TK1482					

¹⁾ Complete type see examples pilot valve.
²⁾ Included O-rings and mounting bolts.
³⁾ Complete type see ordering code C*C.
⁴⁾ Complete type see ordering code CE*.

Shown orifice Ø and springs are recommendations.
 xxØ00 = closed bottom NG16 - NG50, plug NG63
 xxØ99 = open

3-way compensator with proportional pressure relief function (in combination with proportional throttle valve)



8

Adaptor plates see chapter 12

Description	Type					
	NG16	NG25	NG32	NG40	NG50	NG63
Prop. press. valve ¹⁾	RE06MxW2V1KW*					
Preload valve ²⁾	DSBA100xZ07x					
Adaptor plate NG10-NG06 ³⁾	without				PADA1007/A-B/B-A	
Cover ⁴⁾	C016CA*	C025CA*	C032CA*	C040CA*	C050CA*	C063CA*
Cover orifice ①	M5xØ1.1	M5xØ1.3	M5xØ1.4	M5xØ1.5	M6xØ1.6	M6xØ1.7
Cover orifice ②	M5xØ00				M6xØ00	
Cover orifice ③	M5xØ99	M6xØ99			M8xØ99	
Cover orifice ④	M5xØ1.3	M6xØ1.5	M6xØ1.7	M6xØ1.8	M8xØ2.0	M8xØ2.2
Cartridge ⁵⁾	CE016C01*	CE025C01*	CE032C01*	CE040C01*	CE050C01*	CE063C01*
Poppet orifice (a)	1/16NPT x Ø0.9	1/16NPT x Ø1.1	1/16NPT x Ø1.2	1/16NPT x Ø1.3	1/16NPT x Ø1.4	1/16NPT x Ø1.5
Spring	1.6 bar, type S					
Volume reduction	45036578	45036579	45036580	45036581	45036582	45036583
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55	BK416, 4x M20x70	BK417, 4x M20x75	BK418, 4x M30x100
Bolt kit pilot	TK1482					

¹⁾ Complete type see chapter "Pressure Valves", series RE06M*W.

²⁾ Complete type see pilot valves.

³⁾ Included O-rings and mounting bolts.

⁴⁾ Complete type see ordering code C*C.

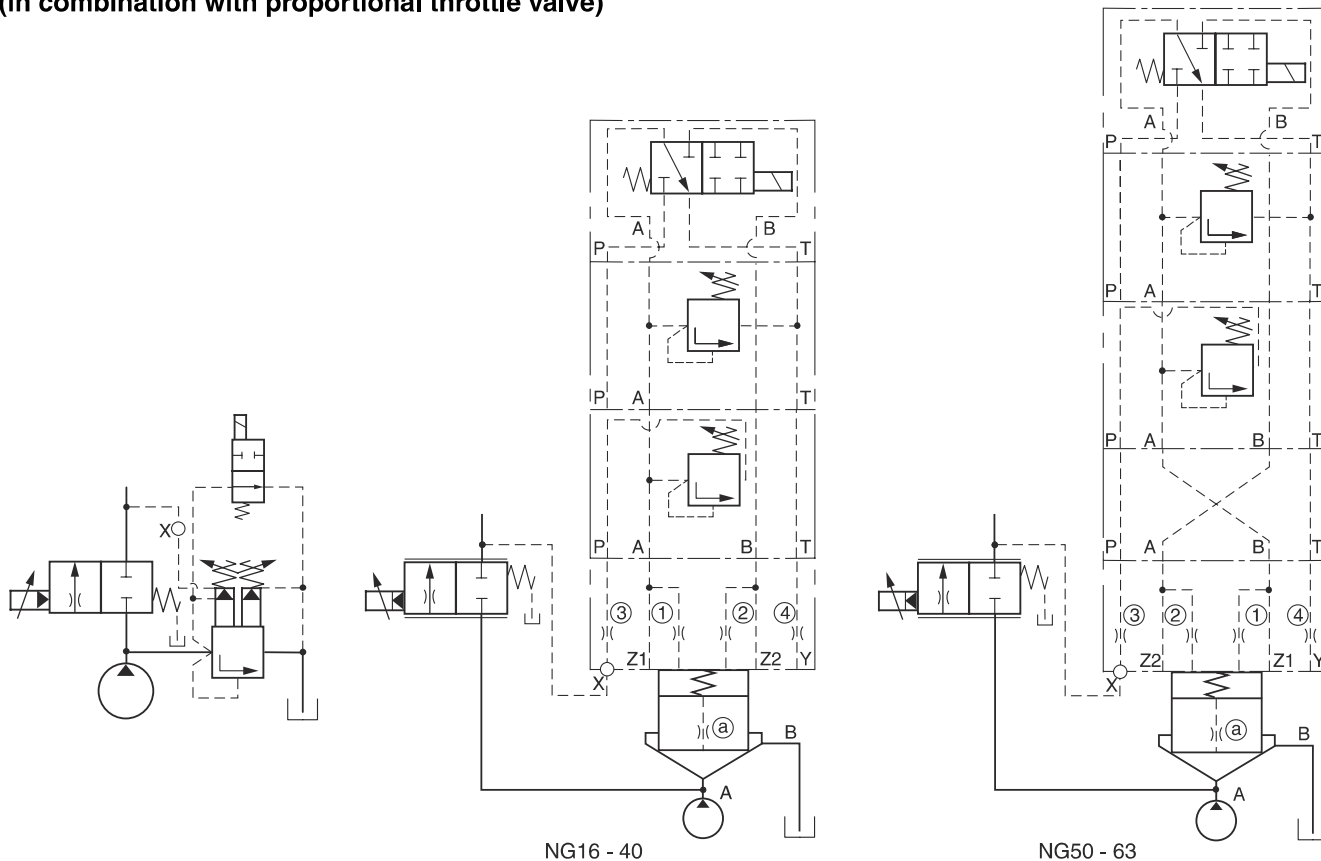
⁵⁾ Complete type see ordering code CE*.

Shown orifice Ø and springs are recommendations.
xxØ00 = closed bottom NG16 - NG50, plug NG63
xxØ99 = open

Examples pressure.INDD 10.04.19



3-way compensator with mechanical max. pressure protection and electrical vent function, normally open (in combination with proportional throttle valve)



NG16 - 40

NG50 - 63

Flow A → B

Adaptor plates see chapter 12



Description	Type					
	NG16	NG25	NG32	NG40	NG50	NG63
4/2 DC valve ¹⁾	D1VW076K*					
Press. valve ²⁾	ZUDB1ATxZ07x					
Preload valve ²⁾	DSBA100xZ07x					
Adaptor plate NG10-NG06 ³⁾	without			PADA1007/A-B/B-A		
Cover ⁴⁾	C016CA*	C025CA*	C032CA*	C040CA*	C050CA*	C063CA*
Cover orifice ①	M5xØ1.1	M5xØ1.3	M5xØ1.4	M5xØ1.5	M6xØ1.6	M6xØ1.7
Cover orifice ②	M5xØ00					M6xØ00
Cover orifice ③	M5xØ99	M6xØ99			M8xØ99	
Cover orifice ④	M5xØ1.3	M6xØ1.5	M6xØ1.7	M6xØ1.8	M8xØ2.0	M8xØ2.2
Cartridge ⁵⁾	CE016C01*	CE025C01*	CE032C01*	CE040C01*	CE050C01*	CE063C01*
Poppet orifice ①	1/16NPT x Ø0.9	1/16NPT x Ø1.1	1/16NPT x Ø1.2	1/16NPT x Ø1.3	1/16NPT x Ø1.4	1/16NPT x Ø1.5
Spring	1.6 bar, type S					
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55	BK416, 4x M20x70	BK417, 4x M20x75	BK418, 4x M30x100
Bolt kit pilot	TK1473					

¹⁾ Complete type see chapter "Directional Control Valves", series D1VW.

²⁾ Complete type see pilot valves.

³⁾ Included O-rings and mounting bolts.

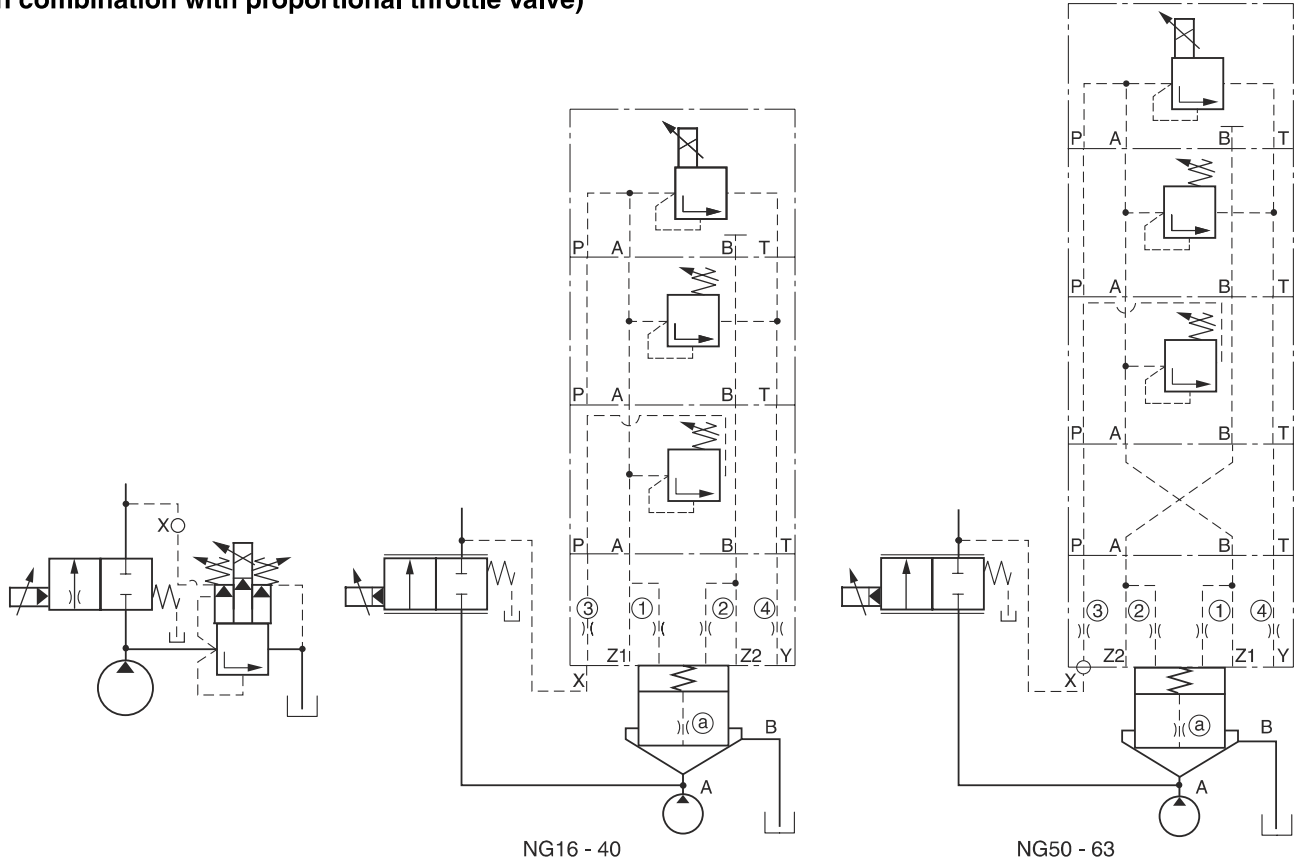
⁴⁾ Complete type see ordering code C*.

⁵⁾ Complete type see ordering code CE*.

Shown orifice Ø and springs are recommendations.
xxØ00 = closed bottom NG16 - NG50, plug NG63
xxØ99 = open

Pressure Compensator Functions

3-way compensator with proportional pressure relief function and mechanical maximum pressure protection (in combination with proportional throttle valve)



Flow A → B

Adaptor plates see chapter 12

8

Description	Type					
	NG16	NG25	NG32	NG40	NG50	NG63
Prop. press. valve ¹⁾	RE06MxW2V1KW*					
Press. valve ²⁾	ZUDB1ATxZ07x					
Preload valve ²⁾	DSBA100xZ07x					
Adaptor plate NG10-NG06 ³⁾	without			PADA1007/A-B/B-A		
Cover ⁴⁾	C016CA*	C025CA*	C032CA*	C040CA*	C050CA*	C063CA*
Cover orifice ①	M5xØ1.1	M5xØ1.3	M5xØ1.4	M5xØ1.5	M6xØ1.6	M6xØ1.7
Cover orifice ②	M5xØ00			M6xØ00		
Cover orifice ③	M5xØ99	M6xØ99			M8xØ99	
Cover orifice ④	M5xØ1.3	M6xØ1.5	M6xØ1.7	M6xØ1.8	M8xØ2.0	M8xØ2.2
Cartridge ⁵⁾	CE016C01*	CE025C01*	CE032C01*	CE040C01*	CE050C01*	CE063C01*
Poppet orifice (a)	1/16NPT x Ø0.9	1/16NPT x Ø1.1	1/16NPT x Ø1.2	1/16NPT x Ø1.3	1/16NPT x Ø1.4	1/16NPT x Ø1.5
Spring	1.6 bar, type S					
Volume reduction	45036578	45036579	45036580	45036581	45036582	45036583
Bolt kit cover	BK414, 4x M8x40	BK391, 4x M12x50	BK415, 4x M16x55	BK416, 4x M20x70	BK417, 4x M20x75	BK418, 4x M30x100
Bolt kit pilot	TK1473					

¹⁾ Complete type see chapter "Pressure Valves", series RE06M*W.

²⁾ Complete type see pilot valves.

³⁾ Included O-rings and mounting bolts.

⁴⁾ Complete type see ordering code C*C.

⁵⁾ Complete type see ordering code CE*.

Shown orifice Ø and springs are recommendations.
xxØ00 = closed bottom NG16 - NG50, plug NG63
xxØ99 = open

Examples pressure.INDD 10.04.19

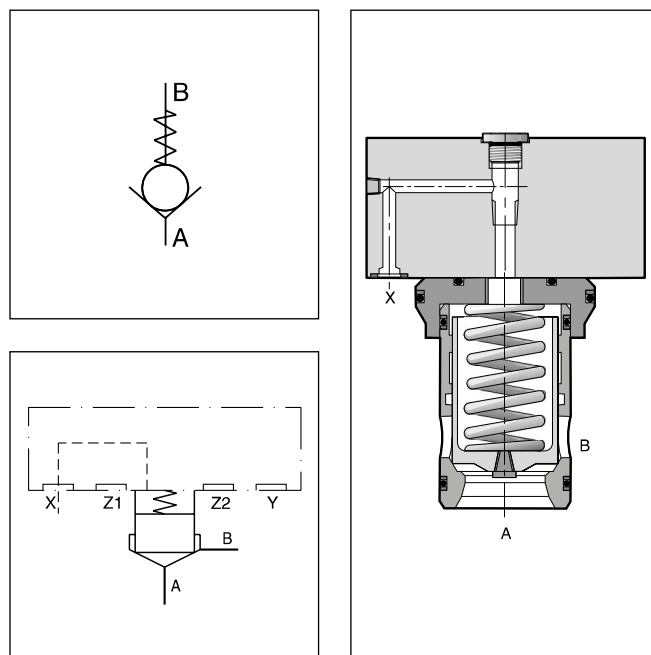


Characteristics / Ordering Code

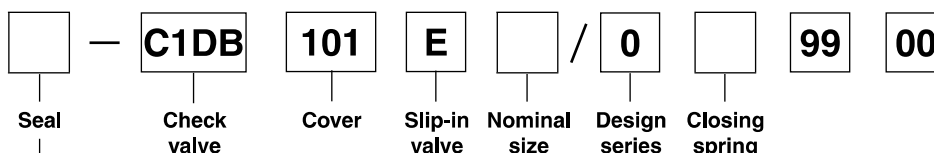
Check valves of the series C1DB consist of a slip-in valve, that is designed for a compact manifold block installation.

Features

- Cavity and mounting pattern according to ISO 7368
- 4 different springs
- 8 sizes NG16 to NG100



Ordering code



Code	Seal
omit	NBR
V	FPM

Code	Nominal size
16	NG16
25	NG25
32	NG32
40	NG40
50	NG50
63	NG63
80	NG80
100	NG100

Code	Spring
L	0.1 bar
N	0.5 bar
S	1.6 bar
T	2.5 bar
U	4.0 bar

Bold letters =
Short-term availability

Replacement springs see spare and mounting parts

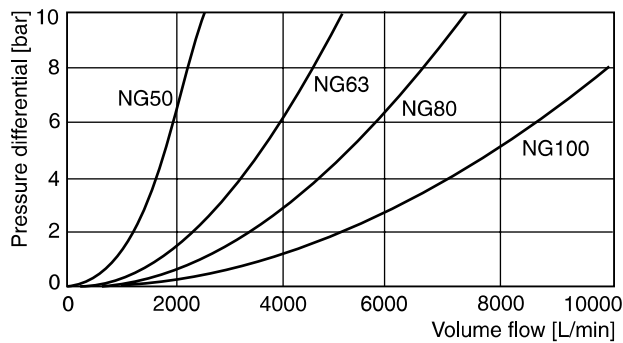
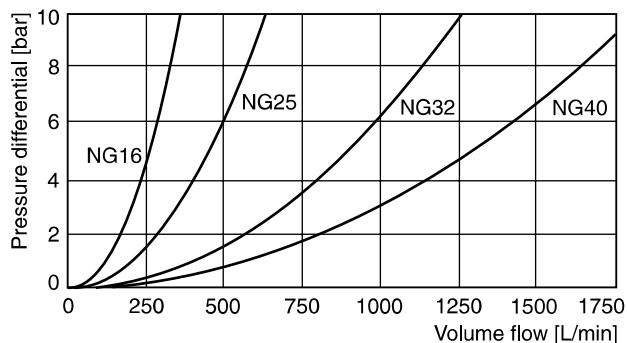
Technical data

General		2-way cartridge valve, according to ISO 7368							
Design		2-way cartridge valve, according to ISO 7368							
Nominal size		NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100
Actuation		hydraulic							
Mounting position		unrestricted							
Ambient temperature	[°C]	-20 ... +60							
MTTF _D value	[years]	150							
Weight	[kg]	1.2	2.5	3.9	7	11.4	21.8	45	74
Hydraulics		See symbols							
Flow direction		See symbols							
Fluid		Hydraulic oil according to DIN 51524							
Fluid temperature	[°C]	-20...+70 (NBR: -25...+70)							
Viscosity,	permitted	20...400							
	recommended	30...80							
Filtration		ISO 4406 (1999); 18/16/13							
Nominal pressure	[bar]	350							
Flow	[l/min]	250	450	900	1300	1800	3600	5250	8000
Opening pressure, spring	[bar]	L = 0.1; N = 0.5; S = 1.6; T = 2.5; U = 4.0							

C1DB UK.INDD 10.04.19

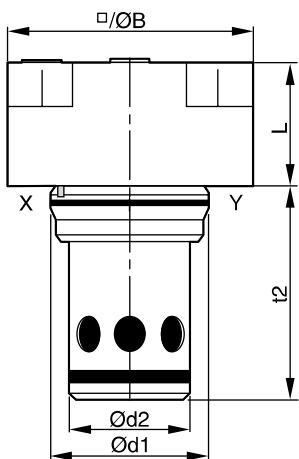


Performance curves



All characteristic curves measured with HLP46 at 50 °C.

Dimensions



NG	L	B	d1	d2	t2
16	36	65	32	25	56
25	45	85	45	34	72
32	50	102	60	45	85
40	60	125	75	55	105
50	70	140	90	68	122
63	85	180	120	90	155
80	105	Ø 250	145	110	205
100	120	Ø 300	180	135	245

8

NG	Kit	ISO 4762-12.9	[Nm]	Kit		Orifice thread
				NBR	FPM	
16	BK441	4x M8x50	31.8	SK-CBE160	SK-CBE160V	1/16 NPT
25	BK391	4x M12x50	108	SK-CBE250	SK-CBE250V	1/16 NPT
32	BK415	4x M16x55	264	SK-CBE320	SK-CBE320V	1/16 NPT
40	BK416	4x M20x70	517	SK-CBE400	SK-CBE400V	1/8 NPT
50	BK417	4x M20x75	517	SK-CBE500	SK-CBE500V	1/8 NPT
63	BK418	4x M30x100	1775	SK-CBE630	SK-CBE630V	1/8 NPT
80	BK419	8x M24x120	890	SK-CBE800	SK-CBE800V	1/8 NPT
100	BK420	8x M30x140	1775	SK-CBE1000	SK-CBE1000V	1/8 NPT

Characteristics

Hydraulically pilot operated check valves allow free flow from A to B. The counter-flow direction is blocked.

When pressure is applied to control port X, the ring chamber flow from B to A is released. The pilot control ratio is 6:1.

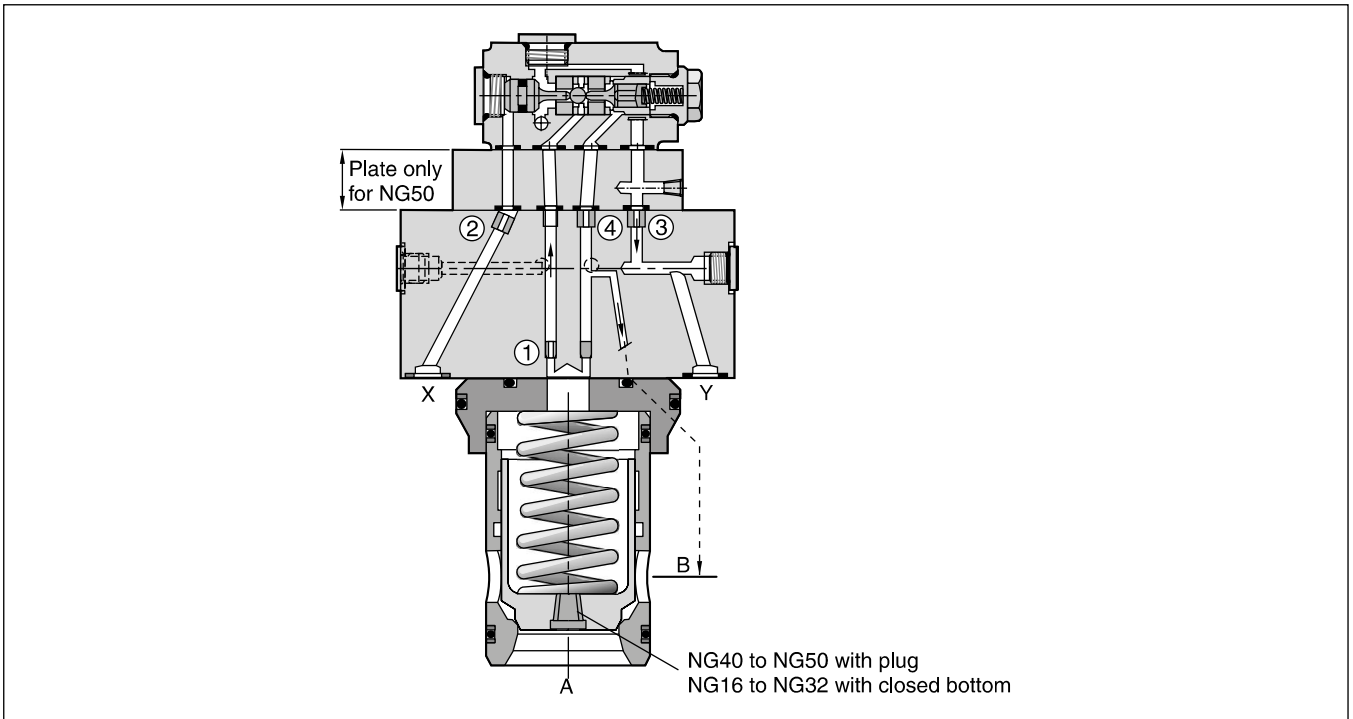
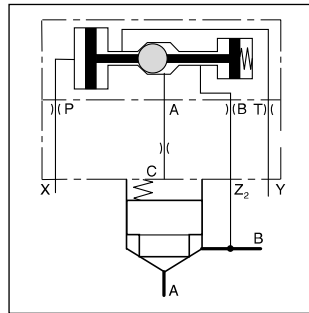
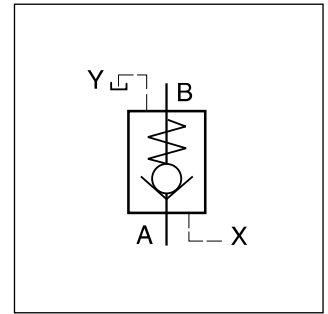
Function

When no pressure is applied to the X-port, the flow from B to A is blocked, because the pressure in B is also effective on top of the poppet.

Pressurizing the X-port relieves the area on top of the poppet to the drain port and allows flow from B to A. The seat design of the SVLB valve series provides leak-free separation of port A and B in the closed position.

Features

- Pilot operated check valve
- Cavity and mounting pattern acc. to ISO 7368
- Dampening poppet optional
- 5 sizes NG16 to NG50



Ordering Code / Characteristics

Ordering code

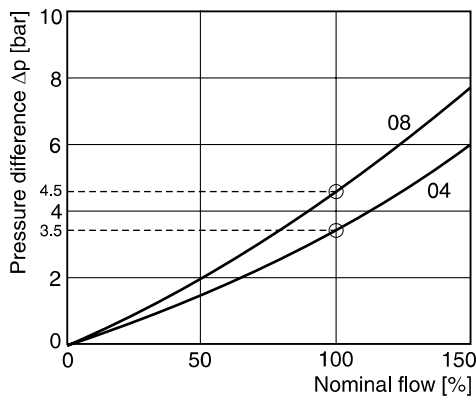
□	SVL	B	10	□	6	E	□	□	□
Seal	Hydr. operated check valve	Slip-in mounting	Design style acc. to ISO 7368	Poppet type	Pilot control ratio 6:1	Slip-in cartridge valve	Valve size	Closing spring	Design series (not required for ordering)
Code	Seal								
omit	NBR								
V	FPM								
Code	Poppet type								
4	04								
8 ¹⁾	08								
Code	Spring								
N	0.5 bar								
S	1.6 bar								
T	2.5 bar								
U	4.0 bar								
Code	Size								
16	NG16								
25	NG25								
32	NG32								
40	NG40								
50	NG50								

Bold letters = Short-term availability

Technical data

General		NG16	NG25	NG32	NG40	NG50
Nominal size						
Interface		Slip-in mounting acc. ISO 7368				
Mounting position		unrestricted				
Ambient temperature	[°C]	-20...+60				
MTTF _D value	[years]	75				
Weight	[kg]	2.3	3.2	4.6	7.8	12.0
Hydraulics						
Max. operating pressure	[bar]	350				
Nominal flow	[l/min]	250	450	900	1300	1800
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				

Δp/Q flow curve

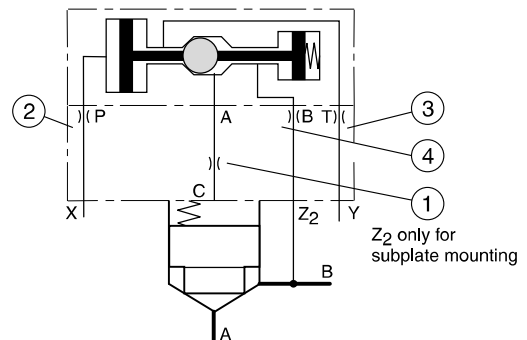


Poppet type 04, 08, without spring.

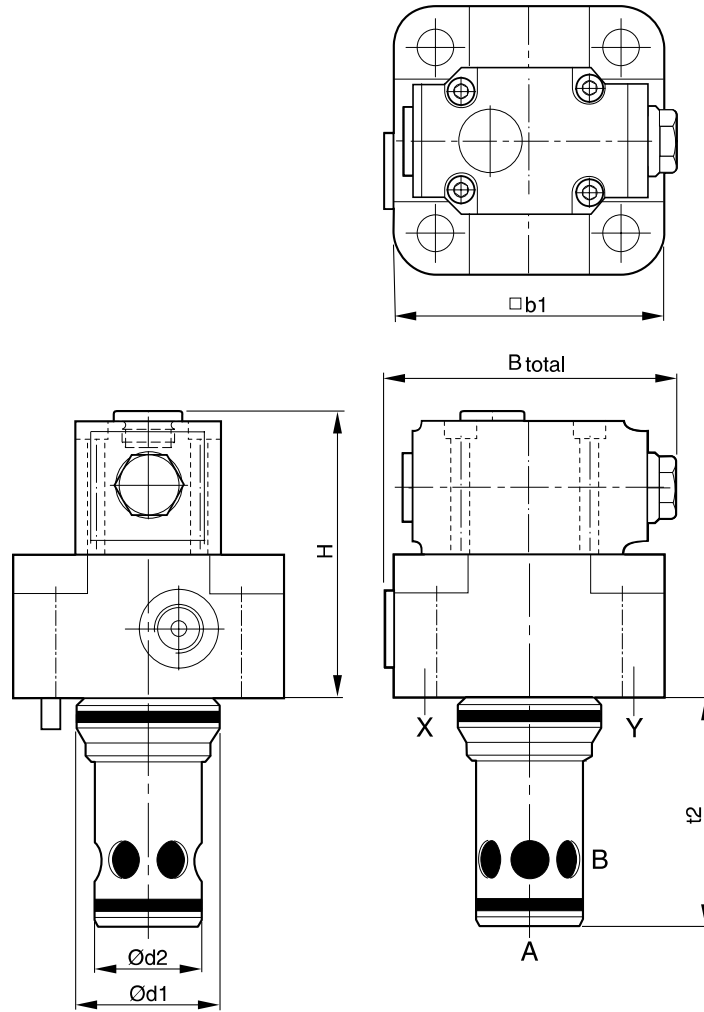
All characteristic curves measured with HLP46 at 50 °C.

¹⁾ With damping nose.




Standard orifices



Pos.	E16	E25	E32	E40	E50
1	open (M5)	open (M5)	open (M5)	open (M5)	open (M6)
2	Ø1.2 (M5)	Ø1.2 (M6)	Ø1.2 (M6)	Ø1.2 (M6)	Ø1.2 (M8)
3	open (M5)	open (M6)	open (M6)	open (M6)	open (M8)
4	Ø1.0 (M5)	Ø1.2 (M5)	Ø1.3 (M5)	Ø1.5 (M6)	Ø2.0 (M6)



Size	16	25	32	40	50
H	84	88	93	103	138
b1	79*	85	102	125	140
d1 ^{H7}	32	45	60	75	90
d2 ^{H7}	25	34	45	55	68
t2 ^{+0.1}	56	72	85	105	122
Eges.	99	94	103	133	148

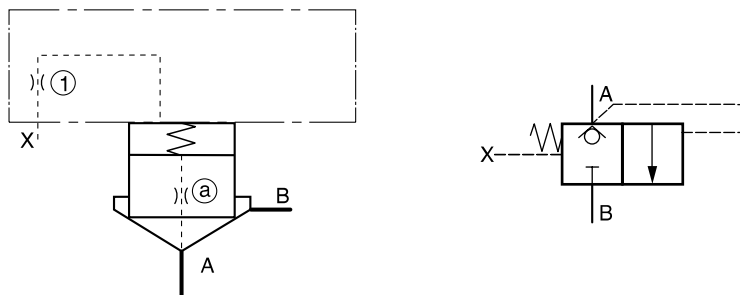
NG	Kit	 ISO 4762-12.9	 [Nm]	 Kit	
				NBR	FPM
16	BK441	4x M8x50	31.8	SK-SVLB10E16	SK-SVLB10E16V
25	BK391	4x M12x50	108	SK-SVLB10E25	SK-SVLB10E25V
32	BK415	4x M16x55	264	SK-SVLB10E32	SK-SVLB10E32V
40	BK416	4x M20x70	517	SK-SVLB10E40	SK-SVLB10E40V
50	BK417	4x M20x75	517	SK-SVLB10E50	SK-SVLB10E50V

* Width 65 mm.

SVLB UK.INDD 10.04.19

2-Way Function

2-way seat valve, flow A ⇒ B



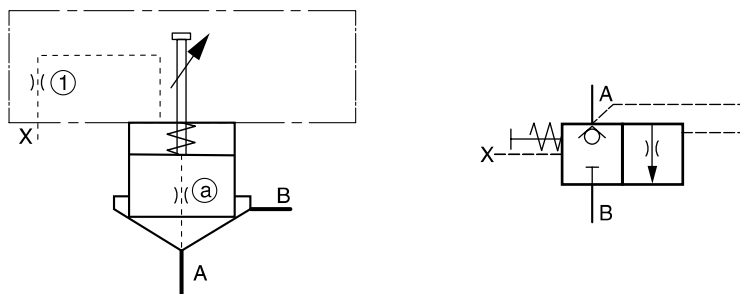
Description	Type							
	NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100
Cover ¹⁾	C016AA*	C025AA*	C032AA*	C040AA*	C050AA*	C063AA*	C080AA*	C100AA*
Cover orifice ①	1/16xØ0.8	1/16xØ1.0	1/16xØ1.2	1/8xØ1.5	1/8xØ1.8	1/8xØ2.0	1/8xØ2.2	1/8xØ2.5
Cartridge ²⁾	CE016C01*	CE025C01*	CE032C01*	CE040C01*	CE050C01*	CE063C01*	CE080C01*	CE100C01*
Poppet orifice ②	1/16xØ00							
Spring	1.6 bar, type S							
Bolt kit cover	BK414 4x M8x40	BK391 4x M12x50	BK415 4x M16x55	BK416 4x M20x70	BK417 4x M20x75	BK418 4x M30x100	BK419 8x M24x120	BK509 8x M30x130

¹⁾ Complete type see ordering code C*A.
²⁾ Complete type see ordering code CE*.

Shown orifice Ø and springs are recommendations.
xxØ00 = closed bottom NG16 - NG50, plug NG63 - NG100
xxØ99 = open

8

2-way seat valve with stroke limiter, flow A ⇒ B

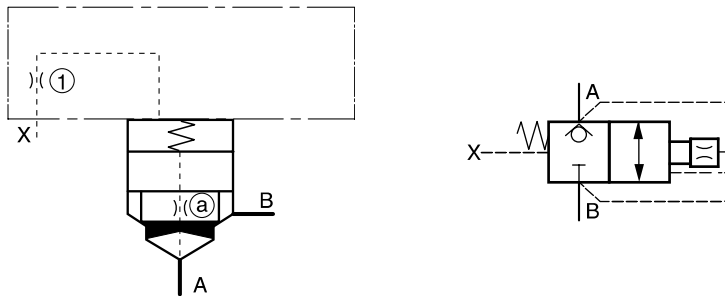


Description	Type							
	NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100
Cover ¹⁾	C016B**	C025B**	C032B**	C040B**	C050B**	C063B**	C080B**	C100B**
Cover orifice ①	M6xØ0.8	M6xØ1.0	1/16xØ1.2	1/16xØ1.5	1/16xØ1.8	1/8xØ2.0	1/8xØ2.2	1/8xØ2.5
Cartridge ²⁾	CE016C01*	CE025C01*	CE032C01*	CE040C01*	CE050C01*	CE063C01*	CE080C01*	CE100C01*
Poppet orifice ②	1/16xØ00							
Spring	1.6 bar, type S							
Bolt kit cover	BK414 4x M8x40	BK391 4x M12x50	BK415 4x M16x55	BK416 4x M20x70	BK417 4x M20x75	BK418 4x M30x100	BK419 8x M24x120	BK509 8x M30x130

¹⁾ Complete type see ordering code C*B.
²⁾ Complete type see ordering code CE*.

Shown orifice Ø and springs are recommendations.
xxØ00 = closed bottom NG16 - NG50, plug NG63 - NG100
xxØ99 = open

2-way functions with dampening poppet, flow A ⇌ B

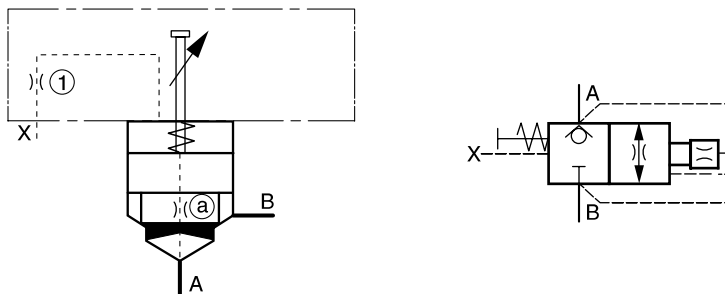


Description	Type							
	NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100
Cover ¹⁾	C016AA*	C025AA*	C032AA*	C040AA*	C050AA*	C063AA*	C080AA*	C100AA*
Cover orifice (1)	1/16xØ0.8	1/16xØ1.0	1/16xØ1.2	1/8xØ1.5	1/8xØ1.8	1/8xØ2.0	1/8xØ2.2	1/8xØ2.5
Cartridge ²⁾	CE016C08*	CE025C08*	CE032C08*	CE040C08*	CE050C08*	CE063C08*	CE080C08*	CE100C08*
Poppet orifice (a)	1/16xØ00							
Spring	1.6 bar, type S							
Bolt kit cover	BK414 4x M8x40	BK391 4x M12x50	BK415 4x M16x55	BK416 4x M20x70	BK417 4x M20x75	BK418 4x M30x100	BK419 8x M24x120	BK509 8x M30x130

¹⁾ Complete type see ordering code C*A.
²⁾ Complete type see ordering code CE*.

Shown orifice Ø and springs are recommendations.
 xxØ00 = plug
 xxØ99 = open

2-way functions with stroke limiter and dampening poppet, flow A ⇌ B



Description	Type							
	NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100
Cover ¹⁾	C016B*	C025B*	C032B*	C040B*	C050B*	C063B*	C080B*	C100B*
Cover orifice (1)	M6xØ0.8	M6xØ1.0	1/16xØ1.2	1/16xØ1.5	1/16xØ1.8	1/8xØ2.0	1/8xØ2.2	1/8xØ2.5
Cartridge ²⁾	CE016C08*	CE025C08*	CE032C08*	CE040C08*	CE050C08*	CE063C08*	CE080C08*	CE100C08*
Poppet orifice (a)	1/16xØ00							
Spring	1.6 bar, type S							
Bolt kit cover	BK414 4x M8x40	BK391 4x M12x50	BK415 4x M16x55	BK416 4x M20x70	BK417 4x M20x75	BK418 4x M30x100	BK419 8x M24x120	BK509 8x M30x130

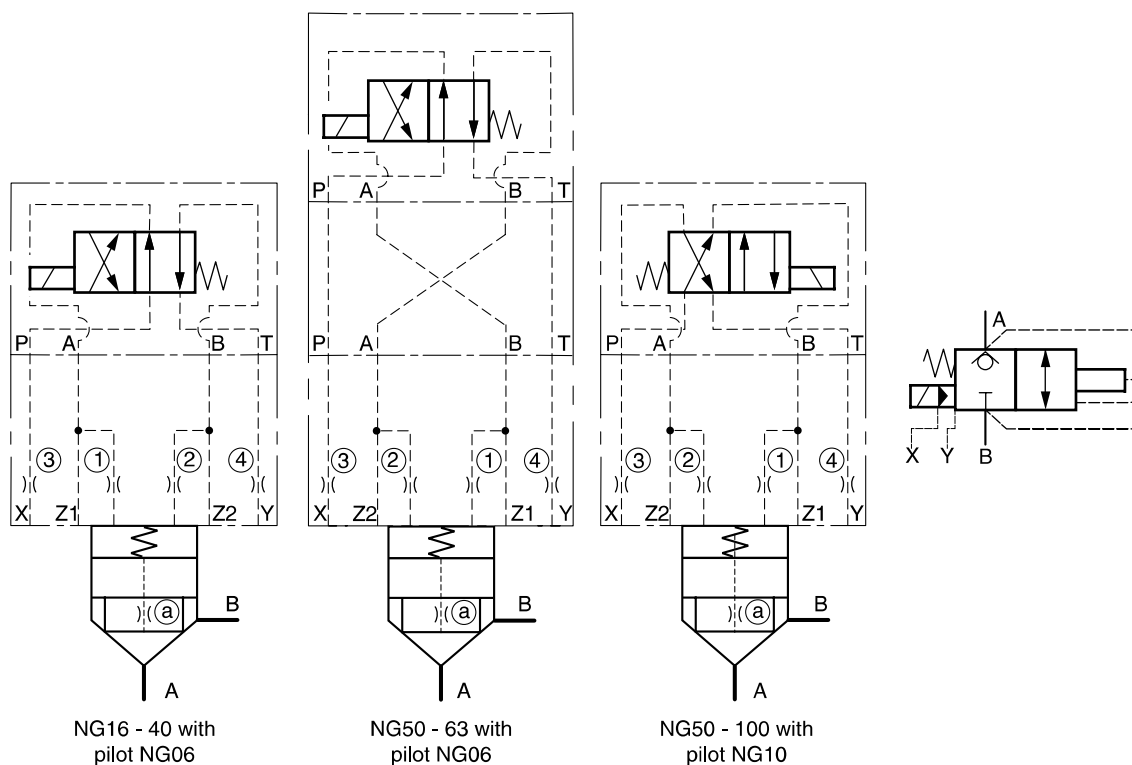
¹⁾ Complete type see ordering code C*B.
²⁾ Complete type see ordering code CE*.

Shown orifice Ø and springs are recommendations.
 xxØ00 = plug
 xxØ99 = open

2-Way Function

Combination Examples

2-way seat valve with pilot, normally closed, flow A ⇌ B



8

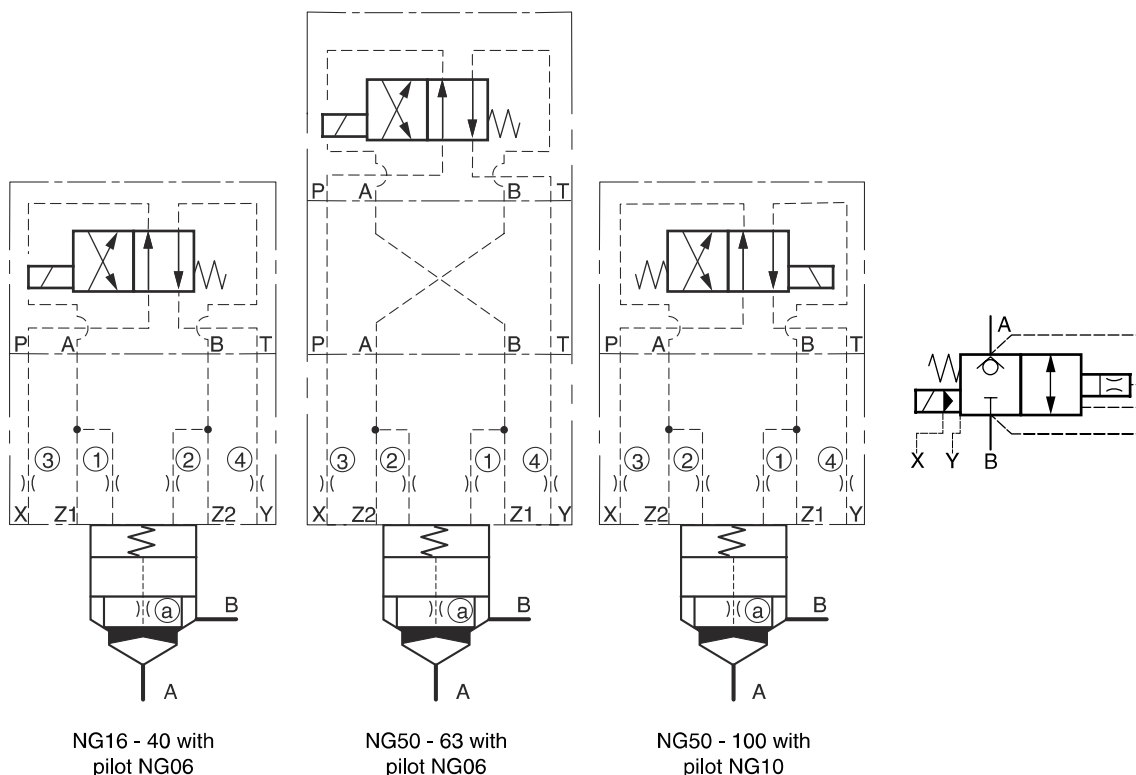
Adaptor plates see chapter 12.

Description	Type									
	Pilot NG06					Pilot NG10				
	NG16	NG25	NG32	NG40	NG50	NG63	NG50	NG63	NG80	NG100
4/2-DC valve ¹⁾	D1VW20B*					D3W20H*				
Adaptor plate ²⁾	without					PADA1007/A-B/B-A				
Cover ³⁾	without					without				
Cover orifice ①	C016CA*	C025CA*	C032CA*	C040CA*	C050CA*	C063CA*	C050CA*	C063CA*	C080CA*	C100CA*
Cover orifice ②	M5xØ0.8	M5xØ1.0	M5xØ1.2	M5xØ1.5	M6xØ1.8	M6xØ2.0	M6xØ1.8	M6xØ2.0	1/16xØ2.2	1/16xØ2.5
Cover orifice ③	M5xØ00					M6xØ00				
Cover orifice ④	M5xØ1.0	M6xØ1.2	M6xØ1.5	M6xØ1.8	M8xØ2.0	M8xØ2.2	M8xØ2.0	M8xØ2.2	M10x1xØ2.5	M10x1xØ3.0
Cartridge ⁴⁾	M5xØ99	M6xØ99			M8xØ99C					M10x1xØ99
Poppet orifice ⑤	CE016C04*	CE025C04*	CE032C04*	CE040C04*	CE050C04*	CE063C04*	CE050C04*	CE063C04*	CE080C04*	CE100C04*
Spring	1/16NPTxØ00									
Bolt kit cover	1.6 bar, type S									
Bolt kit pilot	BK414	BK391	BK415	BK416	BK417	BK418	BK419	BK509	BK419	BK420
	4x M8x40	4x M12x50	4x M16x55	4x M20x70	4x M20x75	4x M30x100	8x M24x120	8x M30x130	8x M24x120	8x M30x140
	BK375 4x M5x30					BK385 4x M6x40				

¹⁾ Complete type see chapter "Directional Control Valves", series D1VW, D3W.
²⁾ NG10-NG06 inclusive O-rings and mounting bolts.
³⁾ Complete type see ordering code C*C.
⁴⁾ Complete type see ordering code CE*.

Shown orifice Ø and springs are recommendations.
 xxØ00 = closed bottom NG16 - NG50, plug NG63 - NG100
 xxØ99 = open

2-way seat valve with pilot and dampening poppet, normally closed, flow A ⇌ B



Adaptor plates see chapter 12.



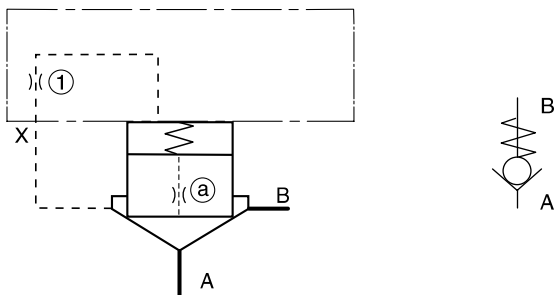
Description	Type									
	Pilot NG06						Pilot NG10			
	NG16	NG25	NG32	NG40	NG50	NG63	NG50	NG63	NG80	NG100
4/2-DC valve ¹⁾	D1VW20B*						D3W20H*			
Adaptor plate ²⁾	without						without			
Cover ³⁾	C016CA*	C025CA*	C032CA*	C040CA*	C050CA*	C063CA*	C050CA*	C063CA*	C080CA*	C100CA*
Cover orifice ①	M5xØ0.8	M5xØ1.0	M5xØ1.2	M5xØ1.5	M6xØ1.8	M6xØ2.0	M6xØ1.8	M6xØ2.0	1/16xØ2.2	1/16xØ2.5
Cover orifice ②	M5xØ00						1/16xØ00			
Cover orifice ③	M5xØ1.0	M6xØ1.2	M6xØ1.5	M6xØ1.8	M8xØ2.0	M8xØ2.2	M8xØ2.0	M8xØ2.2	M10x1xØ2.5	M10x1xØ3.0
Cover orifice ④	M5xØ99	M6xØ99				M8xØ99C				M10x1xØ99
Cartridge ⁴⁾	CE016C08*	CE025C08*	CE032C08*	CE040C08*	CE050C08*	CE063C08*	CE050C08*	CE063C08*	CE080C08*	CE100C08*
Poppet orifice ⑤	1/16NPTxØ00									
Spring	1.6 bar, type S									
Bolt kit cover	BK414 4x M8x40	BK391 4x M12x50	BK415 4x M16x55	BK416 4x M20x70	BK417 4x M20x75	BK418 4x M30x100	BK419 8x M24x120	BK509 8x M30x130	BK419 8x M24x120	BK420 8x M30x140
Bolt kit pilot	BK375 4x M5x30						BK385 4x M6x40			

¹⁾ Complete type see chapter "Directional Control Valves", series D1VW, D3W.
²⁾ NG10-NG06 inclusive O-rings and mounting bolts.
³⁾ Complete type see ordering code C*C.
⁴⁾ Complete type see ordering code CE*.

Shown orifice Ø and springs are recommendations.
 xxØ00 = plug
 xxØ99 = open

Check Function

Check valve, flow A ⇒ B



Description	Type							
	NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100
Cover ¹⁾	C016AA*	C025AA*	C032AA*	C040AA*	C050AA*	C063AA*	C080AA*	C100AA*
Cover orifice ①	M5xØ99				M6xØ99		1/16xØ99	
Cartridge ²⁾	CE016C01*	CE025C01*	CE032C01*	CE040C01*	CE050C01*	CE063C01*	CE080C01*	CE100C01*
Poppet orifice ②	1/16NPTxØ00							
Spring	1.6 bar, type S							
Bolt kit cover	BK414 4x M8x40	BK391 4x M12x50	BK415 4x M16x55	BK416 4x M20x70	BK417 4x M20x75	BK418 4x M30x100	BK419 8x M24x120	BK509 8x M30x130

¹⁾ Complete type see ordering code C*A.

²⁾ Complete type see ordering code CE*.

Shown orifice Ø and springs are recommendations.

xxØ00 = closed bottom NG16 - NG50, plug NG63 - NG100

xxØ99 = open

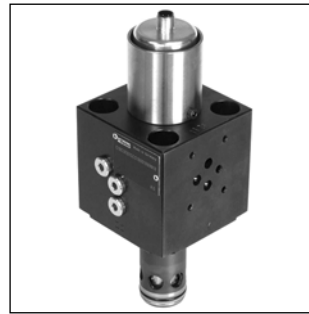
The 2/2-way seat valves series C10C*E are equipped with an inductive switch to monitor the closed position. The poppet has a 60/40 area ratio (AA = 0.6 AC, AB = 0.4 AC) and is capable for flow in both directions.

The safety overlap of the poppet avoids opening of the valve before the signal of the inductive switch has changed.

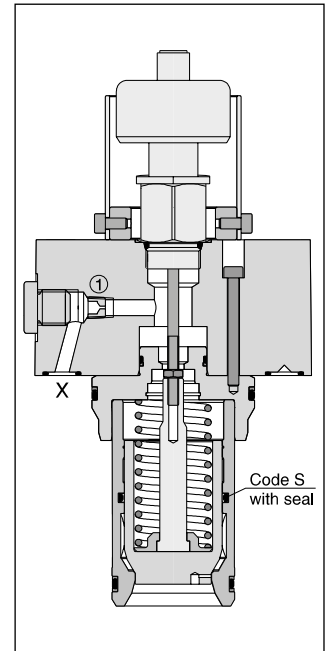
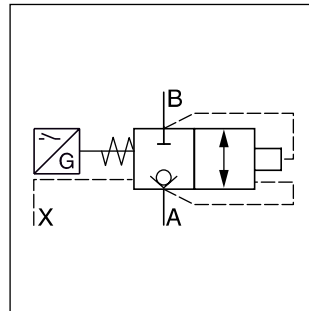
For sizes NG80 and NG100 a proximity switch is used.

Features

- German trade association certificate No. HSM 16014
- 8 sizes, NG16 up to NG100
- Cover to mount a directional control valve (on the side) for cover 3 (for NG16 to NG63)
- Cavity and mounting pattern acc. to ISO 7368
- Monitored closed position
- Inductive switch CE conform
- Optional with poppet sealing between pilot flow C and port B

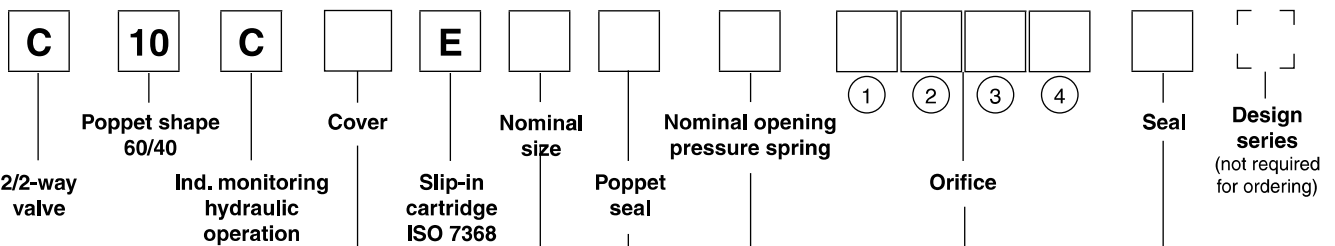


C10C3E



C10C1E

Ordering code



Code	Cover
1	without pilot valve interface
3 ¹⁾	with pilot valve interface

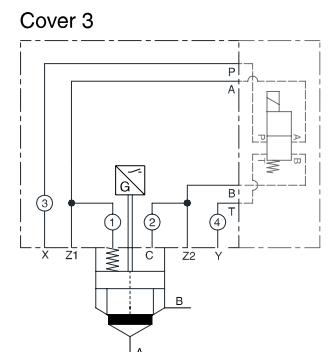
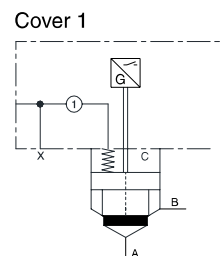
Code	Nominal size
016	NG16
025	NG25
032	NG32
040	NG40
050	NG50
063	NG63
080	NG80
100	NG100

Code	Poppet seal
C	without
S ²⁾	with

Code	Nominal opening pressure spring
L	0.1 bar
N	0.5 bar
S	1.6 bar
T	2.5 bar
U	4.0 bar

Code	Seal
N	NBR
V	FPM

Code	Orifice
ohne	no orifice (2-4 cover 1)
00	Plug
99	open, without orifice



Please order female connector M12x1 separately (order no. 5004109)

¹⁾ NG16 to NG63. The DC valve is not included in the delivery. We recommend the following pilot valves: D1VW020BN*W or D1VW020HN*W, depending on the required functionality and plug location.
²⁾ Only with spring S, T and U.

Note: X modifications are not certified.

○ Orifices (see 'Accessories')

Technical Data / Characteristic Curve

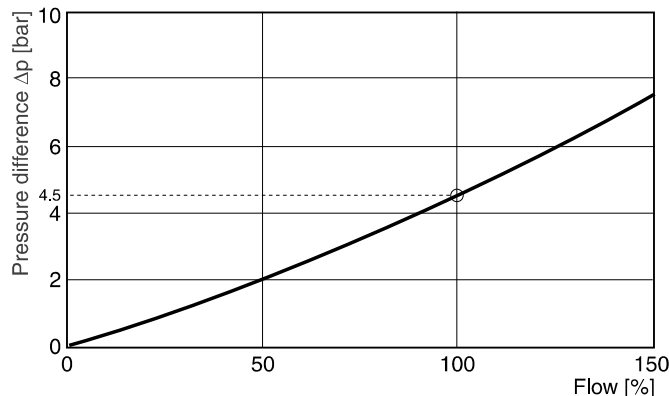
Technical data

General									
Design	2-way slip-in cartridge valves ISO 7368								
Size	NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100	
Mounting position	unrestricted								
Operation	hydraulic								
Ambient temperature [C°]	-20...+60								
MTTF _D value [years]	150								
Weight [kg]	1.5	2.7	4.3	7.4	12	23	53	89	
Hydraulic									
Max. operating pressure [bar]	350								
Nominal flow Δp 5 bar [l/min]	230	400	800	1250	1625	3400	5000	7500	
Fluid	Hydraulic oil according to DIN 51524								
Fluid temperature [C°]	-20...+70 (NBR: -25...+70)								
Viscosity, permitted [cSt] / [mm²/s]	20...400								
Viscosity, recommended [cSt] / [mm²/s]	30...80								
Filtration	ISO 4406 (1999); 18/16/13								
Control volume at max. stroke [cm³]	2.03	6.45	12.21	20.32	39.40	94.56	218	374	
Control surface (surface C = 100 %) A/B [%]	approx. 60 / 40 related on surface C								
Opening pressure									
flow direction A→B [bar]	Spring: L = 0.2; N = 0.9; S = 2.7; T = 4.0; U = 6.6								
flow direction B→A [bar]	Spring: L = 0.3; N = 1.3; S = 4.0; T = 6.3; U = 10.0								
Electrical (Inductive switch)									
	See position control								

Δp/Q performance curve

(without spring and poppet seal, C-chamber unloaded)

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Characteristic curve measured with HLP46 at 50 °C.

Recommended orifice diameter

Cover	Orifice	NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100
C10C1E	No.: 1	1/16 NPT	1/16 NPT	1/16 NPT	1/8 NPT	1/8 NPT	1/8 NPT	1/8 NPT	1/8 NPT
C10C3E	No.: 1, 2, 3, 4	M5	M6	M6	M6	M8	M8	n/a	n/a
Inlet orifice		Ø 0.8	Ø 1.2	Ø 1.5	Ø 2.0	Ø 2.5	Ø 3.0	Ø 3.0	Ø 3.0

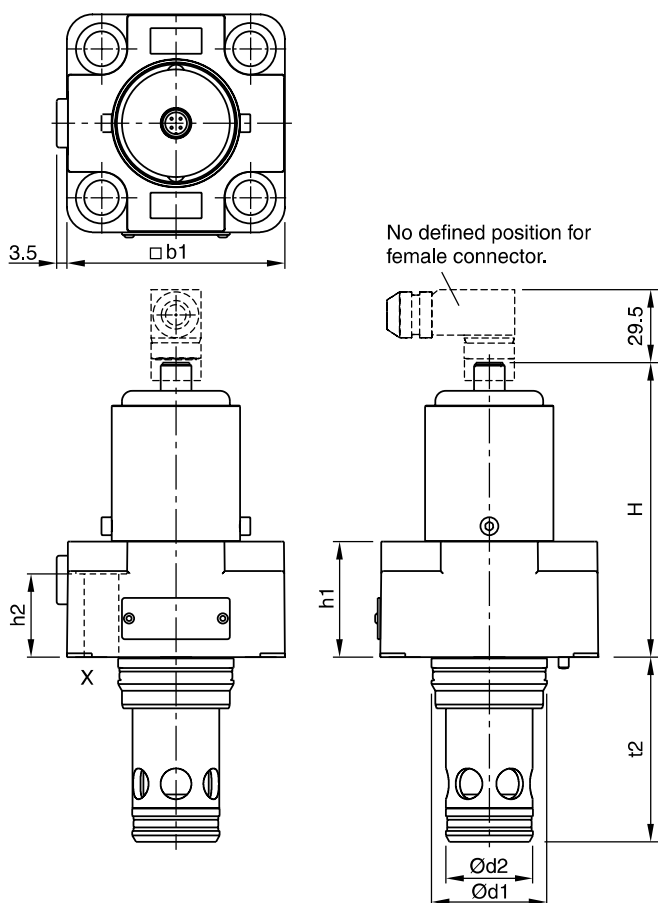
Depending on function, plugs must be used (code00).

Dimensions

**2-Way Slip-In Cartridge Valves
Series C10C*E*****

Dimensions C10C1E

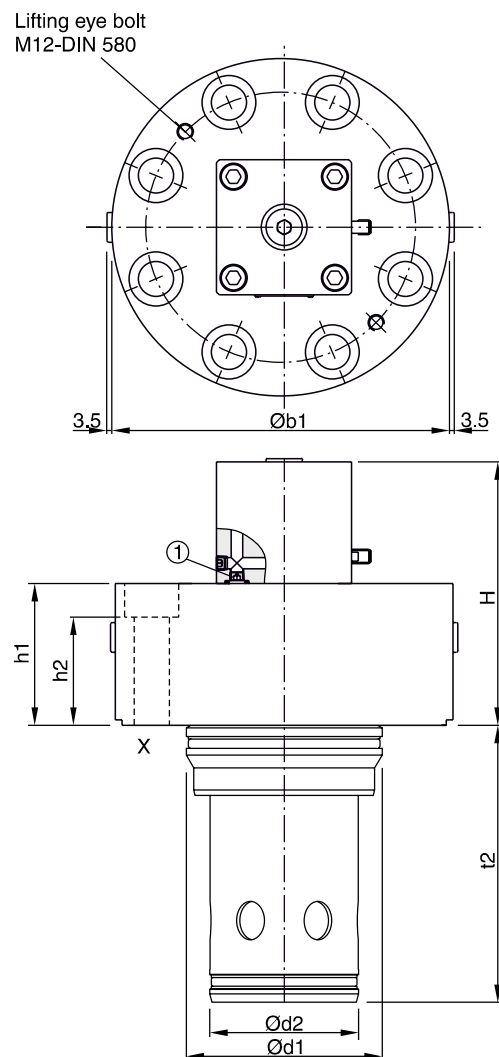
NG16 to NG63 ¹⁾



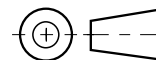
Cavity and mounting pattern acc. to ISO 7368

NG	H	h	h2	b1	d1	d2	t ^{+0.1}
16	107	36	28	65	32	25	56
25	116	45	32.5	85	45	34	72
32	122	50	32	102	60	45	85
40	131	60	40	125	75	55	105
50	141	70	45	140	90	68	122
63	156	85	55	180	120	90	155
80	195	105	80	250	145	110	205
100	210	120	89	300	180	135	245

NG80 to NG100 ¹⁾



The space necessary to remove the M12x1 female connector is at least 22 mm.



Seal and bolt kits

Nominal size		16	25	32	40	50	63	80	100
Seal kit	FPM	SK-C10C1E16V	SK-C10C1E25V	SK-C10C1E32V	SK-C10C1E40V	SK-C10C1E50V	SK-C10C1E60V	SK-C10C1E80V	SK-C10C1E100V
	NBR	SK-C10C1E16N	SK-C10C1E25N	SK-C10C1E32N	SK-C10C1E40N	SK-C10C1E50N	SK-C10C1E60N	SK-C10C1E80N	SK-C10C1E100N
Bolt kit [ISO 4762-12.9]		BK414 4x M8x40	BK391 4x M12x50	BK415 4x M16x55	BK416 4x M20x70	BK417 4x M20x75	BK418 4x M30x100	BK419 8x M24x120	BK420 8x M30x140
	Recommended torque [Nm]	31.8	108	264	517	517	1775	890	1775

Attention!

The switch may only be adjusted by the valve manufacturer. The exchange of individual modules is not permitted.

¹⁾ Please order female connector M12x1 separately (see accessories directional control valves, female connector M12x1 (order no.: 5004109).

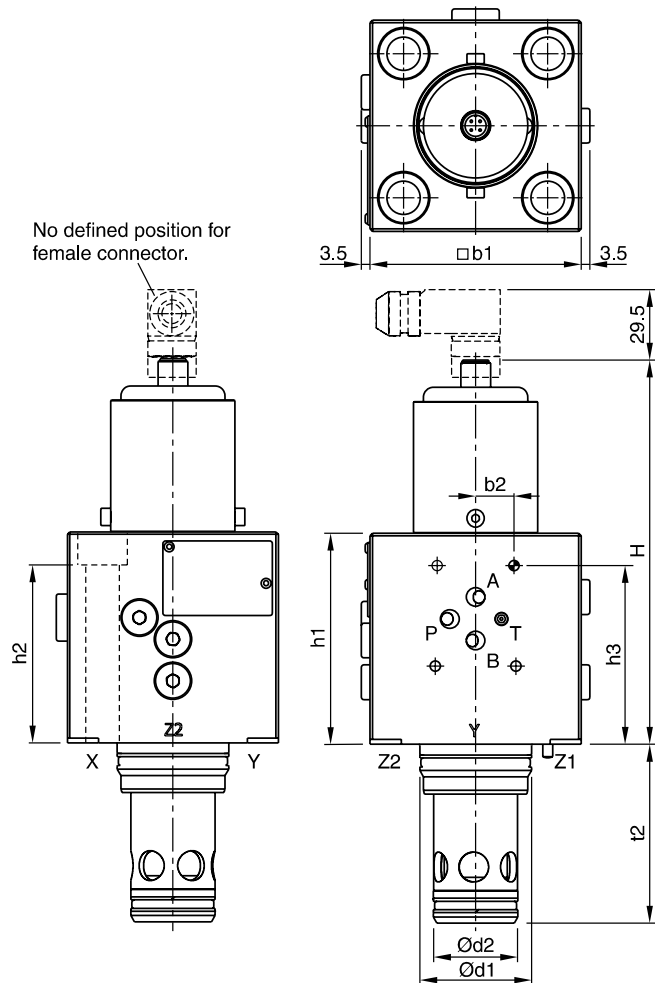


Dimensions

Dimensions C10C3E

NG16 to NG50 ¹⁾

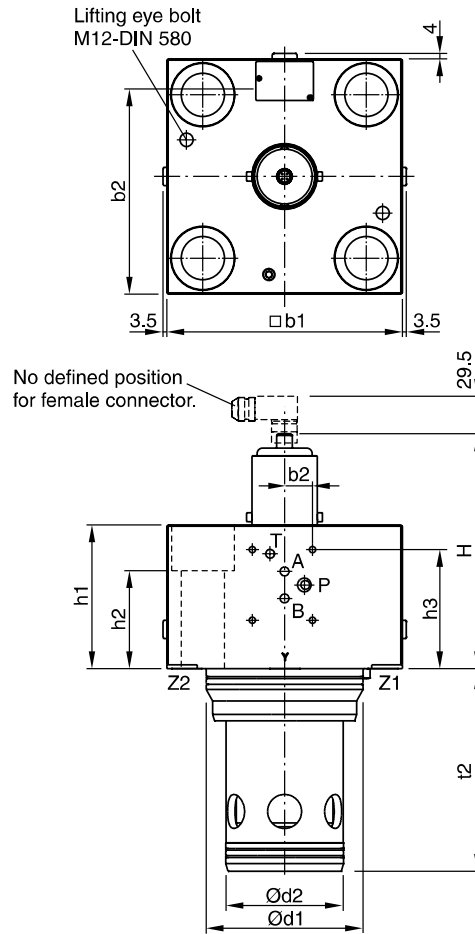
Pilot valve interface NG06.



Cavity and mounting pattern acc. to ISO 7368

NG63 ¹⁾

Pilot valve interface NG10.



Cavity and mounting pattern acc. to ISO 7368

NG	H	h1	h2	h3	b1	b2	d1	d2	t2
16	156	85	76	72	65	15,5	31	25	56
25	156	85	70	72	85	15,5	45	34	72
32	156	85	56	72	102	15,5	60	45	85
40	156	85	50	72	125	15,5	75	55	105
50	156	85	60	72	140	15,5	90	68	122
63	181	110	75	91	180	21,5	120	90	155

The space necessary to remove the M12x1 female connector is at least 22 mm.



Seal and bolt kits

Nominal size		16	25	32	40	50	63
Seal kit	FPM	SK-C10C3E16V	SK-C10C3E25V	SK-C10C3E32V	SK-C10C3E40V	SK-C10C3E50V	SK-C10C3E63V
	NBR	SK-C10C3E16N	SK-C10C3E25N	SK-C10C3E32N	SK-C10C3E40N	SK-C10C3E50N	SK-C10C3E63N
Bolt kit [ISO 4762-12.9]		BK533 4x M8x90	BK532 4x M12x90	BK526 4x M16x80	BK527 4x M20x80	BK534 4x M20x90	BK536 4x M30x120
Recommended torque ± 15%	[Nm]	31.8	108	264	517	517	1775

Attention!

The switch may only be adjusted by the valve manufacturer. The exchange of individual modules is not permitted.

¹⁾ Please order female connector M12x1 separately (see accessories directional control valves, female connector M12x1 (order no.: 5004109).

German trade association certificate

Bescheinigung
Nr. **HSM 16014**
vom 08.06.2016



Baumusterprüfbescheinigung

Name und Anschrift des
Bescheinigungsinhabers:
(Auftraggeber) Parker Hannifin GmbH
Gutenbergstr. 38
41564 Kaarst

Produktbezeichnung: **2/2-Wegesitzventil mit Überwachung**

Typ: C10C1 E "NG" mit "NG" 16/25/32/40/50/63/80/100
C10C3 E "NG" mit "NG" 16/25/32/40/50/63/80/100

Prüfgrundlage: - GS-HSM-20 "Spritzgießmaschinen", 04/2015
- EN 201:2009 "Gummi- und Kunststoffmaschinen -
Spritzgießmaschinen - Sicherheitsanforderungen"

Zugehöriger Prüfbericht: Nr. 014/2016 vom 27.05.2016

Weitere Angaben: Bestimmungsgemäße Verwendung:
Zur Verwendung für hydraulische Schließicherungen in
Spritzgießmaschinen gemäß Herstellereinebauanleitung

Bemerkungen: Das jeweilige Ventil ist gemäß Kapitel 5 der
EN 201:2009 "Gummi- und Kunststoffmaschinen -
Spritzgießmaschinen - Sicherheitsanforderungen" von der Steuerung
der Spritzgießmaschine selbsttätig zu überwachen, so dass auch bei
Versagen des Positionsschalter ein erneuter Maschinenzyklus nicht
mehr eingeleitet werden kann. Das Ventil ist vom Hersteller
eingestellt und darf nur vollständig getauscht werden.

Das geprüfte Baumuster entspricht den einschlägigen Bestimmungen der Richtlinie
2006/42/EG (Maschinen).

Diese Bescheinigung ist gültig bis: **07.06.2021**

Die Baumusterprüfbescheinigung berechtigt nicht zur Nutzung eines Prüfzeichens.

Weiteres über die Gültigkeit, eine Gültigkeitsverlängerung und andere Bedingungen regelt die
Prüf- und Zertifizierungsordnung.



PZB10
11.14 Deutsche Gesetzliche Unfallversicherung (DGUV) e.V.
Spitzenverband der gewerblichen Berufsgenossenschaften
und der Unfallversicherungsträger der öffentlichen Hand
Vereinsregister-Nr. VR 751 B, Amtsgericht Charlottenburg

DGUV Test Prüf- und Zertifizierungsstelle Hebezeuge, Sicherheitskomponenten
und Maschinen • Fachbereich Holz und Metall
Kreuzstraße 45 • 40210 Düsseldorf • Deutschland
Telefon: +49 (0) 211 8224-16910 • Fax: +49 (0) 211 8224-26910

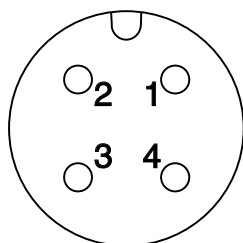


Position Control

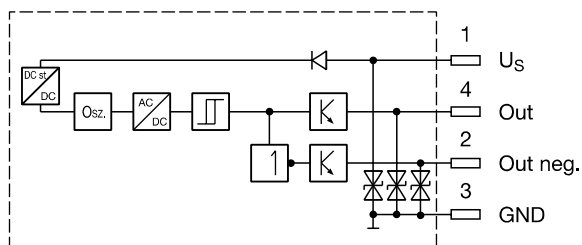
Electrical characteristics of position control M12x1 as per IEC 61076-2-101, NG16 to NG63

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
CE conform ¹⁾		EN 61000-4-2 / EN 61000-4-4 / EN 61000-4-6 1) / ENV 50140 / ENV 50204
Min. distance to next AC solenoid	[m]	0.1
Interface		M12x1 to IEC 61076-2-101

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

8

Please order plug M12x1 separately (see accessories directional control valves, plug M12x1; order no.: 5004109)

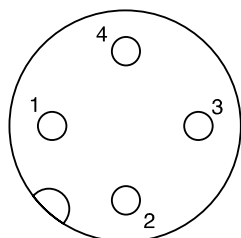
¹⁾ Only guaranteed with screened cable and female connector

Position Control

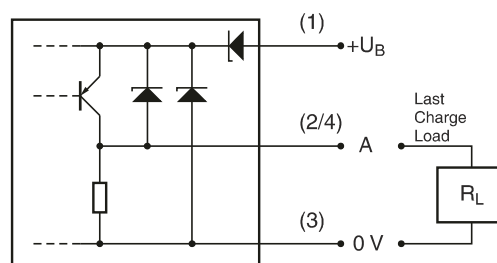
Electrical characteristics of position control M12x1 as per IEC 61076-2-101, NG80 to NG100

Protection class		IP65 in accordance with EN 60529 (with correctly mounted plug-in connector)
Ambient temperature	[°C]	-20...+60
Supply voltage U_S / ripple	[V]	10...30 / 10 %
Current consumption without load	[mA]	≤ 10
Max. output current per channel, ohmic	[mA]	200
Min. output load per channel, ohmic	[kOhm]	100
Max. output drop at 0.2 A	[V]	≤ 2
EMC		EN61000-6-4 / EN61000-6-2
Min. distance to next AC solenoid	[m]	>0.1
Interface		M12x1
Wiring min.	[mm ²]	3 x 0.14 braid shield recommended
Wiring length max.	[m]	50 recommended

M12 pin assignment



- 1 + U_S 10...30 V
- 2 Out A: not connected
- 3 0V
- 4 Out A: normally closed



Please order plug M12x1 separately. Straight plug recommended – no defined position possible for angled plug.

Definition

Start position monitored:

The switching point of the inductive switch is within the overlap of the poppet.

After the signal of the inductive switch has changed, the poppet leaves the safety overlapping position.



Characteristics

The series of active pilot operated 2/2-way cartridge valves TDW enables to open and close the main poppet solely by pilot pressure, independent of pressure build-up in the main ports A and B.

The main poppet is designed hollow and mostly pressure balanced. The operation is accomplished via minimal control surfaces resulting in low pilot oil demand and fast switching operations.

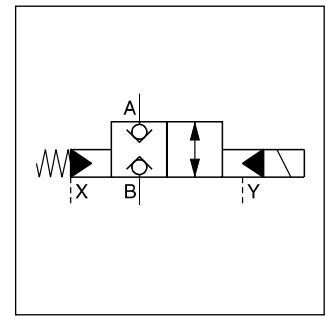
TDW is supplied as one unit to ensure easy installation – sleeve and body are screwed together. Additionally, the lower recess in the standardized mounting cavity is no longer required, providing the possibility to minimize pressure losses in the manifold block.

Features

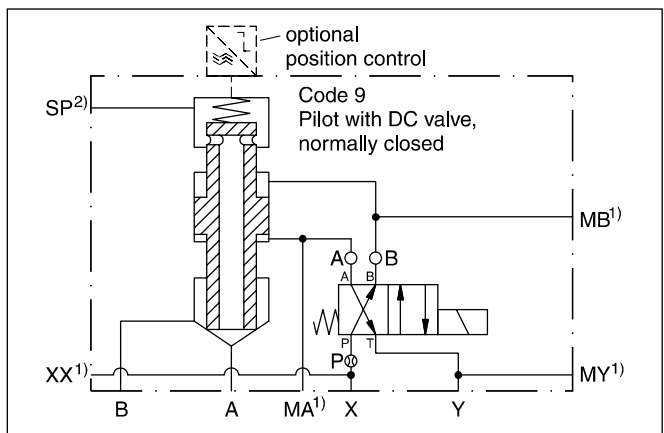
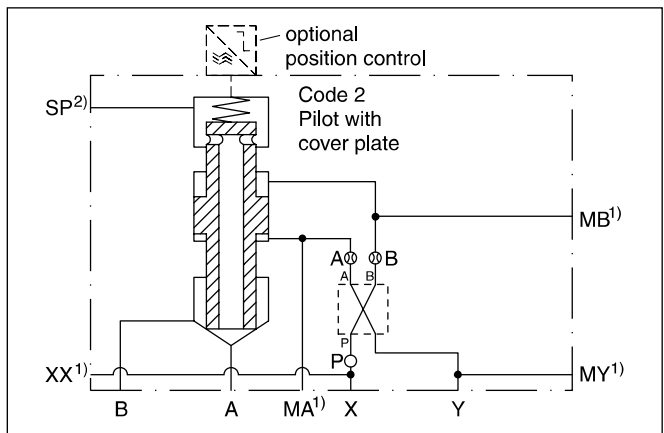
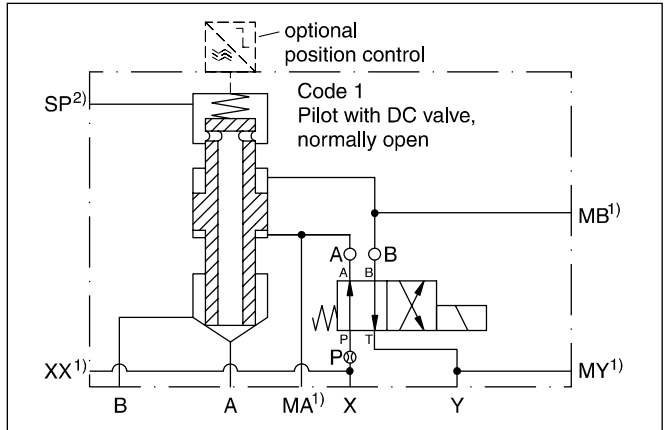
- Active pilot operated 2/2-way cartridge valves
- Cavity and mounting pattern according to ISO 7368
- Flow direction B to A and A to B
- 7 sizes NG25 up to NG100
- Position monitoring optional
- Stroke limiter optional



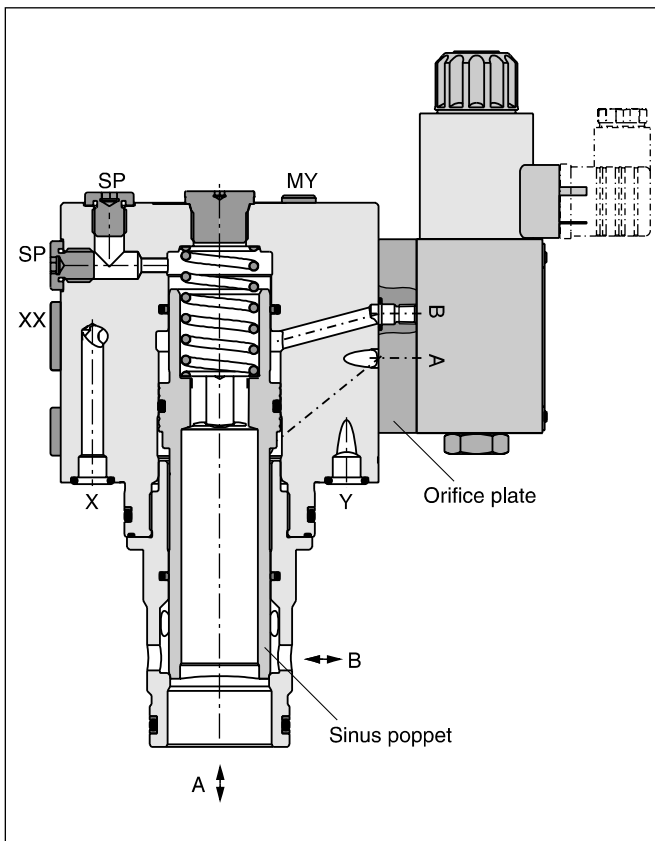
TDW025



Function symbols

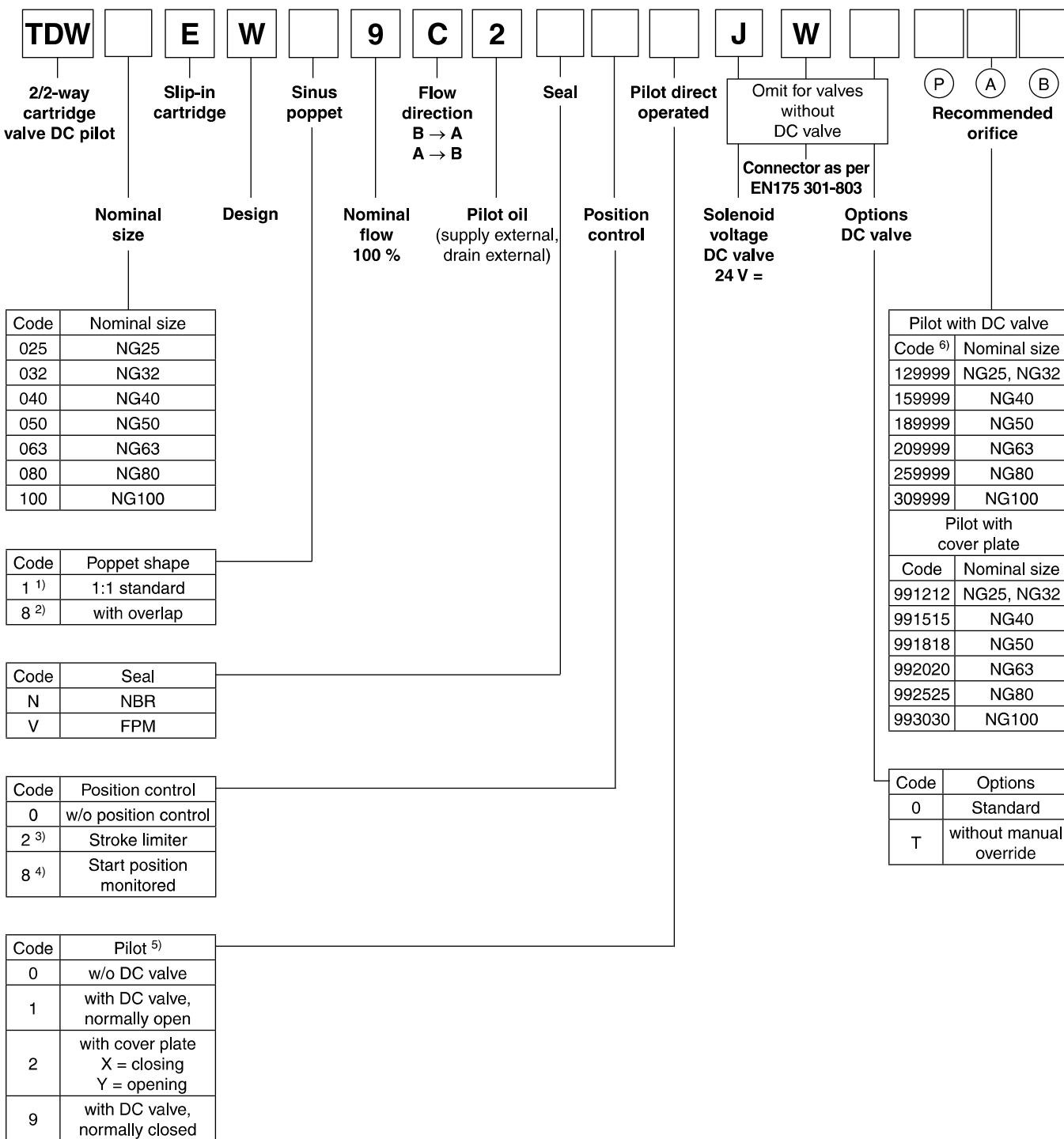


TDW040



1) NG25 and NG32 without accu port XX and without ports MA, MB and MY.
2) NG25 without suction port SP.

Ordering Code



1) Not for start position monitored, Code 8.
 2) Only in combination with start position monitored, code 8).
 3) Only for NG25 to NG63.
 4) Please order female connector M12x1 separately (see accessories directional control valves, female connector M12x1 (order no.: 5004109).
 5) German trade association certificate only legal for pilot options 0 and 2.
 6) Example code 129999: 12 = dia. 1.2 mm, 99 = without orifice.

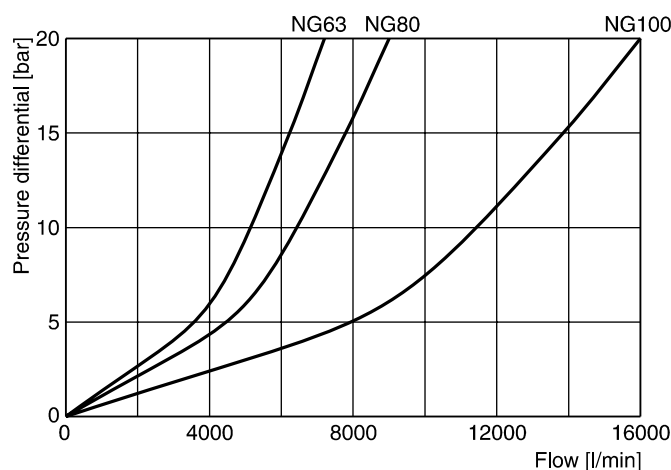
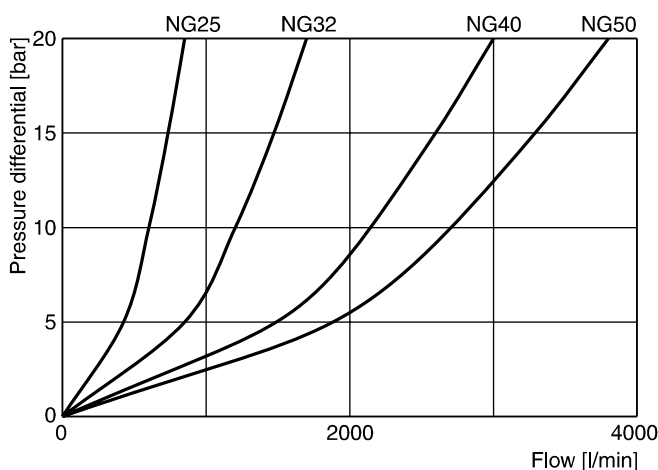


Technical Data / Performance Curves

General		2-way slip-in cartridge valve according to ISO 7368							
Design		2-way slip-in cartridge valve according to ISO 7368							
Nominal size	DIN	NG25	NG32	NG40	NG50	NG63	NG80	NG100	
Mounting position		unrestricted							
Ambient temperature	[°C]	-20...+60							
MTTF _D value	[years]	75							
Weight	[kg]	8	10	12	23	49	102	154	
Hydraulic									
Max. operating pressure	[bar]	Ports A, B, X up to 350, port Y: max. 210 (350 bar with cover plate)							
Fluid		Hydraulic oil according to DIN 51524							
Fluid temperature	[°C]	-25...+70 (NBR: -25...+60)							
Viscosity	permitted	20...400							
	recommended	30...80							
Filtration		ISO 4406 (1999); 18/16/13							
Nominal flow at Δp = 5 bar	[l/min]	420	850	1500	1900	3600	4500	8000	
Recommended max. flow	[l/min]	800	2000	3000	4500	8000	13000	20000	
Flow direction		B to A / A to B							
Pilot pressure	[bar]	must be as high as system pressure							
Overlap (for poppet code 8)	[mm]	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
Electrical characteristics									
Duty ratio		100 % ED; CAUTION: coil temperature up to 150 °C possible							
Protection class		IP 65 in accordance with EN 60529 (with correctly mounted plug-in connector)							
	Code	J							
Supply voltage	[V]	24 V =							
Tolerance supply voltage	[%]	±10							
Current consumption	hold	[A]	1.29						
Current consumption	in rush	[A]	1.29						
Power consumption	hold		31 W						
Power consumption	in rush		31 W						
Solenoid connection		Connector as per EN 175301-803, solenoid identification as per ISO 9461 (code W).							
Wiring min.	[mm ²]	3 x 1.5 recommended							
Wiring length max.	[m]	50 recommended							

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

p/Q Performance curves (sinus poppet code 1 and 8)



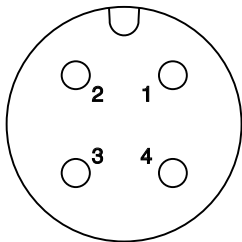
All characteristic curves measured with HLP46 at 50 °C.

Electrical characteristics of position control M12x1 as per IEC 61076-2-101, NG25 to NG100

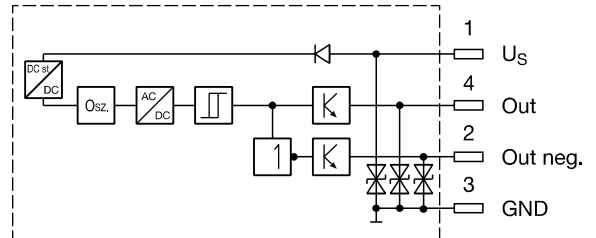
Supply voltage	[VDC]	24
Tolerance supply voltage	[%]	±20
Ripple supply voltage	[%]	≤10
Polarity protection	[V]	300
Current consumption without load	[mA]	≤20
Switching hysteresis	[mm]	<0.06
Max. output current per channel, ohmic	[mA]	250
Ambient temperature	[°C]	-20 ... +60
Protection		IP65 acc. EN 60529 (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

¹⁾ Only guaranteed with screened cable and female connector

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



Please order female connector M12x1 separately (see accessories directional control valves, female connector M12x1 (order no.: 5004109)).

Certificate

German trade association certificate

(only valid for pilot options 0 and 2)

Bescheinigung
Nr. **HSM 16015**
vom 08.06.2016



Baumusterprüfbescheinigung

Name und Anschrift des Bescheinigungsinhabers: **Parker Hannifin GmbH**
(Auftraggeber) **Gutenbergstr. 38**
41564 Kaarst

Produktbezeichnung: **2/2-Wegesitzventil mit Überwachung, aktiv gesteuert**

Typ: **TDW "NG" EW89C 2/8 NV 8 0/2 mit "NG" 25/32/40/50/63/80/100/125**

Prüfgrundlage: **- GS-HSM-20 "Spritzgießmaschinen", 04/2015**
- EN 201:2009 "Gummi- und Kunststoffmaschinen - Spritzgießmaschinen - Sicherheitsanforderungen"

Zugehöriger Prüfbericht: **Nr. 014/2016 vom 27.05.2016**

Weitere Angaben: **Bestimmungsgemäße Verwendung:**
Zur Verwendung für hydraulische Schließicherungen in Spritzgießmaschinen gemäß Herstellereinbauanleitung

Bemerkungen: Das jeweilige Ventil ist gemäß Kapitel 5 der EN 201:2009 "Gummi- und Kunststoffmaschinen - Spritzgießmaschinen - Sicherheitsanforderungen" von der Steuerung der Spritzgießmaschine selbsttätig zu überwachen, so dass auch bei Versagen des Positionsschalter ein erneuter Maschinenzklus nicht mehr eingeleitet werden kann. Das Ventil ist vom Hersteller eingestellt und darf nur vollständig getauscht werden.

Das geprüfte Baumuster entspricht den einschlägigen Bestimmungen der Richtlinie 2006/42/EG (**Maschinen**).

Diese Bescheinigung ist gültig bis: **07.06.2021**

Die Baumusterprüfbescheinigung berechtigt nicht zur Nutzung eines Prüfzeichens.

Weiteres über die Gültigkeit, eine Gültigkeitsverlängerung und andere Bedingungen regelt die Prüf- und Zertifizierungsordnung.



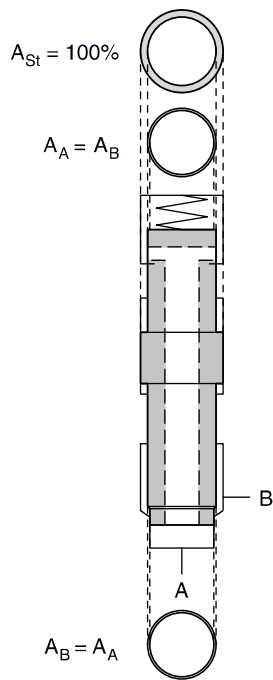
PZB10 11.14 Deutsche Gesetzliche Unfallversicherung (DGUV) e.V.
Spitzenverband der gewerblichen Berufsgenossenschaften
und der Unfallversicherungsträger der öffentlichen Hand
Vereinsregister-Nr. VR 751 B, Amtsgericht Charlottenburg

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8

Control surfaces



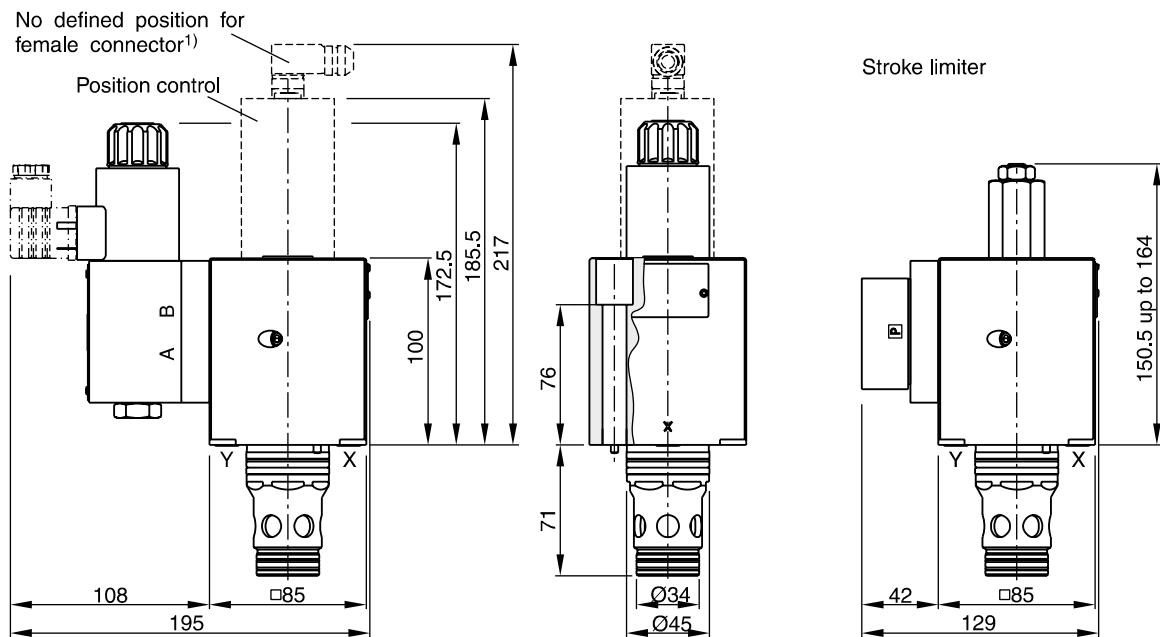
NG	Pilot oil volume for full stroke [cm ³]	A _{ST} [%]	Standard poppet 1 A _B / A _{ST} [%]	Overlapped poppet 8 A _B / A _{ST} [%]
25	4.7	100	0	10.6
32	5.3	100	0	10.9
40	8.3	100	0	11.2
50	12.9	100	0	11.5
63	18.9	100	0	11.7
80	28.5	100	0	11.8
100	35.3	100	0	12.0

The 1:1 standard poppet (Code 1) is pressure balanced. The overlapped poppet (Code 8) shows smaller areas A_A respectively A_B.

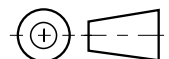
E.g. for NG100





$$\begin{aligned}
 A_{Nom} &= 7854 \text{ mm}^2 = 600 \% \\
 A_{St} &= 1307 \text{ mm}^2 = 100 \% \\
 A_A=A_B &= 157 \text{ mm}^2 = 12 \%
 \end{aligned}$$

Dimensions NG25



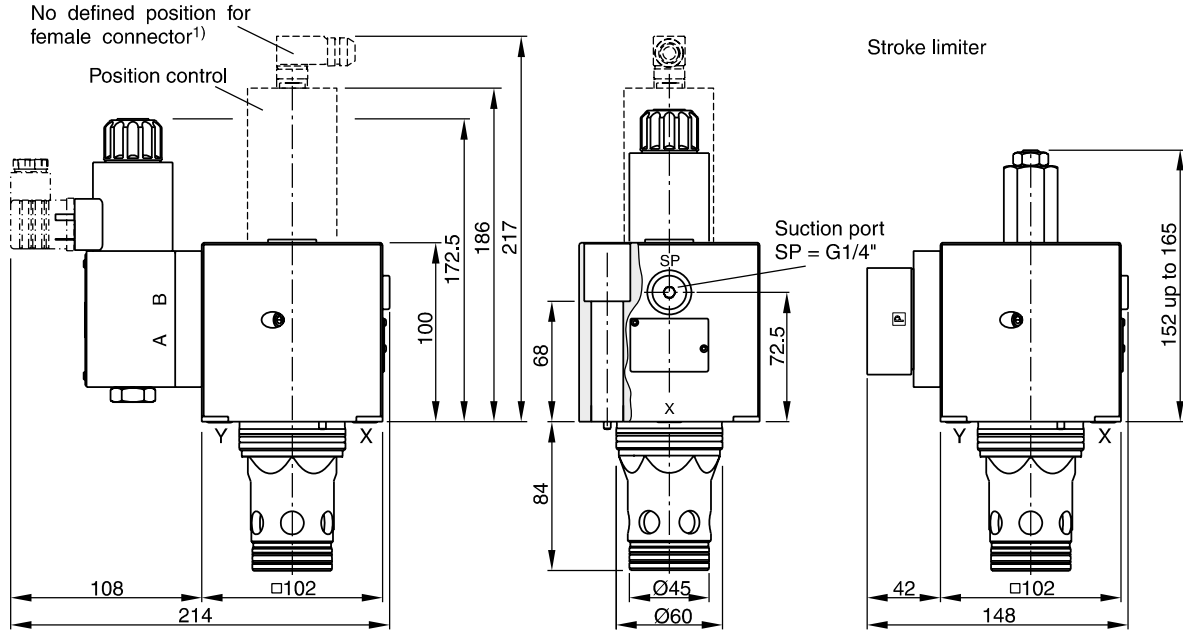
Note:
 Accu port XX and suction port SP non-existent



NG	Bolt kit 		NBR 	Kit 	FPM
25	BK504 4x M12x100 ISO 4762-12.9	108 Nm	SK-TDW025EN		SK-TDW025EV

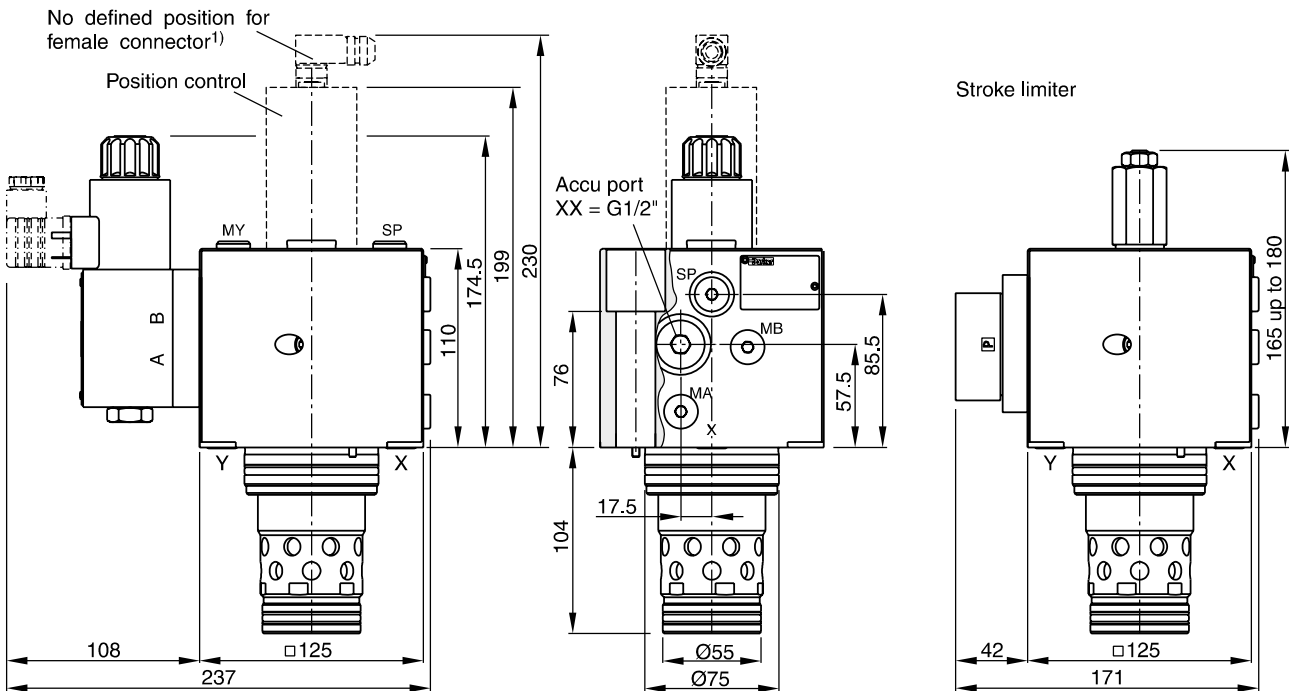
¹⁾ Please order female connector M12x1 separately (see accessories directional control valves, female connector M12x1 (order no.: 5004109).

NG32

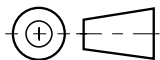





Note:
 Accu port XX non-existent

NG40



Suction port SP = G1/4" Ports MA and MB = G1/4"

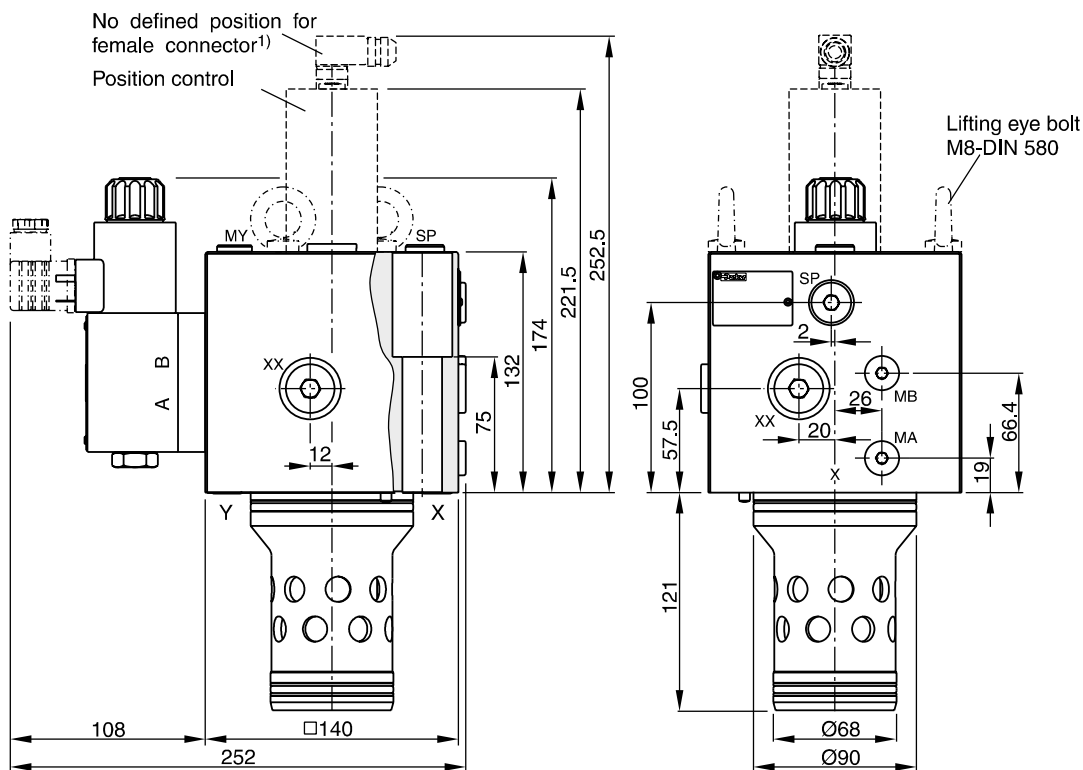


NG	Bolt kit 		NBR	Kit 	FPM
32	BK529 4 x M16x100 ISO 4762-12.9	264 Nm	SK-TDW032EN		SK-TDW032EV
40	BK481 4 x M20x110 ISO 4762-12.9	517 Nm	SK-TDW040EN		SK-TDW040EV

¹⁾ Please order female connector M12x1 separately (see accessories directional control valves, female connector M12x1 (order no.: 5004109).

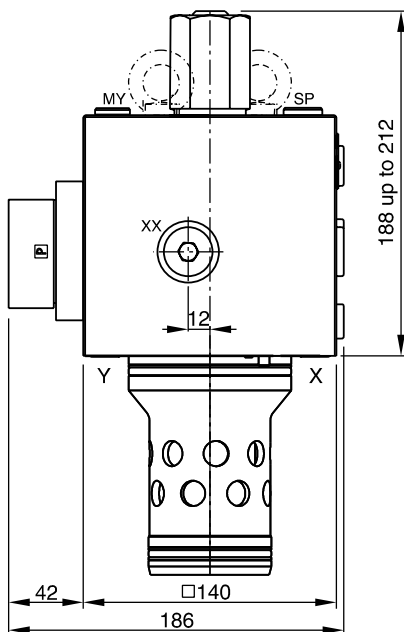
Dimensions

NG50



Lifting thread for disassembly M12

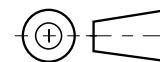
Stroke limiter






Suction port
SP = G3/8"

Accu port
XX = G1/2"

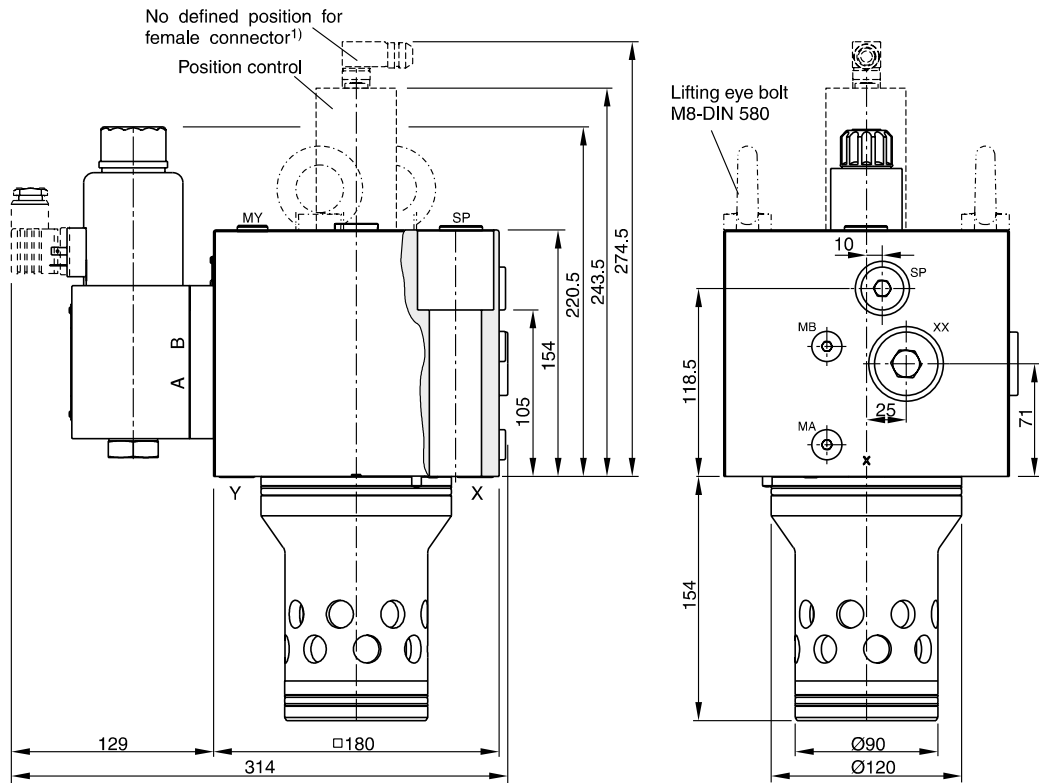
Ports
MA and MB = G1/4"



NG	Bolt kit 		NBR 	Kit	FPM
50	BK481 4 x M20x110 ISO 4762-12.9	517 Nm	SK-TDW050EN		SK-TDW050EV

¹⁾ Please order female connector M12x1 separately (see accessories directional control valves, female connector M12x1 (order no.: 5004109).

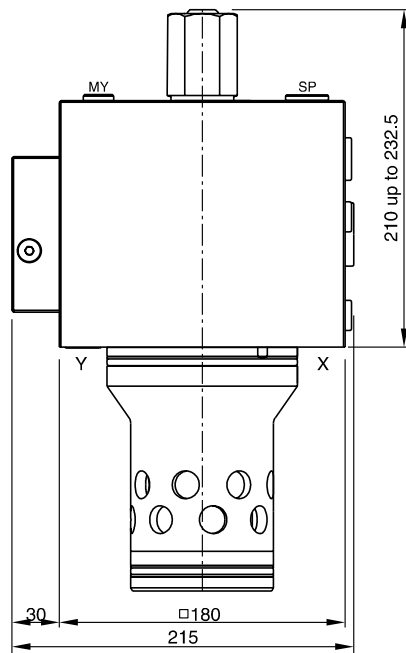
NG63



Lifting thread for disassembly M12

8

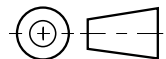
Stroke limiter

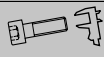




Suction port
 SP = G1/2"

Accu port
 XX = G3/4"

Ports
 MA and MB = G1/4"

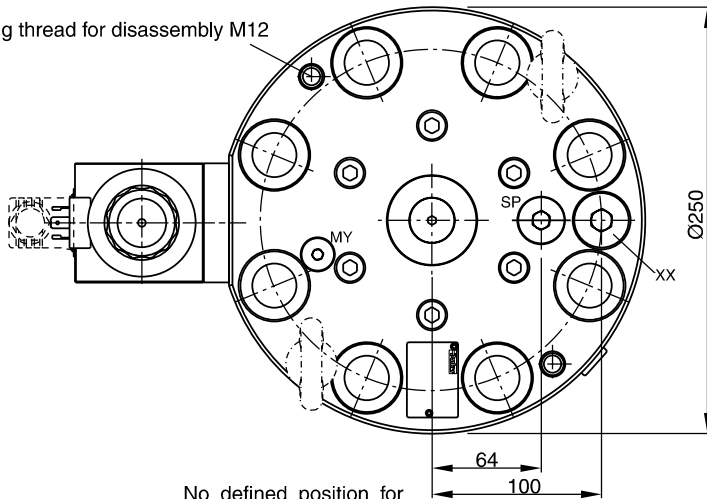


NG	Bolt kit 		NBR	Kit 	FPM
63	BK518 4 x M30x160 ISO 4762-12.9	1775 Nm	SK-TDW063EN		SK-TDW063EV

¹⁾ Please order female connector M12x1 separately (see accessories directional control valves, female connector M12x1 (order no.: 5004109).

NG80

Lifting thread for disassembly M12



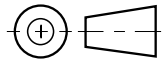
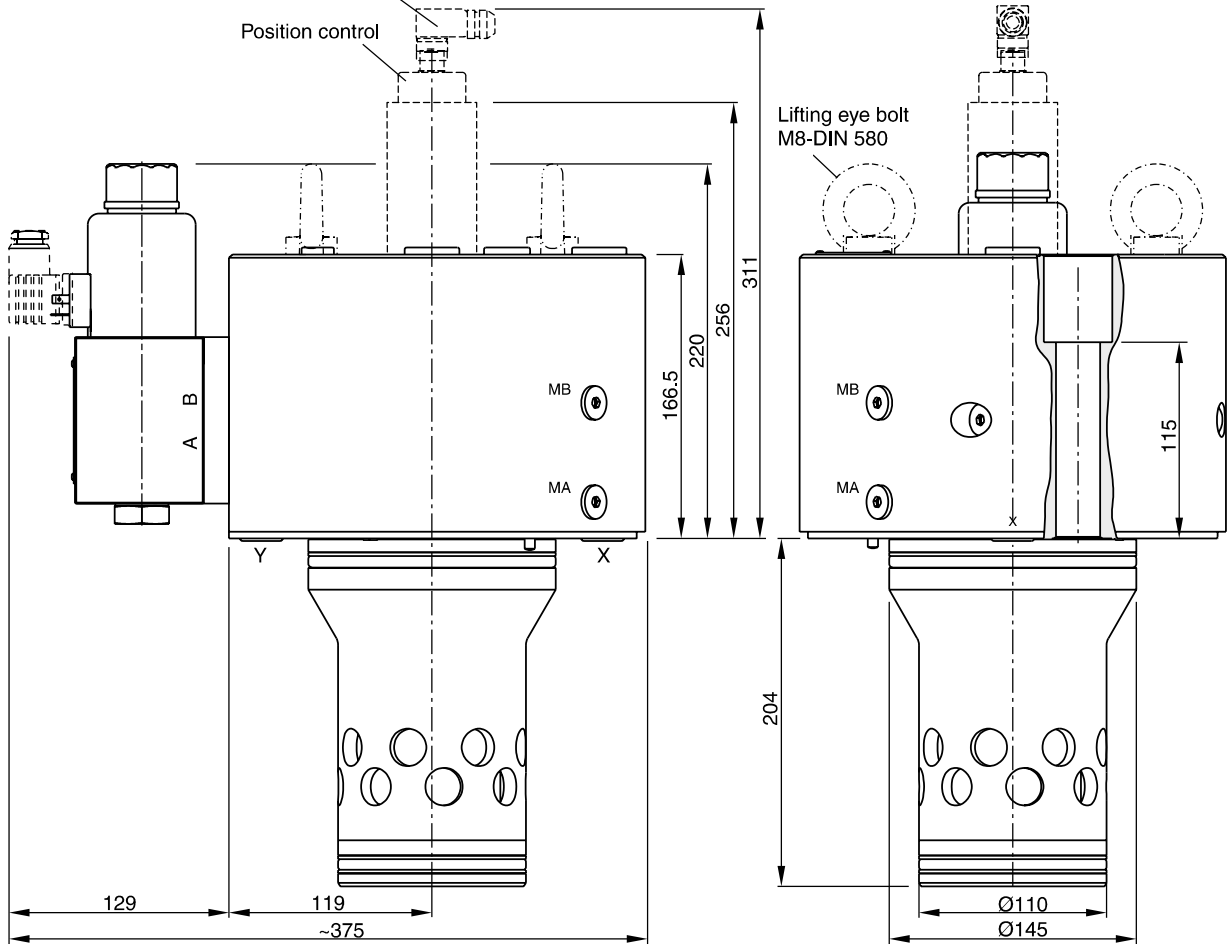
Accu port
 XX = G3/4"

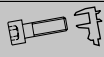


Suction port
 SP = G1/2"

Ports
 MA and MB = G1/4"

No defined position for female connector¹⁾

Position control

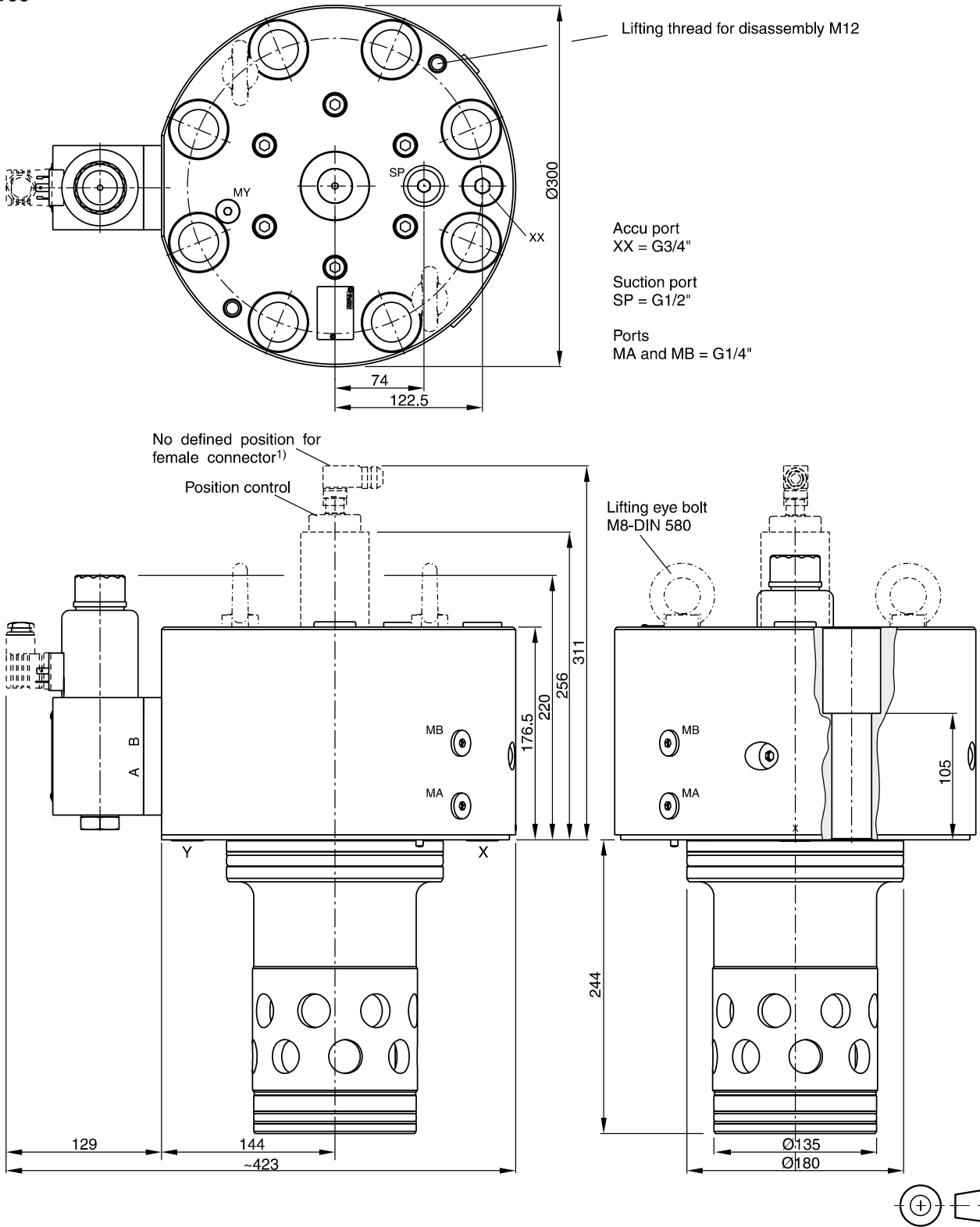


NG	Bolt kit 		NBR	Kit 	FPM
80	BK530 8x M24x160 ISO 4762-12.9	890 Nm	SK-TDW080EN		SK-TDW080EV




¹⁾ Please order female connector M12x1 separately (see accessories directional control valves, female connector M12x1 (order no.: 5004109).



NG100



8

NG	Bolt kit 		NBR	Kit 	FPM
100	BK531 8x M30x150 ISO 4762-12.9	1775 Nm	SK-TDW100EN		SK-TDW100EV

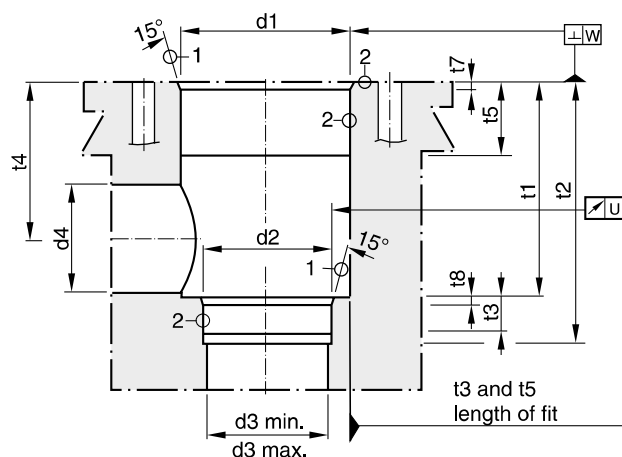
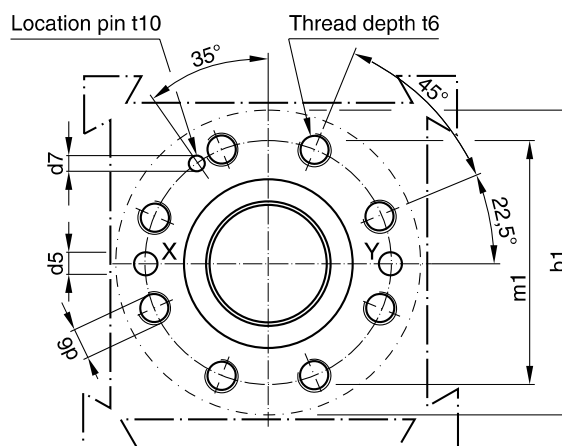
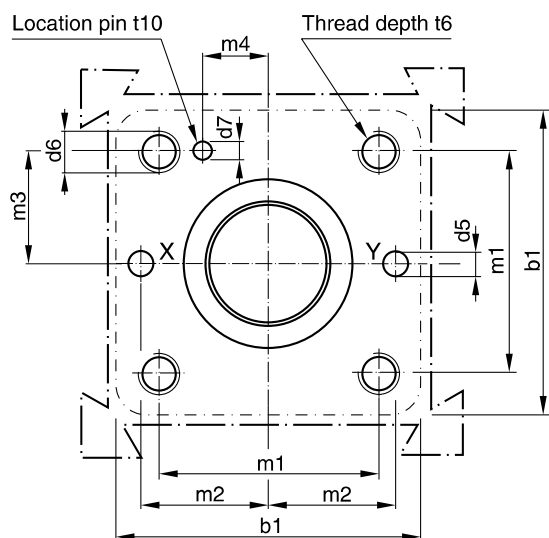
¹⁾ Please order female connector M12x1 separately (see accessories directional control valves, female connector M12x1 (order no.: 5004109).

Dimensions

**2/2-Way Active Slip-In Cartridge Valve
Series TDW**

Code: ISO 7368-B*-*-2-A/B NG25 to NG63

Code: ISO 7368-B*-*-2-A NG80 to NG100



Required surface finish:

① = $\sqrt{R_{\max} 16}$, ② = $\sqrt{R_{\max} 8}$

Deviating from ISO 7368 it is advisable to increase the diameters d3, d4 and d5.

Size	b1	d1 H7	d2 H7	d3	d3 max	d4 max ¹⁾	d5 max	d6	d7 H13	m1±0.2	m2±0.2	m3±0.2
25	85	45	34	25	27	32	6	M 12	4	58	33	29
32	102	60	45	32	44	50	8	M 16	6	70	41	35
40	125	75	55	40	54	63	10	M 20	6	85	50	42.5
50	140	90	68	50	67	80	10	M 20	8	100	58	50
63	180	120	90	63	89	100	12	M 30	8	125	75	62.5
80	250	145	110	80	109	110	16	M 24	10	200	—	—
100	300	180	135	100	134	150	20	M 30	10	245	—	—

Size	m4±0.2	t1+0.5	t2+1	t3	t4	t4 max ¹⁾	t5	t6	t7	t8	t10	U	W
25	16	58	72	12	44	40.5	30	35	2,5	2,5	10	0.03	0.05
32	17	70	85	13	52	44	15	35	2,5	2,5	10	0.03	0.1
40	23	87	105	15	64	54	15	45	3	3	10	0.05	0.1
50	30	100	122	17	72	59	17	45	4	3	10	0.05	0.1
63	38	130	155	20	95	78	19	65	4	4	10	0.05	0.2
80	—	175	205	25	130	115	32	50	5	5	10	0.05	0.2
100	—	210	245	29	155	133	32	53	5	5	10	0.05	0.2

¹⁾ Only in combination with d4max and t4max.



Characteristics / Ordering Code

The 2-way proportional throttle valves series TDA are used to control large oil flows.

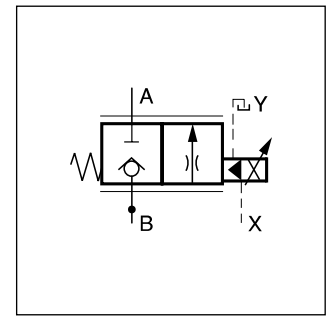
Features

- Cavity and mounting pattern according to ISO 7368
- Fail-safe function at power failure
- Leak-free from port B to A
- Pressure differential up to 350 bar possible
- 8 sizes NG16 up to NG100

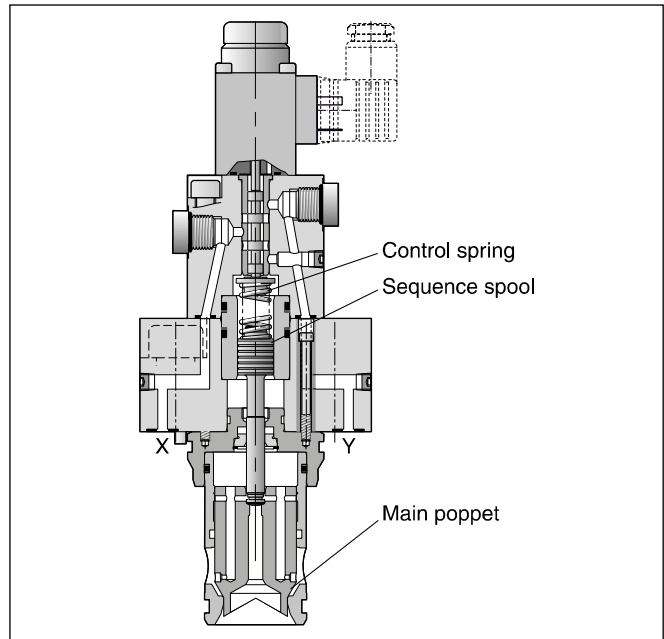
Function

The 2-way proportional throttle valves have a 3-stage design consisting of the first solenoid operated pilot stage with a spool in sleeve design, the second pilot stage with the control spring and the sequence spool and as main stage the poppet in the sleeve. The proportional solenoid operates the pilot spool against the feedback of the control spring and controls the position of the sequence spool. The main poppet follows the position of the sequence spool and provides an open area for flow from B to A (optional A to B) in proportion to the solenoid current. The poppet is positioned independently of the differential pressure, which can become as high as the maximum working pressure.

In combination with the digital power amplifier PC-D00A-400 the valve parameters can be saved, changed and duplicated.



TDA025



8

Ordering code

TDA		E	W	O			2			W	
2-way proportional throttle valve	Nominal size	Slip-in valve DIN ISO 7368	Design	Poppet shape	Nominal flow	Flow direction	Piloting	Seal	Solenoid voltage	Plug socket without plug	Design series (not required for ordering)

Code	Nominal size
016	NG16
025	NG25
032	NG32
040	NG40
050	NG50
063	NG63
080	NG80
100	NG100

Code	Nominal flow
9	Nominal flow
6¹⁾	Reduced flow

Code	Solenoid voltage
X	16 VDC
L	6 VDC

Code	Seal
N	NBR
V	FPM

Code	Flow direction
A	A to B
B	B to A

Bold letters = Short-term availability

¹⁾ Only for NG16 and NG25.

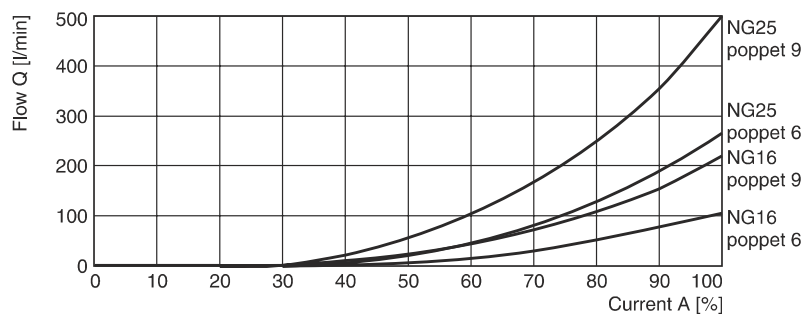
General									
Design	2-way proportional throttle valves, slip-in cartridge according to ISO 7368								
Nominal size	NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100	
Mounting position	unrestricted								
Ambient temperature	[°C]	-20...+60							
MTTF _D value	[years]	75							
Weight	[kg]	3.1	4.3	5.8	9.2	15	33	63	87
Extracting tool	see accessories								
Hydraulics									
Max. operating pressure	[bar]	Ports A, B and X up to 350, port Y: max. 10							
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								
Nominal flow at Δp = 10 bar	[l/min]	220	500	950	1400	2300	4000	6000	9500
Flow direction	see ordering code								
Pilot pressure, min.	[bar]	> 25 % of system pressure							
Min. operating pressure	[bar]	Port A → B approx. 10; Port B → A approx. 15							
Pilot oil	supply	Depending on flow direction A or B using X or external X							
	drain	External using port Y max. 10 bar							
Pilot oil at p = 100 bar	[l/min]	Port X → Y <1.5							
Opening point	At 30 % of nominal current								
Manufacturing tolerance	[%]	±5 of Q _{nom}							
Static/dynamic									
Response time at p _x =50 bar	[ms]	20	25	30	35	45	55	65	80
Hysteresis	[%]	< 3							
Repeatability	[%]	< 1							
Electrical (proportional solenoid)									
Duty ratio	100 % ED								
Protection class	IP65 according to EN 60529 (with correctly mounted plug-in connector)								
Solenoid	Code	L			X				
	at size	16-50	63-100		16-50	63-100			
Solenoid voltage	[V]	6			16				
Nominal current (100 % ED)	[A]	2.6			1.05				
Nominal resistance	[Ohm]	2.2	2.5		11.3	14			
Power amplifier, recommended	PCD 00A-400								
Solenoid connection	Connector as per EN 175301-803								



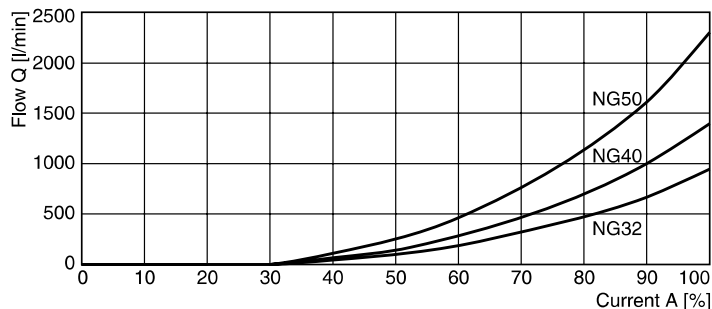
The pilot pressure in X-line must be at least 25 % (NG16-40) or 45 % (NG50-100) of the pressure in the draining-off line of the cartridge to make sure that the main poppet closes safely without malfunction.

Solenoid current / flow curves

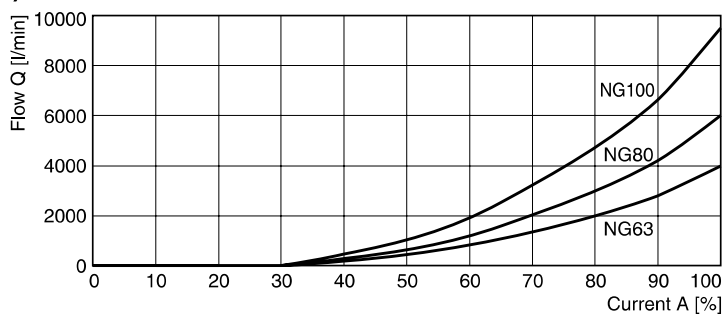
NG16-25 ($\Delta p = 10$ bar)



NG32-50 ($\Delta p = 10$ bar)



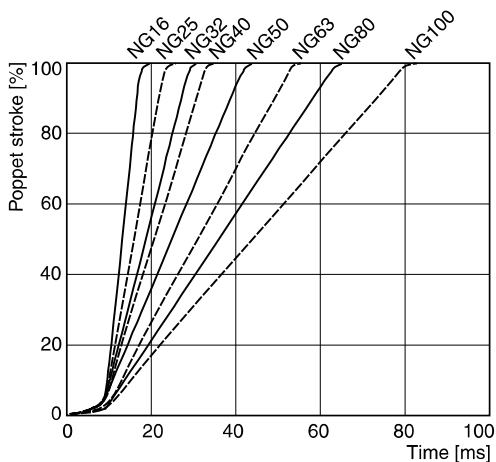
NG63-100 ($\Delta p = 10$ bar)



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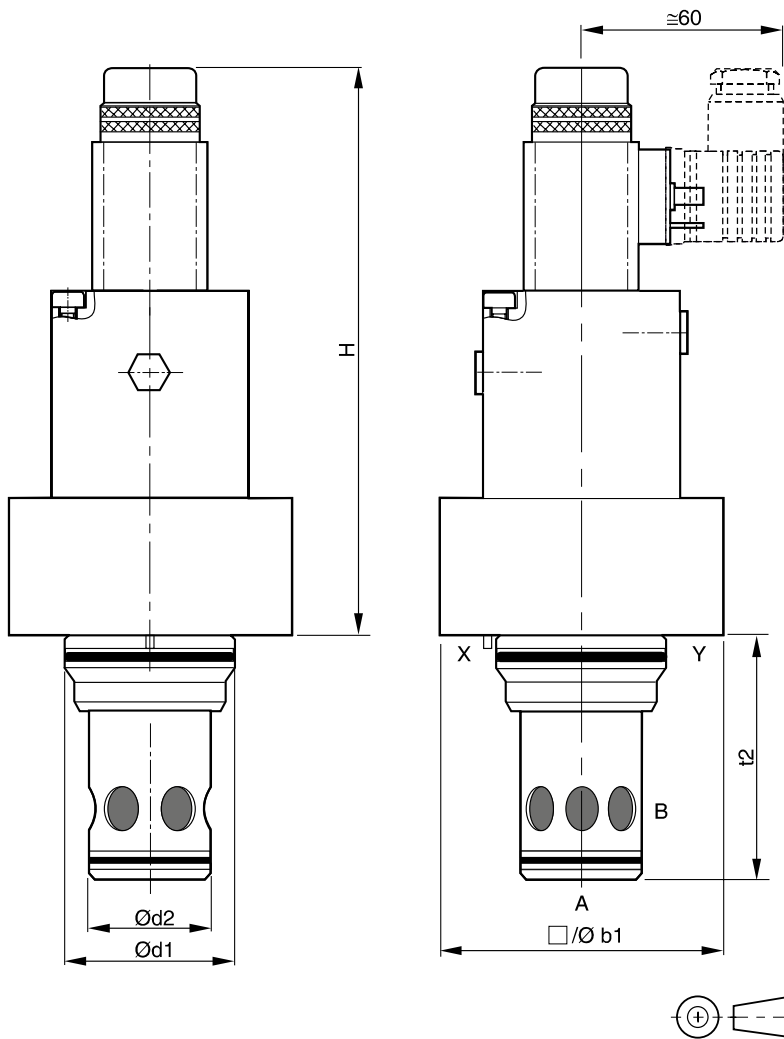
$$\Delta p_{\text{actual}} = \left(\frac{Q_{\text{actual}}}{Q_{\text{nominal}}} \right)^2 \cdot \Delta p_{\text{nominal}}$$

Poppet stroke / time curve

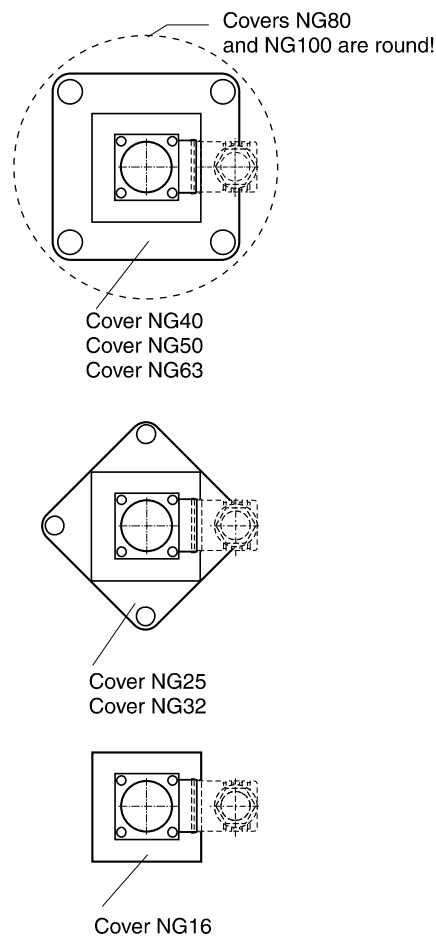


All characteristic curves measured with HLP46 at 50 °C.

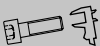

Valves



Valve covers



Size	16	25	32	40	50	63	80	100
H	168	177	182	192	202	304	324	339
b1	65	85	102	125	140	180	Ø250	Ø300
d1 ^{H7}	32	45	60	75	90	120	145	180
d2 ^{H7}	25	34	45	55	68	90	110	135
t2 ^{+0.1}	56	72	85	105	122	155	205	245

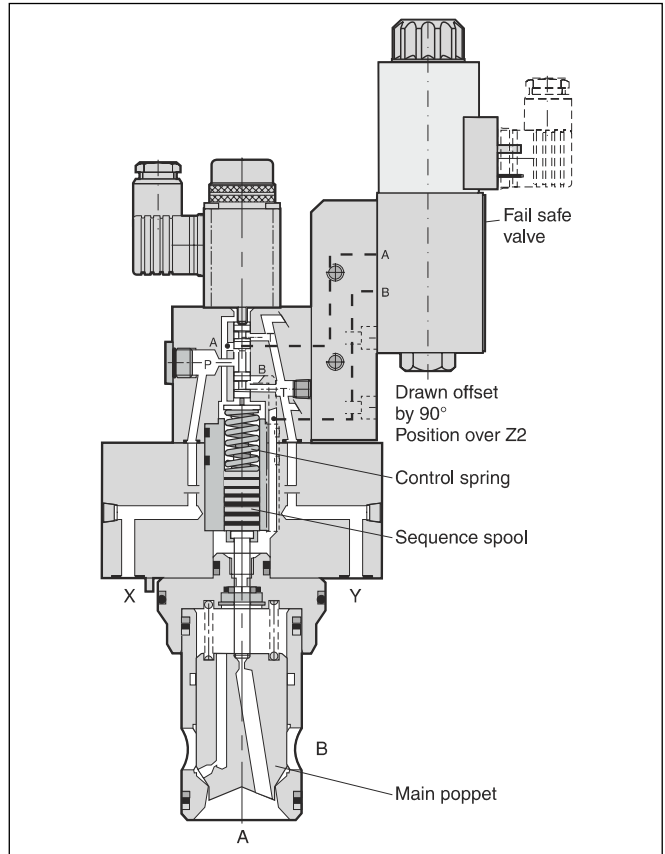
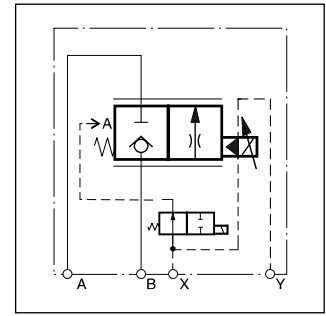
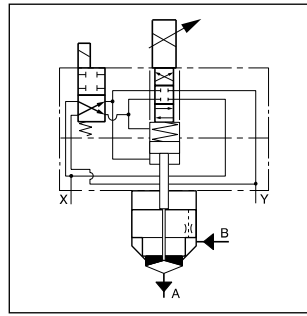
NG	Kit	ISO 4762-12.9		Kit	
				NBR	FPM
16	BK510	4x M8x100	31.8 Nm	SK-TDA016EN	SK-TDA016EV
25	BK391	4x M12x50	108 Nm	SK-TDA025EN	SK-TDA025EV
32	BK415	4x M16x55	264 Nm	SK-TDA032EN	SK-TDA032EV
40	BK416	4x M20x70	517 Nm	SK-TDA040EN	SK-TDA040EV
50	BK417	4x M20x75	517 Nm	SK-TDA050EN	SK-TDA050EV
63	BK418	4x M30x100	1775 Nm	SK-TDA063EN	SK-TDA063EV
80	BK419	8x M24x120	890 Nm	SK-TDA080EN	SK-TDA080EV
100	BK420	8x M30x140	1775 Nm	SK-TDA100EN	SK-TDA100EV

Characteristics

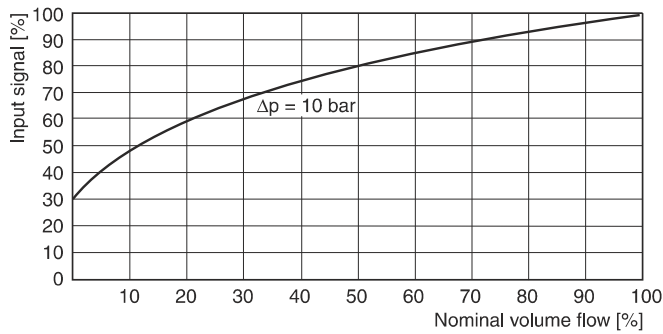
Accumulator discharge valves series TEA are preferably used in hydraulic systems where high flow rates are discharged from hydraulic accumulators over a short operating period (in the range of milliseconds). Typical applications are injection molding and die casting machines as well as hydraulic presses.

Basically the function of an accumulator discharge valve corresponds to the function of a TDA throttle valve. In addition a directional valve is integrated in the pilot circuit to meet the relevant safety regulations.

The directional valve provides the safety function. When the solenoid is deenergized and the spring is in end position, pilot pressure from X presses the control piston into lower end position and the main poppet is closed. As a result the flow from B to A or from the reservoir system to the machine is blocked.

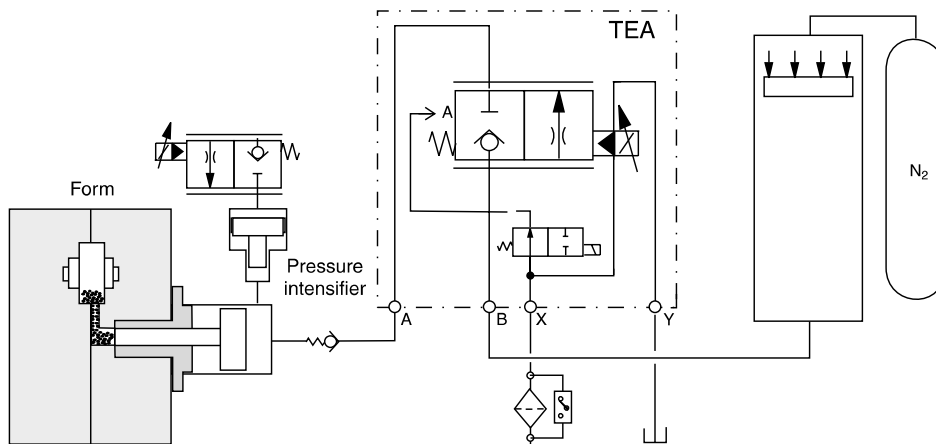


Characteristic curve



Characteristic curve measured with HLP46 at 50 °C.

Example accumulator system in a die casting machine



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Ordering Code / Technical Data

Ordering code

TEA		E	W	0	9		2			W		
2-way Prop. throttle valve with shut-off function	Nominal size	Cartridge valve ISO 7368	Design	Spool form	Flow code	Flow direction	Pilot oil guide	Seals	Prop. solenoid voltage	Plug socket without plug	Solenoid voltage	Design series (not required for ordering)

Code	Nominal size
025	NG25
032	NG32
040	NG40
050	NG50
063	NG63
080	NG80
100	NG100

Code	Flow direction
A	A to B
B	B to A

Bold letters = Short-term availability

Code	Solenoid
J	24 V= / 1.25 A
U ¹⁾	98 V= / 0.31 A
G ¹⁾	205 V= / 0.15 A

Code	Proportional solenoid voltage
L	6 VDC
X	16 VDC

Code	Seal
N	NBR
V	FPM

¹⁾ To be used in combination with rectifier plugs at 120 VAC / 230 VAC power supply.

Technical data

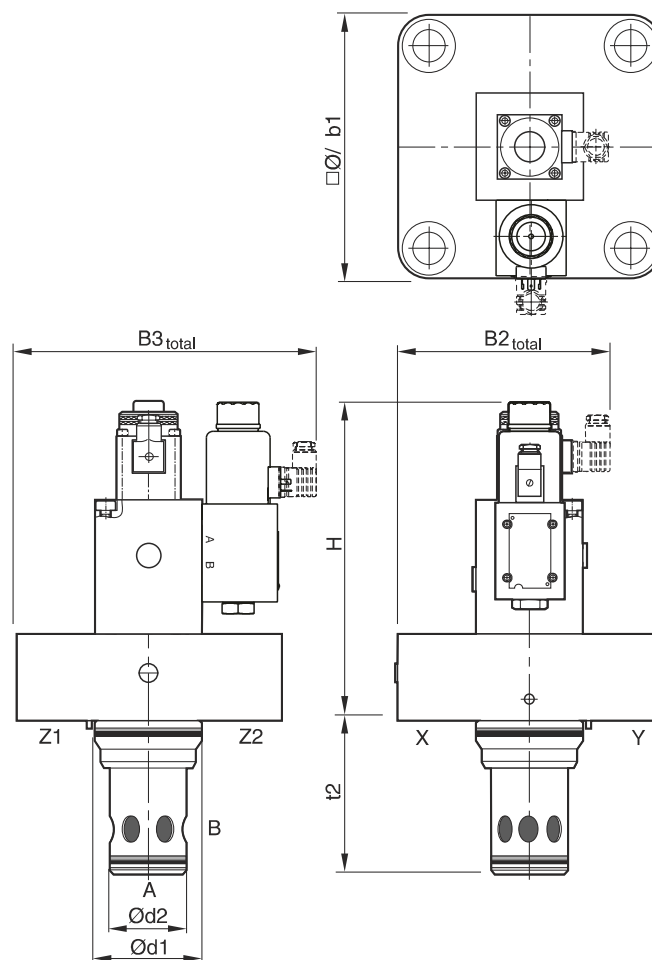
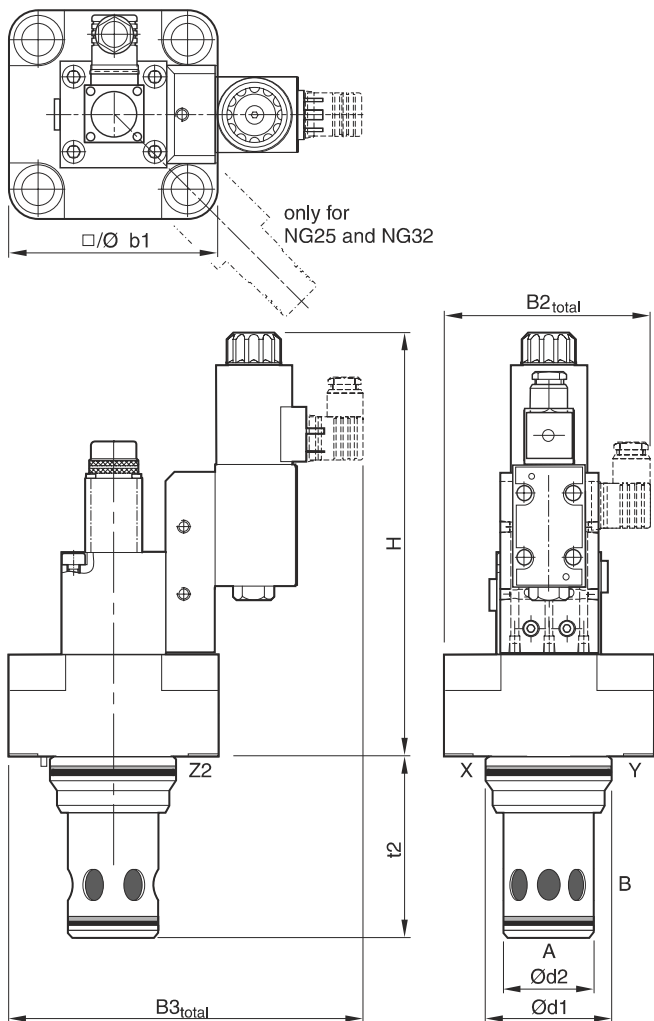
General							
Design	2-way proportional throttle valve, slip-in cartridge according to ISO 7368						
Nominal size	NG25	NG32	NG40	NG50	NG63	NG80	NG100
Mounting position	unrestricted						
Ambient temperature	[°C] -20...+60						
MTTF _D value	[years] 75						
Weight	7.5	9	13	22	38	62	85
Extracting tools	See accessories						
Hydraulics							
Max. operating pressure	[bar] Ports A, B and X up to 350, port Y max. 10						
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						
Nominal flow Δp = 10 bar	500	950	1400	2300	4000	6000	9500
Pilot pressure, min.	[bar] > 25 % of system pressure						
Pilot oil supply	Depending on flow direction A or B using X or external X						
Pilot oil at p = 100 bar	[l/min] Port X → Y <1.5						
Opening point	At 30 % of nominal current						
Manufacturing tolerance	[%] ±5 of Q _{nom}						
Static/dynamic							
Response time at p _x = 50 bar	25	30	35	45	55	65	80
Hysteresis	[%] < 3						
Repeatability	[%] < 1						
Electrical (proportional solenoid)							
Duty ratio	100 % ED						
Protection class	IP65 according to EN 60529 (with correctly mounted plug-in connector)						
Solenoid Code	L			X			
at size	16-50	63-100	16-50	63-100	16-50	63-100	63-100
Solenoid voltage [V]	6			16			
Nominal current (100 % ED) [A]	2.6			1.05			
Nominal resistance [Ohm]	2.2	2.5	11.3	14			
Power amplifier, recommended	PCD 00A-400, Connector as per EN 175301-803						
Pilot valve	4/2 flow control valve type D1VW (NG25-NG50), type D3DW (NG63-NG100)						



Dimensions

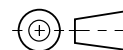
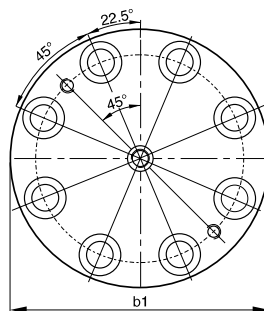
TEA NG25...50

TEA NG63...100



8

Size	25	32	40	50	63	80	100
H	239	250	260	270	312	337	352
b1	85	102	125	140	180	Ø 250	Ø 300
d1 ^{H7}	45	60	75	90	120	145	180
d2 ^{H7}	34	45	55	68	90	110	135
t2 ^{+0.1}	72	85	105	122	155	205	245
B2 _{total}	98	106	118	125	158	193	218
B3 _{total}	208	205	216	224	255	290	315



NG	Kit	ISO 4762-12.9		Kit	
				NBR	FPM
25	BK391	4x M12x50	108 Nm	SK-TEAN10E25	SK-TEAN10E25V
32	BK415	4x M16x55	264 Nm	SK-TEAN10E32	SK-TEAN10E32V
40	BK416	4x M20x70	517 Nm	SK-TEAN10E40	SK-TEAN10E40V
50	BK417	4x M20x75	517 Nm	SK-TEAN10E50	SK-TEAN10E50V
63	BK418	4x M30x100	1775 Nm	SK-TEAN10E63	SK-TEAN10E63V
80	BK419	8x M24x120	890 Nm	SK-TEAN10E80	SK-TEAN10E80V
100	BK420	8x M30x140	1775 Nm	SK-TEAN10E100	SK-TEAN10E100V

The 2-way high performance proportional throttle valves series TDC are used in applications where high flow has to be precisely controlled at high dynamics. Typical applications are die casting, injection moulding and hydraulic presses.

Function

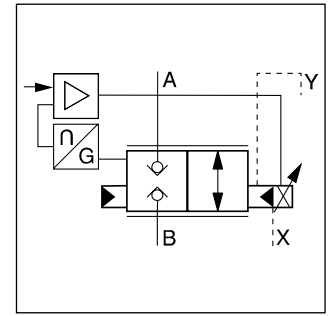
The 2-way high performance proportional throttle valves TDC have a 2-stage design consisting of a proportional pilot valve and a main stage with poppet and LVDT.

With the pilot valve the TDC achieves fast response times: from 20 ms (NG25) up to 31 ms (NG50) with an accuracy of <0.7 % of the nominal flow. The pilot valve actively controls the poppet - independent of the pressure conditions in the main ports.

It is basically required that the pilot pressure is at the level of the system pressure. At low system pressure the pilot pressure should be min. 140 bar, when high valve dynamics are desired.



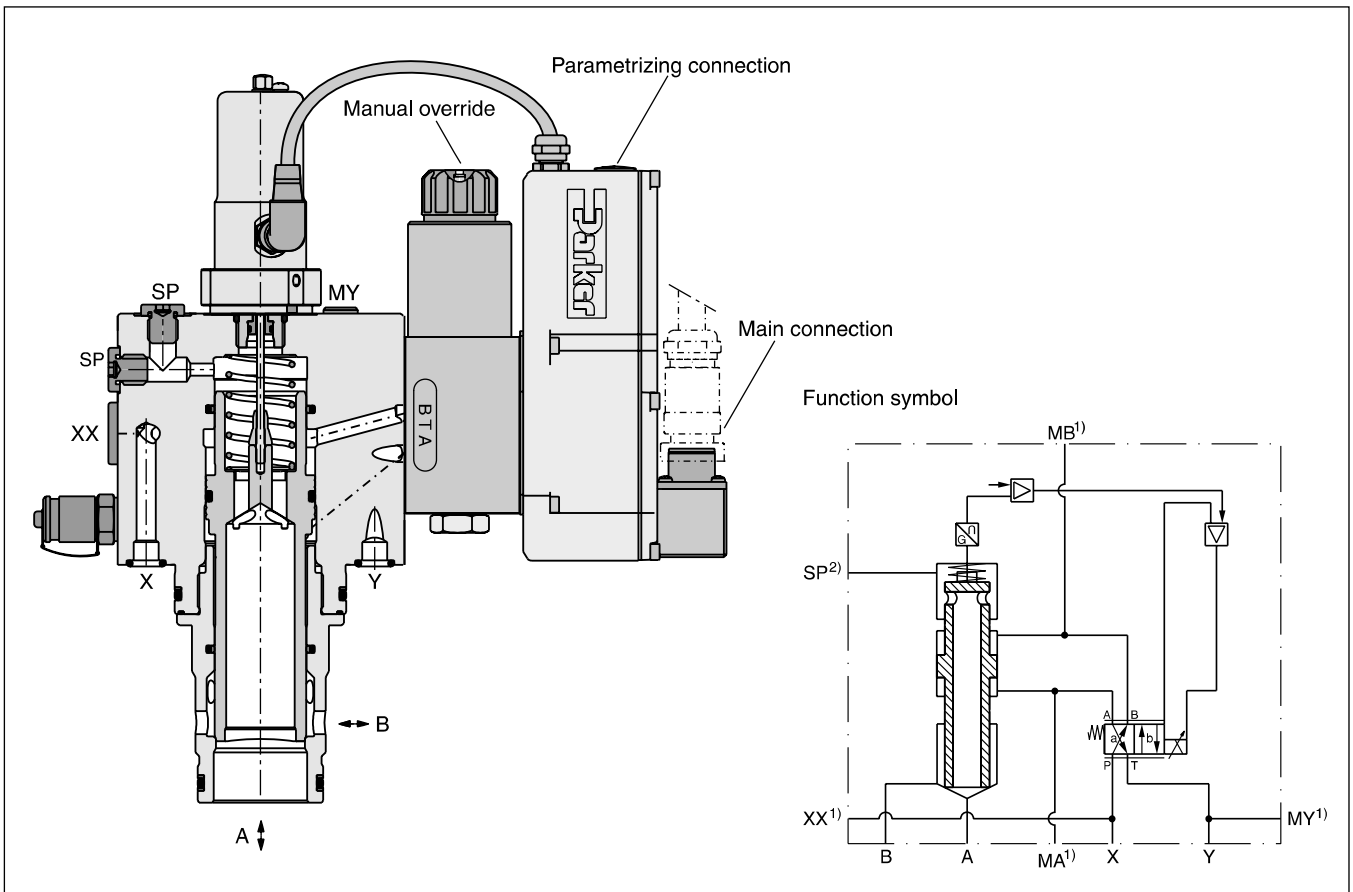
TDC040



Features

- Active pilot operated 2-way high performance proportional throttle valve
- Cavity and mounting pattern according to ISO 7368
- Fast step response
- Flow direction B to A and A to B
- Completely mounted and adapted unit with integrated electronics
- In order to ensure the closed position, pilot pressure is required.
- 4 sizes NG25 up to NG50

TDC040



¹⁾ NG25 and NG32 without accu port XX and without ports MA, MB and MY.

²⁾ NG25 without suction port SP.

TDC UK25.04.19



Ordering Code / Performance Curves

Ordering code

TDC		E	S		9	C	2			0	
2-way high performance proportional throttle valves	Nominal size	Slip-in cartridge	Performance standard response for controlled applications	Flow characteristics	Nominal flow	Flow direction B → A A → B	Pilot oil (supply external, drain external)	Seal	Command signal	Standard electronics	Design series (not required for ordering)

Code	Nominal size
025	NG25
032	NG32
040	NG40
050	NG50

Code	Flow characteristics
7	progressive
9	linear

Code	Command signal
B	0...+10 V
E	0...+20 mA

Code	Seal
N ¹⁾	NBR
V	FPM

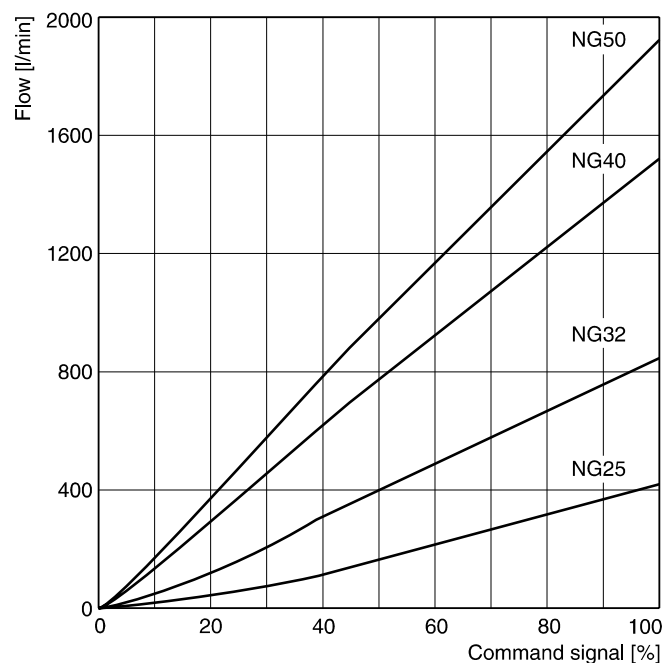
¹⁾ HFC fluids suitable

Please order connector separately.

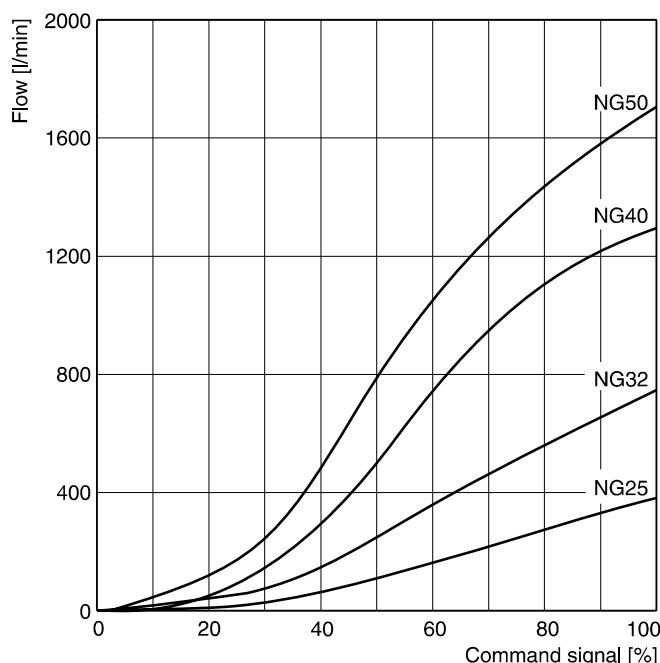
Characteristic flow/signal lines

Δp = 5 bar

Linear (code 9)



Progressive (code 7)



Opening point factory set to 3 %

Flow at different Δp $Q_{actual} = Q_{nominal} \cdot \sqrt{\Delta p_{actual} / \Delta p_{nominal}}$

Characteristic curve measured with HLP46 at 50 °C.

TDC UK25.04.19



Technical Data

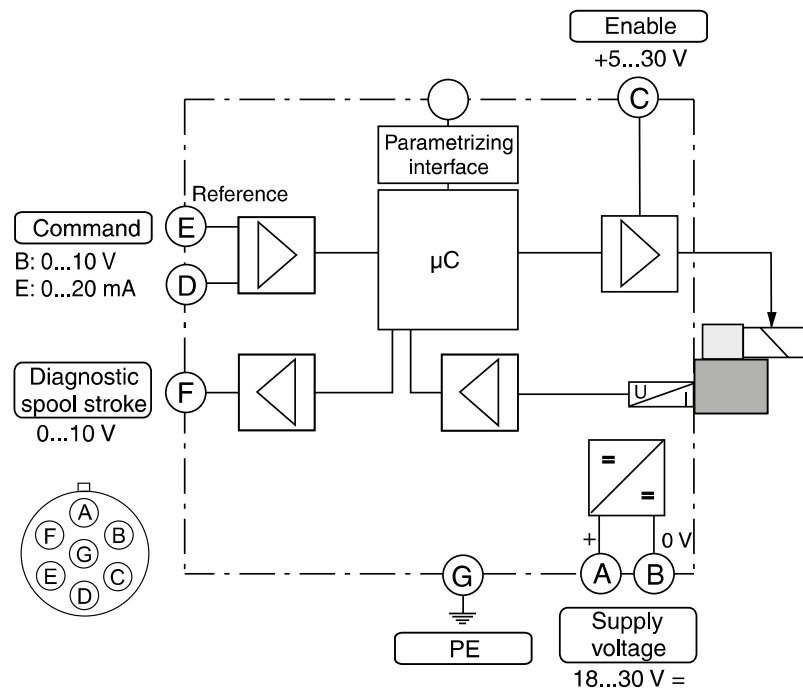
General				
Design	Proportional throttle valve with LVDT and integrated electronics, slip-in cartridge according to ISO 7368			
Nominal size	DIN	NG25	NG32	NG40
Mounting position	unrestricted			
Ambient temperature	[°C]	-20...+60		
Weight	[kg]	11	13	15
Vibration resistance	[g]	10 sinus 5...2000 Hz acc. IEC 68-2-6 10 (RMS) random noise 20...2000 Hz acc. IEC 68-2-36 15 shock acc. IEC 68-2-27		
Hydraulic				
Max. operating pressure	[bar]	Ports A, B, X and SP up to 350, XX observe accumulator pressure rating; port Y: max. 210		
Fluid	Hydraulic oil according to DIN 51524			
Fluid temperature	[°C]	-20...+60 (NBR: -25...+60)		
Viscosity recommended	[cSt] / [mm²/s]	30 ... 80		
Viscosity permitted	[cSt] / [mm²/s]	20 ... 400		
Filtration	ISO 4406; 18/16/13			
Nominal flow at Δp = 5 bar (linear)	[l/min]	420	850	1500
Recommended max. flow (linear)	[l/min]	800	2000	3000
Nominal flow at Δp = 5 bar (progressive)	[l/min]	380	750	1300
Recommended max. flow (progressive)	[l/min]	700	1750	2600
Flow direction	B to A / A to B			
Pilot pressure	[bar]	must be as high as system pressure		
Pilot oil supply	external via X			
Pilot oil drain	external via Y			
Leakage in pilot valve at 100 bar	[ml/min]	<400		
Pilot valve size	NG06			
Max. pilot flow at 140 bar pilot pr.	[l/min]	23	30	40
Static/dynamic				
(for optimal dynamics see installation recommendation)				
Step response at pilot press. >140 bar	[ms]	20	22	27
Hysteresis	[%]	< 0.1		
Sensitivity	[%]	< 0.5		
Electrical				
Duty ratio	[%]	100		
Protection class	IP65 in accordance with EN 60529 (with correctly mounted plug-in connector)			
Supply voltage / ripple	[V]	DC 18 ... 30, electric shut-off at < 17, ripple < 5 % eff., surge free		
Current consumption max.	[A]	2.0		
Pre-fusing	[A]	2.5 A medium lag		
Input signal				
Code B Voltage	[V]	0...+10, ripple < 0,01 % eff., surge free		
Code B Impedance	[kOhm]	100		
Code E Current	[mA]	0...+20, ripple <0,01 % eff., surge free		
Code E Impedance	[Ohm]	< 250		
Differential input max.	[V]	30 for terminal D and E against PE (terminal G) 11 for terminal D and E against 0V (terminal B)		
Adjustment ranges	Min.	[%]	0...50	
	Max.	[%]	50...100	
	Ramp	[s]	0...32.5	
Enable signal	[V]	5...30		
Diagnostic signal	[V]	0...+10 / +12.5 error detection, rated max. 5 mA		
EMC	EN 61000-6-2, EN 61000-6-4			
Electrical connection	6 + PE acc. EN 175201-804			
Wiring min.	[mm²]	7 x 1.0 (AWG16) overall braid shield		
Wiring length max.	[m]	50		

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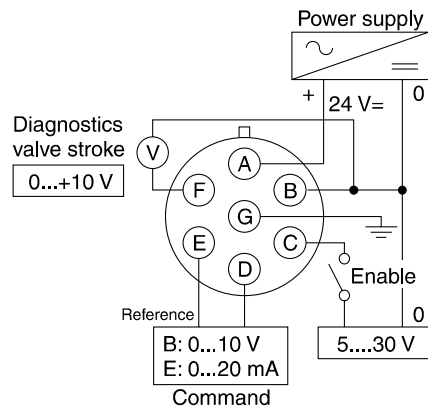


Installation Recommendations / Electronics

Block circuit diagram electronics

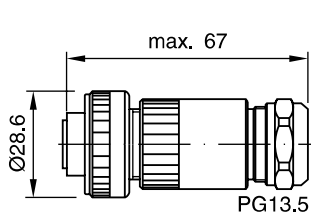


Connection diagrams electronics



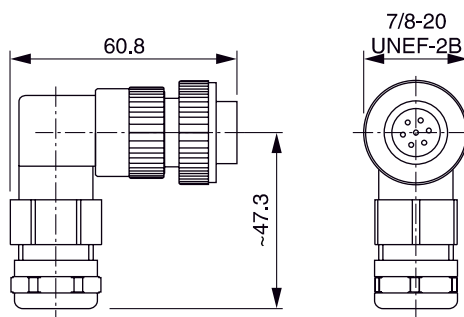
8

Female connector (EMC conform)



ID no. 5004072

Angle female connector (EMC conform)



ID no. 5005160

Please order plugs separately.

ProPxD interface program

The ProPxD software allows quick and easy setting of the digital valve electronics. Individual parameters as well as complete settings can be viewed, changed and saved via the comfortable user interface. Parameter sets saved in the non-volatile memory can be loaded to other valves of the same type or printed out for documentation purposes.

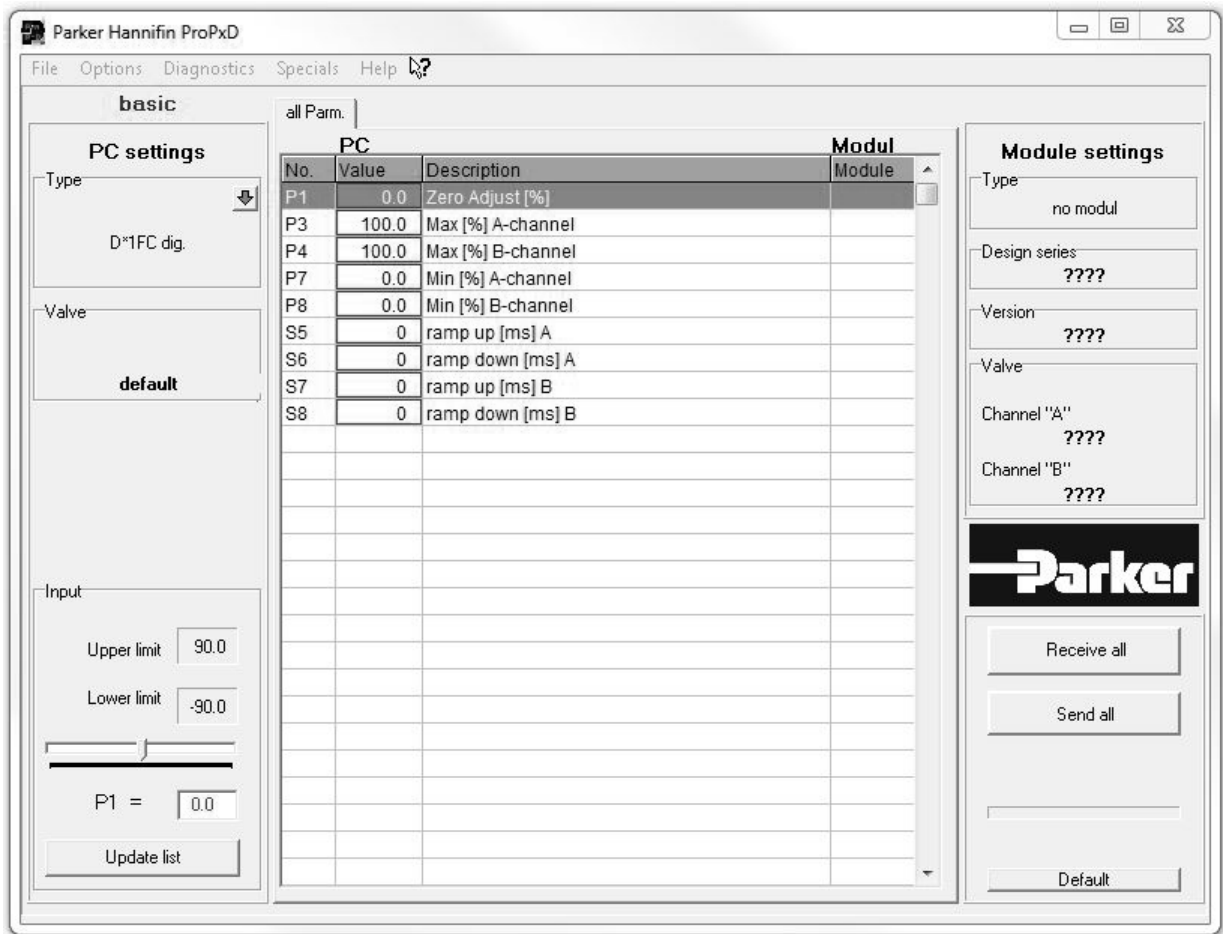
The PC software can be downloaded free of charge at www.parker.com/isde – see page “Support” or directly at www.parker.com/propxd.

Features

- Comfortable editing of valve parameters
- Saving and loading of customized parameter sets
- Executable with all Windows® operating systems from Windows® XP upwards
- Simple communication between PC and valve electronics via serial interface RS232C

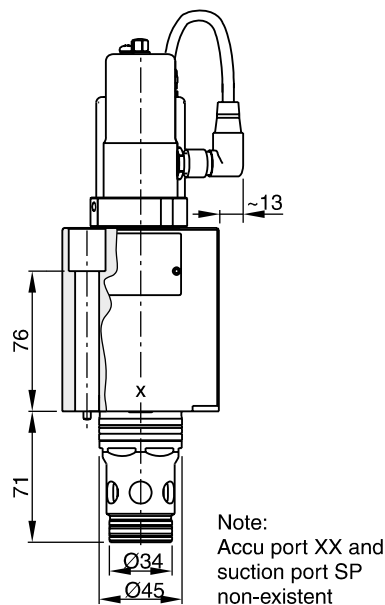
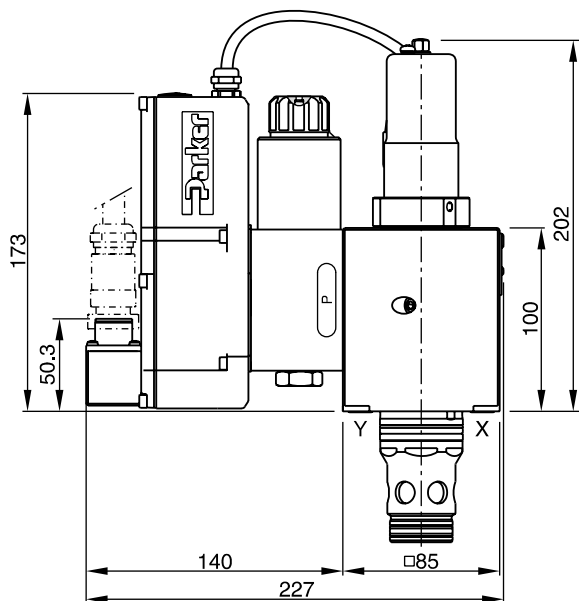
The valve electronics cannot be connected to a PC with a standard USB cable – this can result in damages of PC and/or valve electronics.

The parametrizing cable may be ordered under item no. 40982923.

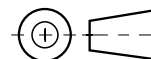
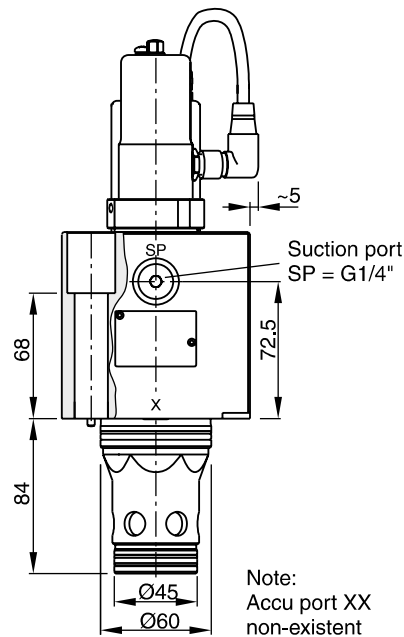
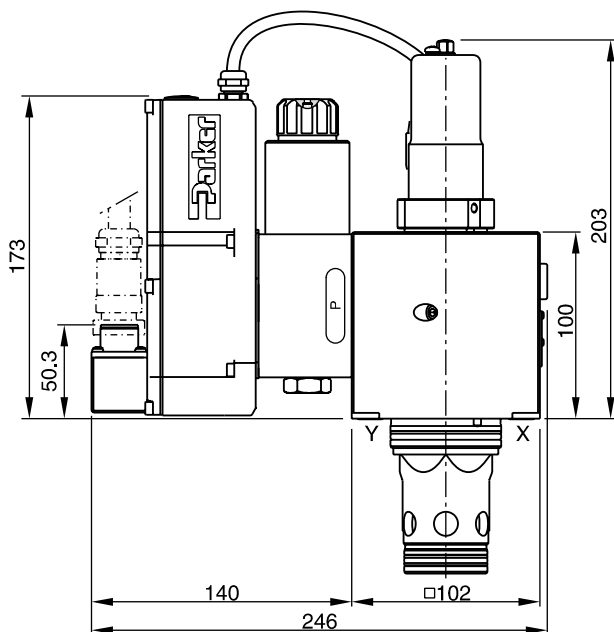


Dimensions

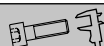


NG25



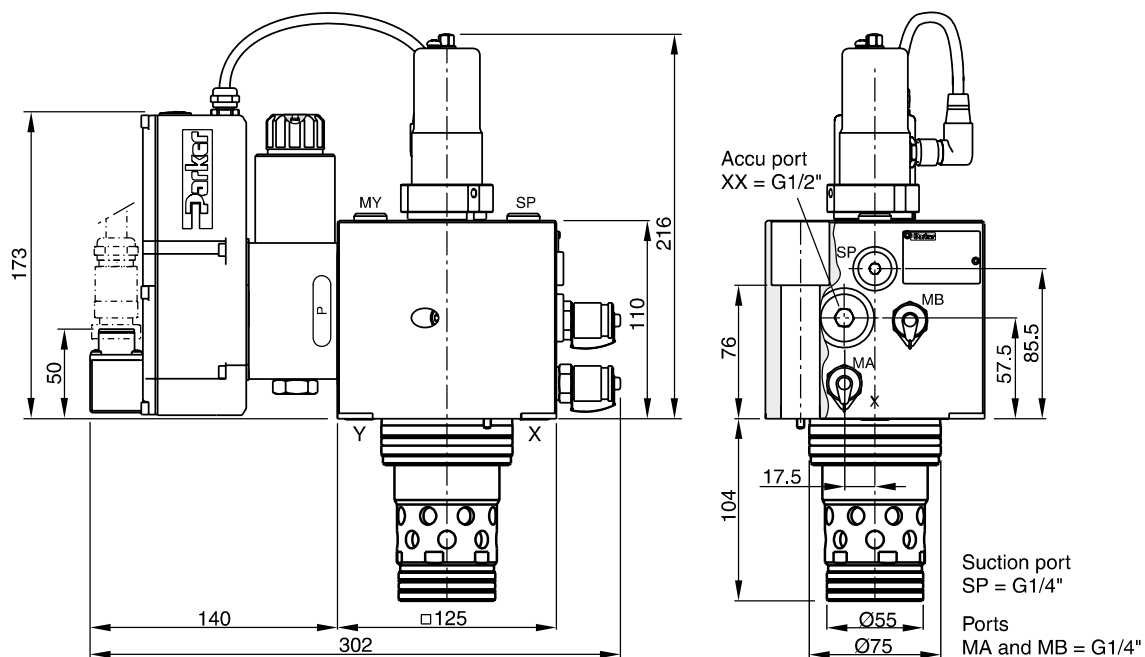
NG32



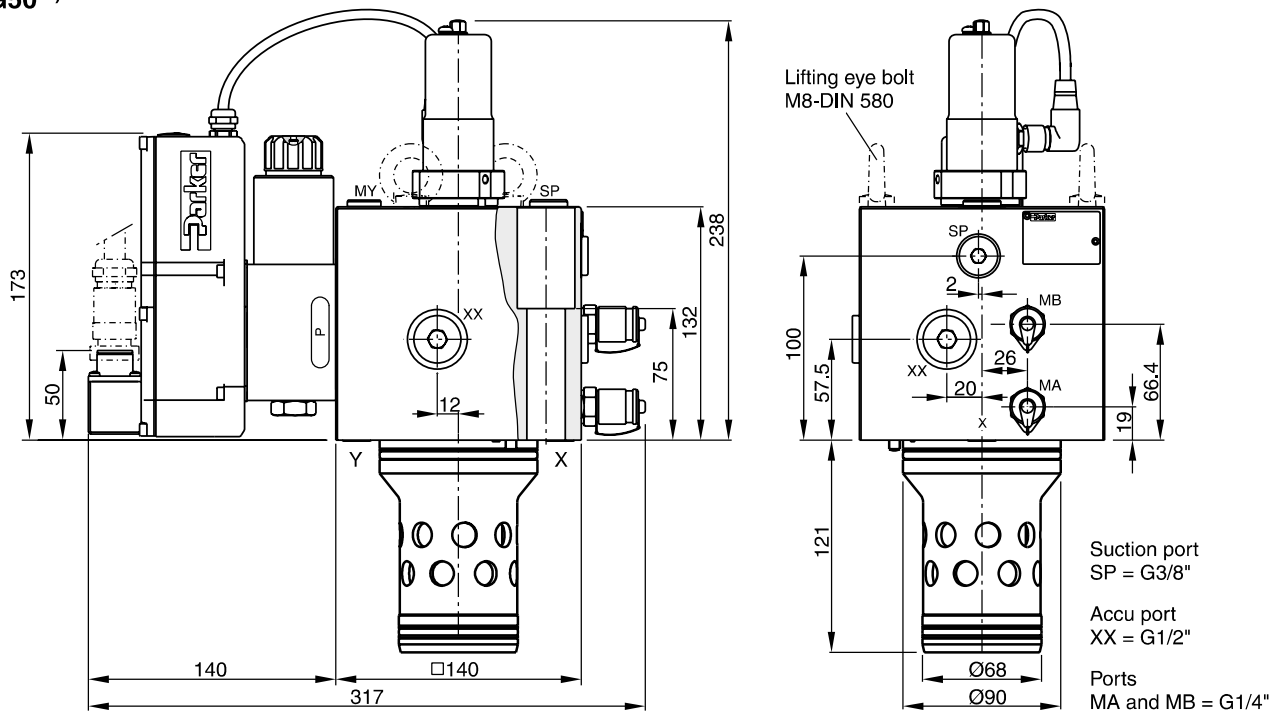
Suction port SP: Contact Parker for installation recommendation.

NG	Bolt kit - 		NBR	Kit 	FPM
25	BK504 4 x M12x100 ISO 4762-12.9	108 Nm	SK-TDP025EN30		SK-TDP025EV30
32	BK529 4 x M16x100 ISO 4762-12.9	264 Nm	SK-TDP032EN30		SK-TDP032EV30

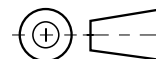
NG40 ¹⁾



NG50 ²⁾






Lifting thread for disassembly M12



¹⁾ Recommended accumulator ELM 0.16-250/00/AF, please see catalogue HY10-4004/UK for details.
²⁾ Recommended accumulator ELM 0.32-210/00/AF, please see catalogue HY10-4004/UK for details.

Suction port SP: Contact Parker for installation recommendation.

NG	Bolt kit - 		NBR	Kit 	FPM
40	BK481 4 x M20x110 ISO 4762-12.9	517 Nm	SK-TDP040EN30		SK-TDP040EV30
50	BK481 4 x M20x110 ISO 4762-12.9	517 Nm	SK-TDP050EN30		SK-TDP050EV30

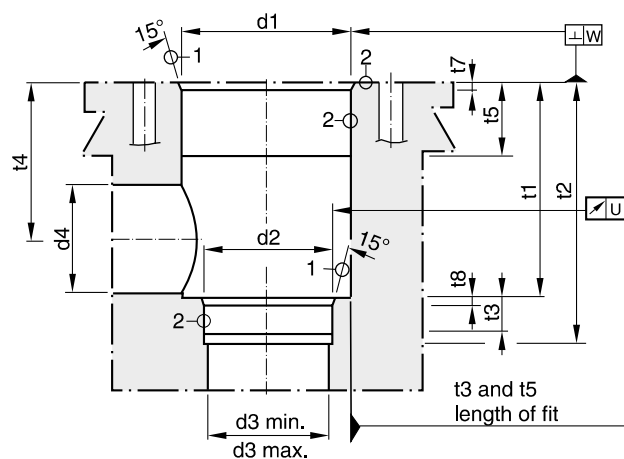
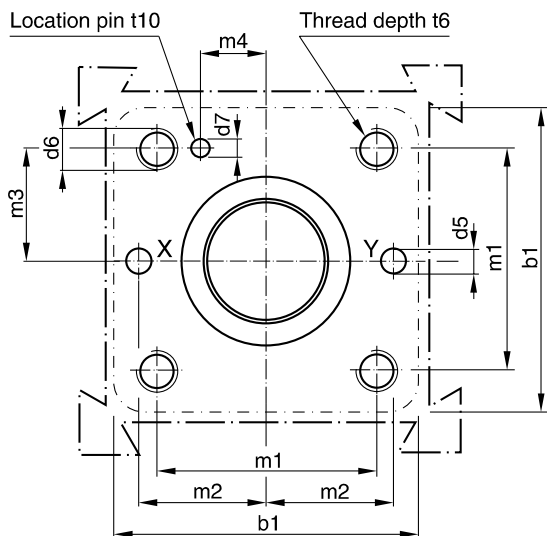
TDC UK25.04.19



Dimensions

Code: ISO 7368-B*-2-A/B

NG25 to NG50



Required surface finish:

$$\textcircled{1} = \sqrt{R_{\max} 16}, \textcircled{2} = \sqrt{R_{\max} 8}$$

Deviating from ISO 7368 it is advisable to increase the diameters d3, d4 and d5.

8

Size	b1	d1 H7	d2 H7	d3 / d4	d3 max	d4 max ¹⁾	d5	d6	d7 H13	m1±0.2	m2±0.2	m3±0.2
25	85	45	34	25	27	32	6	M12	4	58	33	29
32	102	60	45	32	44	50	8	M 16	6	70	41	35
40	125	75	55	40	54	63	10	M 20	6	85	50	42.5
50	140	90	68	50	67	80	10	M 20	8	100	58	50

Size	m4±0.2	t1+0.5	t2+1	t3	t4	t4 max. ¹⁾	t5	t6	t7	t8	t10	U	W
25	16	58	72	12	44	40.5	30	35	25	25	10	0.03	0.05
32	17	70	85	13	52	44	15	35	2.5	2.5	10	0.03	0.1
40	23	87	105	15	64	54	15	45	3	3	10	0.05	0.1
50	30	100	122	17	72	59	17	45	4	3	10	0.05	0.1

¹⁾ d4 max. only in combination with t4 max.

The 2-way servo proportional valves with VCD® technology valves series TDP are used in applications where high flow has to be precisely controlled at maximum dynamics. Typical applications are die casting, injection moulding and hydraulic presses.

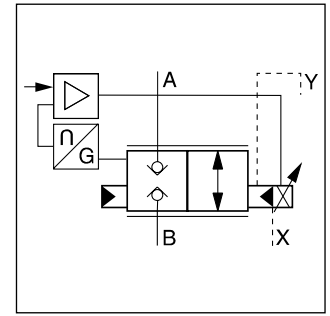
Function

The 2-way servo proportional valves TDP have a 2-stage design consisting of a DFplus pilot valve and a main stage with poppet and LVDT.

With the DFplus pilot valve the TDP achieves extremely fast response times: from 10.5 ms (NG25) up to 28 ms (NG100) with an accuracy of <0.1 % of the nominal flow. The pilot valve actively controls the poppet - independent of the pressure conditions in the main ports. It is basically required that the pilot pressure is at the level of the system pressure. At low system pressure the pilot pressure should be min. 140 bar, when high valve dynamics are desired. The integrated electronics in the pilot of the TDP has two control loops for the main poppet and the pilot spool.



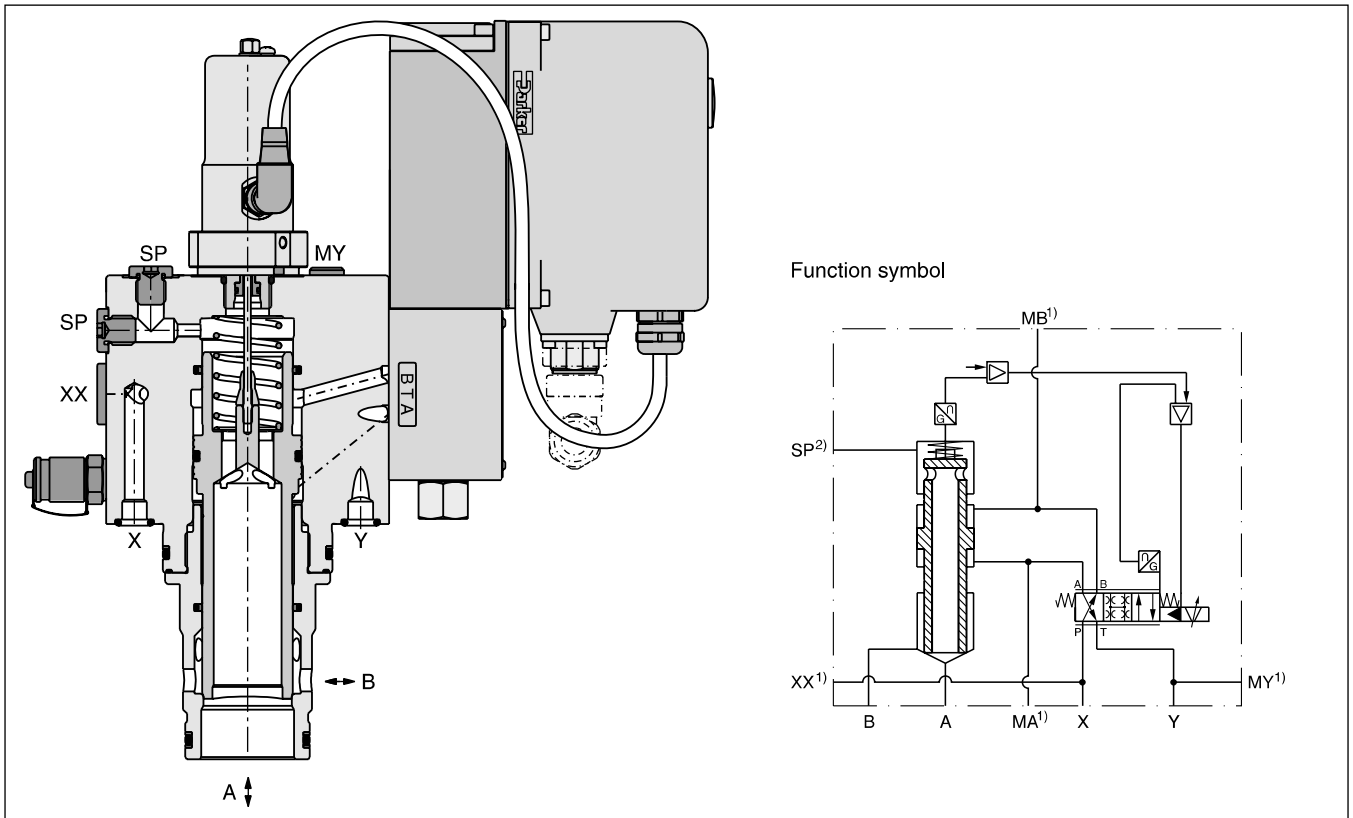
TDP040



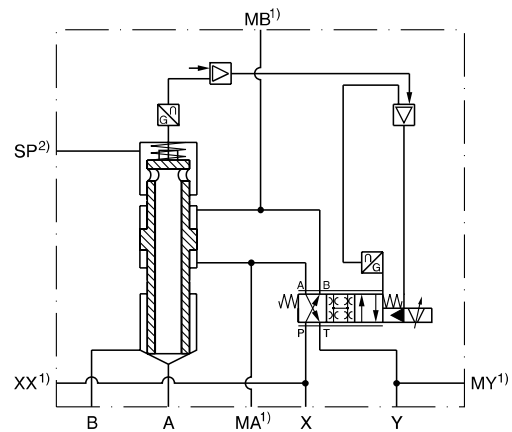
Features

- Active pilot operated 2-way servo proportional valve
- Cavity and mounting pattern according to ISO 7368
- Fast step response
- Flow direction B to A and A to B
- Completely mounted and adapted unit with integrated electronics
- In order to ensure the closed position, pilot pressure is required
- 7 sizes, NG25 up to NG100

TDP040



Function symbol



¹) NG25 and NG32 without accu port XX and without port MA, MB and MY.

²) NG25 without suction port SP.

Ordering Code / Performance Curves

Ordering code

TDP		E	H		9	C	2			0	
2-way servo proportional valve with LVDT	Nominal size	Slip-in cartridge	Closed loop, VCD® performance, integrated electronics	Flow characteristic	Nominal flow	Flow direction B → A A → B	Pilot oil (supply external, drain external)	Seal	Command signal	Standard electronics	Design series (not required for ordering)

Code	Nominal size
025	NG25
032	NG32
040	NG40
050	NG50
063	NG63
080	NG80
100	NG100

Code	Flow characteristic
7	progressive
9	linear

Code	Command signal
B	0...+10 V
E	0...+20 mA
S	4...+20 mA

Code	Seal
N ¹⁾	NBR
V	FPM

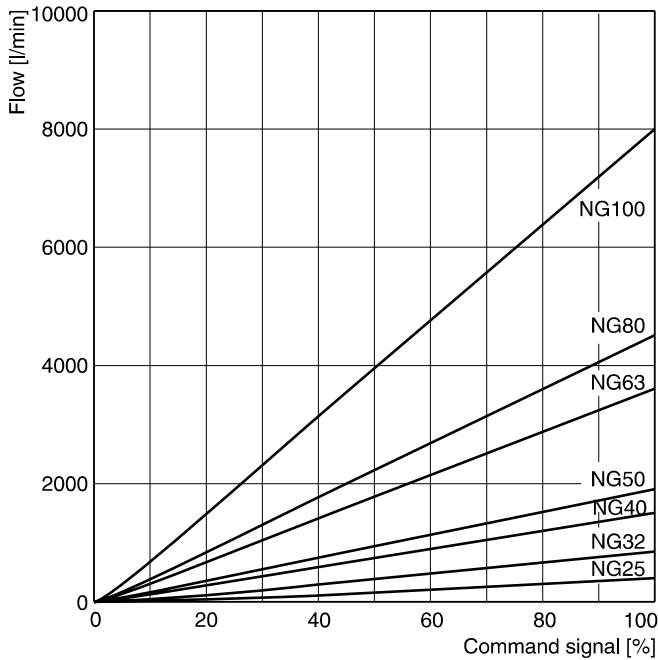
¹⁾ HFC fluids suitable

The DFplus pilot valve is also available with EtherCAT interface, see chapter 3, D*FP and D*1FP with EtherCAT.

Please order connector separately. Angle female connector must be used for NG25 to NG50.

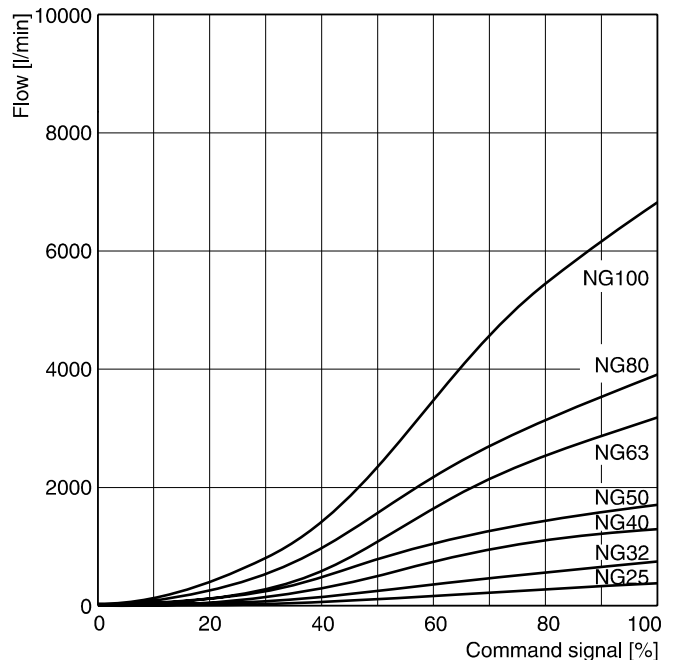
8

Characteristic flow/signal line, Δp = 5 bar
Linear (code 9)



Opening point factory set to 3 %

Progressive (code 7 for TDL replacement)



Flow at different Δp $Q_{actual} = Q_{nominal} \cdot \sqrt{\Delta p_{actual} / \Delta p_{nominal}}$

Characteristic curve measured with HLP46 at 50 °C.



Technical Data

General									
Design	Proportional throttle valve with LVDT and integrated electronics, slip-in cartridge according to ISO 7368								
Nominal size	DIN	NG25	NG32	NG40	NG50	NG63	NG80	NG100	
Mounting position	unrestricted								
Ambient temperature	[°C]	-20...+50							
Weight	[kg]	11	13	15	26	52	105	157	
Vibration resistance	[g]	10 sinus 5...2000 Hz acc. IEC 68-2-6 10 (RMS) random noise 20...2000 Hz acc. IEC 68-2-36 15 shock acc. IEC 68-2-27							
Hydraulic									
Max. operating pressure	[bar]	Ports A, B, X and SP up to 350, XX observe accumulator pressure rating; port Y: max. 35							
Fluid	Hydraulic oil according to DIN 51524								
Fluid temperature	[°C]	-20...+60 (NBR: -25...+60)							
Viscosity	recommended	30 ... 80							
	permitted	20 ... 400							
Filtration	ISO 4406; 18/16/13								
Nominal flow at Δp = 5 bar (linear)	[l/min]	420	850	1500	1900	3600	4500	8000	
Recommended max. flow (linear)	[l/min]	800	2000	3000	4500	8000	13000	20000	
Nominal flow at Δp = 5 bar (progressive)	[l/min]	380	750	1300	1700	3200	3900	6800	
Recommended max. flow (progressive)	[l/min]	700	1750	2600	4000	7000	11250	17000	
Flow direction	B to A / A to B								
Pilot pressure	[bar]	must be as high as system pressure							
Pilot oil	supply	external via X							
	drain	external via Y							
Leakage in pilot valve at 100 bar	[ml/min]	< 400							
Pilot valve size	NG06				NG10				
Max. pilot flow at 140 bar pilot pr.	[l/min]	23	30	40	40	70	80	100	
Static/dynamic									
(for optimal dynamics see installation recommendation)									
Step response at pilot press. >140 bar	[ms]	10.5	12	14	20	17	23	28	
Frequency response at pilot press. >140 bar	Amplitude -3 dB; 10 % ±5 %	[Hz]	95	80	74	66	52	46	41
	Phase -90°; 10 % +5 %	[Hz]	85	63	59	52	56	51	47
	Hysteresis	[%]	< 0.1						
Sensitivity	[%]	< 0.05							
Temperature drift	[%/K]	< 0.025							
Electrical									
Duty ratio	[%]	100							
Protection class	IP65 in accordance with EN 60529 (with correctly mounted plug-in connector)								
Supply voltage / ripple	[V]	DC 22 ... 30, electric shut-off at < 19, ripple < 5 % eff., surge free							
Current consumption max.	[A]	3.5							
Pre-fusing	[A]	4.0 A medium lag							
Input signal	Code B Voltage	[V]	0...+10, ripple < 0,01 % eff., surge free						
		Impedance	[kOhm]	100					
	Code E Current	[mA]	0...+20, ripple < 0,01 % eff., surge free						
		Impedance	[Ohm]	< 250					
	Code S Current	[mA]	4...20, ripple < 0,01 % eff., surge free < 3,6 mA = disable, > 3,8 mA = enable on according to NAMUR NE43						
Impedance	[Ohm]	< 250							
	Differential input max.	[V]	30 for terminal D and E against PE (terminal G) 11 for terminal D and E against 0V (terminal B)						
Enable signal	[V]	5...30, Ri = > 8 kOhm							
Diagnostic signal	[V]	0...+10 / +12.5 error detection, rated max. 5 mA							
EMC	EN 61000-6-2, EN 61000-6-4								
Electrical connection	6 + PE acc. EN 175201-804								
Wiring min.	[mm²]	7 x 1.0 (AWG16) overall braid shield							
Wiring length max.	[m]	50							



Installation Recommendations / Electronics

Installation recommendations

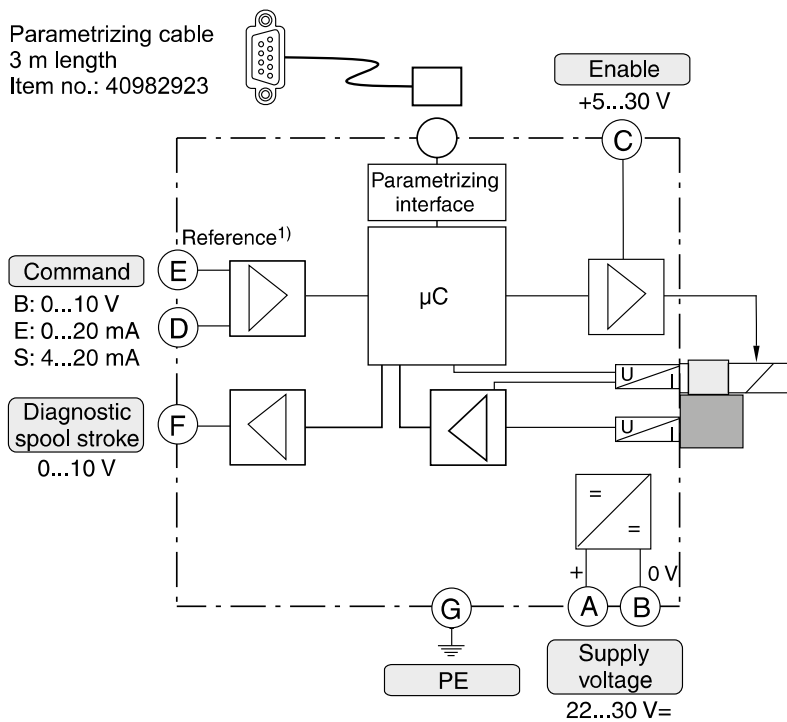
The maximum pilot flow is given in the technical data. At insufficient pilot oil supply – e.g. because of long distances and/or small diameters – an accumulator can be connected to port XX. See selection guide for correct dimensions.

Selection guide

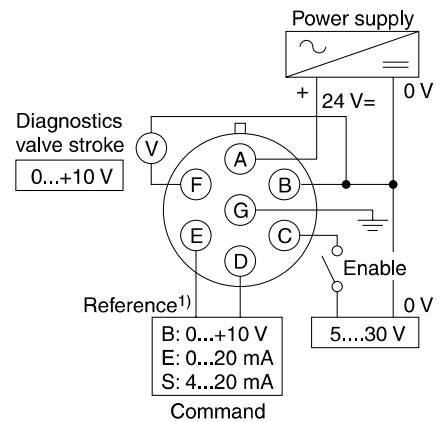
Size	Capacity [l]	Product type	Max. operating pressure [bar]	Recommended precharge pressure [bar]	Accu port XX
NG40	0.243	ADE016-25R	250	126	G ½
NG50	0.243	ADE032-21R	210	126	G ½
NG63	0.405	ADE050-21R	210	126	G ¾
NG80	0.647	ADE075-21R	210	126	G ¾
NG100	0.944	ADE100-21R	210	126	G ¾

Maximum operating pressure and precharge pressure of the accumulator must be adapted to the pilot pressure.

Block circuit diagram electronics

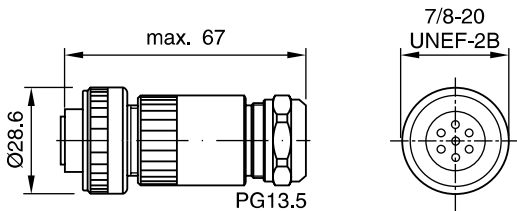


Connection diagrams electronics



8

Female connector for NG63 to NG100
 (EMC conform)

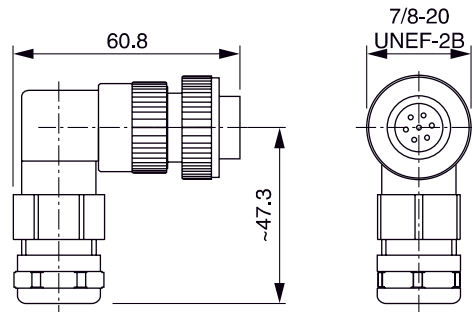


ID no. 5004072

Please order plugs separately.

¹⁾ Do not connect with the supply voltage zero.

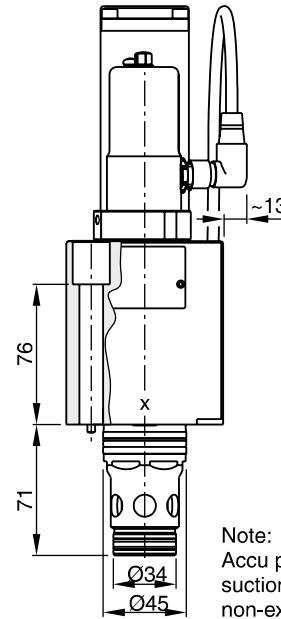
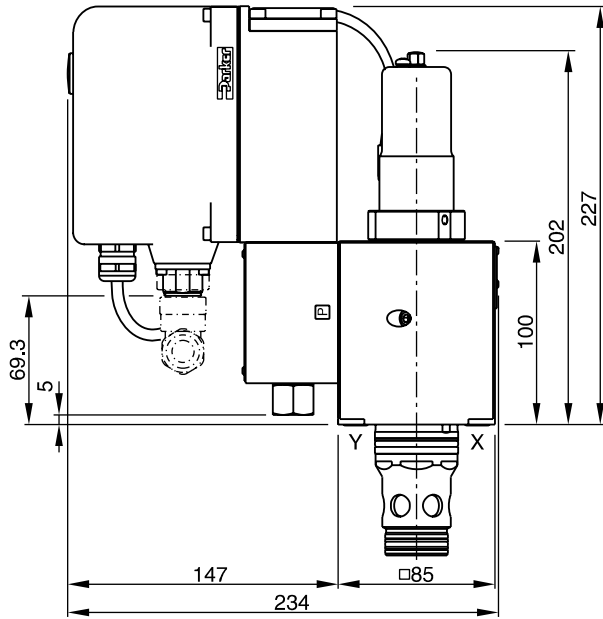
Angle female connector for NG25 to NG50
 (EMC conform)



ID no. 5005160

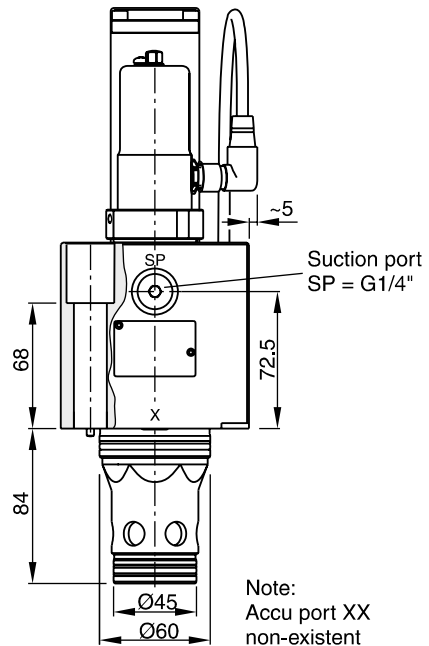
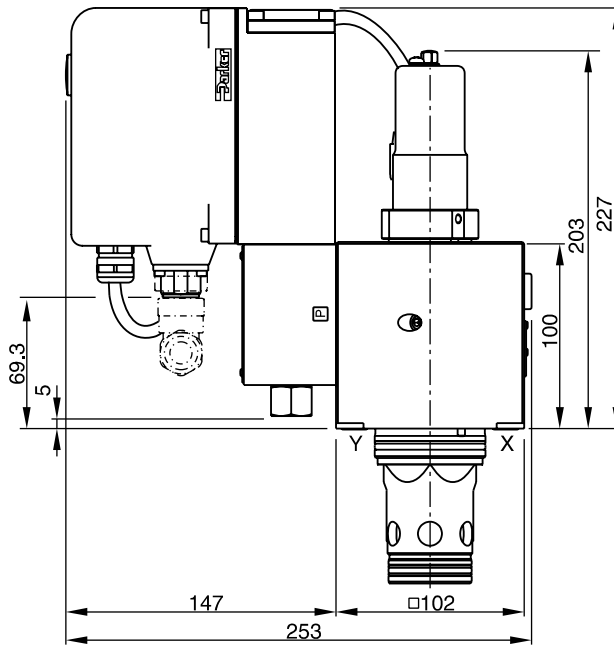
Dimensions

NG25



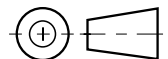
Note:
Accu port XX and
suction port SP
non-existent

NG32






Note:
Accu port XX
non-existent

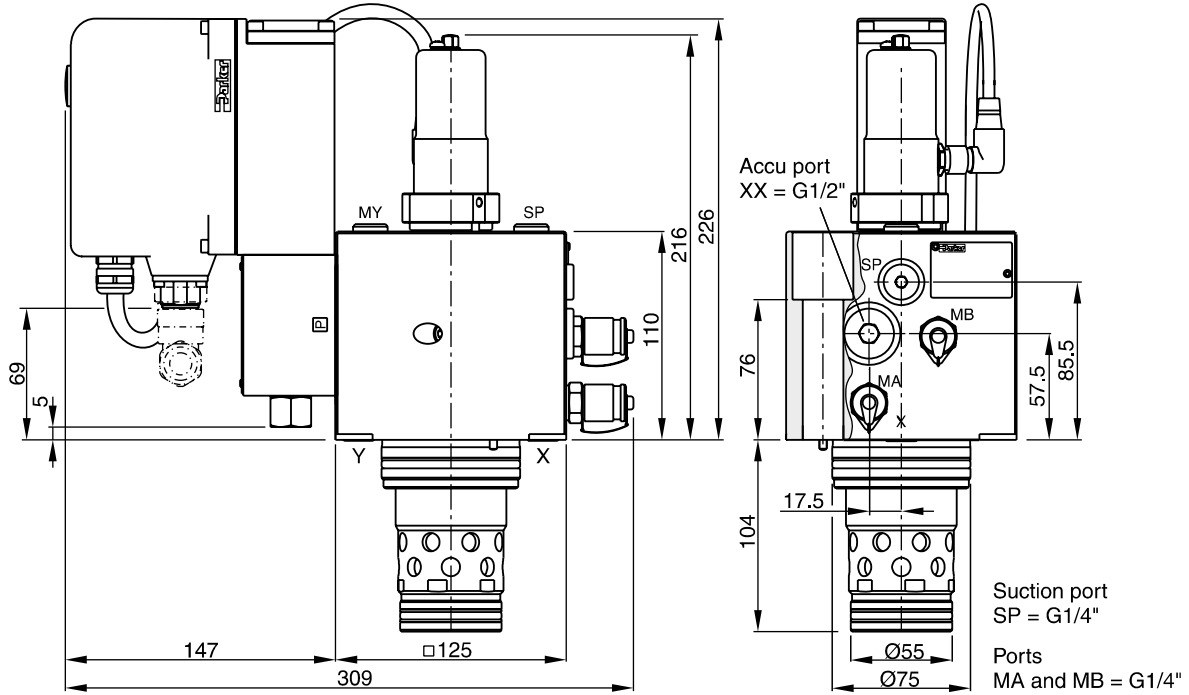
8



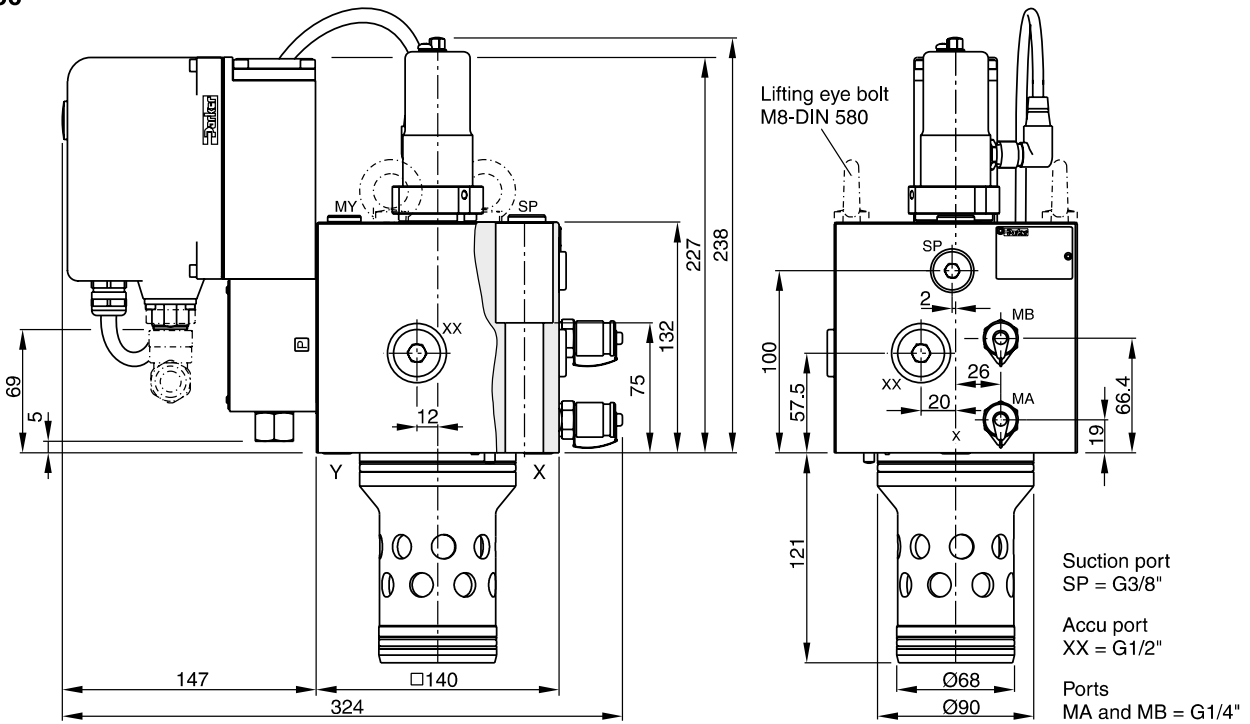
Suction port SP: Contact Parker for installation recommendation.

NG	Bolt kit - 		NBR	Kit 	FPM
25	BK504 4 x M12x100 ISO 4762-12.9	108 Nm	SK-TDP025EN30		SK-TDP025EV30
32	BK529 4 x M16x100 ISO 4762-12.9	264 Nm	SK-TDP032EN30		SK-TDP032EV30

NG40






NG50



Lifting thread for disassembly M12

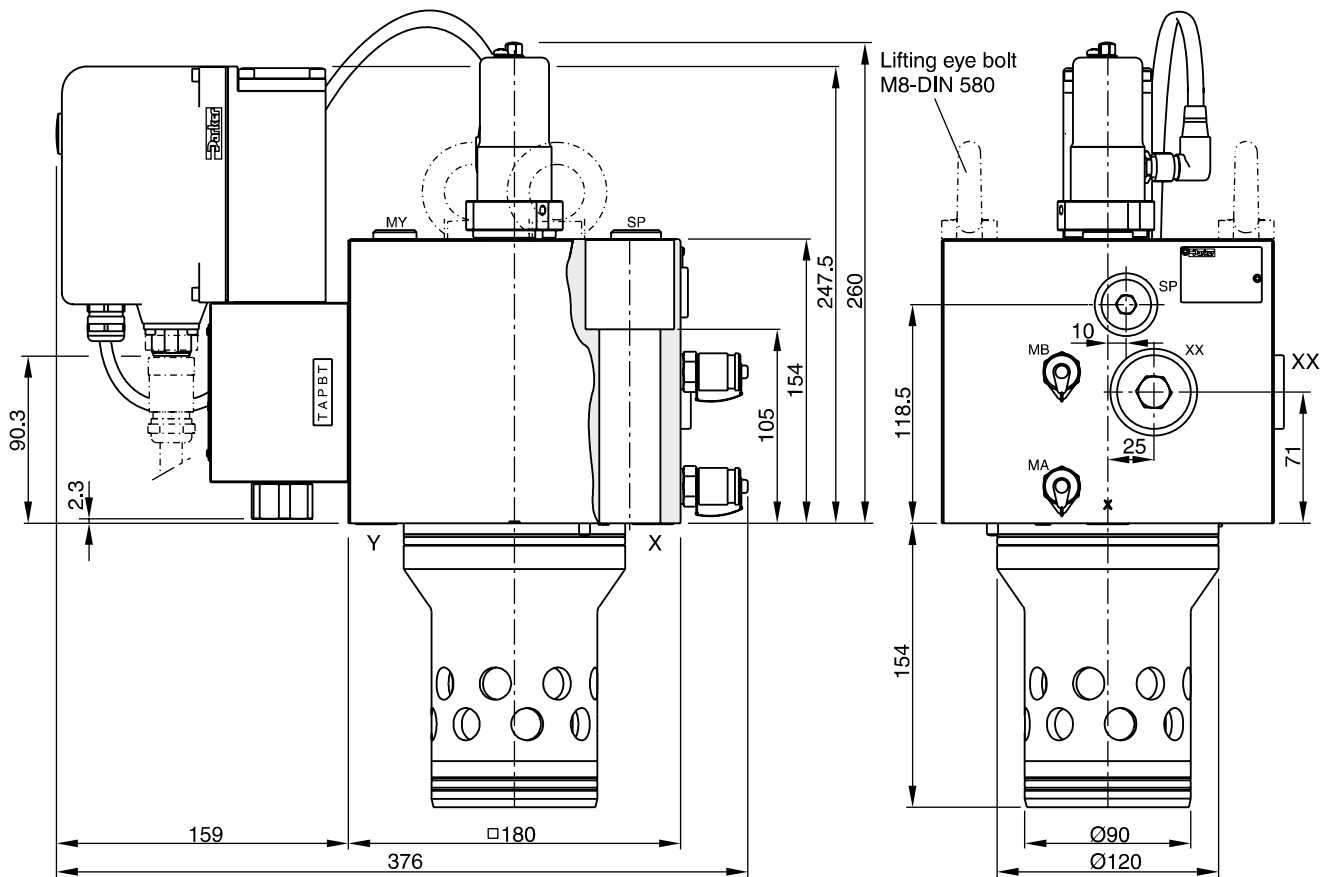


Suction port SP: Contact Parker for installation recommendation.

NG	Bolt kit - 		NBR	Kit 	FPM
40	BK481 4 x M20x110 ISO 4762-12.9	517 Nm	SK-TDP040EN30		SK-TDP040EV30
50	BK481 4 x M20x110 ISO 4762-12.9	517 Nm	SK-TDP050EN30		SK-TDP050EV30

Dimensions

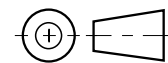
NG63






Suction port Accu port Ports
 SP = G1/2" XX = G3/4" MA and MB = G1/4"

Lifting thread for disassembly M12

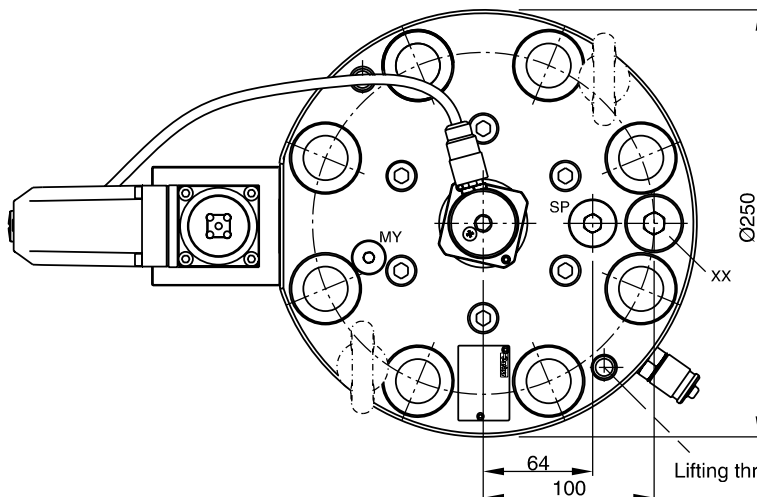
Suction port SP: Contact Parker for installation recommendation.



NG	Bolt kit - 		NBR	 Kit	FPM
63	BK518 4 x M30x160 ISO 4762-12.9	1775 Nm	SK-TDP063EN30		SK-TDP063EV30

Dimensions

NG80

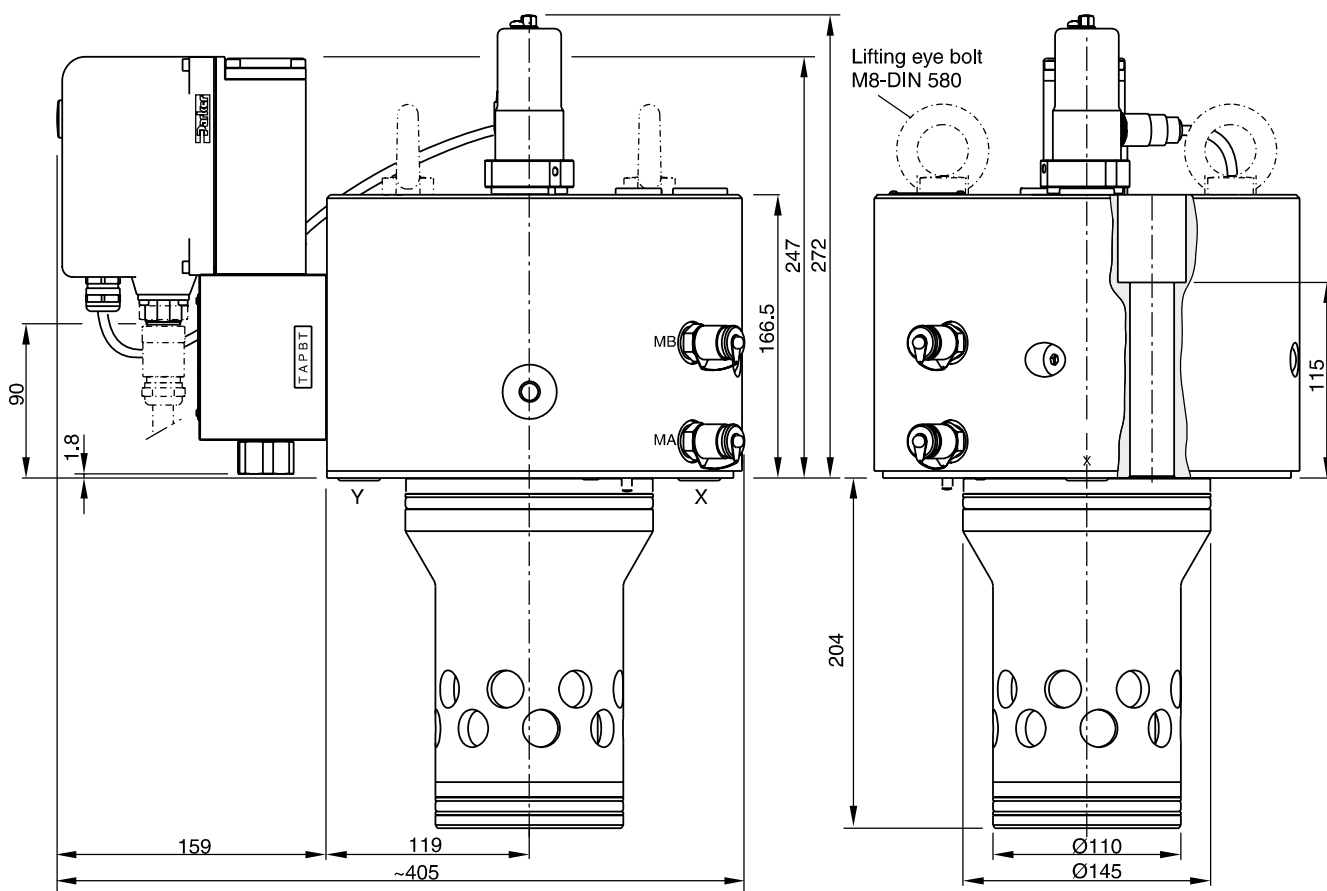


Accu port
XX = G3/4"

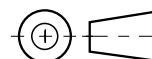
Suction port
SP = G1/2"



Ports
MA and MB = G1/4"

Lifting thread for disassembly M12

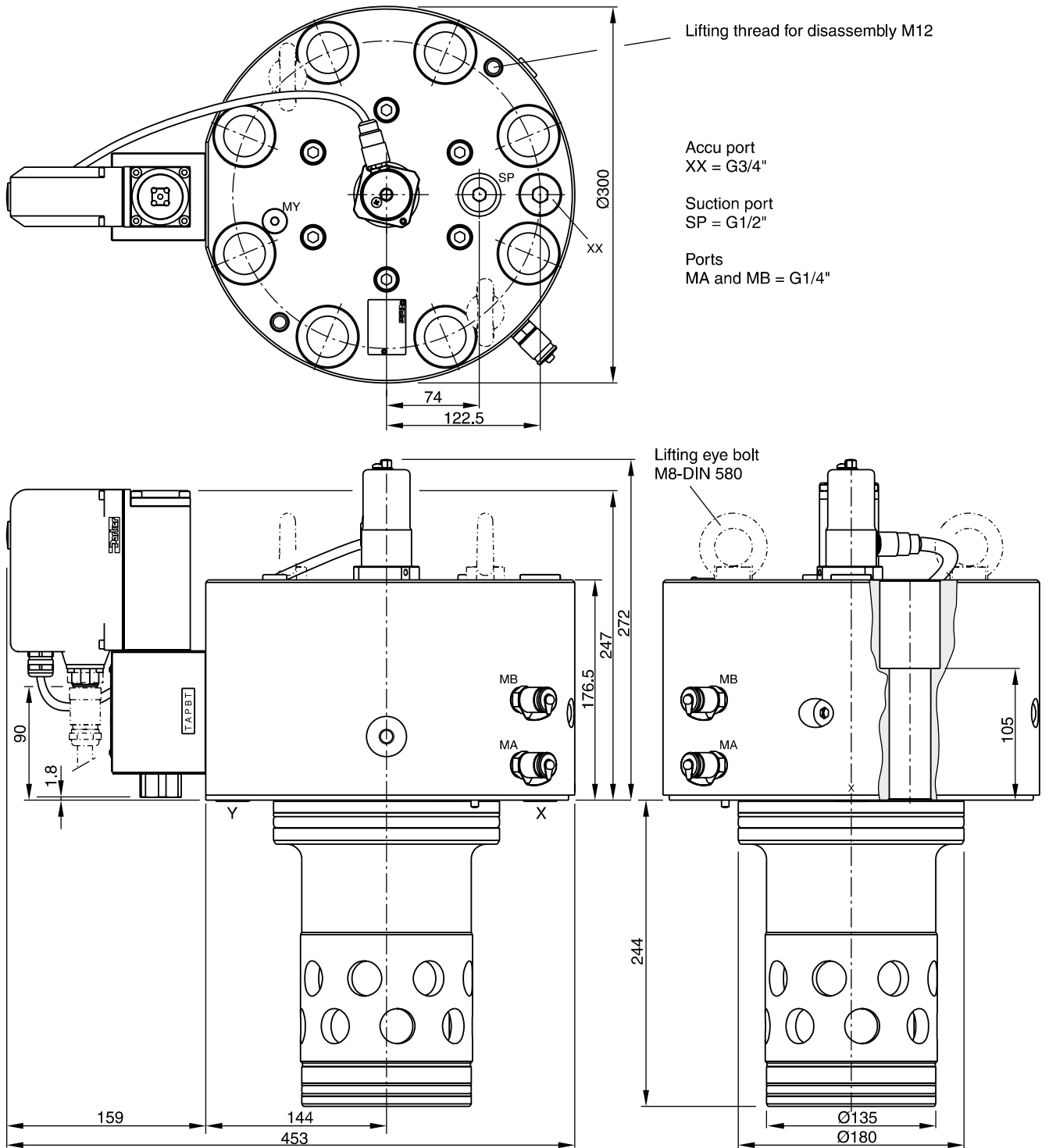


Suction port SP: Contact Parker for installation recommendation.

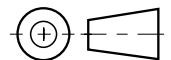





NG	Bolt kit - 		NBR	Kit	FPM
80	BK530 8x M24x160 ISO 4762-12.9	890 Nm	SK-TDP080EN30		SK-TDP080EV30

NG100



Suction port SP: Contact Parker for installation recommendation.

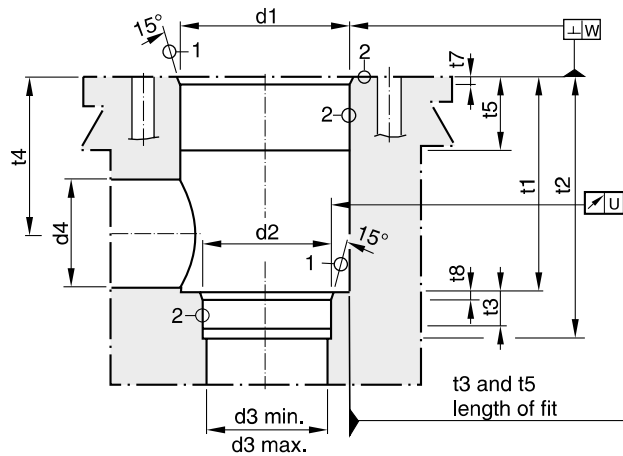
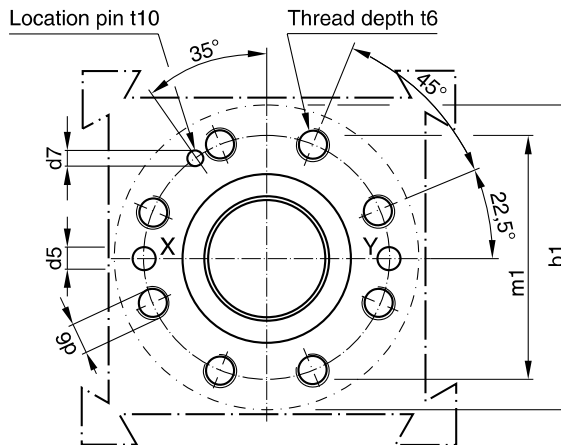
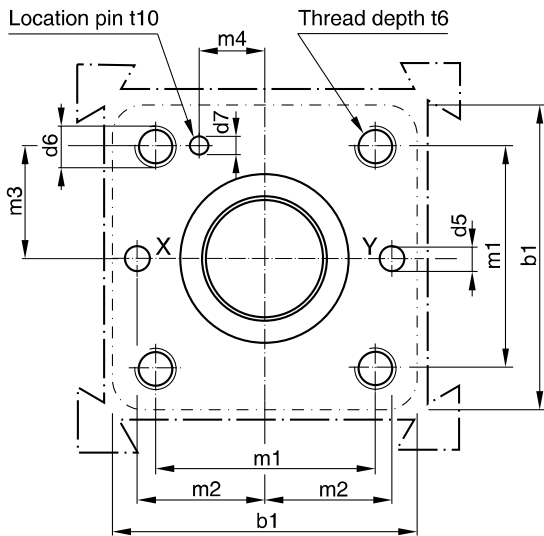


NG	Bolt kit - 		NBR 	Kit
100	BK531 8x M30x150 ISO 4762-12.9	1775 Nm	SK-TDP100EN30	SK-TDP100EV30

Dimensions

Code: ISO 7368-B*-*-2-A/B
NG25 to NG63

Code: ISO 7368-B*-*-2-A
NG80 to NG100



Required surface finish:

① = $\sqrt{R_{\max} 16}$, ② = $\sqrt{R_{\max} 8}$

Deviating from ISO 7368 it is advisable to increase the diameters d3, d4 and d5.

8

Size	b1	d1 H7	d2 H7	d3	d3 max	d4 max ¹⁾	d5 max	d6	d7 H13	m1±0.2	m2±0.2	m3±0.2
25	85	45	34	25	27	32	6	M12	4	58	33	29
32	102	60	45	32	44	50	8	M 16	6	70	41	35
40	125	75	55	40	54	63	10	M 20	6	85	50	42.5
50	140	90	68	50	67	80	10	M 20	8	100	58	50
63	180	120	90	63	89	100	12	M 30	8	125	75	62.5
80	250	145	110	80	109	110	16	M 24	10	200	—	—
100	300	180	135	100	134	150	20	M 30	10	245	—	—

Size	m4±0.2	t1+0.5	t2+1	t3	t4	t4 max ¹⁾	t5	t6	t7	t8	t10	U	W
25	16	58	72	12	44	40.5	30	35	25	25	10	0.03	0.05
32	17	70	85	13	52	44	15	35	2.5	2.5	10	0.03	0.1
40	23	87	105	15	64	54	15	45	3	3	10	0.05	0.1
50	30	100	122	17	72	59	17	45	4	3	10	0.05	0.1
63	38	130	155	20	95	78	19	65	4	4	10	0.05	0.2
80	—	175	205	25	130	115	32	50	5	5	10	0.05	0.2
100	—	210	245	29	155	133	32	53	5	5	10	0.05	0.2

¹⁾ Only in combination with d4max and t4max.

Characteristics

**2-Way Servo Prop. Valve with Shut-off Valve
Series TEP**

2-way servo proportional valves with VCD® technology and shut-off valve series TEP base on the TDP range. Additionally, TEP valves are equipped with a direction control valve for shutting off the pilot system.

Structure and function

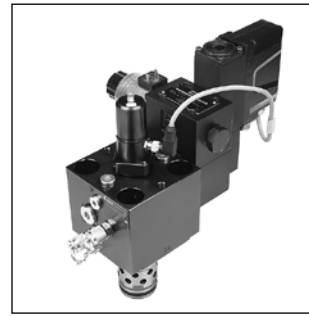
The 2-way servo proportional valves with shut-off valve TEP have a 2-stage design consisting of a DFplus pilot valve and a main stage with poppet and LVDT.

With the DFplus pilot valve the TEP achieves extremely fast response times: from 10.5 ms (NG25) up to 28 ms (NG100) with an accuracy of <0.1 % of the nominal flow. The pilot valve actively controls the poppet - independent of the pressure conditions in the main ports. It is basically required that the pilot pressure is at the level of the system pressure. At low system pressure the pilot pressure should be min. 140 bar, when high valve dynamics are desired.

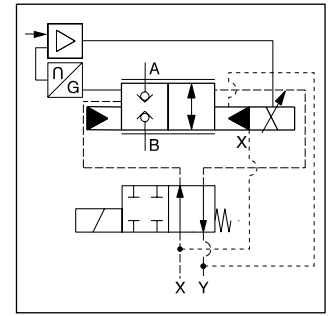
The integrated electronics in the pilot of the TEP has two control loops for the main poppet and the pilot spool. In the de-energized position of the shut-off valve, the upper pilot control surface of the main spool is pressurized, the lower one is relieved to tank. Independent of the DFplus pilot valve, the main spool remains always closed, if the shut-off valve is not activated.

If the solenoid of the shut-off valve is energized, the position of the main spool is controlled by DFplus pilot valve and LVDT.

The shut-off valve can be ordered with position control optionally.



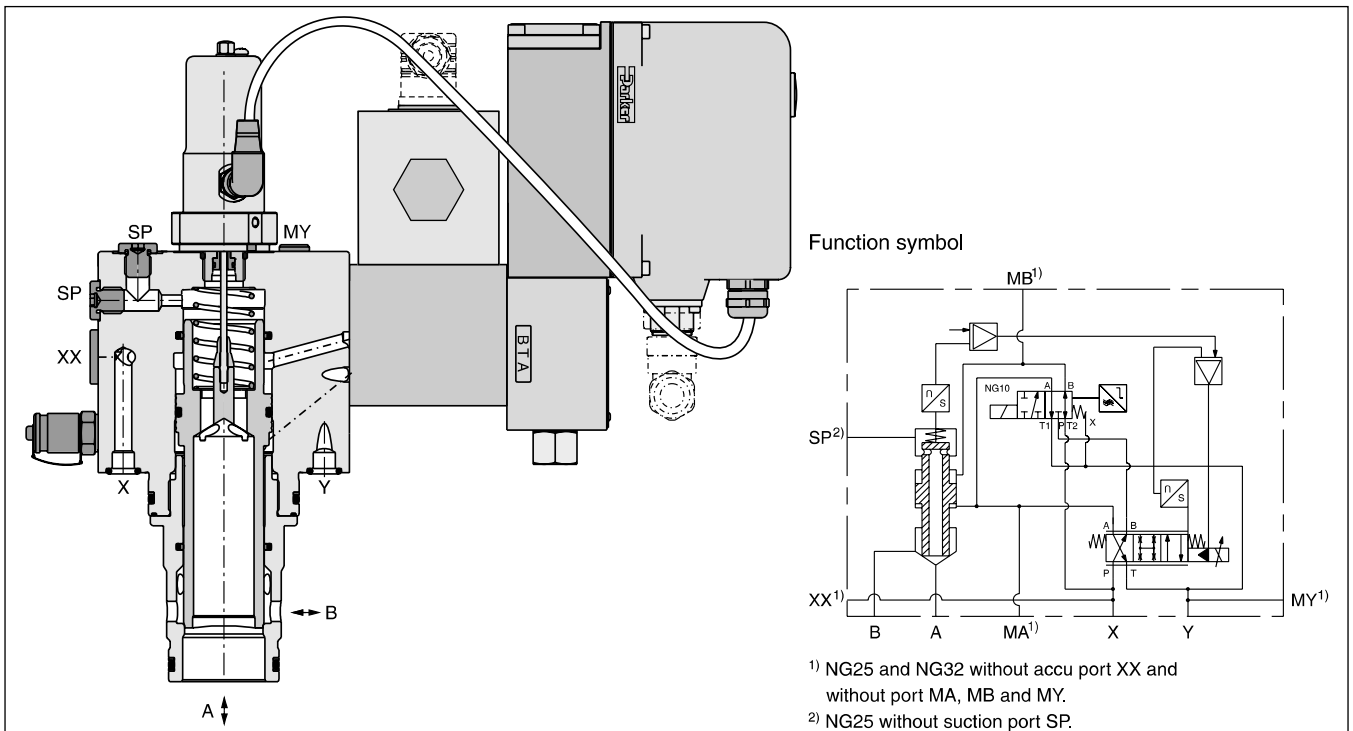
TEP040



Features

- Active pilot operated 2-way servo proportional valves with shut-off valve
- Flow directions A-B and B-A
- Cavity and mounting pattern according to ISO 7368
- Fast step responses
- Completely mounted and adapted unit with integrated electronics
- In order to ensure the closed position pilot pressure is required
- 7 sizes, NG25 up to NG100
- Shut-off function

TEP040

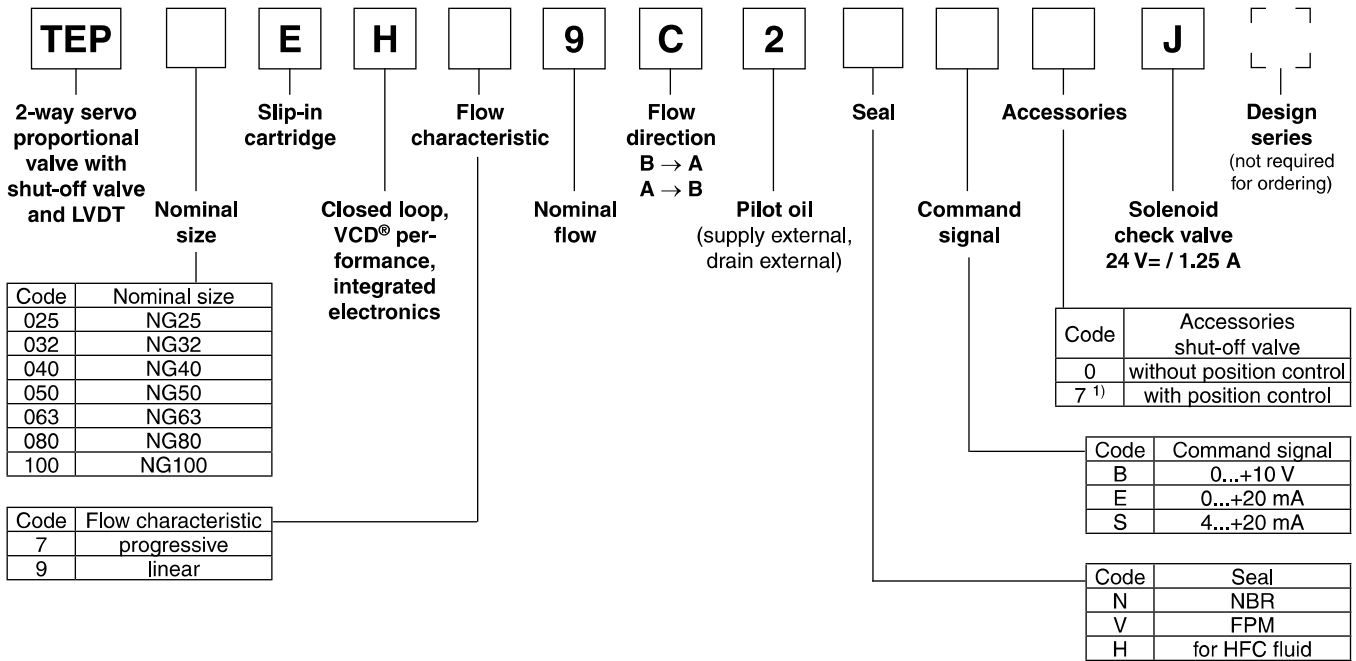


1) NG25 and NG32 without accu port XX and without port MA, MB and MY.
2) NG25 without suction port SP.



Ordering Code / Performance Curves

Ordering code



The DFplus pilot valve is also available with EtherCAT interface, see chapter 3, D*FP and D*1FP with EtherCAT.

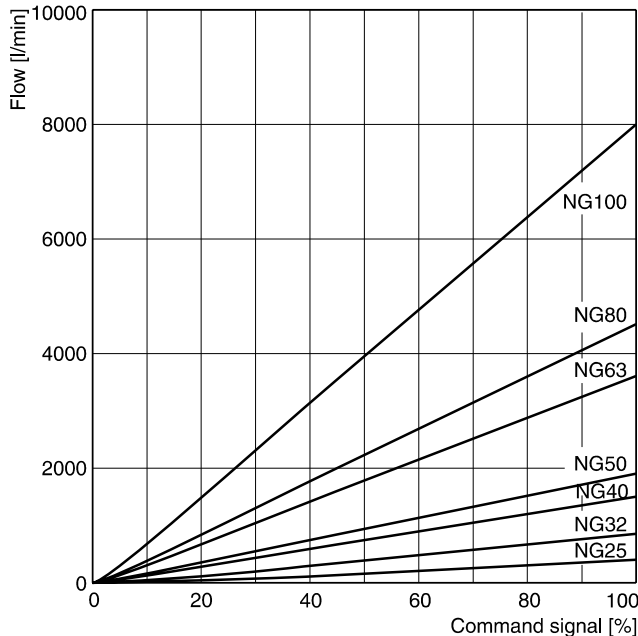
Please order connector separately.

Angle female connector must be used for NG25 to NG50.

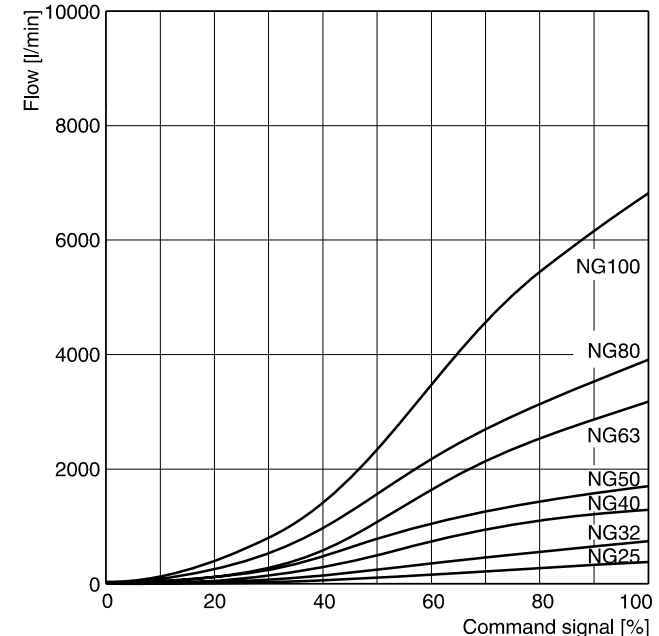
Characteristic flow/signal line

Δp = 5 bar

Linear (code 9)



Progressive (code 7)



Opening point factory set to 3 %

Characteristic curve measured with HLP46 at 50 °C.

$$\text{Flow at different } \Delta p \quad Q_{\text{actual}} = Q_{\text{nominal}} \cdot \sqrt{\Delta p_{\text{actual}} / \Delta p_{\text{nominal}}}$$

¹⁾ Please order female connector M12x1 separately (see accessories, directional control valves, female connector M12x1 (order no.: 5004109).



Technical Data

General							
Design	Proportional throttle valve with LVDT and integrated electronics, slip-in cartridge according to ISO 7368						
Nominal size	DIN	NG25	NG32	NG40	NG50	NG63	NG80 NG100
Mounting position	unrestricted						
Ambient temperature	[°C]	-20...+50					
Weight	[kg]	11	13	15	26	52	105 157
Vibration resistance	[g]	10 sinus 5...2000 Hz acc. IEC 68-2-6 10 (RMS) random noise 20...2000 Hz acc. IEC 68-2-36 15 shock acc. IEC 68-2-27					
Hydraulic							
Max. operating pressure	[bar]	Ports A, B, X and SP up to 350; XX observe accumulator pressure rating; port Y: max. 35					
Fluid	Hydraulic oil according to DIN 51524						
Fluid temperature	[°C]	-20...+60 (NBR: -25...+60)					
Viscosity recommended	[cSt] / [mm²/s]	30 ... 80					
Viscosity permitted	[cSt] / [mm²/s]	20 ... 400					
Filtration	ISO 4406; 18/16/13						
Nominal flow at Δp= 5 bar (linear)	[l/min]	420	850	1500	1900	3600	4500 8000
Recommended max. flow (linear)	[l/min]	800	2000	3000	4500	8000	13000 20000
Nominal flow at Δp= 5 bar (progressive)	[l/min]	380	750	1300	1700	3200	3900 6800
Recommended max. flow (progressive)	[l/min]	700	1750	2600	4000	7000	11250 17000
Flow direction	B to A / A to B						
Pilot pressure	[bar]	must be as high as system pressure					
Pilot oil supply	external via X						
Pilot oil drain	external via Y						
Leakage in pilot valve at 100 bar	[ml/min]	< 400					
Pilot valve size	NG06			NG10			
Max. pilot flow at 140 bar pilot pr.	[l/min]	23	30	40	40	70	80 100
Static/dynamic							
(for optimal dynamics see installation recommendation)							
Step response at pilot press. >140 bar	[ms]	10.5	12	14	20	17	23 28
Frequency response at pilot press. >140 bar	[Hz]	95	80	74	66	52	46 41
Amplitude -3 dB; 10 % ±5 %	[Hz]	85	63	59	52	56	51 47
Phase -90°; 10 % +5 %	[Hz]						
Hysteresis	[%]	< 0.1					
Sensitivity	[%]	< 0.05					
Temperature drift	[%/K]	< 0.025					
Electrical							
Duty ratio	[%]	100					
Protection class	IP65 in accordance with EN 60529 (with correctly mounted plug-in connector)						
Supply voltage / ripple	[V]	DC 22 ... 30, electric shut-off at < 19, ripple < 5 % eff., surge free					
Current consumption max.	[A]	3.5					
Pre-fusing	[A]	4.0 A medium lag					
Input signal Code B Voltage	[V]	0...+10, ripple < 0.01 % eff., surge free					
Impedance	[kOhm]	100					
Code E Current	[mA]	0...+20, ripple < 0.01 % eff., surge free					
Impedance	[Ohm]	< 250					
Code S Current	[mA]	4...20, ripple < 0.01 % eff., surge free					
Impedance	[Ohm]	< 250					
Differential input max.	[V]	30 for terminal D and E against PE (terminal G) 11 for terminal D and E against 0V (terminal B)					
Enable signal	[V]	5...30, Ri = > 8 kOhm					
Diagnostic signal	[V]	0...+10 / +12.5 error detection, rated max. 5 mA					
EMC	EN 61000-6-2, EN 61000-6-4						
Electrical connection	6 + PE acc. EN 175201-804						
Wiring min.	[mm²]	7 x 1.0 (AWG16) overall braid shield					
Wiring length max.	[m]	50					



1) If valves with onboard electronics are used in safety-related parts of control systems, in case the safety function is requested, the valve electronics voltage supply is to be switched off by a suitable switching element with sufficient reliability.



Installation Recommendations / Electronics

Installation recommendations

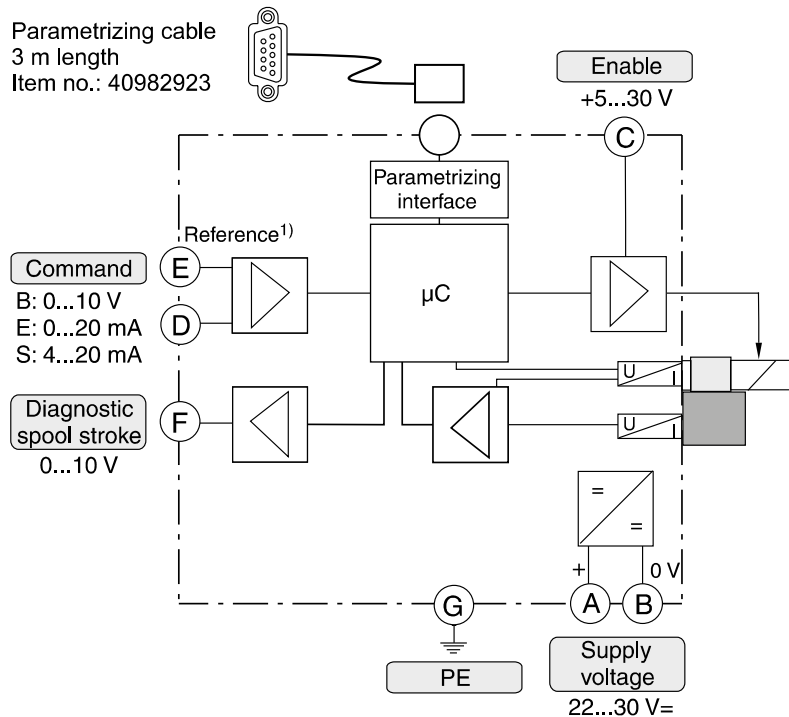
The maximum pilot flow is given in the technical data. At insufficient pilot oil supply - e.g. because of long distances and/or small diameters - an accumulator can be connected to port XX. See selection guide for correct dimensions.

Selection guide

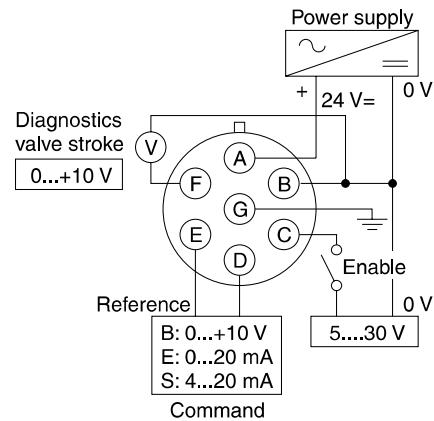
Size	Capacity [l]	Product type	Max. operating pressure [bar]	Recommended precharge pressure [bar]	Accu port XX
NG40	0.243	ADE016-25R	250	126	G ½
NG50	0.243	ADE032-21R	210	126	G ½
NG63	0.405	ADE050-21R	210	126	G ¾
NG80	0.647	ADE075-21R	210	126	G ¾
NG100	0.944	ADE100-21R	210	126	G ¾

Maximum operating pressure and precharge pressure of the accumulator must be adapted to the pilot pressure.

Block circuit diagram electronics

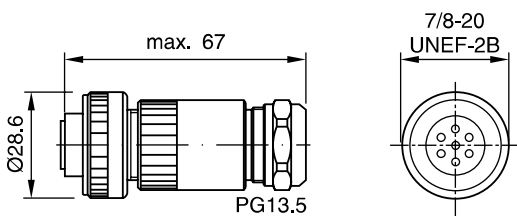


Connection diagrams electronics



8

**Female connector for NG63 to NG100
(EMC conform)**

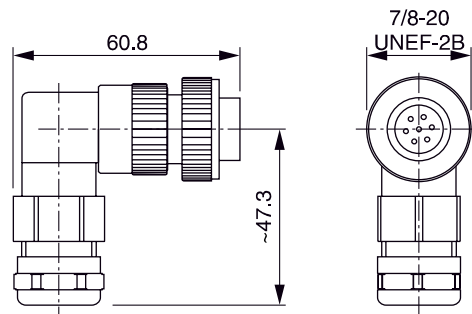


ID no. 5004072

Please order plugs separately.

¹⁾ Do not connect with the supply voltage zero.

**Angle female connector for NG25 to NG50
(EMC conform)**



ID no. 5005160

Position Control

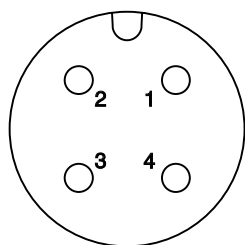
Single solenoid valve

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

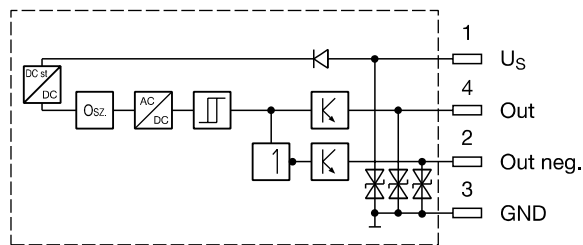
Supply voltage	[VDC]	24
Tolerance supply voltage	[%]	±20
Ripple supply voltage	[%]	≤10
Polarity protection	[V]	300
Current consumption without load	[mA]	≤20
Switching hysteresis	[mm]	<0.06
Max. output current per channel, ohmic	[mA]	250
Ambient temperature	[°C]	-20 ... +60
Protection		IP65 acc. EN 60529 (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

¹⁾ Only guaranteed with screened cable and female connector

M12 pin assignment



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



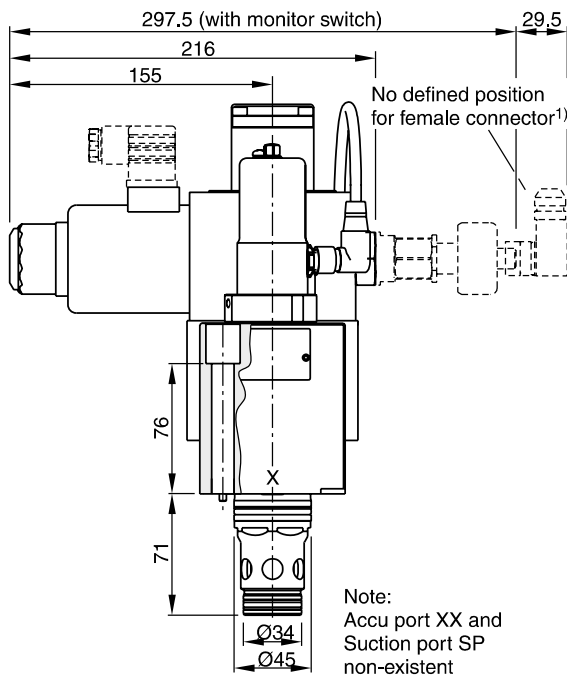
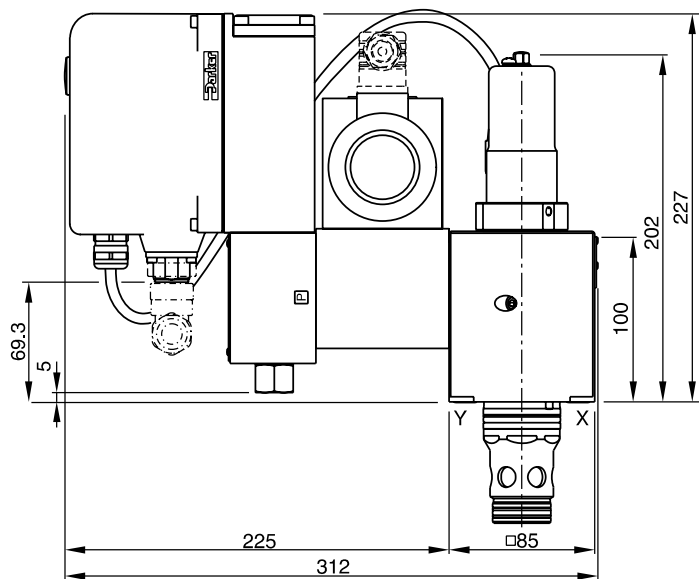
Outputs: Open collector

Please order female connector M12x1 separately (see accessories, directional control valves, female connector M12x1 (order no.: 5004109).

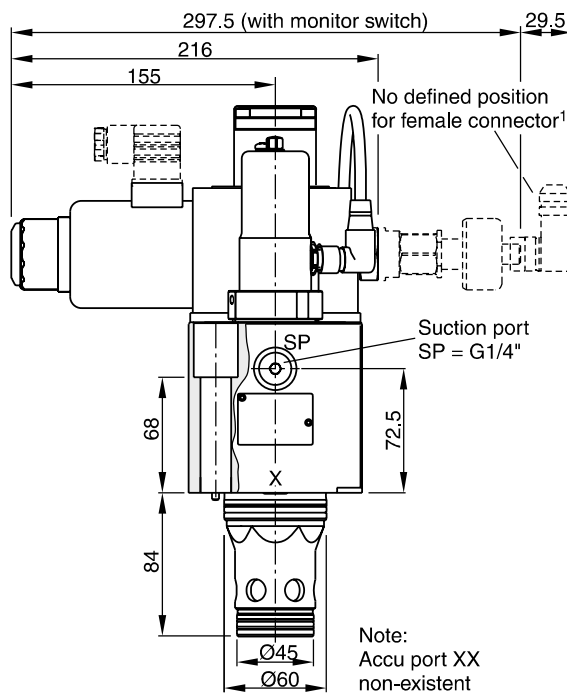
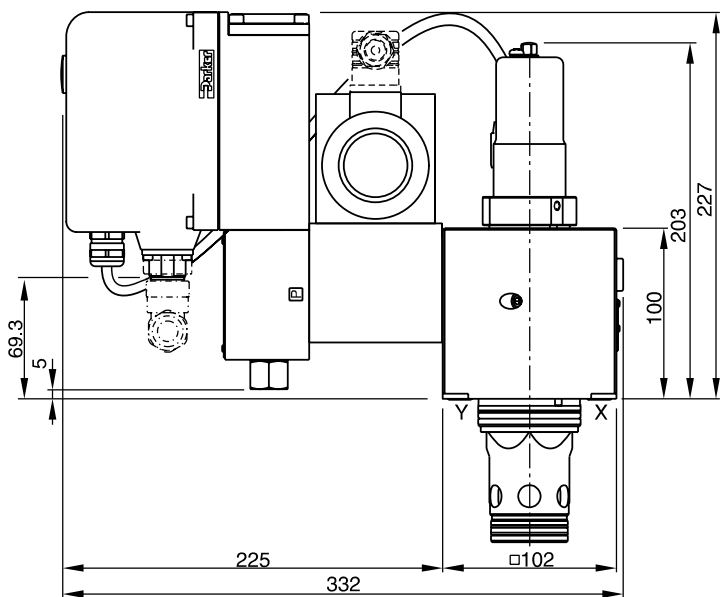


Dimensions

NG25

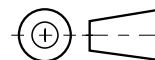


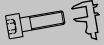


NG32



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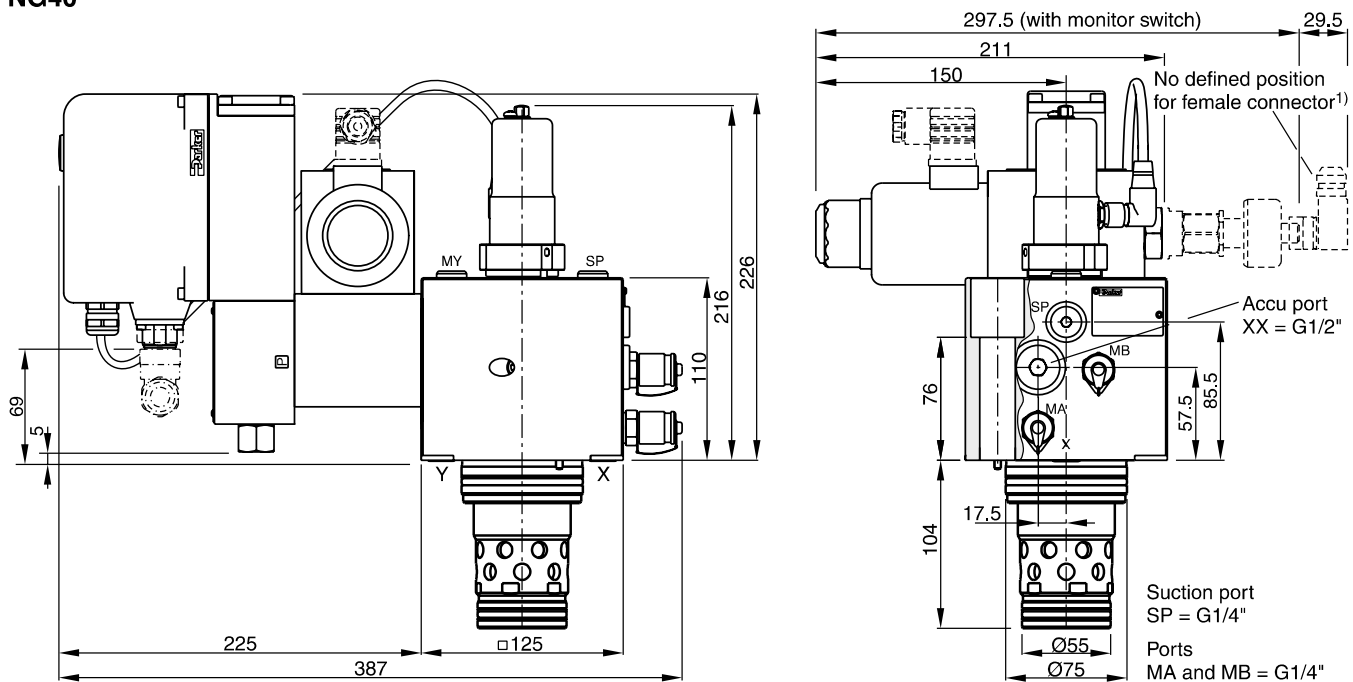
Suction port SP: Contact Parker for installation recommendation.



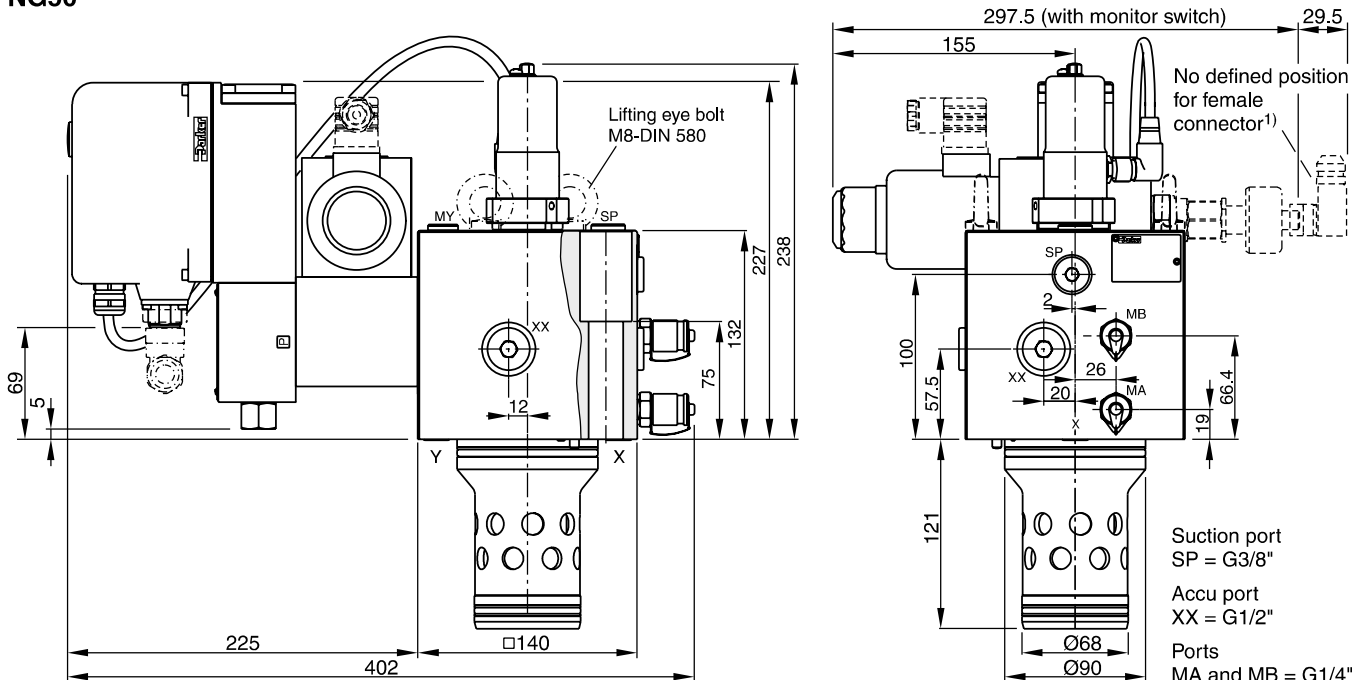
NG	Bolt kit - 		NBR	Kit 	FPM
25	BK504 4 x M12x100 ISO 4762-12.9	108 Nm	SK-TEP025EN		SK-TEP025EV
32	BK529 4 x M16x100 ISO 4762-12.9	264 Nm	SK-TEP032EN		SK-TEP032EV

¹) Please order female connector M12x1 separately (see accessories, directional control valves, female connector M12x1 (order no.: 5004109).

NG40

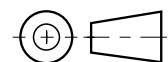





NG50



Lifting thread for disassembly M12

Suction port SP: Contact Parker for installation recommendation.

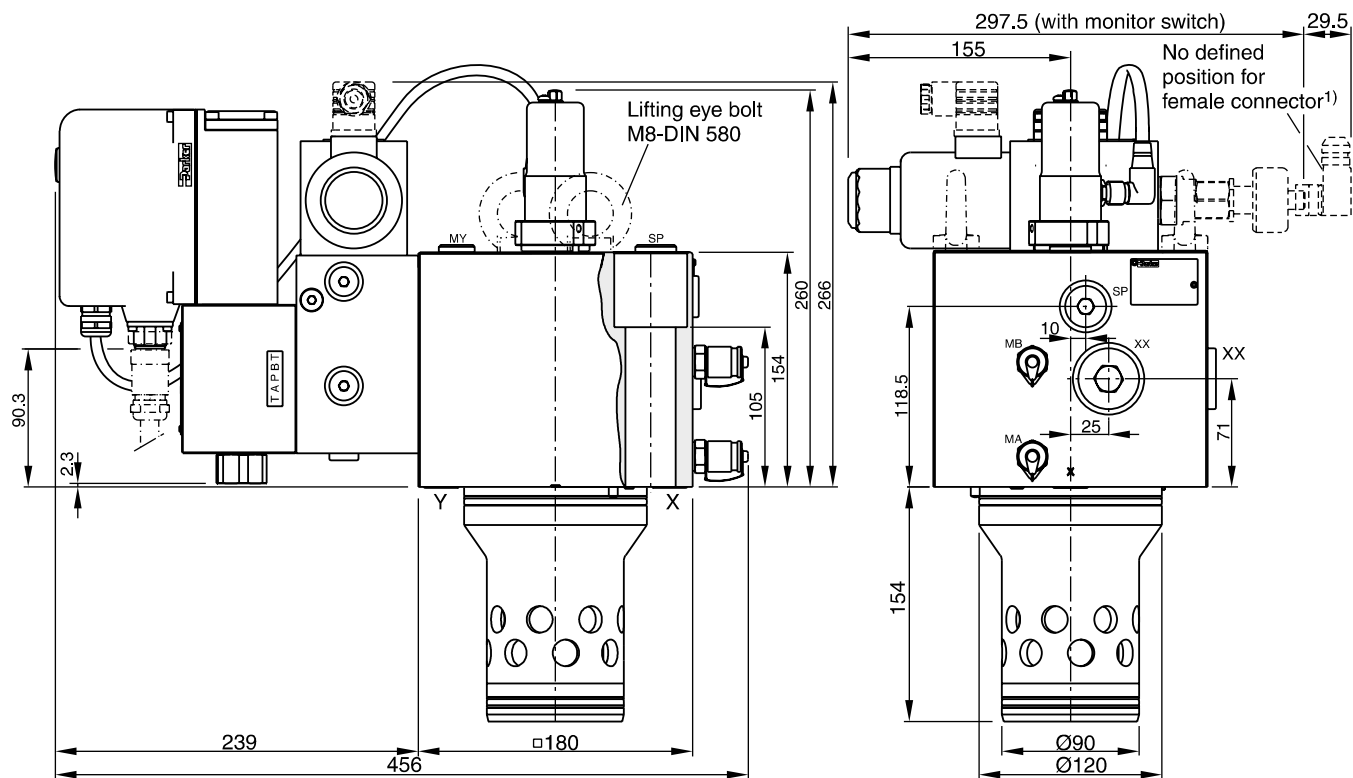


NG	Bolt kit - 		NBR	 Kit	FPM
40	BK481 4 x M20x110 ISO 4762-12.9	517 Nm	SK-TEP040EN		SK-TEP040EV
50	BK481 4 x M20x110 ISO 4762-12.9	517 Nm	SK-TEP050EN		SK-TEP050EV

¹⁾ Please order female connector M12x1 separately (see accessories, directional control valves, female connector M12x1 (order no.: 5004109).

Dimensions

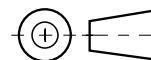
NG63






Suction port Accu port Ports
 SP = G1/2" XX = G3/4" MA and MB = G1/4"
 Lifting thread for disassembly M12

8

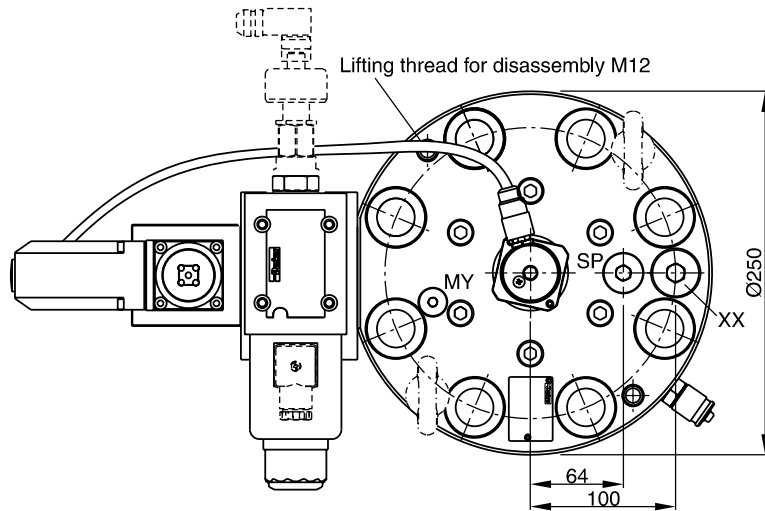
Suction port SP: Contact Parker for installation recommendation.



NG	Bolt kit - 		NBR	Kit 	FPM
63	BK518 4x M30x160 ISO 4762-12.9	1775 Nm	SK-TEP063EN		SK-TEP063EV

¹⁾ Please order female connector M12x1 separately (see accessories, directional control valves, female connector M12x1 (order no.: 5004109).

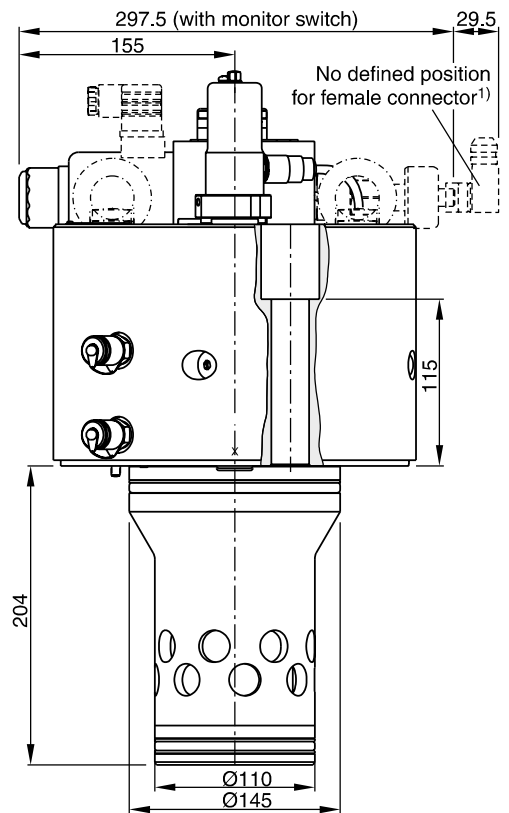
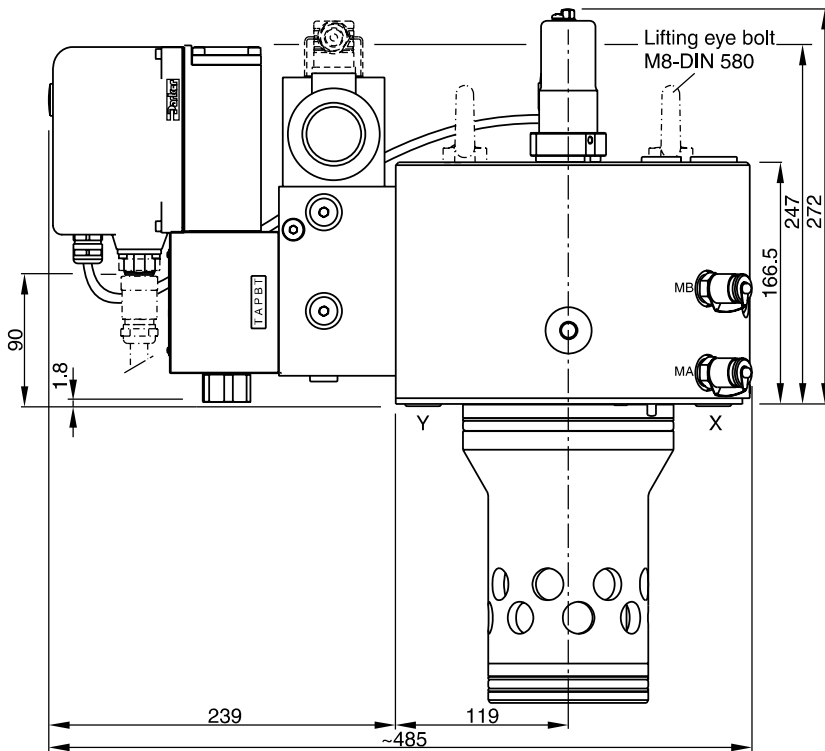
NG80



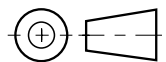
Accu port
 XX = G3/4"

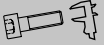


Suction port
 SP = G1/2"

Ports
 MA and MB = G1/4"



Suction port SP: Contact Parker for installation recommendation.

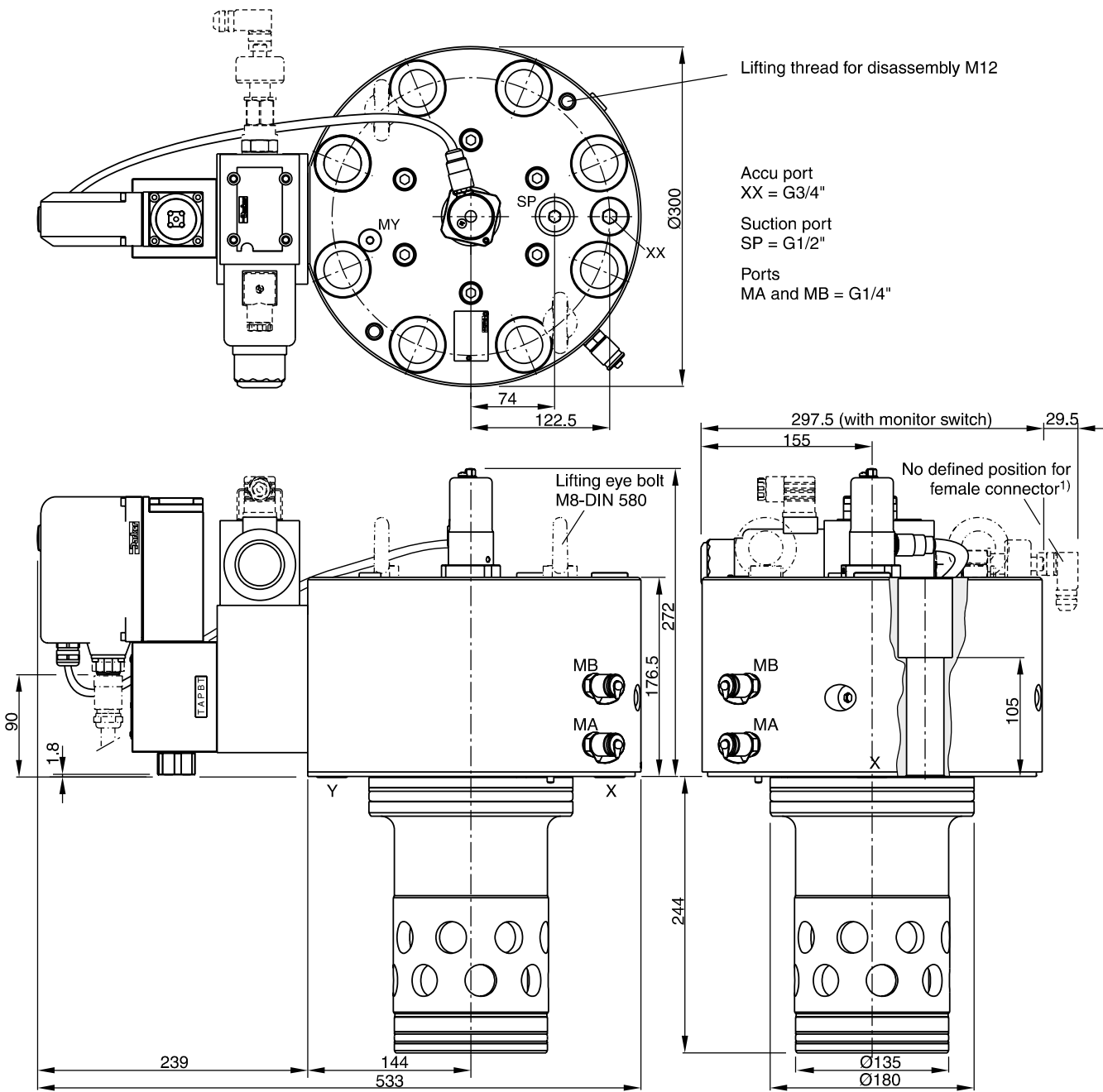


NG	Bolt kit - 		NBR	Kit 	FPM
80	BK530 8x M24x160 ISO 4762-12.9	890 Nm	SK-TEP080EN		SK-TEP080EV

¹⁾ Please order female connector M12x1 separately (see accessories, directional control valves, female connector M12x1 (order no.: 5004109).

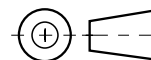
Dimensions




NG100



8

Suction port SP: Contact Parker for installation recommendation.



NG	Bolt kit - 		NBR	Kit 	FPM
100	BK531 8x M30x150 ISO 4762-12.9	1775 Nm	SK-TEP100EN		SK-TEP100EV

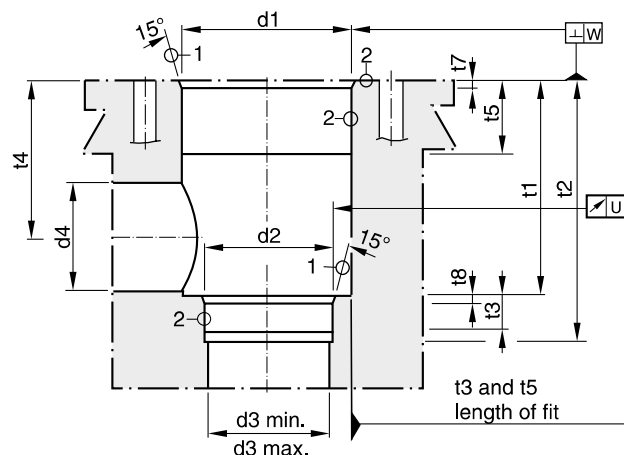
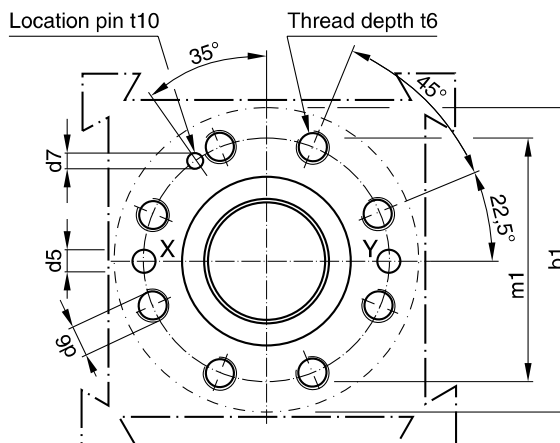
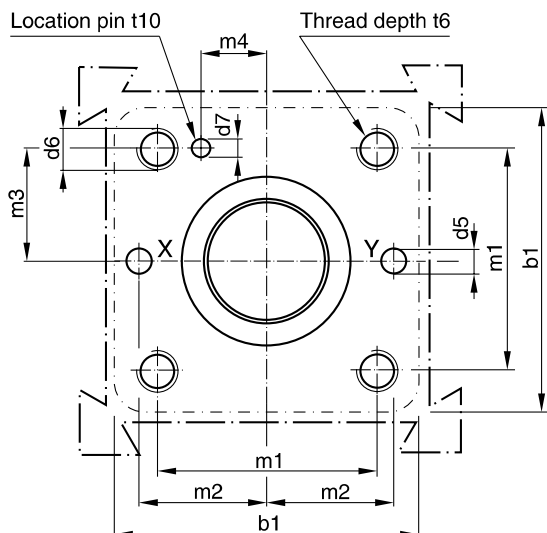
¹⁾ Please order female connector M12x1 separately (see accessories, directional control valves, female connector M12x1 (order no.: 5004109).

Dimensions

**2-Way Servo Prop. Valve with Shut-off Valve
Series TEP**

Code: ISO 7368-B*-2-A/B
NG25 to NG63

Code: ISO 7368-B*-2-A
NG80 to NG100



Required surface finish:

① = $\sqrt{R_{\max} 16}$, ② = $\sqrt{R_{\max} 8}$

Deviating from ISO 7368 it is advisable to increase the diameters d3, d4 and d5.

Size	b1	d1 H7	d2 H7	d3 / d4	d3 max	d4 max ¹⁾	d5	d6	d7 H13	m1±0.2	m2±0.2	m3±0.2
25	85	45	34	25	27	32	6	M 12	4	58	33	29
32	102	60	45	32	44	50	8	M 16	6	70	41	35
40	125	75	55	40	54	63	10	M 20	6	85	50	42.5
50	140	90	68	50	67	80	10	M 20	8	100	58	50
63	180	120	90	63	89	100	12	M 30	8	125	75	62.5
80	250	145	110	80	109	110	16	M 24	10	200	—	—
100	300	180	135	100	134	150	20	M 30	10	245	—	—

Size	m4±0.2	t1+0.5	t2+1	t3	t4	t4 max ¹⁾	t5	t6	t7	t8	t10	U	W
25	16	58	72	12	44	40.5	30	35	25	25	10	0.03	0.05
32	17	70	85	13	52	44	15	35	2.5	2.5	10	0.03	0.1
40	23	87	105	15	64	54	15	45	3	3	10	0.05	0.1
50	30	100	122	17	72	59	17	45	4	3	10	0.05	0.1
63	38	130	155	20	95	78	19	65	4	4	10	0.05	0.2
80	—	175	205	25	130	115	32	50	5	5	10	0.05	0.2
100	—	210	245	29	155	133	32	53	5	5	10	0.05	0.2

¹⁾ d4_{max} only in combination with t4_{max}.



Characteristics

The 3-way servo proportional valve with VCD® technology series TPQ are used in applications where high flow has to be precisely controlled at maximum dynamics. Typical applications are die casting, injection moulding and hydraulic presses.

Function

TPQ has a 2-stage design consisting of a DFplus pilot valve and a main stage with spool and LVDT.

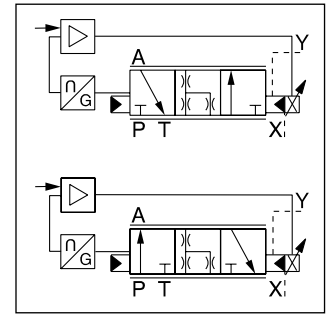
With the DFplus pilot valve the TPQ achieves extremely fast response times: from 7 ms (NG25) up to 20 ms (NG80) with an accuracy of <0.1 % of the nominal flow. The pilot valve actively controls the spool – independent of the pressure conditions in the main ports.

It is basically required that the pilot pressure is at the level of the system pressure. At low system pressure the pilot pressure should be min. 140 bar, when high valve dynamics are desired.

The integrated electronics in the pilot of the TPQ has two control loops for the main cone and the pilot spool.



TPQ 040

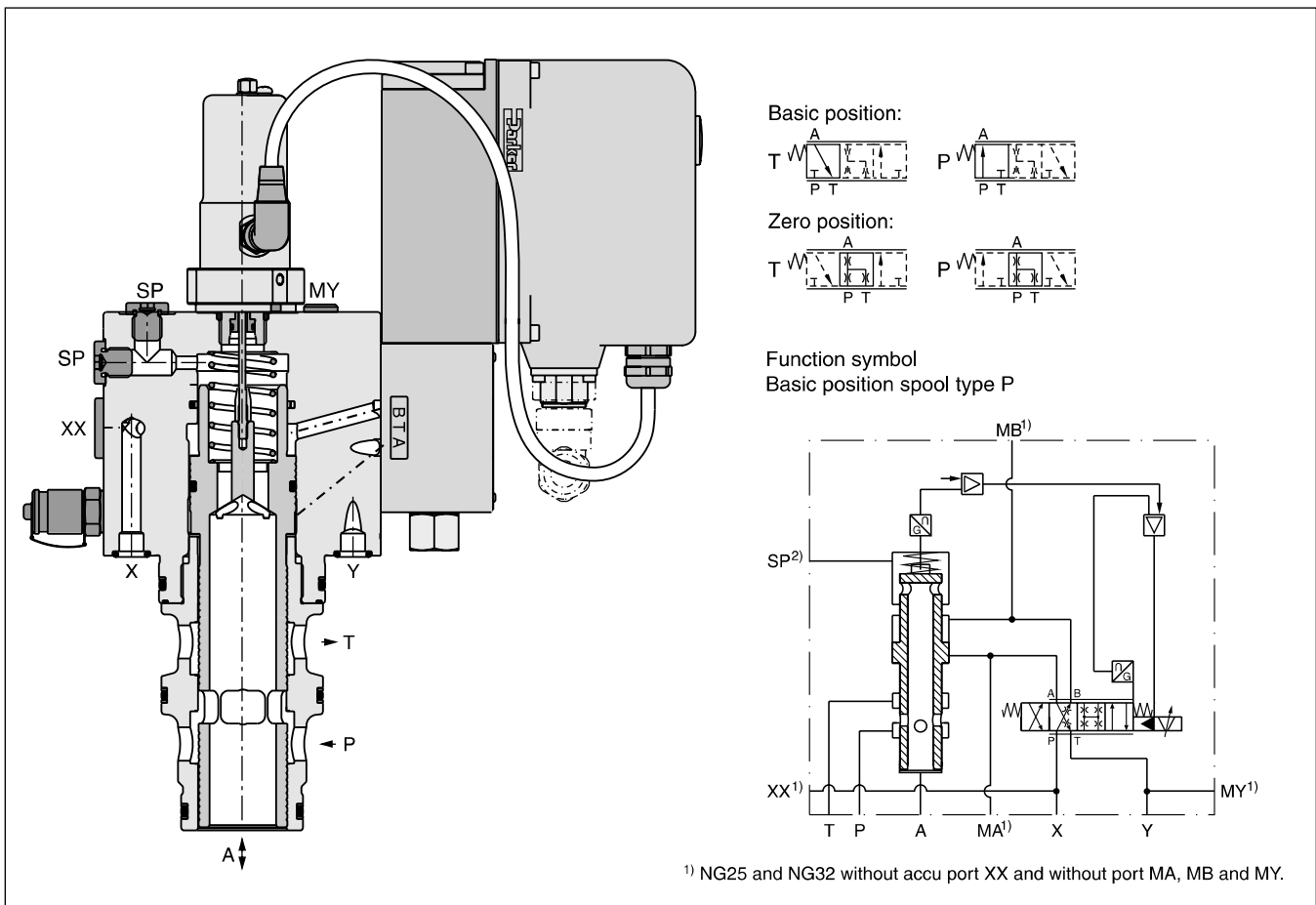


Features

- Active pilot operated 3-way servo proportional valve
- Cavity according to Parker house norm
- Fast step response
- Flow direction A to T and P to A
- Completely mounted adapted unit with integrated electronics
- In order to ensure the basic position, pilot pressure is required
- 6 sizes NG25 up to NG80

TPQ 040 P

8



Ordering Code / Performance Curves

Ordering code

TPQ		W	H	2	5		2			0	
3-way servo proportional valve with LVDT	Nominal size	Parker Slip-in cartridge	Closed loop, VCD® performance, integrated electronics	Linear spool	Nominal flow	Spool type	Pilot oil supply external, drain external	Seal	Input signal	Standard electronics	Design series (not required for ordering)

Code	Nominal size
025	NG25
032	NG32
040	NG40
050	NG50
063	NG63
080	NG80

Code	Signal range
B	0...±10 V
E	0...±20 mA
S	4...+20 mA

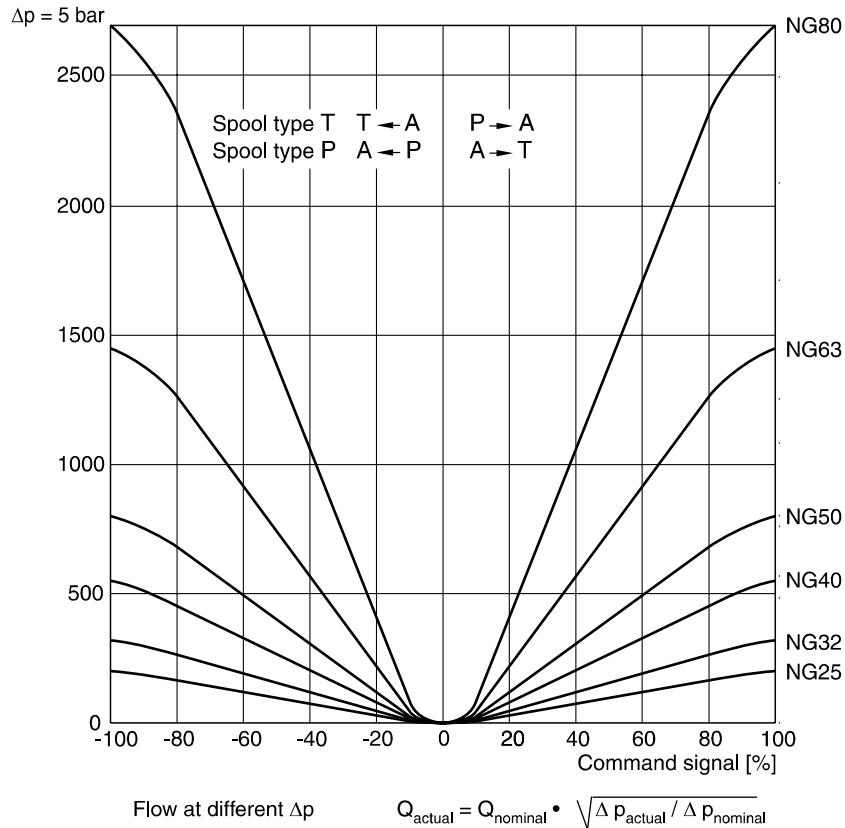
Code	Seal
N	NBR
V	FPM
H	for HFC fluid

Zerolap		
Code	Spool type	Basic position
	Input signal - 0 +	
P		P → A
T		A → T

The DFplus pilot valve is also available with EtherCAT interface, see chapter 3, D*FP and D*1FP with EtherCAT.

Please order connector separately
Angle female connector must be used for NG25 to NG50.

Characteristic flow/signal line



Characteristic curve measured with HLP46 at 50 °C.

Technical Data

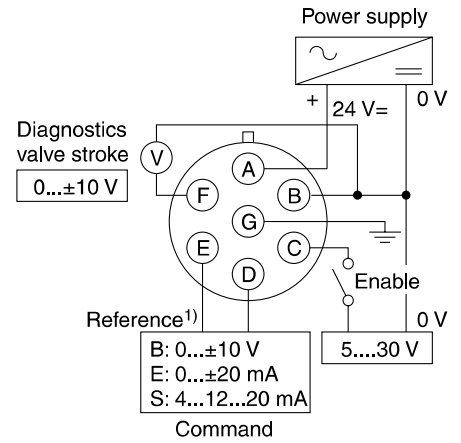
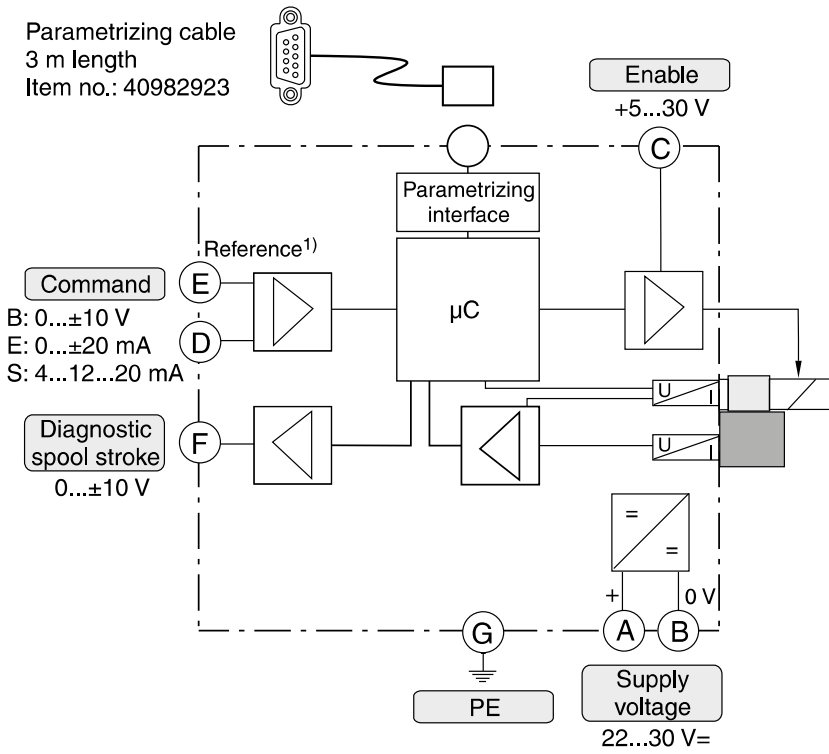
General						
Design	Proportional throttle valve, slip-in cartridge					
Nominal size	DIN	NG25	NG32	NG40	NG50	NG63 NG80
Mounting position	unrestricted					
Ambient temperature	[°C]	-20...+50				
Weight	[kg]	11	13	15	26	52 105
Vibration resistance	[g]	10 sinus 5...2000 Hz acc. IEC 68-2-6 10 (RMS) random noise 20...2000 Hz acc. IEC 68-2-36 15 shock acc. IEC 68-2-27				
Hydraulic						
Max. operating pressure	[bar]	Ports A, P, T, X up to 350, XX ²⁾ observe accumulator pressure rating; port Y: max. 35				
Fluid	Hydraulic oil according to DIN 51524					
Fluid temperature	[°C]	-20...+60 (NBR: -25...+60)				
Viscosity	recommended	30...80				
	permitted	20...400				
Filtration	ISO 4406; 18/16/13					
Nominal flow at Δp = 5 bar	[l/min]	200	320	550	800	1450 2700
Recommended max. flow	[l/min]	500	1000	1600	2250	3500 6500
Nominal overlap	[%]	< 1.5				
Flow direction	A to T or P to A					
Pilot pressure	[bar]	must be as high as system pressure				
Pilot oil	supply	external via X				
	drain	external via Y				
Leakage in pilot valve at 100 bar	[ml/min]	< 400				
Leakage in main stage at 100 bar	[l/min]	NG32 to 63 < 2.5; NG80 < 4.0				
Pilot valve size			NG06			NG10
Max. pilot flow at 140 bar pilot press.	[l/min]	25	25	25	25	50 60
Static/dynamic						
Step response at pilot press. >140 bar	[ms]	7	11	11	18	19 20
Frequency response at pilot press. >140 bar	Amplitude -3 dB; ±5 %	[Hz]	210	105	70	45 35 30
	Phase -90°; ±5 %	[Hz]	170	125	110	95 75 70
	Hysteresis	[%]	< 0.1			
Sensitivity	[%]	< 0.05				
Temperature drift of center position	[%/K]	< 0.025				
Electrical						
Duty ratio	[%]	100				
Protection class	IP65 in accordance with EN 60529 (with correctly mounted plug-in connector)					
Supply voltage / ripple	[V]	DC 22 ... 30, electric shut-off at < 19, ripple < 5 % eff., surge free				
Current consumption max.	[A]	3.5				
Pre-fusing	[A]	4.0 A medium lag				
Input signal	Code B Voltage	[V]	+10...0...-10, ripple < 0.01 % eff., surge free			
	Code E Current	[mA]	+20...0...-20, ripple < 0.01 % eff., surge free			
	Code S Impedance	[Ohm]	< 250			
	Code S Current	[mA]	4...12...20, ripple < 0.01 % eff., surge free < 3.6 mA = disable, > 3.8 mA = enable on according to NAMUR NE43			
	Code S Impedance	[Ohm]	< 250			
Differential input max.	[V]	30 for terminal D and E against PE (terminal G), 11 for terminal D and E against 0V (terminal B)				
Enable signal	[V]	5...30, Ri = > 8 kOhm				
Diagnostic signal	[V]	+10...0...-10 / +12.5 error detection, rated max. 5 mA				
EMC	EN 61000-6-2, EN 61000-6-4					
Electrical connection	6 + PE acc. EN 175201-804					
Wiring min.	[mm ²]	7x1.0 (AWG16) overall braid shield				
Wiring length	[m]	50				

¹⁾ If valves with onboard electronics are used in safety-related parts of control systems, in case the safety function is requested, the valve electronics voltage supply is to be switched off by a suitable switching element with sufficient reliability.

²⁾ Accu port XX: Please contact Parker for installation recommendation.

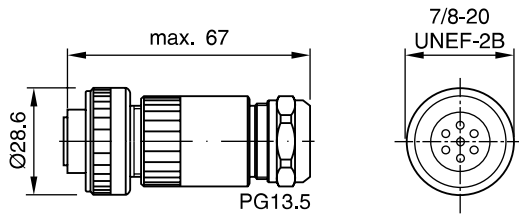
Block circuit diagram electronics

Connection diagrams electronics



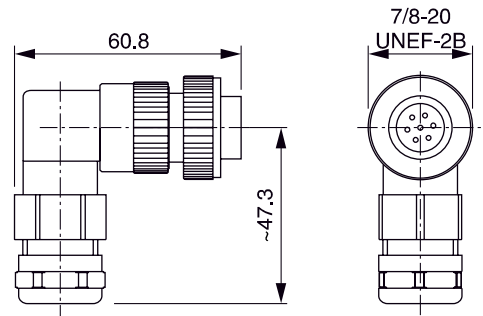
8

Female connector for NG63 to NG80
 (EMC conform)



ID no. 5004072

Angle female connector for NG25 to NG50
 (EMC conform)



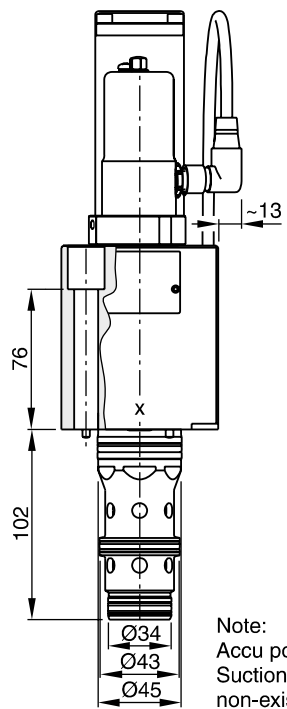
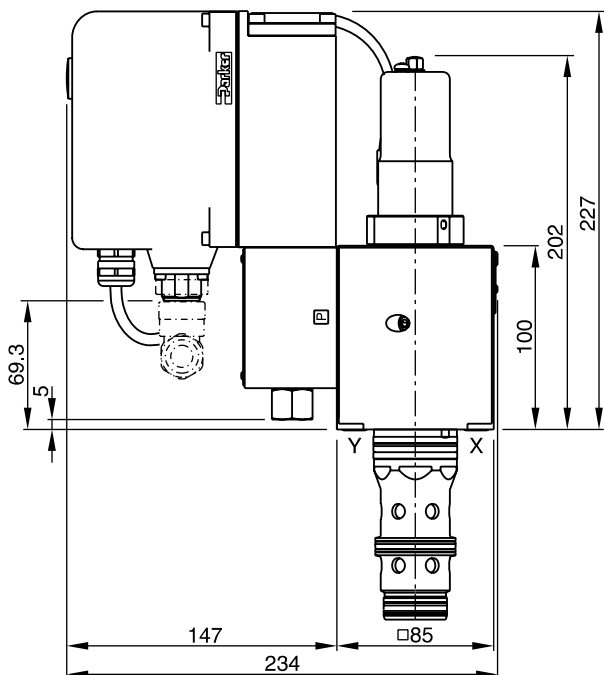
ID no. 5005160

Please order plugs separately.

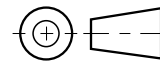
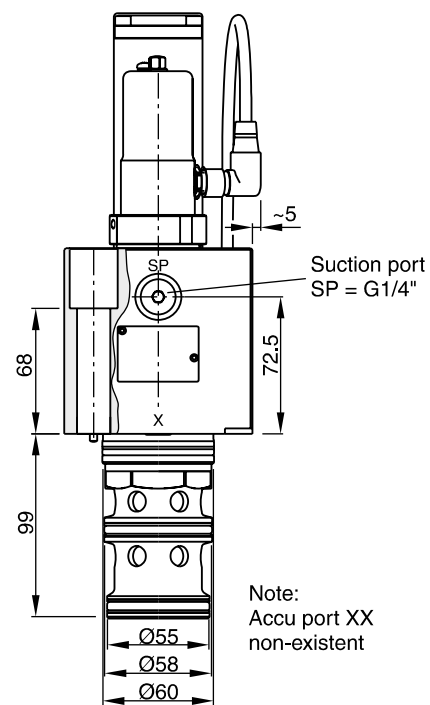
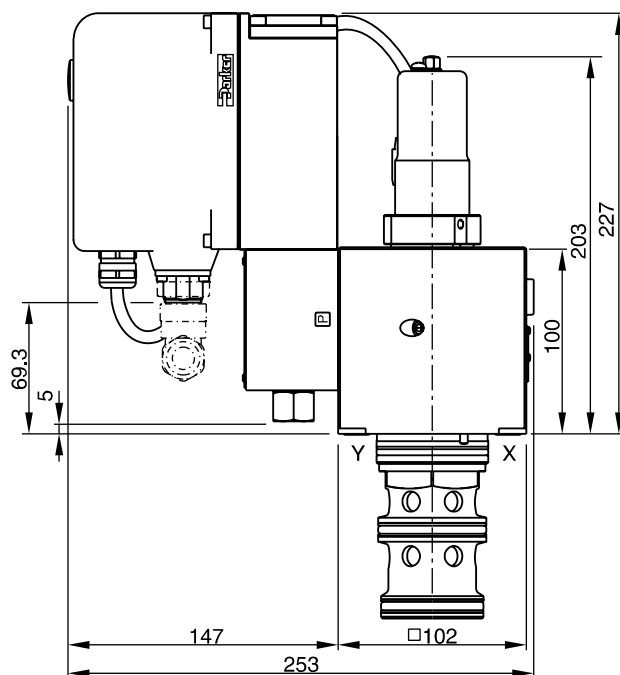
¹⁾ Do not connect with the supply voltage zero.

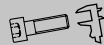


Dimensions

NG25



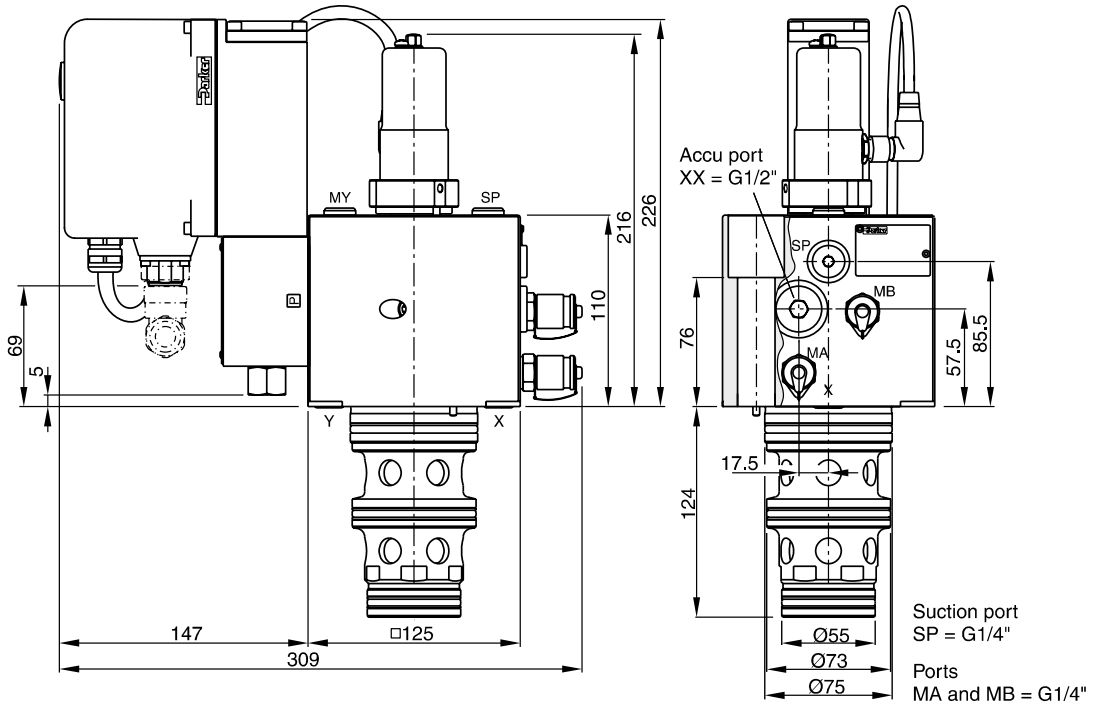
NG32



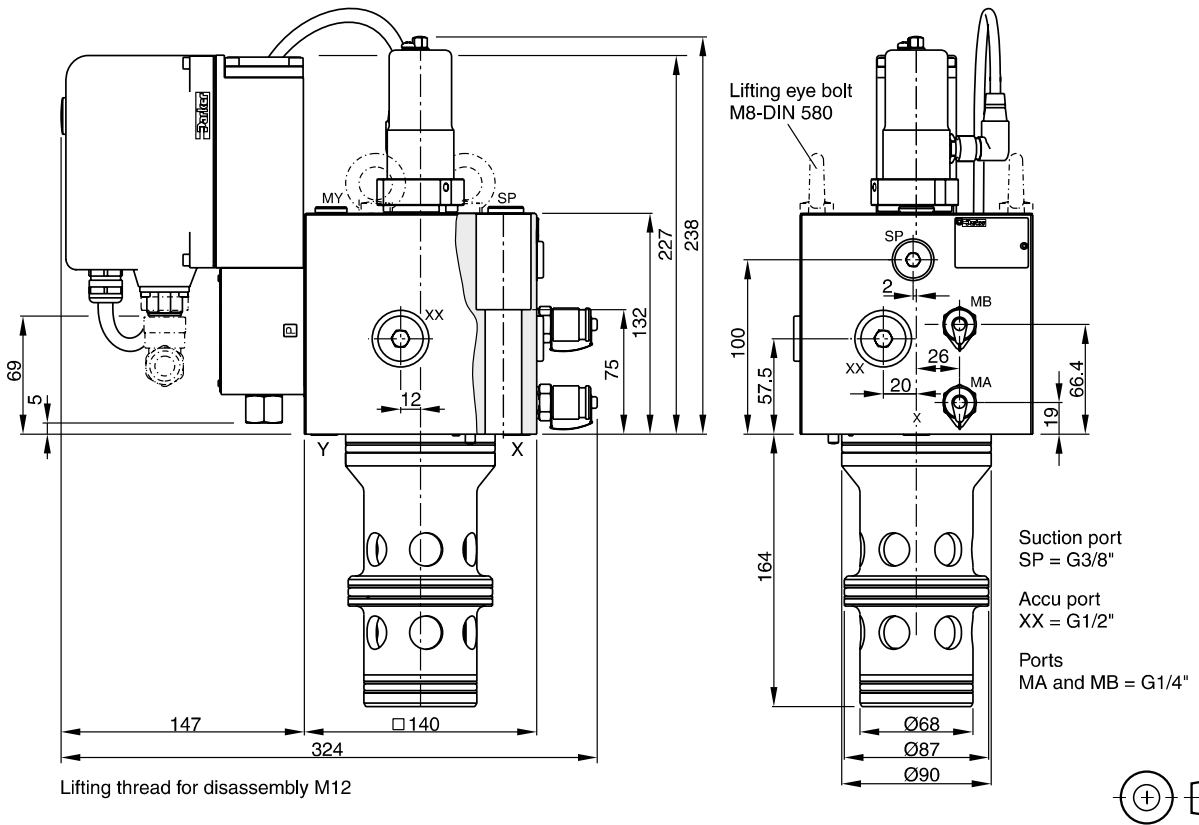
NG	Bolt kit - 		NBR	Kit 	FPM
25	BK504 4x M12x100 ISO 4762-12.9	108 Nm	SK-TPQ025EN30		SK-TPQ025EV30
32	BK529 4x M16x100 ISO 4762-12.9	264 Nm	SK-TPQ032EN30		SK-TPQ032EV30

8



NG40



NG50

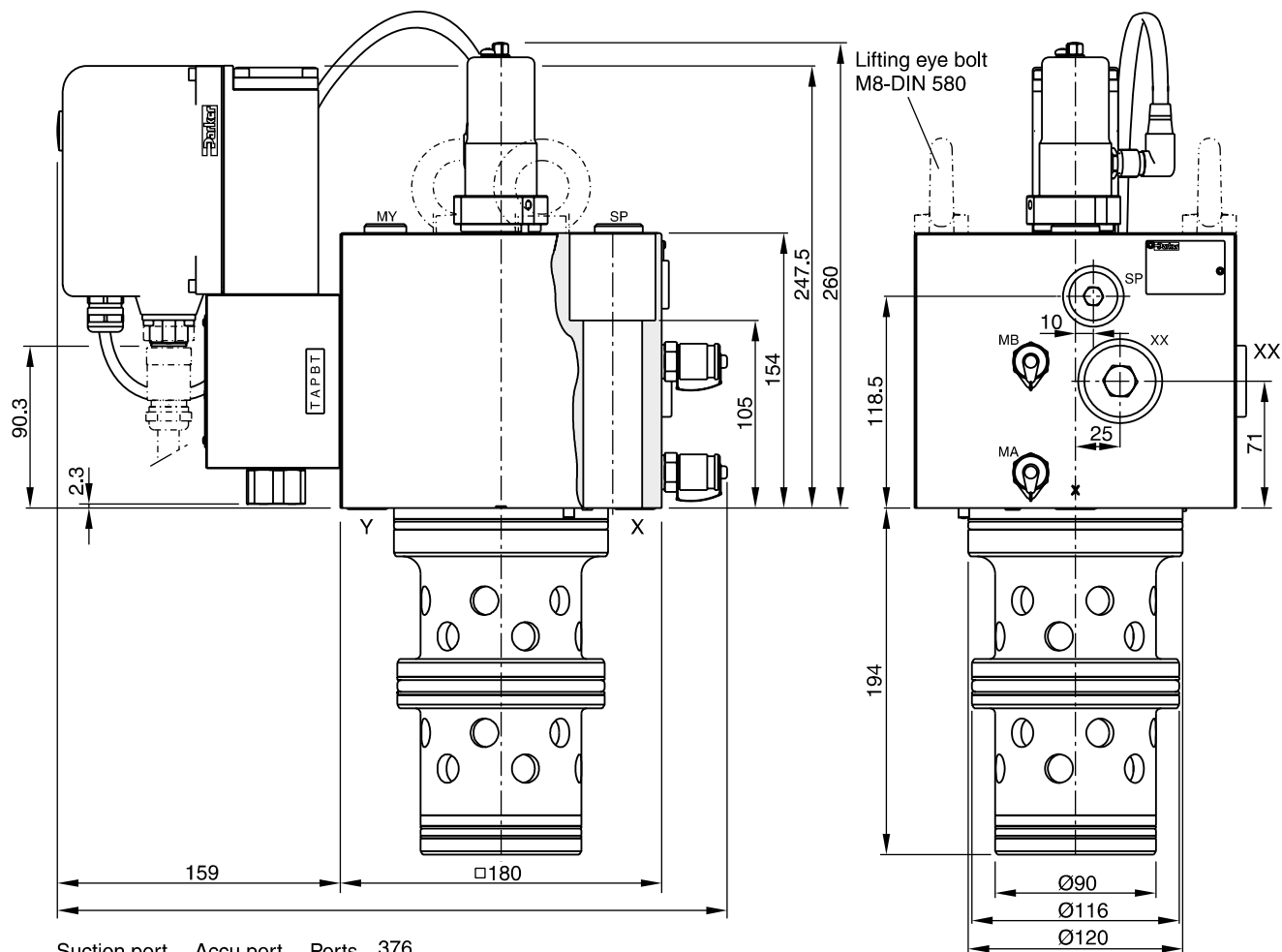


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NG	Bolt kit - 		Kit	
			NBR	FPM
40	BK481 4 x M20x110 ISO 4762-12.9	517 Nm	SK-TPQ040EN30	SK-TPQ040EV30
50	BK481 4 x M20x110 ISO 4762-12.9	517 Nm	SK-TPQ050EN30	SK-TPQ050EV30

Dimensions

NG63






Suction port Accu port Ports 376
 SP = G1/2" XX = G3/4" MA and MB = G1/4"

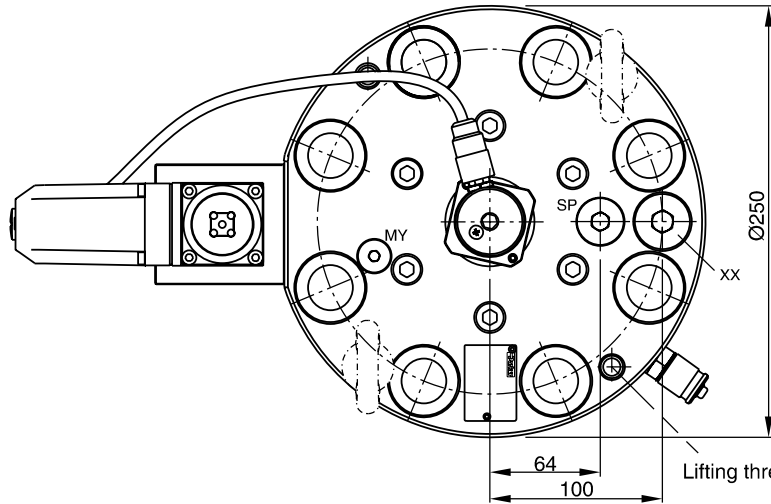
Lifting thread for disassembly M12

8



NG	Bolt kit - 		NBR	Kit 	FPM
63	BK518 4x M30x160 ISO 4762-12.9	1775 Nm	SK-TPQ063EN30		SK-TPQ063EV30

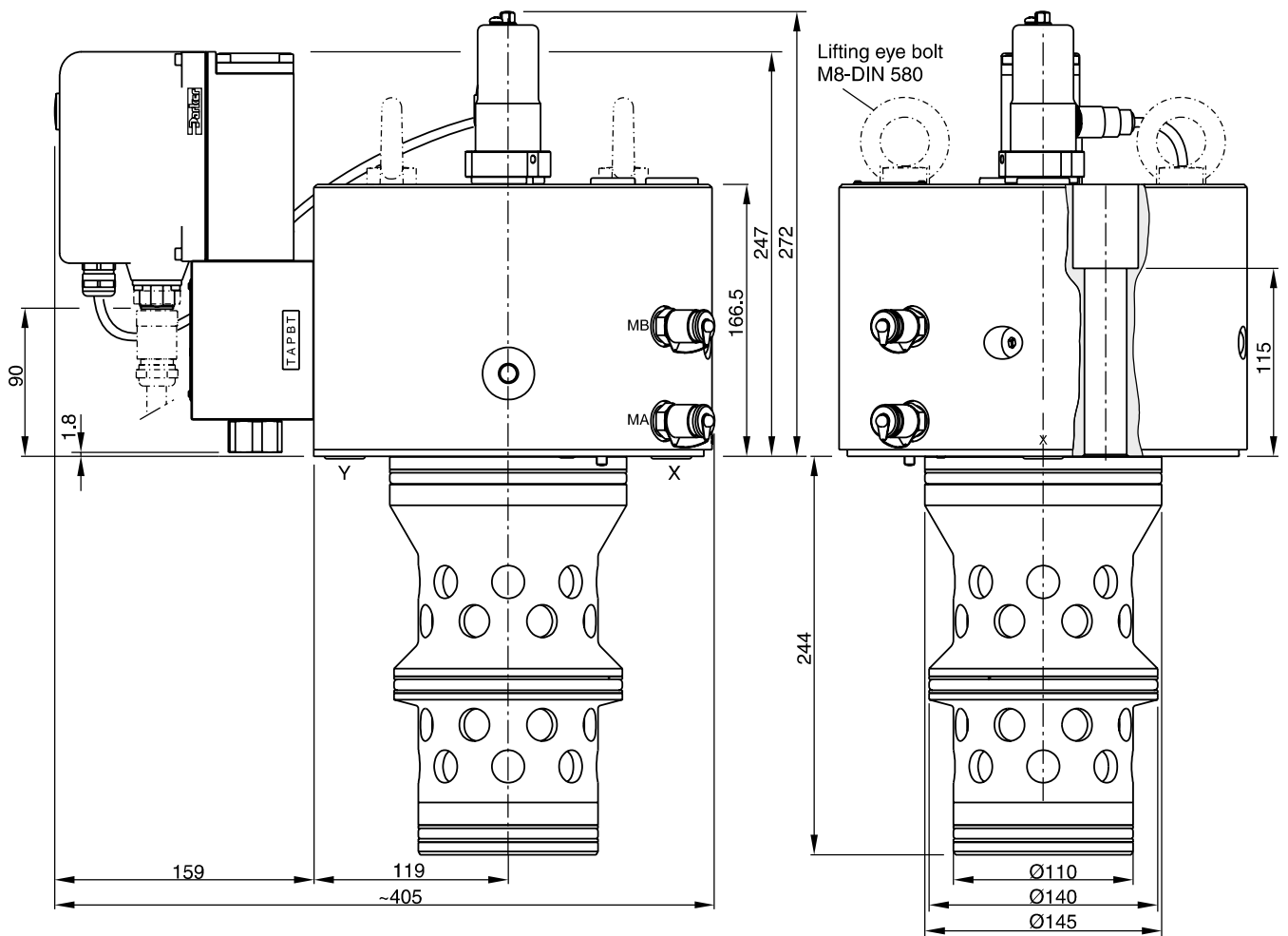
NG80

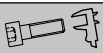



Accu port
 XX = G3/4"

Suction port
 SP = G1/2"

Ports
 MA and MB = G1/4"

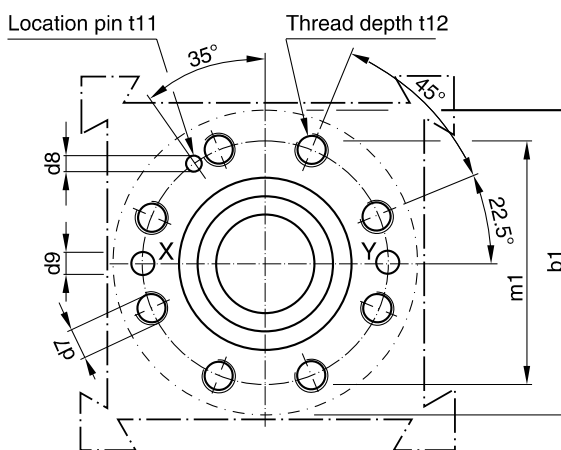
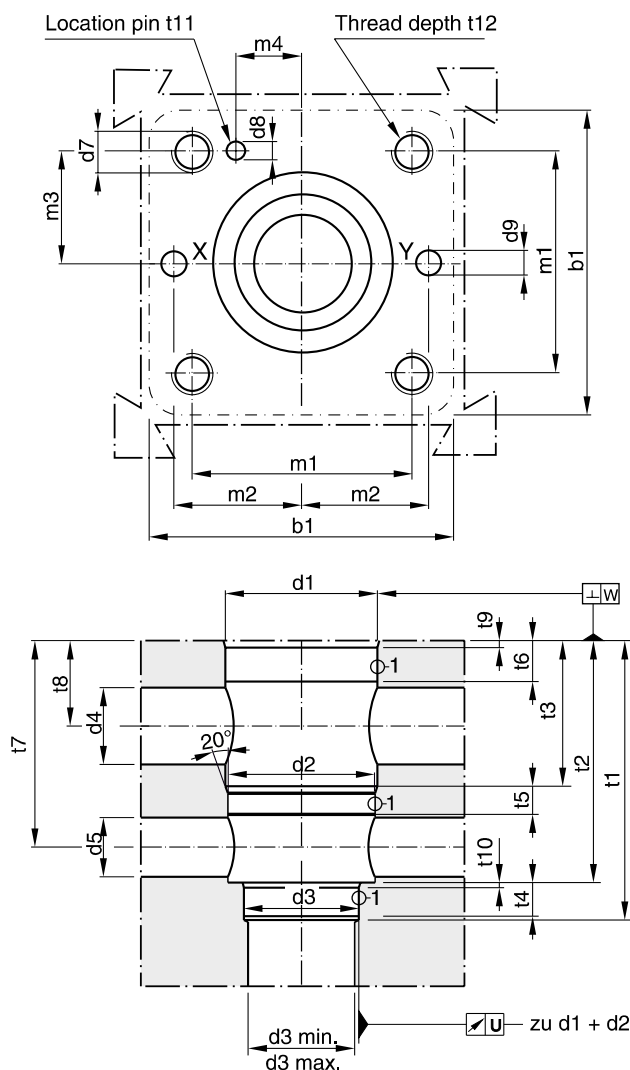


NG	Bolt kit - 		NBR	Kit	FPM
80	BK530 8x M24x160 ISO 4762-12.9	890 Nm	SK-TPQ080EN30		SK-TPQ080EV30

Dimensions

NG32 to NG63

NG80



Required surface finish:

$$\sqrt{R_{\max} 25}, \textcircled{1} = \sqrt{R_{\max} 8}$$

8

Size	b1	d1 H7	d2 H7	d3 H7	d3 min.	d3 max.	d4 max.	d5 max.	d7	d8 H13	d9	U	W
25	85	45	43	34	17	25	25	21	M 12	4	7.5	0.03	0.05
32	102	60	58	55	32	54	28	28	M 16	6	8	0.03	0.1
40	125	75	73	55	40	54	38	32	M 20	6	10	0.05	0.1
50	140	90	87	68	50	67	63	38	M 20	8	10	0.05	0.1
63	180	120	116	90	63	89	64	52	M 30	8	12	0.05	0.2
80	250	145	140	110	80	109	70	66	M 24	10	16	0.05	0.2

Size	m1 ±0.2	m2 ±0.2	m3 ±0.2	m4 ±0.2	t1 +3 / +1	t2 ±0.2	t3 ±0.2	t4	t5	t6	t7 ±0.2	t8 ±0.2	t9	t10	t11	t12
25	58	33	29	16	103	89 +0.3	56	11.5	15	17	78	43.5	2.5x15°	2.5x15°	10	35
32	70	41	35	17	100	85	43	13.5	16	18	71	28.5	2.5x15°	2.5x15°	10	35
40	85	50	42.5	23	125	105	54	15	18	21	88	34	3x15°	3x15°	10	45
50	100	58	50	30	165	143	84.5	18	18	21	122	51.5	4x15°	3x15°	10	45
63	125	75	62.5	38	195	165	83.5	25	29.5	33	138.5	50	4x15°	4x15°	10	65
80	200	-	-	-	245	215	123	25	27	60	181	87	5x15°	5x15°	10	50