

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.

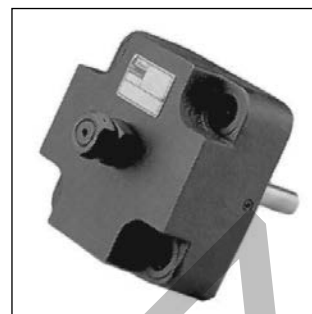
Series CE offers poppet and sleeve combinations for directional functions. Series CP offers a cartridge for pressure functions and has to be combined with corresponding covers.

Features

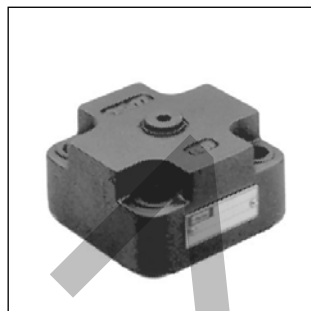
- Installation cavity and mounting pattern according to ISO 7368
- 5 poppet shapes
- 5 poppet springs
- Optional seal between ports B and C
- Cover with adjustable stroke limitation
- Cover with mounting pattern for pilot valve assembly
- Combinations for complex functions
- Normally open cartridge (CE*F*)



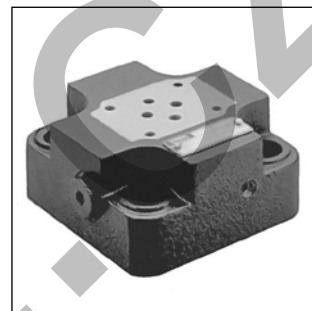
CE



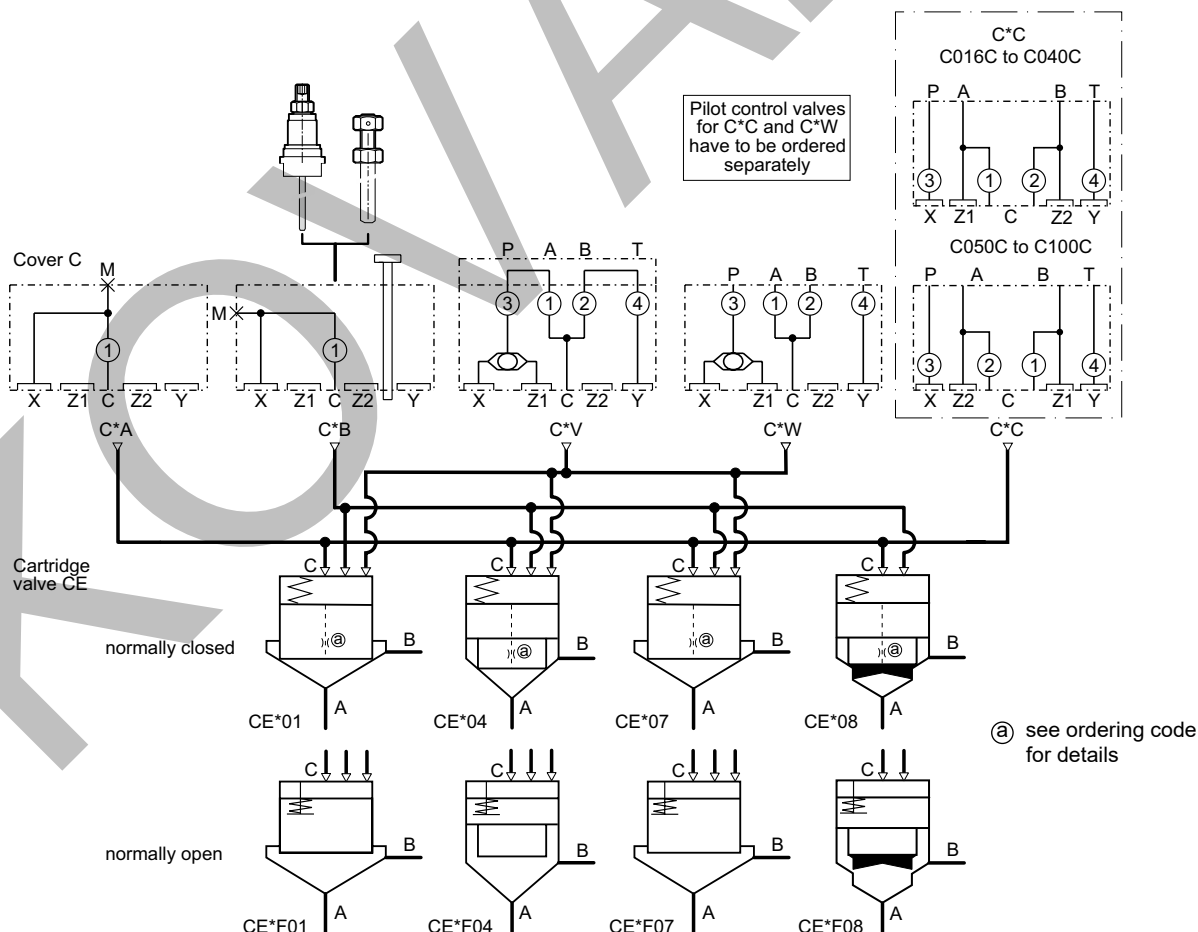
C*B



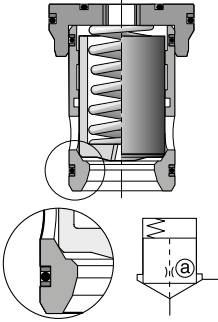
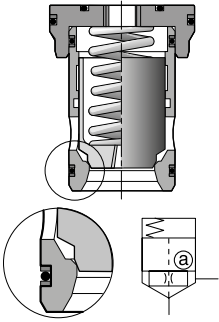
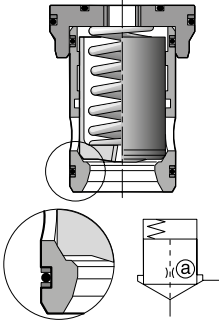
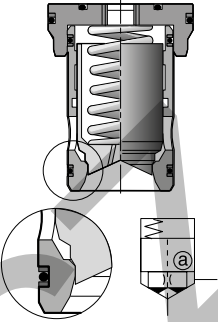
C*A



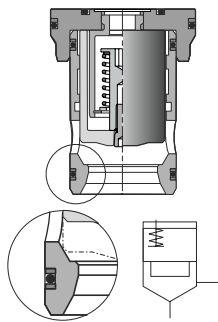
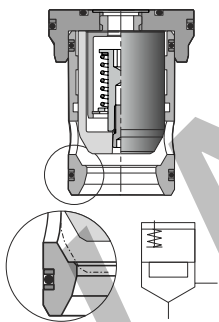
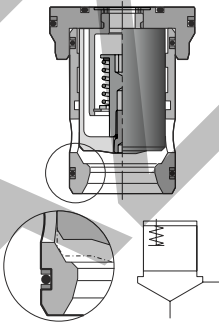
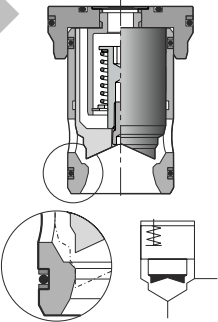
C*C

Pilot control for directional functions

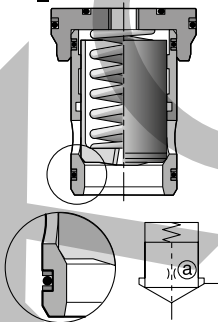
**Cartridge valve for directional function
normally closed**

<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>

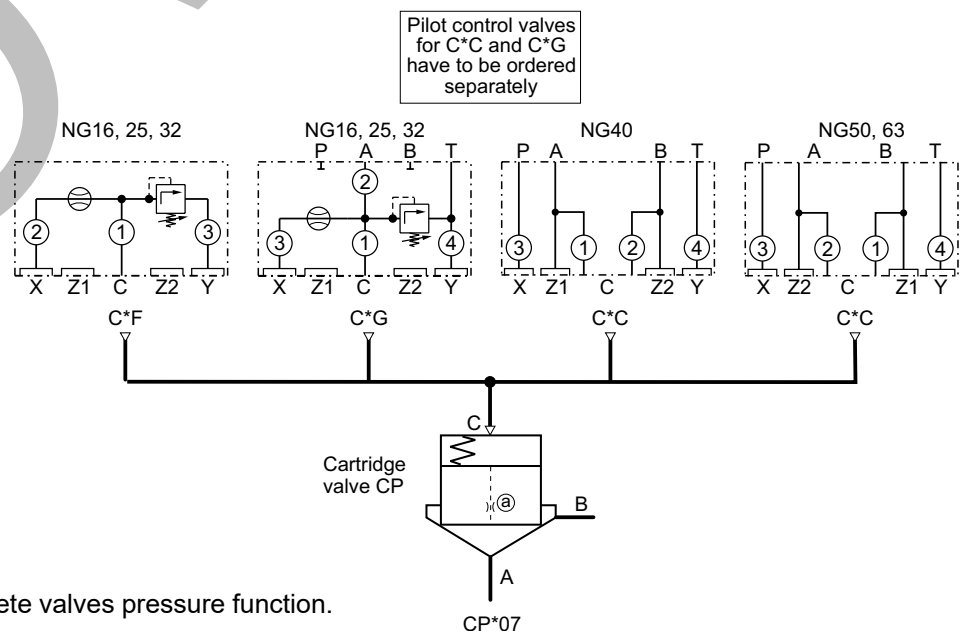
Normally open

<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>

**Cartridge valve for
pressure function**

<p>CP*_07</p> 
<p>1 : 1.04 $A_A = 0.96 A_C$ normally closed</p>

Pilot control for pressure function



Characteristic curves see complete valves pressure function.

Ordering Code

2-Way Slip-In Cartridge Valves
Series CE, CP, C

CE

Cartridge Nominal size Design Poppet area ratio Spring 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	Normal position	Description
C	Closed	No poppet sealing
S ¹⁾	Closed	With poppet sealing
F ^{2) 3)}	Open	No poppet sealing

Code	Poppet area ratio
01	$A_A = A_C$
04	$A_A = 0.6A_C, A_B = 0.4A_C$
07 ³⁾	$A_A = 0.96A_C$
08	$A_A = 0.6A_C, A_B = 0.4A_C$ with dampening

Code	Seal
N	NBR
V	FPM

Code	Size	Poppet	Orifice ⁴⁾
99	all	all	without orifice, open
00	NG16-NG50	01, 04	closed bottom
	NG16-NG50	07	plug
	NG16-NG32	08	closed bottom
	NG40-NG50		plug
	NG63-NG100	all	plug

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

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.

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CP

Cartridge Nominal size Design Poppet area ratio $A_A = 0.96A_C$ Spring Orifice Seal Design series (not required for ordering)

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

Code	Normal position	Description
C	Closed	No poppet sealing
S	Closed	With poppet sealing

Code	Spring
S	Opening pressure 1.6 bar
T	Opening pressure 2.5 bar
U	Opening pressure 4.0 bar

Code	Seal
N	NBR
V	FPM

Code	Orifice ¹⁾
00	Plug
09	0.9 mm for NG16
11	1.1 mm for NG25
12	1.2 mm for NG32
13	1.3 mm for NG40
14	1.4 mm for NG50
15	1.5 mm for NG63

Bold letters =
Short-term availability

¹⁾ Recommended diameter.

For spare parts see "Accessories" in this chapter.

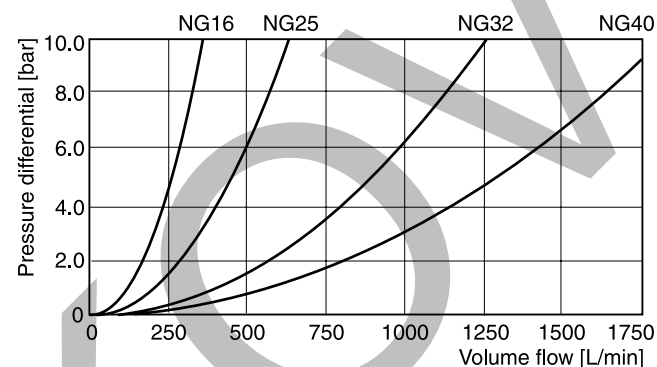
For orifice recommendations see "Combination Examples" in this chapter.

Technical data

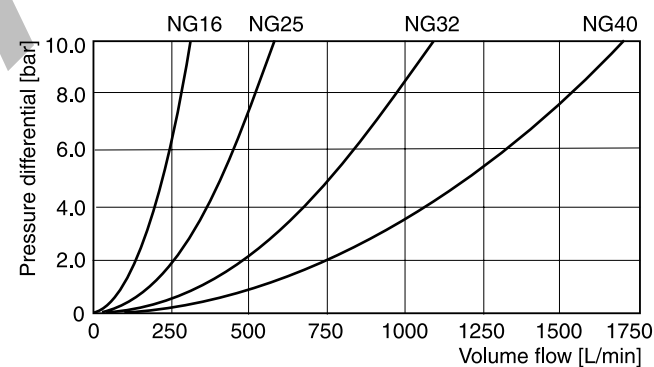
General											
Design type			2-way slip-in cartridge valves according to ISO 7368								
Actuation			hydraulic								
Mounting position			unrestricted								
Ambient temperature			[C°]	-20....+60							
MTTF _D value			[years]	150							
Nominal size				NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100
Weight	cartridge	[kg]		0.3	0.6	1.1	1.7	3.7	5.5	12.8	27
Hydraulic											
Operating pressure	slip-in valve	[bar]	420								
	valve cover	[bar]	350								
	port A, B, X, Z1, Z2	[bar]	350								
	port Y	[bar]	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	[cm³]	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	[mm²/s]	20...400								
	recommended	[mm²/s]	30...80								
Filtration			ISO 4406 (1999); 18/16/13								

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

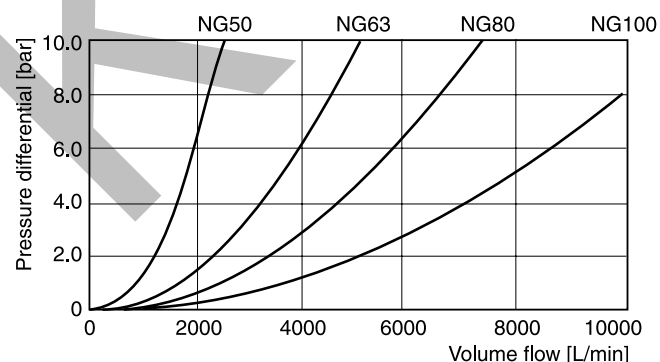
Poppet 01, 04, 07



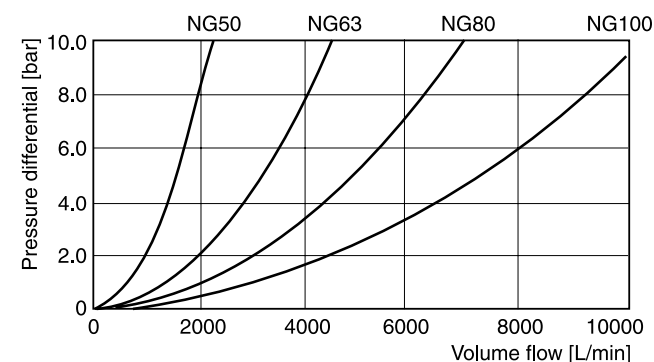
Poppet 08



Poppet 01, 04, 07



Poppet 08



All characteristic curves measured with HLP46 at 50 °C.

CE-C UK.INDD 18.10.22

C		A	A			
Cover	Nominal size	Cover with X-connection and gauge port G $\frac{1}{4}$ "	Without auxiliary function	Orifice	Seal	Design series (not required for ordering)

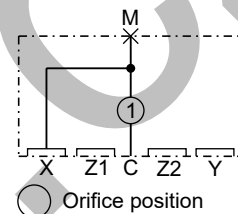
Code	Size
016	NG16
025	NG25
032	NG32
040	NG40
050	NG50
063	NG63
080	NG80
100	NG100

Code	Seal
N	NBR
V	FPM

Code	Orifice
99	Without orifice, open

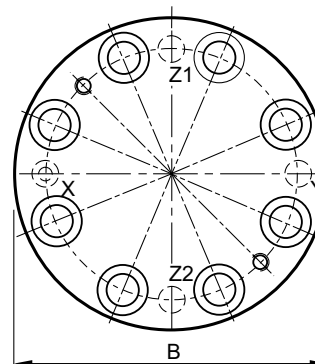
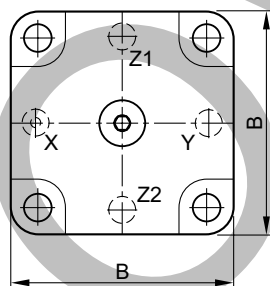
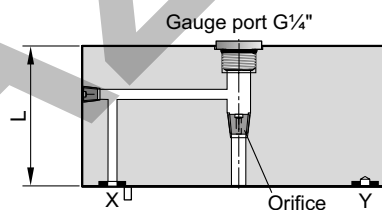
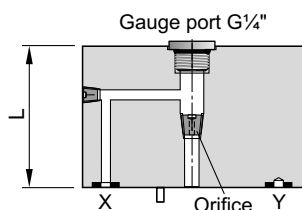
For orifice recommendations, bolt and seal kits see "Accessories" in this chapter.

Bold letters =
Short-term availability



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	16.6
NG80	Ø 250	105	1/8 NPT	34
NG100	Ø 300	120	1/8 NPT	58

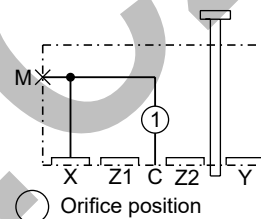
		C		B	N				
		Cover	Nominal size	Cover with X-connection and stroke limiter	Adjustment screw/spindle	Orifice	Seal	Design series (not required for ordering)	
Code	Size								
016	NG16								
025	NG25								
032	NG32								
040	NG40								
050	NG50								
063	NG63								

Code	Seal
N	NBR
V	FPM

Code	Orifice
99	Without orifice, open

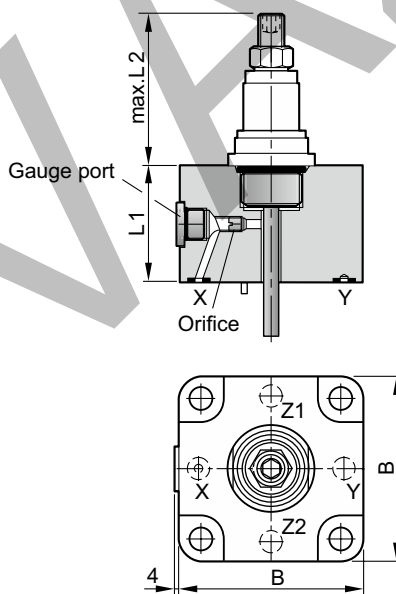
For orifice recommendations, bolt and seal kits see "Accessories" in this chapter.

Bold letters =
Short-term availability



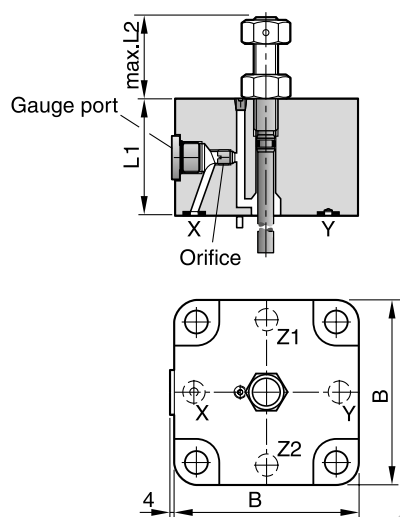
Please note: stroke limiter must not be used for shutting off the cartridge valve. Blocking the cartridge valve in closed position can cause mechanical damage to the stroke limiter and malfunction of the valve.

Dimensions NG16 - NG25

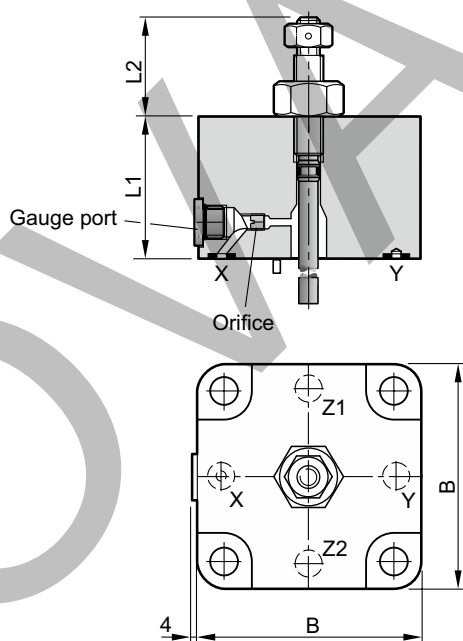


Ports Y, Z1 and Z2: O-ring recess diameter on valve body

Size	B	L1	L2 max.	Gauge port	Orifice thread	Weight [kg]
NG16	65	36	72	G $\frac{1}{8}$ "	M6	0.9
NG25	85	45	72	G $\frac{1}{4}$ "	M6	1.9

Dimensions NG32 - NG50

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

Dimensions NG63

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	G $\frac{1}{4}$ "	1/16 NPT	2.91
NG40	125	60	50	G $\frac{1}{4}$ "	1/16 NPT	5.39
NG50	140	70	50	G $\frac{1}{4}$ "	1/16 NPT	8.41
NG63	180	85	65	G $\frac{1}{4}$ "	1/8 NPT	15.1

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
00	Plug

Attention:

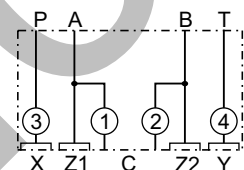
For NG50 and larger:

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.

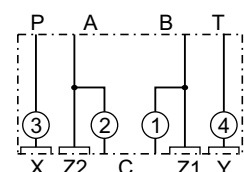
For orifice recommendations, bolt and seal kits see
"Accessories" in this chapter.

Bold letters =
Short-term availability

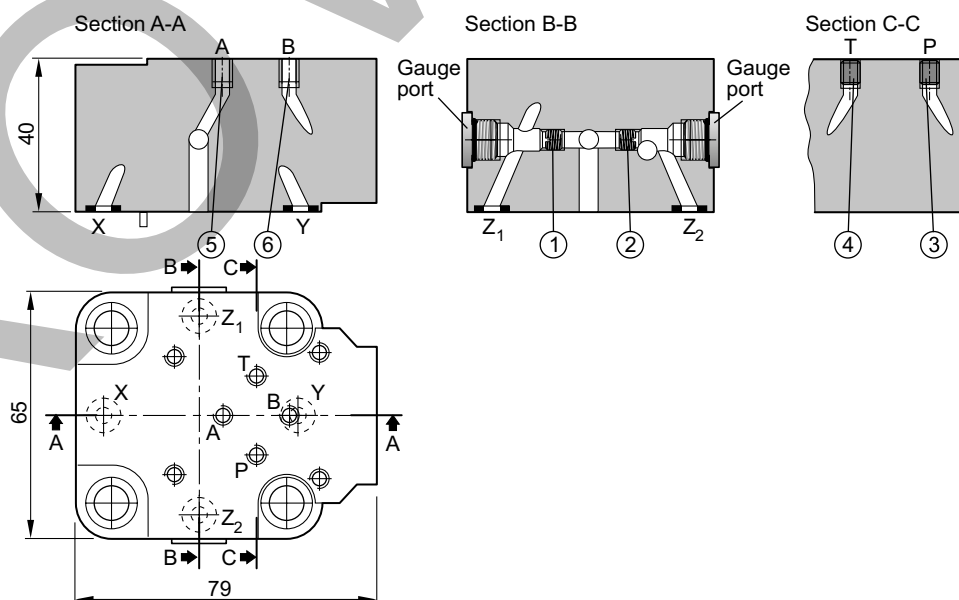
NG16 to NG40



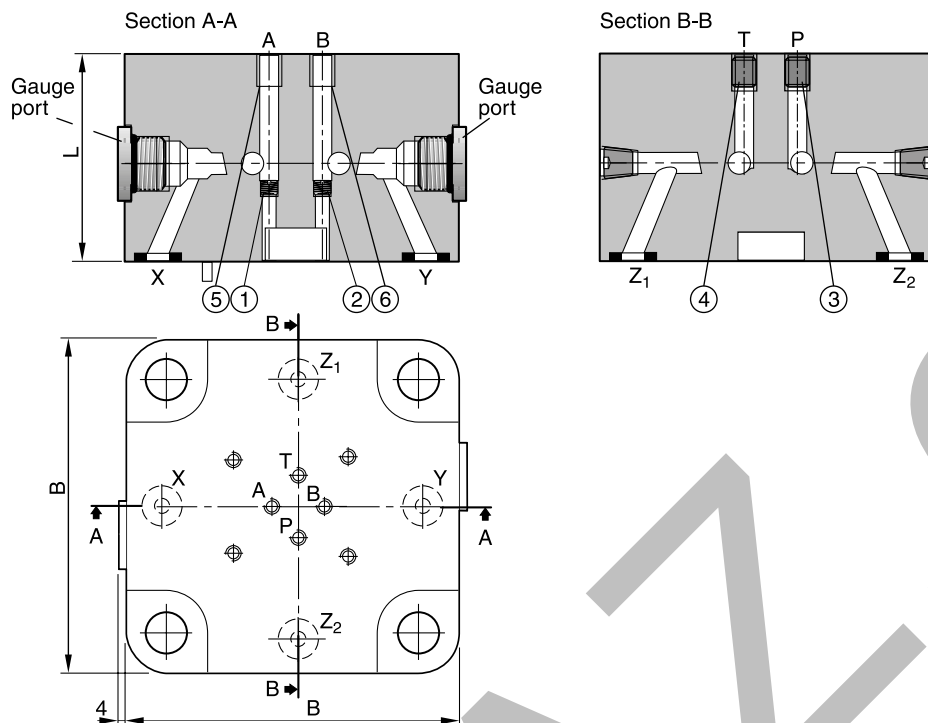
NG50 to NG100



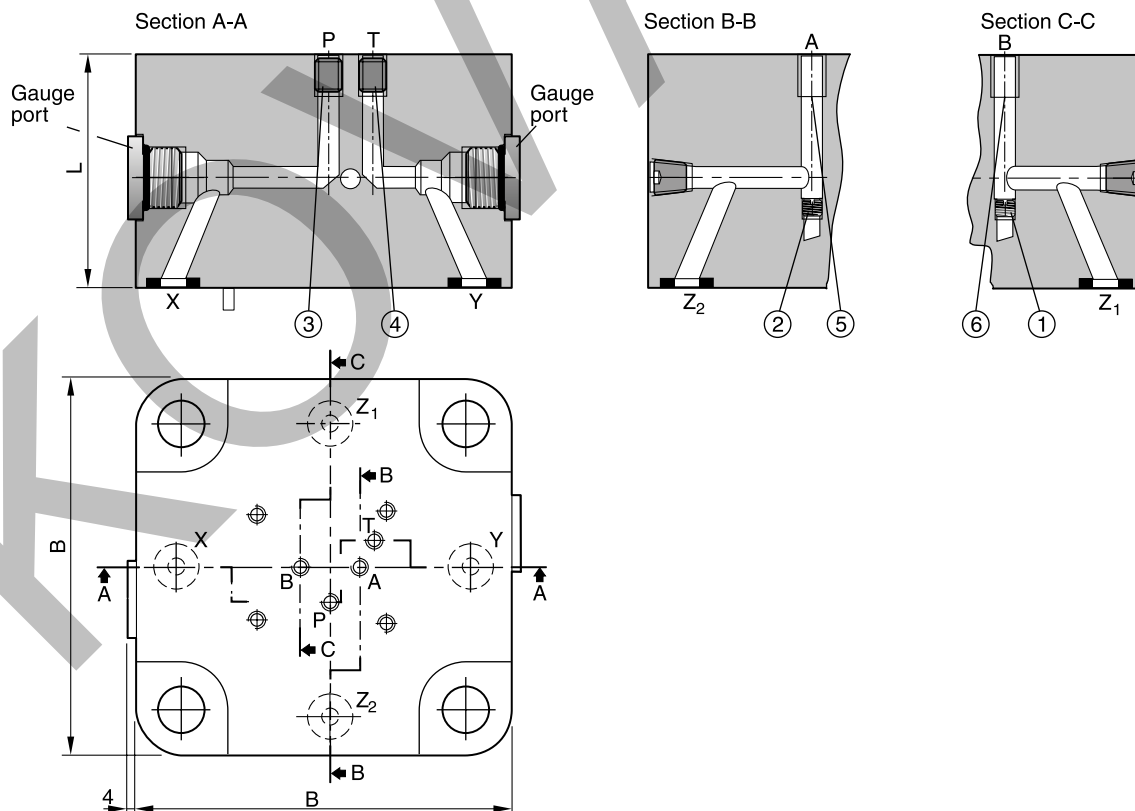
○ Orifice position

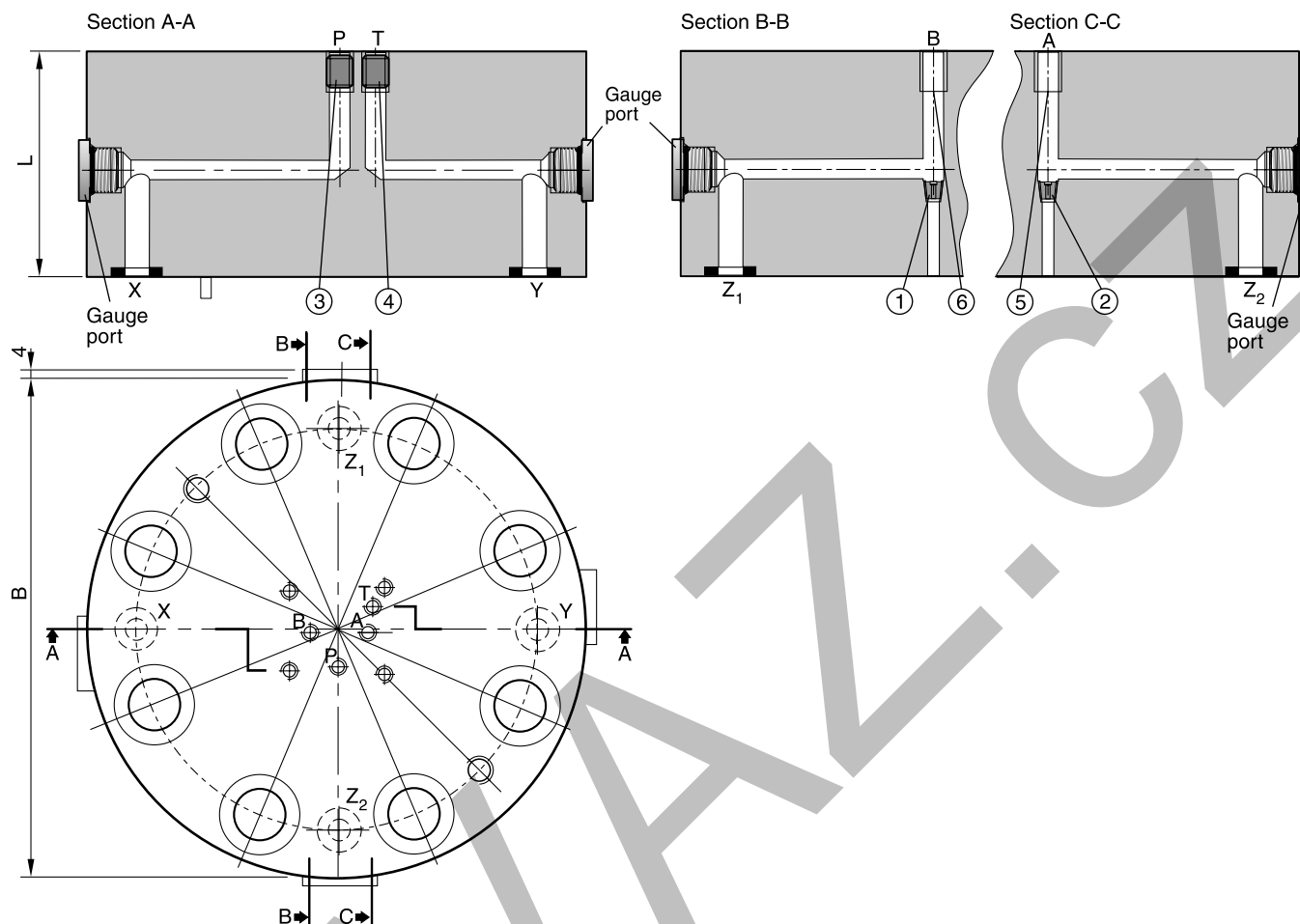
Dimensions NG16

Dimensions NG25 to NG40



Dimensions NG50 to NG63



Dimensions NG80 to NG100

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

¹⁾ Width 65 mm.

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

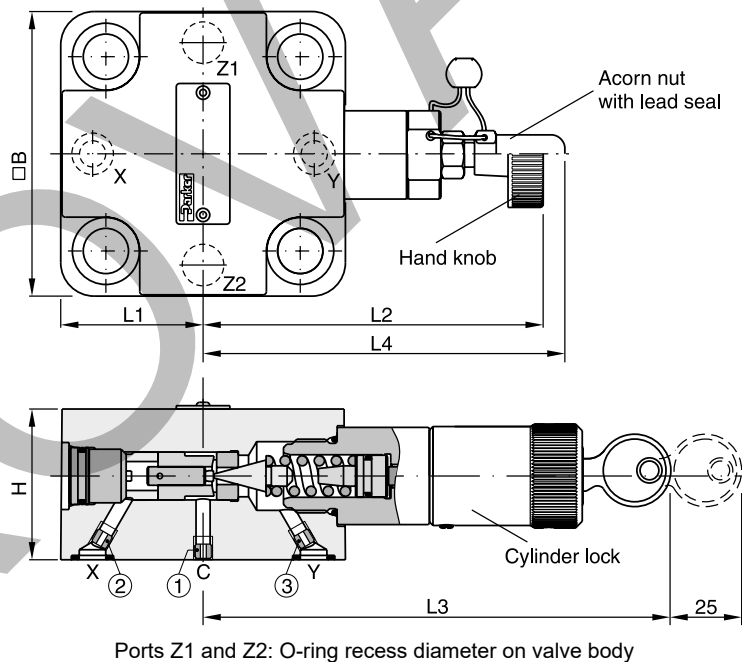
Code	Orifice
99	Without orifice, open

Orifice position

Bold letters =
Short-term availability

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

Dimensions



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.

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

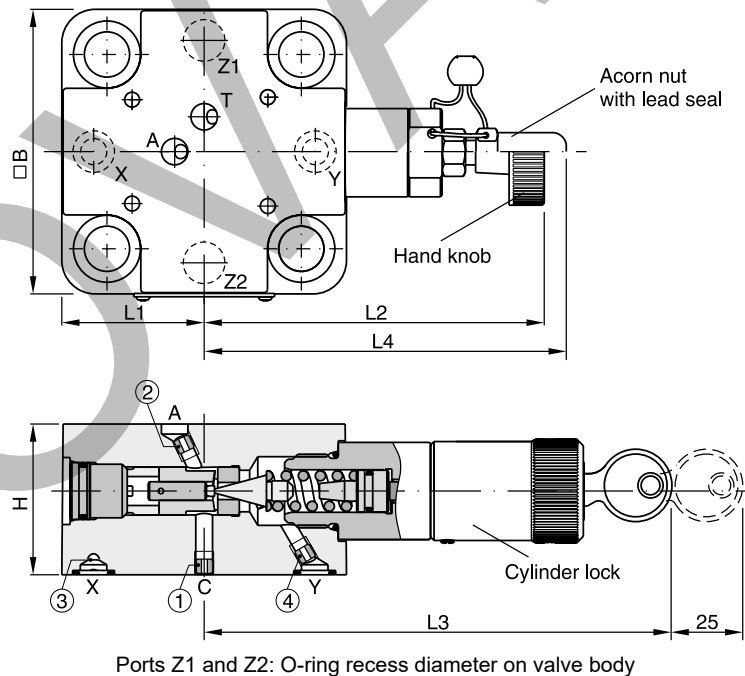
Code	Orifice
99	Without orifice, open

Bold letters = Short-term availability

○ Orifice position

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

Dimensions



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

C		V	A	①	②	③	④		
Cover	Nominal size	Cover with shuttle valve	w/o additional option	Orifice / choke				Seal	Design series (not required for ordering)

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

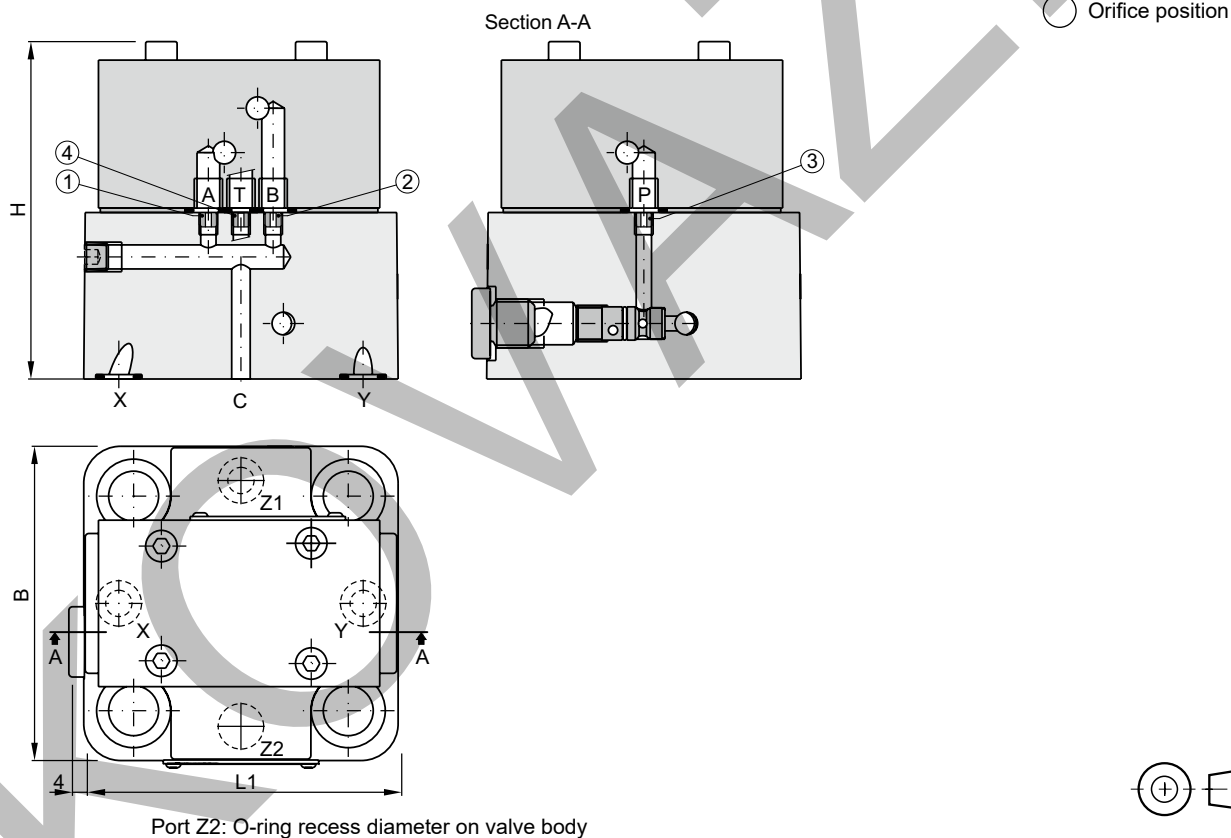
Bold letters = Short-term availability

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



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

Ordering code structure:

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

Nominal size: **016**, **025**, **032**, **040**, **050**, **063**

Orifice / choke: ①, ②, ③, ④

Seal: **N** (NBR), **V** (FPM)

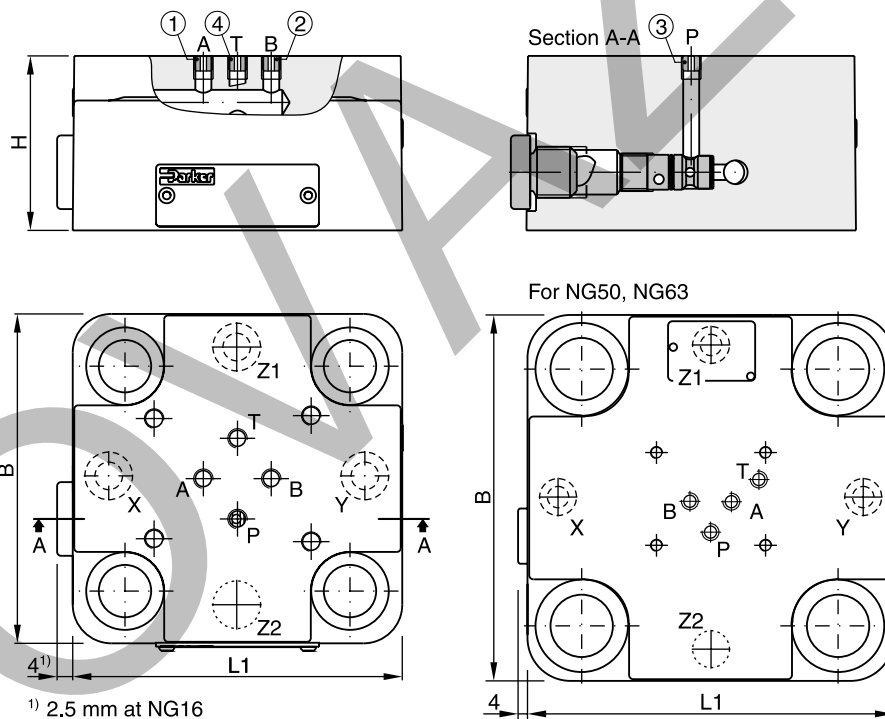
Design series (not required for ordering): **99** Without orifice, open

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



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