

**General Description**

Series CE, CP and C 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.
- One sleeve only for all poppets.
- 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\*F04).



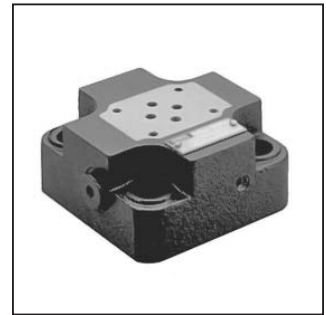
CE



C\*B

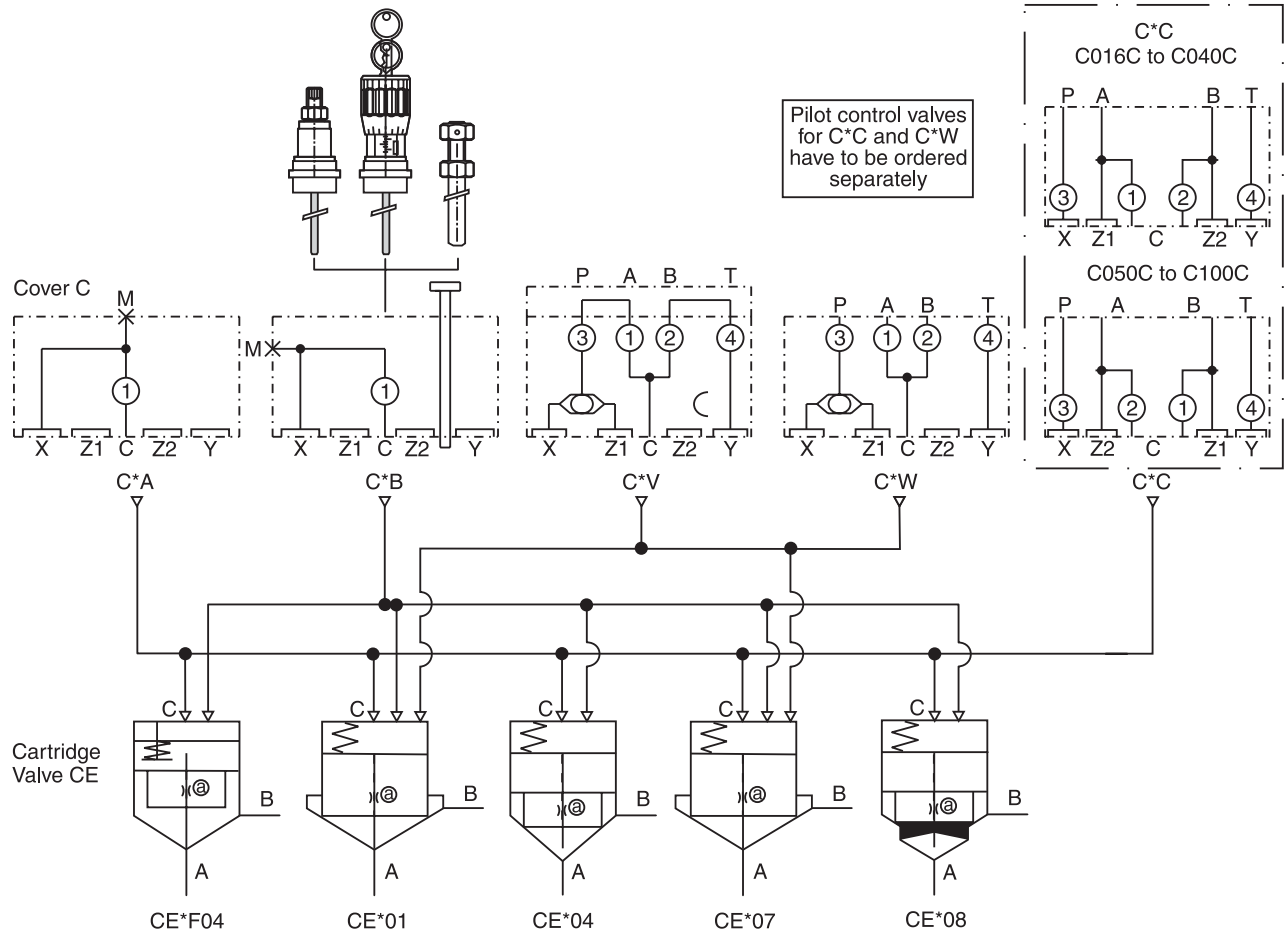


C\*A

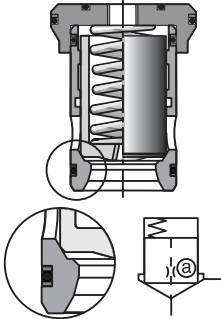
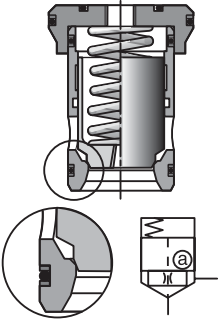
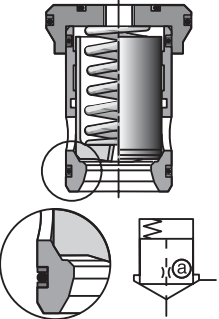
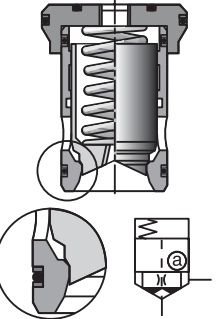
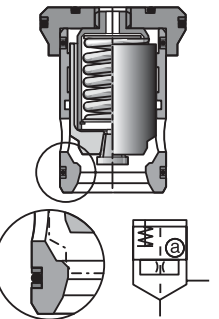


C\*C

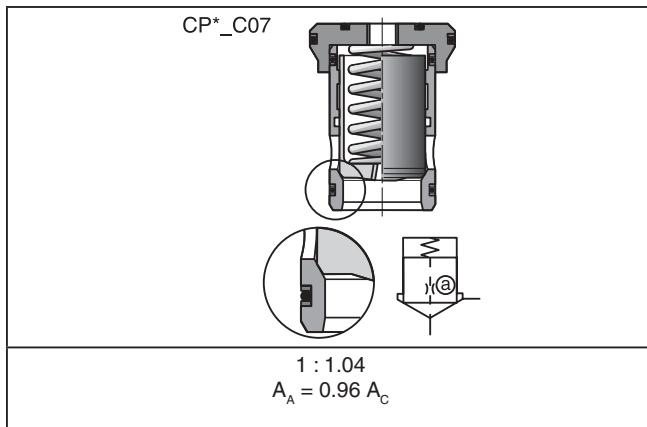
**Pilot Control for Directional Functions**



**Cartridge Valve for Directional Function**

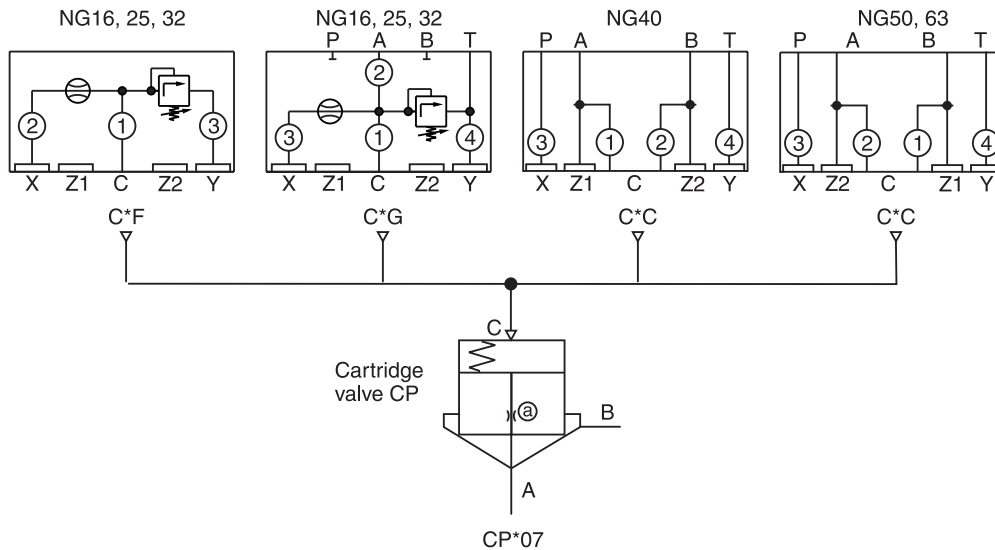
 <p>CE*_01</p>	 <p>CE*_04</p>	 <p>CE*_07</p>	 <p>CE*_08</p>	 <p>CE*F04</p>
<p>1 : 1  <math>A_A = A_C</math></p>	<p>1 : 1.67  <math>A_A = 0.6 A_C</math>  <math>A_B = 0.4 A_C</math></p>	<p>1 : 1.04  <math>A_A = 0.96 A_C</math></p>	<p>1 : 1.67  <math>A_A = 0.6 A_C</math>  <math>A_B = 0.4 A_C</math>                      dampening poppet</p>	<p>1 : 1.67  <math>A_A = 0.6 A_C</math>  <math>A_B = 0.4 A_C</math>                      normally open</p>

**Cartridge Valve for Pressure Function**



**Pilot Control for Pressure Function**

Pilot control valves for C\*C and C\*G have to be ordered separately



**CE**  
 Cartridge

Nominal Size

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

Design

Code	Normal Position	Description
C	Closed	No Poppet Sealing
S <sup>1)</sup>	Closed	With Poppet Sealing
F <sup>2)</sup>	Open	No Poppet Sealing

<sup>1)</sup> Only for spring S and U.  
<sup>2)</sup> Only with spring code L

Poppet Area Ratio

Code	Poppet Area Ratio
01	$A_A = A_C$
04	$A_A = 0.6A_C, A_B = 0.4A_C$
07 <sup>3)</sup>	$A_A = 0.96A_C$
08	$A_A = 0.6A_C, A_B = 0.4A_C$ with dampening

<sup>3)</sup> Not for NG80 and NG100

Spring

Code	Description
L	Opening Pressure 0.1 Bar (1.45 PSI)
N	Opening Pressure 0.5 Bar (7.25 PSI)
S	Opening Pressure 1.6 Bar (23.2 PSI)
T	Opening Pressure 2.5 Bar (36.3 PSI)
U	Opening Pressure 4.0 Bar (58.0 PSI)

Orifice

Code	Size	Poppet	Description
99	All	All	Without Orifice, Open
00	All	01	Orifice Optional <sup>4)</sup>
00	All	04, 07, 08	Plugged, Closed

<sup>4)</sup> Orifice size in 1/10 mm, eg. 1.2 mm orifice - code 12  
 Thread size 1/16 NPTF

Seals

Code	Description
N	Nitrile
V	Fluorocarbon

Design Series not required for ordering

**Weight:**

CE016	0.3 kg (0.7 lbs.)
CE025	0.6 kg (1.3 lbs.)
CE032	1.1 kg (2.4 lbs.)
CE040	1.7 kg (3.7 lbs.)
CE050	3.7 kg (8.2 lbs.)
CE063	7.1 kg (15.7 lbs.)
CE080	12.8 kg (28.2 lbs.)
CE100	27.0 kg (59.5 lbs.)

**CP**  
 Cartridge

Nominal Size

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

Design

Code	Normal Position	Description
C	Closed	No Poppet Sealing
S	Closed	With Poppet Sealing

Poppet Area Ratio

07  
 $A_A = 0.96A_C$

Spring

Code	Description
S	Opening Pressure 1.6 Bar (23.2 PSI)
T	Opening Pressure 2.5 Bar (36.3 PSI)
U	Opening Pressure 4.0 Bar (58.0 PSI)

Orifice<sup>1)</sup>

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

<sup>1)</sup> Recommended diameter

Seals

Code	Description
N	Nitrile
V	Fluorocarbon

Design Series not required for ordering

**Weight:**

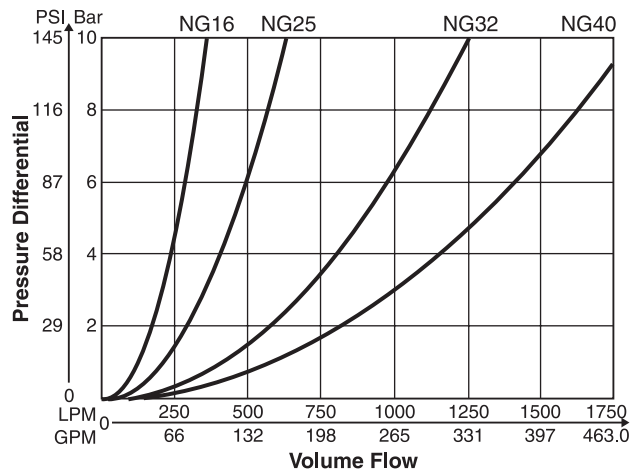
CP016	0.3 kg (0.7 lbs.)
CP025	0.6 kg (1.3 lbs.)
CP032	1.1 kg (2.4 lbs.)
CP040	1.7 kg (3.7 lbs.)
CP050	3.7 kg (8.2 lbs.)
CP063	7.1 kg (15.7 lbs.)

## Specifications

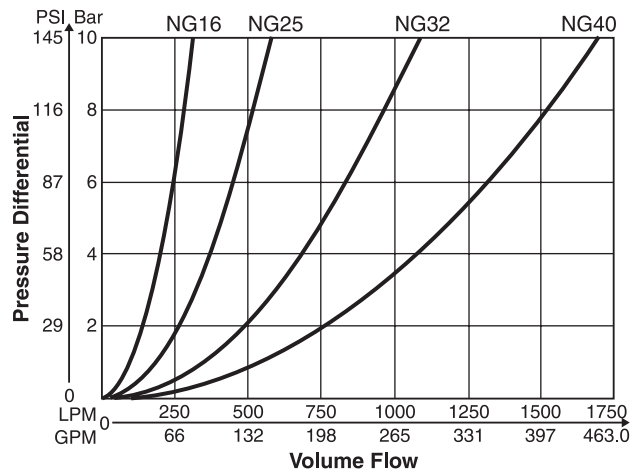
Slip-in Cartridge Valves  
Series CE, CP

General									
Interface	2-way slip-in cartridge valves according to ISO 7368								
Operation	Hydraulic								
Mounting Position	Unrestricted								
Ambient Temperature	-40°C to +60°C (-40°F to +140°F)								
Hydraulic									
Fluid	Hydraulic fluid according to DIN 51 524...525								
Viscosity Recommended	30 to 80 cSt (mm <sup>2</sup> /s)								
Viscosity Permitted	20 to 380 cSt (mm <sup>2</sup> /s)								
Fluid Temperature	-20°C to +60°C (-4°F to +140°F)								
Max. Contamination	ISO 4406 (1999); 18/16/13 (meet NAS 1638:7)								
Operating Pressure	420 Bar (6090 PSI) without pilot valve								
	Ports A, B, X, Z1, Z2: 350 Bar (5075 PSI), 420 Bar (6090 PSI) (depending on p <sub>max</sub> of pilot valves)								
	Port Y: 350 Bar (5075 PSI), according to pilot system, maximum (depending on p <sub>max</sub> of pilot valves)								
Nominal Size	NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100	
Nominal Flow at Δp 5 Bar (73 PSI)	LPM (GPM)	LPM (GPM)	LPM (GPM)	LPM (GPM)	LPM (GPM)	LPM (GPM)	LPM (GPM)	LPM (GPM)	
	poppet 01, 04, 07	250 (66)	450 (119)	900 (238)	1350 (357)	1800 (476)	3600 (952)	5250 (1576)	8000 (2116)
	poppet 08	230 (61)	400 (106)	800 (212)	1250 (331)	1625 (430)	3400 (900)	5000 (1323)	7500 (1984)
Pilot Volume Requirement	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	
	at poppet 01	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	Poppet 01 / 07		spring:	L = 0.1 Bar (1.5 PSI)	N = 0.5 Bar (7.3 PSI)	S = 1.6 Bar (23.2 PSI)	T = 2.5 Bar (36.3 PSI)	U = 4.0 Bar (58.0 PSI)	
	Poppet 04 / 08		spring:	L = 0.2 Bar (2.9 PSI)	N = 0.9 Bar (13.1 PSI)	S = 2.7 Bar (39.2 PSI)	T = 4.0 Bar (58.0 PSI)	U = 6.6 Bar (95.7 PSI)	
Opening Pressure	Poppet 01 / 07		not possible						
	Poppet 04 / 08		spring:	L = 0.3 Bar (4.4 PSI)	N = 1.3 Bar (18.9 PSI)	S = 4.0 Bar (58.0 PSI)	T = 6.3 Bar (91.4 PSI)	U = 10.0 Bar (145.0 PSI)	

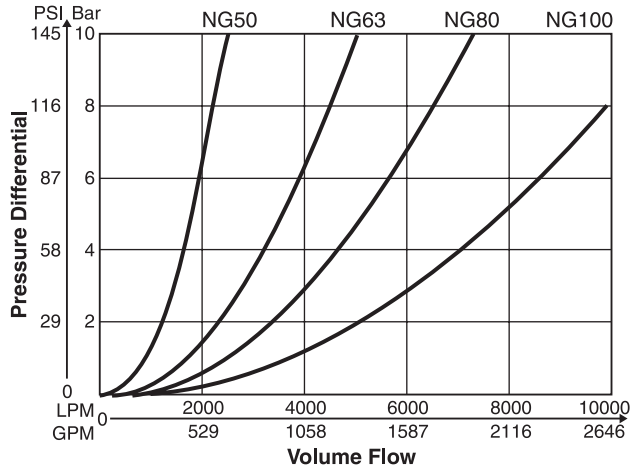
**Poppet 01, 04, 07\***



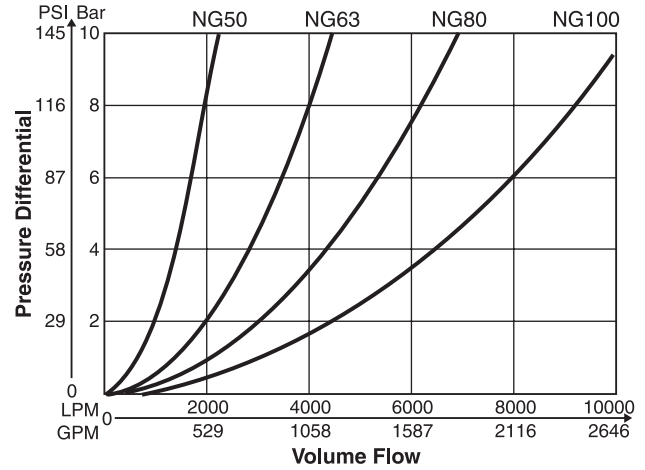
**Poppet 08\***



**Poppet 01, 04, 07\***



**Poppet 08\***



\* without spring and poppet seal, C-chamber unloaded

**Ordering Information**

**C**  
Cover

Nominal Size

**A**  
Cover with X-Connection and Gauge Port G1/4"

**A**  
Without Auxiliary Function

Orifice

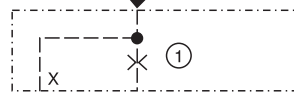
Seals

Design Series not required for ordering

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

Code	Description
N	Nitrile
V	Fluorocarbon

Code	Description
99	Without Orifice, Open Orifice Options



○ Orifice position

**Weight:**

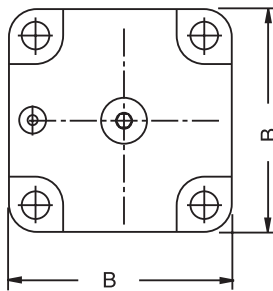
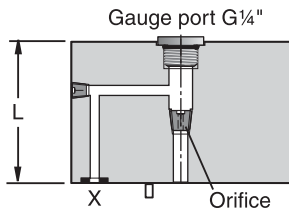
C016A	0.9 kg (2.0 lbs.)
C025A	1.9 kg (4.2 lbs.)
C032A	2.9 kg (6.4 lbs.)
C040A	5.3 kg (11.7 lbs.)
C050A	8.5 kg (18.7 lbs.)
C063A	15.5 kg (34.2 lbs.)
C080A	34.0 kg (75.0 lbs.)
C100A	58.0 kg (127.9 lbs.)

For orifice recommendations, bolt and seal kits, see Accessories.

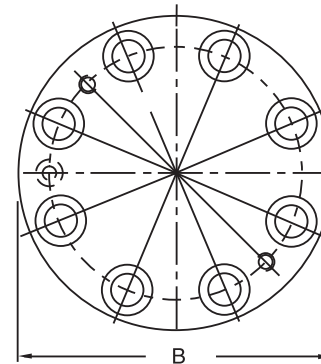
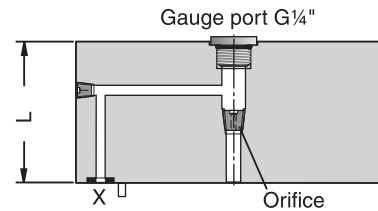
**Dimensions**

Inch equivalents for millimeter dimensions are shown in (\*\*)

**NG16 to NG63**



**NG80 to NG100**



Size	B	L	Orifice Thread
NG16	65.0 (2.56)	36.0 (1.42)	1/16 NPT
NG25	85.0 (3.35)	45.0 (1.77)	1/16 NPT
NG32	102.0 (4.02)	50.0 (1.97)	1/16 NPT
NG40	125.0 (4.92)	60.0 (2.36)	1/8 NPT
NG50	140.0 (5.51)	70.0 (2.76)	1/8 NPT
NG63	180.0 (7.09)	85.0 (3.35)	1/8 NPT
NG80	Ø250.0 (9.84)	105.0 (4.13)	1/8 NPT
NG100	Ø300.0 (11.81)	120.0 (4.72)	1/8 NPT

**Ordering Information**

<b>C</b> Cover	Nominal Size	<b>B</b> Cover with X-Connection and Stroke Limiter	Adjustment	Orifice	Seals	Design Series not required for ordering
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Code	Description
016	NG16
025	NG25
032	NG32
040	NG40
050	NG50
063	NG63
080	NG80
100	NG100

Code	Description
N	Screw / Spindle
Y	Knob E10 lock, only NG16-NG50

Code	Description
N	Nitrile
V	Fluorocarbon

Code	Description
99	Without Orifice, Open Orifice Options

**Weight:**

C016B	0.9 kg (2.0 lbs.)
C025B	1.9 kg (4.2 lbs.)
C032B	2.9 kg (6.4 lbs.)
C040B	5.4 kg (11.9 lbs.)
C050B	8.4 kg (18.5 lbs.)
C063B	15.1 kg (33.3 lbs.)
C080B	34.0 kg (75.0 lbs.)
C100B	60.0 kg (132.3 lbs.)

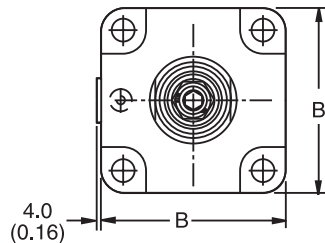
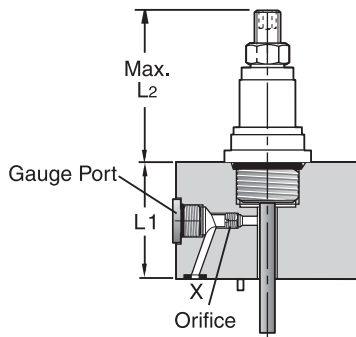
○ Orifice position

For orifice recommendations, bolt and seal kits, see Accessories.

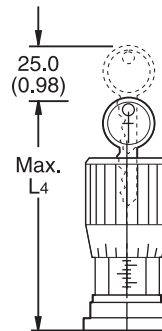
**Dimensions**

Inch equivalents for millimeter dimensions are shown in (\*\*)

**NG16 to NG25 - Adjustment N**



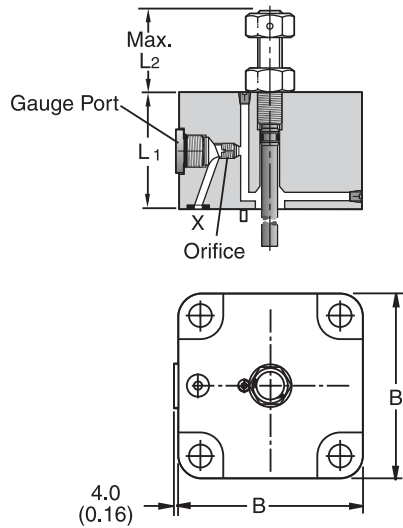
**Adjustment Y**



Size	B	L1	L2 max.	L4 max.	Gauge Port	Orifice Thread
NG16	65.0 (2.56)	36.0 (1.42)	72.0 (2.83)	100.0 (3.94)	G 1/4"	M6
NG25	85.0 (3.35)	45.0 (1.77)	72.0 (2.83)	100.0 (3.94)		

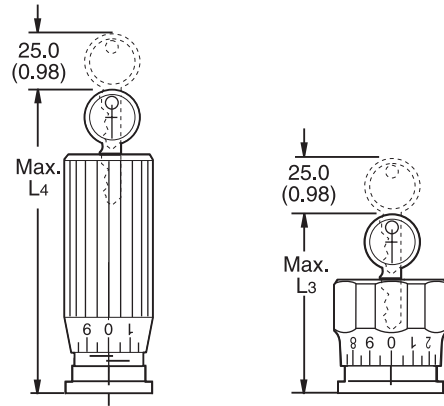
Inch equivalents for millimeter dimensions are shown in (\*\*)

**NG32 to NG50  
Adjustment N**

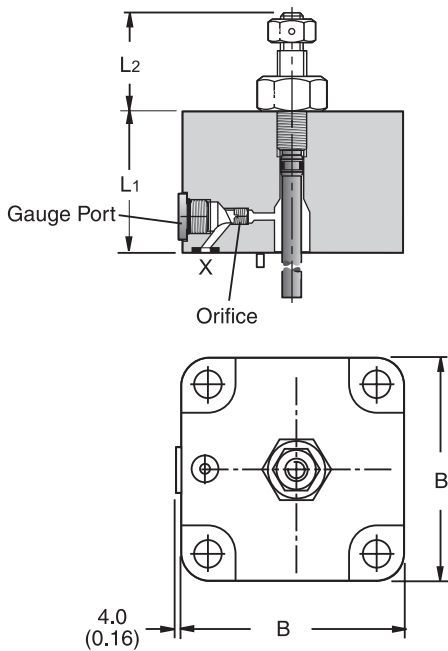


**Adjustment Y (NG32)**

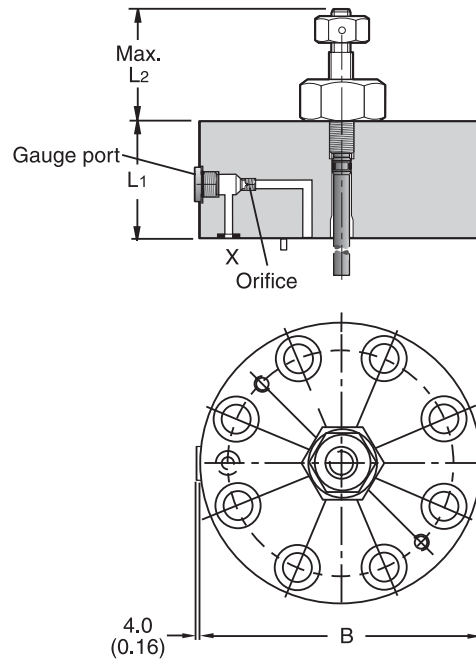
**Adjustment Y (NG40/50)**



**NG63  
Adjustment N**



**NG80 to 100  
Adjustment N**



Size	B	L1	L2 max.	L3	L4 max.	Gauge Port	Orifice Thread
NG32	102.0 (4.02)	50.0 (1.97)	48.0 (1.89)	—	141.0 (5.50)	G¼"	1/16 NPT
NG40	125.0 (4.92)	60.0 (2.36)	50.0 (1.97)	123.0 (4.84)	—		1/16 NPT
NG50	140.0 (5.51)	70.0 (2.76)	50.0 (1.97)	127.0 (5.00)	—		1/16 NPT
NG63	180.0 (7.09)	85.0 (3.35)	65.0 (2.56)	—	—		1/8 NPT
NG80	Ø250.0 (9.84)	105.0 (4.13)	95.0 (3.74)	—	—		1/8 NPT
NG100	Ø300.0 (11.81)	120.0 (4.72)	120.0 (4.72)	—	—		1/8 NPT

CE-CP.indd, ddp



**Ordering Information**

**C**  
Cover

Nominal Size

**C**  
Cover for Pilot System Mounting

**A**  
Without Auxiliary Function

① ② ③ ④  
Orifice / Choke

Seals

Design Series  
not required for ordering

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

Code	Description
N	Nitrile
V	Fluorocarbon

Code	Description
99	Without Orifice, Open Orifice Options
00	Plug, Closed Orifice Options

**Weight:**

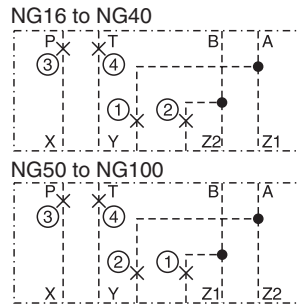
C016C	1.0 kg (2.12 lbs.)
C025C	1.9 kg (4.20 lbs.)
C032C	2.9 kg (6.40 lbs.)
C040C	5.3 kg (11.70 lbs.)
C050C	8.5 kg (18.70 lbs.)
C063C	15.3 kg (33.70 lbs.)
C080C	34.0 kg (75.0 lbs.)
C100C	60.0 kg (132.30 lbs.)

**Attention:**

For NG50 and larger:

If pilot system NG06 is used, mount adapter plate PADA 1007/A-B/B-A or PADA 1007/A-A/B-B (NG10 to NG06) on cover.

For orifice recommendations, bolt and seal kits, see Accessories.

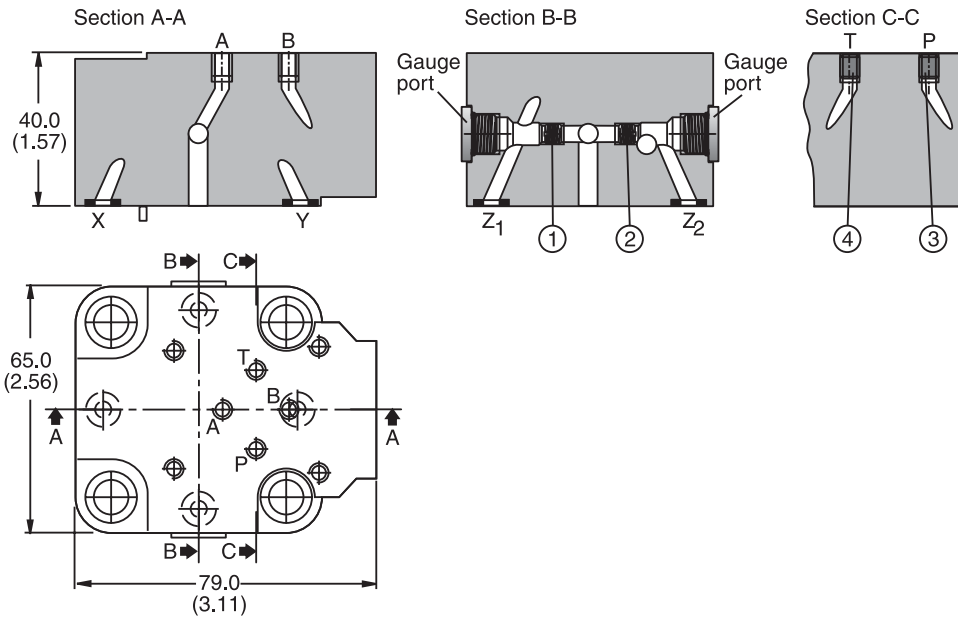


○ Orifice position

**Dimensions**

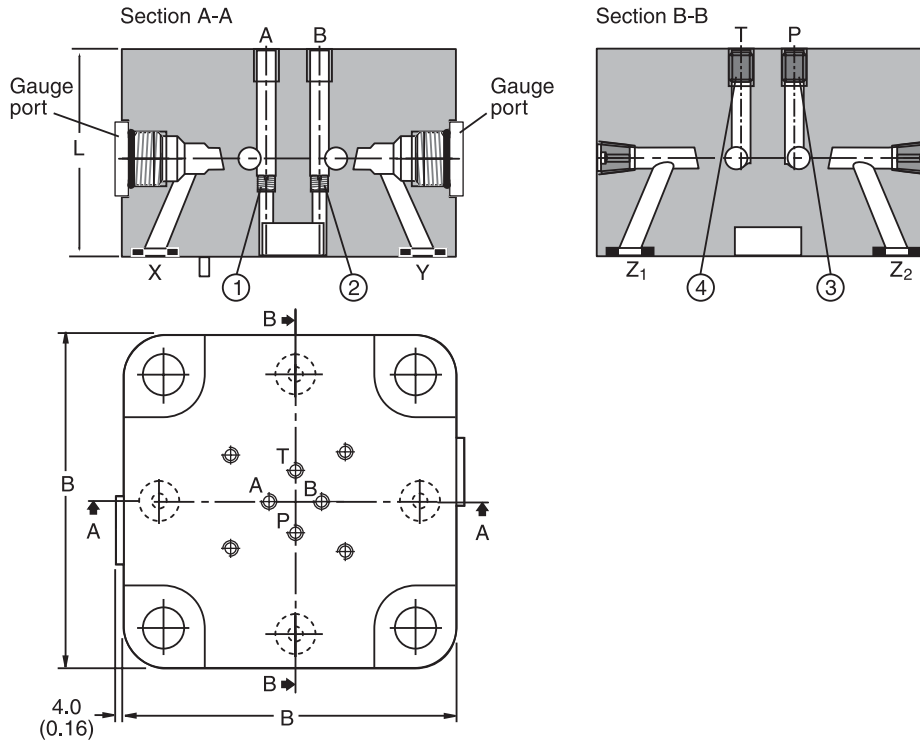
Inch equivalents for millimeter dimensions are shown in (\*\*)

**NG16**

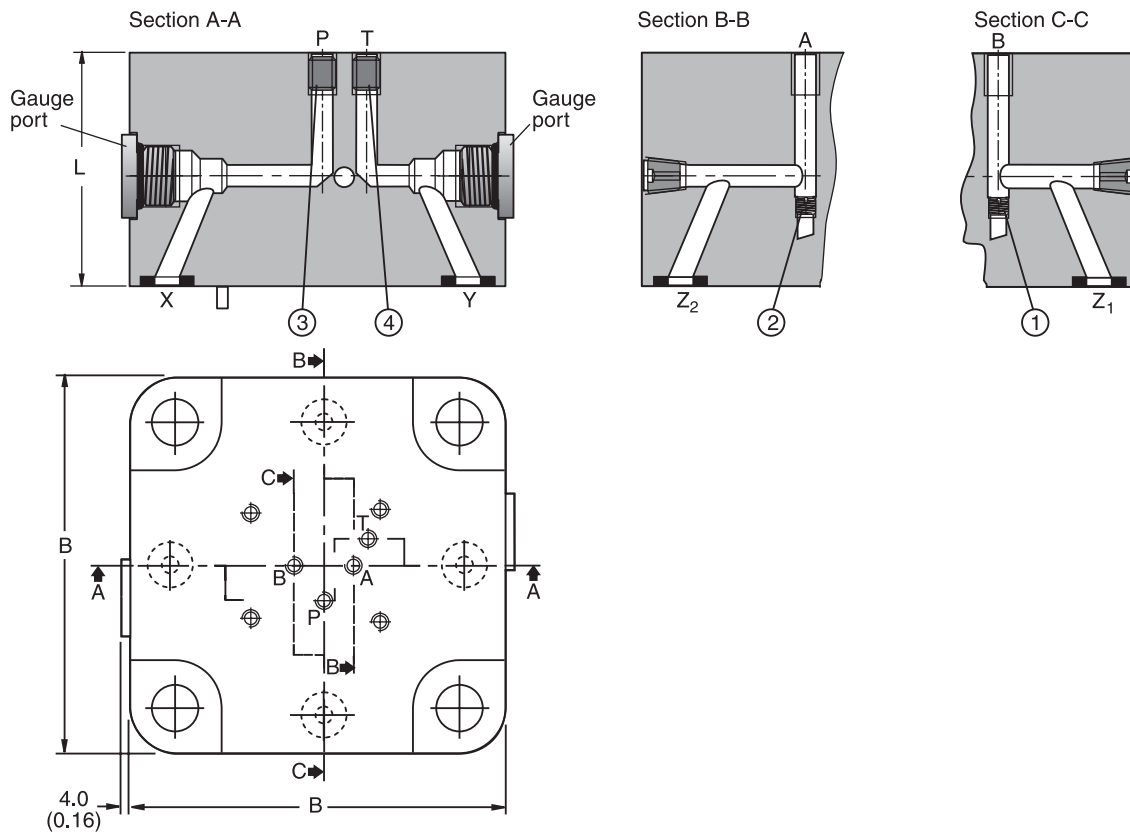


Inch equivalents for millimeter dimensions are shown in (\*\*)

**NG25 to NG40**

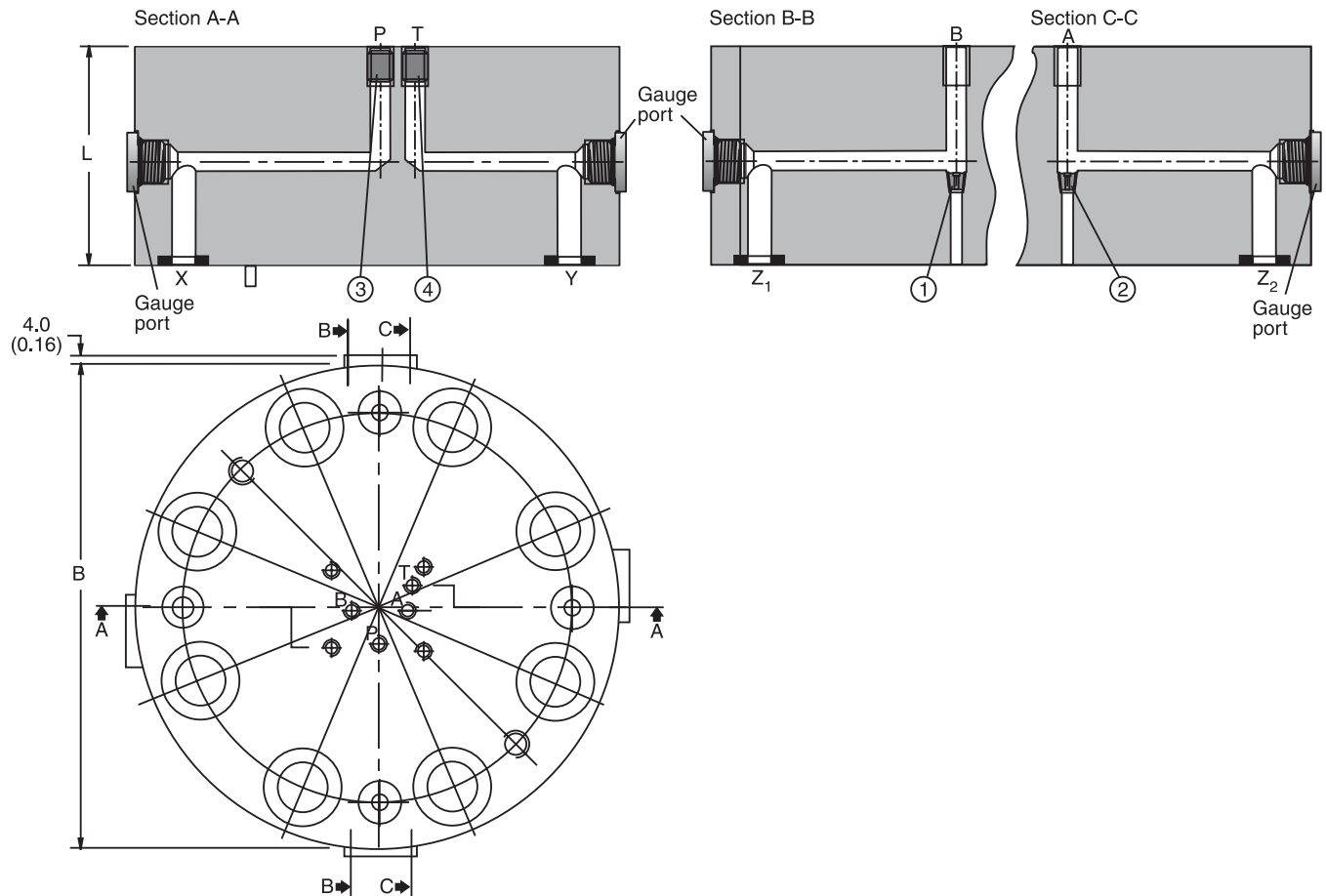


**NG50 to NG63**



Inch equivalents for millimeter dimensions are shown in (\*\*)

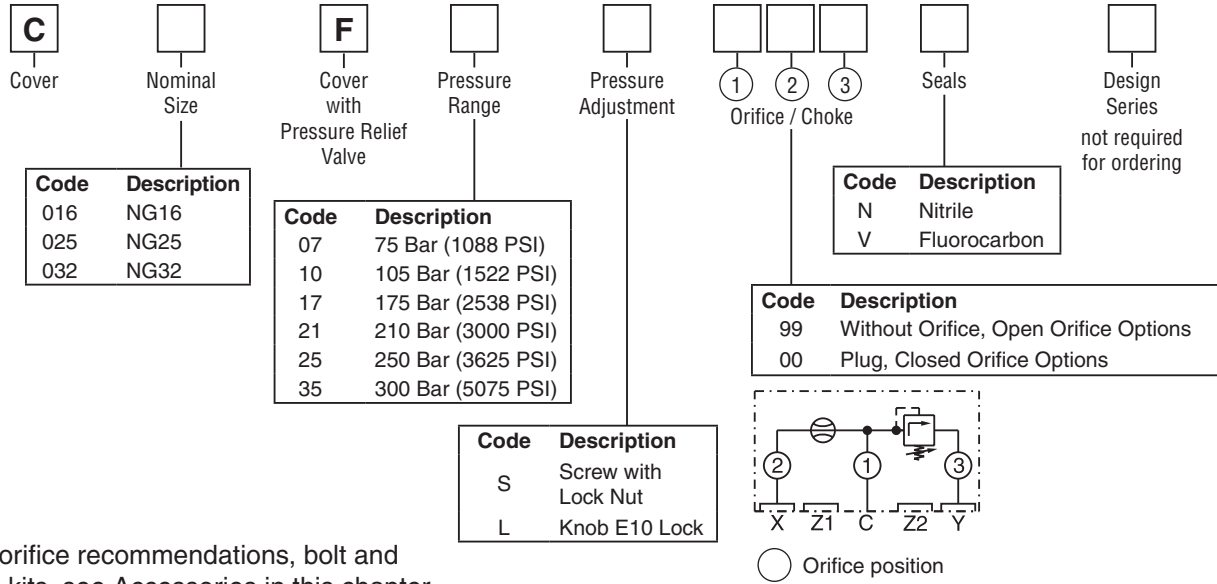
**NG80 to NG100**



Size	B	L	Gauge Port	Orifice Thread			
				①	②	③	④
NG16	79.0 <sup>1)</sup> (3.11)	40.0 (1.57)	G 1/4"	M5	M5	M5	M5
NG25	85.0 (3.35)	45.0 (1.77)		M5	M5	M6	M6
NG32	102.0 (4.02)	50.0 (1.97)		M5	M5	M6	M6
NG40	125.0 (4.92)	60.0 (2.36)		M5	M5	M6	M6
NG50	140.0 (5.51)	70.0 (2.76)		M6	M6	M8	M8
NG63	180.0 (7.09)	85.0 (3.35)		M6	M6	M8	M8
NG80	Ø250.0 (9.81)	105.0 (4.13)		1/16 NPT	1/16 NPT	M10x1	M10x1
NG100	Ø300.0 (11.81)	120.0 (4.72)		1/16 NPT	1/16 NPT	M10x1	M10x1

<sup>1)</sup> Width 65m (2.56 in.)

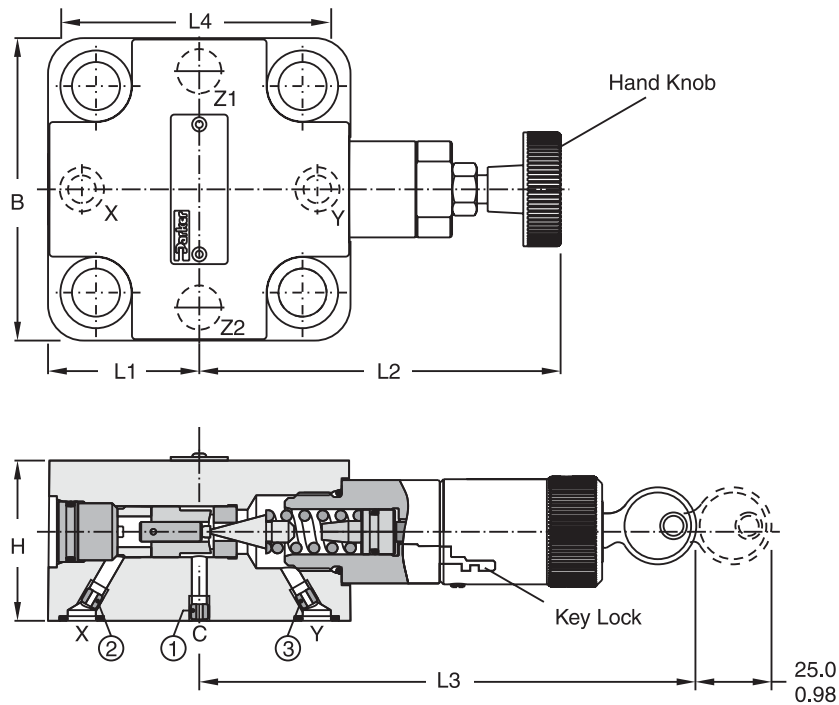
**Ordering Information**



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

**Dimensions**

Inch equivalents for millimeter dimensions are shown in (\*\*)



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

Size	B	H	L1	L2 max.	L3 max.	L4	Orifice Thread		
							①	②	③
NG16	65.0 (2.56)	40.0 (1.57)	32.5 (1.28)	114.0 (4.49)	125.5 (4.94)	79.0 (3.11)	M5	M4	M5
NG25	85.0 (3.35)	45.0 (1.77)	42.5 (1.68)	102.0 (4.02)	114.0 (4.49)	85.0 (3.35)	M5	M5	M5
NG32	102.0 (4.02)	50.0 (1.97)	51.0 (2.01)	95.0 (3.74)	106.0 (4.17)	102.0 (4.02)	M5	M6	M6

**Ordering Information**

<b>C</b> Cover	Nominal Size	<b>G</b> Cover with Pressure Relief and Pilot System Mounting	Pressure Range	Pressure Adjustment	Orifice / Choke (1, 2, 3, 4)	Seals	Design Series (not required for ordering)
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Code	Description
016	NG16
025	NG25
032	NG32

Code	Description
07	75 Bar (1088 PSI)
10	105 Bar (1522 PSI)
17	175 Bar (2538 PSI)
21	210 Bar (3000 PSI)
25	250 Bar (3625 PSI)
35	300 Bar (5075 PSI)

Code	Description
S	Screw with Lock Nut
L	Knob E10 Lock

Code	Description
99	Without Orifice, Open Orifice Options
00	Plug, Closed Orifice Options

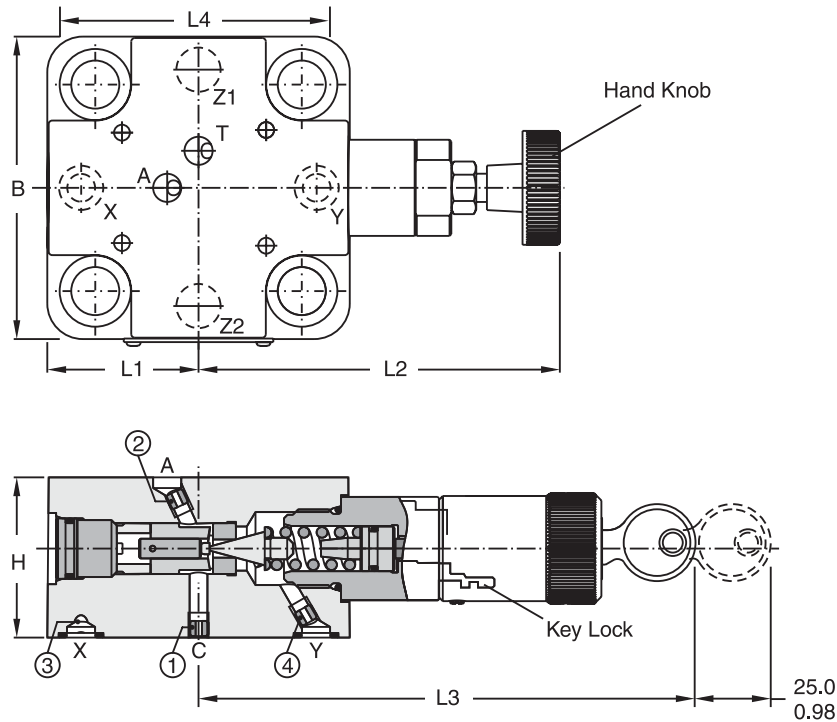
  

○ Orifice position

For orifice recommendations, bolt and seal kits, see Accessories.

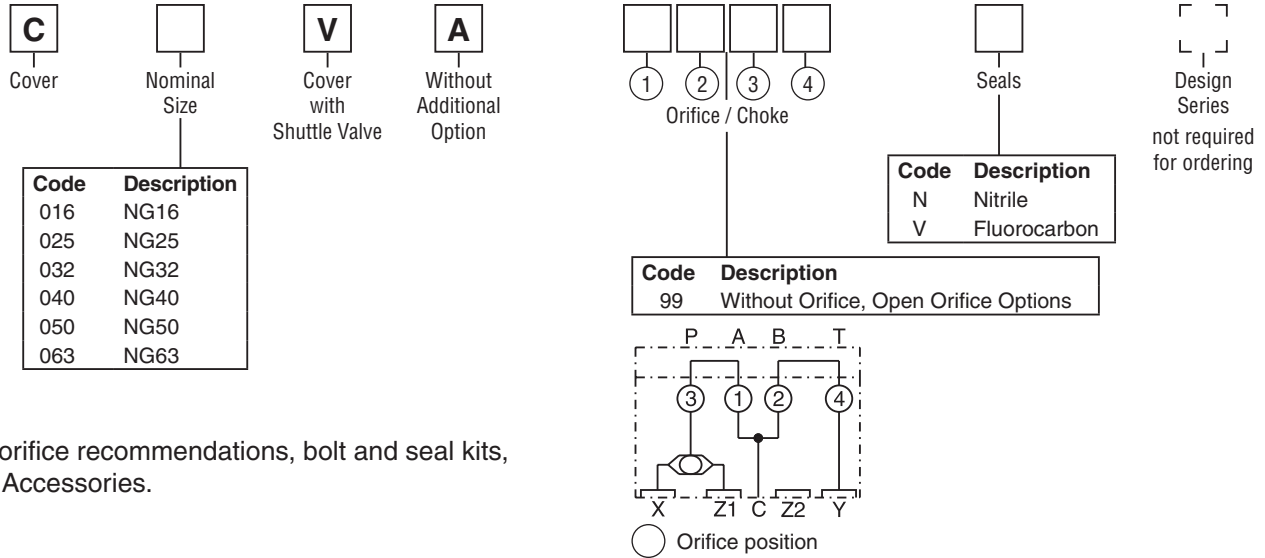
**Dimensions**

Inch equivalents for millimeter dimensions are shown in (\*\*)



Size	B	H	L1	L2 max.	L3 max.	L4	Orifice Thread			
							①	②	③	④
NG16	65.0 (2.56)	40.0 (1.57)	32.5 (1.28)	114.0 (4.49)	125.5 (4.94)	79.0 (3.11)	M5	M5	M4	M5
NG25	85.0 (3.35)	45.0 (1.77)	42.5 (1.68)	102.0 (4.02)	114.0 (4.49)	85.0 (3.35)	M5	M5	M5	M5
NG32	102.0 (4.02)	50.0 (1.97)	51.0 (2.01)	95.0 (3.74)	106.0 (4.17)	102.0 (4.02)	M6	M6	M6	M6

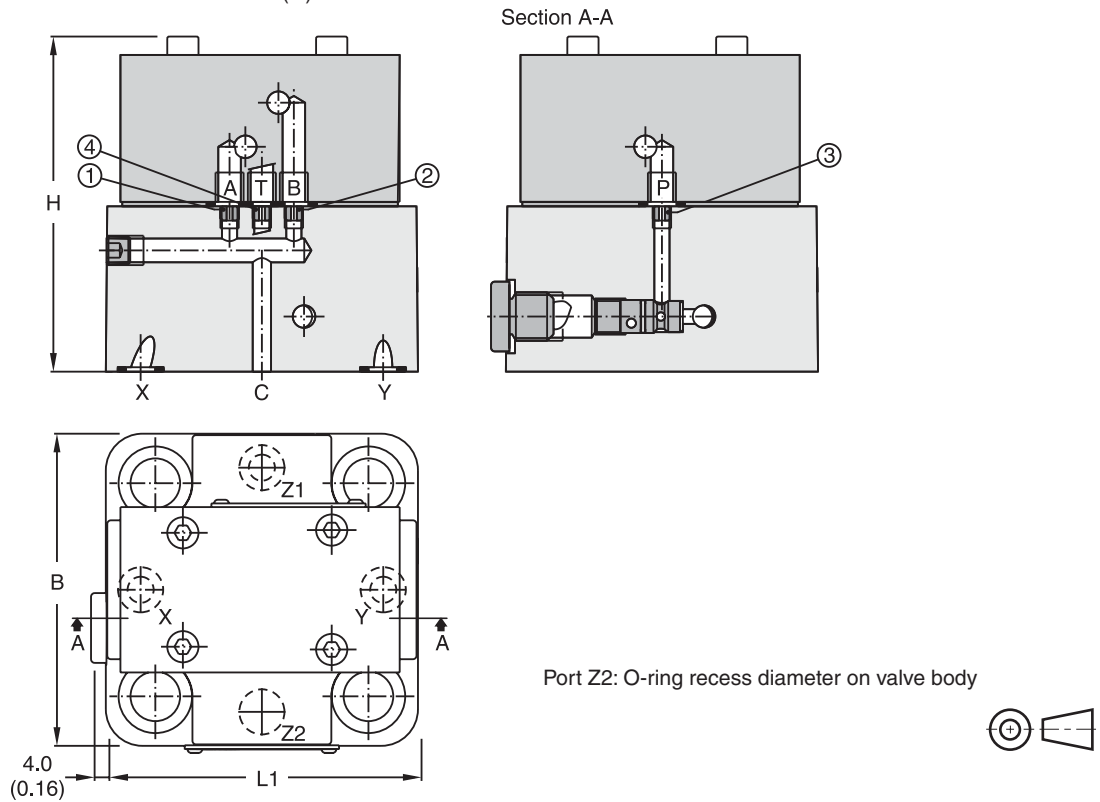
**Ordering Information**



For orifice recommendations, bolt and seal kits, see Accessories.

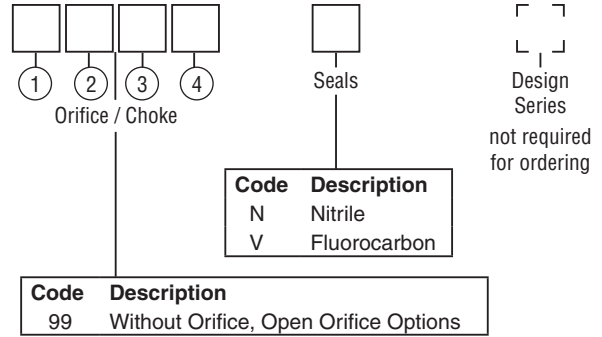
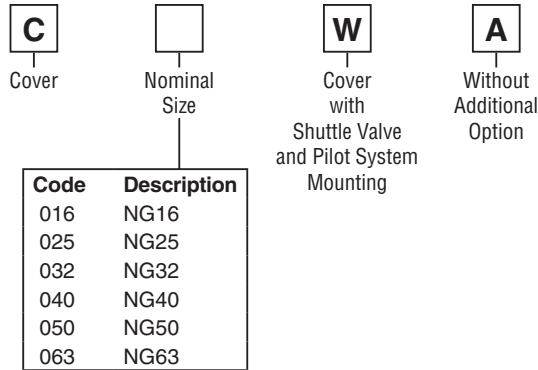
**Dimensions**

Inch equivalents for millimeter dimensions are shown in (\*\*)

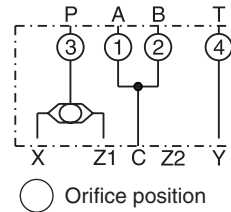


Size	B	H	L1	Orifice Thread			
				①	②	③	④
NG16	65.0 (2.56)	86.5 (3.41)	85.0 (3.35)	M5	M5	M5	M5
NG25	85.0 (3.35)	91.5 (3.60)	85.0 (3.35)	M5	M5	M5	M5
NG32	102.0 (4.02)	96.5 (3.80)	102.0 (4.02)	M5	M5	M5	M5
NG40	125.0 (4.92)	106.5 (4.19)	125.0 (4.92)	M6	M6	M6	M6
NG50	140.0 (5.51)	126.5 (4.98)	140.0 (5.51)	M8	M8	M8	M8
NG63	180.0 (7.09)	141.0 (5.55)	180.0 (7.09)	M8	M8	M8	M8

**Ordering Information**

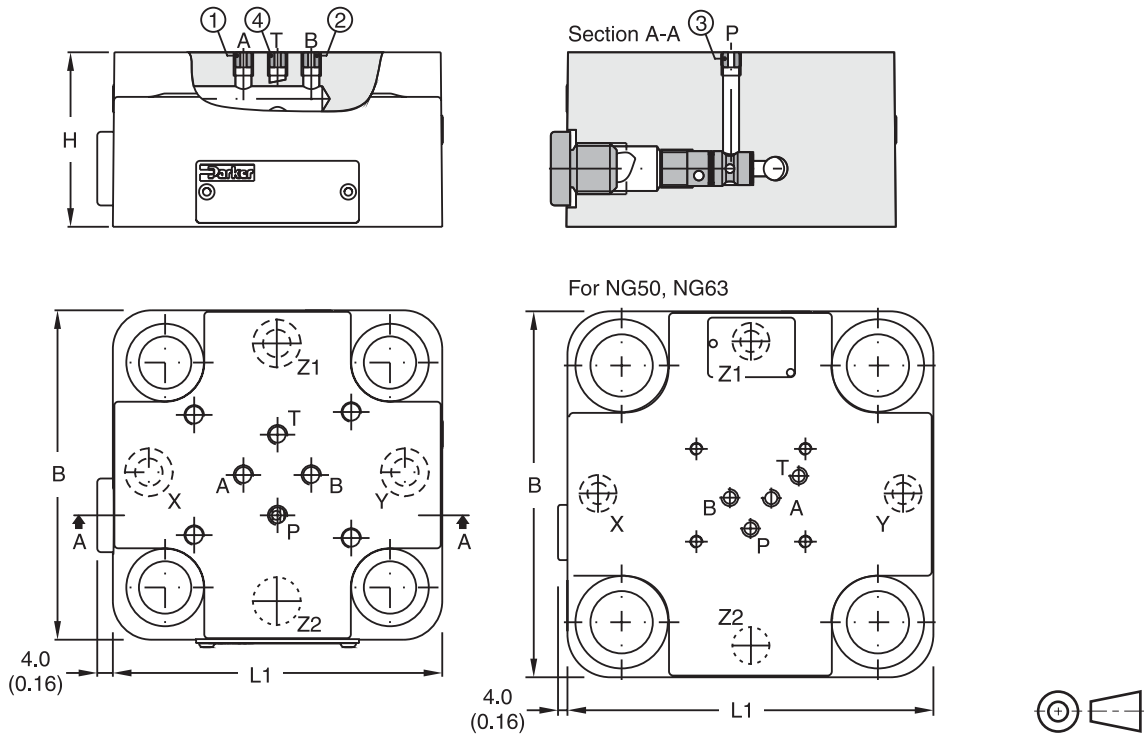


For orifice recommendations, bolt and seal kits, see Accessories.



**Dimensions**

Inch equivalents for millimeter dimensions are shown in (\*\*)



Port Z2: O-ring recess diameter on valve body

Size	B	H	L1	Orifice Thread			
				①	②	③	④
NG16	65.0 (2.56)	40.0 (1.57)	79.0 (3.11)	M5	M5	M5	M5
NG25	85.0 (3.35)	45.0 (1.77)	85.0 (3.35)	M5	M5	M5	M5
NG32	102.0 (4.02)	50.0 (1.97)	102.0 (4.02)	M5	M5	M5	M5
NG40	125.0 (4.92)	60.0 (2.36)	125.0 (4.92)	M6	M6	M6	M6
NG50	140.0 (5.51)	70.0 (2.76)	140.0 (5.51)	M8	M8	M8	M8
NG63	180.0 (7.09)	85.0 (3.35)	180.0 (7.09)	M8	M8	M8	M8