

Parker Series C10C*E 2-Way Slip-In Cartridge Valve Service Manual

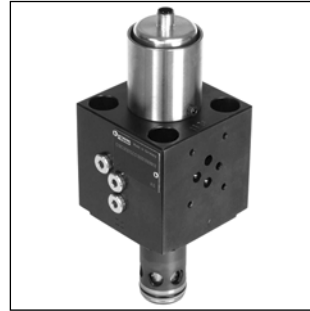
The 2/2-way seat valves series C10C*E are equipped with an inductive switch to monitor the closed position. The poppet has a 60/40 area ratio (AA = 0.6 AC, AB = 0.4 AC) and is capable for flow in both directions.

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

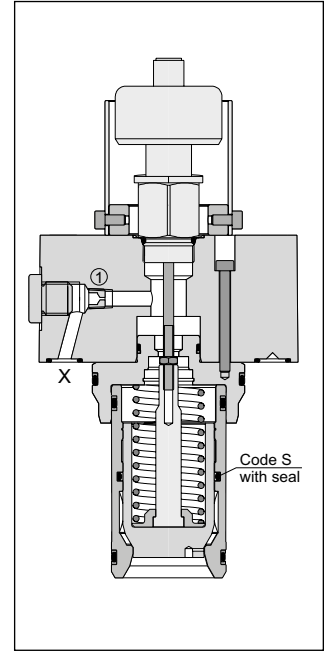
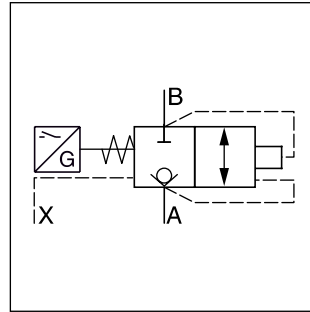
For sizes NG80 and NG100 a proximity switch is used.

Features

- 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

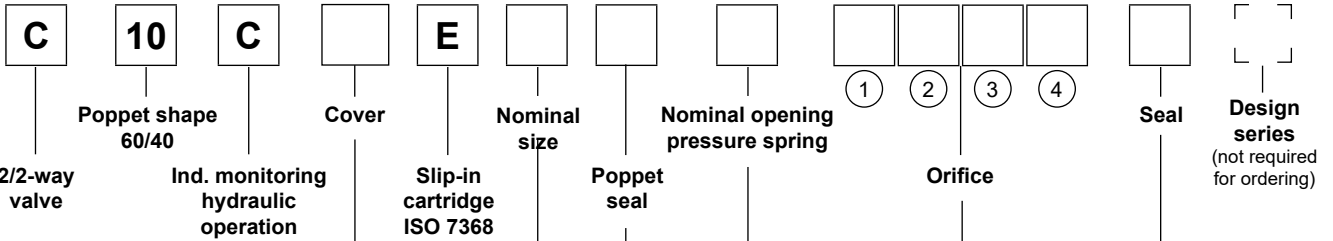


C10C3E



C10C1E

Ordering code



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

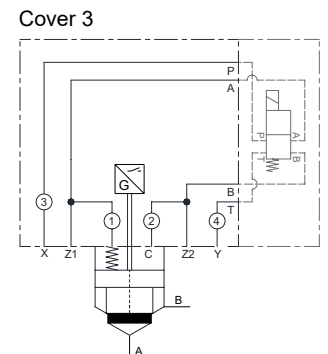
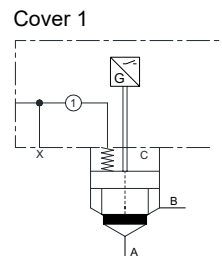
Code	Nominal size
016	NG16
025	NG25
032	NG32
040	NG40
050	NG50
063	NG63
080	NG80
100	NG100

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.

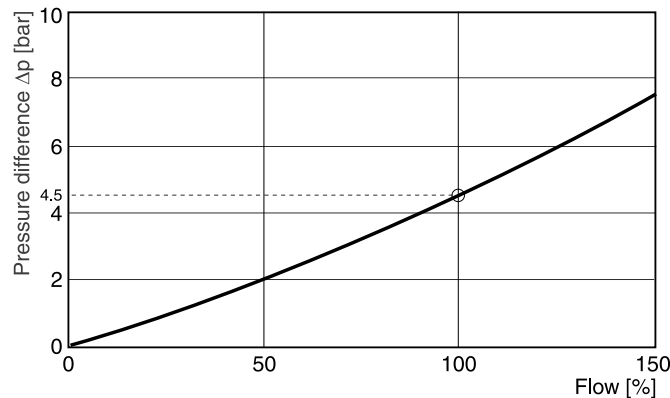
Technical Data / Characteristic Curve

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; 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								
Opening pressure 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)



Characteristic curve measured with HLP46 at 50 °C.

Recommended orifice diameter

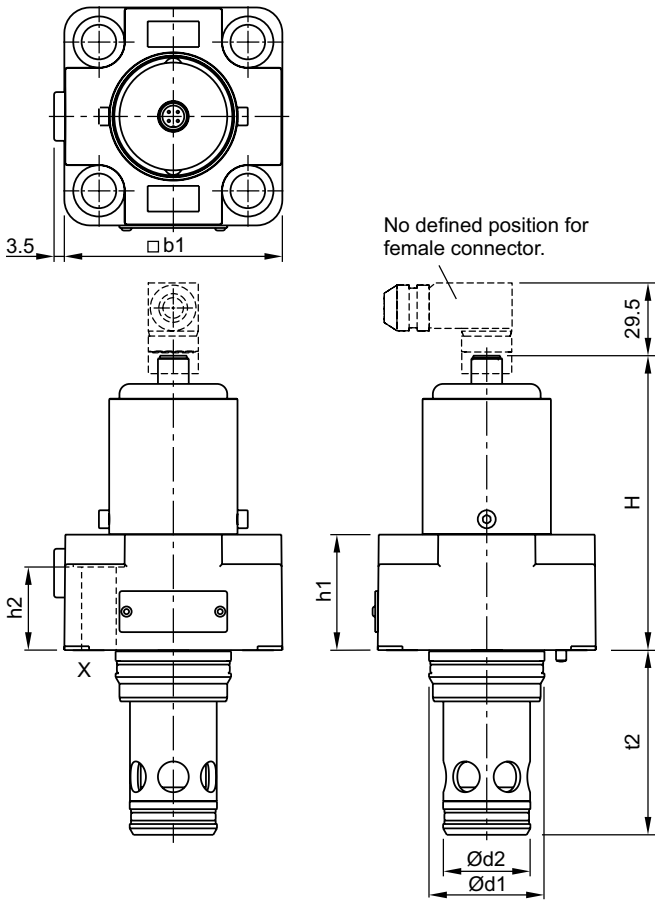
Cover	Orifice	NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100
C10C1E	No.: 1	1/16 NPT	1/16 NPT	1/16 NPT	1/8 NPT	1/8 NPT	1/8 NPT	1/8 NPT	1/8 NPT
C10C3E	No.: 1, 2, 3, 4	M5	M6	M6	M6	M8	M8	n/a	n/a
Inlet orifice		Ø 0.8	Ø 1.2	Ø 1.5	Ø 2.0	Ø 2.5	Ø 3.0	Ø 3.0	Ø 3.0

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

Dimensions

Dimensions C10C1E

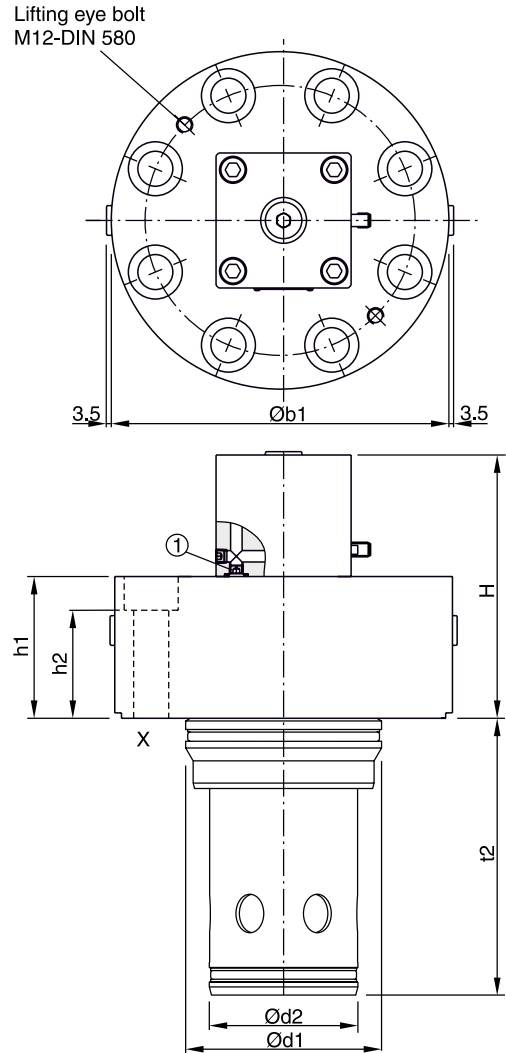
NG16 to NG63 ¹⁾



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	BK391	BK415	BK416	BK417	BK418	BK419	BK420
		4x M8x40	4x M12x50	4x M16x55	4x M20x70	4x M20x75	4x M30x100	8x M24x120	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).

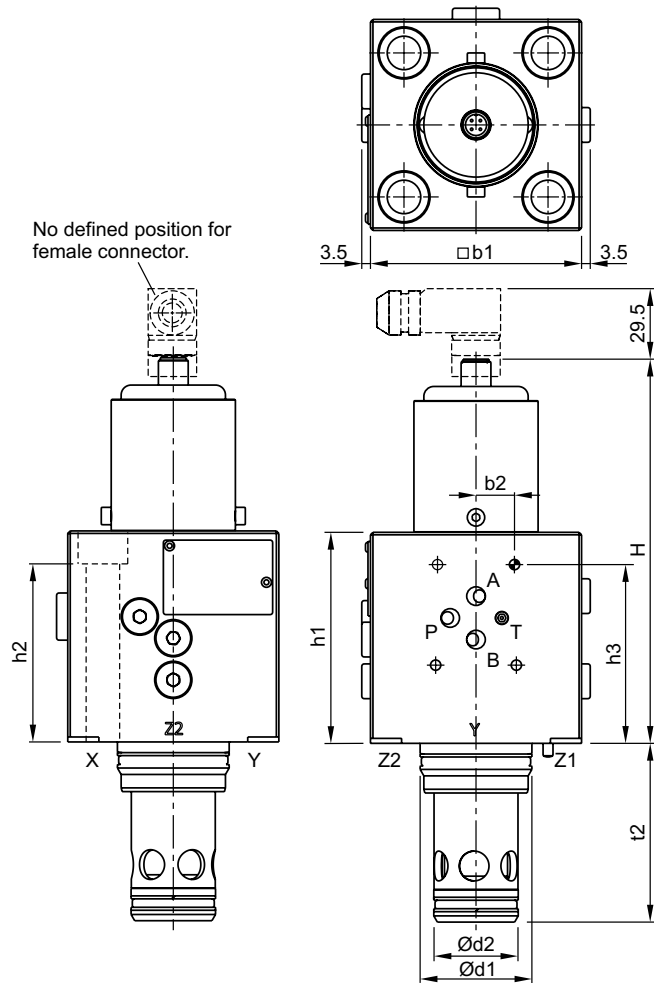


Dimensions

Dimensions C10C3E

NG16 to NG50 ¹⁾

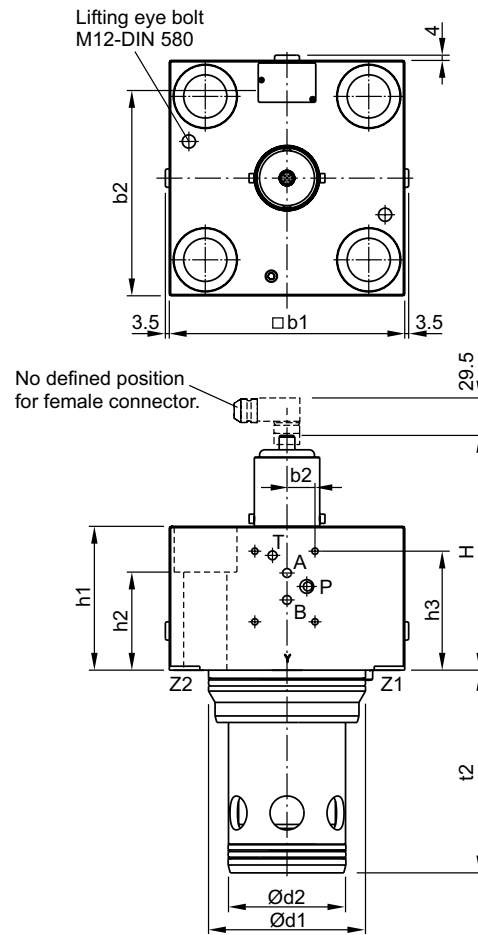
Pilot valve interface NG06.



Cavity and mounting pattern acc. to ISO 7368

NG63 ¹⁾

Pilot valve interface NG10.

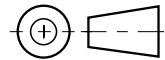


Cavity and mounting pattern acc. to ISO 7368

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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		BK533	BK532	BK526	BK527	BK534	BK536
[ISO 4762-12.9]		4x M8x90	4x M12x90	4x M16x80	4x M20x80	4x M20x90	4x M30x120
Recommended torque	[Nm]	31.8	108	264	517	517	1775
± 15%							

Attention!

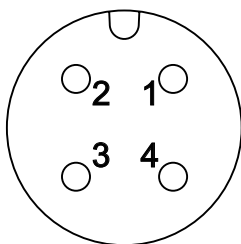
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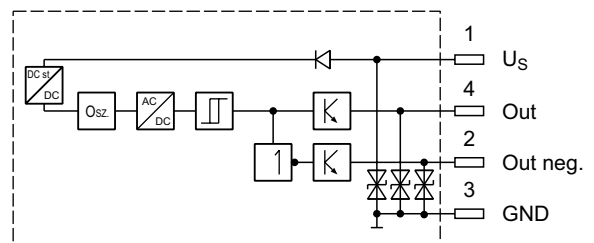
Electrical characteristics of position control M12x1 as per IEC 61076-2-101, NG16 to NG63

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

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

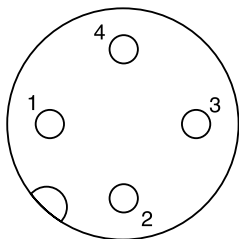


¹⁾ Only guaranteed with screened cable and female connector

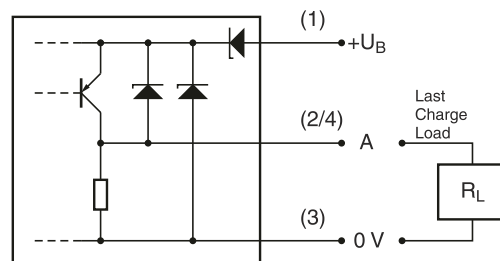
Electrical characteristics of position control M12x1 as per IEC 61076-2-101, NG80 to NG100

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



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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.