

# 2-WAY PROPORTIONAL THROTTLE CARTRIDGE VALVE

ISO 7368 SIZES 16 TO 50

**PHASE-OUT PRODUCT**  
*Do not use in new applications!*



Rev. B, August 2018

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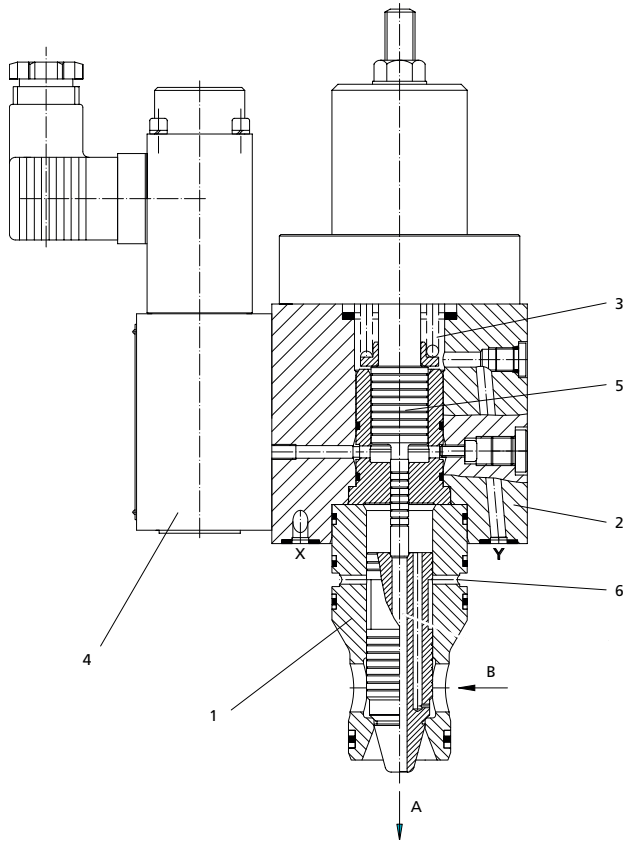
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This catalogue is for users with technical knowledge. To ensure that all necessary characteristics for function and safety of the system are given, the user has to check the suitability of the products described here in. In case of doubt please contact Moog Hydrolux.

**GENERAL DESCRIPTION**

**PHASE-OUT PRODUCT**  
Do not use in new applications!  
**PCME**



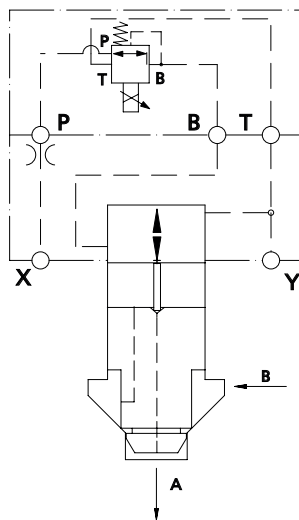
**Technical design**

- ❶ Main stage cartridge
- ❷ Cover
- ❸ Pressure spring
- ❹ Proportional pressure reducing valve
- ❺ Pilot piston

**Proportional throttle cartridge valve solenoid pilot operated (PCME-Valve)**

The proportional throttle valve of the PCME-series is a low pressure controlled, piloted throttle valve in cartridge version.

An integrated proportional pressure reducing valve ❹, electronically controlled by 200-800mA positions the pressure compensated pilot piston ❺ against a strong spring ❸. This pilot piston ❶ is followed by the main stage cone.



# SPECIFICATIONS

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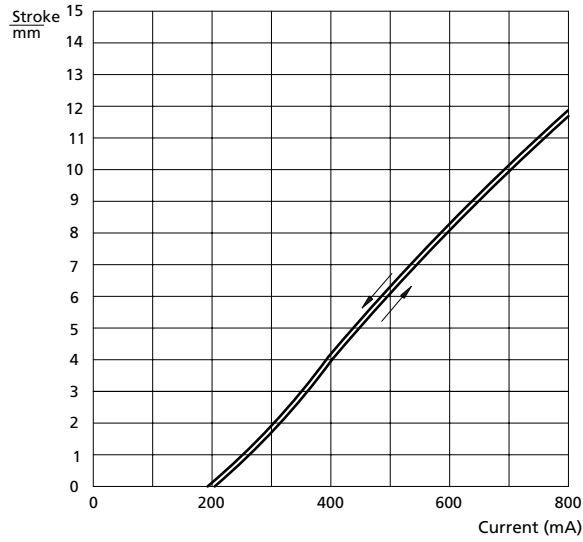
General Data	Value	Unit	Specifications				
Designation and symbol	-	-	Proportional throttle cartridge valve				
Type designation	-	-	see How to order page 14				
Mode of construction	-	-	pilot operated seat valve				
Manner of mounting	-	-	manifold cartridge mounting				
Mounting dimensions	-	mm	see mounting dimensions page 9 + 10				
Mounting position	-	-	any				
Flow direction	-	-	B -> A				
Ambient temperature range	min.	°C	-25				
	max.	°C	+60				
Working pressure							
Input	min.	bar	30				
	max.	bar	350				
Output	min.	bar	0				
	max.	bar	350				
Temperature	min.	°C	-10 (Viton) -20 (NBR)				
	max.	°C	+80				
Viscosity range	min.	mm <sup>2</sup> • s <sup>-1</sup> [cSt]	2,8				
	max.	mm <sup>2</sup> • s <sup>-1</sup> [cSt]	380				
Operational viscosity	v	mm <sup>2</sup> • s <sup>-1</sup> [cSt]	35				
Size	-	-	NG16	NG25	NG32	NG40	NG50
Weight	m	kg	3,3	5,7	9,7	11,7	23,6
Nominal flow at Δp = 10bar	Qn	l/min	see characteristic curves 7				

**CHARACTERISTIC CURVES**

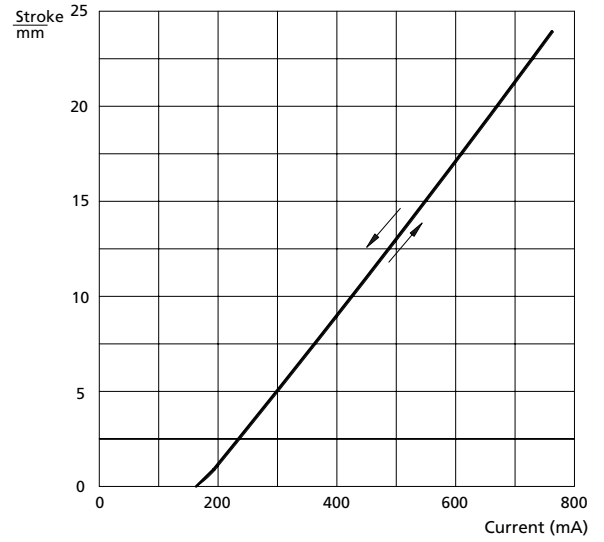
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**Solenoid current - Stroke curves**

NG16-40

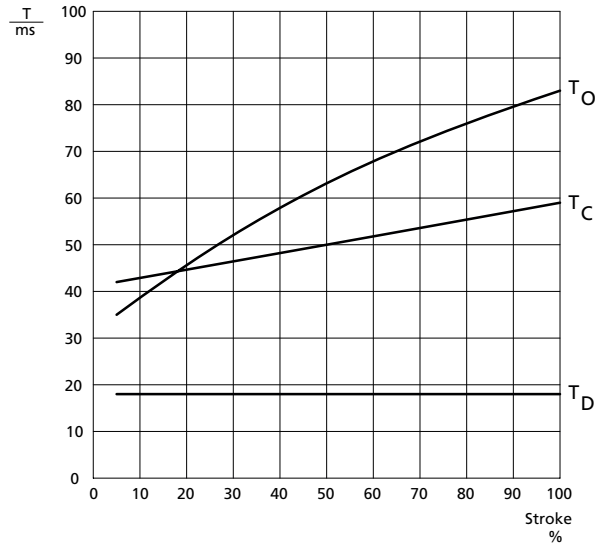


NG50

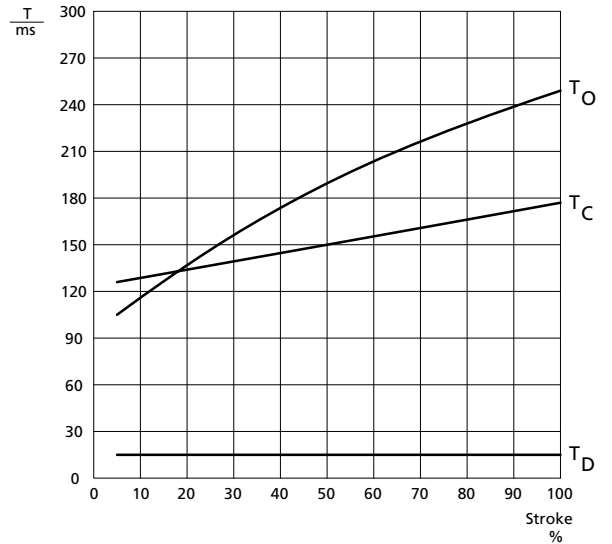


**Response time**

Response time NG16-40



Response time NG50



$T_O$  = Opening time

$T_C$  = Closing time

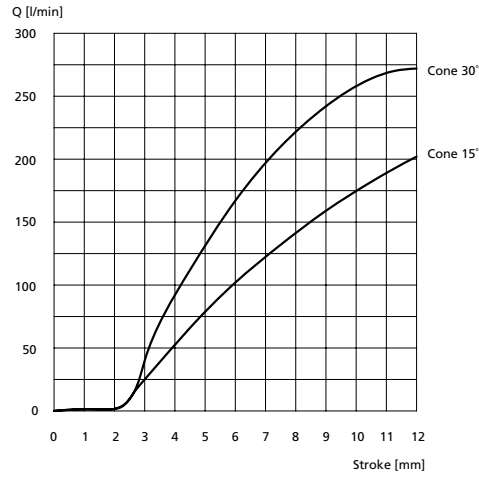
$T_D$  = Dead band

# CHARACTERISTIC CURVES

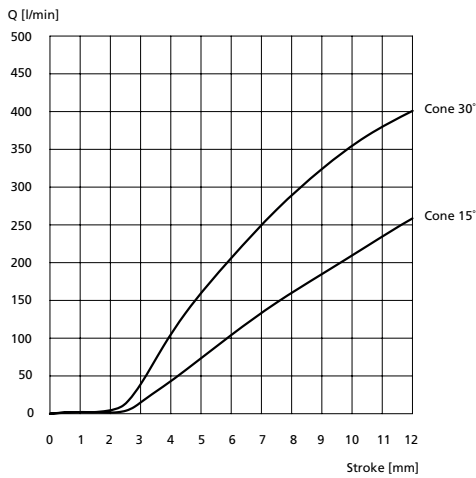
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$\Delta p$  - Q Characteristic curves at  $\Delta p = 10$  bar

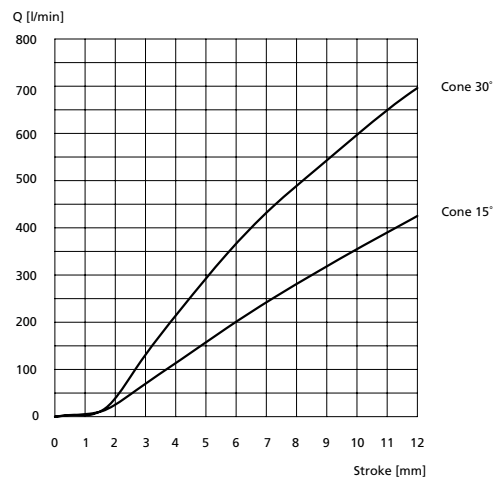
## NG16



## NG25



## NG32



Oil temperature 45°C

Calculation of the flow  $Q_x$  for other pressure differences  $\Delta p_x$ :

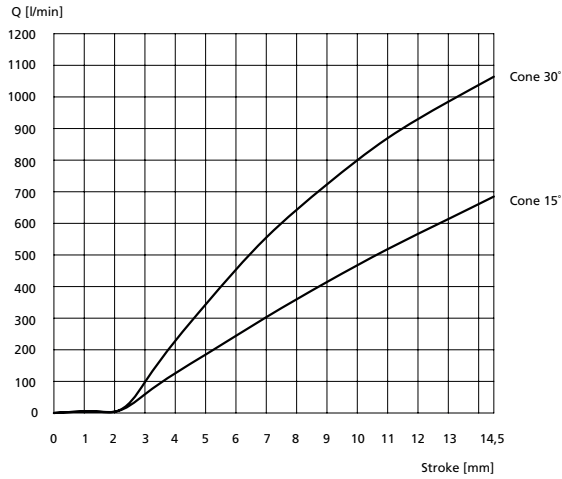
$$Q_x = Q \cdot \sqrt{\frac{\Delta p_x}{10}}$$

# CHARACTERISTIC CURVES

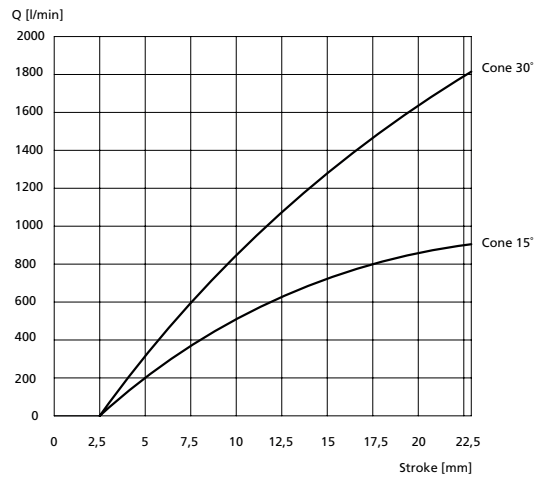
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$\Delta p$  - Q Characteristic curves at  $\Delta p = 10$  bar

## NG40



## NG50



Oil temperature 45°C

Calculation of the flow  $Q_x$   
for other pressure differences  $\Delta p_x$  :

$$Q_x = Q \cdot \sqrt{\frac{\Delta p_x}{10}}$$

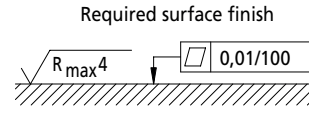
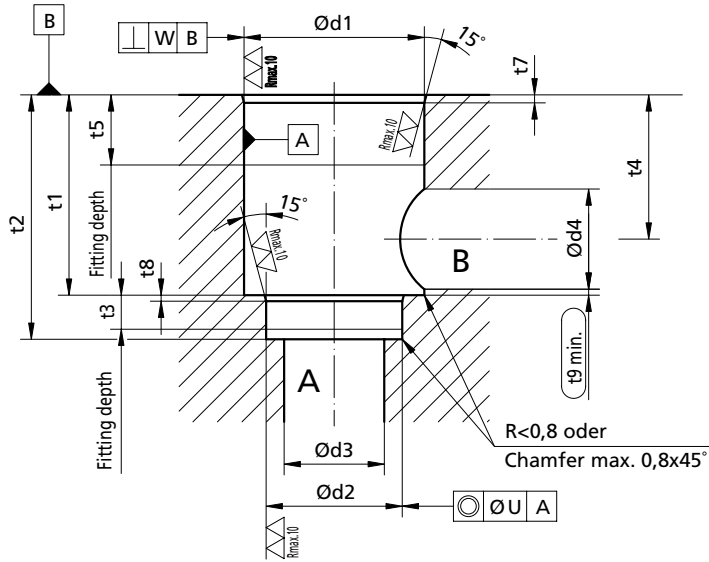


# MOUNTING DIMENSIONS

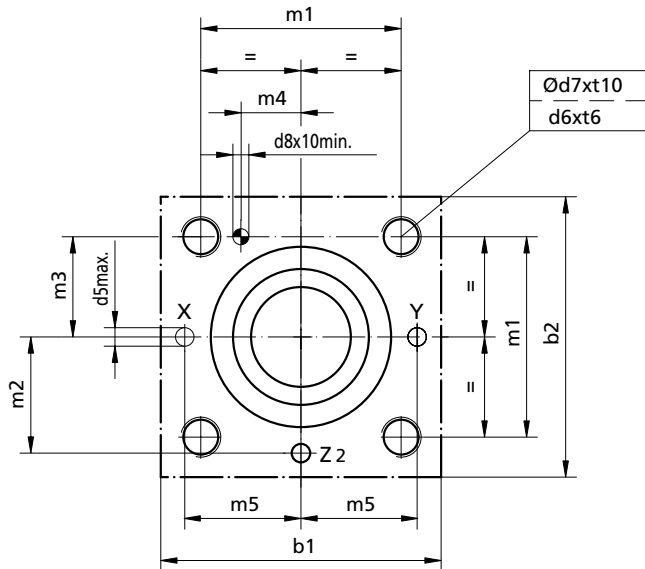
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## Mounting dimensions NG16-50

CAVITY AS PER ISO 7368



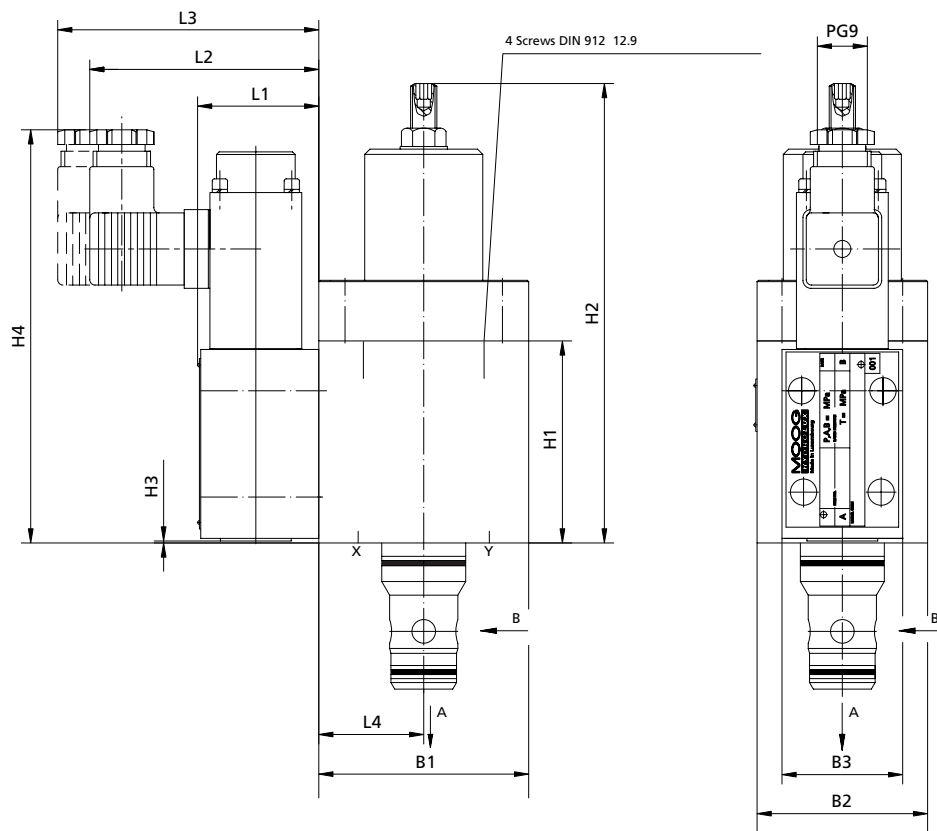
Dimensions	NG16	NG25	NG32	NG40	NG50
b1	65	85	102	125	140
b2	65	85	102	125	140
d1 <sup>H7</sup>	32	45	60	75	90
d2 <sup>H7</sup>	25	34	45	55	68
d3	16	25	32	40	50
d4	16	25	32	40	50
d4 max.	25	32	40	50	63
d5 max.	4	6	8	10	10
d6	M8	M12	M16	M20	M20
d7	6,8	10,2	14	17,5	17,5
d8 <sup>H13</sup>	4	6	6	6	8
m1 $\pm 0,2$	46	58	70	85	100
m2 $\pm 0,2$	25	33	41	50	58
m3 $\pm 0,2$	23	29	35	42,5	50
m4 $\pm 0,2$	10,5	16	17	23	30
m5 $\pm 0,2$	25	33	41	50	58
t1 $\pm 0,1$	43	58	70	87	100
t2 $\pm 0,1$	56	72	85	105	122
t3	11	12	13	15	17
t4	34	44	52	64	72
t4 at d4 max.	29,5	40,5	48	59	65,5
t5	20	30	30	30	35
t6	14	20	26	33	33
t7	2	2,5	2,5	3	4
t8	2	2,5	2,5	3	3
t9	0,5	1,0	1,5	2,5	2,5
t10	17	24	31	38	38
U	0,03	0,03	0,03	0,05	0,05
W	0,05	0,05	0,1	0,1	0,1



# DIMENSIONS

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## Dimensions PCME valves NG16-NG40



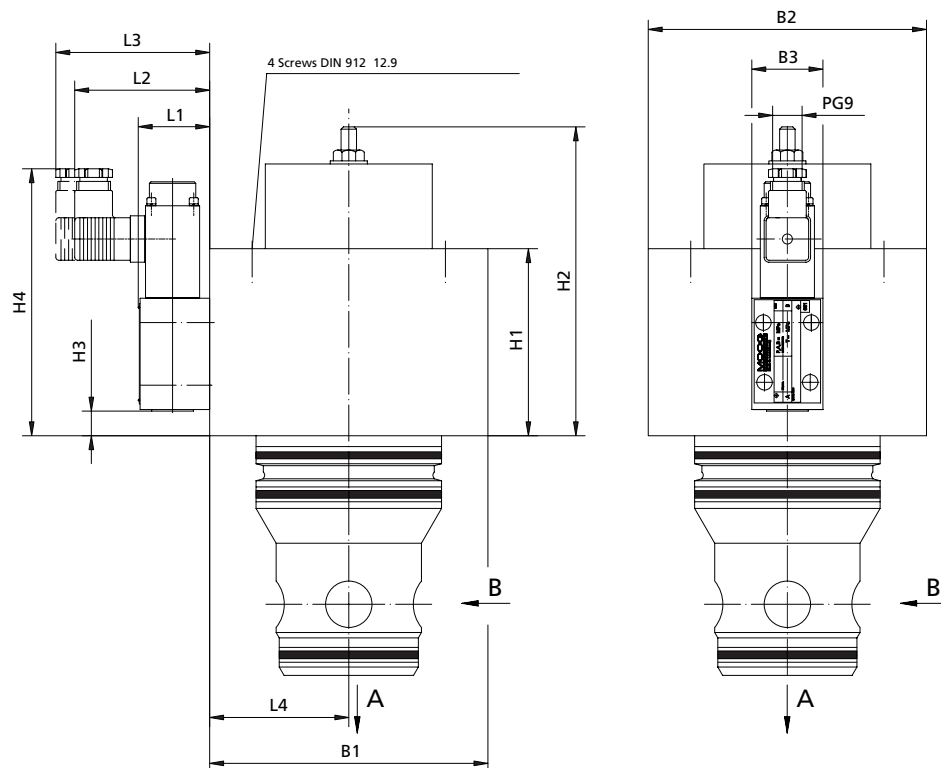
Dimensions	NG16	NG25	NG32	NG40
H1 [mm]	77	80	84	84
H2 [mm]	177	180	184	184
H3 [mm]	1	3	5	5
H4 [mm]	158	160	159	159
L1 [mm]	45	45	45	45
L2 [mm]	88	88	88	88
L3 [mm]	100	100	100	100
L4 [mm]	40	42,5	58	58
B1 [mm]	80	85	116	125
B2 [mm]	65	85	100	125
B3 [mm]	45	45	45	45
*S = Screws DIN EN ISO 4762-12.9	4x M8 x 100	4x M12 x 100	4x M16 x 90	4x M20 x 90
Tightening torque $M_A$ [Nm]	30	100	300	550

\* not part of the delivery

# DIMENSIONS

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PCME

## Dimensions PCME valves NG50



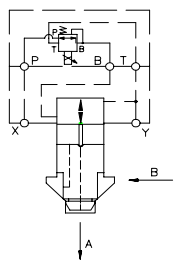
Dimensions	NG50
H1 [mm]	123
H2 [mm]	208
H3 [mm]	18
H4 [mm]	172
L1 [mm]	45
L2 [mm]	88
L3 [mm]	100
L4 [mm]	70
B1 [mm]	140
B2 [mm]	140
B3 [mm]	45
*S = Screws DIN EN ISO 4762-12.9	4x M20 x 120
Tightening torque MA [Nm]	550

\* not part of the delivery

## STANDARD MODELS

PCME

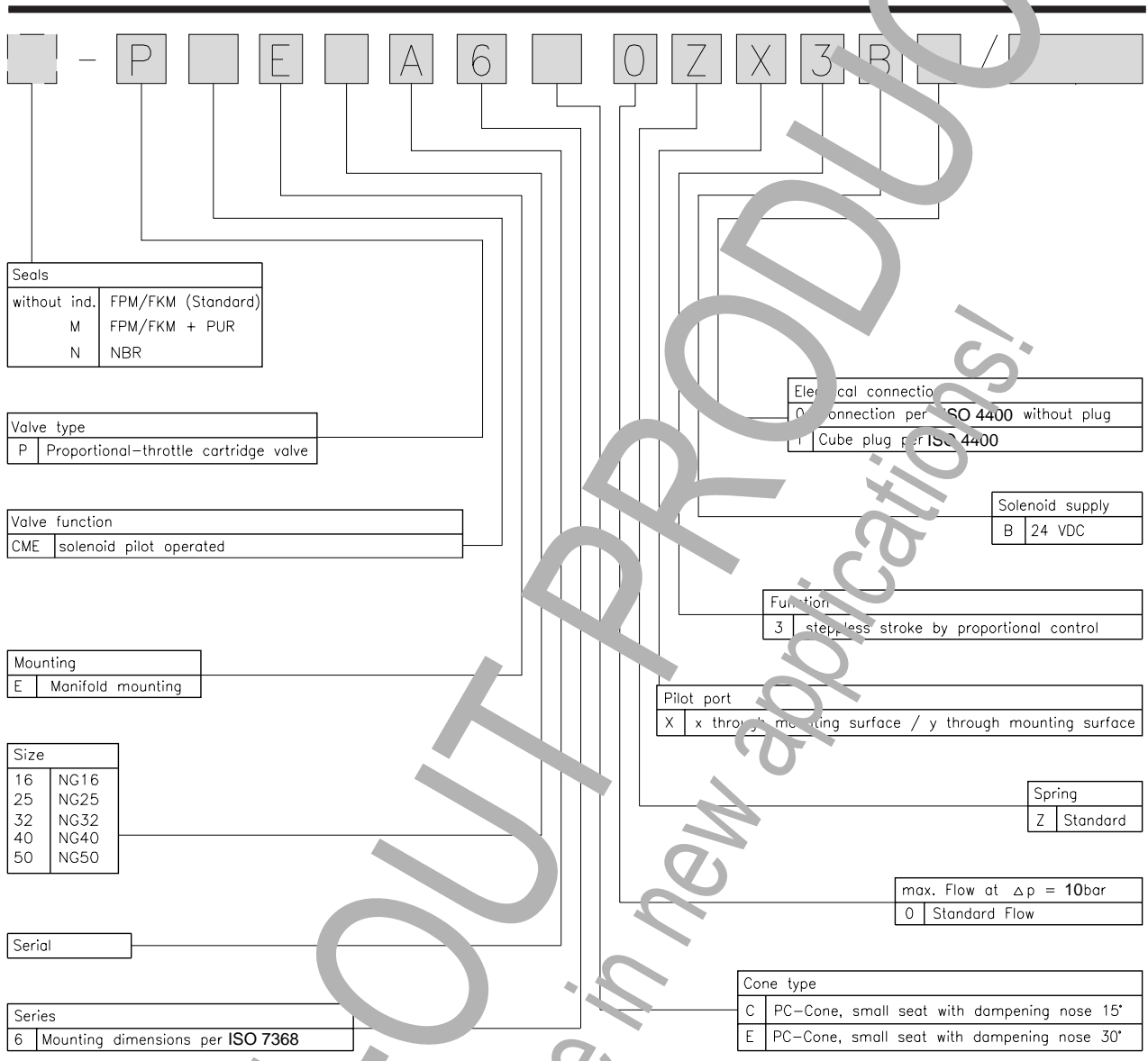
### PCME Standard valves

Symbol	Cone	NG	Weight [kg]	Description	Part number
	15° Cone	16	3,3	PCMEE16A6C0ZX3B	XPB10103-001-01
		25	5,7	PCMEE25A6C0ZX3B	XPB10077-000-01
		32	9,7	PCMEE32A6C0ZX3B	XPB10078-000-01
		40	11,7	PCMEE40A6C0ZX3B	XPB10025-000-01
		50	23,6	PCMEE50A6C0ZX3B	XPB10028-000-01
	30° Cone	16	3,3	PCMEE16A6E0ZX3B	XPB10049-000-01
		25	5,7	PCMEE25A6E0ZX3B	XPB10066-000-01
		32	9,7	PCMEE32A6E0ZX3B	XPB10046-000-01
		40	11,7	PCMEE40A6E0ZX3B	XPB10004-000-01
		50	23,6	PCMEE50A6E0ZX3B	XPB10059-000-01

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# ORDERING INFORMATION

PCME



Seals	
without ind.	FPM/FKM (Standard)
M	FPM/FKM + PUR
N	NBR

Valve type	
P	Proportional-throttle cartridge valve

Valve function	
CME	solenoid pilot operated

Mounting	
E	Manifold mounting

Size	
16	NG16
25	NG25
32	NG32
40	NG40
50	NG50

Serial

Series	
6	Mounting dimensions per ISO 7368

Electrical connection	
0	Connection per ISO 4400 without plug
1	Cube plug per ISO 4400

Solenoid supply	
B	24 VDC

Function	
3	stepless stroke by proportional control

Pilot port	
X	x through mounting surface / y through mounting surface

Spring	
Z	Standard

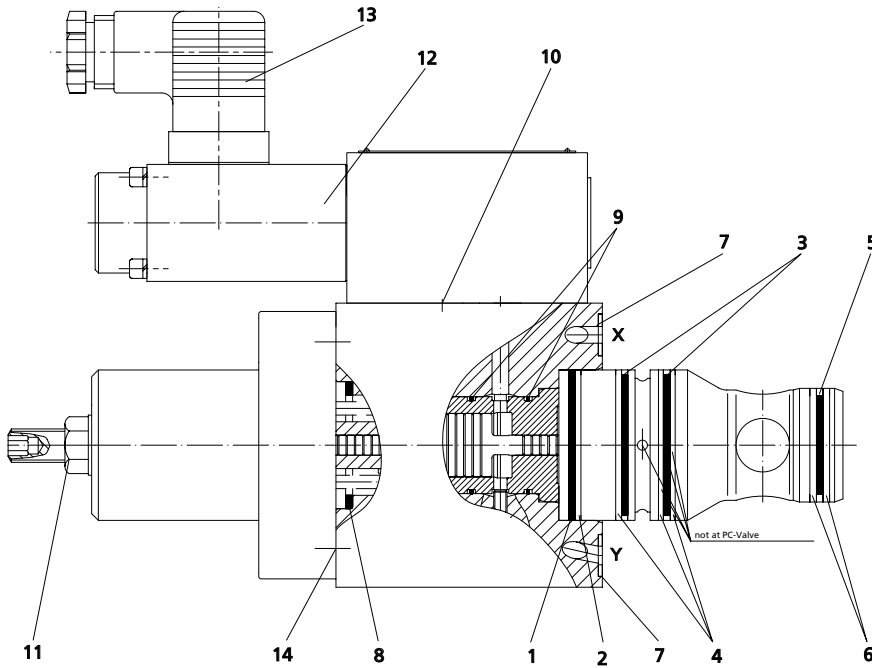
max. Flow at $\Delta p = 10\text{bar}$	
0	Standard Flow

Cone type	
C	PC-Cone, small seat with dampening nose 15°
E	PC-Cone, small seat with dampening nose 30°

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# SPARE PARTS



Pos.	Designation		Part number				
			NG16	NG25	NG32	NG40	NG50
	Seal kit (Viton)	XEB	12272	12273	12274	12275	12276
1	O-Ring (Viton)	X980-	02122	02030	02139	02148	02152
2	Back-Up Ring	X780-	08122	18030	08139	18148	18152
3	O-Ring (Viton)	X980-	02024	02030	02139	02148	02152
4	Back-Up Ring	X780-	18024	18030	08139	18148	18152
5	O-Ring (Viton)	X980-	02020	02122	02222	02225	02229
6	Back-Up Ring	X780-	08020	18122	18222	18225	18229
7	O-Ring (Viton)	X980-	02010	02012	02013	02112	02112
8	O-Ring (Viton)	X980-	02120	02125	02125	02125	02125
9	O-Ring (Viton)	X980-	02022	02022	02022	02022	02022
10	O-Ring (Viton)	X980-	02112	02112	02112	02112	02112
11	Seal-Lock Collar Nut	X786-	11108	11108	11108	11108	11108
12	Solenoid valve	X788-	10243	10243	10243	10243	10243
13	Cube plug gray	X798-	00005	00005	00005	00005	00005
	Cube plug black	X798-	00004	00004	00004	00004	00004
14	Screws	X784-	10811	11209	11605	12015	12008

Order example: O-Ring Pos.3 NG40 => Part number: X980-02148

**Plug amplifier STV1010**

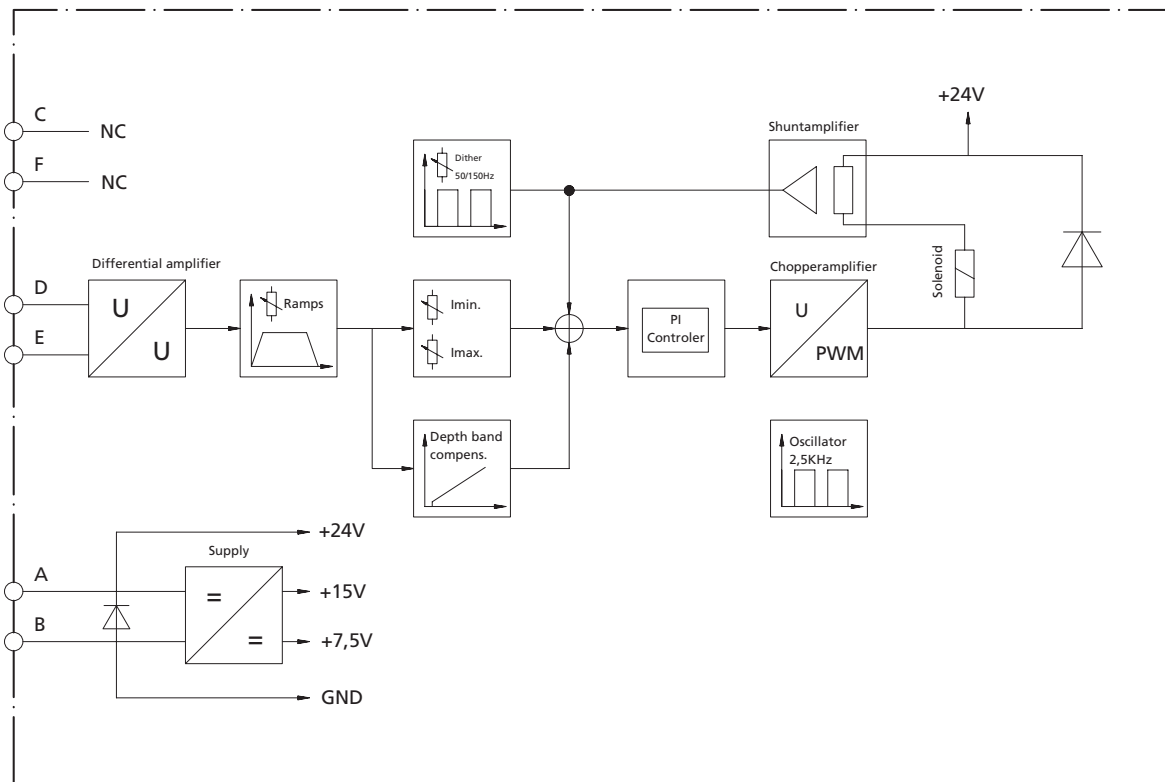
The plug amplifier has the function of actuating proportional valves without position control. It is plugged directly into the valve solenoid plug.



**Part number**

Part number	Description
XEB15753-001-01	STV1010AC15AF50R0T0A1

**Diagram**



**Specification STV1010**

Supply Voltage	19...30V DC
max. Output current	0...1.5A
Input voltage	-0,4V bis 15V (gegen GND)
Signal Output	0...10V
Connection	Connection an solenoid: DIN 43650 Connection on plug amplifier: 6pin+PE DIN 43563
Dither frequency	50Hz
Dimensions (LxBxH)	104x45x51
Weight	ca. 200g

For further technical data please take our electronics catalogue

**Amplifier card HAN209 for proportional valves with one solenoid**

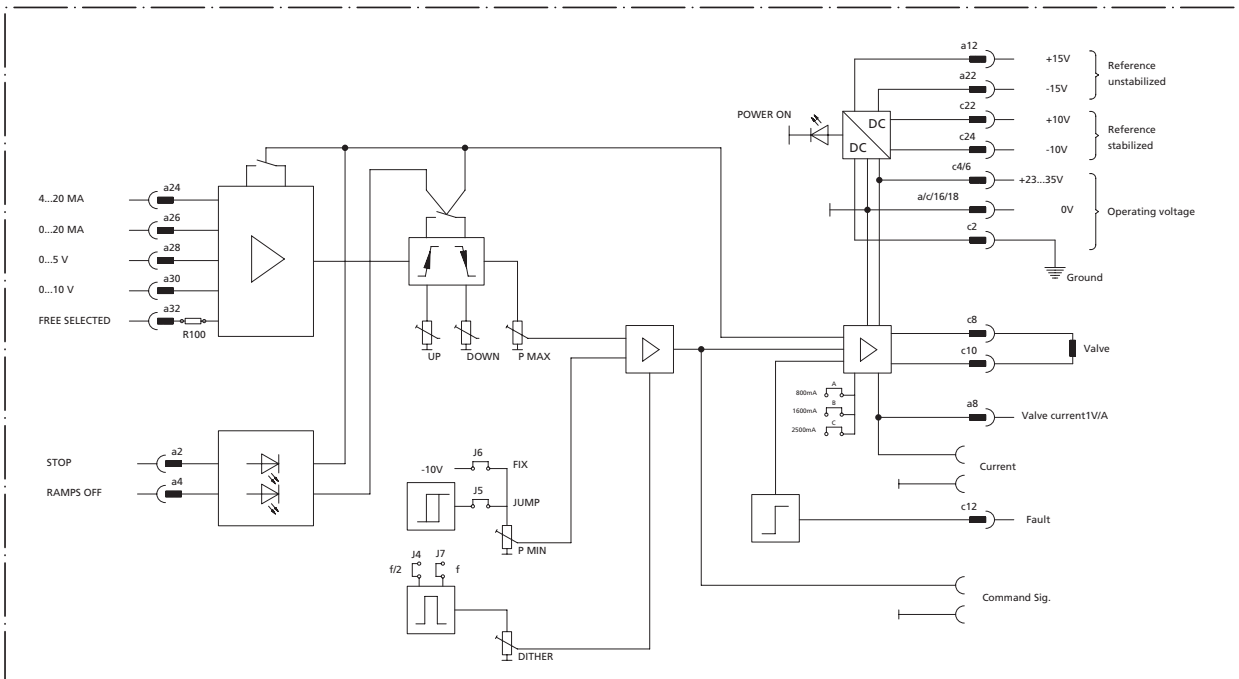
The amplifier card HAN209 is for proportional valves with one solenoid. They are used to control the input for proportional pressure adjustment valve and throttles. The module is with 5 inputs equipped. (1x 4...20mA, 1x 0...20mA, 1x 0...5V, 1x 0...10V, 1x free selected 10kV/V). The card can be closed external over the approved input. The ramp time can be leave separate for the pressure climp and for the pressure drop.



**Part number**

Part number	Description
X798-02005	Amplifier card HAN209

**Diagram**



**Specification HAN209**

Supply Voltage	24V DC nominal 20...35V DC smooth battery-tension ca. 16...24V DC rectified change voltage
Output current	$I_{max} = 0...800mA$
Command value input	1x 4...20mA 100Ω 1x 0...20mA 100Ω 1x 0...5V 50kΩ 1x 0...10V 100kΩ 1x free selected 10kΩ/V
Connection	32-pin blade connector DIN 41612 D32
Dimensions (LxBxH)	186,5mm x 128,4mm X 40mm, Front panel: 3HE x 8TE
Weight	ca. 210g

For further technical data please take our electronics catalogue



## NOTES

PCME

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**NOTES**

**NOTES**

# TAKE A CLOSER LOOK.

Moog designs a range of motion control products that complement the performance of those featured in this catalog. Visit our website for more information and contact the Moog facility nearest you.

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Proportional throttle valve PCME  
X999-02005