

## Position Monitored Active Cartridges

Series RSE/SI1  
Size NG16 – NG100



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This catalog 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 herein. In case of doubt, please contact Moog.

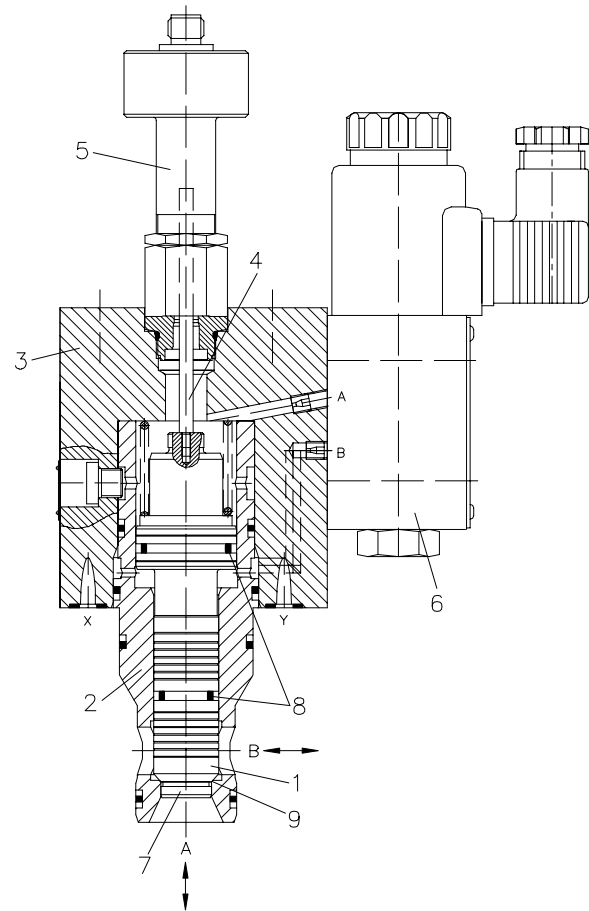
## Position monitored active cartridge for manifold mounting

Ports A and B are either closed or fully open allowing bi-directional flow.

### Valve description:

The valve comprises a sleeve (2), seated poppet (1) with integral tail rod (4), a non contacting position monitoring switch (5) and the valve body (3).

The seated poppet (1) can be controlled by an integral pilot valve (6) mounted on the valve body or externally pilot through the interface ports X and Y. Fast opening and closing times are achieved via the active pilot areas  $A_x$  and  $A_y$ . The position monitoring switch (5) is operated when the nose (7) of the poppet (1) enters the seat diameter on the sleeve (2) closing ports A and B. The poppet (1) then contacts the seat (9) fully blocking ports A and B.



### Advantages:

- No dynamic sealing for position monitoring switch.
- Direct monitoring of the closed position.
- High cycle life.
- Zero leakage due to seals (8) and metal to metal seat (9) – (excluding pilot valve leakage).

### Application examples:

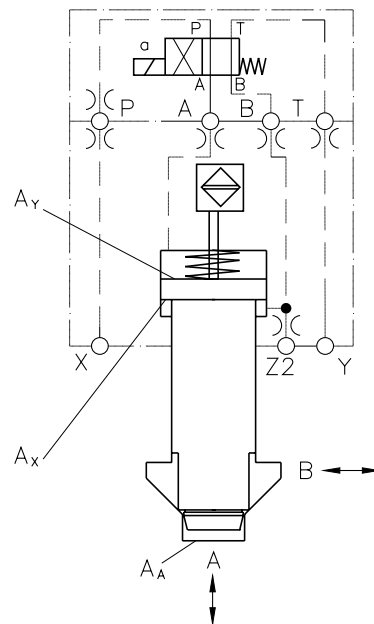
- Presses.
- Injection moulding machines.
- Lifting equipment.
- Any application requiring position monitored cartridges.

### BG Approval certificate (see page 18):

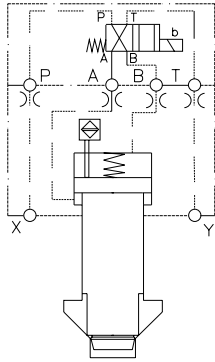
- All valves up to NG50 (NG63 to NG100 in preparation).
- Approval includes the NG06 adaptor plate for the WX3 version.
- For the WX1 and WX2 versions the approval is for the main valve only.

**Warning:** The approval applies to valves tested, set and sealed at Moog Manifold Systems.

**It is essential this setting is not modified or tampered with. If this should happen, then the BG approval would be void.**

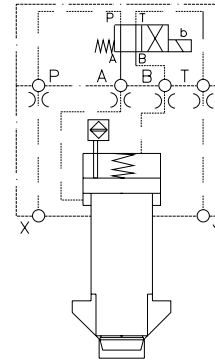


Active Opening with Energized Solenoid  
WX1 - Version



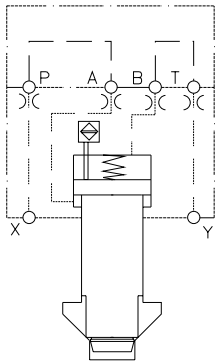
NG16

Active Closing with Energized Solenoid  
WX2 - Version



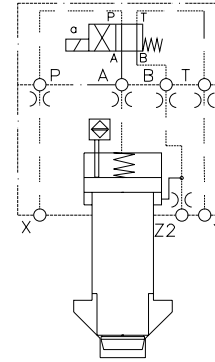
Only NG16

Externally Pilot Operated with an Interconnecting Plate  
WX6 - Version



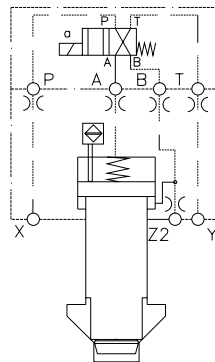
NG16

Active Opening with Energized Solenoid and Additional Z2 - Port  
WX1 - Version



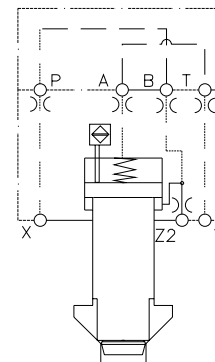
NG25 - NG50

Active Closing with Energized Solenoid and Additional Z2 - Port  
WX2 - Version



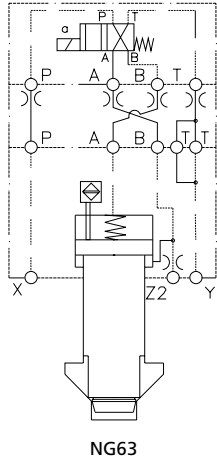
NG25 - NG50

Externally Pilot Operated with an Interconnecting Plate and Additional Z2 - Port  
WX6 - Version

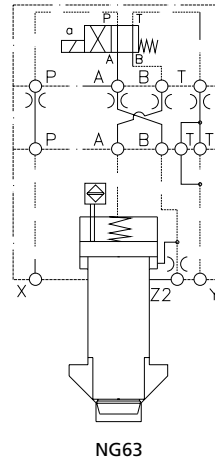


NG25 - NG50

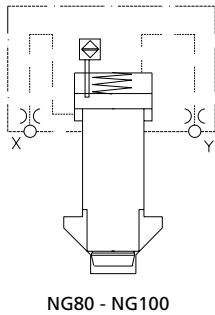
Active Opening with Energized Solenoid and Additional Z2 - Port  
WX1 - Version



Active Closing with Energized Solenoid and Additional Z2 - Port  
WX2 - Version

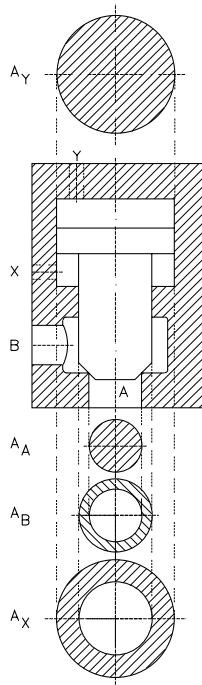


Externally Pilot Operated  
WX3 - Version

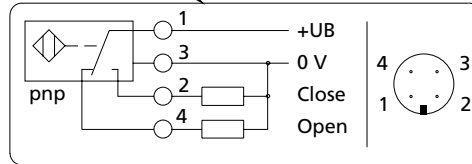
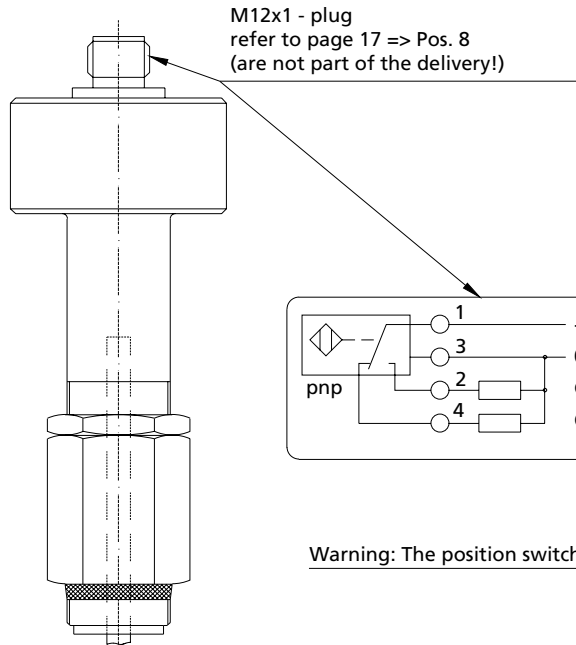


General Data	Value	Unit	Specifications
Designation	-	-	Position monitored active cartridge
Type designation	-	-	see ordering information page 16
Mode of construction	-	-	Pilot operated seat valve
Mounting style	-	-	Manifold mounting
Mounting dimensions	-	mm	see page 11
Mounting position	-	-	any
Flow direction	-	-	A <=> B
Ambient temperature range	min.	°C	-25
	max.	°C	+60
Working pressure			
A-port	min.	bar	0
	max.	bar	350
B-port	min.	bar	0
	max.	bar	350 for WX3 - and WX6 version
X-port	min.	bar	0
	max.	bar	210 for WX1 - and WX2 version
Y-port	min.	°C	-25
	max.	°C	+80
Fluid temperature range	min.	°C	-25
	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	n	mm <sup>2</sup> • s <sup>-1</sup> [cSt]	35
Nominal size	-	-	NG16 NG25 NG32 NG40 NG50 NG63 NG80 NG100
Pilot volume (Area A <sub>Y</sub> )	V <sub>Y</sub>	cm <sup>3</sup>	3,4 10,0 19,8 46,3 92,4 178,3 288,6 505,3

**CHARACTERISTIC PARAMETERS**



Area ratio ( Reference surface A <sub>A</sub> )								
NG	16	25	32	40	50	63	80	100
Stroke [mm]	9	11	17,5	24	24	28	30	36,5
A <sub>A</sub> [mm <sup>2</sup> ]	123	227	452	804	1590	2642	3848	5674
A <sub>A</sub>	1	1	1	1	1	1	1	1
A <sub>B</sub>	0,64	0,67	0,56	0,41	0,49	0,46	0,47	0,67
A <sub>Y</sub>	3,1	4	2,5	2,4	2,42	2,41	2,5	2,44
A <sub>X</sub>	1,45	2,33	0,94	1,03	0,93	0,95	0,99	0,77

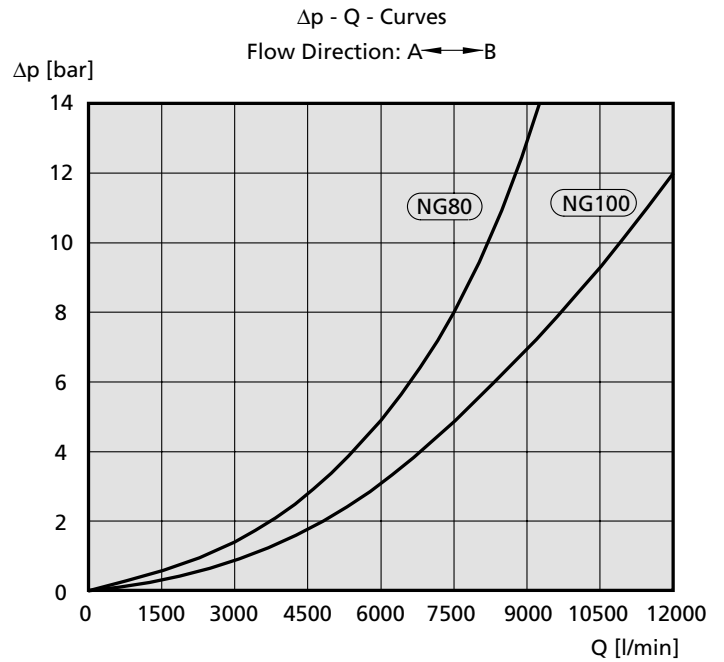
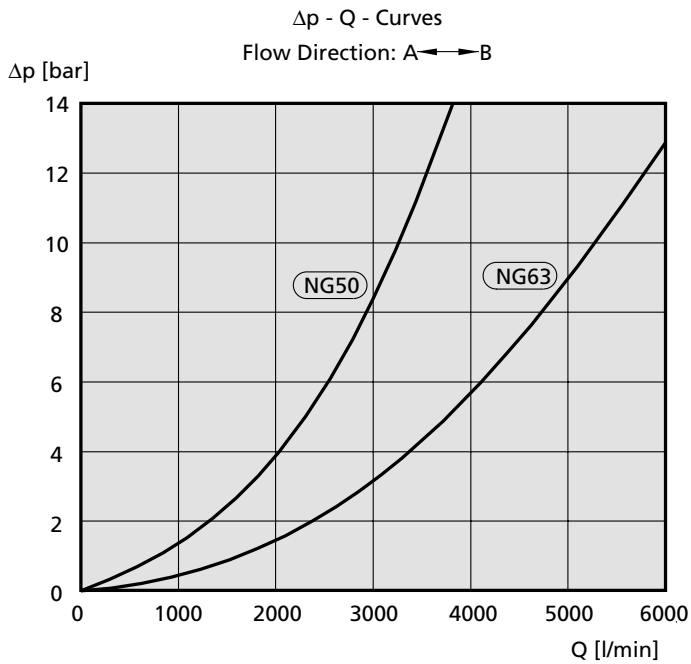
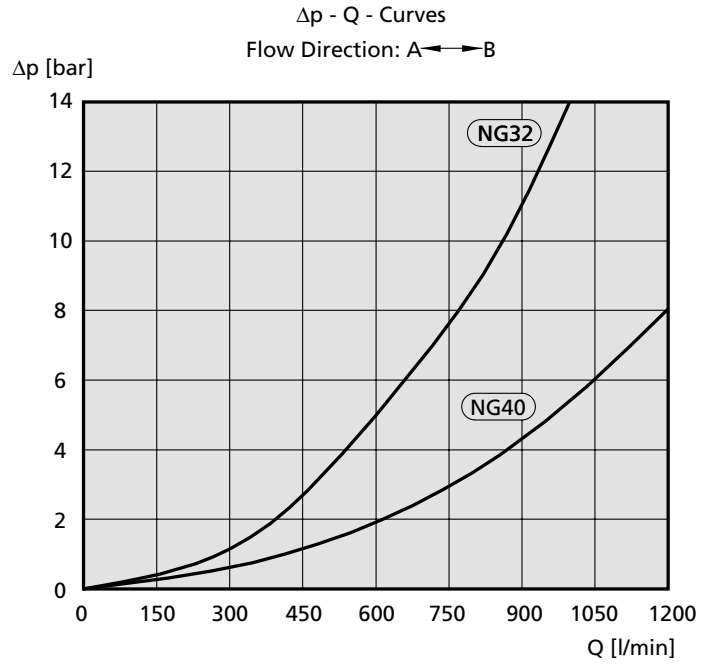
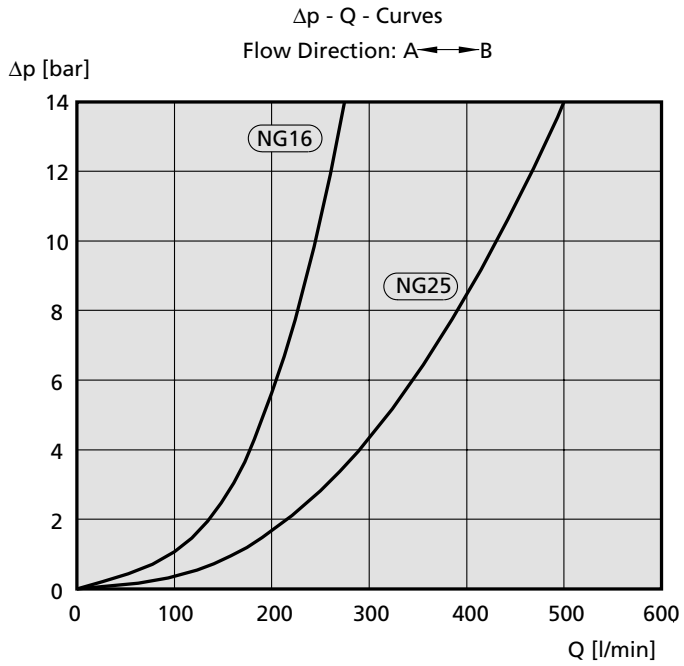


### Contacts (Pins):

- 1: =24 V
- 2: Output close position
- 3: 0 V
- 4: Output open position

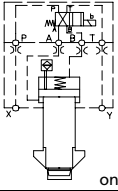
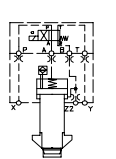
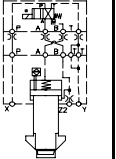
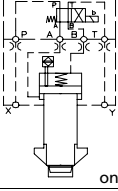
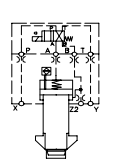
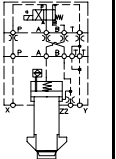
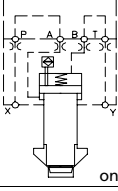
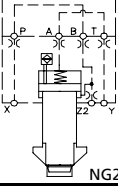
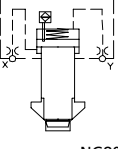
Warning: The position switch does not have an earth conductor!

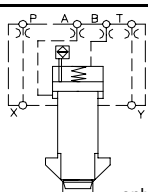
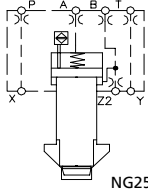
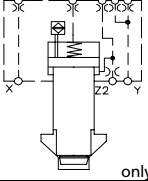
Technical Data of the Position Switch	
Supply voltage UB Ripple	24 V ± 20 % = 10 %
max. output voltage	= UB – 2,5 V
Polarity reversal protection	max. 300 V
max. supply current (w/o output current)	20 mA
Switching point hysteresis	= 0,06 mm
Reproducibility of switching point at Tu = 20 °C	± 0,02 mm
Temperature drift	typ. 0,002 mm/°C (stat.)
max. output current	= 250 mA
Leckage current at low signal	< 10 µA
Outputs	high side, overload protected
Operating temperature	- 20°C bis + 85°C
Vibration-proof	Sinus, 20 g (5 min), 40...250 Hz (12 h),
Protection according to DIN 40050	IP 65 with mounted plug
Pressure strength of tube	= 350 bar, schwellend / 5 Hz

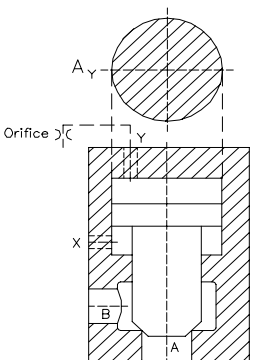


Notes: Active opening, viscosity 32 mm<sup>2</sup>/s and oil temperature 40°C

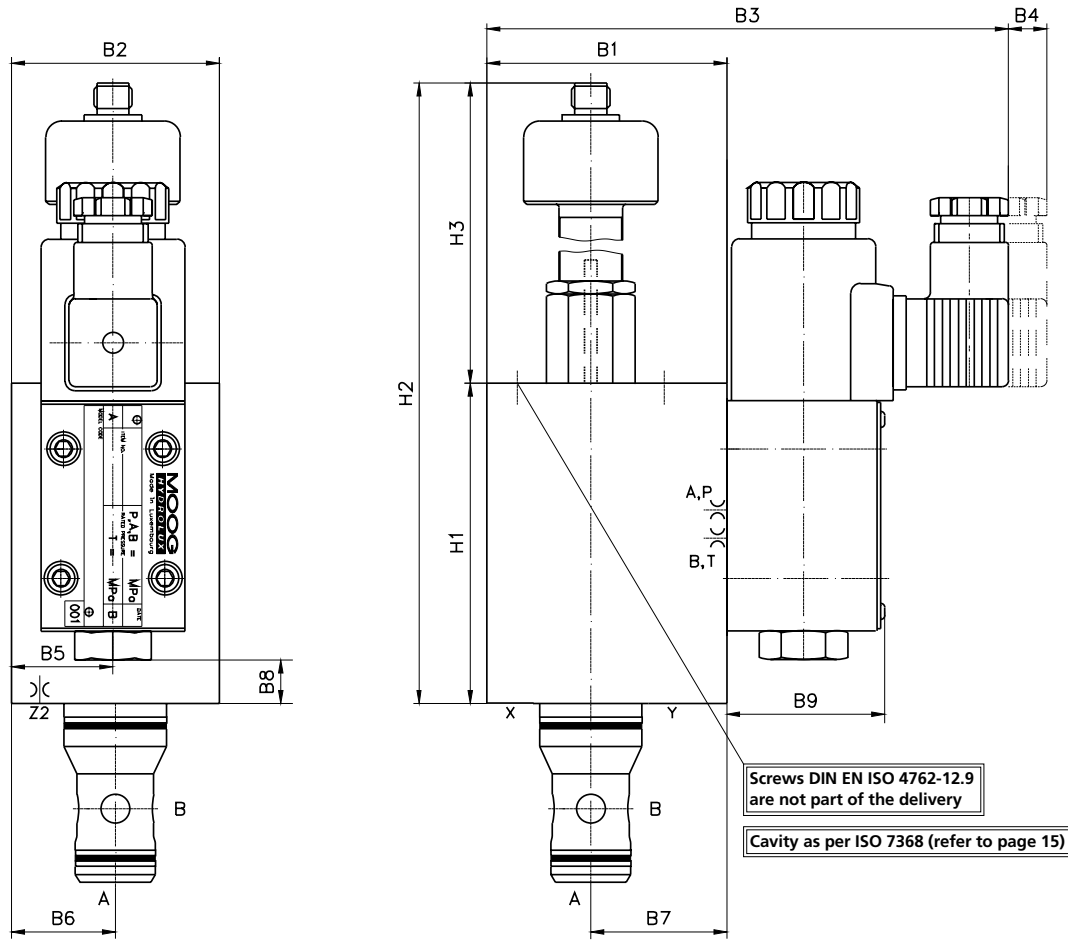


Symbol	Function	Size NG	Weight [kg]	Part Designation	Part Number
 <p>only NG16</p>  <p>NG25-NG50</p>  <p>only NG63</p>	normally closed (WX1)	16	6,0	RSE16CL6T1WX1B/SI1	XEB17275-000-01
		25	8,5	RSE25CL6T2WX1B/SI1;Z2	XEB17277-000-01
		32	11,0	RSE32CL6T3WX1B/SI1;Z2	XEB17279-000-01
		40	18,0	RSE40CL6T4WX1B/SI1;Z2	XEB17281-000-01
		50	28,0	RSE50CL6T5WX1B/SI1;Z2	XEB17283-000-01
		63	53,0	RSE63CL6T6WX1B/SI1;Z2;W106	XEB17285-000-01
 <p>only NG16</p>  <p>NG25-NG50</p>  <p>only NG63</p>	normally open (WX2)	16	6,0	RSE16CL6T1WX2B/SI1	XEB17276-000-01
		25	8,5	RSE25CL6T2WX2B/SI1;Z2	XEB17278-000-01
		32	11,0	RSE32CL6T3WX2B/SI1;Z2	XEB17280-000-01
		40	18,0	RSE40CL6T4WX2B/SI1;Z2	XEB17282-000-01
		50	28,0	RSE50CL6T5WX2B/SI1;Z2	XEB17284-000-01
		63	53,0	RSE63CL6T6WX2B/SI1;Z2;W106	XEB17286-000-01
 <p>only NG16</p>  <p>NG25-NG63</p>	externally piloted (WX6)	16	5,5	RSE16BL6T1WX6/SI1	XEB16951-000-01
		25	8,0	RSE25BL6T2WX6/SI1;Z2	XEB17292-000-01
		32	10,5	RSE32BL6T3WX6/SI1;Z2	XEB16981-000-01
		40	17,5	RSE40BL6T4WX6/SI1;Z2	XEB17009-000-01
		50	27,5	RSE50BL6T5WX6/SI1;Z2	XEB17293-000-01
		63	51,5	RSE63BL6T6WX6/SI1;Z2	XEB16841-000-01
 <p>NG80-NG100</p>	externally piloted (WX3)	80	81,0	RSE80BT6T7WX3/SI1	XEB16842-000-01
		100	100,0	RSE100BT6T8WX3/SI1	XEB16355-000-01

Symbol	Function	Size NG	Weight [kg]	Part Designation	Part Number
 <p>only NG16</p>	without pilot valve	16	4,5	RSE16BL6T1WX_/SI1;OP	XEB16466-000-01
		25	7,0	RSE25BL6T2WX_/SI1;Z2;OP	XEB17189-000-01
 <p>NG25-NG50</p>		32	9,5	RSE32BL6T3WX_/SI1;Z2;OP	XEB16949-000-01
		40	16,5	RSE40BL6T4WX_/SI1;Z2;OP	XEB17003-000-01
 <p>only NG63</p>		50	26,5	RSE50BL6T5WX_/SI1;Z2;OP	XEB17190-000-01
		63	50,0	RSE63BL6T6WX_/SI1;Z2;OP	XEB16968-000-01

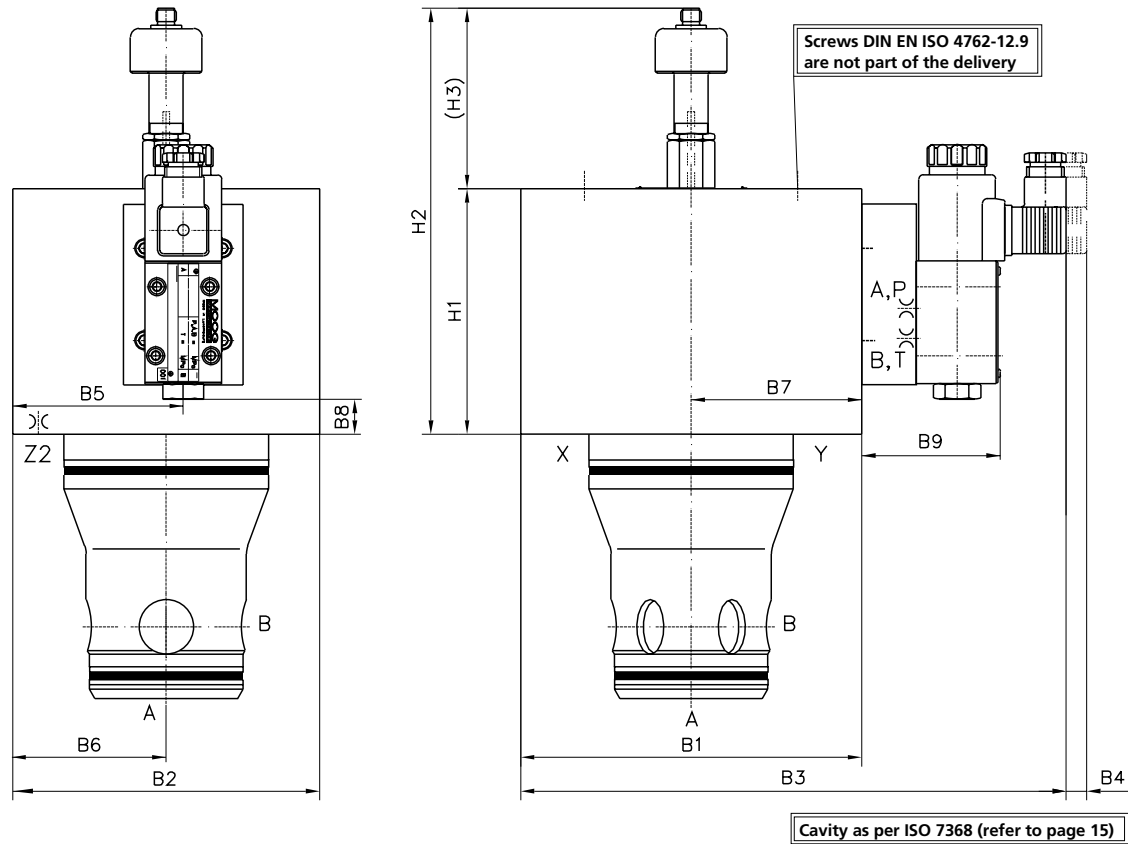
Suggested orifices for pilot area A <sub>Y</sub>		
Pilot area	NG	Orifices as per DIN 913 *
	16	M6 x 0,9 mm
	25	M6 x 1,5 mm
	32	M6 x 2,0 mm
	40	M6 x 2,5 mm
	50	M6 x 2,5 mm
	63	M6 x 2,5 mm => NG06-pilot v. / M10 x 3,0 mm => NG10-pilot v.

\* For the orifice locations and orifice diameters, refer to Dimensions on pages 11 through 14



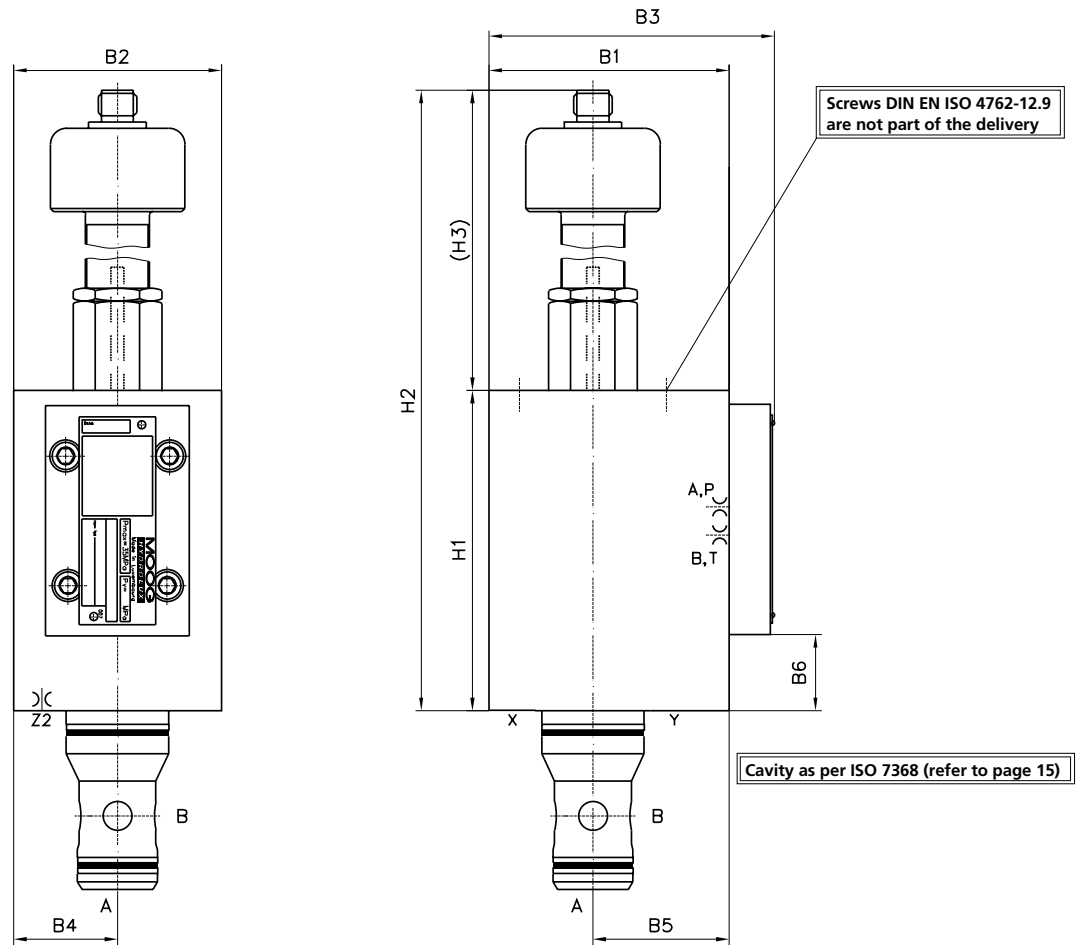
Dimensions	NG16	NG25	NG32	NG40	NG50
H1 [mm]	100	101	109	131	158
H2 [mm]	210	211	219	241	268
(H3) [mm]	110	110	110	110	110
B1 [mm]	75	90	102	125	140
B2 [mm]	65	85	102	125	140
B3 [mm]	163	178	190	213	228
B4 [mm]	12	12	12	12	12
B5 [mm]	32,5	39,15	47	57	70
B6 [mm]	32,5	42,5	51	62,5	70
B7 [mm]	42,5	47,5	51	62,5	70
B8 [mm]	13	17	25	35	35
B9 [mm]	50	50	50	50	50
Orifice thread in A,B,P and T (see drawing)	M6	M6	M6	M6	M6
Orifice thread in Z2 (see drawing)	-	M5	M6	M8	M8
* Screws DIN EN ISO 4762-12.9	4x M8 x 95	4x M12 x 100	4x M16 x 110	4x M20 x 140	4x M20x120
Tightening torque M <sub>A</sub> [Nm]	30	100	300	550	550

\* not part of the delivery



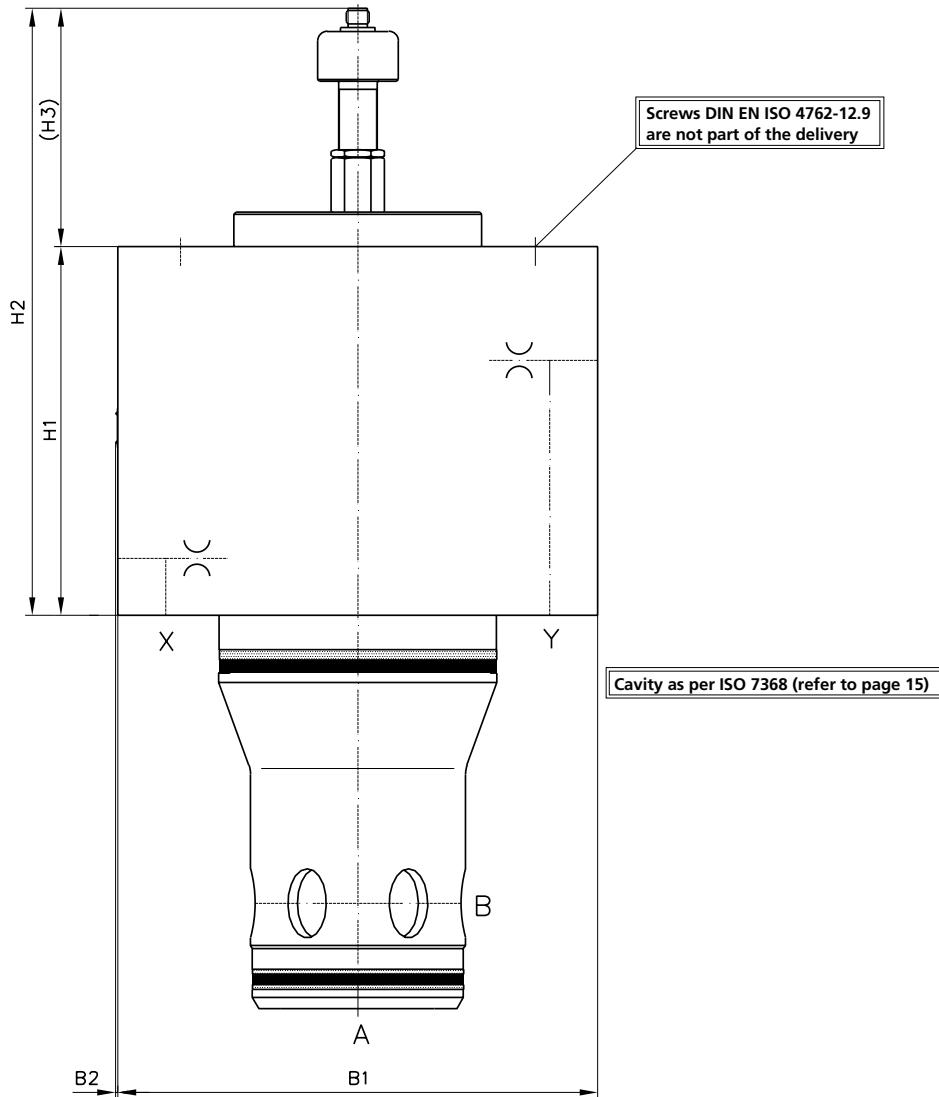
Dimensions	NG63
H1 [mm]	144
H2 [mm]	254
(H3) [mm]	110
B1 [mm]	200
B2 [mm]	180
B3 [mm]	320
B4 [mm]	12
B5 [mm]	100
B6 [mm]	90
B7 [mm]	100
B8 [mm]	20
B9 [mm]	82
Orifice thread in A,B,P and T (see drawing)	M6
Orifice thread in Z2 (see drawing)	M10
* Screws DIN EN ISO 4762-12.9	4x M30 x 150
Tightening Torque $M_A$ [Nm]	1800

\* not part of the delivery



Dimensions	NG16	NG25	NG32	NG40	NG50	NG63
H1 [mm]	100	101	109	131	158	144
H2 [mm]	210	211	219	241	268	254
(H3) [mm]	110	110	110	110	110	110
B1 [mm]	75	90	102	125	140	200
B2 [mm]	65	85	102	125	140	180
B3 [mm]	92	107	119	142	157	225
B4 [mm]	32,5	42,5	51	62,5	70	90
B5 [mm]	42,5	47,5	51	62,5	70	100
B6 [mm]	23	26	35	45	40	28
Orifice thread in A,B,P and T (see drawing)	M6	M6	M6	M6	M6	M10
Orifice thread in Z2 (see drawing)	-	M5	M6	M8	M8	M10
* Screws DIN EN ISO 4762-12.9	4x M8 x 95	4x M12 x 100	4x M16 x 110	4x M20 x 140	4x M20x120	4x M30x150
Tightening torque $M_A$ [Nm]	30	100	300	550	550	1800

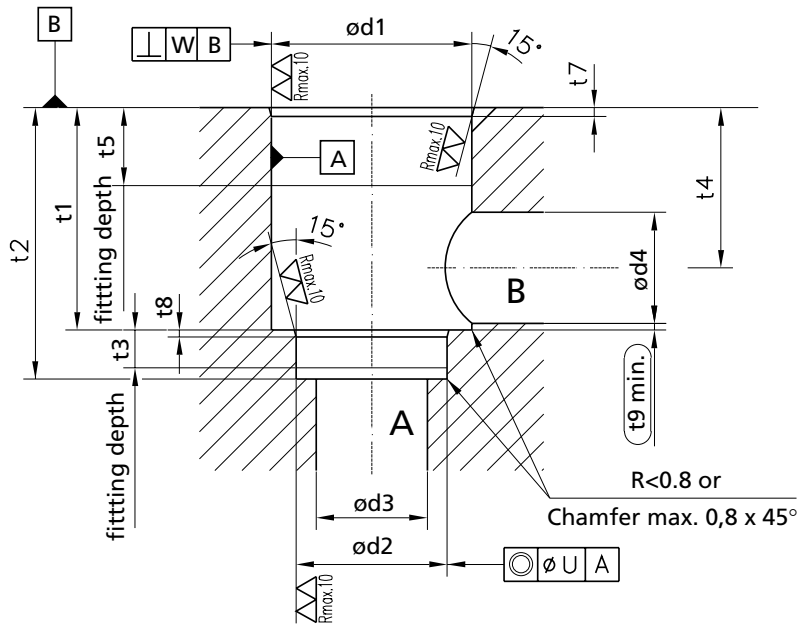
\* not part of the delivery



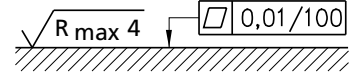
Dimensions	NG80	NG100
H1 [mm]	192	218
H2 [mm]	317	358
(H3) [mm]	125	140
B1 [mm]	∅ 250	∅ 300
B2 [mm]	2	-
Orifice thread in X and Y (see drawing)	M14	M16
* Screws DIN EN ISO 4762-12.9	8x M24 x 200	8x M30 x 170
Tightening Torque $M_A$ [Nm]	900	1800

\* not part of the delivery

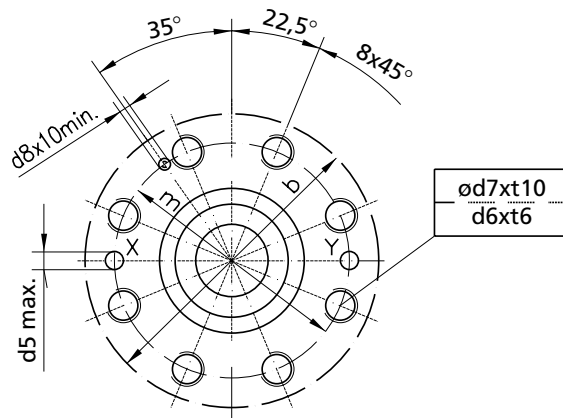
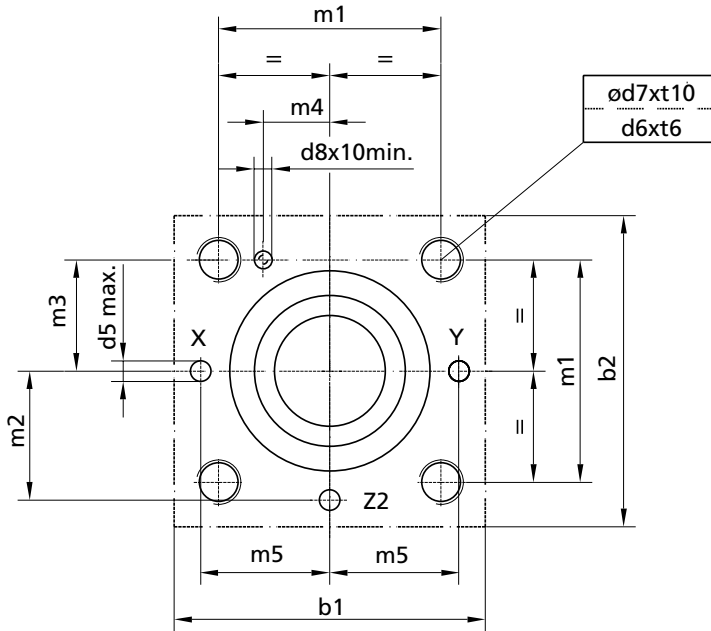
Cavity as per ISO 7368



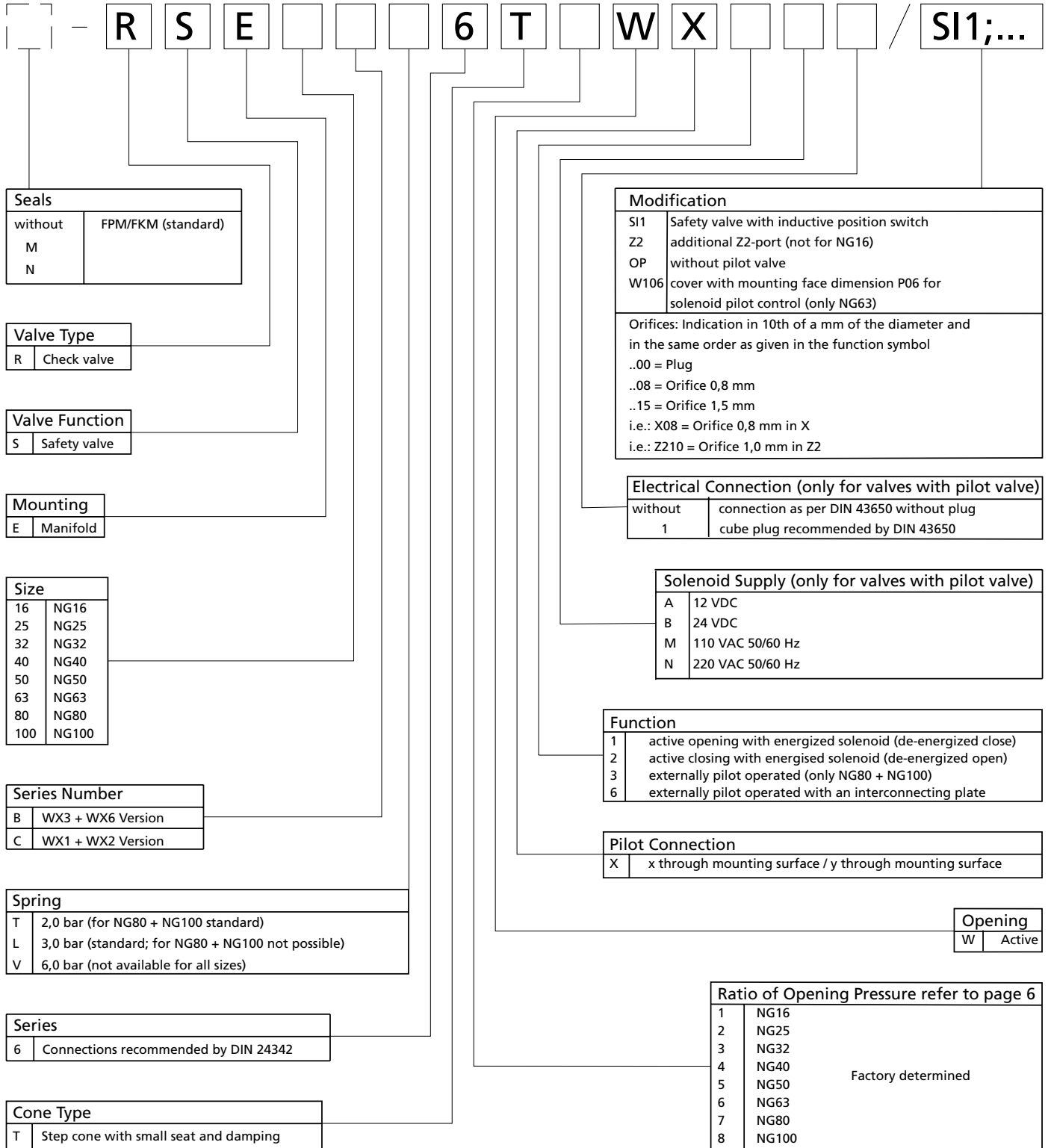
Required surface finish



Dimension	NG16	NG25	NG32	NG40	NG50	NG63
b1	75	90	102	125	140	200
b2	65	85	102	125	140	180
d1 H7	32	45	60	75	90	120
d2 H7	25	34	45	55	68	90
d3	16	25	32	40	50	63
d4	16	25	32	40	50	63
d4 max.	25	32	40	50	63	80
d5 max.	4	6	8	10	10	12
d6	M8	M12	M16	M20	M20	M30
d7	6,8	10,2	14	17,5	17,5	26,5
d8 H13	4	6	6	6	8	8
m1 ±0,2	46	58	70	85	100	125
m2 ±0,2	25	33	41	50	58	75
m3 ±0,2	23	29	35	42,5	50	62,5
m4 ±0,2	10,5	16	17	23	30	38
m5 ±0,2	25	33	41	50	58	75
t1 +0,1	43	58	70	87	100	130
t2 +0,1	56	72	85	105	122	155
t3	11	12	13	15	17	20
t4	34	44	52	64	72	95
t4 at d4 max.	29,5	40,5	48	59	65,5	86,5
t5	20	30	30	30	35	40
t6	14	20	26	33	33	50
t7	2	2,5	2,5	3	4	4
t8	2	2,5	2,5	3	3	4
t9	0,5	1,0	1,5	2,5	2,5	3
t10	17	24	31	38	38	56
U	0,03	0,03	0,03	0,05	0,05	0,05
W	0,05	0,05	0,1	0,1	0,1	0,2

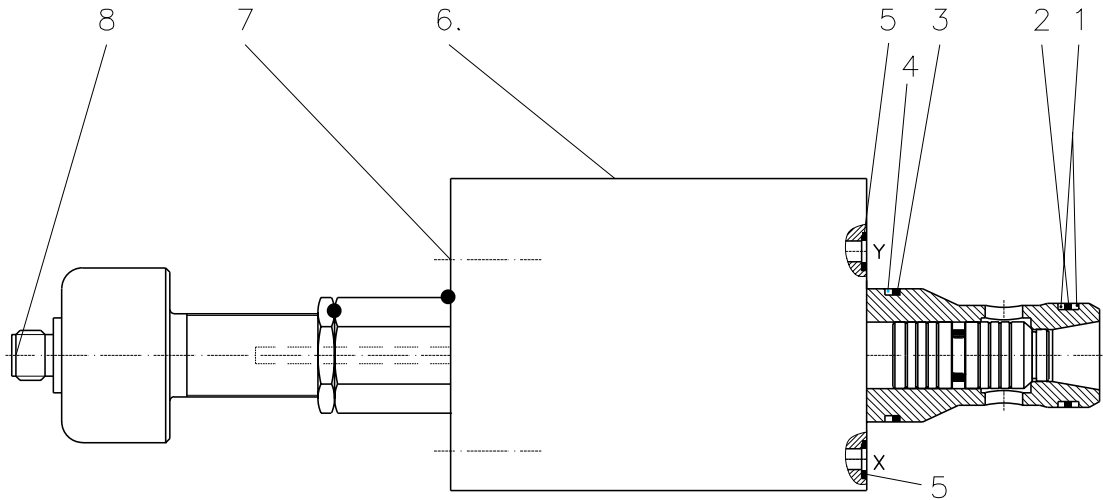


Dimension	NG80	NG100
b max.	250	300
d1 h7	145	180
d2 h7	110	135
d3	80	100
d4	80	100
d4 max.	100	125
d5 max.	16	20
d6	M24	M30
d7	21	26,5
d8 H13	10	10
t1	175	210
t2 +0,2	205	245
t3	25	29
t4	130	155
t4 at d4 max.	120	142,5
t5	40	50
t6	39	50
t7	5	5
t8	5	5
t9	3	5
t10	15	56
m±0,3	200	245
U	0,05	0,05
W	0,2	0,2



Subject to technical changes.





Pos.	Designation	Order Number								
			NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100
1	Back-Up Ring	X780-	08020	18122	18222	18225	18229	18338	18344	18427
2	O-Ring Viton	X980-	02020	02122	02222	02225	02229	02338	02344	02427
3	O-Ring Viton	X980-	02024	02129	02227	02231	02338	02347	02430	02439
4	Back-Up Ring	X780-	18024	18129	08227	18231	18338	08348	08431	18439
5	O-Ring Viton	X980-	02010	02012	02013	02112	02112	02116	02115	02220
	Seal Kit (Pos.1 - 5)	XEB	17324	17325	17326	17327	17328	17329	17330	17331
6	Seal Kit									
	Pilot valve NG06	XEB	16512-000-00							
	Pilot valve NG10	XEB	13746-000-00							
7	Screws									
	DIN EN ISO 4762 - 12.9 (not part of the delivery !)	X784-	10819 (4x)	11209 (4x)	11607 (4x)	12016 (4x)	12008 (4x)	13006 (4x)	12409 (4x)	13004 (4x)
8	Pin Connector + Cable (not part of the delivery !)	X798-	00030 (5 m Cable length)							
		X798-	00085 (10 m Cable length)							

Order example : O-Ring Viton Pos.7 NG32 => Order number : X980-020

Rückseite der BG-Prüfbescheinigung

**BG-PRÜFZERT-Zeichen**



<sup>1)</sup> Bescheinigungs-Nummer

<sup>2)</sup> Zusätzlicher Hinweis

Die Gültigkeit der Prüfbescheinigung (Nummer 99 087 ) wird verlängert bis .....

.....  
Datum

.....  
Unterschrift

**Bemerkungen:**

- Die Prüfbescheinigung schließt die Umlenplatte für WX 3-Ausführung mit ein.
- Die Prüfbescheinigung bezieht sich auf die Hauptstufe. Bei Ausführung des Ventils mit 4/2-Wegevorsteuerventil (WX 1-Ausführung) ist im Rahmen einer Fehlersimulation an der ausgeführten Steuerung nachzuweisen, daß eine ausreichende Überwachung des Vorsteuerventils durch die Überwachung der Hauptstufe gewährleistet ist.

P2807  
10.98



Fachausschüsse  
Eisen und Metall III  
und Hebezeuge  
**Prüf- und Zertifizierungsstelle**  
im BG-PRÜFZERT

Hauptverband der gewerblichen  
Berufsgenossenschaften

**BG-Prüfbescheinigung**

99 087

Bescheinigungs-Nummer

Name und Anschrift  
des Bescheinigungsinhabers:  
(Auftraggeber) MOOG HydroLux S.à.r.l.  
1, rue de l'Acierie  
L - 1112 Luxembourg

Name und Anschrift  
des Herstellers: - siehe oben -

Zeichen des Auftraggebers: Zeichen der Prüf- und Zertifizierungsstelle: Ausstellungsdatum:  
EM III 612.1:612.17/039 Gb/bt 09.08.1999

Produktbezeichnung: 2/2 Wegesitzventil mit induktivem Überwachungsschalter  
▪ Standardausführung ▪

Typ: RSE 16 / 25 / 32 / 40 / 50  
A\_6\_\_WX\_/SI1

Bestimmungsgemäße  
Verwendung:

Prüfgrundlage:  
° EN 201:1997 "Gummi- und Kunststoffmaschinen SPRITZGIEßMASCHINEN  
Sicherheitsanforderungen"  
° Grundsätze für die Prüfung der Arbeitssicherheit von Spritzgieß-  
maschinen, Ausgabe 11/1997

Bemerkungen:  
  
- siehe Rückseite -

Das geprüfte Baumuster entspricht den zur Zeit geltenden Sicherheits- und Gesundheitsanforderungen in der Bundesrepublik  
Deutschland.  
Der Bescheinigungsinhaber ist berechtigt, das umseitig abgebildete BG-PRÜFZERT-Zeichen an den mit dem geprüften  
Baumuster übereinstimmenden Produkten anzubringen, und zwar mit dem unter 'Bemerkungen' genannten Hinweis.  
Diese Bescheinigung wird spätestens ungültig am:

01.09.2004

Weiteres über die Gültigkeit, eine Gültigkeitsverlängerung und andere Bedingungen regelt die Prüf- und Zertifizierungs-  
ordnung vom Oktober 1997



PZ807  
10.98



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