Dimensions

1 Main valve
2 Pilot control valve type 4WE 6 ... (data sheet 23208):
2.1 ▶ Pilot control valve type 4WE 6 D... (1 solenoid) for main valves with symbols C, D, K, Z symbols HC, HD, HK, HZ
▶ Pilot control valve type 4WE 6 JA... (1 solenoid "a") for main valves with symbols EA, FA, etc., spring return
▶ Pilot control valve type 4WE 6 MA... (1 solenoid "a") for main valves with symbols HEA, HFA, etc., hydraulic control spool return
2.2 ▶ Pilot control valve type 4WE 6 Y... (1 solenoid) for main valves with symbol Y symbol HY
▶ Pilot control valve type 4WE 6 JB... (1 solenoid "b") for main valves with symbols EB, FB, etc., spring return
▶ Pilot control valve type 4WE 6 MB... (1 solenoid "b") for main valves with symbols HEB, HFB, etc., hydraulic control spool return
2.3 ▶ Pilot control valve type 4WE 6J... (2 solenoids) for main valves with 3 spool positions, spring-centered
▶ Pilot control valve type 4WE 6 M... (2 solenoids) for main valves with 3 spool positions, pressure-centered
3.1 Solenoid "a"
3.2 Solenoid "b"
4 Concealed manual override "N9"
▶ Actuation of the manual override is only possible up to a tank pressure of approx. 50 bar. Avoid damage to the bore of the manual override! (Special tool for the operation, separate order, material no. **R900024943**). When the manual override is blocked, the operation of the solenoid must be prevented!
▶ Simultaneous actuation of the solenoids must be prevented.
5 Dimension for valve with DC solenoid
6 Dimension () for valve with AC solenoid
8 Switching time adjustment (wrench size 6), optional
9 Pressure reducing valve, optional
10.1 Machined valve contact surface; porting pattern according to ISO 4401-05-05-0-05 and NFPAT3.5.1 R2-D05
10.2 Machined valve contact surface; porting pattern according to ISO 4401-07-07-0-05 and NFPAT3.5.1 R2-D07
10.3 Machined valve contact surface; porting pattern according to ISO 4401-08-08-0-05 and NFPAT3.5.1 R2-D08
10.4 Machined valve contact surface; porting pattern according to ISO 4401-10-09-0-05 and NFPAT3.5.1 R2-D10
11 Name plate pilot control valve
12 Name plate complete valve
13 Seal rings
14 Space required for removing the mating connector
15 2-spool position valves with spring end position in the main valve (symbols A, C, D, K, Z)
16 2-spool position valves with spring end position in the main valve (symbols B, Y)
17 3-spool position valves, spring-centered; 2-spool position valves with hydraulic end position in the main valve
18 3-spool position valves, pressure-centered
19 Locking pin

Subplates (separate order) with porting pattern according to ISO 4401 see data sheet 45100.

Valve mounting screws (separate order)

▶ NG10:
4 hexagon socket head cap screws, metric
ISO 4762 - M6 x 45 - 10.9-flZn-240h-L
(friction coefficient μ_{total} = 0.09 ... 0.14);
tightening torque M_A = 12.5 Nm *[9.2 ft-lbs]* ±10%,
material no. **R913000258**

4 hexagon socket head cap screws, UNC
1/4-20 UNC x 1 3/4" ASTM-A574
upon request

▶ NG16:
4 hexagon socket head cap screws, metric
ISO 4762 - M10 x 60 - 10.9-flZn-240h-L
(friction coefficient μ_{total} = 0.09 ... 0.14);
tightening torque M_A = 58 Nm *[42.8 ft-lbs]* ±10%,
material no. **R913000116**

2 hexagon socket head cap screws, metric
ISO 4762 - M6 x 60 - 10.9-flZn-240h-L
(friction coefficient μ_{total} = 0.09 ... 0.14);
tightening torque M_A = 12.5 Nm *[9.2 ft-lbs]* ±10%,
material no. **R913000115**

4 hexagon socket head cap screws,
UNC 3/8-16 UNC x 2 1/4" ASTM-A574
upon request

2 hexagon socket head cap screws,
UNC 1/4-20 UNC x 2 1/4" ASTM-A574
upon request

▶ NG25:
6 hexagon socket head cap screws, metric
ISO 4762 - M12 x 60 - 10.9-flZn-240h-L
(friction coefficient μ_{total} = 0.09 ... 0.14);
tightening torque M_A = 130 Nm *[95.9 ft-lbs]* ±10%,
material no. **R913000121**

6 hexagon socket head cap screws,
UNC 1/2-13 UNC x 2 1/2" ASTM-A574
upon request

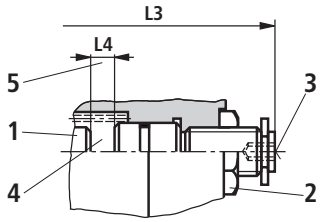
▶ NG32:
6 hexagon socket head cap screws, metric
ISO 4762 - M20 x 80 - 10.9-flZn-240h-L
(friction coefficient μ_{total} = 0.09 ... 0.14);
tightening torque M_A = 430 Nm *[317.2 ft-lbs]* ±10%,
material no. **R901035246**

6 hexagon socket head cap screws,
UNC 3/4-10 UNC x 3 1/4" ASTM-A574
upon request

Bosch Rexroth AG, RE 24802, edition: 2016-12

Stroke setting, mounting options
(dimensions in mm *[inch]*)

The stroke of the control spool is limited by the stroke setting (1). The control spool stroke is shortened by loosening the lock nut (2) and clockwise rotation of the adjustment spindle (3). The control chamber (4) must be depressurized for this.

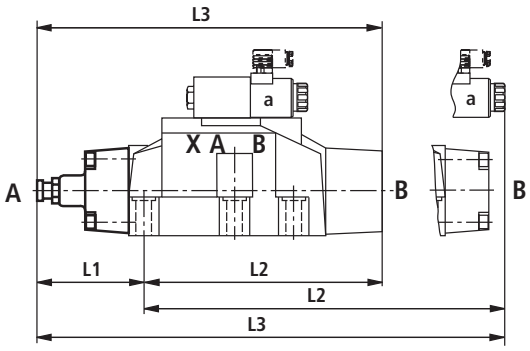


NG	L4
10	6.5 *[0.26]*
16	10 *[0.39]*
25 ("W.H 22")	9.5 *[0.37]*
25 ("W.H 25")	12.5 *[0.49]*
32	15 *[0.59]*

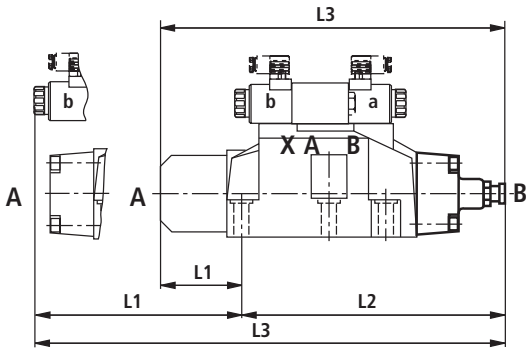
More dimensions see below and page 36.

5 Adjustment range
- NG10:
  1 rotation = 1 mm *[0.0394 inch]* adjustment travel
- NG16 and 32:
  1 rotation = 1.5 mm *[0.0591 inch]* adjustment travel

Stroke limitation on side A



Stroke limitation on side B



Mounting options	Ordering code	NG	3-spool position valve 1) spring-centered L1	spring-centered L2	spring-centered L3	pressure-centered L1	pressure-centered L2	pressure-centered L3
Stroke setting on valve side A and B	**10**	10	90 *[3.54]*	144 *[5.67]*	234 *[9.21]*			
		16	100 *[3.94]*	200 *[7.87]*	300 *[11.81]*			
		25 2)	96 *[3.77]*	241 *[9.49]*	337 *[13.27]*			
		25 3)	123 *[4.84]*	276 *[10.87]*	399 *[15.71]*			
		32	133 *[5.24]*	344 *[13.54]*	477 *[18.78]*			
Stroke setting on valve side A	**11**	10	90 *[3.54]*	106 *[4.17]*	196 *[7.72]*			
		16	100 *[3.94]*	156 *[6.14]*	256 *[10.08]*			
		25 2)	96 *[3.77]*	193 *[7.60]*	289 *[11.38]*			
		25 3)	123 *[4.84]*	225 *[8.86]*	348 *[13.70]*			
		32	133 *[5.24]*	287 *[11.30]*	420 *[16.54]*			
Stroke setting on valve side B	**12**	10	52 *[2.05]*	144 *[5.67]*	196 *[7.72]*	–	–	–
		16	56 *[2.20]*	200 *[7.87]*	256 *[10.08]*	81 *[3.19]*	200 *[7.87]*	281 *[11.06]*
		25 2)	48 *[1.89]*	241 *[9.49]*	289 *[11.38]*	–	–	–
		25 3)	72 *[2.83]*	276 *[10.87]*	348 *[13.70]*	107 *[4.21]*	276 *[10.87]*	283 *[11.14]*
		32	76 *[2.99]*	344 *[13.54]*	420 *[16.54]*	120 *[4.72]*	344 *[13.54]*	464 *[18.27]*

Stroke setting, mounting options
(dimensions in mm *[inch]*)

Mounting options	Ordering code	NG	2-spool position valve								
			Spring end position						Hydraulic end position		
			A, C, D, K, Z			B, Y			HC, HD, HK, HZ, HY		
			L1	**L2**	**L3**	**L1**	**L2**	**L3**	**L1**	**L2**	**L3**
Stroke setting on valve side A and B	**10**	10	90 *[3.54]*	144 *[5.67]*	234 *[9.21]*	90 *[3.54]*	144 *[5.67]*	234 *[9.21]*	90 *[3.54]*	144 *[5.67]*	234 *[9.21]*
		16	–	–	–	–	–	–	100 *[3.94]*	200 *[7.87]*	300 *[11.81]*
		25 [2]	96 *[3.78]*	241 *[9.49]*	337 *[13.27]*	96 *[3.78]*	241 *[9.49]*	337 *[13.27]*	96 *[3.78]*	241 *[9.49]*	337 *[13.27]*
		25 [3]	–	–	–	–	–	–	123 *[4.84]*	276 *[10.87]*	399 *[15.71]*
		32	–	–	–	–	–	–	133 *[5.24]*	344 *[13.54]*	477 *[18.78]*
Stroke setting on valve side A	**11**	10	90 *[3.54]*	106 *[4.17]*	196 *[7.72]*	–	–	–	90 *[3.54]*	106 *[4.17]*	196 *[7.72]*
		16	100 *[3.94]*	180 *[7.09]*	280 *[11.02]*	–	–	–	100 *[3.94]*	156 *[6.14]*	256 *[10.08]*
		25 [2]	96 *[3.78]*	193 *[7.60]*	289 *[11.38]*	96 *[3.78]*	193 *[7.60]*	289 *[11.38]*	96 *[3.78]*	193 *[7.60]*	289 *[11.38]*
		25 [3]	123 *[4.84]*	253 *[9.96]*	376 *[14.8]*	–	–	–	123 *[4.84]*	225 *[8.86]*	348 *[13.70]*
		32	133 *[5.24]*	316 *[12.44]*	449 *[17.68]*	–	–	–	133 *[5.24]*	287 *[11.30]*	420 *[16.53]*
Stroke setting on valve side B	**12**	10	52 *[2.05]*	144 *[5.67]*	196 *[7.72]*	52 *[2.05]*	144 *[5.67]*	196 *[7.72]*	52 *[2.05]*	144 *[5.67]*	196 *[7.72]*
		16	–	–	–	80 *[3.15]*	200 *[7.87]*	280 *[11.02]*	56 *[2.21]*	200 *[7.87]*	256 *[10.08]*
		25 [2]	48 *[1.89]*	241 *[9.49]*	289 *[11.38]*	48 *[1.89]*	241 *[9.49]*	289 *[11.38]*	48 *[1.89]*	241 *[9.49]*	289 *[11.38]*
		25 [3]	–	–	–	100 *[3.94]*	276 *[10.87]*	376 *[14.80]*	72 *[2.84]*	276 *[10.87]*	348 *[13.70]*
		32	–	–	–	105 *[4.13]*	344 *[13.54]*	449 *[17.68]*	76 *[2.99]*	344 *[13.54]*	420 *[16.53]*

[1] With symbol A only version "11", with symbol B only version "12" possible.
[2] Version "W.H **22**"
[3] Version "W.H **25**"

Notice:
The dimensions are nominal dimensions which are subject to tolerances.

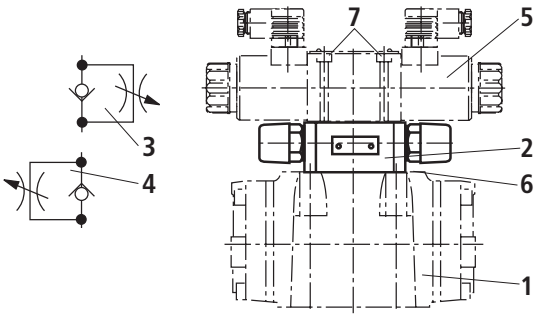
Bosch Rexroth AG, RE 24802, edition: 2016-12

Switching time adjustment

The switching time of the main valve (1) is influenced by using a twin throttle check valve (2) (type Z2FS 6; data sheet 27506).

Modification of supply (3) to discharge control (4):
Remove the pilot control valve (5) – The plate (6) to accept the seal rings stays in place – Turn the switching time adjustment (2) around its longitudinal axis and put it back, install the pilot control valve (5).

☞ **Notice:**
The modification may only be performed by authorized specialists or at the factory!

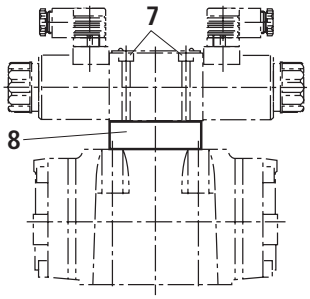


Type .WEH 10 ..4X/...S
Type .WEH 10 ..4X/...S2

Pressure reducing valve "D3"

The pressure reducing valve (8) has to be used at a pilot pressure above 250 bar *[3626 psi]* (with "WEH 22 ...": 210 bar *[3046 psi]*) and with version "H".
The secondary pressure is kept at a constant level of 45 bar *[652 psi]*.

☞ **Notice:**
- If a pressure reducing valve "D3" (8) is used, a "B10" throttle insert has to be installed in channel P of the pilot control valve.
- The modification may only be performed by authorized specialists or at the factory!



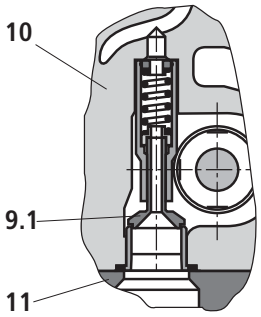
Type .WEH 10 ..4X/.../..D3

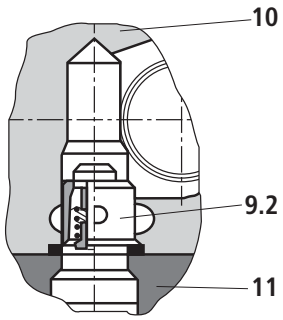
RE 24802, edition: 2016-12, **Bosch Rexroth AG**

Preload valve (not for NG10)

In case of valves with depressurized circulation and internal pilot oil supply, the installation of the preload valve (9) in channel P of the main valve is required in order to build up the minimum pilot pressure.

The pressure differential of the preload valve is to be added to the pressure differential of the main valve (see characteristic curves) to result in one total value. The cracking pressure amounts to approx. 4.5 bar *[65 psi]*.



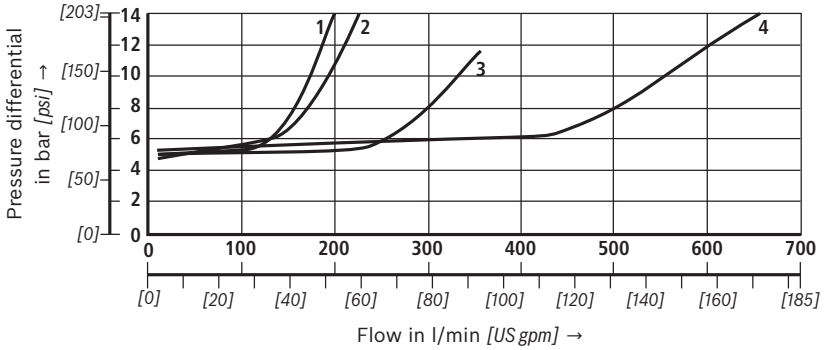


9.1 Preload valve
9.2 Preload valve
10 Main valve
11 Subplate

☞ **Notice:**
Series-production status, see ordering key on the name plate.

Size	Material number P4,5	
	Item 9.2	Item 9.1
16	R961009417 (up to component series 71)	R961009415 (from component series 72)
25 ("W.H **22**")	R961009609 (up to component series 76)	–
25 ("W.H **25**")	R961009416 (up to component series 67)	R961009166 (from component series 68)
32	R961009610 (up to component series 63)	–

***Δp–qV*–characteristic curve** (measured with HLP46, ϑ_{Oil} = 40 °C ± 5 °C *[104 °F ±9 °F]*)



1 NG16
2 NG25 ("W.H **25**")
3 NG25 ("W.H **22**")
4 NG32

Bosch Rexroth AG, RE 24802, edition: 2016-12

Project planning information

The stipulations of the Machinery Directive 2006/42/EC are to be adhered to!
Please also note data sheet 08012 with information on MTTFd values and shock and vibration loads!

Further information

▶ Directional spool valve (solenoid coil with UR-marking according to UL 906)	Data sheet 23208
▶ Subplates	Data sheet 45100
▶ Inductive position switch and proximity sensors (contactless)	Data sheet 24830
▶ Hydraulic fluids on mineral oil basis	Data sheet 90220
▶ Environmentally compatible hydraulic fluids	Data sheet 90221
▶ Flame-resistant, water-free hydraulic fluids	Data sheet 90222
▶ Hexagon socket head cap screw, metric/UNC	Data sheet 08936
▶ Hydraulic valves for industrial applications	Operating instructions 07600-B
▶ Directional spool valves and directional seat valves with electrical actuation and M12x1 plug-in connection	Data sheet 08010
▶ Use of non-electrical hydraulic components in an explosive environment (ATEX)	Data sheet 07011
▶ Selection of the filters	www.boschrexroth.com/filter
▶ Information on available spare parts	www.boschrexroth.com/spc

RE 24802, edition: 2016-12, **Bosch Rexroth AG**