

## Pressure relief valve, pilot-operated

### Type DB and DBW



- ▶ Size 10 ... 32
- ▶ Component series 5X
- ▶ Maximum operating pressure 350 bar
- ▶ Maximum flow 650 l/min

#### Features

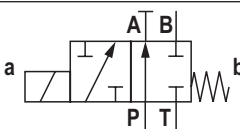
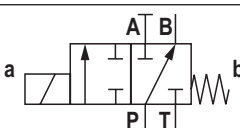
- ▶ For subplate mounting
- ▶ Porting pattern according to ISO 6264-06-09 (NG10), ISO 6264-08-13 (NG25) and ISO 6264-10-17 (NG32)
- ▶ For threaded connection
- ▶ As cartridge valve (cartridge)
- ▶ 4 adjustment types for pressure adjustment, optionally:
  - Rotary knob
  - Bushing with hexagon and protective cap
  - Lockable rotary knob with scale
  - Rotary knob with scale
- ▶ 5 pressure ratings
- ▶ Solenoid-actuated unloading via an installed directional spool valve or directional seat valve
- ▶ High-power solenoid
- ▶ Explosion-protected solenoid (upon request)
- ▶ Switching shock damping, optional (DBW type only)
- ▶ Corrosion-protected design

#### Contents

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**Ordering code**

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	
<b>DB</b>								<b>5X</b>	/													*

01	Pressure relief valve	<b>DB</b>
02	<b>Without</b> directional valve	<b>no code</b>
	<b>With</b> built-on directional valve	<b>W</b>
03	Pilot-operated valve (complete)	<b>no code</b>
	Pilot control valve <b>without</b> main spool insert (do <b>not</b> enter any size)	<b>C</b>
	Pilot control valve <b>with</b> main spool insert (enter size 10 or 30)	<b>C</b>
	Pilot control valve <b>without</b> main spool insert for subplate mounting (do <b>not</b> enter any size)	<b>T</b> <sup>1)</sup>
04	<b>- Size 10</b>	
	Subplate mounting "no code"	<b>10</b>
	Threaded connection "G" (G1/2)	<b>10</b>
	<b>- Size 16</b>	
	Threaded connection "G" (G3/4)	<b>15</b>
	<b>- Size 25</b>	
	Subplate mounting "no code"	<b>20</b>
	Threaded connection "G" (G1)	<b>20</b>
	Threaded connection "G" (G1 1/4)	<b>25</b>
	<b>- Size 32</b>	
Subplate mounting "no code"	<b>30</b>	
Threaded connection "G" (G1 1/2)	<b>30</b>	
05	 Normally closed	<b>A</b> <sup>2)</sup>
	 Normally open	<b>B</b> <sup>2)</sup>

**Type of connection**

06	Subplate mounting or cartridge valve	<b>no code</b>
	Threaded connection	<b>G</b>

**Adjustment type for pressure adjustment**

07	Rotary knob (not for version "C" and "T")	<b>1</b>
	Bushing with hexagon and protective cap	<b>2</b>
	Lockable rotary knob with scale	<b>3</b> <sup>3)</sup>
	Rotary knob with scale	<b>7</b>
08	Main spool Ø24 mm (all sizes)	<b>-</b>
	Main spool Ø28 mm (only NG32)	<b>N</b>
09	Component series 50 ... 59 (50 ... 59: unchanged installation and connection dimensions)	<b>5X</b>

**Pressure rating**

10	Set pressure up to 50 bar	<b>50</b>
	Set pressure up to 100 bar	<b>100</b>
	Set pressure up to 200 bar	<b>200</b>
	Set pressure up to 315 bar	<b>315</b>
	Set pressure up to 350 bar	<b>350</b>

## Ordering code

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	
<b>DB</b>								<b>5X</b>	/													*

### Pilot oil supply and pilot oil return (see also Symbols on page 4)

11	Pilot oil supply and pilot oil return internal	- 4)
	Pilot oil supply external, pilot oil return internal 5)	<b>X</b>
	Pilot oil supply internal, pilot oil return external	<b>Y</b>
	Pilot oil supply and pilot oil return external 5)	<b>XY</b>
12	Standard version	<b>no code</b>
	Valve for minimum cracking pressure (not for version without main spool insert and not suitable for mutual relief function)	<b>U</b> 6)
13	<b>Without</b> switching shock damping	<b>no code</b>
	<b>With</b> switching shock damping (only version "DBW")	<b>S</b>
14	<b>Without</b> directional valve	<b>no code</b>
	<b>With</b> directional spool valve (data sheet 23178)	<b>6E</b> 2)
	<b>With</b> directional seat valve (data sheet 22058)	<b>6SM</b> 2)
15	Direct voltage 24 V	<b>G24</b> 2)
	Alternating voltage 230 V 50/60 Hz	<b>W230</b> 2)
16	<b>With</b> concealed manual override (standard)	<b>N9</b> 2)
	<b>With</b> manual override	<b>N</b> 2)
	<b>Without</b> manual override	<b>no code</b>

### Electrical connection

17	<b>Without</b> mating connector; connector DIN EN 175301-803	<b>K4</b> 2; 7)
18	Nozzle Ø 1.2 mm in channel B of the directional spool valve (version "6E")	<b>R12</b> 8)
	Nozzle Ø 1.2 mm in channel P of the directional seat valve (version "6SM")	<b>B12</b> 8)

### Corrosion resistance

19	None	<b>no code</b>
	Improved corrosion protection (240 h salt spray test according to EN ISO 9227); (only version "without directional valve" and "2", however without protective cap)	<b>J3</b>

### Seal material

20	NBR seals	<b>no code</b>
	FKM seals	<b>V</b>
	Observe compatibility of seals with hydraulic fluid used! (Other seals upon request)	

### Equipment Directive

21	<b>Without</b> type-examination procedure	<b>no code</b>
	Type-examination tested safety valves according to Pressure Equipment Directive 2014/68/EU 9)	<b>E</b>
22	For further information, see the plain text	

1) "DBT/DBWT" corresponds to "DBC/DBWC", however with closed central bore

2) Ordering code only necessary with version with mounted directional valve ("DBW").

3) H-key with material no. **R900008158** is included in the scope of delivery.

4) Dash "-" only necessary with version with mounted directional valve ("DBW"), without specification of "U" or "S".

5) **Not** with version "DBC/DBWC"

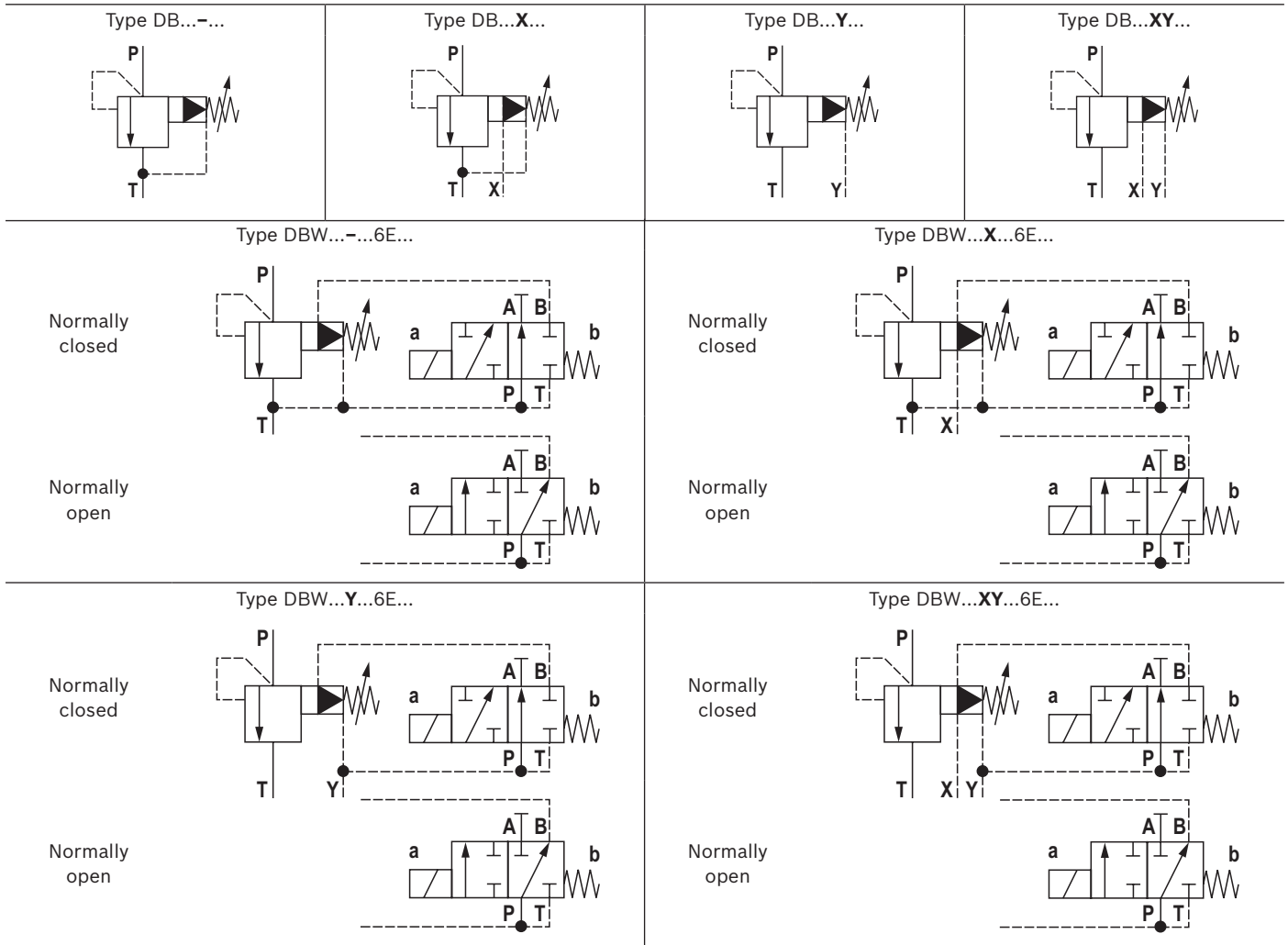
6) Only possible up to pressure rating 315 bar

7) Mating connectors, separate order, see page 21.

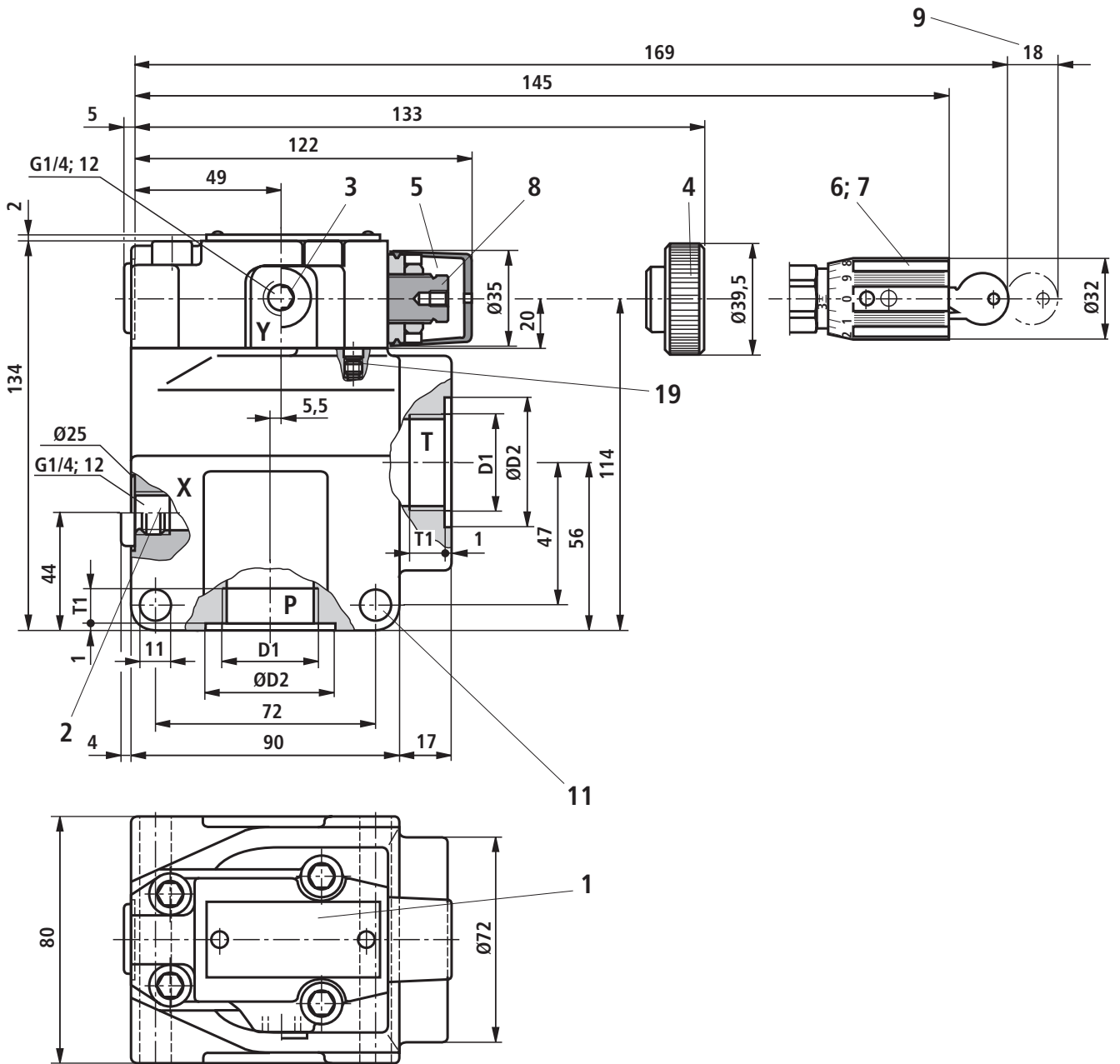
8) Ordering code only necessary with version with attached directional valve and switching shock damping ("DBW.../...S...").

9) See ordering code on page 16.

Symbols



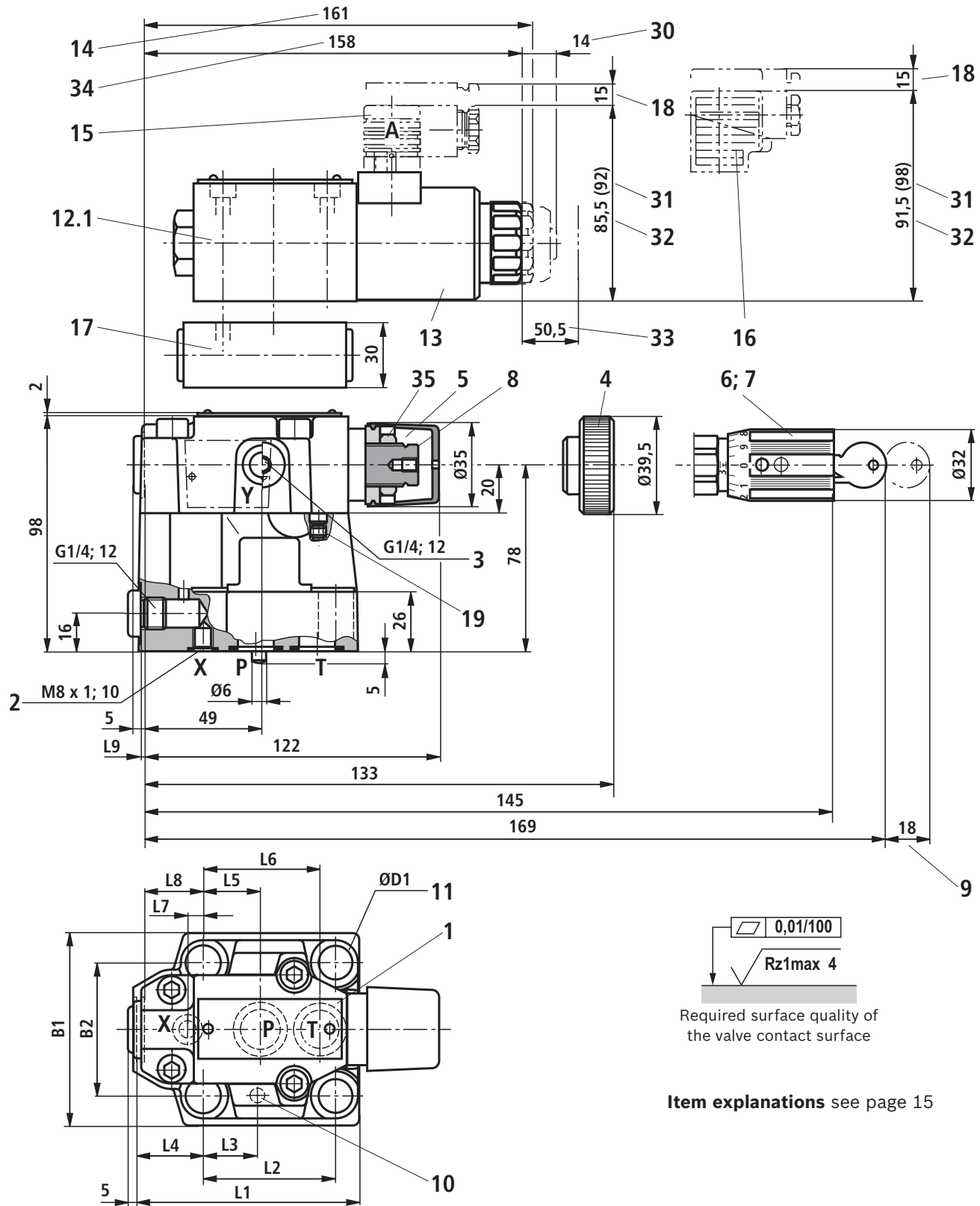
**Dimensions:** Threaded connection  
(dimensions in mm)



Version	D1	ØD2	T1
"DB 10 G"	G1/2	34	14
"DB 15 G"	G3/4	42	16
"DB 20 G"	G1	47	18
"DB 25 G"	G1 1/4	58	20
"DB 30 G"	G1 1/2	65	22

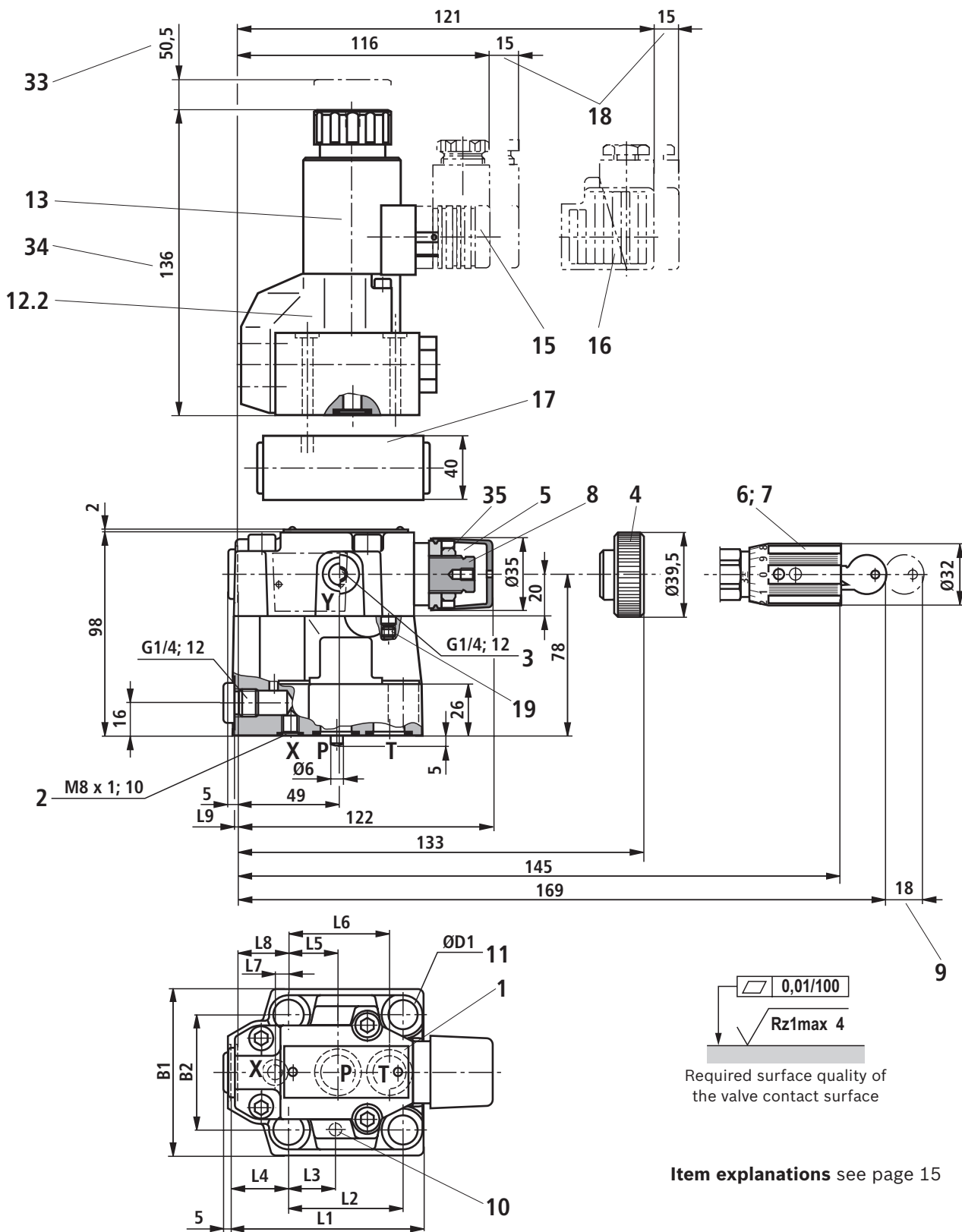
Dimensions for attached directional valve see page 12 and 13; item explanations see page 15

**Dimensions:** Subplate mounting with directional spool valve "DBW...6E"  
(dimensions in mm)



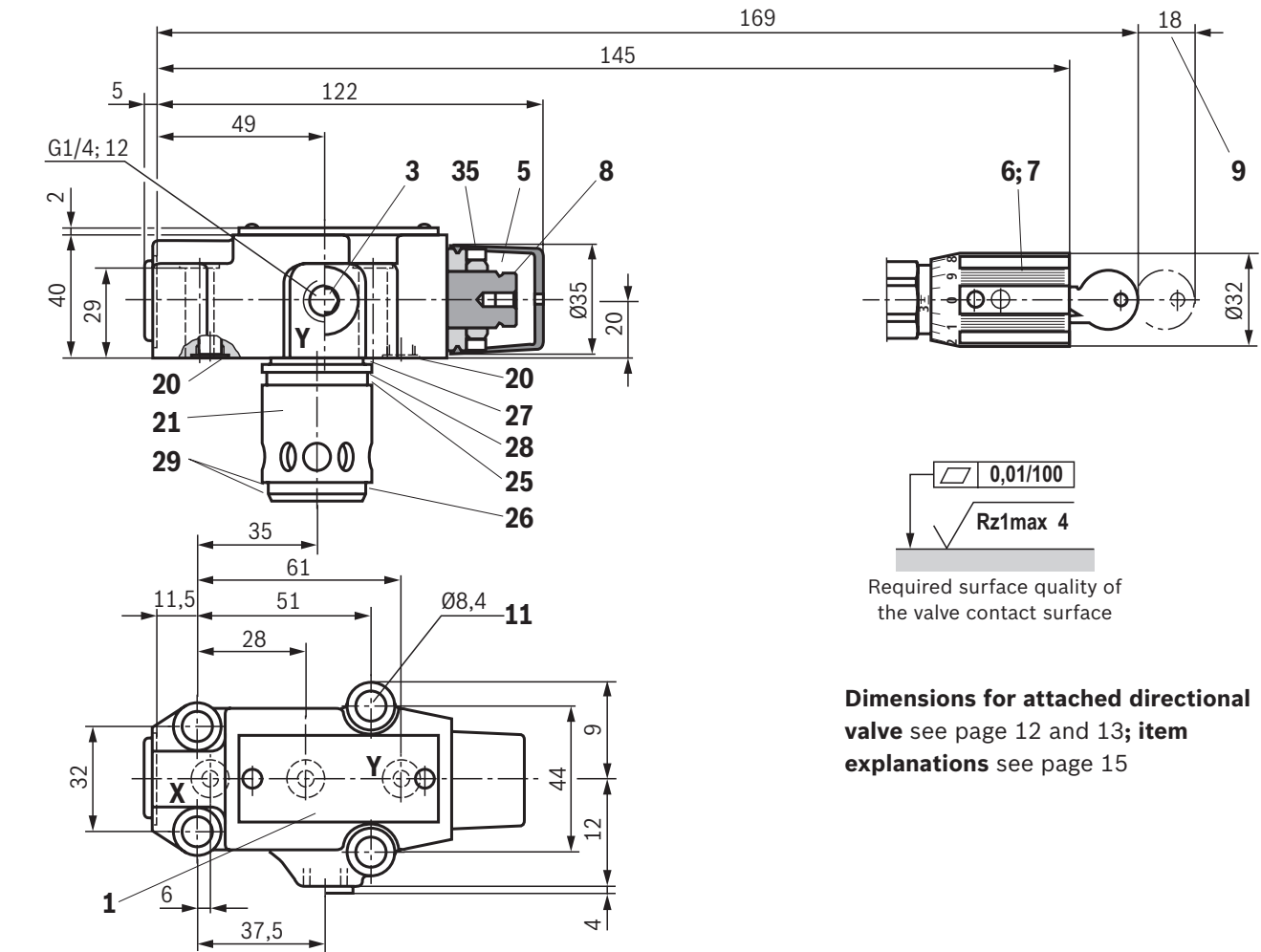
Version	L1	L2	L3	L4	L5	L6	L7	L8	L9	B1	B2	ØD1
"DBW 10"	91	53.8	22.1	27.5	22.1	47.5	0	25.5	2	78	53.8	14
"DBW 20"	116	66.7	33.4	33.3	11.1	55.6	23.8	22.8	10.5	100	70	18
"DBW 30"	147.5	88.9	44.5	41	12.7	76.2	31.8	20	21	115	82.6	20

**Dimensions:** Subplate mounting with directional seat valve "DBW...6SM"  
(dimensions in mm)



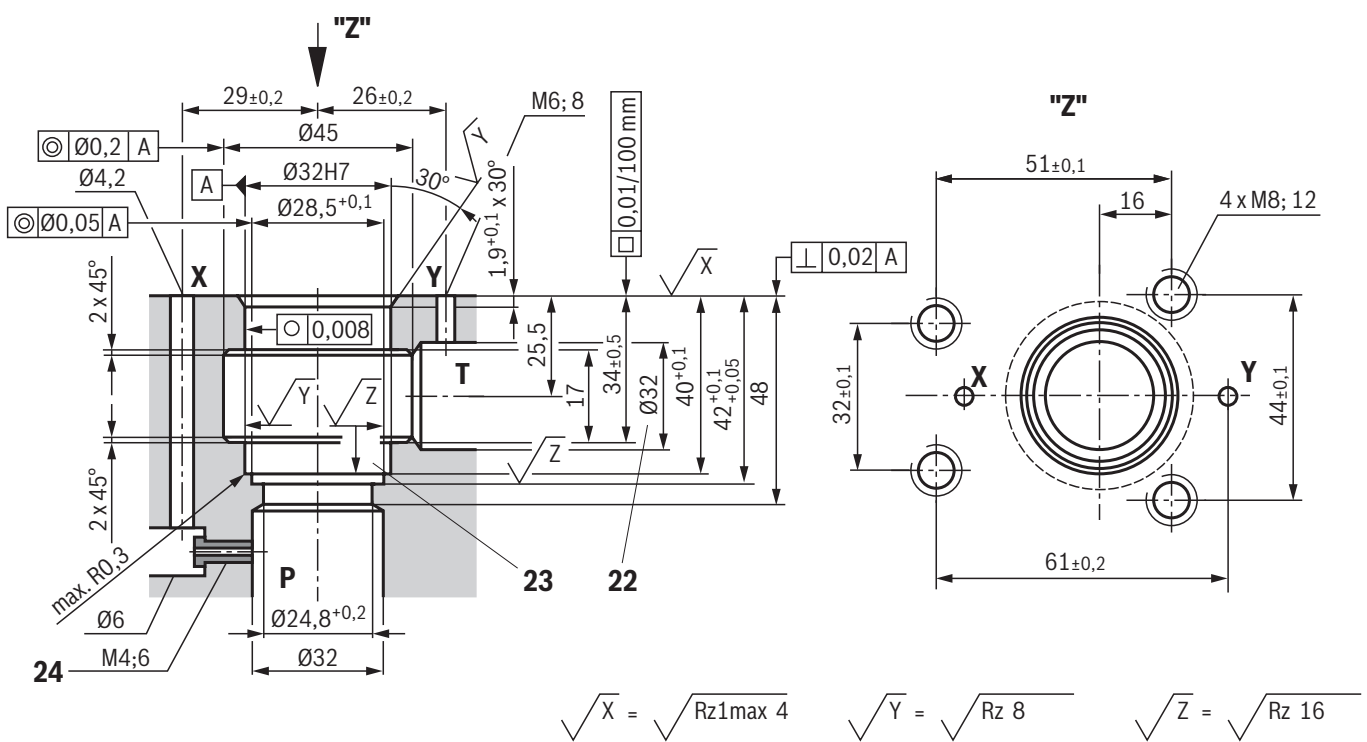
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"DBW 10"	91	53.8	22.1	27.5	22.1	47.5	0	25.5	2	78	53.8	14
"DBW 20"	116	66.7	33.4	33.3	11.1	55.6	23.8	22.8	10.5	100	70	18
"DBW 30"	147.5	88.9	44.5	41	12.7	76.2	31.8	20	21	115	82.6	20

**Dimensions:** Pilot control valve with ("DBC 10 or 30") or without main spool insert ("DBC, DBT") (dimensions in mm)



0,01/100  
Rz1max 4  
Required surface quality of the valve contact surface

**Dimensions for attached directional valve** see page 12 and 13; **item explanations** see page 15





## Dimensions

- 1 Name plate
- 2 X port for pilot oil supply, external
- 3 Y port for pilot oil return, external
- 4 Adjustment type "1"
- 5 Adjustment type "2"
- 6 Adjustment type "3"
- 7 Adjustment type "7"
- 8 Hexagon wrench size 10
- 9 Space required to remove the key
- 10 Locking pin
- 11 Valve mounting bore
- 12.1 Directional spool valve NG6, see data sheet 23178
- 12.2 Directional seat valve NG6, see data sheet 22058
- 13 Solenoid "a"
- 14 Dimension for valve without manual override
- 15 Mating connector **without** circuitry (separate order, see page 21)
- 16 Mating connector **with** circuitry (separate order, see page 21)
- 17 Switching shock damping valve, optional
- 18 Space required for removing the mating connector
- 19 Omitted with internal pilot oil return
- 20 Seal ring
- 21 Main spool insert
- 22 Bore  $\varnothing 32$  may intersect  $\varnothing 45$  at any point. However, it must be observed that the connection bore X and the mounting bore are not damaged.
- 23 Support ring and seal ring are to be inserted before the assembly of the main spool into this bore.
- 24 Nozzle (separate order; recommended nozzle  $\varnothing 1.0$ )
- 25 Seal ring
- 26 Seal ring
- 27 Seal ring
- 28 Support ring
- 29 Support ring
- 30 Dimension for valve with manual override "N"
- 31 Dimension ( ) for valve with AC solenoid
- 32 Dimension for valve with DC solenoid
- 33 Space required to remove the solenoid coil
- 34 Dimension for valve with concealed manual override "N9"
- 35 Lock nut, wrench size 17, tightening torque  $M_A = 10^{+5}$  Nm

**Subplates** (separate order) with porting pattern according to ISO 6264 see data sheet 45100.

 **Notice:**

The specified subplates are not approved for use with type-examination tested safety valves according to Pressure Equipment Directive 2014/68/EU.

**Valve mounting screws** (separate order)

For reasons of stability, exclusively the following valve mounting screws may be used:

- ▶ Version "DB/DBW 10"  
**4 x ISO 4762 - M12 x 50 - 10.9-flZn/nc/480h/C**  
 with friction coefficient  $\mu_{\text{total}} = 0.09 \dots 0.14$ ,  
 tightening torque  $M_A = 75 \text{ Nm} \pm 10\%$ ,  
 material no. **R913015611**
- ▶ Version "DB/DBW 20"  
**4 x ISO 4762 - M16 x 50 - 10.9-flZn/nc/480h/C**  
 with friction coefficient  $\mu_{\text{total}} = 0.09 \dots 0.14$ ,  
 tightening torque  $M_A = 185 \text{ Nm} \pm 10\%$ ,  
 material no. **R913015664**
- ▶ Version "DB/DBW 30"  
**4 x DIN 912 - M18 x 50 - 10.9-flZn/nc/480h/C**  
 with friction coefficient  $\mu_{\text{total}} = 0.09 \dots 0.14$ ,  
 tightening torque  $M_A = 248 \text{ Nm} \pm 10\%$ ,  
 material no. **R913015903**
- ▶ Version "DBC/DBWC", "DBC 10/DBWC 10",  
 "DBC 30/DBWC 30" and "DBT/DBWT"  
**4 x ISO 4762 - M8 x 40 - 10.9-flZn/nc/480h/C**  
 with friction coefficient  $\mu_{\text{total}} = 0.09 \dots 0.14$ ,  
 tightening torque  $M_A = 31 \text{ Nm} \pm 10\%$ ,  
 material no. **R913015798**

 **Notice:**

The tightening torques stated are guidelines when using screws with the specified friction coefficients and when using a manual torque wrench (tolerance  $\pm 10\%$ ).