

# 3/2 directional seat valve, direct operated with solenoid actuation

**RE 18136-21/06.12** 1/8  
Replaces: 08.09

**Type KSDE** (high-performance)

Component size 1  
Component series B  
Maximum operating pressure 500 bar  
Maximum flow 20 l/min



H6805

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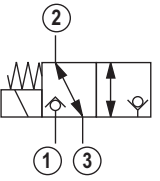
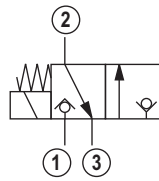
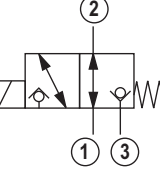
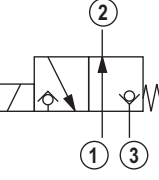
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## Features

- Mounting cavity R/T-11A
- Direct operated directional seat valve with solenoid actuation, tight on both sides
- Blocked connection tight in a leak-free form
- Safe switching also with longer standstill periods
- Wet-pin DC solenoids
- Rotatable solenoid coil

Information on available spare parts:  
[www.boschrexroth.com/spc](http://www.boschrexroth.com/spc)

**Ordering code (Valve without coil) <sup>1)</sup>**

	<b>KSDE</b>	<b>1</b>	<b>B / H</b>	<b>V</b>	<b>*</b>	
Directional seat valve, direct operated, electrically operated	Further details in the plain text					
Maximum operating pressure 500 bar = <b>U</b>	<b>no code =</b> Standard					
Maximum operating pressure 350 bar = <b>R</b>	<b>-17 =</b> Flow-optimized <sup>3)</sup>					
Component size = <b>1</b>	<b>Seal material</b>					
	FKM seals (other seals upon request) Attention! Observe compatibility of seals with hydraulic fluid used!					
3 main ports	<b>V =</b>					
<b>"R"</b> (350 bar)	<b>"U"</b> (500 bar) <b>"R...-17"</b> (350 bar)					
		<b>= C</b>				
		<b>= U</b>				
<b>Symbols</b>			<b>Symbol C</b>		<b>Symbol U</b>	
	<b>Version</b>	<b>N0</b>	<b>N9</b>	<b>N11</b>	<b>N0</b>	<b>N9</b>
	<b>R (350 bar)</b>	X	-	X	X	X <sup>2)</sup>
<b>U (500 bar)</b>	X	-	-	X	-	-
	<b>H =</b> High-performance and mounting cavity R/T-11A (see page 7)					
	<b>B =</b> Component series					

**Valve types (without coil) <sup>1)</sup>**

Operating pressure 350 bar			Operating pressure 500 bar		
Spool symbol	Type	Material no.	Spool symbol	Type	Material no.
<b>C</b>	KSDER1CB/HN0V	R901083205	<b>C</b>	KSDEU1CB/HN0V	R901083198
	KSDER1CB/HN0V-17	R901176263		<b>U</b>	KSDEU1UB/HN0V
	KSDER1CB/HN11V	R901151279			
	KSDER1CB/HN11V-17	R901206917			
<b>U</b>	KSDER1UB/HN0V	R901083191			
	KSDER1UB/HN0V-17	R901176251			
	KSDER1UB/HN9V	R901151288			
	KSDER1UB/HN9V-17	R901206909			

**Available coils (separate order) <sup>1)</sup>**

Direct voltage DC <sup>5)</sup>	Material no. for coil with connector <sup>4)</sup>		
	<b>"K4"</b> 03pol (2+PE) DIN EN 175301-803	<b>"K40"</b> 02pol K40 DT 04-2PA, make: Deutsch	<b>"C4"</b> 02pol C4/Z30 AMP Junior Timer
12 V	R900991678	R900729189	R900315818
24 V	R900991121	R900729190	R900315819

<sup>1)</sup> Complete valves with mounted coil upon request

<sup>2)</sup> Screwable manual override "N10" (actuation by means of internal hexagon with lock nut), possible as separate order, material no. R901051231; ordering code "N9"!

<sup>3)</sup> Only version "R" (free-flowing on one side!)

<sup>4)</sup> Mating connectors (separate order), see RE 08006

<sup>5)</sup> Other voltages upon request

## Function, section, symbols

### General

The 3/2 directional seat valves are direct operated, pressure compensated cartridge valves. They basically comprises of screw-in section (4) with valve seat (1), solenoid (5), as well as closing element (3) and compression spring (2).

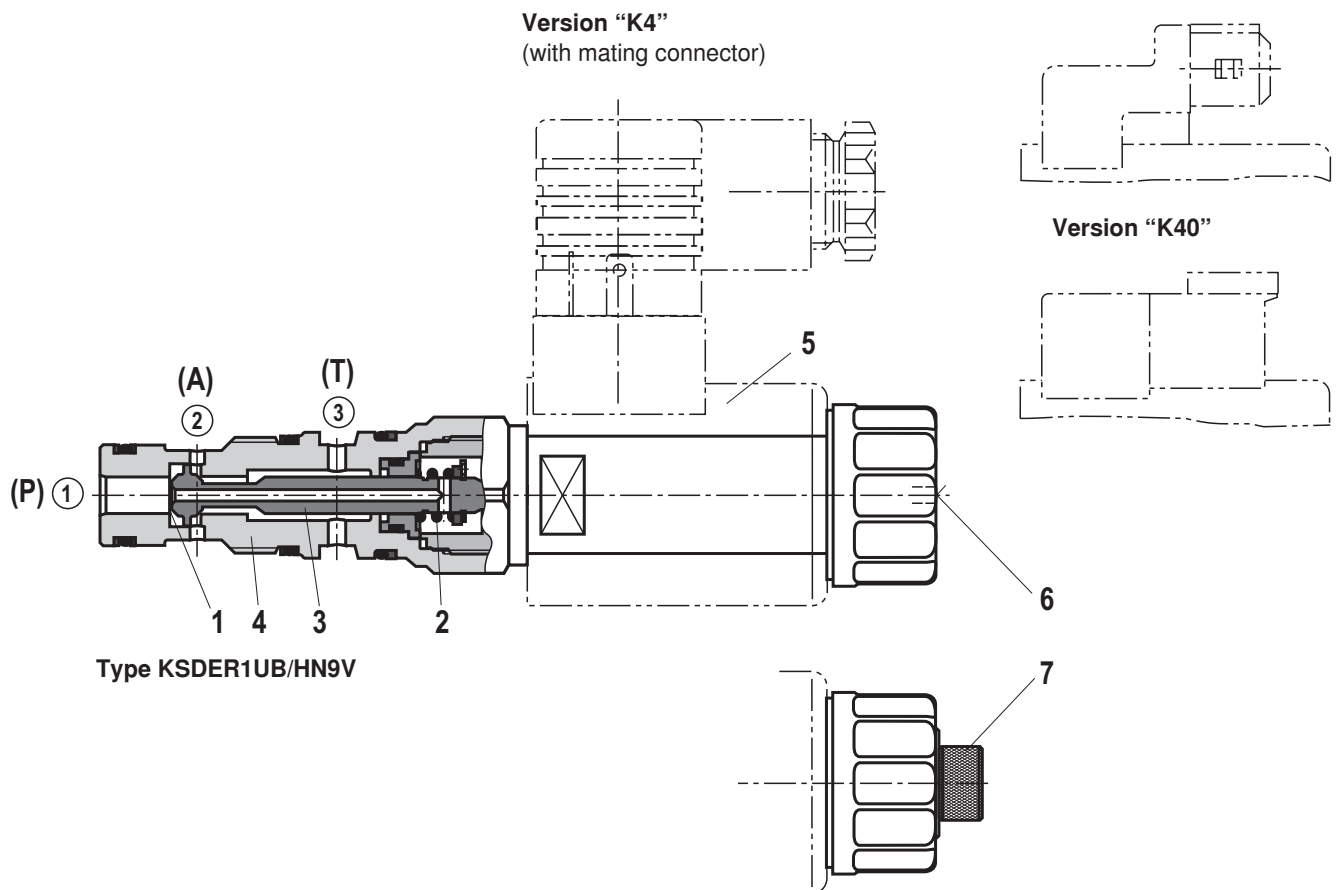
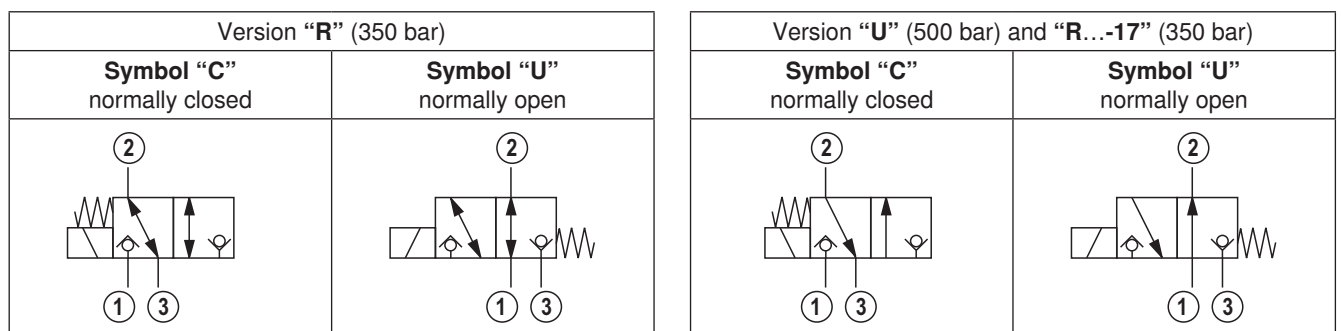
### Function

The initial position of the valve (normally open "U" or normally closed "C") is determined by the position of the closing element (3) and the arrangement of the compression spring (2). Due to the structural design, the 3/2 directional seat valves are always pressure-compensated in relation to the actuating forces. The main ports ① and ② can be loaded with an operating pressure of 350 bar/500 bar (see Technical Data, page 4) and are blocked in a leak-free form in the respective end position. During switching, the main ports are shortly connected (negative overlap).

### Attention!

The flow is only permitted in the direction of arrow (see symbols)! With version "U" (operating pressure 500 bar) as well as with version "R...-17", main port ① must be connected with pump connection P! Valves with version "R...-17" are flow-optimized and thus achieve a higher switching power.

The manual override allows for the the switching of the valve without solenoid energization. It is available in concealed version "N9" (6) or in screwable version "N11" (7) (see page 2).



**Technical data** (For applications outside these parameters, please consult us!)**general**

Weight	- Valve	kg	0.30
	- Coil	kg	0.25
Installation position			Any
Ambient temperature range			°C -40 to +110

**hydraulic**

Maximum operating pressure	- Version "U"	bar	500 (at main port ① and ②, if $P \geq A \geq T$ ; for design reasons)
	- Version "R"	bar	350 (at main port ① and ②)
	- Version "R...-17"		350 (at main port ① and ②, if $P \geq A \geq T$ ; for design reasons)
Maximum tank pressure		bar	$\leq 50$ (at main port ③)
Maximum flow	- Version "U"	l/min	6 (see performance limits page 5)
	- Version "R"	l/min	12 (see performance limits page 5)
	- Version "R...-17"	l/min	20 (see performance limits page 5)
Hydraulic fluid			Mineral oil (HL, HLP) according to DIN 51524; quickly biodegradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids upon request
Hydraulic fluid temperature range			°C -40 to +80
Viscosity range			mm <sup>2</sup> /s 4 to 500
Maximum permitted degree of contamination of the hydraulic fluid - cleanliness class according to ISO 4406 (c)			Class 20/18/15 <sup>1)</sup>
Load cycles	- Version "R" (350 bar)		10 million
	- Version "U" (500 bar)		5 million

**electrical**

Type of voltage		Direct voltage	
Supply voltage <sup>2)</sup>		V	12 DC; 24 DC
Voltage tolerance against ambient temperature		See characteristic curve page 5	
Power consumption		W	22
Duty cycle		%	See characteristic curve page 5
Maximum coil temperature <sup>3)</sup>		°C	150
Switching time according to ISO 6403 (solenoid horizontal)	- ON	ms	$\leq 60$ ( $\leq 95$ with version "R...-17")
	- OFF	ms	$\leq 60$ ( $\leq 95$ with version "R...-17")
Maximum switching frequency	- Version "R"	1/h	9000
	- Version "U"	1/h	3600
Protection class according to VDE 0470-1 (DIN EN 60529) DIN 40050-9	- Version "K4"	IP 65 with mating connector mounted and locked	
	- Version "C4"	IP 66 with mating connector mounted and locked	
		IP 69K with Rexroth mating connector (Material no. R901022127)	
	- Version "K40"	IP 69K with mating connector mounted and locked	

<sup>1)</sup> The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.

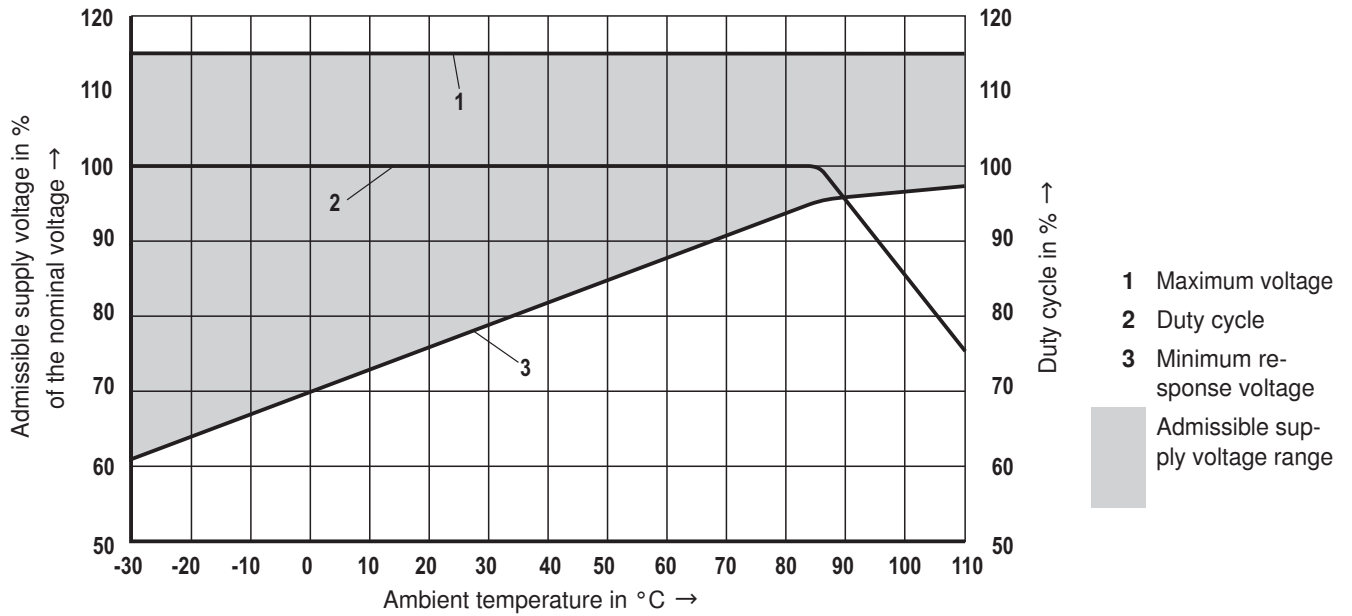
For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

<sup>2)</sup> Other voltages upon request

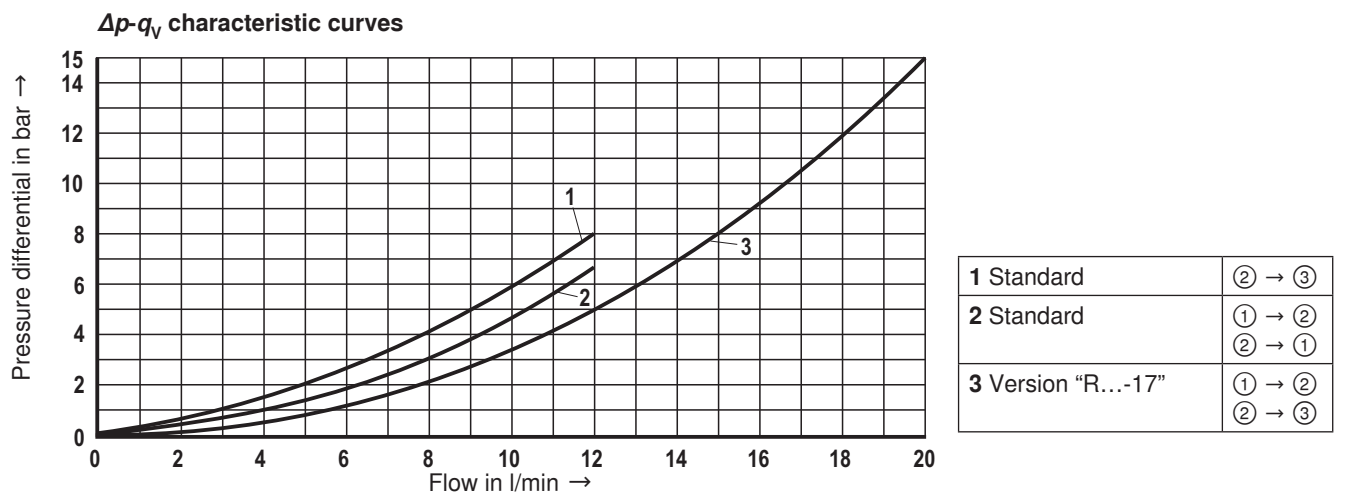
<sup>3)</sup> Due to the temperatures occurring at the surfaces of the solenoid coils, the standards ISO 13732-1 and EN 982 need to be adhered to!

**At the electrical connection "K4", the protective earthing conductor (PE  $\frac{1}{2}$ ) has to be connected properly.**

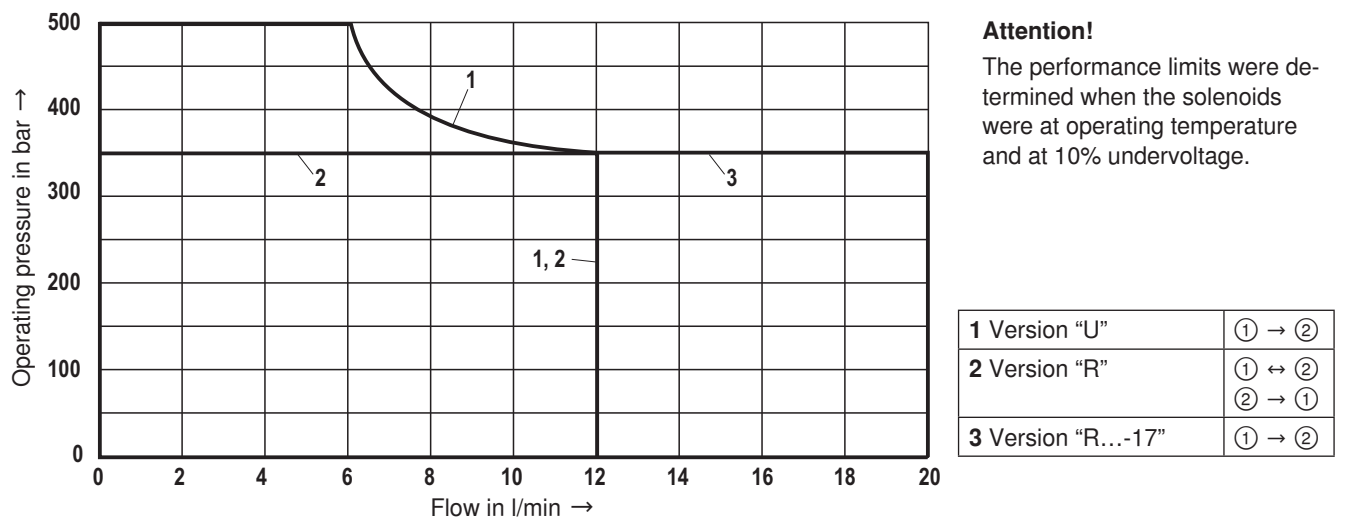
### Voltage tolerance against ambient temperature; duty cycle



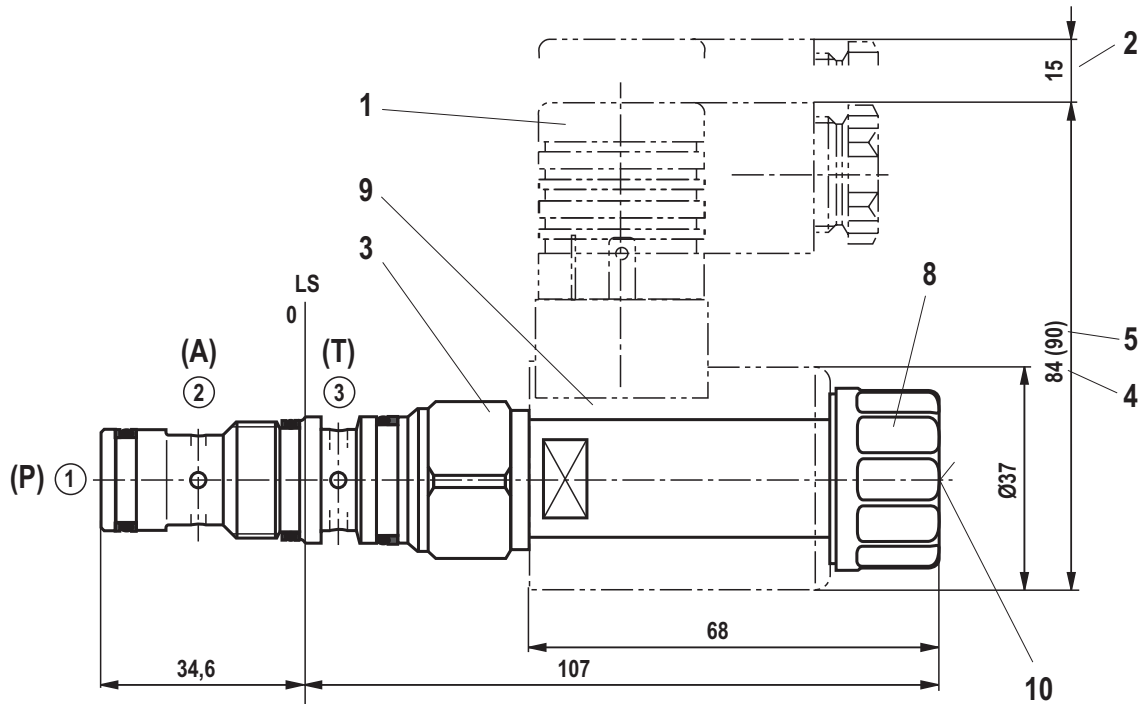
### Characteristic curves (measured with HLP46, $\vartheta_{oil} = 40^\circ\text{C} \pm 5^\circ\text{C}$ and 24 V coil)



### Performance limits (measured with HLP46, $\vartheta_{oil} = 40^\circ\text{C} \pm 5^\circ\text{C}$ and 24 V coil)

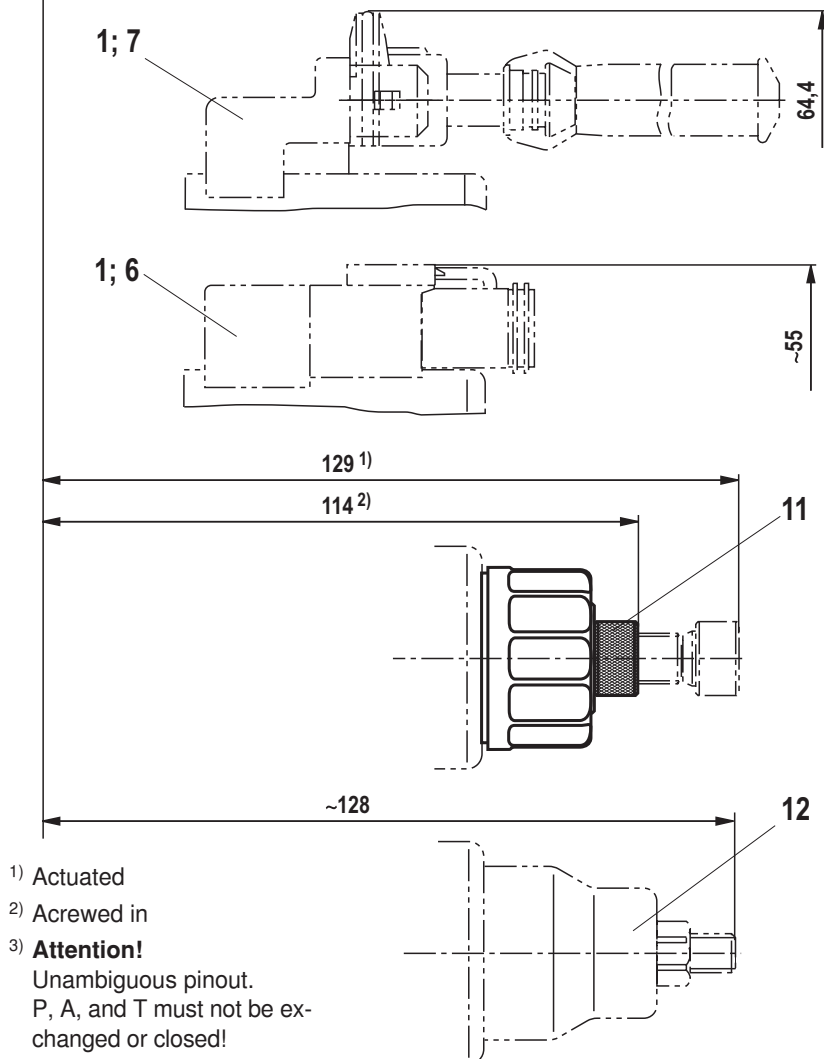


**Unit dimensions** (dimensions in mm)



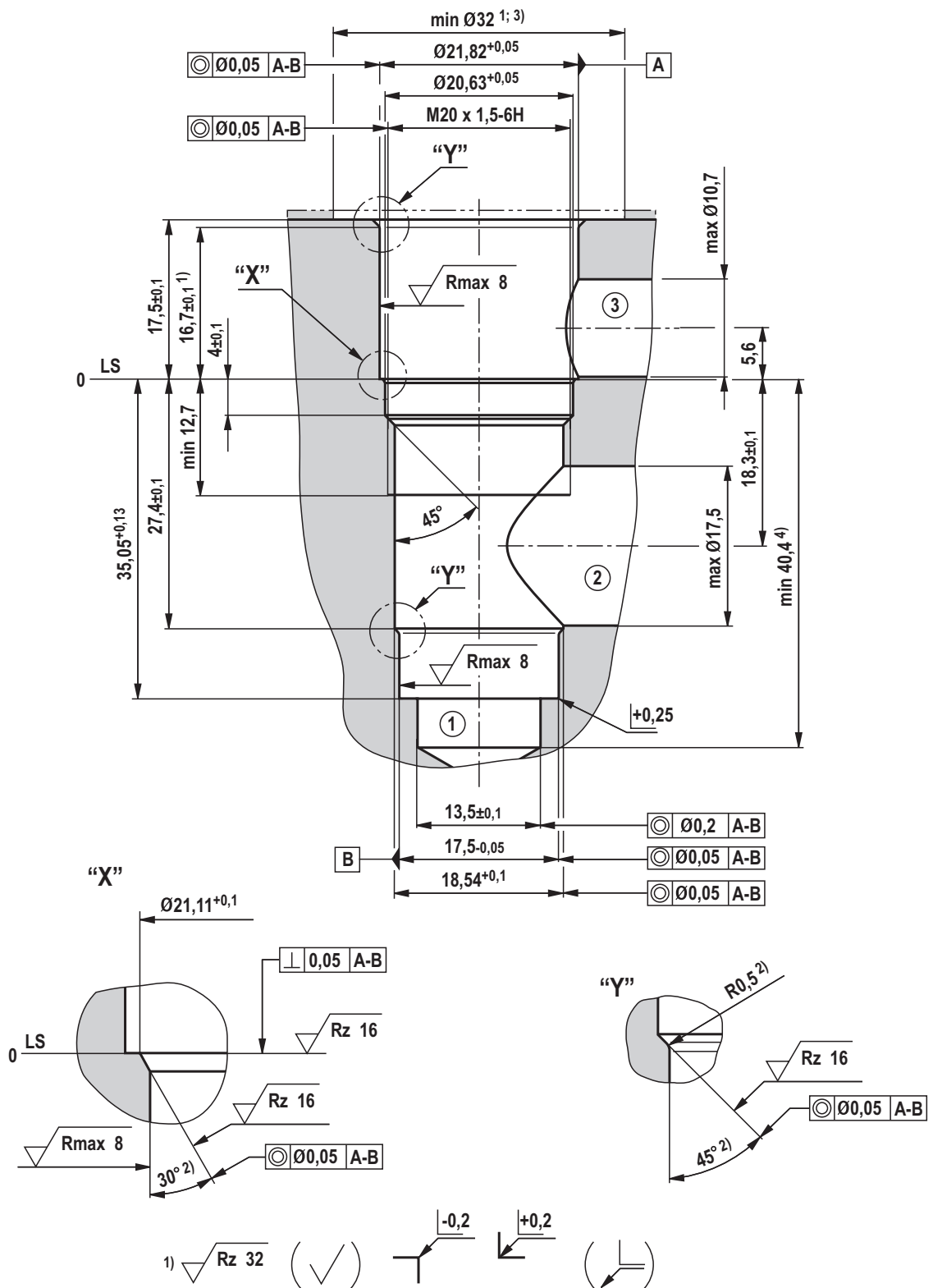
- 1 Mating connector (separate order, see RE 08006)
- 2 Space required for removing the mating connector
- 3 SW24, tightening torque  $M_A = 60^{+5}$  Nm
- 4 Dimension for "K4" mating connector, without circuitry
- 5 Dimension ( ) for "K4" mating connector, with circuitry
- 6 Version "K40"
- 7 Version "C4"
- 8 Nut, tightening torque  $M_A = 5^{+1}$  Nm
- 9 Coil (separate order, see page 2)
- 10 Concealed manual override "N9", optional
- 11 Screwable manual override "N11", optional
- 12 Screwable manual override "N10" (separate order, see page 2)

- ① = Main port 1, pump P<sup>3)</sup>
- ② = Main port 2, actuator A<sup>3)</sup>
- ③ = Main port 3, tank T<sup>3)</sup>
- LS = Positive stop shoulder (location shoulder)



- 1) Actuated
- 2) Acrewed in
- 3) **Attention!** Unambiguous pinout. P, A, and T must not be exchanged or closed!

**Mounting cavity R/T-11A; 3 main ports; thread M20 x 1.5 (dimensions in mm)**



1) Differing from T-11A

2) All seal ring insertion chamfers are rounded and free of burrs

3) with counterbore

4) Depth for moving parts

① = Main port 1

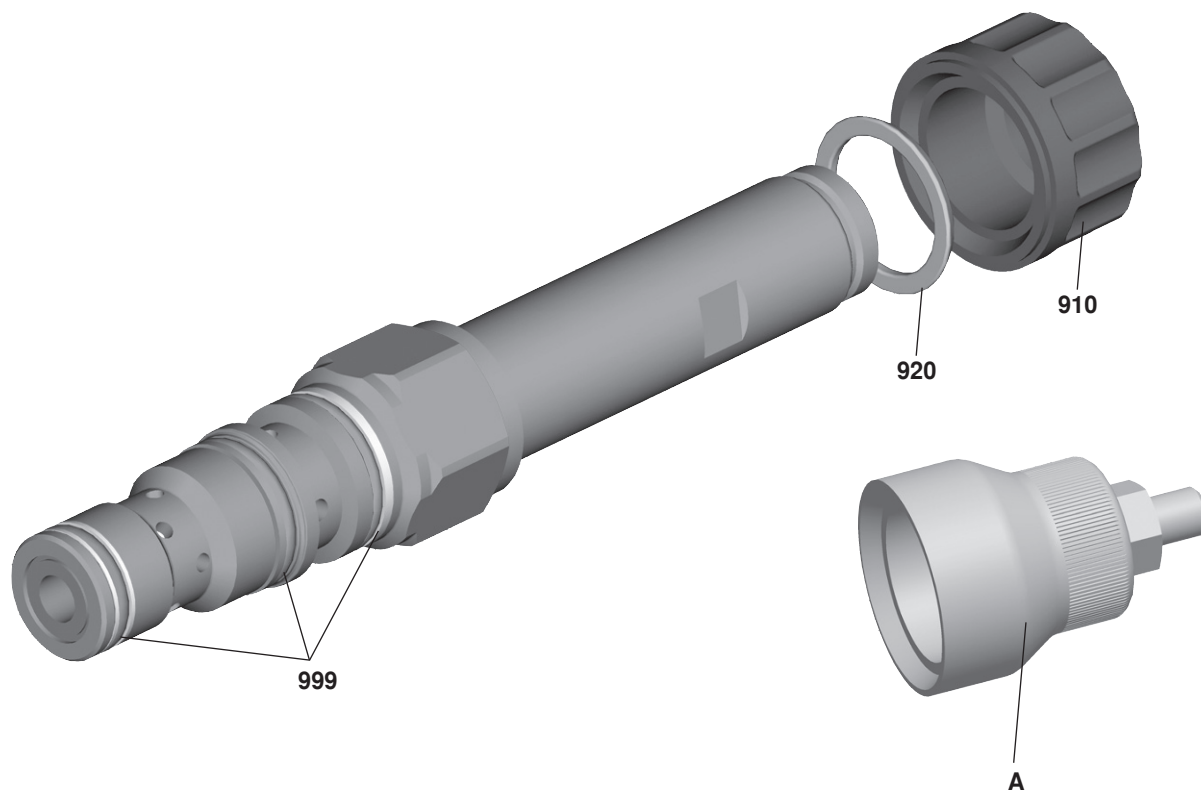
② = Main port 2

③ = Main port 3

LS = Positive stop shoulder (location shoulder)

Tolerance for all angles  $\pm 0.5^\circ$

## Available individual components



Item	Description	Material no.
910	Nut	R900991453
920	O-ring for pole tube	R900004280
999	Seal kit of the valve	R961003235
A	Manual override "N10" 1)	R901051231

Coils, separate order, see page 2

1) Only with ordering code "N9", see page 2