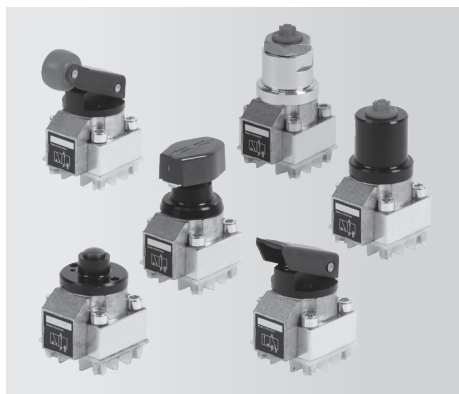


manually, mechanically or pressure operated, max. operating pressure 500 bar

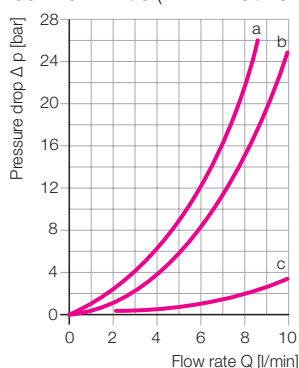


A strainer insert in the pressure port protects the valve seats from coarse impurities.







Type	Ball-type poppet valve hermetically sealed
Type of connection	Mounting plate (see accessories)
Port size	G 1/4
Mounting position	any vertical preferred

Max. operating pressure	500 bar
Max. flow rate	8 l/min
Flow direction	only in the direction of the arrow, as in the symbol
Hydraulic oil	as per DIN 51524
Adm. oil temperature	-25 ... +80 °C
Adm. oil viscosity	ISO VG 10 to 68 as per DIN 51519
Recommendation for room temperature 10 ... 40 °C	HLP 22

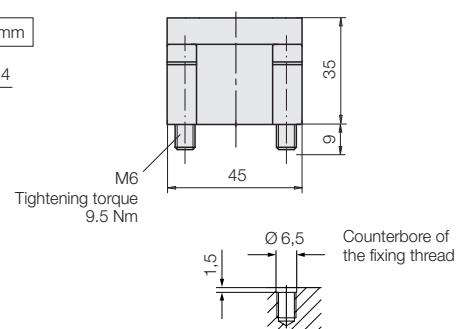
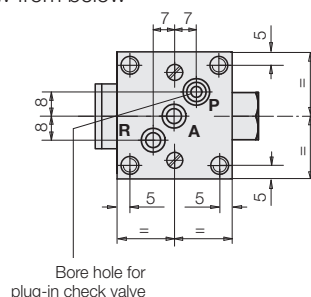
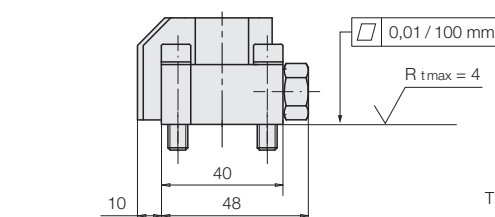
$\Delta$  p-Q characteristic curve for kinematic viscosity  
of  $53 \times 10^{-6} \text{ m}^2/\text{s}$  (HLP 22 at  $20^\circ\text{C}$ )



- a = directional control valve  $P \rightarrow A$  and  $A \rightarrow R$   
b = directional control valve  $P \rightarrow R$   
c = plug-in check valve

manual		mechanical		pressure operated	
Rotary handle D	Sensing lever F	Sensing roller K	Sensing pin T	hydraulic H	pneumatic P
					
Page 2		Page 3		Page 4	

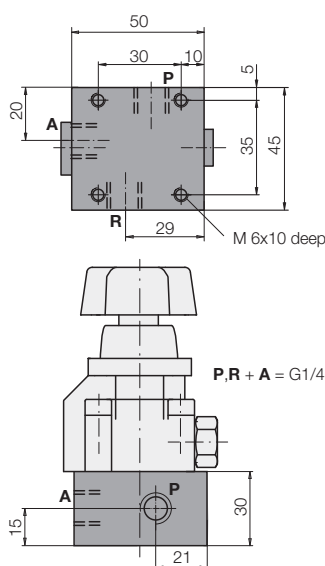
\*) Electrical operation see C 2.360



Sealing (spare part)		Part no.
at <b>A:</b>	O-ring Ø 5x1.5	<b>3000340</b>
at <b>P:</b>	O-ring Ø 8x1.5	<b>3000343</b>
at <b>R:</b>	O-ring Ø 8x1.5	<b>3000343</b>
Plug-in check valve (spare part)		<b>3815002</b>

Connecting holes max. Ø4.5 mm

Single mounting plate	3 x G 1/4"
Weight	0.45 kg
<b>Part no.</b>	<b>3534 039</b>



Example with directional control valve "D"

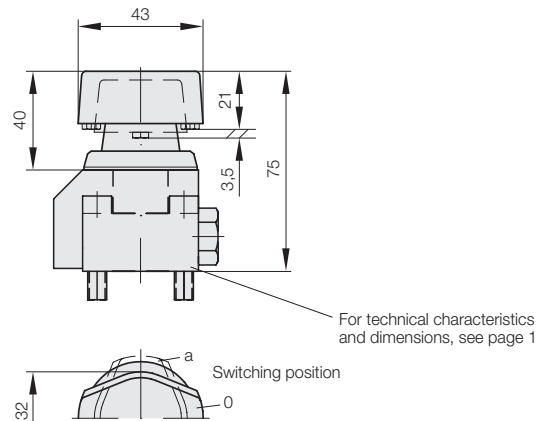
The ports A (consumer port), P (pump) and R (return) are fixed by the ball seating principle and cannot be interchanged at will.

Due to the negative overlap, all ports are briefly connected to each other during the switching process.

The built-in strainer insert in the P port protects against coarse impurities but is not a substitute for the usual hydraulic filters in the power unit.

When using the  $\Delta p$ -Q diagram, it should be noted that during the return stroke of double-acting differential cylinders, a much higher flow rate flows back through the valve than during the operating stroke.

Rotary handle D



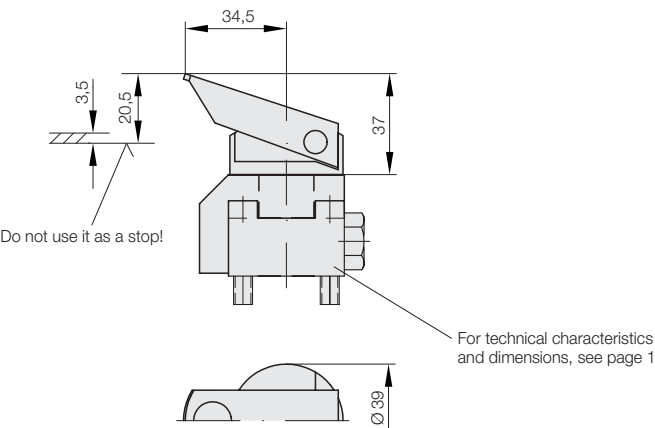
**Operation**  
Rotary handle                      latching  
Rotary angle                      4 x 90°  
Operating torque                  approx. 0.63 Nm  
Weight                                approx. 0.4 kg

**Note**  
For valve combinations, single and double acting, see data sheet C 2.345.

Denomination	Switching symbol	Part no.
2/2 directional control valve DR 2-1		2321 302
3/2 directional control valve DZ3-1		2321 201
3/2 directional control valve DZ3-1R		2321 300

Other functions on request

Sensing lever F

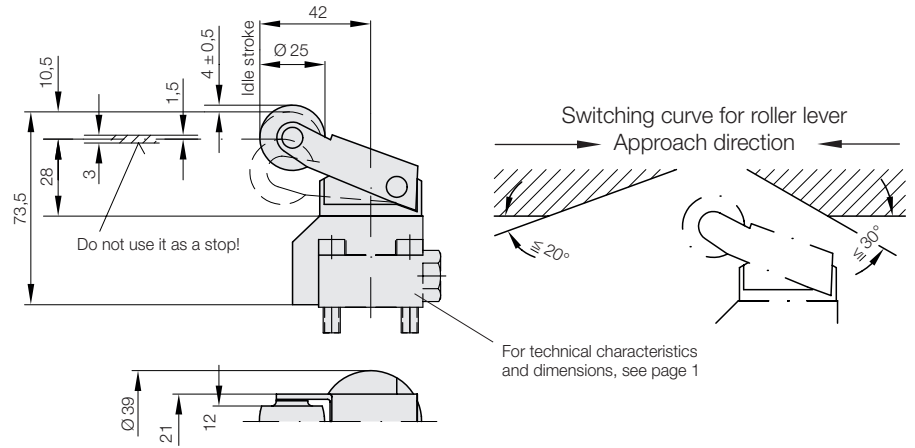


**Operation**  
Sensing lever                      not latching  
    with return spring  
Switching stroke                  max. 20.5 mm  
Switching force                  25...28 N  
Weight                                approx. 0.4 kg

Denomination	Switching symbol	Part no.
2/2 directional control valve FR2-1		2323 302
3/2 directional control valve FZ3-1R		2323 301
3/2 directional control valve F3-1R		2323 201

Other functions on request

## Sensing roller K



### Operation

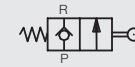
Roller lever with return spring  
Functional path 10.5 mm  
Switching force 25...28 N  
Weight approx. 0.4 kg

### Denomination

### Switching symbol

### Part no.

2/2 directional control valve KR 2-1



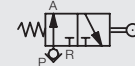
2341 803

3/2 directional control valve KZ3-1



2341 101

3/2 directional control valve KZ3-1R



2341 201

3/2 directional control valve K3-1



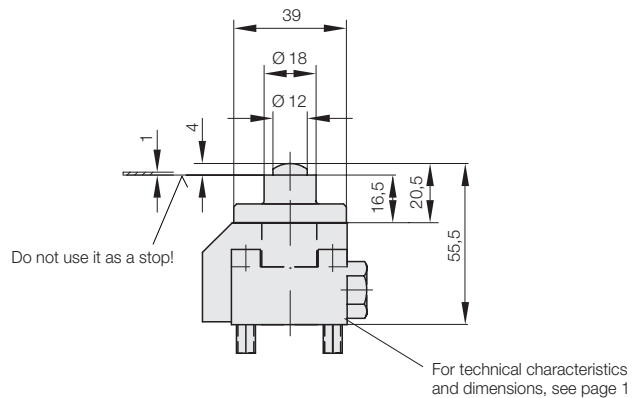
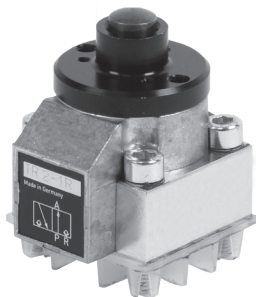
2341 102

3/2 directional control valve K3-1R



2341 301

## Sensing pin T



### Operation

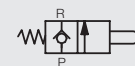
Sensing pin with return spring  
Switching stroke max. 4 mm  
Switching force 51...57 N  
Weight approx. 0.4 kg

### Denomination

### Switching symbol

### Part no.

2/2 directional control valve TR 2-1



2322 302

3/2 directional control valve TZ3-1



2322 203

3/2 directional control valve TZ3-1R



2322 201

3/2 directional control valve T3-1



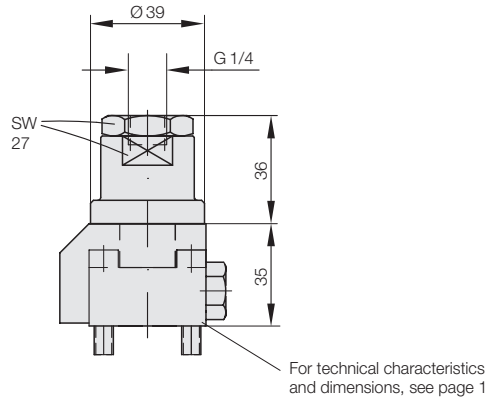
2322 200

3/2 directional control valve T3-1R



2322 301

## Hydraulics H

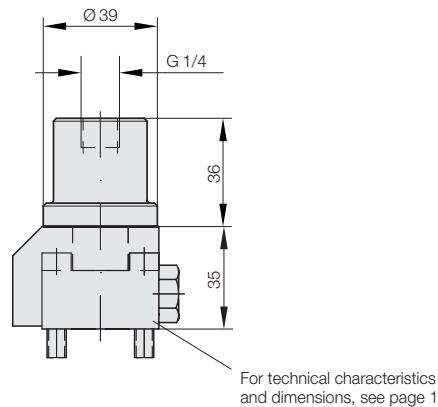


### Operation

Hydraulic piston	with return spring
Operating volume	approx. 0.4 cm <sup>3</sup>
Control pressure	12... 500 bar
Weight	approx. 0.5 kg
Adm. temperature range (environment)	-40 ... 80 °C

Denomination	Switching symbol	Part no.
2/2 directional control valve HR 2-1		<b>2331 401</b>
3/2 directional control valve HZ3-1		<b>2351 220</b>
3/2 directional control valve HZ3-1R		<b>2351 320</b>
3/2 directional control valve H3-1		<b>2351 201</b>
3/2 directional control valve H3-1R		<b>2351 301</b>

## Pneumatics P



### Operation

Pneumatic piston	with return spring
Operating volume	approx. 1 cm <sup>3</sup>
Control pressure	4... 15 bar
Compressed air	lubricated and filtered
Weight	approx. 0.4 kg
Adm. temperature range (environment and medium)	-20 ... +70 °C

Denomination	Switching symbol	Part no.
2/2 directional control valve PR 2-1		<b>2331 301</b>
3/2 directional control valve PZ3-1R		<b>2331 100</b>
3/2 directional control valve P3-1		<b>2332 200</b>
3/2 directional control valve P3-1R		<b>2332 300</b>