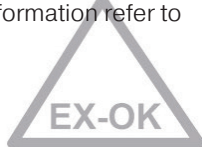


2.2

Valves for Panel Mounting

Selected models can be used in explosion hazardous environment. For detailed information refer to chapter 2.15.



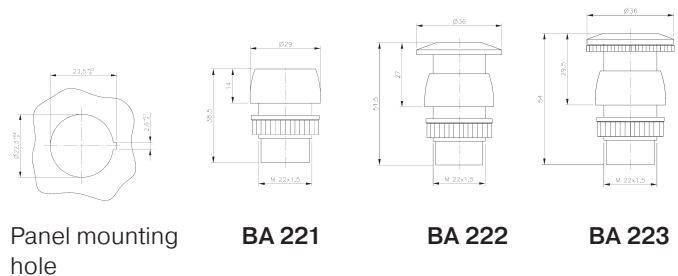
Selected models are available for low temperature application. For detailed information refer to chapter 2.12.

BA-Series: Ø 22 mm Actuators for Panel Mounting



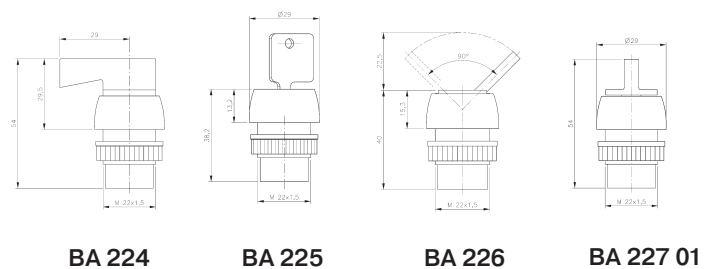
BA-Series: Actuating elements for 22 mm panel mounting hole. Actuators can be used with valves type BA ... displayed on page 2.2.3, 2.2.4 and 2.2.7.

- Materials: Polyamide
- Temperature range: -25°C ... +55°C
(consider temperature limitations of the valve)
- IP protection: IP 65
(IP 66 with dust protection cap BA 221 SSK)



Actuating elements can be used in explosion hazardous environment zone 2 and 22.

According to the directive 2014/34/EU, Article 1 and Article 2, these products do not fall under the scope of the ATEX directive, because they are not capable of causing an explosion through their own potential sources of ignition. So, these products are not marked in terms of the ATEX directive. An ignition risk assessment has been carried out.



BA 221 __ and BA 225 00 can be used in explosion group IIC / IIIC.

BA 222 01, BA 223 02, BA 224 01, BA 226 01 and BA 227 01 can be used in explosion group IIB / IIIC.



BA 221 SSK

Type	Actuation	Colour	Actuating force	Weight	
BA 221 01	Push button	black	16 N	0,014 kg	△
BA 221 02	Push button	red	16 N	0,014 kg	△
BA 221 03	Push button	green	16 N	0,014 kg	△
BA 221 04	Push button	yellow	16 N	0,014 kg	△
BA 221 05	Push button	blue	16 N	0,014 kg	△
BA 221 06	Push button	white	16 N	0,014 kg	△
BA 222 01	Palm button	black	16 N	0,020 kg	△
BA 223 02*	Palm button w. detend	red	27 N	0,026 kg	△
BA 224 01	Rotary lever long	black	42 N/cm	0,021 kg	△
BA 225 00	Locking switch		25 N	0,080 kg	△
BA 226 01	Switch	black	16 N/cm	0,019 kg	△
BA 227 01	Rotary lever short	black	16 N/cm	0,018 kg	△
BA 221 SSK	Transparent dust protection cap for BA 221 __			0,009 kg	

* available on request: for 30 mm panel mouting hole.

BAS-Series: Ø 30 mm Actuators for Panel Mounting




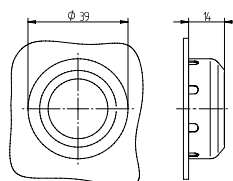
BAS-Series: Actuating elements for 30 mm panel mounting hole. Ideal for demanding applications.

Actuators can be used with valves type BAS ... displayed on page 2.2.5. and 2.12.2.1.

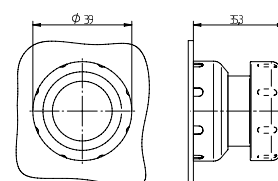
- Materials: Polyamide, seals silicon
- Temperature range: -60°C ... +70°C
(consider temperature limitations of the valve)
- IP protection: IP 66

Elements are ATEX as well as IECEx approved and can be used in explosion hazardous environment zone 1, 2, 21 and 22.

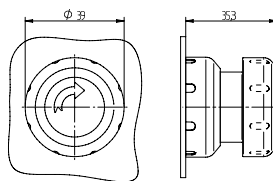
 II 2G Ex eb IIC Gb
II 2D Ex tb IIIC Db



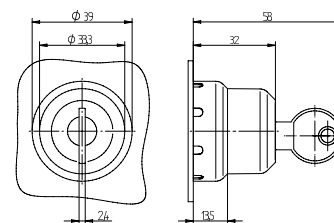
BA 301 01 Ex



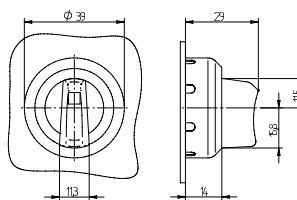
BA 302 02 Ex








BA 303 02 Ex



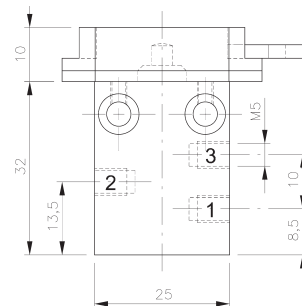
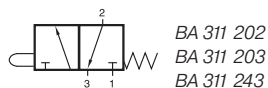
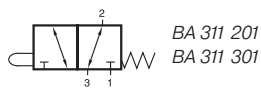
BA 305 00 Ex



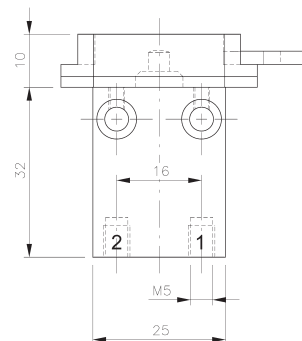
BA 307 01 Ex

Type	Actuation	Colour	Actuating force	Weight
BA 301 01 Ex	Push button	black	8.5 N	0,034 kg 
BA 302 02 Ex	Palm button	red/yellow	8.5 N	0,05 kg 
BA 303 02 Ex	Palm button with detend	red	52 N	0,05 kg 
BA 305 00 Ex	Locking switch	black	1 N	0,05 kg 
BA 307 01 Ex	Rotary lever	black	1 N	0,04 kg 

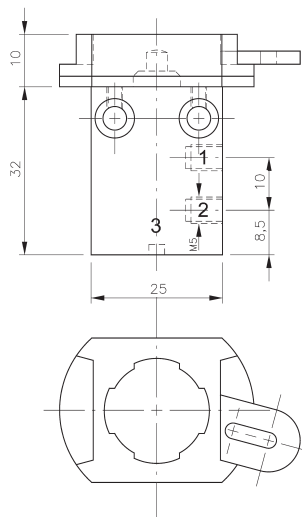
BA 311 201/BA 311 202/BA 311 203 BA 311 243/BA 311 301



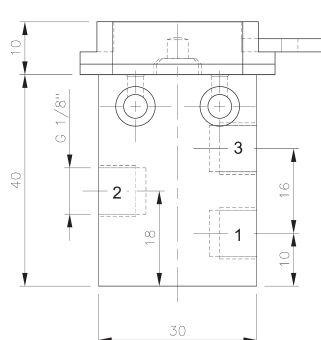
BA 311 201



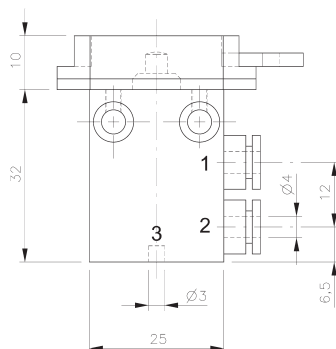
BA 311 202



BA 311 203



BA 311 301



BA 311 243

3/2-way spool valve with mechanical spring for panel mounting.

Valves with ports 1 - 3 on the side (type 201 and 301) are similar to those described on page 2.1.1.1. and 2.1.1.4.

For the valve with the ports on the bottom (type 202) please refer to page 2.1.1.2.

Valves BA 311 203 and BA 311 243 have port 1 and 2 at one side and exhaust through the end-cap.

BA 311 243 offers 4 mm push-in fittings at ports 1 and 2.

Normally open versions of BA 311 203 and BA 311 243 can be delivered on request.

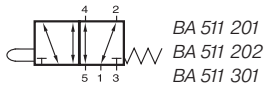
Actuating elements are displayed on page 2.2.1.

Selected valves can be used for technical vacuum too.

Type	Port size	Air flow	Operating press.	Actuating force	Weight
BA 311 201	M5	125 l/min	-0,9 - 10 bar	14 N	0,043 kg
BA 311 202	M5	125 l/min	-0,9 - 10 bar	14 N	0,043 kg
BA 311 203	M5	125 l/min	-0,9 - 10 bar	14 N	0,043 kg
BA 311 243	pif 4 mm	125 l/min	-0,9 - 10 bar	14 N	0,043 kg
BA 311 301	G 1/8"	280 l/min	-0,9 - 10 bar	14 N	0,057 kg



BA 511 201/BA 511 202/BA 511 301

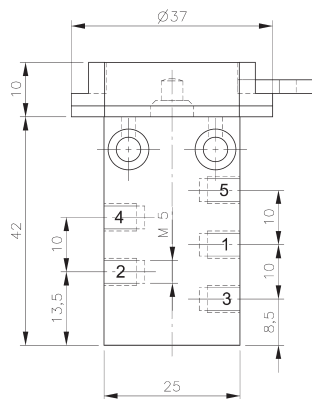


5/2-way spool valve with mechanical spring for panel mounting.

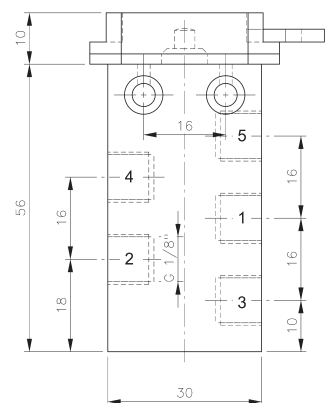
Actuating elements are displayed on page 2.2. 1.

Exhaust can be throttled.

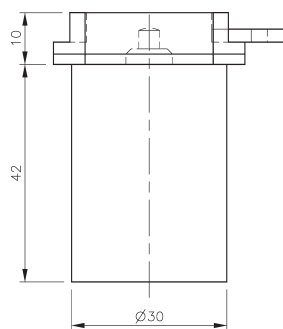
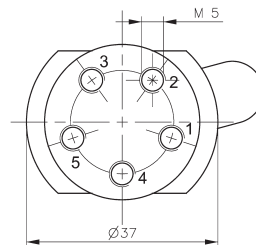
Selected valves can be used for technical vacuum too.



BA 511 201



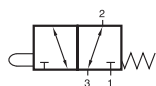
BA 511 301



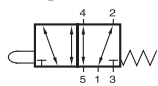
BA 511 202

Type	Port size	Air flow	Operating press.	Actuating force	Weight
BA 511 201	M5	125 l/min	-0,9 - 10 bar	14 N	0,053 kg
BA 511 202	M5	125 l/min	-0,9 - 10 bar	14 N	0,095 kg
BA 511 301	G 1/8"	280 l/min	-0,9 - 10 bar	14 N	0,075 kg

BAS 311 301/BAS 511 301



BAS 311 301



BAS 511 301



3/2-way and 5/2-way spool valves with mechanical spring for panel mounting.

Actuating elements are displayed on page 2.2.2.

Valves can be used with technical vacuum too.

Available on request: Valves based on series 401 (air-flow rate 450 l/min).

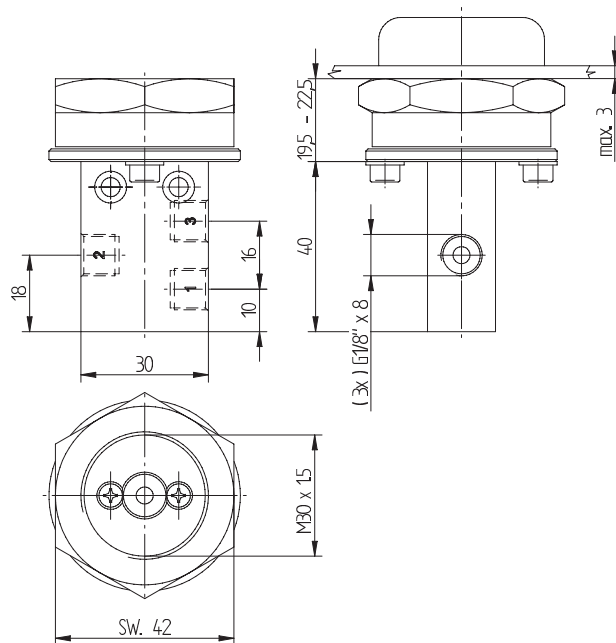
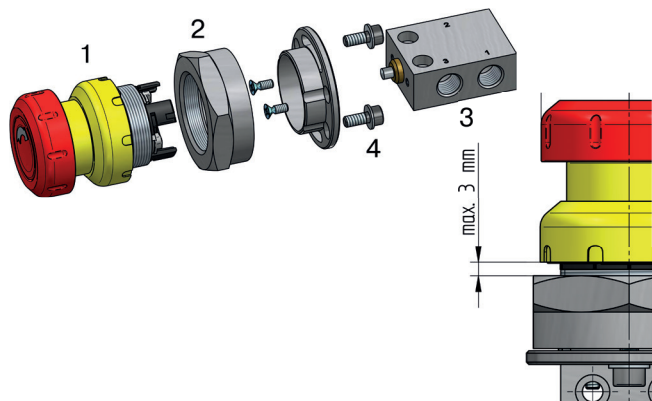
The valves can be also offered in a version for -40°C ... +65°C and for explosion hazardous environment zone 1, 2, 21 and 22. Please refer to page 2.12.2.1.

How to assemble the valve to the panel:

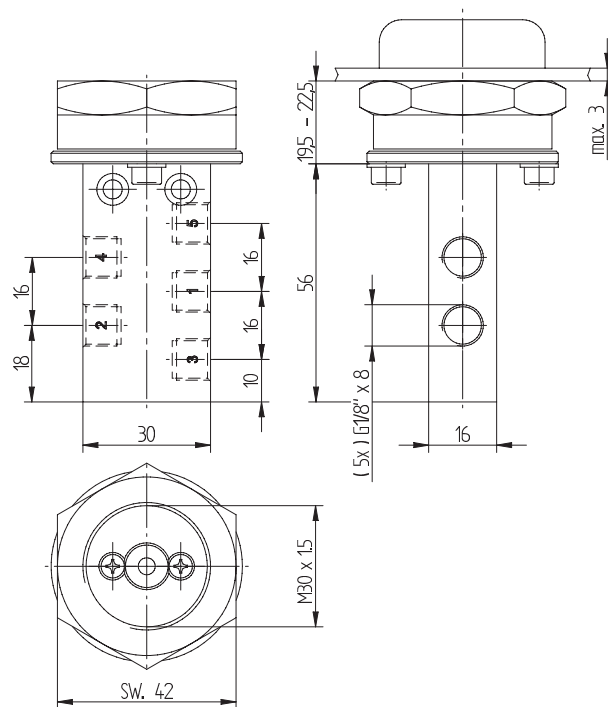
1. Insert the actuator (1) through the hole
2. Tighten the aluminum nut (2) firmly
3. Attach the valve (3) to the nut (2)
4. Fasten the valve with two screws (4)

Please note:

- The sheet thickness must not exceed 3 mm.
- Depending on the sheet thickness, a small gap may remain between the valve and the nut.
- Plastic panels are suitable from 2.5 mm, metal panels from 1.5 mm sheet thickness.



BAS 311 301

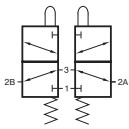


BAS 511 301

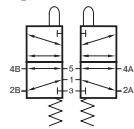
Type	Function	Port size	Air flow	Operating press.	Actuating force	Weight
BAS 311 301	3/2-way	G 1/8"	280 l/min	-0,9 - 10 bar	~ 14 N	0,08 kg
BAS 511 301	5/2-way	G 1/8"	280 l/min	-0,9 - 10 bar	~ 14 N	0,11 kg



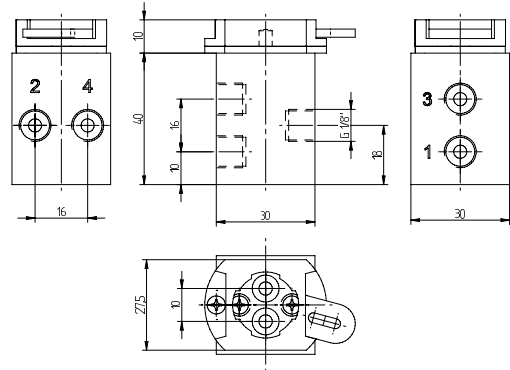
BA 430 301/BA 730 301/BA 334 01



BA 430 301



BA 730 301



BA 430 301

BA 430 301

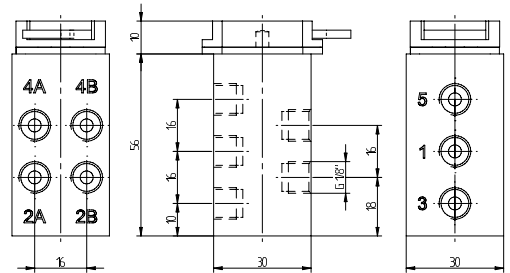
4/3-way spool valve for panel mounting. Middle position exhausted. Typical application: for controlling two single-acting actuators.

BA 730 301

7/3-way spool valve for panel mounting. Typical application: for controlling two double-acting actuators.

BA 334 01

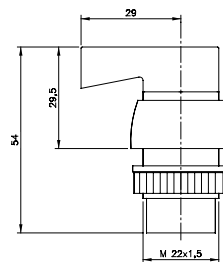
3-position rotary lever long with detent. Please note: Although the valves have a mechanic spring inside, the actuator is with detent.



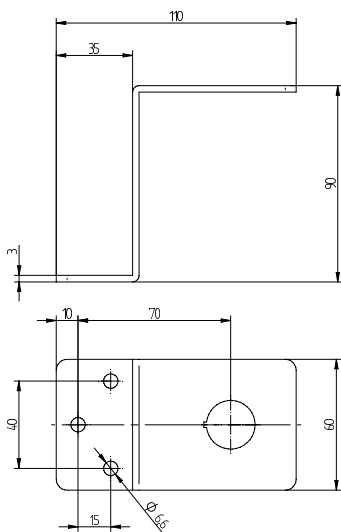
BA 730 301

BW BA 22

Mounting bracket to install a panel mounting valve without a control panel.



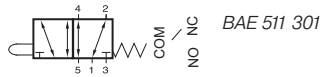
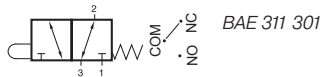
BA 334 01



BW BA 22

Type	Function	Port size	Air flow	Operating press.	Actuating force	Weight
BA 430 301	double 3/2-way	G 1/8"	280 l/min	-0,9 - 10 bar	14 N	0,110 kg
BA 730 301	double 5/2-way	G 1/8"	280 l/min	-0,9 - 10 bar	14 N	0,150 kg
BA 334 01	Rotary lever long	-	-	-	42 N/cm	0,021 kg
BW BA 22	Mounting bracket	-	-	-	-	0,265 kg

BAE 311 301/BAE 511 301



The BAE 311 301 is a 3/2-way spool valve with mechanical spring for panel mounting that can either be used normally closed (pressure at port 1) or normally open (pressure at port 3).

The BAE 511 301 is a 5/2-way spool valve with mechanical spring for panel mounting.

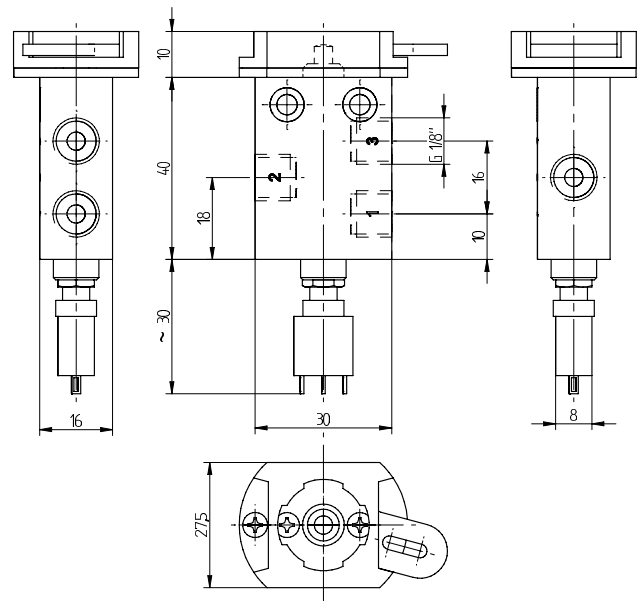
The valves include an electric switch that is actuated at the same time.

The electrical switch can be used up to 6 A / 125 VAC. Switch can be connected in two ways either normally open or normally closed.

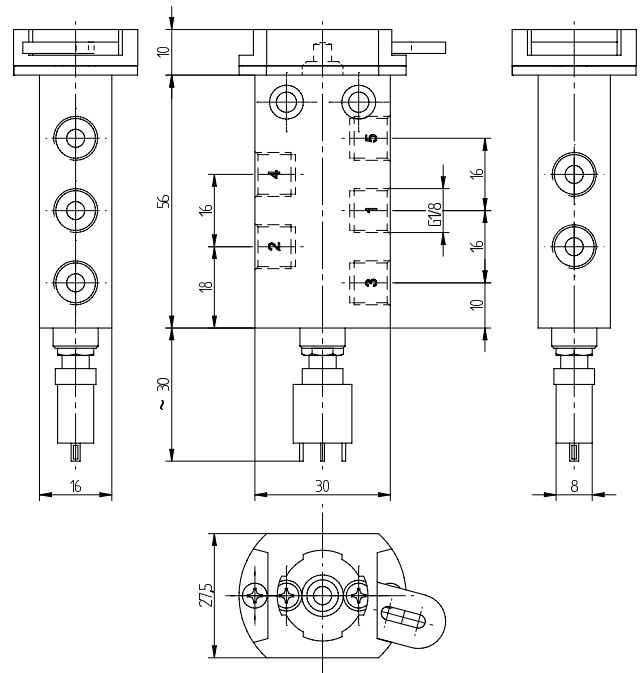
The electrical switch can also be combined with BA 311 201 and BA 511 201 on demand.

Actuation elements are displayed on page 2.2. 1.

Please order including actuation element.



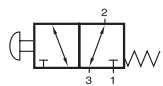
BAE 311 301



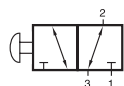
BAE 511 301

Type	Port size	Air flow	Operating press.	Actuating force	Weight
BAE 311 301	G 1/8"	280 l/min	-0,9 - 10 bar	17 N	0,08 kg
BAE 511 301	G 1/8"	280 l/min	-0,9 - 10 bar	17 N	0,097 kg

BH 311 401/BH 320 401 BH 311 701/BH 320 701



BH 311 401
BH 311 701



BH 320 401
BH 320 701



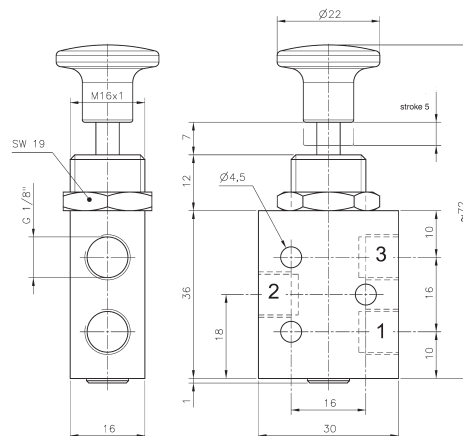
Manually actuated 3/2-way spool valve either with spring return to outer position (type 311) or with two stable positions (type 320).

If pressure is applied to port 1 the function is normally closed.
If pressure is applied to port 3 the function is normally open.

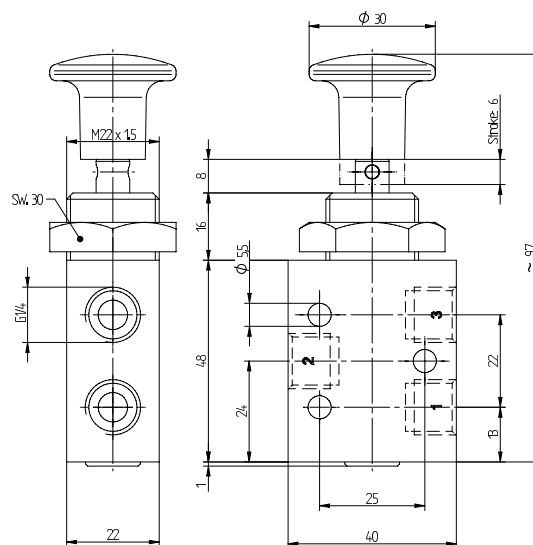
Exhaust can be throttled.

Suitable for wall or panel mounting. Nut for panel mounting, M16 x 1 for G 1/8"-valves or M22 x 1,5 for G 1/4"-valves is included.

Selected valves can be used for technical vacuum too.



BH 311 401/BH 320 401



BH 311 701/BH 320 701

Type	Port size	Air flow	Operating press.	Actuating force	Weight
BH 311 401	G 1/8"	450 l/min	1 - 10 bar	11 N	0,064 kg
BH 320 401	G 1/8"	450 l/min	1 - 10 bar	12 N	0,064 kg 
BH 311 701	G 1/4"	1250 l/min	-0,9 - 10 bar	17 N	0,140 kg 
BH 320 701	G 1/4"	1250 l/min	-0,9 - 10 bar	18 N	0,140 kg 

BH 511 401/BH 520 401 BH 511 701/BH 520 701



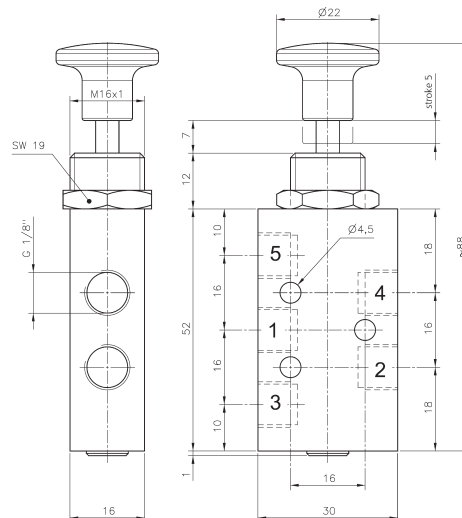
Manually actuated 5/2-way spool valve either with spring return to outer position (type 511) or with two stable positions (type 520).

Normally open from port 1 to 2 and from port 4 to 5.
Operated open from port 1 to 4 and port 2 to 3.

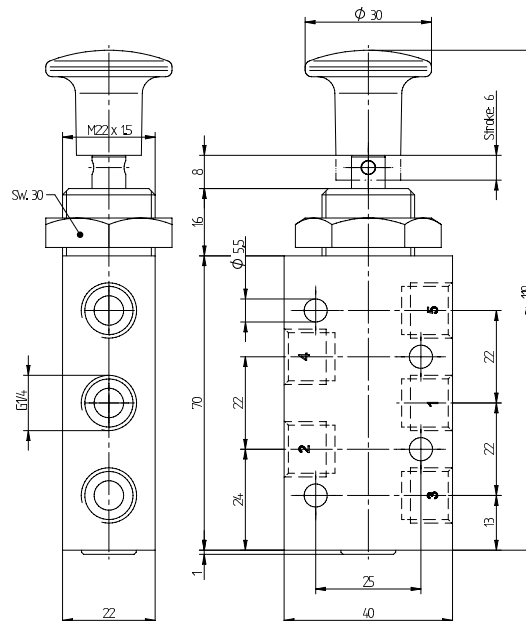
Exhaust can be throttled.

Suitable for wall or panel mounting. Nut for panel mounting, M16 x 1 for G 1/8"-valves or M22 x 1,5 for G 1/4"-valves is included.

Selected valves can be used for technical vacuum too.



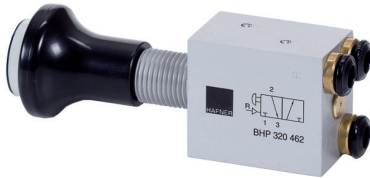
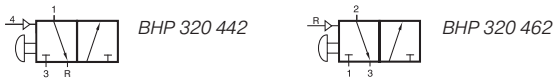
BH 511 401/BH 520 401



BH 511 701/BH 520 701

Type	Port size	Air flow	Operating press.	Actuating force	Weight
BH 511 401	G 1/8"	450 l/min	1 - 10 bar	11 N	0,080 kg
BH 520 401	G 1/8"	450 l/min	1 - 10 bar	12 N	0,080 kg 
BH 511 701	G 1/4"	1250 l/min	-0,9 - 10 bar	17 N	0,180 kg 
BH 520 701	G 1/4"	1250 l/min	-0,9 - 10 bar	18 N	0,180 kg 

BHP 320 442/BHP 320 462



Manually actuated 3/2-way spool valve with 2 stable positions and pneumatic reset.

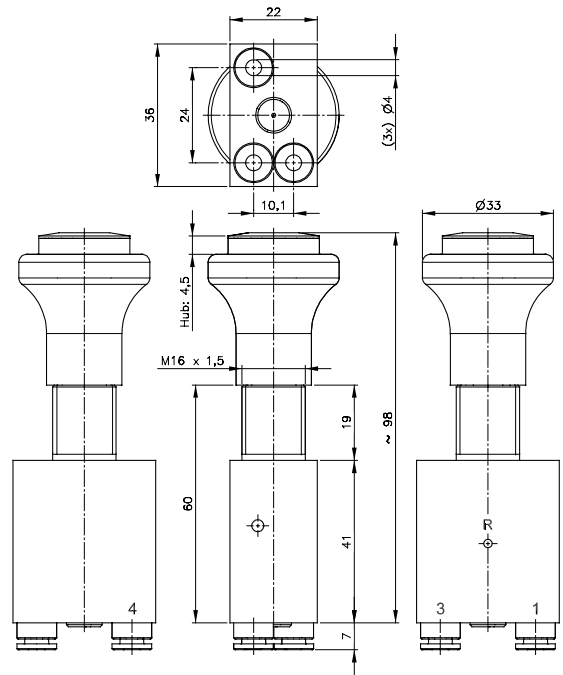
Ports on the bottom of the valve are equipped with integrated push-in fittings. Exhaust is undeducted. Valve is equipped with FKM seals.

If pressure is applied to port 4 (pneumatic reset-port) the stem is pulled in. The knob carries an indicator ring that sticks out when the valve is pulled = actuated.

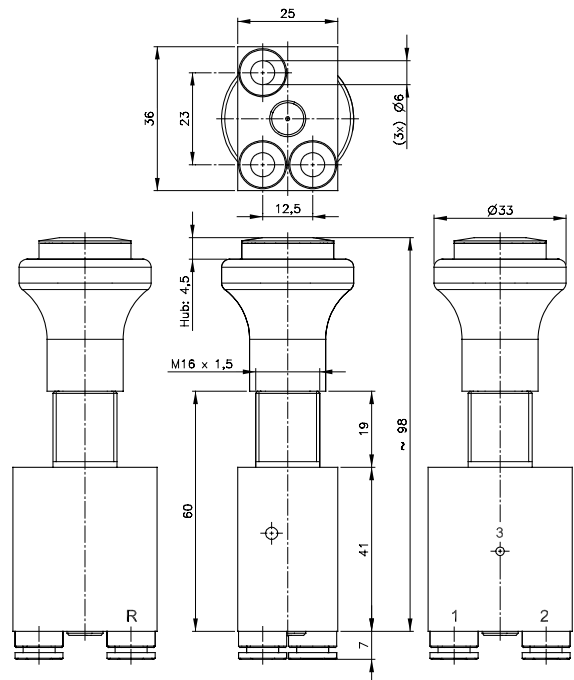
The following knob-colours are available:

Colour code	Colour of knob	Colour of indicator
01	black	white
02	red	white
03	green	red
04	yellow	white
05	blue	white

If requested we add fixing nut DIN 439-VZ-M16x1,5 material: steel zinc plated.



BHP 320 442

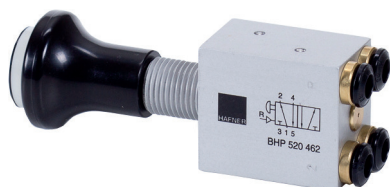


BHP 320 462

Type	Function	Ports	Air flow	Operating press.	Reset press.	Weight
BHP 320 442 _	3/2-way	pif 4 mm	300 l/min	1 - 16 bar	5 bar	0,13 kg
BHP 320 462 _	3/2-way	pif 6 mm	300 l/min	1 - 16 bar	5 bar	0,13 kg

Please add two digits for colour of knob.

BHP 520 442/BHP 520 462



Manually actuated 5/2-way spool valve with 2 stable positions and pneumatic reset.

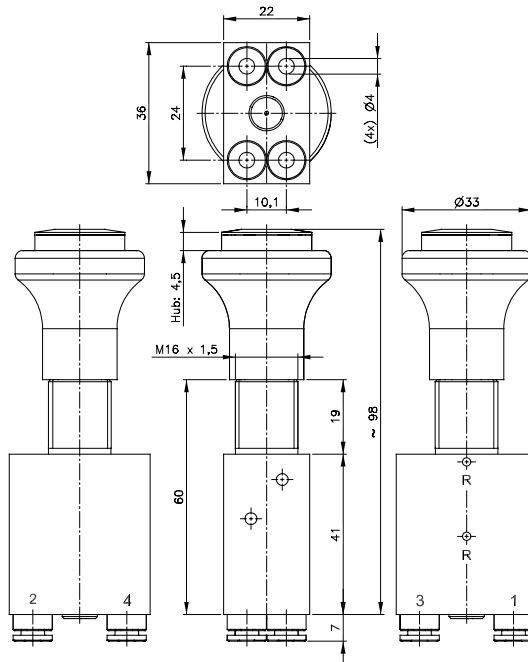
Ports on the bottom of the valve are equipped with integrated push-in fittings. Exhaust is undeducted. Valve is equipped with FKM seals.

If pressure is applied to port 4 (pneumatic reset-port) the stem is pulled in. The knob carries an indicator ring that sticks out when the valve is pulled = actuated.

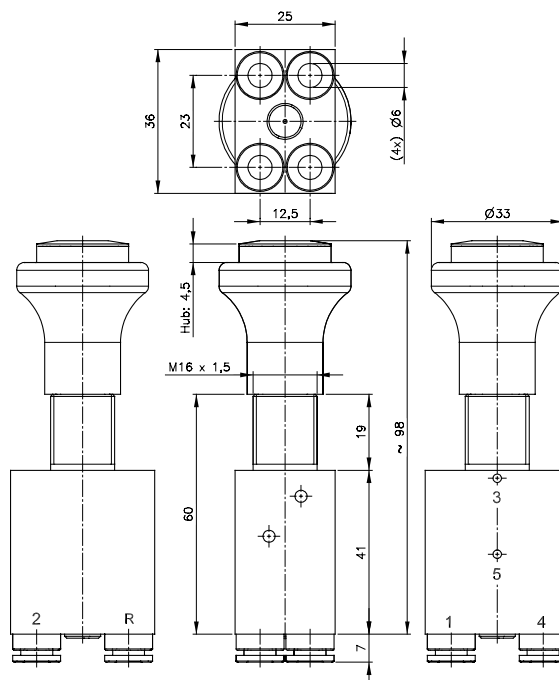
The following knob-colours are available:

Colour code	Colour of knob	Colour of indicator
01	black	white
02	red	white
03	green	red
04	yellow	white
05	blue	white

If requested we add fixing nut DIN 439-VZ-M16x1,5 material: steel zinc plated.



BHP 520 442



BHP 520 462

Type	Function	Ports	Air flow	Operating press.	Reset press.	Weight
BHP 520 442 _	5/2-way	pif 4 mm	300 l/min	1 - 16 bar	5 bar	0,14 kg
BHP 520 462 _	5/2-way	pif 6 mm	300 l/min	1 - 16 bar	5 bar	0,14 kg

Please add two digits for colour of knob.