



2.11

„Hafner on the Rocks“ Low Temperature Valves

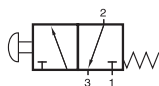
Selected models are available for
explosion hazardous environment.
They are ATEX-Ex certified.
For detailed information refer to
chapter 2.14.



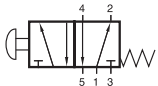
Temperature range: - 50° C to + 50° C

Please notice:
Below -40°C minimum operating
pressure generally increases to 3 bar.

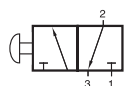
BH 311 701 TT/BH 320 701 TT
BH 511 701 TT/BH 520 701 TT



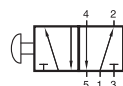
BH 311 701 TT



BH 511 701 TT



BH 320 701 TT



BH 520 701 TT



Manually actuated spool valve for low temperature environment - 50° C to + 50° C.

BH 311 701 3/2-way, normally closed, spring return

BH 320 701 3/2-way, indexed

BH 511 701 5/2-way, spring return

BH 520 701 5/2-way, indexed

Due to the specific design of the low temperature seals pressure has to be applied to port 1.

For other versions (e.g. normally open) please get in touch with the manufacturer.

Please notice:

When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!

Below - 40° C the leakage-rate of the valve can increase to 10 cm³ /min.

Use unlubricated air only.

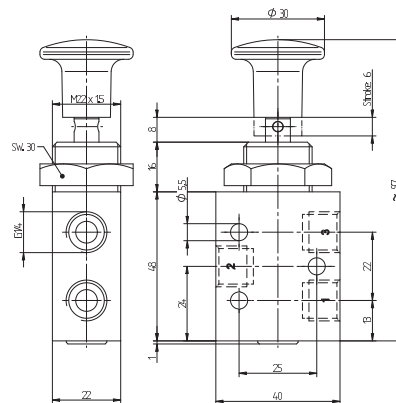
Exhaust can be throttled.

Suitable for wall or panel mounting. Nut for panel mounting M22 x 1,5 is included.

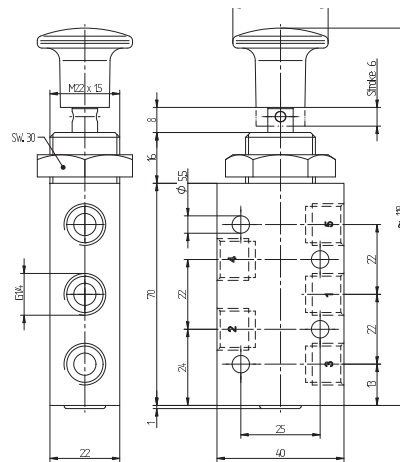
Available on request: BG 311 701 TT

Mechanically actuated 3/2-way valve, body as well as technical specifications similar to BH 311 701.

Modified stem actuator.



BH 311 701 TT/BH 320 701 TT

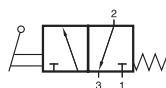


BH 511 701 TT/ BH 520 701 TT

Type	Function	Port size	Air flow	Operating press.	Actuating force	Weight
BH 311 701 TT	3/2-way spring ret.	G 1/4"	1250 l/min	1 - 10 bar	17 N	0,14 kg
BH 320 701 TT	3/2-way indexed	G 1/4"	1250 l/min	1 - 10 bar	18 N	0,14 kg
BH 511 701 TT	5/2-way spring ret.	G 1/4"	1250 l/min	1 - 10 bar	17 N	0,18 kg
BH 520 701 TT	5/2-way indexed	G 1/4"	1250 l/min	1 - 10 bar	18 N	0,18 kg

HV 311 501 TT/HV 311 701 TT HVR 320 501 TT/HVR 320 701 TT

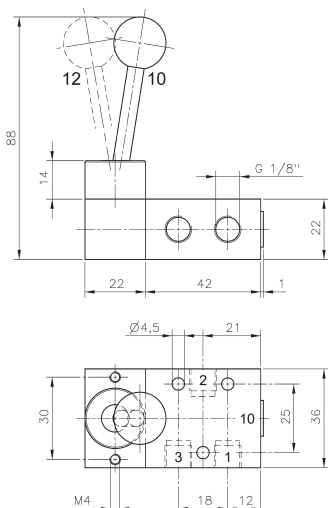
2.11.2.1
page 211



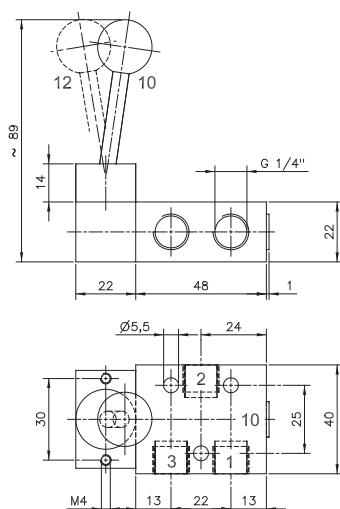
HV 311 501 TT
HV 311 701 TT



HVR 320 501 TT
HVR 320 701 TT



HV 311 501 TT/HVR 320 501 TT



HV 311 701 TT/HVR 320 701 TT



Lever actuated 3/2-way spool valve for low temperature environment - 50° C to + 50° C.

Type HV 311 normally closed, spring return
Type HVR 320 indexed

The lever is sealed by using a metal ball.

Due to the specific design of the low temperature seals pressure has to be applied to port 1.
For other versions (e.g. normally open) please get in touch with the manufacturer.

Please notice:

When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!

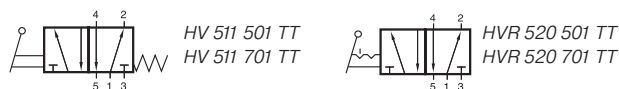
Below - 40° C the leakage-rate of the valve can increase to 10 cm³ /min.

Use unlubricated air only.

Exhaust can be throttled.

Type	Function	Port size	Air flow	Operating press.	Actuating force	Weight
HV 311 501 TT	3/2-way spring ret.	G 1/8"	650 l/min	1 - 10 bar	20 N	0,19 kg
HV 311 701 TT	3/2-way spring ret.	G 1/4"	1250 l/min	1 - 10 bar	20 N	0,20 kg
HVR 320 501 TT	3/2-way indexed	G 1/8"	650 l/min	1 - 10 bar	20 N	0,19 kg
HVR 320 701 TT	3/2-way indexed	G 1/4"	1250 l/min	1 - 10 bar	20 N	0,20 kg

HV 511 501 TT/HV 511 701 TT HVR 520 501 TT/HVR 520 701 TT



Lever actuated 5/2-way spool valve for low temperature environment - 50° C to + 50° C.

Type HV 511 spring return
Type HVR 520 indexed

The lever is sealed by using a metal ball.

Due to the specific design of the low temperature seals pressure has to be applied to port 1. If other function is required please get in touch with the manufacturer.

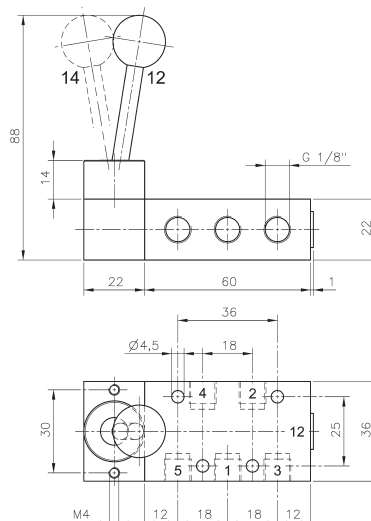
Please notice:

When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!

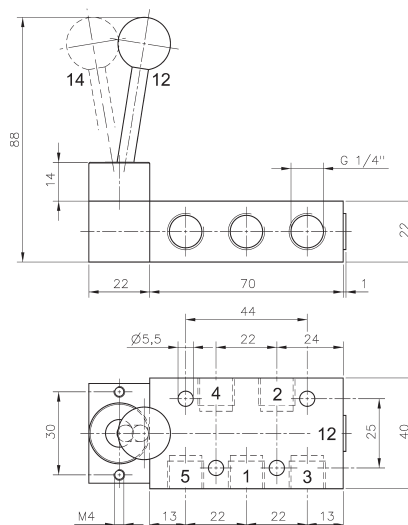
Below - 40° C the leakage-rate of the valve can increase to 10 cm³ /min.

Use unlubricated air only.

Exhaust can be throttled.



HV 511 501 TT/HVR 520 501 TT

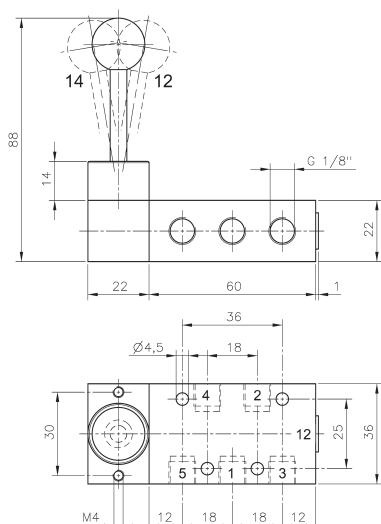
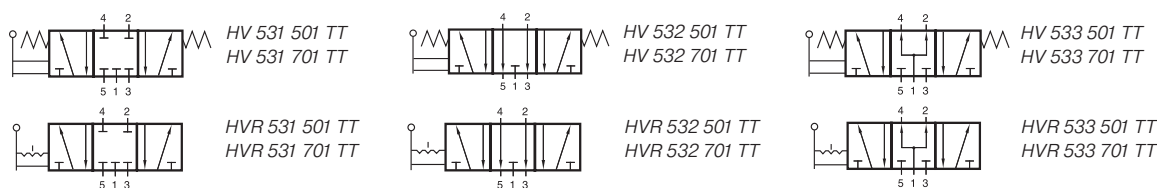


HV 511 701 TT/HVR 520 701 TT

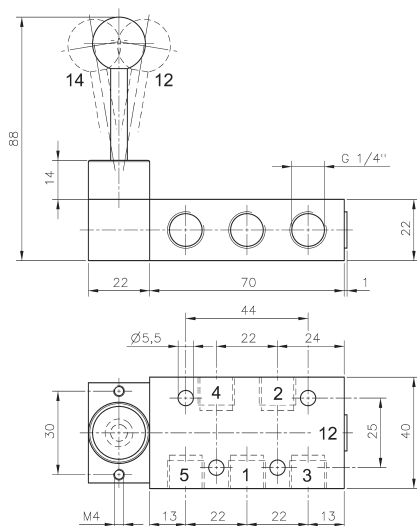
Type	Function	Port size	Air flow	Operating press.	Actuating force	Weight
HV 511 501 TT	5/2-way spring ret.	G 1/8"	650 l/min	1 - 10 bar	20 N	0,22 kg
HV 511 701 TT	5/2-way spring ret.	G 1/4"	1250 l/min	1 - 10 bar	20 N	0,24 kg
HVR 520 501 TT	5/2-way indexed	G 1/8"	650 l/min	1 - 10 bar	20 N	0,22 kg
HVR 520 701 TT	5/2-way indexed	G 1/4"	1250 l/min	1 - 10 bar	20 N	0,24 kg

HV 53_ 501 TT/HV 53_ 701 TT HVR 53_ 501 TT/HVR 53_ 701 TT

2.11.2.3
page 213



HV 53_ 501 TT/HVR 53_ 501 TT



HV 53_ 701 TT/HVR 53_ 701 TT



Lever actuated 5/3-way spool valve for low temperature environment - 50° C to + 50° C.

Type HV	spring return to middle position
Type HVR	indexed
Type 531	centre closed
Type 532	centre exhausted
Type 533	centre pressurized

When ordering please complete the type number by 1, 2 or 3 according to the type required.

The lever is sealed by using a metal ball.

Exhaust can be throttled.

Due to the specific design of the low temperature seals pressure has to be applied to port 1. If other function is required please get in touch with the manufacturer.

Please notice:

When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!

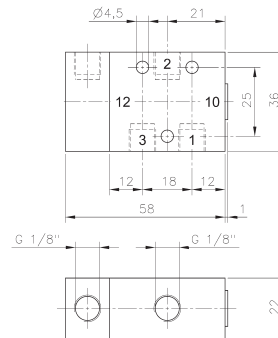
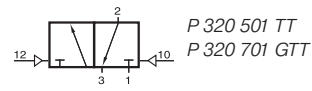
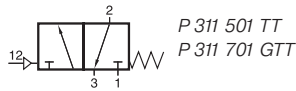
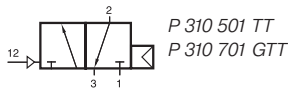
Below - 40° C the leakage-rate of the valve can increase to 10 cm³ /min.

Use unlubricated air only.

For type 531: pressure at port 1 has to be ≥ pressure at 2 and 4. If pressure supply is lost, 2 or 4 can exhaust and actuator might move.

Type	Function	Port size	Air flow	Operating press.	Actuating force	Weight
HV 53_ 501 TT	spring ret.	G 1/8"	650 l/min	1 - 10 bar	20 N	0,22 kg
HV 53_ 701 TT	spring ret.	G 1/4"	1250 l/min	1 - 10 bar	20 N	0,24 kg
HVR 53_ 501 TT	indexed	G 1/8"	650 l/min	1 - 10 bar	20 N	0,22 kg
HVR 53_ 701 TT	indexed	G 1/4"	1250 l/min	1 - 10 bar	20 N	0,24 kg

P 310 501 TT/P 310 701 GTT/P 311 501 TT P 311 701 GTT/P 320 501 TT/P 320 701 GTT



P 310 501 TT/P 311 501 TT

Pneumatically actuated 3/2-way spool valve for low temperature environment - 50° C to + 50° C.

- | | |
|----------|---|
| Type 310 | single pilot n.c. air-spring return operating and actuating pressure should be at the same level. |
| Type 311 | single pilot n.c. mechanical spring return |
| Type 320 | double pilot |

GTT: dual use, valves can be used in-line as well as on manifold plates. Manifolds for valves type 701 G are displayed on page 2.7.1.4.

Due to the specific design of the low temperature seals pressure has to be applied to port 1. For other versions (e.g. normally open) please get in touch with the manufacturer.

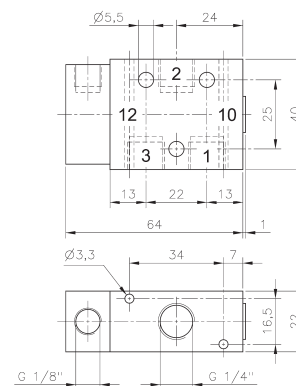
Please notice:

When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!

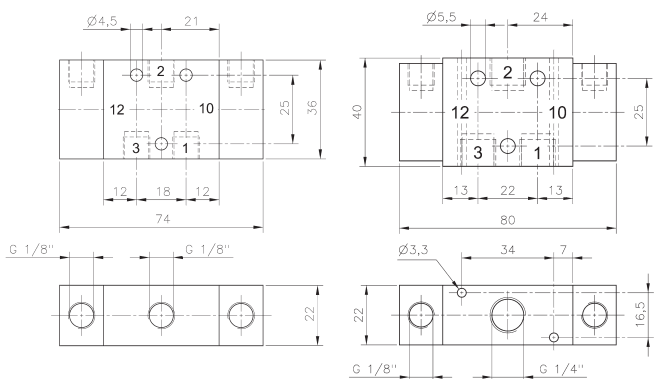
Below - 40° C the leakage-rate of the valve can increase to 10 cm³ /min, actuation pressure minimum 3 bar.

Use unlubricated air only.

Exhaust can be throttled.



P 310 701 GTT/P 311 701 GTT



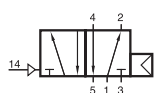
P 320 501 TT

P 320 701 GTT

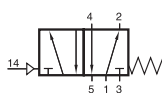
Type	Function	Port size	Air flow	Operating pressure	Actuating pressure	Weight	
P 310 501 TT	n.c. air return	G 1/8"	650 l/min	2 - 10 bar	the same	0,13 kg	⊗
P 310 701 GTT	n.c. air return	G 1/4"	1250 l/min	2 - 10 bar	the same	0,14 kg	⊗
P 311 501 TT	n.c. mech. spring	G 1/8"	650 l/min	2 - 10 bar	3 - 10 bar	0,13 kg	
P 311 701 GTT	n.c. mech. spring	G 1/4"	1250 l/min	2 - 10 bar	3 - 10 bar	0,14 kg	
P 320 501 TT	double pilot	G 1/8"	650 l/min	2 - 10 bar	≤ operating press.	0,16 kg	⊗
P 320 701 GTT	double pilot	G 1/4"	1250 l/min	2 - 10 bar	≤ operating press.	0,17 kg	⊗

P 510 501 GTT/P 510 701 GTT/P 511 501 GTT P 511 701 GTT/P 520 501 GTT/P 520 701 GTT

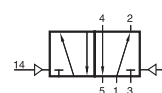
2.11.3.2
page 215



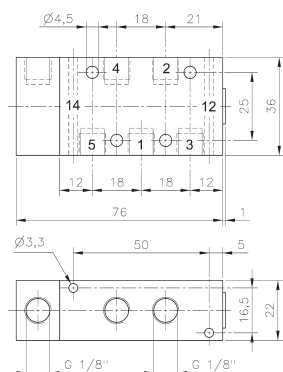
P 510 501 TT
P 510 701 GTT



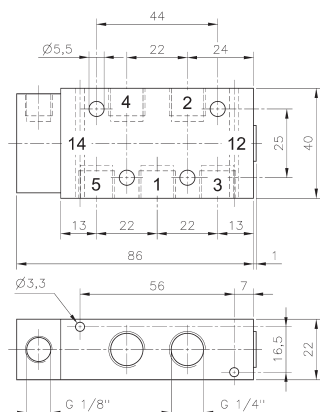
P 511 501 TT
P 511 701 GTT



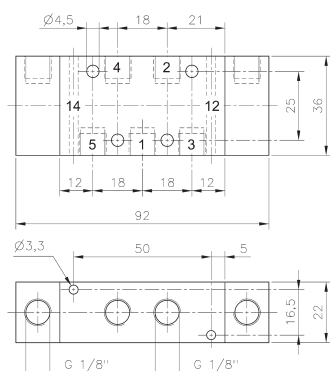
P 520 501 TT
P 520 701 GTT



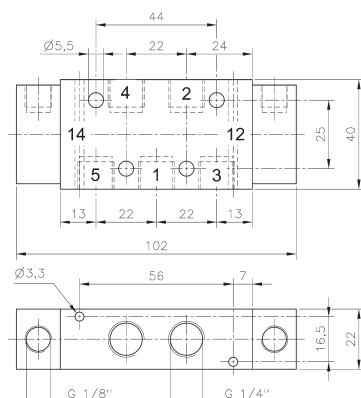
P 510 501 GTT/P 511 501 GTT



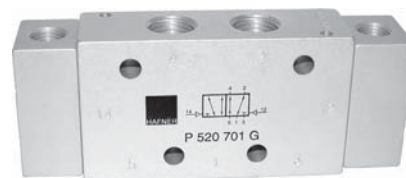
P 510 701 GTT/P 511 701 GTT



P 520 501 GTT



P 520 701 GTT



Pneumatically actuated 5/2-way spool valve for low temperature environment - 50° C to + 50° C.

- | | |
|----------|--|
| Type 510 | single pilot air-spring return
operating and actuating pressure
should be at the same level. |
| Type 511 | single pilot mechanical
spring return |
| Type 520 | double pilot |

GTT: dual use, valves can be used in-line as well as on manifold plates. Manifolds for valves type 501 G are displayed on page 2.7.2.2, manifold for valves type 701 G are displayed on page 2.7.2.3.

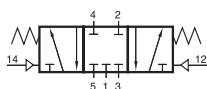
Due to the specific design of the low temperature seals pressure has to be applied to port 1. For other versions please get in touch with the manufacturer.

Please notice:
When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!
Below - 40° C the leakage-rate of the valve can increase to 10 cm³ /min, actuation pressure minimum 3 bar.
Use unlubricated air only.

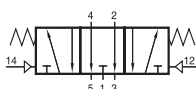
Exhaust can be throttled.

Type	Function	Port size	Air flow	Operating pressure	Actuating pressure	Weight
P 510 501 GTT	air return	G 1/8"	650 l/min	2 - 10 bar	the same	0,16 kg
P 510 701 GTT	air return	G 1/4"	1250 l/min	2 - 10 bar	the same	0,18 kg
P 511 501 GTT	mech. spring	G 1/8"	650 l/min	2 - 10 bar	3 - 10 bar	0,16 kg
P 511 701 GTT	mech. spring	G 1/4"	1250 l/min	2 - 10 bar	3 - 10 bar	0,18 kg
P 520 501 GTT	double pilot	G 1/8"	650 l/min	2 - 10 bar	≤ operating press.	0,20 kg
P 520 701 GTT	double pilot	G 1/4"	1250 l/min	2 - 10 bar	≤ operating press.	0,22 kg

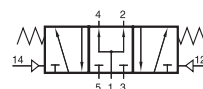
P 53_ 501 GTT/P 53_ 701 GTT



P 531 501 GTT
P 531 701 GTT
P 531 121 GTT



P 532 501 GTT
P 532 701 GTT
P 532 121 GTT



P 533 501 GTT
P 533 701 GTT
P 533 121 GTT



Pneumatically actuated 5/3-way spool valve for low temperature environment - 50° C to + 50° C.

Type 531 centre closed
Type 532 centre exhausted
Type 533 centre pressurized

When ordering please complete the type number by 1, 2 or 3 according to the type required.

GTT: dual use, valves can be used in-line as well as on manifold plates. Manifolds for valves type 501 G are displayed on page 2.7.2.2, manifold for valves type 701 G are displayed on page 2.7.2.3.

Due to the specific design of the low temperature seals pressure has to be applied to port 1.
For other versions please get in touch with the manufacturer.

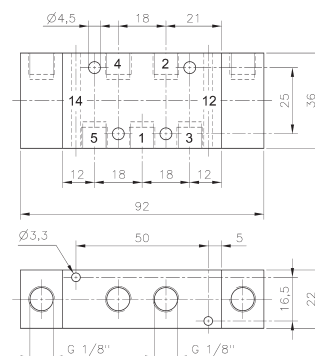
Please notice:

When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!

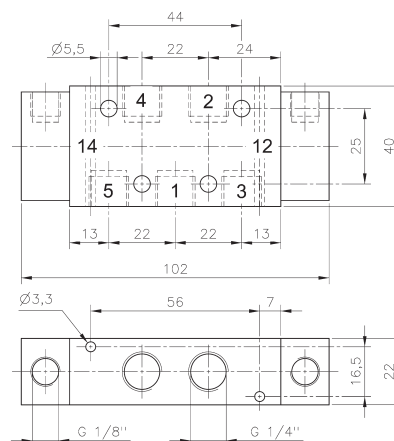
Below - 40° C the leakage-rate of the valve can increase to 10 cm³ /min.

Use unlubricated air only.

For type 531: pressure at port 1 has to be ≥ pressure at 2 and 4. If pressure supply is lost, 2 or 4 can exhaust and actuator might move.



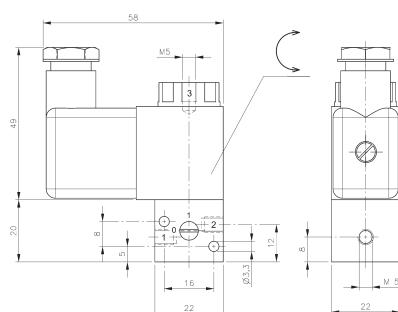
P 53_ 501 GTT



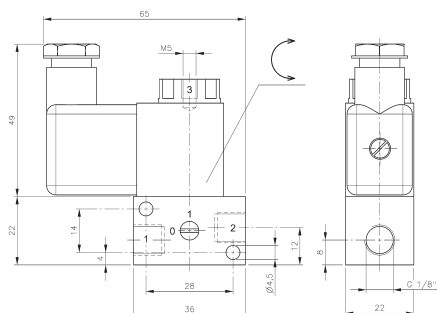
P 53_ 701 GTT

Type	Port size	Air flow	Operating pressure	Actuating pressure	Weight
P 53_ 501 GTT	G 1/8"	650 l/min	2 - 10 bar	3 - 10 bar	0,20 kg
P 53_ 701 GTT	G 1/4"	1250 l/min	2 - 10 bar	3 - 10 bar	0,22 kg

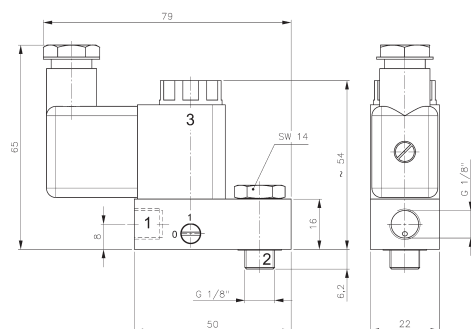
2.11.4.1.1
page 217



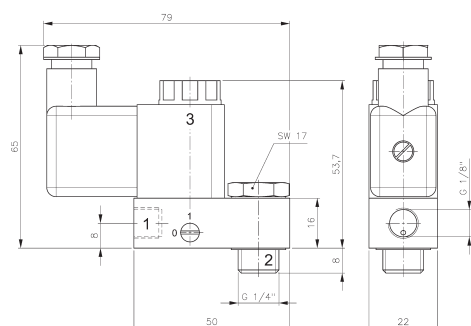
MH 311 012 TT



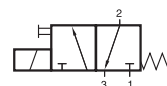
MH 311 015 TT



MH 311 013 TT



MH 311 017 TT



MH 311 012 TT
MH 311 015 TT
MH 311 013 TT
MH 311 017 TT



Direct acting 3/2-way solenoid valve equipped with mechanical spring return for low temperature environment - 50° C to + 50° C.

By closing port 3 the valves can be converted into 2/2-way version.

MH 311 013 TT and MH 311 017 TT are designed for piloting angle seat valves or small spring-return actuators.

When assembling this type of valve to a spring-return actuator, please take into consideration that there is no exhaust air recirculation ("purge").

Please notice:

When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!

Use unlubricated air only.

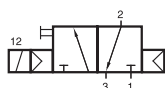
Available with solenoid operators:

230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=,
24V=, 12V=.

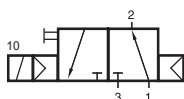
Valves are equipped with manual override to turn.

Type	Port size			Air flow	Operating pressure	Power consumption	Weight	
	1	2	3					
MH 311 012 TT	M5	M5	M5	40 l/min	0 - 10 bar	3 W = / 5 VA ~	0,12 kg	Ex
MH 311 015 TT	G 1/8"	G 1/8"	M5	50 l/min	0 - 10 bar	3 W = / 5 VA ~	0,14 kg	Ex
MH 311 013 TT	G 1/8"	G 1/8" Banjo	M5	50 l/min	0 - 10 bar	3 W = / 5 VA ~	0,14 kg	Ex
MH 311 017 TT	G 1/8"	G 1/4" Banjo	M5	50 l/min	0 - 10 bar	3 W = / 5 VA ~	0,16 kg	Ex

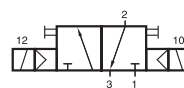
M(O)H 310 501 TT/M(O)H 310 701 GTT MH 320 501 TT/MH 320 701 GTT



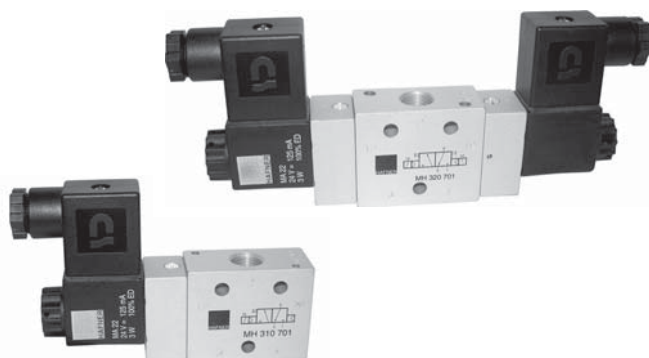
MH 310 501 TT
MH 310 701 GTT



MOH 310 501 TT
MOH 310 701 GTT



MH 320 501 TT
MH 320 701 GTT



3/2-way solenoid valve for low temperature environment - 50° C to + 50° C.

Type MH 310 single solenoid n.c. air-spring return
Type MOH 310 single solenoid n.o. air-spring return
Type MH 320 double solenoid

G 1/4"-valves are dual use, they can be used in-line as well as on manifold plates. Manifolds for valves type 701 G are displayed on page 2.7.1.4.

Available with solenoid operators
230V/50 Hz, 110V/50 Hz, 24V/50 Hz, 48V=,
24V=, 12V=.

Valves are equipped with manual override to turn.

Please notice:

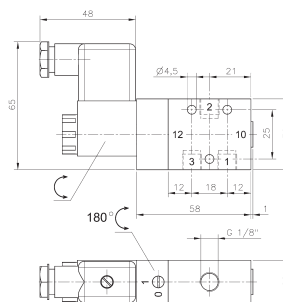
When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!

Below - 40° C the leakage-rate of the valve can increase to 10 cm³/min.

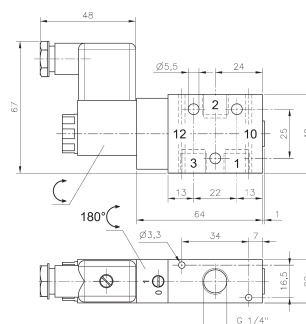
Use unlubricated air only.

Valves are also available with external pilot feed.

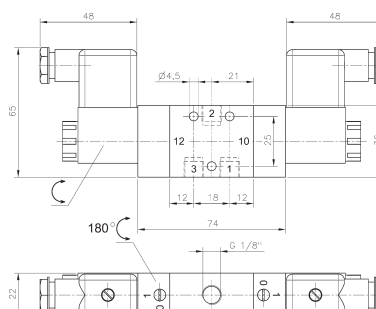
NPT ported valves are available on request.



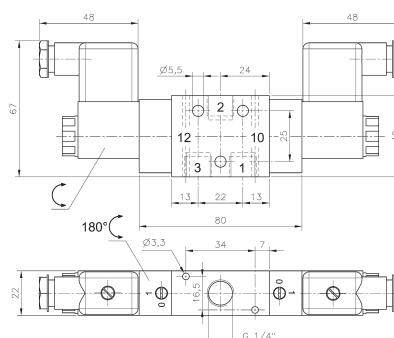
MH 310 501 TT/MOH 310 501 TT



MH 310 701 GTT/MOH 310 701 GTT

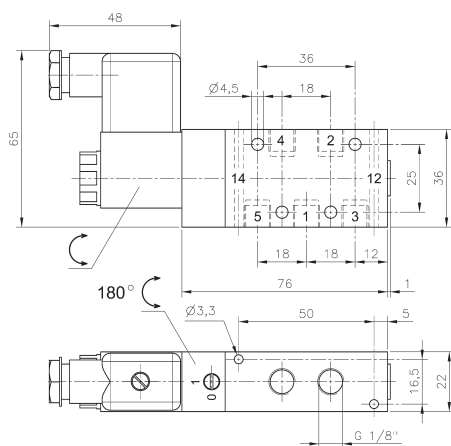
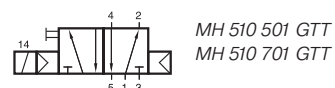


MH 320 501 TT

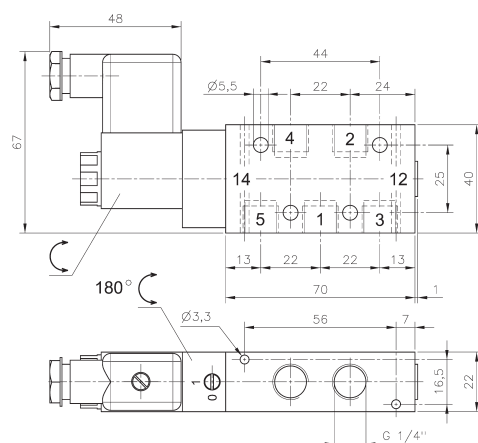


MH 320 701 GTT

Type	Function	Port size	Air flow	Operating press.	Power cons.	Weight
MH 310 501 TT	n.c.	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,21 kg
MH 310 701 GTT	n.c.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,23 kg
MOH 310 501 TT	n.o.	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,21 kg
MOH 310 701 GTT	n.o.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,23 kg
MH 320 501 TT	double sol.	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,34 kg
MH 320 701 GTT	double sol.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,36 kg



MH 510 501 GTT



MH 510 701 GTT



5/2-way single solenoid valve equipped with air spring return for low temperature environment - 50° C to + 50° C.

Valves are dual use, they can be used in-line as well as on manifold plates. Manifolds for valves type 501 G are displayed on page 2.7.2.2, manifold for valves type 701 G are displayed on page 2.7.2.3.

Available with solenoid operators
230V/50 Hz, 110V/50 Hz, 24V/50 Hz, 48V=,
24V=, 12V=.

Valves are equipped with manual override to turn.

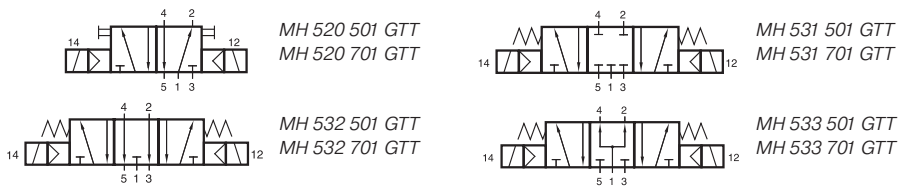
Please notice:
When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!
Below - 40° C the leakage-rate of the valve can increase to 10 cm³ /min.
Use unlubricated air only.

Valves are also available with external pilot feed.

NPT ported valves are available on request.

Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 510 501 GTT	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,25 kg
MH 510 701 GTT	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,27 kg

MH 520 501 GTT/MH 520 701 GTT
MH 53_ 501 GTT/MH 53_ 701 GTT



5-way solenoid valve for low temperature environment - 50° C to + 50° C.

Type 520	5/2-way double solenoid, actuated by impulse
Type 531	5/3-way centre closed
Type 532	5/3-way centre exhausted
Type 533	5/3-way centre pressurized

Valves are dual use, they can be used in-line as well as on manifold plates. Manifolds for valves type 501 G are displayed on page 2.7.2.2, manifold for valves type 701 G are displayed on page 2.7.2.3

Available with solenoid operators
230V/50 Hz, 110V/50 Hz, 24V/50 Hz, 48V=,
24V=, 12V=.

Valves are equipped with manual override to turn.

Please notice:

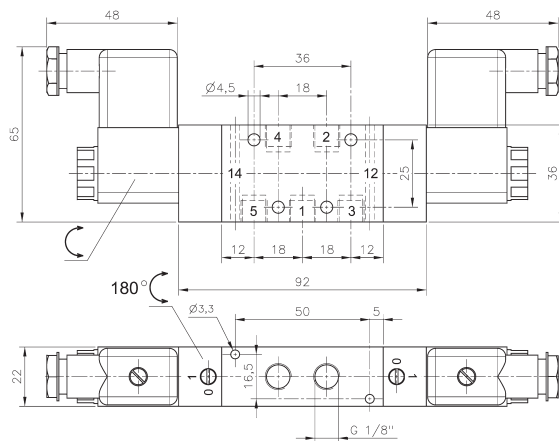
When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!

Below - 40° C the leakage-rate of the valve can increase to 10 cm³ /min.
Use unlubricated air only.

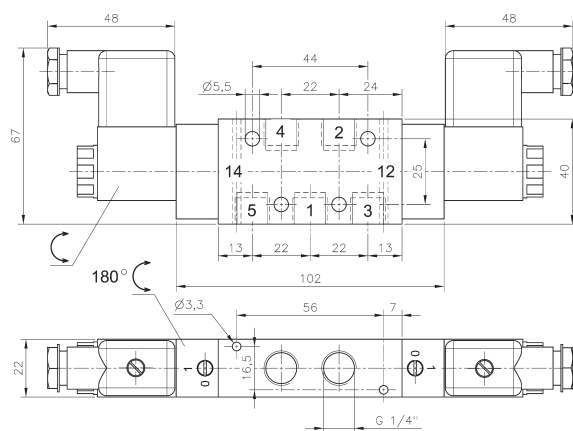
For type 531: pressure at port 1 has to be \geq pressure at 2 and 4. If pressure supply is lost, 2 or 4 can exhaust and actuator might move.

Valves are also available with external pilot feed.





NPT ported valves are available on request.



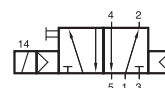
MH 520 501 GTT/MH 53_ 501 GTT



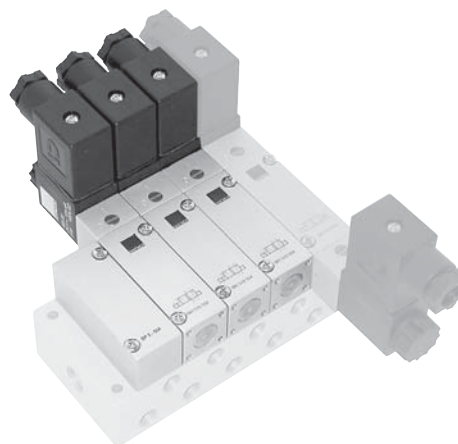
MH 520 701 GTT/MH 53_ 701 GTT

Type	Port size	Air flow	Operating press.	Power consumption	Weight	
MH 520 501 GTT	G 1/8"	650 l/min	1 - 10 bar	3 W = / 5 VA ~	0,38 kg	
MH 520 701 GTT	G 1/4"	1250 l/min	1 - 10 bar	3 W = / 5 VA ~	0,40 kg	
MH 53_ 501 GTT	G 1/8"	650 l/min	3 - 10 bar	3 W = / 5 VA ~	0,38 kg	
MH 53_ 701 GTT	G 1/4"	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,40 kg	

2.11.4.3.1
page 221



MH 510 304 TT
MH 510 504 TT
MH 510 704 TT



The technical drawing shows two views of the B7000-10000 series ball bearing housing:

- Front View (Top):** Shows a cylindrical housing with a total length of 46 mm. The mounting flange has a diameter of 22 mm and a thickness of 16 mm. The main body has a diameter of 12 mm. There are four mounting holes with a diameter of Ø3.3 mm, spaced at 14 mm intervals from the ends.
- Side View (Bottom):** Shows the housing's profile with a total width of 76 mm. The mounting flange has a height of 58 mm and a width of 48 mm. The main body has a height of 60 mm. The bottom flange has a thickness of 16.5 mm. A central hole with a diameter of Ø5 mm is shown.

The technical drawing shows two views of the B7000-10000 series ball bearing housing:

- Top View (Front View):** Shows the overall length of 180 mm and width of 22 mm. The distance from the left end face to the center of the first shaft hole is 9 mm. The distance between the centers of the four shaft holes is 20 mm (between the first and second), 24 mm (between the second and third), and 30 mm (between the third and fourth). The distance from the center of the last shaft hole to the right end face is 16.5 mm.
- Bottom View (Side View):** Shows the overall height of 58 mm. The distance from the left end face to the start of the main body is 48 mm. The total length of the main body is 86 mm. The distance from the start of the main body to the center of the shaft hole is 70 mm. The diameter of the shaft hole is $\varnothing 3.3$. The distance from the bottom flange to the center of the shaft hole is 13 mm. The distance between the centers of the two mounting holes at the bottom is 22 mm. The diameter of the mounting holes is $\varnothing 7$.

5/2-way single solenoid valve equipped with air spring return for low temperature environment - 50° C to + 50° C.

All the ports are in the plate, plates are displayed on page 2.7.2.7 and 2.7.2.8.

Available with solenoid operators
230V/50 Hz, 110V/50 Hz, 24V/50 Hz, 48V=,
24V=, 12V=.

Valves are equipped with manual override to turn.

Please notice:

When operated below 0°C the pressure condensation point has to be at least 15°C below the temperature of environment and media. Air has to be dried!

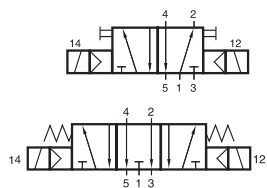
Below - 40° C the leakage-rate of the valve can increase to 10 cm³ /min.

Use unlubricated air only.

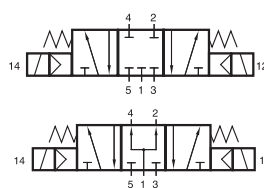
Mounting screens and seals are included.

Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 510 304 TT	Ø 3 mm	220 l/min	2 - 10 bar	3 W = / 5 VA ~	0,20 kg
MH 510 504 TT	Ø 5 mm	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,21 kg
MH 510 704 TT	Ø 7 mm	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,22 kg

MH 520 304 TT/MH 520 504 TT/MH 520 704 TT MH 53_ 304 TT/MH 53_ 504 TT/MH 53_ 704 TT

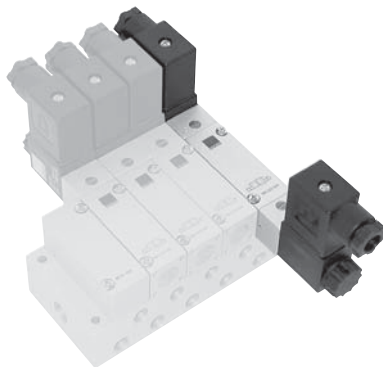


MH 520 304 TT
MH 520 504 TT
MH 520 704 TT



MH 531 304 TT
MH 531 504 TT
MH 531 704 TT

MH 533 304 TT
MH 533 504 TT
MH 533 704 TT



5-way solenoid valve for low temperature environment - 50° C to + 50° C.

- Type 520 5/2-way double solenoid, actuated by impulse
Type 531 5/3-way centre closed
Type 532 5/3-way centre exhausted
Type 533 5/3-way centre pressurized

All the ports are in the plate, plates are displayed on page 2.7.2.7 and 2.7.2.8.

Available with solenoid operators
230V/50 Hz, 110V/50 Hz, 24V/50 Hz, 48V=, 24V=, 12V=.

Valves are equipped with manual override to turn.

Please notice:

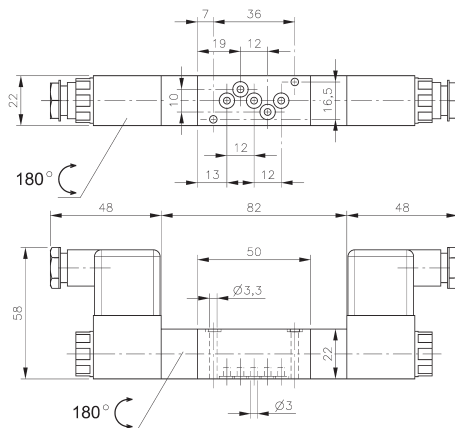
When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!

Below - 40° C the leakage-rate of the valve can increase to 10 cm³ /min.

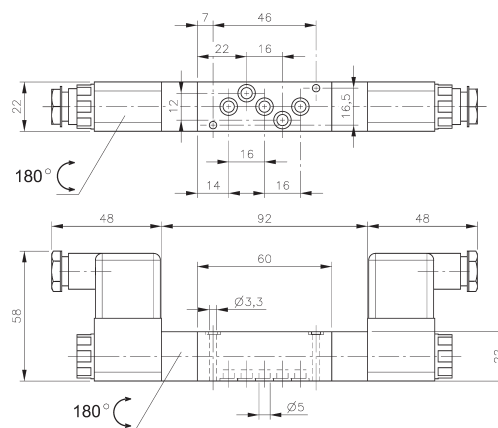
Use unlubricated air only.

For type 531: pressure at port 1 has to be ≥ pressure at 2 and 4. If pressure supply is lost, 2 or 4 can exhaust and actuator might move.

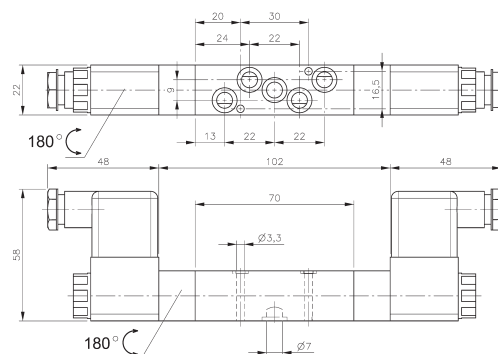
Mounting screws and seals are included.



MH 520 304 TT/MH 53_ 304 TT

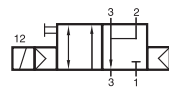


MH 520 504 TT/MH 53_ 504 TT

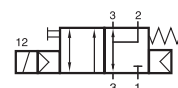


MH 520 704 TT/MH 53_ 704 TT

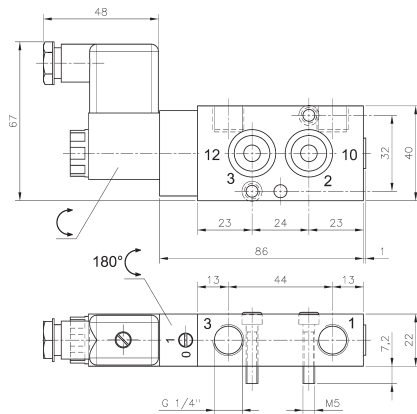
Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 520 304 TT	Ø 3 mm	220 l/min	2 - 10 bar	3 W = / 5 VA ~	0,30 kg
MH 520 504 TT	Ø 5 mm	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,32 kg
MH 520 704 TT	Ø 7 mm	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,34 kg
MH 53_ 304 TT	Ø 3 mm	220 l/min	3 - 10 bar	3 W = / 5 VA ~	0,30 kg
MH 53_ 504 TT	Ø 5 mm	650 l/min	3 - 10 bar	3 W = / 5 VA ~	0,32 kg
MH 53_ 704 TT	Ø 7 mm	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,34 kg



MNH 310 701 TT



MNH 311 701 TT



MNH 310 701 TT/MNH 311 701 TT



3/2-way solenoid valve, actuated by permanent signal for low temperature environment - 50° C to + 50° C. Interface according to 1/4" Namur standard, with exhaust air recirculation (purge).

Type MNH 310 701 with pneumatic spring return
Type MNH 311 701 with combined spring assuring a fail-safe function in case of cut-off of pressure supply.

Available with actuators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=, 24V=, 12V=.

The valves are generally equipped with manual override to turn.

Please notice:
When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!
Below - 40° C the leakage-rate of the valve can increase to 10 cm³ /min.
Use unlubricated air only.

Delivery includes 1 pin, 2 screws, 2 O-rings.

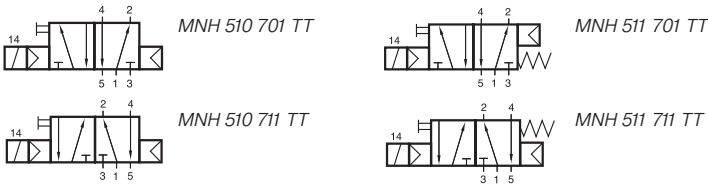
NPT ported valves are available on request.

Type	Port size	Air flow	Operating press.	Power consumption	Weight
MNH 310 701 TT	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,28 kg
MNH 311 701 TT	G 1/4"	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,28 kg



MNH 510 701 TT/MNH 511 701 TT

MNH 510 711 TT/MNH 511 711 TT



5/2-way solenoid valve, actuated by permanent signal for low temperature environment - 50° C to + 50° C. Interface according to 1/4" Namur standard.

Type MNH 510 7_1 with pneumatic spring return
Type MNH 511 7_1 with combined spring.

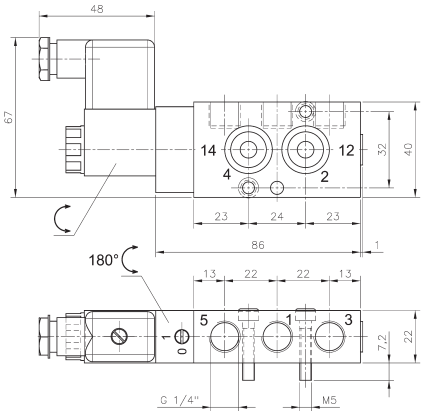
Available with actuators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=,
24V=, 12V=.

The valves are generally equipped with manual override to turn.

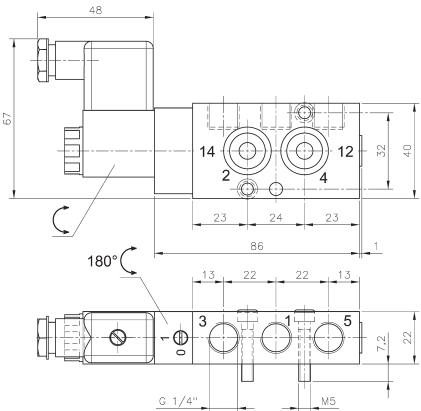
Please notice:
When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!
Below - 40° C the leakage-rate of the valve can increase to 10 cm³ /min.
Use unlubricated air only.

Delivery includes 1 pin, 2 screws, 2 O-rings.

NPT ported valves are available on request.

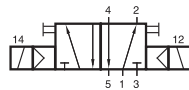


MNH 510 701 TT/MNH 511 701 TT

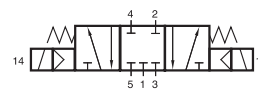


MNH 510 711 TT/MNH 511 711 TT
ports 2 and 4 are swapped!

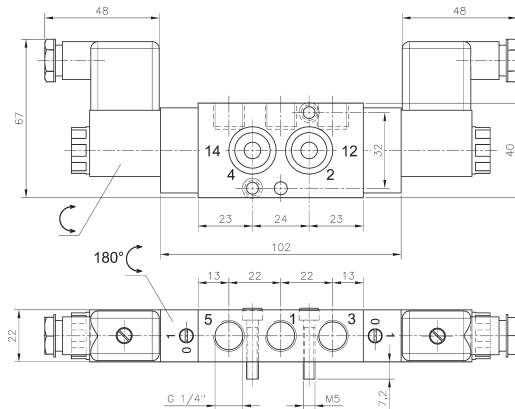
Type	Port size	Air flow	Operating press.	Power consumption	Weight	
MNH 510 701 TT	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,28 kg	Ex
MNH 510 711 TT	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,28 kg	Ex
MNH 511 701 TT	G 1/4"	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,28 kg	
MNH 511 711 TT	G 1/4"	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,28 kg	



MNH 520 701 TT



MNH 531 701 TT



MNH 520 701 TT/MNH 531 701 TT



5-way solenoid valve for low temperature environment - 50° C to + 50° C. Interface according to 1/4" Namur standard.

Type 520 5/2-way double solenoid, actuated by impulse.
Type 531 5/3-way centre closed.
Other 5/3-way versions available on request.

Available with solenoid operators
230V/50 Hz, 110V/50 Hz, 24V/50 Hz, 48V=,
24V=, 12V=.

Valves are equipped with manual override to turn.

Please notice:

When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!

Below - 40° C the leakage-rate of the valve can increase to 10 cm³ /min.

Use unlubricated air only.

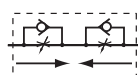
For type 531: pressure at port 1 has to be ≥ pressure at 2 and 4. If pressure supply is lost, 2 or 4 can exhaust and actuator might move.

Delivery includes 1 pin, 2 screws, 2 O-rings.

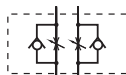
NPT ported valves are available on request.

Type	Function	Port size	Air flow	Operating pressure	Power consumption	Weight
MNH 520 701 TT	5/2 double sol.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,41 kg
MNH 531 701 TT	5/3 centre closed	G 1/4"	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,41 kg

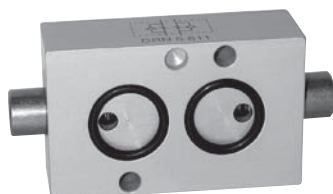
DRN 3 611 TT/DRN 5 611 TT



DRN 3 611 TT



DRN 5 611 TT



Block form flow regulator as intermediate plate, interface according to 1/4" Namur standard for low temperature environment - 50° C to + 50° C.

Type DRN 3 611 TT:

for 3/2-way valves with exhaust air recirculation only. To regulate the forward stroke of a single acting pneumatic actuator and to regulate the exhaust air going into the spring return unit independently. To be operated with a screw-driver.

Type DRN 5 611 TT:

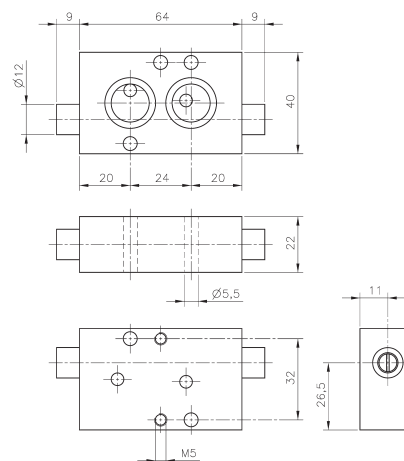
for 5/2 and 5/3 way valves only. To regulate the forward- and backward stroke of a double acting pneumatic actuator. To be operated with a screw-driver.

Please notice:

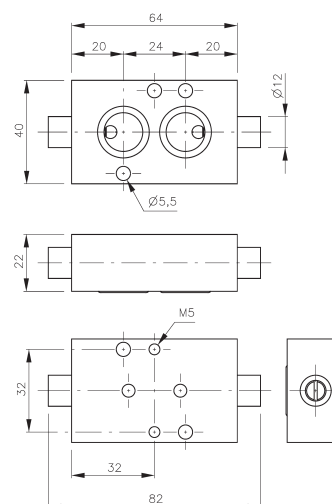
When operated below 0° C the pressure condensation point has to be at least 15° C below the temperature of environment and media. Air has to be dried!

Use unlubricated air only.

Delivery includes 1 pin, 2 screws (50 mm long), 2 O-rings.



DRN 3 611



DRN 5 611

Type	Function	Port size	Max. air flow	Operating pressure	Weight
DRN 3 611 TT	3-way	Ø 5 mm	650 l/min	0,5 - 10 bar	0,18 kg
DRN 5 611 TT	5-way	Ø 5 mm	650 l/min	0,5 - 10 bar	0,18 kg