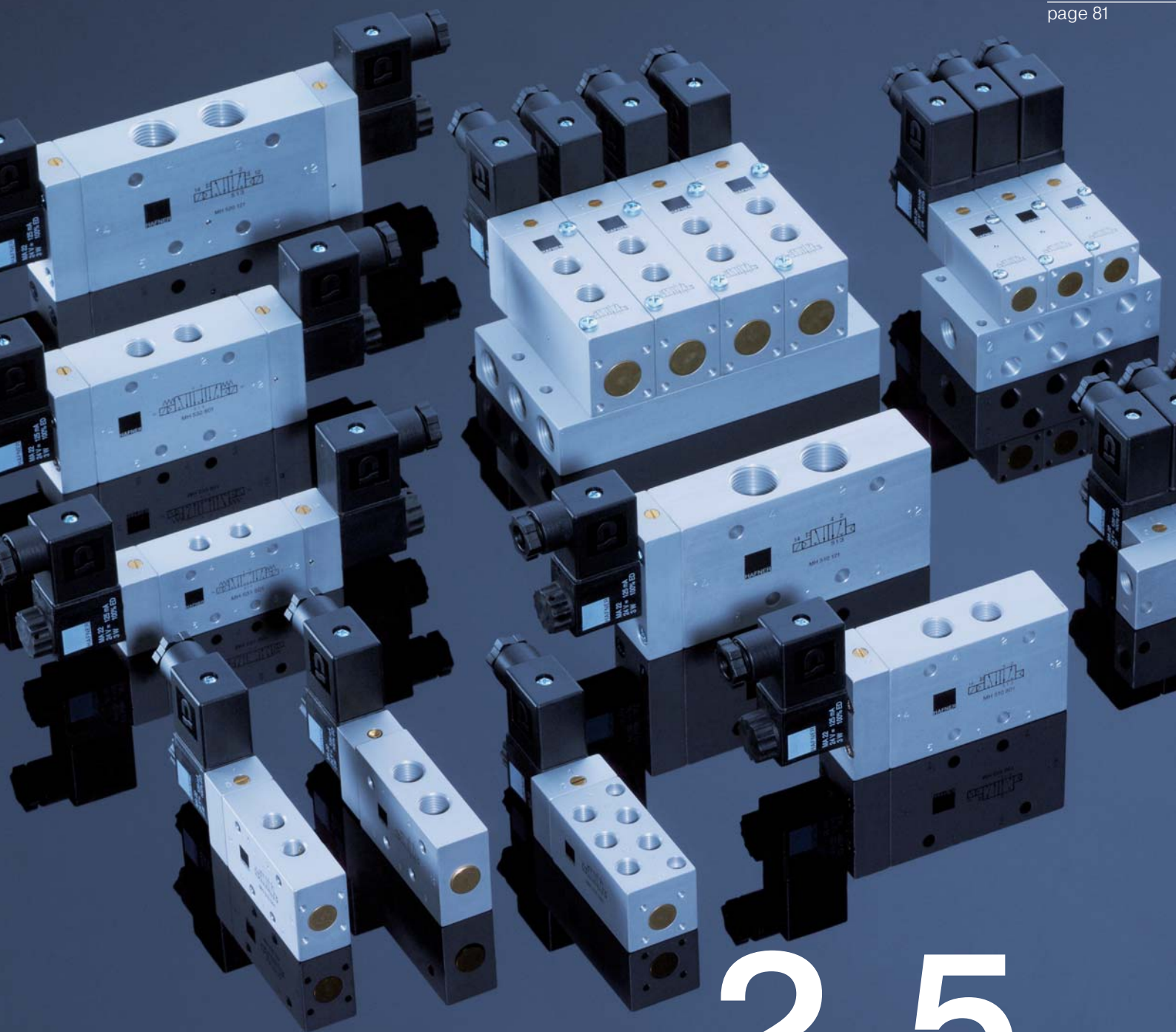




2.5

Solenoid Valves



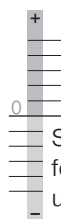
Selected models are available for low temperature application.
For detailed information refer to chapter 2.11.



Selected models are available with high flow and low power consumption. For detailed information refer to page 108.

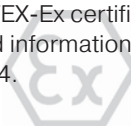


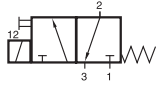
Selected models are available in stainless steel.
For detailed information refer to chapter 2.12.



Selected models can be equipped for high temperature environments up to 80 °C, DC only!

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





MD 311 010



Direct acting 3/2-way solenoid, valve normally closed (n.c.), equipped with mechanical spring return.

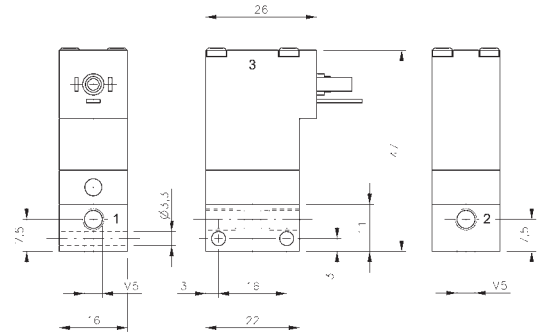
By closing port 3 valve can be converted into a 2/2-way valve.

Available with solenoid operators:
230/50Hz, 110V/50Hz, 24V50Hz, 24V=,
12V=, 6V= either for connector form C ISO 15217 or
with flying leads, standard cable length 500 mm.

For details about solenoid system, please refer to page 2.13.1.

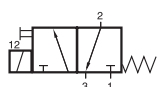
Valves are generally equipped with manual override to push.

Valves can be used for technical vacuum too.

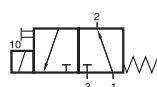


MD 311 010

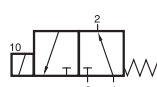
Type	Funktion	Port size	Air flow	Operating press.	Power consumption	Weight
MD 311 010	n.c.	M5	30 l/min	-0,9 - 10 bar	1,8 W = / 3 VA ~	0,05 kg



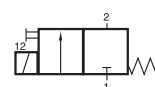
MH 311 012
MH 311 015



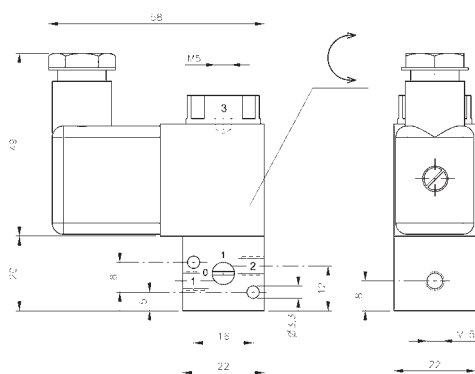
MOH 311 012
MOH 311 015



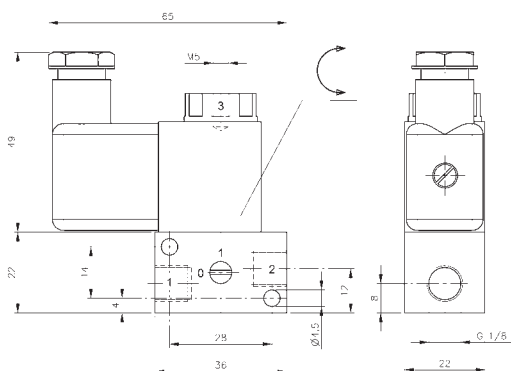
MX 311 012
MX 311 015



MH 211 012
MH 211 015



**MH 311 012/MOH 311 012/MX 311 012/
MH 211 012**



**MH 311 015/MOH 311 015/ MX 311 015
MH 211 015**



Direct acting 3/2-way and 2/2-way solenoid valve equipped with mechanical spring return.

Type MH 311 _ _ _

Normally closed, port 1 and 2 in the valve, port 3 at the top of the solenoid with manual override.

Type MOH 311 _ _ _

Normally open, port 2 and 3 in the valve, port 1 at the top of the solenoid with manual override.

Type MX 311 _ _ _

Normally open, port 1 and 2 in the valve, port 3 at the top of the solenoid, no manual override.

Type MH 211 _ _ _

2/2-way valve n.c. with manual override.

By closing port 3 3/2-way valves can be converted into 2/2-way version, not possible for MX.

Please note: Drawings are for MH 311 _ _ _-valves. For MOH-valves ports 1 and 3 are swapped, for MH 211 port 3 is not existing. Operator system of MX-valve is 8 mm longer. MOH 311 and MH 211-valves are equipped with a flat plastic nut.

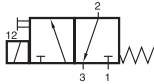
Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=, 24V=, 12V=.

Valves can be used for technical vacuum too.

Type	Ways	Function	Port size			Air flow	Operating pressure	Power-consumption	Weight
			1	2	3				
MH 311 012	3/2	n.c.	M5	M5	M5	40 l/min	-0,9 - 10 bar	3 W = / 5 VA ~	0,12 kg
MH 311 015	3/2	n.c.	G 1/8"	G 1/8"	M5	50 l/min	-0,9 - 10 bar	3 W = / 5 VA ~	0,14 kg
MOH 311 012	3/2	n.o.	M5	M5	M5	40 l/min	-0,9 - 10 bar	3 W = / 5 VA ~	0,12 kg
MOH 311 015	3/2	n.o.	M5	G 1/8"	G 1/8"	50 l/min	-0,9 - 10 bar	3 W = / 5 VA ~	0,14 kg
MX 311 012	3/2	n.o.	M5	M5	hole	40 l/min	-0,9 - 8 bar	3 W = / 5 VA ~	0,13 kg
MX 311 015	3/2	n.o.	G 1/8"	G 1/8"	hole	50 l/min	-0,9 - 8 bar	3 W = / 5 VA ~	0,15 kg
MH 211 012	2/2	n.c.	M5	M5		40 l/min	-0,9 - 10 bar	3 W = / 5 VA ~	0,12 kg
MH 211 015	2/2	n.c.	G 1/8"	G 1/8"		50 l/min	-0,9 - 10 bar	3 W = / 5 VA ~	0,14 kg



MH 311 205/MH 311 209



MH 311 205
MH 311 209

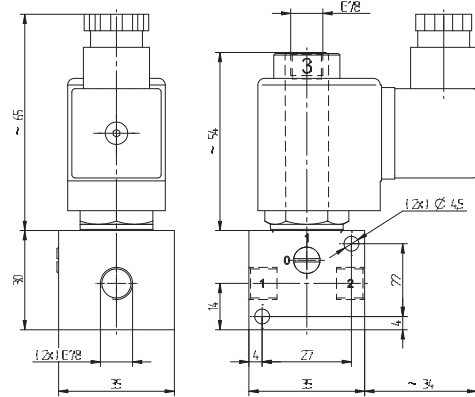


Normally closed direct acting 3/2-way solenoid valve equipped with mechanical spring return.
Orifice size: 2 mm, max. pressure 10 bar.

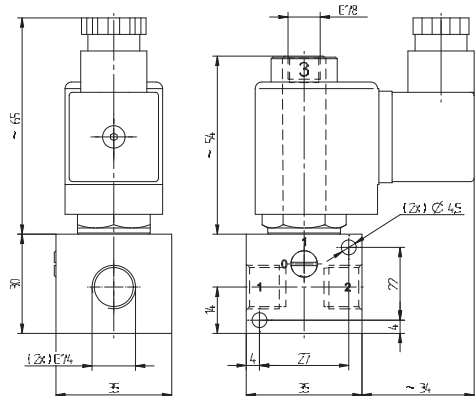
Available with solenoid operators:
230V/50Hz, 24V/50 Hz, 24V=.
Others on request.

Valves are generally equipped with manual override.

Suitable solenoid coils type MA 30 S13 __ and connectors Form A (30 mm) type ST 30 can be found on page 2.13.5.



MH 311 205

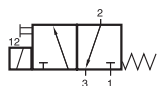


MH 311 209

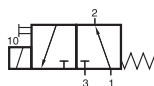
Type	Port size			Air flow	Operating press.	Power cons.	Weight
	1	2	3				
MH 311 205	G 1/8"	G 1/8"	G 1/8"	120 l/min	0 - 10 bar	10 W = /13/11 VA ~	0,31 kg
MH 311 209	G 1/4"	G 1/4"	G 1/8"	120 l/min	0 - 10 bar	10 W = /13/11 VA ~	0,31 kg

MH 311 305/MH 311 309/MOH 311 305 MOH 311 309/MH 211 305/MH 211 309

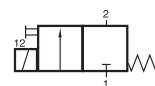
2.5.1.1.4
page 85



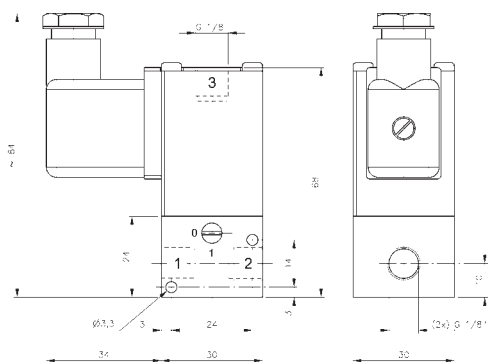
MH 311 305
MH 311 309



MOH 311 305
MOH 311 309



MH 211 305
MH 211 309



MH 311 305/MOH 311 305/MH 211 305



Direct acting 3/2-way and 2/2-way solenoid valve
equipped with mechanical spring return.
Orifice size: 3 mm, max. pressure: 7 bar.

Type MH 311 _ _ _

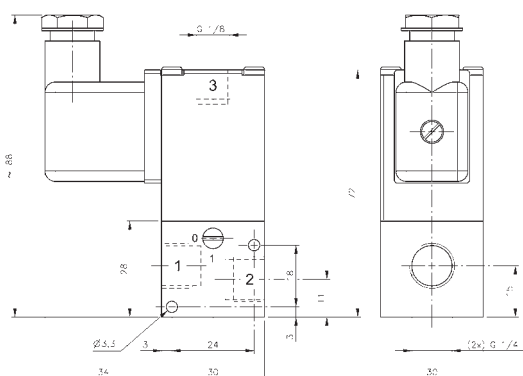
Normally closed, port 1 and 2 in the valve, port 3 at
the top of the solenoid

Type MOH 311 _ _ _

Normally open, port 2 and 3 in the valve, port 1 at
the top of the solenoid

Type MH 211 _ _ _

2/2-way valve n.c.



MH 311 309/MOH 311 309/MH 211 309

Please note:

Drawings are for MH 311 _ _ _-valves. For MOH-valves
ports 1 and 3 are swapped, for MH 211 port 3 is not
existing.

Available with solenoid operators:
230V/50Hz, 24V/50Hz, 24V=.

Valves are generally equipped with manual override.

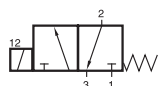
Connector Industry B (22 mm). Flying leads on
request.

Type	Ways	Function	Port size			Air flow	Operating Power		Weight
			1	2	3		pressure	consumption	
MH 311 305	3/2	n.c.	G 1/8"	G 1/8"	G 1/8"	200 l/min	0 - 7 bar	7,5 W = /8,5 VA ~	0,17 kg
MH 311 309	3/2	n.c.	G 1/4"	G 1/4"	G 1/8"	200 l/min	0 - 7 bar	7,5 W = /8,5 VA ~	0,18 kg
MOH 311 305	3/2	n.o.	G 1/8"	G 1/8"	G 1/8"	200 l/min	0 - 7 bar	7,5 W = /8,5 VA ~	0,17 kg
MOH 311 309	3/2	n.o.	G 1/4"	G 1/4"	G 1/8"	200 l/min	0 - 7 bar	7,5 W = /8,5 VA ~	0,18 kg
MH 211 305	2/2	n.c.	G 1/8"	G 1/8"		200 l/min	0 - 7 bar	7,5 W = /8,5 VA ~	0,17 kg
MH 211 309	2/2	n.c.	G 1/4"	G 1/4"		200 l/min	0 - 7 bar	7,5 W = /8,5 VA ~	0,18 kg

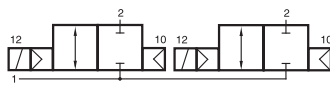


M 311 012 OX/R 02 M 211 02 OX

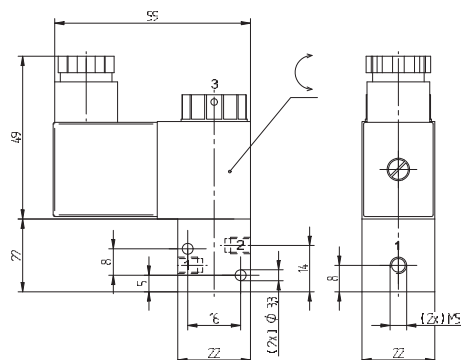
Valves for Oxygen Applications



M 311 012 OX



R 02 M 211 012 OX



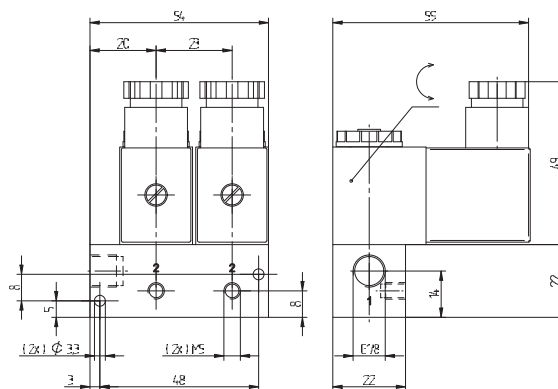
M 311 012 OX

Direct acting 3/2-way and 2/2-way solenoid valve equipped with mechanical spring return.
Valves have been designed for the healthcare industry and can be used with pure oxygen.
If medium includes ozone (O₃), please contact the manufacturer.

Type M 311 012 OX

Normally closed, port 1 and 2 in the valve, port 3 at the top of the solenoid. Without manual override.

- Material body: 1.4404
- Seals: NBR / FPM
- Other parts: brass



R 02 M 211 012 OX

R 02 M 211 012 OX

2 x 2/2-way normally closed valves integrated in a manifold block. Port 1 and 2 in the valve, port 3 at the top of the solenoid. Without manual override.

- Material manifold: 1.4404
- Seals: NBR / FPM
- Other parts: brass

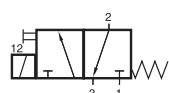
Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=,
24V=, 12V=.

M 211 SET 01 OX

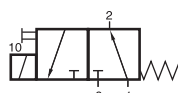
Set including flat nut and plug to convert the M 311 012 OX into a 2/2-way normally closed valve.



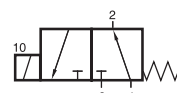
Type	Port size			Air flow	Operating press.	Power cons.	Weight
	1	2	3				
M 311 012 OX	M5	M5	M5	40 l/min	0 - 10 bar	3 W= / 5 VA	0,12 kg
M 211 012 OX	G 1/8"	M5	M5	40 l/min	0 - 10 bar	3 W= / 5 VA	0,12 kg



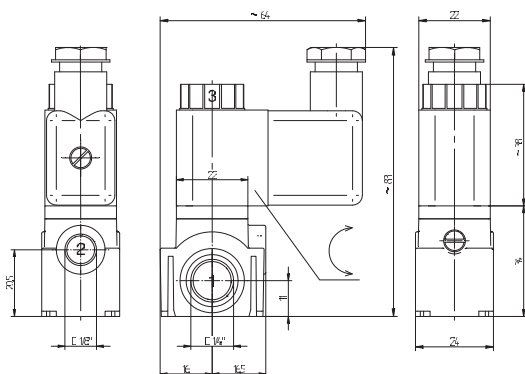
MH 311 105



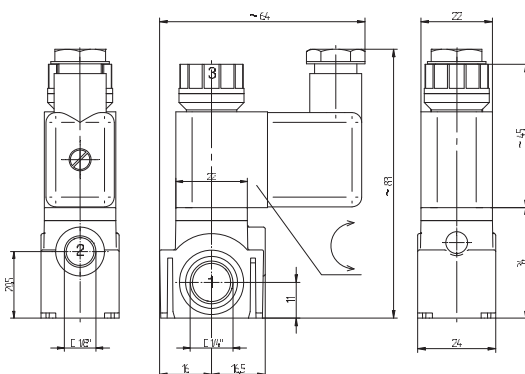
MOH 311 105



MX 311 105



MH 311 105/MOH 311 105



MX 311 105



Direct acting 3/2-way solenoid valve, equipped with mechanical spring return, body made from polyamide.

Type MH 311 105

Normally closed, port 1 in the body, including manual override

Type MOH 311 105

Normally open, port 1 at the top of the solenoid, including manual override

Type MX 311 105

Normally open, port 1 in the body, no manual override

Individual valves can easily be combined to manifold systems just by putting 2 brass brackets (type VBM 105) into the bodies from the bottom. MH and MX valves can be combined in the same manifold system.

By closing port 3 valves can be turned into 2/2-way valves.

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

Valves can be used for technical vacuum too.

Available and useful accessories:

KV SET 01

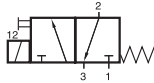
Set to connect two valves consisting of two brass clamping brackets and a NBR O-ring.

3015 – 1/4

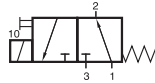
Plug to close one side of the two supply ports in the valve, brass, nickel plated G1/4" with O-ring seal.

Type	Function	Port size			Air flow	Operating pressure	Power consumption	Weight
		1	2	3				
MH 311 105	n.c.	G 1/4"	G 1/8"	M5	60 l/min	-0,9 - 10 bar	3 W= / 5 VA	0,09 kg
MOH 311 105	n.o.	M5	G 1/8"	G 1/4"	60 l/min	-0,9 - 10 bar	3 W= / 5 VA	0,09 kg
MX 311 105	n.o.	G 1/4"	G 1/8"	hole	60 l/min	-0,9 - 8 bar	3 W= / 5 VA	0,09 kg

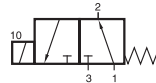
MH 311 014/MOH 311 014 MH 311 019/MX 311 019



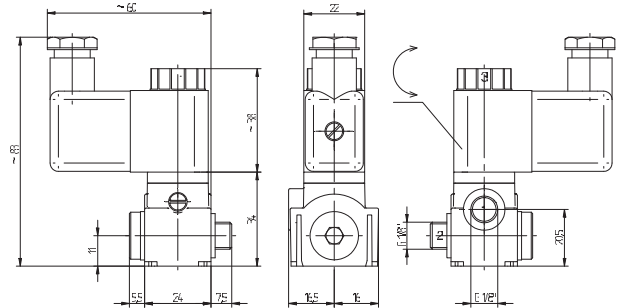
MH 311 014
MH 311 019



MOH 311 014



MX 311 019



MH 311 014/MOH 311 014

Direct acting 3/2-way solenoid valve equipped with spring return. Orifice size 1.3 mm.

Type MH 311 014:

Normally closed, port 1 in the valve, port 2 as banjo screw, exhaust through operator system with manual override.

Type MH 311 019 __:

Normally closed, port 1 swivel either 1/8" or 6 mm pif, port 2 as banjo screw, exhaust through operator system with manual override.

Type MOH 311 014:

Normally open, port 1 at the top of the operator system, port 2 as banjo screw, exhaust at the body, manual override included, delivery with flat nut. Drawing displays MH-valve, for MOH ports 1 and 3 swapped.

Type MX 311 019 __:

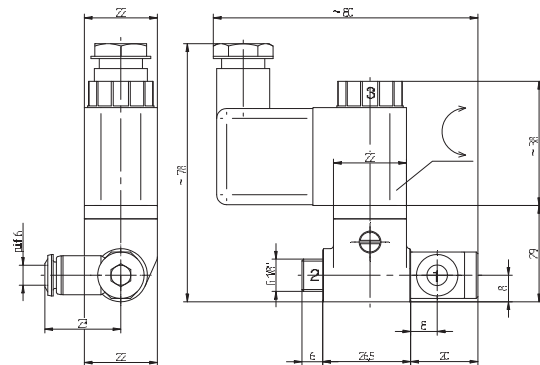
Normally open, port 1 swivel either 1/8" or 6 mm pif, port 2 as banjo screw, exhaust through operator system no manual override. Operator system is 8 mm longer than in drawing.

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

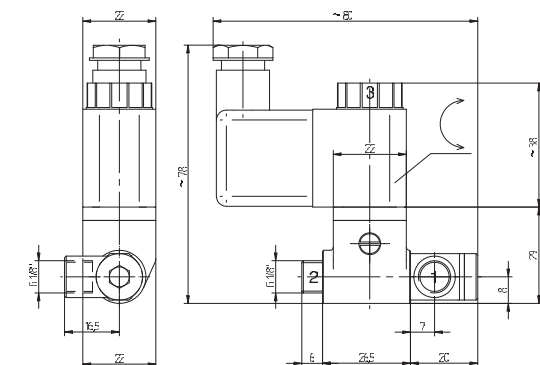
Available accessory:

KV SET 02

Reducer fitting for banjo-screw to change from 1/8" to 1/4", with captive seal.

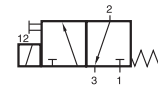


MH 311 019 6/MX 311 019 6

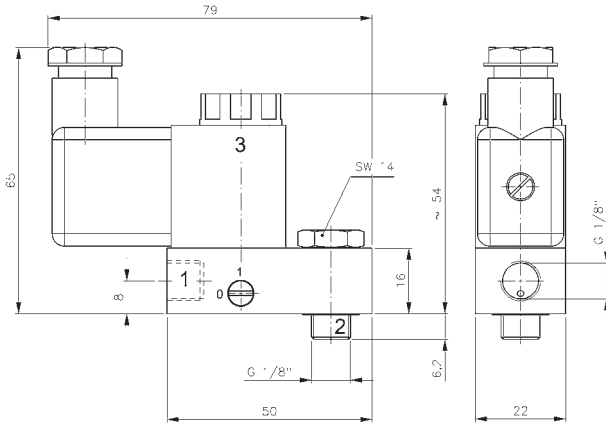


MH 311 019 1/8 / MX 311 019 1/8

Type	Funct.	Port 1	Port 2 banjo	Port 3	Air flow	Operating pressure	Power cons.	Weight
MH 311 014	n.c.	G 1/8"	G 1/8"	M5	60 l/min	-0,9 - 10 bar	3 W= / 5 VA	0,13 kg
MOH 311 014	n.o.	M5	G 1/8"	G 1/8"	60 l/min	-0,9 - 10 bar	3 W= / 5 VA	0,13 kg
MH 311 019 6	n.c.	Swivel 6 mm pif	G 1/8"	M5	50 l/min	-0,9 - 10 bar	3 W= / 5 VA	0,16 kg
MX 311 019 6	n.o.	Swivel 6 mm pif	G 1/8"	M5	50 l/min	-0,9 - 8 bar	3 W= / 5 VA	0,16 kg
MH 311 019 1/8	n.c.	Swivel G 1/8"	G 1/8"	hole	50 l/min	-0,9 - 10 bar	3 W= / 5 VA	0,16 kg
MX 311 019 1/8	n.o.	Swivel G 1/8"	G 1/8"	hole	50 l/min	-0,9 - 8 bar	3 W= / 5 VA	0,16 kg



MH 311 013
MH 311 017



MH 311 013



Direct acting 3/2-way solenoid valve equipped with mechanical spring return, normally closed.

Port 2 is a banjo that can be screwed directly into the actuator that is to be controlled.

Products with port 1 in NPT on request.

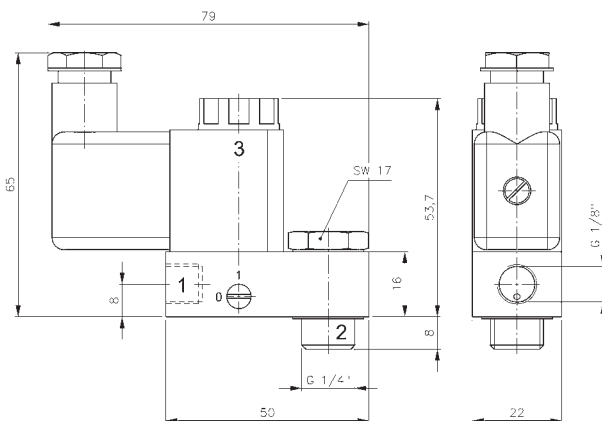
Products normally open on request.

2/2-way version on request.

Available with solenoid operators:

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

Valves are generally equipped with manual override.



MH 311 017



Version with integrated flow-regulator available on request.

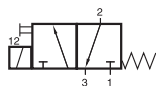
MH 311 013 and MH 311 017 are designed for piloting angle seat valves or small spring-return actuators.

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

Instead of the standard banjo-screw, the valve can also be equipped with a flow-regulating banjo-screw.

Three different versions are available on request: Banjo-screw to regulate the opening speed, the closing speed as well as the opening and closing speed (not independent).

Type	Function	Port			Air flow	Operating pressure	Power consumption	Weight
		1	2 banjo	3				
MH 311 013	n.c.	G 1/8"	G 1/8"	M5	50 l/min	0 - 10 bar	3 W = / 5 VA ~	0,14 kg ❄
MH 311 017	n.c.	G 1/8"	G 1/4"	M5	50 l/min	0 - 10 bar	3 W = / 5 VA ~	0,16 kg ❄



MH 311 313
MH 311 317



Direct acting 3/2-way solenoid valve equipped with mechanical spring return, normally closed. Orifice size: 3 mm, max. pressure: 7 bar.

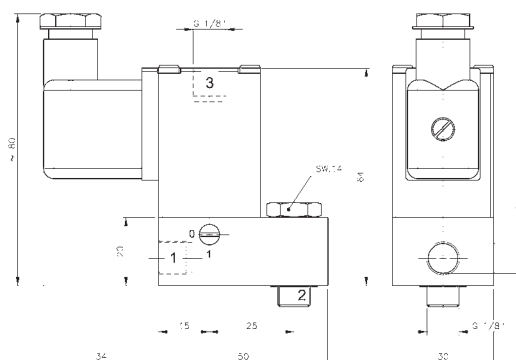
Port 2 is a banjo that can be screwed directly into the actuator that is to be controlled.

Products with port 1 in NPT on request.
Products normally open on request.
2/2-way version on request.

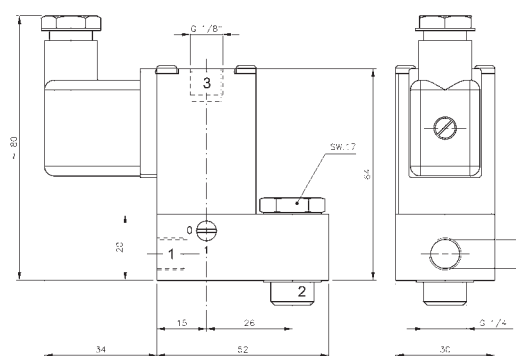
Available with solenoid operators:
230V/50Hz, 24V/50Hz, 24V=.

Valves are generally equipped with manual override.

Connector Industry B (22 mm). Flying leads on request.



MH 311 313



MH 311 317

MH 311 313 and MH 311 317 are designed for pilot-
ing angle seat valves or small spring-return actua-
tors.

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

Instead of the standard banjo-screw, the valve can also be equipped with a flow-regulating banjo-screw.

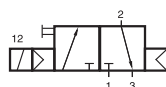
Three different versions are available on request: Banjo-screw to regulate the opening speed, the closing speed as well as the opening and closing speed (not independent).



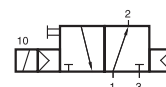
Type	Function	Port 1	Port 2 banjo	Port 3	Air flow	Operating pressure	Power consumption	Weight
MH 311 313	n.c.	G 1/8"	G 1/8"	G 1/8"	150 l/min	0 - 7 bar	7,5 W = /8,5 VA ~	0,21 kg
MH 311 317	n.c.	G 1/8"	G 1/4"	G 1/8"	150 l/min	0 - 7 bar	7,5 W = /8,5 VA ~	0,22 kg

MD 310 301/MD 310 341 MOD 310 301/MOD 310 341

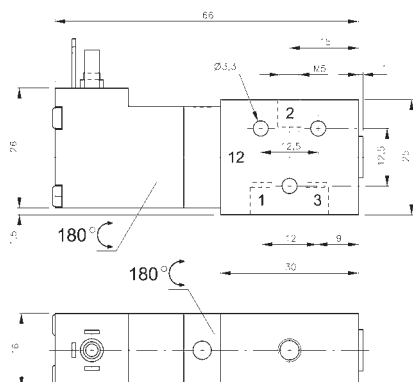
2.5.1.1.10
page 91



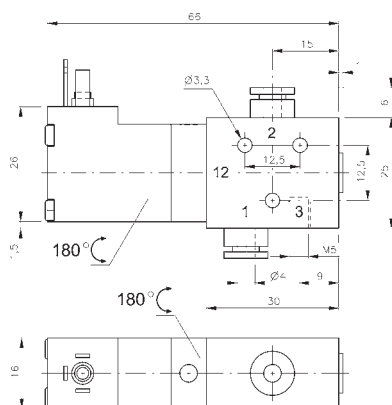
MD 310 301
MD 310 341



MOD 310 301
MOD 310 341



MD 310 301/MD 310 301



MD 310 341/MD 310 341



3/2-way solenoid valve normally closed (MD) or normally open (MOD) actuated by permanent signal and equipped with air spring return.

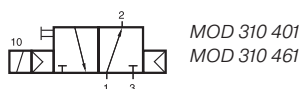
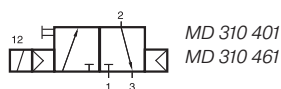
Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 24V=, 12V=, 6V= either for connector form C ISO 15217 or with flying leads, standard cable length 500 mm. For details about solenoid system, please refer to page 2.13.1.

Valves are generally equipped with manual override to push.

Type	Function	Port size 1 and 2	Air flow	Operating pressure	Power consumption	Weight
MD 310 301	n.c.	M5	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,08 kg
MD 310 341	n.c.	pif 4 mm	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,09 kg
MOD 310 301	n.o.	M5	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,08 kg
MOD 310 341	n.o.	pif 4 mm	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,09 kg



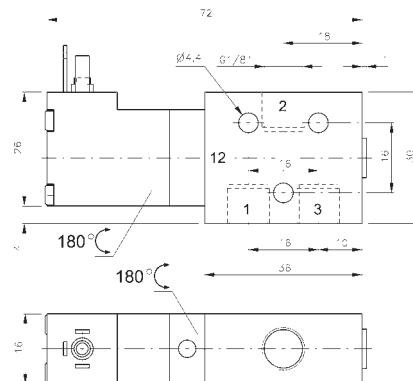
MD 310 401/MD 310 461 MOD 310 401/MOD 310 461



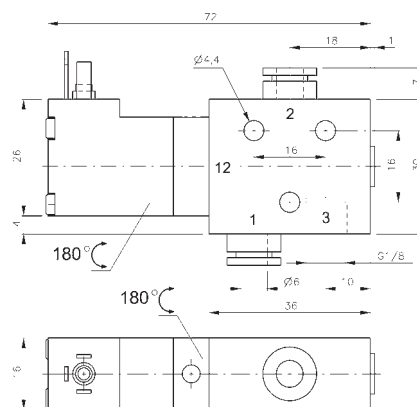
3/2-way solenoid valve normally closed (MD) or normally open (MOD) actuated by permanent signal and equipped with air spring return.

Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 24V=, 12V=, 6V= either for connector form C ISO 15217 or with flying leads, standard cable length 500 mm. For details about solenoid system, please refer to page 2.13.1.

Valves are generally equipped with manual override to push.



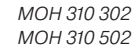
MD 310 401/MOD 310 401



MD 310 461/MOD 310 461

Type	Function	Port size 1 and 2	Air flow	Operating pressure	Power consumption	Weight
MD 310 401	n.c.	G 1/8"	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,09 kg
MD 310 461	n.c.	pif 6 mm	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,10 kg
MOD 310 401	n.o.	G 1/8"	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,09 kg
MOD 310 461	n.o.	pif 6 mm	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,10 kg

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page 93



MH 310 302/MOH 310 302

MH 310 502/MOH 310 502



3/2-way solenoid valve normally closed (MH) or normally open (MOH) actuated by permanent signal and equipped with air spring return.

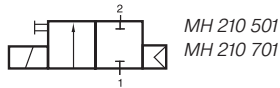
Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=,
24V=, 12V=.

Valves are generally equipped with manual override.
If requested without manual override please order
M 310 ____ / MO 310 ____.

Please note:
Do not close port 3 to convert into a 2-way valve.

Type	Function	Port size 1 and 2	Air flow	Operating pressure	Power consumption	Weight
MH 310 302	n.c.	M5	180 l/min	2 - 10 bar	3 W = / 5 VA ~	0,18 kg
MH 310 502	n.c.	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,25 kg
MOH 310 302	n.o.	M5	180 l/min	2 - 10 bar	3 W = / 5 VA ~	0,18 kg
MOH 310 502	n.o.	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,25 kg

MH 210 501/MH 210 701

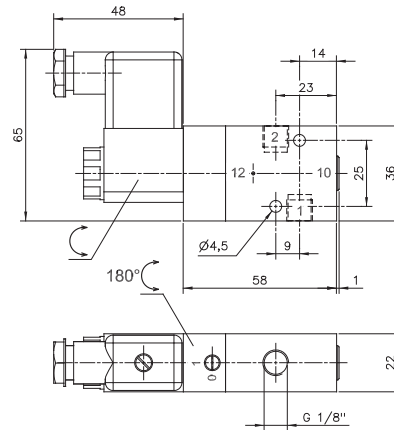


2/2-way solenoid valve, normally closed, actuated by permanent signal and equipped with air spring return.

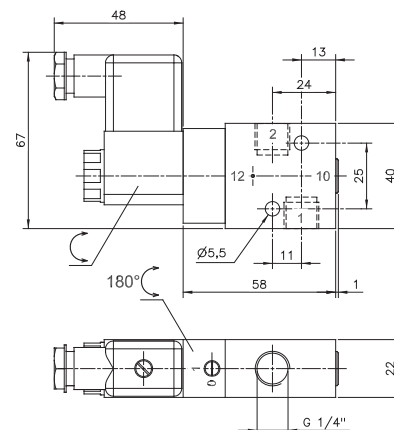
Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=,
24V=, 12V=.

Valves are generally equipped with manual override.

Normally open version (MOH) on request.



MH 210 501

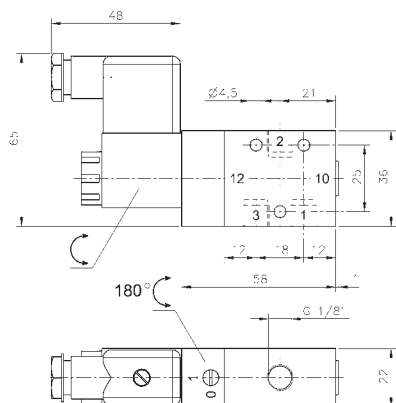
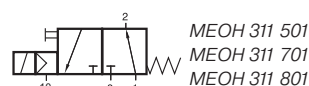
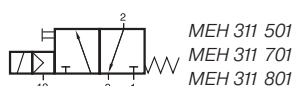
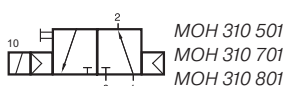
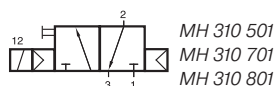


MH 210 701

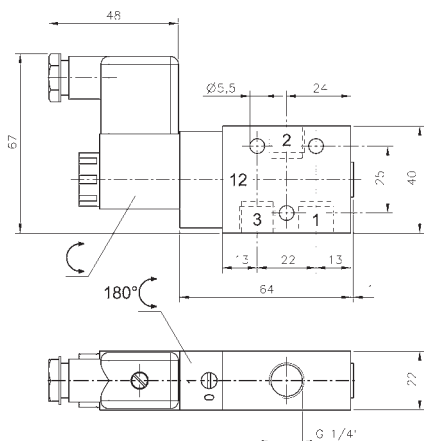
Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 210 501	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,19 kg
MH 210 701	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,19 kg

MH 310 501/MH 310 701/MH 310 801 MOH 310 501/MOH 310 701/MOH 310 801

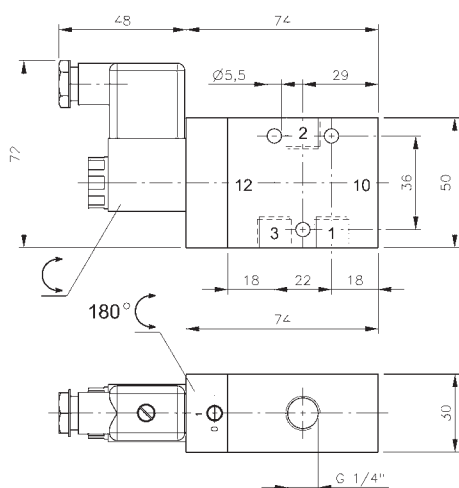
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MH 310 501/MOH 310 501



MH 310 701/MOH 310 701



MH 310 801/MOH 310 801



3/2-way solenoid valve normally closed (MH) or normally open (MOH) actuated by permanent signal and equipped with air spring return.

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

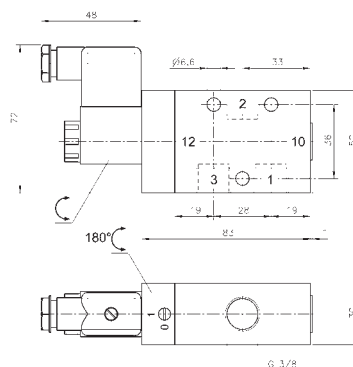
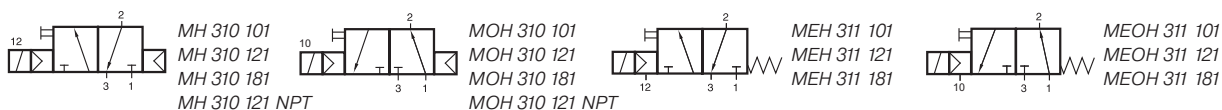
Valves are generally equipped with manual override.
If requested without manual override please order
M 310 ___ / MO 310 ___

Valves are also available with external pilot feed.
Type: MEH 311 ___ (n.c.) or MEOH 311 ___ (n.o.).
Port 12 series 501 and 701 M5, series 801 G 1/8".
Minimum actuation pressure: 3 bar.
Operating pressure: 0 - 10 bar.
Version for vacuum on request.

Please note:
Do not close port 3 to convert into a 2-way valve.

Type	Function	Port size	Air flow	Operating press.	Power consumption	Weight
MH 310 501	n.c.	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,19 kg 
MH 310 701	n.c.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,21 kg  MK 
MH 310 801	n.c.	G 1/4"	1450 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,39 kg 
MOH 310 501	n.o.	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,19 kg 
MOH 310 701	n.o.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,21 kg  MK 
MOH 310 801	n.o.	G 1/4"	1450 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,39 kg 

MH 310 101/MH 310 121/MH 310 181
MOH 310 101/MOH 310 121/MOH 310 181



MH 310 101/MOH 310 101

3/2-way solenoid valve normally closed (MH) or normally open (MOH) actuated by permanent signal and equipped with air spring return.

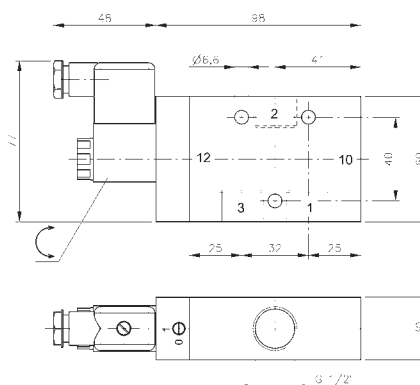
Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=,
24V=, 12V=.

Valves are generally equipped with manual override. If requested without manual override please order M 310 / MO 310 .

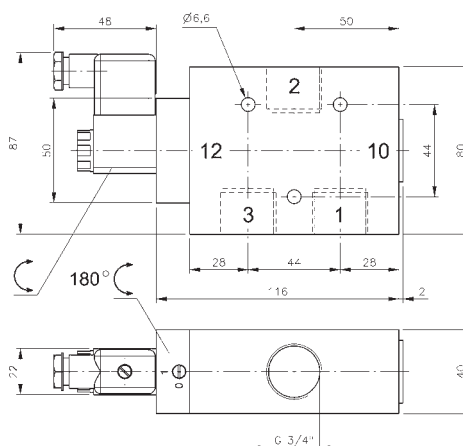
Valves are also available with external pilot feed.
Type: MEH 311 __ (n.c.) or MEOH 311 __ (n.o.).
Port 12: G 1/8".

Minimum actuation pressure: 3 bar.
Operating pressure: 0 - 10 bar.
Version for vacuum on request.

Please note:
Do not close port 3 to convert into a 2-way valve.



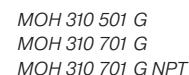
MH 310 121/MOH 310 121
MH 310 121 NPT/MOH 310 121 NPT



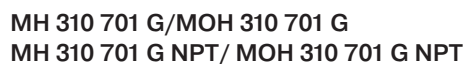
MH 310 181/MOH 310 181

Type	Function	Port size	Air flow	Operating press.	Power cons.	Weight	
MH 310 101	n.c.	G 3/8"	2250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,41 kg	
MH 310 121	n.c.	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,53 kg	  
MH 310 181	n.c.	G 3/4"	6000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,88 kg	
MOH 310 101	n.o.	G 3/8"	2250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,41 kg	
MOH 310 121	n.o.	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,53 kg	 
MOH 310 181	n.o.	G 3/4"	6000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,88 kg	
MH 310 121 NPT	n.o.	1/2" NPT	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,53 kg	 
MOH 310 121 NPT	n.o.	1/2" NPT	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,53 kg	 

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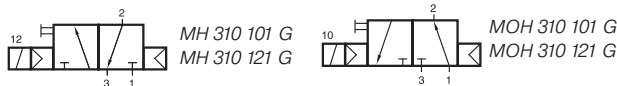


Please note:
Do not close port 3 to convert into a 2-way valve.



Type	Function	Port size	Air flow	Operating press.	Power cons.	Weight
MH 310 501 G	n.c.	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,20 kg 
MH 310 701 G	n.c.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,21 kg  MK 
MOH 310 501 G	n.o.	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,20 kg 
MOH 310 701 G	n.o.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,21 kg  MK 
MH 310 701 G NPT	n.c.	1/4" NPT	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,21 kg 
MOH 310 701 G NPT	n.o.	1/4" NPT	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,21 kg 

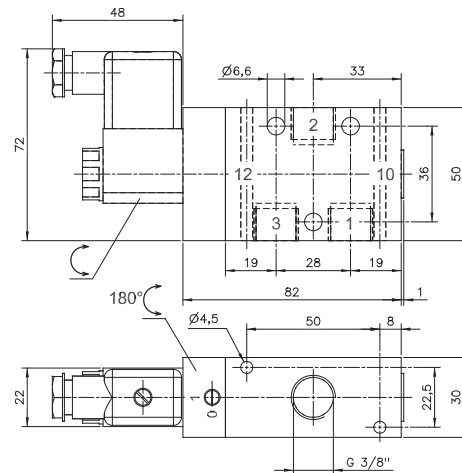
MH 310 101 G/MH 310 121 G MOH 310 101 G/MOH 310 121 G



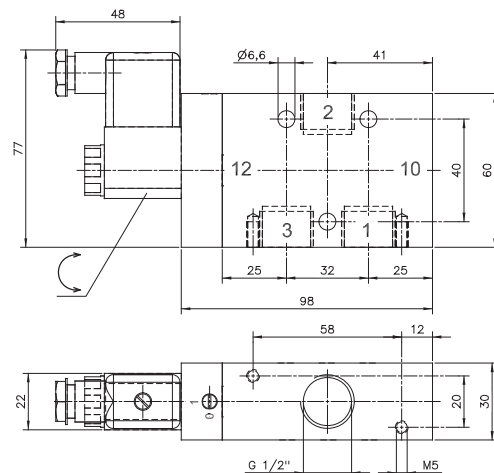
G-Series 101 G



G-Series 121 G



MH 310 101 G/MOH 310 101 G



MH 310 121 G/MOH 310 121 G

3/2-way solenoid valve normally closed (MH) or normally open (MOH) actuated by permanent signal and equipped with air spring return.

The G-Series valves offer the flexibility of in-line fitment as well as the option of being assembled on to a manifold as shown. Manifolds are displayed on page 2.7.1.5.

Normally open and normally closed products can be mixed on one plate.

Valves G1/2" have to be assembled onto the plate by fixing screws from the bottom through the plate into the valve.

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

Valves are generally equipped with manual override.
If requested without manual override please order
M 310 ____ / MO 310 ____.

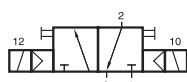
Please note:
Do not close port 3 to convert into a 2-way valve.

Type	Function	Port size	Air flow	Operating press.	Power consumption	Weight
MH 310 101 G	n.c.	G 3/8"	2250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,41 kg
MH 310 121 G	n.c.	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,53 kg
MOH 310 101 G	n.o.	G 3/8"	2250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,41 kg
MOH 310 121 G	n.o.	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,53 kg

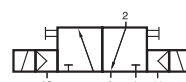
MH 320 501/MH 320 701/MH 320 801

2.5.1.1.18

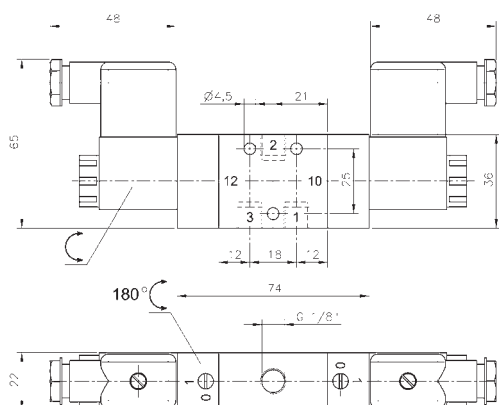
page 99



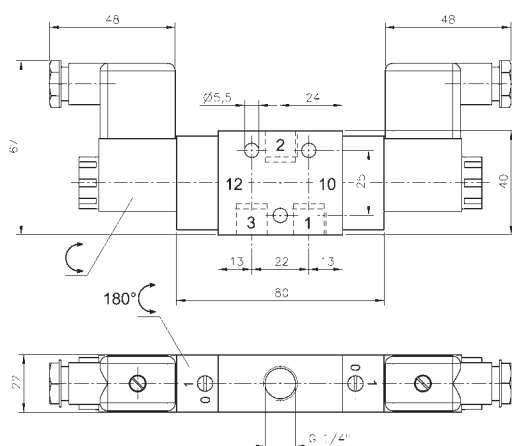
MH 320 501
MH 320 701
MH 320 801



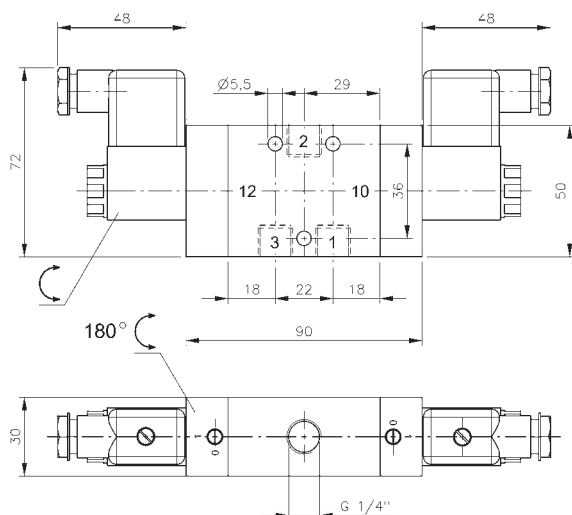
MEH 320 501
MEH 320 701
MEH 320 801



MH 320 501



MH 320 701



MH 320 801



3/2-way double solenoid valve actuated by impulse. Position is kept until an electrical signal is applied to the opposite side even when not attached to an electrical source.

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

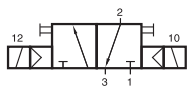
Valves are generally equipped with manual override. If requested without manual override please order type no. M 320 ____.

Valves are also available with external pilot feed.
Type: MEH 320 ____.
Port 12 series 501 and 701 M5, series 801 G 1/8".
Minimum actuation pressure: 2,5 bar.
Operating pressure: 0 - 10 bar.
Version for vacuum on request.

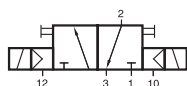
Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 320 501	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,29 kg
MH 320 701	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,31 kg
MH 320 801	G 1/4"	1450 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,54 kg



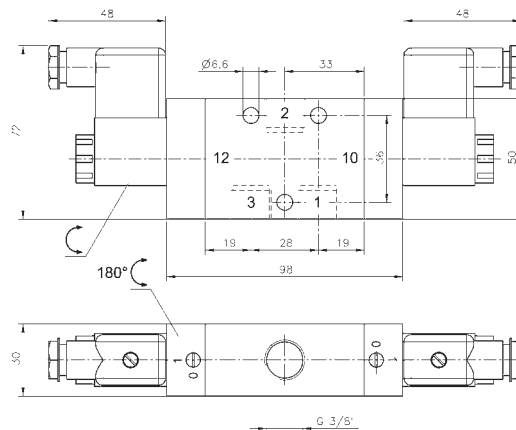
MH 320 101/MH 320 121/MH 320 181



MH 320 101
MH 320 121
MH 320 181



MEH 320 101
MEH 320 121
MEH 320 181



MH 320 101

3/2-way double solenoid valve actuated by impulse. Position is kept until an electrical signal is applied to the opposite side even when not attached to an electrical source.

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

Valves are generally equipped with manual override. If requested without manual override please order type no. M 320 ____.

Valves are also available with external pilot feed.

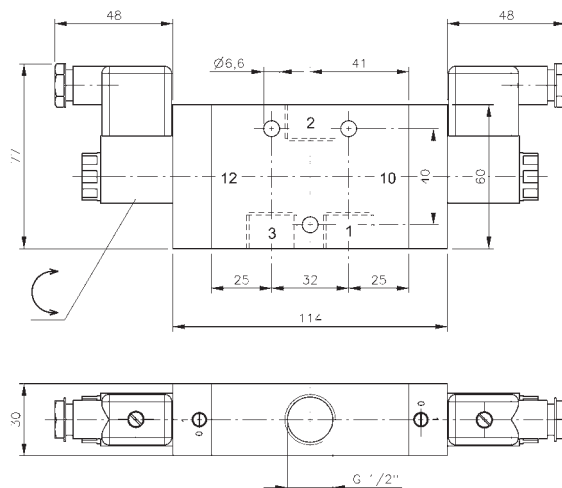
Type: MEH 320 ____.

Port 12: G 1/8\".

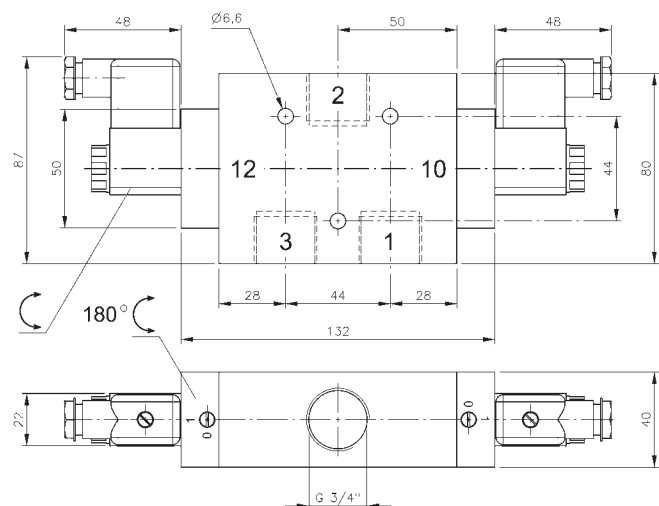
Minimum actuation pressure: 2,5 bar.

Operating pressure: 0 - 10 bar.

Version for vacuum on request.



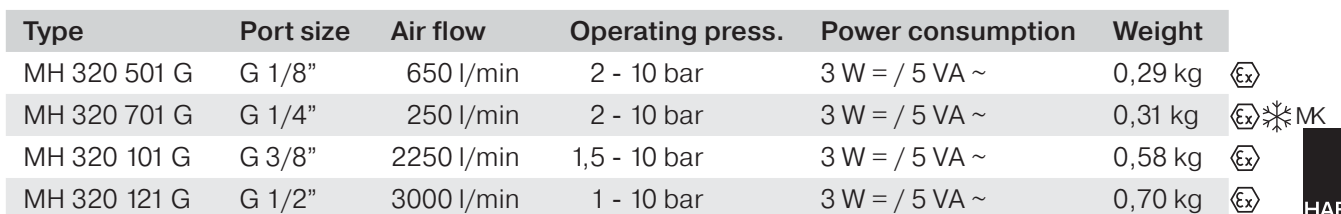
MH 320 121

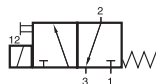


MH 320 181

Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 320 101	G 3/8"	2250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,58 kg
MH 320 121	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,70 kg
MH 320 181	G 3/4"	6000 l/min	1 - 10 bar	3 W = / 5 VA ~	1,08 kg

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MD.311 104



System consisting of direct acting 3/2-way solenoid valves, normally closed, actuated by permanent signal and manifold plates for common pressure supply (1). Port 2 is in the plate, either threaded M5 or with 4 mm push-in fitting, exhaust through the operator tube, thread M3.

Valves

Type MD 311 104:

with electrical connection C ISO 15217, pins are 8 mm apart

Type MD 311 104 L:

with flying leads standard length 500 mm

Available with solenoid operators:

230V/50Hz, 110V/50Hz, 24V/50Hz, 24V=, 12V=, 6V=.

For details about solenoid system, please refer to page 2.13.1.

Valves are generally equipped with manual override to push.

Plates

RD 3 104:

with M5 at port 2 (add 2 digits for number of positions required)

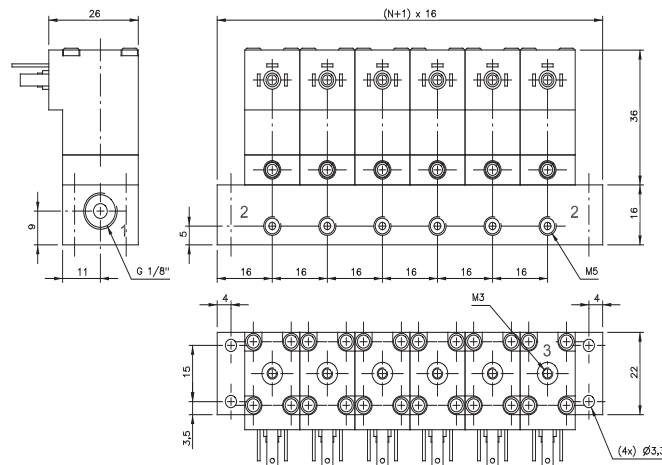
RD 3 144:

with pif 4 mm at port 2 (add 2 digits for number of positions required)

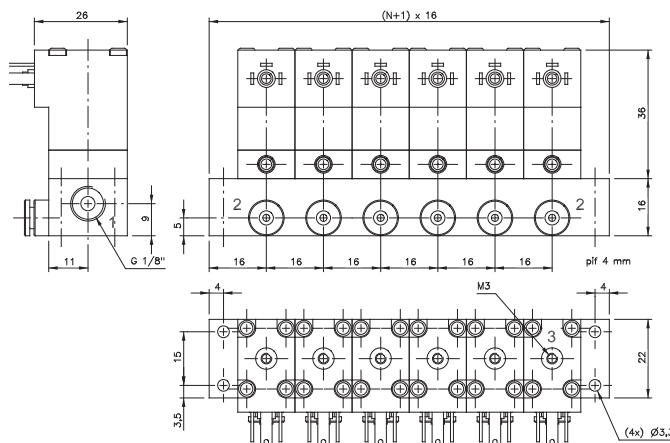
Plates are available with 2, 3, 4, 5, 6, 8, 10 and 12 positions, others on request.

Products are to be ordered individually but system will be delivered fully assembled.

Versions with common electrical connection (terminals) are displayed on page 2.8.2.1



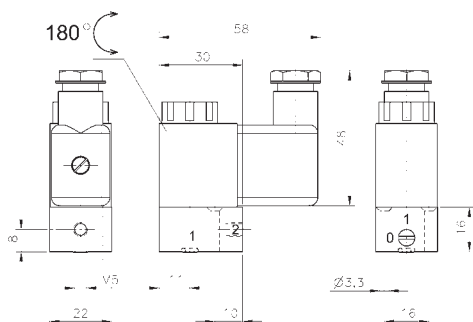
MD 311 104/RD 3__104



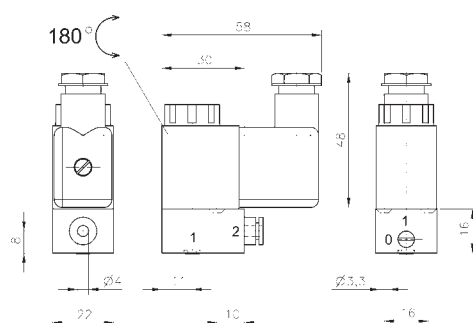
MD 311 104/RD 3__144

Valves can be used for technical vacuum too.

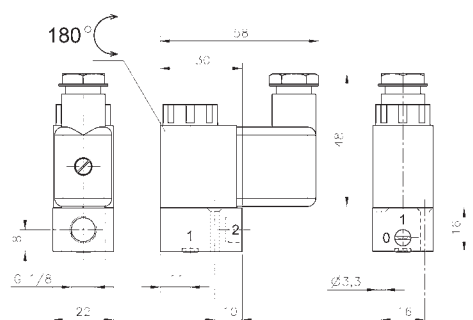
Type	Electric interface	Air flow	Operating press.	Power consumption	Weight
MD 311 104	form C, 8 mm pin	30 l/min	-0,9 - 10 bar	1,8 W = / 3,0 VA ~	0,06 kg
MD 311 104 L	flying leads	30 l/min	-0,9 - 10 bar	1,8 W = / 3,0 VA ~	0,07 kg



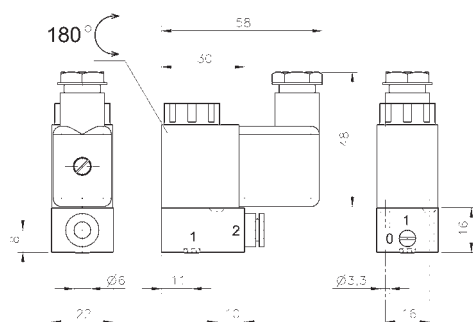
MH 312



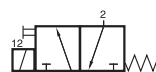
MH 314



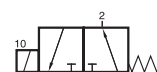
MH 315/MX 315



MH 316



MH 312
MH 314
MH 315
MH 316



MX 315



System consisting of direct actuated 3/2 way solenoid valves actuated by permanent signal and a manifold plate for common pressure supply (1). Exhaust through the operator tube.

Type MH:

Normally closed with manual override to turn. Exhaust at the top of the operator tube, ported M5. Common exhaust line to be assembled on the top using banjo joints is available on request.

Type MX:

Normally open, no manual override, 8 mm longer operator system than in drawing. Exhaust is a hole on the top of the operator tube.

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

Different types of valves can be mixed on one plate.

Manifolds are displayed on page 2.7.1.1.

Blanking plates are also available: Type no. BP 3.

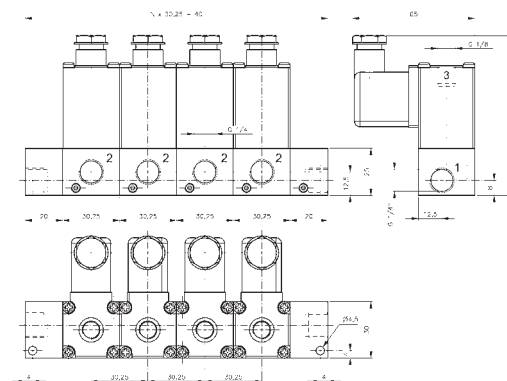
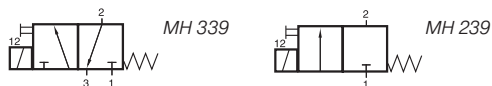
Mounting screws and seals are included.

Valves can be used for technical vacuum too.

Type	Function	Port 2	Air flow	Operating press.	Power consumption	Weight
MH 312	n.c.	M5	40 l/min	-0,9 - 10 bar	3 W = / 5 VA ~	0,13 kg
MH 314	n.c.	pif 4 mm	40 l/min	-0,9 - 10 bar	3 W = / 5 VA ~	0,13 kg
MH 315	n.c.	G 1/8"	50 l/min	-0,9 - 10 bar	3 W = / 5 VA ~	0,13 kg
MH 316	n.c.	pif 6 mm	50 l/min	-0,9 - 10 bar	3 W = / 5 VA ~	0,13 kg
MX 315	n.o.	G 1/8"	50 l/min	-0,9 - 10 bar	3 W = / 5 VA ~	0,14 kg



MH 339/MH 239/R 33 R/R 33 L



Modular system MH 339/MH 239

Modular system consisting of direct acting 3/2-way or 2/2-way solenoid valves normally closed, actuated by permanent signal and endplates for common pressure supply (1). Port 2 is in the valve, G 1/4", exhaust through the operator tube, thread G 1/8".

By opening 2 hexagonsocket screws at the bodies the system can be taken apart at any point and valves can be added or taken away.

Valves:

Type MH 339: 3/2-way – drawings show 3/2-way valves

Type MH 229: 2/2-way – 2/2-way without port 3

Orifice size: 3 mm, max. pressure: 7 bar.

Available with solenoid operators:

230V/50Hz, 24V/50Hz, 24V=

Connector Industry B (22 mm). Flying leads on request.

Valves are generally equipped with manual override.

The system consists of:

End-plate right type R 33 R

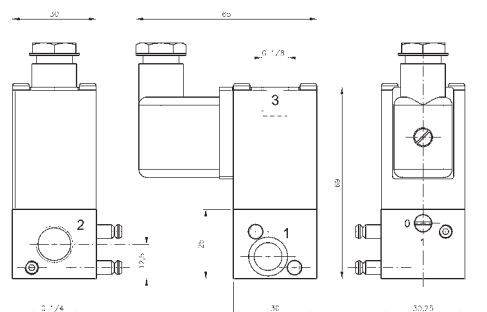
End-plate left type R 33 L

Individual valve 3/2-way type MH 339

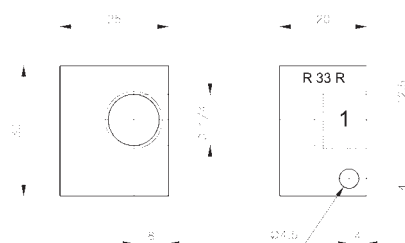
Individual valve 2/2-way type MH 229

The end-plates can be equipped with DIN-rail mounting clips. For details, please refer to page 2.7.3.

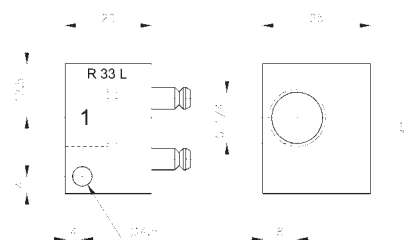
Products are to be ordered individually but system can be delivered fully assembled.



Individual valve MH 339/MH 239



End-plate right R 33 R

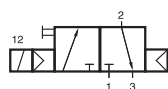


End-plate left R 33 L

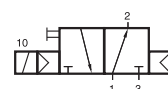
Type	Ways Function	Port size			Air flow	Operating Power		Weight
		1	2	3		pressure	consumption	
MH 339 3/2	n.c.		G 1/4" G 1/8"		200 l/min	0 - 7 bar	7,5 W = /8,5 VA ~ 0,18 kg	
MH 239 2/2	n.c.		G 1/4"		200 l/min	0 - 7 bar	7,5 W = /8,5 VA ~ 0,18 kg	
R 33 R	end-plate right	G 1/4"						0,04 kg
R 33 L	end-plate left	G 1/4"						0,04 kg

MD 310 343/MD 310 403/MD 310 463 MOD 310 343/MOD 310 403/MOD 310 463

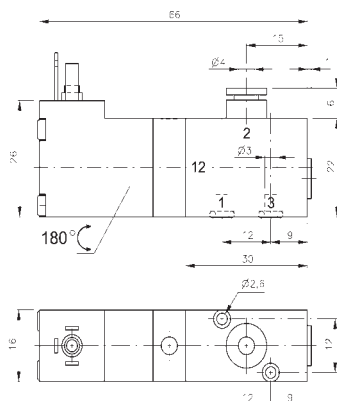
2.5.1.2.4
page 105



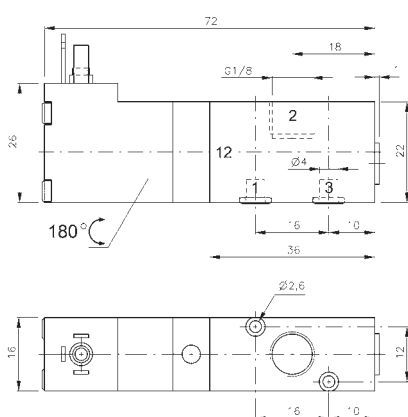
MD 310 343
MD 310 403
MD 310 463



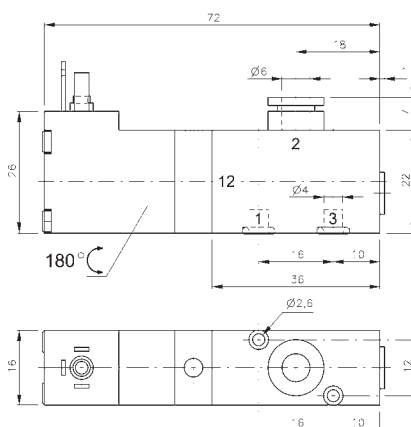
MOD 310 343
MOD 310 403
MOD 310 463



MD 310 343/MOD 310 343



MD 310 403/MOD 310 403



MD 310 463/MOD 310 463



3/2-way solenoid valve normally closed (MD) or normally open (MOD) for assembling on a manifold plate. Port 2 in the valve.

Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 24V=,
12V=, 6V= either for connector form C ISO 15217
or with flying leads, standard cable length 500 mm.
For details about solenoid system, please refer to
page 2.13.1.

Valves are generally equipped with manual override
to push.

Manifolds are displayed on page 2.7.1.2.

Valves normally open and normally closed can be
mixed on one manifold plate!

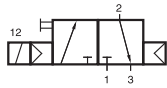
Blanking plates are also available type BP 3 303
or BP 3 403.

Mounting screws and seals are included.

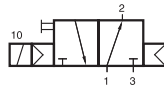
Type	Function	Port size	Air flow	Operating press.	Power consumption	Weight
MD 310 343	n.c.	pif 4 mm	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,08 kg
MD 310 403	n.c.	G 1/8"	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,09 kg
MD 310 463	n.c.	pif 6 mm	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,09 kg
MOD 310 343	n.o.	pif 4 mm	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,08 kg
MOD 310 403	n.o.	G 1/8"	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,09 kg
MOD 310 463	n.o.	pif 6 mm	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,09 kg



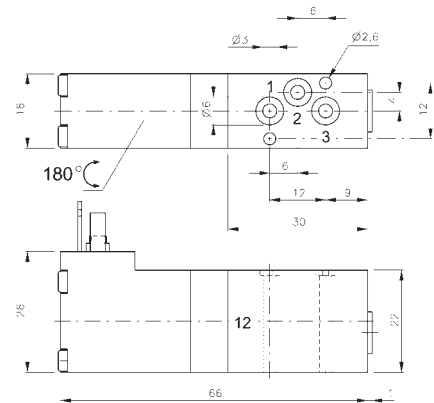
MD 310 304/MD 310 404 MOD 310 304/MOD 310 404



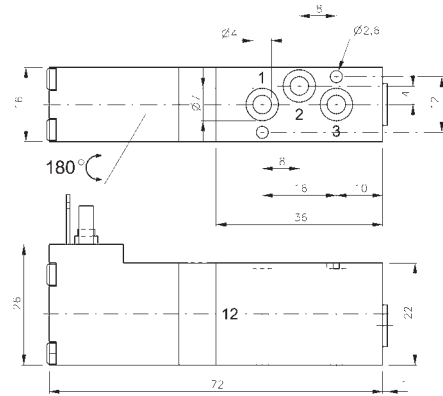
MD 310 304
MD 310 404



MOD 310 304
MOD 310 404



MD 310 304/MOD 310 304



MD 310 404/MOD 310 404

3/2-way solenoid valve normally closed (MD) or normally open (MOD) for assembling on a manifold plate. All the ports are in the plate.

Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 24V=, 6V= either for connector form C ISO 15217 or with flying leads, standard cable length 500 mm. For details about solenoid system, please refer to page 2.13.1.

Valves are generally equipped with manual override to push.

Manifolds are displayed on page 2.7.1.3.

Valves normally open and normally closed can be mixed on one manifold plate!

Blanking plates are also available type BP 3 304 or BP 3 404.

Mounting screws and seals are included.

Type	Function	Air flow	Operating press.	Power consumption	Weight
MD 310 304	n.c.	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,08 kg
MD 310 404	n.c.	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,09 kg
MOD 310 304	n.o.	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,08 kg
MOD 310 404	n.o.	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,09 kg

2.5.1.3
page 107

MK

The MK- series is a combination of the 1.8 Watt / 3.0 VA solenoid-system MD 401 (detailed information on page 2.13.1) and the G 1/4" valves of the 700-series with a flow of 1.250 NL/min. The following valves are available:



MK 310 701	3/2-way single solenoid, n.c.	in-line	description on page 2.5.1.1.14
MOK 310 701	3/2-way single solenoid, n.o.	in-line	page 2.5.1.1.14
MK 310 701 G	3/2-way single solenoid, n.c.	dual use	page 2.5.1.1.16
MOK 310 701 G	3/2-way single solenoid, n.o.	dual use	page 2.5.1.1.16
MK 320 701	3/2-way single solenoid	in-line	page 2.5.1.1.18
MK 320 701 G	3/2-way single solenoid	dual use	page 2.5.1.1.20
MK 510 701	5/2-way single solenoid	in-line	page 2.5.2.1.3
MK 520 701	5/2-way double solenoid	in-line	page 2.5.2.1.9
MK 531 701	5/3-way centre closed	in-line	page 2.5.3.1.2
MK 532 701	5/3-way centre exhausted	in-line	page 2.5.3.1.2
MK 533 701	5/3-way centre pressurized	in-line	page 2.5.3.1.2
MK 510 701 G	5/2-way single solenoid	dual use	page 2.5.2.1.5
MK 520 701 G	5/2-way double solenoid	dual use	page 2.5.2.1.11
MK 531 701 G	5/3-way centre closed	dual use	page 2.5.3.1.4
MK 532 701 G	5/3-way centre exhausted	dual use	page 2.5.3.1.4
MK 533 701 G	5/3-way centre pressurized	dual use	page 2.5.3.1.4
MK 510 703	5/2-way single solenoid	manifold	page 2.5.2.2.2
MK 520 703	5/2-way double solenoid	manifold	page 2.5.2.2.6
MK 531 703	5/3-way centre closed	manifold	page 2.5.3.2.2
MK 532 703	5/3-way centre exhausted	manifold	page 2.5.3.2.2
MK 533 703	5/3-way centre pressurized	manifold	page 2.5.3.2.2
MK 510 704	5/2-way single solenoid	manifold	page 2.5.2.2.4
MK 520 704	5/2-way double solenoid	manifold	page 2.5.2.2.8
MK 531 704	5/3-way centre closed	manifold	page 2.5.3.2.4
MK 532 704	5/3-way centre exhausted	manifold	page 2.5.3.2.4
MK 533 704	5/3-way centre pressurized	manifold	page 2.5.3.2.4

as well as valves with NAMUR-interface, please refer to chapter 2.9.



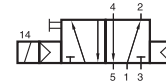
- ## Advantages
- **High flow**
 - **Compact design**
 - **Low power consumption**



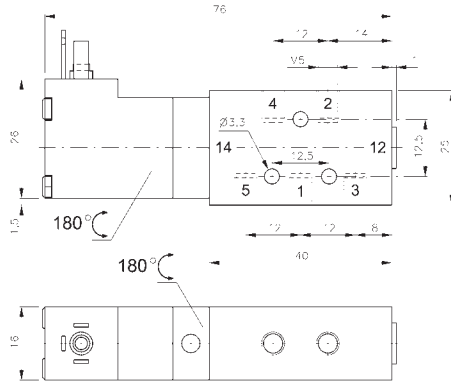
The valves are also used for the **22 mm terminals**, described in chapter 2.8.

MD 510 301/MD 510 341 MD 510 401/MD 510 461

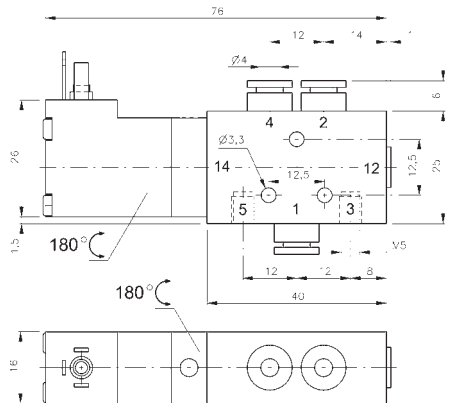
2.5.2.1.1
page 109



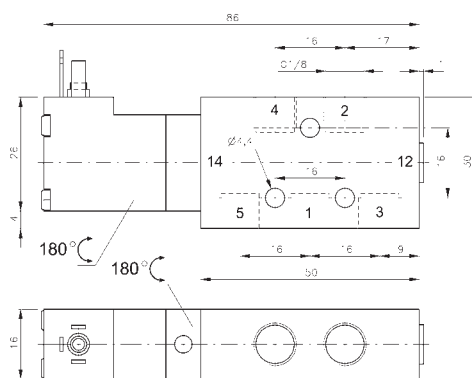
MD 510 301
MD 510 341
MD 510 401
MD 510 461



MD 510 301



MD 510 341



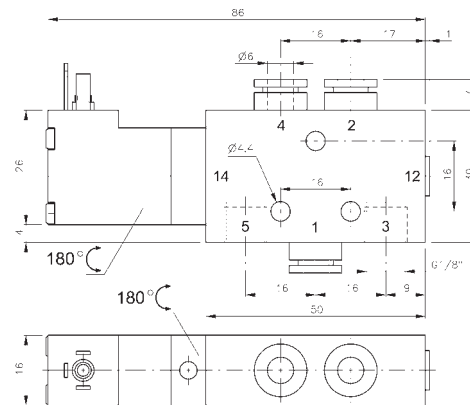
MD 510 401



5/2-way solenoid valve actuated by permanent signal and equipped with air spring return.

Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 24V=,
12V=, 6V= either for connector form C ISO 15217
or with flying leads, standard cable length 500 mm.
For details about solenoid system, please refer to
page 2.13.1.

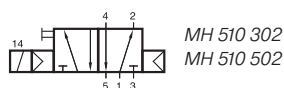
Valves are generally equipped with manual override
to push.



MD 510 461

Type	Ports 1, 2, 4	Air flow	Operating press.	Power consumption	Weight
MD 510 301	M5	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,09 kg
MD 510 341	pif 4 mm	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,10 kg
MD 510 401	G 1/8"	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,10 kg
MD 510 461	pif 6 mm	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,12 kg

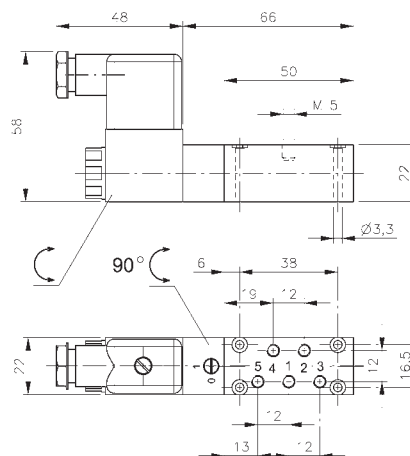




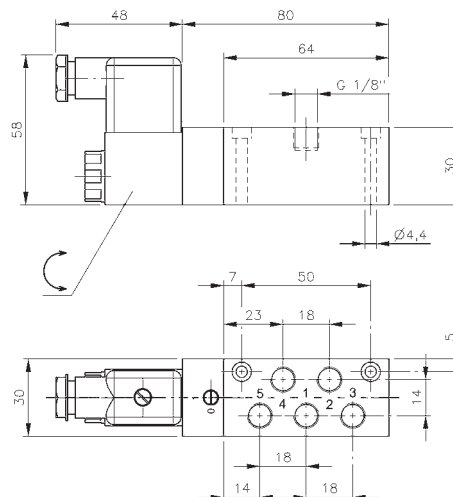
5/2-way solenoid valve actuated by permanent signal and equipped with air spring return.

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

Valves are generally equipped with manual override. If requested without manual override please order M 510 ____.



MH 510 302



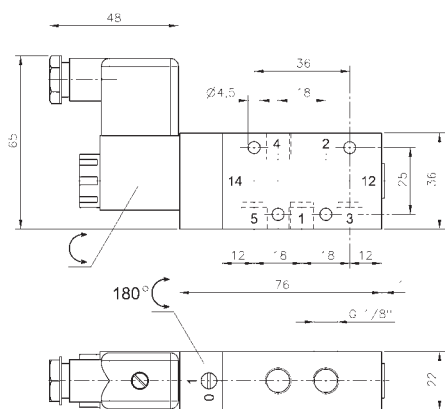
MH 510 502

Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 510 302	M5	180 l/min	2 - 10 bar	3 W = / 5 VA ~	0,19 kg
MH 510 502	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,30 kg

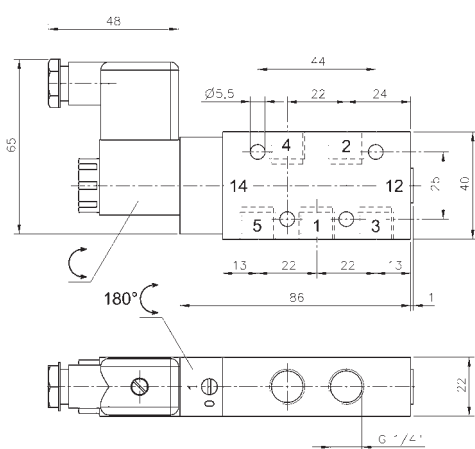
MH 510 501/MH 510 701/MH 510 801

2.5.2.1.3

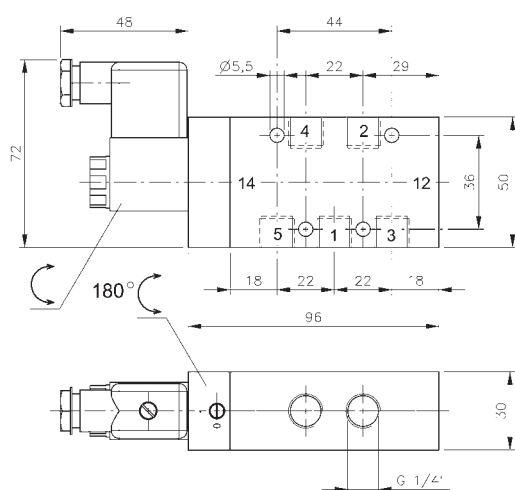
page 111



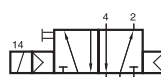
MH 510 501



MH 510 701



MH 510 801



MH 510 501
MH 510 701
MH 510 801



MEH 511 501
MEH 511 701
MEH 511 801



5/2-way solenoid valve actuated by permanent signal and equipped with air spring return.

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

Valves are generally equipped with manual override.
If requested without manual override please order
M 510 ____.

Valves are also available with external pilot feed.

Type: MEH 511 ____.

Port 14 series 501 and 701 M5, series 801 G 1/8".

Minimum actuation pressure: 3 bar.

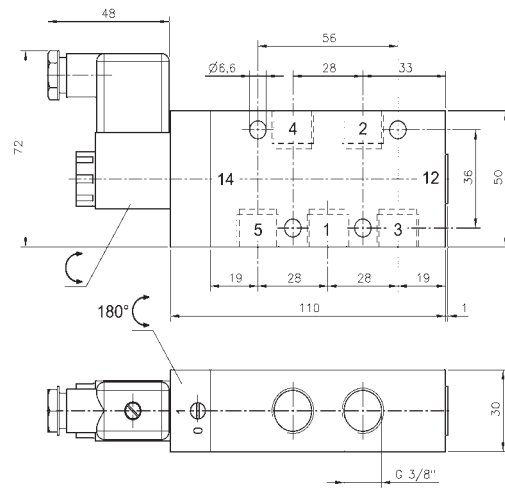
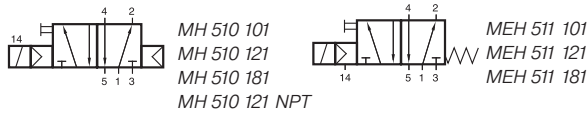
Operating pressure: 0 - 10 bar.

Version for vacuum on request.

Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 510 501	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,23 kg
MH 510 701	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,25 kg MK
MH 510 801	G 1/4"	1450 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,48 kg

HAFNER

MH 510 101/MH 510 121/MH 510 181



MH 510 101

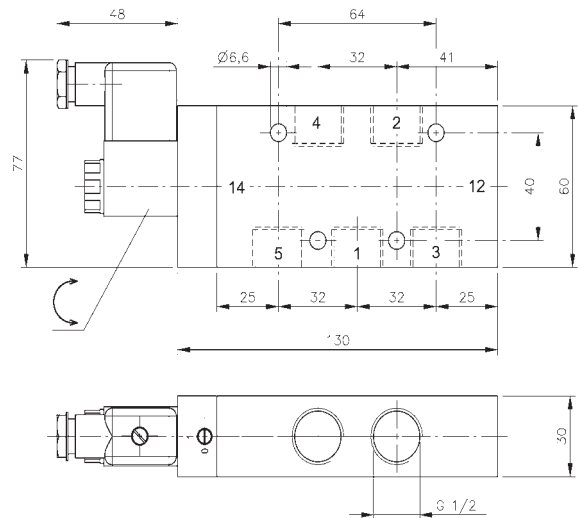
5/2-way solenoid valve actuated by permanent signal and equipped with air spring return.

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

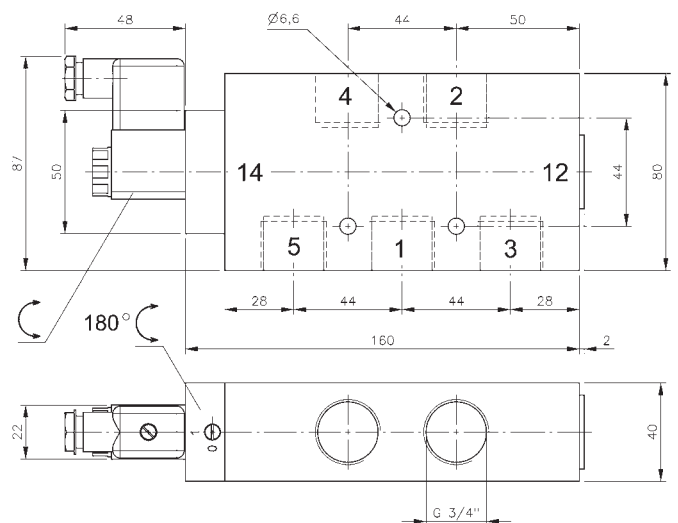
Valves are generally equipped with manual override.
If requested without manual override please order
M 510 ____.

Valves are also available with external pilot feed.
Type: MEH 511 ____.
Port 14: G 1/8\".

Version for vacuum on request.

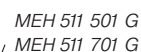


MH 510 121/MH 510 121 NPT



MH 510 181

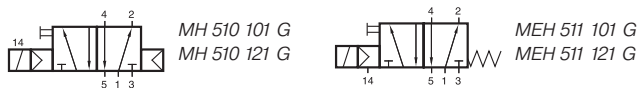
Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 510 101	G 3/8"	2250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,50 kg
MH 510 121	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,67 kg
MH 510 181	G 3/4"	6000 l/min	1 - 10 bar	3 W = / 5 VA ~	1,29 kg
MH 510 121 NPT	1/2" NPT	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,67 kg

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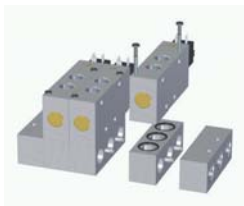
Version for vacuum on request.


HAENER

MH 510 101 G/MH 510 121 G



G-Series 101 G



G-Series 121 G



5/2-way solenoid valve actuated by permanent signal and equipped with air spring return.

The G-Series valves offer the flexibility of in-line fitment as well as the option of being assembled on to a manifold as shown. Manifolds for valves type 101 G are displayed on page 2.7.2.4, manifolds for valves type 121 G are displayed on page 2.7.2.5.

Please note:

Valves G1/2" have to be assembled onto the plate by fixing screws from the bottom through the plate into the valve.

Available with solenoid operators:

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

Valves are generally equipped with manual override.

If requested without manual override please order

M 510 ___ G

Valves are also available with external pilot feed.

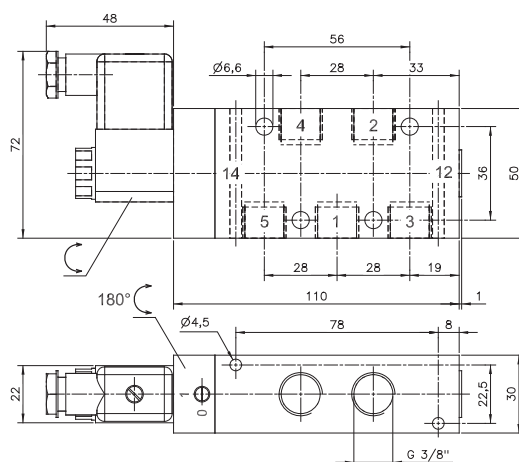
Type: MEH 511 ___ G.

Port 14: G 1/8".

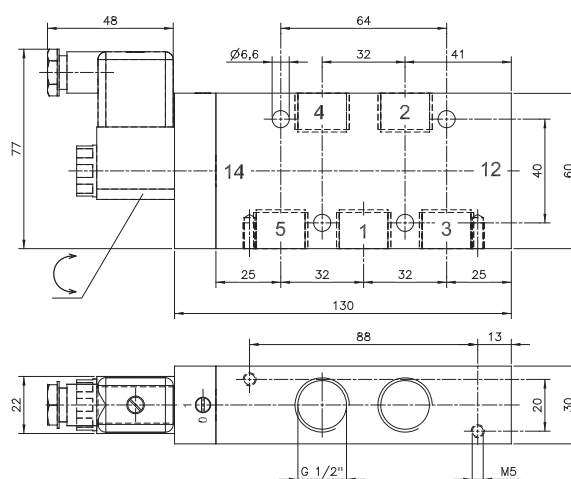
Minimum actuation pressure: 3 bar.

Operating pressure: 0 - 10 bar.

Version for vacuum on request.



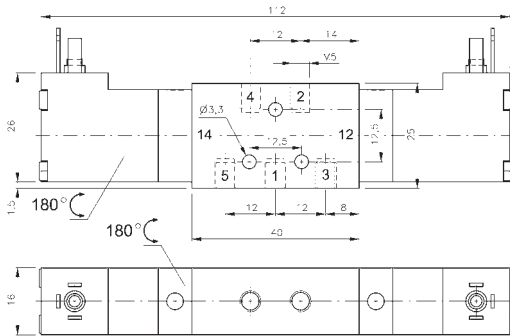
MH 510 101 G



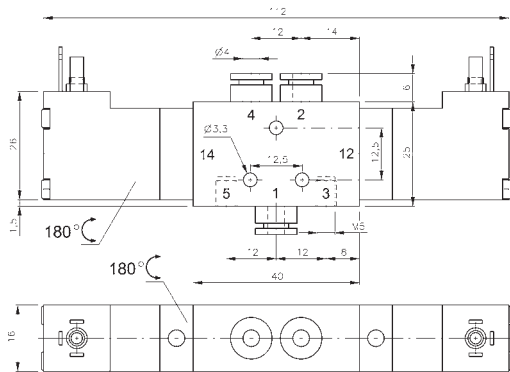
MH 510 121 G

Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 510 101 G	G 3/8"	2250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,52 kg
MH 510 121 G	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,70 kg

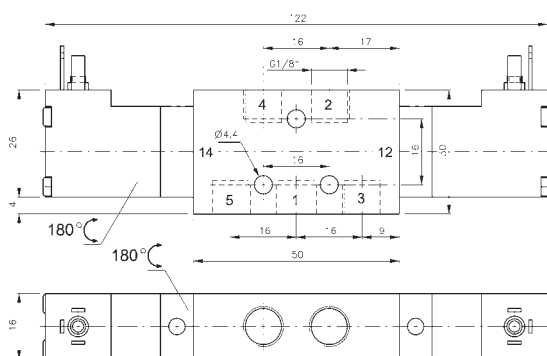
2.5.2.1.7
page 115



MD 520 301



MD 520 341



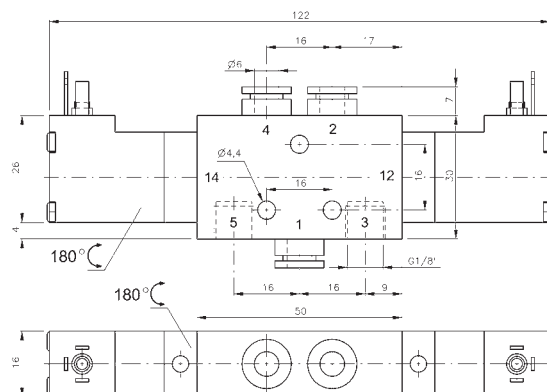
MD 520 401



5/2-way double solenoid valve actuated by impulse. Position is kept until an electrical signal is applied to the opposite side even when not attached to electrical source.

Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 24V=,
12V=, 6V= either for connector form C ISO 15217
or with flying leads, standard cable length 500 mm.
For details about solenoid system, please refer to
page 2.13.1.

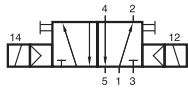
Valves are generally equipped with manual override to push.



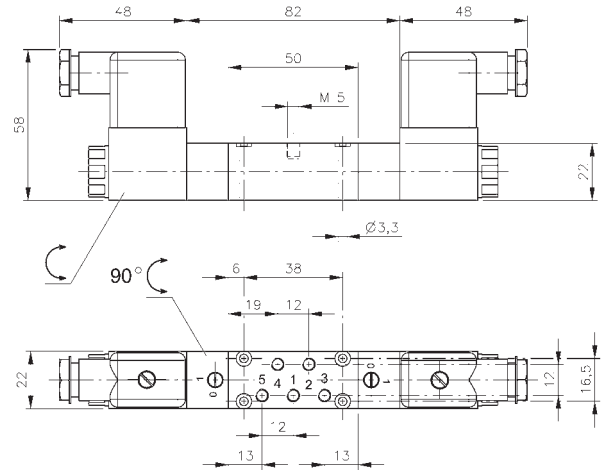
MD 520 461

Type	Ports 1, 2, 4	Air flow	Operating press.	Power consumption	Weight
MD 520 301	M5	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,13 kg
MD 520 341	pif 4 mm	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,14 kg
MD 520 401	G 1/8"	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,15 kg
MD 520 461	pif 6 mm	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,16 kg

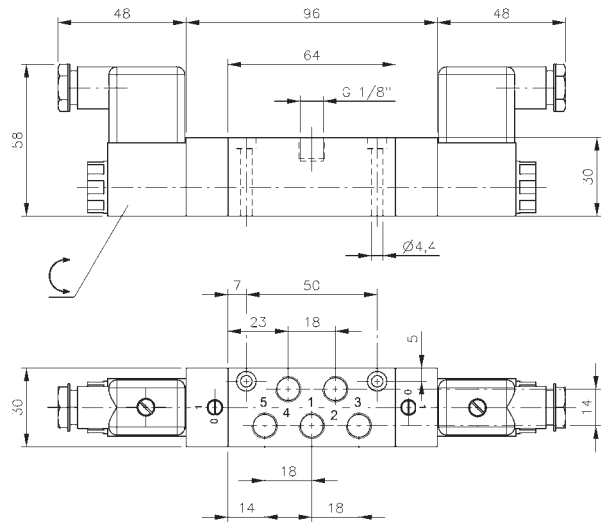
MH 520 302/MH 520 502



MH 520 302
MH 520 502



MH 520 302



MH 520 502

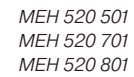
5/2-way double solenoid valve actuated by impulse. Position is kept until an electrical signal is applied to the opposite side even when not attached to electrical source.

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

Valves are generally equipped with manual override. If requested without manual override please order M 520 _ _ _.

Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 520 302	M5	180 l/min	2 - 10 bar	3 W = / 5 VA ~	0,30 kg
MH 520 502	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,43 kg

2.5.2.1.9
page 117



The technical drawing illustrates the G-7400 ball joint assembly in two views:

- Front View (Top):** Shows the main body with a total width of 48 mm. The central section has a diameter of $\varnothing 5.5$. Key dimensions include a distance of 44 mm from the centerline to the top edge, and a height of 25 mm for the central section. The bottom flange has a thickness of 6 mm. A 180° rotation symbol indicates the orientation.
- Side View (Bottom):** Shows the profile of the ball joint with a total length of 102 mm. It features four circular holes spaced at 13, 22, 22, and 13 mm intervals. The overall height is 72 mm. A dimension of 12 mm is shown for the distance from the centerline to the right edge of the central section.

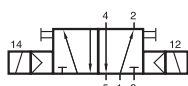
Additional labels include "G - / 4'" at the bottom right and various numerical callouts (1, 2, 3, 4, 5, 12, 14) pointing to specific features on the assembly.

[illegible]

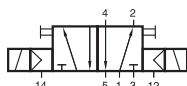
Type	Port size	Air flow	Operating press.	Power consumption	Weight	
MH 520 501	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,33 kg	
MH 520 701	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,35 kg	 MK 
MH 520 801	G 1/4"	1450 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,62 kg	

Version for vacuum on request.

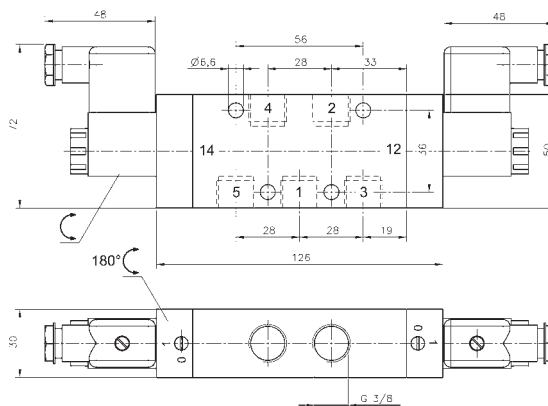
MH 520 101/MH 520 121/MH 520 181



MH 520 101
MH 520 121
MH 520 181
MH 520 121 NPT



MEH 520 101
MEH 520 121
MEH 520 181



MH 520 101

5/2-way double solenoid valve actuated by impulse.
Position is kept until an electrical signal is applied
to the opposite side even when not attached to
electrical source.

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

Valves are generally equipped with manual override.
If requested without manual override please order
M 520 .

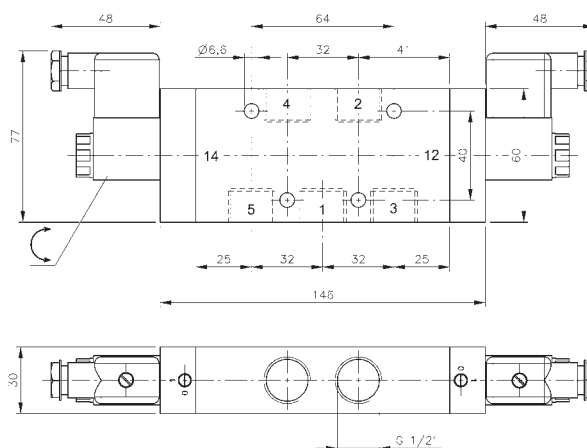
Valves are also available with external pilot feed.

Type: MEH 520 _____.

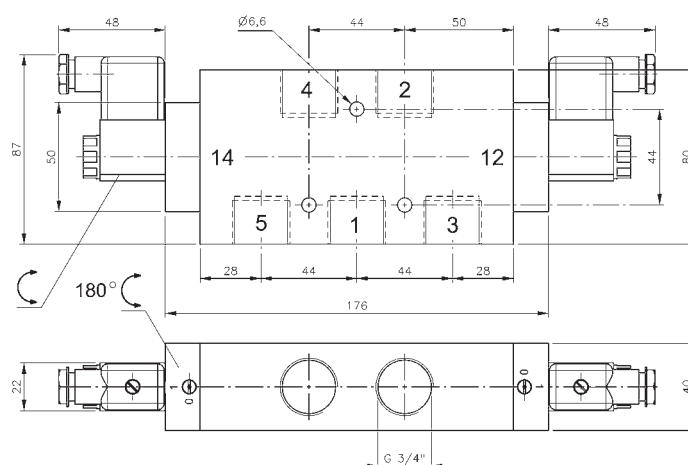
Ports 12 and 14: G 1/8".

Minimum actuation pressure: 2,5 bar.

Operating pressure: 0 - 10 bar.



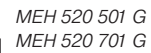
MH 520 121/ MH 520 121 NPT



MH 520 181

Type	Port size	Air flow	Operating press.	Power consumption	Weight	
MH 520 101	G 3/8"	2250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,66 kg	
MH 520 121	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,84 kg	  
MH 520 181	G 3/4"	6000 l/min	1 - 10 bar	3 W = / 5 VA ~	1,45 kg	
MH 520 121 NPT	1/2" NPT	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,84 kg	 

2.5.2.1.11
page 119

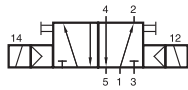


Version for vacuum on request.

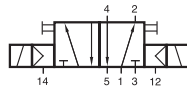
Type	Port size	Air flow	Operating press.	Power consumption	Weight	
MH 520 501 G	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,33 kg	 
MH 520 701 G	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,35 kg	  MK
MH 520 701 G NPT	1/4" NPT	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,35 kg	



MH 520 101 G/MH 520 121 G



MH 520 101 G
MH 520 121 G



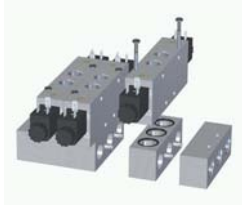
MEH 520 101 G
MEH 520 121 G



G-Series 101 G



G-Series 121 G



5/2-way double solenoid valve actuated by impulse. Position is kept until an electrical signal is applied to the opposite side even when not attached to electrical source.

The G-Series valves offer the flexibility of in-line fitment as well as the option of being assembled on to a manifold as shown. Manifolds for valves type 101 G are displayed on page 2.7.2.4, manifolds for valves type 121 G are displayed on page 2.7.2.5.

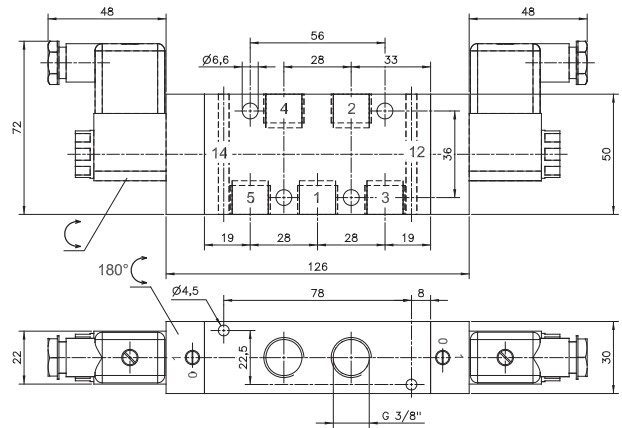
Please note: Valves G 1/2" have to be assembled onto the plate by fixing screws from the bottom through the plate into the valve.

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

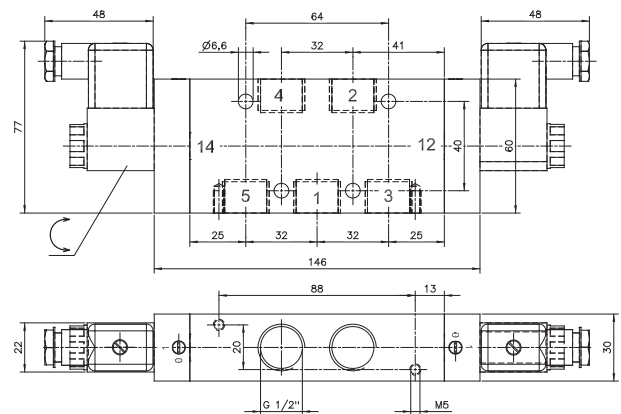
Valves are generally equipped with manual override. If requested without manual override please order M 520 ___ G

Valves are also available with external pilot feed.
Type: MEH 520 ___ G.
Ports 12 and 14: G 1/8".
Minimum actuation pressure: 2,5 bar.
Operating pressure: 0 - 10 bar.

Version for vacuum on request.



MH 520 101 G

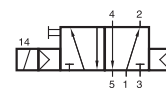


MH 520 121 G

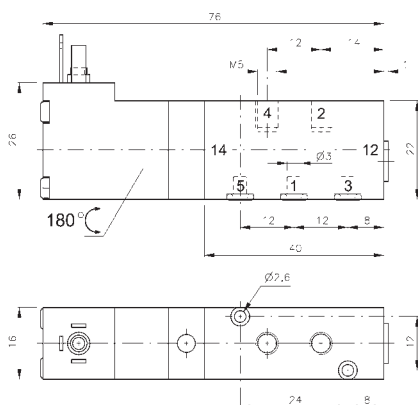
Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 520 101 G	G 3/8"	2250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,66 kg
MH 520 121 G	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,84 kg

MD 510 303/MD 510 343 MD 510 403/MD 510 463

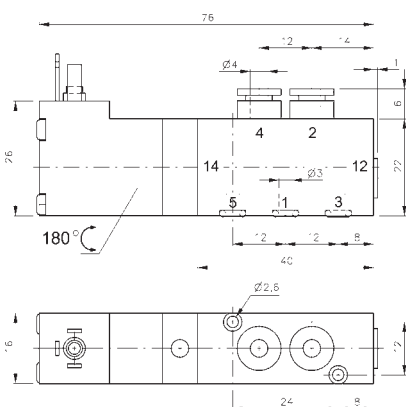
2.5.2.2.1
page 121



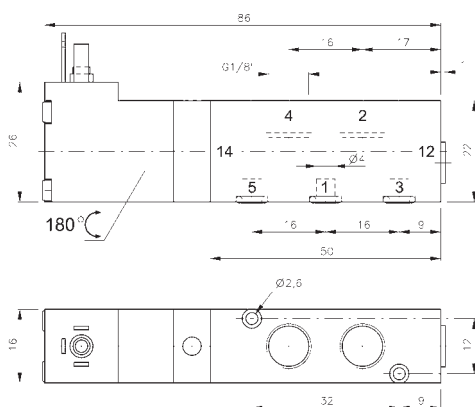
MD 510 303
MD 510 343
MD 510 403
MD 510 463



MD 510 303



MD 510 343



MD 510 403



5/2-way solenoid valve actuated by permanent signal and equipped with air spring return. Ports 2 and 4 are in the valve, ports 1, 3 and 5 in the manifold plate.

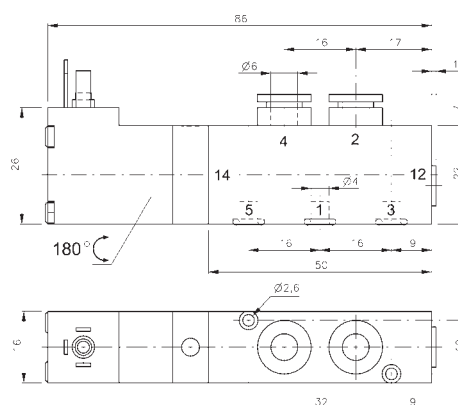
Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 24V=, 12V=, 6V= either for connector form C ISO 15217 or with flying leads, standard cable length 500 mm. For details about solenoid system, please refer to page 2.13.1.

Valves are generally equipped with manual override to push.

Manifolds are displayed on page 2.7.2.1.

Blanking plates are also available type BP 5 303 or BP 5 403.

Mounting screws and seals are included.

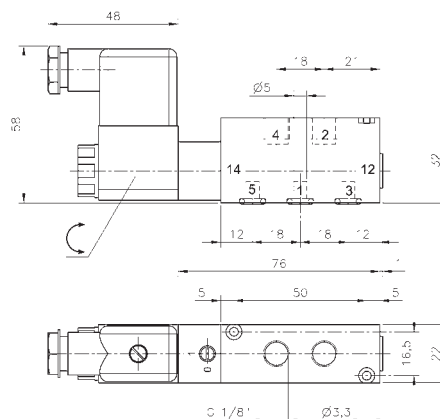
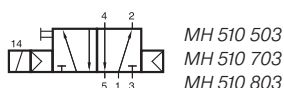


MD 510 463

Type	Ports 1, 2, 4	Air flow	Operating press.	Power consumption	Weight
MD 510 303	M5	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,09 kg
MD 510 343	pif 4 mm	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,10 kg
MD 510 403	G 1/8"	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,10 kg
MD 510 463	pif 6 mm	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,12 kg



MH 510 503/MH 510 703/MH 510 803



MH 510 503

5/2-way solenoid valve actuated by permanent signal and equipped with air spring return. Ports 2 and 4 are in the valve, ports 1, 3 and 5 in the manifold plate.

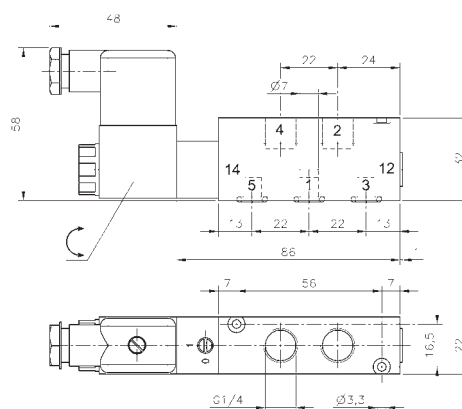
Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=
24V=, 12V=.

Valves are generally equipped with manual override.
If requested without manual override please order
M 510 ____.

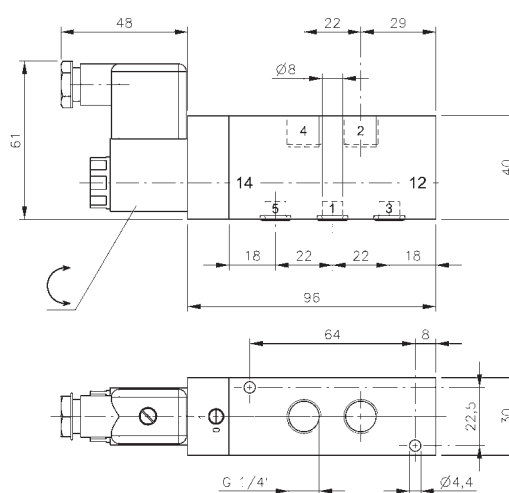
Manifolds for valves type 503 are displayed on
page 2.7.2.2, manifolds for valves type 703 are
displayed on page 2.7.2.3, manifolds for valves
type 803 are displayed on page 2.7.2.5.

Blanking plates are also available type BP 5 503,
BP 5 703 or BP 5 803.

Mounting screws and seals are included.

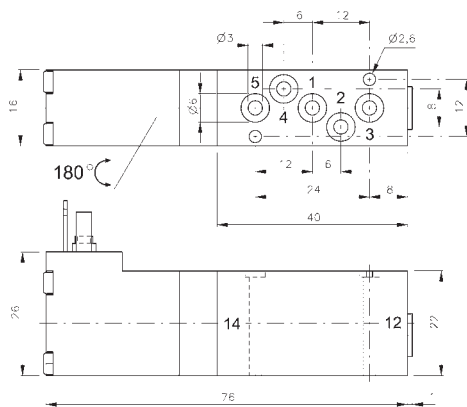
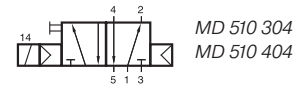


MH 510 703

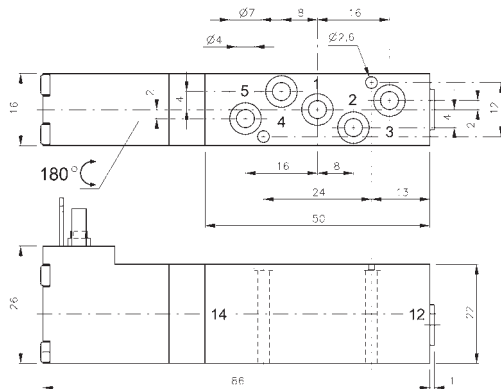


MH 510 803

Type	Ports 2, 4	Air flow	Operating press.	Power consumption	Weight
MH 510 503	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,22 kg MK
MH 510 703	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,23 kg MK
MH 510 803	G 1/4"	1450 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,42 kg



MD 510 304



MD 510 404



5/2-way solenoid valve actuated by permanent signal and equipped with air spring return. All the ports are in the plate.

Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 24V=,
12V=, 6V= either for connector form C ISO 15217
or with flying leads, standard cable length 500 mm.
For details about solenoid system, please refer to
page 2.13.1.

Valves are generally equipped with manual override to push.

Manifolds are displayed on page 2.7.2.6.

Blanking plates are also available type BP 5 344
or BP 5 464.

Mounting screws and seals are included.

Type	Port size	Air flow	Operating press.	Power consumption	Weight
MD 510 304	Ø 3 mm	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,09 kg
MD 510 404	Ø 4 mm	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,10 kg

MH 510 304/MH 510 504 MH 510 704/MH 510 104



MH 510 304 MH 510 704
MH 510 504 MH 510 104



5/2-way solenoid valve actuated by permanent signal and equipped with air spring return. All the ports are in the plate.

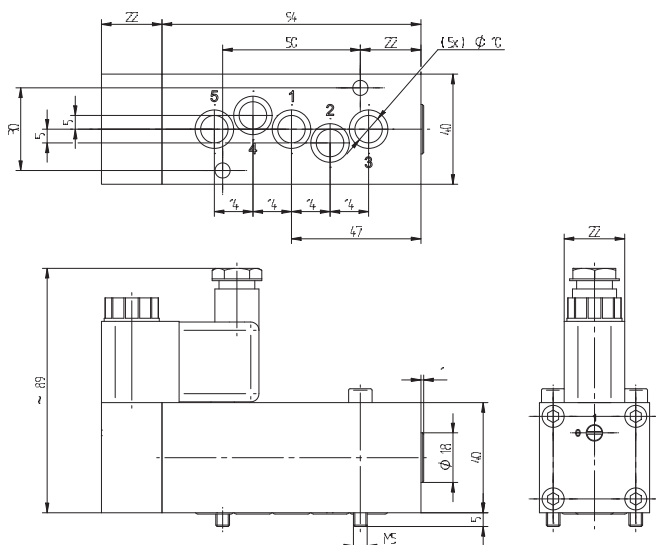
Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=,
24V=, 12V=.

Valves are generally equipped with manual override.
If requested without manual override please order
M 510 ____.

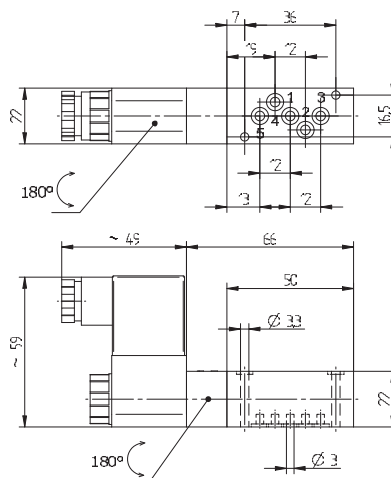
Manifolds for valves type 304 and 504 are displayed
on page 2.7.2.7. Manifolds for valves type 704
are displayed on page 2.7.2.8 and 2.7.2.9. Manifolds for
valves type 104 are displayed on page 2.7.2. 10.

Blanking plates are also available type BP 5 304,
BP 5 504 or BP 5 704.

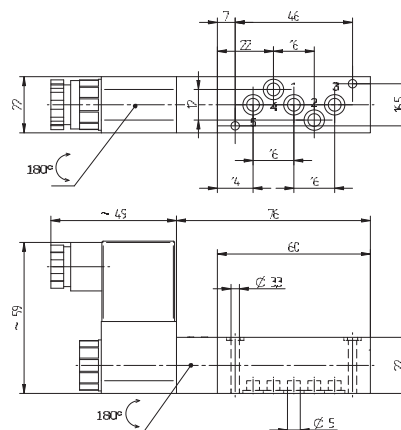
Mounting screws and seals are included.



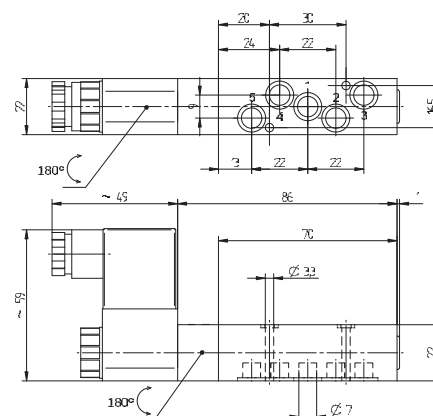
MH 510 104



MH 510 304



MH 510 504



MH 510 704

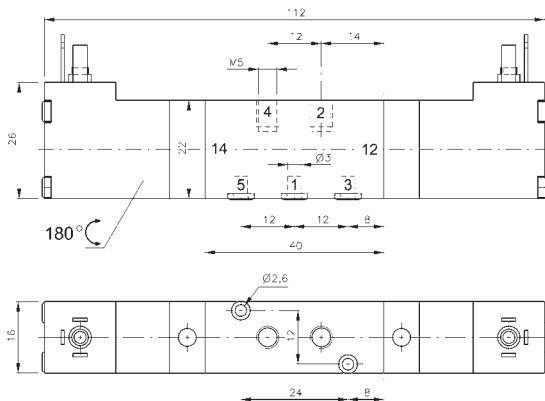
Type	Port size	Air flow	Operating press.	Power cons.	Weight
MH 510 304	Ø 3 mm	220 l/min	2 - 10 bar	3 W = / 5 VA ~	0,18 kg ❄
MH 510 504	Ø 5 mm	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,19 kg ❄❄MK
MH 510 704	Ø 7 mm	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,20 kg ❄❄MK
MH 510 104	Ø 10 mm	2250 l/min	1 - 10 bar	3 W = / 5 VA ~	0,61 kg

MD 520 303/MD 520 343 MD 520 403/MD 520 463

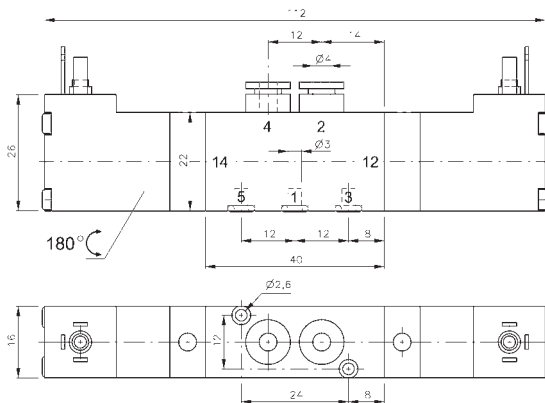
2.5.2.2.5
page 125



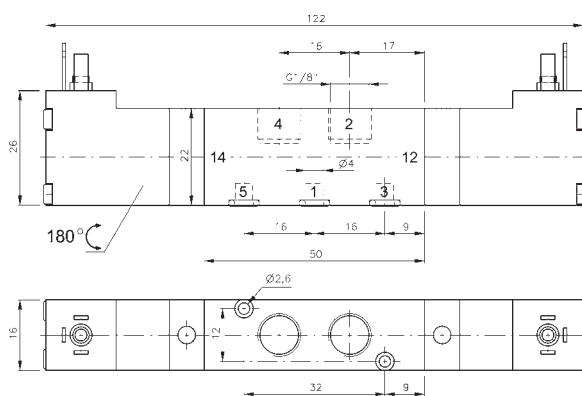
MD 520 303
MD 520 343
MD 520 403
MD 520 463



MD 520 303



MD 520 343



MD 520 403



5/2-way double solenoid valve actuated by impulse. Position is kept until an electrical signal is applied to the opposite side even when not attached to electrical source. Ports 2 and 4 are in the valve, ports 1, 3 and 5 in the manifold plate.

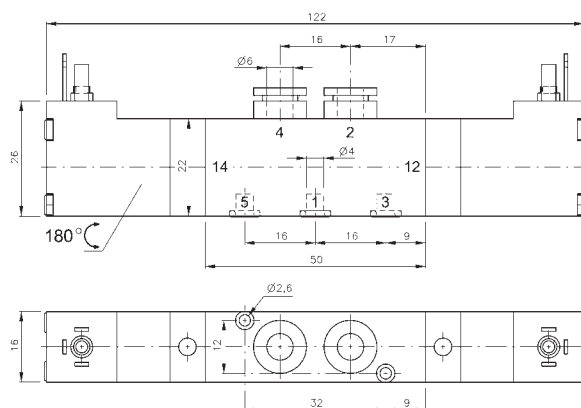
Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 24V=, 12V=, 6V= either for connector form C ISO 15217 or with flying leads, standard cable length 500 mm. For details about solenoid system, please refer to page 2.13.1.

Valves are generally equipped with manual override to push.

Manifolds are displayed on page 2.7.2.1.

Blanking plates are also available type BP 5 303 or BP 5 403.

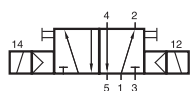
Mounting screws and seals are included.



MD 520 463

Type	Ports 1, 2, 4	Air flow	Operating press.	Power consumption	Weight
MD 520 303	M5	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,13 kg
MD 520 343	pif 4 mm	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,14 kg
MD 520 403	G 1/8"	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,14 kg
MD 520 463	pif 6 mm	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,15 kg





MH 520 503
MH 520 703
MH 520 803



5/2-way double solenoid valve actuated by impulse. Position is kept until an electrical signal is applied to the opposite side even when not attached to electrical source. Ports 2 and 4 are in the valve, ports 1, 3 and 5 in the manifold plate.

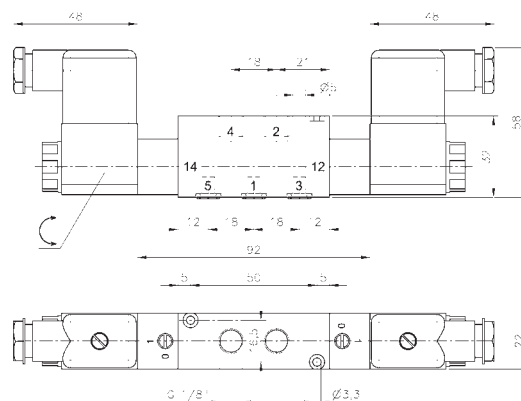
Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=,
24V=, 12V=.

Valves are generally equipped with manual override.
If requested without manual override please order
M 520 .

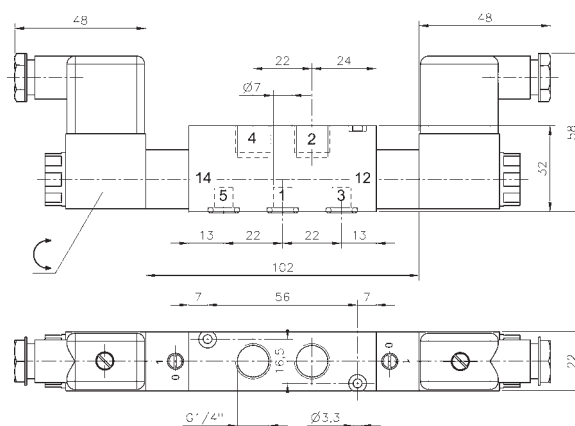
Manifolds for valves type 503 are displayed on page 2.7.2.2, manifolds for valves type 703 are displayed on page 2.7.2.3, manifolds for valves type 803 are displayed on page 2.7.2.5.

Blanking plates are also available type BP 5 503, BP 5 703 or BP 5 803.

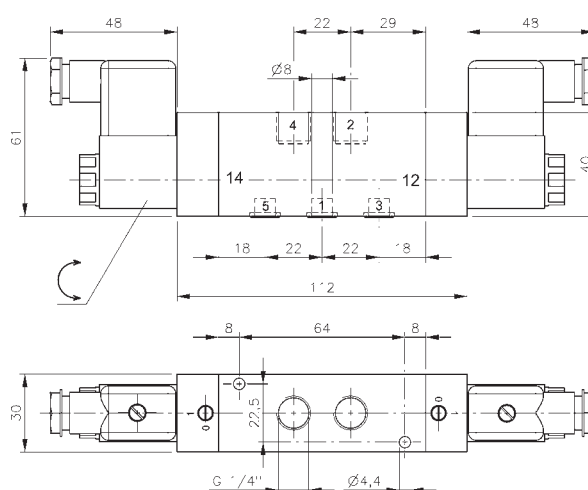
Mounting screws and seals are included.



MH 520 503



MH 520 703



MH 520 803

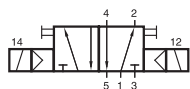
Type	Ports 2, 4	Air flow	Operating press.	Power consumption	Weight
MH 520 503	G 1/8"	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,31 kg
MH 520 703	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,33 kg
MH 520 803	G 1/4"	1450 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,56 kg

2.5.2.2.7

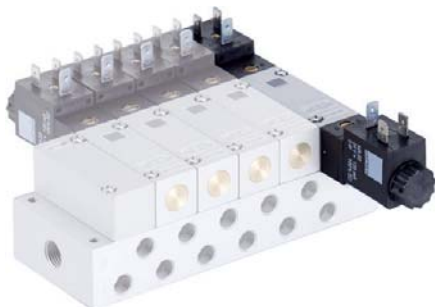
page 127



MH 520 304/MH 520 504 MH 520 704/MH 520 104



MH 520 304 MH 520 704
MH 520 504 MH 520 104



5/2-way double solenoid valve actuated by impulse. Position is kept until an electrical signal is applied to the opposite side even when not attached to electrical source. All the ports are in the plate.

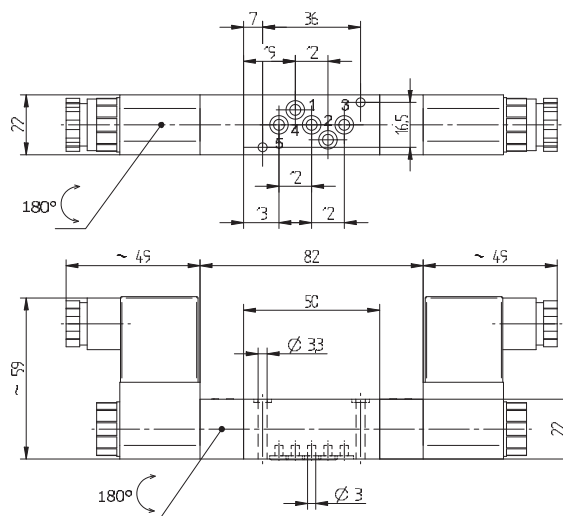
Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=,
24V=, 12V=.

Valves are generally equipped with manual override. If requested without manual override please order M 520 ____.

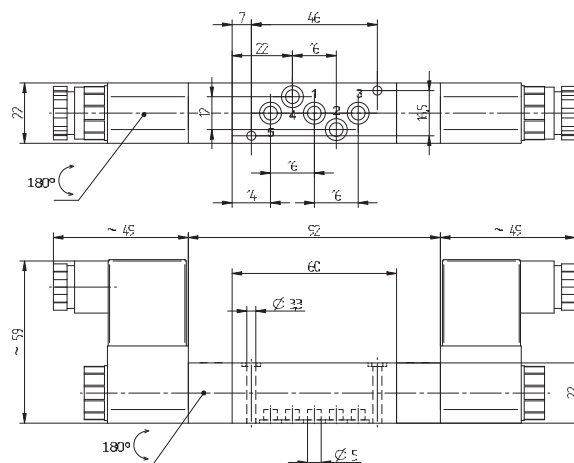
Manifolds for valves type 304 and 504 are displayed on page 2.7.2.7. Manifolds for valves type 704 are displayed on page 2.7.2.8 and 2.7.2.9. Manifolds for valves type 104 are displayed on page 2.7.2.10.

Blanking plates are also available type BP 5 304, BP 5 504 or BP 5 704.

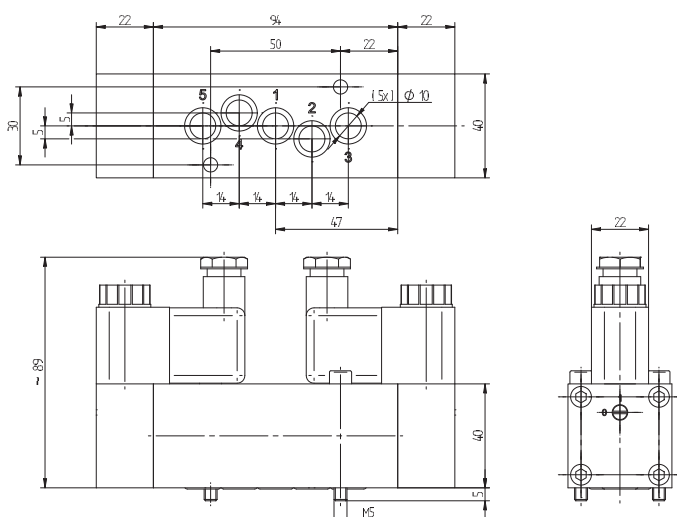
Mounting screws and seals are included.



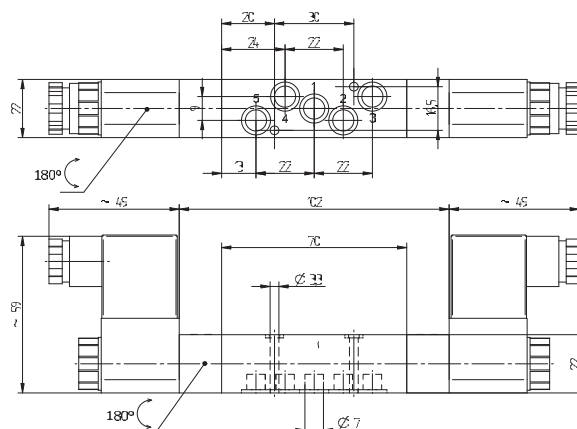
MH 520 304



MH 520 504



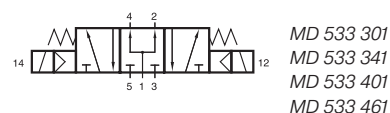
MH 520 104



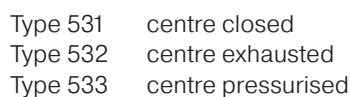
MH 520 704

Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 520 304	Ø 3 mm	220 l/min	2 - 10 bar	3 W = / 5 VA ~	0,25 kg ❄️
MH 520 504	Ø 5 mm	650 l/min	2 - 10 bar	3 W = / 5 VA ~	0,27 kg ❄️MK
MH 520 704	Ø 7 mm	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,29 kg ❄️MK
MH 520 104	Ø 10 mm	2250 l/min	1 - 10 bar	3 W = / 5 VA ~	0,80 kg

2.5.3.1.1
page 129



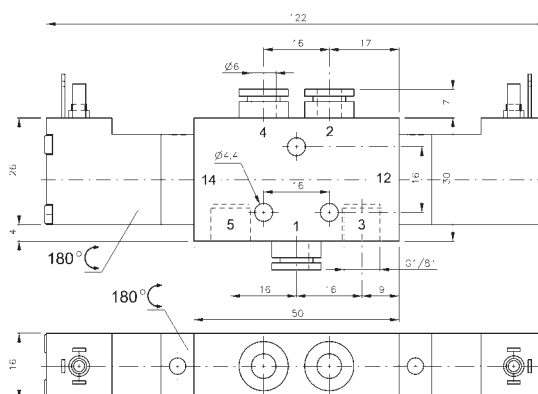
5/3-way solenoid valve with spring return to middle position, actuated by permanent signal.



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

Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 24V=, 6V=
either for connector form C ISO 15217 or with flying
leads, standard cable length 500 mm. For details
about solenoid system, please refer to page 2.13.1.

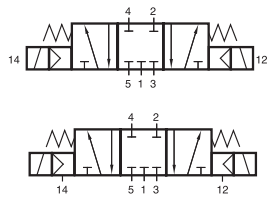
Valves are generally equipped with manual override to push.



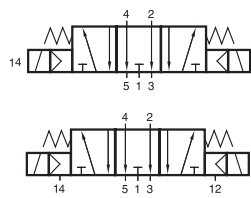
MD 53_ 461

Type	Ports 1, 2, 4	Air flow	Operating press.	Power consumption	Weight
MD 53_ 301	M5	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,13 kg
MD 53_ 341	pif 4 mm	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,14 kg
MD 53_ 401	G 1/8"	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,15 kg
MD 53_ 461	pif 6 mm	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,16 kg

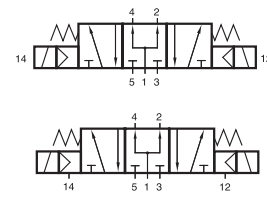
MH 53_ 501/MH 53_ 701/MH 53_ 801



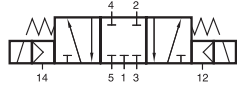
MH 531 501
MH 531 701
MH 531 801



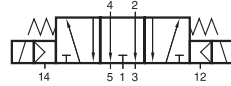
MH 532 501
MH 532 701
MH 532 801



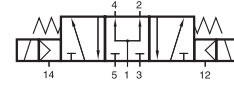
MH 533 501
MH 533 701
MH 533 801



MEH 531 501
MEH 531 701
MEH 531 801



MEH 532 501
MEH 532 701
MEH 532 801



MEH 533 501
MEH 533 701
MEH 533 801



5/3-way solenoid valve with spring return to middle position, actuated by permanent signal.

Type 531 centre closed
Type 532 centre exhausted
Type 533 centre pressurised

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

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

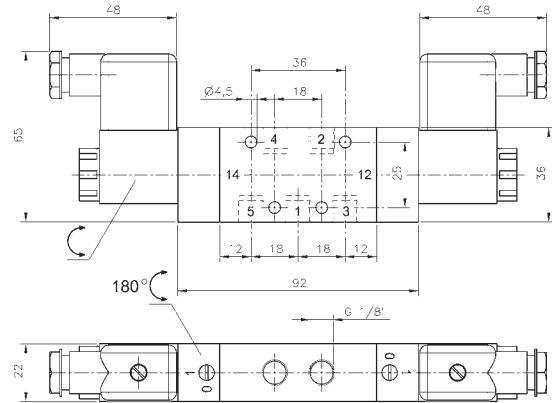
Valves are generally equipped with manual override.
If requested without manual override please order M 53_ _ _ _.

Valves are also available with external pilot feed.
Type: MEH 53_ _ _ _ (please add 1 digit for type and 3 digits for size).

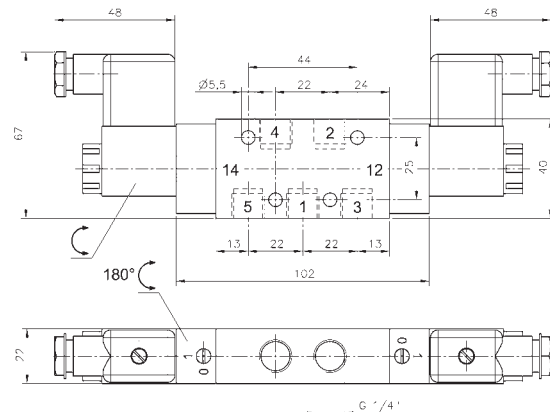
Ports 12 and 14 series 501 and 701: M5,
series 801: G 1/8".

Minimum actuation pressure: 3 bar.
Operating pressure: 0-10 bar.

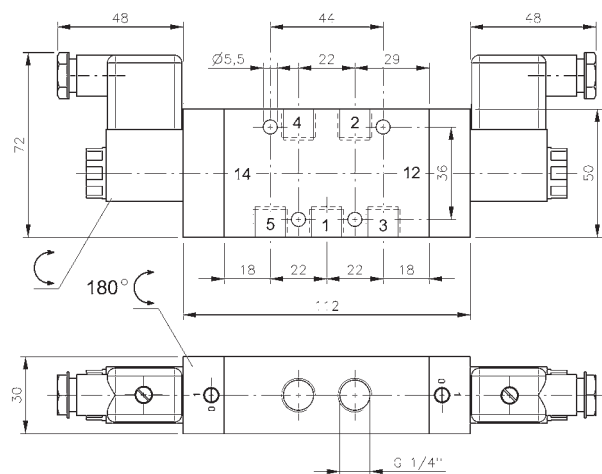
Version for vacuum on request.



MH 53_ 501

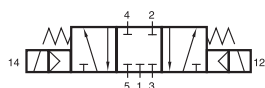


MH 53_ 701

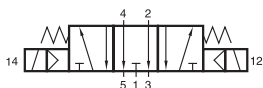


MH 53_ 801

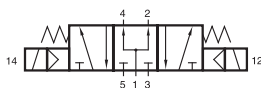
Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 53_ 501	G 1/8"	650 l/min	3 - 10 bar	3 W = / 5 VA ~	0,33 kg
MH 53_ 701	G 1/4"	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,35 kg MK
MH 53_ 801	G 1/4"	1450 l/min	3 - 10 bar	3 W = / 5 VA ~	0,62 kg



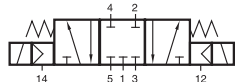
MH 531 101
MH 531 121
MH 531 181
MH 531 121 NPT



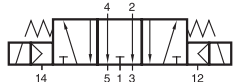
MH 532 101
MH 532 121
MH 532 181
MH 532 121 NPT



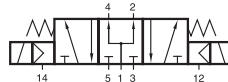
MH 533 101
MH 533 121
MH 533 181
MH 533 121 NPT



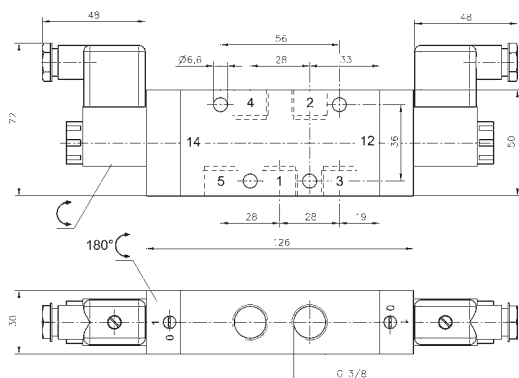
MEH 531 101
MEH 531 121
MEH 531 181



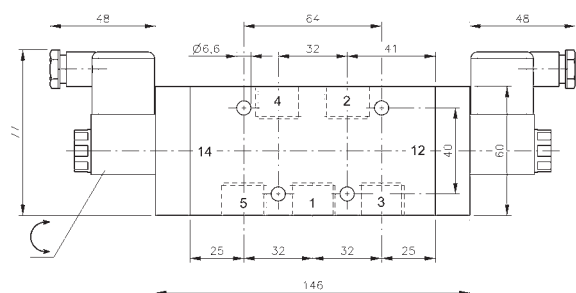
MEH 532 101
MEH 532 121
MEH 532 181



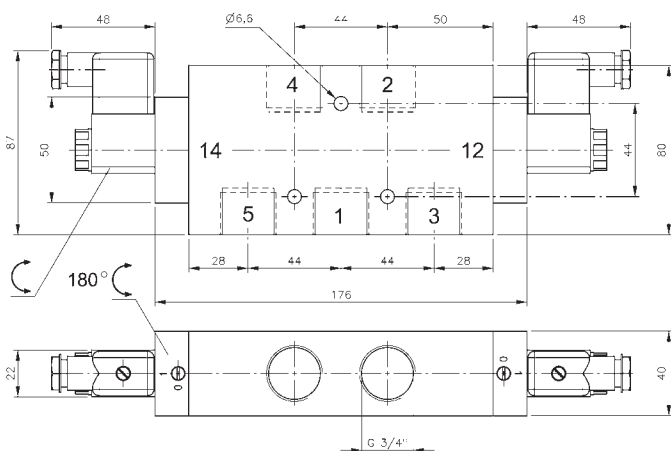
MEH 533 101
MEH 533 121
MEH 533 181



MH 53_101



MH 53_121/MH 53_121 NPT



MH 53_181



5/3-way solenoid valve with spring return to middle position, actuated by permanent signal.

Type 531 centre closed
Type 532 centre exhausted
Type 533 centre pressurised

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

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

Valves are generally equipped with manual override.
If requested without manual override please order
M 53_ _ _ _.

Valves are also available with external pilot feed.
Type: MEH 53_ _ _ _ (please add 1 digit for type
and 3 digits for size).

Ports 12 and 14: G 1/8".

Minimum actuation pressure: 3 bar.

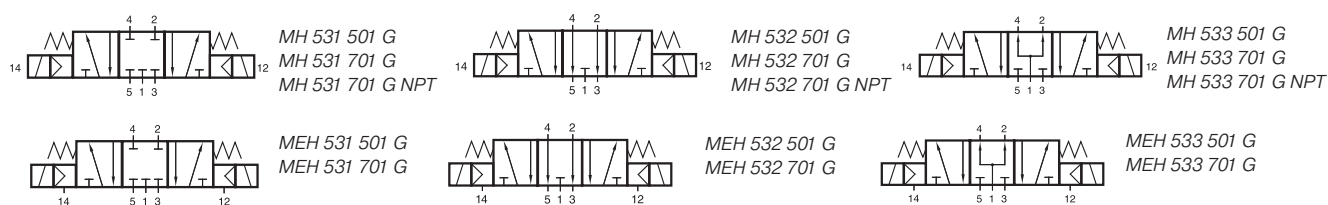
Operating pressure: 0-10 bar.

Version for vacuum on request.

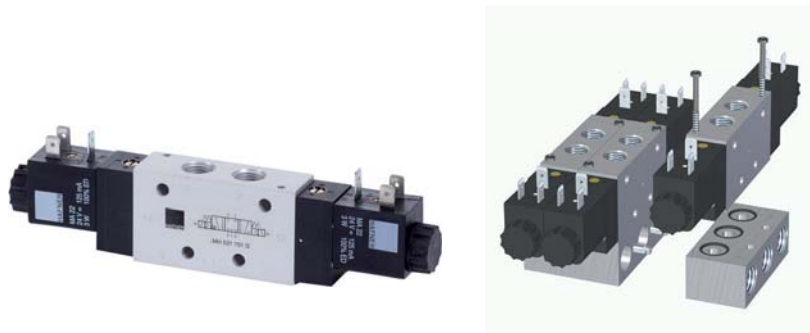
Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 53_ 101	G 3/8"	2250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,66 kg
MH 53_ 121	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,84 kg
MH 53_ 181	G 3/4"	6000 l/min	1 - 10 bar	3 W = / 5 VA ~	1,45 kg
MH 53_ 121 NPT	1/2" NPT	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,84 kg



HAFNER



G-Series 501 G/701 G

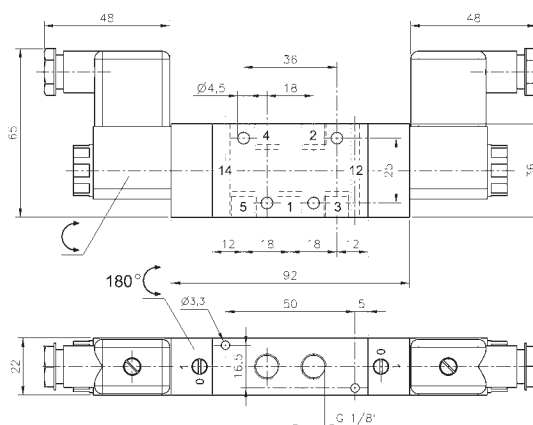


5/3-way solenoid valve with spring return to middle position, actuated by permanent signal.

- | | |
|----------|--------------------|
| Type 531 | centre closed |
| Type 532 | centre exhausted |
| Type 533 | centre pressurised |

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

The G-Series valves offer the flexibility of in-line fitment as well as the option of being assembled on to a manifold as shown. Manifolds for valves type 501 G are displayed on page 2.7.2.2, manifolds for valves type 701 G are displayed on page 2.7.2.3.



MH 53_ 501 G

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

Valves are generally equipped with manual override. If requested without manual override please order M 53 G.

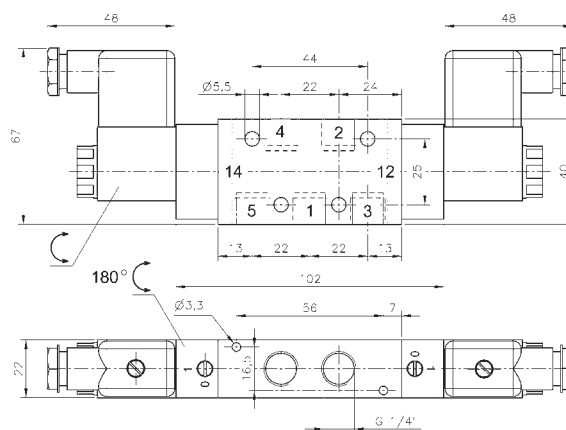
Valves are also available with external pilot feed.
Type: MEH 53 ___ G (please add 1 digit for type
and 3 digits for size).

Ports 12 and 14: M5.

Minimum actuation pressure: 3 bar.

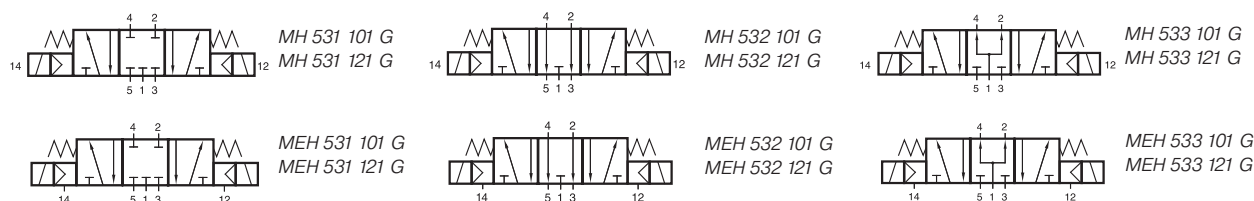
Operating pressure: 0-10 bar.

Version for vacuum on request.



MH 53 701 G/MH 53 701 G NPT

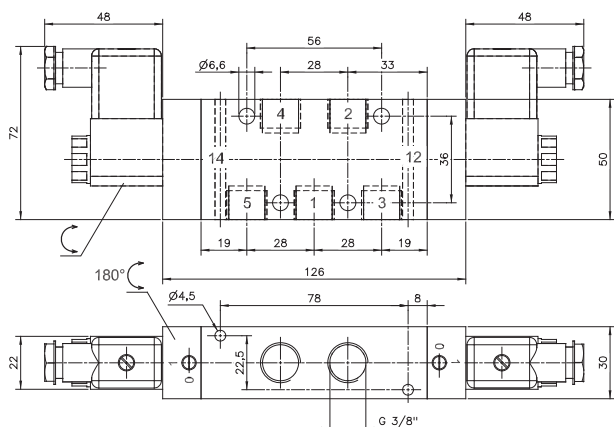
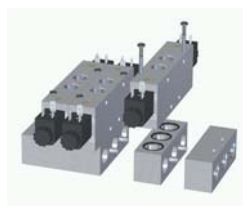
Type	Port size	Air flow	Operating press.	Power consumption	Weight	
MH 53_ 501 G	G 1/8"	650 l/min	3 - 10 bar	3 W = / 5 VA ~	0,33 kg	Ex
MH 53_ 701 G	G 1/4"	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,35 kg	Ex
MH 53_ 701 G NPT	1/4" NPT	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,35 kg	Ex



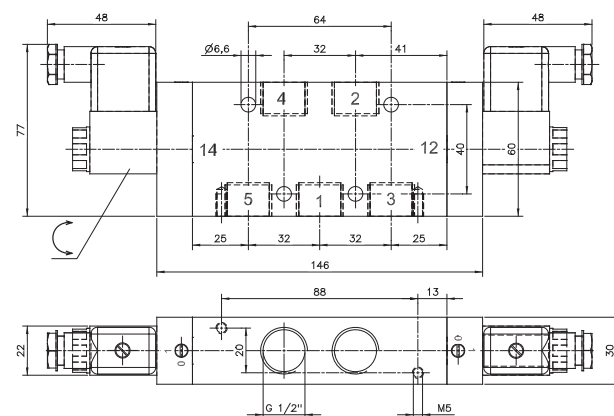
G-Series 101 G



G-Series 121 G



MH 53_ 101 G



MH 53_121 G

5/3-way solenoid valve with spring return to middle position, actuated by permanent signal.

Type 531 centre closed
Type 532 centre exhausted
Type 533 centre pressurised

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

The G-Series valves offer the flexibility of in-line fitment as well as the option of being assembled on to a manifold as shown. Manifolds for valves type 101 G are displayed on page 2.7.2.4, manifolds for valves type 121 G are displayed on page 2.7.2.5.

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

Valves are generally equipped with manual override. If requested without manual override please order M 53_ _ _ _ G.

Valves are also available with external pilot feed. Type: MEH 53_ _ _ _ G (please add 1 digit for type and 3 digits for size).

Ports 12 and 14: G 1/8".

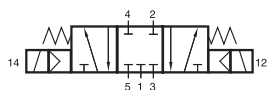
Minimum actuation pressure: 3 bar.

Operating pressure: 0-10 bar.

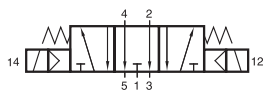
Version for vacuum on request.

Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 53_ 101 G	G 3/8"	2250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,66 kg
MH 53_ 121 G	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	0,84 kg

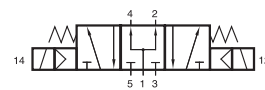
MD 53_ 303/MD 53_ 343 MD 53_ 403/MD 53_ 463



MD 531 303
MD 531 343
MD 531 403
MD 531 463



MD 532 303
MD 532 343
MD 532 403
MD 532 463



MD 533 303
MD 533 343
MD 533 403
MD 533 463



5/3-way solenoid valve with spring return to middle position, actuated by permanent signal. Ports 2 and 4 are in the valve, ports 1, 3 and 5 in the manifold plate.

Type 531 centre closed
Type 532 centre exhausted
Type 533 centre pressurised

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

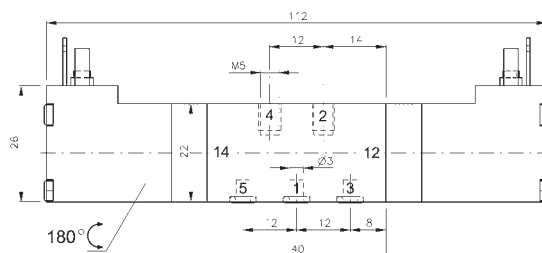
Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 24V=,
12V=, 6V= either for connector form C ISO 15217
or with flying leads, standard cable length 500 mm.
For details about solenoid system, please refer to
page 2.13.1.

Valves are generally equipped with manual override
to push.

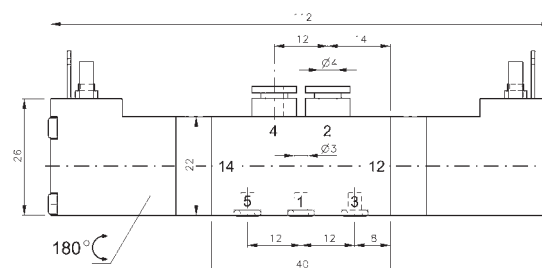
Manifolds are described on page 2.7.2.1.

Blanking plates are also available type BP 5 303
or BP 5 403.

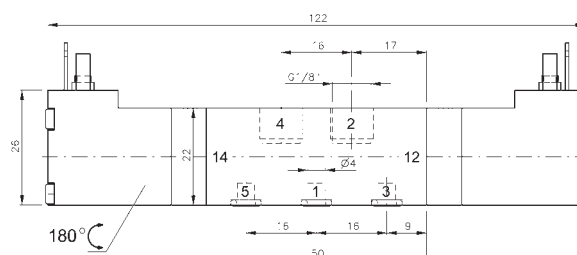
Mounting screws and seals are included.



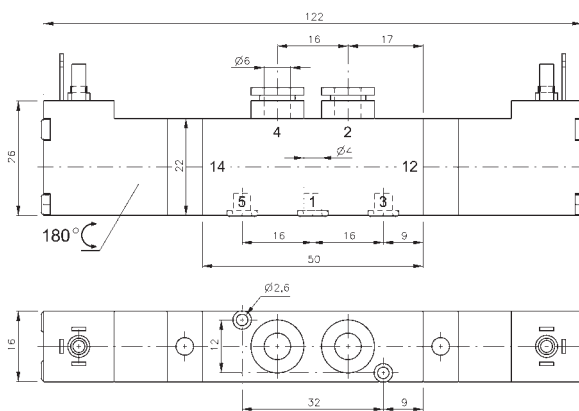
MD 53_303



MD 53_343



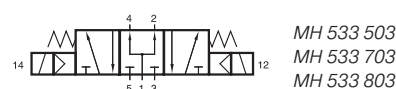
MD 53_403



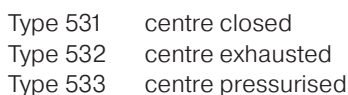
MD 53_463

Type	Ports 1, 2, 4	Air flow	Operating press.	Power consumption	Weight
MD 53_303	M5	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,13 kg
MD 53_343	pif 4 mm	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,14 kg
MD 53_403	G 1/8"	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,14 kg
MD 53_463	pif 6 mm	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,15 kg

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5/3-way solenoid valve with spring return to middle position, actuated by permanent signal. Ports 2 and 4 are in the valve, ports 1, 3 and 5 in the manifold plate.



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

Valves are generally equipped with manual override.
If requested without manual override please order
M 53 (please add 1 digit for type and 3 for size).

MH 53_ 803

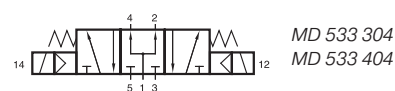
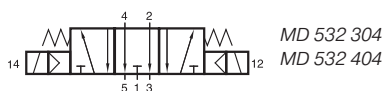
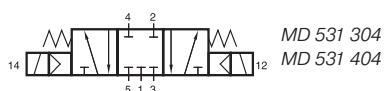
Manifolds for valves type 503 are displayed on page 2.7.2.2, manifolds for valves type 703 are displayed on page 2.7.2.3, manifolds for valves type 803 are displayed on page 2.7.2.5.

Blanking plates are also available type BP 5 503, BP 5 703 or BP 5 803.

Mounting screws and seals are included.

Type	Ports 2, 4	Air flow	Operating press.	Power consumption	Weight
MH 53_ 503	G 1/8"	650 l/min	3 - 10 bar	3 W = / 5 VA ~	0,31 kg
MH 53_ 703	G 1/4"	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,33 kg
MH 53_ 803	G 1/4"	1450 l/min	3 - 10 bar	3 W = / 5 VA ~	0,56 kg

MD 53_304/MD 53_404



5/3-way solenoid valve with spring return to middle position, actuated by permanent signal. All the ports are in the plate.

Type 531 centre closed
Type 532 centre exhausted
Type 533 centre pressurised

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

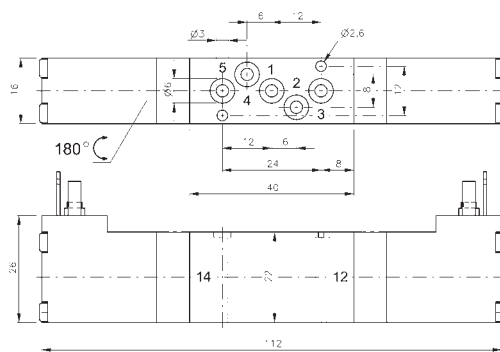
Available with solenoid operators:
230V/50Hz, 110V/50Hz, 24V/50Hz, 24V=,
12V=, 6V= either for connector form C ISO 15217
or with flying leads, standard cable length 500 mm.
For details about solenoid system, please refer to
page 2.13.1.

Valves are generally equipped with manual override to push.

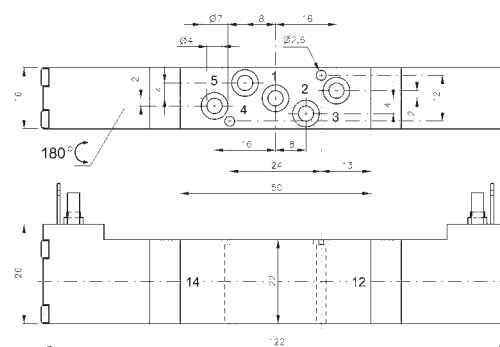
Manifolds are described on page 2.7.2.6.

Blanking plates are also available type BP 5 344
or BP 5 464.

Mounting screws and seals are included.



MD 53_304



MD 53_404

Type	Port size	Air flow	Operating press.	Power consumption	Weight
MD 53_304	Ø 3 mm	280 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,13 kg
MD 53_404	Ø 4 mm	450 l/min	3 - 10 bar	1,8 W = / 3,0 VA ~	0,14 kg

2.5.3.2.4
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MH 53_304

MH 53_ 504

MH 53_704



5/3-way solenoid valve with spring return to middle position, actuated by permanent signal. All the ports are in the plate.

Type 531	centre closed
Type 532	centre exhausted
Type 533	centre pressurised

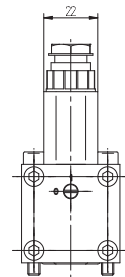
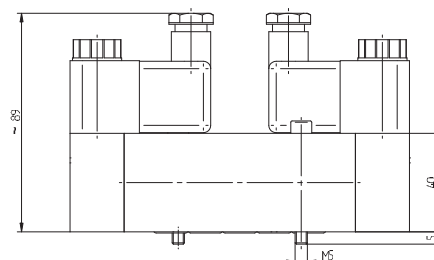
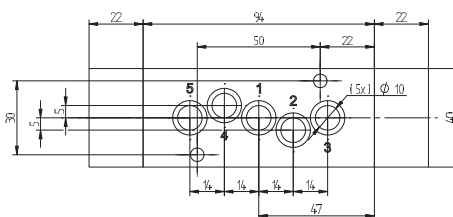
When ordering please complete the type number by 1, 2 or 3 according to the type required.

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

Valves are generally equipped with manual override.
If requested without manual override please order
M 53 ____ (please add 1 digit for type and 3 for size).

Manifolds for valves type 304 and 504 are displayed on page 2.7.2.7. Manifolds for valves type 704 are displayed on page 2.7.2.8 and 2.7.2.9. Manifolds for valves type 104 are displayed on page 2.7.2.10.

Blanking plates are also available:
Type no. BP 5 304, BP 5 504 or BP 5 704.
Mounting screws and seals are included.



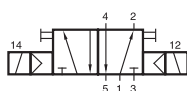
MH 53_104

Type	Port size	Air flow	Operating press.	Power consumption	Weight	
MH 53_ 304	Ø 3 mm	220 l/min	3 - 10 bar	3 W = / 5 VA ~	0,25 kg	❄
MH 53_ 504	Ø 5 mm	650 l/min	3 - 10 bar	3 W = / 5 VA ~	0,27 kg	❄❄MK
MH 53_ 704	Ø 7 mm	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,29 kg	❄❄MK
MH 53_ 104	Ø 10 mm	2250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,80 kg	

MH 510 704 ISO1/MH 520 704 ISO1
RP 5 704 ISO1



MH 510 704 ISO1



MH 520 704 ISO1



5-way solenoid valve and sub-base according to ISO 5599-1 size ISO 1.

Type 510 5/2-way single solenoid, with air spring return

Type 520 5/2-way double solenoid, actuated by impulse

5/3-way centre closed available on request.

Available with solenoid operators:

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

Valves are generally equipped with manual override.

Mounting screws and seals are included.

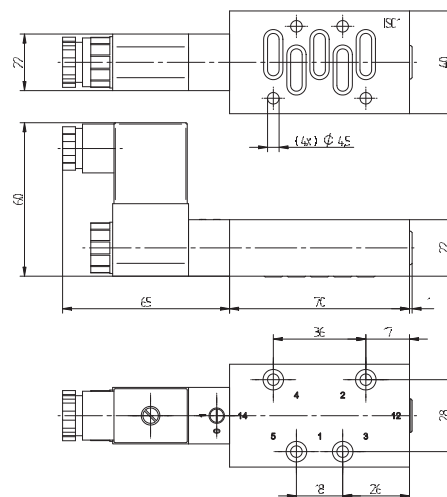
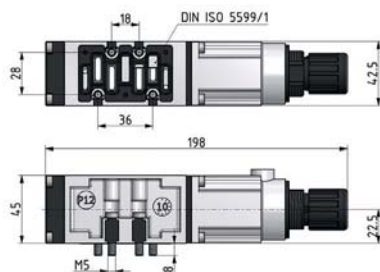
RP 5 704 ISO1

Single sub-base with 5 x G 1/4" threads.

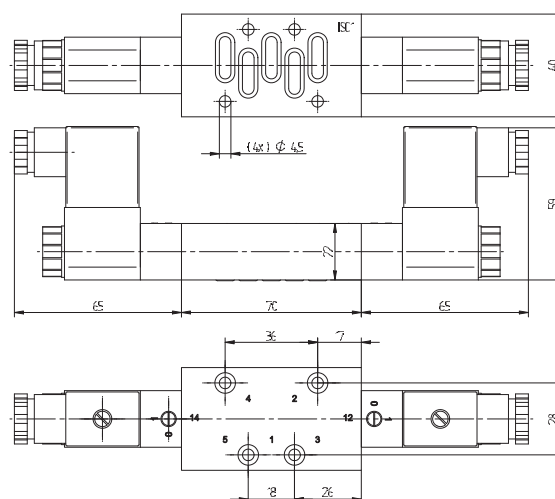
ISO.1 P12

Flange-mounted pressure regulator which can be put between the sub-base and valve.

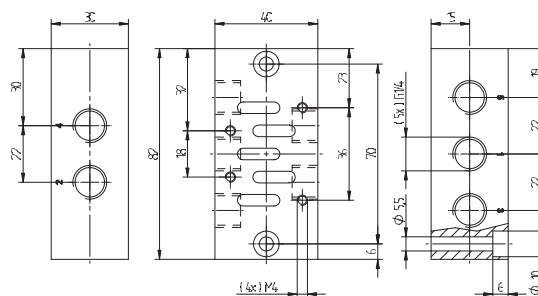
Adjustable pressure range: 0,5 - 10 bar



MH 510 704 ISO1



MH 520 704 ISO1

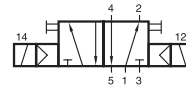


RP 704 ISO1

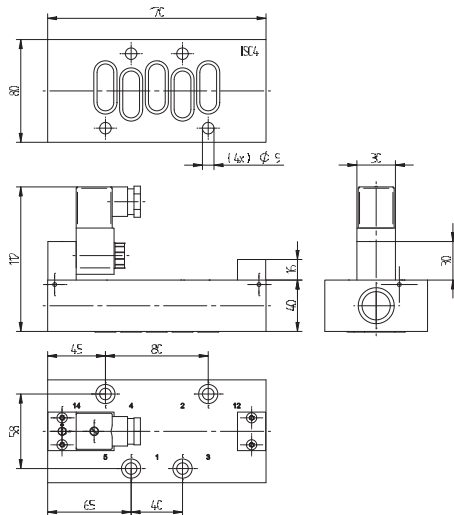
Type	Port size	Air flow	Operating press.	Power consumption	Weight
MH 510 704 ISO 1	Ø 7 mm	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,28 kg
MH 520 704 ISO 1	Ø 7 mm	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,39 kg
RP 5 704 ISO 1	G 1/4"	1250 l/min		3 W = / 5 VA ~	0,23 kg



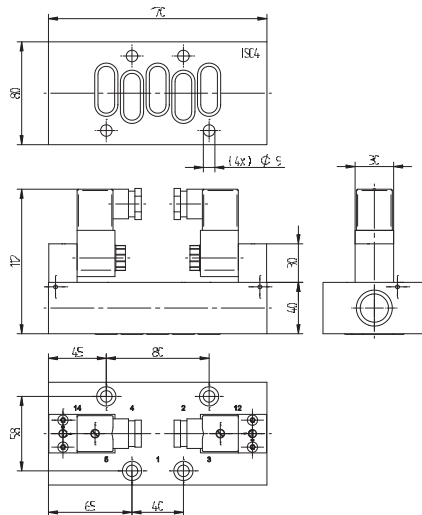
MH 510 184 ISO4



MH 520 184 ISO4



MH 510 184 ISO4



MH 520 184 ISO4



5-way solenoid valve according to ISO 5599-1 size ISO 4.

Type 510 5/2-way single solenoid, with air spring return

Type 520 5/2-way double solenoid, actuated by impulse

5/3-way centre closed available on request.

Valves can be used with industryform B coils (22 mm) type MA 22 displayed on page 2.13.2 as well as Form A coils (30 mm) type MA 30 S9 displayed on page 2.13.4.

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

Valves are generally equipped with manual override.

Mounting screws and seals are included.

Manifolds are displayed on the next page.

Type	Port size	Air flow	Operating press.	Power consumption		Weight
				With MA 22 coils	With MA 30 S9 coils	
MH 510 184 ISO4	Ø 18 mm	6000 l/min	1 - 10 bar	3 W = / 5 VA ~	2 W = / 3 VA ~	1,55 kg
MH 520 184 ISO4	Ø 18 mm	6000 l/min	1 - 10 bar	3 W = / 5 VA ~	2 W = / 3 VA ~	1,70 kg



Modular manifold system according to ISO 5599-1
size ISO 4 with all ports on the bottom.
Plates are designed for assemblage in control
cabinets.

Common connection to port 1 (pressure), 3 (exhaust) and 5 (exhaust). The ports 2 and 4 of the individual valves are also located in the manifold plate. The system can be build up and taken apart by just opening two hexagon socket screws. Additional stations can be added at any position and any time.

The following valves can be assembled to the system
RB 5 184 K ISO4:

5/2 single solenoid	MH 510 184 ISO4 page 2.5.4.1.2
5/2 double solenoid	MH 520 184 ISO4 page 2.5.4.1.2

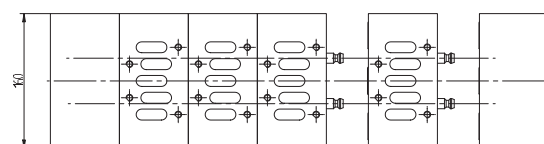
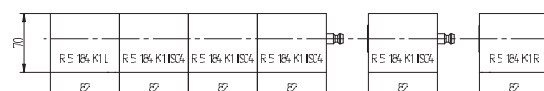
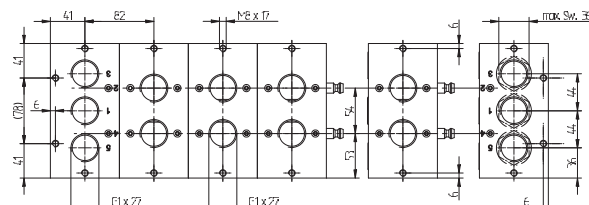
3/2-way functions by closing either port 2 or 4.

The system consists of:

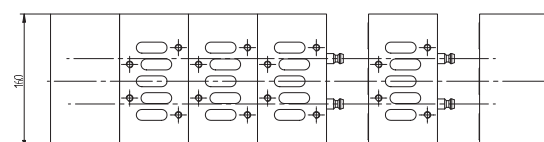
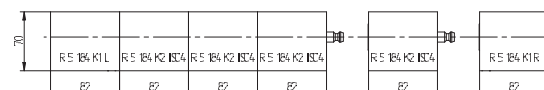
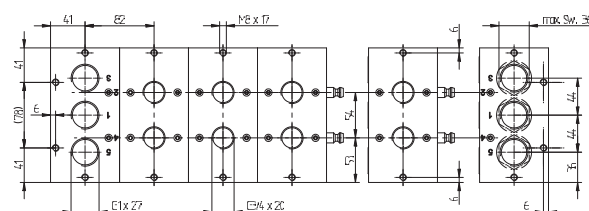
End-plate right	type R 5 184 K1 R
End-plate left	type R 5 184 K1 L
Individual position	type R 5 184 K1 ISO4 with G 1" ports
	type R 5 184 K2 ISO4 with G 3/4" ports

Please note:
End-plates are not offering an individual valve-
position.

The plates can also be ordered assembled by the manufacturer.
In this case order RB 5_ _ 184 K_ ISO4. Please add two digits for the number of positions required and one digit for the thread size.



RB 5 184 K1 ISO4

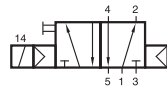


RB 5 184 K2 ISO4

Type	Function	Port size	Weight
R 5 184 K1 R	End-plate right		1,80 kg
R 5 184 K1 L	End-plate left		1,80 kg
R 5 184 K1 ISO4	Individual position	G 1“	1,80 kg
R 5 184 K2 ISO4	Individual position	G 3/4“	1,80 kg

MH 510 714 B/MH 510 714 BT MH 520 714 B/ MH 520 714 BT

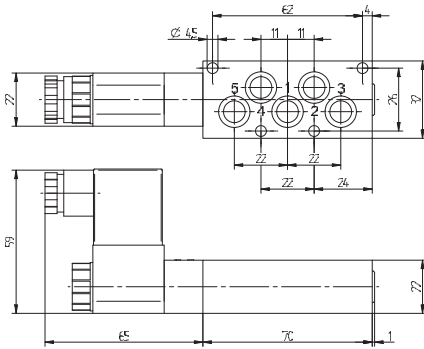
2.5.4.1.4
page 141



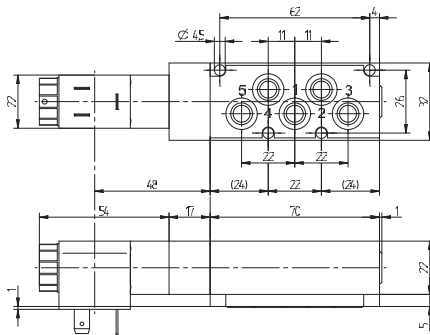
MH 510 714 B
MH 510 714 BT



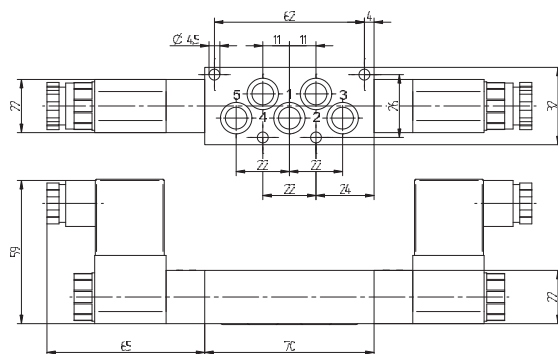
MH 520 714 B
MH 520 714 BT



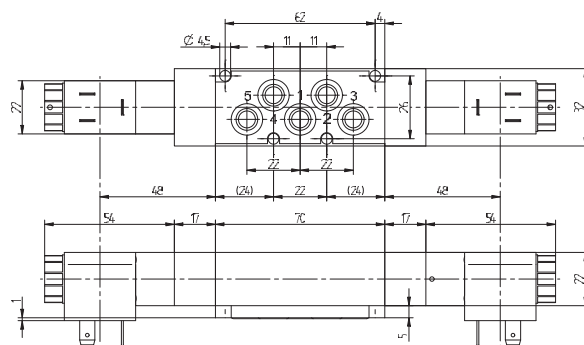
MH 510 714 B



MH 510 714 BT



MH 520 714 B



MH 520 714 BT



5-way solenoid valve with standardized interface which is widely used in packaging machines for bulk materials such as cement.

Type 510 5/2-way single solenoid, with air spring return

Type 520 5/2-way double solenoid, actuated by impulse

Type B For manifold assembly

Type BT For valve terminal assembly, including intermediate plate type ZP 714 BT

Available with solenoid operators:

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

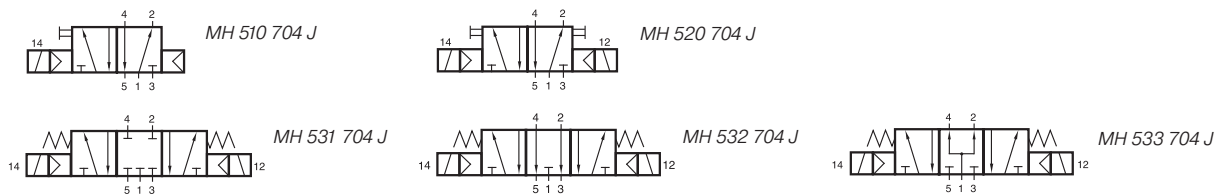
Valves are generally equipped with manual override.

Mounting screws and seals are included.

Type	Usage	Port size	Air flow	Operating press.	Power cons.	Weight
MH 510 714 B	Manifold	Ø 7 mm	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,20 kg
MH 520 714 B	Manifold	Ø 7 mm	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,29 kg
MH 510 714 BT	Valve Terminal	Ø 7 mm	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,30 kg
MH 520 714 BT	Valve Terminal	Ø 7 mm	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,44 kg



MH 510 704 J/MH 520 704 J/MH 53_ 704 J



5-way solenoid valve with standardized interface which is widely used in packaging machines for bulk materials such as cement.

- Type 510 5/2-way single solenoid, with air spring return
- 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

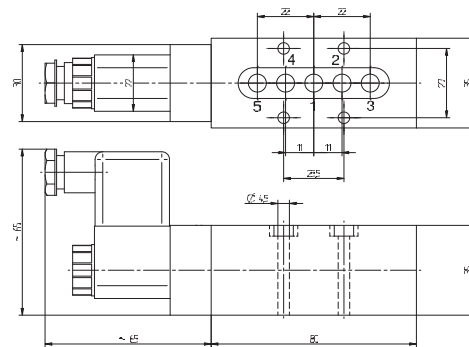
Available with solenoid operators:
230V/50Hz, 110V/50Hz, 48V/50Hz, 24V/50 Hz,
24V=, 12V=.

Valves are generally equipped with manual override.

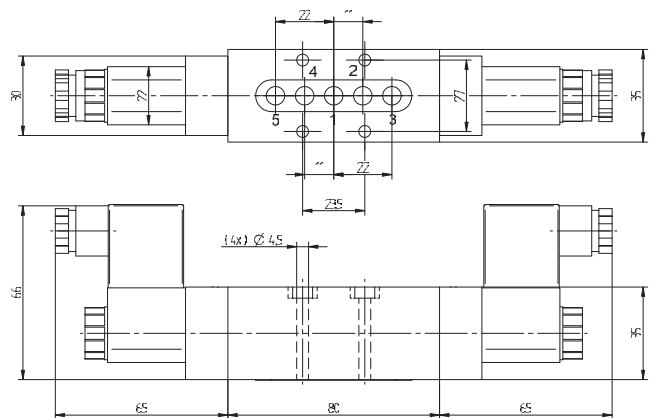
Mounting screws and seals are included.

Pneumatically actuated versions available on request.

Valves can be put onto the single base-plate type R 520 704 J which is displayed on the following page.

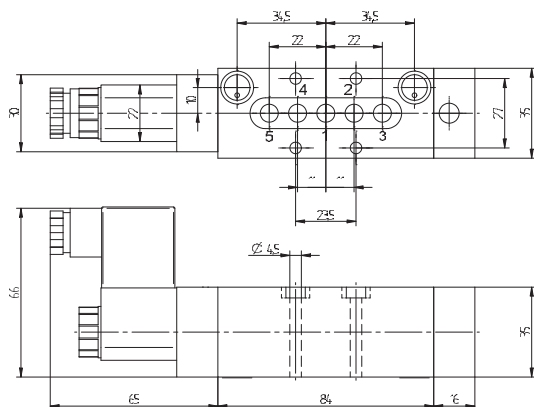
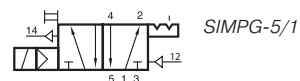


MH 510 704 J

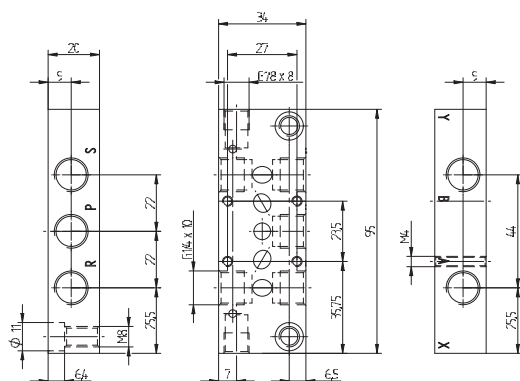


MH 520 704 J/MH 53_ 704 J

Type	Function	Port size	Air flow	Operating press.	Power cons.	Weight
MH 510 704 J	5/2-way single solenoid	Ø 7 mm	1250 l/min	1 - 10 bar	3 W = / 5 VA ~	0,55 kg
MH 520 704 J	5/2-way double solenoid	Ø 7 mm	1250 l/min	1 - 10 bar	3 W = / 5 VA ~	0,68 kg
MH 531 704 J	5/3-way centre closed	Ø 7 mm	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,68 kg
MH 532 704 J	5/3-way centre exhausted	Ø 7 mm	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,68 kg
MH 533 704 J	5/3-way centre pressurized	Ø 7 mm	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,68 kg



SIMPG-5/1



R 520 704 J



SIMPG-5/1

5/2-way bistable valve with detent in both positions. Electric signal at 14 actuates the valve, the spool locks. If the electric signal is taken away, the valve stays in this position.

A pneumatic signal has to be applied to port 12 to change the position again.

Pilot port 14 is not an external pilot feed but an additional signal can be taken, when solenoid is actuated.

Valves can be used with industryform B coils (22 mm) type MA 22 displayed on page 2.13.2 as well as Form A coils (30 mm) type MA 30 S9 displayed on page 2.13.4.

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

Valve is generally equipped with manual override.

Mounting screws and seals are included.

Pneumatically actuated versions available on request.

R 520 704 J

Single base-plate for valves type MH 5_ 704 J and SIMPG-5/1.

Type	Port size	Air flow	Operating press.	Power consumption	Weight
SIMPG-5/1	Ø 7 mm	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,34 kg
R 520 704 J	G 1/4"	1250 l/min			0,20 kg

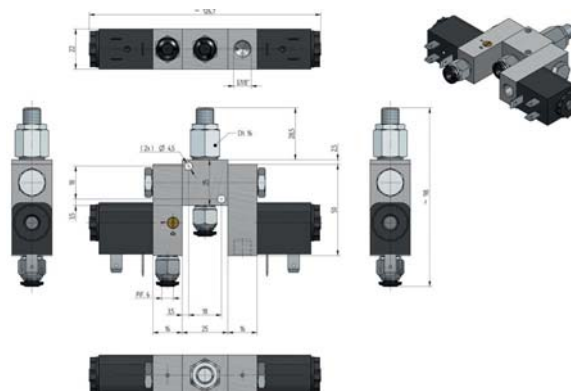
Hafner where non-standard is standard

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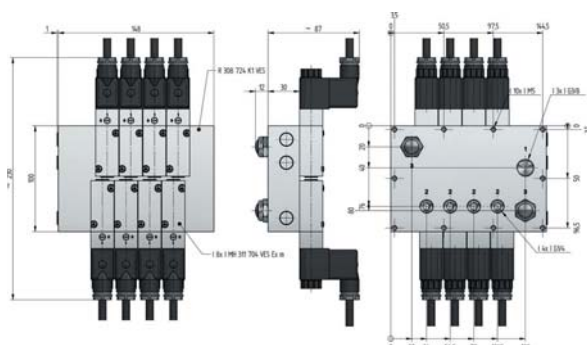


Our experienced and highly motivated team of engineers will assist in providing solutions for specialized applications, often modifying standard products to keep prices competitive. We realize components as well as systems. The modular design of the Hafner valves helps to manufacture non-standard items in an economic manor.

Examples of customized solutions:

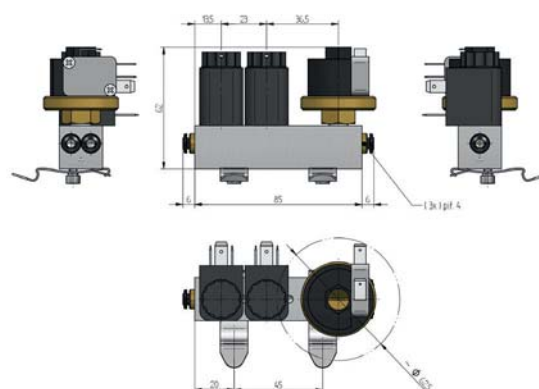


Two direct acting valves combined to control pneumatic cylinders as well as an inflatable seal in disinfectors. The solution ensures that the door remains closed even in case of pressure loss. The unit also includes a pressure safety valve.

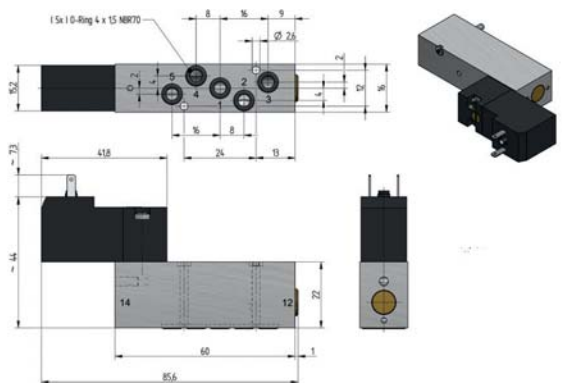


Stainless steel manifold solutions designed for oil rigs. The systems offer:

- Redundancy
- ATEX-certification for explosion hazardous environment
- SIL 3 certification



Valve for pressing machines designed according to customer specifications with bar code and type number.



Valve used in road sweepers designed for usage in limited space and for high temperatures of up to +80°C.

