

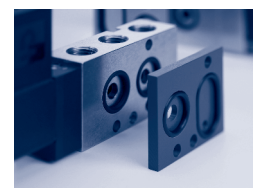
# 2.12

## „Heavy Metal“ Stainless Steel Valves

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



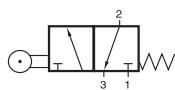
316



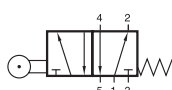
Selected models are available for low temperature application. For detailed information refer to chapter 2.11.

HAFNER

# BR 311 501 VES/BR 511 701 VES



BR 311 501 VES



BR 511 701 VES



Mechanically actuated roller-lever spool valve with mechanical spring.

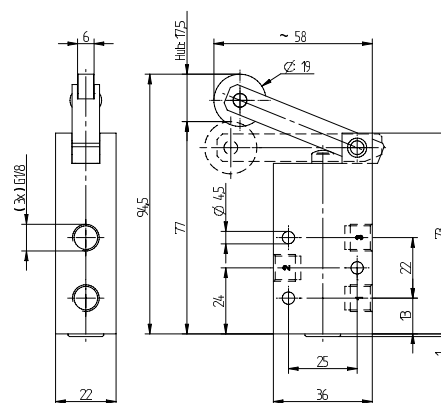
BR 311 501 VES 3/2-way n.c.

BR 511 701 VES 5/2-way

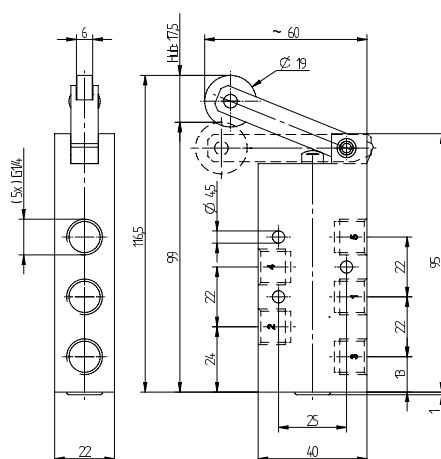
Exhaust can be throttled.

Due to the specific design of the internal parts pressure has to be applied to port 1. For other versions please contact the manufacturer.

Also available with a short stainless steel lever.



BR 311 501 VES

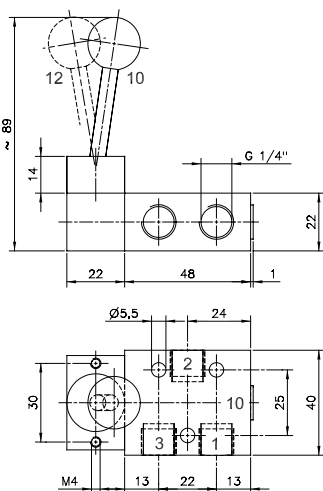
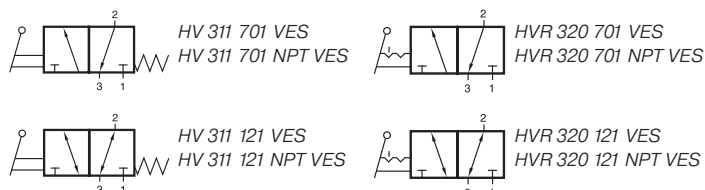


BR 511 701 VES

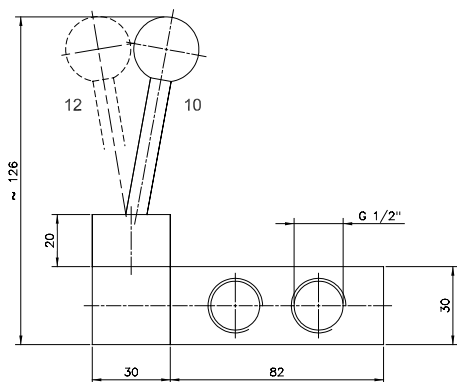
Type	Port size	Air flow	Operating press.	Actuating force	Weight
BR 311 501 VES	G 1/8"	650 l/min	1 - 10 bar	5 N	0,45 kg
BR 511 701 VES	G 1/4"	1250 l/min	1 - 10 bar	5 N	0,55 kg



# HV 311 701 VES/HVR 320 701 VES HV 311 121 VES/HVR 320 121 VES



**HV 311 701 VES/HVR 320 701 VES  
HV 311 701 NPT VES/HVR 320 701 NPT VES**



**HV 311 121 VES/HVR 320 121 VES  
HV 311 121 NPT VES/HVR 320 121 NPT VES**



Lever actuated 3/2-way spool valve.

Body parts are made from stainless steel 316L / 1.4404, seals FKM/PUR (series 701).

Type HV spring return  
Type HVR indexed

Series 701:  
Due to the specific design of the internal parts pressure has to be applied to port 1. For other versions please contact the manufacturer.

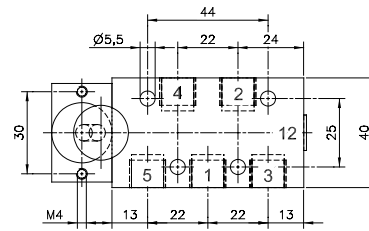
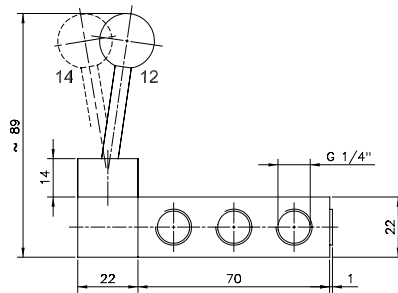
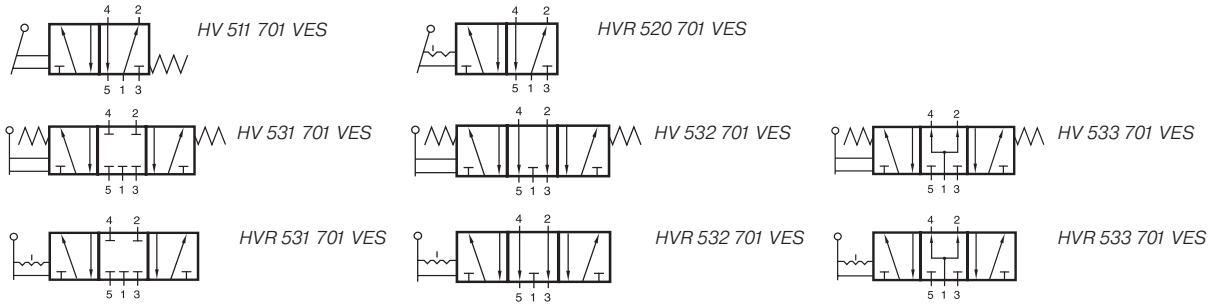
Series 121:  
Can be used normally closed and normally open.

Exhaust can be throttled.

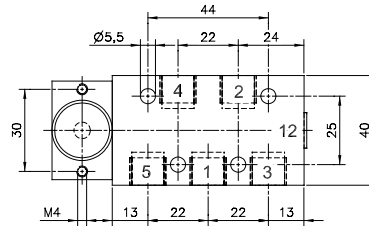
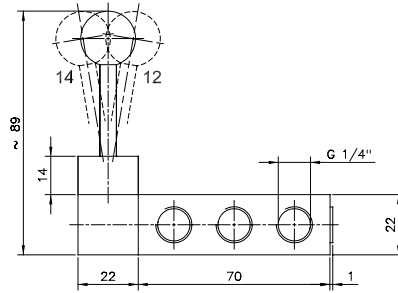
Type	Function	Port size	Air flow	Operating press.	Act. force	Weight
HV 311 701 VES	spring ret.	G 1/4"	1250 l/min	1 - 10 bar	20 N	0,35 kg
HVR 320 701 VES	indexed	G 1/4"	1250 l/min	1 - 10 bar	20 N	0,35 kg
HV 311 701 NPT VES	spring ret.	1/4" NPT	1250 l/min	1 - 10 bar	20 N	0,35 kg
HVR 320 701 NPT VES	indexed	1/4" NPT	1250 l/min	1 - 10 bar	20 N	0,35 kg
HV 311 121 VES	spring ret.	G 1/2"	3000 l/min	1 - 10 bar	32 N	1,10 kg
HVR 320 121 VES	indexed	G 1/2"	3000 l/min	1 - 10 bar	32 N	1,10 kg
HV 311 121 NPT VES	spring ret.	1/2" NPT	3000 l/min	1 - 10 bar	32 N	1,10 kg
HVR 320 121 NPT VES	indexed	1/2" NPT	3000 l/min	1 - 10 bar	32 N	1,10 kg



# HV 511 701 VES/HVR 520 701 VES HV 53\_ 701 VES/HVR 53\_ 701 VES



HV 511 701 VES/HVR 520 701 VES



HV\_53\_701 VES

Lever actuated 5/2-way and 5/3-way spool valves.

Body parts are made from stainless steel 316L / 1.4404, seals PUR and FKM.

Type HV                    spring return  
Type HVR                  indexed

Type 511 and 520		5/2-way
Type 531	centre closed	5/3-way
Type 532	centre exhausted	5/3-way
Type 533	centre pressurized	5/3-way

The lever is sealed by using a metal ball.

Exhaust can be throttled.

NPT ported valves are available on request.

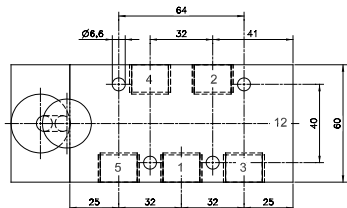
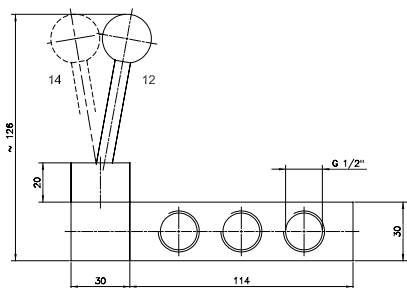
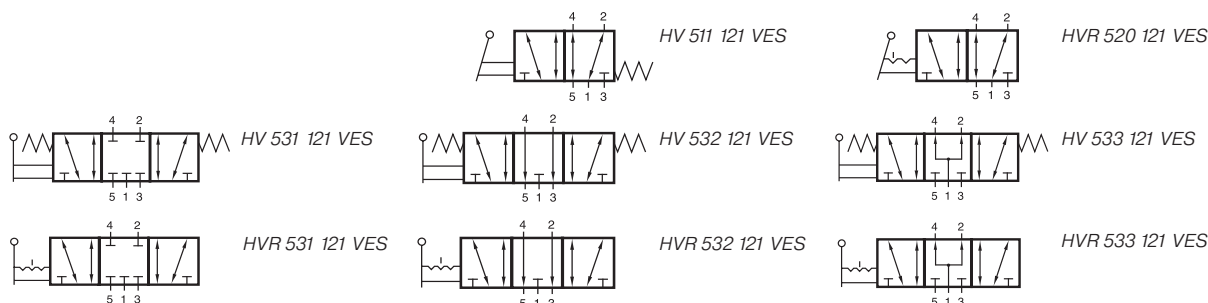
Due to the specific design of the internal parts pressure has to be applied to port 1. For other versions please contact the manufacturer.

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

Type	Function	Port size	Air flow	Operating press.	Act. force	Weight
HV 511 701 VES	Spring ret.	G 1/4"	1250 l/min	1- 10 bar	20 N	0,50 kg
HVR 520 701 VES	Indexed	G 1/4"	1250 l/min	1- 10 bar	20 N	0,50 kg
HV 53_ 701 VES	Spring ret.	G 1/4"	1250 l/min	1- 10 bar	20 N	0,50 kg
HVR 53_ 701 VES	Indexed	G 1/4"	1250 l/min	1- 10 bar	20 N	0,50 kg



# HV 511 121 VES/HVR 520 121 VES HV 53\_ 121 VES/HVR 53\_ 121 VES



**HV 511 121 VES/HVR 520 121 VES**  
**HV 511 121 VES NPT/HVR 520 121 VES NPT**



Lever actuated 5/2-way and 5/3-way spool valves.

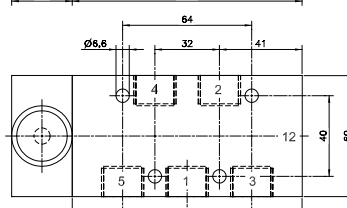
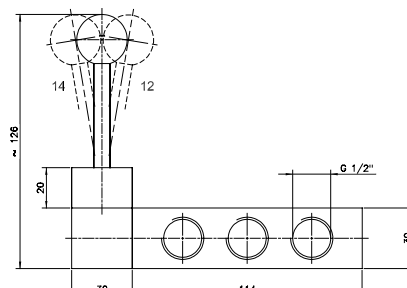
Body parts are made from stainless steel 316L / 1.4404, seals FKM.

Type HV                    spring return  
Type HVR                indexed

Type 511 and 520		5/2-way
Type 531	centre closed	5/3-way
Type 532	centre exhausted	5/3-way
Type 533	centre pressurized	5/3-way

The lever is sealed by using a metal ball.

Exhaust can be throttled.

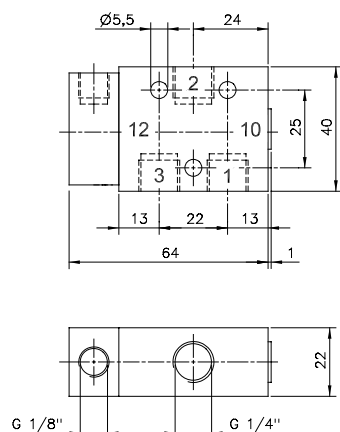
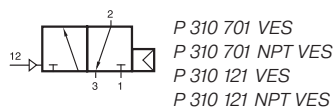


**HV\_53\_ 121 VES/HV\_53\_ 121 VES NPT**

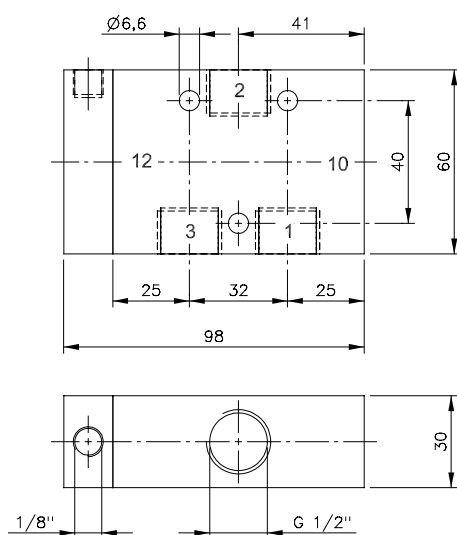
Type	Function	Port size	Air flow	Operating press.	Act. force	Weight
HV 511 121 VES	Spring ret.	G 1/2"	3000 l/min	1 - 10 bar	32 N	1,60 kg
HVR 520 121 VES	Indexed	G 1/2"	3000 l/min	1 - 10 bar	32 N	1,60 kg
HV 53_ 121 VES	Spring ret.	G 1/2"	3000 l/min	1 - 10 bar	32 N	1,60 kg
HVR 53_ 121 VES	Indexed	G 1/2"	3000 l/min	1 - 10 bar	32 N	1,60 kg
HV 511 121 NPT VES	Spring ret.	1/2" NPT	3000 l/min	1 - 10 bar	32 N	1,60 kg
HVR 520 121 NPT VES	Indexed	1/2" NPT	3000 l/min	1 - 10 bar	32 N	1,60 kg
HV 53_ 121 NPT VES	Spring ret.	1/2" NPT	3000 l/min	1 - 10 bar	32 N	1,60 kg
HVR 53_ 121 NPT VES	Indexed	1/2" NPT	3000 l/min	1 - 10 bar	32 N	1,60 kg



# P 310 701 VES/P 311 701 VES P 310 121 VES/P 311 121 VES



**P 310 701 VES/ P 311 701 VES  
P 310 701 NPT VES/ P 311 701 NPT VES**



**P 310 121 VES/ P 311 121 VES  
P 310 121 NPT VES/ P 311 121 NPT VES**



Pneumatically actuated 3/2-way spool valve.

Body parts are made from stainless steel 316L / 1.4404, seals in FKM / PUR (series 701).

Type P 310 \_\_\_ VES single pilot valve with air-spring-return.

Operating pressure and actuating pressure should be at the same level.

Type P 311 701 VES single pilot valve with combined spring return.

Type P 311 121 VES single pilot valve with mechanic spring return.

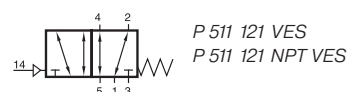
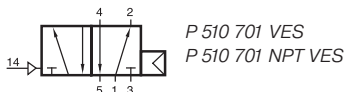
Double pilot valves are available on request.

Exhaust can be throttled.

For 1/4"-size: Due to the specific design of the internal parts pressure has to be applied to port 1. For other versions (e.g. normally open) please contact the manufacturer.

Type	Port size	Air flow	Operating press.	Actuating press.	Weight	
P 310 701 VES	G 1/4"	1250 l/min	2 - 10 bar	the same	0,35 kg	☼☼
P 311 701 VES	G 1/4"	1250 l/min	2 - 10 bar	3 - 10 bar	0,35 kg	☼
P 310 701 NPT VES	G 1/4"	1250 l/min	2 - 10 bar	the same	0,35 kg	☼☼
P 311 701 NPT VES	G 1/4"	1250 l/min	2 - 10 bar	3 - 10 bar	0,35 kg	☼
P 310 121 VES	G 1/2"	3000 l/min	2 - 10 bar	the same	1,20 kg	☼
P 311 121 VES	G 1/2"	3000 l/min	2 - 10 bar	3 - 10 bar	1,20 kg	
P 310 121 NPT VES	G 1/2"	3000 l/min	2 - 10 bar	the same	1,20 kg	☼
P 311 121 NPT VES	G 1/2"	3000 l/min	2 - 10 bar	3 - 10 bar	1,20 kg	

# P 510 701 VES/P 511 701 VES P 510 121 VES/P 511 121 VES



Pneumatically actuated 5/2-way spool valve.

Body parts are made from stainless steel 316L / 1.4404, rubber parts FKM, PUR (series 701).

Type P 510 \_\_\_ VES single pilot valve with air-spring-return.

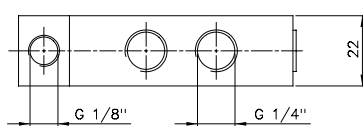
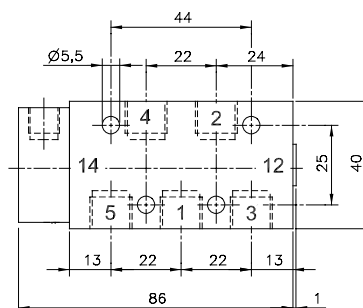
Operating pressure and actuating pressure should be at the same level.

Type P 511 701 VES single pilot valve with combined spring return.

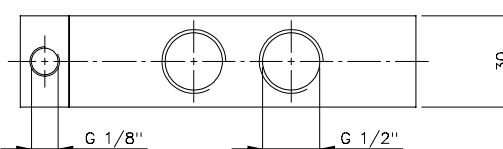
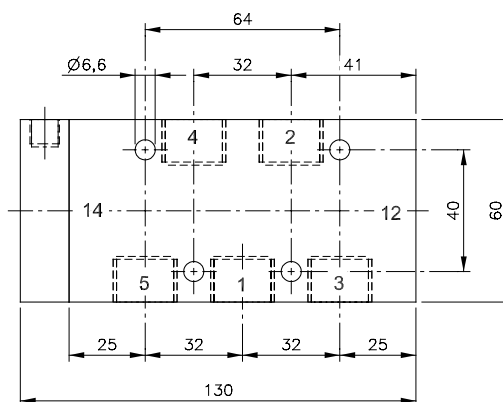
Type P 511 121 VES single pilot valve with mechanic spring return.

Exhaust can be throttled.

For 1/4"-size: Due to the specific design of the internal parts pressure has to be applied to port 1. For other versions (e.g. normally open) please contact the manufacturer.



**P 510 701 VES/P 511 701 VES  
P 510 701 NPT VES/P 511 701 NPT VES**

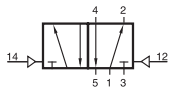


**P 510 121 VES/P 511 121 VES  
P 510 121 NPT VES/P 511 121 NPT VES**

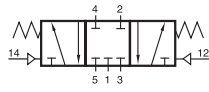
Type	Port size	Air flow	Operating press.	Actuating press.	Weight
P 510 701 VES	G 1/4"	1250 l/min	2 - 10 bar	the same	0,40 kg
P 511 701 VES	G 1/4"	1250 l/min	3 - 10 bar	3 - 10 bar	0,40 kg
P 510 701 NPT VES	1/4" NPT	1250 l/min	2 - 10 bar	the same	0,40 kg
P 511 701 NPT VES	1/4" NPT	1250 l/min	2 - 10 bar	3 - 10 bar	0,40 kg
P 510 121 VES	G 1/2"	3000 l/min	3 - 10 bar	the same	1,50 kg
P 511 121 VES	G 1/2"	3000 l/min	2 - 10 bar	3 - 10 bar	1,50 kg
P 510 121 NPT VES	1/2" NPT	3000 l/min	3 - 10 bar	the same	1,50 kg
P 511 121 NPT VES	1/2" NPT	3000 l/min	2 - 10 bar	3 - 10 bar	1,50 kg



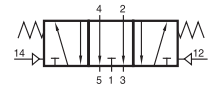
P 520 701 VES/P 53\_ 701 VES  
P 520 121 VES/P 53\_ 121 VES



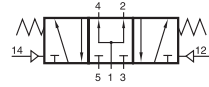
P 520 701 VES  
P 520 121 VES



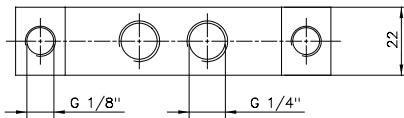
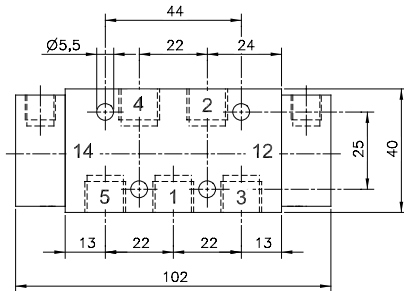
P 531 701 VES  
P 531 121 VES



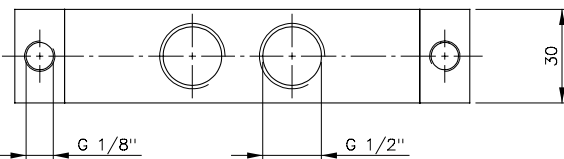
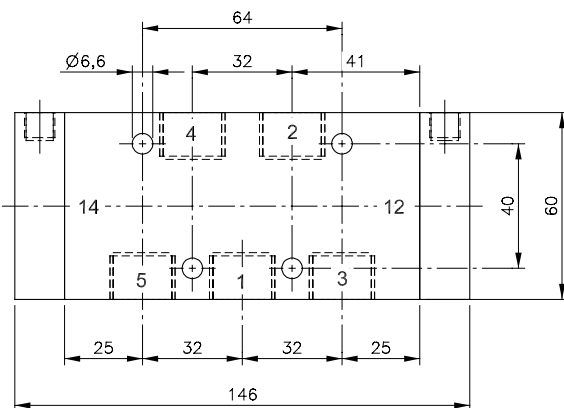
P 532 701 VES  
P 532 121 VES



P 533 701 VES  
P 533 121 VES



P 520 701 VES/ P 53\_ 701 VES  
P 520 701 NPT VES/ P 53\_ 701 NPT VES



P 520 121 VES/ P 53\_ 121 VES

Pneumatically actuated 5/2-way and 5/3-way spool valves, actuated by impulse.

Body parts are made from stainless steel 316L / 1.4404, seals FKM / PUR (series 701).

Type P 520 \_\_\_ VES  
5/2-way double pilot. Position is kept until next pneumatic signal is applied.  
Operating pressure and actuating pressure should be at the same level.

Type P 53\_ 701 and 121 VES  
5/3-way valves.

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

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

For 1/4"-size: Due to the specific design of the internal parts pressure has to be applied to port 1. For other versions please contact the manufacturer.

For type P 531 701 VES: pressure at port 1 has to be >= pressure at 2 and 4. If pressure supply is lost, 2 or 4 can exhaust and actuator might move.

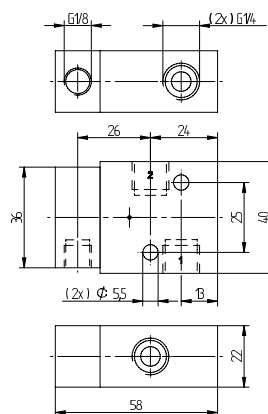
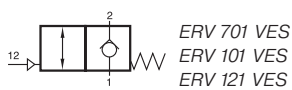
1/2" NPT on request.

Type	Port size	Function	Air flow	Oper. press.	Act. press.	Weight	
P 520 701 VES	G 1/4"	double pilot	1250 l/min	1,5 - 10 bar	the same	0,50 kg	☒☑☑
P 520 701 NPT VES	1/4" NPT	double pilot	1250 l/min	1,5 - 10 bar	the same	0,50 kg	☒☑☑
P 520 121 VES	G 1/2"	double pilot	3000 l/min	1,5 - 10 bar	the same	1,70 kg	☒☑
P 53_ 701 VES	G 1/4"	5/3-way	1250 l/min	1,5 - 10 bar	3,0 - 10 bar	0,50 kg	☒☑☑
P 53_ 701 NPT VES	G 1/4"	5/3-way	1250 l/min	1,5 - 10 bar	3,0 - 10 bar	0,50 kg	☒☑☑
P 53_ 121 VES	G 1/2"	5/3-way	3000 l/min	1,5 - 10 bar	3,0 - 10 bar	1,70 kg	☒☑





# ERV 701 VES/ERV 101 VES/ERV 121 VES



ERV 701 VES

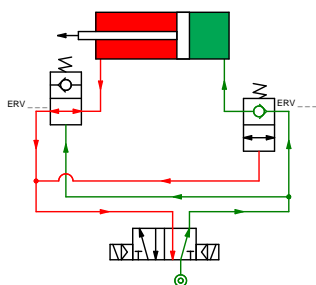
Pilot operated non-return valve.

Port 1 is blocked in basic position, but port 2 can exhaust through port 1.

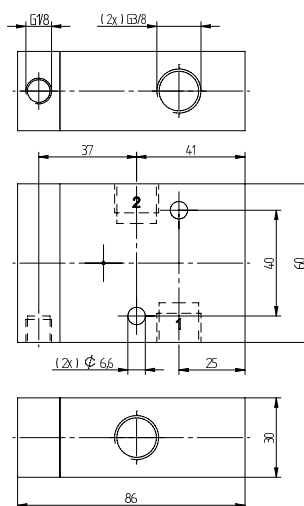
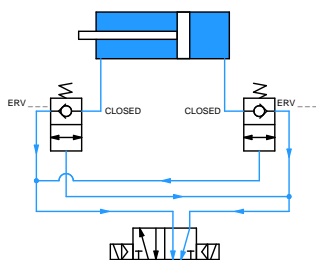
When a pilot signal is applied to port 12, the valve opens from 1 to 2.

Valve can be used to lock the air in a cylinder in case of loss of air pressure.

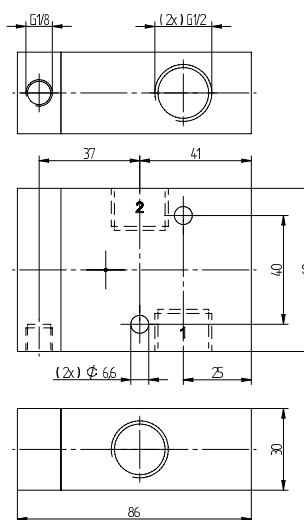
Cylinder in movement:



Pressure loss:



ERV 101 VES



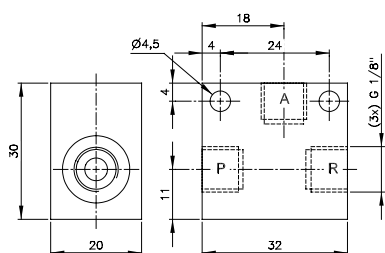
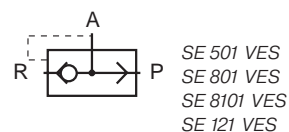
ERV 121 VES

Type	Port size 1 and 2	Port size 12	Air flow	Operating press.	Weight
ERV 701 VES	G 1/4"	G 1/8"	1250 l/min	1 - 10 bar	0,33 kg
ERV 101 VES	G 3/8"	G 1/8"	2250 l/min	1 - 10 bar	0,90 kg
ERV 121 VES	G 1/2"	G 1/8"	3000 l/min	1 - 10 bar	1,20 kg



# SE 501 VES/SE 801 VES SE 8101 VES/SE 121 VES

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SE 501 VES



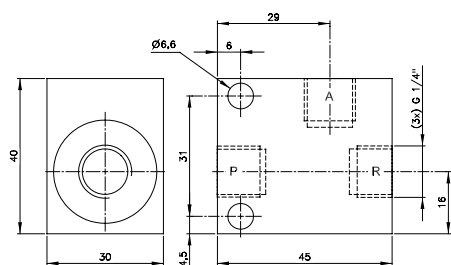
Quick-exhaust valve which can also be used as non-return valve as well as or-gate.

Body parts made from stainless steel 316L / 1.4404, rubber parts from NBR.

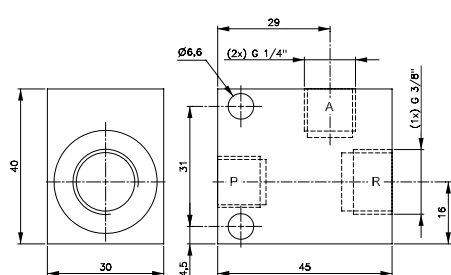
If used as a non-return valve please plug port R. Open from P to A, closed from A to P.

If used as an or-gate connect pressure to P and R. Port A is outlet.

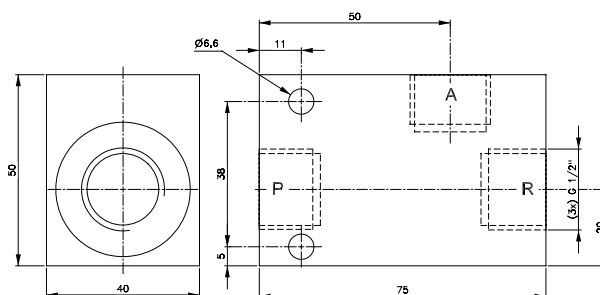
Temperature range: -20° C to +80° C



SE 801 VES



SE 8101 VES

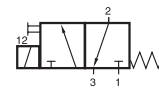


SE 121 VES

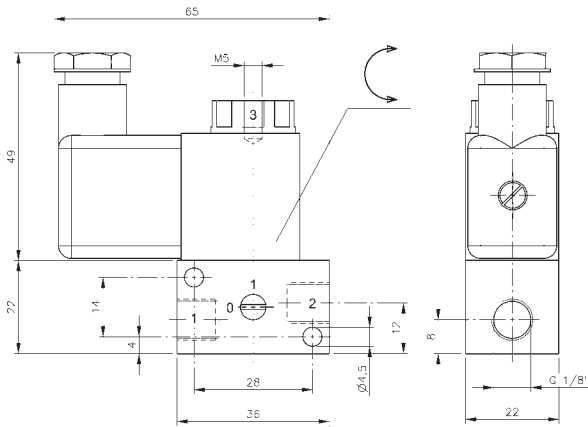
Type	Port size A + P	Port size R	Air flow from A to R	Operating press.	Weight	
SE 501 VES	G 1/8"	G 1/8"	564 l/min	0,3 - 10 bar	0,12 kg	❄
SE 801 VES	G 1/4"	G 1/4"	1188 l/min	0,2 - 10 bar	0,42 kg	❄
SE 8101 VES	G 1/4"	G 3/8"	1188 l/min	0,2 - 10 bar	0,41 kg	❄
SE 121 VES	G 1/2"	G 1/2"	3600 l/min	0,5 - 10 bar	0,84 kg	❄

# MH 311 015 VES

2.12.4.1  
page 260



MH 311 015 VES



MH 311 015 VES



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

Valve body is made from stainless steel, material: 1.4404.  
Plunger-seals are made of FKM.

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

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

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

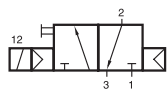
Valves are generally equipped with manual override.

Type	Function	Port size			Air flow	Operation pressure	Power consumption	Weight
		1	2	3				
MH 311 015 VES	n.c.	G 1/8"	G 1/8"	M5	50 l/min	0 - 10 bar	3 W = / 5 VA ~	0,14 kg

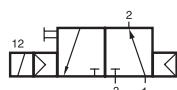


HAFNER

# MH 310 701 VES/MH 310 701 KES MOH 310 701 VES/MOH 310 701 KES



MH 310 701 VES  
MH 310 701 KES  
MH 310 701 NPT VES  
MH 310 701 NPT KES



MOH 310 701 VES  
MOH 310 701 KES  
MOH 310 701 NPT VES  
MOH 310 701 NPT KES

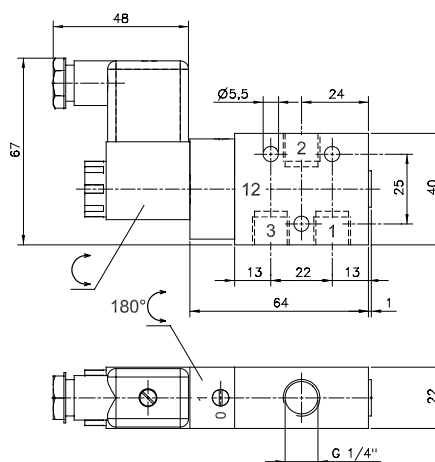


3/2-way solenoid valve normally closed (MH) or normally open (MOH) actuated by permanent signal and equipped with air spring return.

Body parts are made from stainless steel 316L / 1.4404. Customer has the choice between two versions VES and KES, for details refer to the table below.

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

Valves are equipped with manual override to be turned.



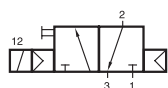
MH 310 701 VES/KES  
MOH 310 701 VES/KES  
MH 310 701 NPT VES/KES  
MOH 310 701 NPT VES/KES

Type	Pilot head	Seals	Other rubber parts
VES	1.4404	PUR	FKM
KES	PA	PUR	FKM

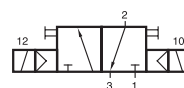
Type	Function	Port size	Air flow	Oper. press.	Power cons.	Weight
MH 310 701 VES	n.c.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,42 kg
MH 310 701 KES	n.c.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,35 kg
MOH 310 701 VES	n.o.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,42 kg
MOH 310 701 KES	n.o.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,35 kg
MH 310 701 NPT VES	n.c.	1/4" NPT	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,42 kg
MH 310 701 NPT KES	n.c.	1/4" NPT	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,35 kg
MOH 310 701 NPT VES	n.o.	1/4" NPT	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,42 kg
MOH 310 701 NPT KES	n.o.	1/4" NPT	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,35 kg



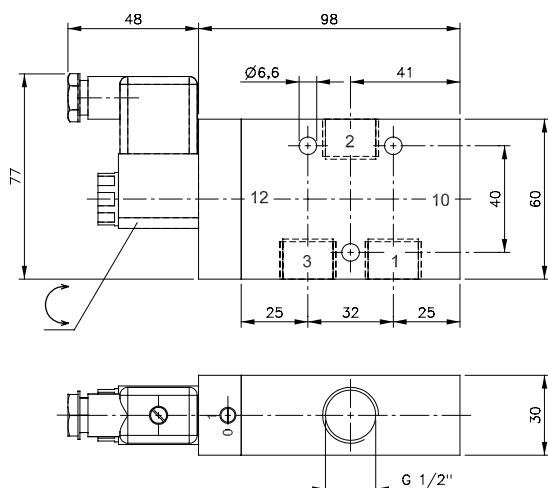
# MH 310 121 VES/MH 320 121 VES



MH 310 121 VES  
MH 310 121 NPT VES



MH 320 121 VES



MH 310 121 VES  
MH 310 121 NPT VES



Type MH 310 121 VES 3/2-way solenoid valve normally closed actuated by permanent signal and equipped with air spring return.

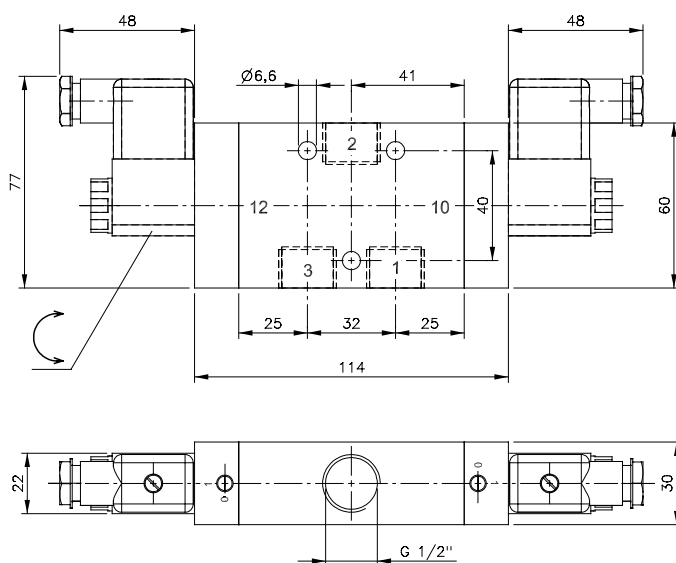
Type MH 320 121 VES 3/2-way double solenoid valve. Position is kept until an electrical signal is applied to the opposite side even when not attached to an electrical source.

Body parts are made from stainless steel 316L / 1.4404, rubber parts are made from FKM.

Valves are available with solenoid operators: 230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=, 24V-, 12V=.

Valves are equipped with manual override to be turned.

Normally open version on request.



MH 320 121 VES

Type	Function	Port size	Air flow	Oper. Press.	Power cons.	Weight
MH 310 121 VES	n.c.	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	1,20 kg
MH 310 121 NPT VES	n.c.	1/2" NPT	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	1,20 kg
MH 320 121 VES	double coil	G 1/2"	3000 l/min	2 - 10 bar	3 W = / 5 VA ~	1,45 kg

# MH 510 701 VES/MH 510 701 KES MH 510 121 VES



MH 510 701 VES/KES  
MH 510 701 NPT VES/KES  
MH 510 121 VES  
MH 510 121 NPT VES



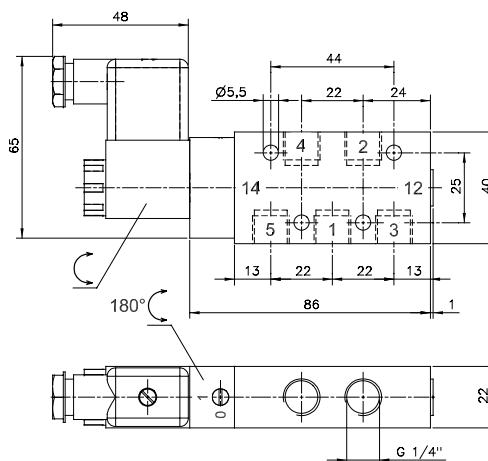
5/2-way solenoid valves actuated by permanent signal and equipped with air spring return.

Body parts are made from stainless steel 316L / 1.4404.

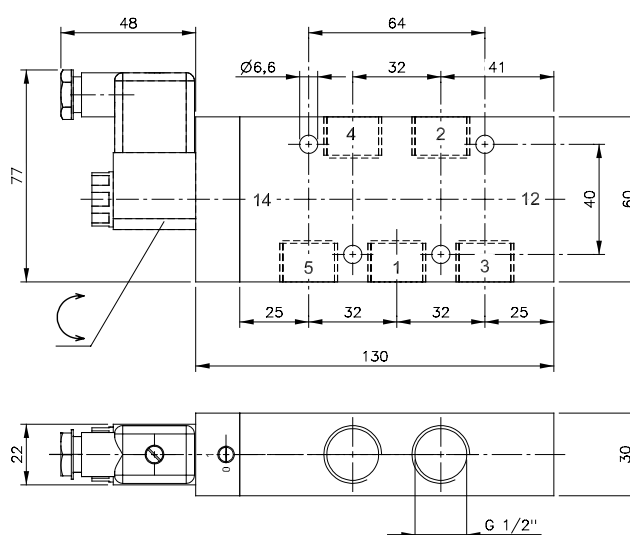
For series 701 the customer has the choice between two versions VES and KES, for details refer to the table below.

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

Valves are equipped with manual override to be turned.



**MH 510 701 VES/KES  
MH 510 701 NPT VES/KES**



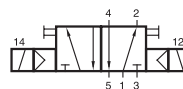
**MH 510 121 VES  
MH 510 121 NPT VES**

Type	Pilot head	Seals	Other rubber parts
701 VES	1.4404	PUR	FKM
701 KES	PA	PUR	FKM
121 VES	1.4404	FKM	FKM

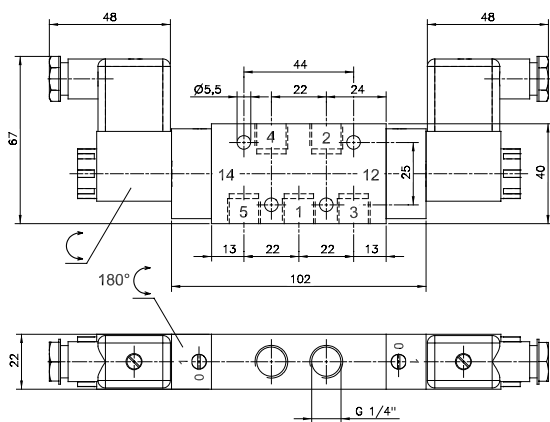
Type	Function	Port size	Air flow	Oper. press.	Power cons.	Weight
MH 510 701 VES	single sol.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,53 kg
MH 510 701 KES	single sol.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,46 kg
MH 510 701 NPT VES	single sol.	1/4" NPT	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,53 kg
MH 510 701 NPT KES	single sol.	1/4" NPT	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,46 kg
MH 510 121 VES	single sol.	G 1/2"	3000 l/min	2 - 10 bar	3 W = / 5 VA ~	1,50 kg
MH 510 121 NPT VES	single sol.	1/2" NPT	3000 l/min	2 - 10 bar	3 W = / 5 VA ~	1,50 kg



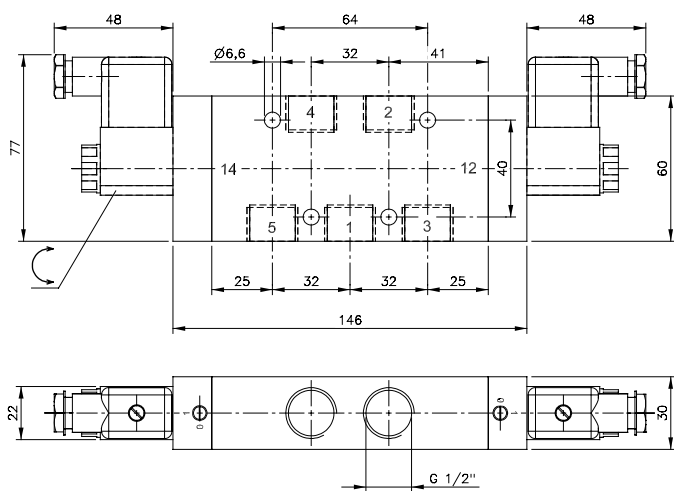
# MH 520 701 VES/MH 520 701 KES MH 520 121 VES



MH 520 701 VES/KES  
MH 520 701 NPT VES/KES  
MH 520 121 VES  
MH 520 121 NPT VES



**MH 520 701 VES/KES  
MH 520 701 NPT VES/KES**



**MH 520 121 VES  
MH 520 121 NPT VES**



5/2-way double solenoid valve.

Position is kept until an electrical signal is applied to the opposite side even when not attached to an electrical source.

Body parts are made from stainless steel 316L / 1.4404, rubber parts FKM, PUR (series 701). Series 701: Customer has the choice between two versions KES and VES, for details refer to the table below.

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

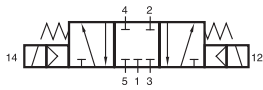
Valves are equipped with manual override to be turned.

Type	Pilot head	Seals	Other rubber parts
701 VES	1.4404	PUR	FKM
701 KES	PA	PUR	FKM
121 VES	1.4404	FKM	FKM

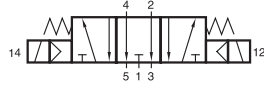
Type	Port size	Air flow	Oper. Press.	Power cons.	Weight
MH 520 701 VES	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,74 kg
MH 520 701 KES	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,60 kg
MH 520 701 NPT VES	1/4" NPT	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,74 kg
MH 520 701 NPT KES	1/4" NPT	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,60 kg
MH 520 121 VES	G 1/2"	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	1,70 kg
MH 520 121 NPT VES	1/2" NPT	3000 l/min	1 - 10 bar	3 W = / 5 VA ~	1,70 kg



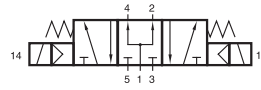
# MH 53\_ 701 VES/MH 53\_ 701 KES MH 53\_ 121 VES



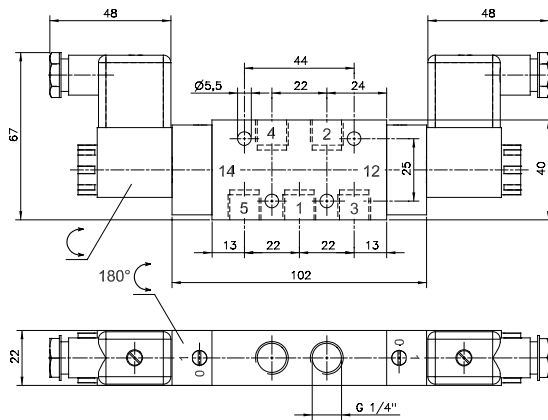
MH 531 701 VES/KES  
MH 531 701 NPT VES/KES  
MH 531 121 VES  
MH 531 121 NPT VES



MH 532 701 VES/KES  
MH 532 701 NPT VES/KES  
MH 532 121 VES  
MH 532 121 NPT VES



MH 533 701 VES/KES  
MH 533 701 NPT VES/KES  
MH 533 121 VES  
MH 533 121 NPT VES



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

Body parts are made from stainless steel 316L / 1.4404.  
Series 701: Customer has the choice between two versions KES and VES, for details refer to the table below.

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

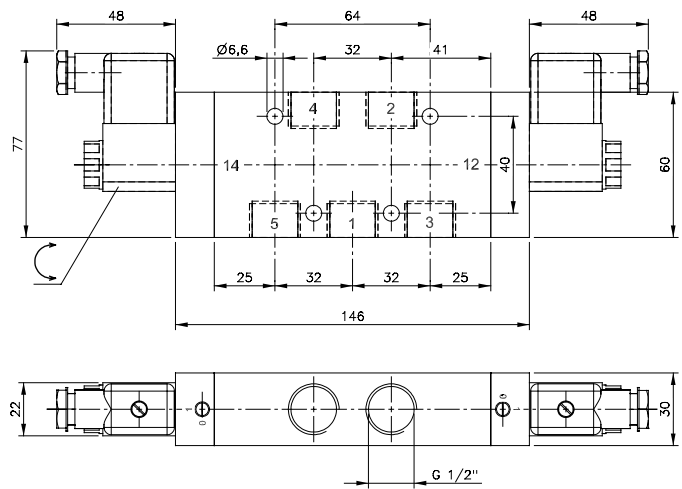
When ordering please complete the type number by 1, 2 or 3 according to the type required.

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

Valves are equipped with manual override to be turned.

For type 531 701: pressure at port 1 has to be >= pressure at 2 and 4. If pressure supply is lost, 2 or 4 can exhaust and actuator might move.

**MH 53\_ 701 VES/KES  
MH 53\_ 701 NPT VES/KES**



**MH 53\_ 121 VES  
MH 53\_ 121 NPT VES**

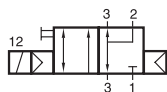
Type	Pilot head	Seals	Other rubber parts
701 VES	1.4404	PUR	FKM
701 KES	PA	PUR	FKM
121 VES	1.4404	FKM	FKM

Type	Port size	Air flow	Oper. Press.	Power cons.	Weight
MH 53_ 701 VES	G 1/4"	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,74 kg
MH 53_ 701 KES	G 1/4"	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,60 kg
MH 53_ 701 NPT VES	1/4" NPT	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,74 kg
MH 53_ 701 NPT KES	1/4" NPT	1250 l/min	3 - 10 bar	3 W = / 5 VA ~	0,60 kg
MH 53_ 121 VES	G 1/2"	3000 l/min	3 - 10 bar	3 W = / 5 VA ~	1,70 kg
MH 53_ 121 NPT VES	1/2" NPT	3000 l/min	3 - 10 bar	3 W = / 5 VA ~	1,70 kg

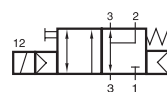




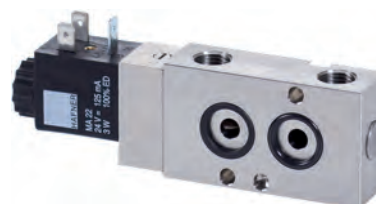
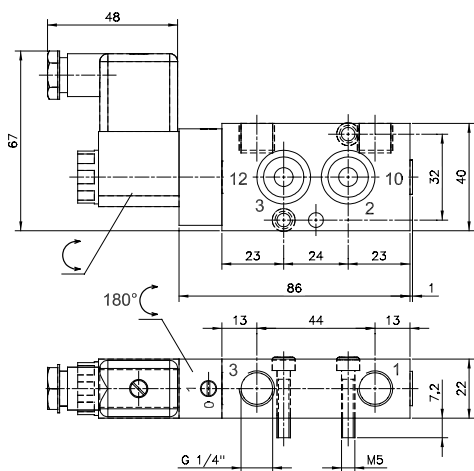
# MNH 310 701 VES/MNH 310 701 KES MNH 311 701 VES/MNH 311 701 KES MNH 310 121 VES/MNH 311 121 VES



MNH 310 701 VES  
MNH 310 701 KES  
MNH 310 701 NPT VES  
MNH 310 701 NPT KES  
MNH 310 121 VES



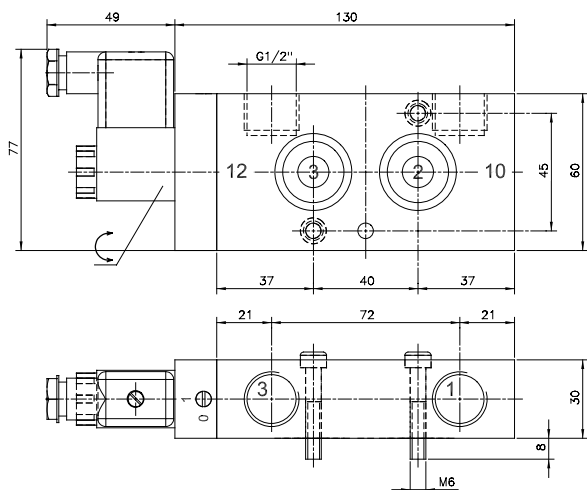
MNH 311 701 VES  
MNH 311 701 KES  
MNH 311 701 NPT VES  
MNH 311 701 NPT KES  
MNH 311 121 VES



3/2-way solenoid valve, actuated by permanent signal. Interface according to NAMUR-standard, with exhaust air recirculation (purge).

**MNH 310 701 VES/KES**  
**MNH 311 701 VES/KES**  
**MNH 310 701 NPT VES/KES**  
**MNH 311 701 NPT VES/KES**

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



**MNH 310 121 VES/MNH 311 121 VES**

Body parts are made from stainless steel 316L / 1.4404.

Series 701: Customer has the choice between two versions VES and KES, for details refer to the table below.

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

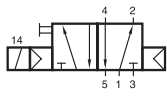
Valves are equipped with manual override to be turned.

Delivery includes 1 pin, 2 screws, 2 O-rings.  
Series 121 with NPT-ports available on request.

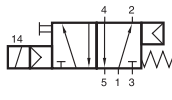
Type	Pilot head	Seals	Other rubber parts
701 VES	1.4404	PUR	FKM
701 KES	PA	PUR	FKM
121 VES	1.4404	FKM	FKM

Type	Function	Port size	Air flow	Oper. press.	Power cons.	Weight
MNH 310 701 VES	air-spring	G 1/4"	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,57 kg ❄️
MNH 310 701 KES	air-spring	G 1/4"	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,49 kg
MNH 311 701 VES	comb. spring	G 1/4"	1250 l/min	2,5 - 10 bar	3 W = / 5 VA ~	0,57 kg ❄️
MNH 311 701 KES	comb. spring	G 1/4"	1250 l/min	2,5 - 10 bar	3 W = / 5 VA ~	0,49 kg
MNH 310 701 NPT VES	air-spring	1/4" NPT	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,57 kg ❄️
MNH 310 701 NPT KES	air-spring	1/4" NPT	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,49 kg
MNH 311 701 NPT VES	comb. spring	1/4" NPT	1250 l/min	2,5 - 10 bar	3 W = / 5 VA ~	0,57 kg ❄️
MNH 311 701 NPT KES	comb. spring	1/4" NPT	1250 l/min	2,5 - 10 bar	3 W = / 5 VA ~	0,49 kg
MNH 310 121 VES	air-spring	G 1/2"	3000 l/min	1,5 - 10 bar	3 W = / 5 VA ~	1,50 kg ⚠️
MNH 311 121 VES	comb. spring	G 1/2"	3000 l/min	1,5 - 10 bar	3 W = / 5 VA ~	1,50 kg

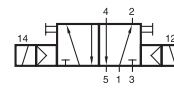
# MNH 510 701 VES/MNH 510 701 KES MNH 511 701 VES/MNH 511 701 KES MNH 520 701 VES/MNH 520 701 KES



MNH 510 701 VES  
MNH 510 701 KES  
MNH 510 701 NPT VES  
MNH 510 701 NPT KES



MNH 511 701 VES  
MNH 511 701 KES  
MNH 511 701 NPT VES  
MNH 511 701 NPT KES



MNH 520 701 VES  
MNH 520 701 KES  
MNH 520 701 NPT VES  
MNH 520 701 NPT KES



5/2-way solenoid valve. Interface according to 1/4" NAMUR-standard.

Type MNH 510 \_\_\_ single solenoid actuated by permanent signal and equipped with air spring return.

Type MNH 520 \_\_\_ double solenoid actuated by impulse. Position is kept until an electric signal is applied to the opposite side even when not attached to an electrical source.

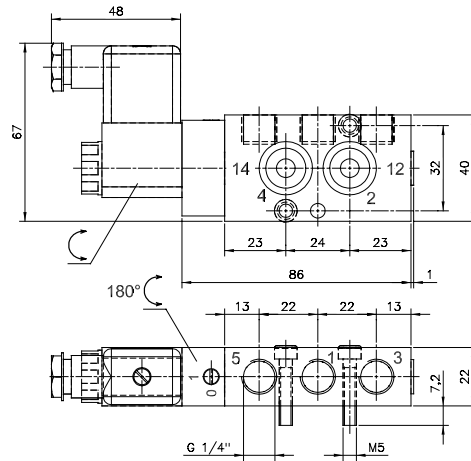
Body parts are made from stainless steel 316L / 1.4404. Customer has the choice between two versions VES and KES, for details refer to the table below.

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

Valves are equipped with manual override to be turned.

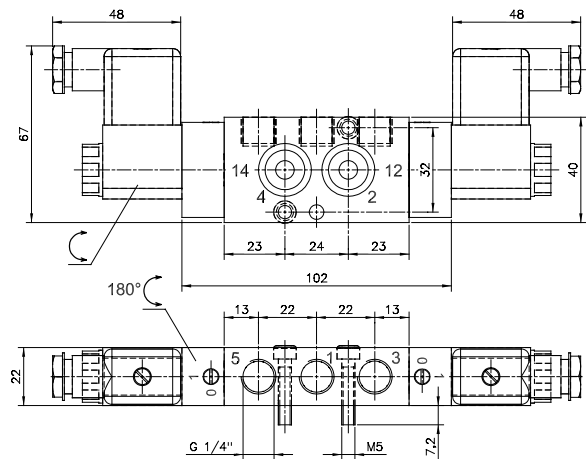
Delivery includes 1 pin, 2 screws, 2 O-rings.

5/3-way valves on request.



MNH 510 701 VES/KES  
MNH 511 701 VES/KES

MNH 510 701 NPT VES/KES  
MNH 511 701 NPT VES/KES



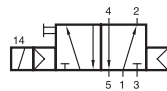
MNH 520 701 VES/KES  
MNH 520 701 NPT VES/KES

Type	Pilot head	Seals	Other rubber parts
VES	1.4404	PUR	FKM
KES	PA	PUR	FKM

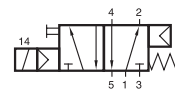
Type	Function	Port size	Air flow	Oper. press.	Power cons.	Weight
MNH 510 701 VES	air-spring	G 1/4"	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,57 kg
MNH 510 701 KES	air-spring	G 1/4"	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,49 kg
MNH 511 701 VES	comb. spring	G 1/4"	1250 l/min	2,5 - 10 bar	3 W = / 5 VA ~	0,57 kg
MNH 511 701 KES	comb. spring	G 1/4"	1250 l/min	2,5 - 10 bar	3 W = / 5 VA ~	0,49 kg
MNH 520 701 VES	double sol.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,67 kg
MNH 520 701 KES	double sol.	G 1/4"	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,58 kg
MNH 510 701 NPT VES	air-spring	1/4" NPT	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,57 kg
MNH 510 701 NPT KES	air-spring	1/4" NPT	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~	0,49 kg
MNH 511 701 NPT VES	comb. spring	1/4" NPT	1250 l/min	2,5 - 10 bar	3 W = / 5 VA ~	0,57 kg
MNH 511 701 NPT KES	comb. spring	1/4" NPT	1250 l/min	2,5 - 10 bar	3 W = / 5 VA ~	0,49 kg
MNH 520 701 NPT VES	double sol.	1/4" NPT	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,67 kg
MNH 520 701 NPT KES	double sol.	1/4" NPT	1250 l/min	2 - 10 bar	3 W = / 5 VA ~	0,58 kg



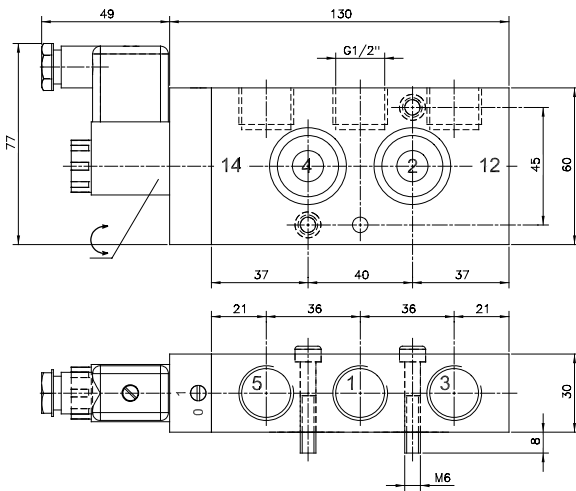
# MNH 510 121 VES/MNH 511 121 VES



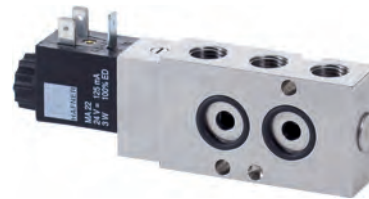
MNH 510 121 VES



MNH 511 121 VES



**MNH 510 121 VES**  
**MNH 511 121 VES**



5/2-way solenoid valve. Interface according to 1/2" NAMUR-standard.

Type MNH 510 \_\_\_ with pneumatic spring return  
Type MNH 511 \_\_\_ with combined spring

Body parts are made from stainless steel 316L / 1.4404.

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

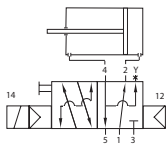
Valves are equipped with manual override to be turned.

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

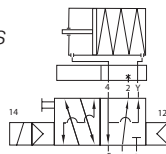
Type	Pilot head	Seals	Other rubber parts
121 VES	1.4404	FKM	FKM

Type	Function	Port size	Air flow	Oper. press.	Power cons.	Weight
MNH 510 121 VES	air-spring	G 1/2"	3000 l/min	1,5 - 10 bar	3 W = / 5 VA ~	1,50 kg
MNH 511 121 VES	comb. spring	G 1/2"	3000 l/min	2,5 - 10 bar	3 W = / 5 VA ~	1,50 kg

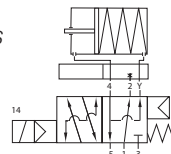
# MNH 350 701 VES/MNH 350 701 KES MNH 351 701 VES/MNH 351 701 KES



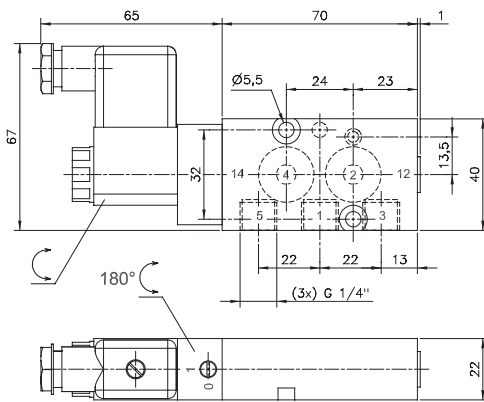
MNH 350 701 VES/KES  
MNH 350 701 NPT VES/KES  
on double acting act.



MNH 350 701 VES/KES  
MNH 350 701 NPT VES/KES  
and Flex-Pack  
on single acting act.

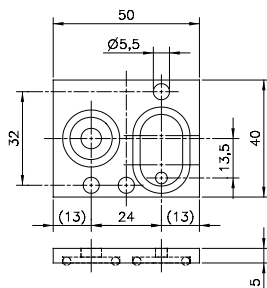


MNH 351 701 VES/KES  
MNH 351 701 NPT VES/KES  
and Flex-Pack  
on single acting act.



MNH 350 701 VES/KES  
MNH 351 701 VES/KES

MNH 350 701 NPT VES/KES  
MNH 351 701 NPT VES/KES



FP 701 K/FP 701 VES



5/2-way solenoid valve, actuated by permanent signal. Interface according to 1/4" NAMUR-standard. Adding the „Flex-Pack“, converts the valve into a 3/2-way NAMUR-valve with exhaust-air recirculation (‘‘purge’’).

MNH 350 701 with pneumatic spring return,  
MNH 351 701 with combined spring.

Body parts are made from stainless steel 316L / 1.4404. Customer has the choice between two versions VES and KES, for details refer to the table below.

Valves are available with solenoid operators:  
230V/50Hz, 110V/50Hz, 24V/50Hz, 48V=,  
24V=, 12V=

Valves are generally equipped with manual override.

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

Instead of the Flex-Pack the „Flex-regulator“ Type DRF 601 converts the function of the valve and offers the possibility to control opening- and closing-speed of a spring-return actuator independently.

Delivery of FP 701 K includes longer screws, seals as well as a plug to close port 3 of the valve.

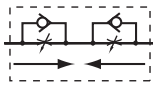
Delivery of FP 701 VES includes longer screws and seals.

Type	Pilot head	Seals	Other rubber parts
VES	1.4404	PUR	FKM
KES	PA	PUR	FKM

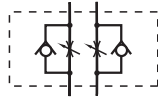
Type	Material	Orifice 4	Orifice 2-3	Weight
FP 701 VES	1.44.04	7 mm	4 mm	0,025 kg

Type	Function	Port size	Air flow	Oper. press.	Power Cons.	Weight
MNH 350 701 VES	air-spring	G 1/4"	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~ 0,57 kg	☼☼
MNH 350 701 KES	air-spring	G 1/4"	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~ 0,49 kg	
MNH 351 701 VES	comb. spring	G 1/4"	1250 l/min	2,5 - 10 bar	3 W = / 5 VA ~ 0,57 kg	☼
MNH 351 701 KES	comb. spring	G 1/4"	1250 l/min	2,5 - 10 bar	3 W = / 5 VA ~ 0,49 kg	
MNH 350 701 NPT VES	air-spring	1/4" NPT	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~ 0,57 kg	☼☼
MNH 350 701 NPT KES	air-spring	1/4" NPT	1250 l/min	1,5 - 10 bar	3 W = / 5 VA ~ 0,49 kg	
MNH 351 701 NPT VES	comb. spring	1/4" NPT	1250 l/min	2,5 - 10 bar	3 W = / 5 VA ~ 0,57 kg	☼
MNH 351 701 NPT KES	comb. spring	1/4" NPT	1250 l/min	2,5 - 10 bar	3 W = / 5 VA ~ 0,49 kg	

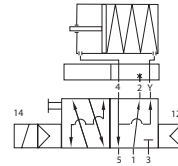
# DRN 3 611 VES/DRN 5 611 VES DRF 3 611 VES



DRN 3 611 VES



DRN 5 611 VES



MNH 350 701  
and Flex Regulator  
DRF 3 611 VES



Block form flow regulator as intermediate plate, interface according to 1/4" NAMUR-standard.

Type DRN 3 611 VES:

For 3/2-way valves with exhaust air recirculation. To regulate the forward stroke of a single acting pneumatic actuator and to regulate the exhaust air going into the spring return unit.

Type DRN 5 611 VES:

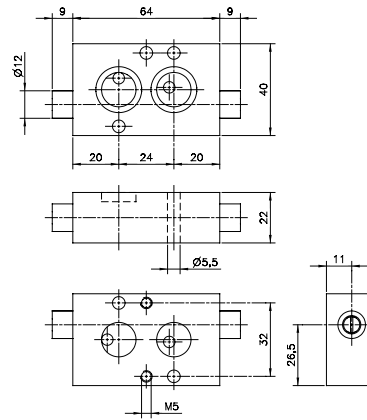
For 5/2 and 5/3 way valves only. To regulate the forward- and backward-stroke of a double acting pneumatic actuator.

Type DRF 3 611 VES:

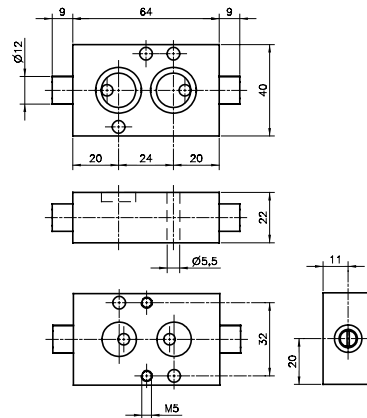
For the Hafner NAMUR-Flex valve. To regulate the forward stroke of a single acting actuator and to regulate the exhaust air going into the spring return unit.

To be operated with a screw-driver.

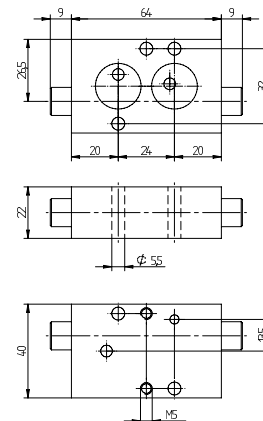
Delivery includes 1 pin, 2 screws, 2 O-Rings.



DRN 3 611 VES



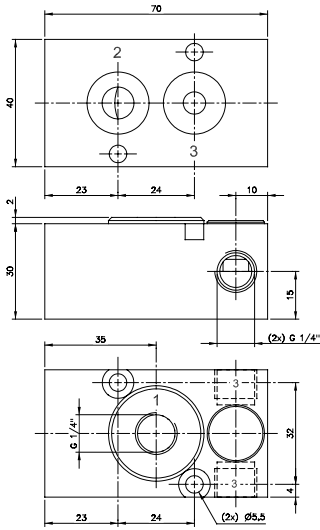
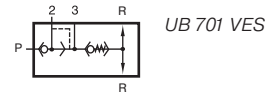
DRN 5 611 VES



DRF 3 611 VES

Type	Function	Port size	Max. air flow	Operating press.	Weight
DRN 3 611 VES	3-way valves	Ø 5mm	650 l/min	0,5 - 10 bar	0,42 kg ❄️
DRN 5 611 VES	5-way valves	Ø 5mm	650 l/min	0,5 - 10 bar	0,42 kg ❄️
DRF 3 611 VES	3-way NAMUR Flex	Ø 5mm	650 l/min	0,5 - 10 bar	0,42 kg

# UB 701 VES



UB 701 VES



The Hafner NAMUR air-recirculation block guarantees, that only exhausting air from the actuation side is going into the spring chamber and for sure no ambient atmosphere.

Valve is designed for spring return pneumatic actuators with 1/4" NAMUR-Interface to be controlled by a remote piloted 3/2-way valve.

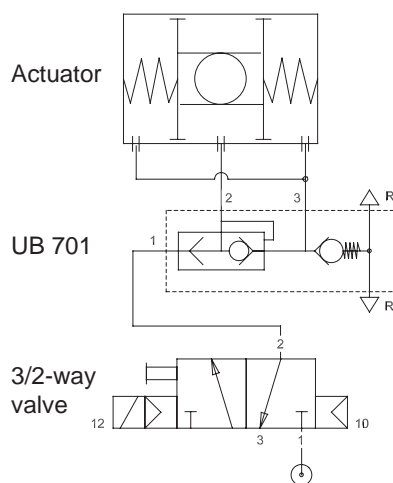
Standard with G 1/4" pilot port. Materials being used:

- Body: Stainless steel 1.4404
- Membrane: NBR
- Other inner parts: Stainless steel 1.4404, 1.4310, 1.4031

One of the two exhaust ports 3 to be closed by a plug. Plug is not included.

Delivery includes 2 screws and 2 O-Rings.

Function:



Type	NAMUR	Port size	Air flow	Operating pressure
UB 701 VES	1/4"	G 1/4"	1250 l/min	1 - 10 bar



## Pneumatically actuated valves in Stainless Steel with NAMUR-interface



Dimensions can be taken from chapter 2.9.2 as technical drawings are identical to the products in aluminum.

Selected products displayed on this page are also available NPT ported.

For 1/4"-size: Due to the specific design of the internal parts pressure has to be applied to port 1.

For type PN 531 701 VES: pressure at port 1 has to be  $\geq$  pressure at 2 and 4. If pressure supply is lost, 2 or 4 can exhaust and actuator might move.

Type	NAMUR Port size		Function	Air flow	Oper. press.	Act. press.
PN 310 701 VES	1/4"	G 1/4" - G 1/8"	3/2-way air ret.	1250 l/min	1,5 - 10 bar	the same
PN 311 701 VES	1/4"	G 1/4" - G 1/8"	3/2-way spring ret.	1250 l/min	3 - 10 bar	2,5 - 10 bar
PN 510 701 VES	1/4"	G 1/4" - G 1/8"	5/2-way air ret.	1250 l/min	1,5 - 10 bar	the same
PN 511 701 VES	1/4"	G 1/4" - G 1/8"	5/2-way spring ret.	1250 l/min	3 - 10 bar	2,5 - 10 bar
PN 520 701 VES	1/4"	G 1/4" - G 1/8"	5/2-way double pil.	1250 l/min	1 - 10 bar	the same
PN 531 701 VES	1/4"	G 1/4" - G 1/8"	5/3-way	1250 l/min	3 - 10 bar	3 - 10 bar