

## SPOOL VALVES Series 400/500

### General

These are 2 stage valves actuated electro-pneumatically. A serie 300 directly operated solenoid valve actuates pneumatically the principal power distributor. This integrated system allows configurations of systems requiring very little space. The pilot air is normally taken from the inlet port (autofeed) and the only actuating signal is electric.

The range of the solenoid valves, as far as dimensions and mechanical construction, is similar to series 200. We have therefore solenoid valves G 1/8", G 1/4", G 1/2" and G 1" with identical pneumatic characteristics that are, however, actuated electrically. They have a balanced spool, insensitive to presence or absence of pressure. They are constructed in 3 and 5 way with 1 solenoid (monostable) or 2 solenoids (bistable) and also 5 ways 3 positions with closed centres, open centres and pressured centres.

It should be noted that the autofeed of the electric pilot requires always inlet through port 1 and if a 3 ways normally open configuration is desired, it is necessary to switch the operators.

In the tables showing individual valves, the quick reference tables show the output in NI/min at a inlet pressure of 6 bar and a pressure drop of 1 bar. All information was obtained using standards CETOP RP 50P.

Solenoid valves G 1/8" and G 1/4" can be equipped with microsolenoids as well as standard solenoids and they can be mounted in line or in 90 degrees on distributors. Please note that while the microsolenoid can be mounted in any direction, standard solenoid requires mounting as indicated in the photographs and diagrams.

**The order codes pertain only to the solenoid valve with mechanical actuator "M2" or solenoid "S\*" already assembled (see Series 300, section 1). (M2 coils are not included and have to be ordered separately).**

**Coils for M2 and solenoids "S"  homologated are available (see Series 300).**



### Construction characteristics

Body	Aluminium
Operators	Aluminium Technopolymer for spring bottom plate G 1/8", G1/4", G 1/2" and aluminium for G 1"
Spools	Stainless steel / Technopolymer fpt Series T488
Seals	NBR Polyurethane compound for oil free applications G 1/8", G 1/4" and G 1/2"
Spacers	Technopolymer (aluminium for G1")
Spring	Stainless steel or spring steel

### Use and maintenance

These valves have an average life of 15 million cycles depending on the application and air quality, filtered and lubricated air using specified lubricants will dramatically reduce the wear of the seals and ensures long and trouble free operation.

Please ensure that the valve is being used according with the manufacturers specification, such as air pressure and temperature and that exhaust ports 3 & 5 are protected against the possible ingress of dirt or debris.

Repair kits including the spool complete with seals are available for overhauling the valves; however, although this is a simple operation it should be carried out by a competent person.

**ATTENTION:** use hydraulic oil class H for lubrication such as MAGNA GC 32 (Castrol).



	Symbol	Description	Code	Max. pressure	Flow at 6 bar, Δp=1	Orifice size
<b>G 1/8"</b> 	3/2	Solenoid - Spring	468.32.0.1.M2	2,5-10 bar	540NI/min	mm 6
		Solenoid - Differential	468.32.0.12.M2			
		Solenoid - Solenoid	468.32.0.0.M2	2-10 bar		
	5/2	Solenoid - Spring	468.52.0.1.M2	2,5-10 bar		
		Solenoid - Differential	468.52.0.12.M2			
		Solenoid - Solenoid	468.52.0.0.M2	2-10 bar		
	5/3	Solenoid - Solenoid - C.C.	468.53.31.0.0.M2	3-10 bar	410NI/min	mm 6
		Solenoid - Solenoid - O.C.	468.53.32.0.0.M2			
		Solenoid - Solenoid - P.C.	468.53.33.0.0.M2			
	3/2	Solenoid - Spring <b>STD</b>	468/1.32.0.1.M2	2,5-10 bar	540NI/min	mm 6
		Solenoid - Differential	468/1.32.0.12.M2			
		Solenoid - Solenoid <b>STD</b>	468/1.32.0.0.M2	2-10 bar		
	5/2	Solenoid - Spring <b>STD</b>	468/1.52.0.1.M2	2,5-10 bar		
		Solenoid - Differential	468/1.52.0.12.M2			
		Solenoid - Solenoid <b>STD</b>	468/1.52.0.0.M2	2-10 bar		
	5/3	Solenoid - Solenoid - C.C. <b>STD</b>	468/1.53.31.0.0.M2	3-10 bar	410NI/min	
		Solenoid - Solenoid - O.C. <b>STD</b>	468/1.53.32.0.0.M2			
		Solenoid - Solenoid - P.C. <b>STD</b>	468/1.53.33.0.0.M2			



	Symbol	Description	Code	Max. pressure	Flow at 6 bar, Δp=1	Orifice size
<b>G 1/4"</b> 	3/2	Solenoid - Spring	464.32.0.1.M2	2,5-10 bar	1360NI/min	mm 8
		Solenoid - Differential	464.32.0.12.M2			
		Solenoid - Solenoid	464.32.0.0.M2	2-10 bar		
	5/2	Solenoid - Spring	464.52.0.1.M2	2,5-10 bar		
		Solenoid - Differential	464.52.0.12.M2			
		Solenoid - Solenoid	464.52.0.0.M2	2-10 bar		
	5/3	Solenoid - Solenoid - C.C.	464.53.31.0.0.M2	3-10 bar	1280NI/min	
		Solenoid - Solenoid - O.C.	464.53.32.0.0.M2			
		Solenoid - Solenoid - P.C.	464.53.33.0.0.M2			
	3/2	Solenoid - Spring <b>STD</b>	464/1.32.0.1.M2	2,5-10 bar	1360NI/min	mm 8
		Solenoid - Differential	464/1.32.0.12.M2			
		Solenoid - Solenoid <b>STD</b>	464/1.32.0.0.M2	2-10 bar		
	5/2	Solenoid - Spring <b>STD</b>	464/1.52.0.1.M2	2,5-10 bar		
		Solenoid - Differential	464/1.52.0.12.M2			
		Solenoid - Solenoid <b>STD</b>	464/1.52.0.0.M2	2-10 bar		
	5/3	Solenoid - Solenoid - C.C. <b>STD</b>	464/1.53.31.0.0.M2	3-10 bar	1280NI/min	
		Solenoid - Solenoid - O.C. <b>STD</b>	464/1.53.32.0.0.M2			
		Solenoid - Solenoid - P.C. <b>STD</b>	464/1.53.33.0.0.M2			

	Symbol	Description	Code	Max. pressure	Flow at 6 bar, Δp=1	Orifice size
<b>Namur Interface</b> 	3/2	Solenoid - Spring <b>STD</b>	514/N.32.0.1.M2	2,5-10 bar	1030NI/min	mm 7
		Solenoid - Differential	514/N.32.0.12.M2			
		Solenoid - Solenoid	514/N.32.0.0.M2	2-10 bar		
	5/2	Solenoid - Spring <b>STD</b>	514/N.52.0.1.M2	2,5-10 bar		
		Solenoid - Differential	514/N.52.0.12.M2			
		Solenoid - Solenoid	514/N.52.0.0.M2	2-10 bar		

Temperature -10 +50°C

Technical modifications keep in reserve !

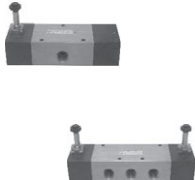



















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# SOLENOID VALVES

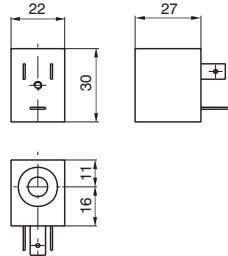
(series 400, section 2)

**PNEUMAX**

	Symbol	Description	Code	Max. pressure	Flow at 6 bar, Δp=1	Orifice size
<b>G 1/2"</b> 	3/2	 Solenoid - Spring	452.32.0.1.M2	2,5-10 bar	3500NI/min	mm 15
		 Solenoid - Differential	452.32.0.12.M2			
		 Solenoid - Solenoid	452.32.0.0.M2	2-10 bar		
	5/2	 Solenoid - Spring	452.52.0.1.M2	2,5-10 bar		
		 Solenoid - Differential	452.52.0.12.M2			
		 Solenoid - Solenoid	452.52.0.0.M2	2-10 bar		
	5/3	 Solenoid - Solenoid - C.C.	452.53.31.0.0.M2	3-10 bar	3000NI/min	
		 Solenoid - Solenoid - O.C.	452.53.32.0.0.M2			
		 Solenoid - Solenoid - P.C.	452.53.33.0.0.M2			
	3/2	 Solenoid - Spring	<b>STD</b> 452/1.32.0.1.M2	2,5-10 bar	3500NI/min	mm 15
		 Solenoid - Differential	452/1.32.0.12.M2	2-10 bar		
		 Solenoid - Solenoid	<b>STD</b> 452/1.32.0.0.M2	2,5-10 bar		
	5/2	 Solenoid - Spring	<b>STD</b> 452/1.52.0.1.M2			
		 Solenoid - Differential	452/1.52.0.12.M2			
		 Solenoid - Solenoid	<b>STD</b> 452/1.52.0.0.M2	3-10 bar		
	5/3	 Solenoid - Solenoid - C.C.	<b>STD</b> 452/1.53.31.0.0.M2			
		 Solenoid - Solenoid - O.C.	<b>STD</b> 452/1.53.32.0.0.M2			
		 Solenoid - Solenoid - P.C.	<b>STD</b> 452/1.53.33.0.0.M2			

## Coil

Coil type U1



Weight 54 gr.

\* Use only with M2/9

Ordering code	Available voltages	Coils
<b>MB 4</b> <b>MB 5</b> <b>MB 6</b>	12 D.C. 24 D.C. 48 D.C.	<b>STD</b> <b>STD</b> <b>STD</b> Direct current
<b>MB 9*</b>	24 D.C. (2 Watt)	(Direct current, low consumption)
<b>MB 17</b> <b>MB 21</b> <b>MB 22</b> <b>MB 24</b>	24/50 48/50 110/50 230/50	<b>STD</b> <b>STD</b> <b>STD</b> <b>STD</b> Alternating current 50 Hz
<b>MB 37</b> <b>MB 39</b> <b>MB 41</b>	24/60 110/60 230/60	Alternating current 60 Hz
<b>MB 56</b> <b>MB 57</b> <b>MB 58</b>	24/50-60 110/50-60 230/50-60	Alternating current 50/60 Hz
<b>MB 66</b> <b>MB 67</b> <b>MB 68</b>	24/50-60 110/50-60 230/50-60	Alternating current (low consumption) 50/60 Hz



Technical modifications keep in reserve !

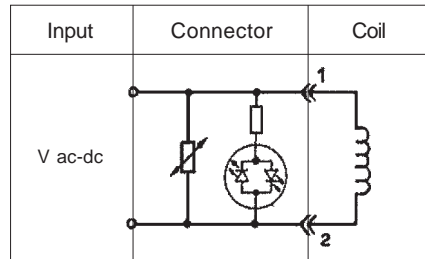
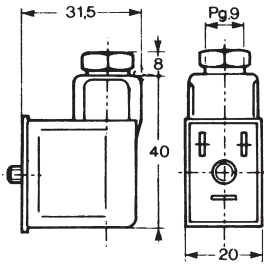
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### Connector for coil (DIN 43650)



Ordering code	Supply voltage until	Coil type	Protection class	Remarks
<b>MP1</b>	0-250V~/300V=	U1	IP 65	CONNECTOR
<b>MP1-LED-24V</b>	24V	U1	IP 65	+LED
<b>MP1-LED-24V-5M</b>	24V	U1	IP 65	+LED+CABLE
<b>MP1-LED-230V</b>	230V	U1	IP 65	+LED

### Electronic circuit for MP-LED



Bipolar LED and VDR to protect supply and switch.  
 (The energy in the coil is limited by the VDR).  
 Voltage: 24 or 230V.



Technical modifications keep in reserve !

(2010/10)



The components illustrated and described in the present catalogue are sold under the trademark **PNEUMAX**. Sales in Italy and abroad are handled through the organization indicated in the "**Sales network pages**". The overall dimensions and technical information are provided solely for information reasons and may be subject to change without notice.

2

<b>Solenoid - Spring</b>	3/2	Ordering code <b>468.1.0.1.M2</b>	5/2	<b>Solenoid - Spring</b>			
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TYPE							
32=3 ways							
52=5 ways							
<p>Weight gr. 240 Minimum working pressure 2,5 bar</p>				<p>Weight gr. 240 Minimum working pressure 2,5 bar</p>			

Operational characteristics					
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10 bar	-5 ÷ +50	540 NI/min	mm 6	G 1/8"

<b>Solenoid - Differential</b>	3/2	Ordering code <b>468.1.0.12.M2</b>	5/2	<b>Solenoid - Differential</b>			
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TYPE							
32=3 ways							
52=5 ways							
<p>Weight gr. 280 Minimum working pressure 2,5 bar</p>				<p>Weight gr. 320 Minimum working pressure 2,5 bar</p>			

Operational characteristics					
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10 bar	-5 ÷ +50	540 NI/min	mm 6	G 1/8"

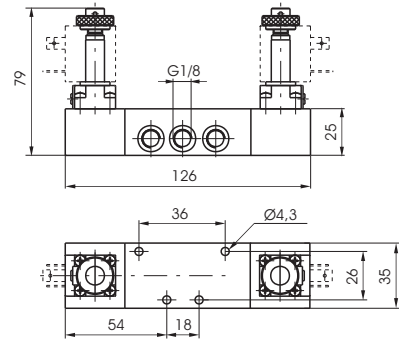
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TYPE							
32=3 ways							
52=5 ways							
<p>Weight gr. 370 Minimum working pressure 2 bar</p>				<p>Weight gr. 410 Minimum working pressure 2 bar</p>			

Operational characteristics					
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10 bar	-5 ÷ +50	540 NI/min	mm 6	G 1/8"

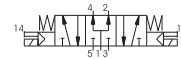
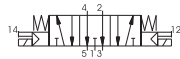
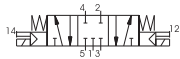
5/3

**Solenoid - Solenoid**

Ordering code
<b>468.53.0.0.M2</b>
FUNCTION
<b>F</b> 31=Closed centres
32=Open centres
33=Pressured centres



Weight gr. 420  
Minimum working pressure 3 bar



**Operational characteristics**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10 bar	-5 ÷ +50	410 NI/min	mm 6	G 1/8"

**3/2 Solenoid - Spring**

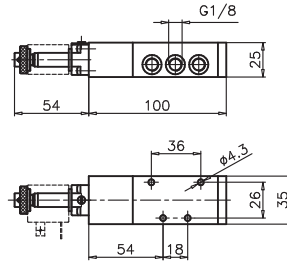
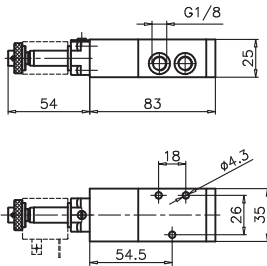
**Ordering code**

**Solenoid - Spring**

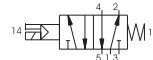
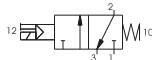
5/2

**468/1.0.0.1.M2**

TYPE
<b>I</b> 32=3 ways
52=5 ways



Weight gr. 240  
Minimum working pressure 2,5 bar



Weight gr. 280  
Minimum working pressure 2,5 bar

**Operational characteristics**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10 bar	-5 ÷ +50	540 NI/min	mm 6	G 1/8"

**3/2 Solenoid - Differential**

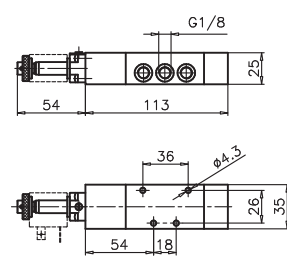
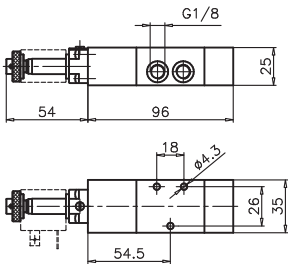
**Ordering code**

**Solenoid - Differential**

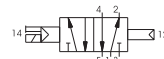
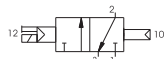
5/2

**468/1.0.0.12.M2**

TYPE
<b>I</b> 32=3 ways
52=5 ways



Weight gr. 280  
Minimum working pressure 2,5 bar


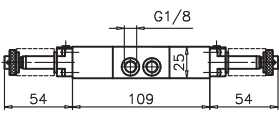
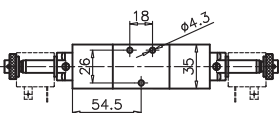

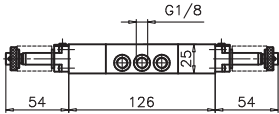
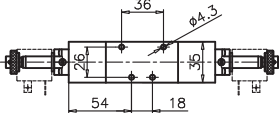
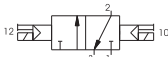
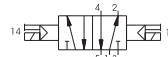



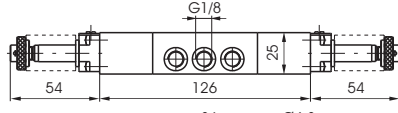
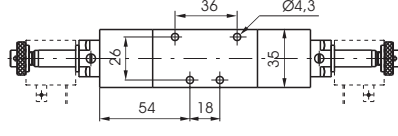
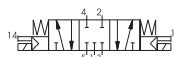

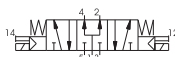
Weight gr. 320  
Minimum working pressure 2,5 bar

**Operational characteristics**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10 bar	-5 ÷ +50	540 NI/min	mm 6	G 1/8"

2

3/2 Solenoid - Solenoid		Ordering code		Solenoid - Solenoid	
		<b>468/1.1.0.0.M2</b>		5/2	
  		<p><b>T</b> TYPE</p> <p>32=3 ways</p> <p>52=5 ways</p>		  	
Weight gr. 370 Minimum working pressure 2 bar		 		Weight gr. 410 Minimum working pressure 2 bar	
<b>Operational characteristics</b>					
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10 bar	-5 ÷ +50	540 NI/min	mm 6	G 1/8"

Solenoid - Solenoid						5/3
Ordering code						
<b>468/1.53.F.0.0.M2</b>						
FUNCTION						
31=Closed centres						
32=Open centres						
33=Pressured centres						
		 				
Weight gr. 420 Minimum working pressure 3 bar		  				
<b>Operational characteristics</b>						
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size	
Filtered and lubricated air	10 bar	-5 ÷ +50	410 NI/min	mm 6	G 1/8"	



2

<b>Solenoid - Spring</b>	3/2	Ordering code <b>464.1.0.1.M2</b>	5/2	<b>Solenoid - Spring</b>			
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>TYPE</td></tr> <tr><td>32=3 ways</td></tr> <tr><td>52=5 ways</td></tr> </table>	TYPE	32=3 ways	52=5 ways		
			TYPE				
32=3 ways							
52=5 ways							
Weight gr. 530 Minimum working pressure 2,5 bar				Weight gr. 625 Minimum working pressure 2,5 bar			

Operational characteristics					
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10	-5 ÷ +50	1360 NI/min	mm 8	G 1/4"

<b>Solenoid - Differential</b>	3/2	Ordering code <b>464.1.0.12.M2</b>	5/2	<b>Solenoid - Differential</b>			
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>TYPE</td></tr> <tr><td>32=3 ways</td></tr> <tr><td>52=5 ways</td></tr> </table>	TYPE	32=3 ways	52=5 ways		
			TYPE				
32=3 ways							
52=5 ways							
Weight gr. 650 Minimum working pressure 2,5 bar				Weight gr. 740 Minimum working pressure 2,5 bar			

Operational characteristics					
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10	-5 ÷ +50	1360 NI/min	mm 8	G 1/4"

<b>Solenoid - Solenoid</b>	3/2	Ordering code <b>464.1.0.0.M2</b>	5/2	<b>Solenoid - Solenoid</b>			
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>TYPE</td></tr> <tr><td>32=3 ways</td></tr> <tr><td>52=5 ways</td></tr> </table>	TYPE	32=3 ways	52=5 ways		
			TYPE				
32=3 ways							
52=5 ways							
Weight gr. 730 Minimum working pressure 2 bar				Weight gr. 820 Minimum working pressure 2bar			

Operational characteristics					
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10	-5 ÷ +50	1360 NI/min	mm 8	G 1/4"

<b>Solenoid - Solenoid</b>																				
Ordering code																				
<b>464.53.0.0.M2</b>																				
FUNCTION																				
<b>F</b> 31=Closed centres 32=Open centres 33=Pressured centres																				
Weight gr. 820 Minimum working pressure 3 bar																				
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="6">Operational characteristics</th> </tr> <tr> <th>Fluid</th> <th>Max working pressure (bar)</th> <th>Temperature °C</th> <th>Flow rate at 6 bar with <math>\Delta p=1</math> (NI/min)</th> <th>Orifice size (mm)</th> <th>Working ports size</th> </tr> <tr> <td>Filtered and lubricated air</td> <td>10</td> <td>-5 ÷ +50</td> <td>1280 NI/min</td> <td>mm 8</td> <td>G 1/4"</td> </tr> </table>			Operational characteristics						Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size	Filtered and lubricated air	10	-5 ÷ +50	1280 NI/min	mm 8	G 1/4"
Operational characteristics																				
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size															
Filtered and lubricated air	10	-5 ÷ +50	1280 NI/min	mm 8	G 1/4"															


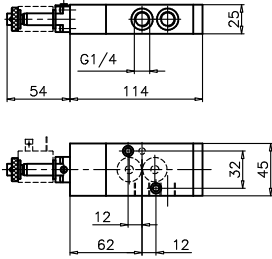

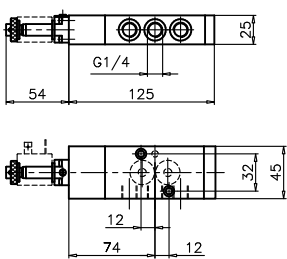
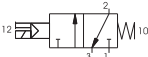

3/2	<b>Solenoid - Spring</b>		5/2																				
<b>Ordering code</b>		<b>Solenoid - Spring</b>																					
<b>464/1.0.0.1.M2</b>		<b>464/1.0.0.1.M2</b>																					
Weight gr. 530 Minimum working pressure 2,5 bar		Weight gr. 625 Minimum working pressure 2,5 bar																					
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="6">Operational characteristics</th> </tr> <tr> <th>Fluid</th> <th>Max working pressure (bar)</th> <th>Temperature °C</th> <th>Flow rate at 6 bar with <math>\Delta p=1</math> (NI/min)</th> <th>Orifice size (mm)</th> <th>Working ports size</th> </tr> <tr> <td>Filtered and lubricated air</td> <td>10 bar</td> <td>-5 ÷ +50</td> <td>1360 NI/min</td> <td>mm 8</td> <td>G 1/4"</td> </tr> </table>						Operational characteristics						Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size	Filtered and lubricated air	10 bar	-5 ÷ +50	1360 NI/min	mm 8	G 1/4"
Operational characteristics																							
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size																		
Filtered and lubricated air	10 bar	-5 ÷ +50	1360 NI/min	mm 8	G 1/4"																		


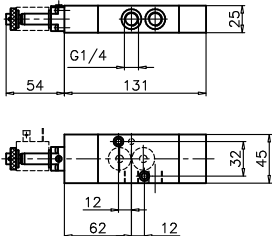

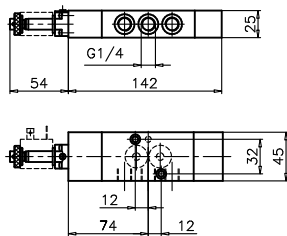
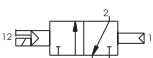

3/2	<b>Solenoid - Differential</b>		5/2																				
<b>Ordering code</b>		<b>Solenoid - Differential</b>																					
<b>464/1.0.0.12.M2</b>		<b>464/1.0.0.12.M2</b>																					
Weight gr. 650 Minimum working pressure 2,5 bar		Weight gr. 740 Minimum working pressure 2,5 bar																					
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="6">Operational characteristics</th> </tr> <tr> <th>Fluid</th> <th>Max working pressure (bar)</th> <th>Temperature °C</th> <th>Flow rate at 6 bar with <math>\Delta p=1</math> (NI/min)</th> <th>Orifice size (mm)</th> <th>Working ports size</th> </tr> <tr> <td>Filtered and lubricated air</td> <td>10 bar</td> <td>-5 ÷ +50</td> <td>1360 NI/min</td> <td>mm 8</td> <td>G 1/4"</td> </tr> </table>						Operational characteristics						Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size	Filtered and lubricated air	10 bar	-5 ÷ +50	1360 NI/min	mm 8	G 1/4"
Operational characteristics																							
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size																		
Filtered and lubricated air	10 bar	-5 ÷ +50	1360 NI/min	mm 8	G 1/4"																		


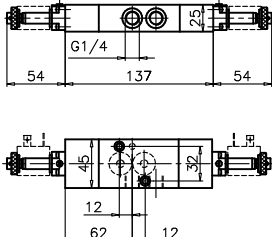

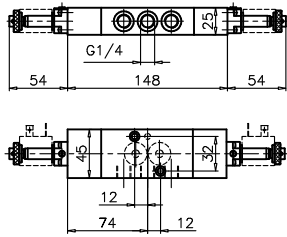


2

3/2	<b>Solenoid - Solenoid</b>	Ordering code	<b>Solenoid - Solenoid</b>			5/2
		<b>464/1.1.0.0.M2</b>				
		TYPE				
		32=3 ways 52=5 ways				
Weight gr. 730 Minimum working pressure 2 bar		Weight gr. 820 Minimum working pressure 2 bar				
<b>Operational characteristics</b>						
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size	
Filtered and lubricated air	10 bar	-5 ÷ +50	1360 NI/min	mm 8	G 1/4"	

<b>Solenoid - Solenoid</b>					5/3	
Ordering code						
<b>464/1.53.F.0.0.M2</b>						
FUNCTION						
31=Closed centres						
32=Open centres						
33=Pressured centres						
Weight gr. 820 Minimum working pressure 3 bar						
<b>Operational characteristics</b>						
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size	
Filtered and lubricated air	10 bar	-5 ÷ +50	1280 NI/min	mm 8	G 1/4"	

3/2 Solenoid - Spring		Ordering code			Solenoid - Spring	
  Weight gr. 390 Minimum working pressure 2,5 bar		<b>514/N.0.1.M2</b>			  Weight gr. 450 Minimum working pressure 2,5 bar	
TYPE 32=3 ways 52=5 ways						
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)	Working ports size
	Filtered and lubricated air	10 bar	-10 - +50	1030 Nl/min	mm 7	G 1/4"

3/2 Solenoid - Differential		Ordering code			Solenoid - Differential	
  Weight gr. 390 Minimum working pressure 2,5 bar		<b>514/N.0.12.M2</b>			  Weight gr. 450 Minimum working pressure 2,5 bar	
TYPE 32=3 ways 52=5 ways						
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)	Working ports size
	Filtered and lubricated air	10 bar	-10 - +50	1030 Nl/min	mm 7	G 1/4"

3/2 Solenoid - Solenoid		Ordering code			Solenoid - Solenoid	
  Weight gr. 390 Minimum working pressure 2,5 bar		<b>514/N.0.0.M2</b>			  Weight gr. 450 Minimum working pressure 2,5 bar	
TYPE 32=3 ways 52=5 ways						
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)	Working ports size
	Filtered and lubricated air	10 bar	-10 - +50	1030 Nl/min	mm 7	G 1/4"

**Solenoid - Spring**

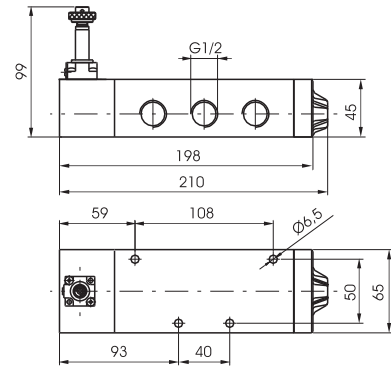
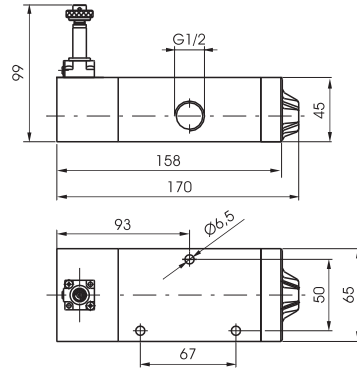
3/2  
5/2

Ordering code

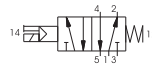
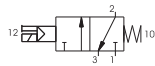
**452.1.0.1.M2**

TYPE

32=3 ways  
52=5 ways



Weight gr. 1152  
Minimum working pressure 2,5 bar



Weight gr. 1422  
Minimum working pressure 2,5 bar

**Operational characteristics**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10 bar	-5 ÷ +50	3500 NI/min	mm 15	G 1/2"

**Solenoid - Differential**

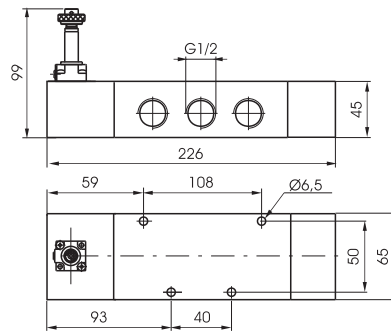
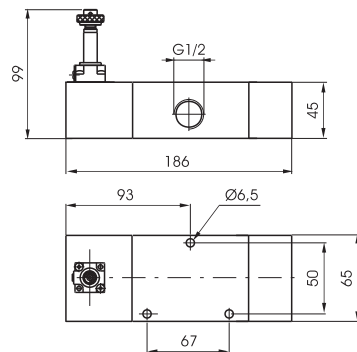
3/2  
5/2

Ordering code

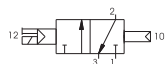
**452.1.0.12.M2**

TYPE

32=3 ways  
52=5 ways



Weight gr. 1422  
Minimum working pressure 2,5 bar



Weight gr. 1692  
Minimum working pressure 2,5 bar

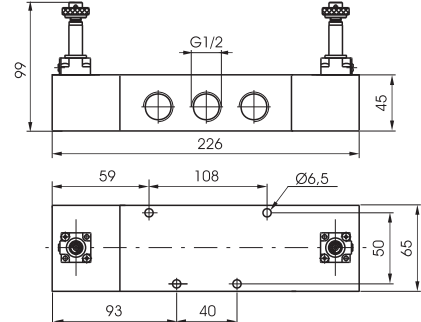
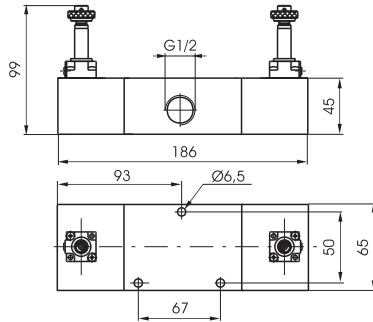
**Operational characteristics**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10 bar	-5 ÷ +50	3500 NI/min	mm 15	G 1/2"

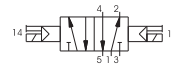
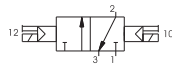
3/2  
5/2

**Solenoid - Solenoid**

Ordering code	
<b>452.1.0.0.M2</b>	
TYPE	
1 32=3 ways	
52=5 ways	



Weight gr. 1474  
Minimum working pressure 2 bar



Weight gr. 1744  
Minimum working pressure 2 bar

**Operational characteristics**

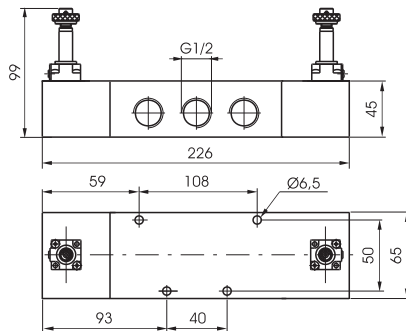
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10 bar	-5 ÷ +50	3500 NI/min	mm 15	G 1/2"

2

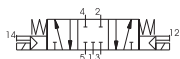
**Solenoid - Solenoid**

5/3

Ordering code	
<b>452.53.0.0.M2</b>	
FUNCTION	
F 31=Closed centres	
32=Open centres	
33=Pressured centres	



Weight gr. 1744  
Minimum working pressure 3 bar



**Operational characteristics**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10 bar	-5 ÷ +50	3500 NI/min	mm 15	G 1/2"

**Solenoid - Spring**

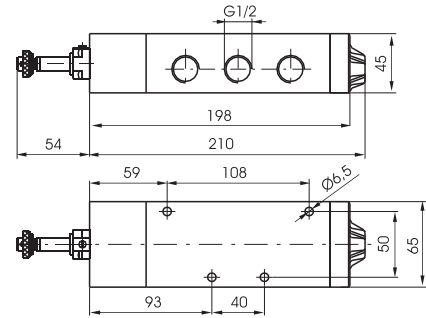
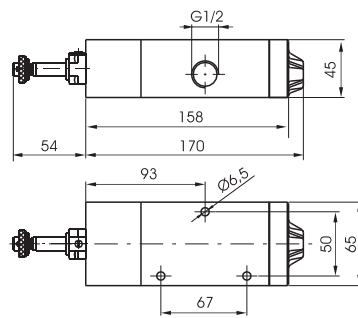
3/2  
5/2

Ordering code

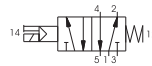
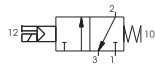
**452/1.0.1.M2**

TYPE

32=3 ways  
52=5 ways



Weight gr. 1330  
Minimum working pressure 2,5 bar



Weight gr. 1600  
Minimum working pressure 2,5 bar

**Operational characteristics**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10 bar	-5 ÷ +50	3500 NI/min	mm 15	G 1/2"

**Solenoid - Differential**

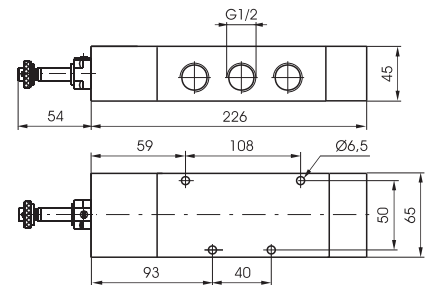
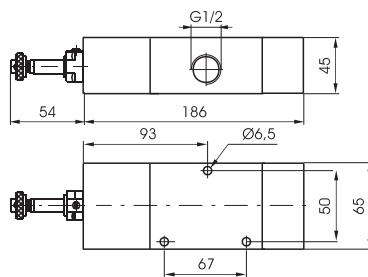
3/2  
5/2

Ordering code

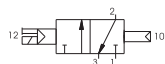
**452/1.0.12.M2**

TYPE

32=3 ways  
52=5 ways



Weight gr. 1600  
Minimum working pressure 2,5 bar



Weight gr. 1870  
Minimum working pressure 2,5 bar

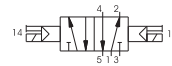
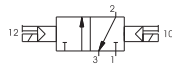
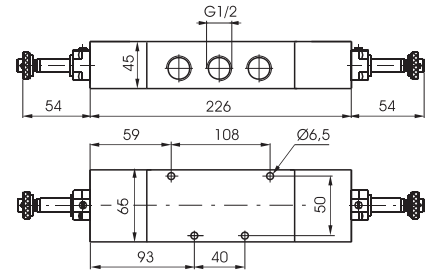
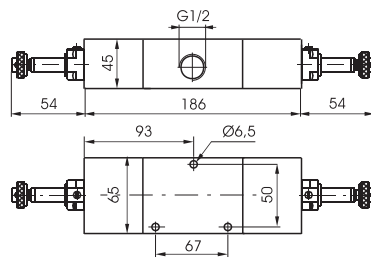
**Operational characteristics**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10 bar	-5 ÷ +50	3500 NI/min	mm 15	G 1/2"

3/2  
5/2

**Solenoid - Solenoid**

Ordering code
<b>452/1.1.0.0.M2</b>
TYPE
32=3 ways
52=5 ways



Weight gr. 1830  
Minimum working pressure 2 bar

Weight gr. 2100  
Minimum working pressure 2 bar

**Operational characteristics**

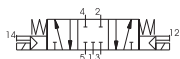
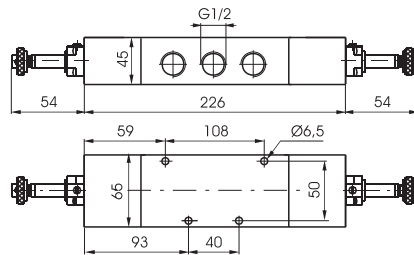
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10 bar	-5 ÷ +50	3500 NI/min	mm 15	G 1/2"

2

**Solenoid - Solenoid**

5/3

Ordering code
<b>452/1.53.F.0.0.M2</b>
FUNCTION
31=Closed centres
32=Open centres
33=Pressured centres



Weight gr. 2100  
Minimum working pressure 3 bar

**Operational characteristics**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air	10 bar	-5 ÷ +50	3500 NI/min	mm 15	G 1/2"