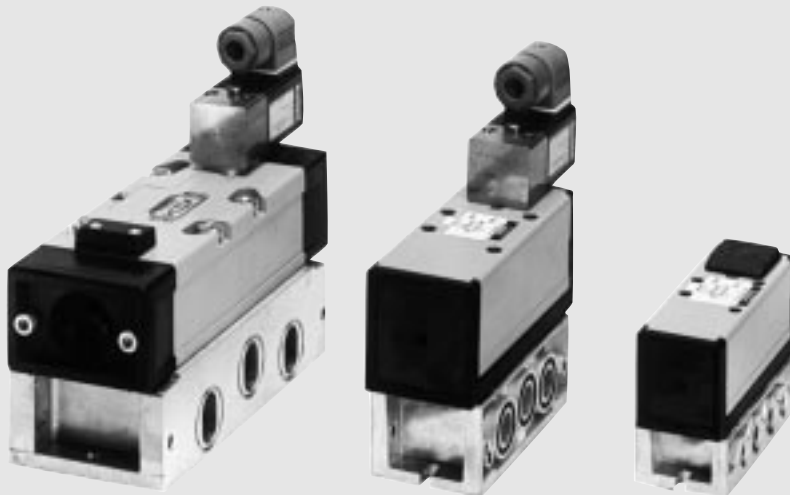


5/2 and 5/3 ISO 1, 2 and 3



Advantages/Benefits

- ▶ Maintenance free. 25 million cycles on dry, non lubricated air due to ceramic slide
- ▶ Conforms to ISO 5599-1
- ▶ High flow
- ▶ Stable performance
- ▶ Stiction free
- ▶ Air quality changes accepted

Design and Function

The switching principle uses a self lubricated sliding valve saddle on a flat ceramic seat; giving an excellent maintenance-free life even when using dry, non-lubricated air.

Lip seals (not O-rings) used for all dynamic seals, and oversize pistons ensure low minimum pilot pressures.

The valve is indifferent to air quality lubrication, dry air can be intermittent or continuous.

The intermediate chamber is at atmospheric pressure and pressure build up is eliminated with the resulting risk of self-switching. Manual overrides are fitted as standard equipment.

The valve to sub-base seal is assured by 4 retained fixing screws and a special formed nitrile seal.

- Low power consumption
- Captive fixing screws
- Easy selection of pilot functions
- Low inventory levels
- Compact. Does not extend beyond the manifold base
- Safety. Manual operator fitted as standard to main valve.
- Self switching eliminated

Applications

- Dairies
- Breweries
- Food packing M/C's
- Machine tools
- Petro-chemical
- Actuators
- Safety Interlocks
- Conveyor switching
- Cylinder control

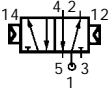
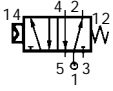
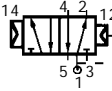
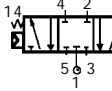
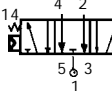
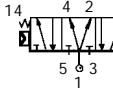


# Pneumatic Directional Control Valves

## Technical Data

### Circuit Functions

H.N.L.S

5/2 Bistable	5/2 Monostable	5/2 Differential spring return	5/3 Pressure held neutral	5/3 Pressure ex- hausted neutral	5/3 Pressure applied neutral
					

### Specifications

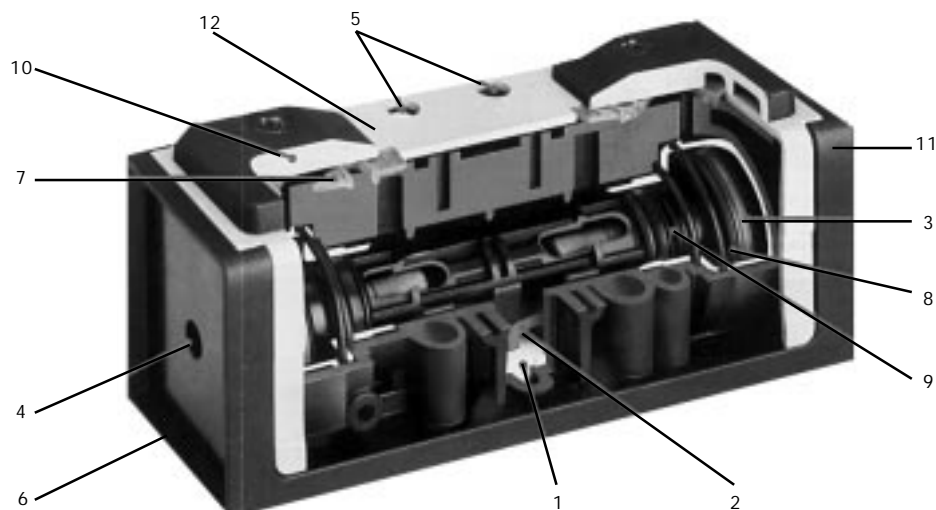
Temperature Range	Qn-Value	[NI/min]		[cv]		Pressure Range	
		External pilot pressure when main pressure is 6bar	Internal pilot (main) pressure	External pilot pressure when main pressure is 6bar	Internal pilot (main) pressure		
Dry air +10°C - +60°C	ISO1	1700	1,17	1	2 - 12 with air spring		
Non dry air + 5°C - +60°C	ISO2	3700	2,59	4	2 - 12 with spring return		
Storage -20°C - +80°C	ISO3	6200	4.40	2,5	2 - 12 with differential pressure		
			2,5	2,5	2 - 12 for 5/3 function		
				as above	2 - 10 for Ex-proof valves		

Air condition filtered 40µ, dry lubricated or non lubricated

All pressures quoted are gauge pressures with respect to the prevailing atmospheric pressure.

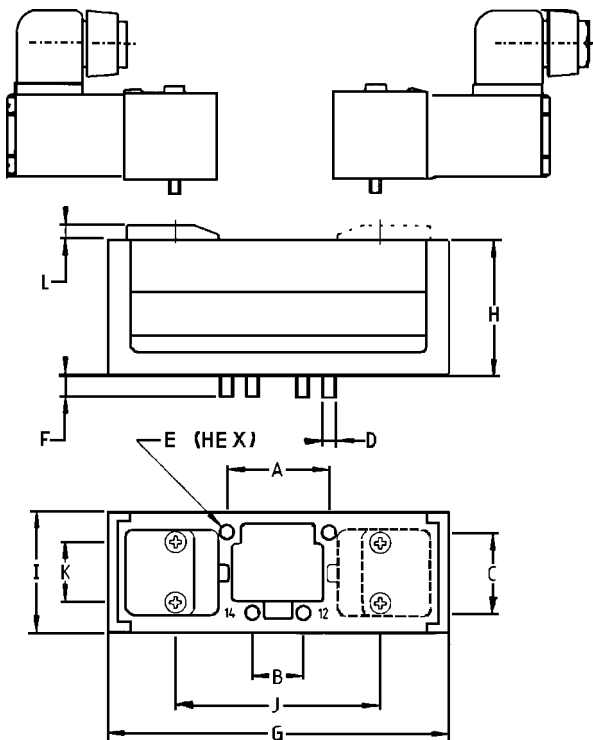
\* ISO3 will be available end 1994

### Material Specification



1 Flat ceramic seat:	Ceramic	8 Pilot operators:	See page 4
2 Flat-faced valve saddler:	Autolube-acetal resin	9 Intermediate chamber at atmospheric pressure	
3 Dynamic lip seals:	NBR	10 Top cover can be removed to fit solenoid (CNOMO 06-05-01 interface)	Polyamid reinforced fibre glass
4 Manual override:	Acetal resin	11 Body:	Polyamid reinforced fibre glass
5 Captive screws:	Zinc plated steel	12 Cover:	Painted zinc plated steel
6 Integral base seal:	Die cast zinc alloy	13 Return spring (not shown):	Stainless steel
7 Two-position seal to select internal or external supply for operator:	Polyester		

## Dimensions in mm

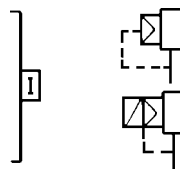


Size	ISO1	ISO2	ISO3
A	36	48	64
B	18	24	32
C	28	38	48
D	M5	M6	M8
E	4	5	6
F	8	11	12
G	120	140	170
H	47	58,5	71
I	42	54	68
J	72	97,50	109,50
K	21	21	21
L	5	5	5
Weight	420	700	*

## Internal or External Pilot Selection

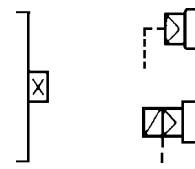
The selector seals are located on each side of the upper face of the Type 451 valve. These enable the selection of an internal or an external pilot supply. The position of the selector can be modified by removing the top cover.

### Position I



Internal pilot supply (I) through valve (port 1)

### Position X



External pilot supply (X) through port 12 or 14

With the selector in position I the pneumatic spring is created for valves with differential pressure control

## Ordering Chart

Solenoid operated valves are supplied without selector top cover and without solenoid.

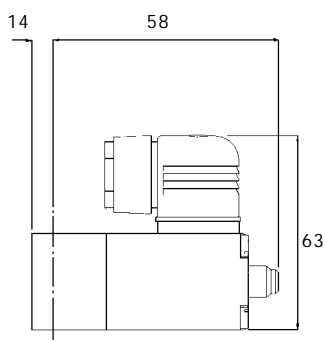
Function	5/2 Bistable	5/2 Monostable	5/2 Differential spring return	5/3 Pressure held neutral	5/3 Pressure ex- hausted neutral	5/3 Pressure applied neutral
ISO1	415 438R	415 439J	415 440X	415 441L	415 442M	415 443N
ISO2	415 450Z	415 451N	415 452P	415 453Q	415 454R	415 455J
ISO3	415 818N	415 819P	415 820L	415 821H	415 822A	

Standard multifunction valve: air operated which can be converted to solenoid operated valves by removing selector(s) cover(s). Supplied with selector(s) cover(s).

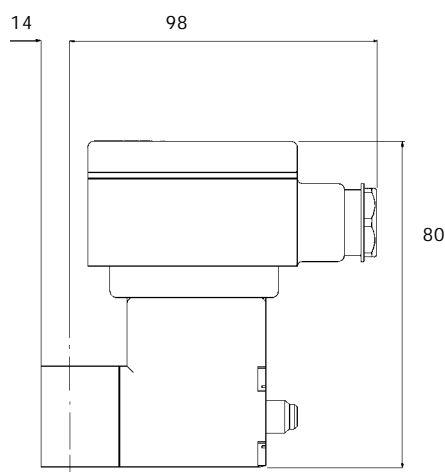
Function	5/2 Bistable	5/2 Monostable	5/2 Differential spring return	5/3 Pressure held neutral	5/3 Pressure ex- hausted neutral	5/3 Pressure applied neutral
ISO1	415 444P	415 445Q	415 446R	415 447J	415 448T	415 449U
ISO2	415 456K	415 457L	415 458V	415 459W	415 460T	415 461Q
ISO3	415 823B	415 824C	415 825D	415 826E	415 827S	

## Operator Options

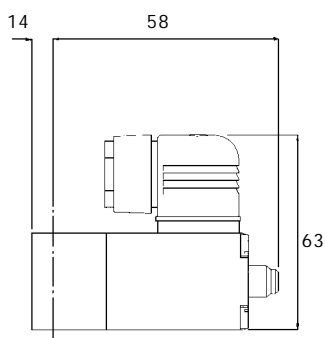
### Standard solenoid



### EEx ed II C T5



### EEx ia II C T6



### Selector Cover (Pneumatic Operator)



### Standard solenoid

24/=	416 002R
24/50-60	416 003J
48/50-60	416 204Y
110-120/50-60	416 004K
220-240/50-60	416 005L

### EEX ed II C T5

24/GR	416 007N
48/GR	416 206S
110-120/GR	416 009Y
220-240/GR	416 011H

### EEX ia II C T6

24/=	416 012A
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Size	Kit Pcs	Order No
1 2 3	100	415 504L
4	50	415 505M