



North America

Valve Catalog

Manual, Mechanical & Air-Pilot

Edition 8.2





Camozzi Pneumatics, Inc.

2160 Redbud Blvd.

Suite 101

McKinney, Texas 75069

Tel. 972 548 8885

Fax 972 548 2110

Email: info@camozzi-usa.com

www.camozzi-usa.com

WELCOME TO THE WORLD OF CAMOZZI.

Welcome to the world of Camozzi and our new **Valve Catalog** that includes Manual, Mechanical and Air-Pilot valves. As part of our total commitment to our customers, Camozzi is launching this new, improved and updated catalog designed with an easy-to-use and practical format, which offers comprehensive and innovative range of valve components.

The catalog includes technical images, drawings, dimension tables, technical specifications and additional tools that will provide you with a better understanding of our Manual, Mechanical, Air-Pilot and Accessories product line.

You will see a new layout and design over how valves have been categorized in the past including the notation of specific flow rates (Cv) at the top of each page. Valves are combined by flow rate range and similar operation. Each major chapter is organized by general function, and sorted by increasing flow rates within the different series of valve families (Manual, Mechanical, or Air-Pilot).

We have also included our Flow Control Valves & Accessories. This chapter is in a short-form catalog format, with images, part numbers and Ansi symbols. Please see the Fittings & Flow Control Valves Catalog (Edition 8.0) for specific information on drawings and dimension tables.

We have also added a Valve Selector Guide at the beginning of this catalog to help you decide which valve family is right for your application. Additionally, please see the Seal Kit Guide in chapter 5 for Camozzi's entire family of valves.

We hope you will find the new catalog helpful to you and your customers.



UNI EN
ISO 9001

Day by day we try to improve ourselves,
to extend our competence and our
professionalism in a constant way.



UNI EN
ISO 14001

Minimize the consumption of
energy, water, raw material and
the production of waste,
and focus on recycling
wherever possible.



SHOP ONLINE at www.airlinehyd.com

800-999-7378



Everybody talks about quality. We prefer to talk about the many components that work together to create a quality system that ensures excellence, not only in the final product but throughout the entire business process. Research, technological innovation, training, respect for personnel, employee and environmental safety, and total customer care are all factors that Camozzi considers strategic in the achievement of quality reflecting an unyielding commitment to the pursuit of excellence.

In 2009 Camozzi renewed from Det NorskeVeritas the certifications for the Quality Management Systems regarding UNI EN ISO 9001 :2008 and for the Environmental Management Systems as UNI EN ISO 14001:2004 One of Camozzi's main goals, equal to quality and safety, is the protection of the environment and compatibility of our activities with the territorial context in which they are performed.





VALVE CATALOG : MANUAL, MECHANICAL & AIR-PILOT

GENERAL INDEX

1 MANUAL VALVES



	Series	Cv	Page
Manually Operated Console Minivalves	2	.06	4
Mini Handle Valve		.06	10
1/8" Manually Operated Valves	1 and 3	.52 - .73	12
1/4" Manually Operated Valves	1 and 4	1.3	20
Foot Pedal (Pneumatic & Electrical)	2 and 3	.06 - .91	26
Slide Valve	VMS	.73 - 4.10	28
Ball Valves	2930/2930N/ 2940/2960		30

2 MECHANICAL VALVES



	Series	Cv	Page
Mechanically Operated Minivalves	2	.06	36
Mechanically Operated Valves	1 and 3	.52 - 1.31	38
1/8" Mechanically Operated Sensor Valves	3	.73	42
1/8" & 1/4" Mechanically Operated Sensor Valves	4	0.68 - 1.31	44

AIR-PILOT VALVES

3








	Series	Cv	Page
Basic Logic Valves	2L	.07	52
Sender & Receiver Element	2L		54
Pneumatically Operated Amplifier Valve	2L	.13	56
Air-Pilot Operated Valves	3	.73 - 1.37	58
Air-Pilot Operated Valves	4	.73 - 2.00	66
Air-Pilot Operated Valves	7	.47 - .95	74
Regulator Plate ISO Size 1 (P-Regulation)	7		82
Regulator Plate ISO Size 1 (A-B Regulation)	7		84
Air-Pilot Operated Valves	9	.95 - 4.57	86
Regulator Plate ISO Size 1 (P-Regulation)	9		94
Regulator Plate ISO Size 1 (AB-Regulation)	9		96
Regulator Plate ISO Size 2 (P-Regulation)	9		98
Regulator Plate ISO Size 2 (AB-Regulation)	9		100
Regulator Plate ISO Size 3 (P-Regulation)	9		102
Regulator Plate ISO Size 3 (AB-Regulation)	9		104
NAMUR Interface	NA	1.05	106
Check Valves	VNR	.16 - 1.47	108
Pilot-Operated Check Valves	VBO-VBU		110
Quick Exhaust Valves	VSC and VSO	.05 - 4.73	114

4 FLOW CONTROL VALVES & ACCESSORIES (NPTF/INCH)

	Series	Page
	Composite Right Angle Flow Control Valves	120
	Right Angle Flow Control Valves	122
	In-Line Flow Control Valves	128

FLOW CONTROL VALVES & ACCESSORIES (BSP/METRIC)

	Series	Page
	Composite Right Angle Flow Control Valves	130
	Right Angle Flow Control Valves	132
	Composite Flow Regulators with Banjo	138
	Right Angle Flow Control Valves	144
	In-Line Flow Control Valves	148
	Needle Valve	150
	Silencers	152
	RSW	152
	Adjustable-Diaphragm Pressure Switches	154
	Electro-Pneumatic Transducer	154
	Pressure Indicators	154

5 TECHNICAL DATA

	Page
Valve Seal Kits	156
Construction Guide	166
Pneumatic Symbols	170

6 MARKETING MATERIALS

	Page
Catalogs & Literature	174
Sample Cases & Fitting Cabinets	175
Camozzi Subsidiaries	176
Camozzi Distributors	177
Alpha-Numeric Index	180



Valve Selector Guide

	MANUAL VALVES								MECHANICAL VALVES								AIR-PILOT VALVES								
	Series / Valve Family								Series / Valve Family								Series / Valve Family								
	2	1	3	4	E	7	9	NA	2	1	3	4	E	7	9	NA	2	1	3	4	E	7	9	NA	
	Cv Range / Flow Rate								Cv Range / Flow Rate								Cv Range / Flow Rate								
< 0.5	•					•	•		•						•	•		•						•	•
0.5 - 1.0		•	•	•	•	•	•			•	•	•	•	•	•	•			•	•	•	•	•	•	•
1.0 - 1.5		•	•	•	•			•		•	•	•	•			•			•	•	•	•			•
1.5 - 2.0							•								•									•	
2.0 - 3.0				•								•									•				
3.0 - 5.0								•								•									•
	Valve Function (Ways/Position)								Valve Function (Ways/Position)								Valve Function (Ways/Position)								
2/2 NC																									
2/2 NO																									
3/2 NC	•	•	•	•					•	•	•	•					•	•	•	•					
3/2 NO	•	•	•	•					•	•	•	•					•	•	•	•					
5/2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
5/3 Center Closed			•	•	•	•	•	•			•	•	•	•	•	•			•	•	•	•	•	•	
5/3 Center Open	•		•	•	•	•	•	•	•		•	•	•	•	•	•	•		•	•	•	•	•	•	
5/3 Pressure Center			•	•	•			•			•	•	•			•			•	•	•			•	
	Port Size								Port Size								Port Size								
M5 (10-32 UNF)	•				•				•				•				•				•				
5/32" OD	•								•								•								
1/8"		•	•	•	•	•				•	•	•	•	•				•	•	•	•	•			
1/4"		•	•	•	•	•	•	•		•	•	•	•	•	•	•		•	•	•	•	•	•	•	
3/8"							•								•								•		
1/2"				•			•					•			•					•			•		
	Seal/Spool Design								Seal/Spool Design								Seal/Spool Design								
Poppet / Plunger	•	•							•	•							•	•							
Packed-Bore Spool			•	•				•			•	•				•			•	•				•	
Packed Spool					•	•							•	•							•	•			
	Operator Group								Operator Group								Operator Group								
Pushbutton	•			•																					
Hand-lever		•	•	•																					
Palm-Switch	•			•																					
Pull-Knob				•	•																				
Thumb-Taggle		•	•																						
Handle	•																								
Foot-Pedal	•			•																					
Dial Selector	•																								
Key	•																								
Joystick	•																								
Plunger									•	•	•	•													
Lever-Roller									•	•	•	•													
Bulkhead Plunger									•																
Strike-Plate									•																
Whisker-Rod											•														
Single Air-Pilot, In-line																	•		•	•	•			•	
Double Air-Pilot, In-line																	•		•	•	•			•	
Single Air-Pilot, Subbase																					•	•	•		
Double Air-Pilot, Subbase																					•	•	•		

Cv =

Chapter 1

Manual Valves

	Series	Cv	Page
Manually Operated Console Minivalves	2	.06	4
Mini Handle Valve		.06	10
1/8" Ported Manually Operated Valves	1 and 3	.52 - .73	12
1/4" Ported Manually Operated Valves	1 and 4	1.3	20
Foot Pedal (Pneumatic & Electrical)	2 and 3	.06 - .91	26
Slide Valve	VMS	.73 - 4.10	28
Ball Valves	2930/2930N/ 2940/2960		30

Manual Valves Product Guide

Cv = .06 - 1.32

This range of valves includes operating devices suitable for most applications according to the space available. They are offered in a range of different dimensions: M5 (10-32 UNF), 1/8" NPTF and 1/4".

Functions include: 3-way/2-position, 5-way/2-position, 5-way/3-position with closed center and exhaust center

Page 4 Cv = .06

Manually Operated Console Minivalves Series 2



3-way/2-position and 5-way/3-position
Ports M5, Cartridge ø4 mm (5/32" O.D.)

Page 10 Cv = .06

Mini Handle Valve



Handle with incorporated micro valve 3-way/2-position Normally Closed Mod. 234-885
Handle with incorporated micro switch Mod. 234-88E

Page 12 Cv = .52 - .73

1/8" Ported Manually Operated Valves Series 1 and 3



5-way/2-position and 5-way/3-position
Ports 1/8" NPTF

Page 20 Cv = 1.3

1/4" Ported Manually Operated Valves Series 1 and 4



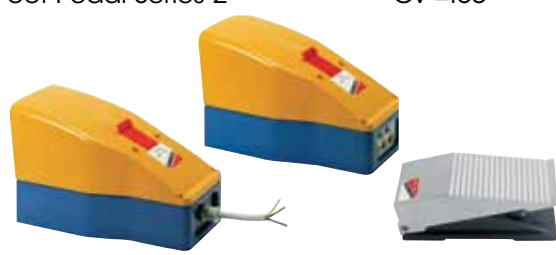
3-way/2-position, 5-way/2-position and 5-way/3-position
Ports 1/4" NPTF

Page 26 Cv = .06 - .91

Pneumatic - Foot Operated Pedal Series 3
1/4", 5/2 Way NPTF Cv = .9

Electrical - Foot Operated Pedal Series 3
with Normally Closed/Normally Open contacts

Foot Pedal Series 2 Cv = .06



Page 28 Cv = .73 - 4.10


Slide Valve Series VMS



3-way/2-position
Ports 1/8", 1/4", 3/8", 1/2" NPTF

Page 30 4.129

Ball Valves Series 2930, 2930N, 2940, 2960



Ports 1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 4", NPTF

The company reserves the right to vary models and dimensions without notice. These products are designed for industrial applications and are not suitable for sale to the general public.

Cv = 0.6

Series 2 Manually Operated Console Minivalves

Cv = .06

3/2 and 5/3-way
Ports M5 (10-32 UNF)
Cartridge ø 4 mm (5/32" O.D.)

The manually operated console valves come standard with a 22 mm diameter mounting aperture which consists of our own valves combined with manual devices. This feature means that all the manual devices, 22 in diameter, can be used. This series of miniature valves has been specially designed to satisfy all the application requirements of the controls industry, with particular attention being paid to the operating characteristics which are required from these components:

- Low actuating force=6N (1.35 lbs.)
- Short operational stroke
- Small dimensions
- Speed and accuracy of signal
- Reduced air consumption

The versatility of the manual range is expandable. It is possible to mount an electrical switch next to the miniature valve. In this case, the base piece Mod. 220-000 is required.

Note: Several additional push buttons, switches, lighted operators and electrical controls are available which integrate into this product line. Contact factory for details, lead time and part number codes.



TECHNICAL SPECIFICATIONS

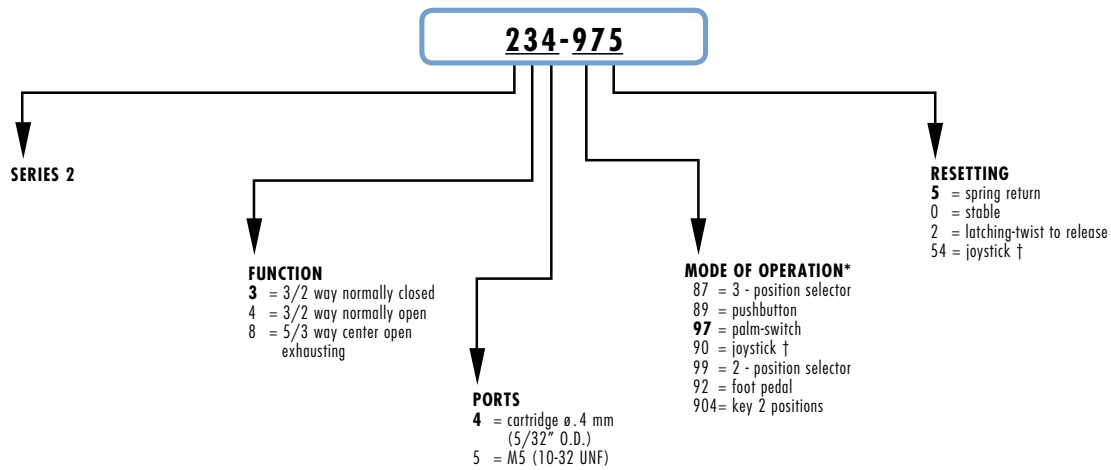
Valve group	3-way/2-position, 5-way/3-position
Construction	Poppet type
Mounting	On consoles, control panels or cabinets: bulkhead design
Materials	Anodized body, Brass poppet gate, Buna-N seals
Threaded port sizes	M5 (10-32 UNF) thread, or 4 mm OD cartridge (5/32" OD tube connect)
Installation	Bulkhead, or single panel mount
Operating temperature	32°F - 175°F, (dry air necessary down to -4°F)
Fluid	Filtered air (25 micron or less recommended)
Lubricant	Not required. Otherwise, only oil compatible with Buna-N, (3° - 10° E) (approximate 32 center strokes viscosity), ISOVG32 grade

PNEUMATIC DATA

Operating pressure	2 - 10 bar, (30 - 145 psi)
Nominal pressure	6 bar, (87 psi)
Nominal flow	*Qn = 60 NL/min. (2.12 SCFM)
Nominal diameter	2.5 mm
Cv Rating	0.06

*Qn flowrate (SCFM) determined with a supply pressure of 6 bar, (87 psi), and with a pressure drop of 1 bar, (14.5 psi).
 **Dimensions are in millimeters.

CODING OF MINIVALVES



* Note: The pilot devices shall be separated from the valve body
 † Joystick codes must be matched together for part number

Manually operated console minivalves Cv = .06

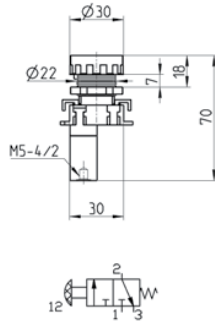


The company reserves the right to vary models and dimensions without notice. These products are designed for industrial applications and are not suitable for sale to the general public.

Cv = .06

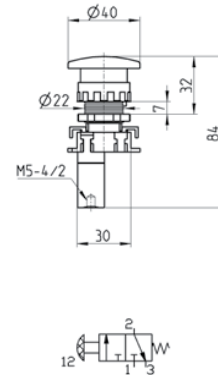
Minivalves Mod. 235-895 and Mod 234-895 Cv = .06

(235-895 and 234-895).
Actuation force at 6 bar = 7 in (1.5 lbs)



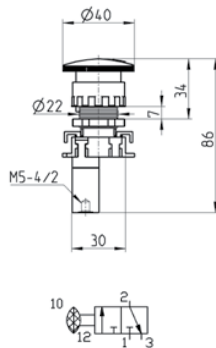
Minivalves Mod. 235-975 and Mod 234-975 Cv = .06

(235-975 and 234-975).
Actuation force at 6 bar = 7 in (1.5 lbs)



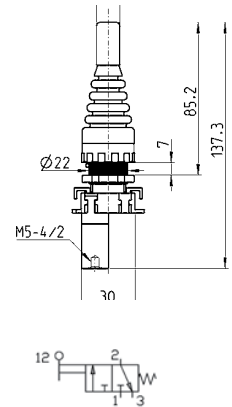
Minivalves Mod. 235-972 and Mod 234-972 Cv = .06

(235-972 and 234-972).
Actuation force at 6 bar = 7 in (1.5 lbs)



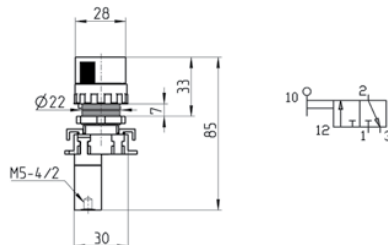
Minivalves Mod. 235-905 and Mod 234-905 Cv = .06

(235-905 and 234-905).



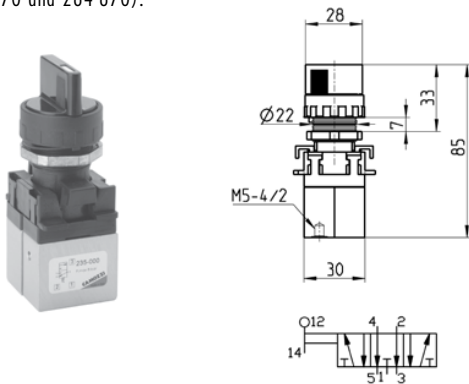
Minivalves Mod. 235-990 and Mod 234-990 Cv = .06

(235-990 and 234-990).



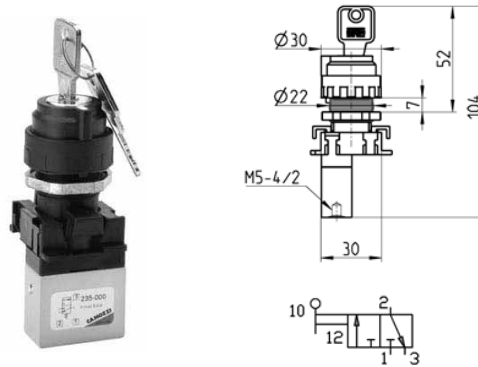
Minivalves Mod. 285-870 and Mod 284-870 Cv = .06

(285-870 and 284-870).



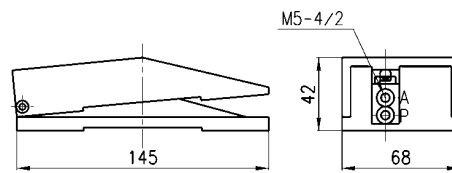
Minivalves Mod. 235-904 and Mod 234-904 Cv = .06

(235-904 and 234-904).



Pedal Mod. 235-925 and Mod 234-925

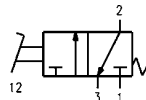
Cv = .06



Mod.

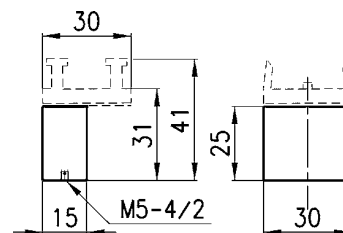
235-925 10-32 UNF

234-925 5/32" OD



Minivalves Mod. 235-000 and Mod 234-000 (Spare Parts)

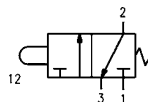
Cv = .06



Mod.

235-000 10-32 UNF

234-000 5/32" OD



Cv = .06

Adaptors Mod. 210-000 and Mod 220-000 (Spare Parts)



Mod. 210-000



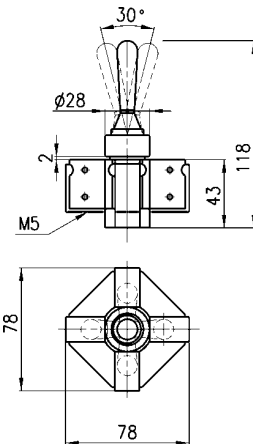
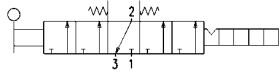
Mod. 220-000

Joystick Mod. 234-9054

Cv = .06

Minimum pressure = 2 bar (30 psi)

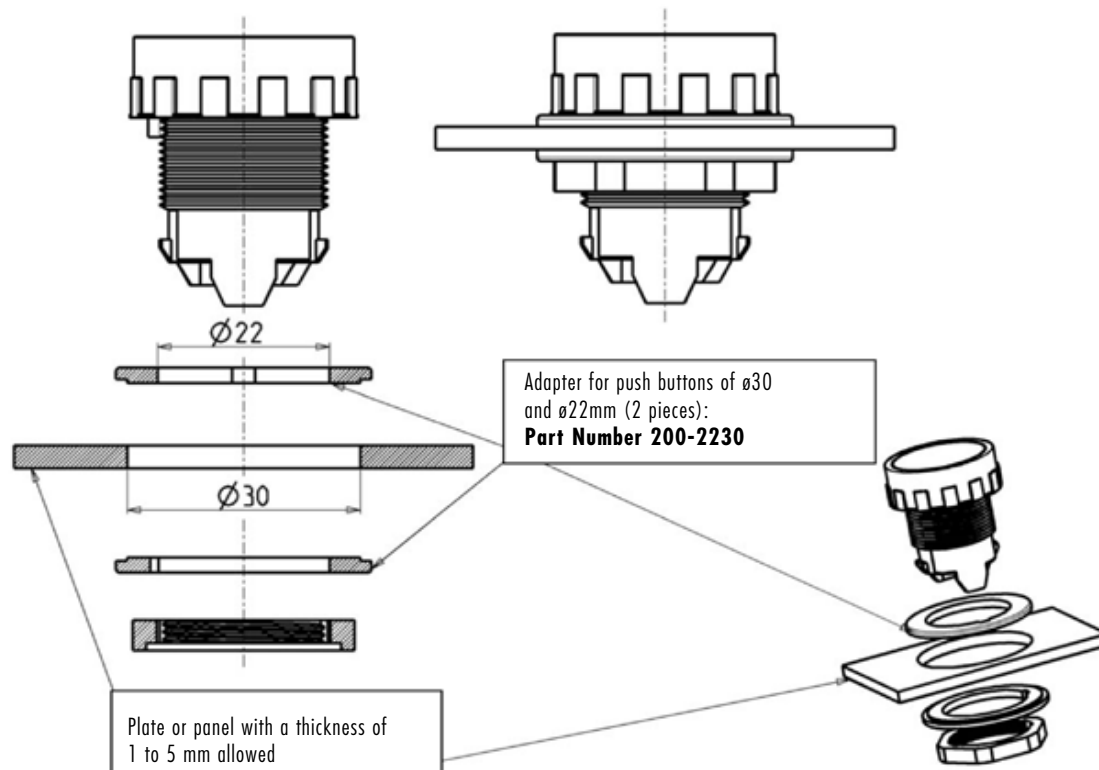
Note: Valve is composed of 4 pieces of Mod. 234-000, each actuated by 1 direction of joystick



Mod.
234-9054

Panel Assembly Guide

Adapter for standard 22mm operators to fit 30mm diam. panel openings



Optional electrical assembly with Normally Open/Closed contacts, lighted button, etc.



Contact factory for details, part number, and availability.

Cv = .06

Mini-handle valve

Cv = .06

Handle with incorporated micro valve 3-way/2-position Normally Closed

Mod. 234-885

Handle with incorporated micro switch Mod. 234-88E

Manual handle with integrated pneumatic micro valve 3/2 or with an electrical micro switch with single pole changeover contacts. Rugged construction particularly suited to be incorporated in to other equipment, such as manual lifting systems, manual vacuum systems, locking and clamping systems.

Note: Handles can support a load of 330 lbf combined total when assembled with 2, M5 x 0.8 BOLTS x 10mm long. (Maximum bolt torque is 7 ft-lbs).



GENERAL and PNEUMATIC CHARACTERISTICS MOD. 234-885

Construction	poppet-type (closed centers)
Valve function	3-way/2-position Normally Closed
Nominal diameter	2.5 mm orifice
Fixing	N°2 M5 x 0.8 female bolts
Ports	push in cartridge Ø4mm (5/32" OD)
Installation	in any position
Operating temperature	
Operating pressure	2 ÷ 10 bar (30-145 psi)
Nominal flow	Qn 60 Nl/min. (6 bar Δ p1) (2.12 SCFM)
Fluid	Filtered air, without lubricant*
Actuating force	at 6 bar 13N (3 lbs)

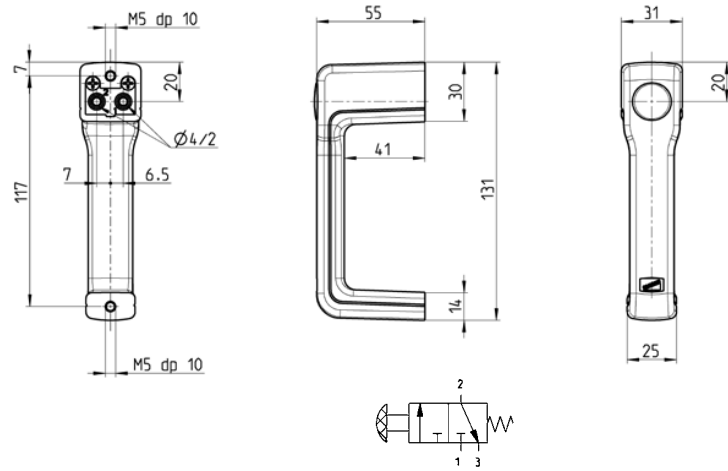
* If lubricated air is used, it is recommended to use oil ISOVG32 grade. Once applied the lubrication should never be interrupted.

32°F - 175°F (dry air required down to -4°F)

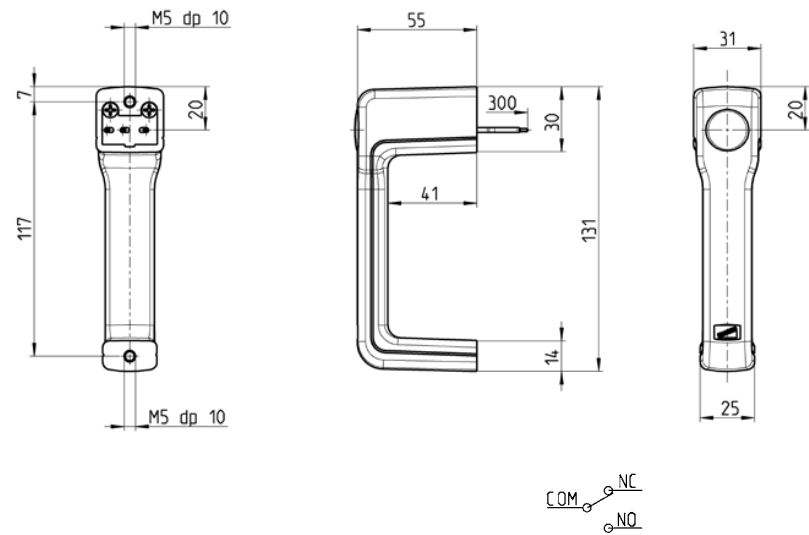
GENERAL and ELECTRICAL CHARACTERISTICS MOD. 234-88E

Construction	switch device
Electrical connections	3 wires Ø external 2,2 mm
	internal section 0,5 length 30 cm
	NC = black wire
	NO = blue wire
Fixing	N° 2 M5 x 0.8 female bolts
Mounting	in any position
Operating temperature	32°F - 175°F
Protection class	IP40
Activation stroke	2 mm
Actuating force	5 N (1 lbf)

Mod. 234-885 Cv = .06



Mod. 234-88E Cv = .06



NON-INDUCTIVE LOAD INDUCTIVE LOAD

Voltage	Resistive		Lamp		Inductive		Motor	
	NC	NO	NC	NO	NC	NO	NC	NO
125 VAC	5 A	1.5 A	0.7 A	3 A	2.5 A	1.3 A		
250 VAC	3 A	1 A	0.5 A	2 A	1.5 A	0.8 A		
8 VDC	5 A		2A	5 A	4 A	3 A		
14 VDC	5 A		2A	4 A	4 A	3 A		
30 VDC	4 A		2A	3 A	3 A	3 A		
125 VDC	0.4 A		0.05 A	0.4 A	0.4 A	0.05 A		
250 VDC	0.2 A		0.03 A	0.2 A	0.2 A	0.03 A		

The above-mentioned values refer to steady-state-current.

The inductive load refers to power factor = 0.4 in Ac. and a time constant of 7 msec max. in Dc.

Lamp load has an inrush current of 10 times the steady-state current.

Motor load has an inrush current of 6 times the steady-state current.

If the switch is used in a DC circuit and is subjected to a surge connect a surge suppressor across the switch.

The company reserves the right to vary models and dimensions without notice. These products are designed for industrial applications and are not suitable for sale to the general public.

$C_v = .52 - .73$

Series 1 and 3 1/8" Ported Manually Operated Valves

$C_v = .52 - .73$

3-way/2-position, 5-way/2-position and 5-way/3-position
Ports 1/8" NPTF

The Series 1 manual valves (1/8", 3-way/2-position and 5-way/2-position) and the Series 3 manual valves (1/8", 3-way/2-position, 5-way/2-position and 5-way/3-position) are available with actuators designed to satisfy different needs. For series 3, the 3-way/2-position valves are normally closed when P is the inlet; they can also be normally open when R is the inlet. They can be operated with vacuum down to -.9 bar (28" Hg). Additionally, the series 3 valves can be supplied with 2 different pressures into ports 3 and 5 if a cylinder requires different extend and retract forces. The series 1 valves offer a more rugged, compact design with steel operator interfaces.



TECHNICAL SPECIFICATIONS

Valve group	3-way/2-position, 5-way/2-position, 5-way/3position
Construction	Spool type Series 3, Poppet type Series 1
Mounting	Mounting holes in valve body
Materials	Anodized body, Stainless steel spool, Buna-N seals, Brass Poppet (Series 1)
Threaded port sizes	1/8" NPTF
Installation	Manifold, or single panel mount
Operating temperature	32°F - 175°F, (dry air necessary down to -4° F)
Fluid	Filtered air (25 micron or less recommended)
Lubricant	Not required; otherwise, only oil compatible with Buna-N, (-3° - 10° E) (ISOVG32 grade; 32 center strokes)

PNEUMATIC DATA

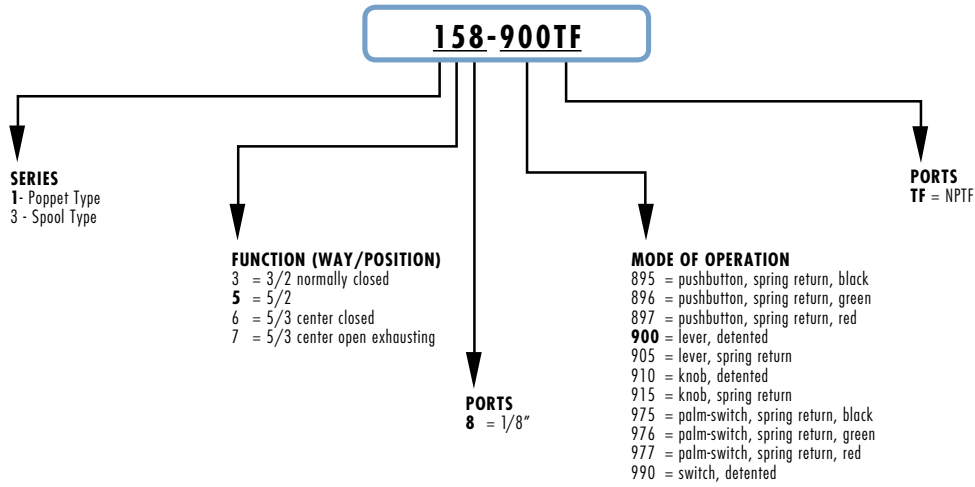
Operating pressure	0 - 10 bar, (0 - 145 psi) (down to -.9 bar vacuum; 28" Hg with series 3)
Nominal pressure	6 bar, (87 psi)
Nominal flow	*Qn Series 3: 1/8" = 700 NL/min. (24.7 SCFM) Series 1: 1/8" = 500 NL/min. (17.65 SCFM)
Nominal diameter	1/8" = 5 mm
Cv Rating	Series 3: 1/8" = 0.73 Series 1: 1/8" = 0.52

*Qn flowrate (SCFM) determined with a supply pressure of 6 bar (87 psi), and with a pressure drop of 1 bar (14.5 psi).

** Soft-seal repair kits are available on request.

***Dimensions are in millimeters

CODING OF MINIVALVES



Manually operated valves



Mod. 138-935TF



Mod. 138-900TF



Mod. 158-900TF



Mod. 338-990TF



Mod. 358-990TF



Mod. 338-895TF
Mod. 338-896TF
Mod. 338-897TF



Mod. 358-895TF
Mod. 358-896TF
Mod. 358-897TF



Mod. 338-975TF
Mod. 338-976TF
Mod. 338-977TF



Mod. 358-975TF
Mod. 358-976TF
Mod. 358-977TF



Mod. 338-910TF
Mod. 338-915TF



Mod. 358-910TF
Mod. 358-915TF



Mod. 338-900TF
Mod. 338-905TF



Mod. 358-900TF
Mod. 358-905TF



Mod. 368-900TF
Mod. 368-905TF



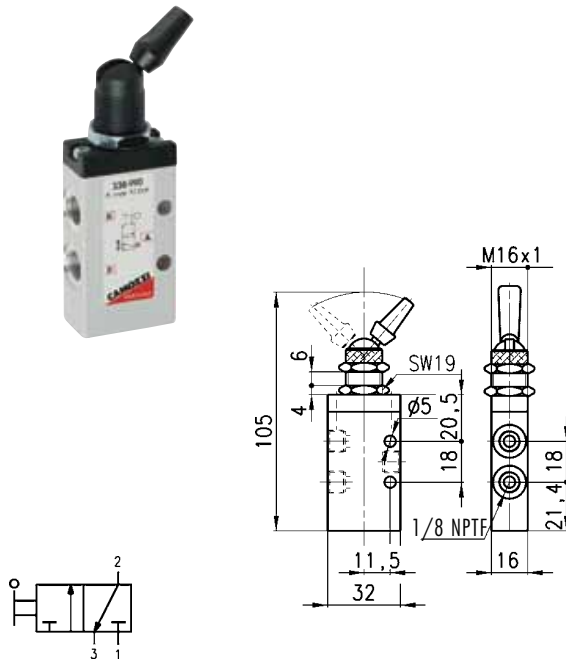
Mod. 378-900TF
Mod. 378-905TF

Cv = .73

Valves Mod. 338-990TF

Cv = .73

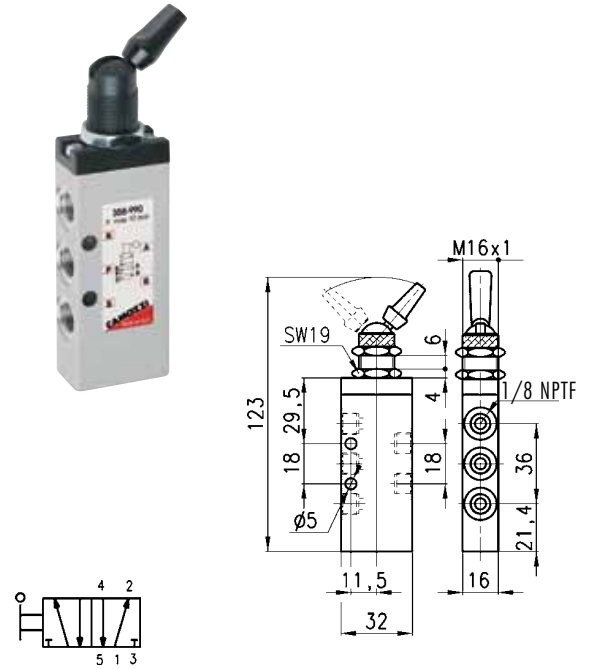
Actuation Force at 87 psi = 4.04 lbf



Valves Mod. 358-990TF

Cv = .73

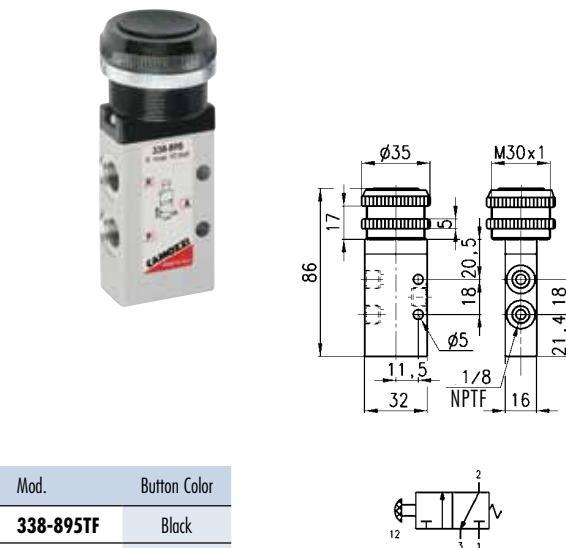
Actuation Force at 87 psi = 4.04 lbf



Valves Mod. 338-895TF

Cv = .73

Actuation Force at 87 psi = 7.9 lbf



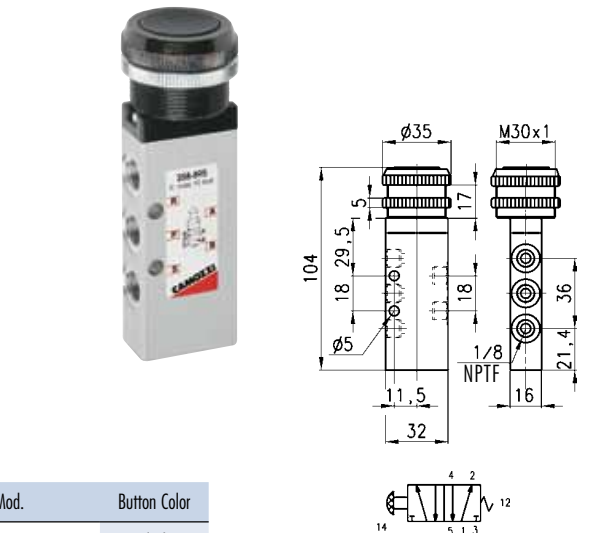
Mod.	Button Color
338-895TF	Black
338-896TF	Green
338-897TF	Red

*buttons are anodized aluminum

Valves Mod. 358-895TF

Cv = .73

Actuation Force at 87 psi = 7.9 lbf



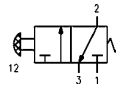
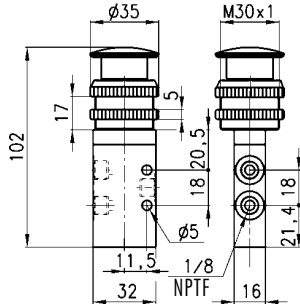
Mod.	Button Color
358-895TF	Black
358-896TF	Green
358-897TF	Red

*buttons are anodized aluminum

Valves Mod. 338-975TF

Cv = .73

Actuation Force at 87 psi = 7.9 lbf



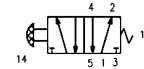
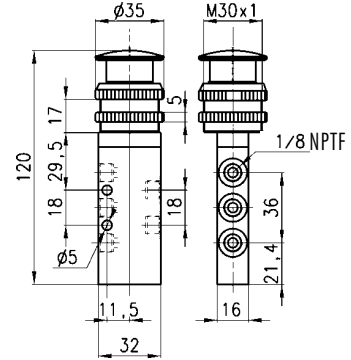
Mod.	Button Color
338-975TF	Black
338-976TF	Green
338-977TF	Red

*buttons are anodized aluminum

Valves Mod. 358-975TF

Cv = .73

Actuation Force at 87 psi = 7.9 lbf

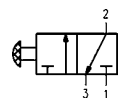
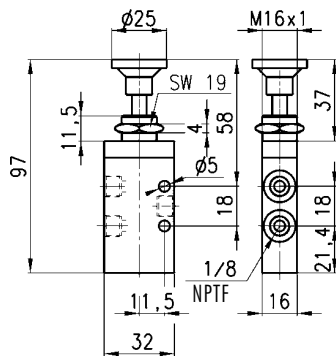


Mod.	Button Color
358-975TF	Black
358-976TF	Green
358-977TF	Red

*buttons are anodized aluminum

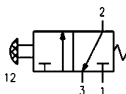
Valves Mod. 338-910TF and Mod. 338-915TF Cv = .73

338-910TF Actuation Force at 87 psi = 1.35 lbf
338-915TF Actuation Force at 87 psi = 7.9 lbf



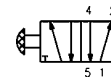
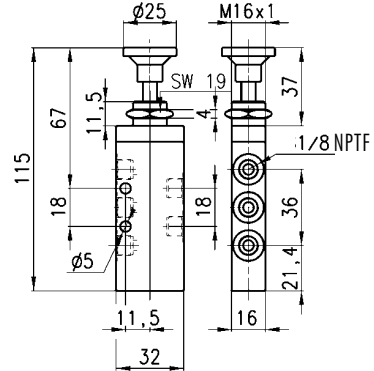
Mod.
338-910TF

Mod.
338-915TF



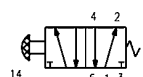
Valves Mod. 358-910TF and Mod. 358-915TF Cv = .73

358-910TF Actuation Force at 87 psi = 1.35 lbf
358-915TF Actuation Force at 87 psi = 7.9 lbf



Mod.
358-910TF

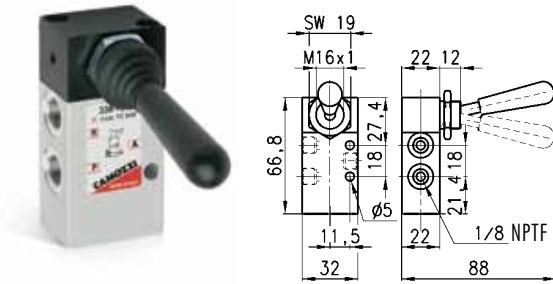
Mod.
358-915TF



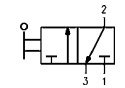
Cv = .73

Valves Mod. 338-900TF and Mod. 338-905TF Cv = .73

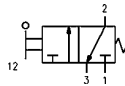
338-900TF Actuation Force at 87 psi = 1.35 lbf
 338-905TF Actuation Force at 87 psi = 7.9 lbf
 *Detent force can be adjusted by means of 5 spring-loaded screws on the side of handle interface



Mod.
338-900TF

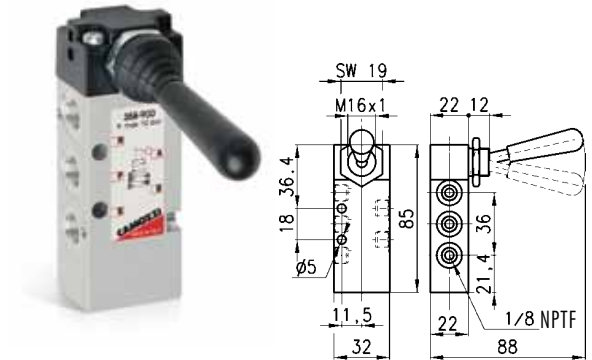


Mod.
338-905TF

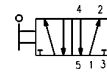


Valves Mod. 358-900TF and Mod. 358-905TF Cv = .73

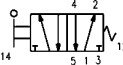
358-900TF Actuation Force at 87 psi = 1.35 lbf
 358-905TF Actuation Force at 87 psi = 7.9 lbf
 *Detent force can be adjusted by means of 5 spring-loaded screws on the side of handle interface



Mod.
358-900TF

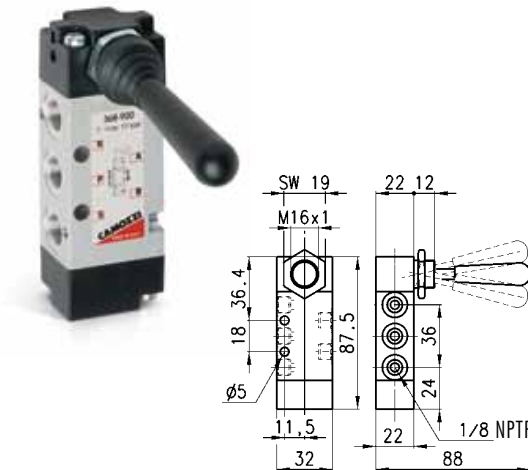


Mod.
358-905TF

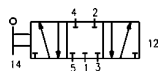


Valves Mod. 368-900TF Cv = .73

Actuation Force at 87 psi = 1.35 lbf
 *Detent force can be adjusted by means of 5 spring-loaded screws on the side of handle interface

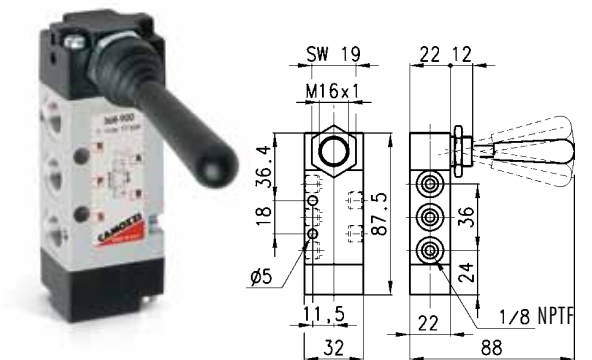


Mod.
368-900TF

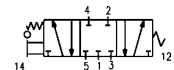


Valves Mod. 368-905TF Cv = .73

Actuation Force at 87 psi = 4.5 lbf
 *Detent force can be adjusted by means of 5 spring-loaded screws on the side of handle interface



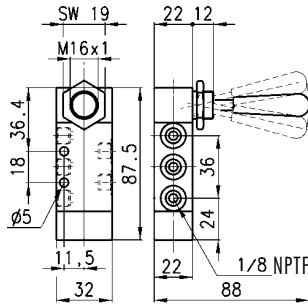
Mod.
368-905TF



Valves Mod. 378-900TF

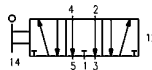
Cv = .73

Actuation Force at 87 psi = 1.35 lbf
 *Detent force can be adjusted by means of 5 spring-loaded screws on the side of handle interface



Mod.

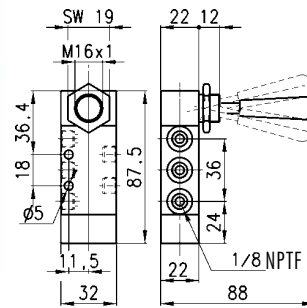
378-900TF



Valves Mod. 378-905TF

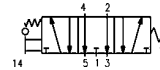
Cv = .73

Actuation Force at 87 psi = 4.5 lbf



Mod.

378-905TF

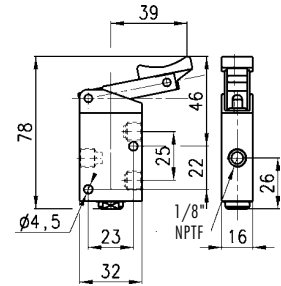


Cv = .52

Valve Mod. 138-935TF

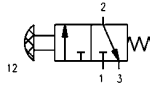
Cv = .52

Actuating force at 6 bar = 38N (8.5 lbf)
 Operating pressure = 0 - 10 bar (0 - 145psi)
 Flow rate = 500 NI/min. (17.6 SCFM)



Mod.

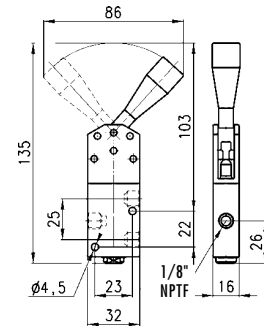
138-935TF



Valve Mod. 138-900TF

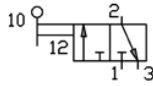
Cv = .52

Actuating force at 6 bar = 25N (5.6 lbf)
 Operating pressure = 0 - 10 bar (0-145 psi)
 Flow rate = 500 NI/min. (17.6 SCFM)



Mod.

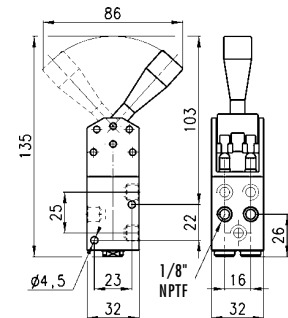
138-900TF



Valve Mod. 158-900TF

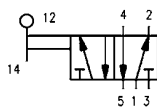
Cv = .52

Actuating force at 6 bar = 45N (10.1 lbf)
 Operating pressure = 0 - 10 bar (0-145 psi)
 Flow rate = 500 NI/min. (17.6 SCFM)



Mod.

158-900TF



Cv = 1.3

Series 1 and 4 1/4" Ported Manually Operated Valves

Cv = 1.3

3-way/2-position, 5-way/2-position and
5-way/3-position
Ports 1/4" NPTF

The Series 1 manual valves (1/4", 3-way/2-position and 5-way/2-position) and the Series 4 manual valves (1/4", 3-way/2-position, 5-way/2-position and 5-way/3-position) are available with actuators designed to satisfy different needs. For Series 4, the the 3-way/2-position valves are normally closed when P is the inlet; they can also be normally open when R is the inlet. They can be operated with vacuum down to -.9 bar (28" Hg). Additionally, the series 4 valves can be supplied with 2 different pressures into ports 3 and 5 if a cylinder requires different extend and retract forces. The series 1 valves offer a more rugged, compact design with steel operator interfaces.



TECHNICAL SPECIFICATIONS

Valve group	3-way/2-position, 5-way/2-position, 5-way/3position
Construction	Spool type Series 4, poppet type Series 1
Mounting	Mounting holes in valve body
Materials	Anodized body, Stainless steel spool, Buna-N seals, brass poppet (Series 1)
Threaded port sizes	1/4" NPTF
Installation	Manifold, or single panel mount
Operating temperature	32°F - 175°F, (dry air necessary down to -4° F)
Fluid	Filtered air (25 micron or less recommended)
Lubricant	Not required; otherwise only oil compatible with Buna-N, (3° - 10° E) (ISOVG32-grade; 32 centistrokes)

PNEUMATIC DATA

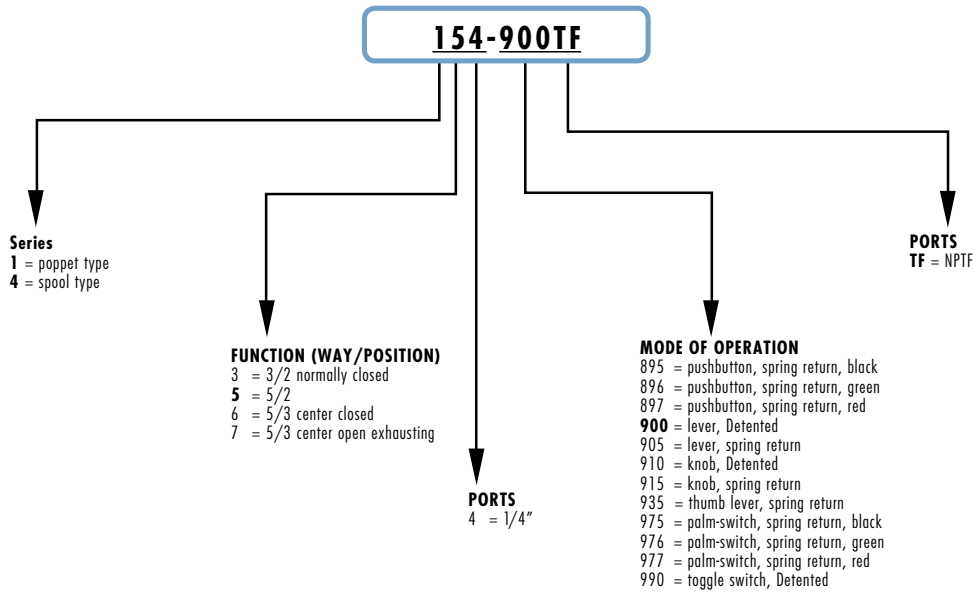
Operating pressure	0 - 10 bar, (0 - 145 psi); (Down to -9 bar vacuum; 28" Hg with Series 4)
Nominal pressure	6 bar, (87 psi)
Nominal flow (QN)	QN Series 1: 1/4"=1250 NL/min. (44.14 SCFM)
Nominal diameter	1/4"= 7.5 mm
	*QN Series 4: 1/4"=1250 NL/min. (44.14 SCFM)
Cv Rating	Series 1: 1.3
	Series 4: 1.3

*Qn flowrate (SCFM) determined with a supply pressure of 6 bar (87 psi), and with a pressure drop of 1 bar (14.5 psi).

** Soft-seal repair kits are available on request.

***Dimensions are in millimeters

CODING OF MINIVALVES



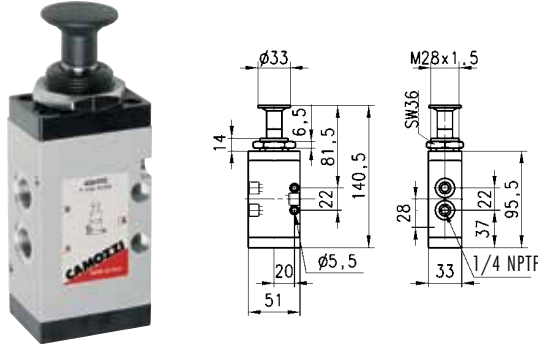
Manually operated valves



Cv = 1.3

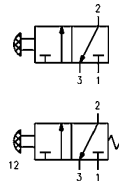
Valves Mod. 434-910TF and 434-915TF Cv = 1.3

Mod. 434-910TF Actuation Force at 87 psi = 2.25 lbf
 Mod. 434-915TF Actuation Force at 87 psi = 8.3 lbf



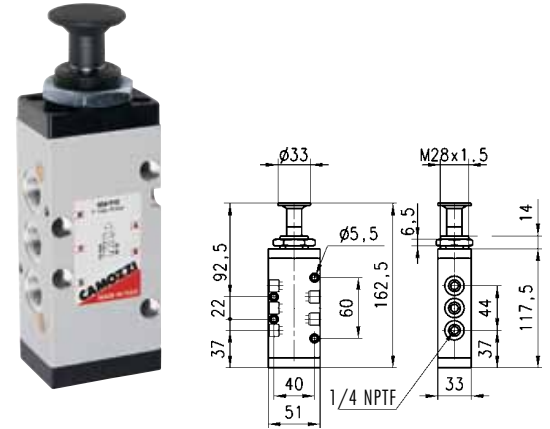
Mod.
434-910TF

Mod.
434-915TF



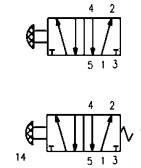
Valves Mod. 454-910TF and 454-915TF Cv = 1.3

Mod. 454-910TF Actuation Force at 87 psi = 2.25 lbf
 Mod. 454-915TF Actuation Force at 87 psi = 8.3 lbf



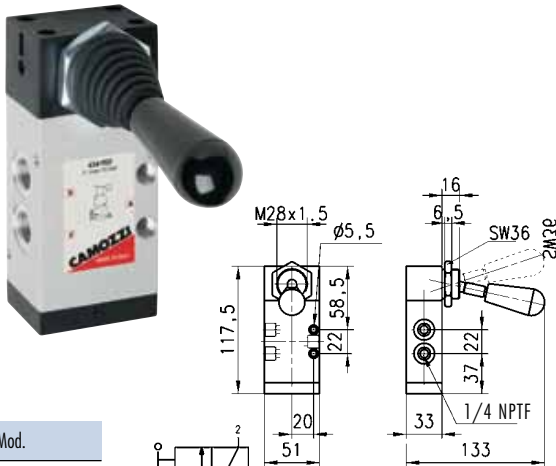
Mod.
454-910TF

Mod.
454-915TF



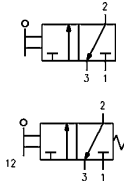
Valves Mod. 434-900TF and 434-905TF Cv = 1.3

Mod. 434-900TF Actuation Force at 87 psi = 1.35 lbf
 Mod. 434-905TF Actuation Force at 87 psi = 8.3 lbf
 *Detent force can be adjusted by means of 5 spring-loaded screws on the side of handle interface



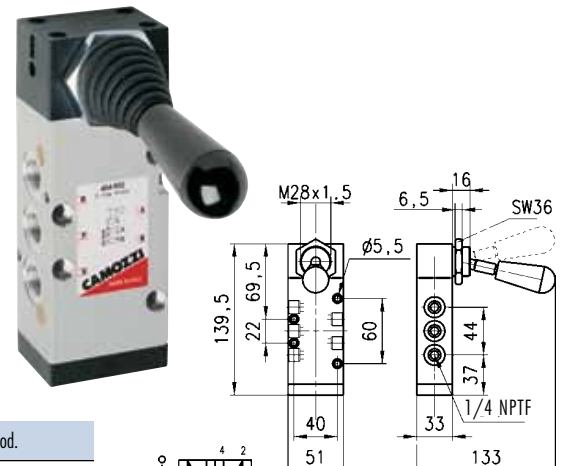
Mod.
434-900TF

Mod.
434-905TF



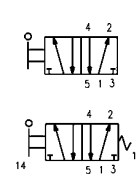
Valves Mod. 454-900TF and 454-905TF Cv = 1.3

Mod. 454-900TF Actuation Force at 87 psi = 1.35 lbf
 Mod. 454-905TF Actuation Force at 87 psi = 8.3 lbf
 *Detent force can be adjusted by means of 5 spring-loaded screws on the side of handle interface



Mod.
454-900TF

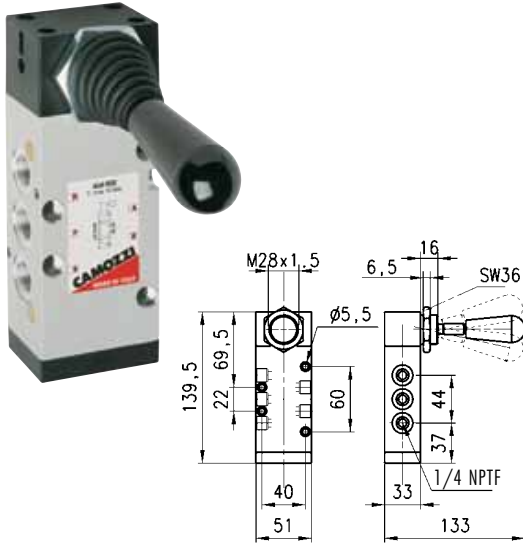
Mod.
454-905TF



Valves Mod. 464-900TF

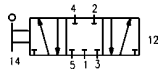
Cv = 1.3

Actuation Force at 87 psi = 1.35 lbf
 *Detent force can be adjusted by means of 5 spring-loaded screws on the side of handle interface



Mod.

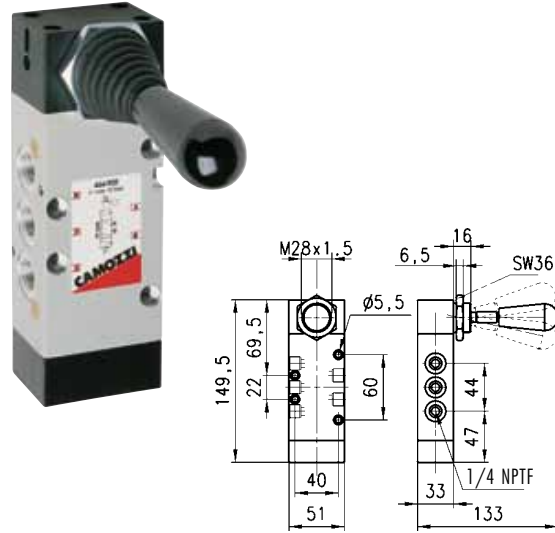
464-900TF



Valves Mod. 464-905TF

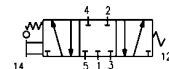
Cv = 1.3

Actuation Force at 87 psi = 2.25 lbf



Mod.

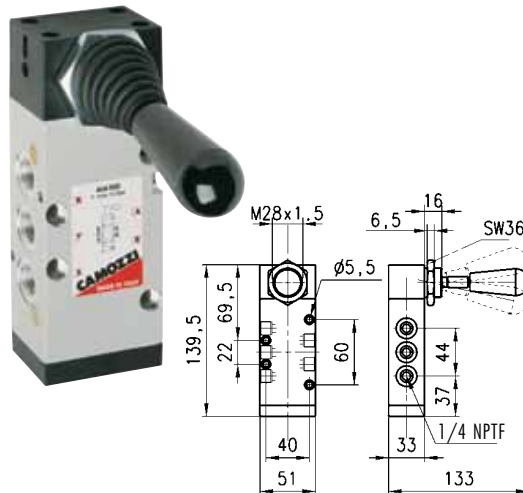
464-905TF



Valves Mod. 474-900TF

Cv = 1.3

Actuation Force at 87 psi = 1.35 lbf
 *Detent force can be adjusted by means of 5 spring-loaded screws on the side of handle interface



Mod.

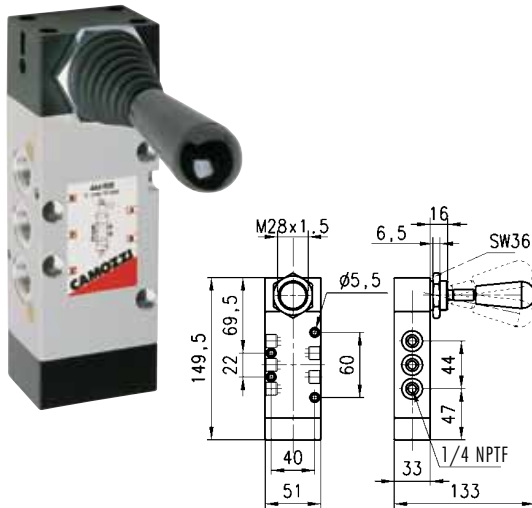
474-900TF



Valves Mod. 474-905TF

Cv = 1.3

Actuation Force at 87 psi = 2.25 lbf



Mod.

474-905TF

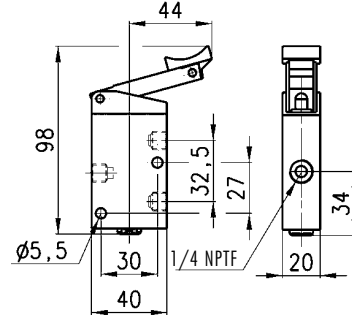


Cv = 1.3

Valve Mod. 134-195TF

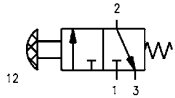
Cv = 1.3

Actuating force at 6 bar = 40N (9 lbf)
 Operating pressure = 0 - 10 bar (0-145 psi)
 Flow rate = 1250 NI/min. (44.1 SCFM)



Mod.

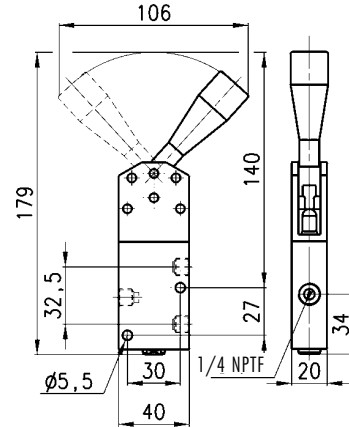
134-935TF



Valve Mod. 134-900TF

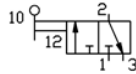
Cv = 1.3

Actuating force at 6 bar = 30N (6.7 lbf)
 Operating pressure = 0 - 10 bar (0 - 145 psi)
 Flow rate = 1250 NI/min. (44.1 SCFM)



Mod.

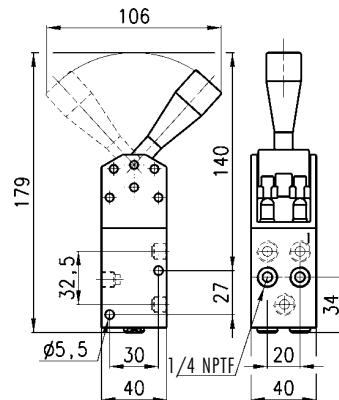
134-900TF



Valve Mod. 154-900TF

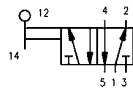
Cv = 1.3

Actuating force at 6 bar = 55N (12.3 lbf)
 Operating pressure = 0 - 10 bar (0-145 psi)
 Flow rate = 1250 NI/min. (44.1 SCFM)



Mod.

154-900TF



Cv = .06 - .91

Foot Pedal - Pneumatic

10-32 UNF, 5/32" OD: 3-way/2-position (Series 2)
 10-1/4" NPTF, 5-way/2-position (Series 3)

Foot Pedal - Electrical

with Normally Closed/Normally Open contacts

Series 2 Foot Pedal

10-32 UNF, 5/32" OD, 3-way/2-position Normally Closed

Cv = .06 - .91



The pedals can be supplied either in the pneumatically-operated or in the electrically-operated version. The pneumatically-operated type is available with a 5-way/2-position valve and 1/4" front ports which allow the fittings and silencers to be assembled more easily. A 3-way/2-position version can be obtained by simply plugging one of the two outlet ports, (2 or 4). The electrically-operated type is available with a deviation single-pole contact micro-switch and a front wire outlet (PG9). The pedal can be operated as spring return or Detented, by switching the selector placed under the small red door as shown on the drawing (x).

TECHNICAL SPECIFICATIONS Mod. 354N-925TF

Valve group	5-way/2-position (Series 3); 3-way/2-position (Series 2)
Construction	Spool-type (servocontrolled) (Series 3); Poppet type (Series 2)
Materials	Anodized body, stainless steel spool, Buna-N seals, plastic casing nylon; brass poppet (Series 2)
Assembly	Valve built into the pedal body
Threaded port sizes	Series 3 1/4" NPTF, Series 2 5/32" OD, or 10-32 UNF
Installation	On the floor
Operating temperature	32°F -125°F (dry air necessary down to 14° F)
Lubricant	Not required; otherwise oil compatible with BUNA-N seals (3°-10°E) (ISOVG32 grade; 32 centistrokes)

PNEUMATIC DATA Mod. 354N-925TF

Operating pressure	2.5 - 10 bar (36 to 145 psi)
Rated pressure	6 bar (87 psi)
Rated flow	Qn = 860 NL/Min., (30.36 SCFM)
CV Rating	.91
*Qn flowrate (SCFM) determined with a supply pressure of 6 bar (87 psi), and with a pressure drop of 1 bar (14.5 psi).	
**Dimensions are in millimeters	

TECHNICAL SPECIFICATIONS Mod. 3E2-925TF

Construction	Deviation single-pole contact microswitch
Assembly	Built into the pedal body
Port	By means of wire PG9
Installation	On the floor
Operating temperature	32°F -125°F

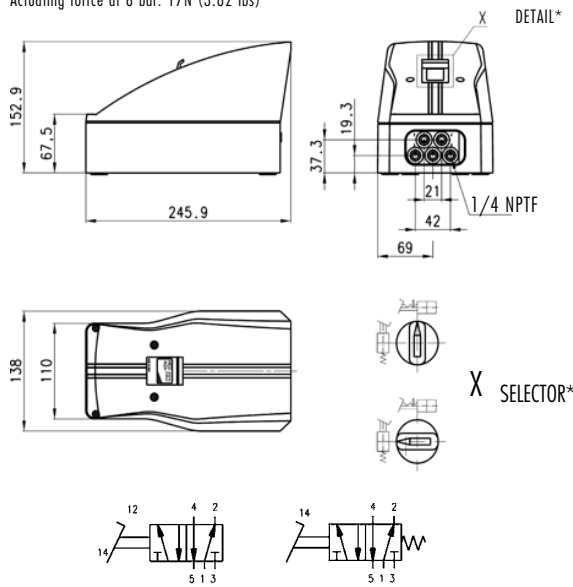
Mod. 3E2-925 ELECTRICAL DATA

CONTACT RATING										
Nominal Voltage	resistive				Load (A)				Amps	
	N.C.	N.O.	N.C.	N.O.	N.C.	N.O.	N.C.	N.O.	N.C.	N.O.
VAC	125 V	15	3	1.5	15	5	2.5			
	250 V	15	2.5	1.25	15	3	1.5			
	480 V	3	1.5	0.75	2.5	1.5	0.75			
VDC	8 V	15	15	3	1.5	15	10	5	2.5	
	14 V	15	15	3	1.5	10	10	5	2.5	
	30 V	6	6	3	1.5	5	5	5	2.5	
	125 V	0.4	0.4	0.4	0.4	0.05	5	0.05	0.05	
	250 V	0.2	0.2	0.2	0.2	0.03	0.03	0.03	0.03	

Note: 1. The inductive load is considered to have a load factor equal to 0.4 (a.c.) and a time constant equal to max. 7 m sec. (d.c.).
 2. Light load means a load with start current equal to ten times the nominal current value.
 3. Motor load means a load with a starting current equal to six times the nominal current value.

Pneumatic - operated pedal Mod. 354N-925TF

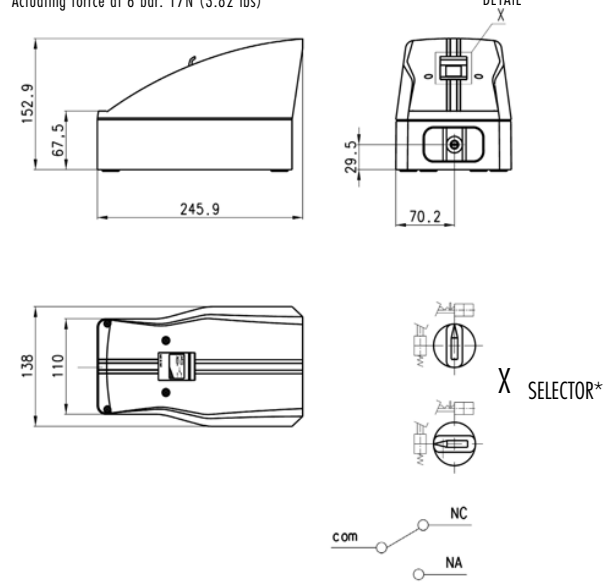
Actuating force at 6 bar: 17N (3.82 lbs)



* Selector function allows user to choose spring return or Detented operation

Electrical - operated pedal Mod. 3E2-925

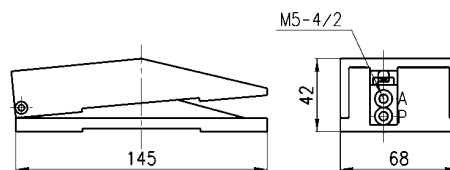
Actuating force at 6 bar: 17N (3.82 lbs)



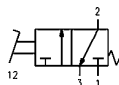
* Selector function allows user to choose spring return or Detented operation

Pedal Mod. 235-925 and Mod. 234-925

Cv = .06



Mod.	
235-925	10-32 UNF
234-925	5/32" OD



Cv = .73 - 4.10

Series VMS Slide Valve

Cv = .73 - 4.10

Series VMS, 3-way/2-position
Ports M5, 1/8", 1/4", 3/8", 1/2", 3/4" NPTF

The VMS series slide valves are commonly used upstream of FRL units to ease repair and replacement. They can also be used in situations requiring the exhausting of all downstream air. This would assist in maintenance applications where ball valves may be too large and bulky to maneuver in tight assembly spaces. The exhausting of downstream air while simultaneously blocking inlet flow helps in building component groups to be tested in stages, and assembled later onto the main body of a machine.



TECHNICAL SPECIFICATIONS

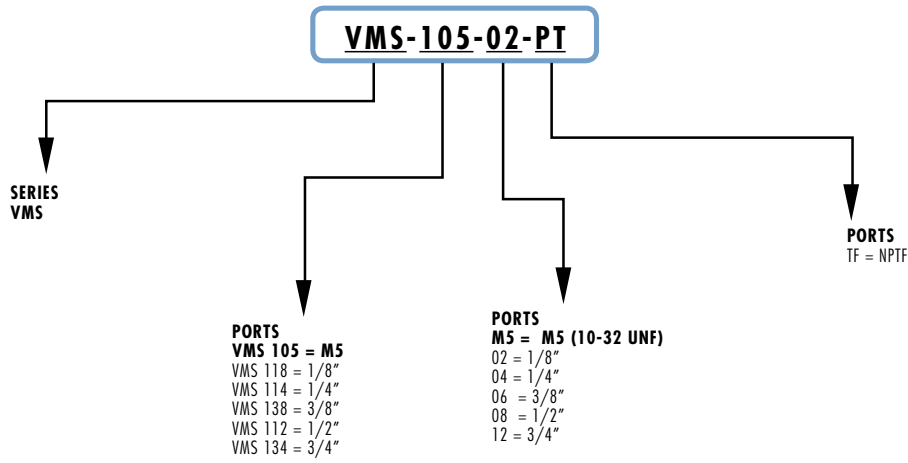
Valve group	3-way/2-position
Construction	Shuttle slide
Mounting	In/line thread ports
Materials	Nickel-Plated brass body, Buna-N seals
Threaded port sizes	M5, 1/8", 1/4", 3/8", 1/2" 3/4" NPTF
Installation	In-line
Operating temperature	32°F - 175°F, (dry air necessary down to -4° F)
Fluid	Filtered air
Lubricant	Not required; otherwise oil compatible with Buna-N, (3°- 10° E) (ISOVG32 grade: 32 centistrokes)

PNEUMATIC DATA

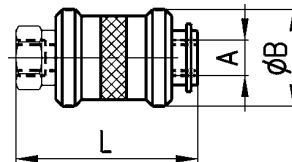
Operating pressure	0 - 10 bar (0 - 145 psi)		
Nominal pressure	6 bar (87 psi)		
Nominal flow	*Qn Series VMS: P→A	M5 = 140 NL/min (4.9 SCFM)	1/8" = 600 NL/min (21.2 SCFM)
		1/4" = 1200 NL/min (42.4 SCFM)	3/8" = 2100 NL/min (74.1 SCFM)
		1/2" = 3350 NL/min (118.5 SCFM)	3/4" = 5350 NL/min (189 SCFM)
Exhausting flowrate (A→R)	A→R M5	= 145 NL/min (5.12 SCFM)	1/8" = 740 NL/min (26.2 SCFM)
		1/4" = 1780 NL/min (62.9 SCFM)	3/8" = 1830 NL/min (64.7 SCFM)
		1/2" = 4030 NL/min (142.5 SCFM)	3/4" = 5000 NL/min (176.8 SCFM)
Cv Rating (Inlet flow)	Series VMS:	M5 = 0.15	1/8" = 0.63
		1/4" = 1.26	3/8" = 2.21
		1/2" = 3.53	3/4" = 5.62

*Qn flowrate (SCFM) determined with a supply pressure of 6 bar (87 psi), and with a pressure drop of 1 bar (14.5 psi).
Exhausting flowrate (A→R), determined with an inlet pressure of 6 bar (87 psi), while exhausting to atmosphere.

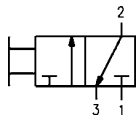
CODING FOR SLIDE VALVES



Valves Mod. VMS



DIMENSIONS (MM)			
Mod.	A	Ø B mm	L mm
VMS-105-M5	M5	15	33.5
VMS-118-02PT	1/8"	25	48
VMS-114-04PT	1/4"	30	58
VMS-138-06PT	3/8"	35	70
VMS-112-08PT	1/2"	40	80
VMS-134-12PT	3/4"	49	83



Series 2930, 2930N, 2940, 2960 Ball Valves - Full Flow Design - NPTF/INCH

Ports 1/4", 3/8", 1/2", 3/4", 1", 1 1/4",
1 1/2", 2", 2 1/2", 3", 4", NPTF
Nickel-Plated (2940), Chrome-Plated (2930N) and
Plain Brass (2930 and 2960)

Electroless nickel-plated: this plating offers excellent corrosion resistance, and is an FDA-approved material, making the Camozzi ball valve suitable for food packaging, chemical processing, medical, dental, water treatment, and printing markets, in addition to standard application.



TECHNICAL SPECIFICATIONS

Valve group	2/2, (way/positions)
Construction	Ball valve
Mounting	In-line
Materials	Brass body (2930 and 2960), Nickel-Plated brass body (2940), Chrome-Plated Brass Body (2930N) Zinc-plated steel handles (2940 and 2960), all others nylon Plastic handles (2930), Hardened chrome-plated brass ball Teflon seat (P.T.F.E.)
Threaded port sizes	1/8", 1/4", 3/8", 1/2" NPTF (2930) 1/4", 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2", 2" NPTF (2940)
Installation	In-line
Operating temperature	Series 2940 - 4°F to 300°F Series 2960 - 4°F to 340°F Series 2930 5° to 200°F
Fluid	Filtered air (for others, check with factory)

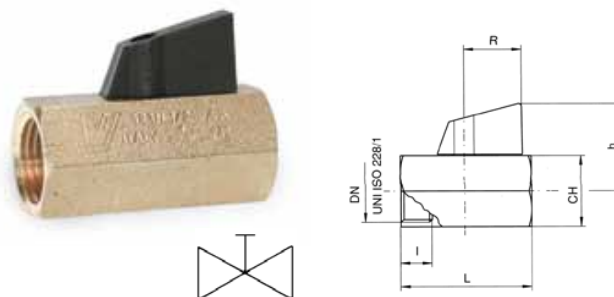
PNEUMATIC DATA

Working pressure	Series 2940: 1/4", 3/8", 1/2"	710 psi	2-1/2" - 260 psi
	3/4", 1"	570 psi	3" - 230 psi
	1-1/4", 1-1/2"	430 psi	4" - 200 psi
			2" - 360 psi
Nominal flow	Series 2930: 1/4", 3/8", 1/2"	220 psi	
	Series 2960: All sizes	400 psi	
Nominal flow		Full flow design	

Mini Ball Valve, Series 2930

These valves are constructed of all brass body, hardened chrome-plated brass ball, teflon seat, and light weight plastic handle.

Kv - Flow coefficient in M³/h → 100kPa differential pressure (ΔP 14.5 psi)



DIMENSIONS (in inches)

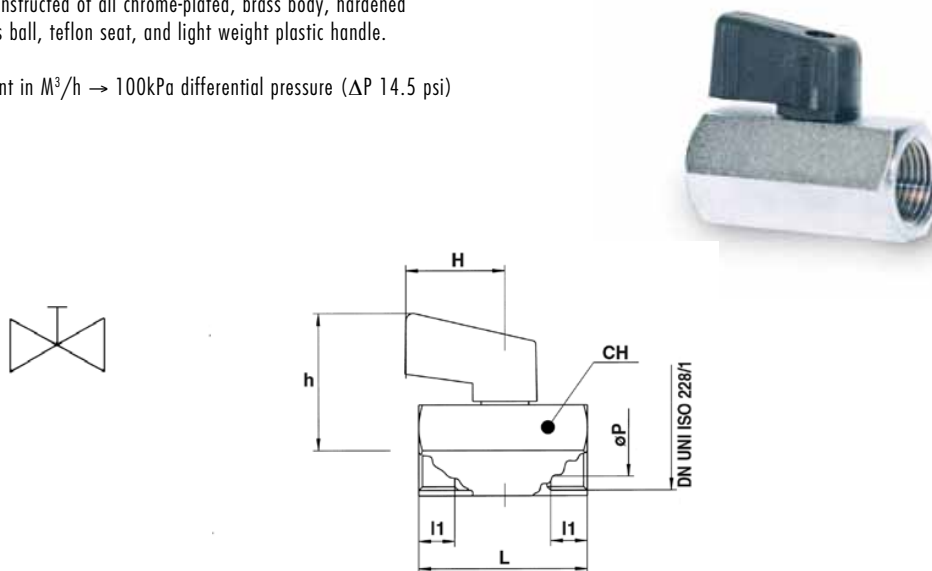
Economical Ball Valves

Mod.	DN(NPTF)	σ P	CH	I	h	L	R	Cv	PSI	LBS	Kv(M ³ /h)	Kg
2930 1/8PT	1/8"	0.31	0.82	0.27	1.16	1.61	0.80	5.00	450	0.25	4.3	0.11
2930 1/4PT	1/4"	0.31	0.82	0.39	1.16	1.69	0.80	5.00	450	0.20	4.3	0.10
2930 3/8PT	3/8"	0.31	0.82	0.40	1.16	1.69	0.80	5.00	450	0.25	4.3	0.11
2930 1/2PT	1/2"	0.39	0.98	0.53	1.24	2.16	0.80	6.26	450	0.28	5.4	0.13

Mini Ball Valve, Series 2930 N

These valves are constructed of all chrome-plated, brass body, hardened chrome-plated brass ball, teflon seat, and light weight plastic handle.

Kv = Flow coefficient in M³/h → 100kPa differential pressure (ΔP 14.5 psi)



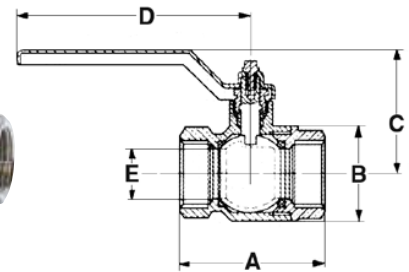
DIMENSIONS (in inches)

Economical Ball Valves (chrome-plated, brass body)

Mod.	DN(NPTF)	σ P	CH	I	h	L	R	Kv (M ³ /h)	Cv	Kg	PSI
2930 N-1/4PT	1/4"	0.31	.857	.384	1.437	1.614	1.063	4.3	5.00	0.11	450
2930 N-3/8PT	3/8"	0.31	.857	.394	1.437	1.614	1.063	4.3	5.00	0.11	450
2930 N-1/2PT	1/2"	0.39	.984	.433	1.484	1.811	1.063	5.4	6.26	0.14	450

Ball Valve, Series 2940

These valves are constructed of an electroless nickel-plated brass body, a steel handle, a hardened chrome-plated brass ball, and a teflon seat. These valves are suitable for industrial, pneumatic, hydraulic, and various domestic installations. Among the various types of compounds which can be transported through these valves are steam, gasoline, fuel, oils, kerosene, acids, and compressed air.



DIMENSIONS

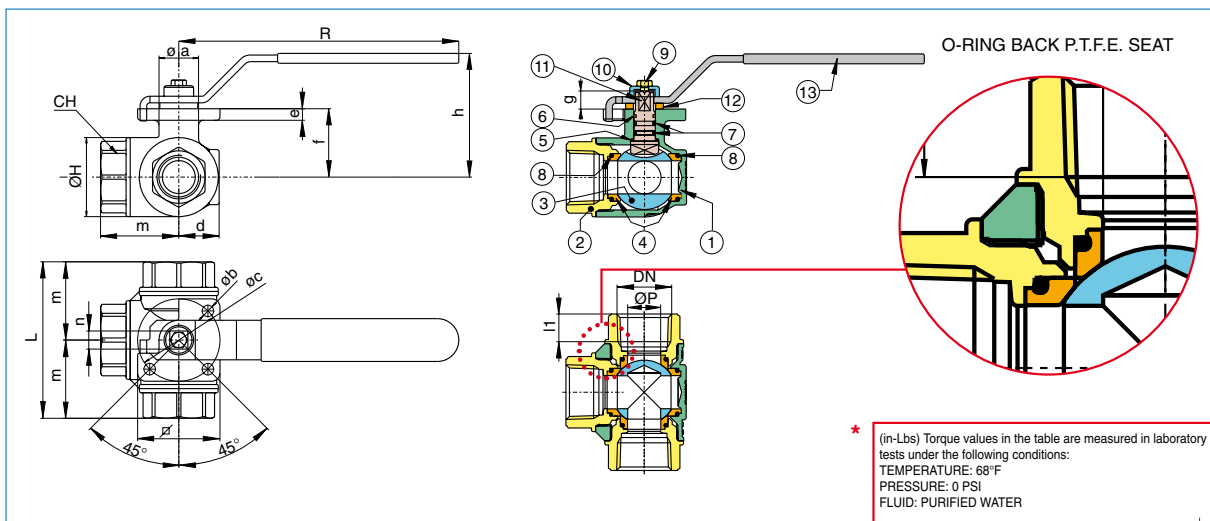
Mod.	NPTF Thread	A		B		C		D		E		Working PSI
		mm	in	mm	in	mm	in	mm	in	mm	in	
2940 1/4PT	1/4"	44.4	1.748	23.5	0.925	37.0	1.457	80.0	3.150	10.0	0.394	710
2940 3/8PT	3/8"	44.4	1.748	24.0	0.945	37.0	1.457	80.0	3.150	10.0	0.394	710
2940 1/2PT	1/2"	50.5	1.988	30.5	1.201	41.0	1.614	80.0	3.150	15.0	0.591	710
2940 3/4PT	3/4"	57.5	2.264	37.0	1.457	55.0	2.165	113.0	4.449	20.0	0.787	570
2940 1PT	1"	70.0	2.756	45.5	1.791	59.0	2.323	113.0	4.449	25.0	0.984	570
2940 1 1/4PT	1-1/4"	80.5	3.169	57.0	2.244	74.5	2.933	137.5	5.413	32.0	1.260	430
2940 1 1/2PT	1-1/2"	94.0	3.701	70.0	2.756	80.5	3.169	137.5	5.413	40.0	1.575	430
2940 2PT	2"	112.5	4.429	84.0	3.307	96.5	3.799	157.0	6.181	50.0	1.968	360
2940 2 1/2PT	2-1/2"	128.0	5.039	96.0	3.780	109.0	4.291	197.0	7.756	54.0	2.126	260
2940 3PT	3"	148.0	5.827	119.0	4.685	126.0	4.961	250.0	9.842	65.0	2.559	230
2940 4PT	4"	169.0	6.654	138.0	5.433	135.0	5.315	250.0	9.842	80.0	3.150	200



Min/Max working temperature: -20°C/+150°C (-4°F/+302°F)

Ball Valve, Series 2960 L-Passage, 3-way/2-position, Lockable

These valves are constructed of a brass body, a steel handle, a hardened chrome-plated brass ball, and a teflon seat. These valves are suitable for industrial, pneumatic, hydraulic, and various domestic installations. Among the various types of compounds which can be transported through these valves are steam, gasoline, fuel, oils, kerosene, acids, and compressed air.



N POS	PART NAME	MATERIAL	N PCS	SIZE	ØP	ØH	l1	L	m	CH	R	h	Øa	Øb	Øc	d	e	f	g	∠	n	CV	psi	Lbs	* in-Lbs
1	BODY	BRASS CW 617 NUNI EN 12165	1	1/4"	0.39	1.34	0.39	2.64	1.32	0.86	4.72	2.44	0.87	0.23	1.42 (ISO F03)	0.77	0.20	1.20	0.35	1.49	0.35	3.26	400	1.22	53.10
2	END CONNECTION	BRASS CW 617 NUNI EN 12165	3	3/8"	0.43	1.34	0.40	2.64	1.32	0.86	4.72	2.44	0.87	0.23	1.42 (ISO F03)	0.77	0.20	1.20	0.35	1.49	0.35	3.50	400	1.16	53.10
3	BALL	BRASS CW 617 NUNI EN 12165	1	1/2"	0.43	1.34	0.53	2.87	1.44	1.06	4.72	2.44	0.87	0.23	1.42 (ISO F03)	0.77	0.20	1.20	0.35	1.49	0.35	4.20	400	1.21	53.10
4	BALL SEAT	P.T.F.E	4	3/4"	0.59	1.53	0.55	3.19	1.60	1.25	4.72	2.52	0.87	0.23	1.42 (ISO F03)	0.87	0.20	1.29	0.35	1.49	0.35	7.00	400	1.44	53.10
5	THRUST WASHER	P.T.F.E	1	1"	0.79	1.89	0.66	3.74	1.87	1.61	6.69	2.95	0.94	0.27	1.97 (ISO F05)	1.00	0.28	1.63	0.43	1.97	0.43	12.83	400	2.64	150.46
6	STEM SEAL	P.T.F.E	1	1 1/4"	0.98	2.36	0.68	4.39	2.20	1.96	6.69	3.17	0.94	0.27	1.97 (ISO F05)	1.22	0.28	1.85	0.43	1.97	0.43	18.67	400	4.15	150.46
7	O-RING STEM	FKM (Viton®)	1	1 1/2"	1.26	2.83	0.68	4.86	2.43	2.16	6.69	3.66	1.26	0.27	1.97 (ISO F05)	1.79	0.28	2.34	0.43	1.97	0.43	29.75	400	6.02	150.46
8	O-RINGS BODY	FKM (Viton®)	4	2"	1.57	3.38	0.70	5.73	2.87	2.75	9.05	4.43	1.46	0.35	2.76 (ISO F07)	1.75	0.32	2.90	0.59	2.75	0.55	43.76	400	9.08	274.37
9	SCREW	Steel 6/S	1	2 1/2"	1.95	4.37	0.93	6.93	3.47	3.34	9.05	4.86	1.46	0.35	2.76 (ISO F07)	2.20	0.32	3.35	0.59	2.75	0.55	70.00	400	16.33	380.58
10	BUSH	BRASS CW 614 NUNI EN 12164	1	3"	1.95	4.45	1.01	7.08	3.54	4.13	9.05	4.86	1.46	0.35	2.76 (ISO F07)	2.20	0.32	3.35	0.59	2.75	0.55	70.00	400	19.55	380.58
11	STEM	BRASS CW 614 NUNI EN 12164	1																						
12	WASHER	NYLON	1																						
13	HANDLE	Fe DD 11 UNI EN 10111	1																						

Chapter 2

Mechanical Valves

	Series	Cv	Page
Mechanically Operated Minivalves	2	.06	36
Mechanically Operated Valves	1 and 3	.52 - 1.31	38
1/8" Ported Mechanically Operated Sensor Valves	3	.73	42
1/8" & 1/4" Mechanically Operated Sensor Valves	4	0.68 - 1.31	44

Mechanical Valves Product Guide

$C_v = .06 - 1.32$

This type of valve is offered with ports from M5 to 1/4" in different versions including 3-way/2-position normally closed, 3-way/2-position normally open, and 5-way/2-position with a variety of operators to meet a wide range of uses. The valves are available in brass poppet style (Series 1 and 2), and spool style (Series 3 and 4).

Page 36

$C_v = 0.6$

Mechanically Operated Minivalves Series 2



3-way/2-position
Ports M5, cartridge $\varnothing 4$ mm (5/32" O.D.)

Page 38

$C_v = .52 - .73$

Mechanically Operated
Valves
Series 1 and 3



3-way/2-position and 5-way/2-position Ports
1/8", 1/4" NPTF

Page 42

$C_v = .73$

1/8" Ported Mechanically
Operated Sensor Valves
Series 3
Whisker Valve



3-way/2-position and 5-way/2-position
Ports 1/8" NPTF

Page 44

$C_v = .68 - 1.32$

1/8" & 1/4" Ported
Mechanically Operated
Sensor Valves
Series 4



3-way/2-position and 5-way/2-position
Ports 1/8", 1/4" NPTF

Cv = .06

Series 2 Mechanically Operated Minivalves

Cv = .06

3-way/2-position
Ports M5, cartridge \varnothing 4 mm
(10-32 UNF, 5/32" O.D.)

The mechanically operated Series 2 miniature valves with 3-way/2-position normally closed function are available with M5 threaded ports or with an integrated super-rapid fitting for diameter 4 mm tubes (5/32" OD).

The devices are actuated by a plunger, roller/lever or a unidirectional lever. These miniature valves have been designed to satisfy the application requirements of the controls industry, paying particular attention to the features which these components must have, i.e.:

- short operational stroke
- small dimensions
- fast and accurate signal

Operating phases (see individual dimension drawings):

A = total stroke

B = pre-stroke (closes exhaust)

C = effective stroke (opens outlet)



TECHNICAL SPECIFICATIONS

Valve group	3-way/2-position
Construction	Poppet type
Mounting	On consoles
Material	Anodized body, Brass poppet gate, Buna-N seals, nickel-plated brass plungers
Threaded port sizes	M5 (10-32 UNF) thread, or 4 mm O.D. cartridge (5/32" O.D. tube connect)
Installation	Bulkhead, or single panel mount
Operating temperature	32° F - 175° F, (dry air necessary down to -4° F)
Fluid	Filtered air (25 micron or less recommended)
Lubricant	Not required; otherwise, only oil compatible with Buna-N, (3° - 10° E), (ISOVG 32 grade; 32 centistokes)

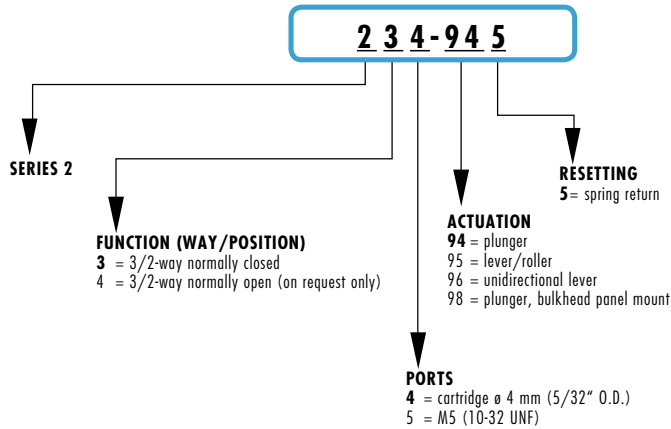
PNEUMATIC DATA

Operating pressure	2 - 10 bar, (30 - 145 psi)
Nominal pressure	6 bar, (87 psi)
Nominal flow	*Qn = 60 NL/min. (2.12 SCFM)
Nominal diameter	2.5 mm
Cv Rating	0.06

*Qn flowrate (SCFM) determined with a supply pressure of 6 bar, (87 psi), and with a pressure drop of 1 bar, (14.5 psi).

**Dimensions are in millimeters

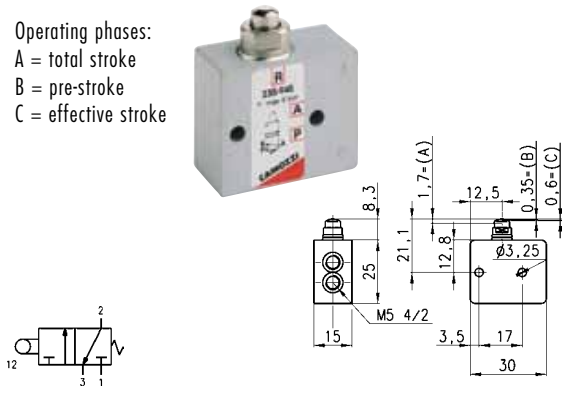
CODING OF MINIVALVES



Minivalves Mod. 235-945 and Mod 234-945 Cv = .06

Actuating force at 6 bar (87 psi) = 6N (1.35 lbs.)

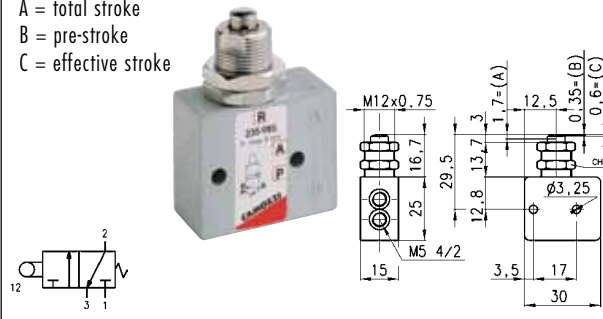
Operating phases:
A = total stroke
B = pre-stroke
C = effective stroke



Minivalves Mod. 235-985 and Mod 234-985 Cv = .06

Actuating force at 6 bar (87 psi) = 6N (1.35 lbs.)

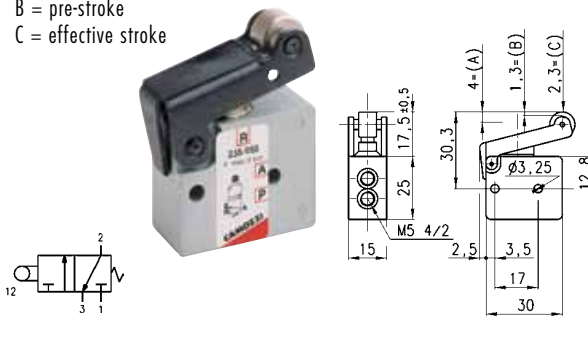
Operating phases:
A = total stroke
B = pre-stroke
C = effective stroke



Minivalves Mod. 235-955 and Mod. 234-955 Cv = .06

Actuating force at 6 bar (87 psi) = 4N (.90 lbs.)
Note: roller and plunger are made of nickle-plated brass.

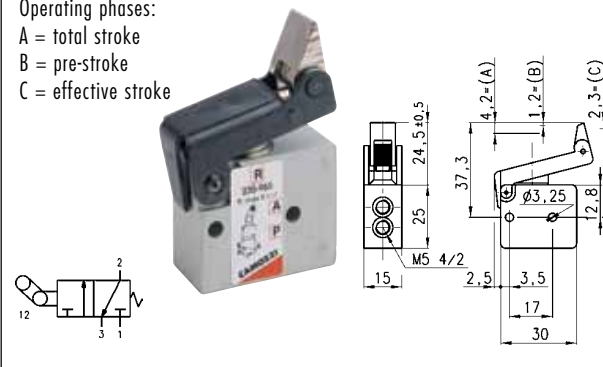
Operating phases:
A = total stroke
B = pre-stroke
C = effective stroke



Minivalves Mod. 235-965 and Mod 234-965 Cv = .06

Actuating force at 6 bar (87 psi) = 4N (.90 lbs.)
Note: roller and plunger are made of nickle-plated brass.

Operating phases:
A = total stroke
B = pre-stroke
C = effective stroke



The company reserves the right to vary models and dimensions without notice. These products are designed for industrial applications and are not suitable for sale to the general public.

Cv = .52 - 1.31

Series 1 and 3 Mechanically Operated Valves

Cv = .52 - 1.31

3-way/2-position and 5-way/2-position
Ports 1/8" and 1/4" NPTF
Series 1: 1/8" and 1/4" NPTF
Series 3: 1/8" NPTF

The mechanically operated valves in the Series 3 (1/8") have been designed with three different types of actuation:

- plunger
- lever/roller
- unidirectional lever/roller

In each case, return is effected by a mechanical spring.

The Series 3, 3-way/2-position valves are normally closed in the rest position when the pressure is supplied at P and are normally open when the pressure is supplied at the connection R, the user port A remaining unchanged.

Moreover, the 5-way/2-position valves may be supplied via the ports R and S with two different pressures if a cylinder has to be operated using a delivery pressure which is different from the return pressure. They can be operated with vacuum down to -.9 bar (28" Hg). Additionally, the series 3 valves can be supplied with 2 different pressures into ports 3 and 5 if a cylinder requires different extend and retract forces. The series 1 valves offer a more rugged, compact design with steel operator interfaces.



TECHNICAL SPECIFICATIONS

Valve group	3/2, 5/2, (way/positions)
Construction	Spool type Series 3; Poppet type series 1
Mounting	Mounting holes in valve body
Materials	Anodized body, Stainless steel spool, Buna-N seals
Threaded port size	1/8" and 1/4" NPTF
Installation	Single panel mount
Operating temperature	32° F - 175° F, (dry air necessary down to -4° F)
Fluid	Filtered air (25 micron or less recommended)
Lubricant	Not required; otherwise, oil compatible with Buna-N, (3° - 10° E) (ISOVG32 grade; 32 centistrokes)

PNEUMATIC DATA

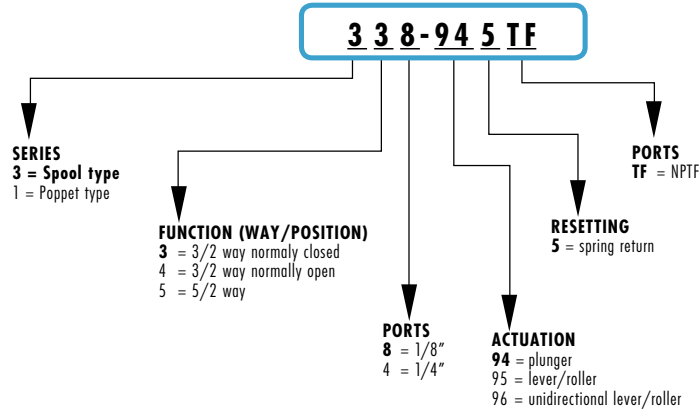
Operating pressure	0 - 10 bar, (0 - 145 psi) (down to -.9 bar vacuum; 28" Hg with Series 3)
Nominal pressure	6 bar (87 psi)
Nominal flow	*Qn Series 1: 1/8" = 500 NL/min. (17.65 SCFM); 1/4" = 1250 NL/min. (44.14 SCFM) Series 3: 1/8" = 700 NL/min. (24.7 SCFM)
Nominal Diameter	1/8" = 5 mm
Cv Rating	Series 1: 1/8" = 0.52; 1/4" = 1.31 Series 3: 1/8" = 0.73

*Qn flowrate (SCFM) determined with a supply pressure of 6 bar, (87 psi), and with a pressure drop of 1 bar, (14.5 psi)

**Dimensions are in millimeters



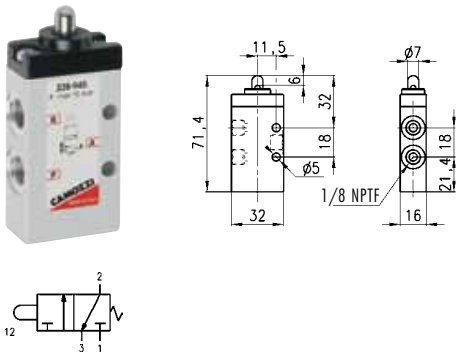
CODING OF MINIVALVES



Valves Mod. 338-945TF

Cv = .73

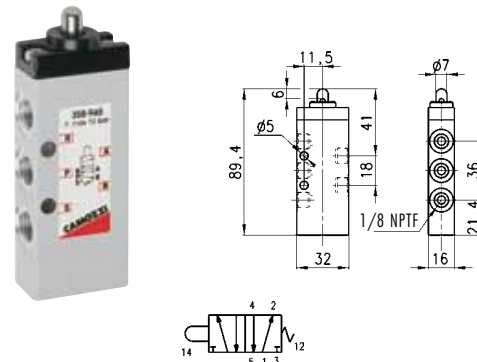
Actuating force at 6 bar (87 psi) = 32N (7.19 lbs.)



Valves Mod. 358-945TF

Cv = .73

Actuating force at 6 bar (87 psi) = 35N (7.87 lbs.)

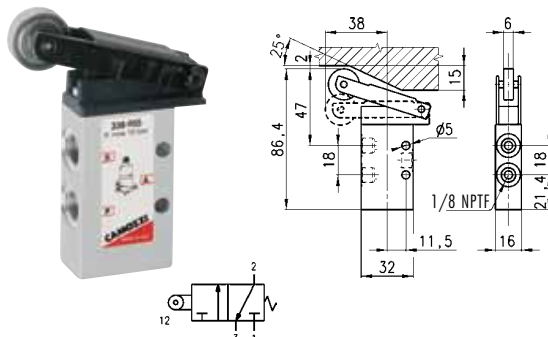


Valves Mod. 338-955TF

Cv = .73

Actuating force at 6 bar (87 psi) = 15N (3.37 lbs.)

Note: roller and plunger are made of stainless steel. (AISI 303)

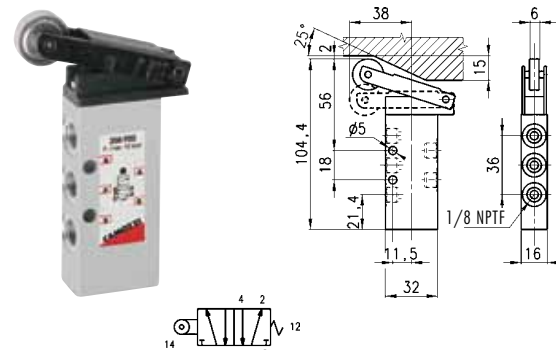


Valves Mod. 358-955TF

Cv = .73

Actuating force at 6 bar (87 psi) = 17N (3.82 lbs.)

Note: roller and plunger are made of stainless steel. (AISI 303)



$C_v = .52 - .73$

Valves Mod. 338-965TF $C_v = .73$

Actuating force at 6 bar (87 psi) = 15N (3.37 lbs.)
 Note: roller and plunger are made of stainless steel. (AISI 303)

Mod. **338-965TF**

Valves Mod. 358-965TF $C_v = .73$

Actuating force at 6 bar (87 psi) = 16N (3.60 lbs.)
 Note: roller and plunger are made of stainless steel. (AISI 303)

Mod. **358-965TF**

Valves Mod 138-945 TF $C_v = .52$

Operating pressure = 0 - 10 bar (0-145 psi)
 Flow rate = 500 NI/min. (17.65 SCFM)
 Actuating force at 6 bar = 70N (15.7 lbs)

Mod. **138-945TF**

Valves Mod 148-945 TF $C_v = .52$

Operating pressure = 0 - 10 bar (0-145 psi)
 Flow rate = 500 NI/min. (17.65 SCFM)
 Actuating force at 6 bar = 70N (15.7 lbs)

Mod. **148-945TF**

Valves Mod 158-945 TF $C_v = .52$

Operating pressure = 0 - 10 bar (0-145 psi)
 Flow rate = 500 NI/min. (17.65 SCFM)
 Actuating force at 6 bar = 120N (26.9 lbs) total combined

Mod. **158-945TF**

Valves Mod 138-955 TF $C_v = .52$

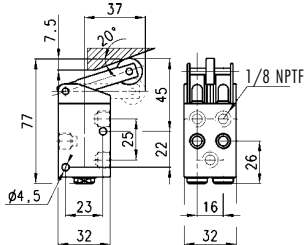
Operating pressure = 0 - 10 bar (0-145 psi)
 Flow rate = 500 NI/min. (17.65 SCFM)
 Actuating force at 6 bar = 36N (8.08 lbs)

Mod. **138-955TF**

Valves Mod 158-955 TF

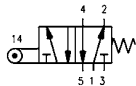
Cv = .52

Operating pressure = 0 - 10 bar (0 - 145 psi)
 Flow rate = 500 NI/min. (17.65 SCFM)
 Actuating force at 6 bar = 92N (20.65 lbs) total combined



Mod.

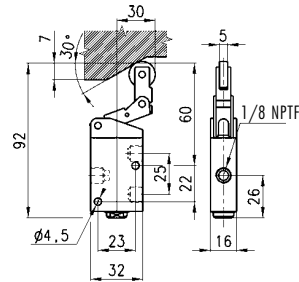
158-955TF



Valves Mod 138-965 TF

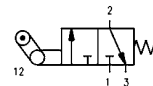
Cv = .52

Operating pressure = 0 - 10 bar (0 - 145 psi)
 Flow rate = 500 NI/min. (17.65 SCFM)
 Actuating force at 6 bar = 41N (9.2 lbs)



Mod.

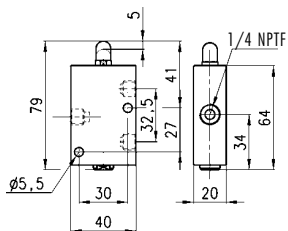
138-965TF



Valves Mod 134-945 TF

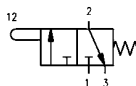
Cv = 1.31

Operating pressure = 0 - 10 bar (0 - 145 psi)
 Flow rate = 1250 NI/min. (44.14 SCFM)
 Actuating force at 6 bar = 64N (14.37 lbs)



Mod.

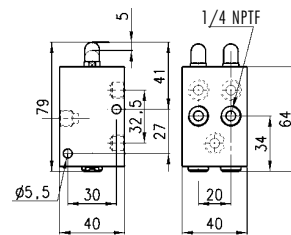
134-945TF



Valves Mod 154-945 TF

Cv = 1.31

Operating pressure = 0 - 10 bar (0 - 145 psi)
 Flow rate = 1250 NI/min. (17.65 SCFM)
 Actuating force at 6 bar = 147N (33.0 lbs) total combined



Mod.

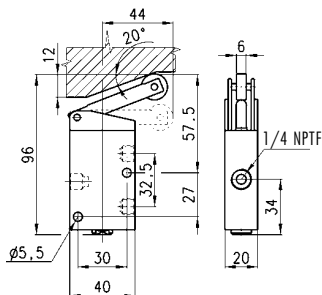
154-945TF



Valves Mod 134-955 TF

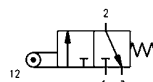
Cv = 1.31

Operating pressure = 0 - 10 bar (0 - 145 psi)
 Flow rate = 1250 NI/min. (17.65 SCFM)
 Actuating force at 6 bar = 41N (9.2 lbs)



Mod.

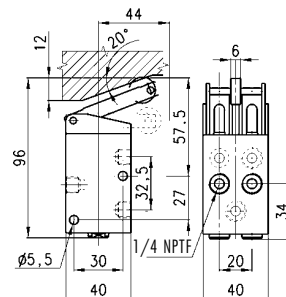
134-955TF



Valves Mod 154-955 TF

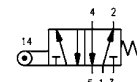
Cv = 1.31

Operating pressure = 0 - 10 bar (0 - 145 psi)
 Flow rate = 1250 NI/min. (17.65 SCFM)
 Actuating force at 6 bar = 110N (24.7 lbs) total combined



Mod.

154-955TF



Cv = .73

Series 3 1/8" Ported Mechanically Operated Sensor Valves (Whisker Valve) Cv = .73

3-way/2-position and 5-way/2-position Ports 1/8" NPTF

In order to facilitate the use of limit switch valves in applications where very low actuating forces and high flow rates are required, the Series 3 valves are equipped with new mechanical devices designed for this purpose. The Series 3 valve is designed with a mechanical lever which when operated releases an internal pilot signal to atmosphere. Actuation forces are less than 50g (2N); (.5 lbf) and the sensitivity can be increased by adding a "whisker" or rod of dia. 3mm to the lever (cross-thread of M5 x .8 can be used to hold "whisker-rod" in place)

The functions available are as follows:

for the 3 Series:

- 3-way/2-position normally closed or normally open (spring return)
- 5-way/2-position (spring return)

* These valves have an internal mechanical spring return and a pilot-pressure spool plunger that shifts upon actuation of the lever by depressurizing the spool plunger. Valve symbols shown are "at rest" next to the actuator symbol.



TECHNICAL SPECIFICATIONS

Valve group	3-way/2-position, 5-way/2-position
Construction	Spool-type (servocontrolled)
Mounting	Mounting holes in valve body
Materials	Anodized body, stainless steel spool, Buna-N seals
Threaded port sizes	1/8" NPTF
Installation	In any position
Operating temperature	32° F - 175° F, (dry air necessary down to -4° F)
Fluid	Filtered air (25 micron or less recommended)
Lubricant	Not required; otherwise, oil compatible with Buna-N, (3° - 10° E) (ISOVG 32 grade; 32 centistrokes)

PNEUMATIC DATA

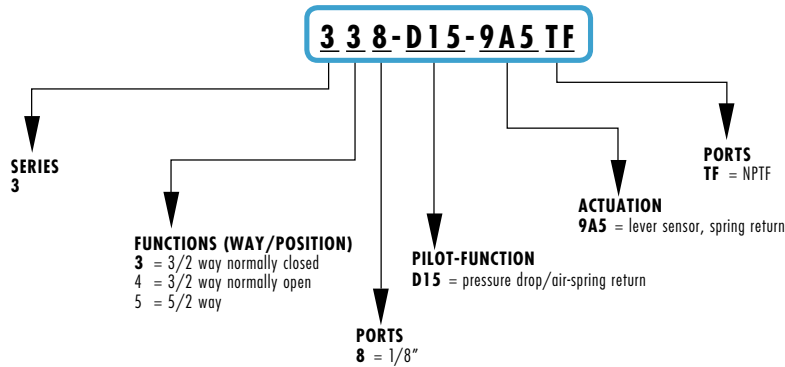
Operating pressure	4-10 bar (58-145 psi)
Nominal pressure	6 bar, (87 psi)
Nominal flow	*Qn Series 3: 1/8" = 700 Nl/min. (24.7 SCFM) Cv rating 1/8" = .73
Nominal diameter	1/8" = 5 mm
Fluid	Filtered air

* Qn = determined with supply pressure of 6 bar and with Dp = 1 bar

**Dimensions are in millimeters

The company reserves the right to vary models and dimensions without notice. These products are designed for industrial applications and are not suitable for sale to the general public.

CODING OF MINIVALVES



* These valves have an internal mechanical spring return and a pilot-pressure spool plunger that shifts upon actuation of the lever by depressurizing the spool plunger. Valve symbols shown are "at rest" next to the actuator symbol.

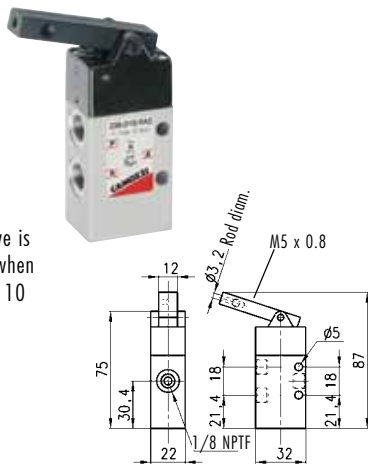
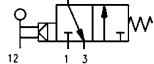
Valves Mod. 338-D15-9A5TF

Cv = .73

Operating pressure
4 - 10 bar, 58-145 psi

Actuation force =
.5lbf at 6 bar (2N)

* The function of the valve is indicated by the symbol when operating between 4 and 10 bar.



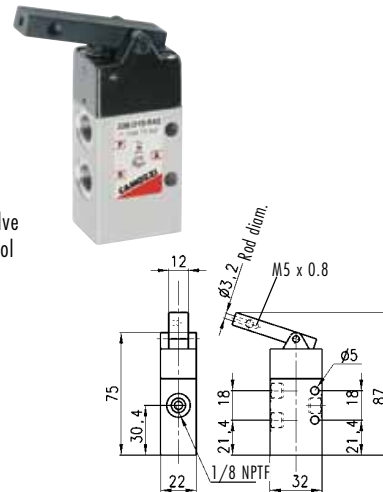
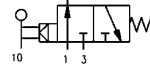
Valves Mod. 348-D15-9A5TF

Cv = .73

Operating pressure
4 - 10 bar, 58-145 psi

Actuation force =
.5lbf at 6 bar (2N)

* The function of the valve is indicated by the symbol when operating between 4 and 10 bar.



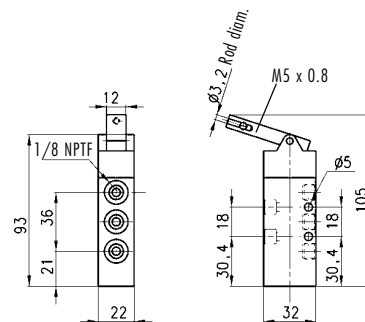
Valves Mod. 358-D15-9A5TF

Cv = .73

Operating pressure
4 - 10 bar, 58-145 psi

Actuation force =
.5lbf at 6 bar (2N)

* The function of the valve is indicated by the symbol when operating between 4 and 10 bar.



* All "whisker-rod" holes in lever have M5 x 0.8 cross-drilled tap hole for securing rod.

Cv = .68 - 1.31

Series 4 Cv = 0.68 - 1.31 1/8" & 1/4" Mechanically Operated Sensor Valves

**3-way/2-position and 5-way/2-position
Ports 1/8", 1/4" NPTF**

In order to facilitate the use of limit switch valves in applications where very low actuating forces and high flowrates are required, Series 4 valves are equipped with new mechanical devices designed for this purpose. The 4 Series includes one or two minivalves depending on the function which the valve must perform.*

The mini valves reduce the actuation force required to operate the main valve.

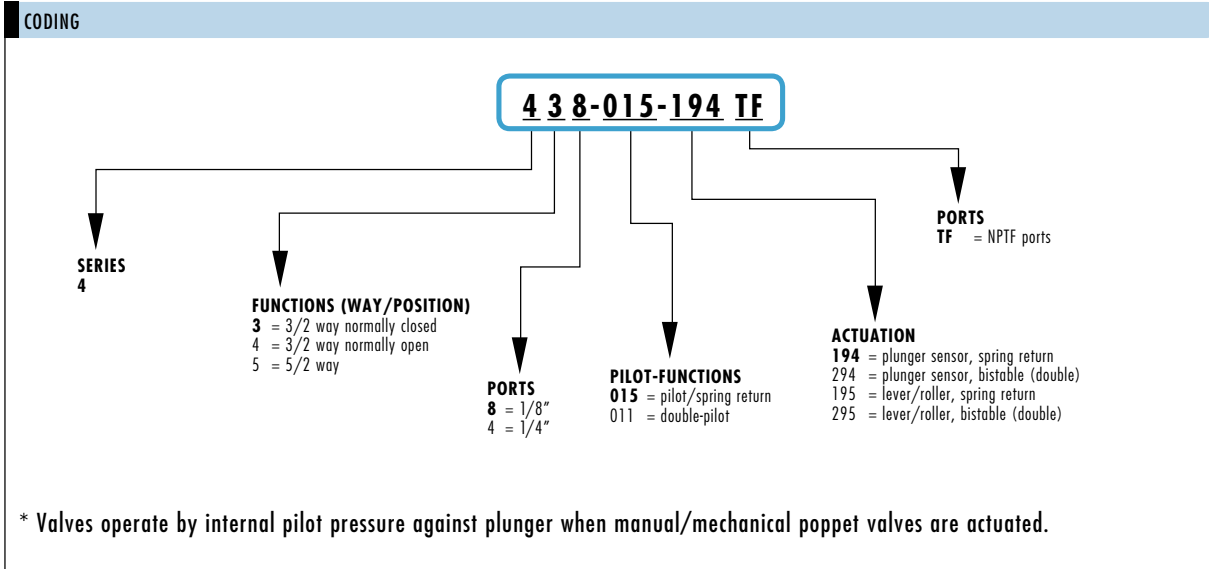
The functions available are as follows:

- 5-way/2-position (monostable) - spring-return
- 5-way/2-position (bistable) - double-pilot detented

*The mini-valves utilize a poppet valve to pilot-pressure the main spool plunger.

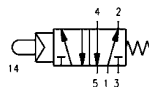
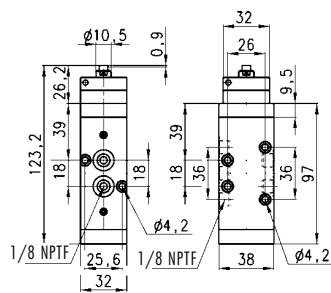


GENERAL DATA	
Construction	spool-type (servocontrolled); internal pilot-pressure spool plunger
Valve Function	3-way/2-position, 5-way/2-position
Materials	Anodized body, stainless steel spool, NBR seals
Ports	1/8", 1/4" NPTF
Operating Temperature	32° - 175°F (dry air necessary down to -4°F)
PNEUMATIC DATA	
Operating pressure	2.5 - 8 bar (36 - 116 psi) for single-pilot models 2 - 8 bar (29 - 116 psi) for double-pilot models
Nominal Flow	Qn: 1/4" = 1250 NL/min. (44.1 SCFM) Cv = 1.31 1/8" = 650 NL/min. (22.95 SCFM) Cv = 0.68



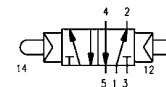
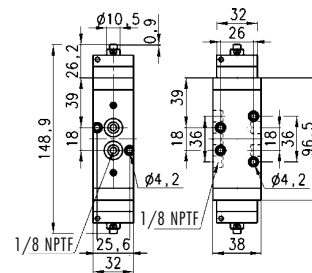
Valves Mod. 458-015-194TF Cv = 0.68

Operating pressure = 2.5 - 8 bar (36 - 116 psi)
Flow rate = 650 NI/min. (22.95 SCFM)
Actuating force at 6 bar = 6N (1.35 lbf)



Valves Mod. 458-011-294TF Cv = 0.68

Operating pressure = 2 - 8 bar (29 - 116 psi)
Flow rate = 650 NI/min. (22.95 SCFM)
Actuating force at 6 bar = 6 N (1.35 lbf)



Chapter 3

Air-Pilot Valves

	Series	Cv	Page
Basic Logic Valves	2L	.07	52
Sender & Receiver Element	2L		54
Pneumatically Operated Amplifier Valve	2L	.13	56
Air-Pilot Operated Valves	3	.73 – 1.37	58
Air-Pilot Operated Valves	4	.73 – 2.00	66
Air-Pilot Operated Valves	7	.47 - .95	74
Regulator Plate ISO Size 1 (P-Regulation)	7		82
Regulator Plate ISO Size 1 (A-B Regulation)	7		84
Air-Pilot Operated Valves	9	.95 – 4.57	86
Regulator Plate ISO Size 1 (P-Regulation)	9		94
Regulator Plate ISO Size 1 (AB-Regulation)	9		96
Regulator Plate ISO Size 2 (P-Regulation)	9		98
Regulator Plate ISO Size 2 (AB-Regulation)	9		100
Regulator Plate ISO Size 3 (P-Regulation)	9		102
Regulator Plate ISO Size 3 (AB-Regulation)	9		104
NAMUR Interface	NA	1.05	106
Check Valves	VNR	.16 – 1.47	108
Pilot-Operated Check Valves	VBO-VBU		110
Quick Exhaust Valves	VSC and VSO	.05 – 4.73	114

Air-Pilot Valves Product Guide

Cv = .07

Page 52

Cv = .07

Basic Logic Valves
Series 2L



Cartridge Ø 4 mm
(5/32" O.D. tube connection)

Page 54

Sender and receiver element
Series 2L



Page 56

Cv = .13

Pneumatically Operated Amplifier Valve
Series 2L



Mod. 2LA-AM (Amplifier Valve)
3-way/2-position
Ports 1/8" BSPP
*(Will accept Pro-Fit® fittings)

Page 58

Cv .73-1.37

Air-Pilot Valves & Remote Air-Pilot
Series 3



1/8" NPTF, 3-way/2-position and 5-way/2-position
1/4" NPTF, 3-way/2-position, 5-way/2-position, 5-way/3-position
and dual 3-way/2-position valves

Page 66

Cv = .73 - 2.00

Air-Pilot Operated Valves
Series 4



1/8", 1/4" NPTF, 3-way/2-position;
5-way/2-position; 5-way/3-position
1/2" NPTF 5-way/2-position

Page 74

Cv = .47 - .95

Air-Pilot Operated Valves
Series 7 ISO 15407-1



(VDMA 24563)
ISO 15407-1, Size 26mm (size 01) and 18mm (size 02)
Side outlet manifold, Manifold assembly (non-plugin)
5-way/2-position and 5-way/3-position

Page 82

Pressure Regulator Plates
Series 7 VDMA 24563 ISO 15407-1



For 26mm-ISO 01 size valves only.
Regulator Plate ISO Size 01 (P-regulation) 26mm



For 26mm-ISO 01 size valves only.
Regulator Plate ISO Size 01 (AB-regulation) 26mm

Page 86

Cv = .95 - 4.57

Air-Pilot Operated Valves
Series 9 ISO 5599/1 Standard

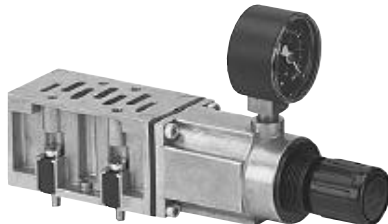


Assembly with sub-base (ISO 5599/1 Standards) non-plug-in
Sizes 1, 2 and 3: 5-way/2-position; 5-way/3-position; single & double Air-Pilot valves.



Page 94

Regulator Plates ISO Sizes 1, 2 and 3
Series 9 ISO 5999/1



For ISO Size 1, 2 and 3 valves only
(P-regulation, AB-regulation)

Page 106

Cv = 1.05

Air-Pilot Operated
Series NA Valves - Namur interface



Air-Pilot operated 1/4" NPTF
3-way, 2-position; 5-way/2-position; and 5-way/3-position valves
with Interface according NAMUR Standard

Page 108

Cv = 1.05

Check Valves
Series VNR



Check valves VNR
Ports M5 (10-32 UNF), 1/8", 1/4",

Page 110

Pilot-Operated Check/Blocking Valves
Series VBO - VBU (Nickel Plated)

Unidirectional (Pilot-Operated Check Valve)
and Bidirectional (Blocking Valve)
1/8", 1/4", 3/8", 1/2" NPTF
Nominal diameters 5.5 - 8 - 11 mm

Page 114

Quick Exhaust Valves
Series VSC and VSO

Quick exhaust valves VSC, VSO
Ports M5 (10-32 UNF), 1/8", 1/4",
3/8", 1/2", NPTF
cartridge \varnothing 4 mm (5/32" O.D.) (VSO only)

Cv = .07

Basic Logic Valves Series 2L

Cv = .07

Cartridge Ø 4 mm
(5/32" O.D. tube connection)

These basic pneumatic logic valves provide a range of functions including "AND", "NOT", "OR", "YES" and "Memory".

Materials:

- Anodized Body
- Buna-N Seals (NBR)
- Nickel-Plated Brass Collet and Cartridge Assembly

Basic logic functions Series 2L are available in 5 different models and can be mounted separately by means of 2 passing holes in the body. Bracket Mod. 2LQ-8A allows to have the inlets and outlets on the front side, facilitating the mounting of the connection tubes.

All models are constructed with the pressure window incorporated, which allows an easy detection of any problems. Moreover the fittings are incorporated into the valve body and are super-rapid ø4. The "NOT" element has an actuating pressure of 0.3 bar.



TECHNICAL SPECIFICATIONS

Construction	Poppet Design (spool for Memory)
Valve group	Automatic valves (logic units)
Ports	Cartridge ø4 mm (5/32" O.D. tube connection)
Operating pressure	32° - 175° F, (dry air necessary down to -4° F)
Lubricant	Not required; otherwise, oil compatible with Buna-N seals (3 - 10° F): ISOVG32 grade (32 centistrokes)
Fluid	Air, with or without lubrication

PNEUMATIC DATA

Operating pressure	29 - 116 psi
Nominal flowrate	70 NL/min. (2.47 SCFM), Cv = .007
Dimensions in millimeters	

"Or", "And" Valve Mod. 2LR.../2LD... (5/32" O.D. Cartridges) Cv = .07

Mod.			
2LR-SB4-B	(OR)		
Mod.			
2LD-SB4-B	(AND)		

"Yes", "Not" Valve Mod. 2LS.../2LT... (5/32" O.D. Cartridges) Cv = .07

Mod.			
2LS-SB4-B	(YES)		
Mod.			
2LT-SB4-B	(NOT)		

* Minimum actuating pilot pressure is 0.3 bar (4.3 psi), at point "X" (10 or 12)

"Memory" Valve Mod. 2LM... (5/32" O.D. Cartridges) Cv = .07

Mod.			
2LM-SB4-B			

* Operation: Pilot air signals at points 12 or 14 shift spool to direct main air from 1 to 2 or 1 to 4 respectively. "Memory" valve will continue to direct air to same outlet as last signal with or without pilot signal or until manual override stem on side of pilot is depressed.

Right-angle bracket Mod. 2LQ... Cv = .07

Mod.			
2LQ-BA			

Sender and Receiver Element Series 2L

Mod. 2LB-SE (Sender)

Mod. 2LB-SR (Receiver)

Both the sender and receiver should be supplied with filtered, non-lubricated compressed air. The sender requires a supply pressure of 0.3 - 2 bar. In the case of the receiver (max 8.7 psi), this is done in order to prevent the danger of contamination. The air jet from the sender interrupts the free outflow of the air jet at the receiver. A back pressure is produced which generates a control pressure at outlet A of the receiver. This pressure signal is typically sent to an amplifier valve. If an object breaks the air jet between the sender and the receiver, the signal drops to zero.

The air signal from the receiver element (2LB-SR) will typically become the input pilot signal to the amplifier valve (2LA-AM). Receiver element (2LB-SR) will typically connect its port 2 (or "A"), to the amplifier valve pilot port 12.



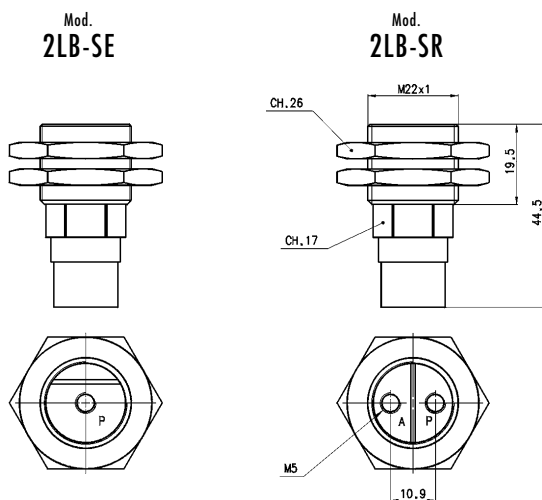
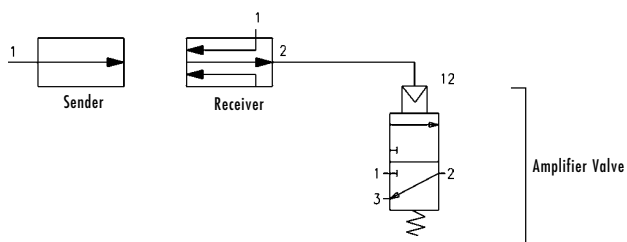
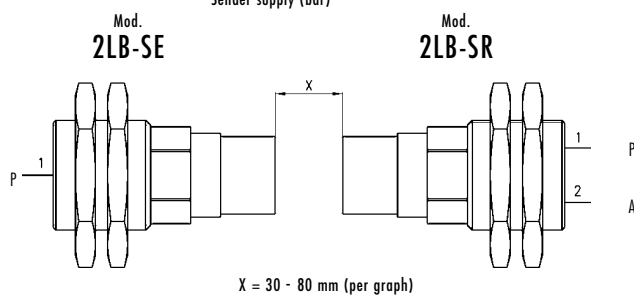
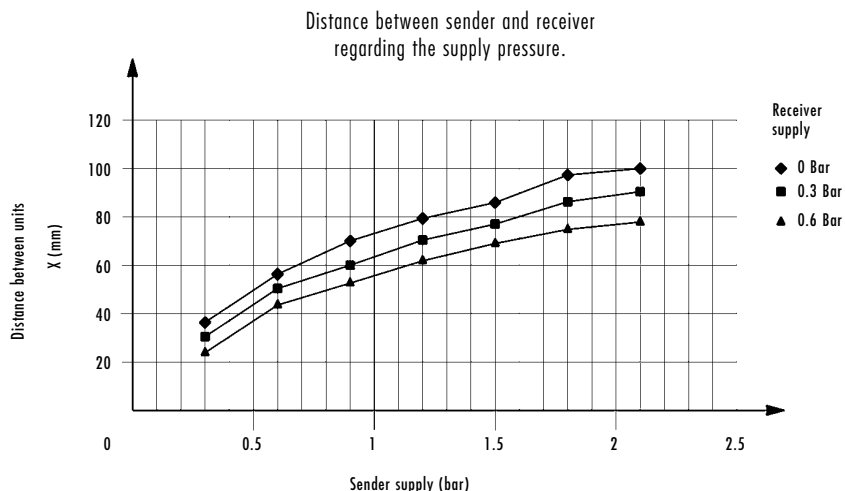
TECHNICAL SPECIFICATIONS

Materials	Anodized - brass
Construction	nozzle without moving parts
Mounting	M22 x 1 threaded body with bulkhead nuts
Installation diameter	22.5 mm
Mounting brackets	B 20-25 (Foot), E 20-25 (Flange)
Ports	M5 (10 - 32 UNF)

PNEUMATIC DATA

Pressure	Sender (2LB-SE): (4.35 - 29 psi) min. 0.3 bar - max. 2 bar
Conditions of functioning	Receiver (2LB-SR): (.6 bar max), 8.7 psi max. PSR ≤ PSE (receiver's pressure is less or equal to sender's pressure)
Air consumption	P (2 bar) @ 45 NL/min; P (29 psi) = 1.59 SCFM
Max. distance between sender and receiver	see graph
Temperature	-20°C + 80°C; (-4° - 175° F)
Fluid	filtered air, without lubricant

Sender and receiver element Mod. 2LB...



Sender
Mod.
2LB - SE
Receiver
Mod.
2LB - SR

Cv = 1.3

Series 2L Pneumatically Operated Amplifier Valve

Cv = .13

Mod. 2LA-AM (Amplifier Valve)
3-way/2-position
Ports 1/8" BSPP
*(Will accept Pro-Fit® fittings)

The pneumatically operated amplifier valve is a 3-way/2-position normally closed valve, changing low pressure signals into 2 - 8 bar pressure signals.
The valve construction allows permanent reduced air consumption at rest.

Pilot pressure applied at Port 12 actuates valve and allows pressure (2 - 8 bar) to flow from inlet P to outlet A). 1 → 2. A constant "leak," or air consumption, occurs while unit is at rest from inlet 1 to atmosphere.



TECHNICAL SPECIFICATIONS

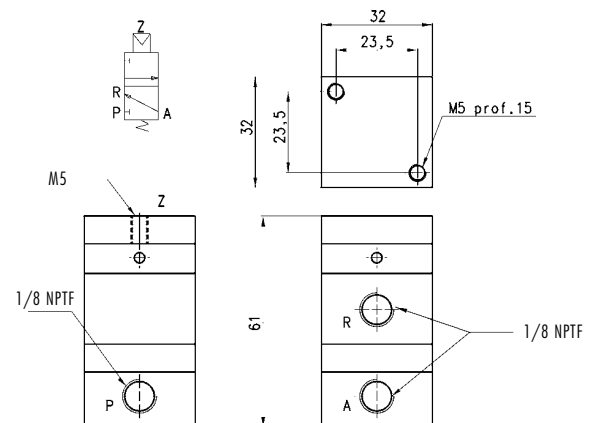
Construction	Poppet type
Valve group	3-way/2-position normally closed
Materials	Aluminum body, Buna-N seals
Mounting	By M5 (10-32 UNF) screws
Ports	1/8" BSP (accepts 1/8" Pro-Fit NPTF)
Installation	In any position
Temperature	32° - 175° F (Dry air required down to -4° F)

PNEUMATIC DATA

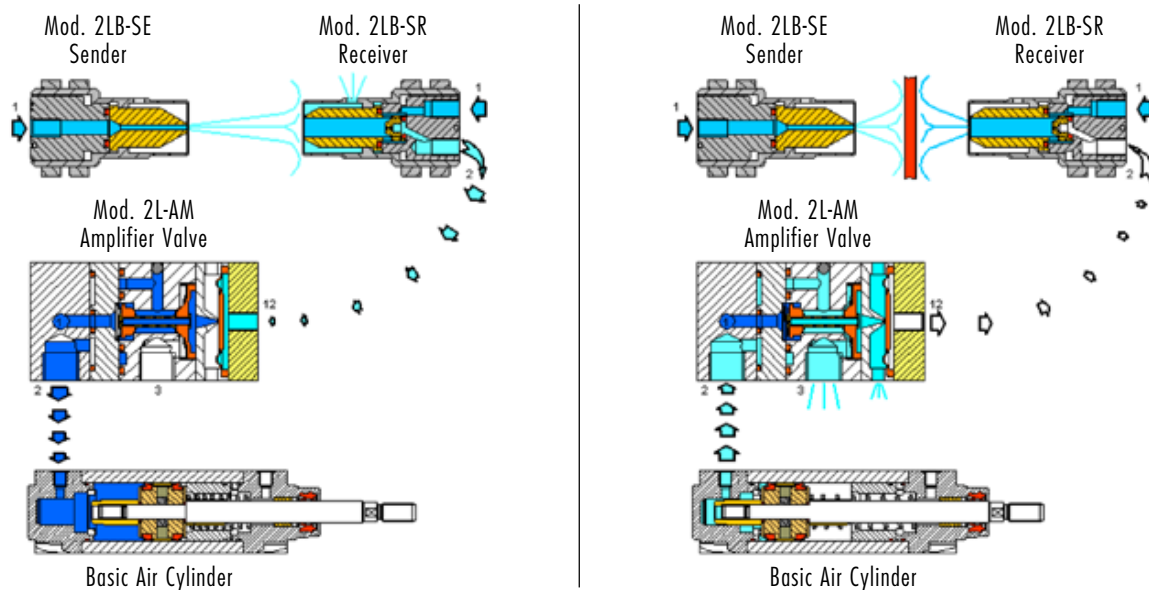
Output pressure	Min. 2 - max. 8 bar (29-116 PSI)
Minimum signal input pressure	0.03 bar (.435 psi)
Maximum signal input pressure	0.6 bar (8.7psi)
Constant air consumption	at rest (6 bar)
	3.3 NL/min (.116 SCFM) via port 1 to atmosphere without signal present at 12
Nominal flow	120 NL/min (4.23 SCFM) P → A (1 → 2) Cv = 0.13 (when actuated)
Fluid	Filtered, not lubricated air

VALVE MOD. 2LA-AM

Cv = .13



Basic Assembly/Circuit Guide



The air signal from the receiver element (2LB-SR) will typically become the input pilot signal to the amplifier valve (2LA-AM). Receiver element (2LB-SR) will typically connect its port 2 (or "A"), to the amplifier valve pilot port 12.

Pilot pressure applied at Port 12 actuates valve and allows pressure (2 - 8 bar) to flow from inlet P to outlet A).
 1 → 2. A constant "leak," or air consumption, occurs while unit is at rest from inlet 1 to atmosphere.

Cv = .73 - 1.37

Series 3 Air-Pilot Operated Valve

Cv= .73 - 1.37

Series 3: 1/8" NPTF, 3-way/2-position & 5-way/2-position
1/4" NPTF, 3-way/2-position, 5-way/2-position, 5-way/3-position,
and dual 3-way/2-position valves.

The pneumatically operated, 3-way/2-position, 5-way/2-position Series 3 valves have been designed with different methods of return: An Air-Pilot with mechanical spring, Air-Pilot return, or Air-Pilot with bias override return. This is possible due to the type of design consisting of a balanced spool, which means that it can be used for a very wide range of applications. (including reverse porting).

The 3-way/2-position valves are normally closed in the rest position when the pressure is supplied at P, and are normally open when the pressure is supplied at R, the use of A remaining unchanged. Moreover, the 5-way/2-position valves can be supplied via the ports R and S with two different pressures if a cylinder must be operated using a delivery pressure different from the return pressure.

On the valve series 3, two additional holes permit assembly onto the manifold CNVL without the use of a banjo bolt.

*See manifold codes at the end of this section.

New versions of this valve have expanded the range to higher flow 1/4" ported valves as well as dual 3-way/2-position valves. 1/8" and 1/4" valves can be mounted on a common manifold by means of a transition plate.



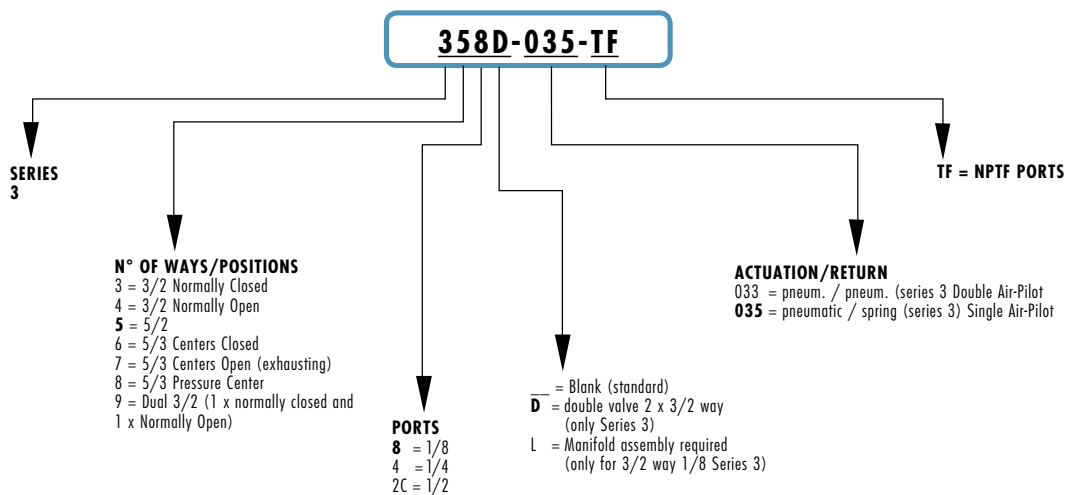
TECHNICAL SPECIFICATIONS

Valve group	3-way/2-position, 5-way/2-position, 5-way/3-position and dual 3-way/2-position
Construction	Air-Pilot, in-line ported
Mounting	through holes in valve body
Materials	Anodized body, stainless steel spool, Buna-N seals
Threaded port sizes	1/4", 1/8" NPTF
Installation	in any position
Operating temperature	0 - 80°C (with dry air at -20°C), 32°F — 176°F (with dry air at -4°F)
Fluid	Filtered air (25 micron or less recommended)
Lubricant	Not required; otherwise, oil compatible with Buna-N, (3° - 10° E); ISOVG32 grade, 32 centistrokes

PNEUMATIC DATA

Operating pressure	P = -9 -10 bar (0-145 psi): (Down to 28" Hg possible)
Control pressure	min. press. (see valve description)
Nominal pressure	6 bar (87 psi)
Nominal flow	*Qn Series 3: 1/8" = 700 NL/min (24.7 SCFM), Cv= .73 1/4" = 1300 NL/min (45.9 SCFM), Cv = 1.37
Nominal diameter	ø1/8 = 5 mm, 1/4" = 7.5 mm
Fluid	filtered air, without lubrication** (25 micron or less recommended)
	*Qn = determined with supply pressure of 6 bar and with Dp = 1 bar. **If lubricated air is used, it is recommended to use ISOVG32 oil and never interrupt the lubrication.

CODING OF PNEUMATICALLY OPERATED VALVES



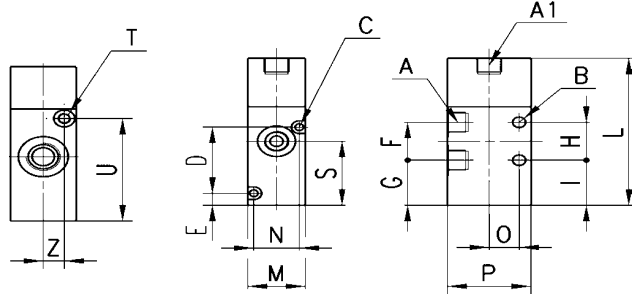
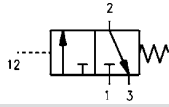
Cv = .73 - 1.37

3-way/2-position valve, Single Air-Pilot, Spring Return

Cv = .73 - 1.37

Valve with Air Pilot and mechanical spring return.
Minimum pilot pressure: 3 bar. (44 psi)

Note: Please specify model 338 for single application or 338L for manifold CNVL use.



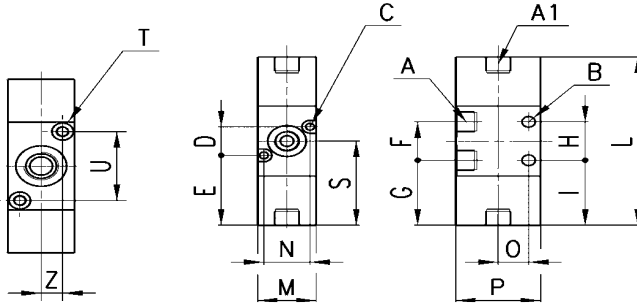
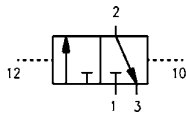
DIMENSIONS

Mod.	Mounting	Function	Flow rate NL/min	Cv	min. pil P.	Ports NPTF		Pilot																
						A	A1	B	C	D	E	F	G	H	I	L	M	N	O	P	S	T	U	Z
338-035TF	without base	3-way/2-position NC	700	.73	3 bar	1/8	1/8	5	3.2	-	5.7	18	21.4	18	21.4	69.8	22	-	11.5	32	30.4	-	-	-
338L-035TF	on manifold	3-way/2-position NC	700	.73	3 bar	1/8	1/8	-	3.2	31.4	5.7	18	21.4	-	21.4	69.8	22	17.4	11.5	32	30.4	-	-	-
334-035TF	without base	3-way/2-position NC	1300	1.37	3 bar	1/4	-	4.1	-	-	-	22	21.4	22	21.4	73	25	-	16	40	32.4	M5	48.5	8

3-way/2-position valve, 1/8" port Double Air-Pilot

Cv = .73 - 1.37

Valve with double Air-Pilot
Minimum pilot pressure: 2.5 bar. (29 psi)



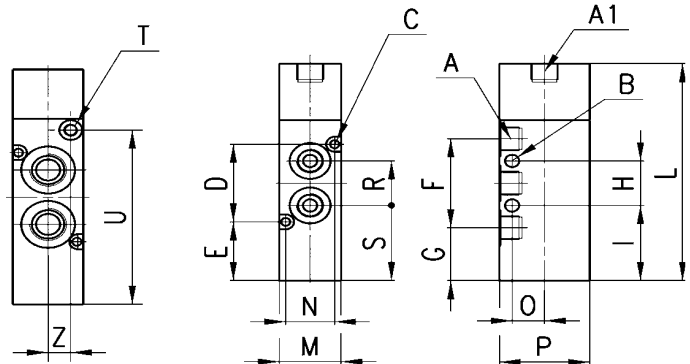
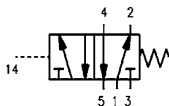
DIMENSIONS

Mod.	Mounting	Function	Flow rate NL/min	Cv	min. pil P.	Ports NPTF		Pilot																
						A	A1	B	C	D	E	F	G	H	I	L	M	N	O	P	S	T	U	Z
338-033TF	without base	3-way/2-position NC	700	.73	2.5 bar	1/8	1/8	5	-	-	-	18	30.4	18	30.4	78.8	22	-	11.5	32	41.7	-	-	-
338L-033TF	on manifold	3-way/2-position NC	700	.73	2.5 bar	1/8	1/8	5	3.2	13.4	32.7	18	30.4	-	30.4	78.8	22	17.4	-	32	41.7	-	-	-
334-033TF	without base	3-way/2-position NC	1300	1.37	2.5 bar	1/4	-	4.1	-	-	-	22	29.7	22	29.7	81.3	25	-	16	40	40.7	M5	-	-

5-way/2-position valve, Single Air Pilot, Spring Return

Cv = .73 - 1.37

Valve with pneumatic operation
mechanical spring return.
Minimum pilot pressure: 2.5 bar. (36 psi)



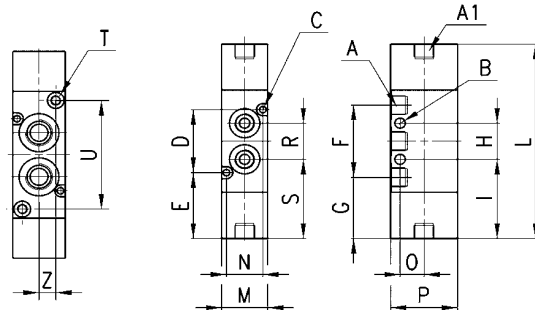
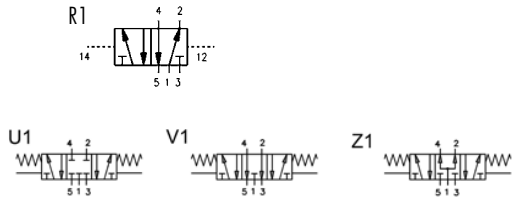
DIMENSIONS

Mod.	Mounting	Function	Flow rate NL/min	Cv	min. pil P.	Ports NPTF		Pilot																
						A	A1	B	C	D	E	F	G	H	I	L	M	N	O	P	S	T	U	Z
358-035TF	without base/on manifold	5/2-way	700	.73	3 bar	1/8	1/8	5	3.2	31.4	23.8	36	21.4	18	30.4	87.8	22	17.4	11.5	32	30.4	-	-	-
354-035TF	without base/on manifold	5/2-way	1300	1.37	3 bar	1/4	-	4.1	3.2	36	25.4	44	21.4	22	30.4	95	25	21	16	40	32.4	M5	70.5	8

5-way/2-position and 5-way/3-position Double Air-Pilot Valve

Cv = .73 - 1.36

Valve with pneumatic actuation and differential return.
Minimum pilot pressure: 2 bar. (29 psi)

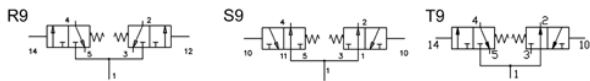


DIMENSIONS

Mod.	Mounting	Function	Flow rate NL/min	Cv	P. min pil.	Ports		B	C	D	E	F	G	H	I	L	M	N	O	P	Pilot				Symbol
						NPTF A	Pilot A1														S	T	U	Z	
358-033TF	in line/ manifold	5/2	700	.73	2.5 bar	1/8	1/8	5	3.2	31.4	32.8	36	30.4	18	39.4	96.8	22	17.4	11.5	32	39.4	-	-	-	R1
354-033TF	in line/ manifold	5/2	1300	1.37	2.5 bar	1/4	-	4.1	3.2	36	33.7	44	29.7	22	40.7	103.3	25	21	16	40	40.7	M5	54.3	8	R1
368-033TF	in line/ manifold	5/3	700	.73	2.5 bar	1/8	1/8	5	3.2	31.4	32.8	36	30.4	18	39.4	96.8	22	17.4	11.5	32	39.4	-	-	-	U1
364-033TF	in line/ manifold	5/3	1200	1.26	2.5 bar	1/4	-	4.1	3.2	36	33.7	44	29.7	22	40.7	103.3	25	21	16	40	40.7	M5	54.3	8	U1
378-033TF	in line/ manifold	5/3	700	.73	2.5 bar	1/8	1/8	5	3.2	31.4	32.8	36	30.4	18	39.4	96.8	22	17.4	11.5	32	39.4	-	-	-	V1
374-033TF	in line/ manifold	5/3	1200	1.26	2.5 bar	1/4	-	4.1	3.2	36	33.7	44	29.7	22	40.7	103.3	25	21	16	40	40.7	M5	54.3	8	V1
388-033TF	in line/ manifold	5/3	700	.73	2.5 bar	1/8	1/8	5	3.2	31.4	32.8	36	30.4	18	39.4	96.8	22	17.4	11.5	32	39.4	-	-	-	Z1
384-033TF	in line/ manifold	5/3	1200	1.26	2.5 bar	1/4	-	4.1	3.2	36	33.7	44	29.7	22	40.7	103.3	25	21	16	40	40.7	M5	54.3	8	Z1

Dual 2 x 3-way/2-position Double Air-Pilot Valve

Cv = .73 - 1.26



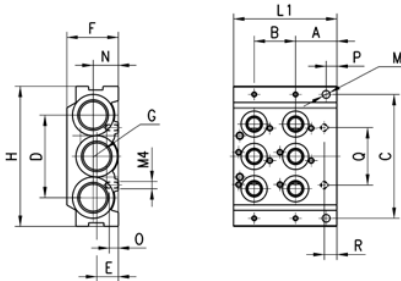
DIMENSIONS

Mod.	Mounting	Function	Flow rate NL/min	Cv	P. min pil.	Ports		B	C	D	E	F	G	H	I	L	M	N	O	P	Pilot				Symbol
						NPTF A	Pilot A1														S	T	U	Z	
338D-035TF	in line/ manifold	2x3/2 NC	700	.73	2.5 bar	1/8	1/8	5	3.2	31.4	32.8	36	30.4	18	39.4	96.8	22	17.4	11.5	32	39.4	-	-	-	R9
334D-035TF	in line/ manifold	2x3/2 NC	1200	1.26	2.5 bar	1/4	-	4.1	3.2	36	33.7	44	29.7	22	40.7	103.3	25	21	16	40	40.7	M5	54.3	8	R9
348D-035TF	in line/ manifold	2x3/2 NA	700	.73	2.5 bar	1/8	1/8	5	3.2	31.4	32.8	36	30.4	18	39.4	96.8	22	17.4	11.5	32	39.4	-	-	-	S9
344D-035TF	in line/ manifold	2x3/2 NA	1050	1.1	2.5 bar	1/4	-	4.1	3.2	36	33.7	44	29.7	22	40.7	103.3	25	21	16	40	40.7	M5	54.3	8	S9
398D-035TF	in line/ manifold	2x3/2 NC NA	700	.73	2.5 bar	1/8	1/8	5	3.2	31.4	32.8	36	30.4	18	39.4	96.8	22	17.4	11.5	32	39.4	-	-	-	T9
394D-035TF	in line/ manifold	2x3/2 NC NA	1050	1.1	2.5 bar	1/4	-	4.1	3.2	36	33.7	44	29.7	22	40.7	103.3	25	21	16	40	40.7	M5	54.3	8	T9

Manifold Segments for Series 3, 1/8" and 1/4" valves (All mounting hardware & seals come with each manifold segment)

Accessories - manifold segments and adaptor plates - 1/2" common inlet & exhaust

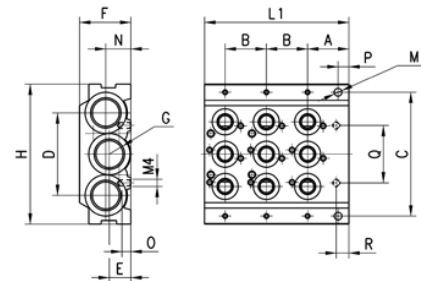
Terminal module 2 positions.
The following is supplied:
3x O-Rings
2x fixing nuts
2x junction plugs
6x interface seals
4x fixing screws



(to be used as a last station on manifold assembly)

DIMENSIONS																
Mod.	Series	A	B	C	D	E	F	H	L1	M	N	O	P	Q	R	G
CNVL-3H2TF	3 - 1/8"	23	23	69.5	46	12	29	78	57.5	4.3	14	5	6	32	7	3/8
CNVL-4H2TF	3 - 1/4"	26	26	88	60	14	29	98	65	4.3	-	5	5	38	7	1/2

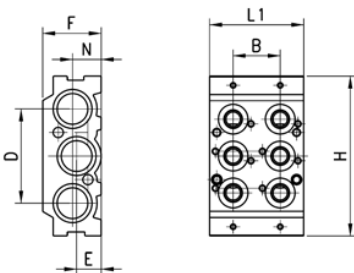
Terminal module 3 positions.
The following is supplied:
3x O-Rings
2x fixing nuts
2x junction plugs
2x junction plugs
9x interface seals
6x fixing screws



(to be used as a last station on manifold assembly)

DIMENSIONS																
Mod.	Series	A	B	C	D	E	F	H	L1	M	N	O	P	Q	R	G
CNVL-3H3TF	3 - 1/8"	23	23	69.5	46	12	29	78	80.5	4.3	14	5	6	32	7	3/8
CNVL-4H3TF	3 - 1/4"	26	26	88	60	14	29	98	91	4.3	-	5	5	38	7	1/2

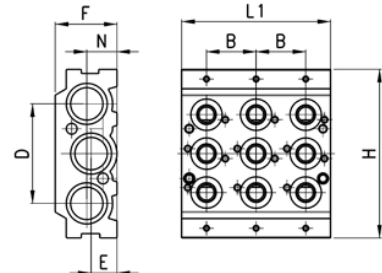
Expansion module 2 positions.
The following is supplied:
3x O-Rings
2x fixing nuts
2x junction plugs
6x interface seals
4x fixing screws



(to be used as an intermediate station on manifold assembly)

DIMENSIONS								
Mod.	Series	B	D	E	F	H	L1	N
CNVL-3I2	3 - 1/8"	23	46	12	29	78	46	14
CNVL-4I2	3 - 1/4"	26	60	14	29	98	52	-

Expansion module 3 positions. The following is supplied:
3x O-Rings
2x fixing nuts
2x junction plugs
2x junction plugs
9x interface seals
6x fixing screws



(to be used as an intermediate station on manifold assembly)

DIMENSIONS								
Mod.	Series	B	D	E	F	H	L1	N
CNVL-3I3	3 - 1/8"	23	46	12	29	78	69	14
CNVL-4I3	3 - 1/4"	26	60	14	29	98	65	-

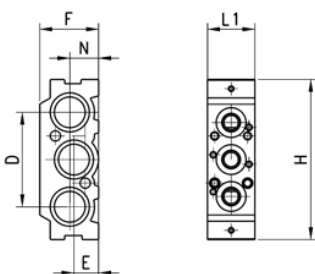
Manifold Segments for Series 3, 1/8" and 1/4" valves (All mounting hardware & seals come with each manifold segment)

Accessories - manifold segments and adaptor plates

Expansion module 1 position TH

following is supplied:

- 3x O-Rings
- 2x fixing nuts
- 2x junction plugs
- 3x interface seals
- 2x fixing seals



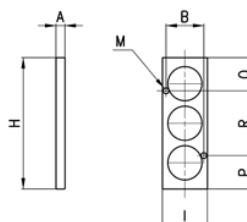
DIMENSIONS							
Mod.	Series	D	E	F	H	L1	N
CNVL-311	3 - 1/8"	46	12	29	78	23	14
CNVL-411	3 - 1/4"	60	14	29	98	26	-

Blanking plate for sub-base.

The item is used to blank one or more stations on a manifold base Mod.CNVL...

The following is supplied:

- 2x fixing screws
- 3x O-Rings

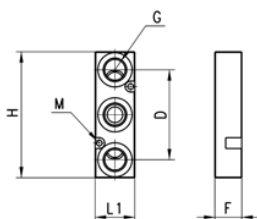


DIMENSIONS										
Mod.	Series	A	B	H	I	M	P	Q	R	O
CNVL-1	3 - 1/8"	5	17.4	52	22	3.2	10.3	10.3	31.4	-
CNVL-4	3 - 1/4"	5	21	73	25	3.2	18.5	18.5	36	-

Intermediate plate for manifolds.

The following is supplied:

- 3x O-Rings
- 2x fixing screws



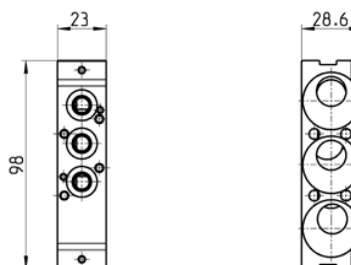
(to be used to create threaded ports on manifold station instead of valve interface)

DIMENSIONS								
Mod.	Series	G	H	M	F	L1	D	F
CNVL-3PTF	3 - 1/8"	1/4	70	3.2	29	22	50	15
CNVL-4PTF	3 - 1/4"	1/4	73	3.2	29	25	50	20

Interface plate between 358 and 354.

The following is supplied:

- 1x interface seal
- 2x screws
- 2x pins
- 2x plugs
- 6x O-Rings

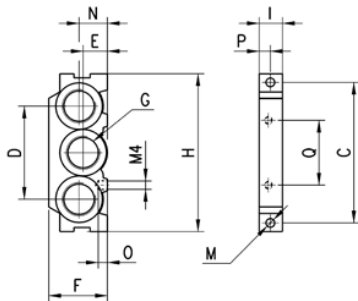


DIMENSIONS	
Mod.	
CNVL-4H-3HTF	

Manifold Segments for Series 3, 1/8" and 1/4" valves (All mounting hardware & seals come with each manifold segment)

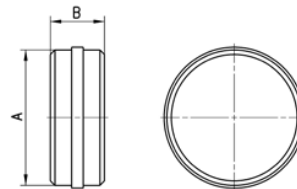
Accessories - manifold segments and adaptor plates - 1/2" common inlet & exhaust

End plate for manifolds.
The following is supplied:
2x fixing nuts



DIMENSIONS													
Mod.	Series	C	D	E	F	H	I	M	N	O	P	Q	G
CNVL-3H	3 - 1/8"	69.5	46	12	29	78	11.5	4.3	14	5	6	32	3/8
CNVL-4H	3 - 1/4"	88	60	14	29	98	13	4.3	-	5	8	29	1/2

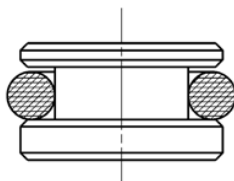
Blocking disk between manifold stations.



DIMENSIONS				
Mod.	Series	A	B	Supply
CNVL-3H-TP	3 - 1/8"	15.6	6	Channels diaphragm 1; 3; 5
CNVL-3H-UP	3 - 1/8"	15.6	6	Channels diaphragm 1
CNVL-3H-JP	3 - 1/8"	15.6	6	Channels diaphragm 3; 5
CNVL-4H-TP	3 - 1/4"	23.8	8	Channels diaphragm 1; 3; 5
CNVL-4H-UP	3 - 1/4"	23.8	8	Channels diaphragm 1
CNVL-4H-JP	3 - 1/4"	23.8	8	Channels diaphragm 3; 5

Blanking plug for 3-way/2-position valve mounted on manifold segments.

The following is supplied:
1x blanking plug
1x O-Ring



DIMENSIONS	
Mod.	Series
CNVL - 3	3 - 1/8"
CNVL - 5	3 - 1/4"



Cv = .73 - 2.00

Series 4 Air-Pilot operated valves

Cv= .73 - 2.00

Series 4: 1/8", 1/4" NPTF, 3-way/2-position;
5-way/2-position; 5-way/3-position
1/2" NPTF 5-way/2-position

The pneumatically operated, 3-way/2-position, 5-way/2-position Series 4 valves have been designed with different methods of return: an Air-Pilot with mechanical spring, Air-Pilot return, or Air-Pilot with bias return. This is possible due to the type of design consisting of a balanced spool, which means that it can be used for a very wide range of applications. (including reverse porting)

The 3-way/2-position valves are normally closed in the rest position when the pressure is supplied at P, and are normally open when the pressure is supplied at R, the use of A remaining unchanged. Moreover, the 5-way/2-position valves can be supplied via the ports R and S with two different pressures if a cylinder must be operated using a delivery pressure different from the return pressure.

On the Series 4 valves, two additional holes permit assembly onto the manifold CNVL without the use of a banjo bolt.

* See pages at end of sections for manifold options.

Key - Series 4 valves incorporate a double lip (Z) seal against the spool. This seal design has improved wear and sealing properties against the spool and spacer glands for when the fluid media is less than optimal.



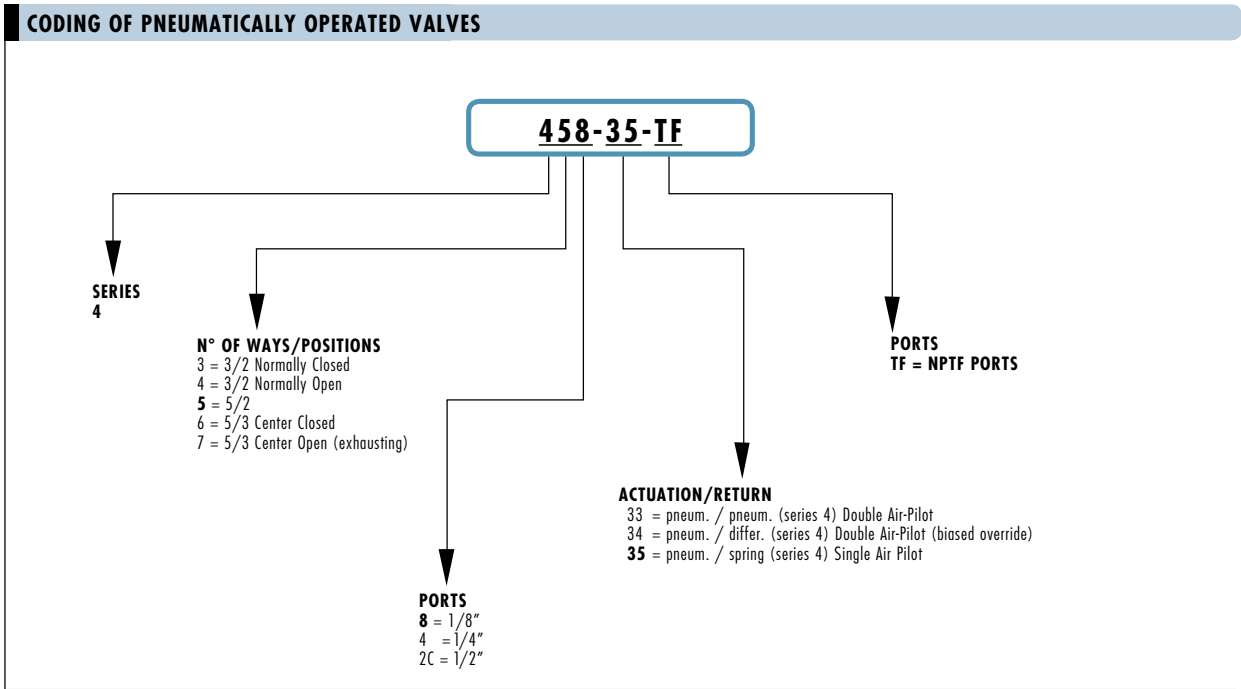
Key - Series 4 valves incorporate a more robust packed bore design than the Series 3 valves. This supports the improved (Z) seal design and better wear life of the seals.

TECHNICAL SPECIFICATIONS

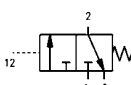

Valve group	3-way/2-position, 5-way/2-position, 5-way/3-position
Construction	Air-Pilot, in-line ported
Mounting	through holes in valve body
Materials	Anodized body, stainless steel spool, Buna-N seals
Threaded port sizes	1/8", 1/4", 1/2" NPTF
Installation	in any position
Operating temperature	0 - 80°C (with dry air at -20°C), 32°F — 176°F (with dry air at -4°F)
Fluid	Filtered air (32 micron or less recommended)
Lubricant	Not required; otherwise, oil compatible with Buna-N, (3° - 10° E) ISOVG32 grade (32 centistrokes)

PNEUMATIC DATA	
Operating pressure	P = -0.9 -10 bar, 0-145 psi (down to 28" Hg vacuum rated)
Control pressure	min. press. (see valve description)
Nominal pressure	6 bar - 87 psi
Nominal flow	*Qn Series 4: 1/8" = 700 NL/min. (24.72 SCFM), Cv = .73 1/4" = 1250 NL/min (43.7 SCFM), Cv= 1.3 1/2" = 1900 NL/min (67.1 SCFM), Cv= 2.00
Fluid	filtered air, without lubrication** (25 micron recommended)

*Qn = determined with supply pressure of 6 bar and with Δp = 1 bar. **If lubricated air is used, it is recommended to use ISOVG32 oil and never interrupt the lubrication.



3-way/2-position valve, 1/8" port, Air Pilot Spring Return Cv = .73

Mod.	Mounting	Function	Flow rate NL/min	P. min pil. bar (psi)
438-35TF	in line/manifold	3/2 NC	700	2.5 bar (36 psi)

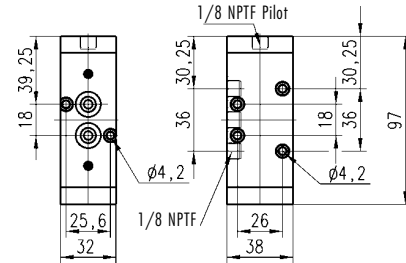
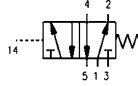
The company reserves the right to vary models and dimensions without notice. These products are designed for industrial applications and are not suitable for sale to the general public.

Cv = .73

5-way/2-position valve, 1/8" port, Air Pilot, Spring Return

Cv = .73

Valve with pneumatic actuation and spring.
Minimum pilot pressure: 2.5 bar. (36 psi)

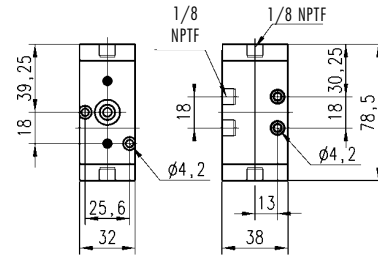
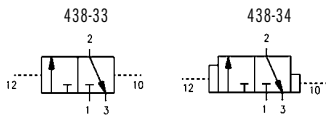


Mod.	Mounting	Function	Flow rate NL/min	P. min pil.
438-35TF	in line/manifold	5/2	700	2.5 bar (36 psi)

3-way/2-position valve, 1/8" port, Double Air Pilot (Mod. -34TF Bias Return)

Cv = .73

Valve with pneumatic actuation/return (-33 model),
and differential return (-34 model).
Minimum pilot pressure: 2 bar. (29 psi)

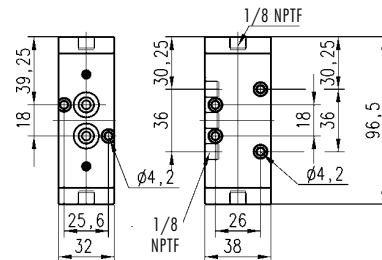
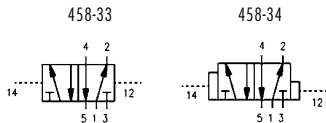


Mod.	Mounting	Function	Flow rate NL/min	P. min pil.
438-33TF	in line/manifold	3/2 NC	700	2 bar (29 psi)
438-34TF	in line/manifold	3/2 NC	700	2 bar (29 psi)

5-way/2-position valve, 1/8" port, Double Air Pilot (Mod. -34TF Bias Return)

Cv = .73

Valve with pneumatic actuation/return (-33 model),
and differential return (-34 model).
Minimum pilot pressure: 2 bar. (29 psi)

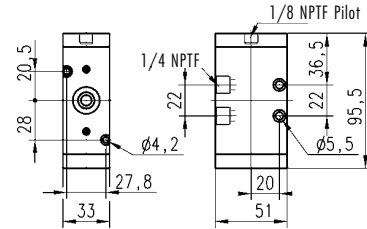
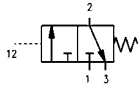


Mod.	Mounting	Function	Flow rate NL/min	P. min pil.
458-33TF	in line/manifold	5/2 NC	700	2 bar (29 psi)
458-34TF	in line/manifold	5/2 NC	700	2 bar (29 psi)

3-way/2-position valve, 1/4" port, Air Pilot, Spring Return

Cv = 1.31

Valve with pneumatic actuation and spring return.
Minimum pilot pressure: 2.5 bar. (36 psi)

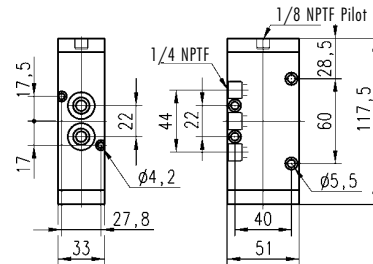
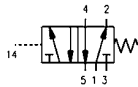


Mod.	Mounting	Function	Flow rate NL/min	P. min pil. bar (psi)
434-35TF	in line/manifold	3/2	1250	2.5 bar (36 psi)

5-way/2-position valve, 1/4" port, Air Pilot, Spring Return

Cv = 1.32

Valve with pneumatic actuation and mechanical spring return.
Minimum pilot pressure: 2.5 bar. (36 psi)

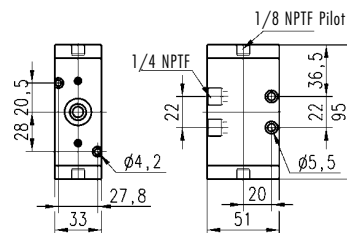
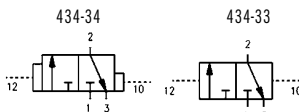


Mod.	Mounting	Function	Flow rate NL/min	P. min pil. bar (psi)
454-35TF	in line/manifold	5/2	1250	2.5 bar (36 psi)

3-way/2-position valve, 1/4" port, Double Air Pilot (Mod -34TF Bias Return)

Cv = 1.31

Valve with pneumatic actuation/return (-33 mod.) and differential return (-34 mod.)
Minimum pilot pressure: 2 bar. (29 psi)



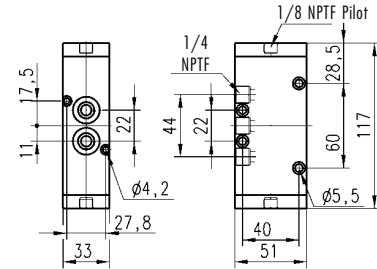
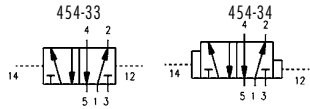
Mod.	Mounting	Function	Flow rate NL/min	P. min pil. bar (psi)
434-33TF	in line/manifold	3/2 NC	1250	2 bar (29 psi)
434-34TF	in line/manifold	3/2 NC	1250	2 bar (29 psi)

Cv = .73 - 1.31

5-way/2-position valve, 1/4" port, Double Air Pilot (Mod. -34TF bias return)

Cv = 1.31

Valve with pneumatic actuation/return (-33 mod.)
and differential return (-34 mod.)
Minimum pilot pressure: 2 bar. (29 psi)

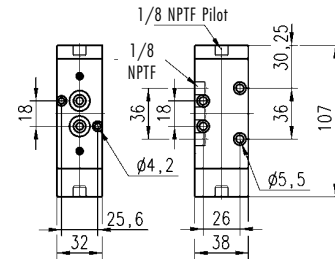
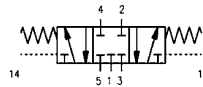


Mod.	Mounting	Function	Flow rate NL/min	P. min pil.
454-33TF	in line/manifold	5/2	1250	2 bar (29 psi)
454-34TF	in line/manifold	5/2	1250	2 bar (29 psi)

5-way/3-position closed-center valve, 1/8" port, Air Pilot with Spring to Center Position

Cv = .73

Valve with pneumatic actuation
and central return by mechanical spring.
Minimum pilot pressure: 2.5 bar. (36 psi)

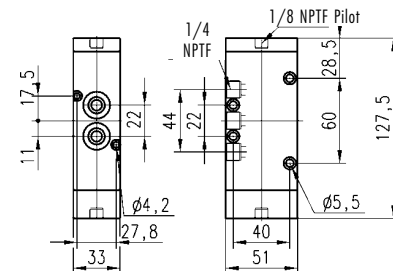
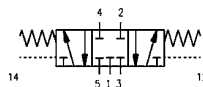


Mod.	Mounting	Function	Flow rate NL/min	P. min pil.
468-33TF	in line/manifold	5/3 CC	700	2.5 bar (36 psi)

5-way/3-position closed-center valve, 1/4" port, Air Pilot with Spring to Center Position

Cv = 1.31

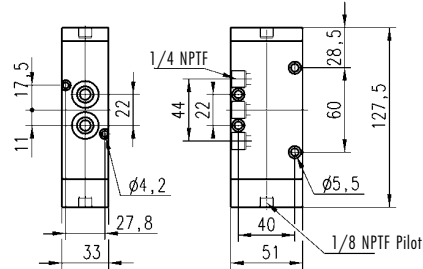
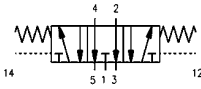
Valve with pneumatic actuation
and central return by mechanical spring.
Minimum pilot pressure: 2.5 bar. (36 psi)



Mod.	Mounting	Function	Flow rate NL/min	P. min pil.
464-33TF	in line/manifold	5/3 CC	1250	2.5 bar (36 psi)

5-way/3-position open-center valve, 1/4" port, Air Pilot with Spring to Center Position (exhausting) Cv = 1.31

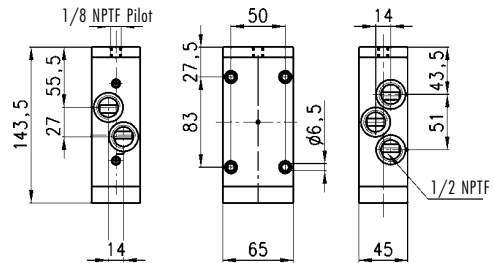
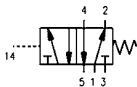
Valve with pneumatic actuation and central return by mechanical spring.
Minimum pilot pressure: 2.5 bar. (36 psi)



Mod.	Mounting	Function	Flow rate NL/min	P. min pil.
474-33TF	in line/manifold	5/3 OC	1250	2.5 bar (36 psi)

5-way/2-position valve, 1/2" port Cv = 2.00

Valve with pneumatic Air-Pilot with spring return, actuation and mechanical spring return.
Minimum pilot pressure: 2.5 bar (36 psi)

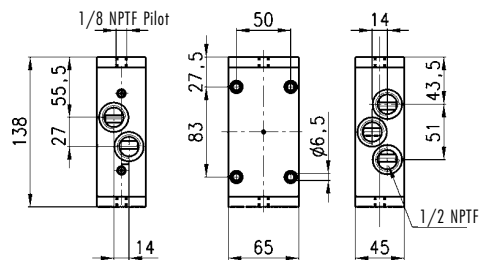
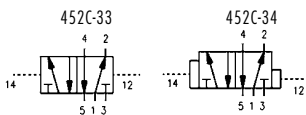


Contact factory for availability.

Mod.	Mounting	Function	Flow rate NL/min	P. min pil.
452C-35TF	in line	5/2	1900	2.5 bar (36 psi)

5-way/2-position valve, 1/2" port, Double Air-Pilot (Mod. -34TF bias return) Cv = 2.00

Valve with pneumatic actuation/return (-33 mod.) and differential return (-34 mod.)
Minimum pilot pressure: 2 bar (29 psi)



Contact factory for availability.

Mod.	Mounting	Function	Flow rate NL/min	P. min pil.
452C-33TF	in line/manifold	5/2	1900	2 bar (29 psi)
452C-34TF	in line/manifold	5/2	1900	2 bar (29 psi)

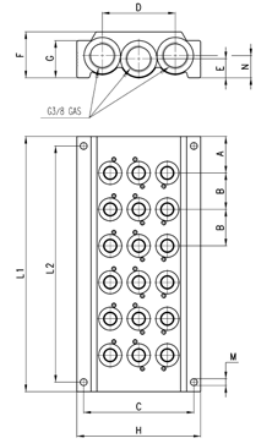
Manifold base with common exhausts - Series 4 valves 1/8"

For valves Series 4, 1/8 (3-way/2-position, 5-way/2-position or 5-way/3-positions).

The following is supplied :

- N° 1 manifold
- N° 1 pair of fixing screws per valve position
- N° 3 OR seal per valve position
- N° 2 guides per valve position

* Available from 2 - 6 stations



DIMENSIONS

Stations	Mod.	3/8" NPTF		Inlet/Exhaust Ports	C	D	E	F	G	H	L1	L2	M	N
		A	B											
2	CNVL-42TF	28	33	3/8"	69.5	46	12	29	23.5	78	89	77	4.3	14
3	CNVL-43TF	28	33	3/8"	69.5	46	12	29	23.5	78	122	110	4.3	14
4	CNVL-44TF	28	33	3/8"	69.5	46	12	29	23.5	78	155	143	4.3	14
5	CNVL-45TF	28	33	3/8"	69.5	46	12	29	23.5	78	188	176	4.3	14
6	CNVL-46TF	28	33	3/8"	69.5	46	12	29	23.5	78	221	209	4.3	14

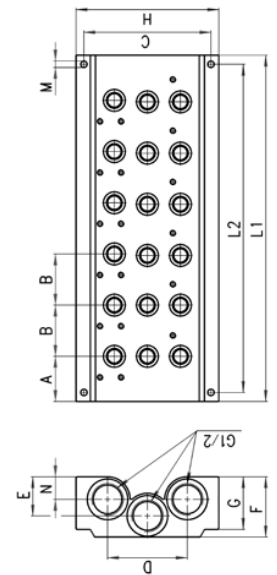
Manifold base with common exhausts - Series 4 valves 1/4"

For valves Series 4, 1/4 (3-way/2-position, 5-way/2-position or 5-way/3-positions).

The following is supplied :

- N° 1 manifold
- N° 1 pair of fixing screws per valve position
- N° 3 OR seal per valve position
- N° 2 guides per valve position

* Available from 2 - 6 stations

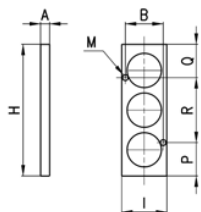


DIMENSIONS

Stations	Mod.	A	B	Inlet/Exhaust Ports	C	D	E	F	G	H	L1	L2	M	N
3	CNVL-53TF	30	34	1/2"	84.5	53	26	40	35	95	128	116	4.3	15
4	CNVL-54TF	30	34	1/2"	84.5	53	26	40	35	95	162	150	4.3	15
5	CNVL-55TF	30	34	1/2"	84.5	53	26	40	35	95	196	184	4.3	15
6	CNVL-56TF	30	34	1/2"	84.5	53	26	40	35	95	230	218	4.3	15

Blanking plate for CNVL manifolds

The item is used to blank one or more stations on a manifold base Mod.CNVL...,
The following is supplied:
2x fixing screws
3x O-Rings

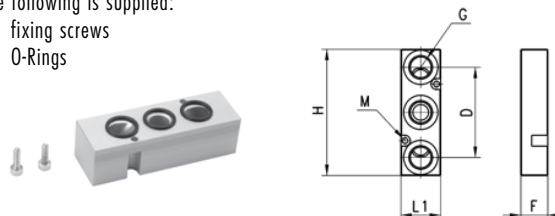


DIMENSIONS

Mod.	Series	A	B	H	I	M	P	Q	R
CNVL/2	4 - 1/8"	5	25.6	52	32	4.2	17	17	18
CNVL/3	4 - 1/4"	5	27.8	70	32.5	4.2	7.5	3.5	59

Intermediate plate for manifold with outlets

The following is supplied:
2x fixing screws
3x O-Rings

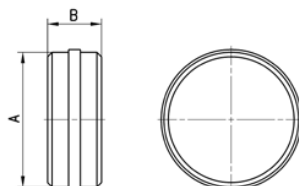


DIMENSIONS

Mod.	G	H	M	L1	D	F
CNVL-4P	1/4	73	3.2	25	50	20

Blocking Disk

MODULES SEPARATION BLANKING PLUG



DIMENSIONS

Mod.	Series	A	B	Supply
CNVL-3H-TP	4 - 1/8"	15.6	6	Channels diaphragm 1; 3; 5
CNVL-3H-UP	4 - 1/8"	15.6	6	Channels diaphragm 1
CNVL-3H-JP	4 - 1/8"	15.6	6	Channels diaphragm 3; 5
CNVL-4H-TP	4 - 1/4"	23.8	8	Channels diaphragm 1; 3; 5
CNVL-4H-UP	4 - 1/4"	23.8	8	Channels diaphragm 1
CNVL-4H-JP	4 - 1/4"	23.8	8	Channels diaphragm 3; 5

Blanking plug for TCNVL manifolds for 3-way/2-position valves mounted on manifold segment

The following is supplied:
1x blanking plug
1x O-Ring



DIMENSIONS

Mod.	Series
TCNVL-3	4 - 1/8"
TCNVL-5	4 - 1/4"

Series 7 Solenoid and Air-Pilot Operated Valves

Cv= .47 — .95

(VDMA 24563)
 ISO 15407-1, Size 26mm (size 01) and 18mm (size 02)
 Side outlet manifold, Manifold assembly (non-plug-in)
 5-way/2-position and 5-way/3-position



The Series 7 electropneumatically and pneumatically operated valves have been designed to comply with ISO 15407-1 (VDMA 24563) standards size 26mm (VDMA 01) and size 18mm (VDMA 02).

The electropneumatically operated valves have the following types of operation available:

- Air-Pilot, and air-spring return
- Air-Pilot operation and return

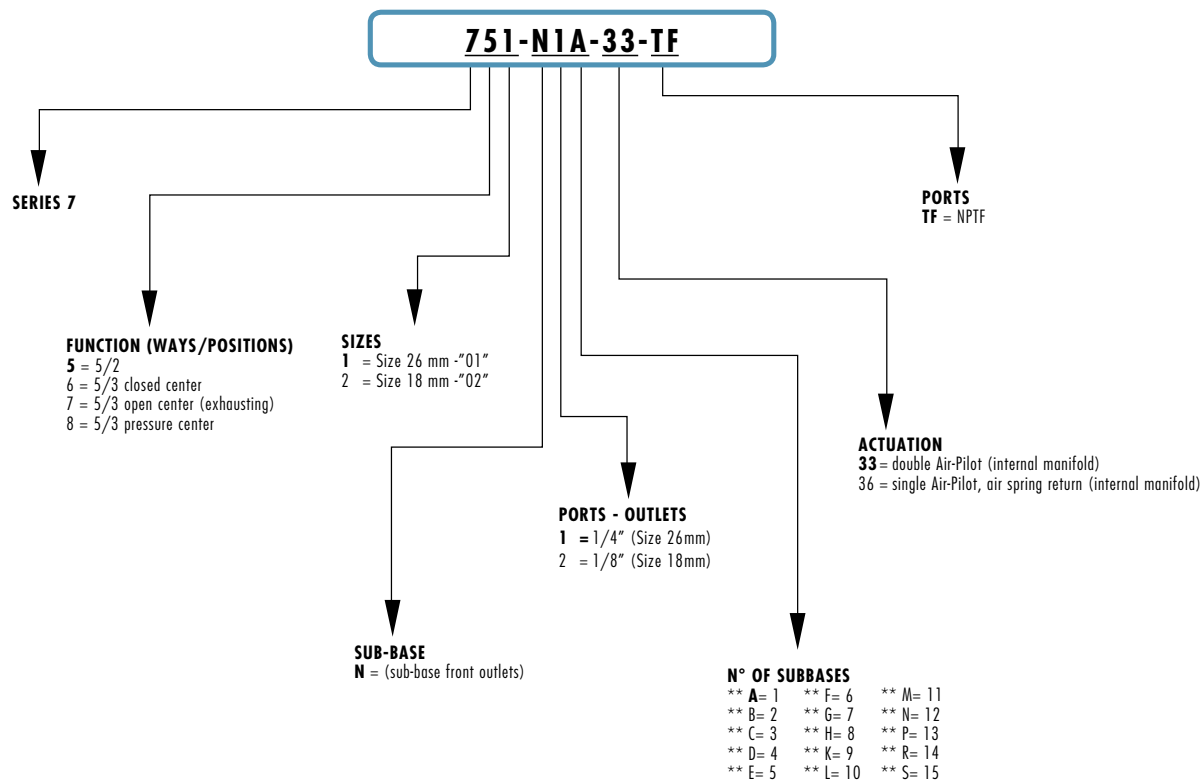


TECHNICAL SPECIFICATIONS	
Construction	Packed spool-type
Valve group	5-way/2-position, 5-way/3-position
Materials	Anodized aluminum body, spool, base nylon end covers, BUNA-N seals
Mounting	through holes in valve body onto manifold segments
Operating temperature	0° C min. +50° C max, (32°F — 122°F)
Lubricant	without lubrication**
Size	26 mm - size VDMA 01; 18 mm - size VDMA 02
Installation	in any position

PNEUMATIC DATA	
Operating pressure	P. max 7 bar (102 psi). See tables for minimum operating pressures.
Nominal pressure	6 bar - 87 psi (used for flow calculations)
Nominal flow	*Qn Size 26 mm: 900 NL/min; 31.8 SCFM ; Cv = .95 Size 18 mm: 450 NL/min; 15.9 SCFM; Cv = .47
Fluid	filtered air (5 micron or less), without lubrication**

*Qn = determined with supply pressure of 6 bar and with Δp = 1 bar ** If lubricated air is used, it is recommended to use ISOVG32 oil and never to interrupt the lubrication.

CODING OF VALVES AND SOLENOID VALVES SERIES 7 WITH SUB-BASES - (ORDERED SEPARATELY)



* on request only.
 ** complete with the two end blocks.

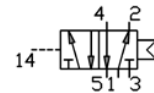
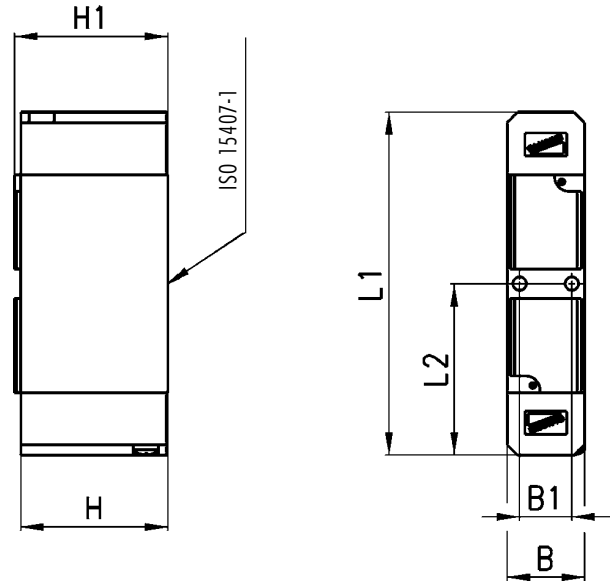
Cv = .47 - .95

5-way/2-position valves VDMA 01 - VDMA 02, Single Air-Pilot, Air-Spring Return

Cv= .47 - .95

The Series 7 solenoid valves with VDMA 01 - 02 interface which have Air-Pilot actuation and air-spring return, (via manifold porting) are suitable for mounting on a sub-base.
For the correct use of the valve, the pilot pressure must be the same or higher than the operating pressure.
The minimum operating pressure is 3 bar - 43.5 psi.

Note: Interface seals and fixing screws are packaged with the valve.



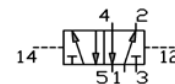
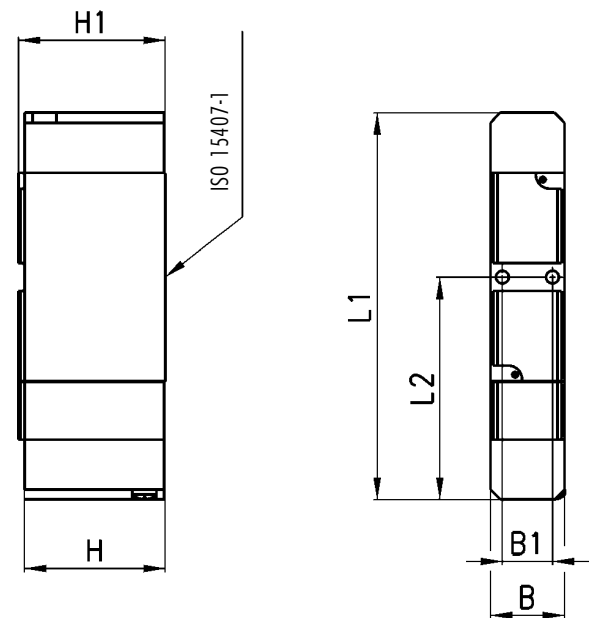
DIMENSIONS							
Mod.	Size ISO	B	B1	L1	L2	H	H1
751-000-36	01-26mm	26.5	19	99.7	49.85	39	40.5
752-000-36	02-18mm	18.5	12.5	82.2	41.1	35.2	36.7

5-way/2-position valves VDMA 01 - VDMA 02, Double Air-Pilot

Cv= .47 - .95

The Series 7 solenoid valves with VDMA 01 - 02 interface which have Air-Pilot actuation and return (via manifold porting) are suitable for mounting on a sub-base.
The minimum operating pressure is 2 bar - 29 psi.

Note: Interface seals and fixing screws are packaged with the valve.



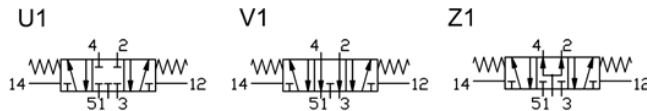
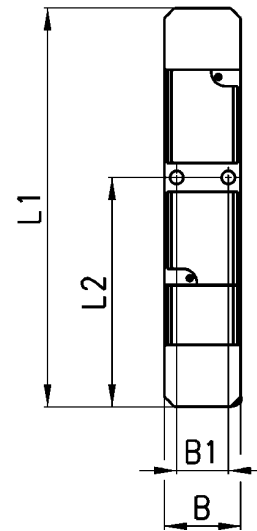
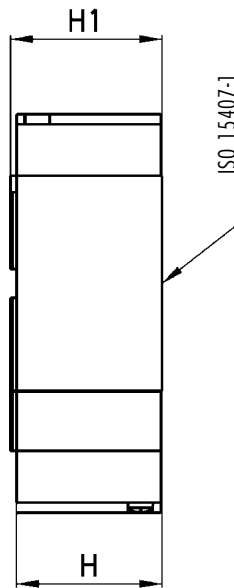
DIMENSIONS							
Mod.	Size ISO	B	B1	L1	L2	H	H1
751-000-33	01-26mm	26.5	19	99.7	49.85	39	40.5
752-000-33	02-18mm	18.5	12.5	82.2	41.1	35.2	36.7

5-way/3-position valves ISO 26 mm - 18 mm, Double Air-Pilot, Spring Return to Center

Cv= .47 - .95

The Series 7 solenoid valves with VDMA 01 - 02 interface which have Air-Pilot actuation and mechanical spring return are suitable for mounting on a sub-base. The minimum operating pressure is 3 bar - 43.5 psi.

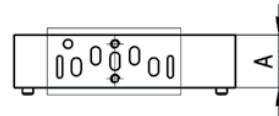
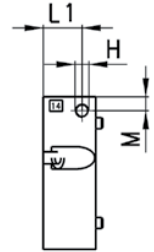
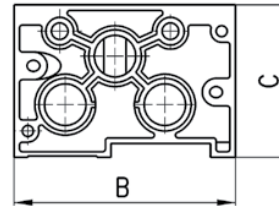
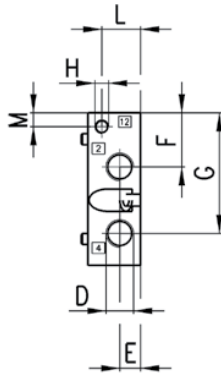
Note: Interface seals and fixing screws are packaged with the valve.



DIMENSIONS											
Mod.	Size		B	B1	L1	L2	H	H1	Min. operating pressure	Symbol	Function
	ISO										
761-000-33	26 mm		26.5	19	117.7	61.85	39	40.5	3	U1	CC
762-000-33	18 mm		18.5	12.5	96.7	55.6	35.2	36.7	3	U1	CC
771-000-33	26 mm		26.5	19	117.7	61.85	39	40.5	3	V1	CO
772-000-33	18 mm		18.5	12.5	96.7	55.6	35.2	36.7	3	V1	CO
781-000-33	26 mm		26.5	19	117.7	61.85	39	40.5	3	Z1	PC
782-000-33	18 mm		18.5	12.5	96.7	55.6	35.2	36.7	3	Z1	PC

Manifold bases with common inlet and exhaust ports and with outlet ports on the front

Note: complete with screws and seal.

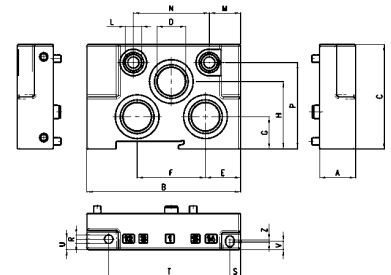
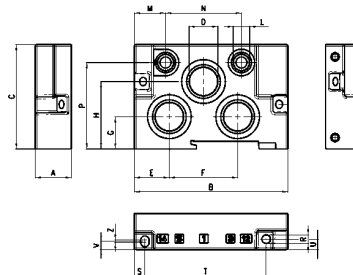


DIMENSIONS

Mod.	Size ISO	NPTF											
		A	B	C	D	E	F	G	H	L	L1	M	
701C-N1ATF	for sub-base with separate pilots	26 mm	27	107	65	1/4	11	23	53	M5	20.7	20.7	6.5
702C-N2ATF	for sub-base with separate pilots	18 mm	19	81	55	1/8	7.5	19.5	44.5	M5	13	6	7
701C-N1CTF	for manifold pilot side ported	26 mm	27	107	65	1/4	11	23	53	M5	20.7	20.7	6.5
702C-N2CTF	for manifold pilot side ported	18 mm	19	81	55	1/8	7.5	19.5	44.5	M5	13	6	7

End blocks for manifold bases with common inlet and exhaust ports

Note: complete with screws and seal.



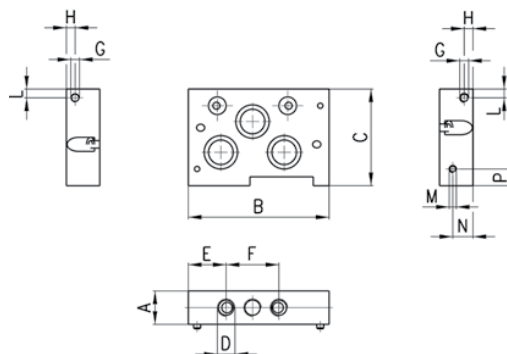
DIMENSIONS

Mod.	Size ISO	NPTF																	
		A	B	C	D	E	F	G	H	L	M	N	P	R	S	T	U	V	Z
701C - HN1TF	25 mm	27	107	65	1/2"	23	60	24.5	43	1/8	21.5	58	55.5	4.5	7.5	61.5	6	6.2	4
702C - HN2TF	18 mm	19	81	55	3/8"	18.5	36	17	35.5	1/8	16.5	40	45.5	4.5	4.65	63.85	5.5	4.35	1.3



Supply unit for manifold bases, (for auxillary pressure supply or different pressure zones) with common inlet and exhaust ports

Note: complete with screws and seal.



DIMENSIONS

Mod.	Size ISO	NPTF											
		A	B	C	D	E	F	G	H	L	M	N	P
701C-N1NTF	26 mm	27	100	65	1/4	27	38	M5	6.5	10	M4	10	10
702C-N2NTF	18 mm	19	80	55	1/8	21.5	30	M5	5	5	M4	11.5	9.5

Diaphragm for manifold bases with common inlet and exhaust ports and with outlet ports on the front

Blocking Disc

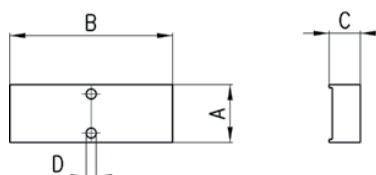


DIMENSIONS

Mod.	Size
701C-N1A-TP	01 (26 mm)
702C-N2A-TP	02 (18 mm)

Excluder tap - blanking plate for manifold bases

Note: complete with screws and seal.

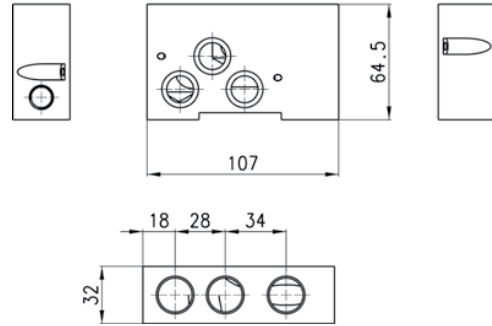


DIMENSIONS

Mod.	Size ISO	Size			
		A	B	C	D
701-TP	26 mm	26.5	61.7	10	4.2
702-TP	18 mm	18.5	52.2	10	3.2

Interfacd ISO 01 / ISO 02 - adapter: from 26mm (O1) to 18mm (O2)

The following is supplied:
 N° 1 tap S2610 3/8
 N° 5 OR
 N° 2 screws



Mod.

701C-702C-A-TF

Cv =



Series 7 - VDMA 24563 (ISO 15407-1) Regulator Plate ISO Size 01 (P-regulation) 26mm

For 26mm-ISO 01 size valves only.

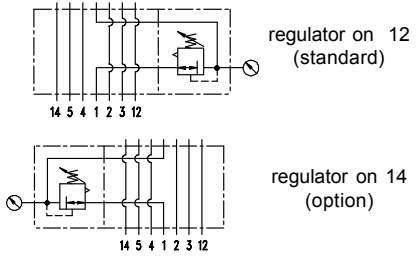
Part Number	ISO.01 P		
port size	VDMA 24563		
description	air line regulator with diaphragm and relieving feature		
mounting	arbitrary		
supply pressure	Pe max. 16 bar (not to exceed max. pressure of valve)		
reduced pressure	Pa 0.5-10 bar		
media and ambient			
temperature	max. 50°C (other temperature ranges available upon request)		
fixing	with connection board		
weight	0.340 kg		



Gauges supplied separately, shown only for installation

replacement parts * (repair kit: ESA-ISO.01)

no	description	material	order-no.
1	intermediate plate	Al	---
2	sealing frame ISO.01-6	NBR	5.1801.06.000
3	body	Al	---
4	spring cage ISO.01-9	PBTP - Ms	8.1801.09.000
5	diaphragm	NBR - Ms	*
6	regulating spring 0-10 bar	St. - galvanized	5.1801.11.000
7	valve cone	NBR - Ms	*
8	spring DR.00-70	niro	5.1500.70.000
			*



ordering information

12
ISO.01 P 14

type

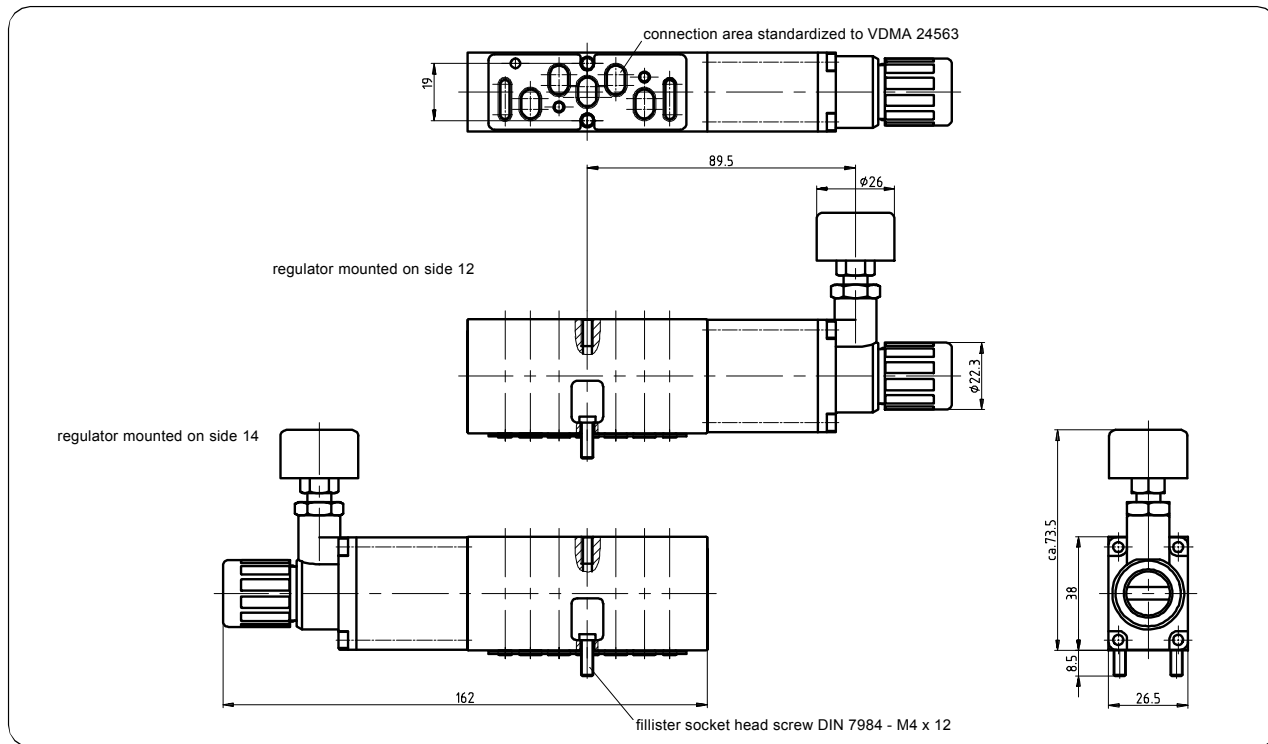
port side

ordering example: ISO.01 P 14

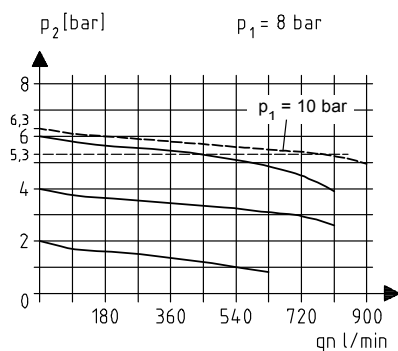
application information

- adjusting knob can be locked by depressing

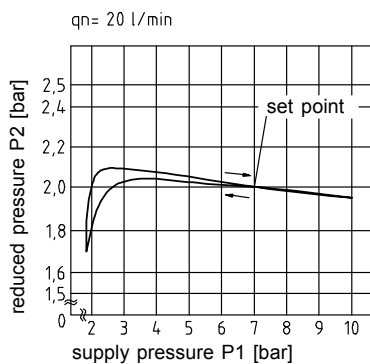
Dimensions (mm)



flow characteristics



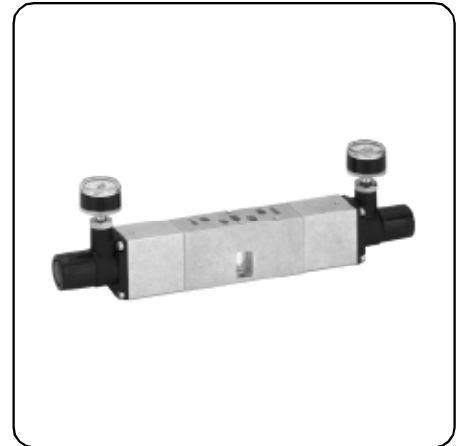
pressure characteristics



Series 7 - VDMA 24563 (ISO 15407-1) Regulator Plate ISO Size 01 (AB-regulation) 26mm

For 26mm-ISO 01 size valves only.

Part Number	ISO.01AB	ISO.01A	ISO.01B
port size	regulation on 4 & 2	regulation on 4	regulation on 2
	VDMA 24563		
description	air line regulator with diaphragm and relieving feature		
mounting	arbitrary		
supply pressure	Pe max. 16 bar (not to exceed max. pressure of valve)		
reduced pressure	Pa 0.5-10 bar		
media and ambient			
temperature	max. 50°C (other temperature ranges available upon request)		
fixing	with connection board		
weight	0.470 kg		0.340 kg



Gauges supplied separately, shown only for installation

ISO.01 AB

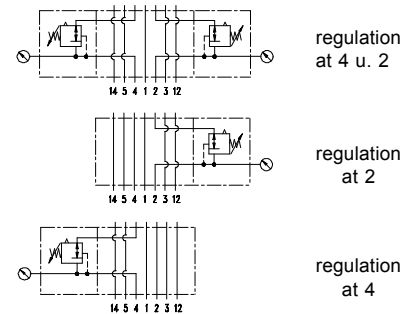
↑
Air Flow

ISO.01 A
or
ISO.01 B

↑
Inlet

* (repair kit: ESA-ISO.01)

no	description	material	order-no.
1	intermediate plate	Al	---
2	sealing frame ISO.01-6	NBR	5.1801.06.000
3	body	Al	---
4	spring cage ISO.01-9	PBTP - Ms	8.1801.09.000
5	diaphragm	NBR - Ms	*
6	regulating spring 0-10 bar	St. - galvanized	5.1801.11.000
7	valve cone	NBR - Ms	*
8	spring DR.00-70	niro	5.1500.70.000
			*



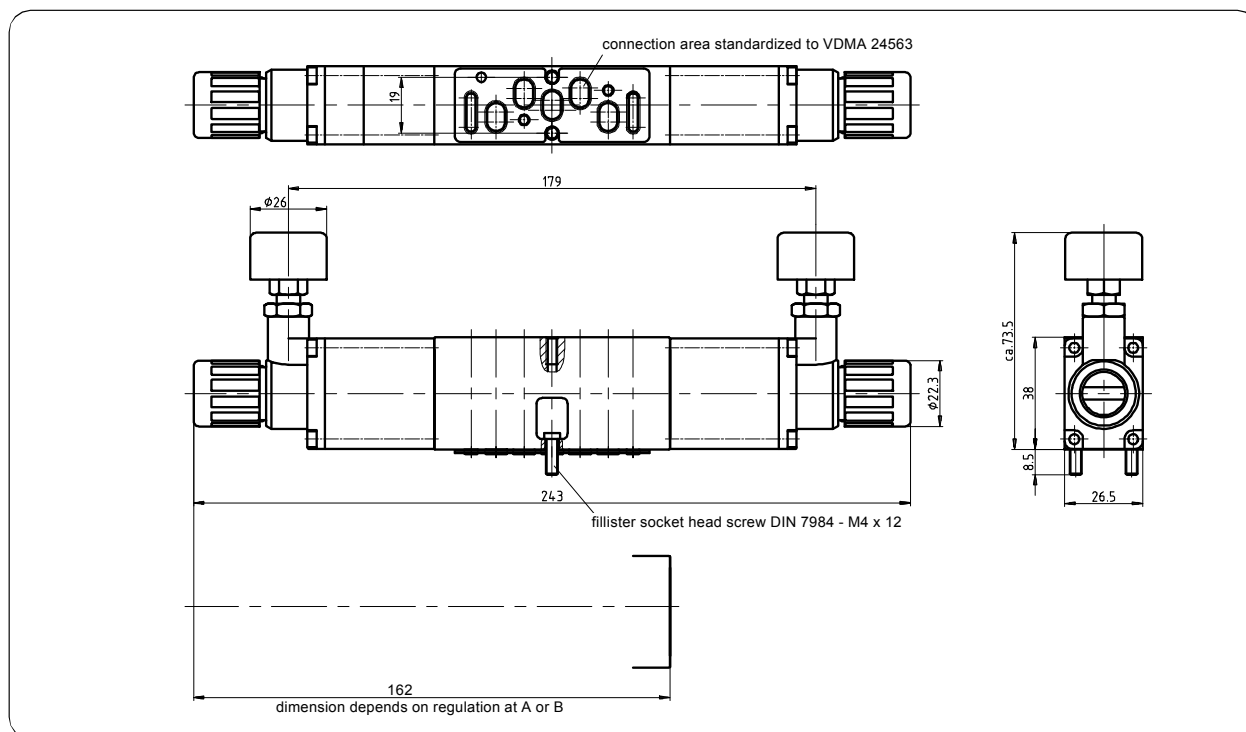
ordering information	key
ISO.01	AB
ISO.01	A(4)
ISO.01	B(2)
type	
1 port side	

ordering example: ISO.01 AB

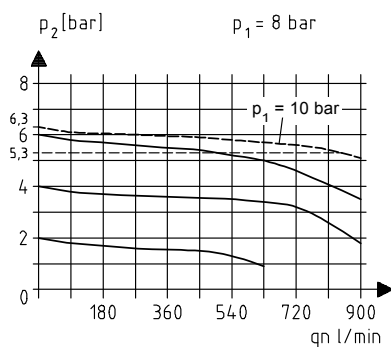
application information

- adjusting knob can be locked by depressing

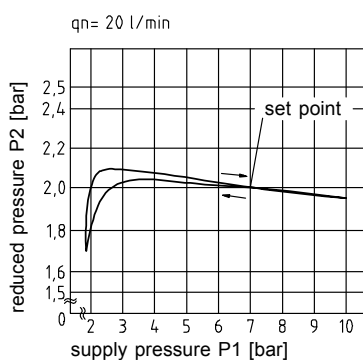
Dimensions (mm)



flow characteristics



pressure characteristics



Cv = .95 - 4.57

Series 9 Air-Pilot Operated Valves

Cv= .95 - 4.57

Assembly with sub-base (ISO 5599/1 Standards) non-plug-in
 Sizes 1, 2 and 3: 5-way/2-position; 5-way/3-position; single & double Air-Pilot valves.

The Series 9 Air-Pilot operated valves have been manufactured in the sizes 1, 2 and 3, as recommended by the ISO Standards. Three different types of sub-base are available:

- single sub-base with side ports
- single sub-base with rear ports
- manifold sub-base with common exhausts complete with end blocks.

The Series 9 solenoid valves are also constructed so as to be actuated in different ways:

- Air-Pilot and spring return
- Air-Pilot and return
- Air-Pilot and differential Air-Pilot return (bias override)



TECHNICAL SPECIFICATIONS

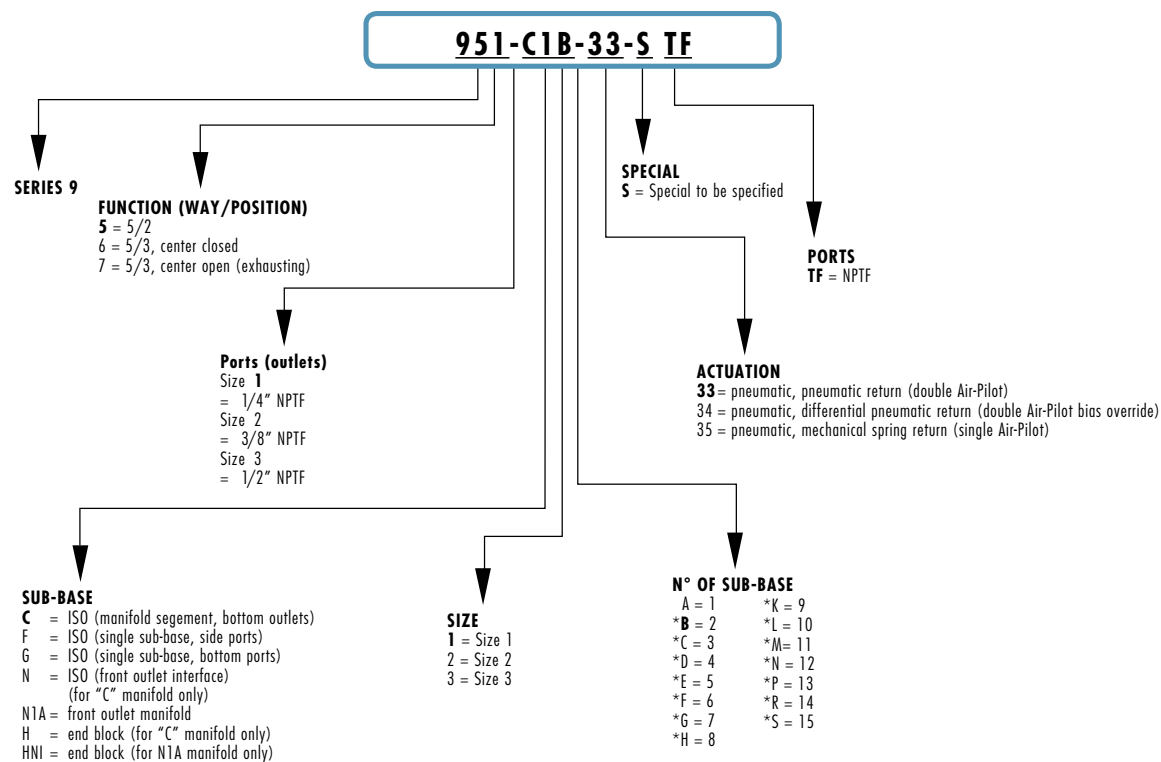
Construction	spool-type (servocontrolled) packed bore
Valve group	5-way/2-position and 5-way/3-position
Materials	Anodized aluminum body, stainless steel spool, BUNA-N seals
Mounting	threaded holes in sub-base
Size	1, 2 and 3 according to ISO 5599/1 standard)
Installation	in any position
Operating temperature	0 - 60°C (using dry air at -20°C) (32°F — 140°F) (using dry air at -4°F)

PNEUMATIC DATA

Operating pressure	max. press. 10 bar (for minimum pressures see descriptions); 145 psi max
Nominal pressure	6 bar (87 psi) nominal
Nominal flow	* Qn Size 1 = 900 NL/min; 31.8 SCFM, Cv= .95
	Size 2 = 1610 NL/min; 56.8 SCFM, Cv= 1.69
	Size 3 = 4350 NL/min; 153.6 SCFM, Cv= 4.57
Fluid	filtered air, without lubrication (25 micron or less recommended)**

*Qn = determined with supply pressure of 6 bar and with $\Delta p = 1$ bar. **If lubricated air is used, it is recommended to use ISOVG32 oil and to never interrupt the lubrication.

CODING OF SERIES 9 SOLENOID VALVES WITH SUB-BASE



* Complete with two end-blocks Mod. 900-H or 900-HN.

$C_v = .95 - 4.97$

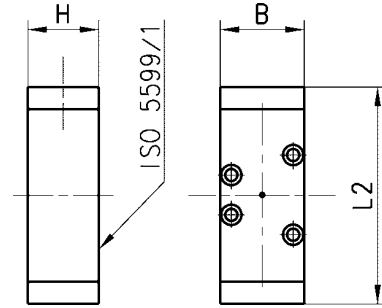
5-way/2-position valves, ISO 1, ISO 2, ISO 3, spring return and detented

$C_v = .95 - 4.97$

The Series 9 valves with ISO interface, size 1, 2 and 3, are available with the following types of actuation:

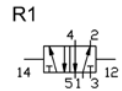
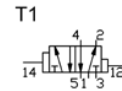
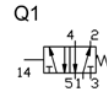
- pneumatic, with spring return (min. press. 2.5 bar) (36 psi)
- pneumatic actuation and differential return (min. press. 2 bar) (29 psi)
- pneumatic actuation and return (min. press. 2 bar) (29 psi)

Note: Packaging with ISO solenoid valves includes interface seals and fixing screws.



DIMENSIONS

Mod.	Size ISO	B	L2	H	Min. operating pressure (bar)	Symbol	Function
951-000-35	1	38	98	32	2.5	Q1	CC
952-000-35	2	51	118	33	2.5	Q1	CC
953-000-35	3	65	163	45	2.5	Q1	CC
951-000-34	1	38	98	32	2	T1	CO
952-000-34	2	51	118	33	2	T1	CO
953-000-34	3	65	163	45	2	T1	CO
951-000-33	1	38	98	32	2	R1	PC
952-000-33	2	51	118	33	2	R1	PC
953-000-33	3	65	163	45	2	R1	PC



5-way/3-position valve, ISO 1, ISO 2, ISO 3, spring return, with stable central position

$C_v = .95 - 4.57$

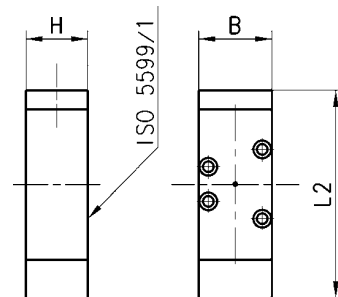
The Series 9 valves with ISO interface, size 1, 2 and 3, are available with pneumatic actuation and central return by a spring.

There are two types of function:

- with closed center
- with open center.

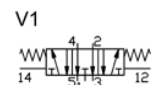
The minimum operating pressure is 2.5 bar. (36 psi)

Note: Packaging with ISO solenoid valves includes interface seals and fixing screws.

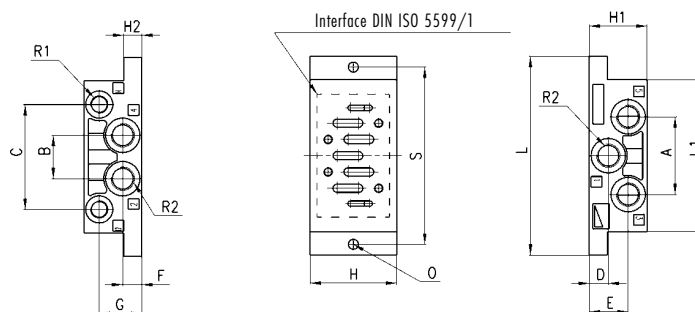


DIMENSIONS

Mod.	Size ISO	B	L2	H	Min. operating pressure (bar)	Symbol	Function
961-000-33	1	38	108	32	2,5	U1	CC
962-000-33	2	51	128	33	2,5	U1	CC
963-000-33	3	65	173	45	2,5	U1	CC
971-000-33	1	38	108	32	2,5	V1	CO
972-000-33	2	51	128	33	2,5	V1	CO
973-000-33	3	65	173	45	2,5	V1	CO



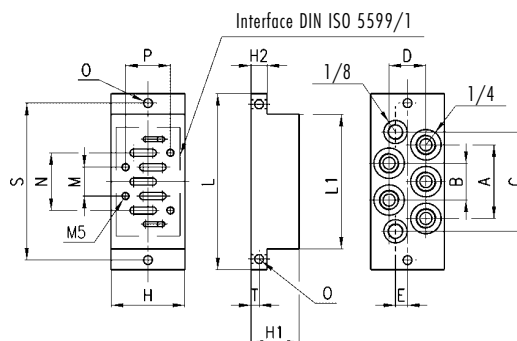
Single sub-base side outlets (VDMA 24345)



DIMENSIONS

Mod.	Size	NPTF															
		A	B	C	D	E	F	G	H	H1	H2	L	L1	O	R1	R2	S
901-F1A TF	1	43	24	58	21.5	10.5	10.5	23.5	48	32	10	110	84	5.5	1/8	1/4	98
902-F2A TF	2	56	30	74	26	14	14	30	57	40	13	124	95	6.5	1/8	3/8	112
903-F3A TF	3	68	32	90	17	17	17	22	71	32	18	149	119	6.5	1/8	1/2	136

Single sub-base with rear outlets (VDMA 24345)

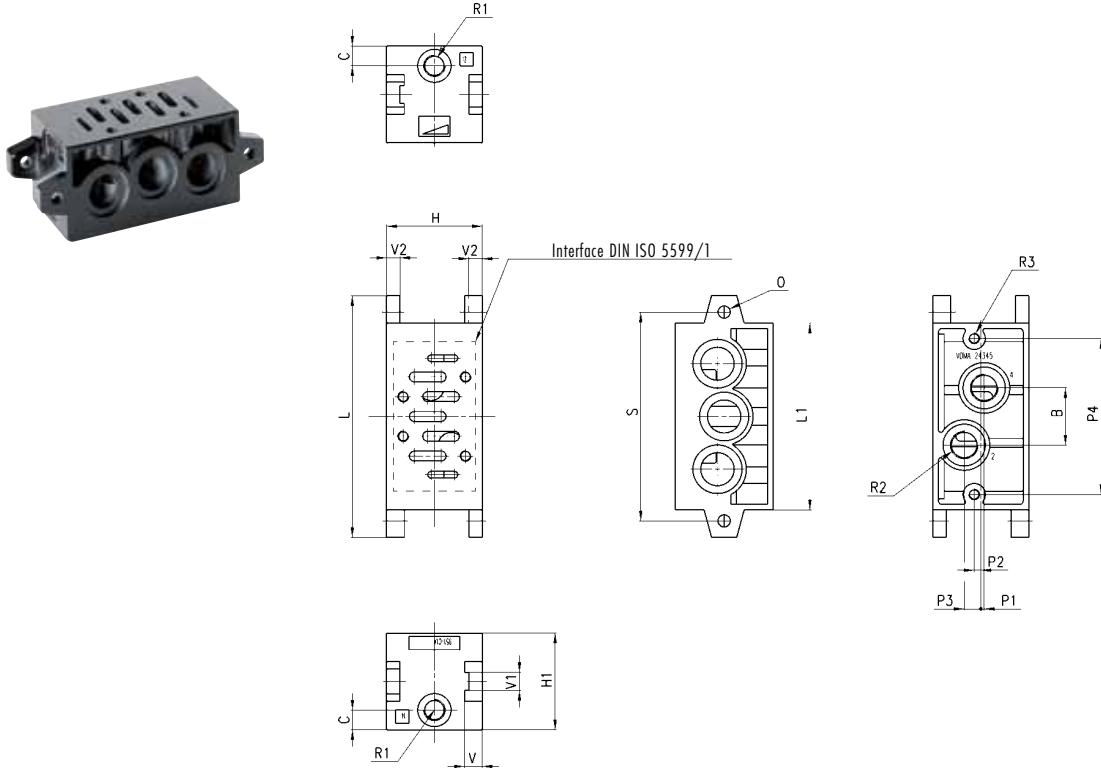


DIMENSIONS

Mod.	Size ISO	NPTF																		
		A	B	C	D	E	H	H1	H2	L	L1	M	N	O	P	R	R1	R2	S	T
901-G1A TF	1	46	23	61	23	7.5	46	30	10	110	84	18	36	5.5	28	M5	1/8	1/4	98	5
902-G2A TF	2	56	28	72	28	8	56	35	13	124	95	24	48	6.5	38	M6	1/8	3/8	112	6.5
903-G3A TF	3	68	34	90	34	10	71	32	18	149	119	32	64	6.5	48	M8	1/8	1/2	136	9

Manifold sub-base with common exhausts and inlet (VDMA 24345):(bottom outlets)

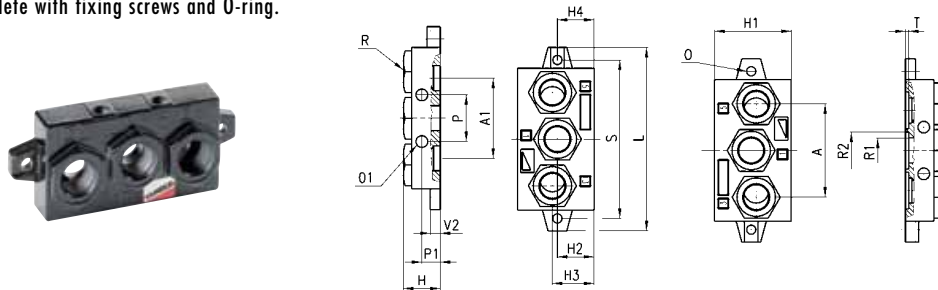
Note: complete with fixing screws and O-ring.



DIMENSIONS		NPTF																	
Mod.	Size	B	C	H	H1	L	L1	O	P1	P2	P3	P4	R1	R2	R3	S	V	V1	V2
901-C1A TF	1	26	8.5	43	44	110	85	5.5	1.5	3	7.5	71	1/8	1/4	M5	95	8	8	6
902-C2A TF	2	30	9	56	45	135	100	6.5	5	3	6	86	1/8	3/8	M6	115	11	11	8
903-C3A TF	3	38	10	71	54	190	140	9	6	3	8	130	1/8	1/2	M8	168	13	13	8

End block for manifold sub-base (VDMA 24345): for use with "C" manifolds only

Note: complete with fixing screws and O-ring.

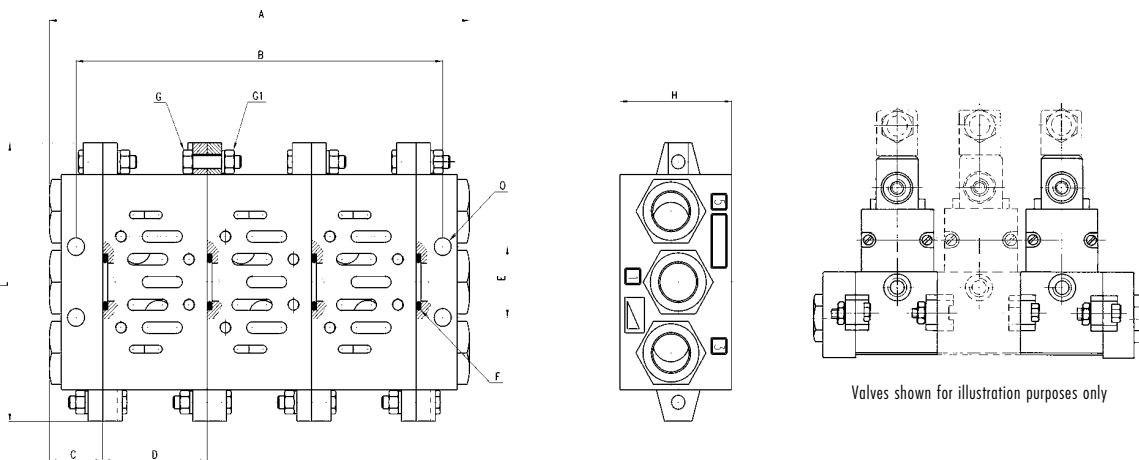


DIMENSIONS		NPTF																	
Mod.	Size	A	A1	H	H1	H2	H3	H4	L	O	O1	P	P1	R	øR1	øR2	S	T	V2
901-H1 TF (pair)	1	56	48	22	46	22	25	22	110	5.5	7	28	11	3/8	15	22.1	95	2	6
902-H2 TF (pair)	2	68	63	26	47	23	25	24	135	6.5	9	35	13	1/2	18.5	28.7	115	2	8
903-H3 TF (pair)	3	104	94	30	56	22	25	25	190	9	12	52	15	1	28	38	168	2.7	8

Assembly of manifold sub-base (VDMA 24345) assembly dimensions for "C" manifold with "H" end plates

Manifold assembly with valves

(with "C" manifolds & "H" end-blocks)

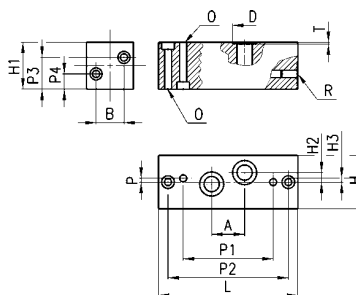


DIMENSIONS

Size	A	B	C	D	E	F	G	G1	H	L	O	
							O-Ring Part No.	UNI 5739	UNI 5588			
1	n° D+2C	n° D+C	22	43	28	3068	M5x20	M5	46	110	7	
2	n° D+2C	n° D+C	26	56	35	3093	M6x25	M6	47	135	9	
3	n° D+2C	n° D+C	30	71	52	4125	M8x25	M8	56	190	12	

Manifold segment adapter with front outlets (VDMA 24345): for use with "C" manifold to adapt to end outlets

Note: complete with fixing screws and O-ring.

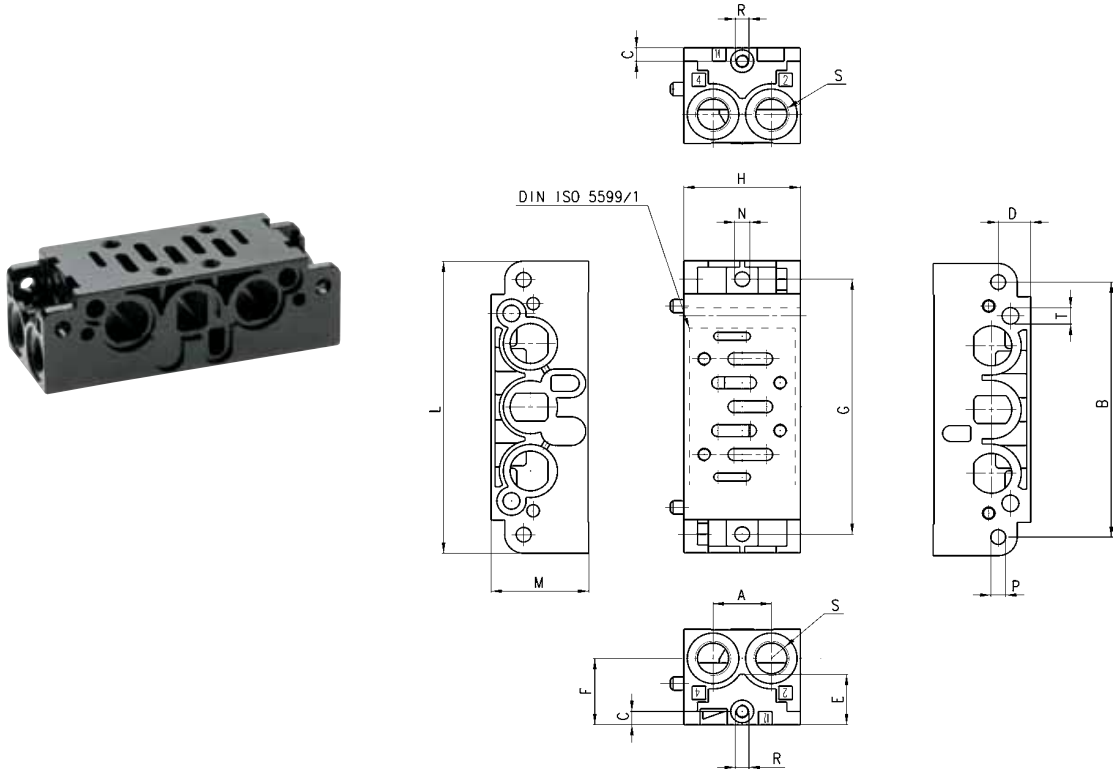


DIMENSIONS

Mod.	Size	A	B	D	H	H1	H2	H3	L	O	P	P1	P2	P3	P4	R	T
901-N1 TF	1	26	22	19	42	37	7.5	1.5	110	5.5	3	71	95	25	12	1/4	1.4
902-N2 TF	2	30	29	23	55	40	6	5	135	6.5	3	86	115	26	14	3/8	1.4
903-N3 TF	3	38	36	27	70	45	8	6	190	9	3	130	168	29	17	1/2	1.4

Manifold bases with common inlet and exhaust ports and with outlet ports on the front (end)

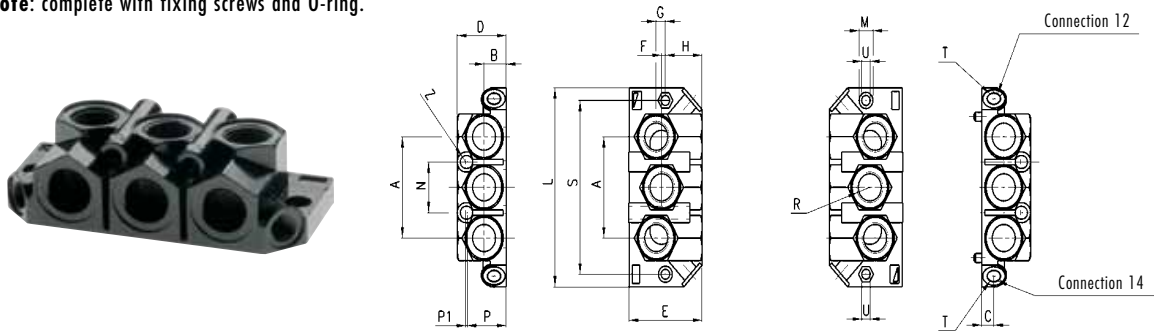
Note: complete with fixing screws and O-ring.



DIMENSIONS		NPTF														
Mod.	Size	A	B	C	D	E	F	G	H	L	M	N	P	R	S	T
901-N1A TF	1	21.5	96	5	12	19	25	96	43	110	36	5.5	5.5	M5	1/4	6.2

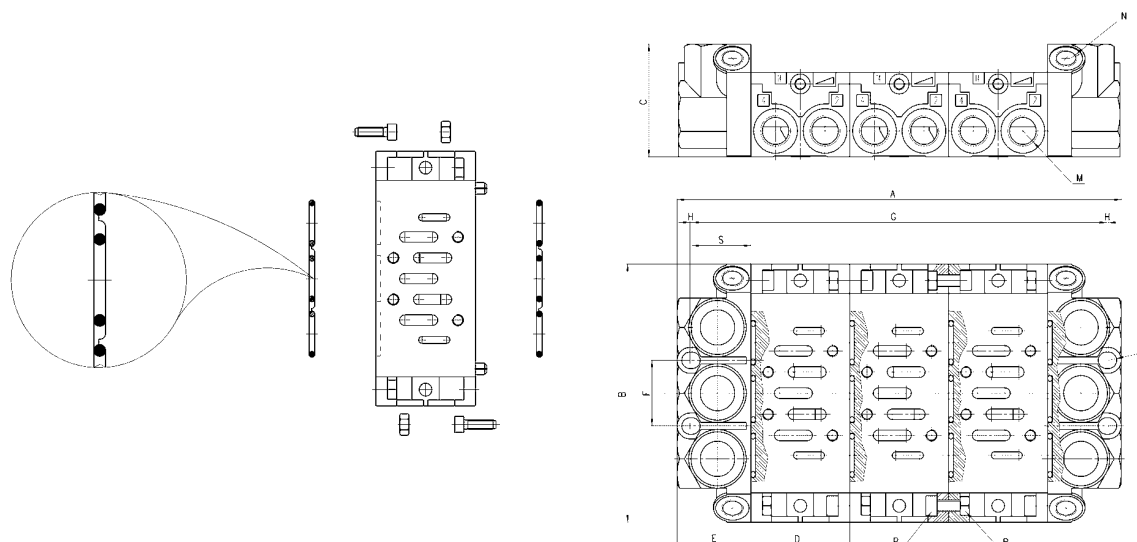
End blocks for manifold bases with front outlets: for use with "N1A" manifold units

Note: complete with fixing screws and O-ring.



DIMENSIONS		NPTF														NPTF			
Mod.	Size	A	B	C	D	E	F	G	H	L	M	N	P	P1	R	S	T	U	Z
901-HN1 TF (pair)	1	56	14.5	8	32	48	2.5	6	24	110	9	28	25.5	1	3/8"	96	1/8	5.5	3.5

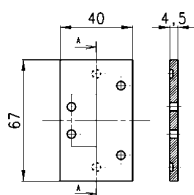
Assembly for front outlet manifold sub-bases: (shown with "N1A" & "HN1" assembly dimensions in mm units)



DIMENSIONS		NPTF											UNI 5931		UNI 5588	
Size	A	B	C	D	E	F	G	H	L	M	N	P	R	S		
1	N° D+2E	110	48	43	32	28	n° D+2S	1	3.5	1/4	1/8	M5 x 14	M5	25.5		

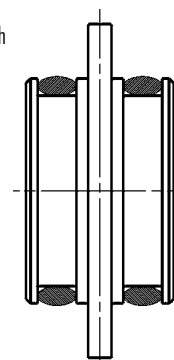
Mod. 901-TP (ISO size 1 only)

Cover plate for the positions which are not used.
Complete with seals and screws.



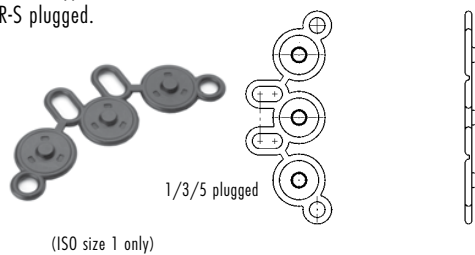
Example of assembly - blocking discs

Separation tap lines 1/3/5 to be used with manifold type 901C - 902C.
Mod. **901-C1A/TP** Size 1
Mod. **902-C2A/TP** Size 2



Mod. 901-N1A/T - full blocking gasket

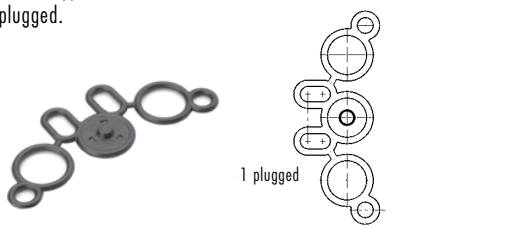
Separation joint to be used with manifold type 901N.
P-R-S plugged.



(ISO size 1 only)

Mod. 901 - N1A/TP - pressure blocking gasket

Separation joint to be used with manifold type 901N.
P plugged.

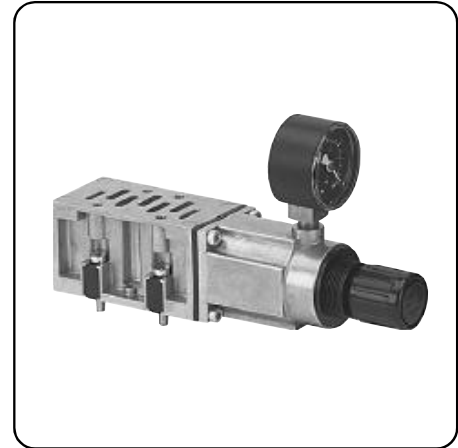


(ISO size 1 only)

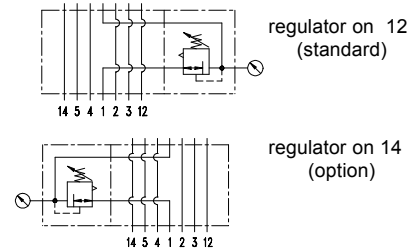
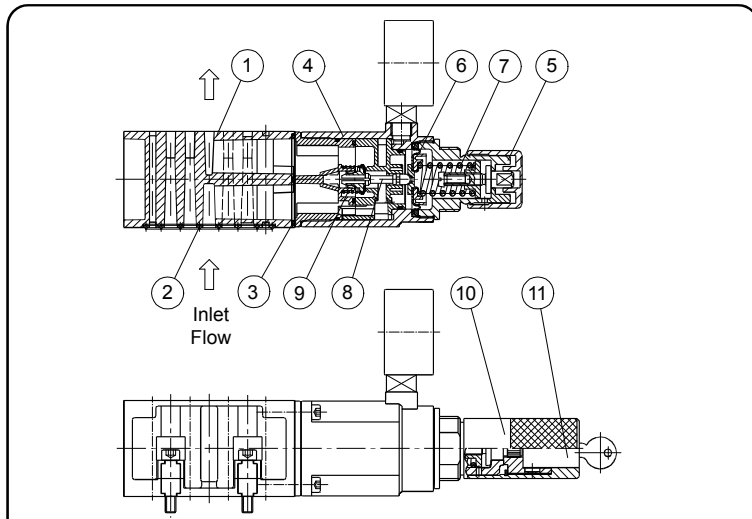
Series 9 - ISO 5599/1 Regulator Plate ISO Size 1 (P-regulation) Size 1

For ISO Size 1 valves only.

Part Number	ISO.1 P		
port size	DIN ISO 5599/1		
description	air line regulator with diaphragm and relieving feature,		
mounting	arbitrary		
supply pressure	Pe max. 16 bar (not to exceed max. pressure of valve)		
reduced pressure	Pa 0.5-12 bar		
media and ambient			
temperature	max. 50°C (other temperature ranges available upon request)		
fixing	with connection board		
weight	0.374 kg (without gauge)		



Gauges supplied separately, shown only for installation



ordering information key

	12
ISO.1 P	14
type	
1 port side	

ordering example: ISO.1 P 14

replacement parts * (repair kit: ESA-ISO.1)

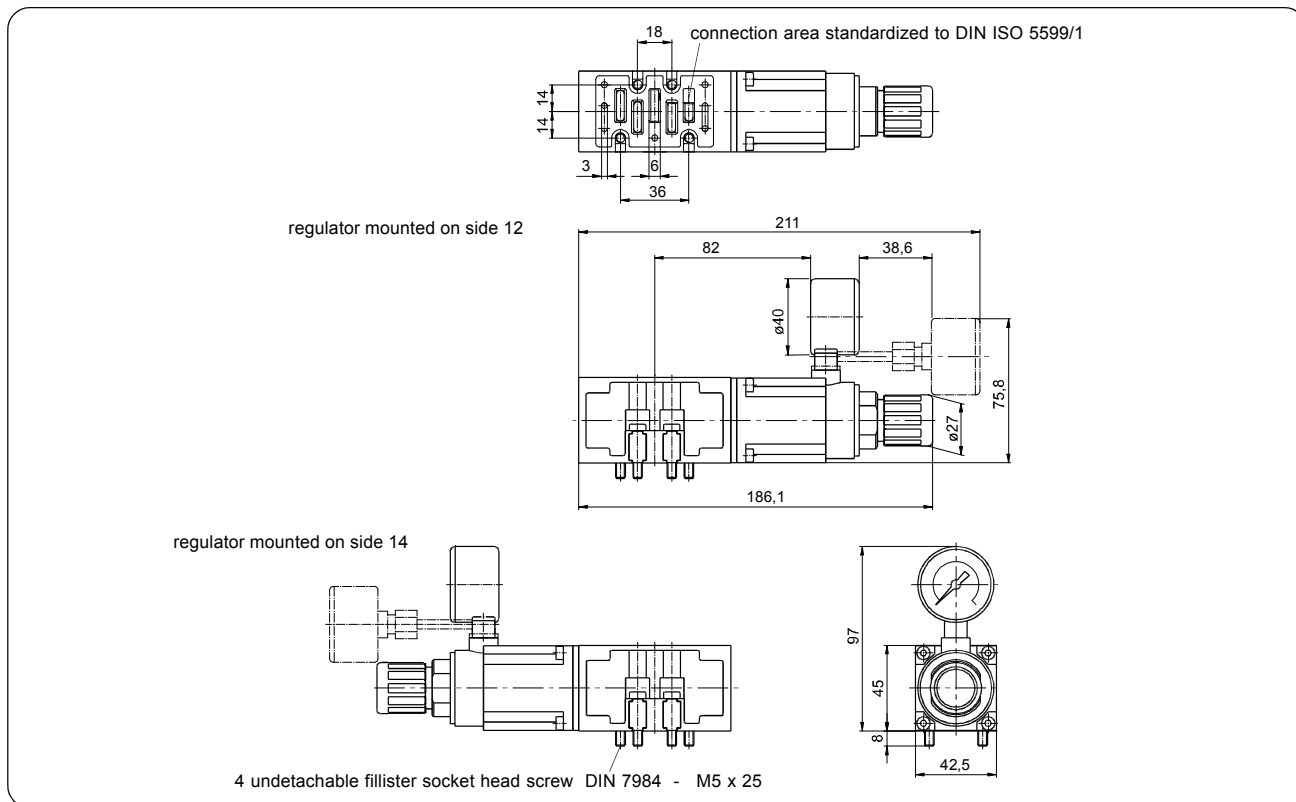
no	description	material	order-no.
1	intermediate plate	zinc - Z 410	---
2	sealing frame ISO 1-58	NBR	9.9911.00.056
3	sealing frame ISO 1-59	NBR	*
4	body	zinc - Z 410	---
5	spring cage C.00-72	POM - Ms	8.2100.72.000
6	regulating spring C.11-66	St. - galvanized	5.2111.66.000
7	diaphragm	NBR - Ms	*
8	valve cone	NBR - Ms	*
9	spring C.11-87	niro	5.2111.87.000
10	spring cage lockable C.11-K	POM - Al	8.2111.72.001
11	lock cylinder C.33-52	Ms	5.2133.52.000

application information

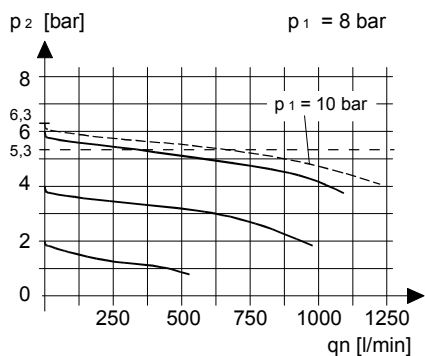
- adjusting knob can be locked by depressing



Dimensions (mm)

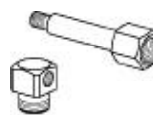


flow characteristics



accessories

adaptor for gauge with rear connection



Mod.: ISO.1-12

Series 9 - ISO 5599/1 Regulator Plate ISO Size 1 (AB-regulation) Size 1

For ISO Size 1 valves only.

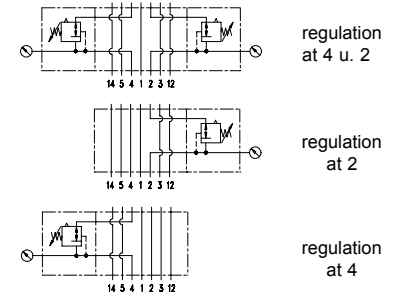
Part Number	ISO.1 AB	ISO.1 A	ISO.1 B
port size	regulation on 4 u. 2	regulation on 4	regulation on 2
	DIN ISO 5599/1		
description	air line regulator with diaphragm and relieving feature		
mounting	arbitrary		
supply pressure	Pe max. 16 bar (not to exceed max. pressure of valve)		
reduced pressure	Pa 0.5-12 bar		
media and ambient			
temperature	max. 50°C (other temperature ranges available upon request)		
fixing	with connection board		
weight	0.585 kg	0.374 kg	0.374 kg
	without gauge	without gauge	without gauge



Gauges supplied separately, shown only for installation

replacement parts * (repair kit: ESA-ISO.1)

no	description	material	order-no.
1	intermediate plate	zinc - Z 410	---
2	sealing frame ISO 1-58	NBR	9.9911.00.056
3	sealing frame ISO 1-59	NBR	*
4	body	zinc - Z 410	---
5	spring cage C.00-72	POM - Ms	8.2100.72.000
6	regulating spring C.11-66	St. - galvanized	5.2111.66.000
7	diaphragm	NBR - Ms	*
8	valve cone	NBR - Ms	*
9	spring C.11-87	niro	5.2111.87.000
10	spring cage lockable C.11-K	POM - Al	8.2111.72.001
11	lock cylinder C.33-52	Ms	5.2133.52.000



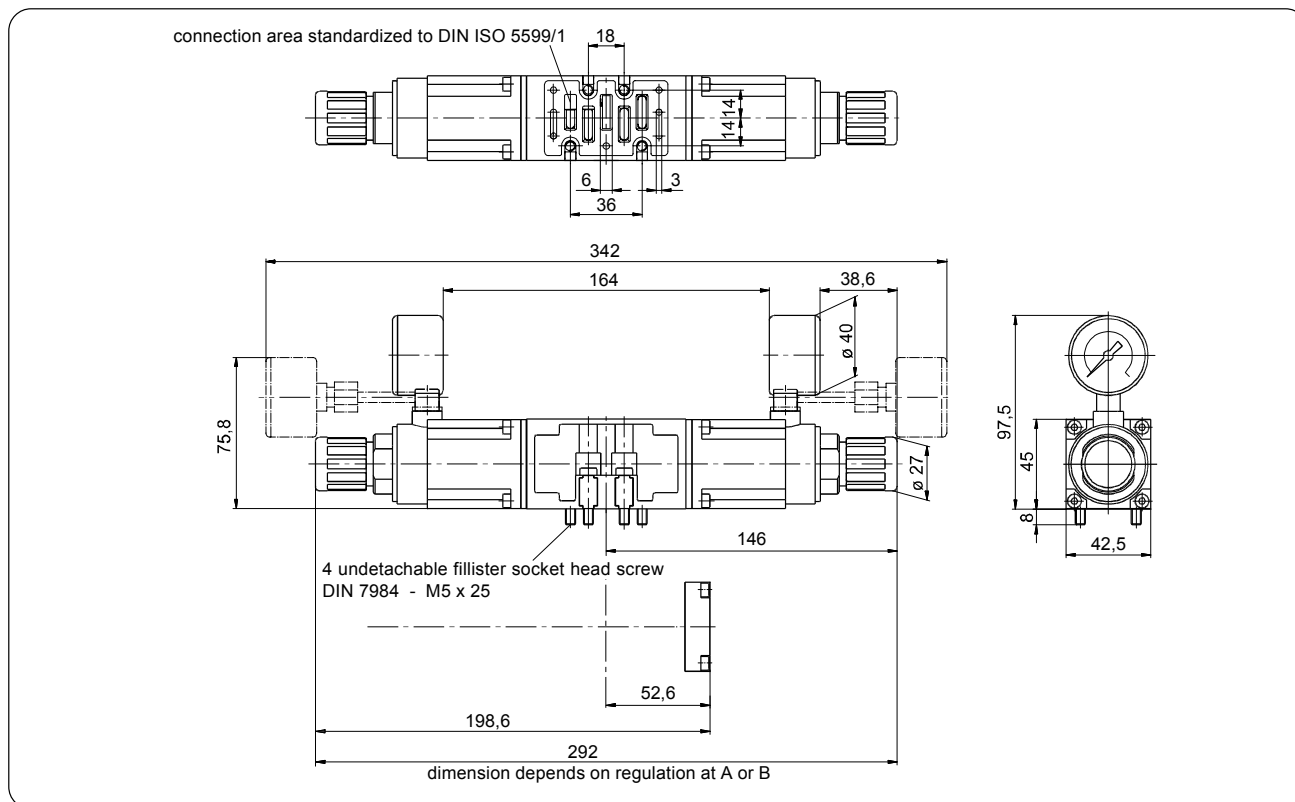
ordering information **key**

ISO.1	AB
ISO.1	A(4)
ISO.1	B(2)
type	
1 port size	

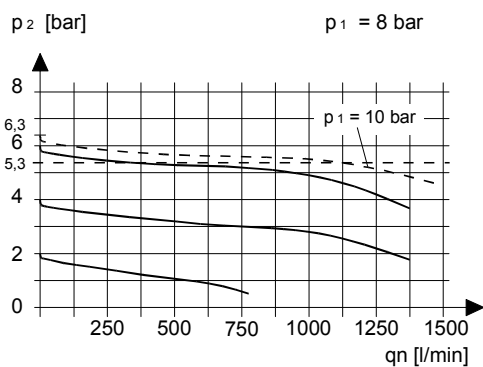
ordering example: ISO.1 AB

application information
- adjusting knob can be locked by depressing

Dimensions (mm)

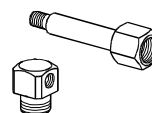


flow characteristics



accessories

adaptor for
gauge with rear
connection



Mod.: ISO.1-12

Series 9 - ISO 5599/1 Regulator Plate ISO Size 2 (P-regulation) Size 2

For ISO Size 2 valves only.

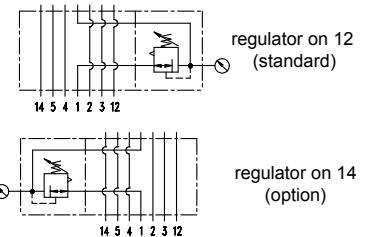
Part Number	ISO.2 P		
port size	DIN ISO 5599/1		
description	air line regulator with diaphragm and relieving feature,		
mounting	arbitrary		
supply pressure	Pe max. 16 bar (not to exceed max. pressure valve)		
reduced pressure	Pa 0.5-12 bar		
media and ambient			
temperature	max. 50°C (other temperature ranges available upon request)		
fixing	with connection board		
weight	1.680 kg (without gauge)		



Gauges supplied separately, shown only for installation

replacement parts *(repair kit: ESA-ISO.2)

no	description	material	order-no.
1	intermediate plate	Al	---
2	sealing frame ISO.2-5	NBR	5.1822.05.000
3	body	zinc - Z 410	---
4	spring cage C.22-72	POM - Ms	8.2122.72.000
5	diaphragm	NBR - Ms	*
6	regulating spring 0-12 bar	St. - galvanized	5.2122.83.000
7	valve cone	NBR - Ms	*
8	spring C.22-87	niro	5.2122.87.000
9	sealing frame	NBR	*
10	bonnet	Al	---



ordering information key

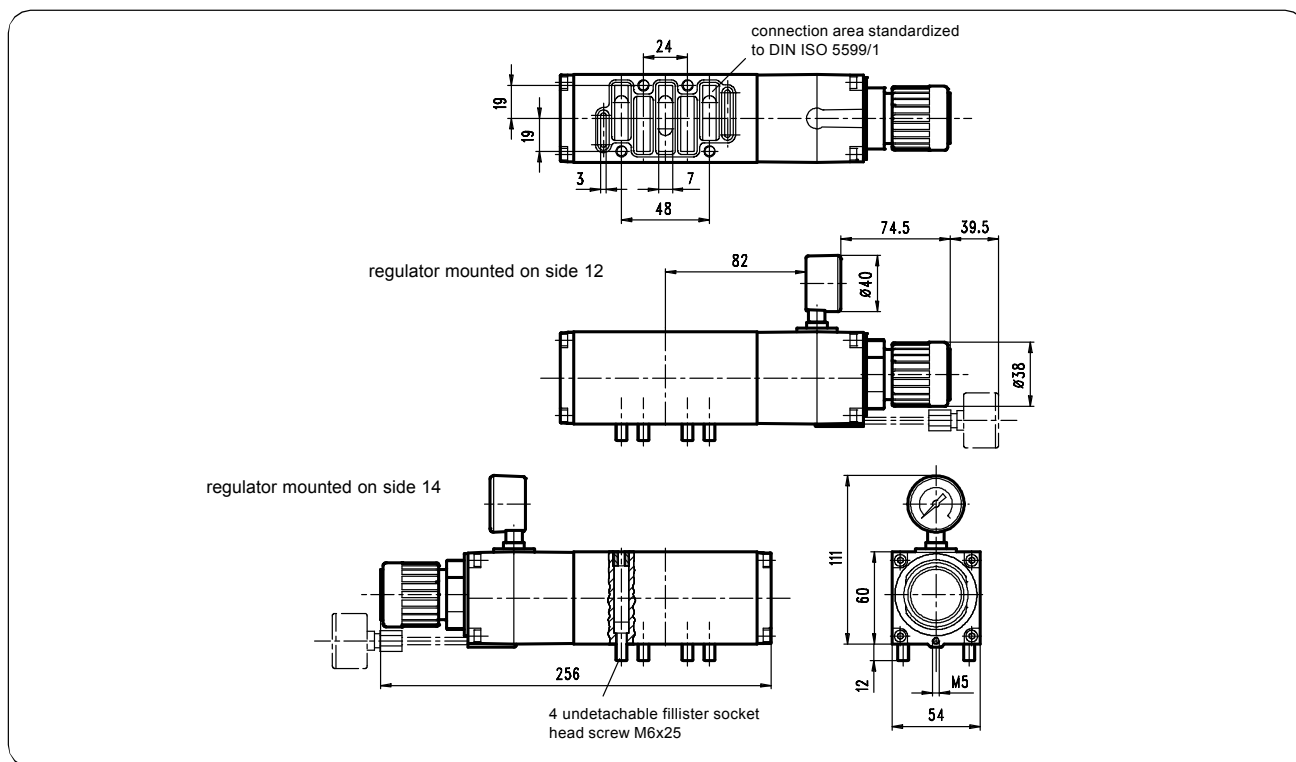
	12
ISO.2 P	14
type	
1 port side	

ordering example: ISO.2 P 14

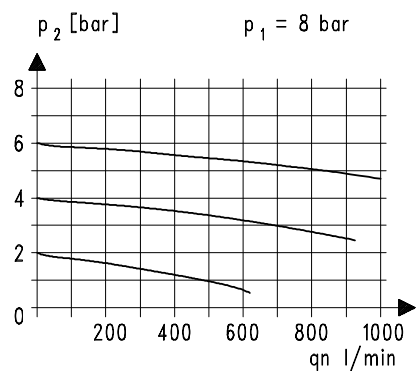
application information

- adjusting knob can be locked by depressing

Dimensions (mm)

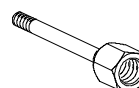


flow characteristics



accessories

adaptor for gauge with rear connection



Mod: ISO.3-12

Series 9 - ISO 5599/1 Regulator Plate ISO Size 2 (AB-regulation) Size 2

For ISO Size 2 valves only.

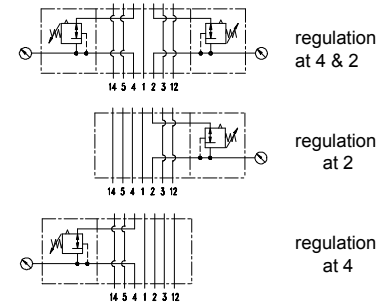
Part Number	ISO.2 AB	ISO.2 A	ISO.2 B
port size	regulation on 4 & 2	regulation on 4	regulation on 2
	DIN ISO 5599/1		
description	air line regulator with diaphragm and relieving feature		
mounting	arbitrary		
supply pressure	Pe max. 16 bar (not to exceed max. pressure valve)		
reduced pressure	Pa 0.5-12 bar		
media and ambient			
temperature	max. 50°C (other temperature ranges available upon request)		
fixing	with connection board		
weight	2.400 kg (without gauge)		



Gauges supplied separately, shown only for installation

replacement parts * (repair kit: ESA-ISO.2)

no	description	material	order-no.
1	intermediate plate	Al	---
2	sealing frame ISO.2-5	NBR	5.1822.05.000
3	body	zinc - Z 410	---
4	spring cage C.22-72	POM - Ms	8.2122.72.000
5	diaphragm	NBR - Ms	*
6	regulating spring 0-12 bar	St. - galvanized	5.2122.83.000
7	valve cone	NBR - Ms	*
8	spring C.22-87	niro	5.2122.87.000
9	sealing frame	NBR	*



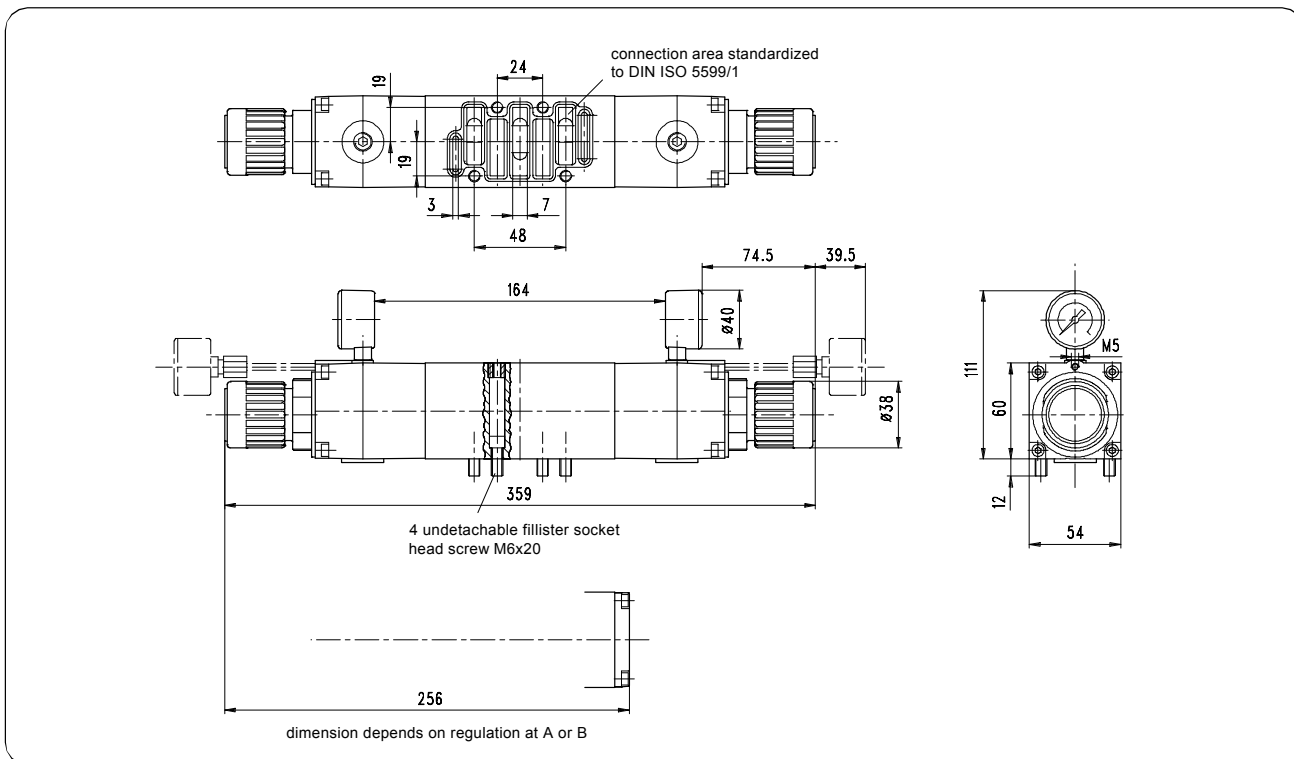
ordering information	key
ISO.2 AB	AB
ISO.2 A (4)	A(4)
ISO.2 B (2)	B(2)
type	
1 port side	

ordering example: ISO.2 AB

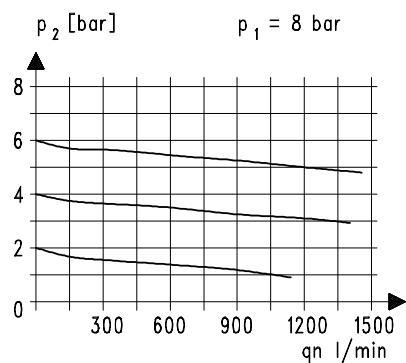
application information

- adjusting knob can be locked by depressing

Dimensions (mm)



flow characteristics



accessories

adaptor for gauge with rear connection

Mod.: ISO.3-12

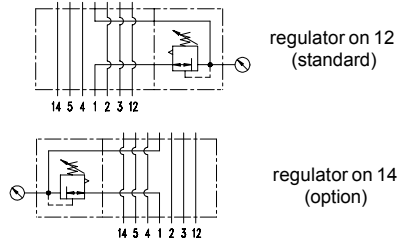
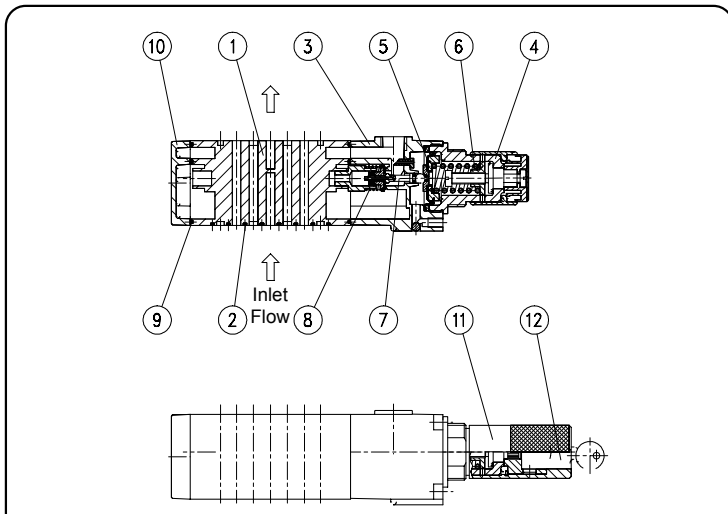
Series 9 - ISO 5599/1 Regulator Plate ISO Size 3 (P-regulation) Size 3

For ISO Size 3 valves only.

Part Number	ISO.3 P		
port size	DIN ISO 5599/1		
description	air line regulator with diaphragm and relieving feature		
mounting	arbitrary		
supply pressure	Pe max. 16 bar (not to exceed max. pressure of valve)		
reduced pressure	Pa 0.5-12 bar		
media and ambient			
temperature	max. 50°C (other temperature ranges available upon request)		
fixing	with connection board		
weight	2.210 kg (without gauge)		



Gauges supplied separately, shown only for installation



ordering information

ISO.3 P

type

port side

ordering example: ISO.3 P 14

replacement parts

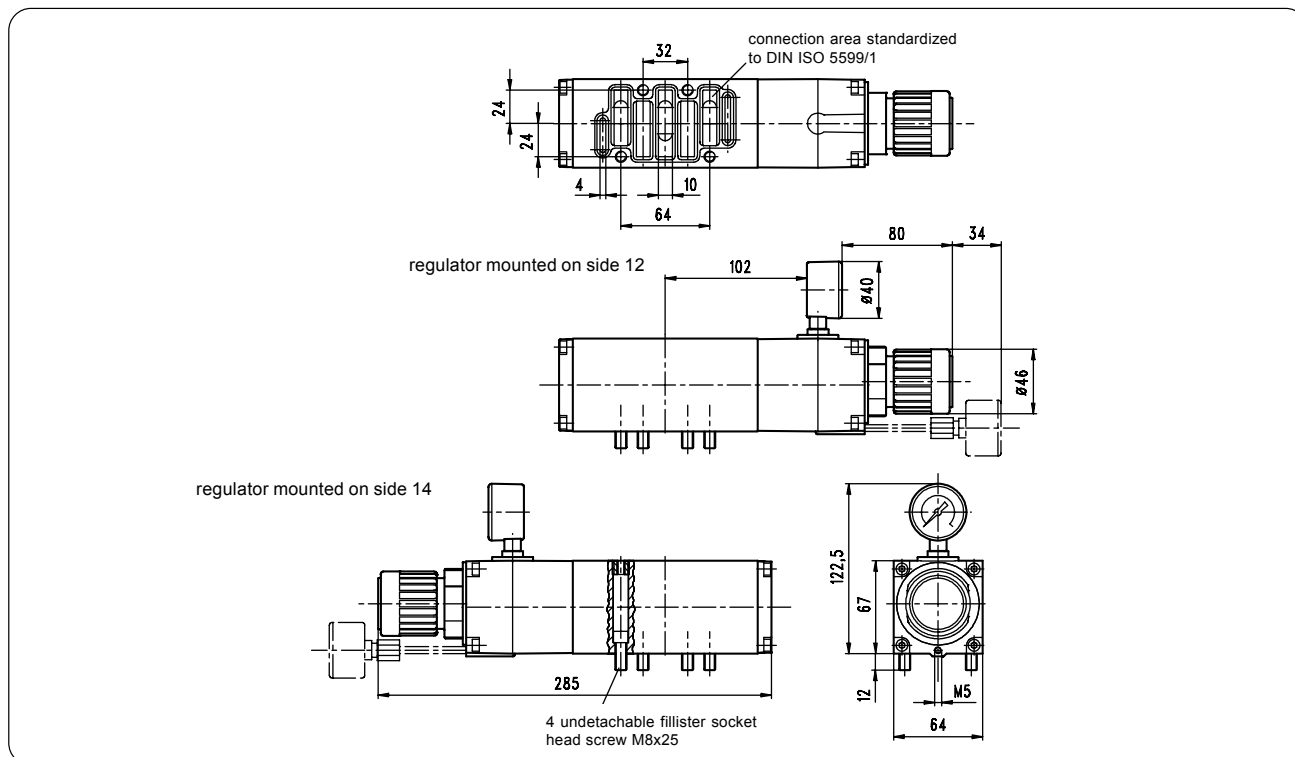
*(repair kit: ESA-ISO.3)

no	description	material	order-no.
1	intermediate plate	Al	---
2	sealing frame ISO.3-5	NBR	5.1833.05.000
3	body	Al	---
4	spring cage	POM - Ms	8.2133.72.000
5	diaphragm	NBR - Ms	---
6	regulating spring 0-12 bar	St. - galvanized	5.2133.08.000
7	valve cone	NBR - Ms	---
8	spring C.33-22	niro	5.2133.22.000
9	sealing frame	NBR	---
10	bonnet	Al	---
11	spring cage lockable C.33-K	POM - Al	8.2133.72.001
12	lock cylinder C.33-52	Ms	5.2133.52.000

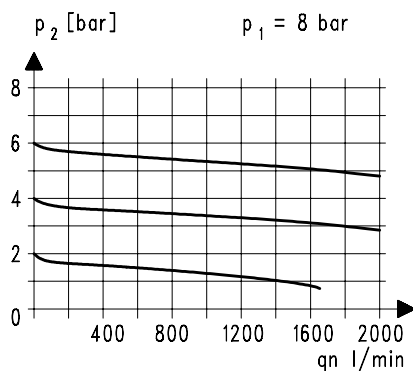
application information

- adjusting knob can be locked by depressing

Dimensions (mm)

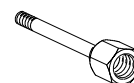


flow characteristics



accessories

adaptor for gauge with rear connection



Mod.: ISO.3-12

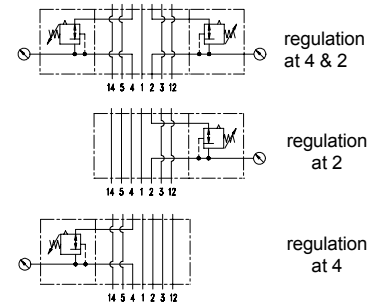
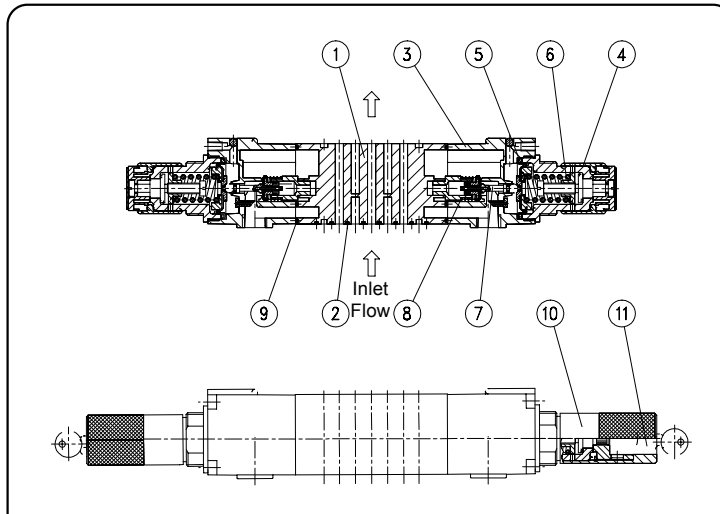
Series 9 - ISO 5599/1 Regulator Plate ISO Size 3 (AB-regulation) Size 3

For ISO Size 3 valves only.

Part Number	ISO.3 AB	ISO.3 A	ISO.3 B
port size	regulation at 4 & 2	regulation at 4	regulation at 2
	DIN ISO 5599/1		
description	air line regulator with diaphragm and relieving feature		
mounting	arbitrary		
supply pressure	Pe max. 16 bar (not to exceed max. pressure of valve)		
reduced pressure	Pa 0.5-12 bar		
media and ambient			
temperature	max. 50°C (other temperature ranges available upon request)		
fixing	with connection board		
weight	3.200 kg (without gauge)		



Gauges supplied separately, shown only for installation



ordering information Key

ISO.3 AB	AB
ISO.3 A (4)	A (4)
ISO.3 B (2)	B (2)

type

port side

replacement parts

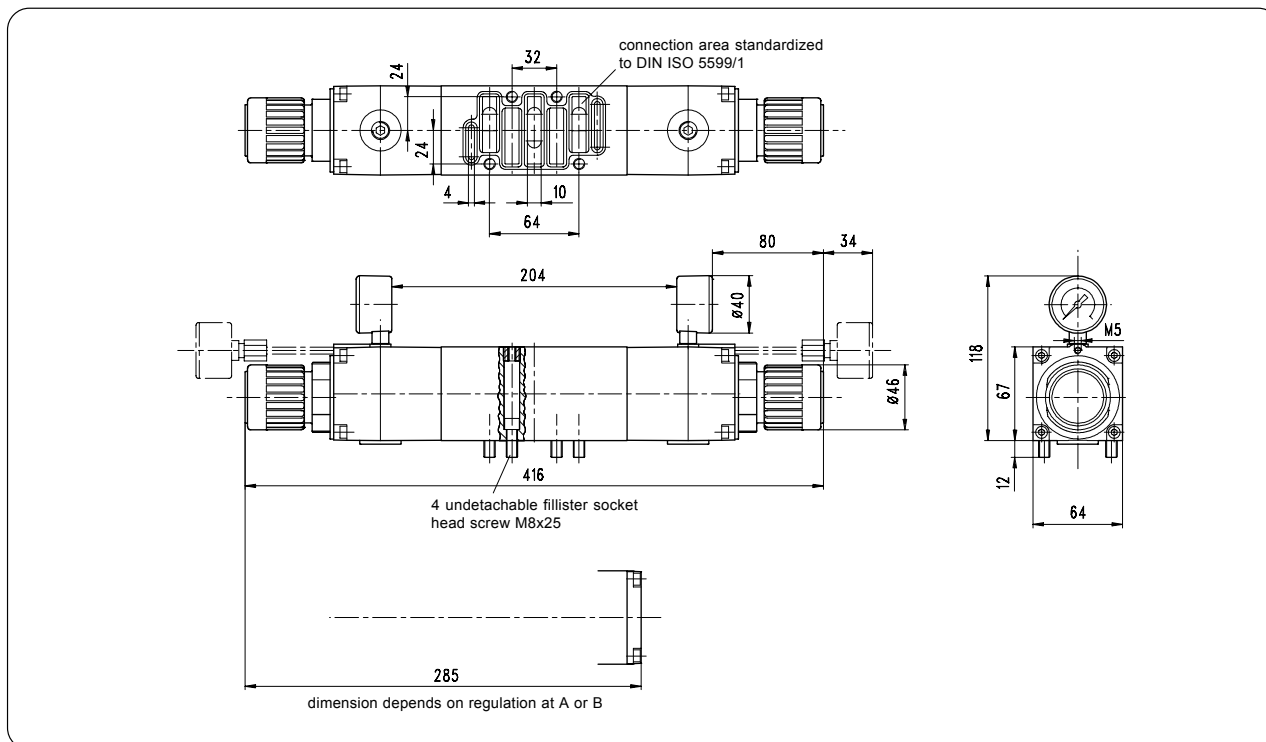
* (repair kit: ESA-ISO.3)

no	description	material	order-no.
1	intermediate plate	Al	---
2	sealing frame ISO.3-5	NBR	5.1833.05.000
3	body	Al	---
4	spring cage C.33-72	POM - Ms	8.2133.72.000
5	diaphragm	NBR - Ms	*
6	regulating spring 0-12 bar	St. - galvanized	5.2133.08.000
7	valve cone	NBR - Ms	*
8	spring C.33-22	niro	5.2133.22.000
9	sealing frame	NBR	*
10	spring cage lockable C.33-K	POM - Al	8.2133.72.001
11	lock cylinder C.33-52	Ms	5.2133.52.000

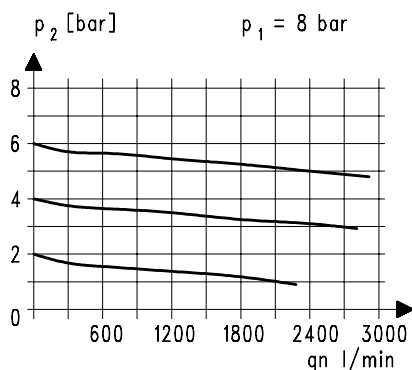
application information

- adjusting knob can be locked by depressing

Dimensions (mm)

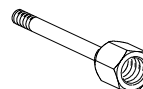


flow characteristics



accessories

adaptor for gauge with rear connection



Mod.: ISO.3-12

Series NA Valves (NAMUR Interface)

Cv= 1.05

Air-Pilot operated 1/4" NPTF
3-way/2-position; 5-way/2-position; and 5-way/3-position valves
with Interface according NAMUR Standard

The valves Series NA are available in versions: 5-way/2-position and 3-way/2-position, Normally Closed or Normally Open. These are indirectly actuated valves and are available in single and double air pilot versions. The valve has a NAMUR interface pattern and can therefore be directly mounted on other suitable components that also have this hole pattern, such as certain rotary actuators, ball valves or process valves. The single air pilot version is equipped with a mechanical return spring.



TECHNICAL SPECIFICATIONS

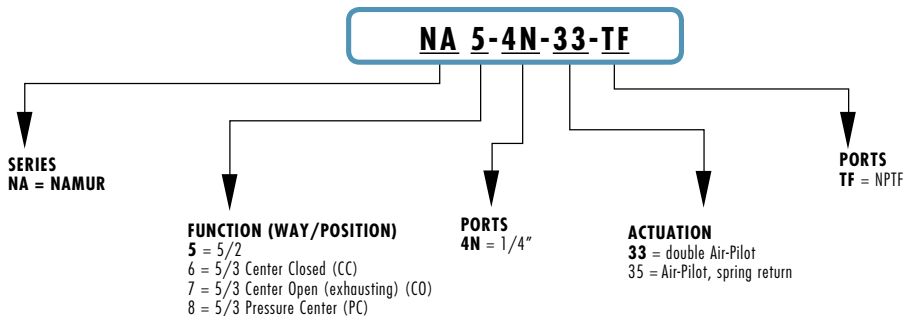
Construction	spool type (pilot operated)
Valve group	3-way/2-position, 5-way/2-position, 5-way/3-position
Materials	Anodized aluminum body - stainless steel spool - BUNA-N seals
Mounting	through 2 Ø5 holes in valve body; according to Namur interface
Ports	2-4 = NAMUR 1-3-5 = 1/4" NPTF
Installation	directly on surfaces with Namur Interface
Operating temperature	0 - 60°C (using dry air -20°C), 32°F — 140°F (using dry air -4°F)

PNEUMATIC DATA

Operating pressure	1.5 - 10 bar double air pilot (22-145 psi); 2.5 - 10 bar single air pilot (36-145 psi)
Nominal pressure	6 bar (87 psi)
Nominal flow	*Qn = 1000 NL/min = 35.3 SCFM; Cv= 1.05
Nominal diameter	8 mm
Fluid	filtered air (25 micron), without lubrication**

*Qn = determined with supply pressure of 6 bar and with $\Delta p = 1$ bar. **If lubricated air is used, it is recommended to use ISOVG32 oil, and never interrupt the lubrication.

CODING OF SERIES NA AIR PILOT VALVES

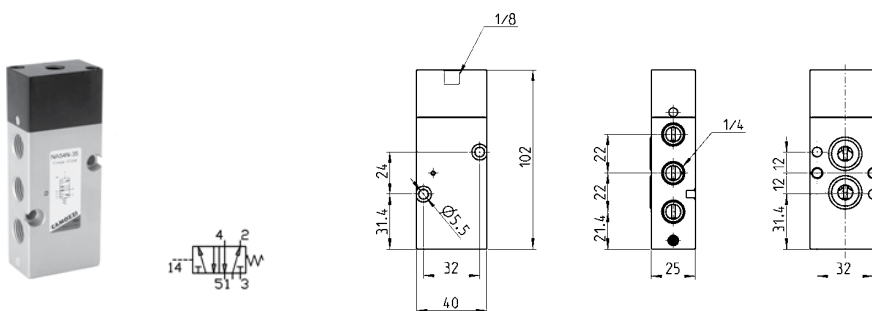


5-way/2-position pneumatic valve, Air-Pilot, spring return,

Cv=1.05

Mod.

NA54N-35TF

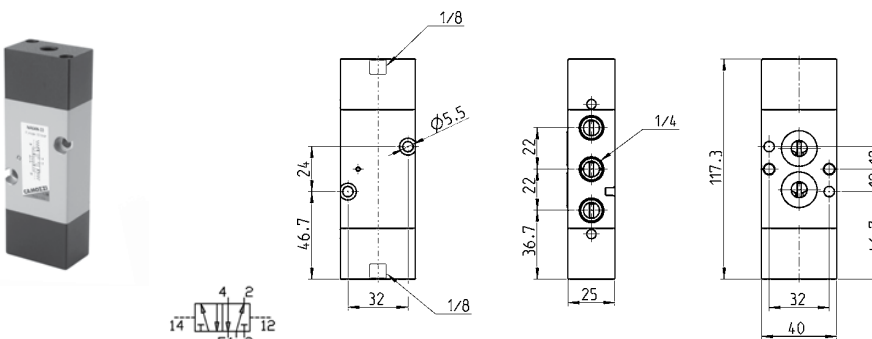


5-way/2-position pneumatic valve, Double Air-Pilot

Cv=1.05

Mod.

NA54N-33TF



5-way/3-position pneumatic valve

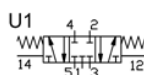
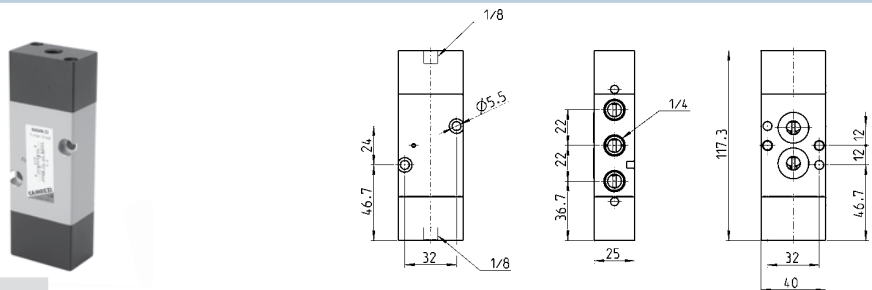
Cv=1.05

Mod.

Symbol

Function

NA64N-33TF	U1	CC
NA74N-33TF	V1	CO
NA84N-33TF	Z1	PC



*see voltage coding

Cv = .16 - 1.47

Series VNR Check Valves

Cv = .16 - 1.47

Check Valves VNR

Ports M5 (10-32 UNF), 1/8", 1/4"



TECHNICAL SPECIFICATIONS

Construction	Poppet type
Mounting	In-line
Materials	Nickel-plated brass body, Brass body, Buna-N seals, Polyurethane seals, Stainless steel spring
Port sizes	M5 (10-32 UNF), 1/8", 1/4", 3/8", 1/2" NPTF;
Installation	In-line
Operating temperature	32°F - 175°F, (dry air necessary down to - 4° F)
Fluid	Filtered air
Lubricant	Oil compatible with Buna-N, (3° - 10° E)

PNEUMATIC DATA

Operating pressure	0.2 - 10 bar (3 - 145 psi)
Nominal pressure	6 bar (87 psi)
Nominal flow	*Qn Series VNR: M5 = 150NL/Min. (5.3 SCFM); 1/8" = 600 NL/min. (21.18 SCFM) 1/4" = 1400 NL/min. (49.44 SCFM)
Lubricant	not required
Cv	M5 = .16; 1/8" = .63; 1/4" = 1.47

*Qn flowrate (SCFM) determined with a supply pressure of 6 bar, (87 psi), and with a pressure drop of 1 bar, (14.5 psi).

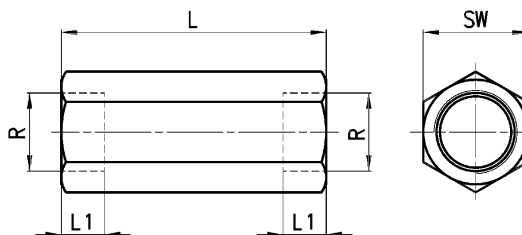
***Dimensions are in millimeters.

Check Valves

The check valves in the VNR Series are available with M5 (10-32 UNF), 1/8" and 1/4" ports. They must be used when it is required to intercept a flow in one direction only. The design of these valves is of the poppet type and this feature allows operation at low pressures both when there is a free flow and during retention.

Materials used:

- OT58 (brass) body, Nickel Plated (1/4")
- Buna-N seals
- stainless steel spring
- internals brass



VNR-205-M5

$Q_n^{**} = 150$ NL/min Minimum operating pressure = 1 bar (14.5 psi)

VNR-210-02

$Q_n^* = 600$ NL/min Minimum operating pressure = 0.3 bar (4.3 psi)

VNR-843-07TF

$Q_n^* = 1400$ NL/min Minimum operating pressure = 0.2 bar (2.9 psi)

* Q_n = determined with 6 bar and $D_p = 1$ bar

** Q_n = determined with 6 bar and $D_p = 2$ bar



DIMENSIONS

Mod.	R	L	L1	SW
VNR-205-M5	10-32 UNF	25	6	8
VNR-210-02	1/8"	34	7	13
VNR-843-07TF	1/4"	48	9	17

Series VBO - VBU (Nickel Plated) Pilot-Operated Check/Blocking Valves

Unidirectional (Pilot-Operated Check Valve)
and Bidirectional (Blocking Valve) 1/8", 1/4", 3/8", 1/2" NPTF
Nominal diameters 5.5 - 8 - 11 mm

These valves have been designed to mount directly into the cylinder ports. The inner design of the blocking valves Series VBO and VBU allows a very high flow rate and reliable operation.



TECHNICAL SPECIFICATIONS

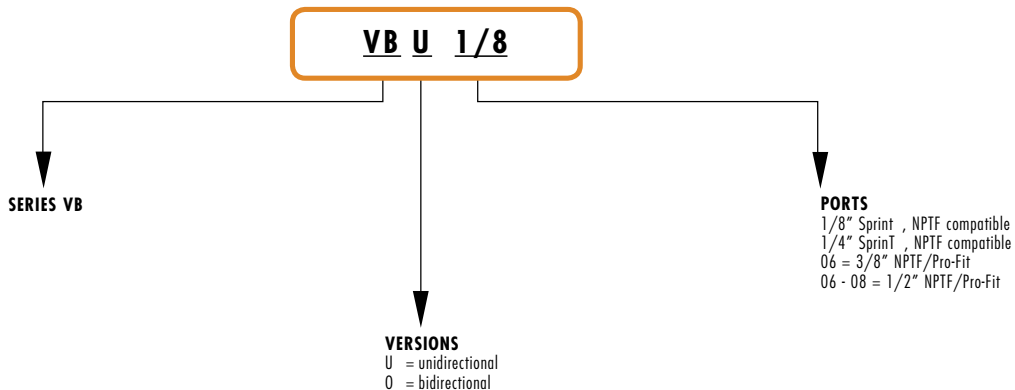
Construction	poppet type
Valve group	pilot-operated check and blocking valves (pilot connection 5/32" OD)
Materials	OT58 Nickel-Plated Brass Body, Buna-N seals, Teflon seal ring, internals brass
Mounting	by male thread
Ports	1/8" - 1/4" - 3/8" - 1/2" NPTF
Position	in any position
Operating temperature	from 0 to 80°C (with dry air -20°C) (32°F - 175°F (dry air necessary down to - 4° F))
Lubrication	not required, if necessary use oil compatible with Buna-N (3° — 10° E) (ISOVG32 grade)

PNEUMATIC DATA

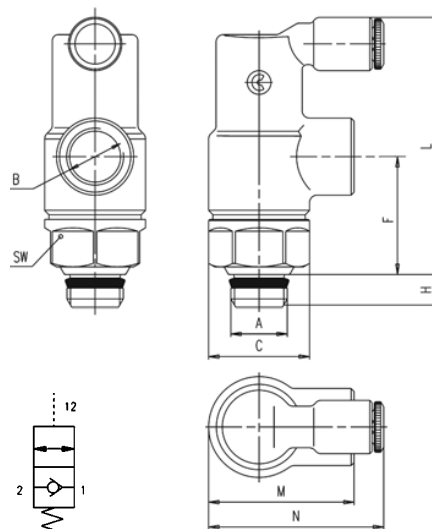
Operating pressure	VBU: 0.3 — 10 bar (4.35 — 145 psi), VBO: 0 — 10 bar (0 - 145 psi)
Nominal pressure	6 bar (87 psi)
Nominal flow	see graph
Nominal diam.	1/8" ø5.5 mm (.217") — 1/4" ø8 mm (.315") — 3/8" ø11 mm (.433")
Fluid	filtered air, without lubricant* (25 micron or less)

*in the event that lubricated air is used, it is recommended to use oil ISOVG32. Once applied, the lubrication should never be interrupted.

CODING OF UNIDIRECTIONAL AND BIDIRECTIONAL VALVES



Unidirectional blocking valve Mod. VBU and bidirectional blocking valve Mod. VBO



DIMENSIONS (in inches)

Mod.	A NPTF	B NPTF	C	F	H	L	M	N	SW
VBU 1/8	1/8"	1/8"	.665	.787	.216	1.692	.964	1.181	.590
VBU 1/4	1/4"	1/4"	.807	.984	.275	1.968	1.267	1.318	.748
VBU 06	3/8"	3/8"	1.055	1.299	.314	2.637	1.574	1.555	.944
VBU 06-08	1/2"	3/8"	1.055	1.299	.334	2.667	1.574	1.555	.944

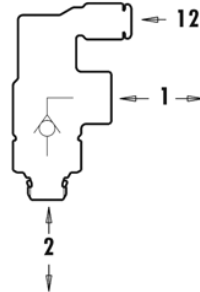
DIMENSIONS (in inches)

Mod.	A NPTF	B NPTF	C	F	H	L	M	N	SW
VBO 1/8	1/8"	1/8"	.665	.787	.216	1.692	.964	1.181	.590
VBO 1/4	1/4"	1/4"	.807	.984	.275	1.968	1.267	1.318	.748
VBO 06	3/8"	3/8"	1.055	1.299	.314	2.637	1.574	1.555	.944
VBO 06-08	1/2"	3/8"	1.055	1.299	.334	2.667	1.574	1.555	.944

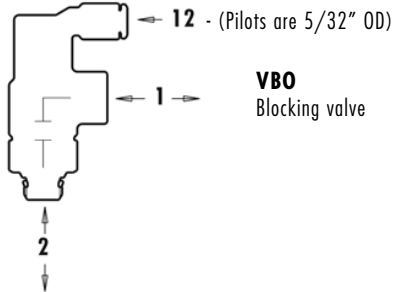
UNIDIRECTIONAL AND BIDIRECTIONAL BLOCKING VALVES

VBU
Pilot-operated check valve

Unidirectional



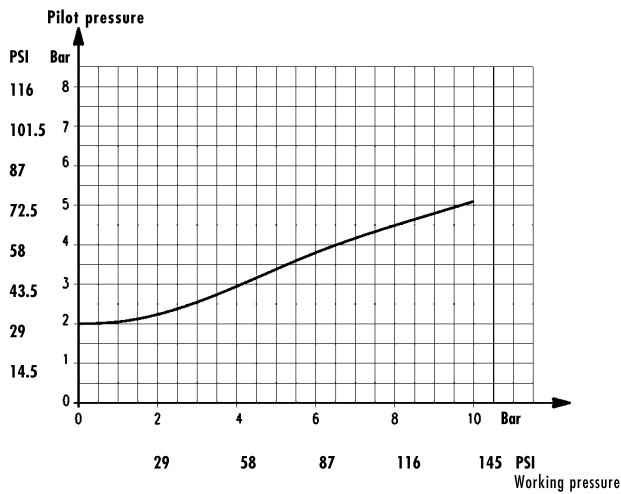
Bidirectional



VBO
Blocking valve

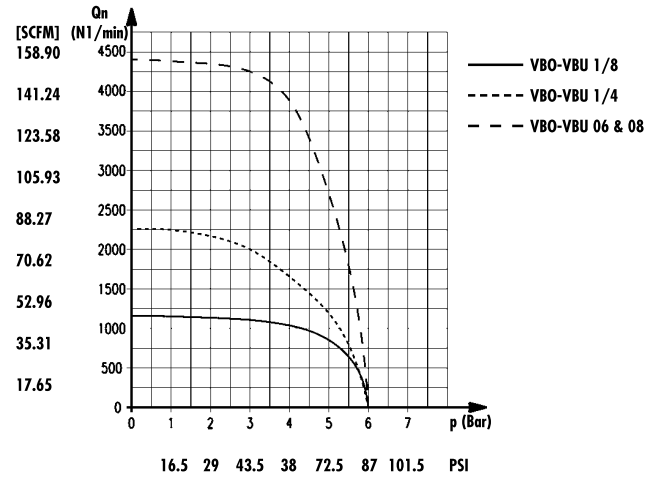
PILOT PRESSURE (BOTH VBU AND VBO)

The diagram below shows the relation between working pressure and pilot pressure required in order to operate the valve.
VBU - The opening pressure of the unidirectional valve is 0.3 bar (4.35 psi).

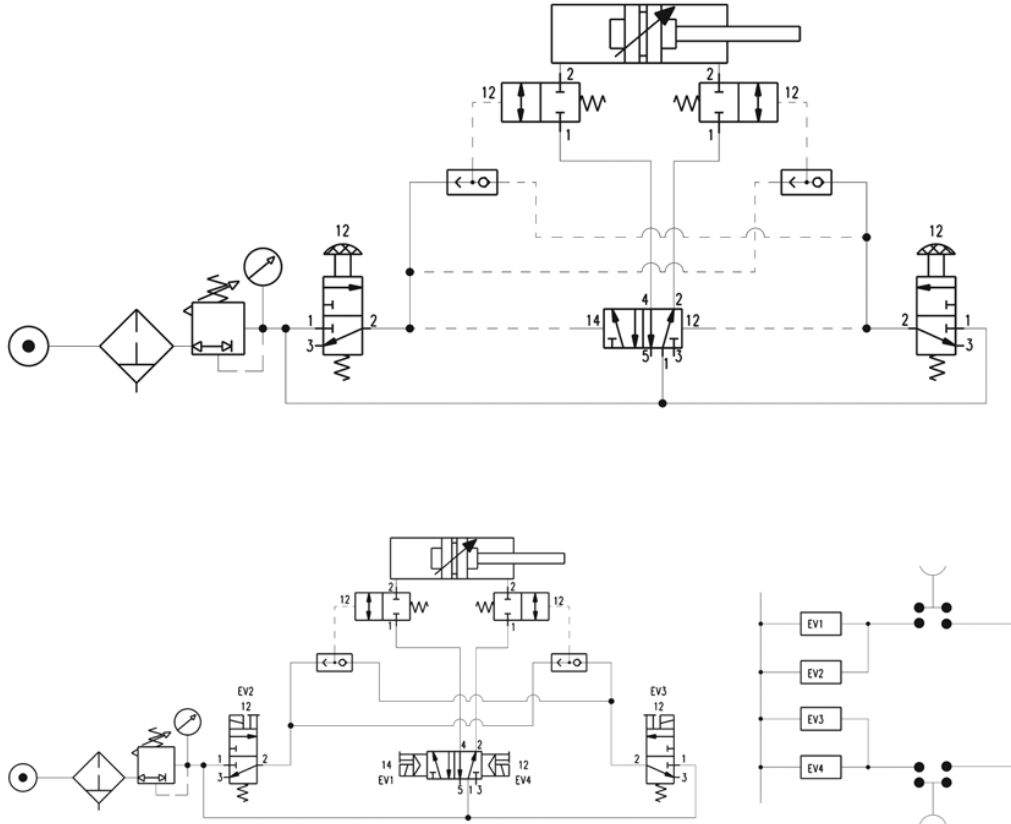


FLOW RATE (BOTH VBU AND VBO)

Flow Q (NL/min.) (SCFM)
N.B.: Q is determined with an inlet pressure of 6 bar (87 psi).



APPLICATION SCHEMES (Examples Only)



Cv = .05 - 4.73

Series VSC and VSO Quick Exhaust Valves

Cv = .05 - 4.73

Quick exhaust valves VSC, VSO
Ports M5 (10-32 UNF), 1/8", 1/4",
3/8", 1/2", NPTF
cartridge ø 4 mm (5/32" O.D.) (VSO only)



TECHNICAL SPECIFICATIONS

Construction	Poppet type
Mounting	In-line
Materials	Nickel-plated brass body, Buna-N seals, Polyurethane seals
Port sizes	M5 (10-32 UNF), 1/8", 1/4", 3/8", 1/2" NPTF; 5/32" O.D. cartridge
Installation	In-line
Operating temperature	32°F - 175°F, (dry air necessary down to - 4° F)
Fluid	Filtered air (25 micron or less)
Lubricant	Oil compatible with Buna-N, (3° - 10° E) (ISOVG32 grade)

PNEUMATIC DATA

Operating pressure	0.3 - 10 bar, (5 - 145 psi)
Nominal pressure	6 bar (87 psi)
Nominal flow	Series VSC: P → A, 1/8" = 650 NL/min. (22.9 SCFM) 1/4" = 1100 NL/min. (38.8 SCFM) 3/8" = 4500 NL/min. (158.9 SCFM) 1/2" = 4500 NL/min. (158.9 SCFM) A → R, 1/8" = 1000 NL/min. (35.3 SCFM) 1/4" = 1900 NL/min. (67.1 SCFM) 3/8" = 6300 NL/min. (222.5 SCFM) 1/2" = 6300 NL/min. (222.5 SCFM)
	Series VSO: P → A, 5/32" O.D. = 30 NL/min. (1.06 SCFM)
Lubricant	A → R, 5/32" O.D. = 80 NL/min. (2.82 SCFM)
Cv	See Table

*Qn flowrate (SCFM) determined with a supply pressure of 6 bar, (87 psi), and with a pressure drop of 1 bar, (14.5 psi).

** Soft-seal repair kits are available for Series VSC Quick-exhaust valves.

***Dimensions are in millimeters.

Quick exhaust valves Series VSO (connections are all 5/32" OD)

Quick exhaust valves are commonly used to increase the speed of cylinders or for rapid depressurisation of tanks containing compressed air. The models **VSO 425-M5** and **VSO 426-04** are specially designed for mounting on solenoid valves and valves incorporating a 5/32" O.D. port. We recommend that a silencer be mounted on the outlet (2931-M5).

Materials used:

- OT58 (brass) body, Nickel Plated
- Buna-N seals

Nominal flowrate

from P A Qn* 50 NL/min. (1.76 SCFM)

from A R Qn* 100 NL/min. (3.53 SCFM)

Qn* = determined with 6 bar (87 psi) and DP = 1 bar (14.5 psi)

Minimum operating pressure = 1 bar (14.5 psi)

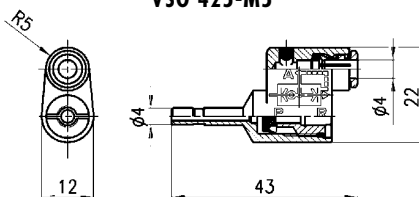
Cv Rating

from P A: Cv = 0.05

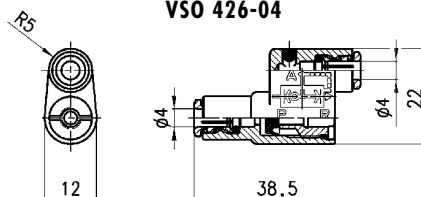
from A R: Cv = 0.1



VSO 425-M5



VSO 426-04



Mod.	
VSO 425-M5	
Mod.	
VSO 426-04	

Quick exhaust valves Series VSC

Quick exhaust valves are commonly used to increase the speed of cylinders or for rapid depressurisation of tanks containing compressed air. We recommend that a silencer be mounted on the outlet.

Materials used:

- OT58 (brass) body, Nickel Plated
- Desmopan seal (polyurethane)

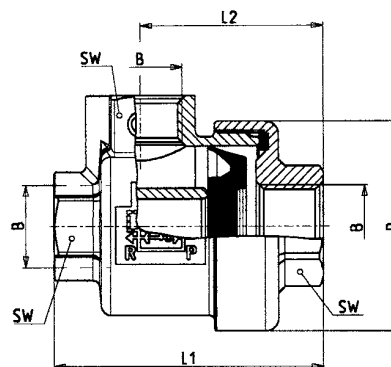
VSC 588-02 Qn = P A 650 NL/min Qn = A R 1000 NL/min
Minimum operating pressure = 0,5 bar

VSC 544-04 Qn = P A 1100 NL/min Qn = A R 1900 NL/min
Minimum operating pressure = 0,3 bar

VSC 538-06 Qn = P A 4500 NL/min Qn = A R 6300 NL/min
Minimum operating pressure = 0,2 bar

VSC 522-08 Qn = P A 4500 NL/min Qn = A R 6300 NL/min
Minimum operating pressure = 0,2 bar

* Qn = determined with 6 bar and Dp = 1 bar



Mod.	DIMENSIONS (in inches)					Flow (Qn)			
	B NPTF	D	L1	L2	SW	Inlet P→A		Exhausting A→R	
						SCFM	Cv	SCFM	Cv
VSC 588-02	1/8"	1.102	1.437	.984	.551	22.9	0.68	35.3	1.05
VSC 544-04	1/4"	1.299	1.653	1.122	.669	38.8	1.16	67.1	2.00
VSC 538-06	3/8"	1.692	2.263	1.555	.944	158.9	4.73	222.5	6.62
VSC 522-08	1/2"	1.692	2.302	1.555	.944	158.9	4.73	222.5	6.62



Chapter 4

Flow Control Valves and Accessories

(NPTF/INCH)

	Series	Page
Composite Right Angle Flow Control Valves	TMCU-TMVU-TMCO	120
Right Angle Flow Control Valves	GMCU-MCU-GSCU-SCU	122
In-Line Flow Control Valves	GSVU-SVU-MVU-SCO-MCO RFU	128

(BSP/METRIC)

	Series	Page
Composite Right Angle Flow Control Valves	TMCU-TMVU-TMCO	130
Right Angle Flow Control Valves	SCU-MCU-SVU-MVU SCO-MCO	132
Composite Flow Regulators with Banjo	PSCU-PMCU-PSVU-PMVU PSCO-PMCO	138
Right Angle Flow Control Valves	GSCU-GMCU-GSVU-GMVU GSCO-GMCO	144
In-Line Flow Control Valves	RFU-RFO	148
Needle Valve	28	150
Silencers	2901-2903-2921	152
RSW	2931-2938-2939-2905	152
Adjustable-Diaphragm Pressure Switches		154
Electro-Pneumatic Transducer	TRP	154
Pressure Indicators	2950	154

NPTF/INCH

Flow Control Valves & Accessories Product Guide

Camozzi realizes the importance of these valves especially as actuator performance depends essentially on the right choice of automatic valve. The range includes flow regulators, quick release valves, flow control valves, basic logic functions and silencers with different specifications in order to meet most requirements.

This chapter is a general overview of the Flow Control Valve product line. For details of product data and dimensions, please see the *Fittings and Flow Control Valves Catalog*.

Page 120

NPTF/INCH

Composite Right Angle Flow Control Valves
Series TMCU - TMVU - TMCO



Unidirectional and bidirectional
1/8", 1/4", 3/8", 1/2" NPTF
Banjo flow controllers
Nominal diameters ø 5,5 - 8 - 11

NEW

Page 122

NPTF/INCH

Right Angle Flow Control Valves
Series GSCU - SCU,
GMCU - MCU,
GSVU - SVU,
GMVU - MVU,
GSCO - SCO,
GMCO - MCO



Unidirectional and bidirectional
banjo flow controllers
Ports M5 (10-32 UNF),
1/8", 1/4", 3/8", 1/2" NPTF

Page 128

NPTF/INCH

In-line Flow Control Valve
Series RFU



Unidirectional RFU
Panel or wall-mounted flow controllers
Ports M5 (10-32 UNF), 1/8", 1/4", NPTF

Page 130

BSP/METRIC

Composite Right Angle Flow Control Valves
Series TMCU - TMVU - TMCO



Unidirectional and bidirectional
G1/8, G1/4, G3/8, G1/2
Banjo flow controllers
Nominal diameters ø 5,5 - 8 - 11

NEW

Page 132

BSP/METRIC

Right Angle Flow control valves
Series SCU -
MCU - SVU -
MVU - SCO - MCO



Unidirectional and bidirectional
Swivel banjo flow controllers
Ports M5, G1/8, G1/4, G3/8, G1/2

Page 138 **BSP/METRIC**

Composite Flow Regulators with Banjo
Series PSCU - PMCU - PSVU - PMVU - PSCO -
PMCO



Flow Control Valves
Composite Flow Regulators with Banjo
Unidirectional and Bidirectional (Meter-out, Meter-in, Needle Orifice)
Ports G1/8, G1/4, G3/8 with metric mm O.D. tube connections

Page 144 **BSP/METRIC**

Right Angle Flow Control Valves
Series GSCU -
GMCU - GSVU -
GMVU - GSCO -
GMCO



Unidirectional and bidirectional
M5, G1/8, G1/4
banjo flow controllers
Nominal diameters ø1,5, ø3,5, ø5

Page 148 **BSP/METRIC**

In-line Flow Control Valves
Series RFU - RFO



Unidirectional and bidirectional
Inline flow controllers
Ports M5, G1/8, G1/4, G3/8, G1/2

Page 150 **BSP/METRIC**

Needle Valve
Series 28



Unidirectional and bidirectional
M5, G1/8, G1/4
Inline flow controllers
Nominal diameters ø1,5, ø3,5, ø5

Page 152 **BSP/METRIC**

Silencers Series 2901, 2903, 2921, 2931,
2938, 2939, 2905, RSW



Ports M5 (10-32 UNF), G1/8, G1/4, G3/8, G1/2, G3/4, G1

Page 154 **BSP/METRIC**

Adjustable-Diaphragm Pressure Switches
Series PM

Normally closed or open - Ports 1/8"

Electro-Pneumatic Transducer Series TRP

Normally closed or open - Ports 1/8"

Pressure Indicators Series 2950

Ports M5 (10-32 UNF)



The company reserves the right to vary models and dimensions without notice. These products are designed for industrial applications and are not suitable for sale to the general public.

NPTF/INCH

Series TMCU – TMVU – TMCO Composite Right Angle Flow Control Valves – NPTF/INCH

Meter In, Meter Out, Needle Orifice 1/8", 1/4", 3/8", 1/2" NPTF
Tube OD 5/32", 1/4", 5/16", 3/8", 1/2"
Reusable thread seal, PTFE seal ring (Teflon®) - **Pro-Fit®**

The Meter In, Meter Out, Needle Orifice flow controllers, series TMCU, TMVU, TMCO have been designed to offer a solution with reduced overall dimensions in combination with higher flow rate characteristics.

Their construction allows an easy assembly on cylinders and valves and offers the possibility of locking the regulation screw once it has been set.

The flow regulation range which is extremely wide and gradual has been optimized further, allowing a very accurate flow regulation over the whole scale.

This chapter is a general overview of the Flow Control Valve product line. For details of product data and dimensions, please see the *Fittings and Flow Control Valves Catalog*.



TECHNICAL SPECIFICATIONS

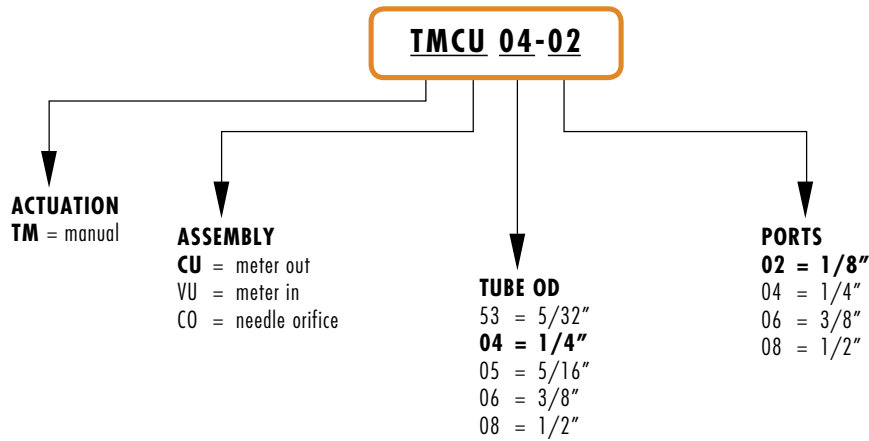
Construction	needle-type
Valve group	Meter In, Meter Out, Needle Orifice flow controlle
Materials	OTS8 Nickel Plated Brass Threads and Collet - Technopolymer (Glass-Reinforced Nylon® 66 Resin) - BUNA-N Seals, PTFE thread seal
Mounting	by male thread
Parts	1/8", 1/4", 3/8", 1/2" NPTF
Position	in any position
Operating temperature	0 - 60°C (with dry air -20°C) (32°F - 140°F, with dry air -4°F). Consult factory for higher temperature requirements.

*If lubricated air is used, it is recommended to use ISOVG32 oil. Once applied the lubrication should never be interrupted.

PNEUMATIC DATA

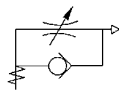
Operating pressure	0.5 - 10 bar (7.25 - 145 psi)
Nominal pressure	6 bar (87 psi)
Nominal flow	see graph
Nominal diam.	Tube OD 5/32", 1/4", 5/16", 3/8", 1/2"
Fluid	filtered air

CODING OF FLOW CONTROL VALVES



Meter-Out Valves Series TMCU

Right angle flow controller for mounting on cylinders and valves. Knurled screw adjustment, with internal hex slot.
Ports 1/8", 1/4", 3/8", 1/2" NPTF

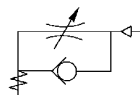


Mod.

- TMCU 53-02
- TMCU 04-02
- TMCU 04-04
- TMCU 05-04
- TMCU 05-06
- TMCU 06-06
- TMCU 06-08

Meter-In Valves Series TMVU

Meter-In Unidirectional flow controller for mounting on cylinders and valves. Knurled screw adjustment, with internal hex slot.
Ports 1/8", 1/4", 3/8", 1/2" NPTF

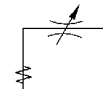


Mod.

- TMVU 53-02
- TMVU 04-02
- TMVU 04-04
- TMVU 05-04
- TMVU 05-06
- TMVU 06-06
- TMVU 06-08

Needle Orifice Valves Series TMCO

Needle Orifice Bi-directional flow controller for mounting on cylinders and valves. Knurled screw adjustment, with internal hex slot.
Ports 1/8", 1/4", 3/8", 1/2" NPTF



Mod.

- TMCO 53-02
- TMCO 04-02
- TMCO 04-04
- TMCO 05-04
- TMCO 05-06
- TMCO 06-06
- TMCO 06-08

NPTF/INCH

Series GMCU - MCU, GSCU - SCU, GSVU - SVU, MVU, SCO, MCO Right Angle Flow Control Valves - NPTF/INCH

Meter-In, Meter-Out, Needle Orifice
banjo flow controllers
Series GMCU-MCU, GSCU-SCU,
GSVU-SVU, MVU, SCO, MCO
Ports M5 (10-32 UNF), 1/8", 1/4",
3/8", 1/2" NPTF

These unidirectional and bidirectional flow controllers have been designed as small as possible so as to be mounted directly on valves or cylinders. The GMCU's and GSCU's feature Camozzi's new swivel design. This new design features a fully rotatable swivel design and is constructed with a lower profile. The great variety of adjustable fittings makes it possible to complete the regulator with the most suitable system in relation to the available tube.



This chapter is a general overview of the Flow Control Valve product line. For details of product data and dimensions, please see the *Fittings and Flow Control Valves Catalog*.

TECHNICAL SPECIFICATIONS

Valve group	Unidirectional and bidirectional controller, (meter-in, meter-out, and needle valve)
Construction	Needle type
Mounting	Right-angle male thread
Materials	Nickel-plated brass body, Buna-N seals, Nylon gaskets
Port sizes	M5 (10-32 UNF), 1/8", 1/4", 3/8", 1/2" NPTF
Tube sizes	1/8", 5/32", 1/4", 3/8", 1/2" (O.D.)
Installation	Any position
Operating temperature	32° - 175° F, (dry air necessary down to - 4° F)
Fluid	Filtered air
Lubricant	Oil compatible with Buna-N, (3° - 10° E)

PNEUMATIC DATA

Operating pressure	1.0 - 10 bar, (14.5 - 145 psi)
Nominal pressure	6 bar, (87 psi)
Nominal flow	See graphs below
Nominal diameter	M5 (10-32 UNF) = 1.5mm (.059"), 1/8" = 2 mm (.079")
	1/4" = 4 mm (.157"), 3/8" = 7 mm (.275")

*Qn flowrate (SCFM) determined with a supply pressure of 6 bar, (87 psi), and with a pressure drop of 1 bar, (14.5 psi).

**Dimensions are in inches

CODING OF FLOW CONTROL VALVES

G M C U 04-02

ACTUATION
G = Swivel

ADJUSTMENT
M = Manual
S = Screwdriver

ASSEMBLY
C = on cylinders (meter out)
V = on valves (meter in)

FUNCTION
U = Unidirectional (flow control)
O = Bidirectional (needle valve)

ATTACHMENTS
32F = 10-32 UNF Female Thread
53 = 5/32" OD Tube
02 = 1/8" OD Tube
02F = 1/8" NPTF Female Thread
04 = 1/4" OD Tube
04F = 1/4" NPTF Female Thread
06 = 3/8" OD Tube
06F = 3/8" NPTF Female Thread
08 = 1/2" OD Tube
08F = 1/2" NPTF Female Thread

THREAD
32 = 10-32 UNF
02 = 1/8" NPTF
04 = 1/4" NPTF
06 = 3/8" NPTF
08 = 1/2" NPTF

Meter-Out Valves Series GMCU

Meter-out unidirectional flow controller for mounting on cylinders or valves. It has a manual adjustment with a right-angle push to connect tube fitting.

Mod.

GMCU 53-32



Mod.

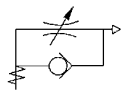
GMCU 53-02

GMCU 04-02

GMCU 04-04

GMCU 06-04

GMCU 06-06



Meter-Out Valves Series GMCU & MCU

Meter-out unidirectional flow controller for mounting cylinders or valves. It has a manual adjustment with right-angle female threads.

Mod.

GMCU 32F-32



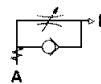
Mod.

MCU 02F-02

MCU 04F-04

MCU 06F-06

MCU 08F-08



NPTF/INCH

Meter-Out Valves Series GSCU

Meter-out unidirectional flow controller for mounting on cylinders or valves. It has a screwdriver adjustment with a right-angle push to connect tube fitting.

Mod.

GSCU 53-32



Mod.

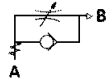
GSCU 53-02

GSCU 04-02

GSCU 04-04

GSCU 06-04

GSCU 06-06



Meter-Out Valves Series GSCU & SCU

Meter-out unidirectional flow controller for mounting on cylinders or valves. It has screwdriver adjustment with right-angle female threads.

Mod.

GSCU 32F-32



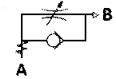
Mod.

SCU 02F-02

SCU 04F-04

SCU 06F-06

SCU 08F-08



Meter-In Valves Series GSVU

Meter-in unidirectional flow control designed to be mounted on cylinders or valves. It has a screwdriver adjustment with a right-angle push to connect tube fitting.

Mod.

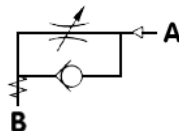
GSVU 53-02

GSVU 04-02

GSVU 04-04

GSVU 06-04

GSVU 06-06



Meter-In Valves Series SVU

Meter-in unidirectional flow control designed to be mounted on valves or cylinders. It has a screwdriver adjustment with right-angle female threads.

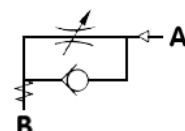
Mod.

SVU 32F-32

SVU 02F-02

SVU 04F-04

SVU 08F-08



Meter-In Valves Series MVU

Meter-in unidirectional flow control designed to be mounted on valves or cylinders. It has a manual adjustment with right-angle female threads.

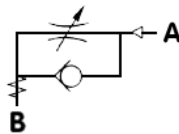
Mod.

MVU 32F-32

MVU 02F-02

MVU 04F-04

MVU 08F-08



Meter-In Valves Series GMVU

Meter-in unidirectional flow control designed to be mounted on valves or cylinders. It has a manual adjustment with a right-angle push to connect tube fitting.

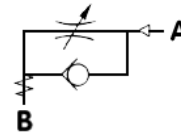
Mod.

GMVU 53-02

GMVU 04-02

GMVU 04-04

GMVU 06-04



Needle Orifice Valves Series GSCO

This needle-orifice bidirectional flow control is designed with a needle orifice. It has a screwdriver adjustment with a right-angle push to connect tube fitting.

Mod.

GSCO 53-02

GSCO 04-02

GSCO 04-04

GSCO 06-04

GSCO 06-06



Needle Orifice Valves Series SCO

This needle-orifice bidirectional flow control is designed with a needle orifice. It has a screwdriver adjustment with right-angle female threads.

Part No.

SCO 32F-32

SCO 02F-02

SCO 04F-04

SCO 08F-08



NPTF/INCH

Needle Orifice Valves Series MCO

This needle-orifice bidirectional flow control is designed with a needle orifice. It has a manual adjustment with right-angle female threads.



Mod.

MCO 32F-32

MCO 02F-02

MCO 04F-04

MCO 08F-08



Needle Orifice Valves Series GMCO

This needle-orifice bidirectional flow control is designed with a needle orifice. It has a manual adjustment with a right-angle push to connect tube fitting.



Mod.

GMCO 53-02

GMCO 04-02

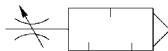
GMCO 04-04

GMCO 06-04



Flow control valves with silencer Series RSW

Flow control valves with silencer.
Connections: G1/8, G1/4, G1/2



Mod.

RSW 1/8

RSW 1/4

RSW 1/2

Silencer bushing Series 2905

Silencer Bushing for Mod. SCO... or MCO...



Mod.

2905 1/8

2905 1/4

2905 3/8

NPTF/INCH

4

FLOW CONTROL VALVES & ACCESSORIES

The company reserves the right to vary models and dimensions without notice.
These products are designed for industrial applications and are not suitable for sale to the general public.

SHOP ONLINE at www.airlinehyd.com



NPTF/INCH

Series RFU In-line Flow Control Valves - NPTF/INCH

Panel or wall-mounted flow controllers
In-line/Unidirectional, RFU
Ports M5 (10-32 UNF),
1/8", 1/4" NPTF

The unidirectional flow controllers are equipped with M5 (10-32 UNF), 1/8" and 1/4" ports, each of which is available with two different types of adjustment (see diagrams). They are used mainly for controlling the speed of cylinders. They may be mounted on control panels or cylinders, as required.

This chapter is a general overview of the Flow Control Valve product line. For details of product data and dimensions, please see the *Fittings and Flow Control Valves Catalog*



TECHNICAL SPECIFICATIONS

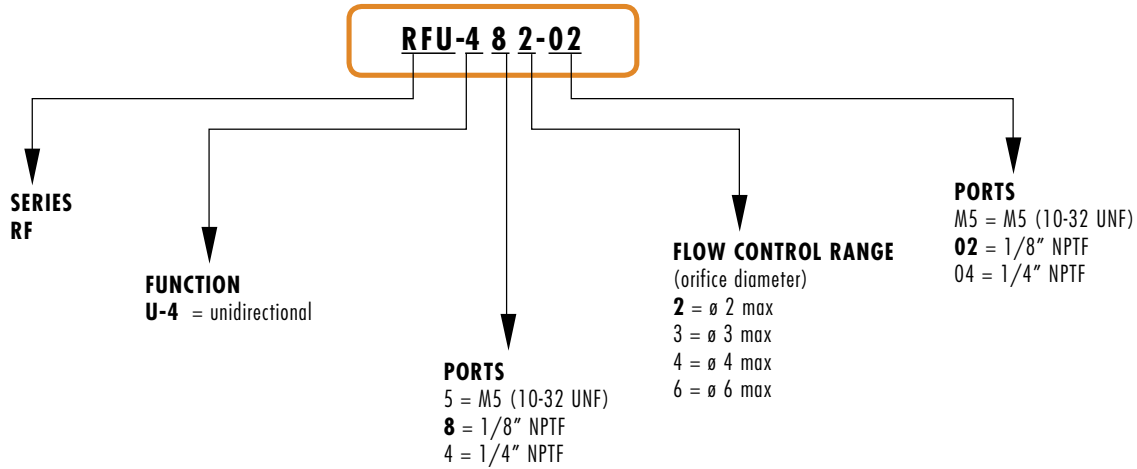
Valve group	Unidirectional controller, (meter-in, meter-out)
Construction	In-Line Needle type
Mounting	Through holes in body, or control panel
Materials	Aluminum body, Brass needle, Buna-N seals
Port sizes	M5 (10-32 UNF), 1/8", 1/4", NPTF
Installation	As required
Operating temperature	32° - 175° F, (dry air necessary down to -4° F)
Fluid	Filtered air
Lubricant	Oil compatible with Buna-N, (3° - 10° E)

PNEUMATIC DATA

Operating pressure	1.0 - 10 bar, (14.5 - 145 psi)
Nominal pressure	6 bar, (87 psi)
Nominal flow	See graphs
Nominal diameter (Flow Orifice)	1/8" = 2 mm (.079"), or 3 mm (.118")
	1/4" = 4 mm (.157"), or 6 mm (.236")

*Qn flowrate (SCFM) determined with a supply pressure of 6 bar, (87 psi), and with a pressure drop of 1 bar, (14.5 psi).
**Dimensions are in inches

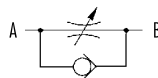
CODING OF FLOW CONTROLLERS



Unidirectional flow controller Series RFU

To regulate the speed of a cylinder, the air flow from the chamber which is being discharged must be regulated. For this reason, the unidirectional flow controller must be connected as follows: connect the threaded outlet marked A to the cylinder inlet and the threaded outlet marked B to the valve user port.

- | Mod. |
|------------|
| RFU 452-M5 |
| RFU 482-02 |
| RFU 483-02 |
| RFU 444-04 |
| RFU 446-04 |



BSP/METRIC

Series TMCU-TMVU-TMCO Composite Right Angle Flow Control Valves - BSP/METRIC

Meter In, Meter Out, Needle Orifice G1/8, G1/4, G3/8, G1/2
Banjo flow controllers
Nominal diameters Ø 2 - 3.8 - 5.8 - 8 mm

The Meter In, Meter Out, Needle Orifice flow controllers, series TMCU, TMVU, TMCO have been designed to offer a solution with reduced overall dimensions in combination with higher flow rate characteristics.

Their construction allows an easy assembly on cylinders and valves and offers the possibility of locking the regulation screw once it has been set. The flow regulation range which is extremely wide and gradual has been optimized further, allowing a very accurate flow regulation over the whole scale.

This chapter is a general overview of the Flow Control Valve product line. For details of product data and dimensions, please see the *Fittings and Flow Control Valves Catalog*.



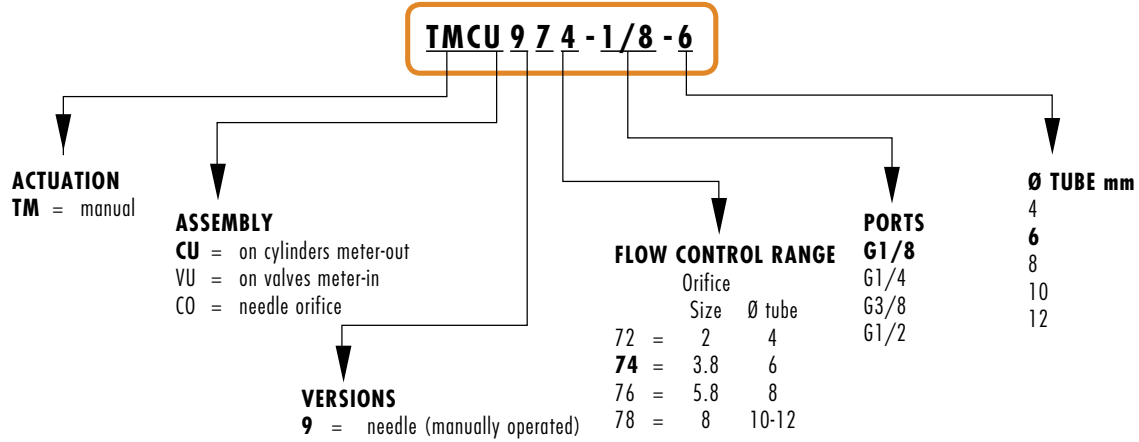
TECHNICAL SPECIFICATIONS

Construction	needle-type
Valve group	Meter In, Meter Out, Needle Orifice flow controller
Materials	OT58 Nickel-plated brass threads and collet - technopolymer (glass-reinforced Nylon® 66 resin) - NBR, BUNA-N seals
Mounting	by male thread
Ports	G1/8, G1/4, G3/8, G1/2
Installation	in any position (spot face o-ring thread seal)
Operating temperature	0 - 60°C (with dry air -20°C) (32°F - 140°F, with dry air -4°F)
*If lubricated air is used, it is recommended to use ISOVG32 oil. Once applied the lubrication should never be interrupted.	

PNEUMATIC DATA

Operating pressure	0.5 - 10 bar (7.25 - 145 psi)
Nominal pressure	6 bar (87 psi)
Nominal flow	see graph
Nominal dia.	Tube 4 ø2 mm (.079") - Tube 6 ø3.8 mm (.150") - Tube 8 ø5.8 mm (.228") - Tube 10 and 12 ø8 mm (.315")
Fluid	filtered air

CODING OF FLOW CONTROL VALVES

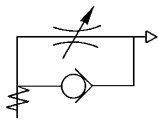


Valves Series TMCU (Meter out)

Right angle flow controller for mounting on single-acting and double-acting cylinders and valves. Knurled screw adjustment with internal hex slot.
Ports G1/8, G1/4, G3/8, G1/2



- Mod.**
- TMCU 972 1/8-4
 - TMCU 974 1/8-6
 - TMCU 974 1/4-6
 - TMCU 976 1/4-8
 - TMCU 976 3/8-8
 - TMCU 978 3/8-10
 - TMCU 978 1/2-10

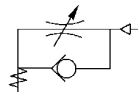


Valves Series TMVU (Meter in)

Unidirectional flow controller for mounting on single-acting and double-acting cylinders and valves. Knurled screw with internal hex slot.
Ports G1/8, G1/4, G3/8, G1/2



- Mod.**
- TMVU 972-1/8-4
 - TMVU 974-1/8-6
 - TMVU 974-1/4-6
 - TMVU 976-1/4-8
 - TMVU 976-3/8-8
 - TMVU 978-3/8-10
 - TMVU 978-1/2-10

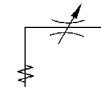


Valves Series TMCO (Needle orifice)

Bidirectional flow controller for mounting on single-acting and double-acting cylinders and valves. Knurled screw with internal hex slot.
Ports G1/8, G1/4, G3/8, G1/2



- Mod.**
- TMCO 972-1/8-4
 - TMCO 974-1/8-6
 - TMCO 974-1/4-6
 - TMCO 976-1/4-8
 - TMCO 976-3/8-8
 - TMCO 978-3/8-10
 - TMCO 978-1/2-10



BSP/METRIC

Series SCU, MCU, SVU, MVU, SCO, MCO Right Angle Flow Control Valves - BSP/Metric

Unidirectional and bidirectional
banjo flow controllers
Ports M5, G1/8, G1/4, G3/8, G1/2

These unidirectional and bidirectional flow controllers have been designed as small as possible so as to be mounted directly on valves or cylinders. The great variety of adjustable fittings makes it possible to complete the regulator with the most suitable system in relation to the available tube. Only the G1/2 model is supplied complete with banjo flow controllers. For the other models the banjo fitting is to be requested separately.

This chapter is a general overview of the Flow Control Valve product line. For details of product data and dimensions, please see the *Fittings and Flow Control Valves Catalog*.



TECHNICAL SPECIFICATIONS

Construction	needle type, right angle banjo assembly
Valve group	unidirectional and bidirectional controller
Materials	OT58 nickel-plated brass body and threads - Buna-N seals, Nylon® gaskets.
Mounting	by male thread
Ports	M5 - G1/8 - G1/4 - G3/8 - G1/2
Installation	in any position
Operating temperature	from 0 to 80°C (with dry air -20°C) (32°F — 175°F (with dry air -4°F))
Lubricant	compatible with Buna-N (3° — 10° E)

PNEUMATIC DATA

Operating pressure	from 1 to 10 bar (14.5 - 145 psi)		
Nominal pressure	6 bar (87 psi)		
Nominal flow	see graph		
Nominal diameter	M5 = 1.5 mm (.059")	G1/8 = 2 mm (.078")	G1/4 = 4 mm (.157")
	G3/8 = 7 mm (.275")	G1/2 = 12 mm (.472")	
Fluid	filtered air		

CODING OF BANJO FLOW CONTROLLERS (STUD BODIES ONLY)

MCU 7 02-M5

ACTUATION

M = Manual
S = Screwdriver

ASSEMBLY

CU = on cylinders meter-out
VU = on valves meter-in
CO = needle orifice

VERSIONS

6 = needle (screwdriver operated)
7 = needle (manual operated)

FLOW CONTROL RANGE

02 = \varnothing 1.5 max
04 = \varnothing 2 max
06 = \varnothing 4 max
08 = \varnothing 7 max
10 = \varnothing 12 max

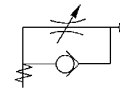
PORTS

M5
G1/8
G1/4
G3/8
G1/2

Valves Series SCU (Meter Out)

Unidirectional flow controller for mounting on single-acting or double-acting cylinders. Adjustment of setting by a screwdriver.
Ports: M5, G1/8, G1/4, G3/8.

Note: M5 flow controllers must be used together with M6 banjo fittings.
Note: Stud only, banjos ordered separately



Mod.

SCU 602-M5

SCU 604-1/8

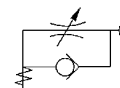
SCU 606-1/4

SCU 608-3/8

Valves Series MCU (Meter Out)

Unidirectional flow controller for mounting on valves and cylinders. Adjustment of setting by knurled screw.
Ports: M5, G1/8, G1/4.

Note: M5 flow controllers must be used together with M6 banjo fittings.
Note: Stud only, banjos ordered separately



Mod.

MCU 702-M5

MCU 704-1/8

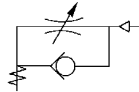
MCU 706-1/4

MCU 708-3/8

Valves Series SVU (Meter-In)

Unidirectional flow controller for mounting on valves and cylinders.
Adjustment of setting by a screwdriver.
Ports: M5, G1/8, G1/4.

Note: M5 flow controllers must be used together with M6 banjo fittings.



Mod.

SVU 602-M5

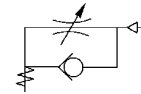
SVU 604-1/8

SVU 606-1/4

Valves Series MVU (Meter-In)

Unidirectional flow controller for mounting on valves and cylinders. Adjustment of setting by a manually operated knurled screw.
Ports: M5, G1/8, G1/4

Note: M5 flow controllers must be used together with M6 banjo fittings.
Note: Stud only, banjos ordered separately



Mod.

MVU 702 - M5

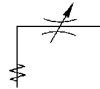
MVU 704 - 1/8

MVU 706 - 1/4

Valves Series SCO (Needle Orifice)

Bidirectional flow controller.
Adjustment of setting by a screwdriver.
Ports: M5, G1/8, G1/4

Note: M5 flow controllers must be used together with M6 banjo fittings.
Note: Stud only, banjos ordered separately



Mod.

SCO 602 - M5

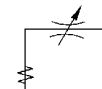
SCO 604 - 1/8

SCO 606 - 1/4

Valves Series MCO (Needle Orifice)

Bidirectional flow controller.
Adjustment of setting by a knurled screw.
Ports: M5, G1/8, G1/4

Note: M5 flow controllers must be used together with M6 banjo fittings.
Note: Stud only, banjos ordered separately



Mod.

MCO 702 - M5

MCO 704 - 1/8

MCO 706 - 1/4

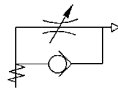
Valves Series SCU (Meter Out)

Unidirectional flow controller for mounting on single-acting or double-acting cylinders. Screwdriver adjustment.



Mod.

SCU 610-1/2



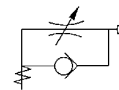
Valves Series MCU (Meter Out)

Unidirectional flow controller for mounting on single-acting or double-acting cylinders. Knurled screw adjustment.



Mod.

MCU 610-1/2



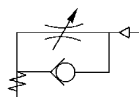
Valves Series SVU (Meter In)

Unidirectional flow controller for mounting on valves. Screwdriver adjustment.



Mod.

SVU 610-1/2



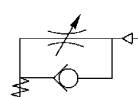
Valves Series MVU (Meter In)

Unidirectional flow controller for mounting on single-acting or double-acting cylinders. Knurled screw adjustment.



Mod.

MVU 710-1/2



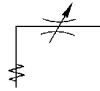
Valves Series SCO (Needle Orifice)

Bidirectional flow controller.
Screwdriver adjustment.



Mod.

SCO 610-1/2



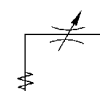
Valves Series MCO (Needle Orifice)

Bidirectional flow controller.
Knurled screw adjustment.



Mod.

MCO 710-1/2



Flow control valves with silencer Series RSW

Flow control valves with silencer.
Connections: G1/8, G1/4, G1/2



Mod.

RSW 1/8

RSW 1/4

RSW 1/2

Silencer bushing Series 2905

Silencer bushing for Mod. SCO... or MCO...
Assemble onto Stud Controller



Mod.

2905 1/8

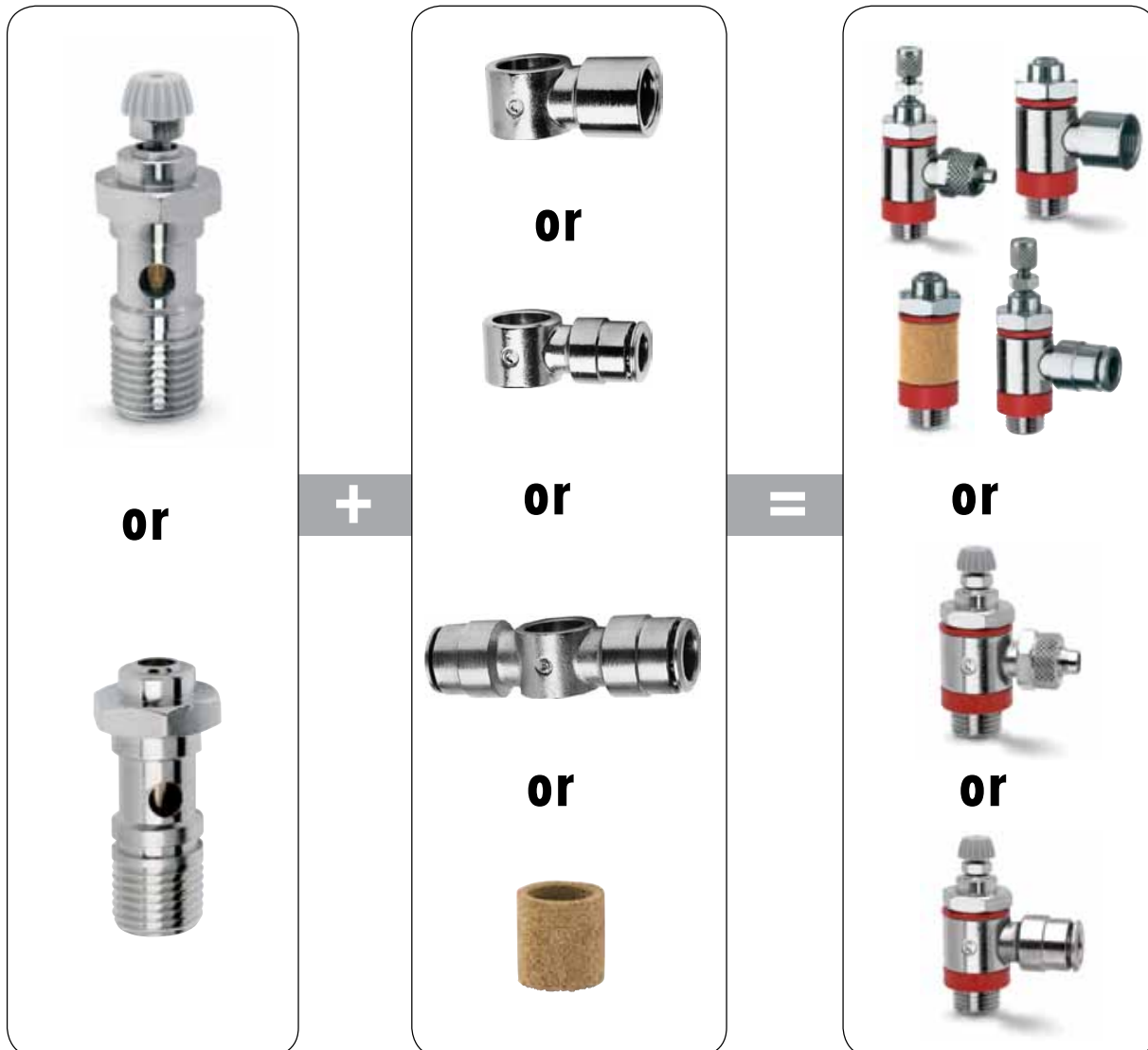
2905 1/4

2905 3/8

Banjo-Style Flow Control Valve Assembly

BSP Non-Swivel models and customized NPTF models not shown in catalog, or hybrids

1. Older style flow-control valves with banjo tube/thread connections and stud valve types may be assembled in a variety of combinations.
2. Select any stud valve flow-control type; Meter-In, Meter-Out, or Needle –Orifice with either Manual or Screwdriver adjustment, (i.e. MCU-, SCU-, MVU-, SVU-, MCO-, SCO- from BSP flow control body offering).
3. Select desired banjo connection, either inch OD, metric/mm OD, metric compression, female thread or silencer ring from banjo offerings in Fittings section of catalog , (i.e. 6610 04-02, 6610 6-1/8, 2023 02-02, 2023 ¼-1/4, 1610 6/4-1/8, 2905 ¼, etc.)
4. Select thread adapter to “close” the final assembly and hold banjo in place, (i.e. 2520 02-1/8, 2520 04-1/4, 2520 ¼-1/4, 2520 1/8-1/8), depending on final thread choice of BSP or NPTF threads.



BSP/METRIC

Series PSCU - PMCU - PSVU - PMVU - PSCO - PMCO Composite Flow Regulators with Banjo

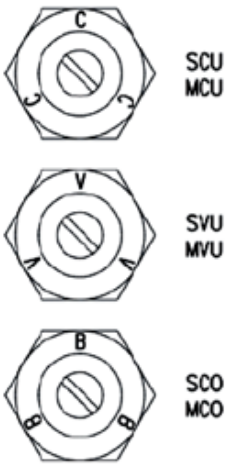
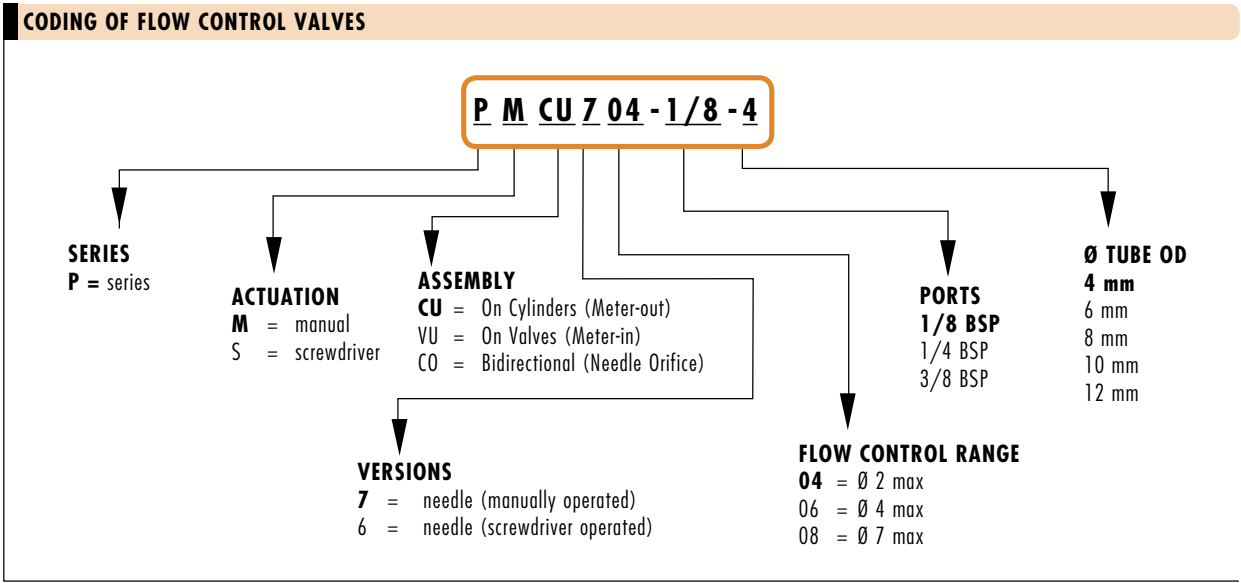
Flow Control Valves
Composite Flow Regulators with Banjo
Unidirectional and Bidirectional (Meter-out, Meter-in, Needle Orifice)
Ports G1/8, G1/4, G3/8 with metric mm O.D. tube connections



These unidirectional and bidirectional flow regulators are supplied complete with banjo and O-ring thread seal.

TECHNICAL SPECIFICATIONS

Construction	needle type
Valve group	unidirectional and bidirectional controller (Meter-out, Meter-in, Needle Orifice)
Materials	Nickel-plated brass body, regulation screw, collet and insert; technopolymer: banjo and controller; NBR seals
Mounting	by male thread
Ports	G1/8 - G1/4 - G3/8
Installation	in any position
Operating temperature	from 0 °C - 60°C (with dry air -20°C) (32°F — 175°F (with dry air -4°F))
Operating Pressure	1 - 10 bar
Nominal Pressure	6 bar
Nominal Flow	See graph
Nominal Diameter	G1/8 = 2 mm, G1/4 = 4 mm, G3/8 = 7mm
Fluid	Filtered Air, 25 micron or less

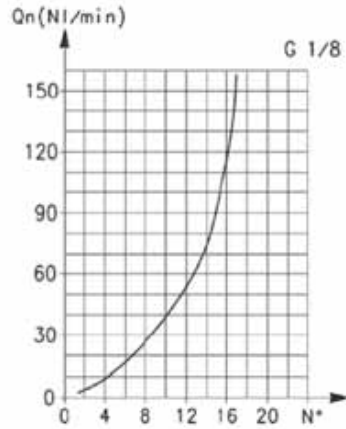


Identification of different types:
 SCU, MCU = Assembly directly on the cylinders
 SVU, MVU = Assembly directly on the valves
 SCO, MCO = Assembly directly on the cylinders or valves

Flow Regulators with Banjo in Technopolymer

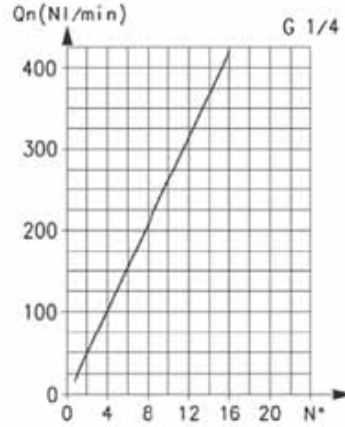
Unidirectional and bidirectional flow controllers

Regulated Flow All Models G 1/8



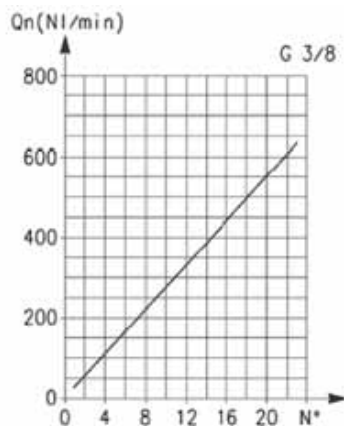
Flow QN (NL/Min.) from 2 to 1 with controller OPEN: 200
 Flow QN (NL/Min.) from 2 to 1 with controller CLOSED: 70
 QN is determined with the supply pressure of 6 bar and $\Delta P = 1$ bar at the outlet
 N° = number of screw turns

Regulated Flow All Models G 1/4



Flow QN (NL/Min.) from 2 to 1 with controller OPEN: 530
 Flow QN (NL/Min.) from 2 to 1 with controller CLOSED: 160
 QN is determined with the supply pressure of 6 bar and $\Delta P = 1$ bar at the outlet
 N° = number of screw turns

Regulated Flow All Models G 3/8



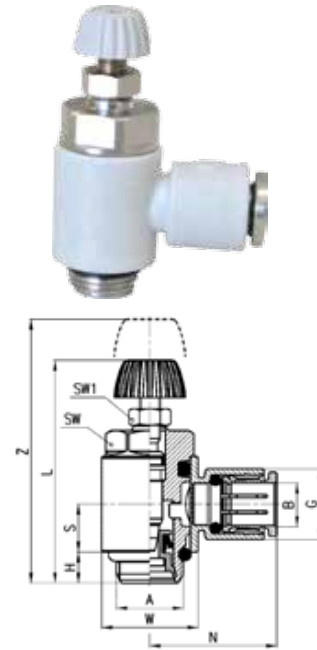
Flow QN (NL/Min.) from 2 to 1 with controller OPEN: 710
 Flow QN (NL/Min.) from 2 to 1 with controller CLOSED: 410
 QN is determined with the supply pressure of 6 bar and $\Delta P = 1$ bar at the outlet
 N° = number of screw turns

Valve Series PMCU (Meter-Out)

DIMENSIONS (in inches)

Mod.	A	B	G	H	L	N	S	W	SW	SW1	Z
PMCU 704-1/8-4	G1/8	4	11.6	5	36.5	21	7.75	14	12	7	42.5
PMCU 704-1/8-6	G1/8	6	11.6	5	36.5	21	7.75	14	12	7	42.5
PMCU 704-1/8-8	G1/8	8	13.9	5	36.5	22.5	7.75	14	12	7	42.5
PMCU 706-1/4-6	G1/4	6	13.9	6	42	24.5	9.25	18.6	15	7	48
PMCU 706-1/4-8	G1/4	8	13.9	6	42	24.5	9.25	18.6	15	7	48
PMCU 706-1/4-10	G1/4	10	16.1	6	42	27	9.25	18.6	15	7	48
PMCU 708-3/8-10	G3/8	10	20.2	6	47.5	29	11	22	18	10	55.5
PMCU 708-3/8-12	G3/8	12	20.2	6	47.5	29	11	22	18	10	55.5

Note: All dimensions are identical for PMVU and PMCO models.

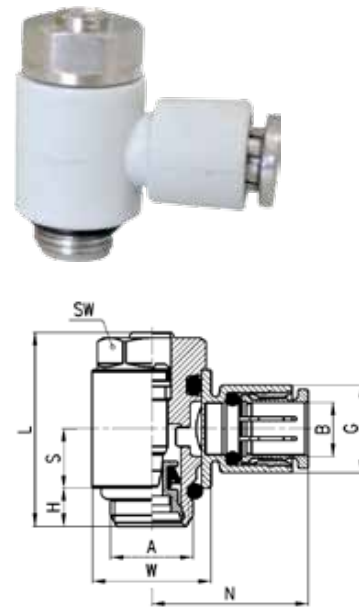


Valve Series PSCU (Meter-Out)

DIMENSIONS (in inches)

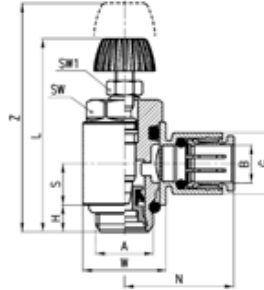
Mod.	A	B	G	H	L	N	S	W	SW	SW1	Z
PSCU 604-1/8-4	G1/8	4	11.6	5	27	21	7.75	14	12	7	42.5
PSCU 604-1/8-6	G1/8	6	11.6	5	27	21	7.75	14	12	7	42.5
PSCU 604-1/8-8	G1/8	8	13.9	5	27	22.5	7.75	14	12	7	42.5
PSCU 606-1/4-6	G1/4	6	13.9	6	30.5	24.5	9.25	18.6	15	7	48
PSCU 606-1/4-8	G1/4	8	13.9	6	30.5	24.5	9.25	18.6	15	7	48
PSCU 606-1/4-10	G1/4	10	16.1	6	30.5	27	9.25	18.6	15	7	48
PSCU 608-3/8-10	G3/8	10	20.2	6	35.5	29	11	22	18	10	55.5
PSCU 608-3/8-12	G3/8	12	20.2	6	35.5	29	11	22	18	10	55.5

Note: All dimensions are identical for PSVU and PSCO models.



BSP/METRIC

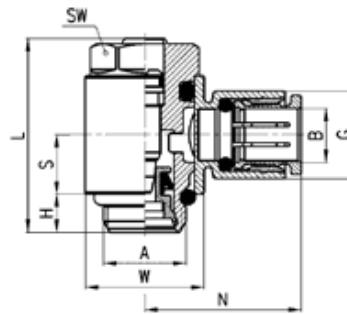
Valve Series PMVU (Meter-In)



DIMENSIONS (in inches)

Mod.	A	B	G	H	L	N	S	W	SW	SW1	Z
PMVU 704-1/8-4	G1/8	4	11.6	5	36.5	21	7.75	14	12	7	42.5
PMVU 704-1/8-6	G1/8	6	11.6	5	36.5	21	7.75	14	12	7	42.5
PMVU 704-1/8-8	G1/8	8	13.9	5	36.5	22.5	7.75	14	12	7	42.5
PMVU 706-1/4-6	G1/4	6	13.9	6	42	24.5	9.25	18.6	15	7	48
PMVU 706-1/4-8	G1/4	8	13.9	6	42	24.5	9.25	18.6	15	7	48
PMVU 706-1/4-10	G1/4	10	16.1	6	42	27	9.25	18.6	15	7	48
PMVU 708-3/8-10	G3/8	10	20.2	6	47.5	29	11	22	18	10	55.5
PMVU 708-3/8-12	G3/8	12	20.	6	47.5	29	11	22	18	10	55.5

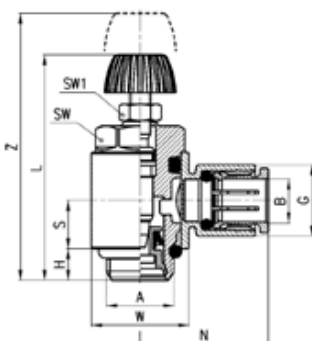
Valve Series PSVU (Meter-In)



DIMENSIONS (in inches)

Mod.	A	B	G	H	L	N	S	W	SW	SW1	Z
PSVU 604-1/8-4	G1/8	4	11.6	5	27	21	7.75	14	12	7	42.5
PSVU 604-1/8-6	G1/8	6	11.6	5	27	21	7.75	14	12	7	42.5
PSVU 604-1/8-8	G1/8	8	13.9	5	27	22.5	7.75	14	12	7	42.5
PSVU 606-1/4-6	G1/4	6	13.9	6	30.5	24.5	9.25	18.6	15	7	48
PSVU 606-1/4-8	G1/4	8	13.9	6	30.5	24.5	9.25	18.6	15	7	48
PSVU 606-1/4-10	G1/4	10	16.1	6	30.5	27	9.25	18.6	15	7	48
PSVU 608-3/8-10	G3/8	10	20.2	6	35.5	29	11	22	18	10	55.5
PSVU 608-3/8-12	G3/8	12	20.2	6	35.5	29	11	22	18	10	55.5

Valve Series PMCO (Needle Orifice)

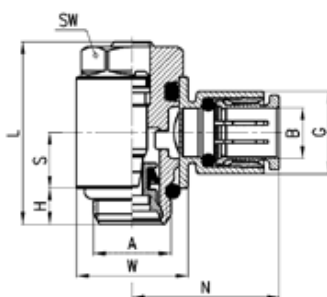


DIMENSIONS (in inches)

Mod.	A	B	G	H	L	N	S	W	SW	SW1	Z
PMCO 704-1/8-4	G1/8	4	11.6	5	36.5	21	7.75	14	12	7	42.5
PMCO 704-1/8-6	G1/8	6	11.6	5	36.5	21	7.75	14	12	7	42.5
PMCO 704-1/8-8	G1/8	8	13.9	5	36.5	22.5	7.75	14	12	7	42.5
PMCO 706-1/4-6	G1/4	6	13.9	6	42	24.5	9.25	18.6	15	7	48
PMCO 706-1/4-8	G1/4	8	13.9	6	42	24.5	9.25	18.6	15	7	48
PMCO 706-1/4-10	G1/4	10	16.1	6	42	27	9.25	18.6	15	7	48
PMCO 708-3/8-10	G3/8	10	20.2	6	47.5	29	11	22	18	10	55.5
PMCO 708-3/8-12	G3/8	12	20.	6	47.5	29	11	22	18	10	55.5

Note: All dimensions are identical for PMVU and PMCO models.

Valve Series PSCO (Needle Orifice)



DIMENSIONS (in inches)

Mod.	A	B	G	H	L	N	S	W	SW	SW1	Z
PSCO 604-1/8-4	G1/8	4	11.6	5	27	21	7.75	14	12	7	42.5
PSCO 604-1/8-6	G1/8	6	11.6	5	27	21	7.75	14	12	7	42.5
PSCO 604-1/8-8	G1/8	8	13.9	5	27	22.5	7.75	14	12	7	42.5
PSCO 606-1/4-6	G1/4	6	13.9	6	30.5	24.5	9.25	18.6	15	7	48
PSCO 606-1/4-8	G1/4	8	13.9	6	30.5	24.5	9.25	18.6	15	7	48
PSCO 606-1/4-10	G1/4	10	16.1	6	30.5	27	9.25	18.6	15	7	48
PSCO 608-3/8-10	G3/8	10	20.2	6	35.5	29	11	22	18	10	55.5
PSCO 608-3/8-12	G3/8	12	20.2	6	35.5	29	11	22	18	10	55.5

Note: All dimensions are identical for PSVU and PSCO models.

BSP/METRIC

Series GSCU-GMCU-GSVU GMVU-GSCO-GMCO Right Angle Flow Control Valves - BSP/METRIC

Swivel Design
Meter-in, Meter-Out, Needle Orifice
M5, G1/8 and G1/4
banjo flow controllers
Nominal diameters dia.
1.5 - 3.5 and 5 mm

These unidirectional and bidirectional flow controllers have been designed as small as possible to enable mounting directly on valves or cylinders.
The flow regulation range is wide and gradual, allowing the regulation to be very accurate either at minimum or maximum flow.

This chapter is a general overview of the Flow Control Valve product line. For details of product data and dimensions, please see the *Fittings and Flow Control Valves Catalog*.



TECHNICAL SPECIFICATIONS

Construction	needle-type, right angle swivel banjo design
Valve group	unidirectional and bidirectional controller (Meter-Out, Meter-In, Needle Orifice)
Materials	nickel-plated brass body threads - Buna-N seals, Nylon® gaskets
Mounting	by male thread
Ports	M5 - G1/8 - G1/4
Installation	in any position
Operating temperature	from 0 to 80°C (with dry air -20°C) (32°F - 175°F (with dry air -4°F))
Lubricant	compatible with Buna-N (3° — 10° E)

PNEUMATIC DATA

Operating pressure	1 — 10 bar (14.5 - 145 psi)
Nominal pressure	6 bar (87 psi)
Nominal flow	see graph
Nominal dia.	M5 ø1.5 mm (.059") G1/8 ø3.5 mm (.137") G1/4 ø5 mm (.196")
Fluid	filtered air

CODING OF BANJO FLOW CONTROLLERS

GMCU 8 03 -1/8 - 3

ACTUATION

GM = manual
GS = screwdriver

ASSEMBLY

CU = on cylinders meter-out
VU = on valves meter-in
CO = needle orifice

VERSIONS

8 = needle (screwdriver operated)
9 = needle (manually operated)

FLOW CONTROL RANGE

	orifice size	Ø tube OD
13	1.5	3
14	1.5	4
03	3.5	6
04	3.5	8
05	5	8
06	5	10

BSP PORTS

M5
G1/8
G1/4

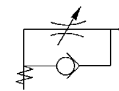
Ø TUBE OD

3 mm
4 mm
6 mm
8 mm
10 mm

NOTE: brackets are supplied separately.

Valves Series GSCU (Meter-Out)

Unidirectional flow controller for mounting on single-acting or double-acting cylinders and valves.
Screwdriver adjustment.
Ports: M5, G1/8, G1/4



Mod.

GSCU 813-M5-3

GSCU 814-M5-4

GSCU 803-1/8-6

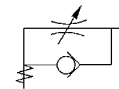
GSCU 804-1/8-8

GSCU 805-1/4-8

GSCU 806-1/4-10

Valves Series GMCU (Meter Out)

Unidirectional flow controller for mounting on single-acting or double-acting cylinders and valves.
Knurled screw adjustment.
Ports: M5, G1/8, G1/4



Mod.

GMCU 913-M5-3

GMCU 914-M5-4

GMCU 903-1/8-6

GMCU 904-1/8-8

GMCU 905-1/4-8

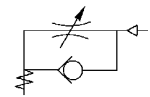
GMCU 906-1/4-10

BSP/METRIC

Valves Series GSVU (Meter-In)

Unidirectional flow controller for mounting on valves and cylinders.
Screwdriver adjustment.
Ports: M5, G1/8, G1/4

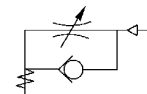
Mod.
GSVU 813-M5-3
GSVU 814-M5-4
GSVU 803-1/8-6
GSVU 804-1/8-8
GSVU 805-1/4-8
GSVU 806-1/4-10



Valves Series GMVU (Meter-In)

Unidirectional flow controller for mounting on valves and cylinders.
Knurled screw adjustment.
Ports: M5, G1/8, G1/4

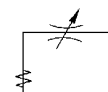
Mod.
GMVU 913-M5-3
GMVU 914-M5-4
GMVU 903-1/8-6
GMVU 904-1/8-8
GMVU 905-1/4-8
GMVU 906-1/4-10



Valves Series GSCO (Needle Orifice)

Bidirectional flow controller.
Screwdriver adjustment.
Ports: M5, G1/8, G1/4

Mod.
GSCO 813-M5-3
GSCO 814-M5-4
GSCO 803-1/8-6
GSCO 804-1/8-8
GSCO 805-1/4-8
GSCO 806-1/4-10



Valves Series GMCO (Needle Orifice)

Bidirectional flow controller.
Knurled screw adjustment.
Ports: M5, G1/8, G1/4

Mod.

GMCO 913-M5-3

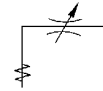
GMCO 914-M5-4

GMCO 903-1/8-6

GMCO 904-1/8-8

GMCO 905-1/4-8

GMCO 906-1/4-10



BSP/METRIC

Series RFU - RFO In-line Flow Control Valves - BSP/METRIC

Panel or wall-mounted flow controllers
Unidirectional (RFU) and bidirectional (RFO)
Ports M5, G1/8, G1/4
Nominal diameter:
M5 = 1.5 mm (10-32 UNF)
G1/8 = 2 and 3mm
G1/4 = 4 and 6mm

The unidirectional flow controllers are equipped with M5, G1/8 and G1/4 ports, each of which is available with two different types of adjustment (see diagrams). They are used mainly for controlling the speed of cylinders. They may be mounted on control panels or cylinders, as required. Bidirectional controllers are also available with the same bodies, but suitably modified.

This chapter is a general overview of the Flow Control Valve product line. For details of product data and dimensions, please see the *Fittings and Flow Control Valves Catalog*.



TECHNICAL SPECIFICATIONS

Construction	needle-type
Valve group	unidirectional and bidirectional controller (Meter-Out, Meter-In, Needle Orifice)
Materials	aluminium body - OT58 (brass) needle - Buna-N seals
Mounting	by through-holes in valve body or control panel
Threaded ports	M5 - G1/8 - G1/4
Installation	as required
Operating temperature	0 — 80°C (with dry air -20°C) (32°F - 175°F (with dry air necessary down to -4°F))
Lubricant	oil compatible with Buna-N (3° — 10° E)

PNEUMATIC DATA

Operating pressure	1 — 10 bar (14.5 - 145 psi)
Nominal pressure	6 bar (87 psi)
Nominal flow	see graph
Nominal diameter (flow orifice)	M5 = 1.5 mm (10-32 UNF) - G1/8 = 2 or 3 mm (.079" or .118") - G1/4 = 4 or 6 mm (.157" or .236")
Fluid	filtered air

CODING OF BANJO FLOW CONTROLLERS

RFU 4 8 2 - 1/8

SERIES = RF

FUNCTION

U4 = unidirectional
03 = bidirectional

PORTS

8 = 1/8
4 = 1/4
5 = M5

FLOW CONTROL RANGE

2 = ø 2 mm orifice
3 = ø 3 mm orifice
4 = ø 4 mm orifice
6 = ø 6 mm orifice

BSP PORTS

M5
G1/8
G1/4

Unidirectional flow controller Series RFU

To regulate the speed of a cylinder, the air flow from the chamber which is being discharged must be regulated. For this reason, the unidirectional flow controller must be connected as follows:
-connect the threaded outlet marked A to the cylinder inlet and the threaded outlet marked B to the valve user part.

Mod.

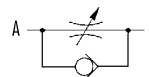
RFU 452-M5

RFU 482-1/8

RFU 483-1/8

RFU 444-1/4

RFU 446-1/4



Bidirectional flow controller Series RFO

The bidirectional flow controller is suitable for regulating the air flow in both directions and for pressurising or depressurising containers. When choosing the model, reference must always be made to the M5, G1/8 and G1/4 graph, although it is necessary to know in advance the number of litres of air to be regulated per unit of time.

Mod.

RFO 352-M5

RFO 382-1/8

RFO 383-1/8

RFO 344-1/4

RFO 346-1/4



BSP/METRIC

Series 28 Needle Valve - BSP/METRIC

BSP/Metric —
Needle valve Series 28

These are bidirectional control valves made entirely of nickel-plated brass OT58 (brass), with Buna-N seals and a plastic control knob. They are suitable for regulating compressed air, water or mineral oil.

This chapter is a general overview of the Flow Control Valve product line. For details of product data and dimensions, please see the *Fittings and Flow Control Valves Catalog*.



TECHNICAL SPECIFICATIONS

Construction	cone-type
Mounting	by through-holes in body or console
Materials	Nickel-plated brass, plastic control knob, Buna-N seals
Ports	G1/8, G1/4, G3/8, G1/2
Installation	as required
Operating temperature	32°F - 175°F (with dry air necessary -4°F)

PNEUMATIC DATA

Operating pressure	0 — 10 bar (0 - 145 psi)
Nominal flowrate	see table

CONTROL VALVE FLOWRATE

(inlet pressure: 6 bar)

DIMENSIONS

Model	WITH ΔP 1 bar	AS Free flow
2810 1/8	415 NI/min	590 NI/min
2820 1/8	400 NI/min	640 NI/min
2830 1/8	415 NI/min	635 NI/min
2810 1/4	508 NI/min	740 NI/min
2820 1/4	530 NI/min	840 NI/min
2830 1/4	530 NI/min	850 NI/min
2810 3/8	620 NI/min	900 NI/min
2820 3/8	1415 NI/min	1990 NI/min
2830 3/8	1415 NI/min	1980 NI/min
2810 1/2	1540 NI/min	2080 NI/min
2820 1/2	1520 NI/min	2150 NI/min
2830 1/2	1520 NI/min	2100 NI/min

Valve Mod. 2810... (Needle Orifice)



Mod.

2810 1/8

2810 1/4

2810 3/8

2810 1/2



Valve Mod. 2820... (Needle Orifice)



Mod.

2820 1/8

2820 1/4

2820 3/8

2820 1/2



Valve Mod. 2830... (Needle Orifice)



Mod.

2830 1/8

2830 1/4

2830 3/8

2830 1/2



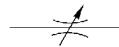
Valve Mod. 2819... (Needle Orifice)



Mod.

2819 1/8

2819 1/4



Valve Mod. 2829... (Needle Orifice)



Mod.

2829 1/8

2829 1/4



Valve Mod. 2839... (Needle Orifice)



Mod.

2839 1/8

2839 1/4

2839 3/8

2839 1/2



BSP/METRIC

Series 2901 - 2903 - 2921 Silencers Series 2931 - 2938 - 2939 - 2905 - RSW BSP-METRIC

Ports M5 (10-32 UNF), G1/8, G1/4, G3/8, G1/2, G3/4, G1

The silencers are indispensable elements for eliminating or reducing the characteristic noise of compressed air during discharge operations. They should always be placed on the outlets of 3/2, 5/2 or 5/3-way valves.

When carrying out maintenance, the silencers should be degreased using mineral spirit or paraffin and compressed air blown through them in the opposite direction to operation.

This chapter is a general overview of the Flow Control Valve product line. For details of product data and dimensions, please see the *Fittings and Flow Control Valves Catalog*.



TECHNICAL SPECIFICATIONS

Construction	Body with male and female thread
Materials used for body	OT58 brass - copper (2921-2931) - polyethylene (2938)
Materials used for silencing	Stainless steel - bronze (sintered) - polyethylene
Ports	M5 (10-32 UNF), G1/8, G1/4, G3/8, G1/2, G3/4, G1
Noise threshold	See Fittings and Flow Control Valve Catalog for details

* The measurements were carried out at 6 bar

Silencers Series 2901

Mod.
2901 1/8
2901 1/4-17
2901 1/4-22
2901 3/8
2901 1/2
2901 3/4
2901 1

Silencers Series 2903

Mod.
2903 1/8

Silencers Series 2931

Mod.
2931 M5
2931 M7
2931 1/8
2931 1/4
2931 3/8
2931 1/2
2931 3/4
2931 1

Silencers Series 2938

Mod.
2938 M5
2938 1/8
2938 1/4
2938 3/8
2938 1/2

Silencers Series 2939

Mod.
2939 4
2939 6
2939 8
2939 10

Flow controllers Mod. RSW...

Flow control valves with silencer.
Connections: G1/8, G1/4, G1/2
(for instructions, see p. 117 or p. 146)

Mod.
RSW 1/8
RSW 1/4
RSW 1/2

Flow controllers Series 2905

Silencer bushing for Mod. SCO... or MCO...
(for instructions, see p. 117 or p. 146)

Mod.
2905 1/8
2905 1/4
2905 3/8

BSP/METRIC

Series PM Adjustable-Diaphragm Pressure Switches - BSP/METRIC

Normally closed or open - Ports 1/8" BSP

Series TRP Electro-Pneumatic Transducer

Normally closed or open - Ports 4mm OD

Series 2950 Pressure Indicators

Ports M5 (10-32 UNF)

The diaphragm pressure switches in the PM Series are available in two versions: one with NC (normally closed) contacts and one with NO (normally open) contacts.

A regulating screw, which can be adjusted using a small screwdriver, allows the switch to be set to the required pressure.

The calibrated diaphragm enables an electrical signal to be generated or inhibited depending on the pressure set.

This chapter is a general overview of the Flow Control Valve product line. For details of product data and dimensions, please see the *Fittings and Flow Control Valves Catalog*.



TECHNICAL SPECIFICATIONS

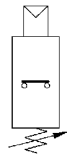
Valve group	Pressure switches
Construction	Diaphragm type, adjustable
Mounting	Body through holes, ports
Materials	Brass body
Port sizes	1/8" NPTF (with adapters 2520-02-1/8)
Installation	According to requirements
Operating temperature	23° - 140° F
Fluid	Filtered air
Lubricant	Oil compatible with Buna-N, (3° - 10° E)
Operating pressure	1.0 - 10 bar (14.5 - 145 psi) (PM11 series)
Min. activation pressure of the Series TRP-8	1.5 bar (22 psi)

Adjustable-diaphragm pressure switches Series PM

Mod.

PM11-NC

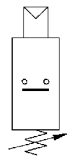
Normally Closed = The pressure switch opens an electric contact when it reaches the fixed pressure.



Mod.

PM11-NA

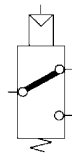
Normally Open = The pressure switch closes an electric contact when it reaches the fixed pressure.



Electro-pneumatic transducer Series TRP

Mod.

TRP-8



Pressure indicators Series 2950

Mod.

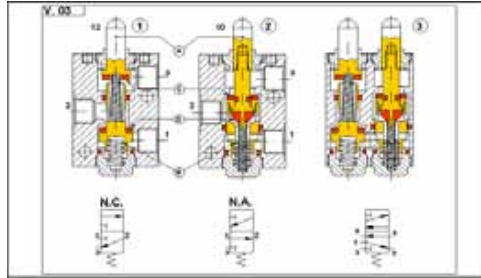
2950 M5



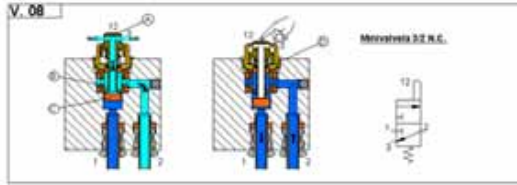
Valve Construction Guide

Series, Function, and Spool/Poppet Construction

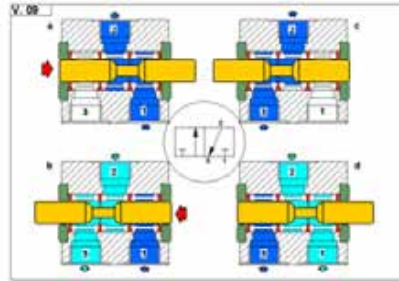
Series 1 - Poppet Construction: 3-way/2-position Normally Closed, 3-way/2-position Normally Open, 5-way/2-position



Series 2 & Logic Functions - Poppet Construction: 3-way/2-position Normally Closed, 3-way/2-position Normally Open, 5-way/3-position

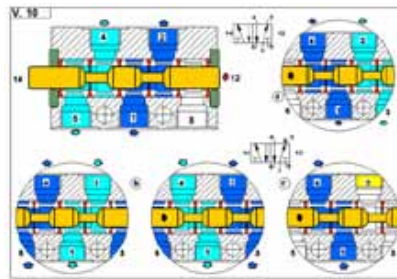


Series 3 - Packed Bore - Spool Construction: 3-way/2-position Normally Closed, 3-way/2-position Normally Open



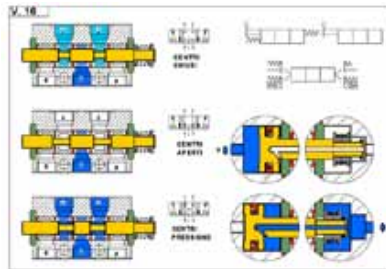
** All Series 3 valves are equipped with flat geometric ring seals in the packed bore construction, (A wider flat edged portion of the seal ring seals against the external packing spacers and valve inner body, while a thinner rounded lip seals against the spool surface). The design offers significantly improved sealing over traditional o-rings or oval rings, especially between differing surface geometries, such as spools and packing glands.

Series 3 - Packed Bore - Spool Construction: 5-way/2-position

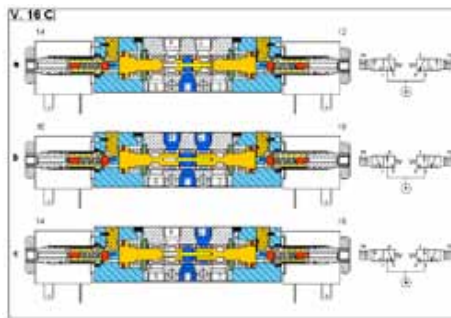


** All Series 3 valves are equipped with flat geometric ring seals in the packed bore construction, (A wider flat edged portion of the seal ring seals against the external packing spacers and valve inner body, while a thinner rounded lip seals against the spool surface). The design offers significantly improved sealing over traditional o-rings or oval rings, especially between differing surface geometries, such as spools and packing glands.

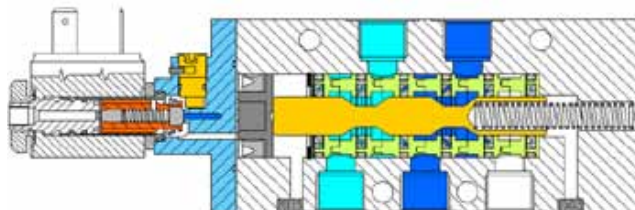
Series 3 - Packed Bore - Spool Construction:
5-way/3-position (Center Closed, Center Open/
Exhausting, Pressure Center)



Series 3 - Packed Bore - Spool Construction: Dual
3-way/2-position (NC/NC, NO/NO, NC/NO)

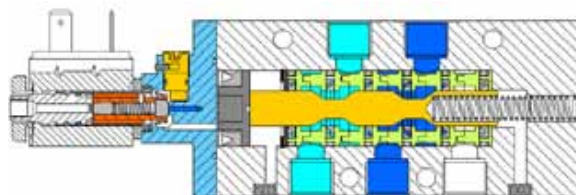


Series 4 - Packed Bore - Spool Construction: Dual
5-way/2-position (general design)



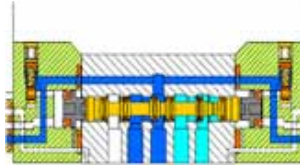
** All Series 4 valves are equipped with dual seals in the packed bore construction, (O-rings around external packing glands, and dual lip "airzet" seals around the spool body for improved performance in both vacuum and more rigorous media sealing situations).

Series 4 - Packed Bore - Spool Construction: Dual
5-way/2-position (general design)



** All Series 4 valves are equipped with dual seals in the packed bore construction, (O-rings around external packing glands, and dual lip "airzet" seals around the spool body for improved performance in both vacuum and more rigorous media sealing situations).

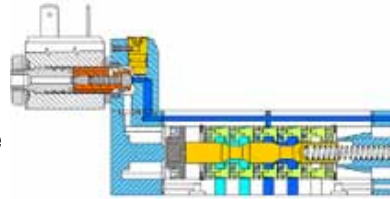
Series 7 (ISO 15407-1 Standard)- Packed Spool Construction, Manifold Assembly



5-way / 2-position, 5-way / 3-position - Center Closed, Center Open/Exhausting, & Pressure Center

** All Series 7 valves offer a balanced packed-spool design. This design permits a customized seal geometry to be fitted onto the spool directly. Benefits are less vulnerability to "varnishing" and/or contamination due to smaller seal contact area with the valve bore. Maintenance is reduced due to less parts and labor required to repair, while providing increased seal life and leak-free performance.

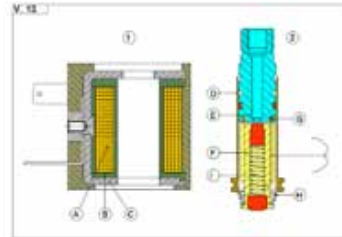
Series 9 (ISO 5599/1 Standard)- Packed-Bore Spool Construction, Manifold Assembly



5/2 - way/position, 5/3 Center Closed & Centers Open / Exhausting

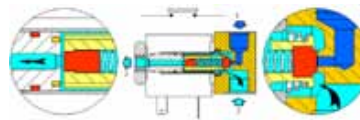
** All Series 9 valves are equipped with dual seals in the packed bore construction, (O-rings around external packing glands, and dual lip "airzet" seals around the spool body for improved performance in both vacuum and more rigorous media sealing situations).

Series A and Series 600 Kits - comprised of coil plunger, (or solenoid armature), and plunger o-rings.



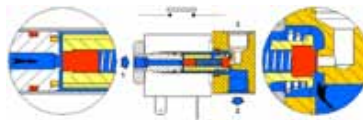
Basic Series A/U or 600 coil plunger, (armature assembly)

Series A / Series 6 - Directly Operated Solenoid valve with M5 (10-32 UNF), 1/8" ports, or 4mm OD (5/32" OD tube)



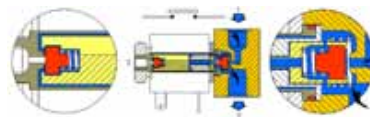
3-way/ 2-position Normally Closed, (shown with coil De-Energized)

Series A / Series 6 - Directly Operated Solenoid valve with M5 (10-32 UNF), 1/8" ports, or 4mm OD (5/32" OD tube)



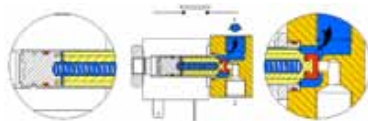
3-way/ 2-position Normally Open, Reverse Ported (shown with coil De-Energized)

Series A / Series 6 - Directly Operated Solenoid valve with M5 (10-32 UNF), 1/8" ports, or 4mm OD (5/32" OD tube)



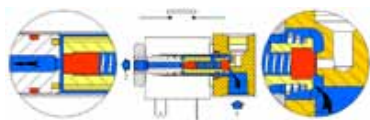
3-way/ 2-position Normally Open, Manifold or Stand-Alone w/ Common Inlet (shown with coil De-Energized)

Series A / Series 6 - Directly Operated Solenoid valve with M5 (10-32 UNF), 1/8" ports, or 4mm OD (5/32" OD tube)



2-way/2-position Normally Closed, (shown with coil De-Energized)

Series A / Series 6 - Directly Operated Solenoid valve with M5 (10-32 UNF), 1/8" ports, or 4mm OD (5/32" OD tube)



2-way/2-position Normally Open, (shown with coil De-Energized)

Series E - Packed Spool Construction, Manifold Assembly



5-way/2-position, 5-way/3-position - Center Closed, Center Open/Exhausting, & Pressure Center

** All Series E valves offer a balanced packed-spool design. This design permits a customized seal geometry to be fitted onto the spool directly. Benefits are less vulnerability to "varnishing" and/or contamination due to smaller seal contact area with the valve bore. Maintenance is reduced due to less parts and labor required to repair, while providing increased seal life and leak-free performance.

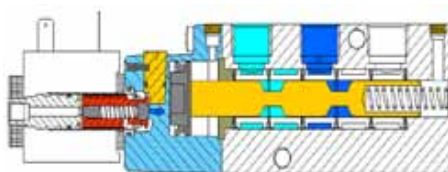
Series E - Packed Spool Construction, In-line Assembly



5-way/2-position, 5-way/3-position - Center Closed, Center Open/Exhausting, & Pressure Center

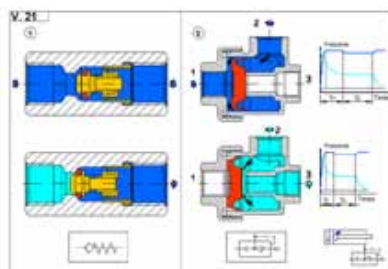
Series NA (NAMUR Interface)- Packed-Bore Spool Construction

3-way/2-position Normally Closed, 3-way/2-position Normally Open, 5/2, 5/3 Center Closed, 5/3 Center Open/Exhausting, 5/3 Pressure Center



** All Series NA-NAMUR valves are equipped with flat geometric ring seals in the packed bore construction, (A wider flat edged portion of the seal ring seals against the external packing spacers and valve inner body, while a thinner rounded lip seals against the spool surface). The design offers significantly improved sealing over traditional o-rings or oval rings, especially between differing surface geometries, such as spools and packing glands.

Series VNR, SCS & VSC Valves - Poppet Design Check, Shuttle, and Quick-Exhaust Valves



Pneumatic Symbols

DIRECTLY OPERATED SOLENOID VALVES MONOSTABLE	
	3/2 N.C. mechanical spring return
	3/2 N.C. mechanical spring return with manual override
	3/2 N.O. mechanical spring return
	3/2 N.O. mechanical spring return with manual override
	2/2 N.C. mechanical spring return
	2/2 N.C. mechanical spring return with manual override
	2/2 N.O. mechanical spring return
	2/2 N.O. mechanical spring return with manual override
	3/2 N.C. mechanical spring return quick exhaust

ELECTRO-PNEUMATICALLY OPERATED VALVES MONOSTABLE	
	3/2 N.C. mechanical spring return with manual override
	2/2 N.C. mechanical spring return with manual override
	3/2 N.O. mechanical spring return with manual override
	2/2 N.O. mechanical spring return with manual override
	3/2 N.C. pneumatic spring return with manual override
	2/2 N.C. pneumatic spring return with manual override
	3/2 N.O. pneumatic spring return with manual override

	2/2 N.O. pneumatic spring return with manual override
	5/2 mechanical spring return with manual override
	5/2 pneumatic spring return with manual override
	5/3 centers closed, electropneumatic return with manual override
	5/3 centers open, electropneumatic return with manual override
	5/3 pressure center, electropneumatic return with manual override








ELECTRO-PNEUMATICALLY OPERATED VALVES BISTABLE	
	3/2 with manual override
	2/2 with manual override
	electropneumatic return, 5/2 bistable, with manual override













PNEUMATICALLY OPERATED VALVES - MONOSTABLE	
	3/2 N.C. mechanical spring return
	3/2 N.A. mechanical spring return
	2/2 N.C. mechanical spring return
	2/2 N.A. mechanical spring return
	3/2 N.C. pneumatic return
	5/2 monostable mechanical spring return
	5/2 pneumatic return
	5/3 centers closed pneumatic return









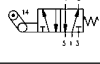
	5/3 centers open pneumatic return
	5/3 pressure centers pneumatic return






PNEUMATICALLY OPERATED VALVES - BISTABLE	
	3/2 differential pneum. return
	2/2 differential pneum. return
	3/2 differential pneum. return
	2/2 differential pneum. return
	5/2 differential pneum. return
	5/2 differential pneum. return



MANUALLY OPERATED VALVES MONOSTABLE	
	3/2 N.C. button operated mechanical spring return
	3/2 N.O. button operated mechanical spring return
	2/2 N.C. button operated mechanical spring return
	2/2 N.O. button operated mechanical spring return
	5/2 button operated mechanical spring return
	3/2 N.C. lever operated mechanical spring return
	3/2 N.O. lever operated mechanical spring return
	2/2 N.C. lever operated mechanical spring return











	2/2 N.O. lever operated mechanical spring return
	5/2 lever operated mechanical spring return
	5/3 centers closed, lever operated mechanical spring return
	5/3 centers open, lever operated mechanical spring return
	5/3 pressure center, lever operated mechanical spring return
	3/2 N.C. pedal operated mechanical spring return
	5/2 pedal operated mechanical spring return








MANUALLY OPERATED VALVES BISTABLE	
	3/2 push-pull button operated
	2/2 push-pull button operated
	5/2 push-pull button operated
	3/2 lever operated
	2/2 lever operated
	5/2 lever operated
	5/3 centers closed lever operated
	5/3 centers open lever operated
	5/3 pressure centers lever operated
	5/2 pedal operated
	5/2
	3/2

MECHANICALLY OPERATED VALVES - MONOSTABLE	
	3/2 N.C. plunger operated mechanical spring return
	3/2 N.O. plunger operated mechanical spring return
	5/2 plunger operated mechanical spring return
	3/2 N.C. roller operated mechanical spring return
	3/2 N.O. roller operated mechanical spring return
	5/2 roller operated mechanical spring return
	3/2 N.C. roller operated unidirectional mechanical spring return
	3/2 N.O. roller operated unidirectional mechanical spring return
	5/2 roller operated unidirectional mechanical spring return

MANUAL/MECHANICALLY OPERATED SENSITIVE	
	3/2 N.O. lever operated mechanical spring return
	3/2 N.C. lever operated mechanical spring return
	5/2 lever operated mechanical spring return
	5/2 lever operated mechanical spring return
	5/2 lever operated mechanical spring return

MANUAL/MECHANICALLY OPERATED SENSITIVE VALV. BISTABLE	
	5/2 plunger operated, plunger return
	5/2 roller operated plunger return

LOGIC VALVES	
	"AND" pneumatic symbol
	"AND" logical symbol
	"OR" pneumatic symbol
	"OR" logical symbol
	"NOT" pneumatic symbol
	"NOT" logical symbol
	"YES" pneumatic symbol
	"YES" logical symbol
	"memory" pneumatic symbol
	"memory" logical symbol

AUTOMATIC VALVES, FLOW REGULATORS AND SILENCERS	
	non return valves
	Quick exhaust valves
	directional flow control valve
	unidirectional blocking valves VBU
	bidirectional blocking valves VBO
	unidirectional flow control valve
	silencer

AIR PREPARATION	
	filter with standard drain
	pressure regulator relieving
	pressure regulator relieving and pressure gauge
	lubricator
	lockable isolation valve manually operated
	lockable isolation valve electropneumatically operated
	lockable isolation valve pneumatically operated
	soft start valve pneumatically operated
	soft start valve electropneumatically operated

CYLINDERS - SINGLE ACTING	
	single-acting cylinder front spring
	single-acting cylinder front spring magnetic
	single-acting cylinder rear spring
	single-acting cylinder rear spring magnetic
	single-acting cylinder through-rod
	single-acting cylinder through-rod

CYLINDERS DOUBLE-ACTING	
	double-acting cylinder non adjustable cushioning
	double-acting cylinder non adjustable cushioning magnetic
	double-acting cylinder adjustable cushioning
	double-acting cylinder adjustable cushioning magnetic
	double-acting cylinder through-rod non adjustable cushioning
	double-acting cylinder magnetic, through rod non adjustable cushioning
	double-acting cylinder through-rod adjustable cushioning
	double-acting cylinder through-rod magnetic, adjustable cushioning
	rodless cylinder double-acting magnetic, adjustable cushioning

ROTARY CYLINDERS	
	rotary cylinders double-acting

PRESSURE SWITCHES, INDICATOR AND AMPLIFIER	
	N.C. pressure switch
	N.O. pressure switch
	pressure switch changeover contact
	pressure indicator
	3/2 N.C. pneumatic amplifier

COUPLINGS	

VALVES	
	monostable manual override
	bistable manual override

MARKETING MATERIALS



Group Profile Brochure
93-4900-0GB004



Pneumatics
Division Brochure
93-1500-IGB005



North American Fittings
& Flow Control Valves
Catalog
93-0507-USA001



North American
Valve Catalog
93-0510-USA002



North American
FRL Catalog
93-0510-USA001



Metric Master Catalog
93-0508-001001



Short Form
Metric Master Catalog*
93-1009-0GB012



Series 60/61 ISO
Cylinder Brochure
93-1005-USA003



NPTF Fittings Poster
93-5000-USA001



BSP Fittings Poster
93-5000-0GB005



BSP Cylinder Poster
93-5000-0GB008



Full Range Product Poster
93-5000-0GB011



NPTF Fittings Bin Labels
SUS93-5500-0013



Metric Fittings Bin Labels
SUS93-5500-0012



Pro-Fit Fittings Brochure
93-1002-0GB004



Super-Rapid Compact Fittings
Brochure
93-1002-0GB010



Trade Show Panel
94-5010-0002

MARKETING MATERIALS



Distributor Full Line
Sample Case
94-1160-0006



Assorted Fittings
Sample Case
94-1160-0009



DOT Fittings Sample Case
94-1160-0010



Composite Fittings Sample Case
94-1160-0016



Standard Brass Fittings
Sample Case
94-1160-0008



Roller Fittings Cabinet
94-1500-0003



Modular Fittings Cabinet Deluxe
94-1500-0002

Camozzi Subsidiaries Around the World

Europe

Camozzi spa
Società Unipersonale
Via Eritrea, 20/I
25126 Brescia
Italy
Tel. +39 030/37921
Fax +39 030/2400430
info@camozzi.com
www.camozzi.com

Camozzi GmbH Pneumatic
Porschestrasse 1
73095 Albershausen
Germany
Tel. +49 7161/910100
Fax +49 7161/9101099
info@camozzi.de
www.camozzi.de

Camozzi GmbH Pneumatic
Löfflerweg 18
6060 Hall in Tirol
Austria
Tel. +43 5223/52888-0
Fax +43 5223/52888-500
office@camozzi.at
www.camozzi.at

Camozzi Pneumatics Ltd.
The Fluid Power Centre
Watling Street
Nuneaton - Warwickshire
CV 11 6BQ
United Kingdom
Tel. +44 24/7637 4114
Fax +44 24/7634 7520
info@camozzi.co.uk
www.camozzi.co.uk

Camozzi Pneumatique
5, Rue Louis Gattefossé
Parc de la Bandonnière
69800 Saint Priest
France
Tel. +33 478/213408
Fax +33 472/280136
info@camozzi.fr
www.camozzi.fr

Camozzi Benelux B.V.
De Vijf Boeken 1 A
2911 BL Nieuwerkerk a/d IJssel
The Netherlands
Tel. +31 180/316677
Fax +31 180/316616
info@camozzi.nl
www.camozzi.nl

Camozzi Pneumatik AB
Box 9214
Bronsyxegatan 7
20039 Malmö
Sweden
Tel. +46 40/222580
Fax +46 40/223878
info@camozzi.se
www.camozzi.se

Camozzi Aps
Metalvej 7a
4000 Roskilde
Denmark
Tel. +45 46/750202
Fax +45 46/750203
info@camozzi.dk
www.camozzi.dk

Camozzi Pneumatic Ltd.
Floor 14, Leningradskaya Street, 1-A Himki,
Moscow Region
141400 Moskau
Russian Federation
Tel. +7 495/7354961
Fax +7 495/7354961
info@camozzi.ru
www.camozzi.ru

Camozzi-Pneumatic
38 Larionova St
95018 Simferopol
Ukraine
Tel. +380 652/518198
Fax +380 652/515700
info@camozzi.com.ua
www.camozzi.ru

Camozzi Pneumatic
Karbushva St. 9 Off. 412
246029 Gomel
Byelorussia
Tel. +375 232/478064
232/473920 - 232/478417
Fax +375 232/478417
camozzi@mail.gomel.by

Camozzi Pneumatic Kazakhstan LLP
Shevchenko/Radostovec,
165b/72g, off. 503
050009 Almaty
Kazakhstan
Tel. +7 727/3335334
Fax +7 727/3335334
info@camozzi.kz
www.camozzi.kz

America

Camozzi Pneumatics Inc.
2160 Redbud Blvd., TX 75069
P.O. Box 2386, TX 75070
McKinney - Texas
USA
Tel. +1 972/5488885
Fax +1 972/5482110
info@camozzi-usa.com
www.camozzi-usa.com

Camozzi Neumatica de Mexico
S.A. de C.V.
Lago Tanganica 707
Col. Ocho Cedros 2ª sección
50170 Toluca
México
Tel. +52 722/2707880
Fax +52 722/2707860
camozzi@camozzi.com.mx
www.camozzi.com/mx

Camozzi do Brasil Ltda.
Rua Estácio de Sá, 1042
CEP 13080-010 Campinas SP
Brazil
Tel. +55 19/21374500
Fax +55 19/21374530
sac@camozzi.com.br
www.camozzi.com.br

Camozzi Neumatica S.A.
Prof. Dr. Pedro Chutro 3048
1437 Buenos Aires
Argentina
Tel. +54 11/49110816
Fax +54 11/49124191
info@camozzi.com.ar
www.camozzi.com/ar

Camozzi Venezuela S.A.
Calle 146 con Av. 62
N°146-180
P.O.Box 529
Zona Industrial Maracaibo
Edo. Zulia
Venezuela
Tel. +58 261/7360821
Fax +58 261/7360401
info@camozzi.com.ve
www.camozzi.com.ve

Middle East

Camozzi Iran Co. Ltd.
Motahari Ave. No. 243
Teheran
Iran
Tel. +98 21/88732130
Fax +98 21/88738552
general_secretary@camozziran.com

Asia

Shanghai Camozzi Pneumatic
Control Components Co, Ltd.
415, Ren De Road
200434 Shanghai
China
Tel. +86 21/65363650
Fax +86 21/65360613
info@camozzi.com.cn
www.camozzi.com/cn

Shanghai Camozzi Automation
Control Co, Ltd.
717, Shuang Dan Road,
Malu Town
201801 Jiading Ind. District
Shanghai
China
Tel. +86 21/59100999
Fax +86 21/59100333
info@camozzi.com.cn
www.camozzi.com/cn

Camozzi India Private Limited
No D-44 Phase II Ext.,
Hosiery Complex
Noida - 201 305
Uttar Pradesh
India
Tel. +91 120/4055252
Fax +91 120/4055200
info@camozzi-india.com
www.camozzi.com/in

Camozzi Malaysia SDN. BHD.
30 & 32, Jalan Industri USJ 1/3
Taman Perindustrian USJ 1
47600 Subang Jaya
Selangor
Malaysia
Tel. +60 3/80238400
Fax +60 3/80235626
camozzijb@myjaring.net
www.camozzi.com/my

Camozzi R.O. in Hochiminh City
7th F1., 61-61A Tran Quang Dieu St.,
Ward 13, Dist. 3, HCMC,
Vietnam
Tel. +84 8/6290 3721
Fax +84 8/6290 3720
camozzi@camozzi.com.vn
www.camozzi.com.vn

Camozzi Distributors Around the World

Europe

Hidroteka Engineering Services
Chemijos 29E
LT-51333 Kaunas
Lithuania
Tel. +370 37/452969
Fax +370 37/760500
hidroteka@hidroteka.lt
www.hidroteka.lt

AVS A/S
Postboks 263
N - 1402 SKI
Norway
Tel. +47 64/860430
Fax +47 64/860440
postmaster@avs.no
www.avs.no

AVS-Yhtiöt Oy
Rusthollarinkatu 8
02270 Espoo
Finland
Tel. +358 9/613316
Fax +358 9/61331800
info@avs-yhtiot.fi
www.avs-yhtiot.fi/

LOFT & RAFTÆKI
Hjallabrekka 1
200 Kópavogur
Iceland
Tel. +354 564/3000
Fax +354 564/0030
gummi@loft.is
www.loft.is

Bibus AG
Allmendstrasse 26
CH-8320 Fehraltorf
Switzerland
Tel. +41 44/8775011
Fax +41 44/8775019
info.bag@bibus.ch
www.bag.bibus.ch/

STAF Automation s.r.o.
Kostiviarska 4944/5
974 01 Banská Bystrica
Slovakia
Tel. +421 48/47 227 77
Fax +421 48/47 227 55
staf@staf.sk
www.staf.sk/

Esperia S.A.
Arangutxi, 13
Poligono Industrial De Jundiz
01015 Vitoria
Spain
Tel. +34 945/290105
Fax +34 945/290356
comercial@esperia.es
www.esperia.es

Teclena - Automizacao, Estudos e Representacoes, S.A.
Rua Dos Camponeses, n° 390
Zona Industrial do Vale Sepal -
2400-316 Leiria
Portugal
Tel. +351 244/860980
Fax +351 244/812832
geral@teclena.pt
www.teclena.pt

Technomatic control s.a.
Esopou Street
Kalohori
570 09 Thessaloniki
Greece
Tel. +30 2310/778730
Fax +30 2310/778732
info@technomatic.gr
www.technomatic.gr

L.D. GmbH
Zar Samuil Str. 116
1202 Sofia
Bulgary
Tel. +359 2/9269011
Fax +359 2/9269025
info@ld-gmbh.com

Tech-Con Hungaria Kft
Véső u. 9-11
1133 Budapest
Hungary
Tel. +36 1/412 4161
Fax +36 1/412 4171
tech-con@tech-con.hu
www.tech-con.hu

Tech-Con Industry Srl
Calea Crângasi N°60
Sector 6, 060346 Bucharest
Romania
Tel. +40 21/2219640
Fax +40 21/2219766
paul.stoica@tech-congroup.com
www.tech-con.ro

Tech-Con d.o.o. Beograd
Cara Dušana 205a
11080 Zemun - Belgrade
Serbia
Tel./Fax +381 11/3167051 - 3167064
+381 11/2613782 - 2198758
automation@tech-con.co.rs
www.tech-con.co.rs

Tech-Con Czech Republic s.r.o.
Ve Zlibku 1800
Praha 9 - Horni Pocernice 19300
Czech Republic
Tel. +420 226/001064
Fax +420 226/001063
spalensky@tech-con.cz

Kovimex d.o.o.
Podskrajnik 60,
SI-1380 Cerknica
Slovenia
Tel. +386 1/7096430
Fax +386 1/7051930
kovimex@kovimex.si

Bibus Zagreb d.o.o.
Anina 91
HR 10000 Zagreb
Croatia
Tel. +385 1/3818004 - 3818006
Fax +385 1/3818005
bibus@bibus.hr
www.bibus.hr

Experts d.o.o.
Ivo Ribar Lola 149
1000 Skopje
Rep. of Macedonia
Tel. +389 2/3081970
Fax +389 2/3084871
experts@t-home.mk

Bibus Menos Sp. z o.o.
Spadochroniarzy 18
80-298 Gdańsk
Poland
Tel. +48 58/6609570
Fax +48 58/6617132
info@bibusmenos.pl
www.bibusmenos.pl

Rayair Automation Ltd.
KW23G Corradino Industrial Estate
Paola, Pla 08
Malta
Tel/Fax +356 21/672497
ray@rayair-automation.com

TS Hydropower Ltd.
Industrial Area N°64
Aglanzia 21-03
Nicosia
Cipro
Tel. +357 22/332085
Fax +357 22/338608
tshydro@cytanet.com.cy

Hidrel Hidrolik Elemanlar
Sanayi Ve Ticaret A.S.
Perçemli Sokak, No 11 Tünel Mevkii
80000 Karakoy - Istanbul
Turkey
Tel. +90 212/2517318 - 2494881
Fax +90 212/2920850
hidrel@superonline.com

America

Cocles S.A.
BVAR Artigas 4543 P.O. Box 11800
Montevideo
Uruguay
Tel. +598 2/2006428 - 2090446
Fax +598 2/206428
cocles@adinet.com.uy
www.cocles.com.uy

Marco Industrial Ltda
Los Gobellinos # 2584 - Renca
Santiago
Chile
Tel. +56 2/7824400
Fax +56 2/6464623
marcoindustrial@marco.cl
www.marco.cl

Eurotécnica de Costa Rica AYM, S.A.
425 m Oeste Municipalidad de Tibás
San José
Costa Rica
Tel. +506 2241/4242 - 4230
Fax +506 2241/4272
eurotecnica@eurotecnicacr.com
www.eurotecnicacr.com

Isotex de Panama S.A.
Via Tocumen Plaza Conquistador
Local # 45
Panama
Tel. +507 217/0050
Fax +507 217/0049
gerencia@isotexpanama.com
info@isotexpanama.com

Eisefac, S.A.
Av. Los Cipreses No 484 Los Ficus
Santa Anita - Lima
Peru
Tel. +51 1/3628484 - 3627127
Fax +51 1/3625602
eisefac@eisefac.com
www.eisefac.com

Fluidica Cia. Ltda.
Av. Amazonas N41-138 y isla Floreana
Quito
Ecuador
Tel. +593 2/2440848 - 5102003 - 5102004
Fax +593 2/2440848
fluidica@interactive.net.ec

Aplitec S.A. de C.V.
75 Av. Nte. Residencial Escalon Nte II
PJE. KL #3
San Salvador
El Salvador
Tel. +503 211/9797
Fax +503 211/9798
aplitec@telesal.net

Middle East

Al-Hawaiya for Industrial Solutions Establishment. (ALHA)
Kilo - 3, Makkah Road
P.O. Box 11429
Jeddah 21453
Saudi Arabia
Tel. +966 2/6885524
Fax +966 2/6885061
info@alha.com.sa
www.alha.com.sa

I.M.O. Industrial Machine Trd. Co. L.L.C.
P.O. Box 20376
Sharjah
United Arab Emirates
Tel. +971 6/5437991
Fax +971 6/5437994
imo@eim.ae

Al Maram General Trading Establishment
P.O. Box 376
32004 Hawalli
Kuwait
Tel. +965 2652994
Fax +965 2658162
siraj_samdeen@yahoo.com

Ohara Data Engineering
Surian Djaidieh Zouhour Street
4410 Aleppo
Syria
Tel. +963 21/2273227
Fax +963 21/2273281
ohaara@net.sy

E. Yeruham & Comp. Ltd.
34 Hahofer St.
P.O. Box 11884 Holon
58117 Israel
Israel
Tel. +972 3/5567322
Fax +972 3/5596616
office@ayeruham.com
www.ayeruham.com

Kalbony Cousins Co.
P.O. Box 211751
Amman 11121
Jordan
Tel. +962 6/4647372
Fax +962 6/4649848
Kalbony@wanadoo.jo

Technoline Trading & Service W.L.L.
Flat 11, Bldg 255D, Road 1104, Block 711
Tubli
Kingdom of Bahrain
Tel. +973 17244225 - 17783906
Fax +973 17243225 - 17786906
techline@batelco.com.bh

Compressed Air Technology Co.Saa
83 - El Sabteya Str.
21211 Sabteya ET
Cairo
Egypt
Tel. +20 2/25766266 - 25774400
Fax +20 2/25750113
elhaggar@intouch.com

Asia

Polytechnic Enterprises
R.no 101 1st Floor A.H. Centre
74000 Shahrah-E-Liquat
Karachi
Pakistan
Tel. +92 21/2426612
Fax +92 21/2426188
polytech@cyber.net.pk

Seika Corporation
Aqua Dojima East Bldg.
16F, 4-4, 1-Chome, Dojimahama,
Kita-Ku Osaka
Japan
Tel. +81 6/63453176
Fax +81 6/63443584
mashien@jp.seika.com

Exceltec Enviro Pte Ltd
691 Geylang Road # 02-03
389684 Singapore
Tel. +65/67436083
Fax +65/67439286
xltenviro@yahoo.com.sg

Savikma Automation & Engineering Services (Pvt) Ltd.
22, Wattegedara Road
Maharagama
Sri Lanka
Tel. +94 115642164
Fax +94 112839652
saes@slnet.lk

Exceltec Automation Inc.
Door 2, F. Cano Building,
104 Quezon Avenue, Brgy. Tatalon,
Quezon City, Metro Manila
Philippines
Tel. +63 2/416 1143
Fax +63 2/712 1672
exceltec@uplink.com.ph

Prosperity Machinery Manufacturers Ltd.
3/F., 483E Castle Peak Road
Cheungshawan Kowloon,
Hong Kong
Tel. +852 27437175
Fax +852 27854595

Pneumax Co. Ltd.
104/21, Moo 8,
Chaloem Phrakiat R. 9 Rd.,
Pravet - Bangkok 10250
Thailand
Tel. +66 2/7268000
Fax +66 2/7268260
import@pneumax.co.th
www.pneumax.co.th

PT. Golden Archy Sakti
Kompleks Prima Centre Blok B2 No.2
Jl.Pool PPD - Pesing Poglar No.11,
Kedaung Kali Angke - Cengkareng,
Jakarta Barat 11710
Indonesia
Tel. +62 21/54377888
Fax +62 21/54377089
archy@dycom.co.id

Genn Dih Enterprises CO, Ltd.
No. 17, Lane 822, Sec. 2
Chung-Hsing Road, Ta-Li City
Taichung County
Taiwan R.O.C.
Tel. +886 4/24874219 - 24860626
Fax +886 4/24862824
yuchong@ms61.hinet.net

U-Chang International Ltd.
Bld.19-11
Industrial Material Circul. Center 1629
702-012 San Gyuk-2Dong, BukGu Taegu
South Korea
Tel. +82 53/6041698
Fax +82 53/6041297
jsanco@unitel.co.kr

Africa

Topflight Hydraulics & Pneumatics
16 Galaxy avenue
2065 Linbro Business Park
Sandton Johannesburg
South Africa
Tel. +27 11/6081340 - 341
Fax +27 11/6081344
mjones@tmsg.co.za
www.tmsg.co.za

FHP s.a. Flexibles Haute Pression
25 Rue Lt Puissesseau
Casablanca
Morocco
Tel. +212 22/301997
Fax +212 22/301913
fhpelidrissi@iam.net.ma

Sarl.Si.Maaz.Co
36 Bd Mellah Ali
(Ex. Bd Marceau) Oran
Algeria
Tel. +213 041/302791 - 303052
Fax +213 041/301921
mnaima@algeriecom.com

DISMATEC
Distribution de Materiels Techniques
N°R.C. 179041 16 BP
236 ABIDJAN 16
Ivory Coast
Tel. +225 +21267091
Fax +225 +21262367
dismatec2002@yahoo.fr

A.T.C. Automatismes
25 Av. H. Bourguiba Centre Said B
2033 Megrin Tunis Sud
Tunisia
Tel. +216 71/429084
Fax +216 71/429084
commercial@atc.com.tn

Oceania

Griffiths Components Pty Ltd
605 Burwood Hwy
Knoxfield Victoria
Melbourne 3180
Australia
Tel. +61 3/9800 6500
Fax +61 3/9801 8553
enquiry@camozzi.com.au

Alphanumeric Index

MOD.	VALVE	PAGE
134-945	Mechanical	41
134-955	Mechanical	51
138-9..	Mechanical	18
138-965	Mechanical	41
138-945	Mechanical	40
138-955	Mechanical	40
148-945	Mechanical	40
154-945	Mechanical	41
154-955	Mechanical	41
158-955	Mechanical	41
200-870	Manual	5
200-895	Manual	5
200-905	Manual	5
200-970	Manual	5
200-972	Manual	5
200-972	Manual	5
200-975	Manual	5
200-900	Manual	5
200-904	Manual	5
200-925	Manual	5
210...	Manual	8
220...	Manual	8
234-...	Manual	6
234-000	Manual	7
234-925	Manual	7 & 27
234-885	Manual	10
234-9054	Manual	8
234-945	Mechanical	37
234-955	Mechanical	37
234-965	Mechanical	37
234-985	Mechanical	37
235-...	Manual	6
235-000	Manual	7
235-925	Mechanical	27
235-945	Mechanical	37
235-955	Mechanical	37
235-965	Mechanical	37
235-985	Mechanical	37
2L-....	Air-Pilot	53
2905 ..	Flow Control Valves	166

MOD.	VALVE	PAGE
2930 ...	Manual	31
2930N ...	Manual	31
2940 ...	Manual	32
3E2-925	Mechanical	27
334-...	Air-Pilot	60
334D-...	Air-Pilot	61
338-D..	Mechanical	43
338-...	Air-Pilot	60
348-D..	Mechanical	43
338-945	Mechanical	39
338-955	Mechanical	39
338-9..	Manual	14
338-965	Mechanical	40
338-97.	Manual	15
338-91.	Manual	15
354-...	Air-Pilot	60
358-D..	Mechanical	43
358-945	Mechanical	39
358-955	Mechanical	39
358-965	Mechanical	40
358-89.	Manual	14
358-900	Manual	16
358-91.	Manual	15
368-...	Air-Pilot	61
368-900	Manual	16
368-905	Manual	16
374-...	Air-Pilot	61
378-...	Air-Pilot	61
378-900	Manual	17
378-905	Manual	17
384-...	Air-Pilot	61
388-...	Air-Pilot	61
394D-...	Air-Pilot	61
398D-...	Air-Pilot	61
434-900	Manual	22
434-905	Manual	22
434-910	Manual	22
434-915	Manual	22
438-3.	Air-Pilot	68
452C-..	Air-Pilot	71

MOD.	VALVE	PAGE
452-35	Air-Pilot	71
454-011-...	Mechanical	46
454-015-...	Mechanical	46
454-3.	Air-Pilot	69
454-900	Manual	22
454-905	Manual	22
458-011...	Mechanical	45
458-015...	Mechanical	45
464-..	Air-Pilot	70
464-900	Manual	23
464-905	Manual	23
468-..	Air-Pilot	70
474-3.	Air-Pilot	71
474-900	Manual	23
474-905	Manual	23
751-....	Air-Pilot	76
752-....	Air-Pilot	76
761-....	Air-Pilot	77
762-....	Air-Pilot	77
771-....	Air-Pilot	77
781-....	Air-Pilot	77
782-....	Air-Pilot	77
701C-...	Air-Pilot	78
702C-...	Air-Pilot	78
901-C..	Air-Pilot	90
902-C..	Air-Pilot	90
903-C..	Air-Pilot	90
901-F..	Air-Pilot	89
902-F..	Air-Pilot	89
903-F..	Air-Pilot	89
901-G..	Air-Pilot	89
902-G..	Air-Pilot	89
903-G..	Air-Pilot	89
901-H.	Air-Pilot	90
902-H.	Air-Pilot	90
903-H.	Air-Pilot	90
901-N.	Air-Pilot	91
902-N.	Air-Pilot	91
903-N.	Air-Pilot	91
951-....	Air-Pilot	88

MOD.	VALVE	PAGE
952-...-..	Air-Pilot	88
953-...-..	Air-Pilot	88
961-000-..	Air-Pilot	88
962-000.00	Air-Pilot	88
963-000-..	Air-Pilot	88
971-000-..	Air-Pilot	88
972-000-..	Air-Pilot	88
973-000-..	Air-Pilot	88
2810 ..	Flow Control Valves	150
2819 ..	Flow Control Valves	151
2820 ..	Flow Control Valves	150
2829 ..	Flow Control Valves	151
2830 ..	Flow Control Valves	150
2839 ..	Flow Control Valves	151
2901..	Flow Control Valves	153
2903 ..	Flow Control Valves	153
2905 ..	Flow Control Valves	153
2938..	Flow Control Valves	153
2939..	Flow Control Valves	153
2950 M5	Flow Control Valves	155
CNVL-3..	Air-Pilot	62
CNVL-4..	Air-Pilot	62
CNVL-5..	Air-Pilot	72
GMCO ...	Flow Control Valves	126 & 144
GMCU ...	Flow Control Valves	123 & 144
GMVU ...	Flow Control Valves	125 & 144
GSCO ...	Flow Control Valves	125 & 144
GSCU ...	Flow Control Valves	124 & 144
GSVU ...	Flow Control Valves	124 & 144
ISO.01 ...	Air-Pilot	82
ISO.1 ...	Air-Pilot	94
ISO.2 ...	Air-Pilot	98
ISO.3 ...	Air-Pilot	102

MOD.	VALVE	PAGE
MCO ...-..	Flow Control Valves	126 & 132
MCU ...-..	Flow Control Valves	123 & 132
MVU ...-..	Flow Control Valves	125 & 132
NA5-..	Air-Pilot	107
NA6...-..	Air-Pilot	107
NA7...-..	Air-Pilot	107
NA8...-..	Air-Pilot	107
PM11-	Flow Control Valves	155
PMCO ...-..	Flow Control Valves	143
PMCU ...-..	Flow Control Valves	141
PMVU ...-..	Flow Control Valves	142
PSCO ...-..	Flow Control Valves	143
PSCU ...-..	Flow Control Valves	141
PSVU ...-..	Flow Control Valves	182
RFU ...-..	Flow Control Valves	129 & 149
RFO ...-..	Flow Control Valves	149
RSW..	Flow Control Valves	126 & 153
SCO ...-..	Flow Control Valves	125 & 132
SCU ...-..	Flow Control Valves	124 & 132
SVU ...-..	Flow Control Valves	124 & 132
TMCO ...-..	Flow Control Valves	121 & 130
TMCU ...-..	Flow Control Valves	121 & 130
TMVU ...-..	Flow Control Valves	121 & 130
TRP – 8	Flow Control Valves	155
VBO..	Air-Pilot	113
VBU..	Air-Pilot	113
VMS ...	Manual	28
VNR-2...-..	Air-Pilot	109
VNR-8...-..	Air-Pilot	109
VSC ...-..	Air-Pilot	115
VSO ...-..	Air-Pilot	115

MOD.	VALVE	PAGE
------	-------	------

www.camozzi-usa.com



Air that moves the world

93-0510-USA002 (Sept 2010)

SHOP ONLINE at www.airlinehyd.com

800-999-7378