

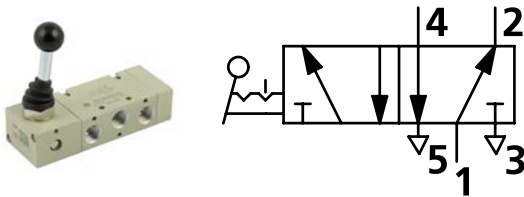
5/2-way valve

manually operated, series 70 low temperature

PLUS ||

Art. No. 149911

Type No. 70L2000400



Exemplary illustration

The series 70 low temperature valves in manually operated version with hand lever complement our range of traditional way valves of series 70. They represent a selection of the most commonly used manually operated way valves, which are manufactured with components for special low temperature applications. These valves are also suitable for use with vacuum.

Technical data

Operation	manually
Function	5/2 bistable
Version	90° lever
Connection	G 1/4 IT
DN	7.5 mm
Flow rate measurement 1	flow rate at 6 bar and Δp 1 bar
Flow rate 1	1100 NI/min
Flow rate measurement 2	flow rate at 6 bar and Δp 0.5 bar
Flow rate 2	750 NI/min
Medium	filtered, dry and unlubricated compressed air
Required purity class in accordance w. ISO 8573-1	4.2.3
Operating pressure	-0.99 - 10 bar
Temperature range	-40 to 60 °C
Valve body	aluminium
Piston	nickel-plated aluminium
Sealant	NBR
Spring	special steel
Series	series 70 low temperature

Commercial data

Customs tariff number	84818079
Country of origin	IT
eCl@ss 5.1.4	27291801
eCl@ss 9.0	27291390
UNSPSC_Code_v190501	40141603
UNSPSC_CodeDesc_v190501	Pneumatic valves

B1

VALVES SERIES 70

VALVES
VALVES SERIES 70

The Series 70 forms part of Metal Work's full range of traditional valves.
They are available in sizes 1/8", 1/4", 3/8" and 1/2", versions 3/2, 5/2, 5/3 and double 3/2, with mechanical, manual, pneumatic and electric drives.
They can be installed in line, onto a wall, on the cylinder (using a special bracket) or in series (on a multiple or modular base) to suit all possible applications.

A range of valves (Series 70 LT) designed using components for specific low-temperature applications is now available for the most commonly used types and sizes.

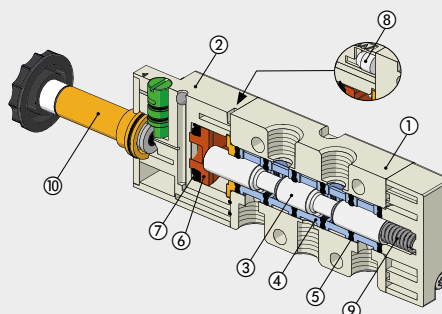
These highly reliable valves comply with the main applicable standards, including Atex, ISO 13489 and SIL, as stated in the documents and certificates available online.



TECHNICAL DATA		1/8"	1/4"	3/8"	1/2"
Thread on the valve ports		1/8"	1/4"	3/8"	1/2"
Operating pressure series 70 versions	bar	2.5 to 10			
monostable and bistable differential		1 to 10			
bistable		vacuum to 10			
asserved					
Operating pressure series 70 LT (low temperature) versions	bar				
hand operated		vacuum to 10		-	
pneumatic and solenoid/pneumatic	t = -40°C to -10°C	5 to 10		-	
	t = -10°C to +60°C	3 to 10		-	
Minimum pilot pressure	bar	2.5			
Operating temperature range	°C				
series 70 versions		-10 to +60			
series 70 LT (low temperature) versions		-40 to +60			
Nominal diameter	mm	5	7.5	13.3	15
Conductance C	Nl/min · bar	121.43	264.26	505.52	971.43
Critical ratio b	bar/bar	0.32	0.27	0.32	0.43
Flow rate at 6 bar ΔP 0.5 bar	Nl/min	400	750	1560	3200
Flow rate at 6 bar ΔP 1 bar	Nl/min	550	1100	2150	4600
Installation		In any position (vertical assembly is not recommended for bistable valves subjected to vibration)			
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous.			
Recommended lubricant		For series 70 LT (low-temperature) versions, it is recommended to use of perfettamente dried air. ISO and UNI FD 22			
Maximum coil nut torque	Nm	For series 70 LT (low-temperature) it is not expected to be used with lubricated air.			
Compatibility with oils		1 See chapter Z1			

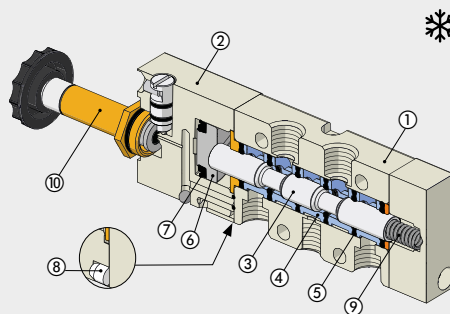
COMPONENTS SERIES 70

- ① VALVE BODY: Aluminium
- ② CONTROL/END CAP: plastic
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: NBR
- ⑥ PISTONS: Hostaform®
- ⑦ PISTON GASKET: NBR
- ⑧ FILTER: plastic
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: Brass pipe - Stainless steel core


B1.12

COMPONENTS SERIES 70 LT (LOW TEMPERATURE)

- ① ALVE BODY: aluminium
- ② CONTROL/END CAP: aluminium
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: HNBR
- ⑥ PISTONS: aluminium
- ⑦ PISTON GASKET: HNBR
- ⑧ FILTER: plastic
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: brass pipe - Stainless steel core
(version specific for low-temperature applications)



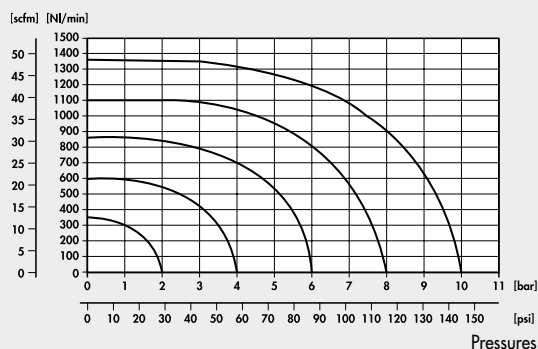
VALVES

VALVES SERIES 70

FLOW CHARTS

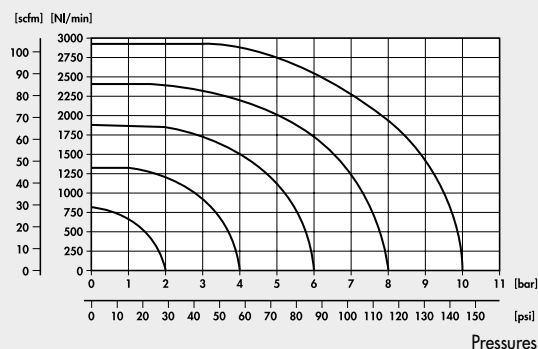
VALVES SERIES 70 1/8"

Flow rates



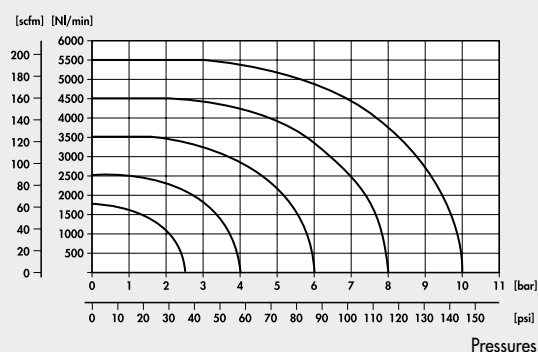
VALVES SERIES 70 1/4"

Flow rates



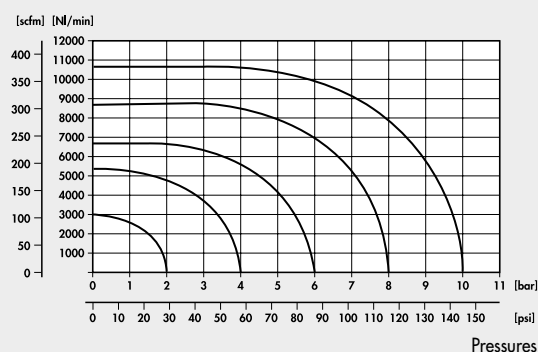
VALVES SERIES 70 3/8"

Flow rates



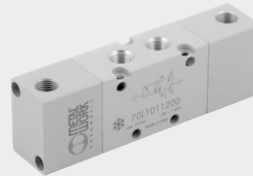
VALVES SERIES 70 1/2"

Flow rates



VALVES SERIES 70 LT (LOW TEMPERATURE)

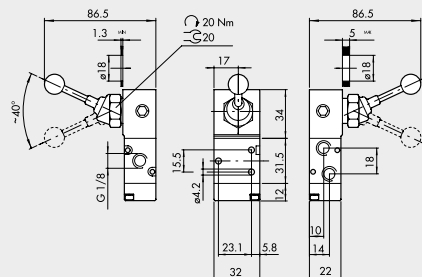
TECHNICAL DATA		1/8"	1/4"	3/8"
Operating pressure standard bar		Vacuum to 10		
hand operated		5 to 10		
pneumatic and solenoid/pneumatic t = -40°C to -10°C		3 to 10		
t = -10°C to +60°C		-40 to +60		
Operating temperature range °C				
Nominal diameter mm		5	7.5	13.3
Conductance C Nl/min · bar		121.43	264.26	505.52
Critical ratio b bar/bar		0.32	0.27	0.32
Flow rate at 6 bar ΔP 0.5 bar Nl/min		400	750	1560
Flow rate at 6 bar ΔP 1 bar Nl/min		550	1100	2150
PNEUMATIC				
Minimum pilot pressure bar		5		
t = -40°C to -10°C		3		
t = -10°C to +60°C				
TRA / TRR monostable at 6 bar (at 20°C) ms		6/15	7/15	5/28
TRA / TRR bistable at 6 bar (at 20°C) ms		7/7	7/7	13/13
SOLENOID/PNEUMATIC				
TRA / TRR monostable at 6 bar (at 20°C) ms		15/35	19/45	21/72
TRA / TRR bistable at 6 bar (at 20°C) ms		20/20	21/21	18/18
Coil voltage values		12; 24 VDC		
		24; 110; 220V AC 50/60Hz		
Power t = -40°C to -10°C		5 W (DC) - 5 VA (AC)		
t = -10°C to +60°C		2 W (DC) - 3.5 VA (AC)		
Voltage tolerance %		-10 to +15		
Insulation class		F 155		
Maximum coil nut torque Nm		1		
Hand operator		Bistable		
Notes: after a long stop and with very low temperatures the movement of the first drives may be slower. It recommends the use of perfectly dry air.				


VALVES

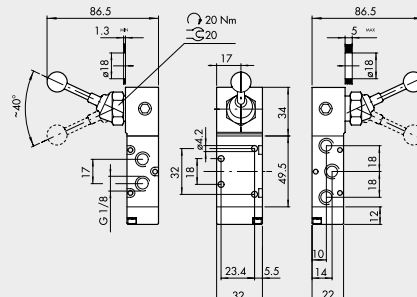
VALVES SERIES 70 LT (LOW TEMPERATURE)

SYNOPTIC, SIZES AND VERSIONS

P N V	2	3	P N	S	OO	LT
FAMILY	DIMENSIONS	FUNCTION	OPERATORS 14	RESETTING (12)	FURTHER DETAILS	
MAV manual valves	2 1/8"	3 3/2	LE leva 90°	S mechanical springs	OO no indication	LT low temperature
PNV pneumatic valves	3 1/4"	5 5/2	PN pneumatic	B bistable	NC normally closed	
SOV solenoid/ pneumatic	C 3/8"	6 5/3	SO solenoid	O stable for 5/3	NO normally open	
					CC closed centres	
					OC open centres	
					PC pressure centres	

VALVES SERIES 70 LT, HAND OPERATED (LOW TEMPERATURE)
90° LEVER 3/2 1/8"


Symbol	Code	Abbrev.	Weight [g]
	* 70L1000100	MAV 23 LES NC LT	184
	* 70L1000200	MAV 23 LEB OO LT	187

90° LEVER 5/2 1/8"


Symbol	Code	Abbrev.	Weight [g]
	* 70L1000300	MAV 25 LES OO LT	210
	* 70L1000400	MAV 25 LEB OO LT	213

VALVES SERIES 70 LT (LOW TEMPERATURE)

Technical drawing of a 1000 mm long shaft assembly. The drawing includes three views: a front view, a side view, and a cross-sectional view. Key dimensions and tolerances are as follows:

- Front View (Left):**
 - Total length: 90 mm
 - Distance from left end to first step: 1.3 mm
 - Step diameter: $\phi 18$ mm
 - Distance from left end to second step: 22 mm
 - Distance between steps: 22 mm
 - Distance from second step to right end: 22 mm
 - Keyway width: 11 mm
 - Keyway depth: 1 mm
 - Keyway position: G 1/4
 - Angle: -40°
- Side View (Middle):**
 - Distance from left end to first step: 21.5 mm
 - Step diameter: $\phi 20$ mm
 - Distance from left end to second step: 15 mm
 - Distance between steps: 64.2 mm
 - Distance from second step to right end: 34.5 mm
 - Keyway width: 13 mm
 - Keyway depth: 8 mm
 - Keyway position: 26.5 mm
 - Keyway tolerance: ± 0.02 mm
 - Keyway position: 40 mm
- Cross-sectional View (Right):**
 - Total length: 90 mm
 - Distance from left end to first step: 5 mm
 - Step diameter: $\phi 18$ mm
 - Distance from left end to second step: 22 mm
 - Distance between steps: 22 mm
 - Distance from second step to right end: 22 mm
 - Keyway width: 11 mm
 - Keyway depth: 1 mm
 - Keyway position: 15.2 mm
 - Keyway position: 25 mm

Additional notes: The drawing specifies a torque of 20 Nm and a tolerance of ± 0.02 mm for the keyway position.

B1.38