

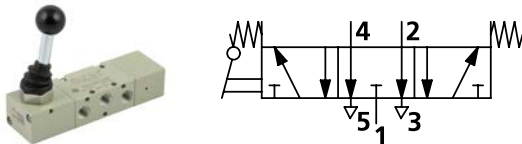
## 5/3-way valve

manually operated, series 70 low temperature

**PLUS** ||

Art. No. 149913

Type No. 70L1000900



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

Function	5/3
Operation	mid-position exhausted, spring return
Connection	G 1/8 IT
DN	5
Flow rate measurement 1	flow rate at 6 bar and $\Delta p$ 0.5 bar
Flow rate 1	400 NI/min
Flow rate measurement 2	flow rate at 6 bar and $\Delta p$ 1 bar
Flow rate 2	550 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



## 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



## VALVES SERIES 70

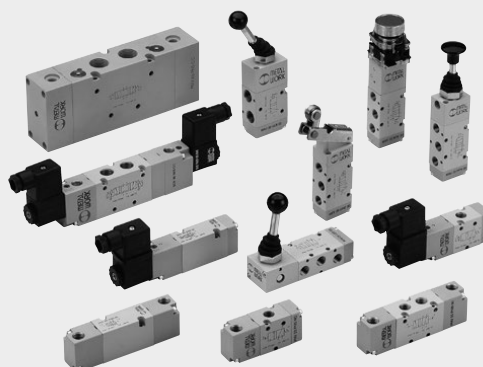
The Series 70 forms part of Metal Work's full range of traditional valves.

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.

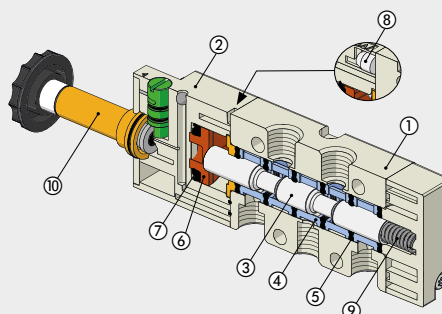
These highly reliable valves comply with the main applicable standards, including Atex, ISO 13489 and SIL, as stated in the documents and certificates available online.



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	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				
Minimum pilot pressure	bar	2.5			
Operating temperature range	°C	-10 to +60			
series 70 versions		-40 to +60			
series 70 LT (low temperature) versions					
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

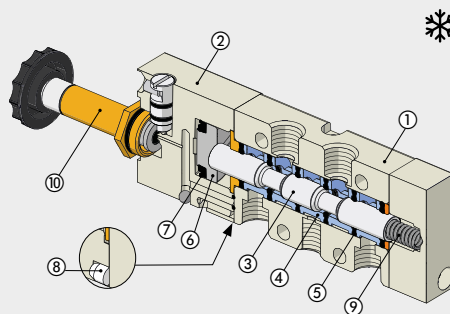
- ① VALVE BODY: Aluminium
- ② CONTROL/END CAP: plastic
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: NBR
- ⑥ PISTONS: Hostaform®
- ⑦ PISTON GASKET: NBR
- ⑧ FILTER: plastic
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: Brass pipe - Stainless steel core





## 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)



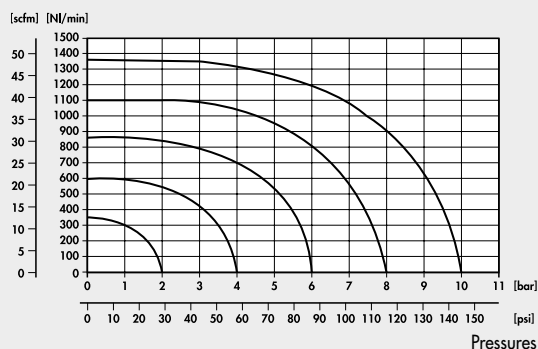
VALVES

VALVES SERIES 70

## FLOW CHARTS

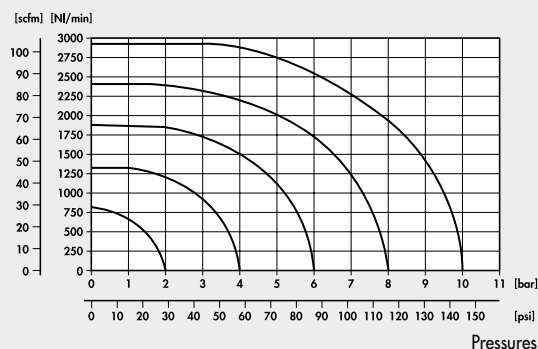
### VALVES SERIES 70 1/8"

Flow rates



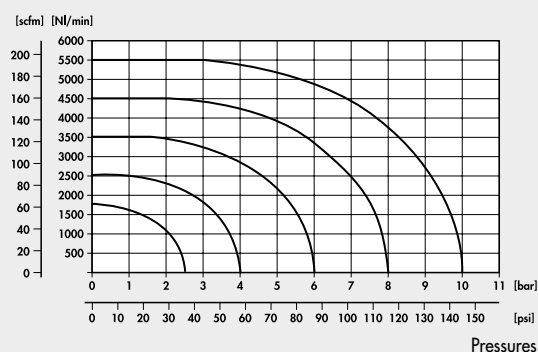
### VALVES SERIES 70 1/4"

Flow rates



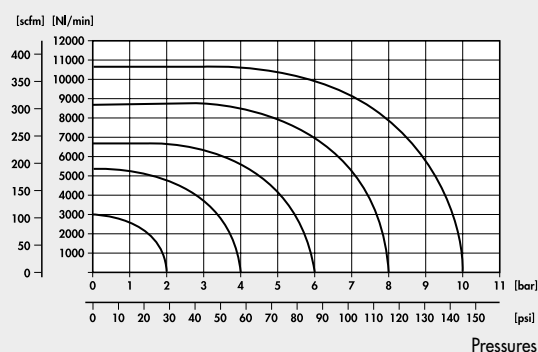
### VALVES SERIES 70 3/8"

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			
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	
Operating temperature range	°C		-40 to +60	
Nominal diameter	mm	5	7.5	13.3
Conductance C	l/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	l/min	400	750	1560
Flow rate at 6 bar ΔP 1 bar	l/min	550	1100	2150
<b>PNEUMATIC</b>				
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
<b>SOLENOID/PNEUMATIC</b>				
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

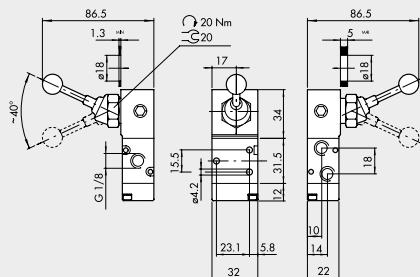
**VALVES SERIES 70 LT (LOW TEMPERATURE)**



## SYNOPTIC, SIZES AND VERSIONS

P N V FAMILY		2 DIMENSIONS	3 FUNCTION	P N OPERATORS 14	S RESETTING (12)	OO FURTHER DETAILS		L T
MAV	manual valves	2 1/8"	3 3/2	LE leva 90°	S mechanical springs	OO	no indication	LT low
PNV	pneumatic valves	3 1/4"	5 5/2	PN pneumatic	B bistable	NC	normally closed	temperature
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	

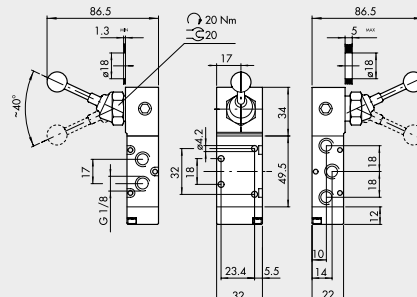
## VALVES SERIES 70 LT, HAND OPERATED (LOW TEMPERATURE)



**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]
	<b>70L1000300</b>	MAV 25 LES OO LT	210
	<b>70L1000400</b>	MAV 25 LEB OO LT	213



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