

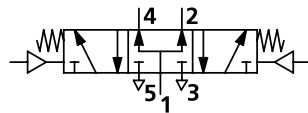
5/3-way valve

pneumatic, series 70

PLUS ||

Art. No. 106519

Type No. 516.603



Exemplary illustration

Traditional way valves of series 70 in pneumatic version. These valves have a wide range of applications as bushing valves, direct mounting on the cylinder with special adapters or as series valves with multi-base plates and individual interlinking plates (supply strips).

Technical data

Function	5/3
Operation	mid-position pressurised
Connection	G 1/2
DN	15 mm
Flow rate measurement 1	flow rate at 6 bar and Δp 0.5 bar
Flow rate 1	3200 NI/min
Flow rate measurement 2	flow rate at 6 bar and Δp 1 bar
Flow rate 2	4600 NI/min
Medium	filtered compressed air with or without lubrication. If lubricated, then continuous.
Required purity class in accordance w. ISO 8573-1	4.7.3
Operating pressure	-0.99 - 10 bar
Pilot pressure	2.5 - 10 bar
Pilot pressure at -40 to -10 °C	max. 10 bar
Operating pressure at -10 to 60 °C	max. 10 bar
Temperature range	-10 to 60 °C
Sealant	NBR

Commercial data

Customs tariff number	84818079
Country of origin	IT
eCl@ss 5.1.4	27291501
eCl@ss 9.0	27291390
UNSPSC_Code_v190501	40141603
UNSPSC_CodeDesc_v190501	Pneumatic valves

Material informations

REACH SVHC1 substance name	lead
CAS no. SVHC 1	7439-92-1
RoHS materials notice	RoHS compliant
REACH Info	contains SVHC substance

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



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, PNEUMATIC

TECHNICAL DATA		1/8"	1/4"	3/8"	1/2"
Operating pressure	bar	Vacuum to 10			
Minimum pilot pressure					
• monostable and bistable differential	bar	2.5			
• bistable	bar	1			
Operating temperature range	°C	-10 to +60			
Nominal diameter	mm	5	7.5	13.3	15
Conductance C	NI/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	NI/min	400	750	1560	3200
Flow rate at 6 bar ΔP 1 bar	NI/min	550	1100	2150	4600
TRA / TRR monostable at 6 bar	ms	6/15	7/15	5/28	16/80
TRA / TRR bistable at 6 bar	ms	7/7	7/7	13/13	25/25

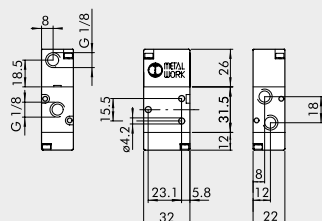
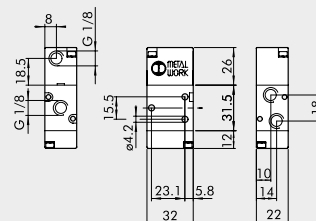

VALVES

VALVES SERIES 70, PNEUMATIC

SYNOPTIC, SIZES AND VERSIONS

PNV FAMILY	2 DIMENSIONS	3 FUNCTION	PN OPERATORS 14	S RESETTING (12)	NC FURTHER DETAILS
PNV pneumatic valves	2 1/8"	3 3/2	PN pneumatic	S mechanical springs	OO no indication
	3 1/4"	5 5/2		B bistable	NC normally closed
	C 3/8"	6 5/3		D differential	NO normally open
	4 1/2"	■ 8 2-3/2		O stable for 5/3	CC closed centres
				◆ A pneumatic/mechanical spring	OC open centres
					PC pressure centres
					▲ NC-NO normally closed - normally open

- Only available for size 1/8" and 1/4"
- ◆ On demand
- ▲ Only available for function 2-3/2

VALVES SERIES 70, PNEUMATIC, 1/8"
MONOSTABLE 3/2 NO, 1/8"

MONOSTABLE 3/2 NC, 1/8"


Symbol	Code	Abbrev.	Weight [g]
	7010010400	PNV 23 PNS NO	82

Symbol	Code	Abbrev.	Weight [g]
	7010010200	PNV 23 PNS NC	82

Technical drawings of the 1000 Series 1/2, showing three views: front, side, and top. The front view shows a rectangular block with a central hole of diameter 18.5 and a smaller hole of diameter 17. The side view shows a rectangular block with a central hole of diameter 18.5 and a smaller hole of diameter 17. The top view shows a rectangular block with a central hole of diameter 18.5 and a smaller hole of diameter 17. The drawings include dimensions for the holes and the overall size of the block.

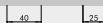
Technical drawing of a metal door assembly showing three views: front, side, and detail. The front view shows a door with a handle and lock mechanism. The side view shows the door's profile and the handle assembly. The detail view shows a close-up of the handle and lock mechanism. Dimensions are given in millimeters (mm).

Key dimensions and features:

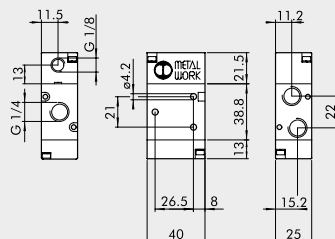
- Front View:
 - Overall height: 18.5
 - Overall width: 17
 - Handle height: 8
 - Lock height: 18.5
 - Door thickness: $G \frac{1}{8}$
- Side View:
 - Overall height: 32
 - Handle height: 16
 - Lock height: 26
 - Door thickness: $G \frac{1}{8}$
- Detail View:
 - Overall height: 26
 - Overall width: 26
 - Handle height: 10
 - Lock height: 14
 - Door thickness: $G \frac{1}{8}$

Technical drawing of the 3D-printed part showing three views: front, top, and side. The front view shows a rectangular part with a central slot and four holes. The top view shows the part's footprint with dimensions. The side view shows the profile of the part. Dimensions are given in mm.

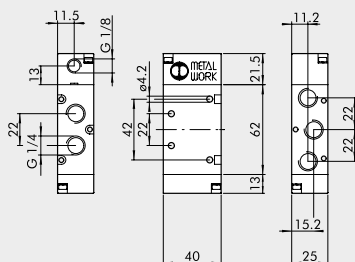
Technical drawing of a mechanical part showing three views: front, top, and side. The front view shows a rectangular block with a central slot and two circular features. The top view shows the block's footprint with dimensions. The side view shows the profile of the block. Dimensions are given in millimeters.


VALVES SERIES 70, PNEUMATIC, 1/4"
MONOSTABLE 3/2 NO, 1/4"


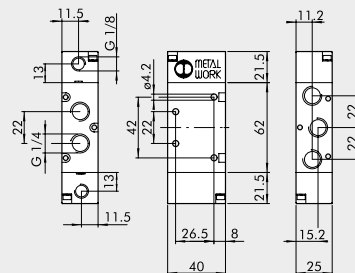
Symbol	Code	Abbrev.	Weight [g]
	7020010400	PNV 33 PNS NO	124

MONOSTABLE 3/2 NC, 1/4"


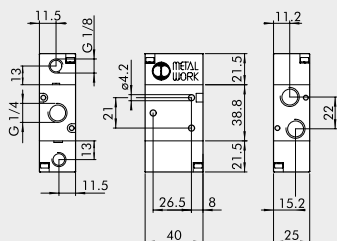
Symbol	Code	Abbrev.	Weight [g]
	7020010200	PNV 33 PNS NC	122

MONOSTABLE 5/2, 1/4"


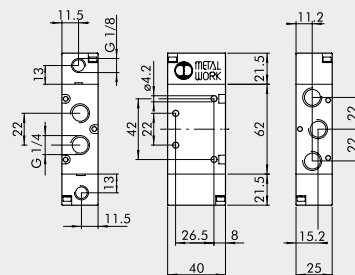
Symbol	Code	Abbrev.	Weight [g]
	7020011100	PNV 35 PNS OO	174

BISTABLE 5/2, 1/4"


Symbol	Code	Abbrev.	Weight [g]
	7020011200	PNV 35 PNB OO	174
	7020011300	PNV 35 PND OO	198

BISTABLE 3/2, 1/4"


Symbol	Code	Abbrev.	Weight [g]
	7020010100	PNV 33 PNB OO	134

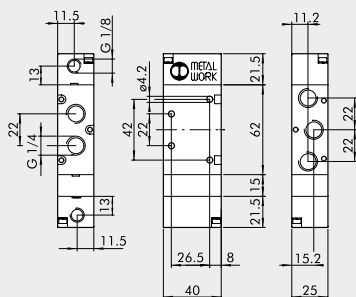
DOUBLE 3/2, 1/4"


Symbol	Code	Abbrev.	Weight [g]
	7020013100	PNV 38 PNS NC	223
	7020013200	PNV 38 PNS NO	223
	7020013300	PNV 38 PNS NC-NO	223

VALVES

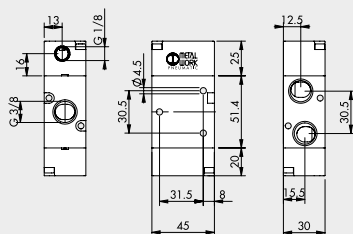
VALVES SERIES 70, PNEUMATIC

NOTES

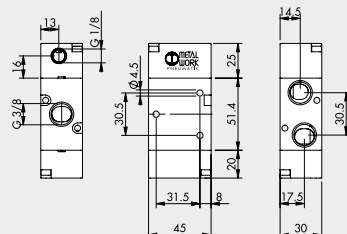


Symbol	Code	Abbrev.	Weight [g]
	7020012100	PNV 36 PINS CC	124
	7020012200	PNV 36 PINS OC	124
	7020012300	PNV 36 PINS PC	124

MONOSTABLE 3/2 NC, 3/8"

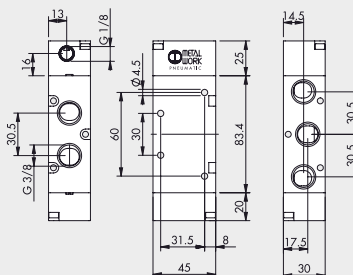


Symbol	Code	Abbrev.	Weight [g]
	7040010400	PNV C3 PNS NO	223

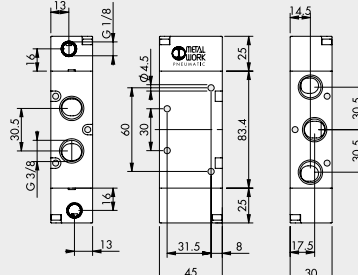


Symbol	Code	Abbrev.	Weight [g]
	7040010200	PNV C3 PNS NC	223

BISTABLE 5/2, 3/8"



Symbol	Code	Abbrev.	Weight [g]
	7040011100	PNV C5 PNS OO	329



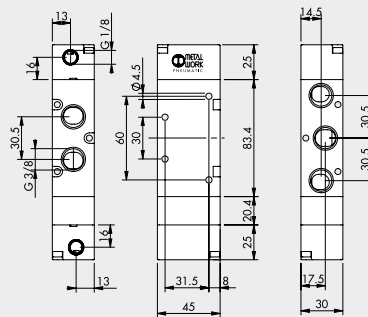
Symbol	Code	Abbrev.	Weight [g]
	7040011200	PNV C5 PNB OO	324
	7040011300	PNV C5 PND OO	360

BISTABLE 3/2, 3/8"



Symbol	Code	Abbrev.	Weight [g]
	7040010100	PNV C3 PNB OO	230

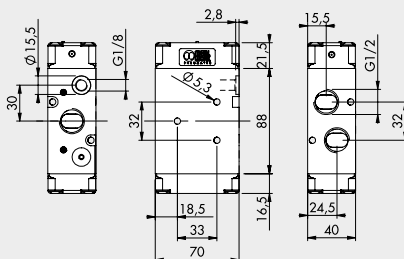
MONOSTABLE 5/3, 3/8"



Symbol	Code	Abbrev.	Weight [g]
	7040012100	PNV C6 PNS CC	411
	7040012200	PNV C6 PNS OC	409
	7040012300	PNV C6 PNS PC	409

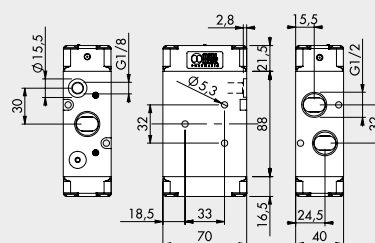
VALVES SERIES 70, PNEUMATIC, 1/2"

MONOSTABLE 3/2 NO, 1/2"



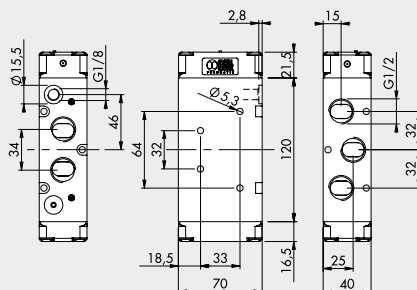
Symbol	Code	Abbrev.	Weight [g]
	7030010400	PNV 43 PNS NO	640

MONOSTABLE 3/2 NC, 1/2"



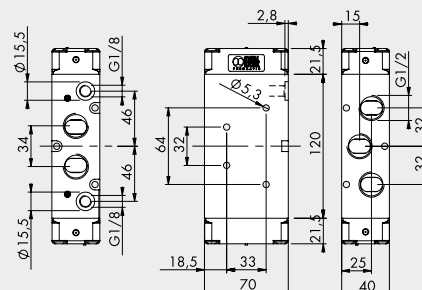
Symbol	Code	Abbrev.	Weight [g]
	7030010200	PNV 43 PNS NC	640

MONOSTABLE 5/2, 1/2"



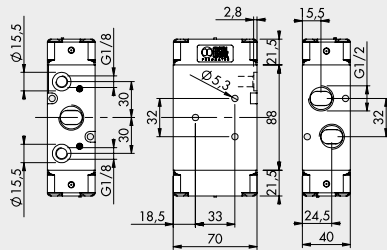
Symbol	Code	Abbrev.	Weight [g]
	7030011100	PNV 45 PNS OO	812

BISTABLE 5/2, 1/2"

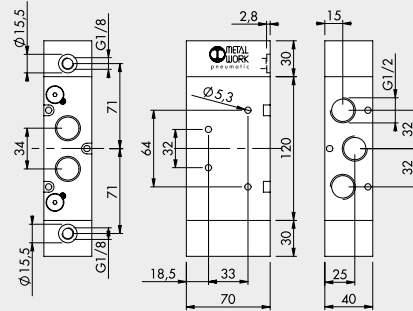


Symbol	Code	Abbrev.	Weight [g]
	7030011200	PNV 45 PNB OO	816
	7030011300	PNV 45 PND OO	828

MONOSTABLE 5/3, 1/2"



Symbol	Code	Abbrev.	Weight [g]
	7030010100	PNV 4.3 PNB OO	650



Symbol	Code	Abbrev.	Weight [g]
	7030012100	PNV 46 PNS CC	1200
	7030012200	PNV 46 PNS OC	1194
	7030012300	PNV 46 PNS PC	1196

NOTES