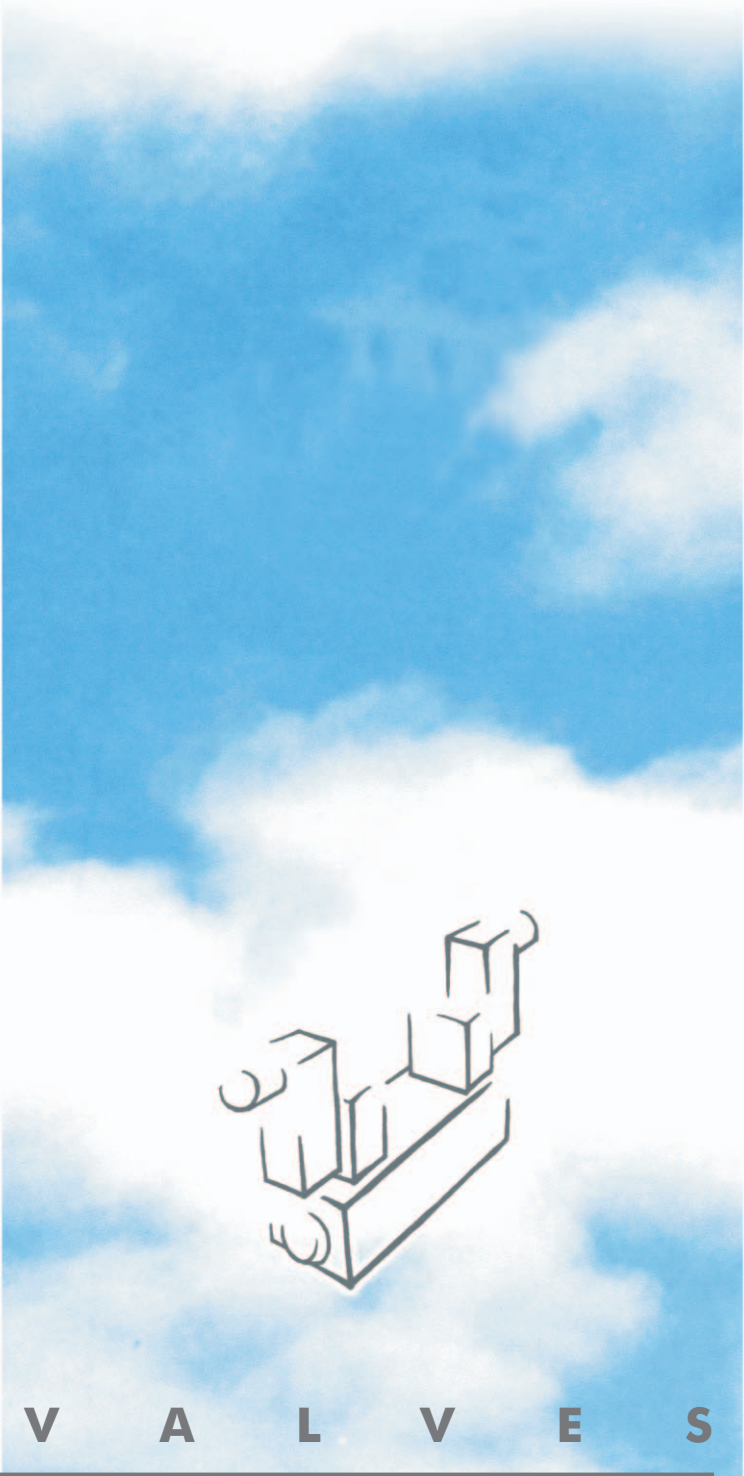


METAL[®] WORK

P N E U M A T I C



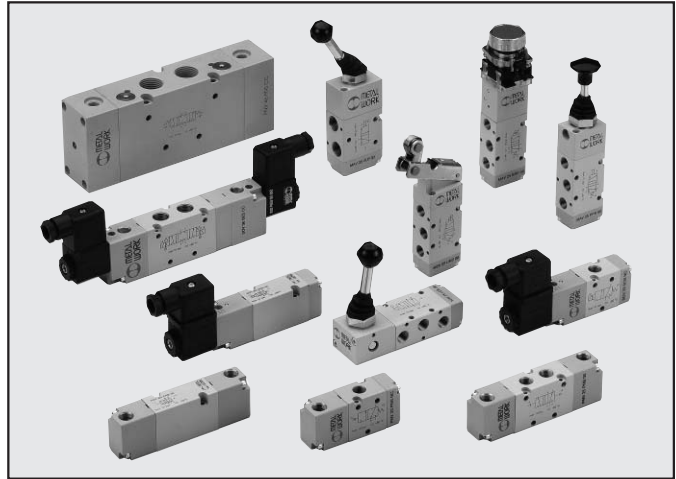
V A L V E S



VALVES

SERIES 70 VALVES with NPT ports

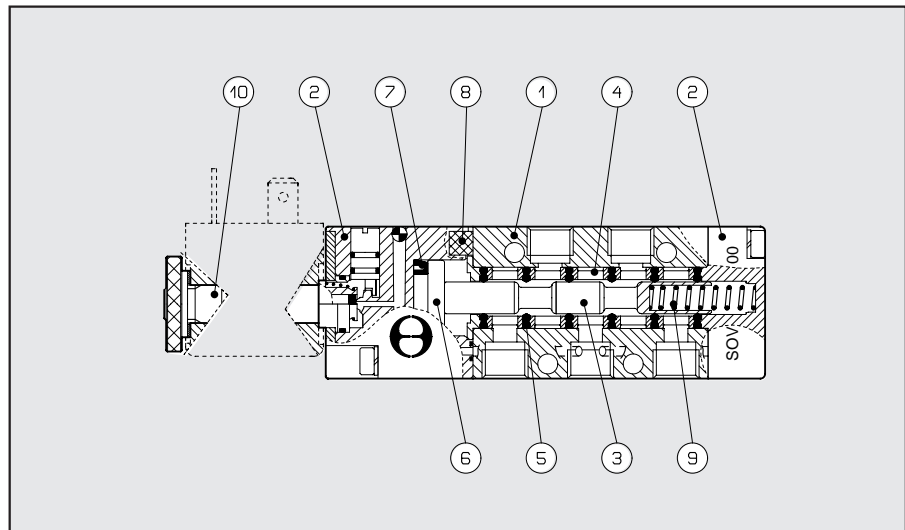
This is Metal Work's full range. Available in three sizes: 1/8", 1/4", 1/2". Three versions: 3/2 5/2 5/3, four different types of actuation (mechanical, manual, pneumatic and electric). Series 70 valves can be used for a wide range of applications as they can be mounted in line, on wall, on the cylinder using a special bracket, or in series on a multiple or manifold base.

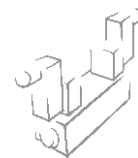


TECHNICAL DATA	1/8"NPT	1/4"NPT	1/2"NPT
Fluid	Filtered air without lubrication; lubrication, if used, must be continuous		
Thread on the valve ports	1/8 NPT	1/4 NPT	1/2 NPT
Operating pressure:			
• monostable		36.3 ÷ 145 psi	
• bistable		14.5 ÷ 145 psi	
• asserved		vacuum ÷ 145 psi	
Minimum pilot pressure		36.3 psi	
Operating temperature range		14°F ÷ 140°F	
Nominal diameter	0.20 in	0.30 in	0.59 in
Conductance C	0.30 scfm / psi	0.65 scfm / psi	2.37 scfm / psi
Critical ratio b	0.32 psi/psi	0.27 psi/psi	0.43 psi/psi
Flow rate at 87 psi ΔP 7 psi	14 scfm	26.5 scfm	113 scfm
Flow rate at 87 psi ΔP 15 psi	19.5 scfm Cv 0.55	39 scfm Cv 1.1	163 scfm Cv 4.6
Installation	In any position (vertical assembly is not recommended for bistable valves subjected to vibration)		
Recommended lubricant	ISO and UNI FD 22		
Maximum coil nut torque	0.74 lbf ft		

COMPONENTS

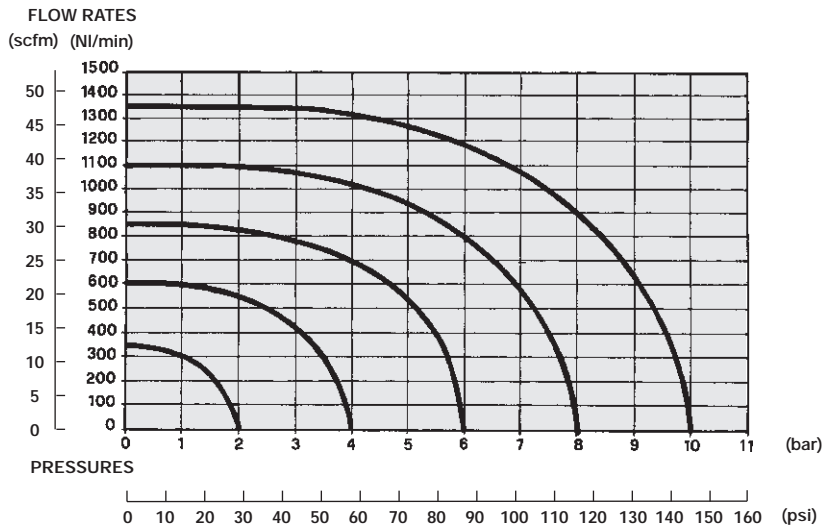
- ① VALVE BODY: Aluminium
- ② CONTROL/END CAP: HOSTAFORM®
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: Nitrile rubber NBR
- ⑥ PISTONS: HOSTAFORM®
- ⑦ PISTON GASKET: Nitrile rubber NBR
- ⑧ FILTER: sintered bronze
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: Brass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



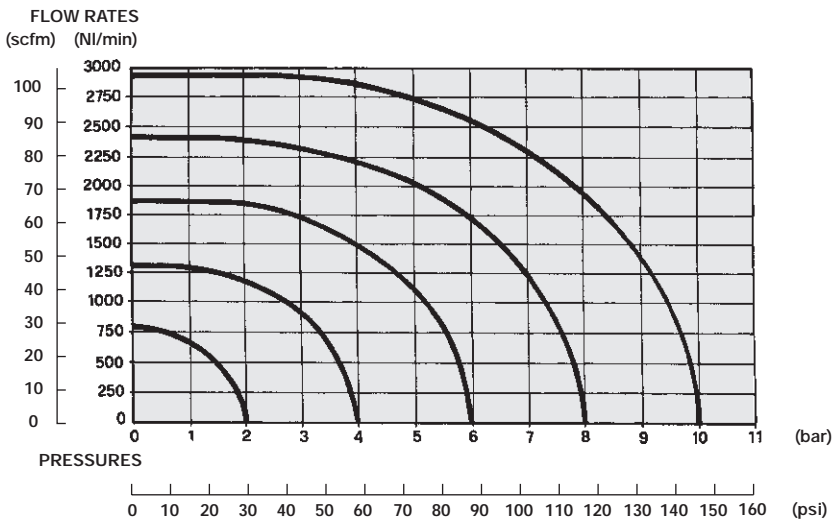


FLOW CHARTS

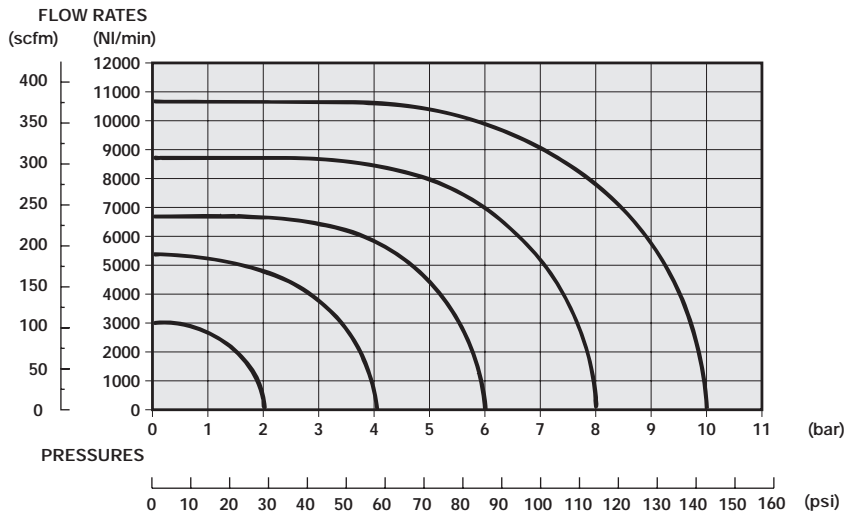
VALVES SERIES 70, 1/8"



VALVES SERIES 70, 1/4"



VALVES SERIES 70, 1/2"



SERIES 70 VALVES with NPT ports, HAND OPERATED

TECHNICAL DATA	1/8"NPT	1/4"NPT	1/2"NPT
Operating pressure range:	Vacuum-145 psi		
• version with direct control	36.3÷145 psi		
• Pilot-assisted version	14 to 140°F		
Operating temperature range	14 to 140°F		
Nominal diameter	0.20 in	0.30 in	0.59 in
Conductance C [scfm / psi]	0.30	0.65	2.37
Critical ratio b	0.32 psi/psi	0.27 psi/psi	0.43 psi/psi
Flow rate at 87 psi ΔP 7 psi	14 scfm	26.5 scfm	113 scfm
Flow rate at 87 psi ΔP 15 psi	19.5 scfm	39 scfm	163 scfm
	Cv 0.55	Cv 1.1	Cv 4.6

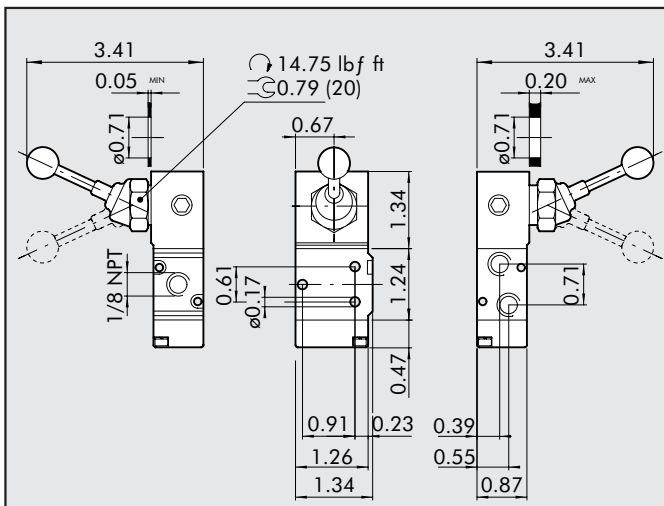


KEY TO CODES

M	A	V	2	3	P	P	S	N	C	U				
FAMILY		DIMENSIONS		FUNCTION		OPERATION 14		REPEATED OPERATION 12		FURTHER DETAILS		THREAD		
MAV	manual	valves	2	1/8"	3	3/2	PP	drawer	A	pneumatic/ mechanical spring*	NC	normally closed	U	NPT
			3	1/4"	5	5/2	VL	axial lever	S	mech. spring	NO	normally open		
			4	1/2"	6	5/3	LE	90° lever	B	bistable	OO	no indication		
					8	2x3/2	BRE	arranged for manual panel actuators	D	differential	CC	closed centres		
									O	stable for 5/3	OC	open centres		
										*on demand	PC	pressure centres		

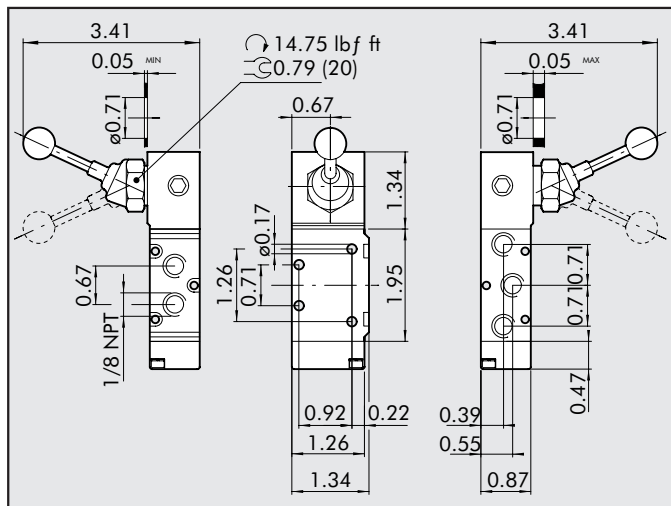
SERIES 70 VALVES, HAND OPERATED, 1/8"NPT

90° LEVER 3/2 1/8"NPT



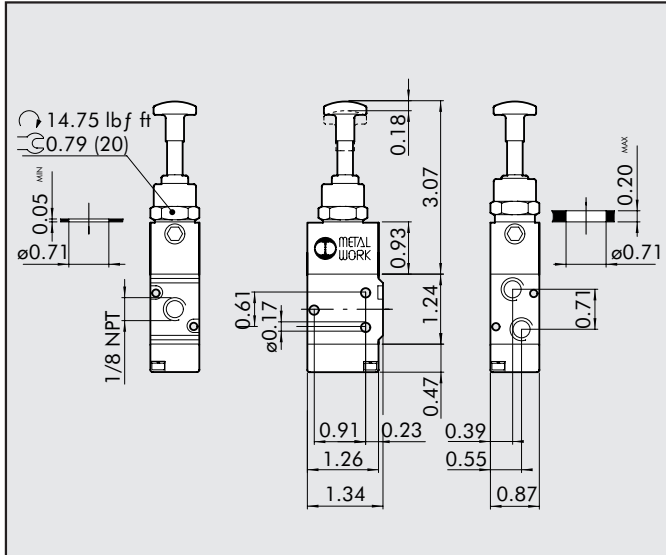
Symbol	Abbrev.	Code	Weight [lb]
	MAV 23 LES NC U	7010000100U	0.370
	MAV 23 LEB OO U	7010000200U	0.377

90° LEVER 3/2 1/8"NPT



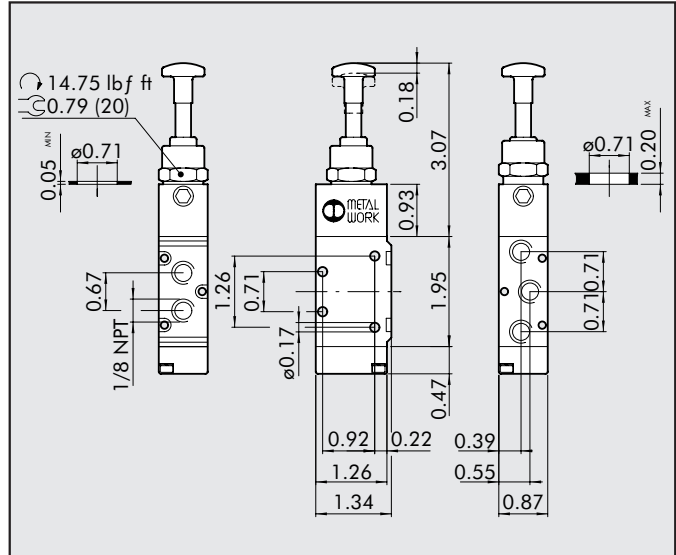
Symbol	Abbrev.	Code	Weight [lb]
	MAV 25 LES OO U	7010000300U	0.427
	MAV 25 LEB OO U	7010000400U	0.432

DRAWER 3/2, 1/8"NPT



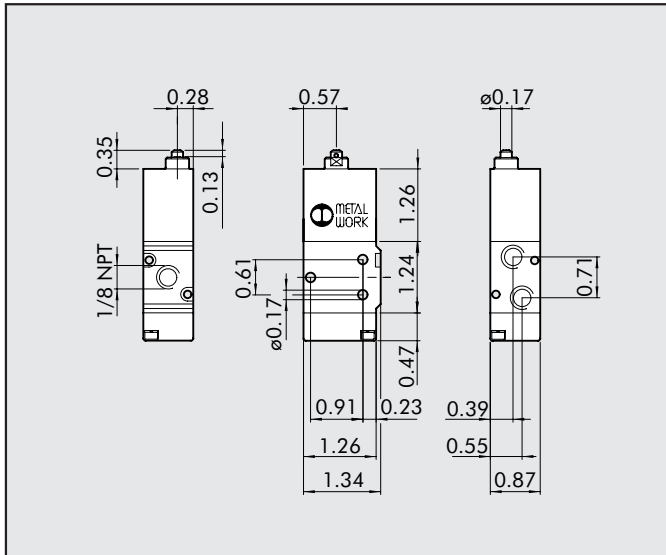
Symbol	Abbrev.	Code	Weight [lb]
	MAV 23 PPB OO U	7010001300U	0.296
	MAV 23 PPS NC U	7010001200U	0.296

DRAWER 5/2, 1/8"NPT



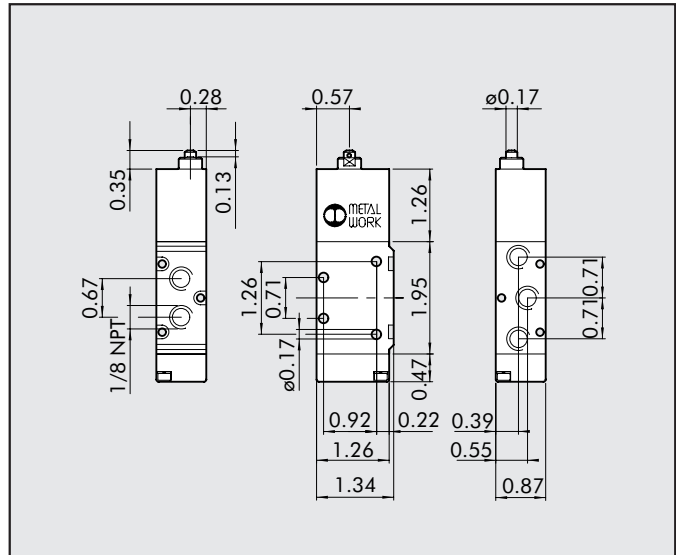
Symbol	Abbrev.	Code	Weight [lb]
	MAV 25 PPB OO U	7010001600U	0.353
	MAV 25 PPS OO U	7010001500U	0.353

PILOT-ASSISTED PLUNGER 3/2 1/8"NPT FOR PANEL ACTUATORS

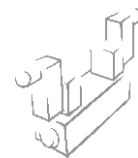


Symbol	Abbrev.	Code	Weight [lb]
	MAV 23 BRE NC U	7010001800U	0.273

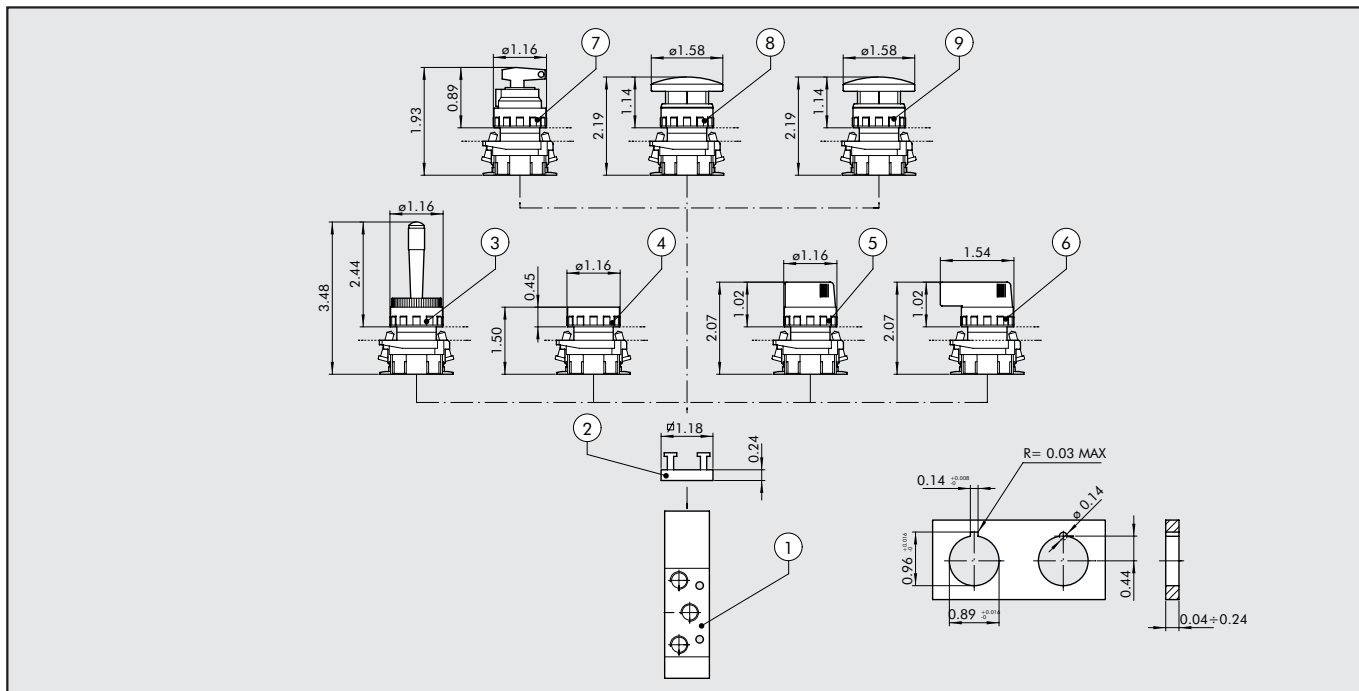
PILOT-ASSISTED PLUNGER 5/2 1/8"NPT FOR PANEL ACTUATORS



Symbol	Abbrev.	Code	Weight [lb]
	MAV 25 BRE OO U	7010001900U	0.331



ASSEMBLY DIAGRAM FOR PILOT-ASSISTED HAND-OPERATED VALVES SERIES 70 WITH PANEL ACTUATORS

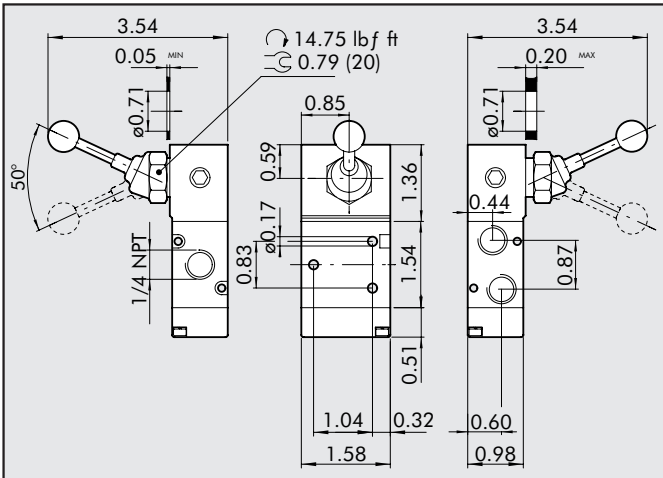


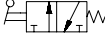

ORDERING CODES

Symbol	Reference	Description	Abbrev.	Code	Weight [lb]
	①	Pilot-assisted plunger 3/2, 1/8"NPT	MAV 23 BRE NC U	7010001800U	0.273
	①	Pilot-assisted plunger 5/2, 1/8"NPT	MAV 25 BRE OO U	7010001900U	0.331
	②	Added base for push-button valve VME 1-000	VME1-000	0351000050	0.015
	③	Monostable rocker lever	VRM-054 R	W0351000015	0.150
	④	Monostable guarded button with red and black disk Bistable guarded button without disk	VRM-010 RN VRM-030	W0351000011 W0351000012	0.128 0.132
	⑤	Switch - short lever - 2 Positions monostable	VRM-350 N	W0351000030	0.172
	⑤	Switch - short lever - 2 Positions bistable	VRM-300 N	W0351000031	0.172
	⑤	Switch - short lever - 3 Positions monostable	VRM-383 N	W0351000032	0.172
	⑤	Switch - short lever - 3 Positions bistable	VRM-313 N	W0351000033	0.172
	⑥	Switch - long lever - 2 Positions monostable	VRM-450 N	W0351000034	0.110
	⑥	Switch - long lever - 2 Positions bistable	VRM-400 N	W0351000035	0.172
	⑥	Switch - long lever - 3 Positions monostable	VRM-483 N	W0351000036	0.172
	⑥	Switch - long lever - 3 Positions bistable	VRM-413 N	W0351000037	0.181
	⑦	Pull-out, bistable key	VRM-201 N	W0351000016	0.229
	⑧	Monostable axial mushroom	VRM-050 R	W0351000013	0.146
	⑨	Mushroom with emergency block	VRM-065 R	W0351000014	0.132
		Adapter for bore Ø 30 G2326	G2326	W0351000050	0.031
		Red disk for VRM-030	P 24728 R	W0351000051	0.004
		Black disk for VRM-030	P 24728 N	W0351000053	0.004
		Green disk for VRM-030	P 24728 V	W0351000052	0.004
		Green disk for VRM-010	P 22804 V	W0351000054	0.004

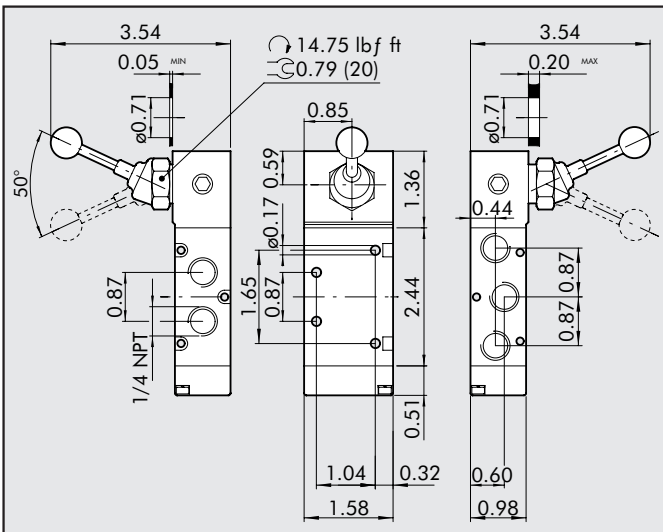
SERIES 70 VALVES, HAND-OPERATED, 1/4"NPT



90° LEVER 3/2, 1/4"NPT



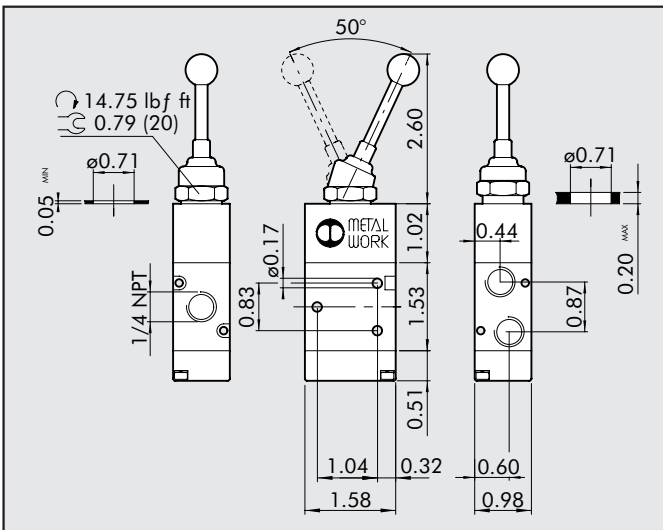
Symbol	Abbrev.	Code	Weight [lb]
	MAV 33 LES NC U	7020000100U	0.538
	MAV 33 LEB OO U	7020000200U	0.538


90° LEVER 5/2, 1/4"NPT



Symbol	Abbrev.	Code	Weight [lb]
	MAV 35 LES OO U	7020000300U	0.640
	MAV 35 LEB OO U	7020000400U	0.640

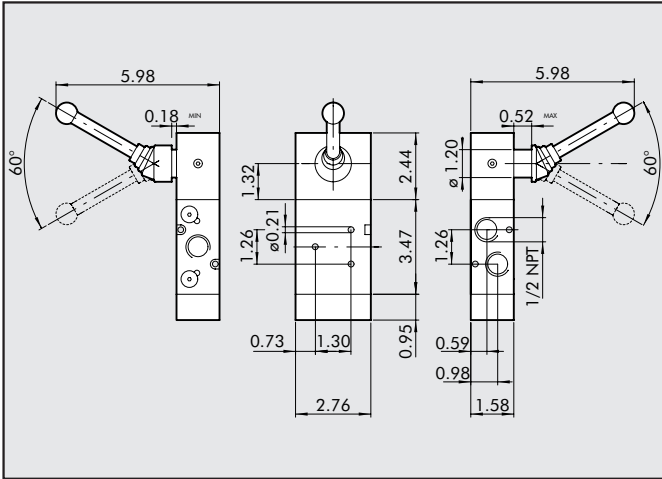
FRONT LEVER 3/2, 1/4"NPT

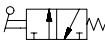



Symbol	Abbrev.	Code	Weight [lb]
	MAV 33 VLB OO U	7020001400U	0.428

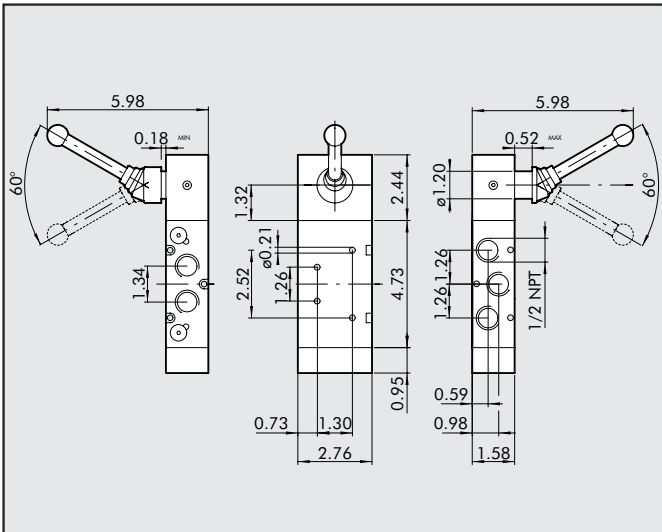
SERIES 70 VALVES, HAND OPERATED, 1/2"NPT



90° LEVER 3/2, 1/2"NPT



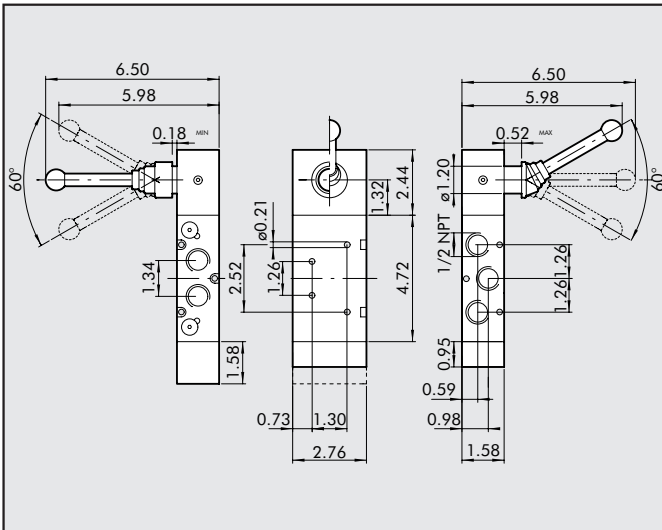
Symbol	Abbrev.	Code	Weight [lb]
	MAV 43 LES NC U	7030000100U	3.182
	MAV 43 LEB OO U	7030000200U	3.164

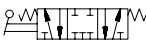



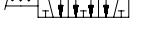
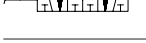
90° LEVER 5/2, 1/2"NPT



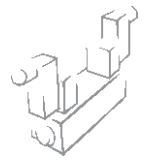
Symbol	Abbrev.	Code	Weight [lb]
	MAV 45 LES OO U	7030000300U	3.502
	MAV 45 LEB OO U	7030000400U	3.594

90° LEVER 5/3, 1/2"NPT



Symbol	Abbrev.	Code	Weight [lb]
	MAV 46 LES CC U	7030001000U	3.991
	MAV 46 LES OC U	7030000900U	3.969
	MAV 46 LES PC U	7030001100U	3.969
	MAV 46 LEO CC U	7030000500U	3.561
	MAV 46 LEO OC U	7030000600U	3.539
	MAV 46 LEO PC U	7030000700U	3.539

SERIES 70 VALVES, MECHANICALLY OPERATED, 1/8" NPT



TECHNICAL DATA

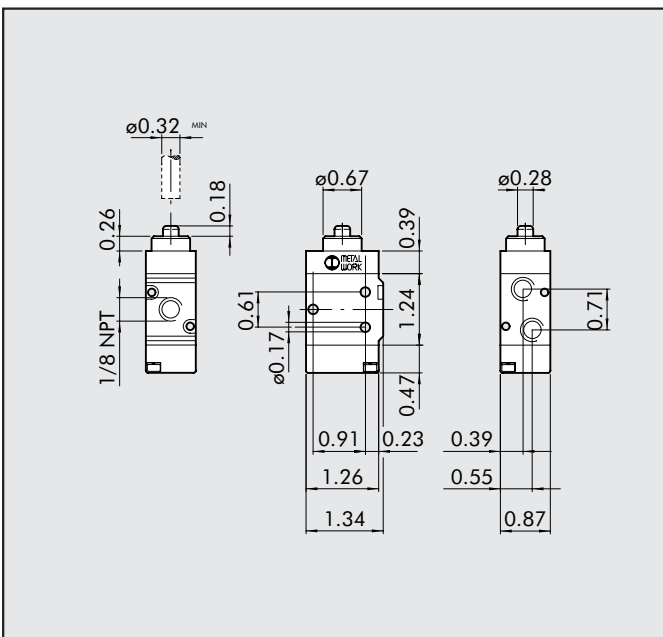
Thread at valve ports	1/8" NPT
Operation force at 87 psi:	
• Version with direct control	11.2 lbf
• Pilot-assisted Version	1.35 lbf
Operating pressure:	
• Version with direct control	Vacuum to 145 psi
• Pilot-assisted version	36.3 ÷ 145 psi
Operating temperature range	14°F to 140°F
Nominal diameter	0.20 in
Conductance C	0.30 scfm/psi
Critical ratio b	0.32 psi/psi
Flow rate at 87 psi ΔP 7 psi	14 scfm
Flow rate at 87 ΔP 15 psi	19.5 scfm Cv 5.5



KEY TO CODES AND ORDERING CODES

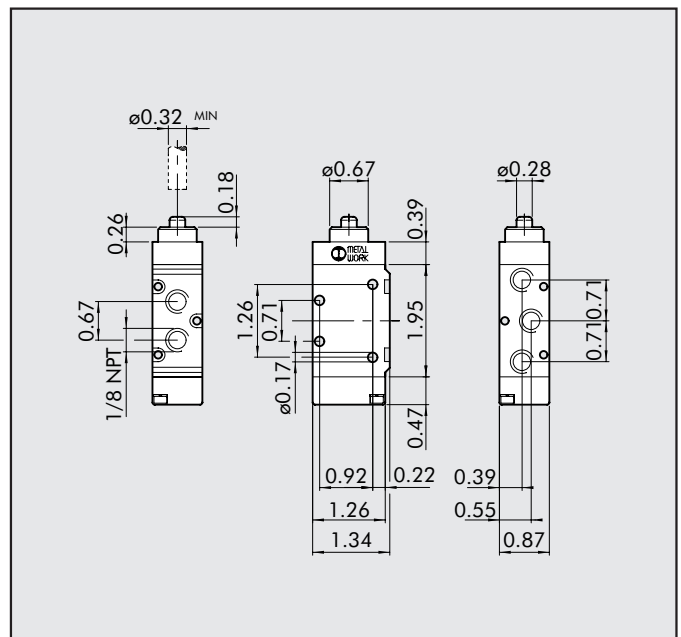
M	E	V	2	3	T	A	S	N	C	U			
FAMILY		PORT		FUNCTION		OPERATORS 14		RESETTING 12		FURTHER DETAILS		THREAD	
MEV	Mechanically-operated valves	2	1/8"	3	3/2	TA	Plunger	S	Mechanical spring	NC	normally closed	U	NPT
				5	5/2	BR	Bidirectional roller	A	pneumatic/mechanical spring*	OO	5/2		
						UR	unidirectional roller						
						TS	sensitive plunger						
						RS	sensitive roller						
						AS	sensitive aerial						

PLUNGER 3/2, 1/8" NPT



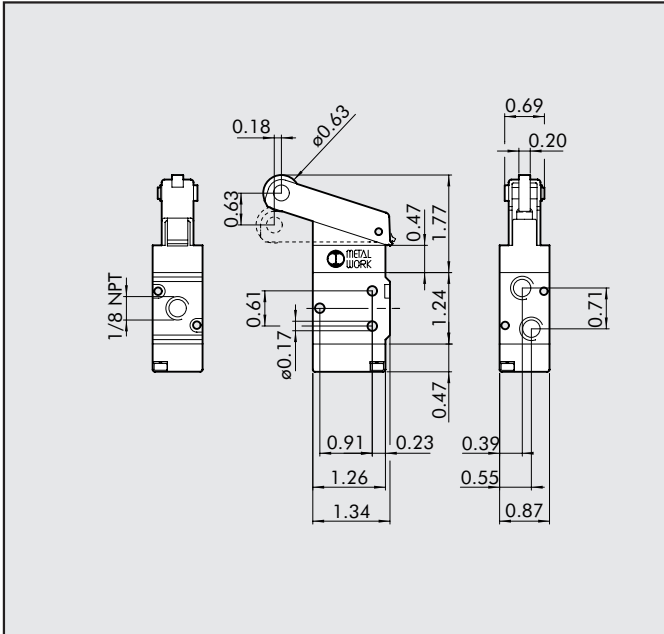
Symbol	Abbrev.	Code	Weight [lb]
	MEV 23 TAS NC U	7001000100U	0.194

PLUNGER 5/2, 1/8" NPT



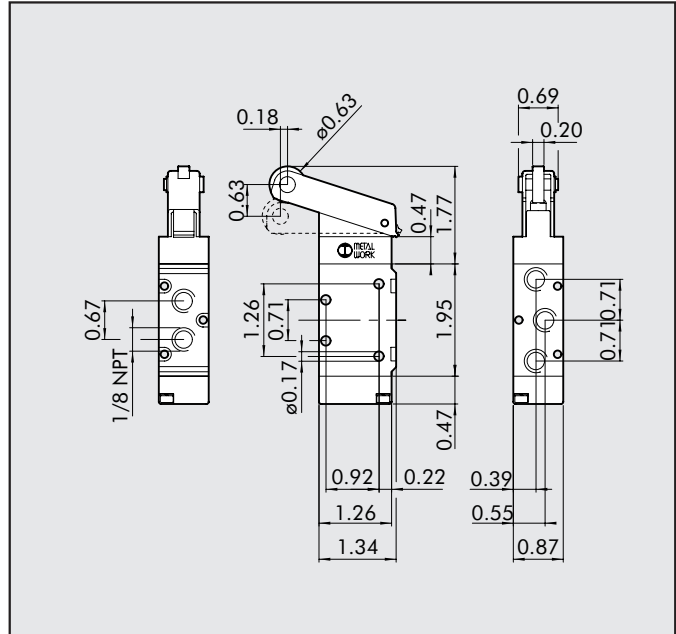
Symbol	Abbrev.	Code	Weight [lb]
	MEV 25 TAS OO U	7001000110U	0.251

ROLLER LEVER 3/2, 1/8"NPT



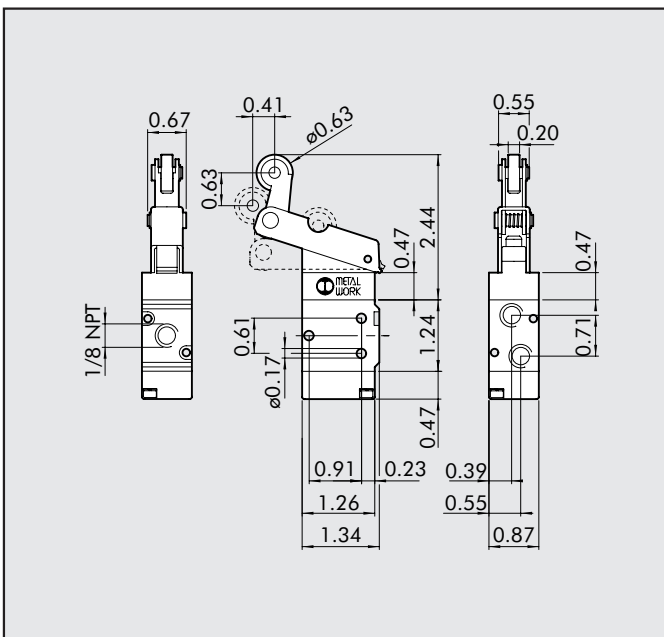
Symbol	Abbrev.	Code	Weight [lb]
	MEV 23 BRS NC U	7001000500U	0.287

ROLLER LEVER 5/2, 1/8"NPT



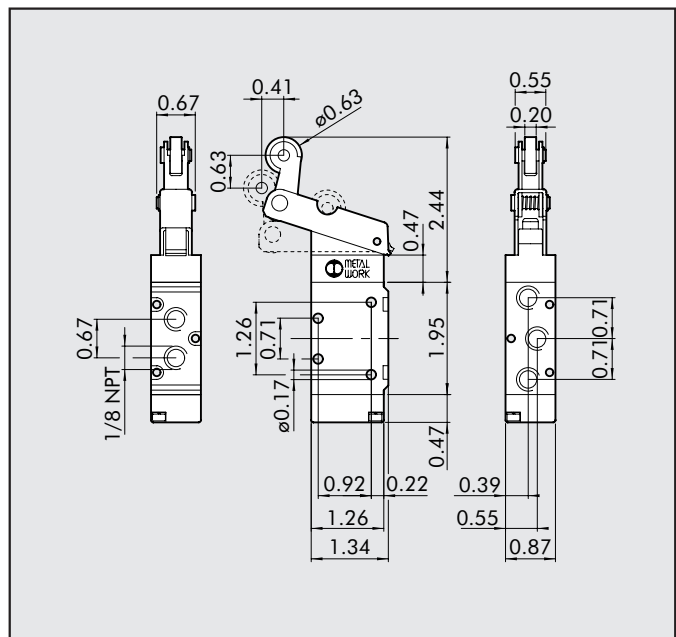
Symbol	Abbrev.	Code	Weight [lb]
	MEV 25 BRS OO U	7001000510U	0.344

UNIDIRECTIONAL ROLLER 3/2, 1/8"NPT LEVERS

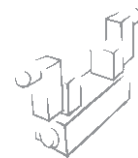


Symbol	Abbrev.	Code	Weight [lb]
	MEV 23 URS NC U	7001000600U	0.300

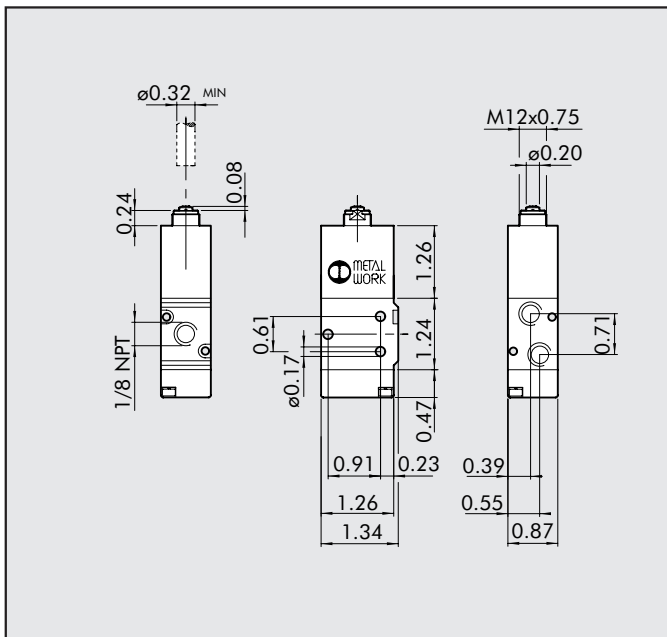
UNIDIRECTIONAL ROLLER 5/2, 1/8"NPT LEVERS



Symbol	Abbrev.	Code	Weight [lb]
	MEV 25 URS OO U	7001000610U	0.357

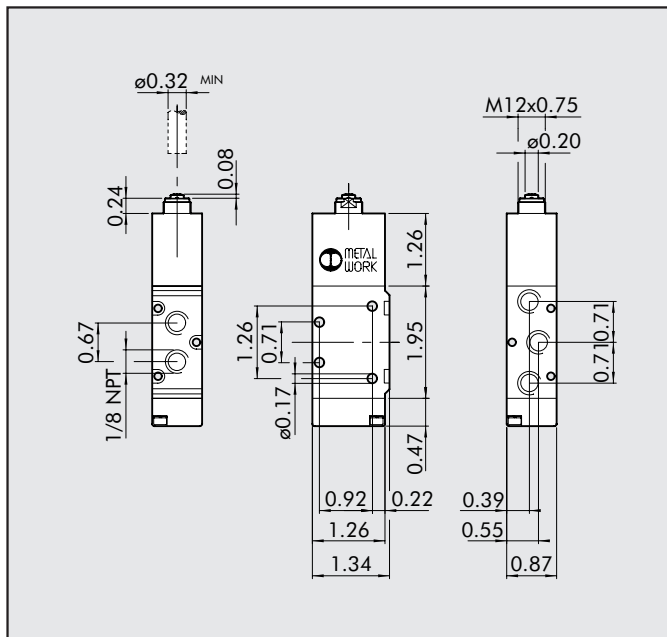


PILOT-ASSISTED PLUNGER 3/2 NC, 1/8"NPT



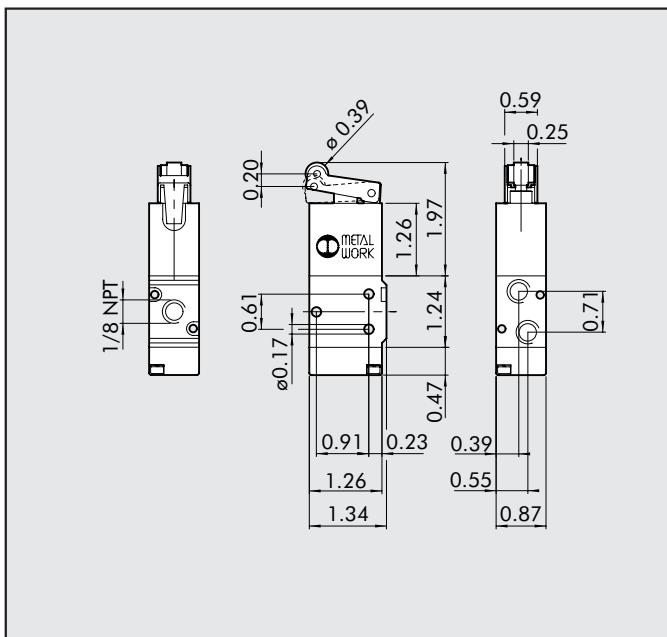
Symbol	Abbrev.	Code	Weight [lb]
	MEV 23 TSS NC U	7001000200U	0.278

PILOT-ASSISTED PLUNGER 5/2, 1/8"NPT



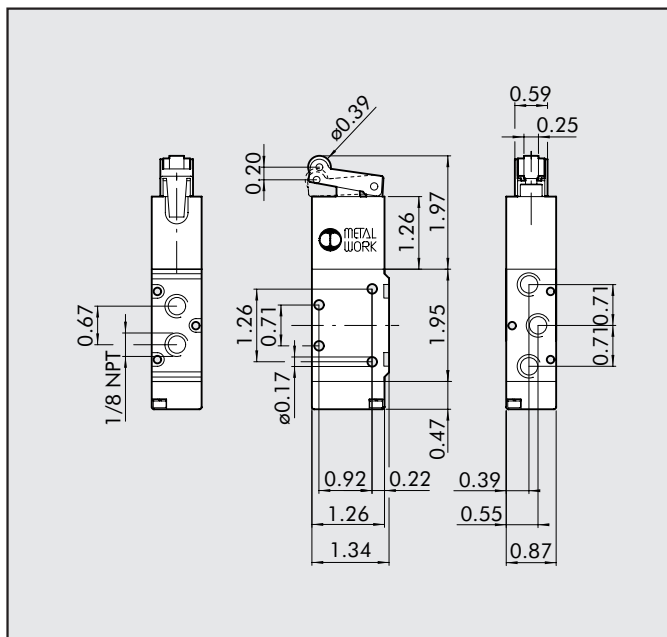
Symbol	Abbrev.	Code	Weight [lb]
	MEV 25 TSS OO U	7001000210U	0.335

PILOT-ASSISTED ROLLER LEVER 3/2 NC, 1/8"NPT



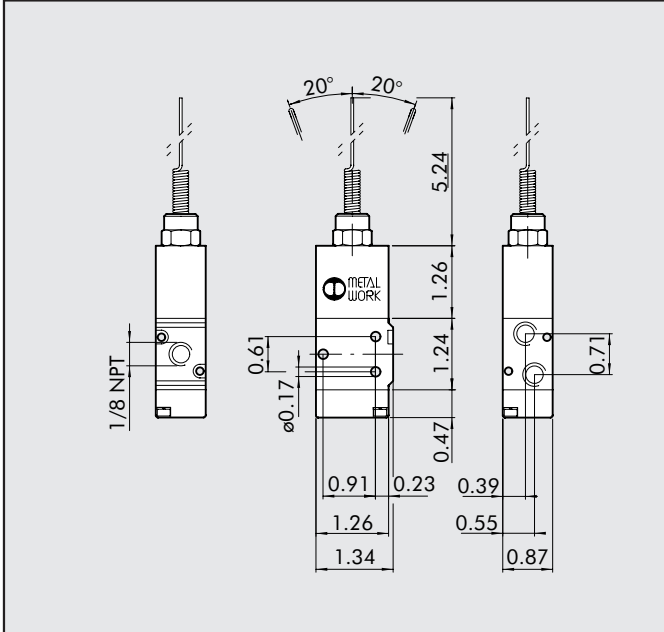
Symbol	Abbrev.	Code	Weight [lb]
	MEV 23 RSS NC U	7001000400U	0.304

PILOT-ASSISTED ROLLER LEVER 5/2, 1/8"NPT



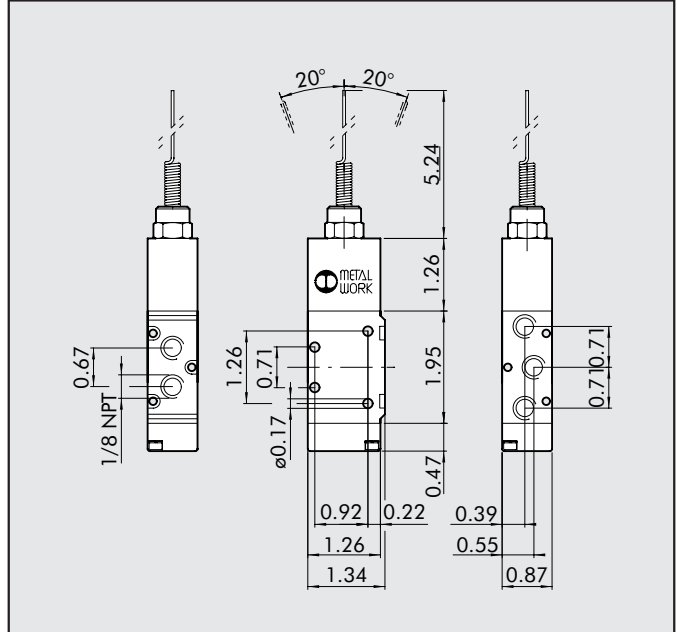
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	MEV 25 RSS OO U	7001000410U	0.362

PILOT-ASSISTED AERIAL 3/2 NC, 1/8"NPT



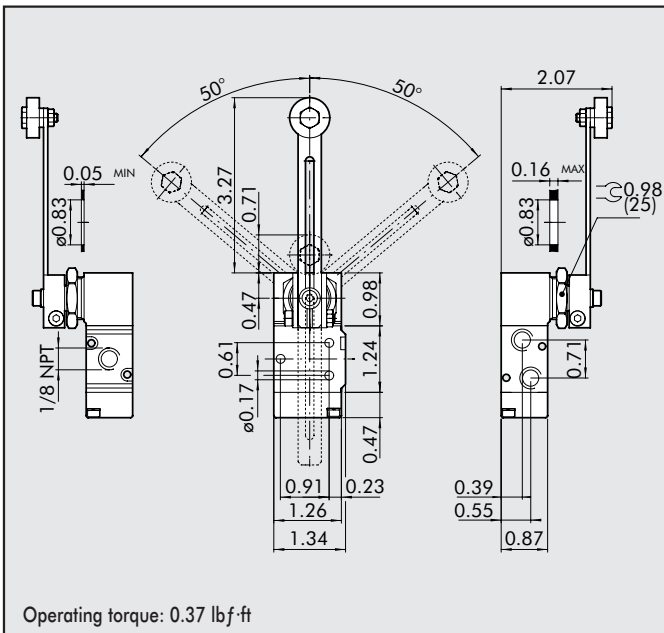
Symbol	Abbrev.	Code	Weight [lb]
	MEV 23 ASS NC U	7001000700U	0.278

PILOT-ASSISTED AERIAL 5/2 NC, 1/8"NPT



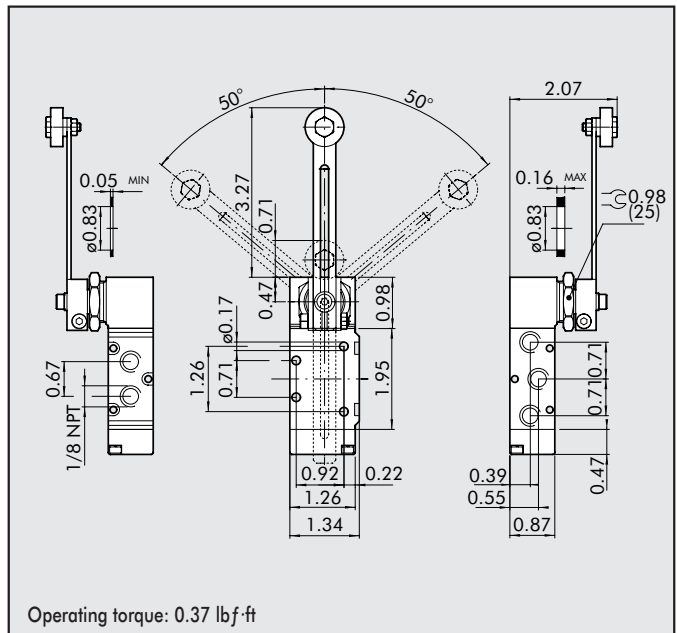
Symbol	Abbrev.	Code	Weight [lb]
	MEV 25 ASS OO U	7001000710U	0.370

ROLLER-LEVER 3/2 1/8"NPT



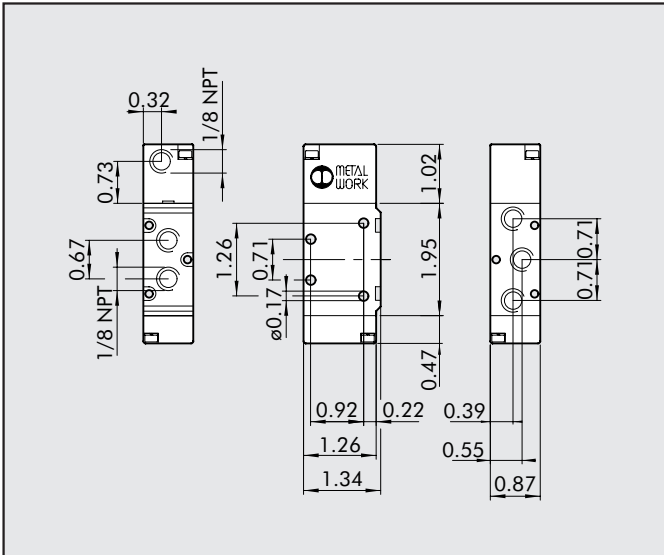
Symbol	Abbrev.	Code	Weight [lb]
	MEV 23 LLS NC U	7001000900U	0.417

ROLLER-LEVER 5/2 1/8"NPT



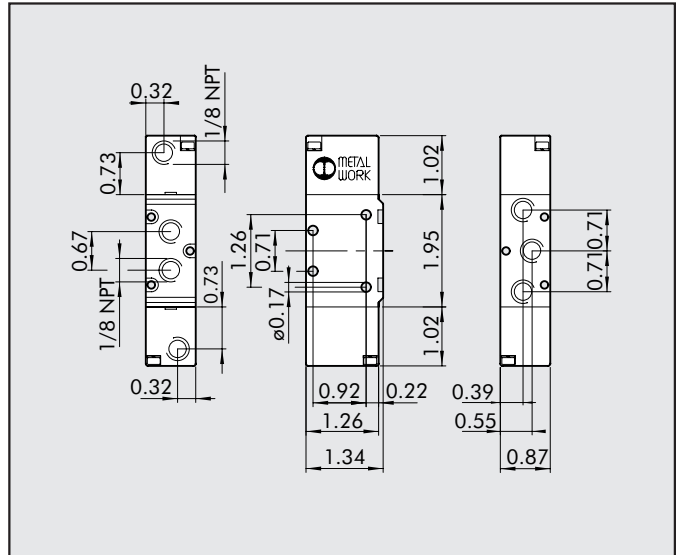
Symbol	Abbrev.	Code	Weight [lb]
	MEV 25 LLS OO U	7001000910U	0.476

MONOSTABLE 5/2, 1/8"NPT



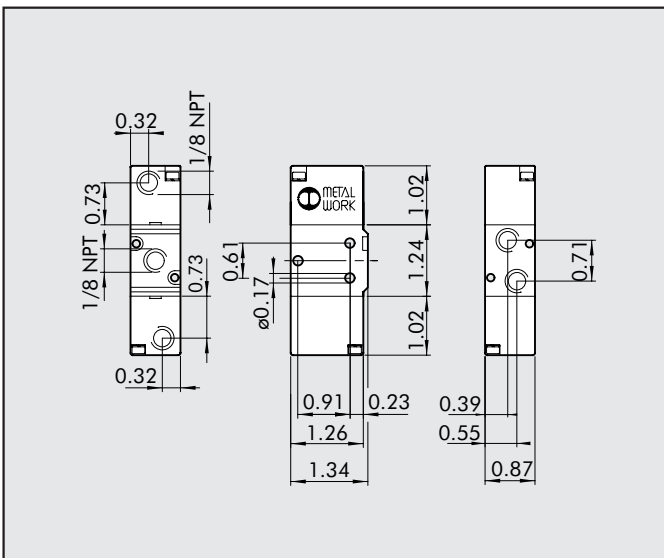
Symbol	Abbrev.	Code	Weight [lb]
	PNV 25 PNS OO U	7010011100U	0.238

BISTABLE 5/2, 1/8"NPT



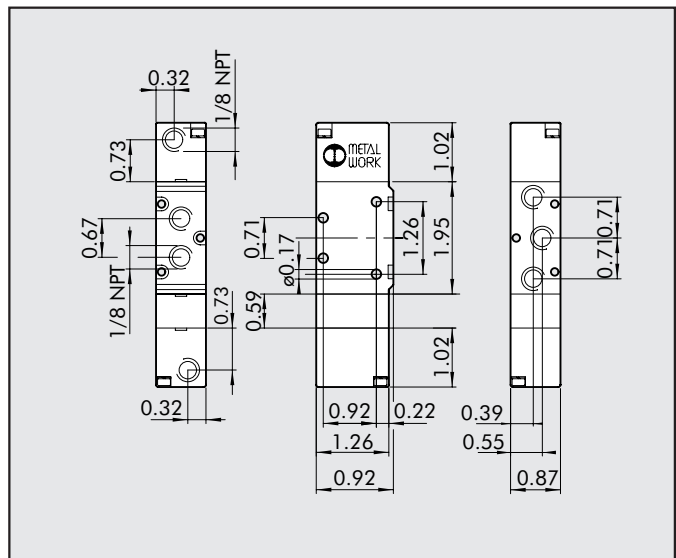
Symbol	Abbrev.	Code	Weight [lb]
	PNV 25 PNB OO U	7010011200U	0.269
	PNV 25 PND OO U	7010011300U	0.282

BISTABLE 3/2, 1/8"NPT

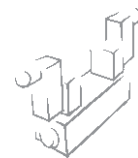


Symbol	Abbrev.	Code	Weight [lb]
	PNV 23 PNB OO U	7010010100U	0.212

MONOSTABLE 5/3, 1/8"NPT

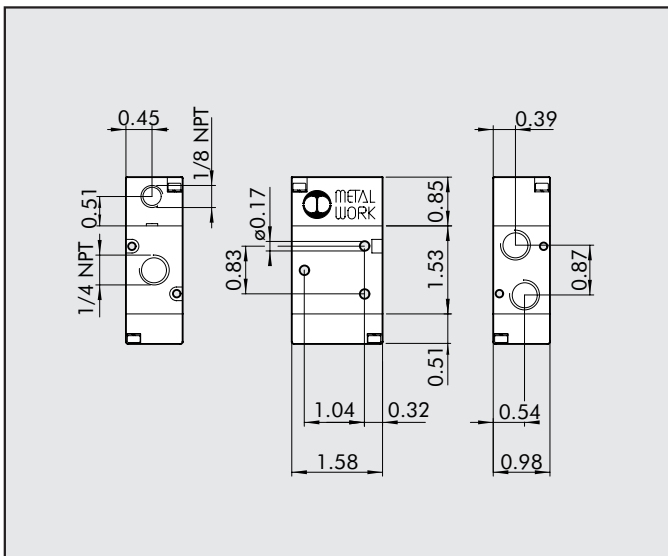


Symbol	Abbrev.	Code	Weight [lb]
	PNV 26 PNS CC U	7010012100U	0.331
	PNV 26 PNS OC U	7010012200U	0.331
	PNV 26 PNS PC U	7010012300U	0.331



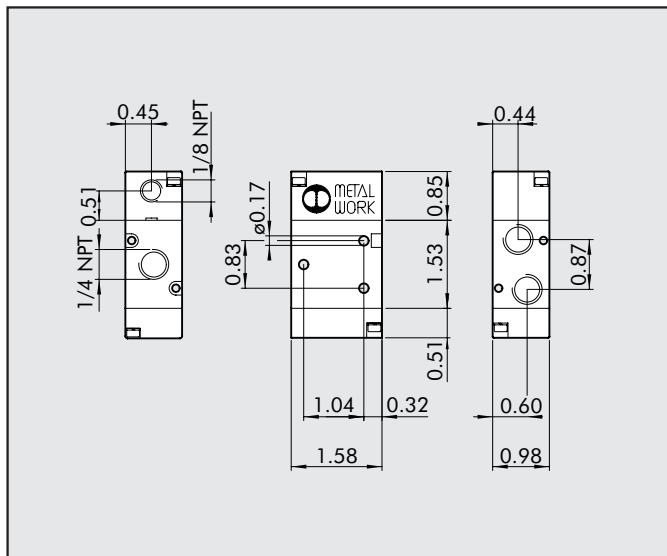
SERIES 70 VALVES, PNEUMATIC, 1/4"NPT

MONOSTABLE 3/2 NO, 1/4"NPT



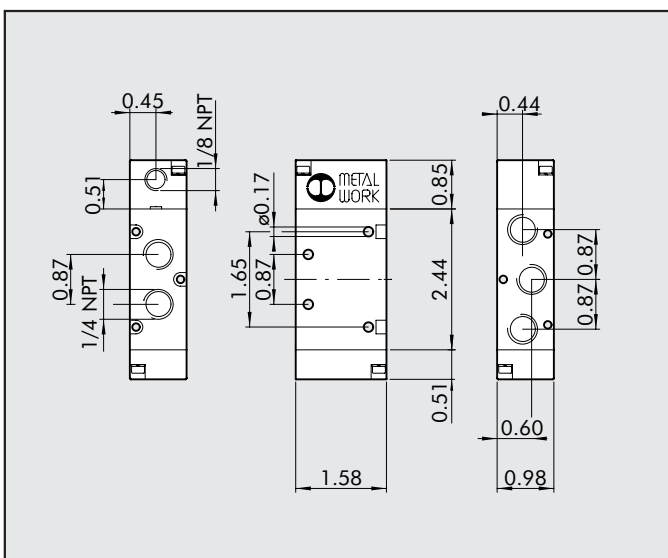
Symbol	Abbrev.	Code	Weight [lb]
→	PNV 33 PNS NO U	7020010400U	0.273

MONOSTABLE 3/2 NC, 1/4"NPT



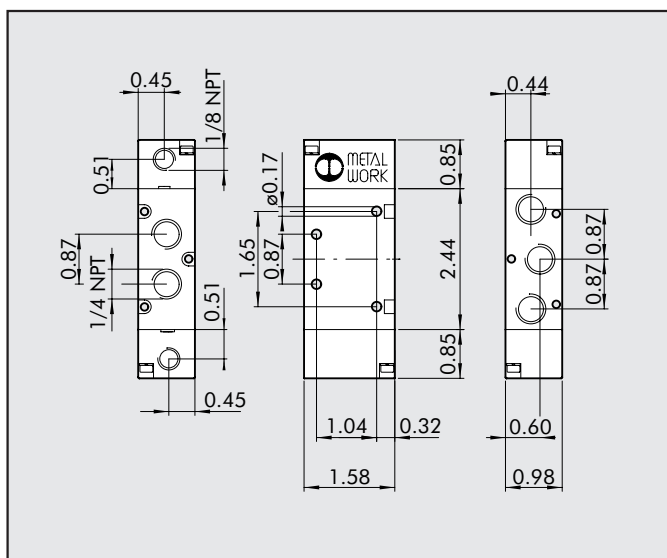
Symbol	Abbrev.	Code	Weight [lb]
→	PNV 33 PNS NC U	7020010200U	0.269

MONOSTABLE 5/2, 1/4"NPT



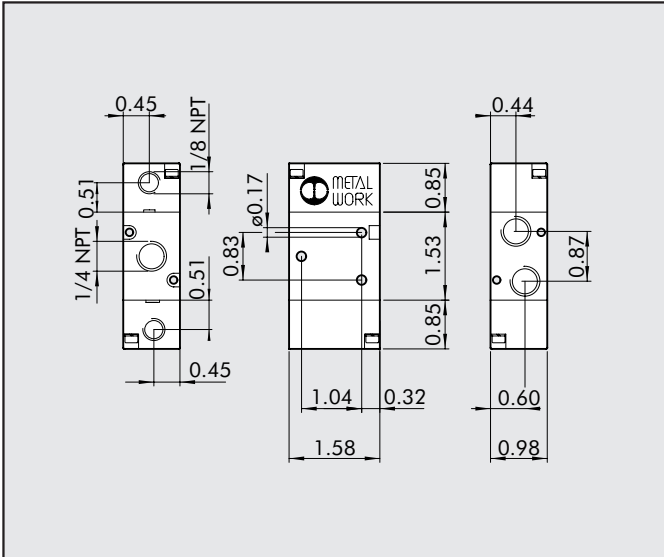
Symbol	Abbrev.	Code	Weight [lb]
→	PNV 35 PNS OO U	7020011100U	0.384

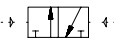
BISTABLE 5/2, 1/4"NPT



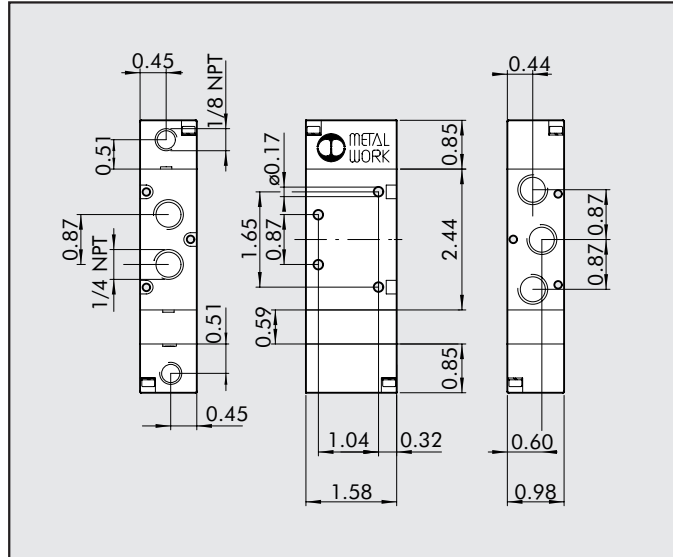
Symbol	Abbrev.	Code	Weight [lb]
→	PNV 35 PNB OO U	7020011200U	0.384
→	PNV 35 PND OO U	7020011300U	0.437

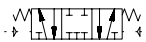
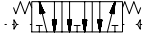
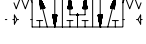
BISTABLE 3/2, 1/4"NPT



Symbol	Abbrev.	Code	Weight [lb]
	PNV 33 PNB OO U	7020010100U	0.296

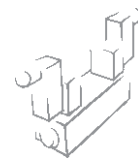
MONOSTABLE 5/3, 1/4"NPT



Symbol	Abbrev.	Code	Weight [lb]
	PNV 36 PNS CC U	7020012100U	0.273
	PNV 36 PNS OC U	7020012200U	0.273
	PNV 36 PNS PC U	7020012300U	0.273

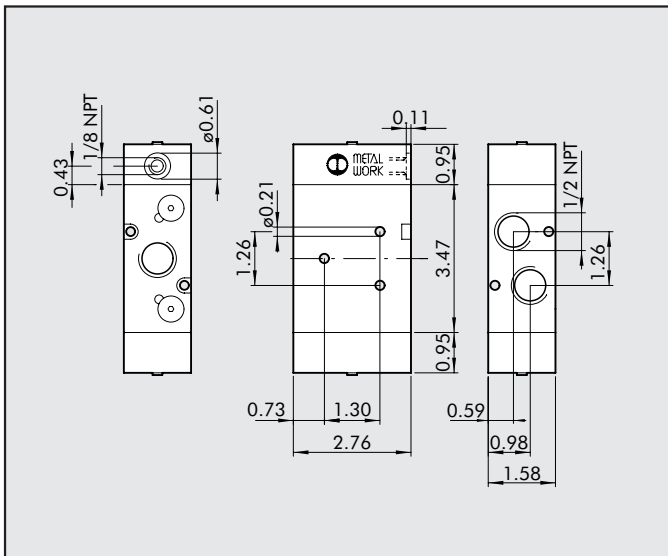
NOTES

Blank area for notes.



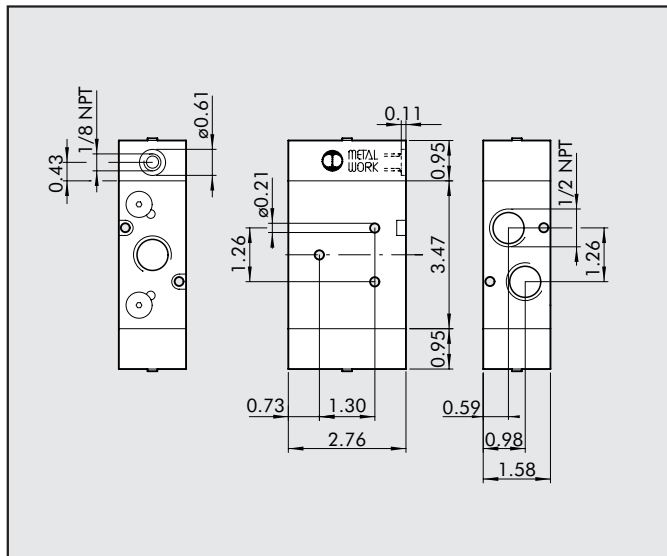
SERIES 70 VALVES, PNEUMATIC, 1/2" NPT

MONOSTABLE 3/2 NO, 1/2" NPT



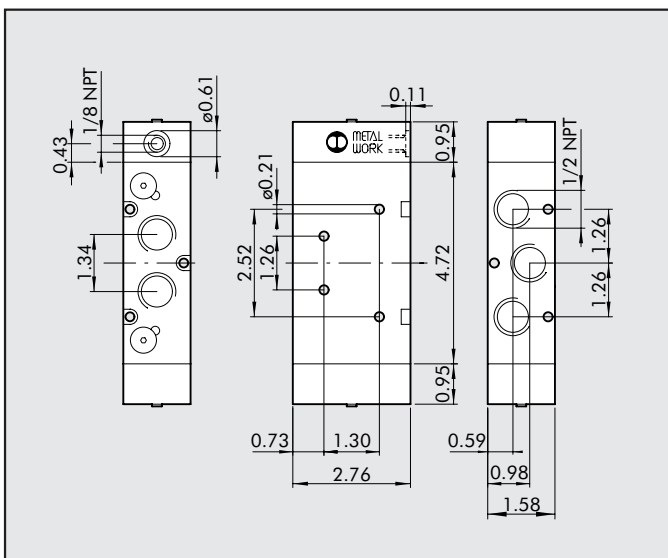
Symbol	Abbrev.	Code	Weight [lb]
	PNV 43 PNS NO U	7030010400U	2.00

MONOSTABLE 3/2 NC, 1/2" NPT



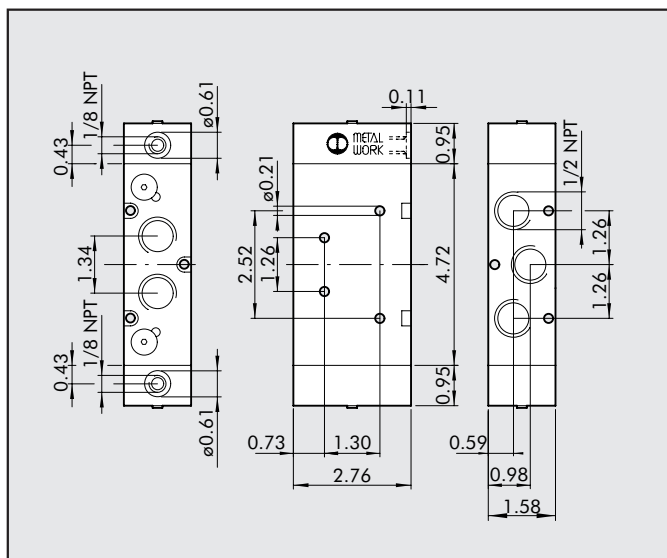
Symbol	Abbrev.	Code	Weight [lb]
	PNV 43 PNS NC U	7030010200U	2.00

MONOSTABLE 5/2, 1/2" NPT

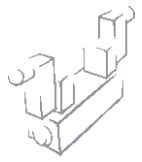


Symbol	Abbrev.	Code	Weight [lb]
	PNV 45 PNS OO U	7030011100U	2.404

BISTABLE 5/2, 1/2" NPT

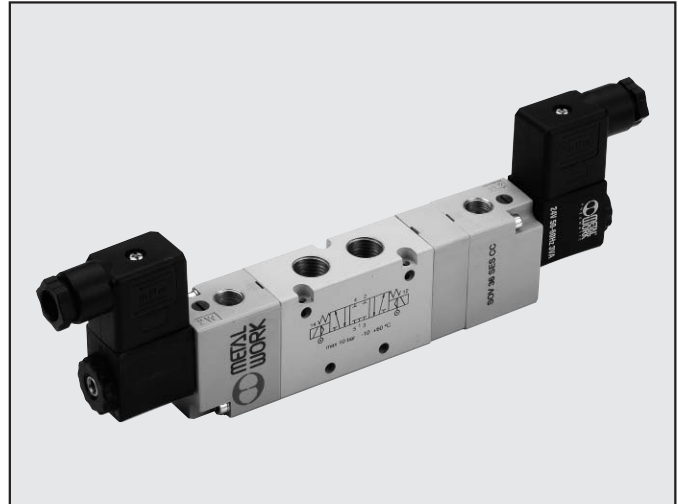


Symbol	Abbrev.	Code	Weight [lb]
	PNV 45 PNB OO U	7030011200U	2.375
	PNV 45 PND OO U	7030011300U	2.404



SERIES 70 VALVES with NPT ports, SOLENOID/PNEUMATIC

TECHNICAL DATA	1/8"NPT	1/4"NPT	1/2"NPT
Operating pressure:		36.3 psi ÷ 145 psi	
		14.5 psi ÷ 145 psi	
		Vacuum ÷ 145 psi	
Minimum actuation pressure		36.3 psi	
Operating temperature range		14°F to 140°F	
Nominal diameter	0.20 in	0.30 in	0.59 in
Conductance C [scfm/psi]	0.30	0.65	2.37
Critical ratio b	0.32 psi/psi	0.27 psi/psi	0.43 psi/psi
Flow rate at 87 psi ΔP 7 psi	14 scfm	26.5 scfm	113 scfm
Flow rate at 87 psi ΔP 15 psi	19.5 scfm	39 scfm	163 scfm
	Cv 0.55	Cv 1.1	Cv 4.6
TRA/TRR monostable at 87 psi	15 ms / 35 ms	19 ms / 45 ms	36 ms / 60 ms
TRA /TRR bistable at 87 psi	20 ms / 20 ms	21 ms / 21 ms	30 ms / 30 ms
Hand operation		bistable	
Coil voltage values	24VDC ÷ 24VAC ÷ 110VAC ÷ 220VAC 50/60Hz		
Power	2 W (DC)	3VA (AC)	5W (DC) 5VA (AC)
Voltage tolerance		-10% ÷ +15%	
Insulation class		F 155	
Maximum coil nut torque		0.74 lbf·ft	

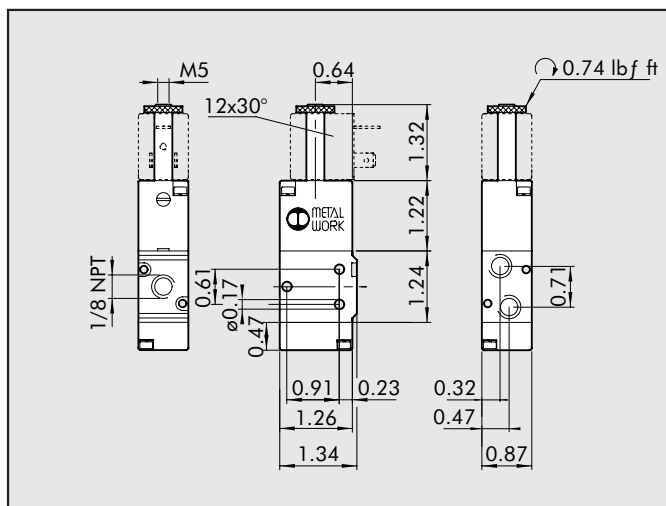


KEY TO CODES

S	O	V	2	3	S	O	S	N	C	U			
FAMILY		PORT		FUNCTION		OPERATORS 14		RESETTING 12		FURTHER DETAILS		THREAD	
SOV	Solenoid / pneumatic	2	1/8"	3	3/2	SO	Solenoid	S	mechanical spring	NC	normally closed	U	NPT
		3	1/4"	5	5/2	SE	Solenoid assisted	B	bistable	NO	normally open		
		4	1/2"	6	5/3			D	differential	CC	closed centres		
								P	pneumatic*	OC	open centres		
								A	pneumatic/mechanical spring*	PC	pressure centres		
									*on demand	OO	5/2		

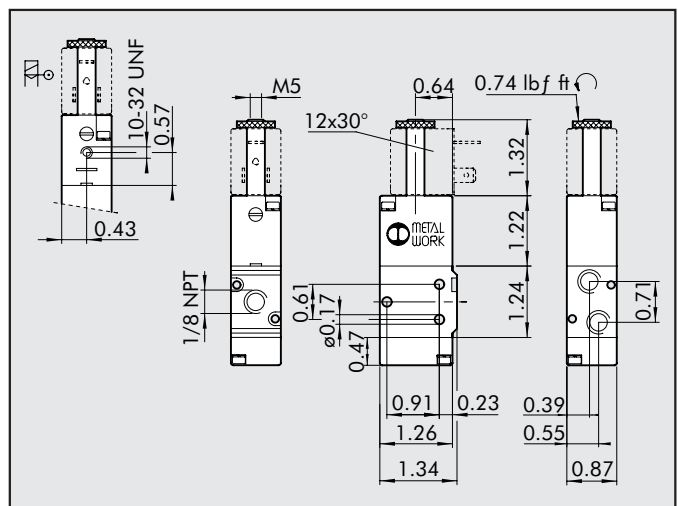
SERIES 70 VALVES, SOLENOID/PNEUMATIC-PILOT-ASSISTED SOLENOID/PNEUMATIC, 1/8"NPT

MONOSTABLE 3/2 NO, 1/8"NPT



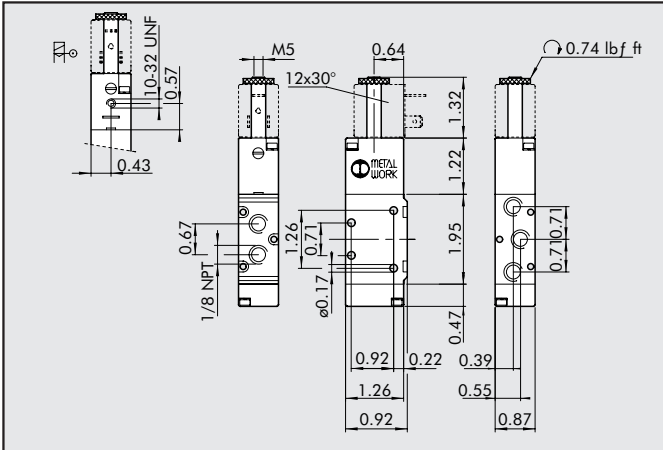
Symbol	Abbrev.	Code	Weight [lb]
	SOV 23 SOS NO U	7010020400U	0.221

MONOSTABLE 3/2 NC, 1/8"NPT



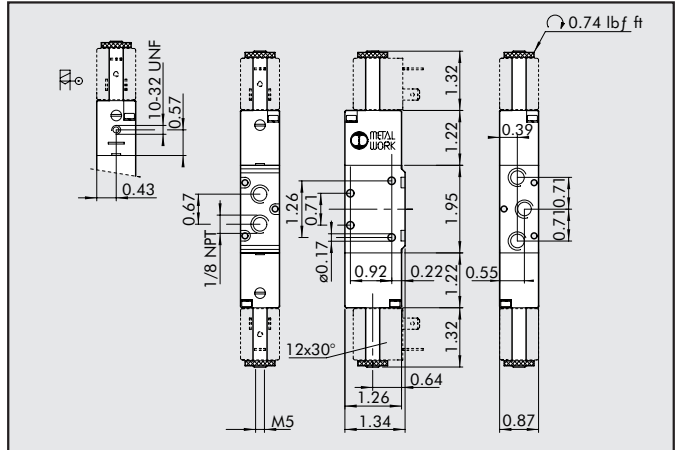
Symbol	Abbrev.	Code	Weight [lb]
	SOV 23 SOS NC U	7010020200U	0.221
	SOV 23 SES NC U	7010020500U	0.221

MONOSTABLE 5/2, 1/8" NPT



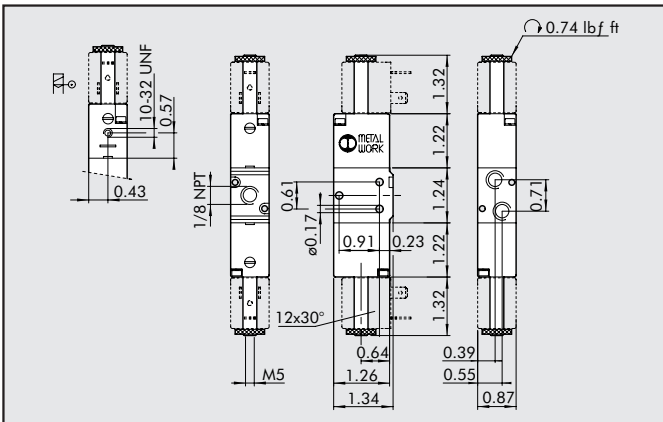
Symbol	Abbrev.	Code	Weight [lb]
	SOV 25 SOS OO U	7010021100U	0.282
	SOV 25 SES OO U	7010021500U	0.285

BISTABLE 5/2, 1/8" NPT



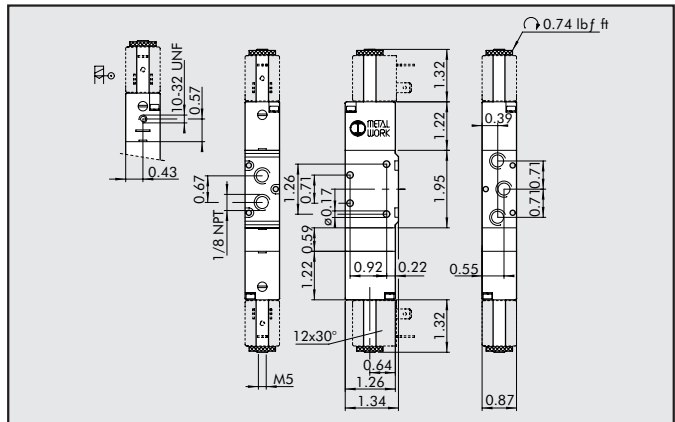
Symbol	Abbrev.	Code	Weight [lb]
	SOV 25 SOB OO U	7010021200U	0.353
	SOV 25 SOD OO U	7010021300U	0.366
	SOV 25 SEB OO U	7010021600U	0.353

BISTABLE 3/2, 1/8" NPT

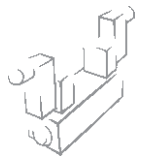


Symbol	Abbrev.	Code	Weight [lb]
	SOV 23 SOB OO U	7010020100U	0.298
	SOV 23 SEB OO U	7010020300U	0.300

MONOSTABLE 5/3, 1/8" NPT

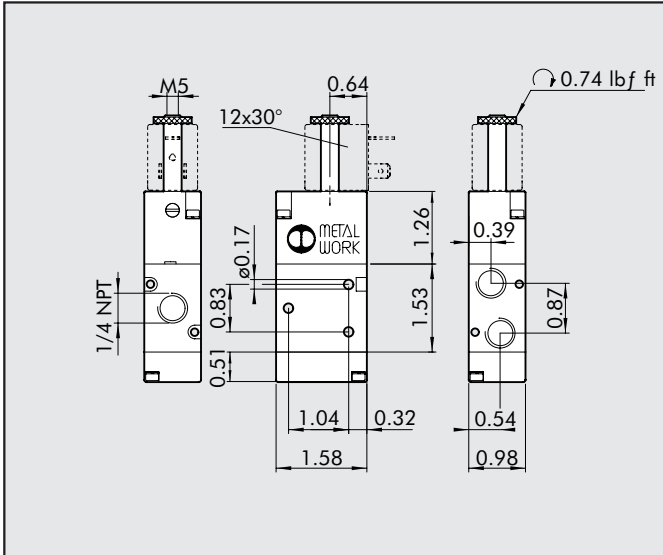


Symbol	Abbrev.	Code	Weight [lb]
	SOV 26 SOS CC U	7010022100U	0.419
	SOV 26 SOS OC U	7010022200U	0.419
	SOV 26 SOS PC U	7010022300U	0.419
	SPV 26 SES CC U	7010022400U	0.415
	SOV 26 SES OC U	7010022500U	0.415
	SOV 26 SES PC U	7010022600U	0.415



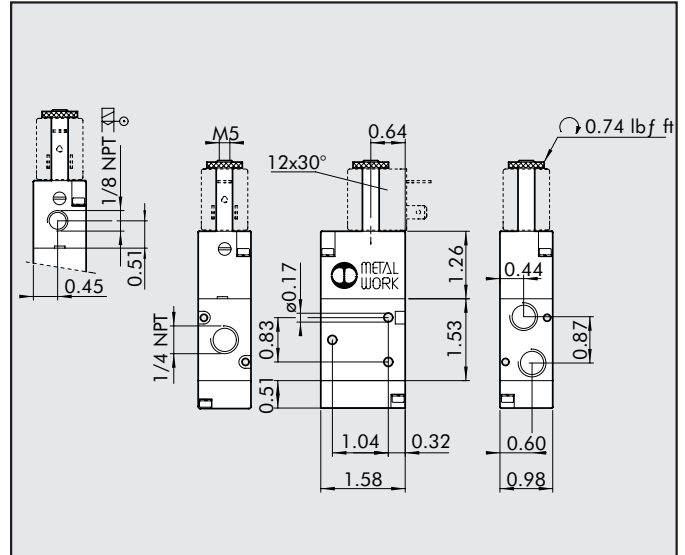
SERIES 70 VALVES, SOLENOID/PNEUMATIC-PILOT-ASSISTED SOLENOID/ PNEUMATIC, 1/4"NPT

MONOSTABLE 3/2 NO, 1/4"NPT



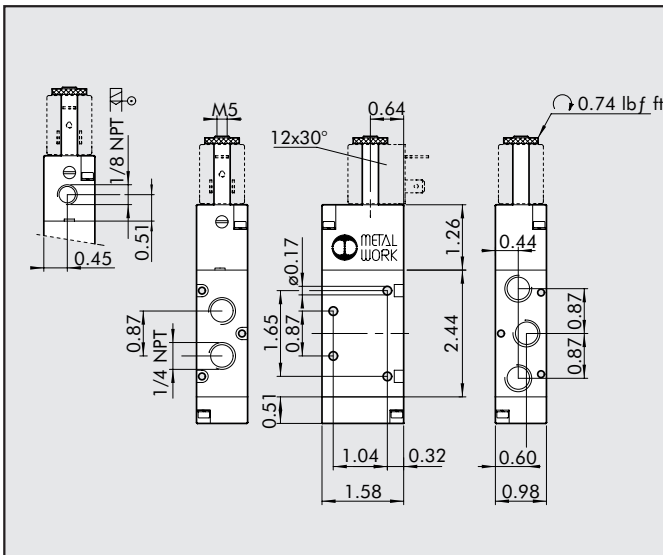
Symbol	Abbrev.	Code	Weight [lb]
	SOV 33 SOS NO U	7020020400U	0.335

MONOSTABLE 3/2 NC, 1/4"NPT



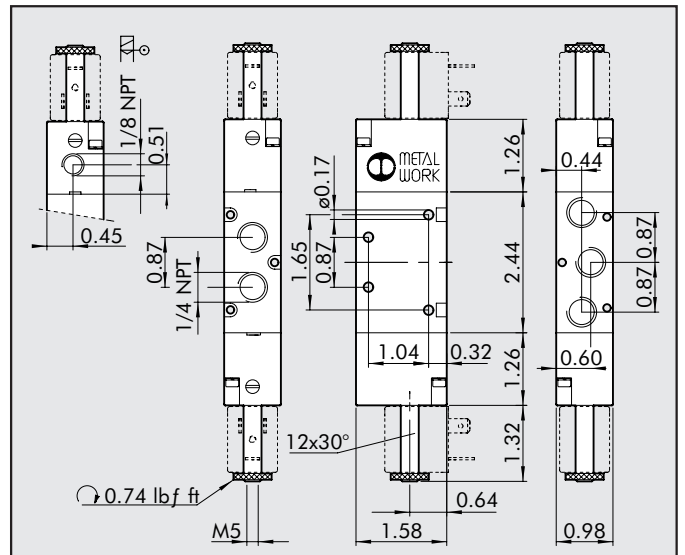
Symbol	Abbrev.	Code	Weight [lb]
	SOV 33 SOS NC U	7020020200U	0.335
	SOV 33 SES NC U	7020020500U	0.335

5/2 1/4"NPT MONOSTABLE

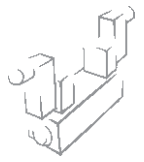


Symbol	Abbrev.	Code	Weight [lb]
	SOV 35 SOS OO U	7020021100U	0.441
	SOV 35 SES OO U	7020021500U	0.441

5/2 1/4"NPT BISTABLE

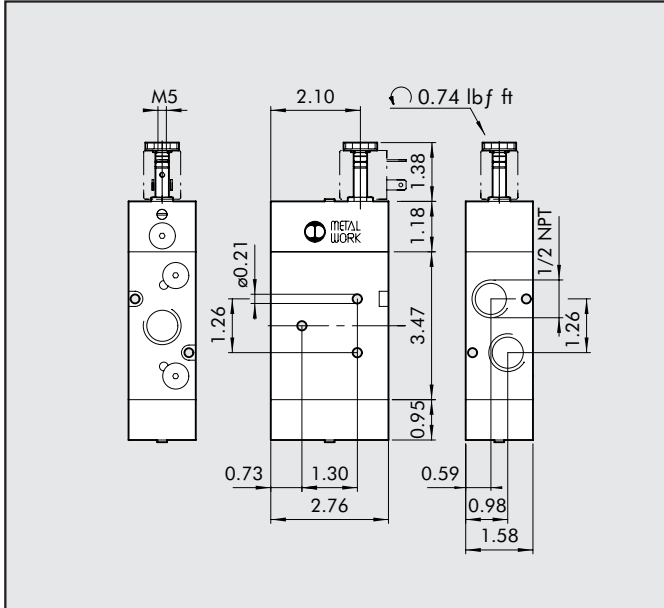


Symbol	Abbrev.	Code	Weight [lb]
	SOV 35 SOB OO U	7020021200U	0.520
	SOV 35 SOD OO U	7020021300U	0.517
	SOV 35 SEB OO U	7020021600U	0.534



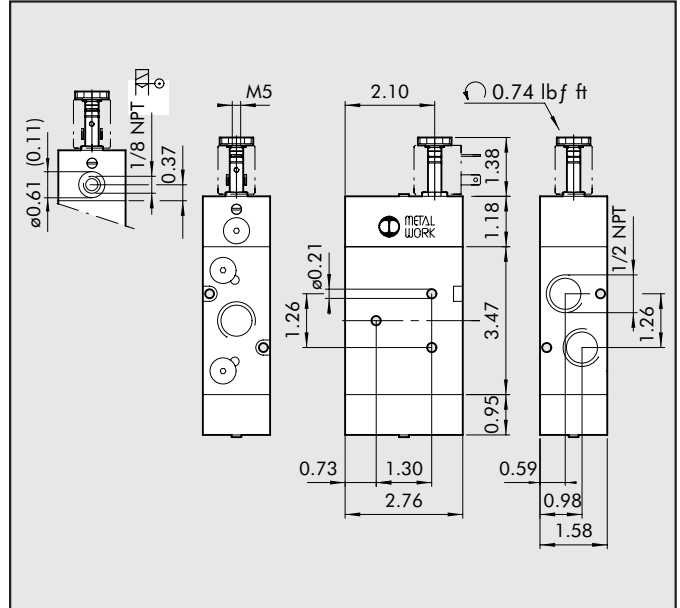
SERIES 70 VALVES, SOLENOID/PNEUMATIC-PILOT-ASSISTED SOLENOID/PNEUMATIC, 1/2"NPT

MONOSTABLE 3/2 NO, 1/2"NPT



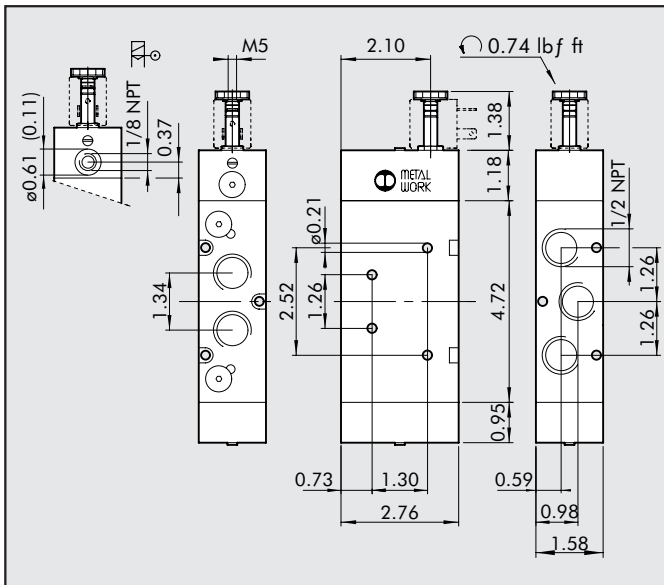
Symbol	Abbrev.	Code	Weight [lb]
	SOV 43 SOS NO U	7030020400U	2.051

MONOSTABLE 3/2 NC, 1/2"NPT



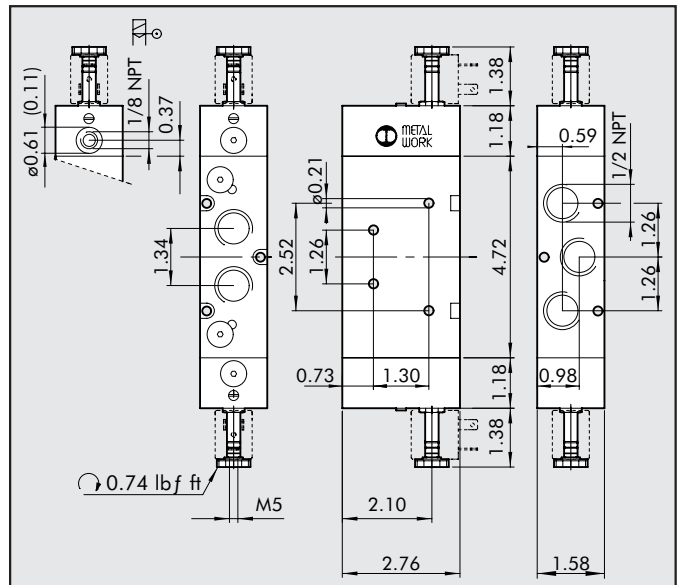
Symbol	Abbrev.	Code	Weight [lb]
	SOV 43 SOS NC U	7030020200U	2.051
	SOV 43 SES NC U	7030020500U	2.035

MONOSTABLE 5/2, 1/2"NPT



Symbol	Abbrev.	Code	Weight [lb]
	SOV 45 SOS OO U	7030021100U	2.470
	SOV 45 SES OO U	7030021500U	2.454

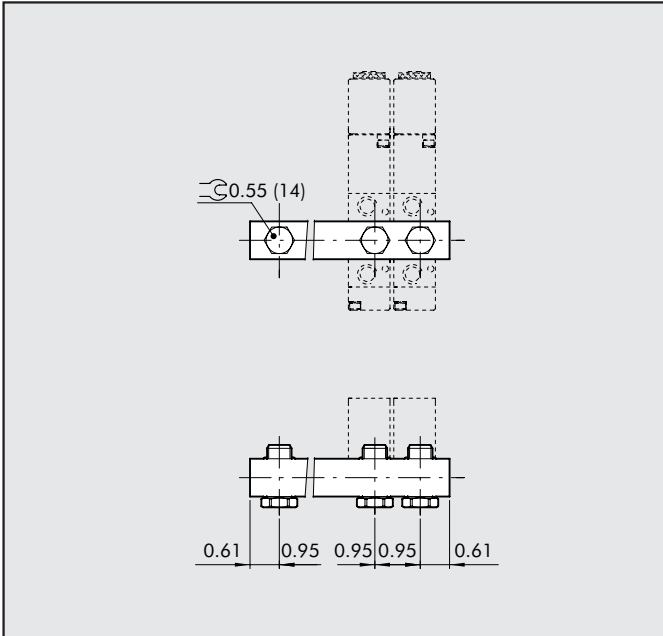
BISTABLE 5/2, 1/2"NPT



Symbol	Abbrev.	Code	Weight [lb]
	SOV 45 SOB OO U	7030021200U	2.514
	SOV 45 SOD OO U	7030021300U	2.540
	SOV 45 SEB OO U	7030021600U	2.485

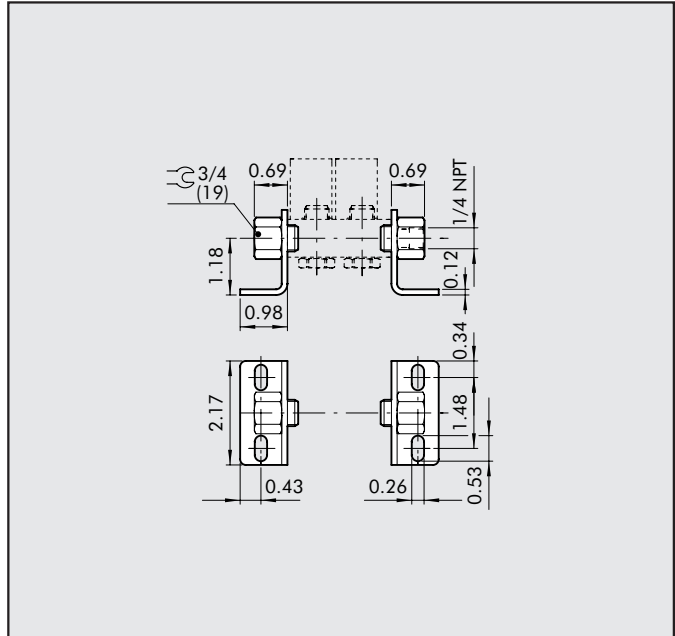
ACCESSORIES: 1/8" NPT MANIFOLDS FOR SERIES 70 PNV-SOV VALVES

MANIFOLD WITH 2 TO 7 POSITIONS + FITTINGS



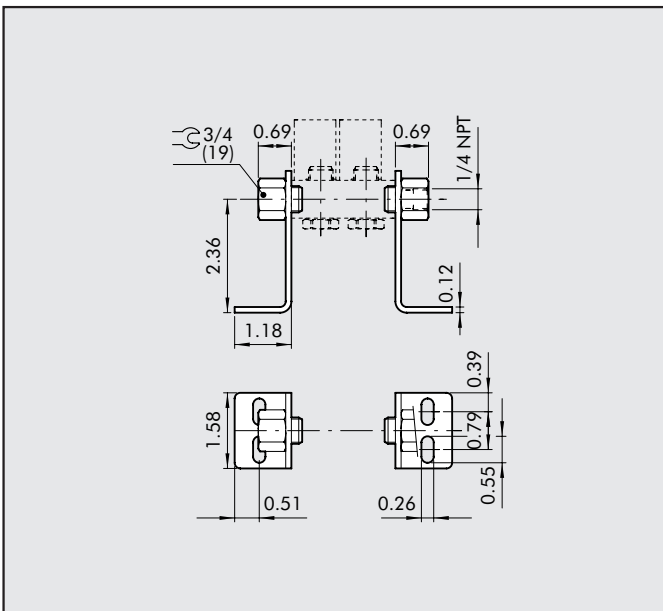
Code	Abbrev.	Weight [lb]
0221000200U	CSA-18-02 U	0.154
0221000300U	CSA-18-03 U	0.218
0221000400U	CSA-18-04 U	0.289
0221000500U	CSA-18-05 U	0.357
0221000600U	CSA-18-06 U	0.423
0221000700U	CSA-18-07 U	0.505

BRACKET SET H30



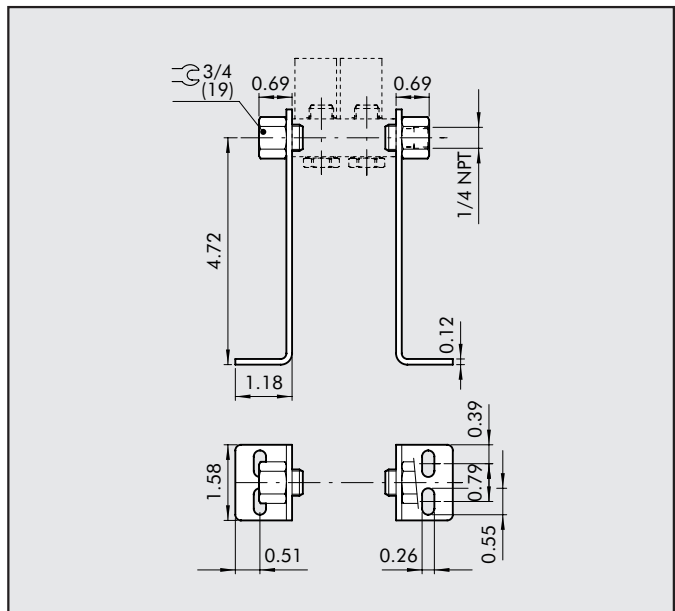
Code	Description	Weight [lb]
0221000192U	CSA-18-OE U	0.399

BRACKET SET H60

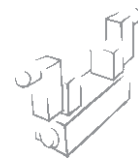


Code	Abbrev.	Weight [lb]
0221000191U	CSA-18-OC U	0.470

BRACKET SET H120

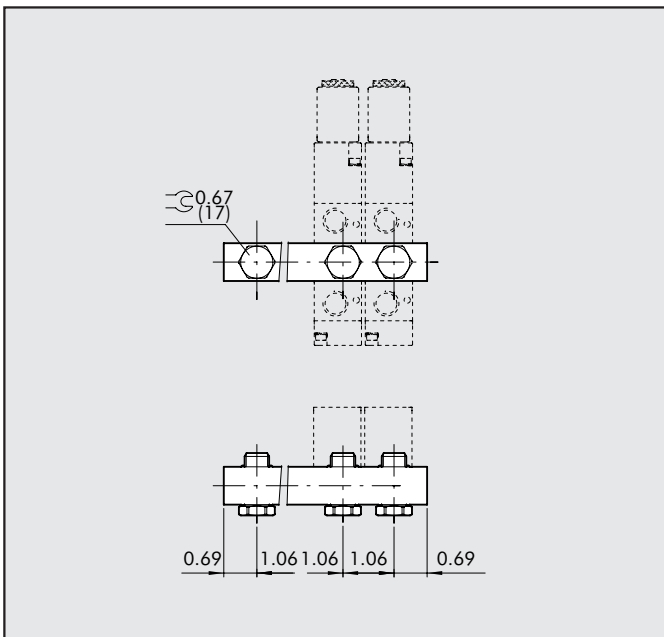


Code	Description	Weight [lb]
0221000190U	CSA-18-OO U	0.681



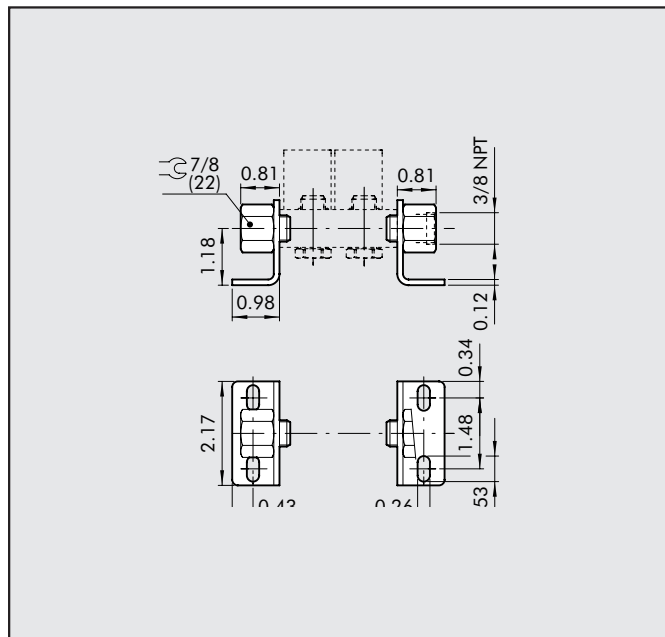
ACCESSORIES: 1/4" NPT MANIFOLDS FOR SERIES 70 PNV-SOV VALVES

MANIFOLD WITH 2 TO 7 POSITIONS + FITTINGS



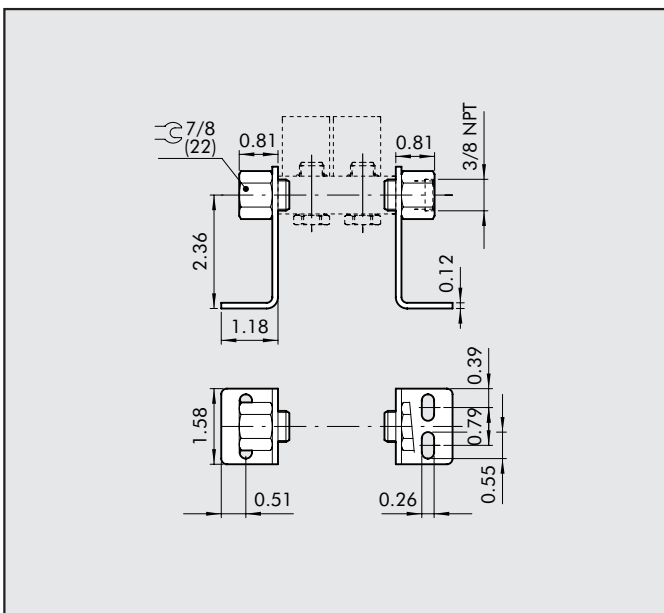
Code	Abbrev.	Weight [lb]
0222000200U	CSA-14-02 U	0.196
0222000300U	CSA-14-03 U	0.289
0222000400U	CSA-14-04 U	0.384
0222000500U	CSA-14-05 U	0.470
0222000600U	CSA-14-06 U	0.556
0222000700U	CSA-14-07 U	0.723

BRACKET SET H30



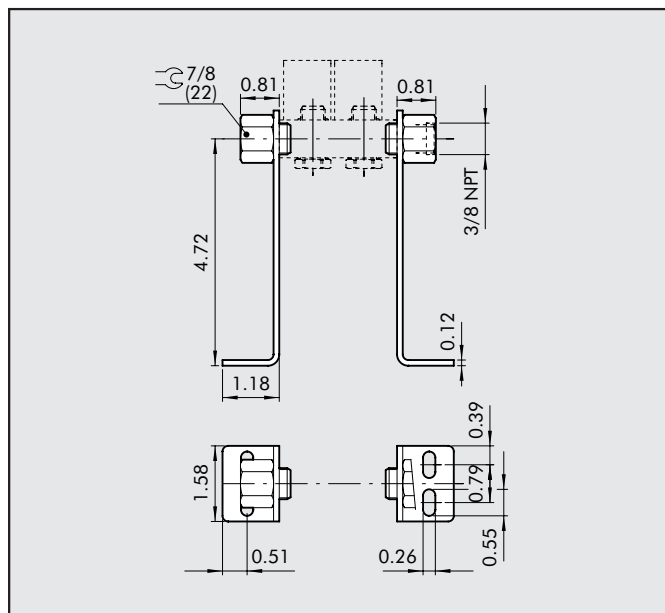
Code	Description	Weight [lb]
0222000192U	CSA-14-OE U	0.461

BRACKET SET H60

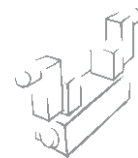


Code	Abbrev.	Weight [lb]
0222000191U	CSA-14-OC U	0.534

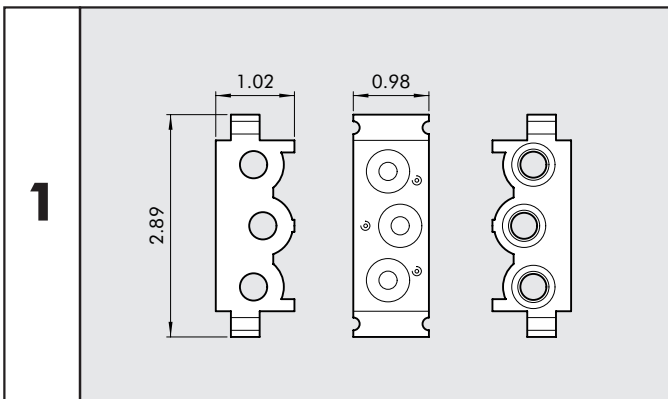
BRACKET SET H120



Code	Description	Weight [lb]
0222000190U	CSA-14-OO U	0.745

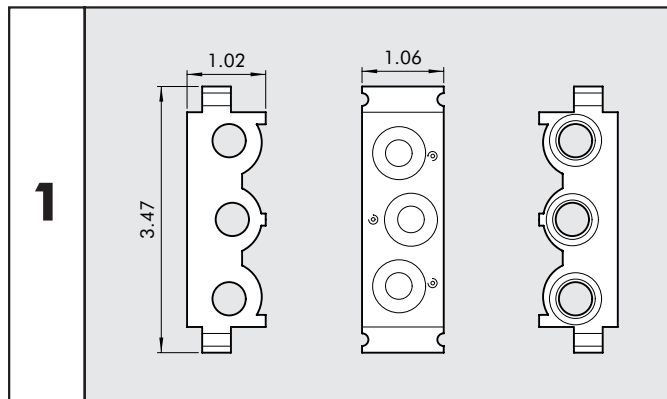


MODULAR BASE 1/8"NPT



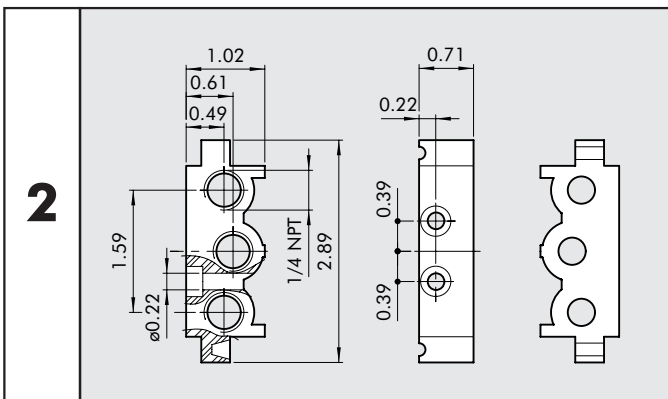
Code	Abbrev.	Weight [lb]
0226004150	Comp. MANIFOLD 1/8"	0.243

MODULAR BASE 1/4"NPT



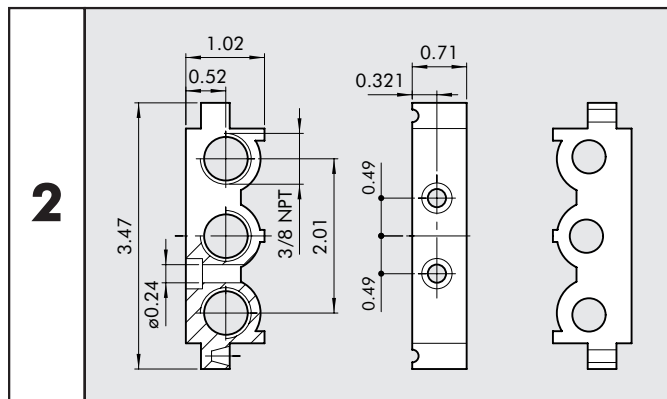
Code	Abbrev.	Weight [lb]
0226005150	Comp. MANIFOLD 1/4"	0.289

END PLATE WITHOUT OR 1/8"NPT



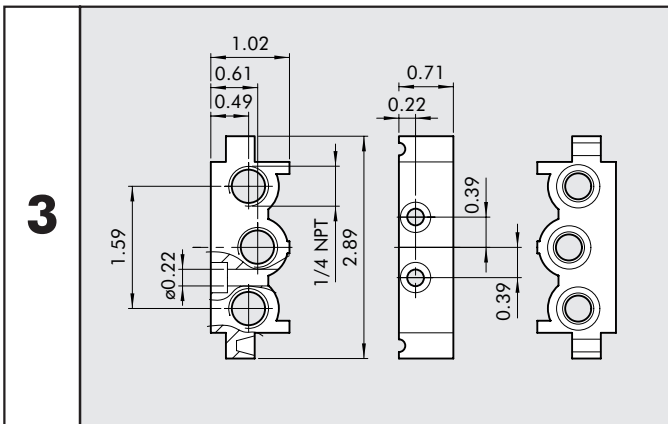
Code	Abbrev.	Weight [lb]
0226004201U	T. S/ZA OR 1/8"U	0.115

END PLATE WITHOUT OR 1/4"NPT



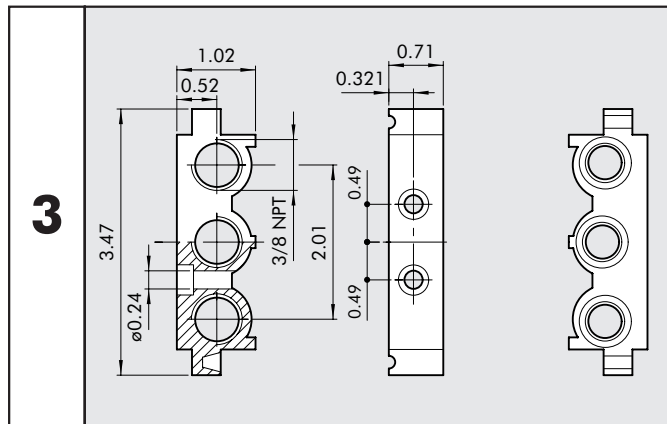
Code	Abbrev.	Weight [lb]
0226005201U	T. S/ZA OR 1/4"U	0.126

END PLATE WITH OR 1/8"NPT



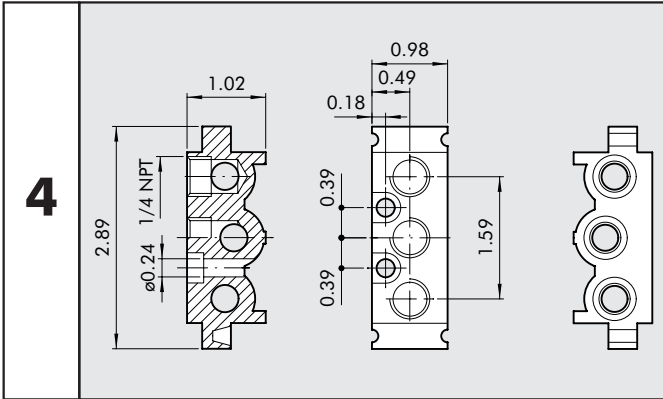
Code	Abbrev.	Weight [lb]
0226004200U	MAN. INPUT T. 1/8"U	0.163

END PLATE WITH OR 1/4"NPT



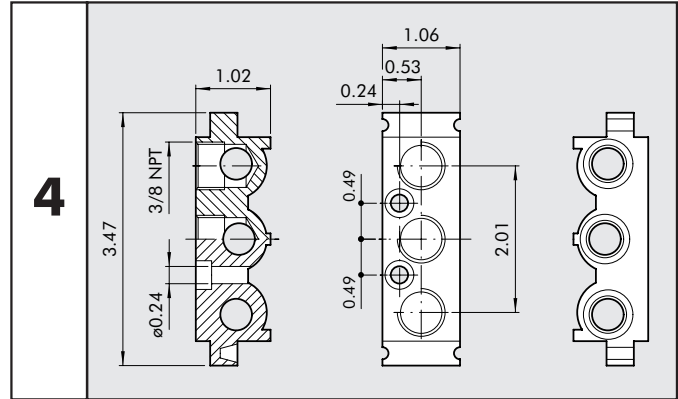
Code	Abbrev.	Weight [lb]
0226005200U	MAN. INPUT T. 1/4"U	0.176

INTERMEDIATE PART FOR UPPER FEED 1/8"NPT



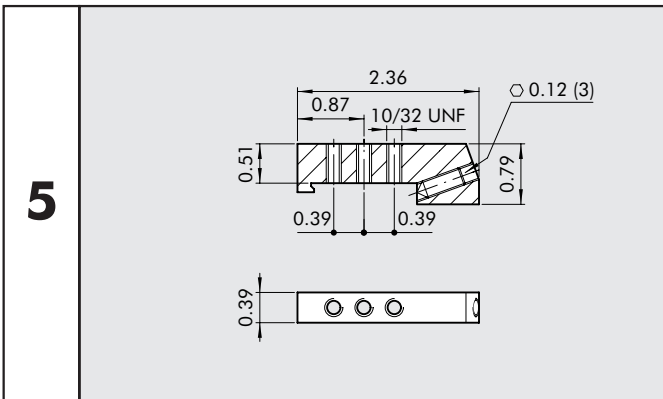
Code	Abbrev.	Weight [lb]
0226004300U	SUP. SUPPLY SW. 1/8"	0.205

INTERMEDIATE PART FOR UPPER FEED 1/4"NPT



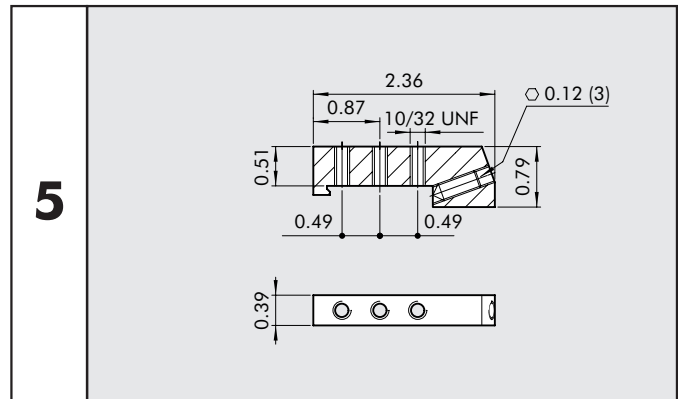
Code	Abbrev.	Weight [lb]
0226005300U	SUP. SUPPLY SW. 1/4"	0.240

ADAPTER FOR Ω BAR BASES 1/8"NPT



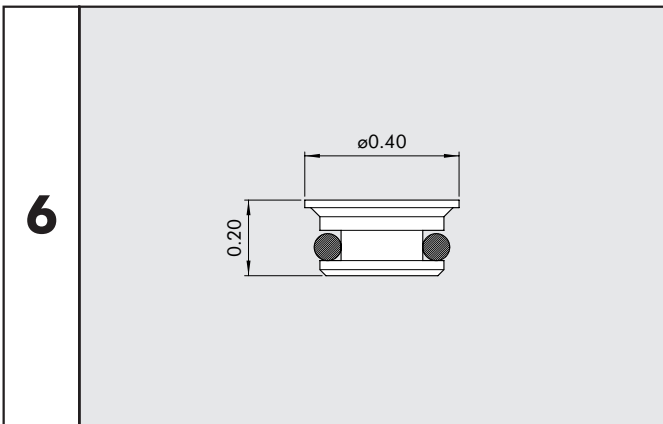
Code	Abbrev.	Weight [lb]
0226004600	ADT Ω 1/8"	0.101
N.B. ALSO FOR MULTIPLE BASES		

ADAPTER FOR Ω BAR BASES 1/4"NPT



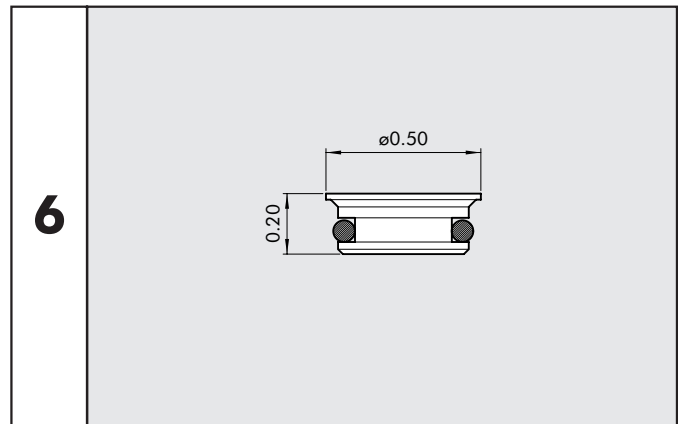
Code	Abbrev.	Weight [lb]
0226005600	ADT Ω 1/4"	0.101
N.B. ALSO FOR MULTIPLE BASES		

INTERMEDIATE DIAPHRAGM 1/8"NPT



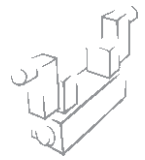
Code	Abbrev.	Weight [lb]
0226004000	COMP. DIA. 1/8"	0.004

INTERMEDIATE DIAPHRAGM 1/4"NPT



Code	Abbrev.	Weight [lb]
0226005000	COMP. DIA. 1/4"	0.007

ISO 5599/1 VALVES, SERIES IPV-ISV with NPT ports



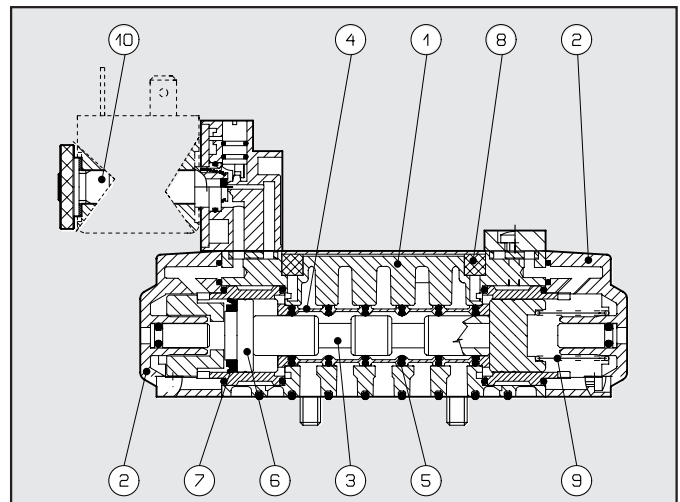
The assembly surface dimensions of ISO1 and ISO2 valves are to ISO5599-1. They are available in the 5-way versions with 2 and 3 positions and with pneumatic or solenoid actuation.



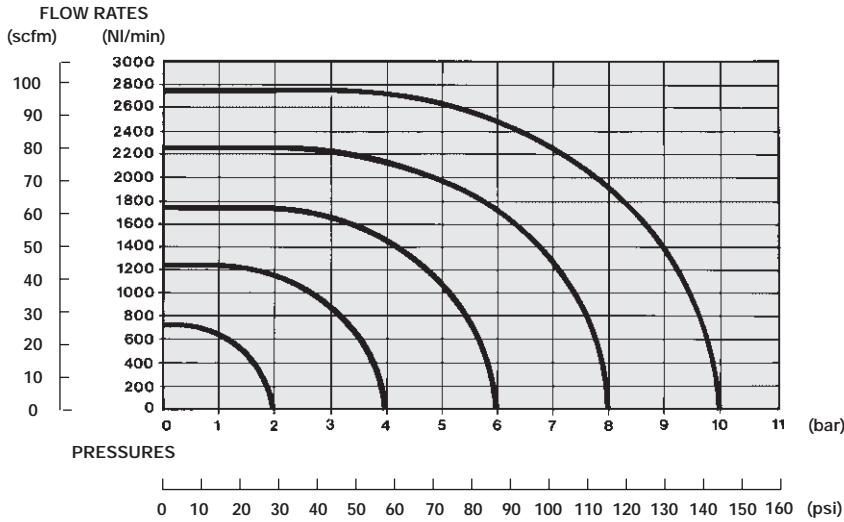
TECHNICAL DATA	ISO 1	ISO 2
Fluid	Filtered air without lubrication; lubrication, if used, must be continuous	
Operating pressure:	Vacuum ÷ 145 psi pneumatic – 36.3 ÷ 145 psi solenoid/pneumatic	
• monostable	Vacuum ÷ 145 psi pneumatic – 14.5 ÷ 145 psi solenoid/pneumatic	
• bistable	Vacuum ÷ 145 psi	
• pilot-assisted	36.3 psi	
Minimum pilot pressure	14 ÷ 140 °F	
Operating temperature range	0.30 in	0.47 in
Nominal diameter	0.61 scfm / psi	1.60 scfm / psi
Conductance C	0.36 psi/psi	0.25 psi/psi
Critical ratio b	25 scfm	64 scfm
Flow rate at 87 psi ΔP 7 psi	39 scfm Cv 1.1	95.5 scfm Cv 2.7
Flow rate at 87 psi ΔP 15 psi	In any position (vertical assembly is not recommended for bistable valves subjected to vibration)	
Installation	On single and manifold bases according to ISO 5599/1	
Assembly	ISO and UNI FD 22	
Recommended lubricant	to CNOMO / in-line pilot / M12	
Solenoid pilot:	bistable on solenoid pilot	
Manual:	monostable on valve body	
Maximum torque nut/coil	0.74 lbf ft	

COMPONENTS

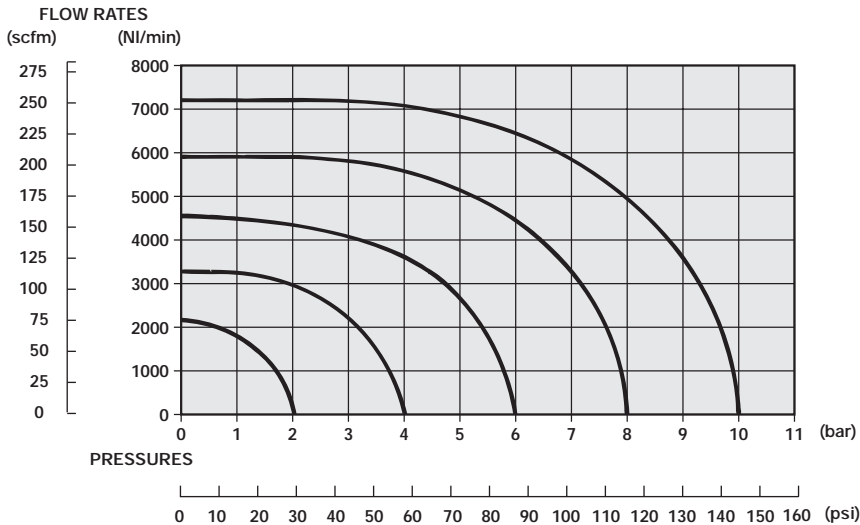
- ① VALVE BODY: Aluminium
- ② END CAP: HOSTAFORM®
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: NBR nitrile rubber
- ⑥ PISTONS: HOSTAFORM®
- ⑦ PISTON GASKETS: NBR nitrile rubber
- ⑧ FILTER: sintered bronze
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: Brass pipe – Stainless steel core



FLOW CHART ISO 1

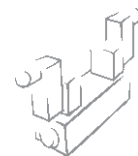


FLOW CHART ISO 2



KEY TO CODES

I	P	V	5	5	P	N	S	O	O	U		
FAMILY		PORT		FUNCTION		OPERATORS 14		RESETTING 12		FURTHER DETAILS		THREAD
IPV	ISO pneumatic	5	ISO 1	5	5/2	PN	pneumatic	S	mechanical spring	OO	5/2	U NPT
ISV	ISO solenoid/ pneumatic	6	ISO 2	6	5/3	SO	solenoid/pneumatic	B	bistable	CC	closed centres	
						SE	electric pilot-assisted	D	differential	OC	open centres	
						DO	solenoid/pneumatic in line			PC	pressure centres	
						DE	solenoid, assisted in line					
						CO	M12 solenoid/pneumatic					
						CE	M12 solenoid assisted					

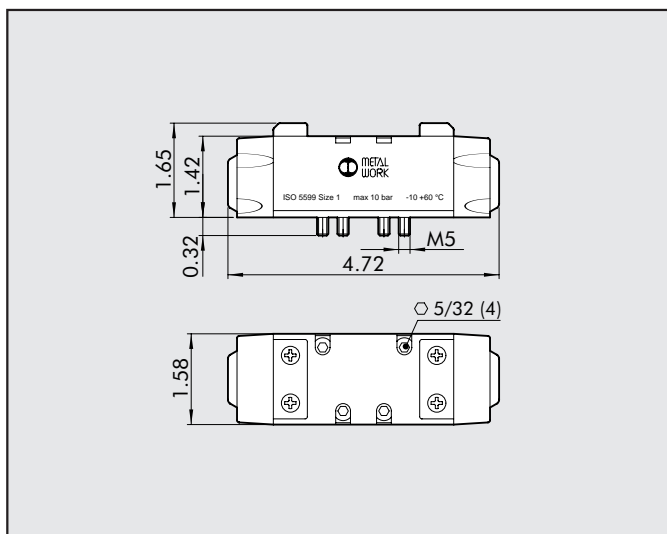


ISO 5599/1 VALVES, PNEUMATIC SERIES IPV

TECHNICAL DATA	ISO 1	ISO 2
Operating pressure	Vacuum ÷ 145 psi	
Minimum operation pressure:		
• monostable	36.3 psi	
• bistable	14.5 psi	
Operating temperature range	14° to 140°F	
Nominal diameter	0.30 in	0.47 in
Conductance C	0.61 scfm/psi	1.60 scfm/psi
Critical ratio b	0.36 psi/psi	0.25 psi/psi
Flow rate at 87 psi ΔP 7 psi	25 scfm	64 scfm
Flow rate at 87 psi ΔP 15 psi	39 scfm Cv 1.1	95.5 scfm Cv 2.7
Response times at 87 psi:		
• monostable	12 ms	24 ms
• bistable	20 ms	30 ms
Repositioning response times at 87 psi:		
• monostable	30 ms	43 ms
• bistable	20 ms	30 ms
Manual	monostable on valve body	

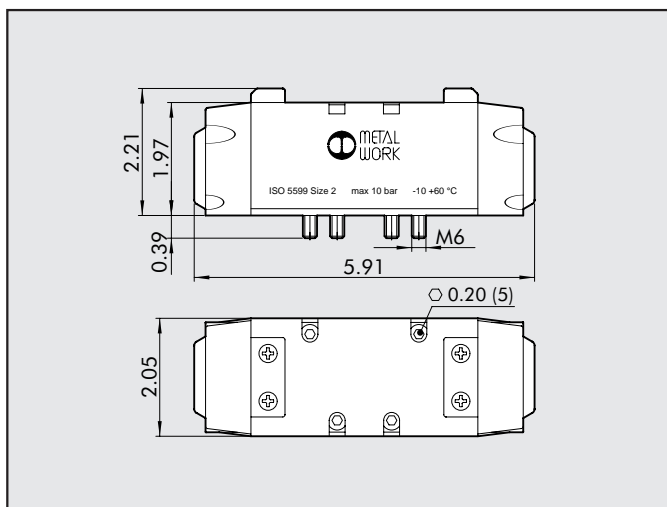


PNEUMATIC ACTUATION ISO 1

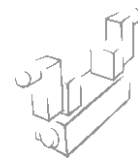


Symbol	Abbrev.	Code	Weight [lb]
	IPV 55 PNS OO	7051011100	0.684
	IPV 55 PNB OO	7051011200	0.684
	IPV 55 PND OO	7051011300	0.684
	IPV 56 PNS CC	7051012100	0.684
	IPV 56 PNS OC	7051012200	0.684
	IPV 56 PNS PC	7051012300	0.684

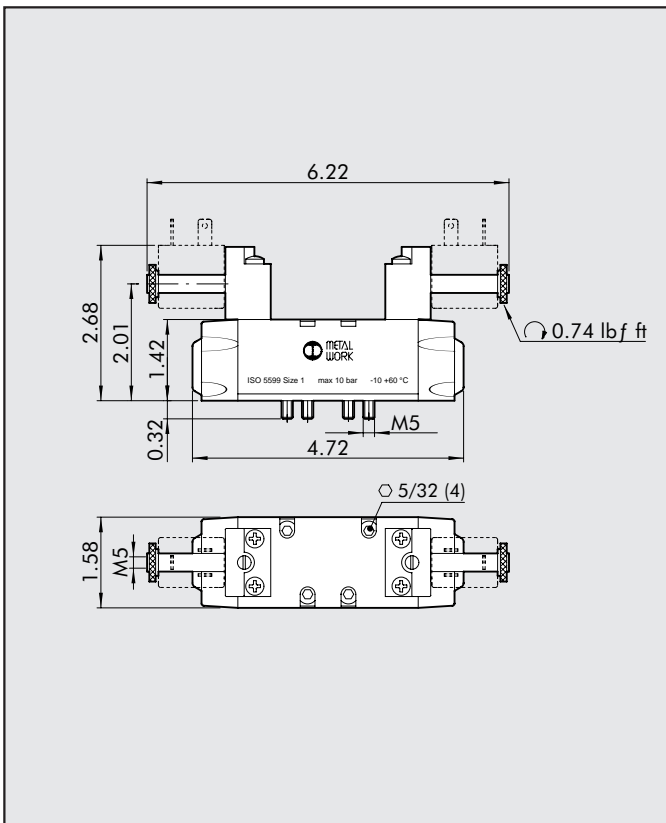
PNEUMATIC ACTUATION ISO 2



Symbol	Abbrev.	Code	Weight [lb]
	IPV 65 PNS OO	7052011100	1.555
	IPV 65 PNB OO	7052011200	1.555
	IPV 65 PND OO	7052011300	1.555
	IPV 66 PNS CC	7052012100	1.555
	IPV 66 PNS OC	7052012200	1.555
	IPV 66 PNS PC	7052012300	1.555

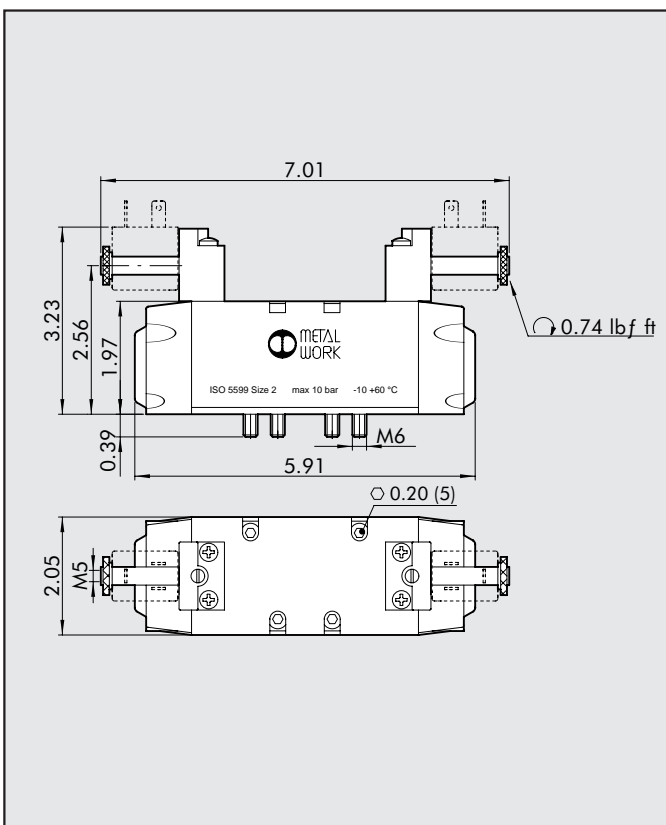


**BISTABLE 5/2 ISO 1
MONOSTABLE 5/3 ISO 1**



Symbol	Abbrev.	Code	Weight [lb]
	ISV 55 SOB OO	7051021200	0.856
	ISV 55 SOD OO	7051021300	0.827
	ISV 56 SOS CC	7051022100	0.820
	ISV 56 SOS OC	7051022200	0.820
	ISV 56 SOS PC	7051022300	0.820
	ISV 55 SEB OO	7051021500	0.856
	ISV 55 SED OO	7051021600	0.827
	ISV 56 SES CC	7051022400	0.820
	ISV 56 SES OC	7051022500	0.820
	ISV 56 SES PC	7051022600	0.820

**BISTABLE 5/2 ISO 2
MONOSTABLE 5/3 ISO 2**



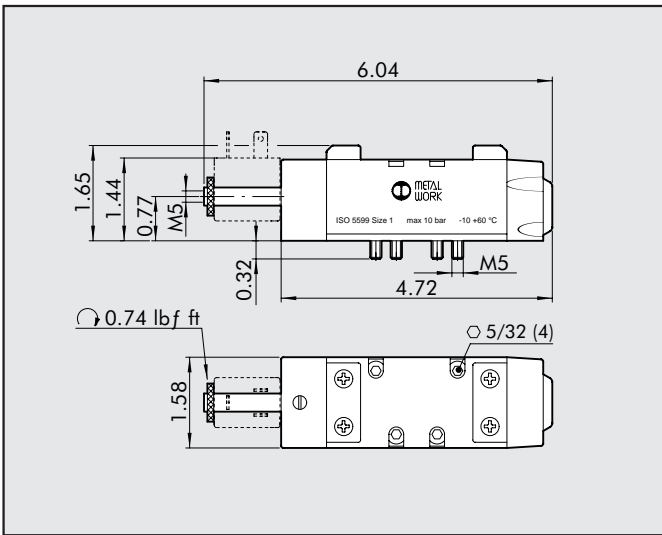
Symbol	Abbrev.	Code	Weight [lb]
	ISV 65 SOB OO	7052021200	1.632
	ISV 65 SOD OO	7052021300	1.566
	ISV 66 SOS CC	7052022100	1.588
	ISV 66 SOS OC	7052022200	1.588
	ISV 66 SOS PC	7052022300	1.588
	ISV 65 SEB OO	7052021500	1.632
	ISV 65 SED OO	7052021600	1.566
	ISV 66 SES CC	7052022400	1.588
	ISV 66 SES OC	7052022500	1.588
	ISV 66 SES PC	7052022600	1.588

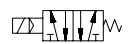

ISO 5599/1 VALVES, SOLENOID/PNEUMATIC, SERIES ISV WITH IN-LINE SOLENOID PILOT

TECHNICAL DATA	ISO 1
Operating pressure:	
• monostable	36.3 ÷ 145 psi
• bistable	14.5 ÷ 145 psi
• pilot-assisted	Vacuum ÷ 145 psi
Minimum pilot pressure	36.3 psi
Operating temperature range	14° to 140°F
Nominal diameter	0.30 in
Conductance C	0.61 scfm/psi
Critical ratio b	0.36 psi/psi
Flow rate at 87 psi ΔP 7 psi	25 scfm
Flow rate at 87 psi ΔP 15 psi	39 scfm Cv 1.1
TRA / TRR monostable at 87 psi	24 ms / 50 ms
TRA / TRR bistable at 87 psi	80 ms / 80 ms
Solenoid pilot:	In line pilot
Manual:	bistable on solenoid pilot
Coils:	1.18 in side DIN 43650 Form A – ISO
	0.87 in side
Maximum torque coil/nut	0.74 lb f ft

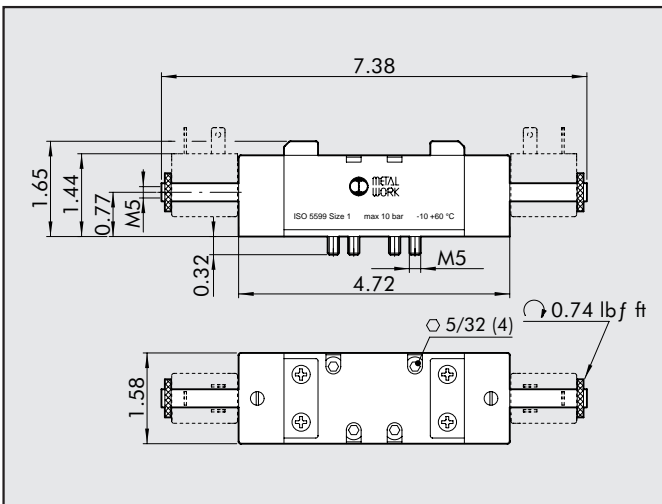




MONOSTABLE 5/2 ISO 1



Symbol	Abbrev.	Code	Weight [lb]
	ISV 55 DOS OO	7053021100	0.873
	ISV 55 DES OO	7053021400	0.873

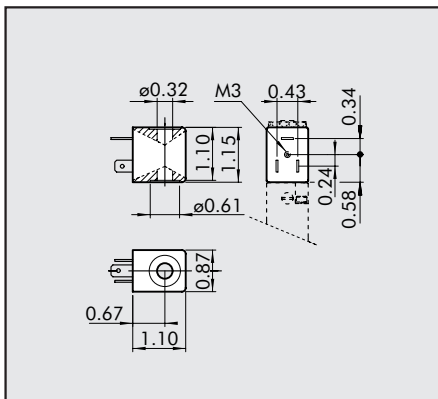
BISTABLE 5/2 ISO 1



Symbol	Abbrev.	Code	Weight [lb]
	ISV 55 DOB OO	7053021200	0.992
	ISV 55 DEB OO	7053021500	0.992

COILS AND CONNECTORS FOR ISO 5599/1 SOLENOID VALVES SERIES ISV

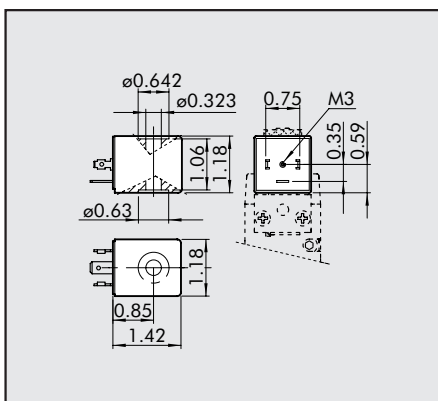
COILS SIDE 22 mm FOR ISO 5599/1 SOLENOID VALVES



- Voltage tolerance: -10% + 15%
- Insulation class: F155
- Degree of protection: IP65 EN60529 with connector
- Avoid prolonged exposure to the atmospheric agents
- Coil temperature 100% ED: 158°F at 68°F – Ambient temperature

Nominal voltage	Absorption		Abbrev.	Code
	Inrush	Holding		
12Vcc	2W	2W	Coil 22 Ø8 BA 2W-12VDC	W0215000151
24Vcc	2W	2W	Coil 22 Ø8 BA 2W-24VDC	W0215000101
24V 50/60Hz	4VA	3VA	Coil 22 Ø8 BA 3VA-24VAC	W0215000111
110V 50/60Hz	4VA	3VA	Coil 22 Ø8 BA 3VA-110VAC	W0215000121
220V 50/60Hz	4VA	3VA	Coil 22 Ø8 BA 3VA-220VAC	W0215000131

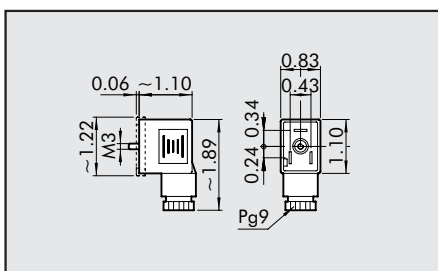
COILS SIDE 30 mm FOR ISO 5599/1 SOLENOID VALVES



- electric contact DIN43650 shape A – ISO 4400
- Voltage tolerance: -10% + 10%
- Insulation class: F155
- Degree of protection: IP65 EN60529 with connector

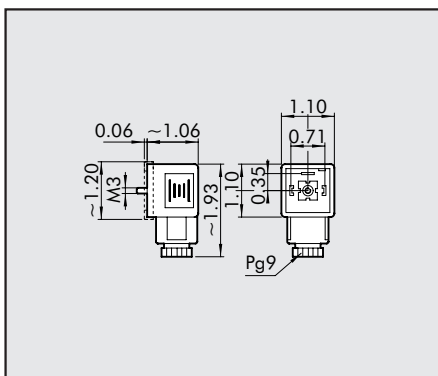
Nominal voltage	Absorption		Abbrev.	Code
	Inrush	Holding		
24Vcc	5W	4W	Coil 30 Ø8 4W-24VDC	W0210010100
24V 50/60Hz	10VA	4VA	Coil 30 Ø8 4VA-24VAC	W0210011100
110V 50/60Hz	10VA	4VA	Coil 30 Ø8 4VA-110VAC	W0210012100
220V 50/60Hz	10VA	4VA	Coil 30 Ø8 4VA-220VAC	W0210013100

ELECTRIC CONNECTOR FOR COILS SIDE 22 mm



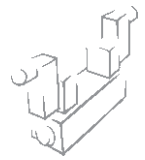
Colour	Ø Cable	Type	Code
Black	PG9	Standard	W0970510011
Transparent	PG9	LED 24V	W0970510012
Transparent	PG9	LED 110V	W0970510013
Transparent	PG9	LED 220V	W0970510014
Transparent	PG9	LED + VDR 24V	W0970510015
Transparent	PG9	LED + VDR 110V	W0970510016
Transparent	PG9	LED + VDR 220V	W0970510017

ELECTRIC CONNECTOR FOR COILS SIDE 30 mm

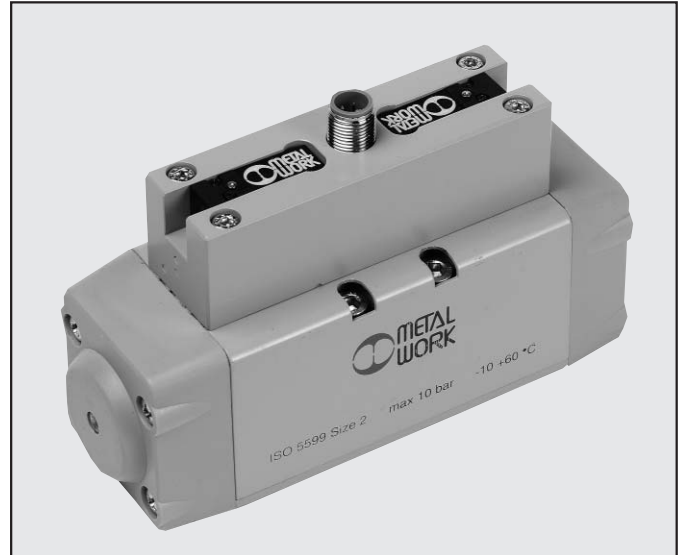


Colour	Ø Cable	Type	Code
Black	PG9	Standard	W0970520033
Transparent	PG9	LED 24V	W0970520034
Transparent	PG9	LED 110V	W0970520035
Transparent	PG9	LED 220V	W0970520036
Transparent	PG9	LED + VDR 24V	W0970520037
Transparent	PG9	LED + VDR 110V	W0970520038
Transparent	PG9	LED + VDR 220V	W0970520039

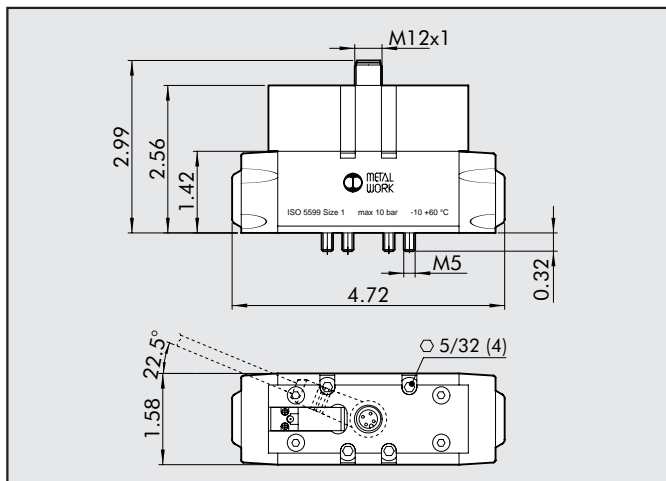
ISO 5599/1 VALVES, SOLENOID/PNEUMATIC, SERIES ISV WITH M12 CONNECTOR



TECHNICAL DATA	ISO 1	ISO 2
Operating pressure:		
• monostable	36.3 ÷ 145 psi	
• bistable	14.5 ÷ 145 psi	
• pilot-assisted	Vacuum ÷ 145 psi	
Minimum pilot pressure	36.3 psi	
Operating temperature range	14° ÷ 140°F	
Nominal diameter	0.30 in	0.47 in
Conductance C	0.61 scfm/psi	1.60 scfm/psi
Critical ratio b	0.36 psi/psi	0.25 psi/psi
Flow rate at 87 psi ΔP 7 psi	25 scfm	64 scfm
Flow rate at 87 psi ΔP 15 psi	39 scfm Cv 1.1	95.5 scfm Cv 2.7
TRA / TRR monostable at 87 psi	22 ms / 60 ms	78 ms / 180 ms
Solenoid pilot:	with built-in coil	
Manual:	monostable on solenoid pilot monostable on valve body	
Coil power	1,2 W	
Voltage	24 VDC ± 10%	
Electrical connection	M12	
Degree of protection	IP65 EN60529	
Electrical protection	Transil	

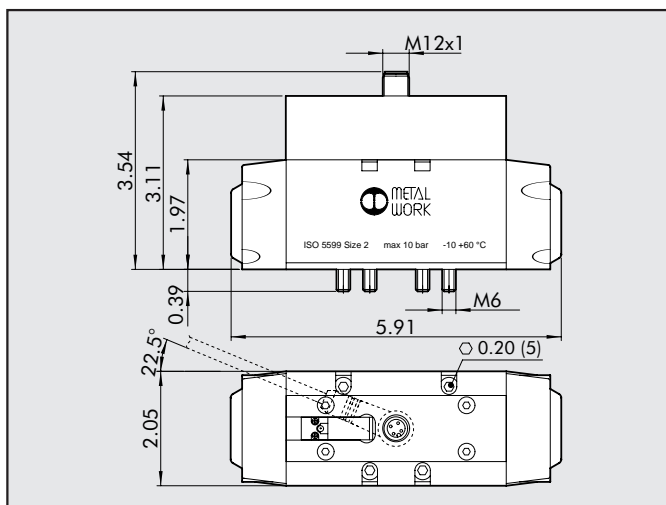


MONOSTABLE 5/2 ISO 1



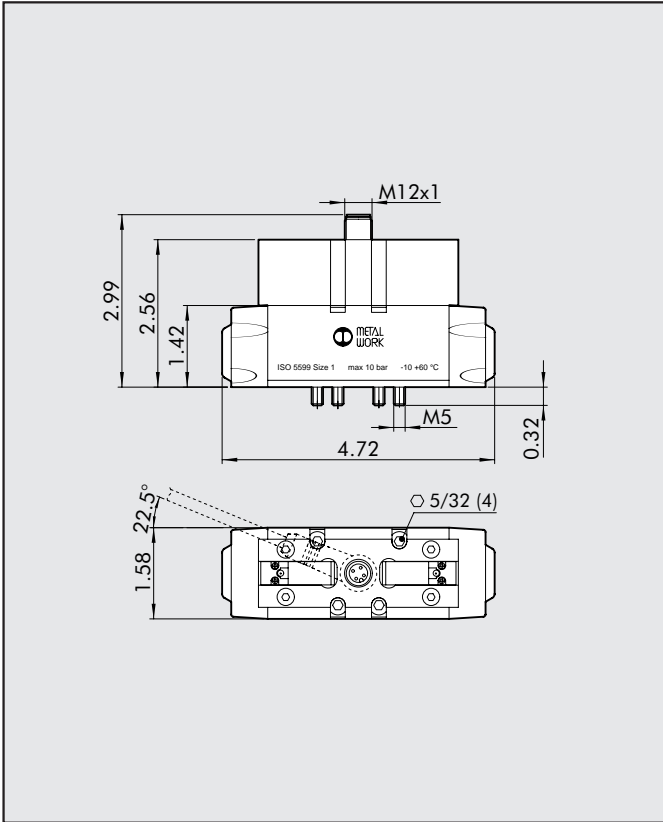
Symbol	Abbrev.	Code	Weight [lb]
	ISV 55 COS OO	7054021100	1.120
	ISV 55 CES OO	7054021400	1.120



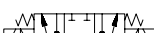

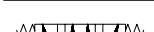
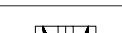
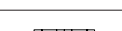
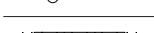


MONOSTABLE 5/2 ISO 2



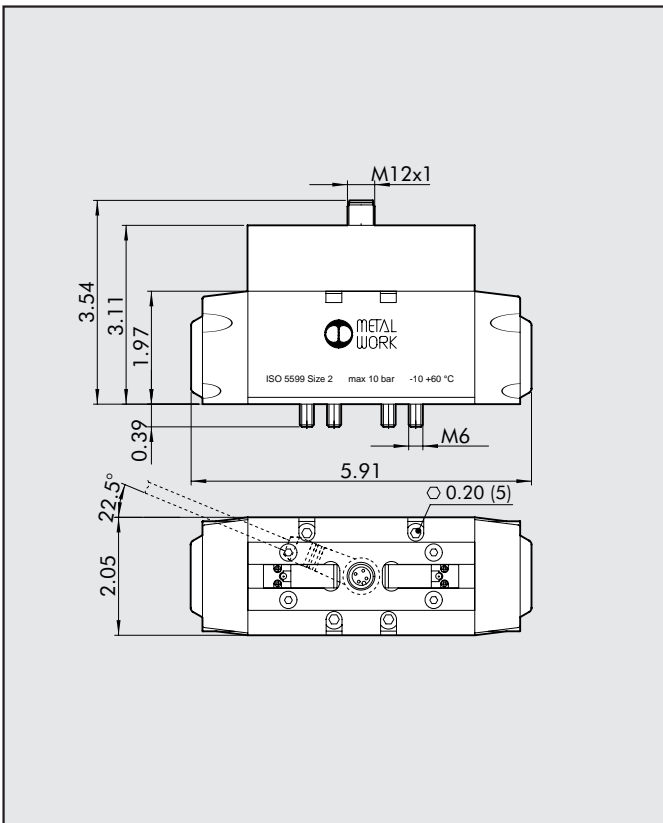
Symbol	Abbrev.	Code	Weight [lb]
	ISV 65 COS OO	7055021100	1.987
	ISV 65 CES OO	7055021400	1.987

**BISTABLE 5/2 ISO 1
MONOSTABLE 5/3 ISO 1**

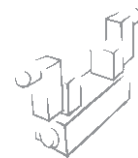


Symbol	Abbrev.	Code	Weight [lb]
	ISV 55 COB OO	7054021200	1.129
	ISV 55 COD OO	7054021300	1.081
	ISV 56 COS CC	7054022100	1.094
	ISV 56 COS OC	7054022200	1.094
	ISV 56 COS PC	7054022300	1.094
	ISV 55 CEB OO	7054021500	1.129
	ISV 55 CED OO	7054021600	1.081
	ISV 56 CES CC	7054022400	1.094
	ISV 56 CES OC	7054022500	1.094
	ISV 56 CES PC	7054022600	1.094

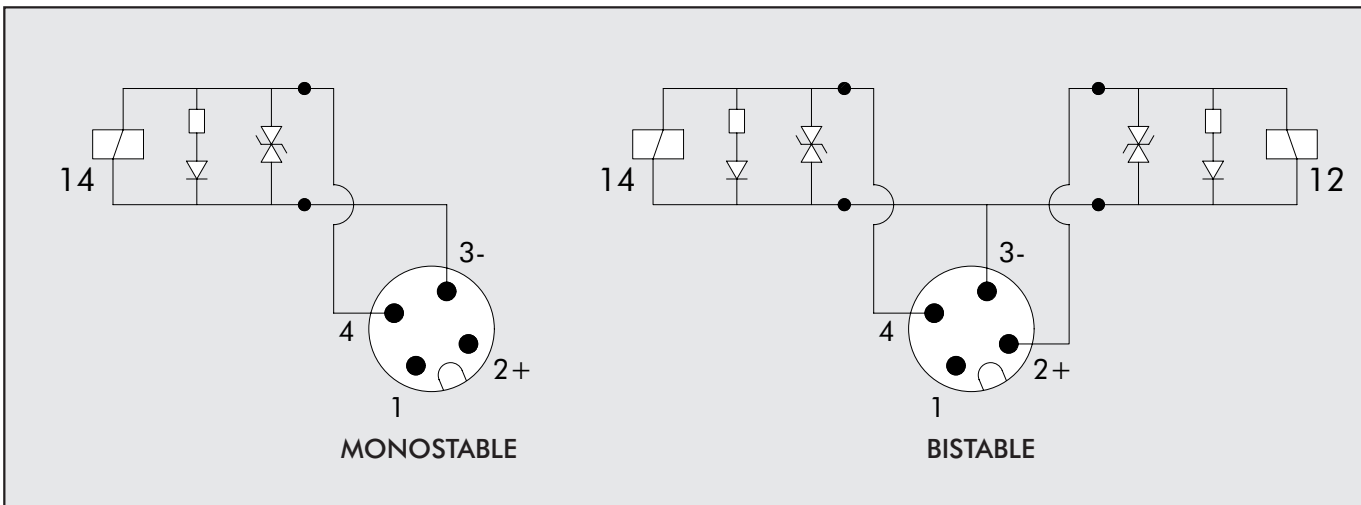
**BISTABLE 5/2 ISO 2
MONOSTABLE 5/3 ISO 2**



Symbol	Abbrev.	Code	Weight [lb]
	ISV 65 COB OO	7055021200	1.896
	ISV 65 COD OO	7055021300	1.896
	ISV 66 COS CC	7055022100	1.914
	ISV 66 COS OC	7055022200	1.914
	ISV 66 COS PC	7055022300	1.914
	ISV 65 CEB OO	7055021500	1.896
	ISV 65 CED OO	7055021600	1.896
	ISV 66 CES CC	7055022400	1.914
	ISV 66 CES OC	7055022500	1.914
	ISV 66 CES PC	7055022600	1.914



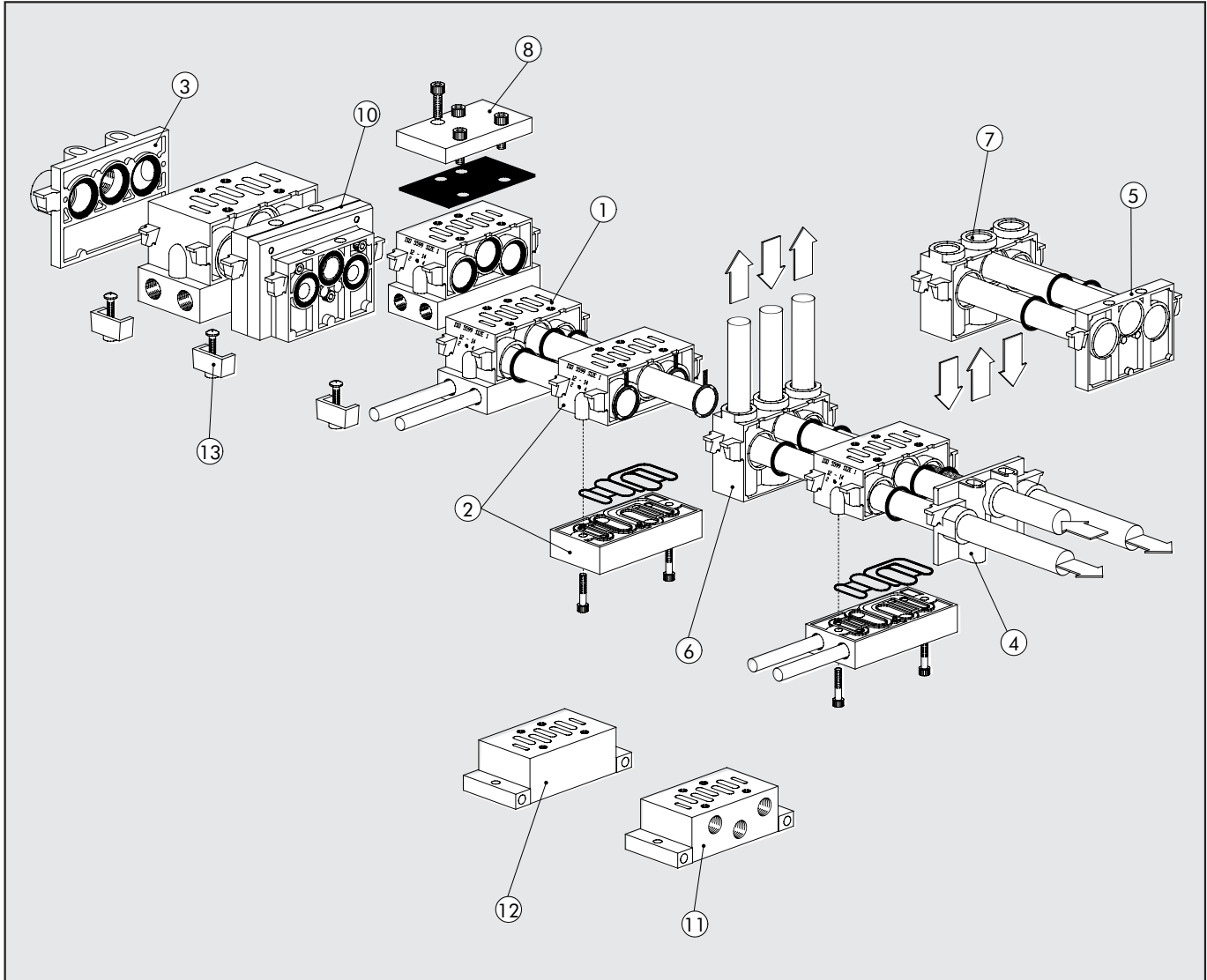
WIRING DIAGRAM



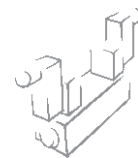
NOTES

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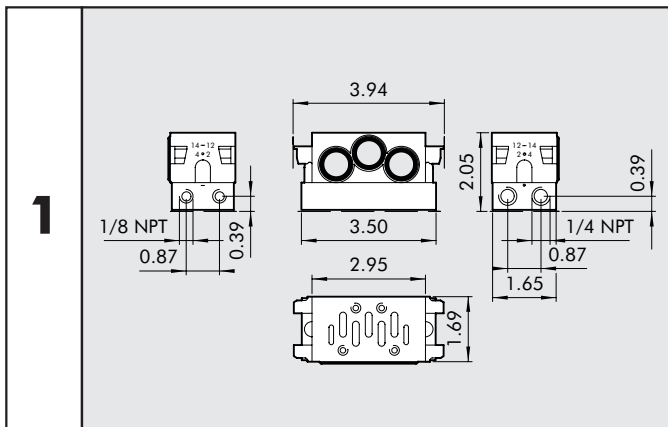
BASES TO ISO 5599/1 FOR ISO 5599/1 VALVES SERIES IPV-ISV



Ref.	Description	ISO 1 Code	ISO 2 Code
①	Manifold base – side ports	0228000150U	0228001150U
②	Manifold base with bottom ports	0228000155U	0228001155U
③	Input end plate	0228000200U	0228001200U
④	Additional input end plate	0228000201U	0228001201U
⑤	Blind end plate	0228000210	0228001210
⑥	Intermediate – top ports	0228000300U	0228001300U
⑦	Intermediate – back ports	0228000301U	0228001301U
⑧	Blanking plate	0228000500	0228001500
⑨	Intermediate diaphragm	0228000400	0228001400
⑩	ISO 1/ISO 2 port adapter	0228000600	-
⑪	Individual base – side ports	0228000100U	0228001100U
⑫	Base – bottom ports	0228000110U	0228001110U
⑬	Assembly kit	0228000700	0228001700

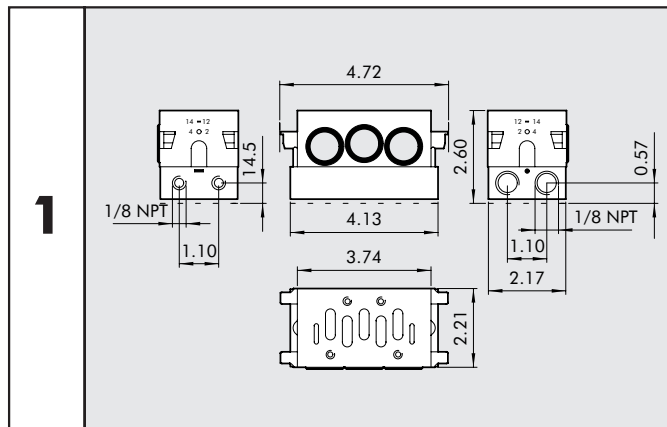


MANIFOLD BASE, SIDE PORTS, BMS-1



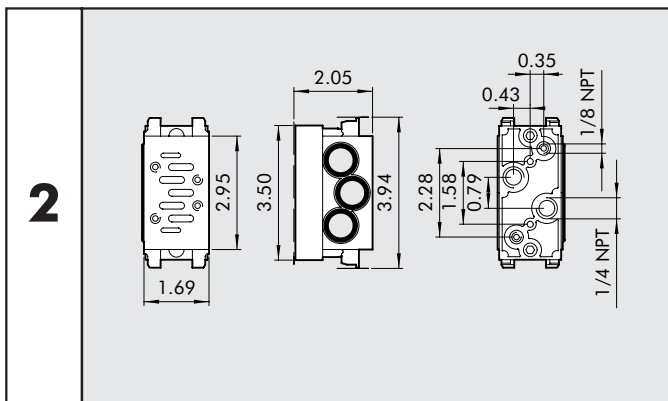
Code	Abbrev.	Weight [lb]
0228000150U	BMS-1U	0.692

MANIFOLD BASE, SIDE PORTS, BMS-2



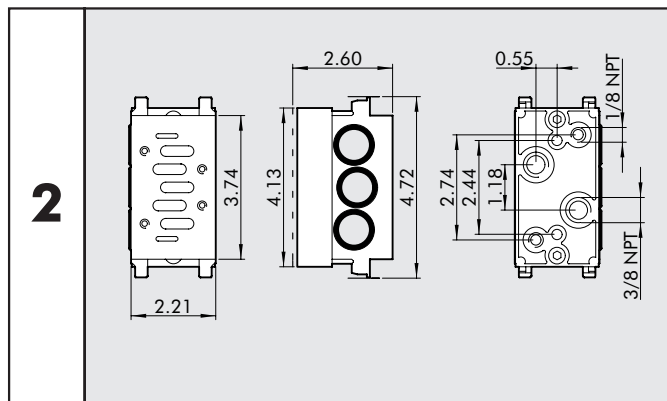
Code	Abbrev.	Weight [lb]
0228001150U	BMS-2U	0.289

MANIFOLD BASE, BOTTOM PORTS, BMS-1



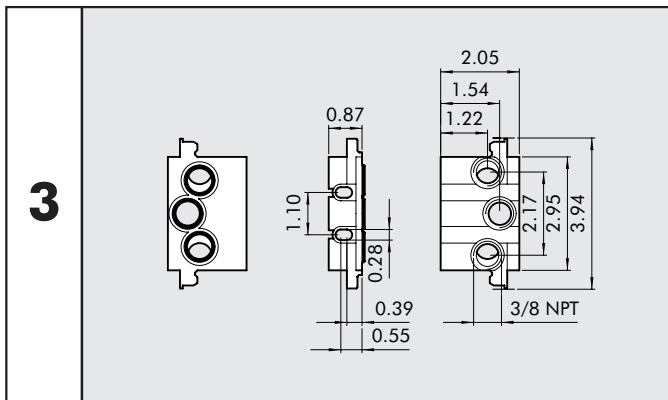
Code	Abbrev.	Weight [lb]
0228000155U	BMB-1U	0.692

MANIFOLD BASE, BOTTOM PORTS, BMS-2



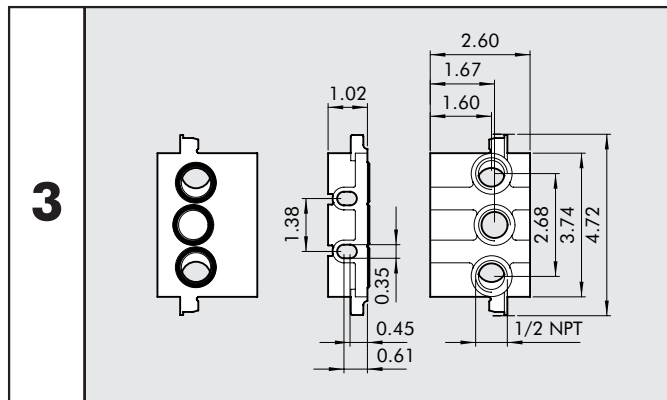
Code	Abbrev.	Weight [lb]
0228001155U	BMB-2U	1.114

INPUT END PLATE TIN-1



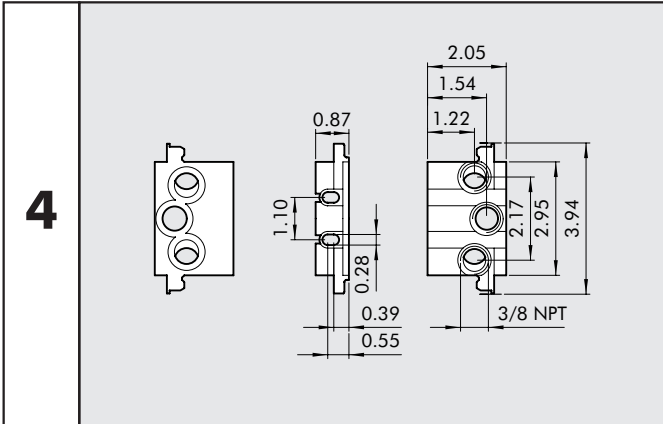
Code	Abbrev.	Weight [lb]
0228000200U	TIN-1U	0.284

INPUT END PLATE TIN-2



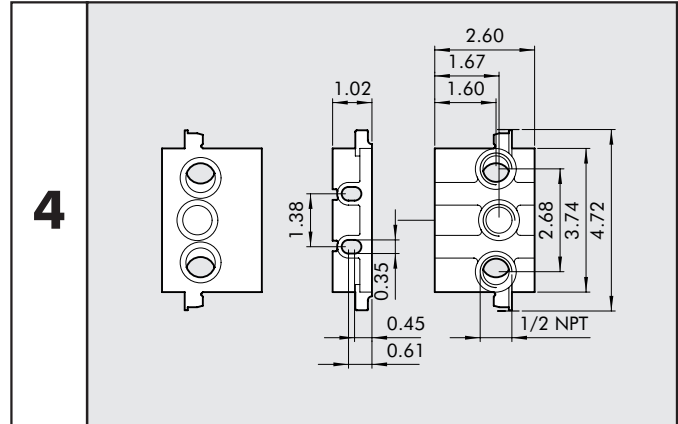
Code	Abbrev.	Weight [lb]
0228001200U	TIN-2U	0.454

ADDITIONAL INPUT END PLATE TIS-1



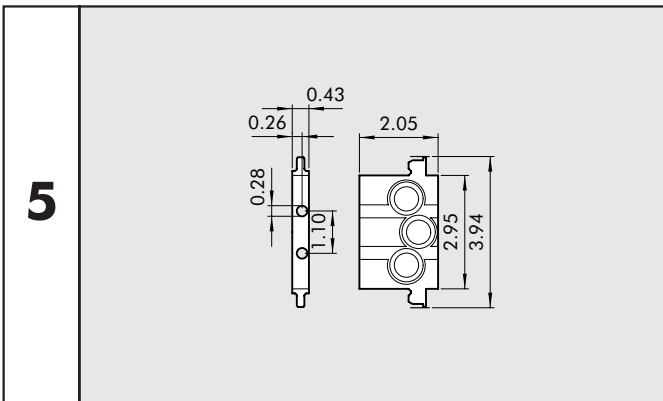
Code	Abbrev.	Weight [lb]
0228000201U	TIS-1U	0.185

ADDITIONAL INPUT END PLATE TIS-2



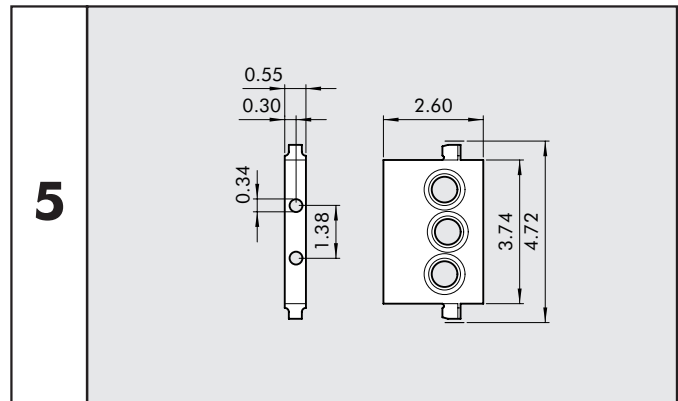
Code	Abbrev.	Weight [lb]
0228001201U	TIS-2U	0.357

BLIND END PLATE TCI-1



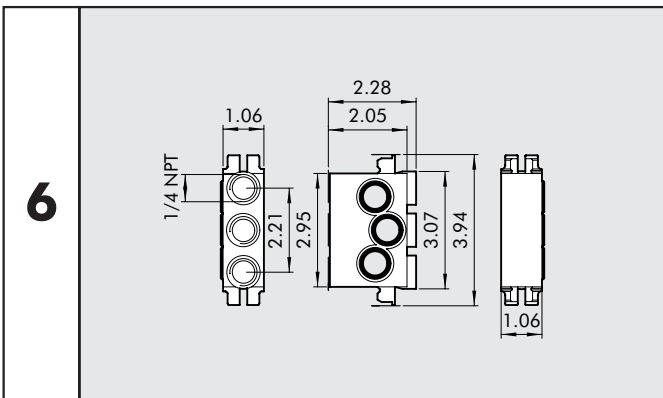
Code	Abbrev.	Weight [lb]
0228000210	TC1-1	0.174

BLIND END PLATE TCI-2



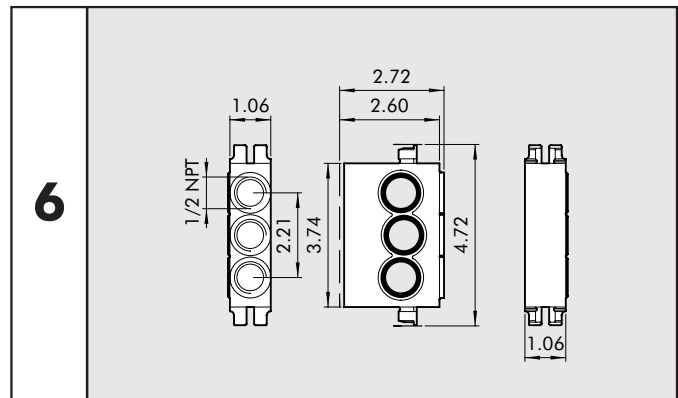
Code	Abbrev.	Weight [lb]
0228001210	TC1-2	0.287

INTERMEDIATE TOP PORTS TIA-1

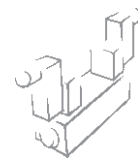


Code	Abbrev.	Weight [lb]
0228000300U	TIA-1U	0.518

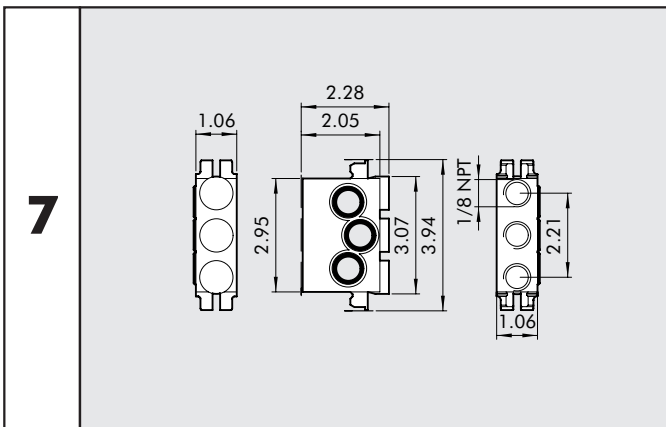
INTERMEDIATE TOP PORTS TIA-2



Code	Abbrev.	Weight [lb]
0228001300U	TIA-2U	0.659

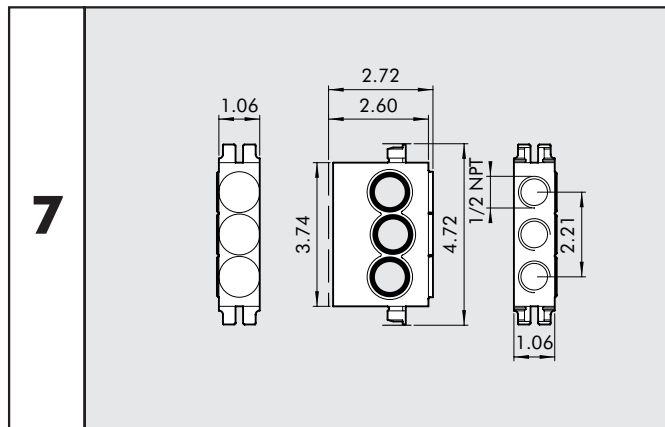


INTERMEDIATE REAR PORTS TIB-1



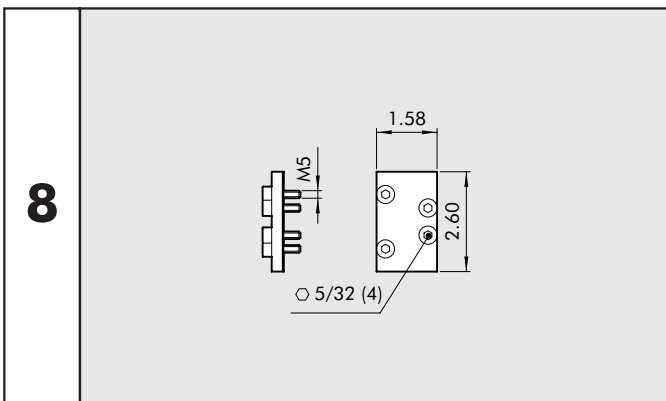
Code	Abbrev.	Weight [lb]
0228000301U	TIB-1U	0.523

INTERMEDIATE REAR PORTS TIB-2



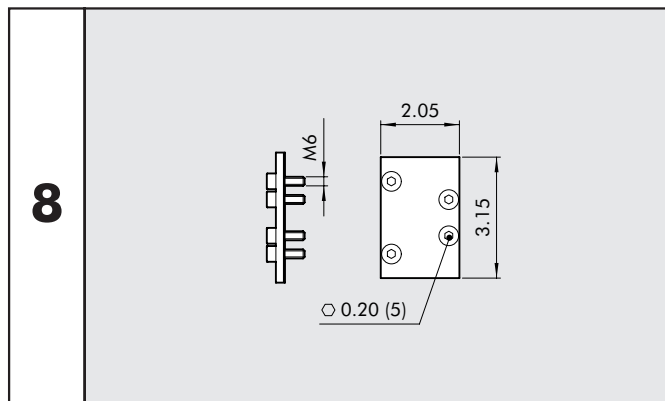
Code	Abbrev.	Weight [lb]
0228001301U	TIB-2U	0.659

BLANKING PLATE PCS-1



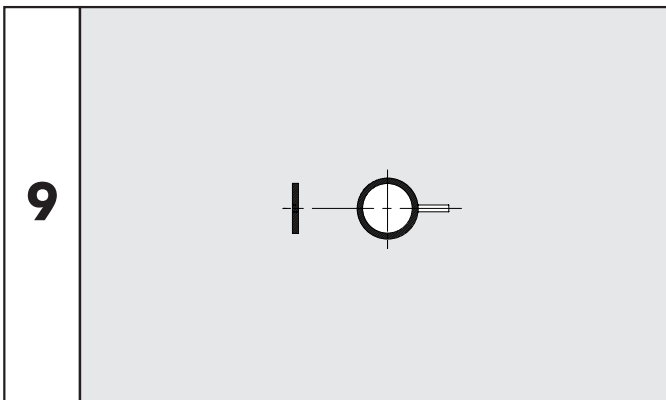
Code	Abbrev.	Weight [lb]
0228000500	PCS-1	0.104

BLANKING PLATE PCS-2



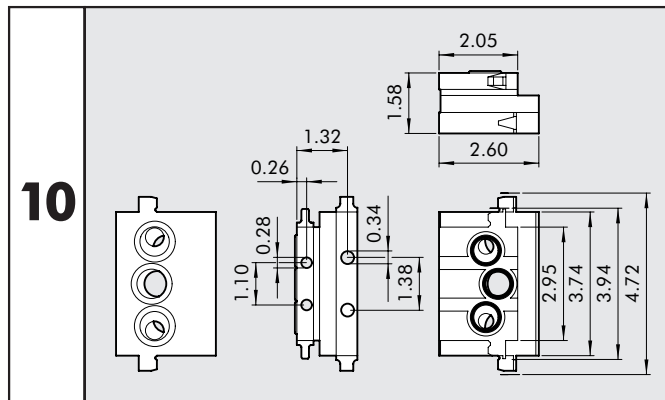
Code	Abbrev.	Weight [lb]
0228001500	PCS-2	0.212

INTERMEDIATE DIAPHRAGM DIA-1 DIA-2



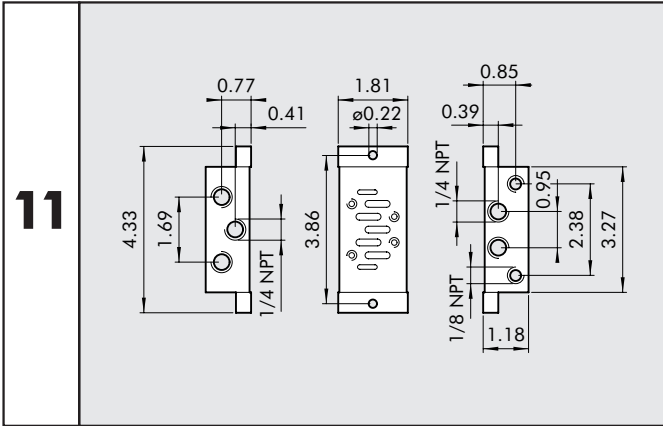
Code	Abbrev.	Weight [lb]
0228000400	DIA-1	0.009
0228001400	DIA-2	0.015

DIMENSION ADAPTER ADT 1-2



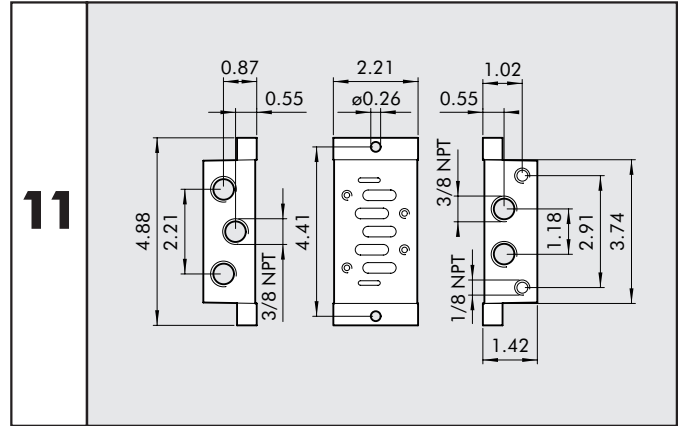
Code	Abbrev.	Weight [lb]
0228000600	ADT 1-2	1.001

INDIVIDUAL BASE SIDE PORTS BSS-1



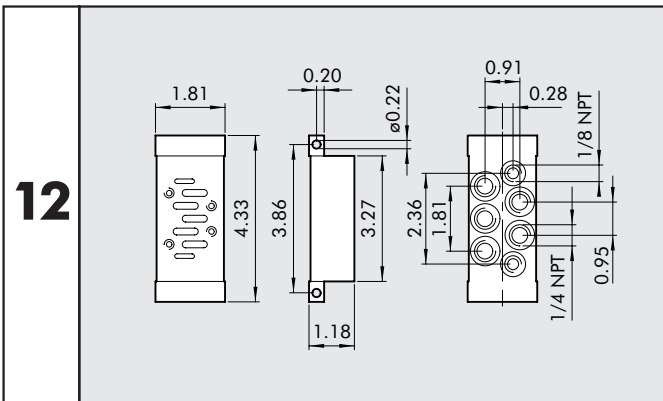
Code	Abbrev.	Weight [lb]
0228000100U	BSS-1U	0.364

INDIVIDUAL BASE SIDE PORTS BSS-2



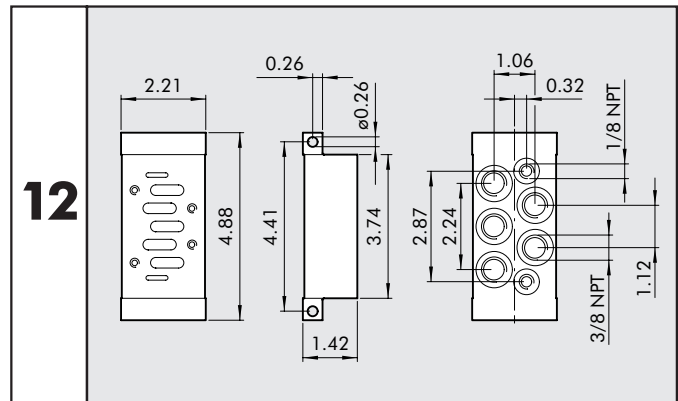
Code	Abbrev.	Weight [lb]
0228001100U	BSS-2U	0.567

INDIVIDUAL BASE BOTTOM PORTS BSB-1



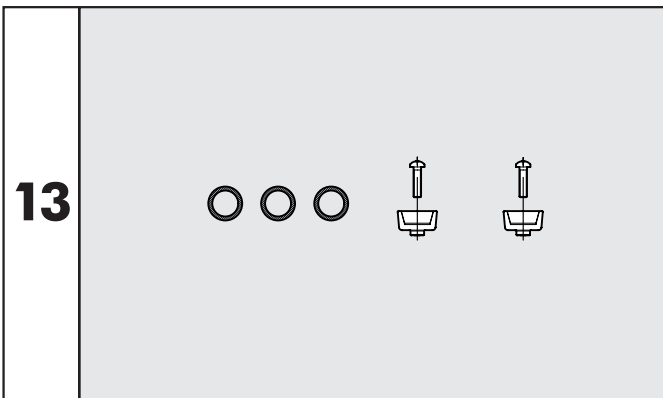
Code	Abbrev.	Weight [lb]
0228000110U	BSB-1U	0.434

INDIVIDUAL BASE BOTTOM PORTS BSB-2



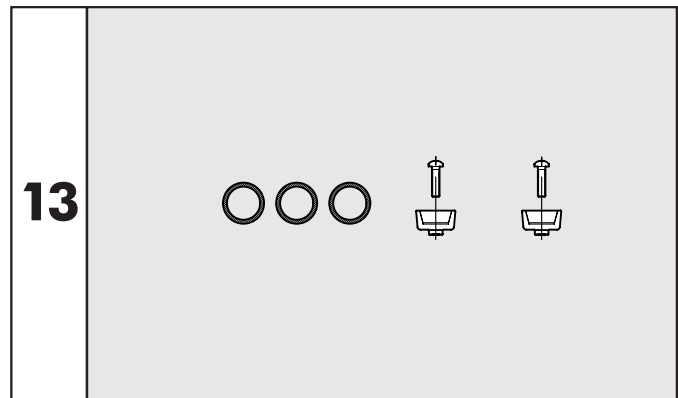
Code	Abbrev.	Weight [lb]
0228001110U	BSB-2U	0.670

ASSEMBLY KIT ISO 1

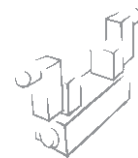


Code	Abbrev.	Weight [lb]
0228000700	KIT ISO 1	0.104

ASSEMBLY KIT ISO 2



Code	Abbrev.	Weight [lb]
0228001700	KIT ISO 2	0.104



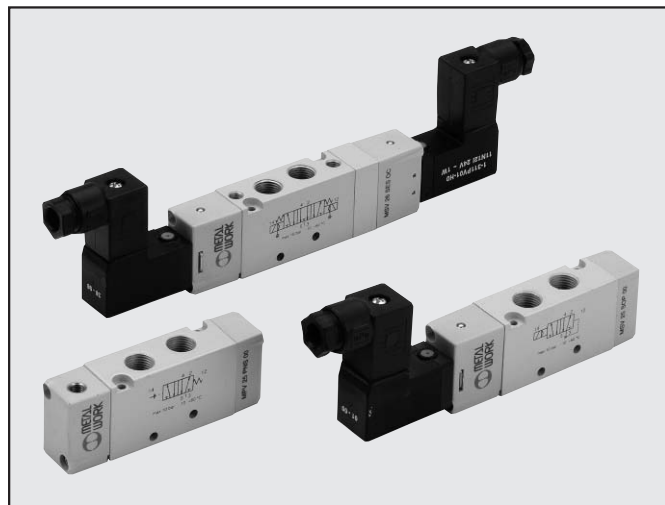
MACH 16 VALVES NPT THREADS

Available in size 1/8" only, versions 5/2 and 5/3 and with pneumatic and solenoid actuation. The MACH 16 valves are typical small size valves, only 0,62 inch wide, with excellent performance, 26,5 scfm flow rate at 87 psi, ΔP 14,5 psi.

The valve can be used in line, on a panel, or on a base (multiple or manifold).

This MACH design is the result of the miniaturisation concept with the same durability, sturdiness and reliability.

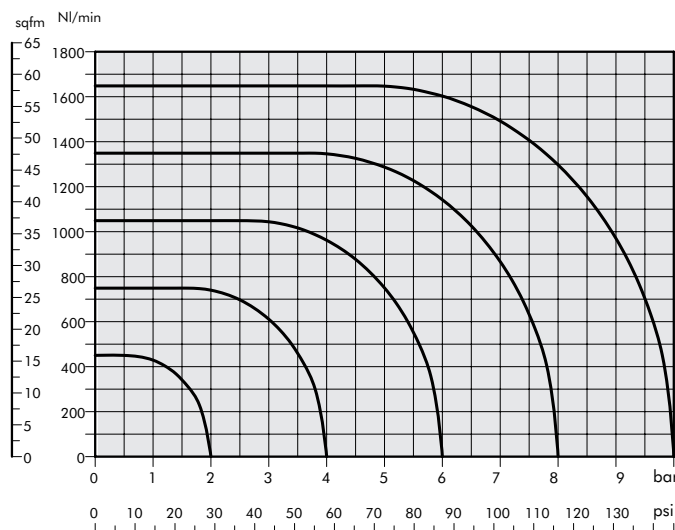
Flow Coefficient:
Cv .75 @ 87psi ΔP=15psi



TECHNICAL DATA

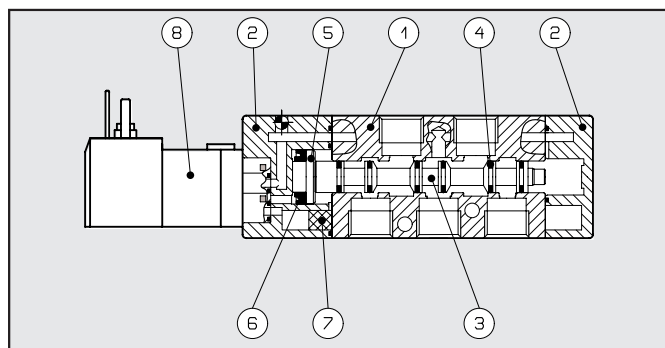
Valve port thread	1/8" NPT
Type of control	pneumatic actuation 10-32 UNF solenoid/pneumatic operation with integrated coil
Maximum outer diameter of gaskets for ports 1 - 3- 5	0.6"
Maximum outer diameter for ports 2 - 4	0.6"
Operating temperature range	14° to 140°F
Minimum actuation pressure pilot – pneumatic controls	monostable with pneumatic spring: see picture on page 2.2/86 23.2 psi bar for monostable valves – mechanical spring 14.5 psi bar for bistable valves – 27.6 psi bar for valves 5/3
Maximum operating pressure	145 psi bar
Fluid	Filtered lubricated or unlubricated air lubrication, if used, must be continuous
Recommended lubricant	ISO and UNI FD22
Solenoid pilot	Integrated coil DIN 43650 C shape
Manual	monostable on solenoid pilot (with bistable manual valve on request)
Number of ways in base	1-3-5 and pilot exhaust
Screws for wall-mounting single valve	2 screws M3
Screws for base-mounting valve	2 screws M2.5x30
Installation	in any position (vertical assembly is not recommended for bistable valves subjected to vibration)
Flow rate at 87 psi Bar ΔP 7 psi	19 SCFM
Flow rate at 87 psi Bar ΔP 14.5 psi	26.5 SCFM CV 0.75
Conductance C	0.36 SCFM psi
Critical ratio b	0.52 psi/psi

FLOW CHART

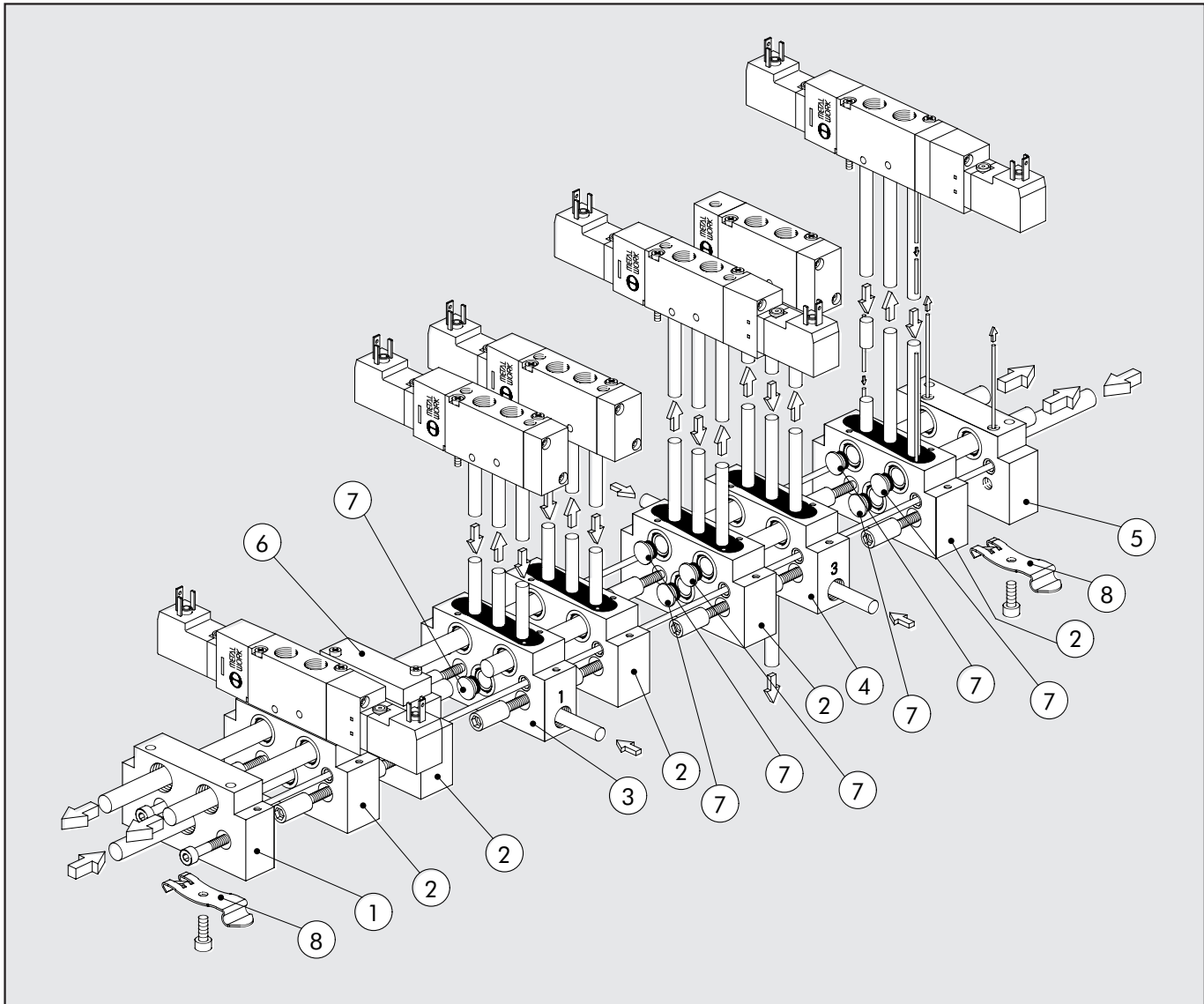


COMPONENTS

- ① VALVE BODY: Aluminium
- ② CONTROL/END CAP: HOSTAFORM®
- ③ SPOOL: Aluminium
- ④ GASKETS: Polyurethane
- ⑤ PISTONS: HOSTAFORM®
- ⑥ PISTON GASKET: Polyurethane
- ⑦ FILTER: sintered bronze
- ⑧ PILOT: with integrated coil



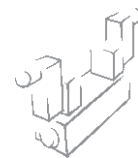
MANIFOLD BASES FOR MACH 16



Ref.	Description	Code
①	M16/VDMA Input end-plate kit	0227100201U
②	M16 manifold base kit	0227100150
③	M16 separate feed manifold base kit	0227100301U
④	M16 exhaust feed manifold base kit	0227100302U
⑤	M16/VDMA output end-plate kit	0227100200U
⑥	M16 blanking plate	0225004500
⑦	Intermediate diaphragm	0227100000
⑧	Connection bracket on DIN-bar	0227300600

KEY TO CODES

M	S	V	N	5	S	O	P	O	O	24VDC	
FAMILY		PORT	FUNCTION		OPERATORS 14		RESETTING 12		FURTHER DETAILS		VOLTAGE
MSV	solenoid/ pneumatic	N 1/8 NPT	5	5/2	SO	solenoid/ pneumatic	P	pneumatic spring	OO	5/2	24VDC
MPV	pneumatic		6	5/3	SE PN	solenoid pilot pneumatic	S B	mechanical spring bistable	CC OC PC	closed centres open centres pressure centres	24VAC 110VAC



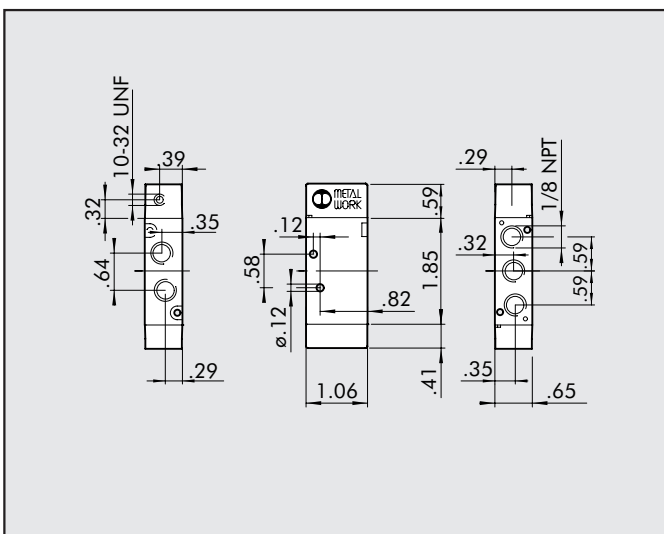
MACH 16 VALVES MPV, PNEUMATIC

TECHNICAL DATA

Operating pressure	vacuum to 145 psi
Minimum operating pressure:	
• monostable	see chart
• monostable 5/3	27,5 psi
• bistable	14,5 psi
Conductance C	0,36 scfm psi
Critical ratio b	0,52 psi/psi
Flow rate at 87psi ΔP 7psi	19 scfm
Flow rate at 87psi ΔP 14,5psi	26,5 scfm
Actuation response times at 87psi:	
• monostable	4 ms
• bistable	4 ms
Repositioning response times at 87psi:	
• monostable	8.4 ms
• bistable	4 ms

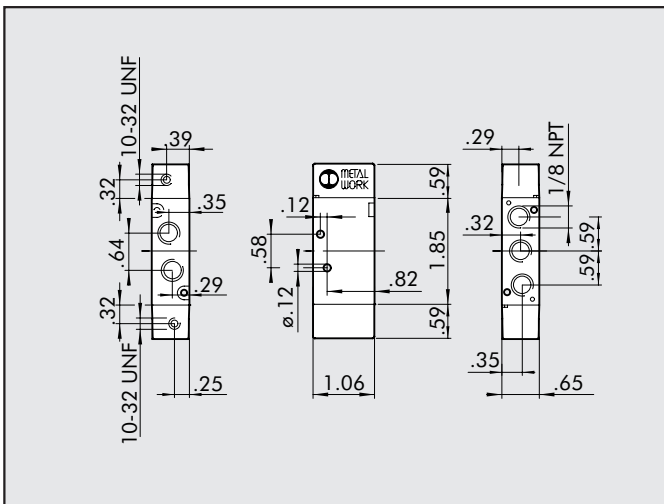


MONOSTABLE 5/2

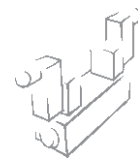


Symbol	Abbrev.	Code	Weight [lb]
	MPV N5 PNP OO	7062010100U	0,0132
	MPV N5 PNS OO	7062010130U	0,0135

BISTABLE 5/2



Symbol	Abbrev.	Code	Weight [lb]
	MPV N5 PNB OO	7062010110U	0,0137



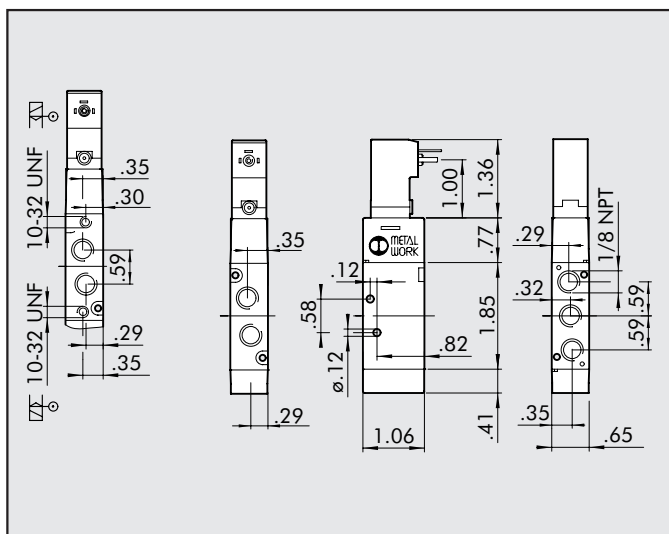
MACH 16 VALVES MPV, SOLENOID/PNEUMATIC

TECHNICAL DATA

Operating pressure:	
• monostable	22 to 145 psi
• bistable	14,5 to 145 psi
• pilot assisted	vacuum to 145 psi
Minimum pilot pressure	29 psi
Operating temperature	14 to 140°F
Conductance C	0,36 scfm psi
Critical ratio b	0.52 psi/psi
Flow rate at 87psi ΔP 7psi	19 scfm
Flow rate at 87psi ΔP 14,5psi	26,5 scfm
TRA/TRR monostable at 87psi	12 ms / 26 ms
TRA/TRR bistable at 87psi	21 ms / 21 ms
Type of manual actuation	monostable on solenoid pilot
Pilot with integrated coils	24 VDC - 24 VAC - 110 VAC
Power	1 W
Voltage tolerances	-10% to +15%
Insulation class	F 155
Degree of protection	IP 65 EN60529 with connector
Solenoid rating	100% ED
Electric contacts	DIN 43650 C-shape

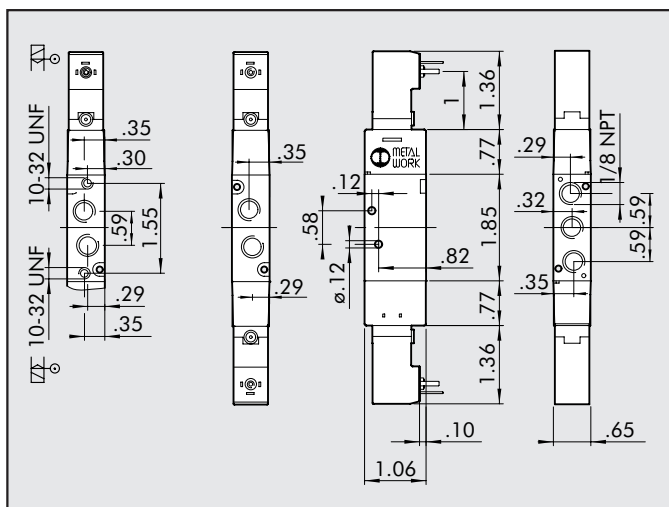


MONOSTABLE 5/2



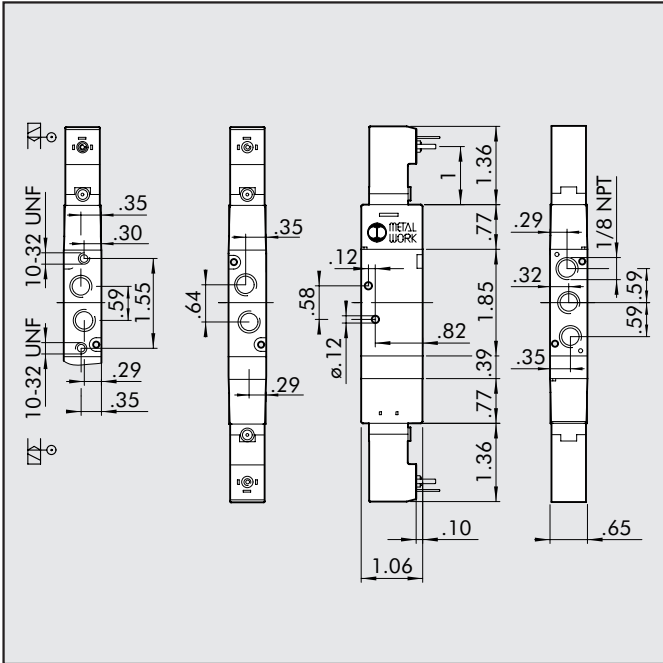
Symbol	Abbrev.	Code	Weight [lb]
	MSV N5 SOP 00 24VDC	7062020102U	0,0203
	MSV N5 SOP 00 24VAC	7062020103U	0,0203
	MSV N5 SOP 00 110VAC	7062020104U	0,0203
	MSV N5 SOS 00 24VDC	7062020132U	0,0205
	MSV N5 SOS 00 24VAC	7062020133U	0,0205
	MSV N5 SOS 00 110VAC	7062020134U	0,0205
	MSV N5 SES 00 24VDC	7062030132U	0,0205
	MSV N5 SES 00 24VAC	7062030133U	0,0205
	MSV N5 SES 00 110VAC	7062030134U	0,0205

BISTABLE 5/2



Symbol	Abbrev.	Code	Weight [lb]
	MSV N5 SOB 00 24VDC	7062020112U	0,0273
	MSV N5 SOB 00 24VAC	7062020113U	0,0273
	MSV N5 SOB 00 110VAC	7062020114U	0,0273
	MSV N5 SEB 00 24VDC	7062030112U	0,0276
	MSV N5 SEB 00 24VAC	7062030113U	0,0276
	MSV N5 SEB 00 110VAC	7062030114U	0,0276

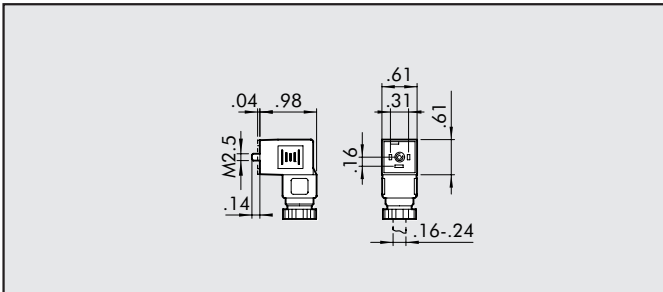
MONOSTABLE 5/3



Symbol	Abbrev.	Code	Weight [lb]
	MSV 26 SOS CC 24VDC	7062020212	0,0313
	MSV 26 SOS CC 24VAC	7062020213	0,0313
	MSV 26 SOS CC 110VAC	7062020214	0,0313
	MSV 26 SOS OC 24VDC	7062020312	0,0313
	MSV 26 SOS OC 24VAC	7062020313	0,0313
	MSV 26 SOS OC 110VAC	7062020314	0,0313
	MSV 26 SOS PC 24VDC	7062020412	0,0313
	MSV 26 SOS PC 24VAC	7062020413	0,0313
	MSV 26 SOS PC 110VAC	7062020414	0,0313
	MSV 26 SES CC 24VDC	7062030212	0,0315
	MSV 26 SES CC 24VAC	7062030213	0,0315
	MSV 26 SES CC 110VAC	7062030214	0,0315
	MSV 26 SES OC 24VDC	7062030312	0,0315
	MSV 26 SES OC 24VAC	7062030313	0,0315
	MSV 26 SES OC 110VAC	7062030314	0,0315
	MSV 26 SES PC 24VDC	7062030412	0,0315
	MSV 26 SES PC 24VAC	7062030413	0,0315
	MSV 26 SES PC 110VAC	7062030414	0,0315

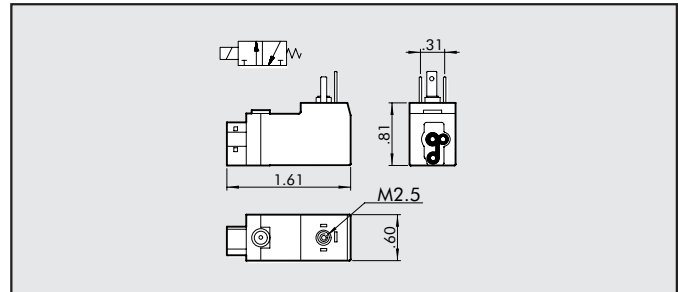
ACCESSORIES: MACH 16 VALVES MSV, SOLENOID/PNEUMATIC

CONNECTOR 0.6 INCHES SHAPE C TO DIN 43650

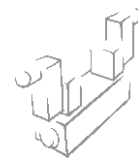


Code	Description
W0970501021	CONNECTOR 0.6 inches SHAPE C DIN 43650
W0970501022	CONNECTOR 0.6 inches SHAPE C DIN 43650 LED 24V
W0970501025	CONNECTOR 0.6 inches SHAPE C DIN 43650 LED+VDR 24V

SPARE PARTS: PILOT FOR MACH 16

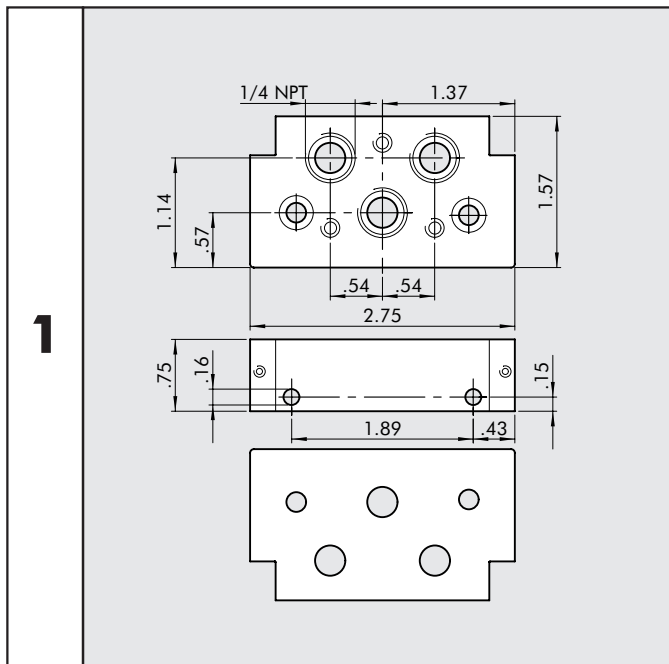


Code	Description
W4015101000	IN-LINE PILOT M16 24 VDC
W4015101010	IN-LINE PILOT M16 24 VAC 50/60 Hz
W4015101020	IN-LINE PILOT M16 110 VAC 50/60 Hz



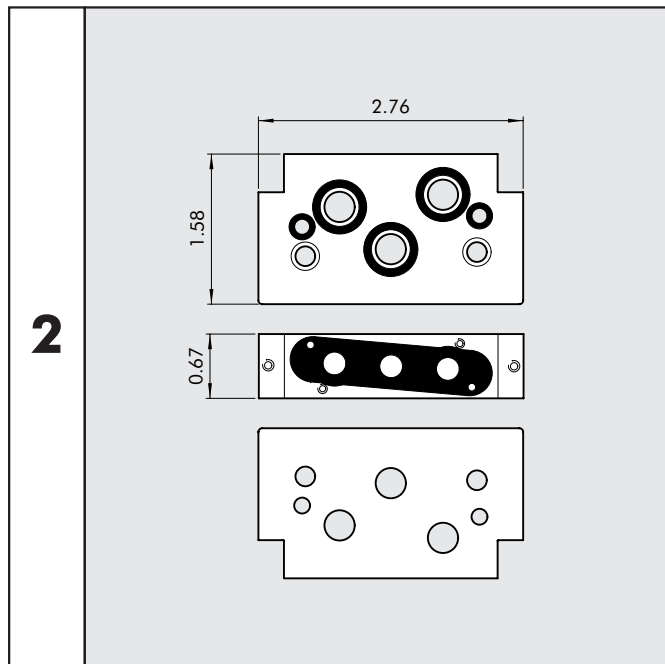
MANIFOLD BASES FOR MACH 16 VALVES

MACH 16 INPUT TERMINAL KIT



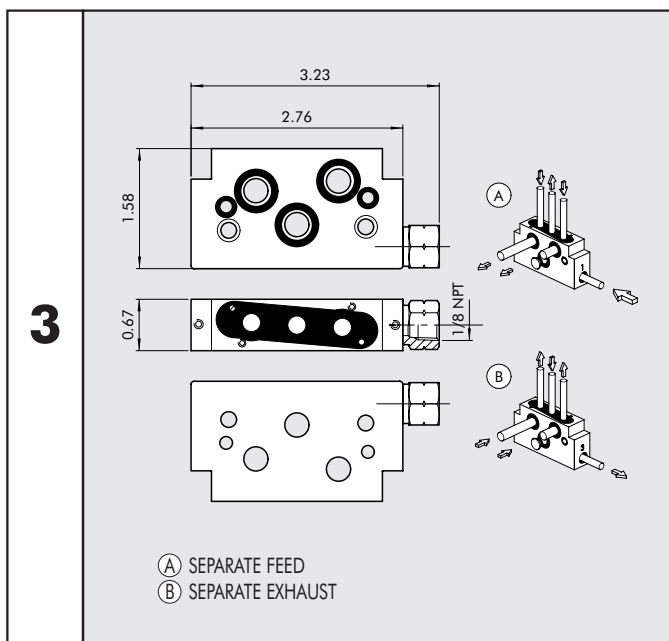
Code	Description	Weight [lb]
0227100201U	M16 INPUT TERMINAL KIT	0,0276

MACH 16 MANIFOLD BASE KIT



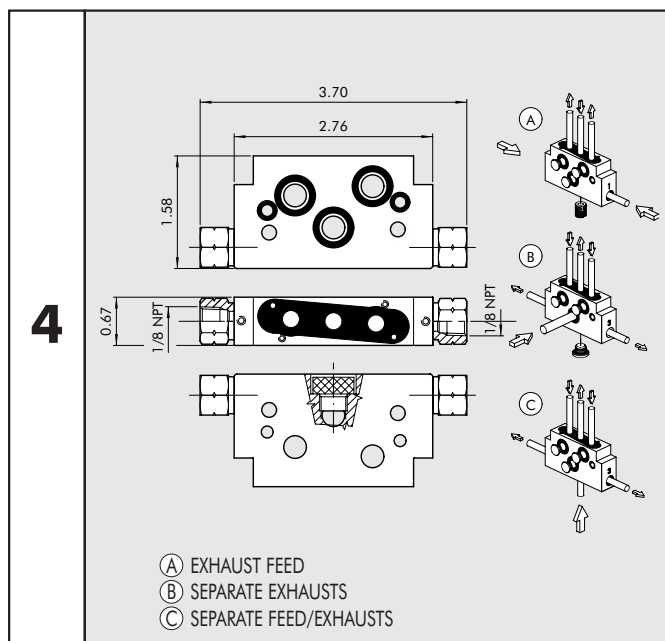
Code	Description	Weight [lb]
0227100150	M16 MANIFOLD BASE KIT	0,0267

MACH 16 SEPARATE FEED MANIFOLD BASE KIT



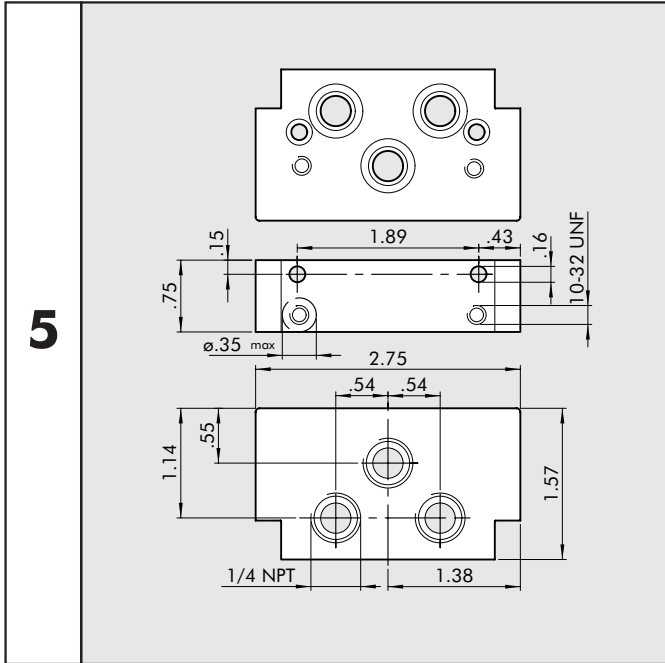
Code	Description	Weight [lb]
0227100301U	M16 SEPARATE FEED MANIFOLD BASE KIT	0,0262

MACH 16 EXHAUST FEED MANIFOLD BASE KIT



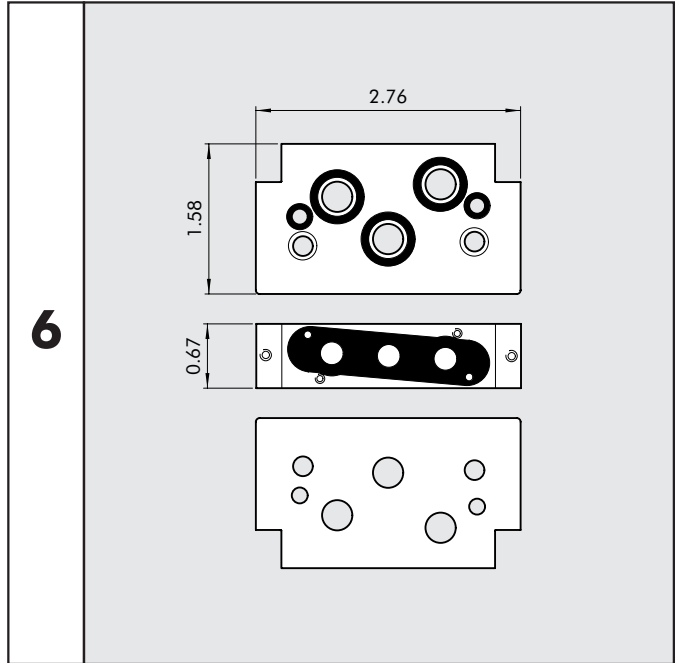
Code	Description	Weight [lb]
0227100302U	M16 EXHAUST FEED MANIFOLD BASE KIT	0,0249

MACH 16 OUTPUT TERMINAL KIT



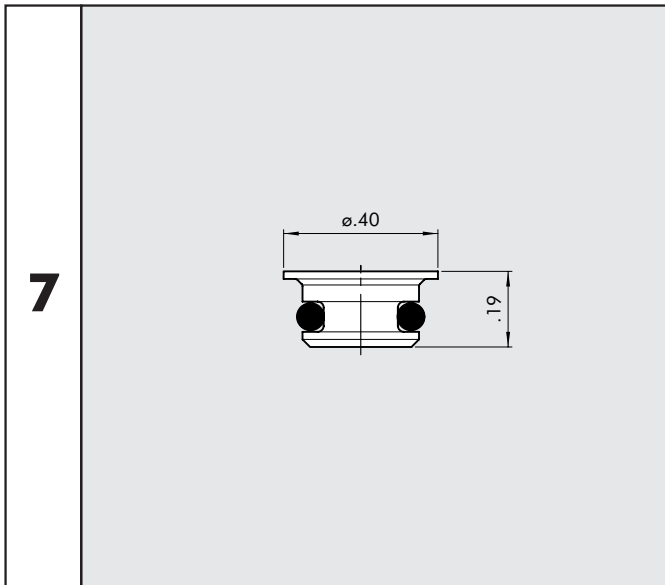
Code	Description	Weight [lb]
0227100200U	M16 OUTPUT TERMINAL KIT	0,0269

BLANKING PLATE FOR UNUSED POSITION



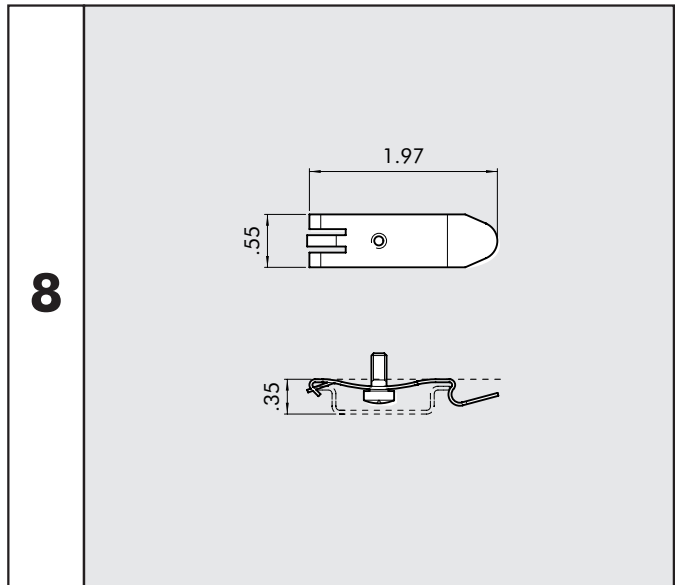
Code	Description	Weight [lb]
0225004500	M16 BLANKING PLATE ACCESSORY	0,0040

INTERMEDIATE DIAPHRAGM



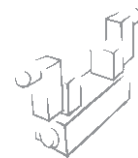
Code	Description	Weight [lb]
0227100000	INTERMEDIATE DIAPHRAGM	0,0002

BRACKETS FOR CONNECTION ON DIN BAR



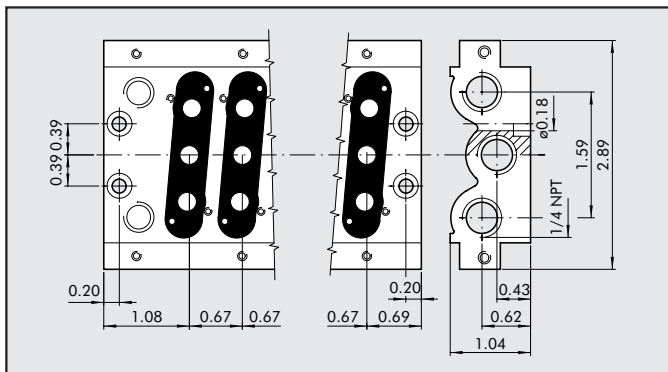
Code	Description	Weight [lb]
0227300600	BRACKET FOR CONNECTION ON DIN BAR	0,0015

Direct attachment under Mach 16 input terminal and Mach 16 output terminal 1 piece each bag.



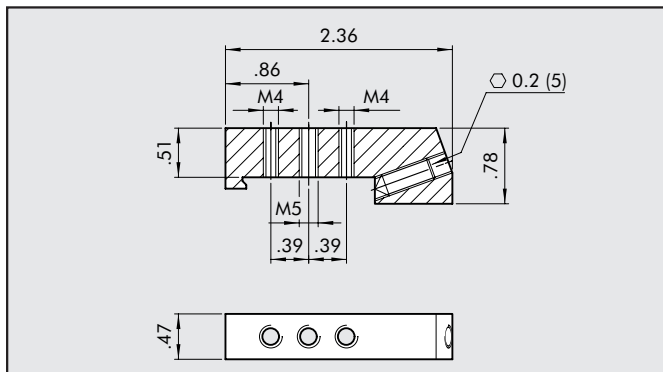
MULTIPLE BASES FOR MACH 16 VALVES

MACH 16 MULTIPLE BASE



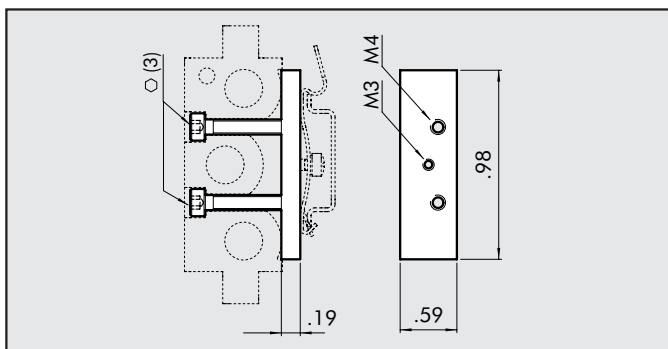
Code	Description	Posn.	Weight [lb]
0225000201U	ACC. BASE CVM.PN-08-02-0-000	2	0,0397
0225000401U	ACC. BASE CVM.PN-08-04-0-000	4	0,0630
0225000601U	ACC. BASE CVM.PN-08-06-0-000	6	0,0860
0225000801U	ACC. BASE CVM.PN-08-08-0-000	8	0,1102
0225001001U	ACC. BASE CVM.PN-08-10-0-000	10	0,1351
0225001201U	ACC. BASE CVM.PN-08-12-0-000	12	0,1556

Ω BAR ADAPTER MULTIPLE BASES FOR MACH 16



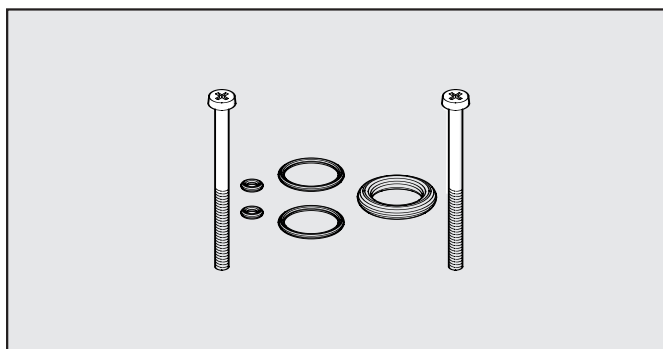
Code	Description	Weight [lb]
0225004600	ACCESSORIES: OMEGA-ADAPTER MACH 16	0,0035

PLATE FOR BRACKET FOR CONNECTION ON DIN BAR



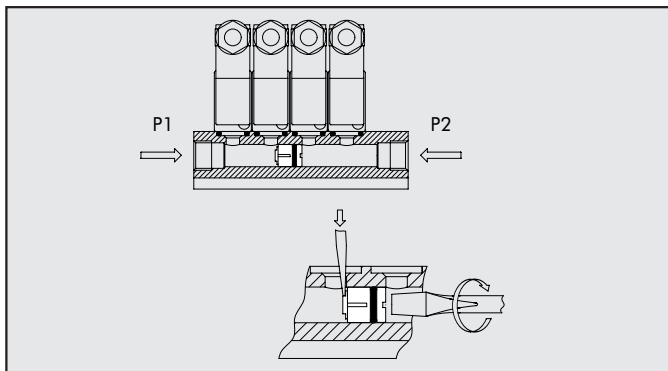
Code	Description
0225004503	PLATE FOR BRACKET FOR CONNECTION ON DIN BAR

SET OF MULTIPLE BASE GASKETS



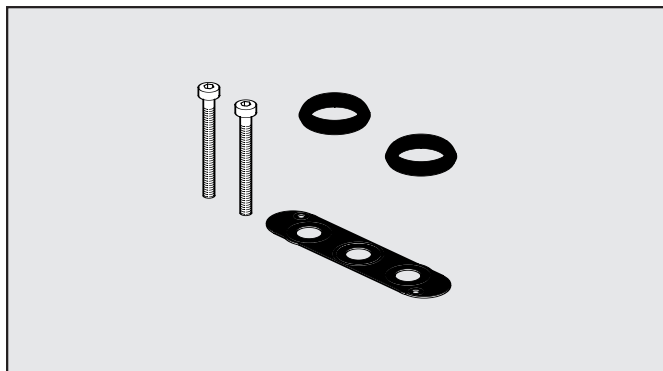
Code	Description	Weight [lb]
0226007030	SET OF M16 MULTIPLE BASE GASKETS	0,0011

INTERMEDIATE DIAPHRAGM



Code	Description	Weight [lb]
0227100001	ACC. MULTIPLE BASE DIAPHRAGM	0,0013

KIT OF SPARE INTEGRATED GASKET



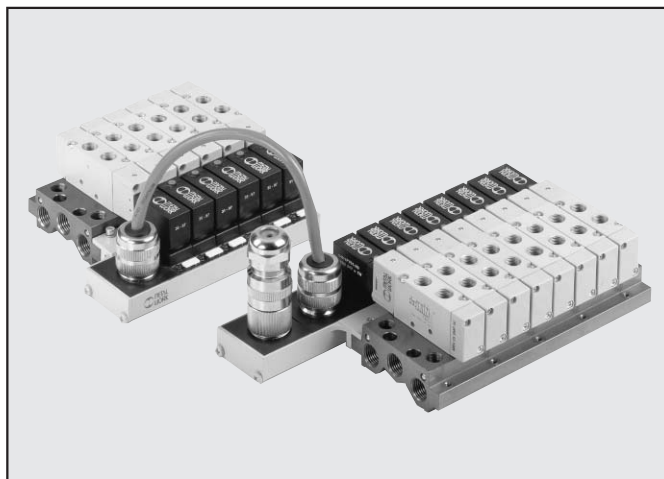
Code	Description	Weight [lb]
0226007030	M16 MULTIPLE BASE GASKET KIT	0,0011

MACH 16 valves can be mounted on bases complete with pneumatic or electrical connection. The electric contacts of the individual valves are connected by means of a printed circuit in a sealed conduit to a single connection point suitable for up to 16 controls. The number 16 has been chosen because the number of outputs of most PLC output boards is 16 or a multiple of it.

The system has numerous alternatives and variants for a wide range of requirements:

- Base for monostable or bistable valves.
- Connection via a multiple connector or wired cable
- Supply of individual parts or ready prepared bases or complete valve units.
- The configuration can be modified at any time to convert bases for monostable valves into bases for bistable valves.
- The return cable can be used to connect two monostable valve units to a single multiple connector.

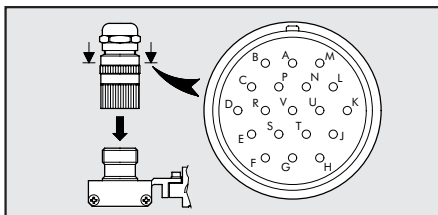
All versions are certified for electromagnetic compatibility. The system is prearranged for mounting a slave for field buses, which can be added at any time.



TECHNICAL DATA

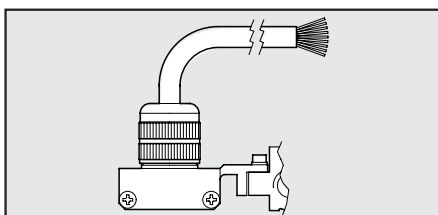
Supply voltage	24VDC, 24VAC
Max. absorption	50 mA per position
Valve actuation indicator	yellow LED
Operating temperature	14 to 140°F
Degree of protection with valves mounted	IP65
Insulation class	to IEC 664-1 and VDE 0110 group C
Electromagnetic compatibility	to EC 336/89
Max. number of solenoids to apply	16
Number of contacts	19 = 16 for solenoids, 2 common, 1 ground
Version with connector	
Connector insulation class	II, to MIL 26485
Cross section of cables to weld to connector	Ø max. 0.00093 inches
number of contacts	19 = 16 for solenoid, 2 common, 1 ground
Pre-wired version	
Cable length	200 inch
Number of wires	19 = 16 for solenoids, 1 common, 1 ground
Wire cross section	Ø 0.00034 inches
Shielding	80-90% airtight covering
Cable	Outer oil-proof and flameproof PVC sheath
Cable outside diameter	0.33 inches

WIRING DIAGRAM FOR VERSION WITH CONNECTOR

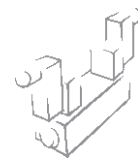


Position of electric contact	Pin on flying connector	Position of electric contact	Pin on flying connector	Position of electric contact	Pin on flying connector
V1	S	V8	J	V15	B
V2	F	V9	A	V16	P
V3	U	V10	N	EARTH	K
V4	H	V11	M	- COM	E
V5	V	V12	L	- COM	R
V6	G	V13	D		
V7	T	V14	C		

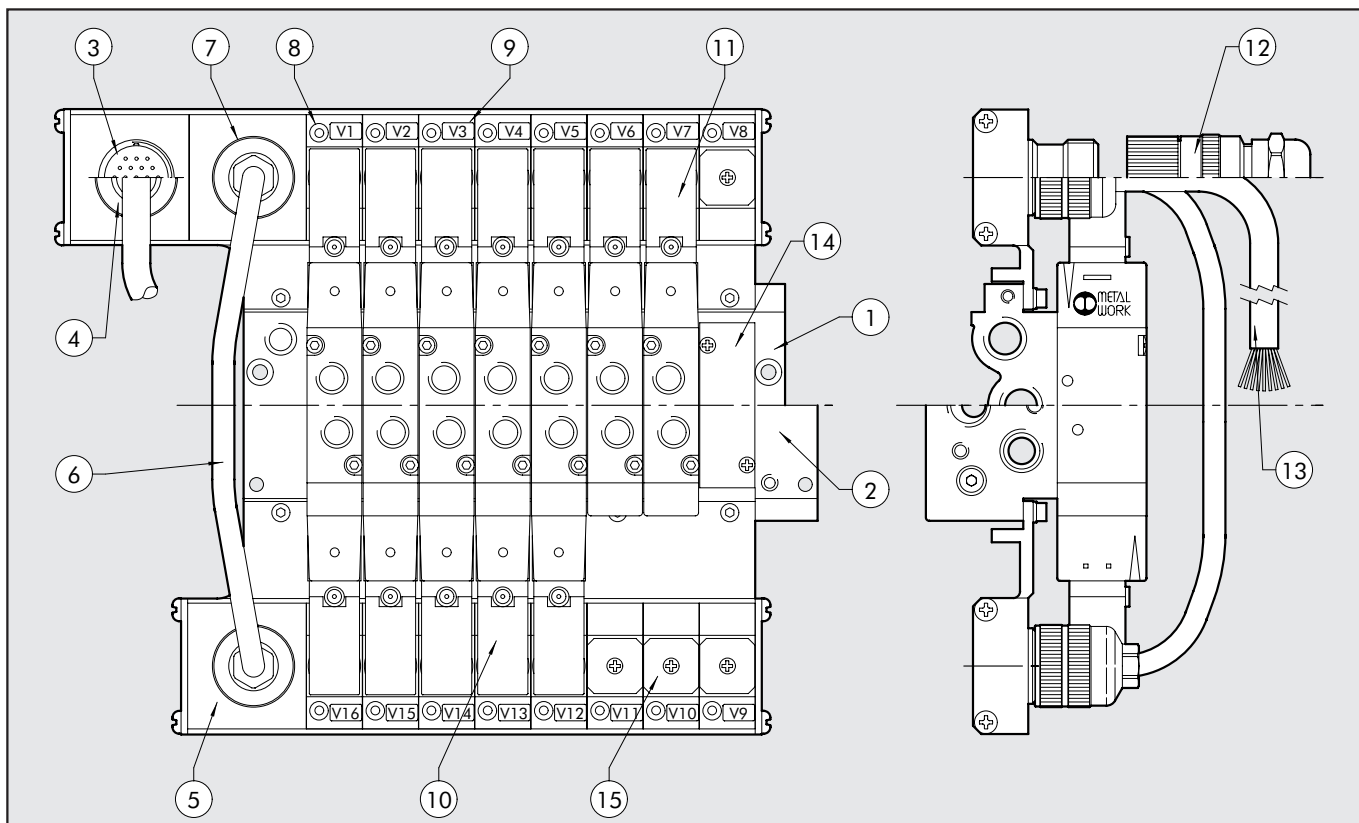
WIRING DIAGRAM FOR PRE-WIRED VERSION



Position of electric contact	Colour of corresponding wire	Position of electric contact	Colour of corresponding wire	Position of electric contact	Colour of corresponding wire
V1	green/black	V8	brown/red	V15	orange
V2	yellow	V9	red/white	V16	blue/black
V3	black/white	V10	red/black	GROUND	yellow/red
V4	blue	V11	green/red	- COM	brown/black
V5	red	V12	blue/red	- COM	green
V6	yellow/black	V13	brown		
V7	white	V14	orange/black		



COMPONENTS



- ① Multiple base: extruded anodised aluminium
- ② Modular base: anodised aluminium
- ③ Main assembly, version with connector
- ④ Main assembly, pre-wired version
- ⑤ Secondary unit/additional secondary unit
- ⑥ 10-wire return cable
- ⑦ Socket for 10-wire return cable
- ⑧ LED (LED on= Solenoid valve energised)
- ⑨ Identification label (for writing on)
- ⑩ Bistable solenoid valve MACH 16
- ⑪ Monostable solenoid valve MACH 16
- ⑫ Flying 19-wire connector for version with connector: nickel-plated aluminium, silver-plated contacts
- ⑬ 19-wire cable for pre-wired version
- ⑭ Blanking plate – pneumatic position: anodised aluminium
- ⑮ Small blanking plate – electric connector: painted aluminium

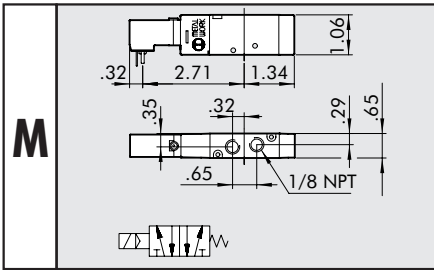
KEY TO CODES

A	0	8	B	W	C	5	0	8	U	M	V	L	2	4	V	D	C
FAMILY		NO. OF POSITIONS				SIZE						VOLTAGE					
A	multiple base for solenoid/pneumatic connection Mach 16	04	4 Posn.	M	electrical connection only for monostable valves	MCN	celectrical connector	08U	1/8 NPT	M	MSV 25 SMS 00		24VDC				
		06	6 Posn.							V	MSV 25 SCS 00		24VAC				
		08	8 Posn.							L	MSV 25 SMP 00						
		10	10 Posn.			WC5	pre-wired cable			J	MSV 25 SMB 00						
		12	12 Posn.							K	MSV 25 SCB 00						
B	manifold base for Mach 16 sol/pneum. connection			B	electrical connection for bistable valves	ACM	additional connection for monostable battery			G	MSV 26 SMS CC						
										O	MSV 26 SCS CC						
										E	MSV 26 SMS OC						
										F	MSV 26 SCS OC						
										B	MSV 26 SMS PC						
										C	MSV 26 SCS PC						
										A	BLANKING PLATE						
										D	INTERMEDIATE DIAPHRAGM						

N.B. The valve insertion order inside the descriptive key is the following, starting from the connector, from the left towards the right: the first left square corresponds to the first valve close to the connector on the base. There are 12 squares available for the description: if you order a base with less than 12 positions, complete by placing a 0 in the remaining boxes.

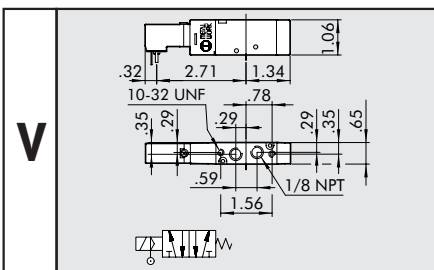
MACH 16 VALVES WITH MULTIPLE CONNECTOR

5/2 MONOSTABLE SOLENOID VALVE WITH MECHANICAL SPRING



Code	Description	Weight [lb]
7062040132U	VALVE MSV N5 SMS 00 24VDC	0,020
7062040133U	VALVE MSV N5 SMS 00 24VAC	0,020

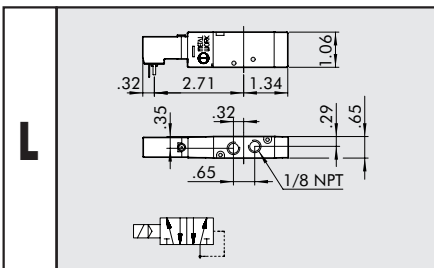
5/2 MONOSTABLE PILOT-ASSISTED SOLENOID VALVE WITH MECHANICAL SPRING



Code	Description	Weight [lb]
7062060132U	VALVE MSV N5 SCS 00 24VDC	0,021
7062060133U	VALVE MSV N5 SCS 00 24VAC	0,021

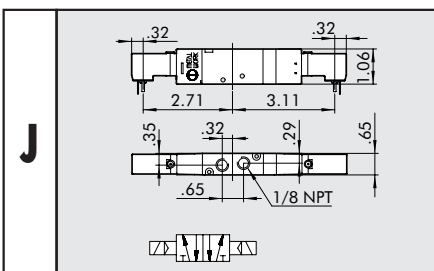
Note: Only for use with manifold bases.

5/2 MONOSTABLE SOLENOID VALVE WITH PNEUMATIC SPRING



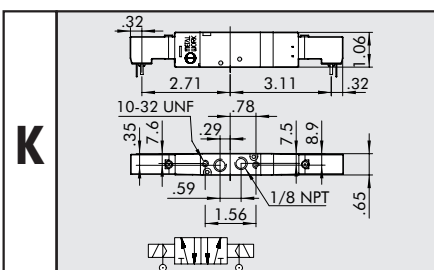
Code	Description	Weight [lb]
7062040102U	VALVE MSV N5 SMP 00 24VDC	0,021
7062040103U	VALVE MSV N5 SMP 00 24VAC	0,021

5/2 BISTABLE SOLENOID VALVE

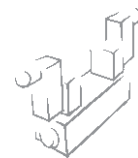


Code	Description	Weight [lb]
7062040112U	VALVE MSV N5 SMB 00 24VDC	0,031 (0,0306)
7062040113U	VALVE MSV N5 SMB 00 24VAC	0,031 (0,0306)

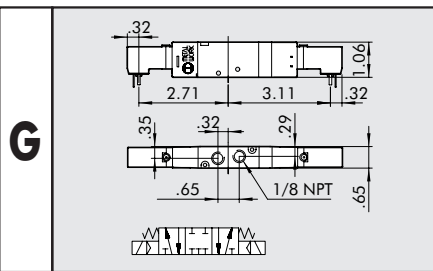
5/2 BISTABLE PILOT-ASSISTED SOLENOID VALVE



Code	Description	Weight [lb]
7062060112U	VALVE MSV N5 SCB 00 24VDC	0,031 (0,0308)
7062060113U	VALVE MSV N5 SCB 00 24VAC	0,031 (0,0308)

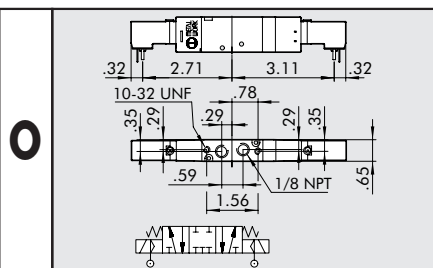


5/3 MONOSTABLE CLOSED CENTER SOLENOID VALVE



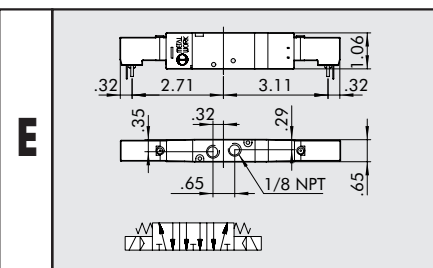
Code	Description	Weight [lb]
7062040212U	VALVE MSV N6 SMS CC 24VDC	0,0313
7062040213U	VALVE MSV N6 SMS CC 24VAC	0,0313

5/3 MONOSTABLE PILOT-ASSISTED CLOSED CENTER SOLENOID VALVE



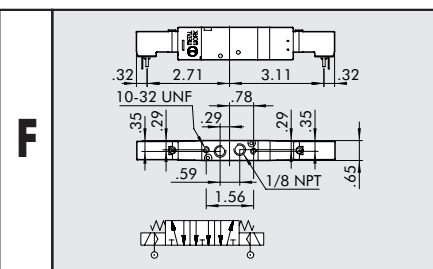
Code	Description	Weight [lb]
7062060212U	VALVE MSV N6 SCS CC 24VDC	0,0315
7062060213U	VALVE MSV N6 SCS CC 24VAC	0,0315

5/3 MONOSTABLE OPEN CENTER SOLENOID VALVE



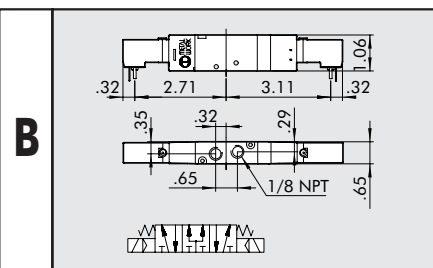
Code	Description	Weight [lb]
7062040312U	VALVE MSV N6 SMS OC 24VDC	0,0313
7062040313U	VALVE MSV N6 SMS OC 24VAC	0,0313

5/3 MONOSTABLE PILOT-ASSISTED OPEN CENTER SOLENOID VALVE



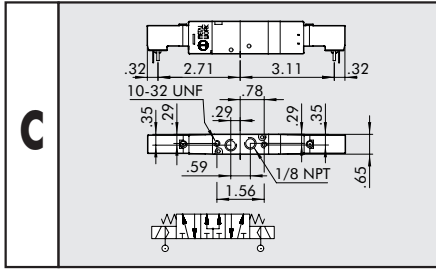
Code	Description	Weight [lb]
7062060312U	VALVE MSV N6 SCS OC 24VDC	0,0315
7062060313U	VALVE MSV N6 SCS OC 24VAC	0,0315

5/3 MONOSTABLE PRESSURE CENTER SOLENOID VALVE



Code	Description	Weight [lb]
7062040412U	VALVE MSV N6 SMS PC 24VDC	0,0313
7062040413U	VALVE MSV N6 SMS PC 24VAC	0,0313

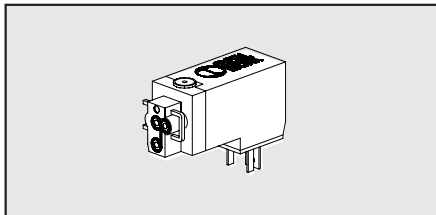
5/3 MONOSTABLE PILOT-ASSISTED PRESSURE CENTER SOLENOID VALVE



Code	Description	Weight [lb]
7062060412U	VALVE MSV N6 SCS PC 24VDC	0,0315
7062060413U	VALVE MSV N6 SCS PC 24VAC	0,0315

SPARE PARTS

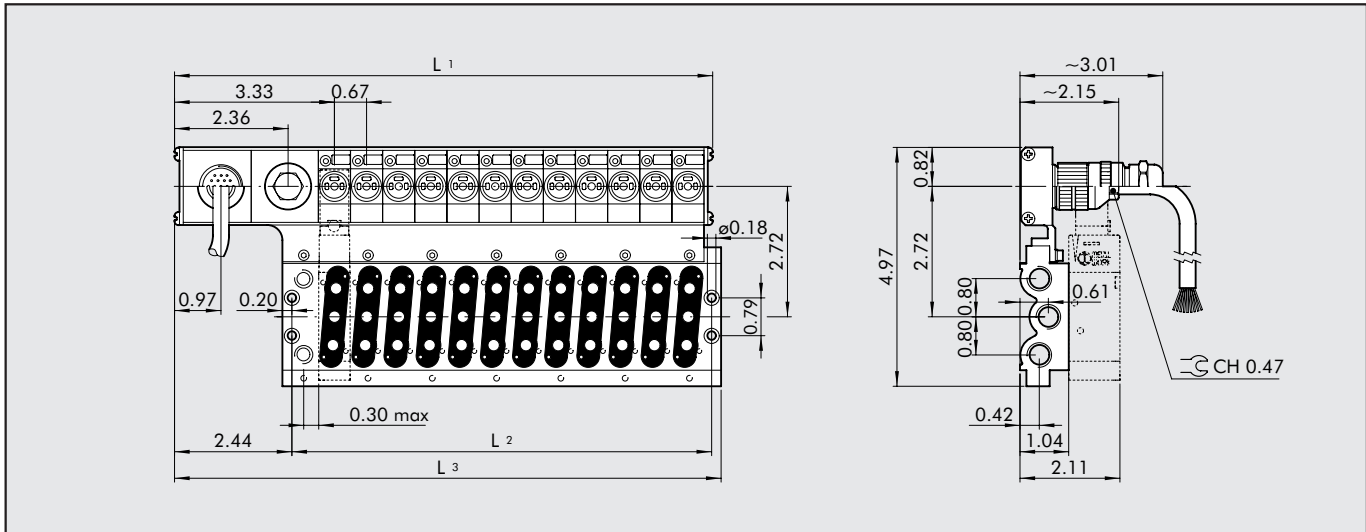
PILOT



Code	Description
W4015201000	PILOT - MULTIPLE CONNECTION 24 VDC
W4015201010	PILOT - MULTIPLE CONNECTION 24 VAC

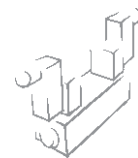
BASES WITH MULTIPLE CONNECTION

MONOSTABLE SOLENOID BASE

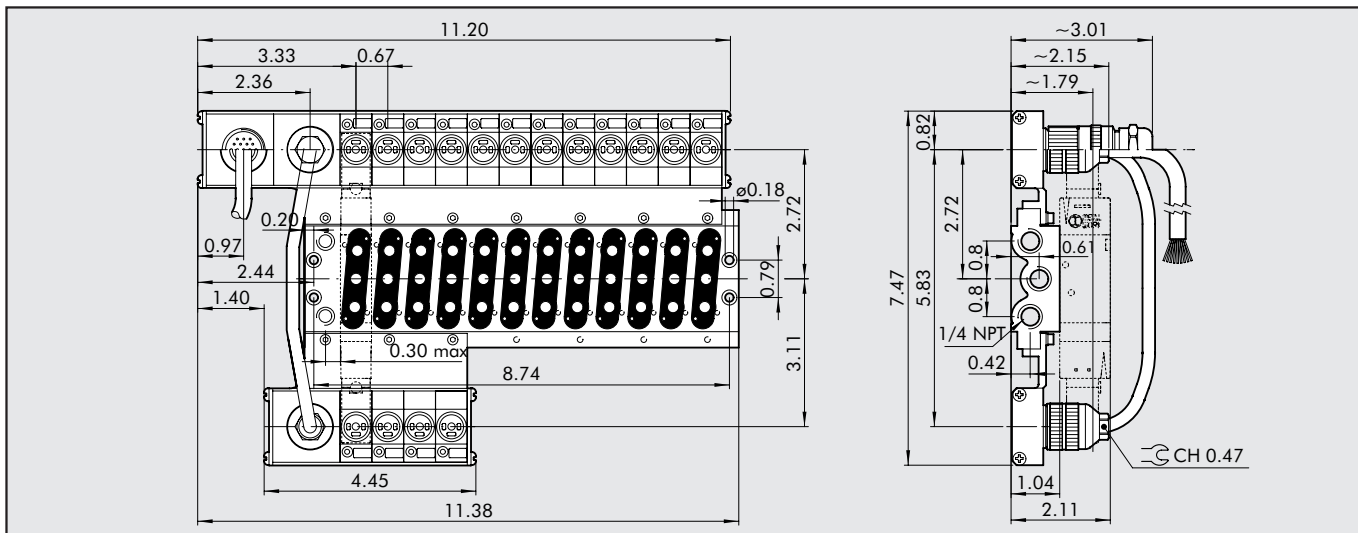


No. of pos.	L1	L2	L3	Description	24VDC code	24VAC code	Weight [lb]
4	5.85	3.39	6.02	CVM EP 08U04 M MCN	0225100401U	0225110401U	0,111
6	7.19	4.75	7.37	CVM EP 08U06 M MCN	0225100601U	0225110601U	0,142
8	8.53	6.07	8.70	CVM EP 08U08 M MCN	0225100801U	0225110801U	with connector 0,173
10	9.87	7.40	10.03	CVM EP 08U10 M MCN	0225101001U	0225111001U	0,204
12	11.20	8.74	11.38	CVM EP 08U12 M MCN	0225101201U	0225111201U	0,279
4	5.85	3.39	6.02	CVM EP 08U04 M WC5	0225400401U	0225410401U	0,803
6	7.19	4.75	7.37	CVM EP 08U06 M WC5	0225400601U	0225410601U	0,834
8	8.53	6.07	8.70	CVM EP 08U08 M WC5	0225400801U	0225410801U	with pre-wired cable 0,865
10	9.87	7.40	10.03	CVM EP 08U10 M WC5	0225401001U	0225411001U	0,897
12	11.20	8.74	11.38	CVM EP 08U12 M WC5	0225401201U	0225411201U	0,925

. : • 24VDC = direct current
• 24VAC = alternating current



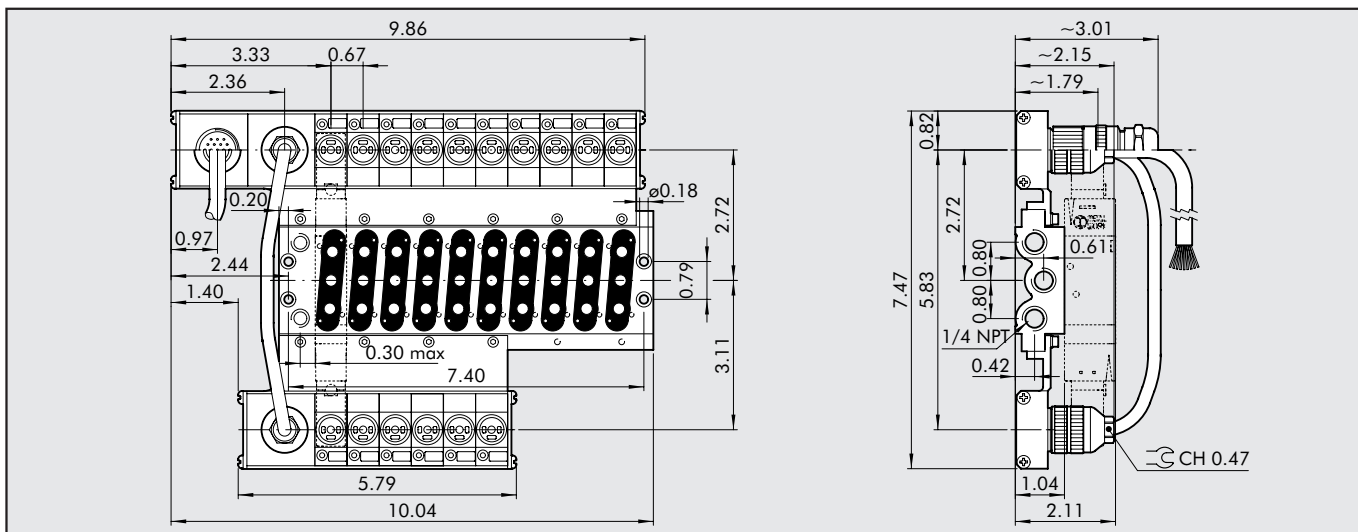
BISTABLE SOLENOID BASE, 12 POSITIONS



No. of posns.	Description	24VDC code	24VAC code		Weight [lb]
12	CVM EP 08U12 B MCN	0225201201U	0225211201U	with multiple connector	0,290
12	CVM EP 08U12 B WC5	0225501201U	0225511201U	with pre-wired cable	1,036

. : • 24VDC = direct current
 • 24VAC = alternating current

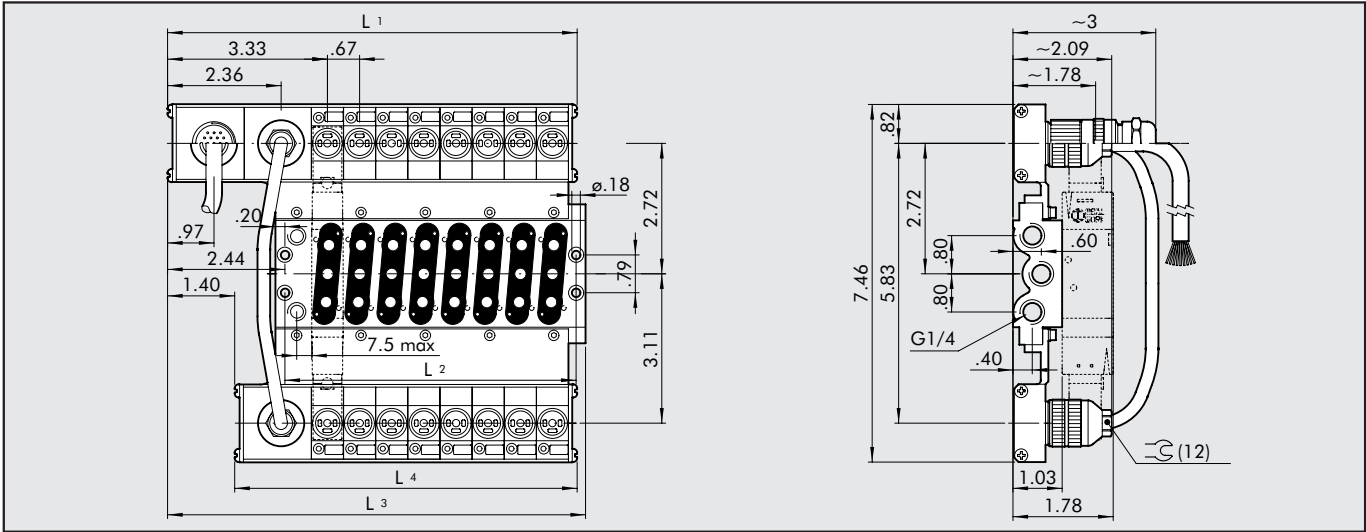
BISTABLE SOLENOID BASE, 10 POSITIONS



No. of posns.	Description	24VDC code	24VAC code		Weight [lb]
10	CVM EP 08U10 B MCN	0225201001U	0225211001U	with multiple connector	0,275
10	CVM EP 08U10 B WC5	0225501001U	0225511001U	with pre-wired cable	1,014

. : • 24VDC = direct current
 • 24VAC = alternating current

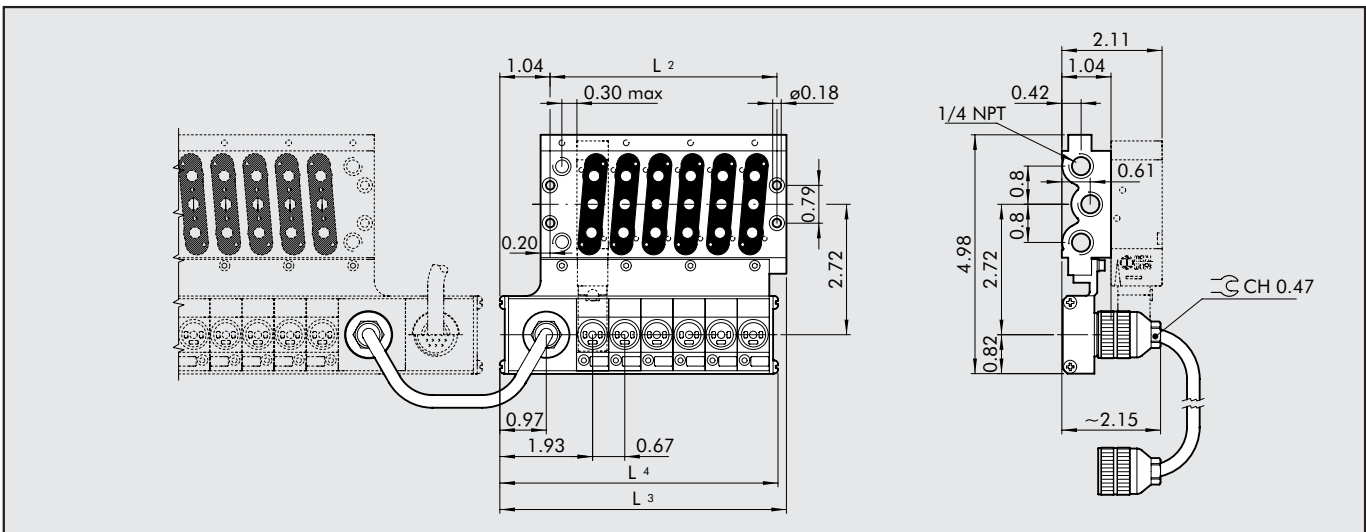
BISTABLE SOLENOID BASE, 4/6/8 POSITIONS



No. of posns.	L1	L2	L3	L4	Description	24VDC code	24VAC code	Weight [lb]
4	5.85	3.39	6.02	4.45	CVM EP 08U04 B MCN	0225200401U	0225210401U	0,170
6	7.18	4.73	7.36	5.79	CVM EP 08U06 B MCN	0225200601U	0225210601U	with multiple connector 0,213
8	8.52	6.06	8.70	7.12	CVM EP 08U08 B MCN	0225200801U	0225210801U	0,265
4	5.84	3.39	6.02	4.45	CVM EP 08U04 B WC5	0225500401U	0225510401U	0,862
6	7.18	4.72	7.36	5.79	CVM EP 08U06 B WC5	0225500601U	0225510601U	with pre-wired cable 0,901
8	8.52	6.06	8.70	7.12	CVM EP 08U08 B WC5	0225500801U	0225510801U	0,940

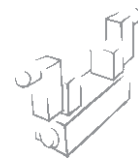
. : • 24VDC = direct current
• 24VAC = alternating current

ADDITIONAL MONOSTABLE SOLENOID BASE



No. of posns.	L2	L3	L4	Description	24VDC code	24VAC code	Weight [lb]
4	3.38	6.02	4.44	CVM EP 08U04 M ACM	0225300401U	0225310401U	0,110
6	4.72	7.36	5.78	CVM EP 08U06 M ACM	0225300601U	0225310601U	0,141
8	6.06	8.70	7.12	CVM EP 08U08 M ACM	0225300801U	0225310801U	0,172

. : • 24VDC = direct current
• 24VAC = alternating current



MULTIPLE MODULAR CONNECTOR KIT

It is possible to buy the various assembly kits separately to get a wide range of customised applications.

The main units of the version with connector ① or the pre-wired version ② can easily be assembled with the multiple base ⑫ or the modular manifold base ⑬. The manifold base allows particular circuits on the individual valves (feed from exhaust outlets, pressure differentiation, etc.)

Likewise, on the other side it is also simple to mount the secondary unit ③. This possibility is very interesting because it allows you to convert a base for monostable valve into a base for bistable valves. If you mount an additional secondary unit ④ on a base, you get an additional solenoid base that can be connected by means of return cables to a main base for monostable valves. The only thing to remember is that in all cases the total number of positions (connection to solenoid valve coil) must not exceed sixteen.

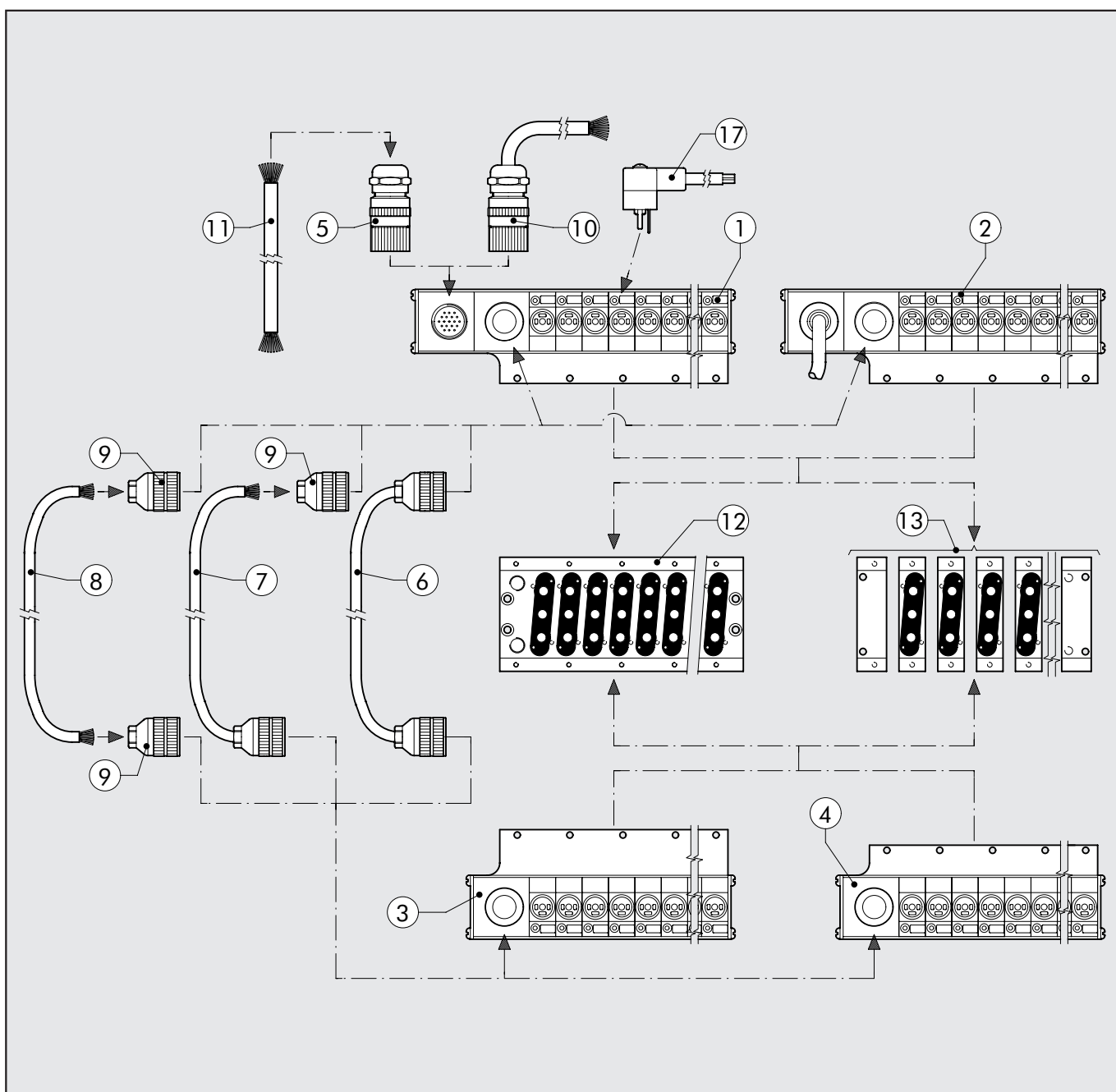
The 10-pin return cable ⑥ is used when a main unit and a

secondary unit, or only one additional secondary unit, are mounted together on the multiple (or manifold) base. It has to be connected to the sockets shown in the diagrams.

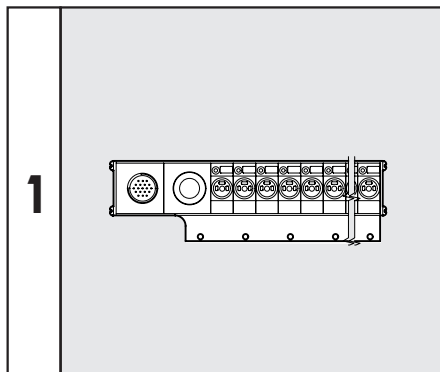
For different requirements, it is also possible to have return cables with a connector at one end only ⑦ or just the 10-pin cable ⑧. These types are available in different lengths. A 10-pin connector kit ⑨ is also available if you need to complete the wiring.

In the version with a connector, the 19-pin flying connector ⑤ pilots the entire assembled base. This connector must be welded onto the 19-pin cable ⑪, which is available in different lengths. The 19-pin connector complete with cable ⑩ is available in various lengths.

The Male Connector ⑰ allows to use the free electrical connection of the multiple connector in order to control the valves placed in the system or to control the bistable valves by a monostable multiple electrical connection base.

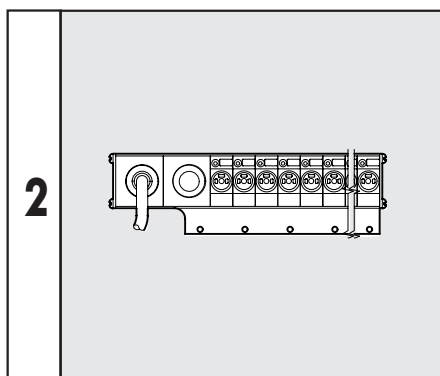


MAIN KIT, VERSION WITH CONNECTOR



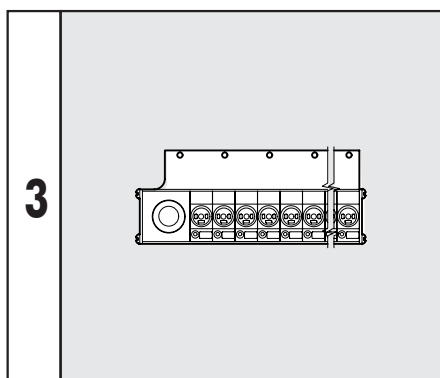
Cod.	Description	Weight [lb]
0226500401	MAIN MULTIPLE CONN. KIT, 4 POSITIONS, 24VDC	0,054
0226510401	MAIN MULTIPLE CONN. KIT, 4 POSITIONS, 24VAC	0,054
0226500601	MAIN MULTIPLE CONN. KIT, 6 POSITIONS, 24VDC	0,062
0226510601	MAIN MULTIPLE CONN. KIT, 6 POSITIONS, 24VAC	0,062
0226500801	MAIN MULTIPLE CONN. KIT, 8 POSITIONS, 24VDC	0,068
0226510801	MAIN MULTIPLE CONN. KIT, 8 POSITIONS, 24VAC	0,068
0226501001	MAIN MULTIPLE CONN. KIT, 10 POSITIONS, 24VDC	0,076
0226511001	MAIN MULTIPLE CONN. KIT, 10 POSITIONS, 24VAC	0,076
0226501201	MAIN MULTIPLE CONN. KIT, 12 POSITIONS, 24VDC	0,087
0226511201	MAIN MULTIPLE CONN. KIT, 12 POSITIONS, 24VAC	0,087

MAIN KIT, PRE-WIRED VERSION



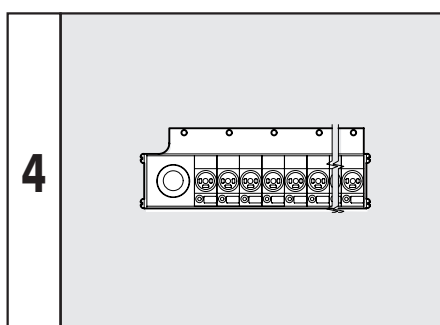
Code	Description	Weight [lb]
0226400401	MAIN MULTIPLE PRE-WIRED CONN. KIT, 4 POSITIONS, 24VDC	0,739
0226410401	MAIN MULTIPLE PRE-WIRED CONN. KIT, 4 POSITIONS, 24VAC	0,739
0226400601	MAIN MULTIPLE PRE-WIRED CONN. KIT, 6 POSITIONS, 24VDC	0,750
0226410601	MAIN MULTIPLE PRE-WIRED CONN. KIT, 6 POSITIONS, 24VAC	0,750
0226400801	MAIN MULTIPLE PRE-WIRED CONN. KIT, 8 POSITIONS, 24VDC	0,755
0226410801	MAIN MULTIPLE PRE-WIRED CONN. KIT, 8 POSITIONS, 24VAC	0,755
0226401001	MAIN MULTIPLE PRE-WIRED CONN. KIT, 10 POSITIONS, 24VDC	0,763
0226411001	MAIN MULTIPLE PRE-WIRED CONN. KIT, 10 POSITIONS, 24VAC	0,763
0226401201	MAIN MULTIPLE PRE-WIRED CONN. KIT, 12 POSITIONS, 24VDC	0,769
0226411201	MAIN MULTIPLE PRE-WIRED CONN. KIT, 12 POSITIONS, 24VAC	0,769

SECONDARY KIT

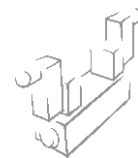


Code	Description	Weight [lb]
0226200401	SECONDARY MULTIPLE CONN. KIT, 4 POSITIONS, 24VDC	0,037
0226210401	SECONDARY MULTIPLE CONN. KIT, 4 POSITIONS, 24VAC	0,037
0226200601	SECONDARY MULTIPLE CONN. KIT, 6 POSITIONS, 24VDC	0,046
0226210601	SECONDARY MULTIPLE CONN. KIT, 6 POSITIONS, 24VAC	0,046
0226200801	SECONDARY MULTIPLE CONN. KIT, 8 POSITIONS, 24VDC	0,057
0226210801	SECONDARY MULTIPLE CONN. KIT, 8 POSITIONS, 24VAC	0,057

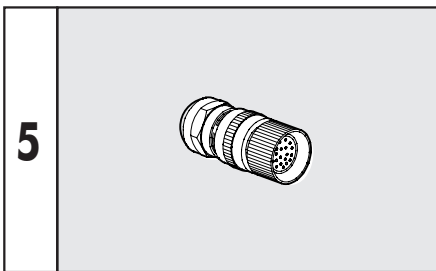
ADDITIONAL SECONDARY KIT



Code	Description	Weight [lb]
0226300401	ADDITIONAL SECONDARY MULTIPLE CONN. KIT, 4 POSITIONS, 24VDC	0,035
0226310401	ADDITIONAL SECONDARY MULTIPLE CONN. KIT, 4 POSITIONS, 24VAC	0,035
0226300601	ADDITIONAL SECONDARY MULTIPLE CONN. KIT, 6 POSITIONS, 24VDC	0,044
0226310601	ADDITIONAL SECONDARY MULTIPLE CONN. KIT, 6 POSITIONS, 24VAC	0,044
0226300801	ADDITIONAL SECONDARY MULTIPLE CONN. KIT, 8 POSITIONS, 24VDC	0,054
0226310801	ADDITIONAL SECONDARY MULTIPLE CONN. KIT, 8 POSITIONS, 24VAC	0,054

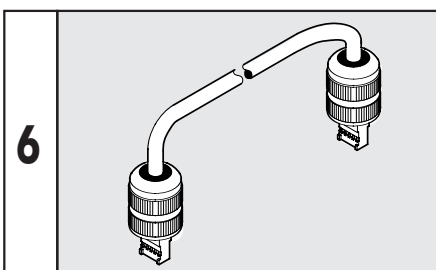


19-PIN CONNECTOR KIT



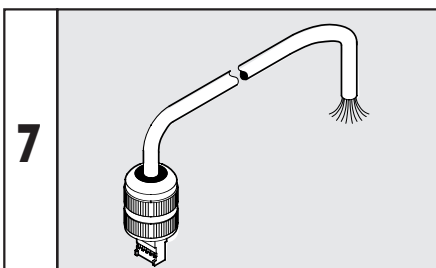
Code	Description
0226170001	19-PIN CONNECTOR KIT

10-PIN RETURN CABLE



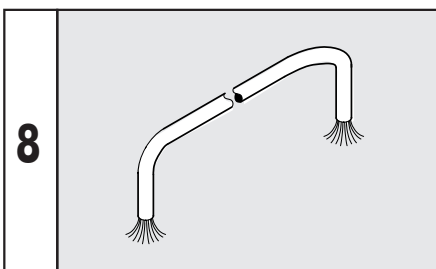
CONTACT OUR SALES DEPARTMENT

10-PIN RETURN CABLE, ONE END WITH CONNECTOR



CONTACT OUR SALES DEPARTMENT

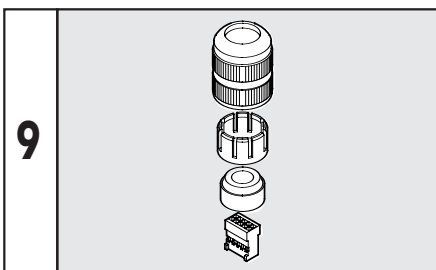
10-WIRE CABLE



Code	Description
0226107201	10-WIRE CABLE

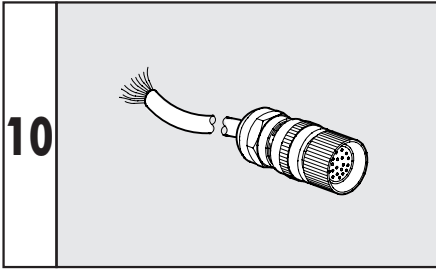
Indicate cable length.

10-PIN CONNECTOR KIT



Code	Description
0226170002	10-PIN CONNECTOR KIT

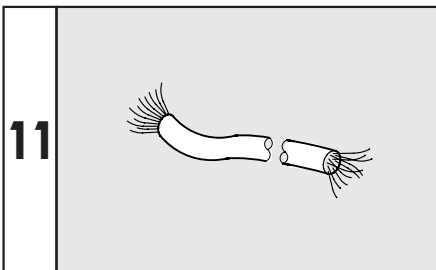
19-WIRE CABLE, ONE END WITH CONNECTOR



10

Code	Description
0226140200	19-WIRE CABLE, 1 END WITH CONNECTOR L= 2m
0226140500	19-WIRE CABLE, 1 END WITH CONNECTOR L= 5m
0226141000	19-WIRE CABLE, 1 END WITH CONNECTOR L=10m
0226141500	19-WIRE CABLE, 1 END WITH CONNECTOR L=15m
0226142000	19-WIRE CABLE, 1 END WITH CONNECTOR L=20m
0226143000	19-WIRE CABLE, 1 END WITH CONNECTOR L=30m

19-WIRE CABLE

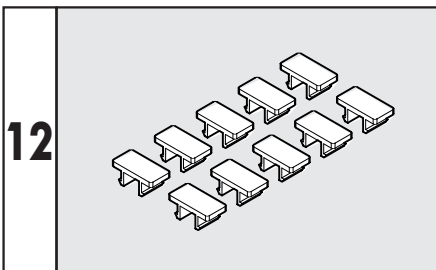


11

Code	Description
0226107101	19-WIRE CABLE

*Specify cable length

SET OF IDENTIFICATION PLATES

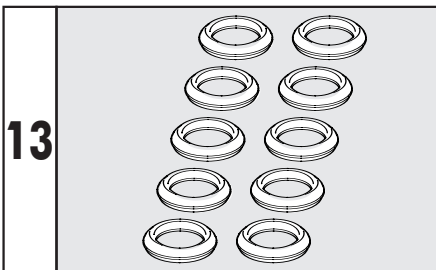


12

Code	Description
0226107000	SET OF IDENTIFICATION PLATES

Pack of 10

SET OF ELECTRIC CONTACT GASKETS

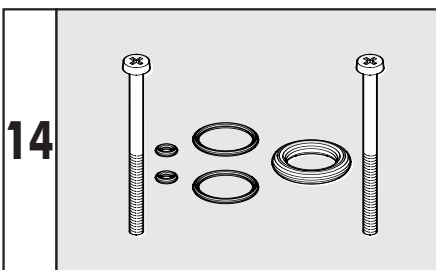


13

Code	Description
0226107001	SET OF ELECTRIC CONTACT GASKETS

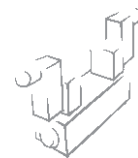
Pack of 10

SET OF MULTIPLE BASE GASKETS

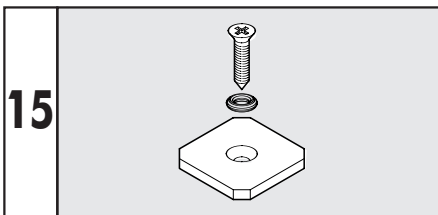


14

Code	Description
0226007001	SET OF M16 MULTIPLE BASE GASKETS

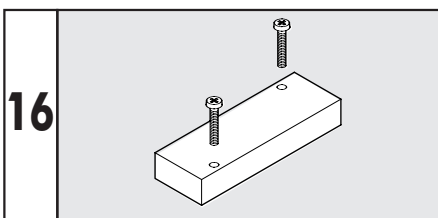


ELECTRIC CONNECTION BLANKING PLATE



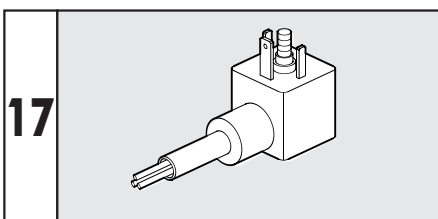
Code	Description
0225004502	MACH16 ELECTRIC CONNECTION BLANKING PLATE

BASE BLANKING PLATE



Code	Description
0225004500	MACH16 BASE BLANKING PLATE

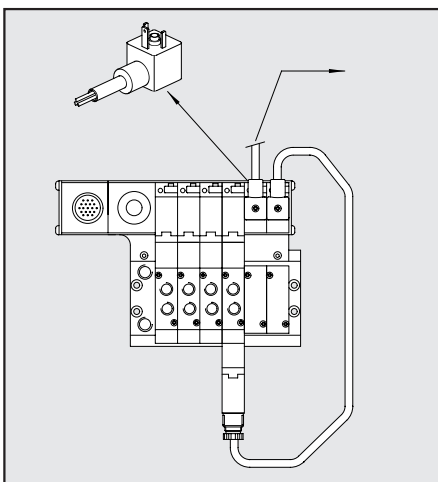
MALE CONNECTOR



Code	Description
W0970504021	MALE CONNECTOR

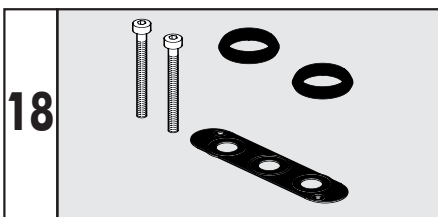
Max power for each position = 5W
 Max total power of multiple connector = 36W

EXAMPLE OF A MALE CONNECTOR



SOV 1/8"
 SOV 1/4"
 SOV 1/2"
 SOV on base
 MACH 16
 ISO 1 – ISO 2
 APR: progressive starter
 V3V: circuit switching valve

KIT OF MULTIPLE BASE GASKETS



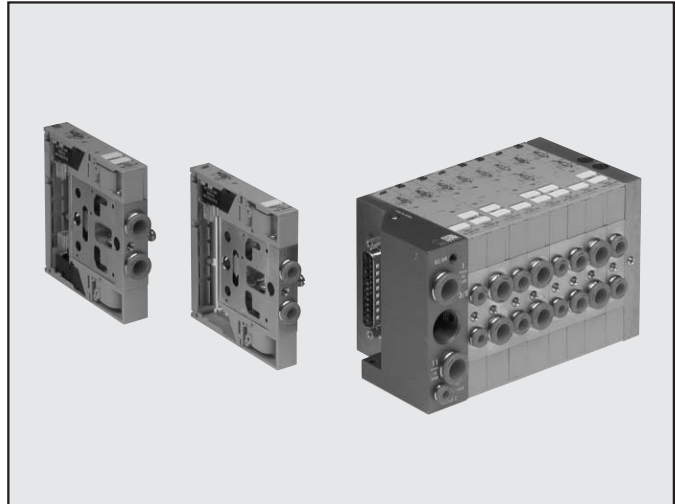
Code	Description
0226007030	KIT OF M16 MULTIPLE BASE INTEGRATE GASKETS

MULTIMACH NPT THREADS, INCH TUBES

Multimach is not just a valve, it is an electro-pneumatic distribution "island" - a single block ready for connection to power and air delivery pipes and a multi-pin cable.

All the pneumatic connections are situated on one side with built-in push-in fittings. The user interface is located on the other side so that the fitter or servicer has everything within easy reach - manual controls, valve-on indicator lights, compressed air system diagram and valve identification plates. There are also four different positions for the electric connector.

Multimach provides total flexibility in the application of valves: 1 to 24 valves, power plates, drain for pipes of various sizes and 9- or 25-pin power connector. But the real novelty, patent pending, is the fact that valves with different flow rates can be mounted. Three different valves can be mounted together, and one valve can be replaced with another having a different flow rate. This revolutionary concept enables the user to optimise spaces and costs and adapt the unit to different performance requirements. The ratio between the Multimach system's flow rates and sizes is unique - the best in terms of miniaturisation and efficiency.

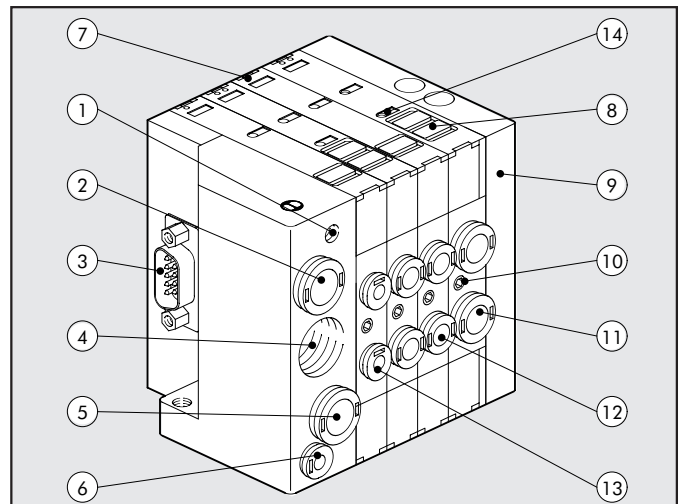


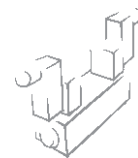
TECHNICAL DATA

Valve connections	2 and 4 inlet ports with push-in fittings, Ø 5/32", 1/4", 5/16" 3/8" threaded outlet port or Ø 5/16 fitting		
Pilot port on the end plate	Ø 5/32 push-in fitting		
Temperature range	°C 14 to 140°F		
Fluid	Lubricated and unlubricated filtered air. Lubrication, if used, must be continuous.		
Wall-mounted valve securing screw	Depending on the end plate used: see page 22		
Flow rate at 87 psi ΔP 14,5 psi	scfm	Ø5/32: 7 scfm, Cv .15	Ø1/4: 17,6 scfm, Cv .4 Ø5/16: 28 scfm, Cv .8
Technical data – solenoid control			
Voltage range	24 VDC		
Power	1,2 W		
Insulation class	F155		
Degree of protection	IP51		
Solenoid rating	100% ED		
Pressure range	psi	X (pilots drive) max100 psi	1-11 (valves drive) vacuum-145 psi
	- End plate 1-11		
	- End plate 1	30÷100 psi	
	- End plate 1 reduced	30÷100 psi	
TRA/TRR 2X3/2 monostable at 87 psi			
TRA/TRR 5/2 monostable at 87 psi			
TRA/TRR 5/2 bistable at 87 psi			
TRA/TRR 5/3 monostable at 87 psi			

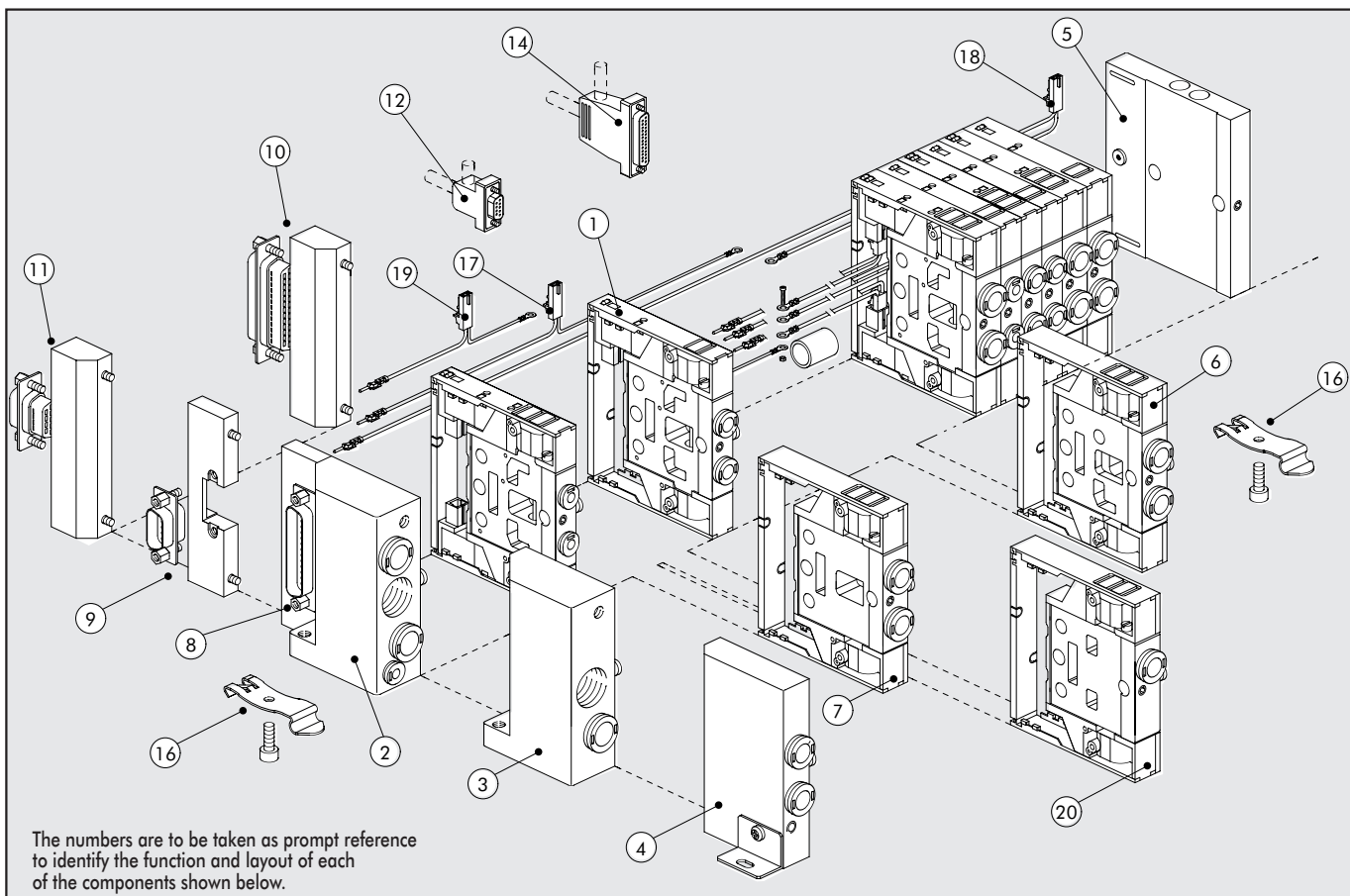
COMPONENTS

- ① Solenoid exhaust
- ② Port 1 valve feed
- ③ 9- or 25-pin power multiple connection
- ④ Threaded port for 3/5 ports
- ⑤ Valve feed
- ⑥ Solenoid feed
- ⑦ Green led (light on = solenoid energized)
- ⑧ Identification removable labels
- ⑨ Blanking plate
- ⑩ Screw for valve modular assembly
- ⑪ Port for Ø 5/16 tube
- ⑫ Port for Ø 1/4 tube
- ⑬ Port for Ø 5/32 tube
- ⑭ Manual control

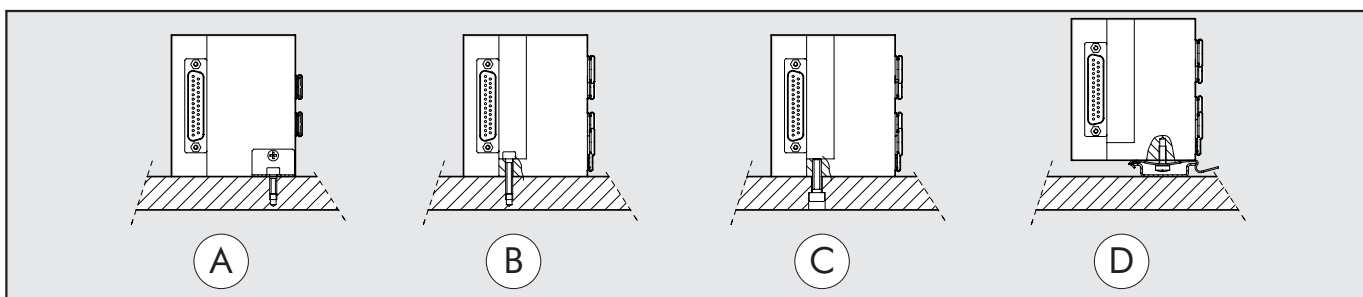




THE MULTIMACH WORLD: FUNCTIONALITY



HOW TO SECURE THE BASE



A: using the reduced end plate 1 code 0227300300U supplied complete with bracket.

B: using the end plate 1-11 code 0227300200U or end plate 1 code 0227300201U by means of a through screw.

C: using the end plate 1-11 code 0227300200U or end plate 1 code 0227300201U via the end plate thread 10·32UNF.

D: using the end plate 1-11 code 0227300200U or end plate 1 reduced code 0227300300U or end plate 1 code 0227300201U for fixing on a DIN bar by means of the coupling bracket code 0227300600. The base can be easily removed from the bar without requiring any special tool.

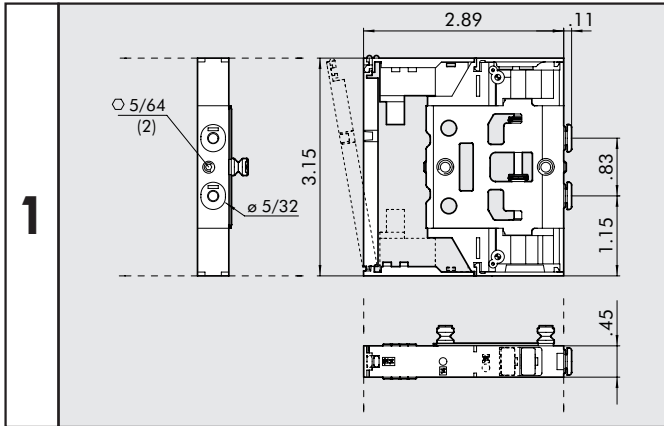
KEY TO CODES VALVE

N	S	V	F	5	S	E	B	0	0	2 4 V D C
FAMILY			PORT	FUNCTION	OPERATORS		RESETTING	FURTHER DESCRIPTION		TENSION
NSV	mini	sol. valves	F 0.43 inch cartridge Ø 5/32	5 5/2 6 5/3 8 3/2x2	SE	solenoid	B bistable S mechanical spring	OO 5/2 standard 3/2 NC+ 3/2 NO	CC 5/3 closed centres NC norm. closed NO norm. open	24Vdc

KEY TO CODES FOR MULTIMACH

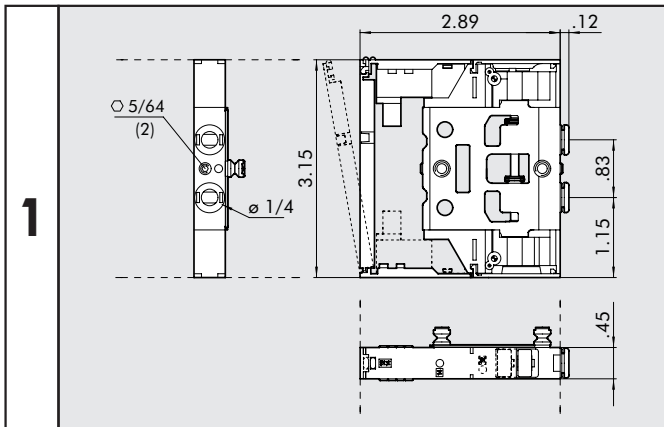
M 5 1	2	8	16-W8-W6-O4-L8-5				1 2 - 1 4	
VALVE	INPUT END PLATE	ELECTRIC SUPPORT	TYPE OF VALVE				FURTHER DESCRIPTION	
Multimach IP51	2U END PLATE 1-11 3U END PLATE 1 4U END PLATE 1 REDUCED	8 AXIAL 25-PIN connector support 9 AXIAL 9-PIN connector support 10 REAR 25-PIN connector support 11 REAR 9-PIN connector support	I W L V	no. 2 3/2 NC no. 2 3/2 NO 3/2 NO + 3/2 NC 5/2 monostable	K O 5U 6	5/2 bistable 5/3 monostable CC Blind end plate interm. through	7 interm. blind 20 exhaust section. 4 cartridge 5/32 6U cartridge 1/4 8 cartridge 5/16	12 9-pin connector 14 25-pin connector 16 Brackets for DIN bar

Ø 5/32 VALVE DIMENSIONS



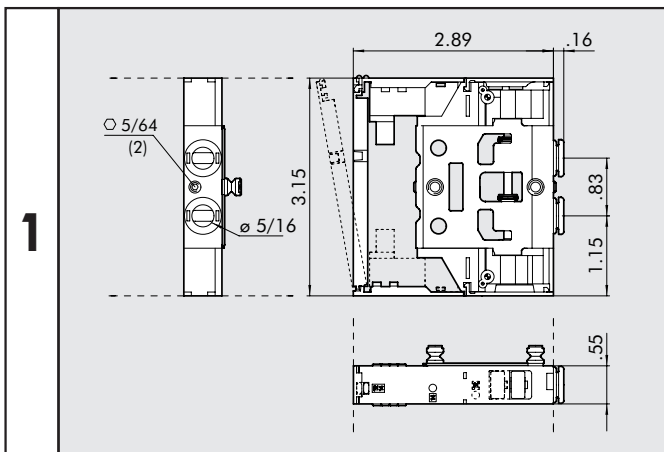
Symbol	Type	Code	Weight [lb]
I4	NSV F8 SES NC	7068030532	0,0260
W4	NSV F8 SES NO	7068030632	0,0260
L4	NSV F8 SES OO	7068030732	0,0260
V4	NSV F5 SES OO	7068030132	0,0220
K4	NSV F5 SEB OO	7068030112	0,0251
O4	NSV F6 SES CC	7068030212	0,0253

Ø 1/4 VALVE DIMENSIONS



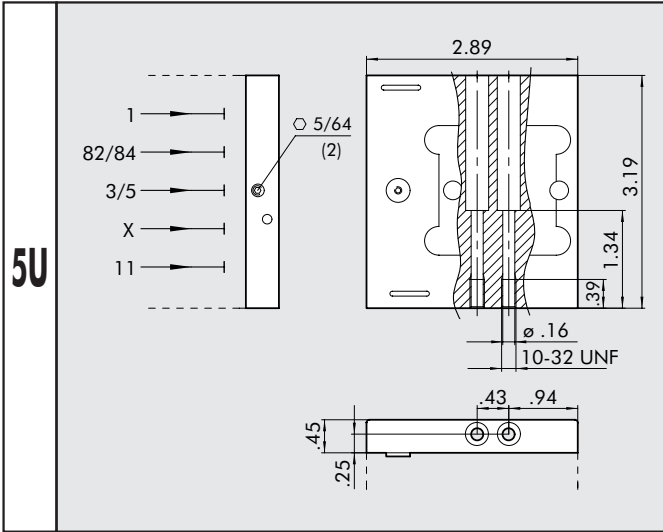
Symbol	Type	Code	Weight [lb]
I6U	NSV U8 SES NC	7069030532U	0,0243
W6U	NSV U8 SES NO	7069030632U	0,0243
L6U	NSV U8 SES OO	7069030732U	0,0243
V6U	NSV U5 SES OO	7069030132U	0,020
K6U	NSV U5 SEB OO	7069030112U	0,0236
O6U	NSV U6 SES CC	7069030212U	0,0238

Ø 5/16 VALVE DIMENSIONS



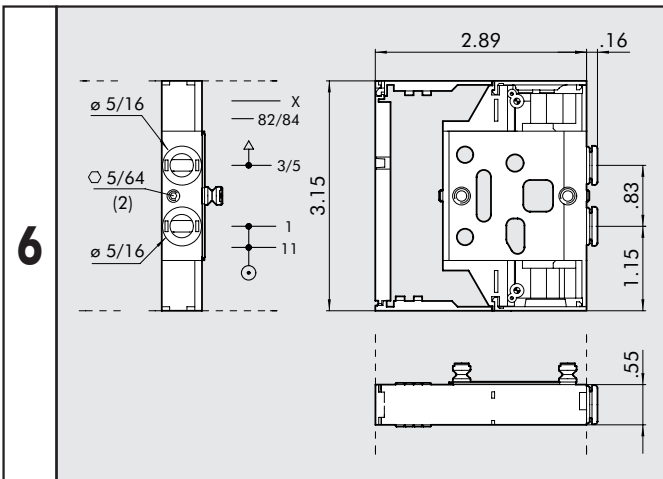
Symbol	Type	Code	Weight [lb]
I8	NSV H8 SES NC	7070030532	0,0273
W8	NSV H8 SES NO	7070030632	0,0273
L8	NSV H8 SES OO	7070030732	0,0273
V8	NSV H5 SES OO	7070030132	0,0232
K8	NSV H5 SEB OO	7070030112	0,0265
O8	NSV H6 SES CC	7070030212	0,0267

BLIND END PLATE 1



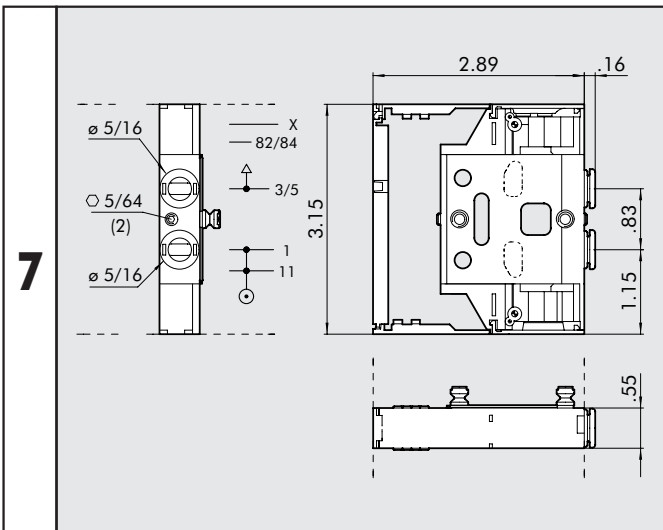
Code	Description	Weight [lb]
0227300500U	BLIND END PLATE	0,0370

INTERMEDIATE THROUGH

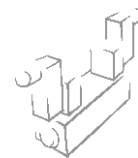


Code	Description	Weight [lb]
0227300301	INTERMEDIATE THROUGH	0,0203

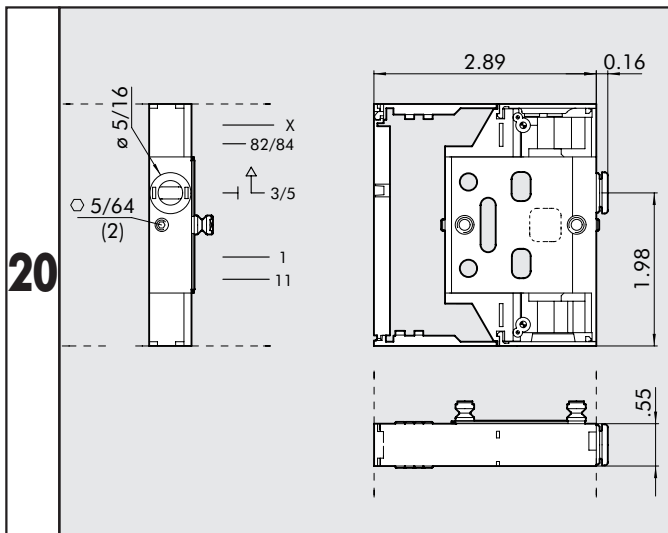
INTERMEDIATE BLIND



Code	Description	Weight [lb]
0227300302	INTERMEDIATE BLIND	0,0196

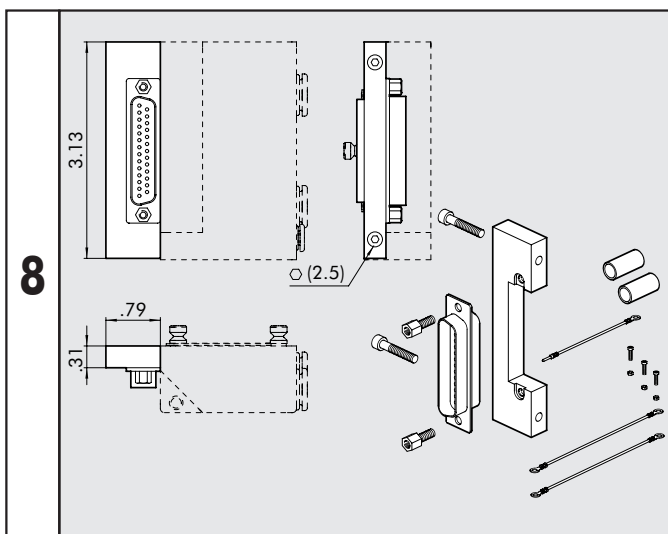


INTERMEDIATE EXHAUST SWITCH



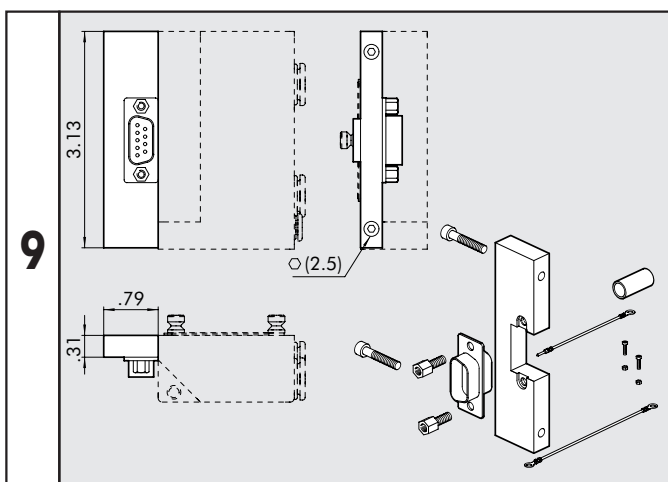
Code	Description	Weight [lb]
0227300303	INTERMEDIATE EXHAUST SWITCH	0,0209

AXIAL 25-PIN CONNECTOR SUPPORT



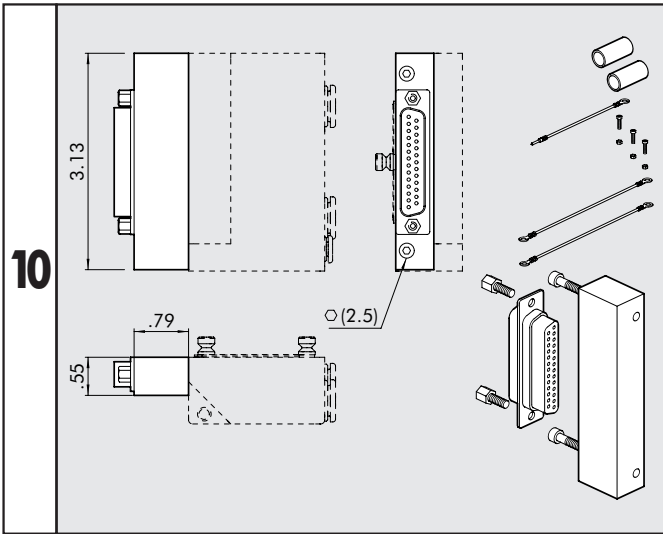
Code	Description	Weight [lb]
0226180001	AXIAL 25-PIN CONNECTOR SUPPORT KIT	0,0119

AXIAL 9-PIN CONNECTOR SUPPORT



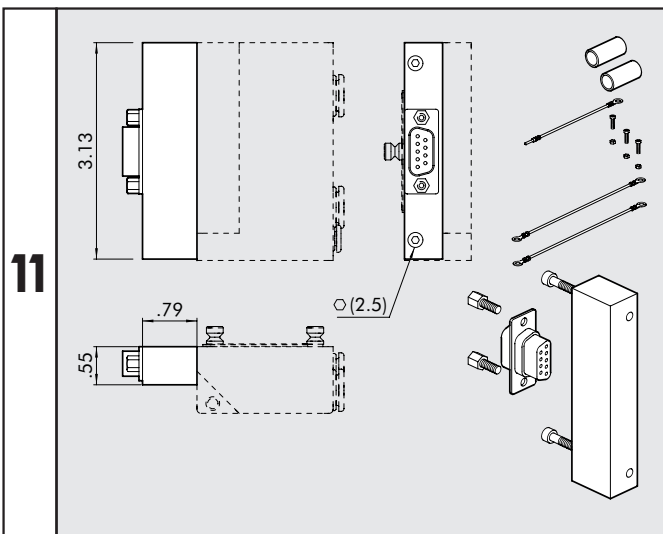
Code	Description	Weight [lb]
0226180002	AXIAL 9-PIN CONNECTOR SUPPORT KIT	0,0112

REAR 25-PIN CONNECTOR SUPPORT



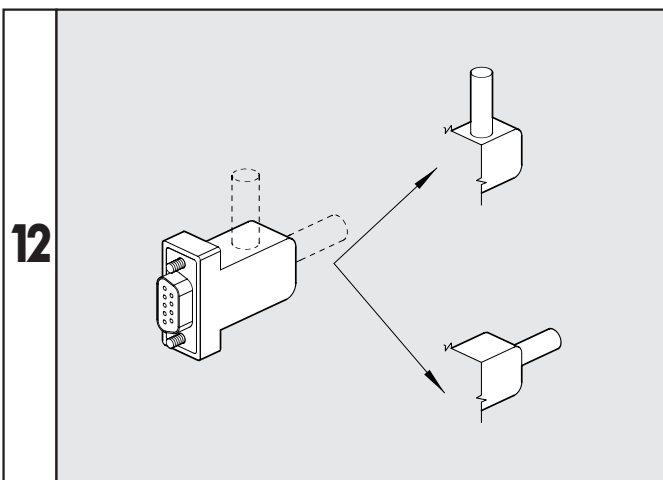
Code	Description	Weight [lb]
0226180003	REAR 25-PIN CONNECTOR SUPPORT KIT	0,0161

REAR 9-PIN CONNECTOR SUPPORT

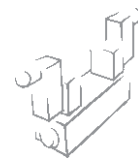


Code	Description	Weight [lb]
0226180004	KIT FOR REAR 9-PIN CONNECTOR SUPPORT	0,0170

STRAIGHT 9-PIN PLUG CONNECTOR KIT

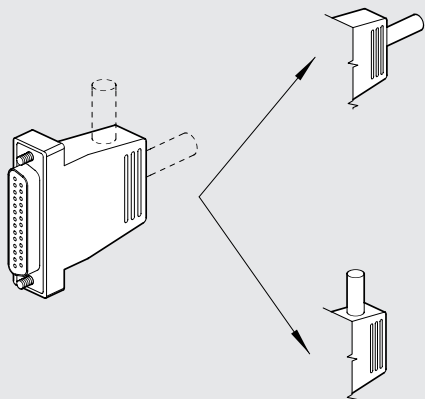


Code	Description	Weight [lb]
0226180102	STRAIGHT AND 90° ANGLED 9-PIN PLUG CONNECTOR KIT	0,0068



STRAIGHT 25-PIN PLUG CONNECTOR KIT

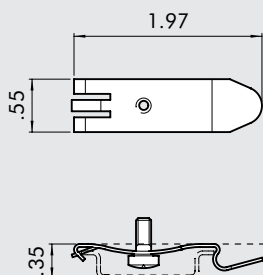
14



Code	Description	Weight [lb]
0226180101	STRAIGHT AND 90° ANGLED 25-PIN PLUG CONNECTOR KIT	0,0106

BRACKETS FOR CONNECTION ON DIN BAR

16



Code	Description	Weight [lb]
0227300600	BRACKET FOR CONNECTION ON DIN BAR	0,0017

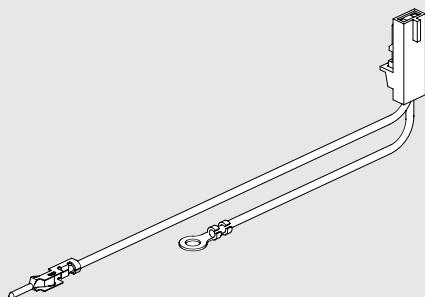
1 piece each bag

KIT CONNECTOR + WIRE

17

18

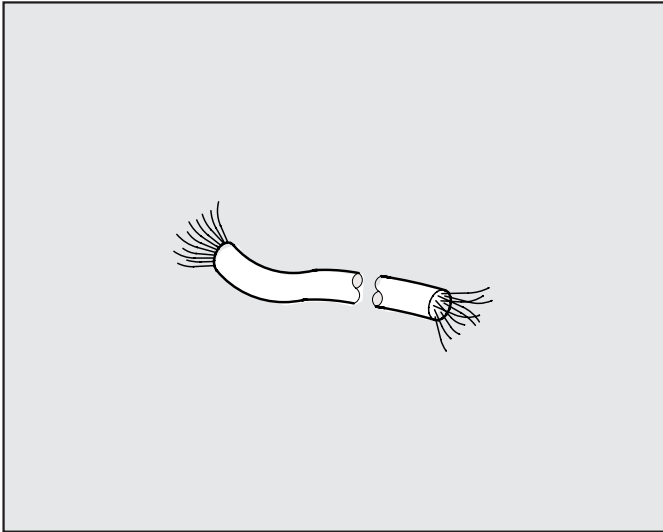
19



Code	Description	Weight [lb]
0226180399	KIT CONNECTOR + WIRE 1-6*	0,0007
0226180400	KIT CONNECTOR + WIRE 7-12**	0,0009
0226180401	KIT CONNECTOR + WIRE 13-30***	0,0011

*For valves from 1st to 6th position, starting from connector side.
 **For valves from 7th to 12th position, starting from connector side.
 ***For valves from 7th to 13th position, starting from connector side.

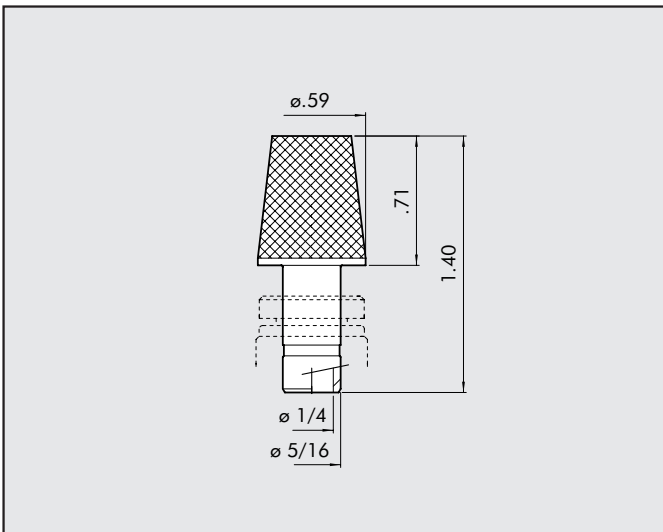
CABLES



Code	Description	Weight [lb]
0226107201	10 WIRE	0,0190
0226107101	19 WIRE	0,0269
0226107102	25 WIRE	0,0287

*Specify the number of feet required.

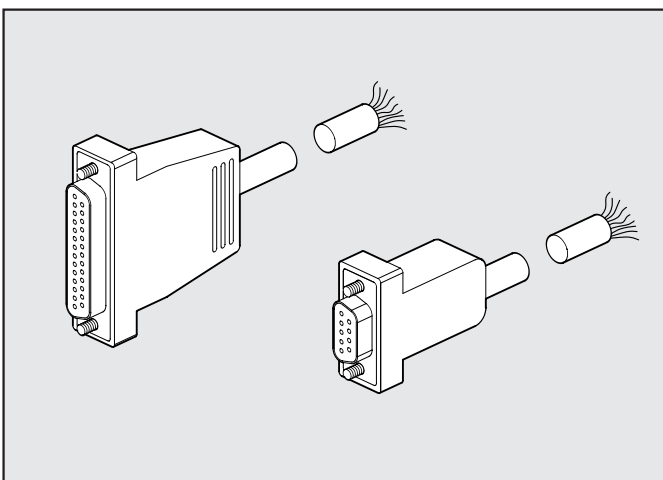
SILENCER FOR Ø 8 FITTING



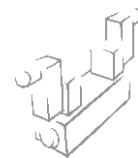
Code	Description	Weight [lb]
W0970530084	SILENCER FOR 5/16" FITTING	0,0033

At the 3/5-exhaust port of the reduced end-plate 1 ref. 4 and of the intermediate through ref. 6 and of the intermediate exhaust switch reference 20

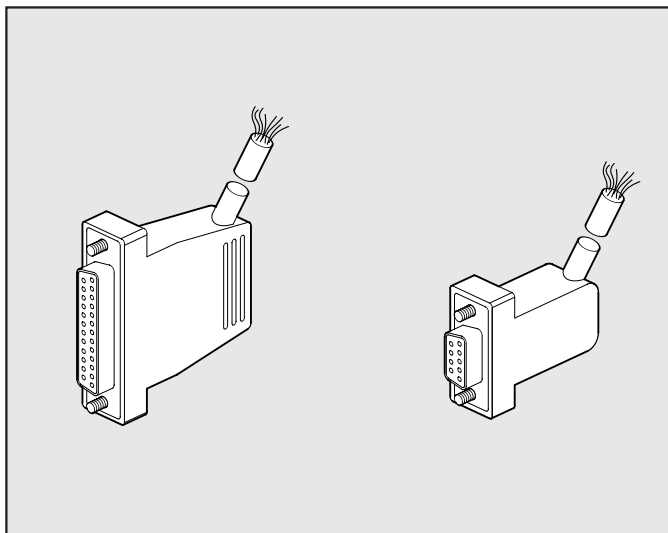
PLUG CONNECTOR STRAIGHT



Code	Description	Weight [lb]
0226900100	STRAIGHT 9-PIN PLUG CONNECTOR+WIRE 1 MT	0,0198
0226900250	STRAIGHT 9-PIN PLUG CONNECTOR+WIRE 2.5 MT	0,0485
0226900500	STRAIGHT 9-PIN PLUG CONNECTOR+WIRE 5 MT	0,0957
0226920100	STRAIGHT 25-PIN PLUG CONNECTOR+WIRE 1 MT	0,0291
0226920250	STRAIGHT 25-PIN PLUG CONNECTOR+WIRE 2.5 MT	0,0706
0226920500	STRAIGHT 25-PIN PLUG CONNECTOR+WIRE 5 MT	0,1402



PLUG CONNECTOR 90° ANGLED PREWIRED KIT

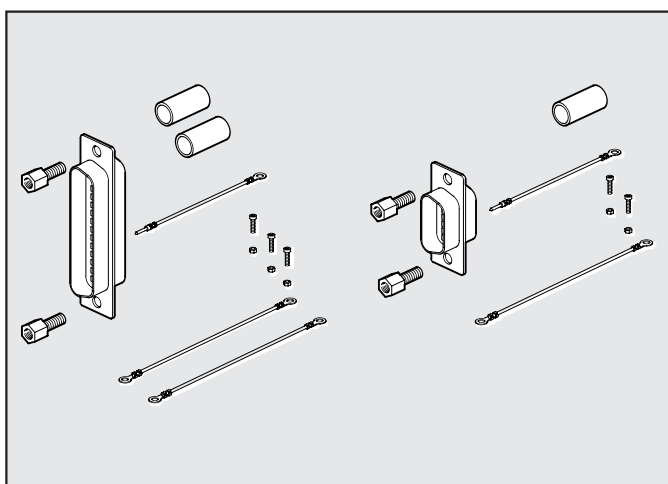


Code	Description	Weight [lb]
0226910100	90° ANGLED 9 PIN PLUG CONN. + WIRE 1 MT	0,0198
0226910250	90° ANGLED 9 PIN PLUG CONN. + WIRE 2.5 MT	0,0485
0226910500	90° ANGLED 9 PIN PLUG CONN. + WIRE 5 MT	0,0957
0226930100	90° ANGLED 25 PIN PLUG CONN. + WIRE 1 MT	0,0291
0226930250	90° ANGLED 25 PIN PLUG CONN. + WIRE 2.5 MT	0,0706
0226930500	90° ANGLED 25 PIN PLUG CONN. + WIRE 5 MT	0,1402

WIRING DIAGRAM FOR PRE-WIRED PLUG CONNECTORS

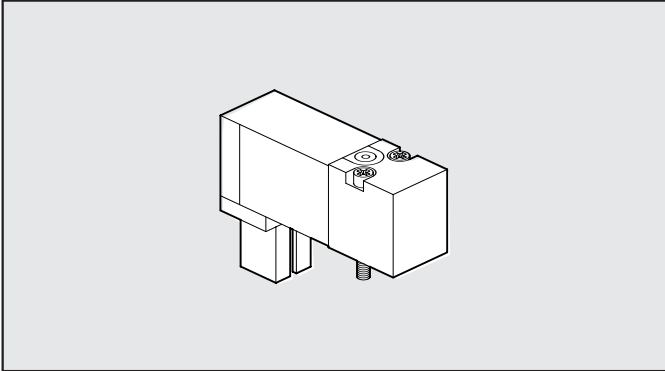
	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire		Position of electrical contact	Colour of the corresponding wire
	25 PIN	1	blue/black	10	brown/white	19		yellow/black	9 PIN
2		red/brown	11	red/orange	20	white	2	white	
3		white/black	12	light blue	21	blue/white	3	blue/black	
4		red/blue	13	yellow/white	22	brown	4	blue	
5		black/orange	14	yellow	23	green/white	5	yellow/black	
6		yellow/red	15	red/green	24	red	6	yellow	
7		black/brown	16	orange	25	green/black	7	red/black	
8		white/red	17	orange/white			8	green	
9		red/black	18	green			9	white/black	

MALE PLUG CONNECTOR + CONTACTS + COMMON TERMINAL KIT



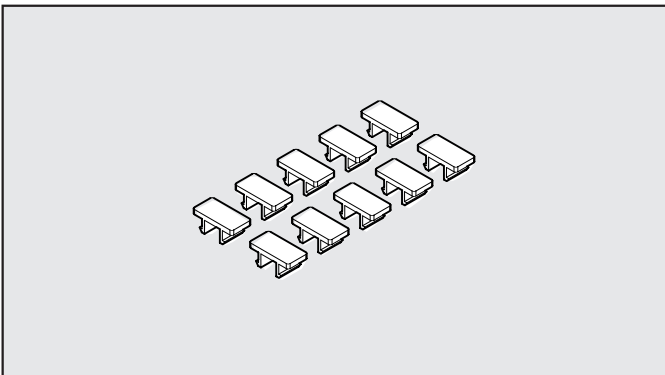
Code	Description
0226180201	25-PIN MALE PLUG CONNECTOR KIT
0226180202	9-PIN MALE PLUG CONNECTOR KIT

SOLENOID



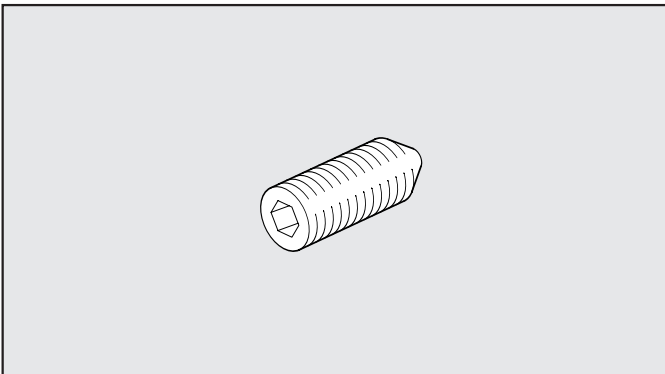
Code	Description
W4005001000	24 VDC SOLENOID WITH LED

SET OF IDENTIFICATION PLATES



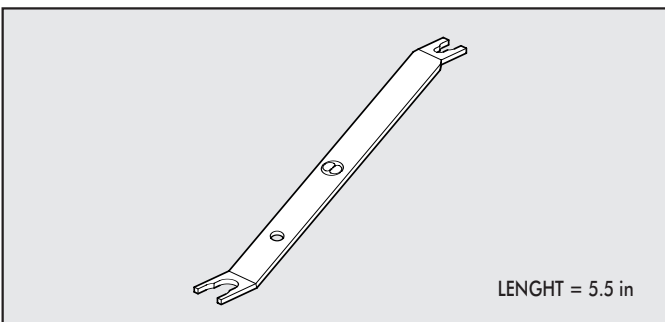
Code	Description
0226107000	SET OF IDENTIFICATION PLATES
10 pieces for bag	

GRUB SCREW KIT



Code	Description
0227300800	GRUB SCREW FOR MULTIMACH
Comes in 10-pc. pack	

R17 - PIPE RELEASE SPANNER



Code	Description	Ø Tube	Notes
2L17001	RL17	from 1/8 to 3/8	For R fitting and Fox fitting

