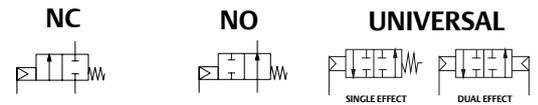


ASCO™ Pinch Valves

2-way, 3-way, NC or NO, Pressure Operated, 1/4" - 1" O.D.

2/2, 3/2
Series
273/373

- Series 273/373 Pinch Valves are designed for high-purity fluid control in biotechnology, pharmaceuticals, diagnostics, single-use technology, and food & beverage applications.
- Hermetic separation of control mechanism and the fluid within the tubing prevents contamination, assuring maximum purity of liquids
- RoHS compliant
- Innovative design allows for firm retention of the soft tubing
- Bi-directional flow for exceptional versatility
- Available in a large range of body sizes to accommodate a wide variety of tubing sizes
- Typical applications include: Tangeantial Flow Filtration, Chromatography Skids, Single-Use Bioreactors, and bottling and dispensing skids
- 273 available in Anodized Aluminum and Stainless Steel. 373 available in Anodized Aluminum.



General

Differential pressure	See "Specifications Table" [1 bar = 100 kPa]
Ambient temperature range	0°C to +40°C (32°F to 104°F)
Pilot fluid	Air
Air operated pressure	4.8 to 10 bar (70 PSI to 145 PSI)
Response time	200 ms (1/4" - 1/2" I.D.) & 400 ms (3/4" I.D.)

Fluids (*)	Temperature range
inert gases or liquids	0°C to +40°C (32°F to 104°F)

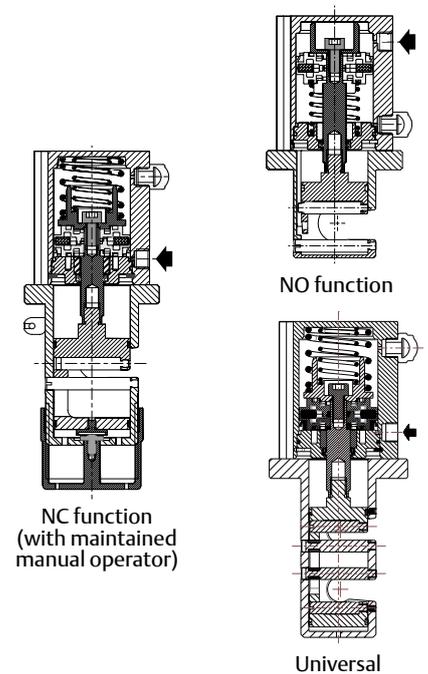
(*) Ensure that the compatibility of the fluids in contact with the tube is verified.

Specifications

Tube Range (O.D.)	3/8", 1/2", 3/4", 1", 1/4" (with optional size adaptor) (see Tube Chart for Tube Range (O.D./I.D.))
Tube Hardness range	55 to 80 Shore A
Tube Media Pressure	Up to 6 bar depending on size & tubing material, refer to tube chart (up to 90 PSI)

Other materials

Body & Actuator	Stainless steel AISI 316 or anodised aluminium
Actuator screws	Stainless steel AISI 316
Dynamic pinching parts	Stainless steel AISI 316
Pin	Stainless steel AISI 304
Sliding rings	PTFE charged bronze



Specifications

tube I.D.	tube O.D.	operating pressure differential bar (psi)		catalog number*	
		min.	max.	Without manual override	with manual override
2/2 - Normally closed (NC)					
3.2 (1/8)	6.4 (1/4)	0	4 (60)	P273AG32ACA0000/ P273A832ACA0000	P273AG32AC0M000/ P273A832AC0M000
6.4 (1/4)	9.5 (3/8)	0	4 (60)	P273AG12ACA0000/ P273A812ACA0000	P273AG12AC0M000/ P273A812AC0M000
6.4 (1/4)	12.7 (1/2)	0	6 (90)	P273AG14ACA0000/ P273A814ACA0000	P273AG14AC0M000/ P273A814AC0M000
9.5 (3/8)	12.7 (1/2)	0	4 (60)	P273AG13ACA0000/ P273A813ACA0000	P273AG13AC0M000/ P273A813AC0M000
12.7 (1/2)	19.1 (3/4)	0	4 (60)	P273AG15ACA0000/ P273A815ACA0000	P273AG15AC0M000/ P273A815AC0M000
19.1 (3/4)	25.4 (1)	0	1.6 (25)	P273AG16ACA0000/ P273A816ACA0000	P273AG16AC0M000/ P273A816AC0M000
2/2 - Normally open (NO)					
3.2 (1/8)	6.4 (1/4)	0	4 (60)	P273AG32APA0000/ P273A832APA0000	-
6.4 (1/4)	9.5 (3/8)	0	4 (60)	P273AG12APA0000/ P273A812APA0000	-
6.4 (1/4)	12.7 (1/2)	0	6 (90)	P273AG14APA0000/ P273A814APA0000	-
9.5 (3/8)	12.7 (1/2)	0	4 (60)	P273AG13APA0000/ P273A813APA0000	-
12.7 (1/2)	19.1 (3/4)	0	4 (60)	P273AG15APA0000/ P273A815APA0000	-
19.1 (3/4)	25.4 (1)	0	4 (60)	P273AG16APA0000/ P273A816APA0000	-
3/2 - Universal					
				single acting	double acting
6.4 (1/4)	12.7 (1/2)	0	4 (60)	P373AG14ASA0000/ P373A814ASA0000	P373AG14ADA0000/ P373A814ADA0000

* Configurations with ISO and NPT pilot connections listed. Please refer to product code on pg. 2 to select a desired configuration.

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How To Order

15-DIGIT PRODUCT CODE
P 273 A G 12 A C A00 00

Connection Type
P = No connection

Product series
273 = 2-way Pinch Valve
373 = 3-way Pinch Valve

Revision letter
A = Initial release

Pilot Connection Type
G = 1/8" G - ISO 228/1
8 = 1/8" NPT

Tube Size
12 = 1/4" I.D. x 3/8" O.D.
13 = 3/8" I.D. x 1/2" O.D.
14 = 1/4" I.D. x 1/2" O.D.
15 = 1/2" I.D. x 3/4" O.D.
16 = 3/4" I.D. x 1" O.D.

Multi size valve with a plastic size reducer:
32 = 1/4" I.D. X 3/8" O.D. with reducer to x I.D. X 1/4" O.D.

Options
A00 = Without options
OM0 = With manual override for NC version

Function
C = 2 Way - Normally closed
P = 2 Way - Normally open
S = 3 Way - Normally Closed Upper Slot, Normally Open Lower Slot, Single-acting
D = 3 Way - Universal, Double-acting

Body Material
A = Aluminium (273 and 373)
S = Stainless steel (273)

TUBES COMPATIBILITY TABLE AT 25°C (77°F)

	tube I.D.	tube O.D.	tubing type	tubing material	tubing nominal hardness (Shore A)	max. tested media pressure (2) bar (psi)
P273A-32-----00	3.2 (1/8)	6.4 (1/4)	Watson Marlow 913.A132.016	Platinum-cured silicone tubing (Pumpsil)	60	2.0 (30)
P273A-12-----00	6.4 (1/4)	9.5 (3/8)	AdvantaFlex®, APAF-BP	TPE	65	0.8 (12)
			C-Flex® 374	TPE	60	1.0 (15)
			Pharma 80	Platinum-Cured Silicone	80 (1)	4.0 (60)
			Saint Gobain AND00017	TYGON® E-65-F	65	0.9 (12)
			AN800017	TYGOPRENE® XL-60	60	1.0 (15)
			ACF00017	TYGON® E-3603	56	1.4 (20)
			Watson Marlow 913.A064.016	Platinum-cured silicone tubing (Pumpsil)	60	2.0 (30)
			Watson Marlow 941.0064.016	Weldable biopharmaceutical tubing (PureWeld XL)	65-73	2.0 (30)
	6 (1/4)	9 (3/8)	Saint Gobain ABX6FB020-C	VERSILON™ SPX60-FB	61	0.38 (0.03)
P273A-14-----00 P373A-14-----00	6.4 (1/4)	12.7 (1/2)	C-Flex® 374	TPE	60	1.0 (15)
			TYGON® B-44-4X	PVC	66	2.1 (30)
			Pharma 80	Platinum-Cured Silicone	80 (1)	4.0 (60)
			Vena®,TECHNOSIL	Braided Silicone	70/60	6.0 (90)
				12.8 (1/2)	Watson Marlow 913.A064.032	Platinum-cured silicone tubing (Pumpsil)
		12.4 (1/2)	BPSHP0250-C	BioPure Silicone single braided hose (7,6)	-	4.0 (60)
	6 (1/4)	12 (1/2)	Saint Gobain ABX6FB022-C	VERSILON™ SPX60-FB	61	0.65 (0.04)
P273A-13-----00	9.5 (3/8)	12.7 (1/2)	TYGON® B-44-4X	PVC	66	1.7 (25)
			Pharma 80	Platinum-Cured Silicone	80 (1)	4.0 (60)
P273A-15-----00	12.7 (1/2)	19.1 (3/4)	AdvantaFlex®, APAF-BP	TPE	65	0.8 (12)
			C-Flex® 374	TPE	60	1.0 (15)
			TYGON® B-44-4X	PVC	66	1.4 (20)
			Pharma 65	Platinum-Cured Silicone	65 (1)	4.0 (60)
			Pharma 80	Platinum-Cured Silicone	80 (1)	4.0 (60)

(1) In accordance with the manufacturer's specifications, a single cycle of gamma radiation up to 40 kGy has minimum effect on mechanical properties of the tubing. No effect has been observed on valve's performances when used with an irradiated sample of tubing.*

(2) Maximum media pressure for reference only. It is user's responsibility to verify performance. Please contact tubing manufacturers for maximum working pressure and temperature.

The tubing has been tested with air at the maximum pressure stated in the table above. After 20000 pinching cycles in the same spot of the tubing, no fully-penetrated surface cuts or compromised integrity have been observed in our testing.

Please contact ASCO to verify suitability for any condition not stated in the above table.

AdvantaFlex® is a registered trademark of NewAge® Industries, Inc.

C-Flex® and TYGON® and TYGOPRENE® and VERSILON™ are registered trademarks of Saint-Gobain Performance Plastics.

PUMPSIL® and PUREWELD® are registered trademarks of Watson-Marlow, Inc.

Vena® is a registered trademark of Venair.

TUBES COMPATIBILITY TABLE AT 25°C (77°F)						
	tube I.D.	tube O.D.	tubing type	tubing material	tubing nominal hardness (Shore A)	max. tested media pressure ⁽²⁾ bar (psi)
P273A-15-----00	12.7 (1/2)	19.8 (3/4)	Saint Gobain ACF00038	TYGON® E-3603	56	1.4 (20)
		19.1 (3/4)	Saint Gobain AN800038	TYGOPRENE® XL-60	60	1.0 (15)
	Watson Marlow 913.A127.032		Platinum-cured silicone tubing (Pumpsil)	60	2.0 (30)	
	Watson Marlow 941.0127.032		Weldable biopharmaceutical tubing (PureWeld XL)	65-73	2.0 (30)	
	9.6 (1/2)	16.7 (3/4)	BPSHP0375-C	BioPure Silicone single braided hose (7,6)	-	4.0 (60)
	12.7 (1/2)	20.3 (3/4)	BPSHP0375-C	BioPure Silicone single braided hose (7,6)	-	4.0 (60)
P273A-16-C--00	19.1 (3/4)	25.4 (1)	AdvantaFlex®, APAF-BP	TPE	65	0.8 (12)
			C-Flex® 374	TPE	60	1.0 (15)
			Pharma 50	Platinum-Cured Silicone	50 ⁽¹⁾	1.6 (25)
P273A-16-P--00	19.1 (3/4)	25.4 (1)	AdvantaFlex®, APAF-BP	TPE	65	0.8 (12)
			C-Flex® 374	TPE	60	1.0 (15)
			TYGON® B-44-4X	PVC	66	1.4 (20)
			Pharma 50	Platinum-Cured Silicone	50 ⁽¹⁾	1.6 (25)
			Pharma 80	Platinum-Cured Silicone	80 ⁽¹⁾	4.0 (60)

⁽¹⁾ In accordance with the manufacturer's specifications, a single cycle of gamma radiation up to 40 kGy has minimum effect on mechanical properties of the tubing. No effect has been observed on valve's performances when used with an irradiated sample of tubing."

⁽²⁾ Maximum media pressure for reference only. It is user's responsibility to verify performance. Please contact tubing manufacturers for maximum working pressure and temperature.

The tubing has been tested with air at the maximum pressure stated in the table above. After 20000 pinching cycles in the same spot of the tubing, no fully-penetrated surface cuts or compromised integrity have been observed in our testing.

Please contact ASCO to verify suitability for any condition not stated in the above table.

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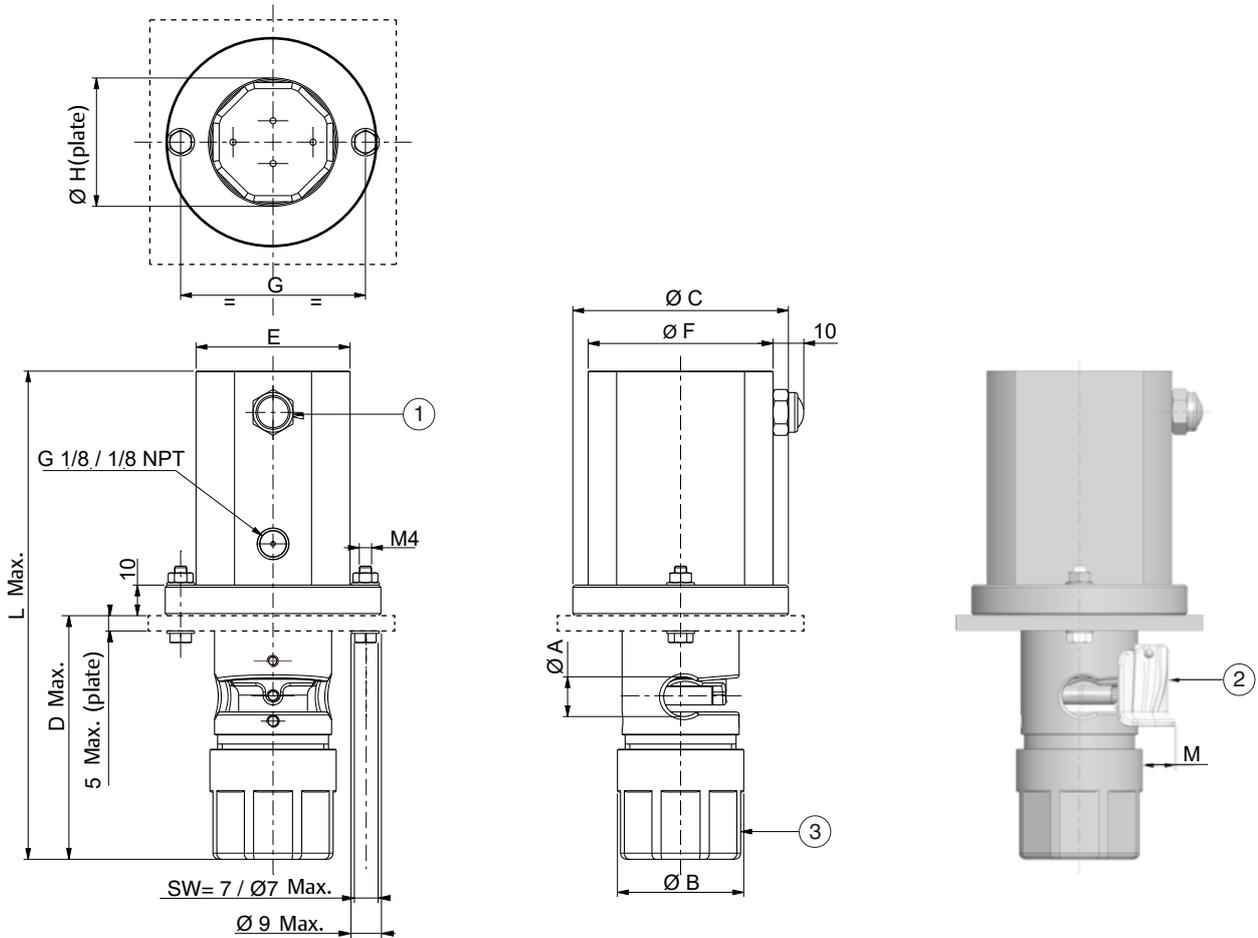
Installation

- The valves can be mounted in any position without affecting operation
- Check tube compatibility table
- Piloting thread connection: Pipe connections (G) have standard thread according to ISO 228/1
- Piloting thread connections have standard thread = NPTF (ANSI B1.20.3)
- Installation/maintenance instructions are included with each valve

Dimensions mm (inches), Weight (kg)



TYPE 01
 "P" No connection
 NC version only
With maintained manual operator



- ① Silencer
- ② Safety guard
- ③ Maintained manual operator

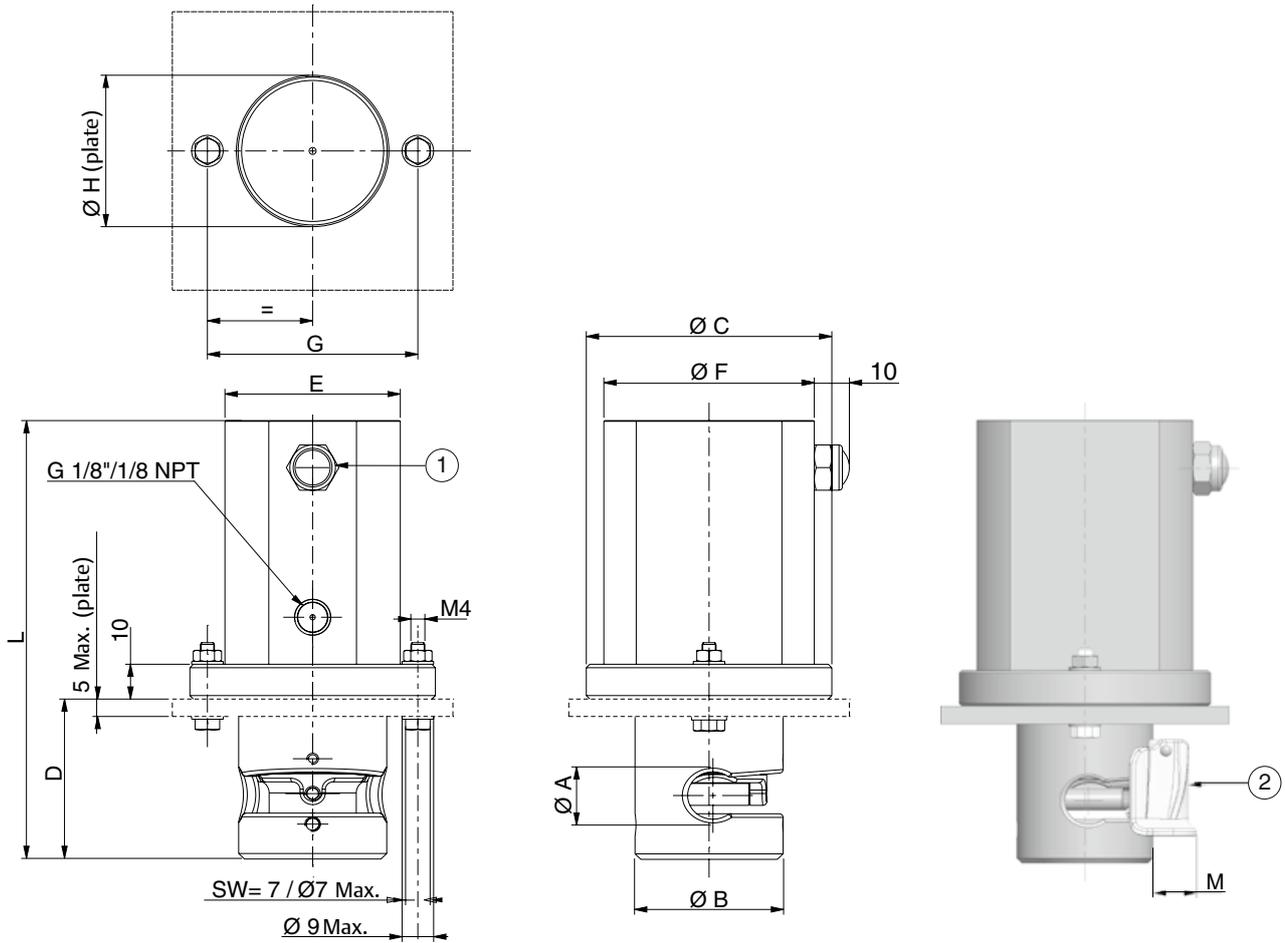
	size	ØA	ØB	ØC	D	E	ØF	G	ØH	L	M	weight kg (Lbs)			
												aluminium	st. steel		
P273A-12-COM000	mm 9.5x6.40 (in) 3/8x1/4	9.6	35.00	57.00	63.50	36.00	45.00	50.00	36.00	123.50	6.50	0.36	kg	0.91	kg
P273A-13-COM000	mm 12.7x9.50 (in) 1/2x3/8	13.00	41.00	70.00	79.50	50.00	60.00	60.00	42.00	160.00	10.50	0.68	kg	1.61	kg
P273A-14-COM000	mm 12.7x6.40 (in) 1/2x1/4	13.00	41.00	70.00	79.50	50.00	60.00	60.00	42.00	160.00	10.50	0.68	kg	1.61	kg
P273A-15-COM000	mm 19.1x12.7 (in) 3/4x1/2	20.00	53.00	75.00	97.00	50.00	60.00	65.00	54.00	177.00	11.00	0.79	kg	1.88	kg
P273A-16-COM000	mm 25.4x19.1 (in) 1x3/4	25.50	65.00	85.00	115.00	60.00	70.00	75.00	66.00	195.00	11.70	1.19	kg	2.85	kg

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Dimensions mm (inches), Weight (kg)



TYPE 02
 "P" No connection
 NC version
 Without manual operator



- ① Silencer
- ② Safety guard

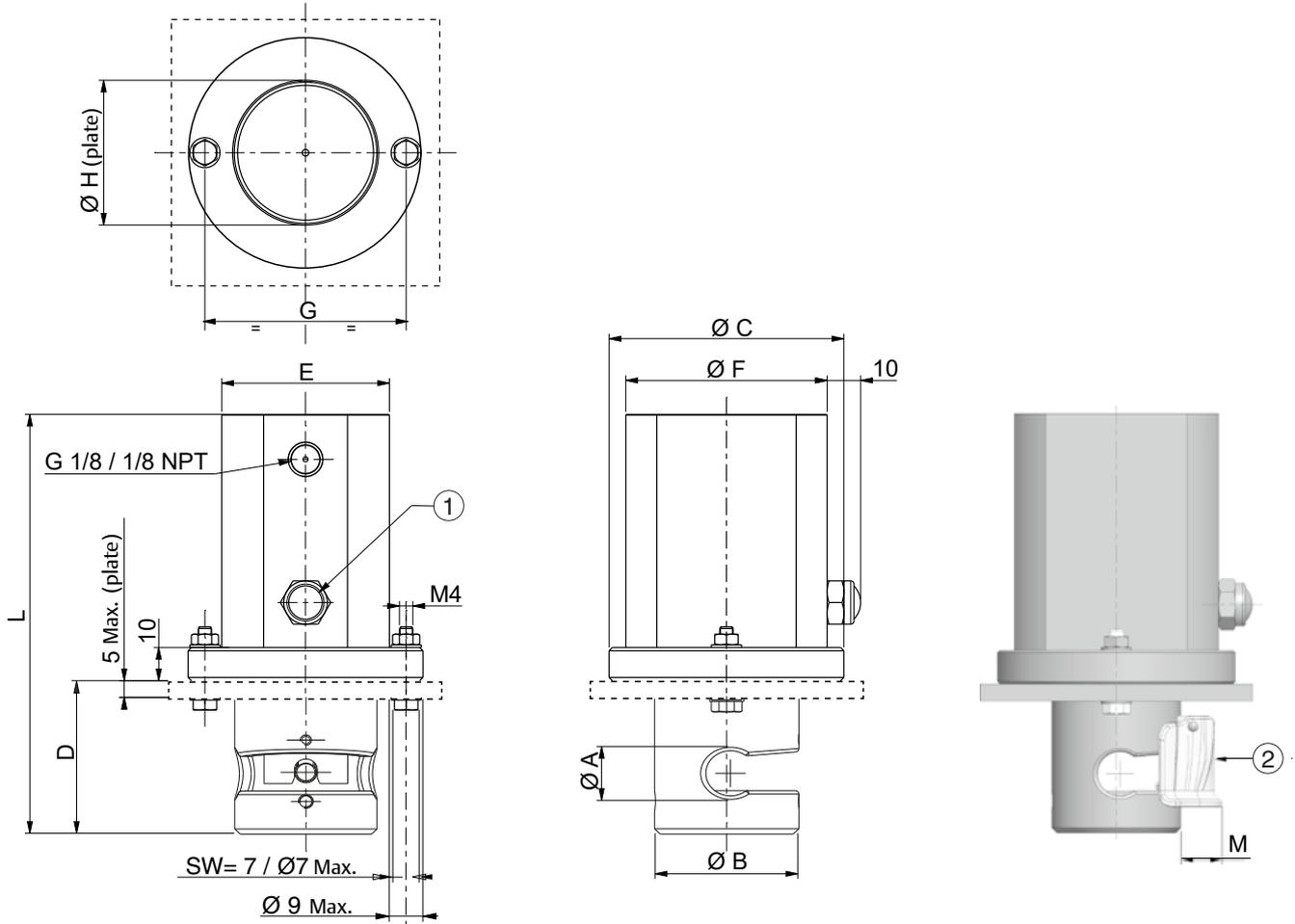
	size	ØA	ØB	ØC	D	E	ØF	G	ØH	L	M	weight kg (Lbs)				
												aluminium	st. steel			
P273A-12-CA0000	mm	9.5x6.4	9.60	32.00	57.00	30.50	36.00	45.00	50.00	33.00	90.50	8.00	0.310	kg	0.78	kg
	(in)	3/8x1/4	0.38	1.26	2.24	1.20	1.42	1.77	1.97	1.30	3.56	0.31	0.68	(Lbs)	1.73	(Lbs)
P273A-13-CA0000	mm	12.7x9.5	13.00	38.00	70.00	44.00	50.00	60.00	60.00	39.00	124.00	12.00	0.52	kg	1.15	kg
	(in)	1/2x3/8	0.51	1.50	2.76	1.73	1.97	2.36	2.36	1.54	4.88	0.47	1.15	(Lbs)	2.54	(Lbs)
P273A-14-CA0000	mm	12.7x6.4	13.00	38.00	70.00	44.00	50.00	60.00	60.00	39.00	124.00	12.00	0.52	kg	1.15	kg
	(in)	1/2x1/4	0.51	1.50	2.76	1.73	1.97	2.36	2.36	1.54	4.88	0.47	1.15	(Lbs)	2.54	(Lbs)
P273A-15-CA0000	mm	19.1x12.7	20.00	42.50	75.00	46.00	50.00	60.00	65.00	43.50	126.00	12.50	0.61	kg	1.39	kg
	(in)	3/4x1/2	0.79	1.67	2.95	1.81	1.97	2.36	2.56	1.71	4.96	0.49	1.35	(Lbs)	3.06	(Lbs)
P273A-16-CA0000	mm	25.4x19.1	25.50	60.00	85.00	62.00	60.00	70.00	75.00	61.00	142.00	14.00	1.00	kg	2.66	kg
	(in)	1x3/4	1.00	2.36	3.35	2.44	2.36	2.76	2.95	2.40	5.60	0.55	2.20	(Lbs)	5.00	(Lbs)

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Dimensions mm (inches), Weight (kg)



TYPE 03
 "P" No connection
 NO version
 Without manual operator



- ① Silencer
- ② Safety guard

	size	ØA	ØB	ØC	D	E	ØF	G	ØH	L	M	weight kg (Lbs)				
												aluminium	st. steel			
P273A-12-PA0000	mm	9.5x6.4	9.60	32.00	57.00	30.50	36.00	45.00	50.00	33.00	90.50	8.00	0.310	kg	0.78	kg
	(in)	3/8x1/4	0.38	1.26	2.24	1.20	1.42	1.77	1.97	1.30	3.56	0.31	0.68	(Lbs)	1.73	(Lbs)
P273A-13-PA0000	mm	12.7x9.5	13.00	38.00	70.00	44.00	50.00	60.00	60.00	39.00	124.00	12.00	0.52	kg	1.15	kg
	(in)	1/2x3/8	0.51	1.50	2.76	1.73	1.97	2.36	2.36	1.54	4.88	0.47	1.15	(Lbs)	2.54	(Lbs)
P273A-14-PA0000	mm	12.7x6.4	13.00	38.00	70.00	44.00	50.00	60.00	60.00	39.00	124.00	12.00	0.52	kg	1.15	kg
	(in)	1/2x1/4	0.51	1.50	2.76	1.73	1.97	2.36	2.36	1.54	4.88	0.47	1.15	(Lbs)	2.54	(Lbs)
P273A-15-PA0000	mm	19.1x12.7	20.00	42.50	75.00	46.00	50.00	60.00	65.00	43.50	126.00	12.50	0.61	kg	1.39	kg
	(in)	3/4x1/2	0.79	1.67	2.95	1.81	1.97	2.36	2.56	1.71	4.96	0.49	1.35	(Lbs)	3.06	(Lbs)
P273A-16-PA0000	mm	25.4x19.1	25.50	60.00	85.00	62.00	60.00	70.00	75.00	61.00	142.00	14.00	1.00	kg	2.66	kg
	(in)	1x3/4	1.00	2.36	3.35	2.44	2.36	2.76	2.95	2.40	5.60	0.55	2.20	(Lbs)	5.00	(Lbs)

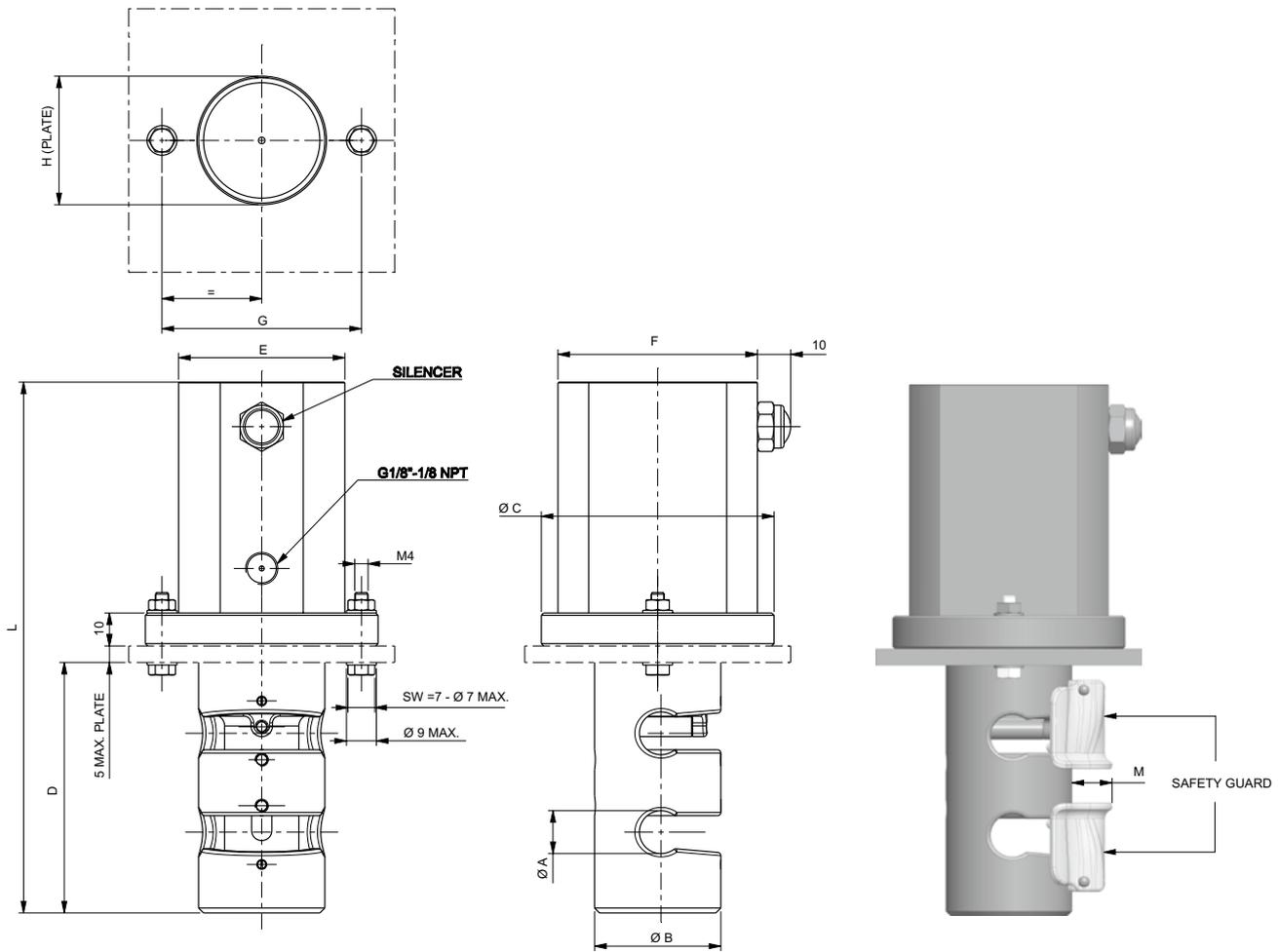
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Dimensions mm (inches), Weight (kg)



TYPE 03
“P” No connection
Universal version
Without manual operator

Single Effect Cylinder



													weight kg (Lbs)	
		size	ØA	ØB	ØC	D	E	F	G	ØH	L	M	aluminium	
P373AG14AXA0000	mm	12.7x6.4	13.00	38.00	70.00	76.00	50.00	60.00	60.00	39.00	161.00	10.50	0.78	kg
	(in)	1/2x1/4	0.51	1.50	2.76	3.00	1.97	2.36	2.36	1.54	6.34	0.41	1.72	(Lbs)

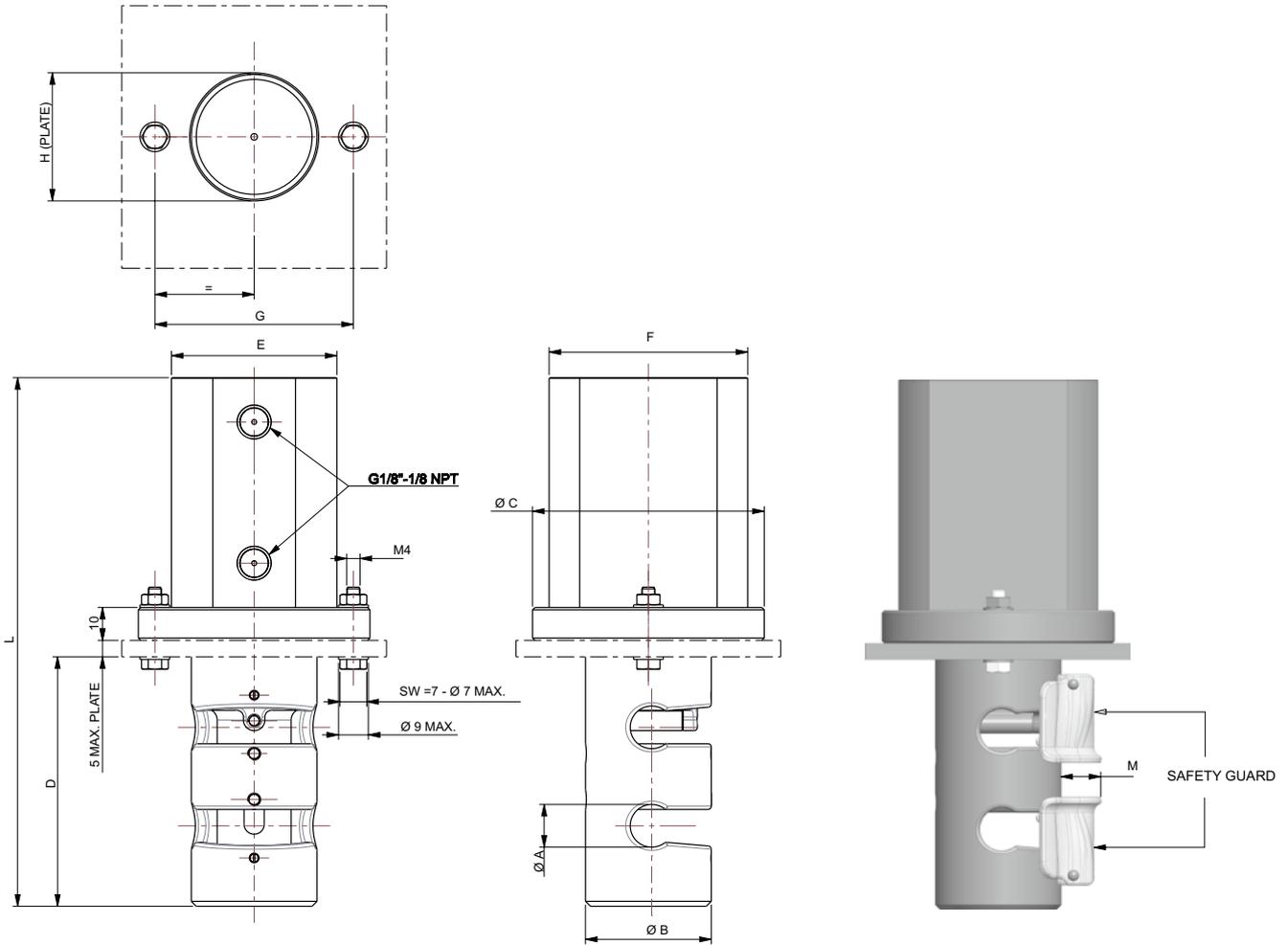
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Dimensions mm (inches), Weight (kg)



TYPE 03
 "P" No connection
 Universal version
 Without manual operator

Double Effect Cylinder



													weight kg (Lbs)	
		size	ØA	ØB	ØC	D	E	F	G	ØH	L	M	aluminium	
P373A...	mm	12.7x6.4	13.00	38.00	70.00	76.00	50.00	60.00	60.00	39.00	161.00	10.50	0.74	kg
	(in)	1/2x1/4	0.51	1.50	2.76	3.00	1.97	2.36	2.36	1.54	6.34	0.41	1.63	(Lbs)

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Safety Guard Spare Parts

Pinch Valve Description (O.D.)	Kit Code ⁽¹⁾
1" O.D. x 3/4" I.D. NC - NC+MO - NO	M27354152700100
3/4" O.D. x 1/2" I.D. NC - NO	M27354152900100
3/4" O.D. x 1/2" I.D. NC+MO	M27354152900200
1/2" O.D. x 3/8" I.D. (& 1/4" I.D.) NC - NC+MO - NO	M27354152800100
3/8" O.D. x 1/4" I.D. NC - NC+MO - NO	M27354161500100

⁽¹⁾ Kit includes; a sub-assembly of (2) pins, (1) mounting block, (1) screw and (1) safety cover.



Accessories

Description	Kit Code
Size adaptor for 1/4" O.D. flexible tubing	M27354644200100



Proximity Sensors

- AVENTICS™ ST6 Series proximity sensors are designed for 6 mm T-slots of pneumatic actuators
- Extremely sensitive, secure, and reliable
- With their optimized, compact shape, the sensors can flush-fit into existing slots
- Quick and easy to install with just a quarter turn of the mounting screw
- Can be mounted from above in the slot ("drop-in" mounting)
- Shock- and vibration-resistant
- Available in a wide range of versions with different line lengths and connections



General

Contact	Reed, electronic PNP, NPN
For slots	T-slot
Supply voltage	10-30 V AC/DC; Variant up to 230 V AC/DC
Ambient temperature	-40°C to +80/120 °C (-40°F to 176/248°F)
Switching point precision	± 0,1 mT
Protection class	IP65, IP67, IP68, IP69K
Certification	UL, ST6 versions with ATEX

For additional information about Proximity Sensors please see the catalog Aventics Sensors, Series ST6.

Aventics 580 CHARM Communication Node with 500 Series Valve Manifold for Piloting of Pinch Valves

- 580 CHARM node provides full integration of 501/502/503 Series valve manifold into DeltaV™ DCS network.
- Electronic Marshalling reduces the need for a third-party network and speeds up production readiness.
- Reduction of overall downtime via real-time diagnostics at the valve and at the DeltaV workstation
- Redundant cables carry both power and communication signal, reducing risk of communication error and loss of power.
- Extended solenoid capability up to 96 coils
- Available panel mounting kit reduces cost for panel installs.

