

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, and Single-Use Bioreactors
- Available in Anodized Aluminum and Stainless Steel

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)

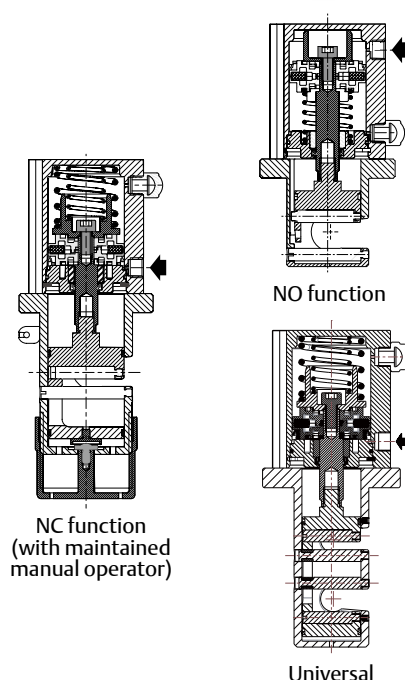
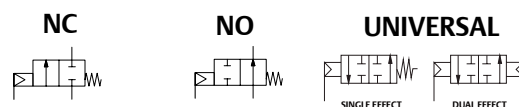
(*) Ensure that the compatibility of the fluids in contact with the tube is verified.

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	
mm (inches)	mm (inches)	min.	max.	without manual operator	with maintained manual operator
2/2 - Normally closed (NC)					
3.2 (1/8)	6.4 (1/4)	0	4 (60)	P273AG32ACA0000	P273AG32ACOM000
6.4 (1/4)	9.5 (3/8)	0	4 (60)	P273AG12ACA0000	P273AG12ACOM000
6.4 (1/4)	12.7 (1/2)	0	6 (90)	P273AG14ACA0000	P273AG14ACOM000
9.5 (3/8)	12.7 (1/2)	0	4 (60)	P273AG13ACA0000	P273AG13ACOM000
12.7 (1/2)	19.1 (3/4)	0	4 (60)	P273AG15ACA0000	P273AG15ACOM000
19.1 (3/4)	25.4 (1)	0	1.6 (25)	P273AG16ACA0000	P273AG16ACOM000
2/2 - Normally open (NO)					
3.2 (1/8)	6.4 (1/4)	0	4 (60)	P273AG32APA0000	-
6.4 (1/4)	9.5 (3/8)	0	4 (60)	P273AG12APA0000	-
6.4 (1/4)	12.7 (1/2)	0	6 (90)	P273AG14APA0000	-
9.5 (3/8)	12.7 (1/2)	0	4 (60)	P273AG13APA0000	-
12.7 (1/2)	19.1 (3/4)	0	4 (60)	P273AG15APA0000	-
19.1 (3/4)	25.4 (1)	0	4 (60)	P273AG16APA0000	-
3/2 - Universal					
				single acting	double acting
6.4 (1/4)	12.7 (1/2)	0	4 (60)	P373AG14ASA0000	P373AG14ADA0000

How To Order

15-DIGIT PRODUCT CODE

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

OM0 = With maintained manual operator ⁽¹⁾

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

S = Stainless steel

⁽¹⁾ NO function not available.

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.AI32.016	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)	60	2.0 (30)
		12.4 (12)	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 NewAge® Industries, 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.

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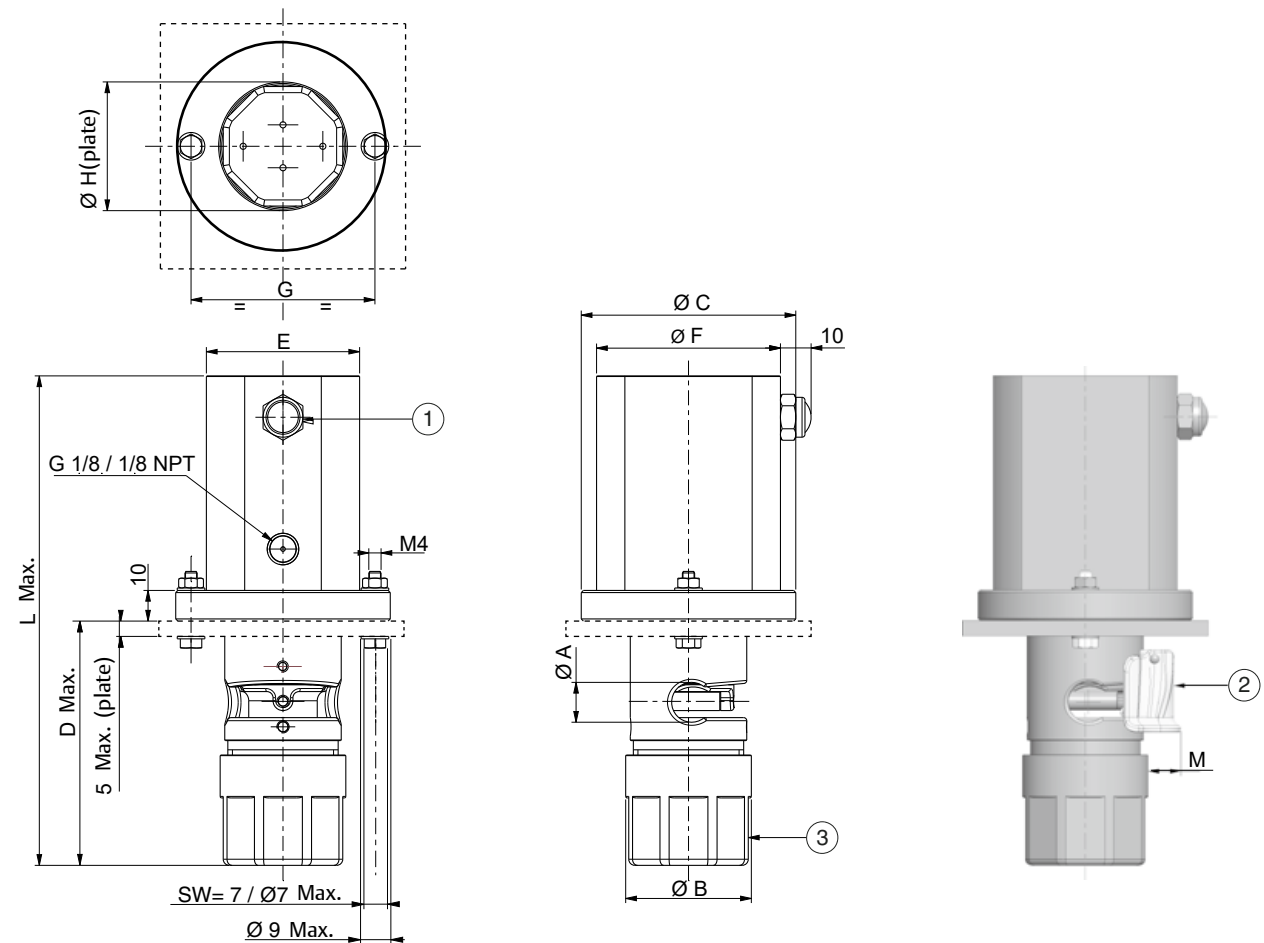
Installation

- 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

Maintained manual operator													weight kg (Lbs)			
		size	ØA	ØB	ØC	D	E	ØF	G	ØH	L	M	aluminium	st. steel		
P273A-12-COM000	mm	9.5x6.40	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
	(in)	3/8x1/4	0.38	1.38	2.24	2.50	1.42	1.7	1.97	1.30	4.86	0.26	0.79	(Lbs)	2.01	(Lbs)
P273A-13-COM000	mm	12.7x9.50	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
	(in)	1/2x3/8	0.51	1.61	2.76	3.13	1.97	2.36	2.36	1.65	6.30	0.41	1.51	(Lbs)	3.54	(Lbs)
P273A-14-COM000	mm	12.7x6.40	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
	(in)	1/2x1/4	0.51	1.61	2.76	3.13	1.97	2.36	2.36	1.65	6.30	0.41	1.51	(Lbs)	3.54	(Lbs)
P273A-15-COM000	mm	19.1x12.7	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
	(in)	3/4x1/2	0.79	2.09	2.95	3.82	1.97	2.36	2.56	2.13	6.97	0.43	1.74	(Lbs)	4.14	(Lbs)
P273A-16-COM000	mm	25.4x19.1	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
	(in)	1x3/4	1.00	2.56	3.35	4.53	2.36	2.76	2.95	2.60	7.68	0.46	2.62	(Lbs)	6.28	(Lbs)

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Dimensions mm (inches), Weight (kg)

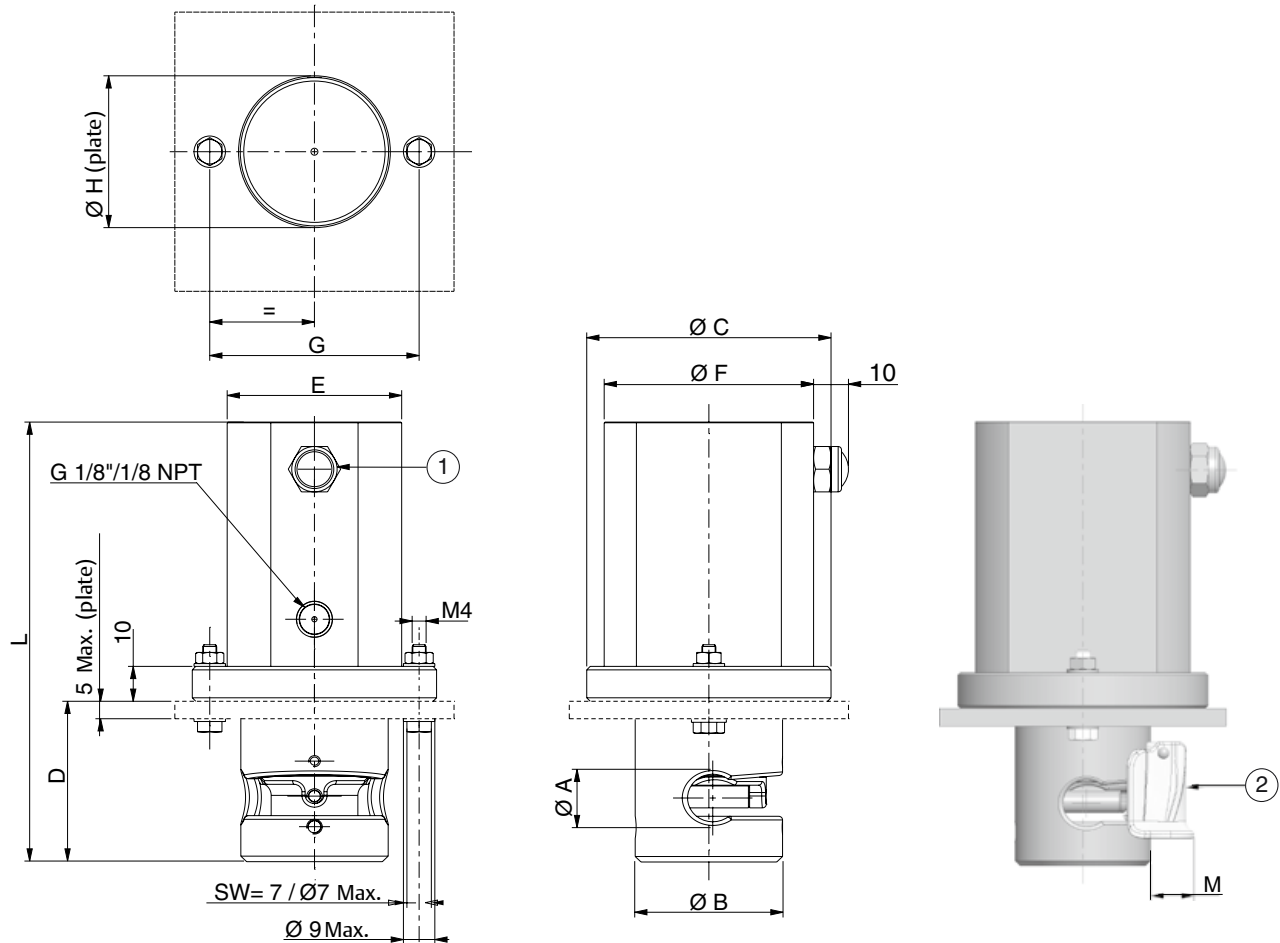


TYPE 02

"P" No connection

NC version

Without manual operator



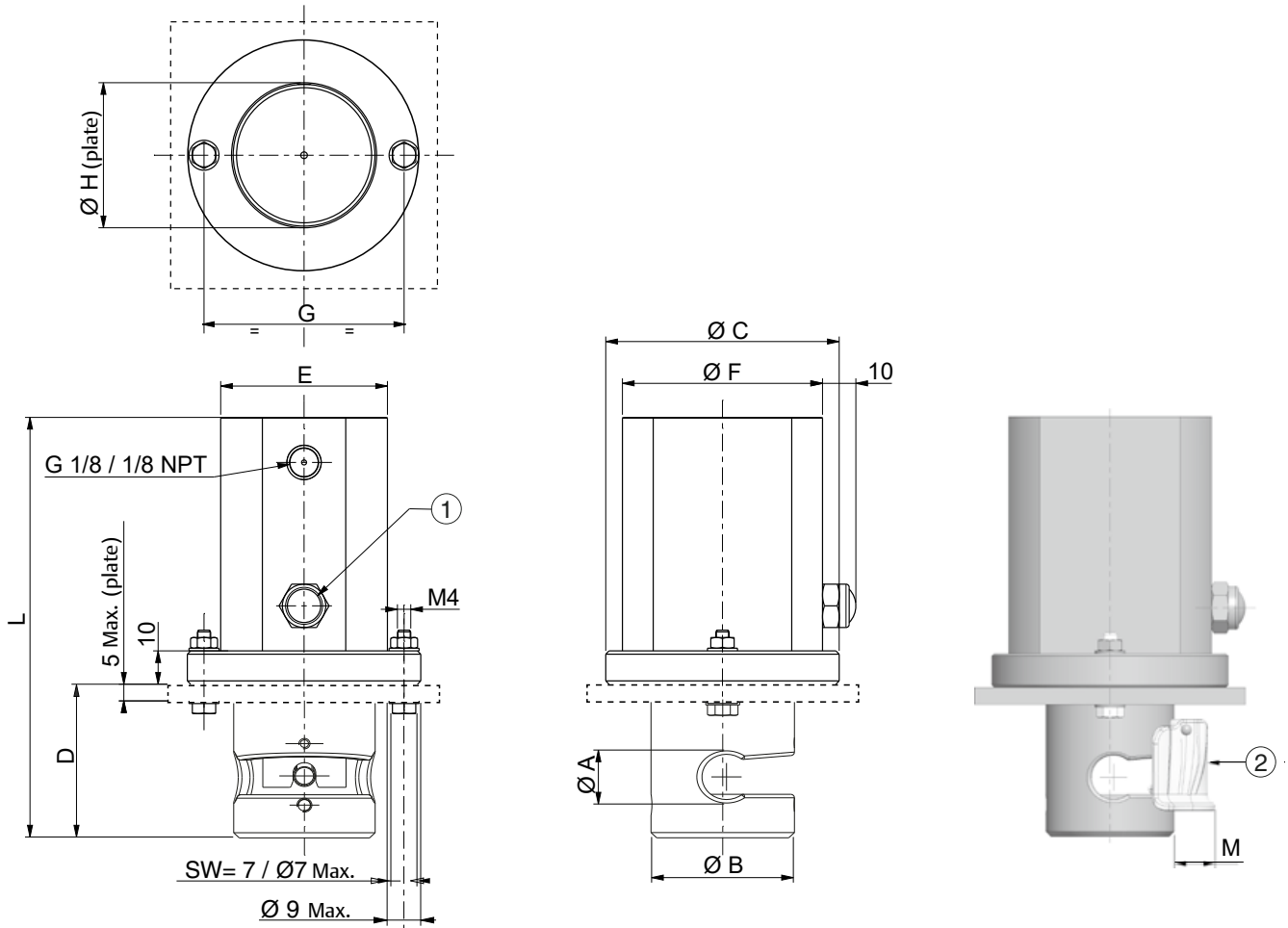
- ① Silencer
- ② Safety guard

												weight kg (Lbs)			
		size	ØA	ØB	ØC	D	E	ØF	G	ØH	L	M	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
	(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
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
	(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
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
	(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
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
	(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
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
	(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

Dimensions mm (inches), Weight (kg)



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



- ① Silencer
② Safety guard

												weight kg (Lbs)			
		size	$\varnothing A$	$\varnothing B$	$\varnothing C$	D	E	$\varnothing F$	G	$\varnothing H$	L	M	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
	(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
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
	(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
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
	(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
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
	(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
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
	(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

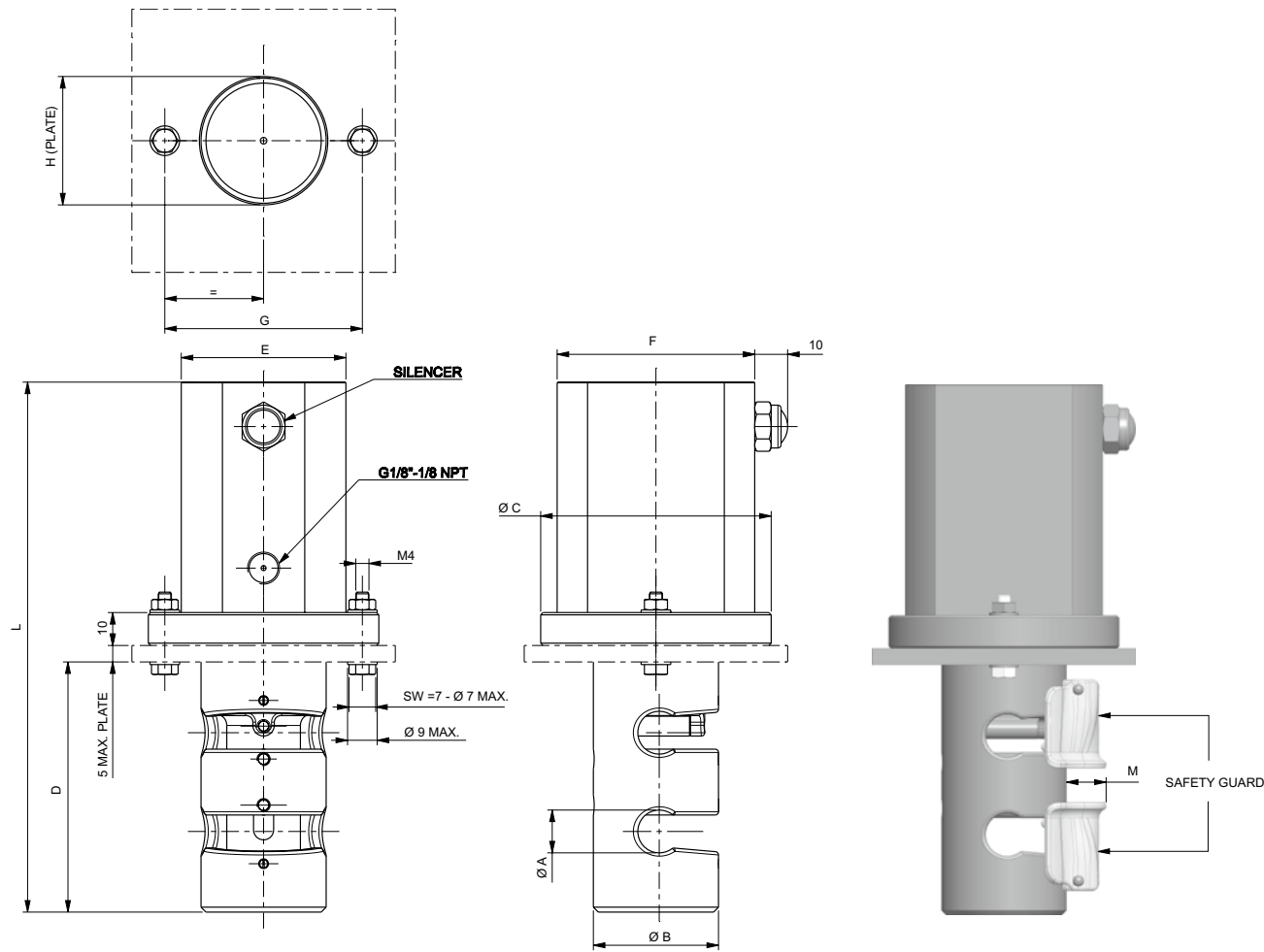
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Dimensions mm (inches), Weight (kg)



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

Single Effect Cylinder



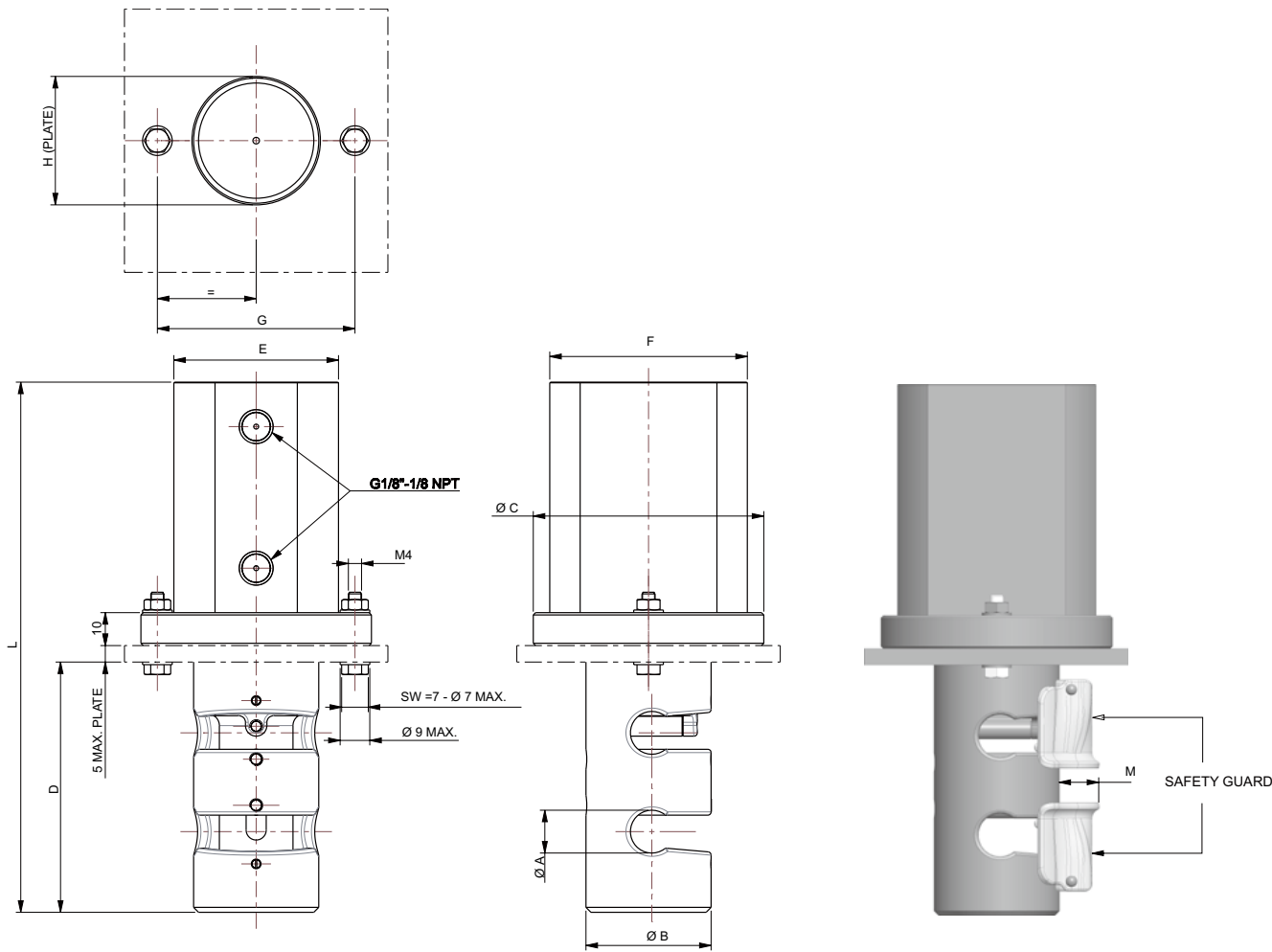
												weight kg (Lbs)		
												aluminium		
P373AG14AXA0000	mm	12.7x6.4	13.00	38.00	70.00	76.00	50.00	60.00	60.00	39.00	161.00	10.50	0.78	kg
	(in)	1/2x1/4	0.51	1.50	2.76	3.00	1.97	2.36	2.36	1.54	6.34	0.41	1.72	(Lbs)

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)

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 1/4"	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.