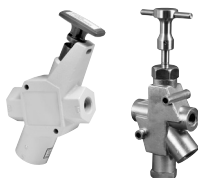


Pneumatic Valve Products Manual / Mechanical Series



Directair 2 / Directair 4 Series

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Technical Data	E7-E8
Dimensional Data	E9-E13

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MO Series

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Sensing Products, Limit Switches

Features	E75-E78
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E

Manual / Mechanical
Valves

Features

Directair Valve Series

Directair 2 & 4 Series

Directair 2, 1/8" valves**Poppet style – .17 Cv**

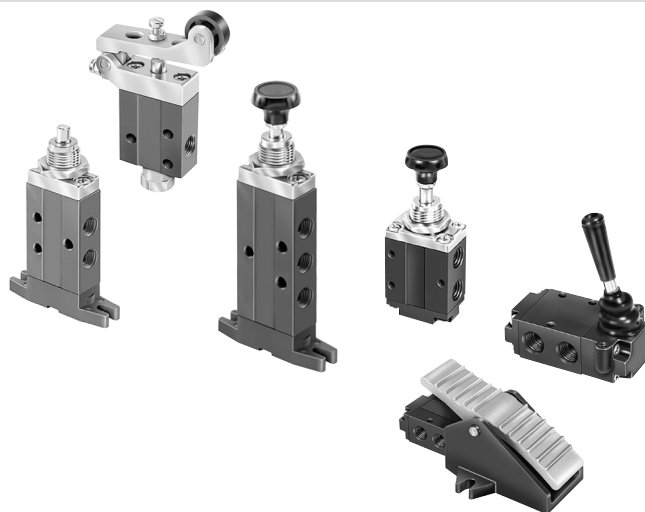
- Economical
- 3-way normally closed function

Directair 2, 1/8" valves**Packed bore style – .20 Cv**

- Stainless steel spool
- Fluorocarbon o-rings
- 3-way & 4-way

Directair 4, 1/4" valves**Packed bore style – .83 Cv**

- Stainless steel spool
- Fluorocarbon o-rings
- 3-way & 4-way



Material specifications

Body and operator housings	Aluminum extrusion
Bushings and pilot piston	Brass
Dynamic seals	Fluorocarbon
Operator o-rings, u-cups	Buna (nitrile)
Poppet ball	Nylon
Spacers - Directair 2	Aluminum
Spacers - Directair 4	Zinc die cast
Spool	Stainless steel

Flow Rating (Cv)

Flow Path	Direct Pipe Spool, 1/8" Ports	Direct Pipe Poppet, 1/8" Ports
Directair 2		
1 → 2	.199	.125
1 → 4	.191	--
2 → 3	.192	.215
4 → 5	.212	--
Avg.	.199	N/A
Directair 4		
1 → 2	.82	.64
1 → 4	.84	.66
2 → 3	.84	.63
4 → 5	.83	.63
Avg.	.83	.64

Operating Information

Operating pressure	Vacuum to 150 PSI (28 inHg to 1035 kPa)*
Temperature range	32°F to 175°F (0°C to 80°C)

* Poppet valves cannot be used for vacuum.
Minimum operating pressure = 0 PSIG.

⚠ CAUTION:

If it is possible that the ambient temperature may fall below freezing, the medium must be moisture free to prevent internal damage or unpredictable behavior.

Lubrication

For maximum service life use clean, lubricated air. Valves are shipped pre-lubricated and can be operated without additional lubrication with reduced service life.

Suggested Lubricant

F442 Oil

Mechanically operated actuating forces in lbs. 1/4" Directair 4 valves

	2-Position Spring Return	2-Position Manual Return	3-Position Spring Return	3-Position Manual Return
Button Actuator	13.0	2.0	13.0	N/A
Roller Actuator	13.0	N/A	N/A	N/A
Lever Actuator	4.0	2.0	4.0	2.5

Notes: N/A = Not Applicable

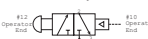
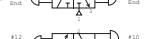
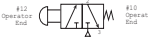
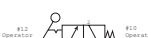
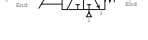
All valves are at 100 PSIG inlet pressure to the valve.

 Most popular.



For inventory, lead times, and kit lookup, visit www.pdnplu.com

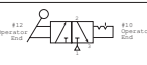
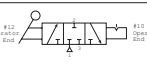
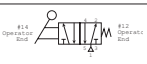
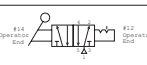
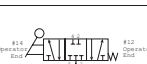
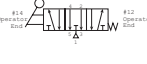
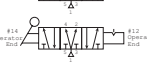
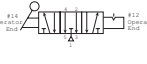
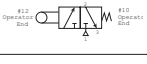
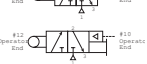
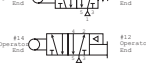
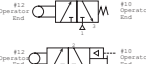
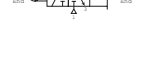
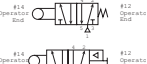
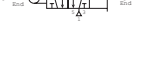
3-Way & 4-Way Valves

	Symbol	Port Size	Cv	Description	Valve Type	Part Number
Button Operated, 3-Way 		1/8"	.17	3-Way, Spring Return	Poppet	404411000
		1/8"	.20	3-Way, Spring Return	Spool	414411000
		1/8"	.20	3-Way, Spring Return, Foot Mounted	Spool	414421000
		1/8"	.20	3-Way, Pilot Return	Spool	414451000
		1/8"	.20	3-Way, Manual Return	Spool	414931000
		1/8"	.20	3-Way, Manual Return, Foot Mounted	Spool	414941000
		1/8"	.20	3-Way, Manual Or Pilot Return	Spool	414951000
		1/4"	.83	3-Way, Spring Return	Spool	524411000
		1/4"	.83	3-Way, Pilot Return	Spool	524451000
		1/4"	.83	3-Way, Manual Return	Spool	524431000
Button Operated, 4-Way 		1/8"	.20	4-Way, Spring Return	Spool	410411000
		1/8"	.20	4-Way, Spring Return, Foot Mounted	Spool	410421000
		1/8"	.20	4-Way, Pilot Return	Spool	410451000
		1/8"	.20	4-Way, Manual Return	Spool	410931000
		1/8"	.20	4-Way, Manual Return, Foot Mounted	Spool	410941000
		1/8"	.20	4-Way, Manual Or Pilot Return	Spool	410951000
		1/4"	.83	4-Way, Spring Return	Spool	520411000
		1/4"	.83	4-Way, Pilot Return	Spool	520451000
		1/4"	.83	4-Way, Manual Return	Spool	520431000
Toggle Operated, Detented 		1/8"	.17	3-Way, Spring Assist Return	Poppet	404811000
		1/8"	.20	3-Way, Spring Assist Return	Spool	414811000
		1/8"	.20	3-Way, Spring Assist Return, Foot Mounted	Spool	414821000
		1/8"	.20	4-Way, Spring Assist Return	Spool	410811000
		1/8"	.20	4-Way, Spring Assist Return, Foot Mounted	Spool	410821000

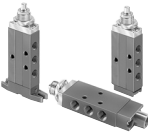
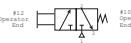
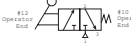
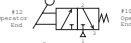
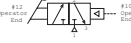
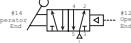
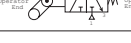
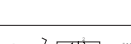
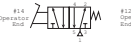
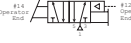
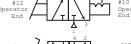
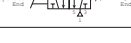


For inventory, lead times, and kit lookup, visit www.pdnplu.com

3-Way & 4-Way Valves

		Symbol	Port Size	Cv	Description	Valve Type	Part Number
Directair 2 & 4 Series	Lever Operated		1/4"	.83	3-Way, Spring Return	Spool	524811000
			1/4"	.83	3-Way, Manual Return	Spool	524831000
			1/4"	.83	3-Way, 3-Position Detented, All Ports Blocked	Spool	523831000
			1/4"	.83	4-Way, Spring Return	Spool	520811000
			1/4"	.83	4-Way, Manual Return	Spool	520831000
			1/4"	.83	4-Way, Spring Centered, Closed Center	Spool	521811000
			1/4"	.83	4-Way, Spring Centered, Pressure Center	Spool	522811000
			1/4"	.83	4-Way, Spring Centered, Exhaust Center	Spool	529811000
			1/4"	.83	4-Way, Detented, Closed Center	Spool	521831000
			1/4"	.83	4-Way, Detented, Pressure Center	Spool	522831000
			1/4"	.83	4-Way, Detented, Exhaust Center	Spool	529831000
MO Series	Roller Operated		1/8"	.20	3-Way, Spring Return	Poppet	404211000
			1/8"	.20	3-Way, Spring Return	Spool	414211000
			1/8"	.20	3-Way, Spring Return, Foot Mounted	Spool	414221000
			1/8"	.20	3-Way, Pilot Return	Spool	414251000
			1/8"	.20	4-Way, Spring Return	Spool	410211000
			1/8"	.20	4-Way, Spring Return, Foot Mounted	Spool	410221000
			1/8"	.20	4-Way, Pilot Return	Spool	410251000
Safety	Roller Operated		1/4"	.83	3-Way, Spring Return, Delrin Roller	Spool	524211000
			1/4"	.83	3-Way, Pilot Return, Delrin Roller	Spool	524251000
			1/4"	.83	3-Way, Spring Return, Steel Roller	Spool	524A11000
			1/4"	.83	3-Way, Pilot Return, Steel Roller	Spool	524A51000
			1/4"	.83	4-Way, Spring Return, Delrin Roller	Spool	520211000
			1/4"	.83	4-Way Pilot Return, Delrin Roller	Spool	520251000
			1/4"	.83	4-Way, Spring Return, Steel Roller	Spool	520A11000
			1/4"	.83	4-Way, Pilot Return, Steel Roller	Spool	520A51000
E	Roller Operated						
Manual / Mechanical Valves	Roller Operated						
Brass Poppet / Sliding Seal	Roller Operated						
Control Panel Products	Roller Operated						
Sensing	Roller Operated						

3-Way & 4-Way Valves

	Symbol	Port Size	Cv	Description	Valve Type	Part Number
Plunger Operated  		1/8"	.17	3-Way, Spring Return	Poppet	404111000
		1/8"	.20	3-Way, Spring Return	Spool	414111000
		1/8"	.20	3-Way, Spring Return, Foot Mounted	Spool	414121000
		1/8"	.20	3-Way, Pilot Return	Spool	414151000
		1/8"	.17	4-Way, Spring Return	Spool	410111000
		1/8"	.20	4-Way, Spring Return, Foot Mounted	Spool	410121000
		1/8"	.20	4-Way, Pilot Return	Spool	410151000
		1/8"	.17	3-Way, Spring Return	Poppet	404711000
		1/8"	.20	3-Way, Spring Return	Spool	414711000
Hand Lever Operated  		1/8"	.20	3-Way, Spring Return, Foot Mounted	Spool	414721000
		1/8"	.20	3-Way, Pilot Return	Spool	414751000
		1/8"	.20	4-Way, Spring Return	Spool	410711000
		1/8"	.20	4-Way, Spring Return, Foot Mounted	Spool	410721000
		1/8"	.20	4-Way, Pilot Return	Spool	410751000
One Way Tripper Operated  		1/8"	.17	3-Way, Spring Return	Poppet	404311000
		1/8"	.20	3-Way, Spring Return	Spool	414311000
		1/8"	.20	3-Way, Spring Return, Foot Mounted	Spool	414321000
		1/8"	.20	3-Way, Pilot Return	Spool	414351000
		1/8"	.20	4-Way, Spring Return	Spool	414311000
		1/8"	.20	4-Way, Spring Return, Foot Mounted	Spool	414321000
		1/8"	.20	4-Way, Pilot Return	Spool	414351000
Pedal Operated 		1/4"	.83	3-Way, Spring Return	Spool	524711000
		1/4"	.83	3-Way, Pilot Return	Spool	524751000
		1/4"	.83	4-Way, Spring Return	Spool	520711000
		1/4"	.83	4-Way, Pilot Return	Spool	520751000
Treadle Operated 		1/4"	.83	3-Way, Treadle Operated, Detented	Spool	524931000
		1/4"	.83	4-Way, Treadle Operated, Detented	Spool	520931000
CAUTION: This valve shall not be used to actuate a punch press. Do not use this valve on punch presses or press brakes. See OSHA 1910.217.						



For inventory, lead times, and kit lookup, visit www.pdnplu.com

Directair 2

41	0	1	1	1	000																												
<table><tr><th colspan="2">Basic Series</th></tr><tr><td>1/8" Port Poppet Valve</td><td>40*</td></tr><tr><td>1/8" Port Spool Valve</td><td>41</td></tr></table>			Basic Series		1/8" Port Poppet Valve	40*	1/8" Port Spool Valve	41	<table><tr><th colspan="2">Manual / Mechanical</th></tr><tr><td>000</td><td>Standard</td></tr></table>			Manual / Mechanical		000	Standard																		
Basic Series																																	
1/8" Port Poppet Valve	40*																																
1/8" Port Spool Valve	41																																
Manual / Mechanical																																	
000	Standard																																
<table><tr><th colspan="2">Type</th></tr><tr><td>4-Way, 2-Position Valve</td><td>0*</td></tr><tr><td>3-Way, 2-Position</td><td>4</td></tr></table>			Type		4-Way, 2-Position Valve	0*	3-Way, 2-Position	4	<table><tr><th colspan="2">Mounting</th></tr><tr><td>1</td><td>Direct Pipe Ported, NPT</td></tr><tr><td>K</td><td>Direct Pipe Ported, BSPP</td></tr></table>			Mounting		1	Direct Pipe Ported, NPT	K	Direct Pipe Ported, BSPP																
Type																																	
4-Way, 2-Position Valve	0*																																
3-Way, 2-Position	4																																
Mounting																																	
1	Direct Pipe Ported, NPT																																
K	Direct Pipe Ported, BSPP																																
* N/A with Basic Series 40.																																	
<table><tr><th colspan="2">Actuation</th></tr><tr><td>Plunger</td><td>1</td></tr><tr><td>Roller - Delrin</td><td>2</td></tr><tr><td>One-Way Tripper</td><td>3</td></tr><tr><td>Button - Spring Return</td><td>4</td></tr><tr><td>Hand Lever</td><td>7</td></tr><tr><td>Toggle</td><td>8</td></tr><tr><td>Button - Push-Pull</td><td>9*</td></tr></table>			Actuation		Plunger	1	Roller - Delrin	2	One-Way Tripper	3	Button - Spring Return	4	Hand Lever	7	Toggle	8	Button - Push-Pull	9*	<table><tr><th colspan="2">Return</th></tr><tr><td>1†</td><td>Spring</td></tr><tr><td>2†</td><td>Spring w/ Foot Mount</td></tr><tr><td>3*</td><td>None (Manual Return)</td></tr><tr><td>4*</td><td>None (Manual Return w/ Foot Mount)</td></tr><tr><td>5†</td><td>Remote Pilot Return</td></tr></table>			Return		1†	Spring	2†	Spring w/ Foot Mount	3*	None (Manual Return)	4*	None (Manual Return w/ Foot Mount)	5†	Remote Pilot Return
Actuation																																	
Plunger	1																																
Roller - Delrin	2																																
One-Way Tripper	3																																
Button - Spring Return	4																																
Hand Lever	7																																
Toggle	8																																
Button - Push-Pull	9*																																
Return																																	
1†	Spring																																
2†	Spring w/ Foot Mount																																
3*	None (Manual Return)																																
4*	None (Manual Return w/ Foot Mount)																																
5†	Remote Pilot Return																																
* N/A with Basic Series 40.			* Available only with Actuation 9. † N/A with Actuation 8.																														

Directair 4

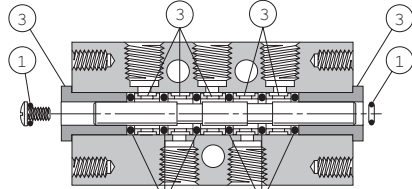
52		0	8	1	1	000		
Basic Series						Manual / Mechanical		
1/4" Port Spool Valve		52					000	Standard



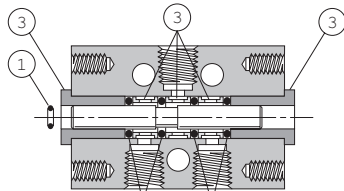
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Service Kits – 1/8 Port Size Valves (DA2)

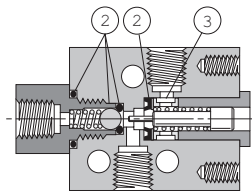
①	Spool Valve Seal Kit (3 & 4-way, direct pipe ported)	410008000
②	Poppet Valve Seal Kit	404118000
③	Body Service Kit	410008005



4-Way Spool



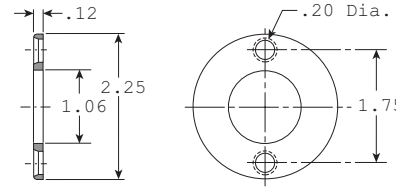
3-Way Spool



3-Way Poppet

Panel Mounting Kit – No. 520838004

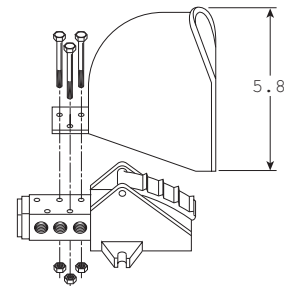
Available for panel mounting direct pipe ported, lever operated 1/4" Directair 4 Series valves. Kit includes a flange and two screws.



Pedal Guard Kit – No. 520718001

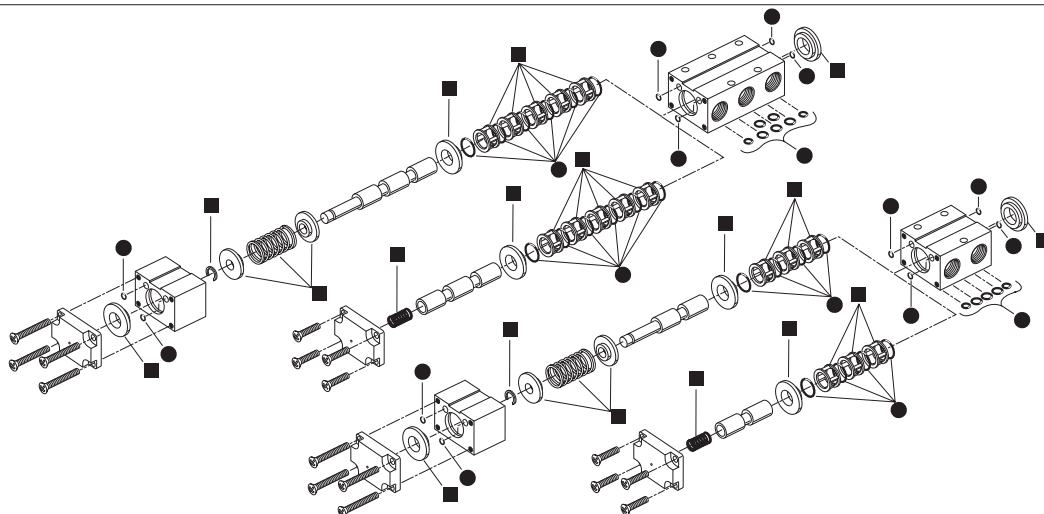
Pedal guard meets safety requirements for foot operated valves by protecting pedal from accidental tripping from all angles. Guard is constructed of lightweight aluminum casting for strength and durability. Bolts quickly into place with only three screws without special valve mounting. One model fits any pedal (not treadle) operated 1/4" Directair 4 Series valve.

CAUTION:
This valve shall not be used to actuate a punch press. Do not use this valve on punch presses or press brakes. See OSHA 1910.217.

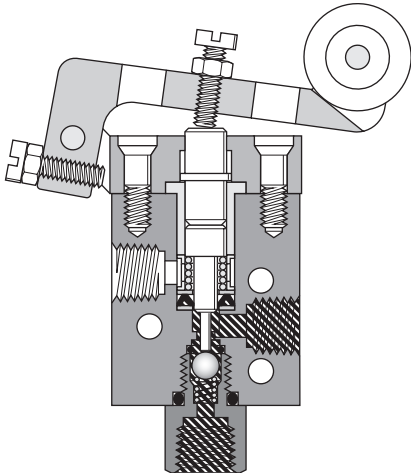


Service Kits – 1/4 Port Size Valves (DA4)

●	Valve Seal Kit (Contains all soft seals found in 3 & 4-way bodies and all actuator styles.)	520008050
	All fluorocarbon	520008500
■	Body Service Kit (Contains bushing, springs, retainers and shell from 2 & 3-position, 3 & 4-way bodies.)	520018005



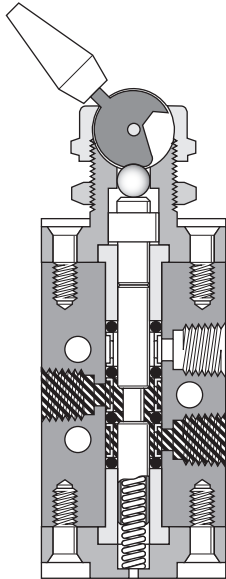
Directair 2 & 4 Series	Viking Xtreme Lever Series	4/2 Lever / Pedal Series	MO Series	Safety		Manual / Mechanical Valves	Brass Poppet / Sliding Seal	Control Panel Products	Sensing
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Roller Operated
Poppet



Button Operated



Toggle Operated
Spool



Lever Operated



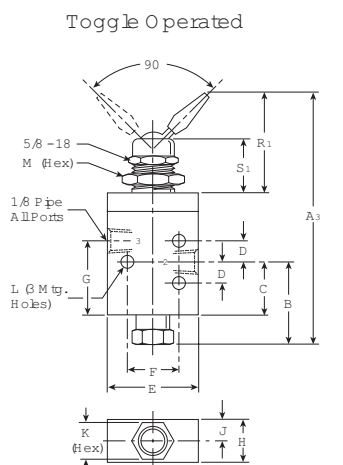
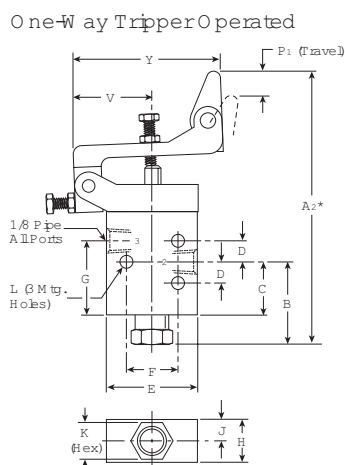
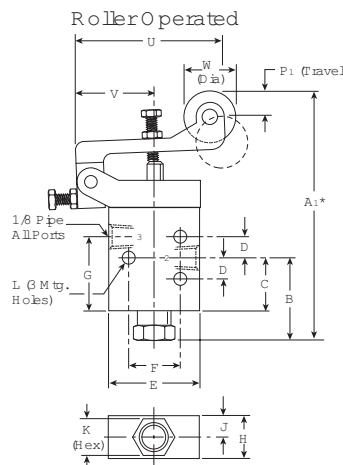
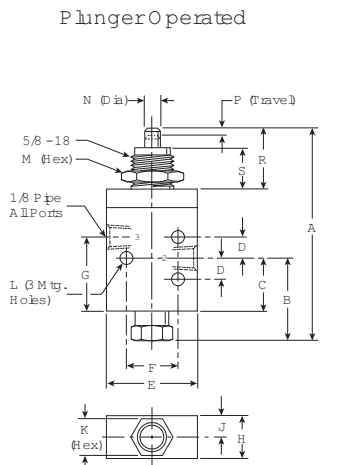
Treadle Operated

 Pressure  Exhaust



For inventory, lead times, and kit
lookup, visit www.pdnplu.com

Plunger, Roller, One-way Tripper & Toggle Operated — 3-Way, 3-Port, 2-Position – 1/8" Ports



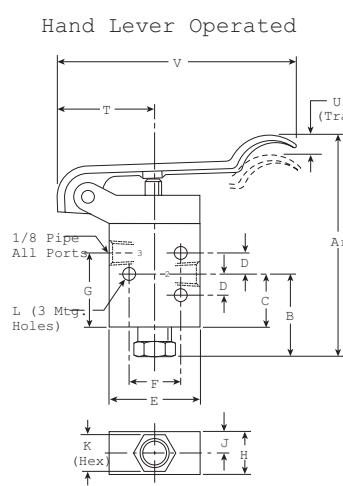
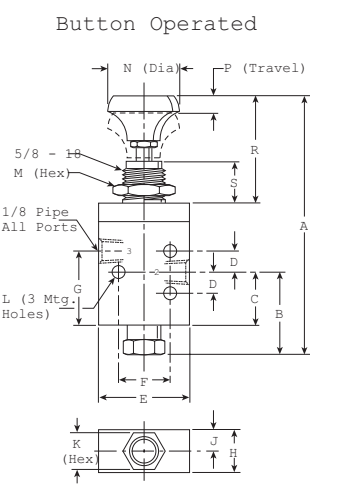
3-Way, 3-Port, 2-Position

A	A1*	A2*	A3	B
3.37 (86)	4.21 (107)	4.46 (113)	3.99 (101)	1.03 (26)
C	D	E	F	G
.55 (14)	.31 (8)	1.31 (33)	.75 (19)	.90 (23)
H	J	K	L	M
.62 (16)	.31 (8)	.56 (14)	.19 (5)	.88 (22)
N	P	P1	R	R1
.25 (6)	.17 (4)	.38 (10)	.91 (23)	1.53 (39)
S	S1	U	V	W
.62 (16)	.78 (20)	2.28 (58)	1.19 (30)	.75 (19)
X	Y			
.19 (5)	2.19 (56)			

* Dimensions may be reduced .44" using adjusting screw.

Inches (mm)

Button & Hand Lever Operated — 3-Way, 3-Port, 2-Position – 1/8" Ports



3-Way, 3-Port, 2-Position

A	A1	B	C	D
4.13 (105)	3.34 (85)	1.03 (26)	.55 (14)	.31 (8)
E	F	G	H	J
1.31 (33)	.75 (19)	.90 (23)	.62 (16)	.31 (8)
K	L	M	N	P
.56 (14)	.19 (5)	.88 (22)	1.06 (27)	.17 (4)
R	S	T	U	V
1.67 (42)	.63 (16)	1.19 (30)	.53 (13)	3.38 (86)

Inches (mm)

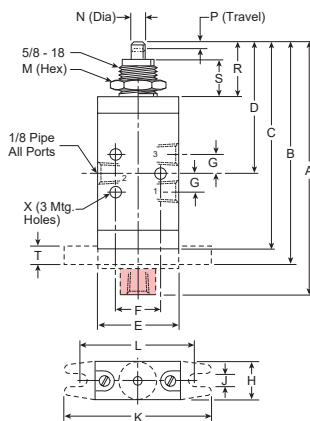


For inventory, lead times, and kit lookup, visit www.pdnplu.com

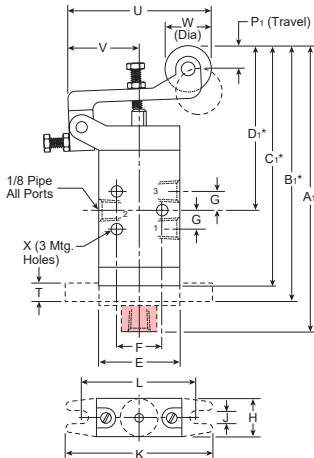
Directair 2 & 4 Series	Viking Xtreme Lever Series	42 Lever / Pedal Series	MO Series	Safety	E	Manual / Mechanical Valves	Brass Poppet / Sliding Seal	Control Panel Products	Sensing
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Plunger, Roller, One-way Tripper & Toggle Operated — 3-Way, 3-Port, 2-Position — 1/8" Ports

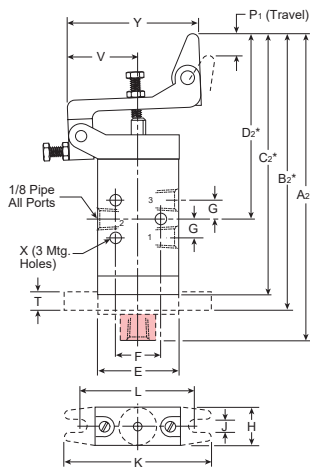
Plunger Operated



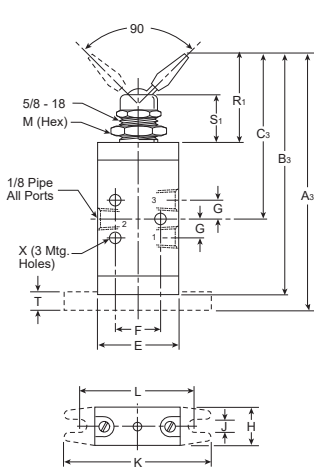
Roller Operated



One-Way Tripper Operated



Toggle Operated



3-Way, 3-Port, 2-Position

A	A1*	A2*	A3	B
4.14 (105)	4.98 (126)	5.23 (133)	4.23 (107)	3.61 (92)
B1	B2	B3	C	C1
4.45 (113)	4.70 (119)	4.00 (102)	3.38 (86)	4.22 (107)
C2	C3	D	D1	D2
4.47 (113)	2.75 (70)	2.05 (52)	2.98 (76)	3.22 (82)
E	F	G	H	J
1.31 (33)	.75 (19)	.31 (8)	.62 (16)	.20 (5)
K	L	M	N	P
2.38 (60)	1.88 (48)	.88 (22)	.25 (6)	.17 (4)
P1	R	R1	S	S1
.38 (10)	.91 (23)	1.53 (39)	.62 (16)	.78 (20)
T	U	V	W	X
.25 (6)	2.28 (58)	1.19 (30)	.75 (19)	.19 (5)

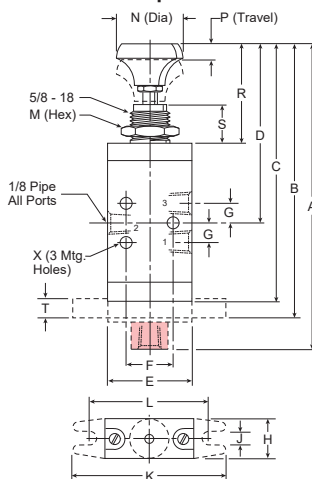
Y
2.19
(56)

*Dimensions may be reduced .44" using adjusting screw.

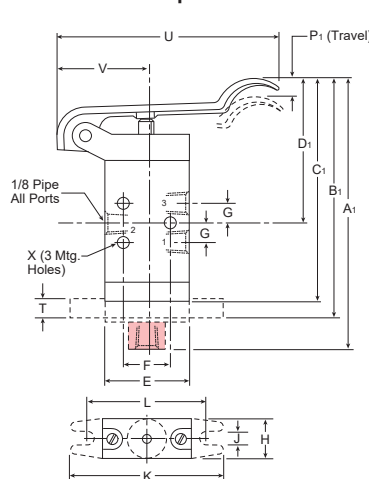
Inches (mm)

Button, Hand Lever Operated — 3-Way, 3-Port, 2-Position — 1/8" Ports

Button Operated



Hand Lever Operated



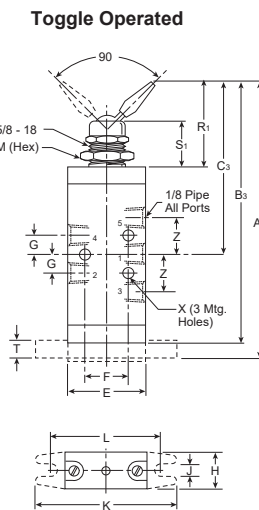
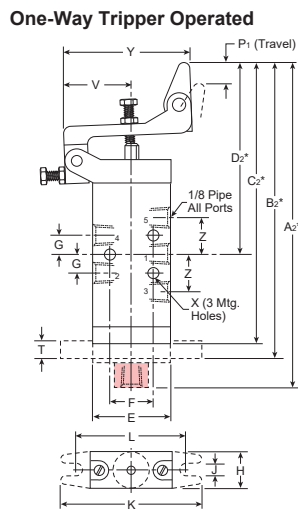
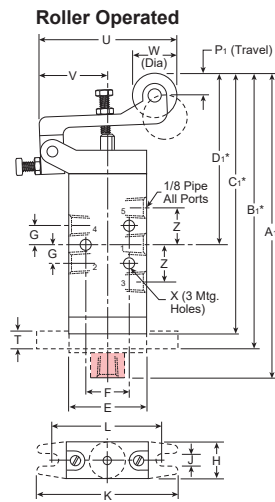
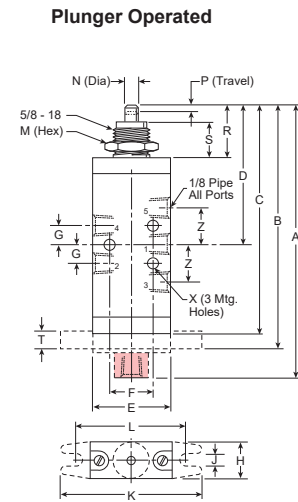
3-Way, 3-Port, 2-Position

A	A1	B	B1	C
5.08 (129)	4.29 (109)	4.55 (115)	3.77 (96)	4.31 (109)
C1	D	D1	E	F
3.53 (90)	3.08 (78)	2.29 (58)	1.31 (33)	.75 (19)
G	H	J	K	L
.31 (8)	.62 (16)	.20 (5)	2.38 (60)	1.88 (48)
M	N	P	P1	R
.88 (22)	1.06 (27)	.17 (4)	.53 (13)	1.67 (42)
S	T	U	V	X
.63 (16)	.25 (6)	3.38 (86)	1.19 (30)	.19 (5)

Y
.59
(15)

Inches (mm)

Plunger, Roller, One-way Tripper & Toggle Operated — 4-Way, 5-Port, 2-Position — 1/8" Ports



4-Way, 5-Port, 2-Position

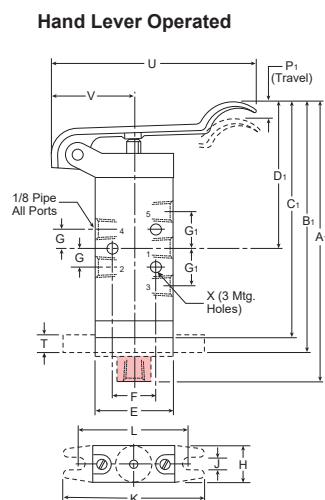
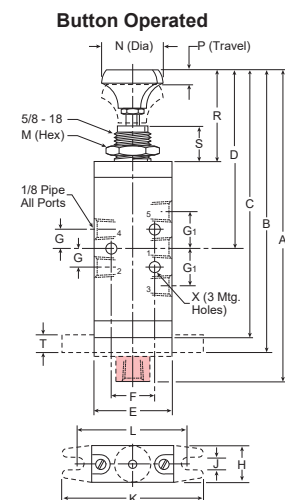
A	A1*	A2*	A3	B
4.75 (121)	5.59 (142)	5.84 (148)	4.84 (123)	4.22 (107)
B1*	B2*	B3	C	C1*
5.06 (128)	5.31 (135)	4.61 (117)	3.99 (102)	4.83 (123)
C2*	C3	D	D1*	D2*
5.08 (129)	3.06 (78)	2.44 (62)	3.28 (83)	3.53 (90)
E	F	G	H	J
1.31 (33)	.75 (19)	.31 (8)	.62 (16)	.20 (5)
K	L	M	N	P
2.38 (60)	1.88 (48)	.88 (22)	.25 (6)	.17 (4)
P1	R	R1	S	S1
.38 (10)	.91 (23)	1.53 (39)	.62 (16)	.78 (20)
T	U	V	W	X
.25 (6)	2.28 (58)	1.19 (30)	.75 (19)	.19 (5)

Y	Z
2.19 (56)	.62 (16)

*Dimensions may be reduced .44" using adjusting screw.

Inches (mm)

Button & Hand Lever Operated — 4-Way, 5-Port, 2-Position — 1/8" Ports

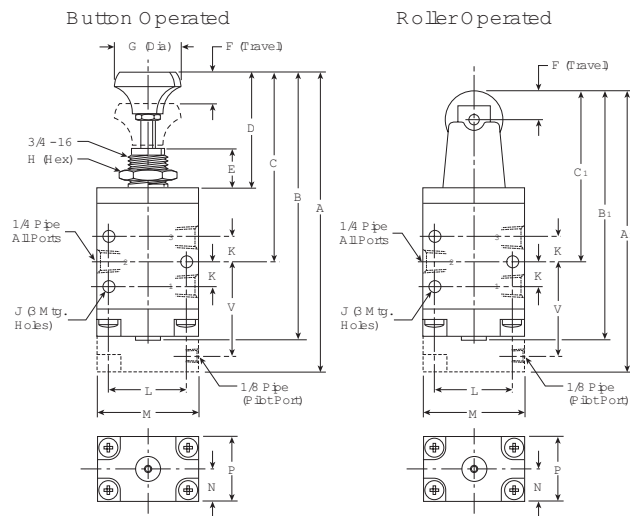


4-Way, 5-Port, 2-Position

A	A1	B	B1	C
5.69 (144)	4.90 (124)	5.16 (131)	4.38 (111)	4.92 (125)
C1	D	D1	E	F
4.14 (105)	3.67 (93)	2.90 (74)	1.31 (33)	.75 (19)
G	G1	H	J	K
.31 (8)	.63 (16)	.62 (16)	.20 (5)	2.38 (60)
L	M	N	P	P1
1.88 (48)	.88 (22)	1.06 (27)	.17 (4)	.53 (13)
R	S	T	U	V
1.67 (42)	.63 (16)	.25 (6)	3.38 (86)	1.19 (30)
X	Y			
.19 (5)	.59 (15)			

Inches (mm)

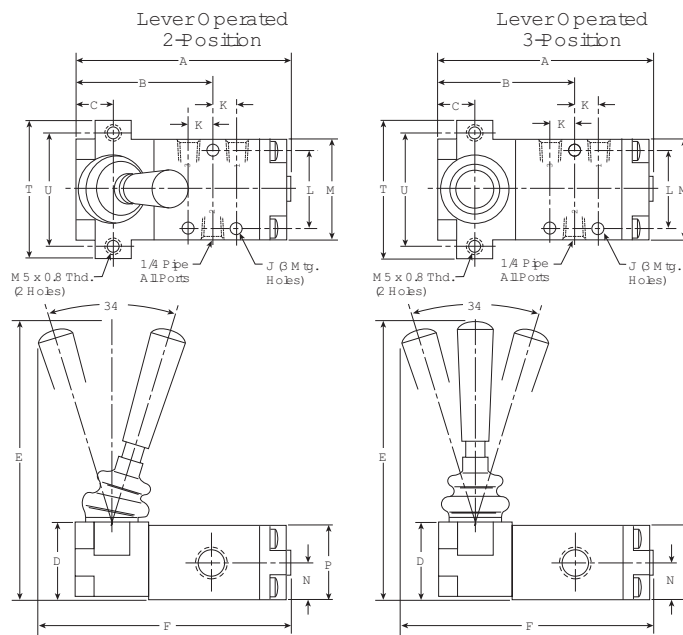
Button & Roller Operated — 3-Way, 3-Port, 2-Position



3-Way, 3-Port, 2-Position

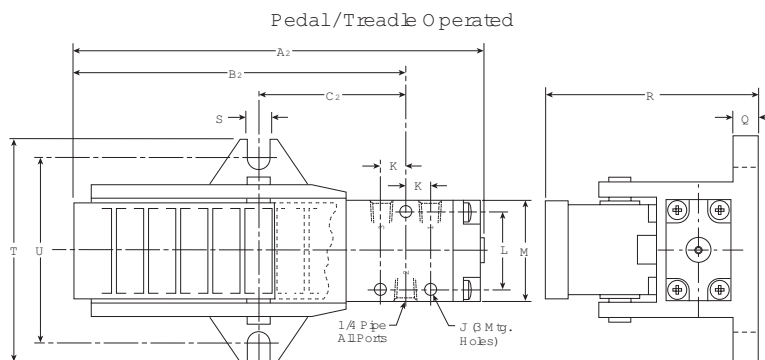
A	A ₁	B	B ₁	C
4.91 (125)	4.25 (108)	4.44 (113)	3.78 (96)	3.10 (79)
C ₁	D	E	F	G
2.44 (62)	2.00 (51)	.63 (16)	.32 (8)	1.05 (27)
H	J	K	L	M
1.00 (25)	.19 (5)	.41 (10)	1.25 (32)	1.63 (42)
N	P	V		
.53 (14)	1.06 (27)	1.52 (39)		
Inches (mm)				

Lever & Pedal Operated — 3-Way, 3-Port, 2 & 3-Position



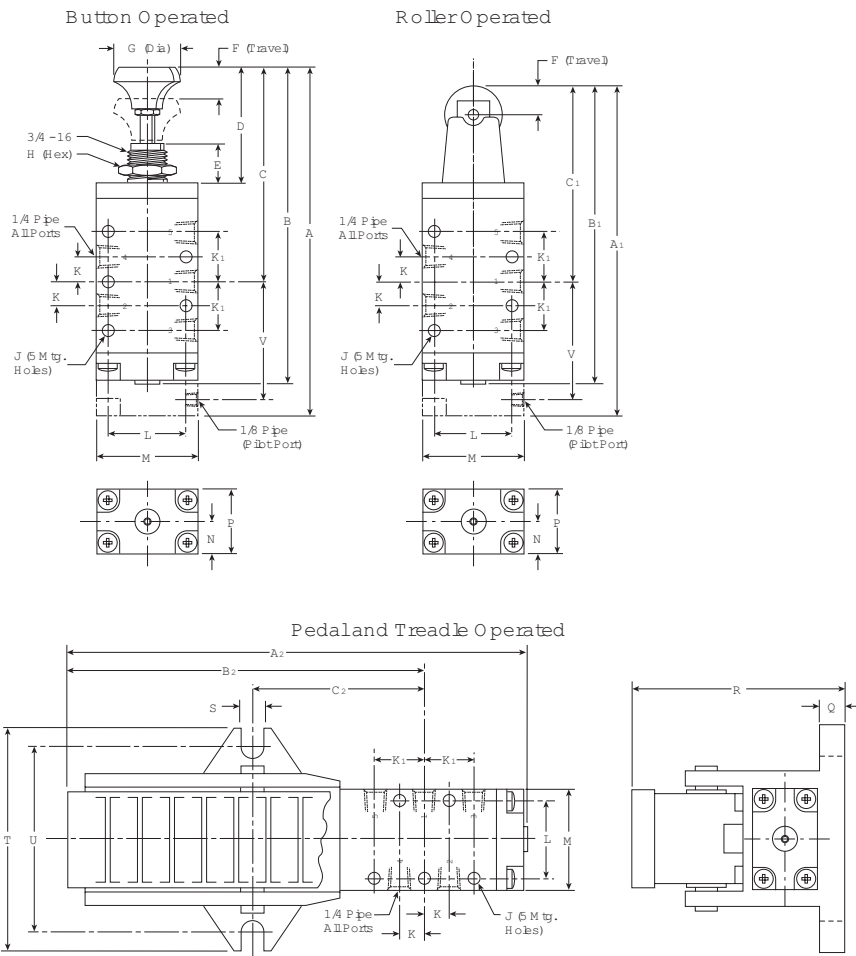
3-Way, 3-Port, 2 & 3-Position

A	A ₁	B	B ₁	C
3.31 (84)	6.55 (166)	1.97 (50)	5.20 (132)	.53 (14)
C ₁	D	E	F	J
2.19 (56)	1.12 (28)	4.06 (103)	3.90 (99)	.19 (5)
K	L	M	N	P
.41 (10)	1.25 (32)	1.63 (42)	.53 (14)	1.06 (27)
Q	R	S	T	T ₁
.37 (10)	2.40 (61)	.34 (9)	2.13 (54)	3.50 (89)
U	U ₁			
1.75 (44)	3.00 (76)			
Inches (mm)				



CAUTION:
 This valve shall not be used to actuate a punch press. Do not use this valve on punch presses or press brakes. See OSHA 1910.217.

Button, Roller, Pedal & Treadle, Lever Operated — 4-Way, 5-Port, 2-Position



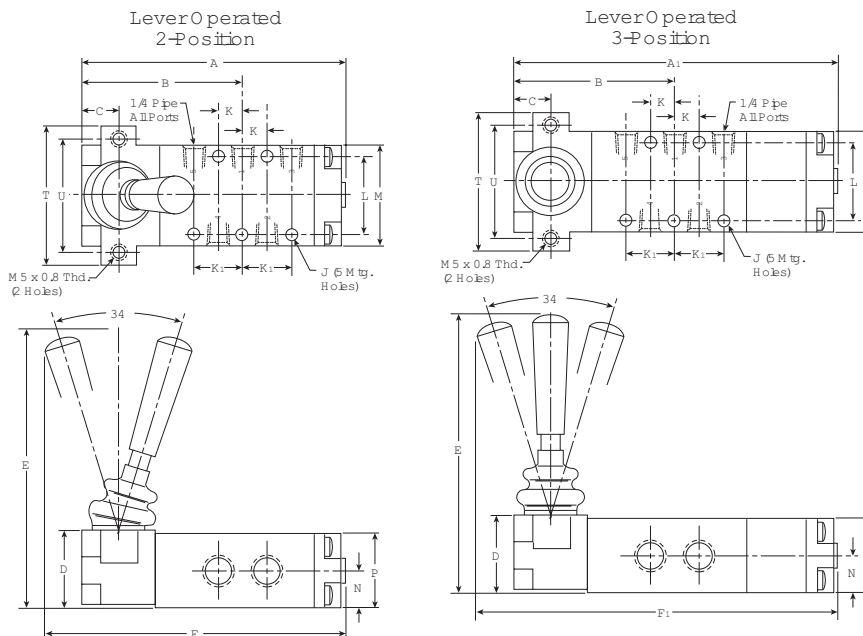
4-Way, 5-Port, 2-Position

A	A ₁	A ₂	B	B ₁
5.75 (146)	5.13 (130)	7.41 (189)	5.28 (134)	4.66 (118)
B ₂	C	C ₁	C ₂	D
5.63 (143)	3.50 (89)	2.88 (73)	2.64 (67)	2.00 (51)
E	F	G	H	J
.63 (16)	.32 (8)	1.05 (27)	1.00 (25)	.19 (5)
K	K ₁	L	M	N
.44 (11)	.84 (21)	1.25 (32)	1.63 (41)	.53 (14)
P	Q	R	S	T
1.06 (27)	.37 (10)	2.40 (61)	.34 (9)	3.50 (89)
U	V			
3.00 (76)	1.96 (50)			

Inches (mm)

CAUTION:
 This valve shall not be used to actuate a punch press. Do not use this valve on punch presses or press brakes. See OSHA 1910.217.

Lever Operated — 4-Way, 5-Port, 2 & 3-Position



4-Way, 5-Port, 2 & 3-Position

A	A ₁	B	C	D
4.19 (106)	5.09 (129)	2.41 (61)	.53 (14)	1.12 (28)
E	F	F ₁	J	K
4.06 (103)	4.78 (121)	5.78 (147)	.19 (5)	.44 (11)
K ₁	L	M	N	P
.84 (21)	1.25 (32)	1.63 (42)	.53 (14)	1.06 (27)
T	U			
2.13 (54)	1.75 (44)			

Inches (mm)

Features

Viking Xtreme Manual Series

The Viking Xtreme Manual valve range is robust, versatile and combines high performance with compact installation dimensions. The valves rugged lever actuator has been specifically designed for gloved hands to suit mobile applications in the most arduous of environments. Available in 3/2, 5/2 and 5/3 functions with either spring return or detented lever. The lever actuated versions are available across the entire range from 1/8 to 1/2 port sizes.

- **Heavy duty lever**
- **Inline valve**
 - 1/8", 1/4", 3/8", 1/2" NPT & BSPP
- **2-position models**
 - 4-way & 3-way
- **3-position models**
 - all ports blocked
 - pressure center
 - center exhaust
- **Approval**
 - Canada Registration Number available (CRN)
- **Over-moulded single piece aluminium spool**
 - Reduced product complexity
 - Increased flow
 - Wide operating temperature range
 - Stable seal performance even with high flow / pressure drop across spool.



Operating information

Operating pressure: Type A & B: Vacuum to 232 PSIG
(Vacuum to 16 bar Max.)

Type C & D: Vacuum to 174 PSIG
(Vacuum to 12 bar Max.)

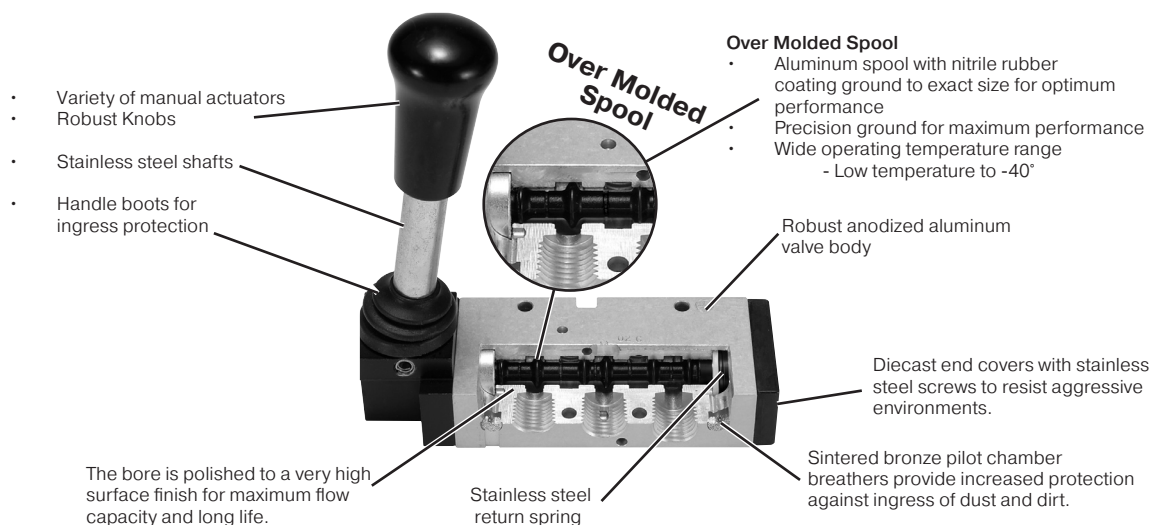
Temperature range:
Xtreme: -40°F to 140°F (-40°C to 60°C)

Material specifications

End covers	Anodized aluminum
Lever	Reinforced polyamide plastic
Lever housing	Acetal plastic
Piston	Acetal plastic / anodized aluminum
Seals	Nitrile rubber
Screws	Stainless steel
Spool	Aluminum & nitrile rubber
Springs	Stainless steel
Valve body	Anodized aluminum

Lever Handle –
1/8" valve size,
5/2 & 5/3 onlyTwist Handle –
1/4" valve sizesLever Handle –
All other valve
sizes

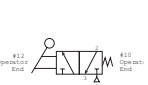
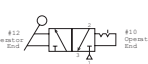
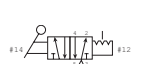
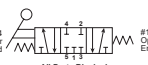
Features



For inventory, lead times, and kit lookup, visit www.pdnplu.com

Common Part Numbers

Manual / Mechanical Products
Viking Xtreme Manual Series

3/2 - 2-Position *	Symbol	Valve Type	Port Size	Cv	Weight lb (kg)	Part Number NPT	Part Number BSPP
 Size P2LBX Shown		Lever Spring Return	1/8	0.6	0.73 (0.33)	P2LAX391VS	P2LAX311VS
			1/4	1.5	0.73 (0.33)	P2LBX392VS	P2LBX312VS
			3/8	2.5	0.88 (0.40)	P2LCX393VS	P2LCX313VS
			1/2	2.7	1.32 (0.60)	P2LDX394VS	P2LDX314VS
 Size P2LAX Shown		Lever Detent	1/8	0.7	0.73 (0.33)	P2LAX391VV	P2LAX311VV
			1/4	1.3	0.73 (0.33)	P2LBX392VV	P2LBX312VV
			3/8	2.5	0.88 (0.40)	P2LCX393VV	P2LCX313VV
			1/2	2.7	1.32 (0.60)	P2LDX394VV	P2LDX314VV
5/2 - 2-Position *	Symbol	Valve Type	Port Size	Cv	Weight lb (kg)	Part Number NPT	Part Number BSPP
 Size P2LBX Shown		Lever Spring Return	1/8	0.6	0.40 (0.18)	P2LAX591VS	P2LAX511VS
			1/4	1.5	0.73 (0.33)	P2LBX592VS	P2LBX512VS
			3/8	2.5	0.88 (0.40)	P2LCX593VS	P2LCX513VS
			1/2	2.7	1.32 (0.60)	P2LDX594VS	P2LDX514VS
 Size P2LAX Shown		Lever Detent	1/8	0.7	0.40 (0.18)	P2LAX591VV	P2LAX511VV
			1/4	1.3	0.73 (0.33)	P2LBX592VV	P2LBX512VV
			3/8	2.5	0.88 (0.40)	P2LCX593VV	P2LCX513VV
			1/2	2.7	1.32 (0.60)	P2LDX594VV	P2LDX514VV
5/3 - 3-Position,* All Ports Blocked	Symbol	Valve Type	Port Size	Cv	Weight lb (kg)	Part Number NPT	Part Number BSPP
 Size P2LAX Shown		Lever Spring Center	1/8	0.6	0.40 (0.18)	P2LAX69111	P2LAX61111
			1/4	1.5	0.73 (0.33)	P2LBX69211	P2LBX61211
			3/8	2.5	1.56 (0.71)	P2LCX69311	P2LCX61311
			1/2	2.7	1.61 (0.73)	P2LDX69411	P2LDX61411
 Size P2LBX Shown		Lever Detent	1/8	0.7	0.40 (0.18)	P2LAX69122	P2LAX61122
			1/4	1.3	0.73 (0.33)	P2LBX69222	P2LBX61222
			3/8	2.5	1.56 (0.71)	P2LCX69322	P2LCX61322
			1/2	2.7	1.61 (0.73)	P2LDX69422	P2LDX61422
5/3 - 3-Position,* Center Exhaust	Symbol	Valve Type	Port Size	Cv	Weight lb (kg)	Part Number NPT	Part Number BSPP
 Size P2LAX Shown		Lever Spring Center	1/8	0.6	0.40 (0.18)	P2LAX89111	P2LAX81111
			1/4	1.5	0.73 (0.33)	P2LBX89211	P2LBX81211
			3/8	2.5	1.56 (0.71)	P2LCX89311	P2LCX81311
			1/2	2.7	1.61 (0.73)	P2LDX89411	P2LDX81411
 Size P2LBX Shown		Lever Detent	1/8	0.7	0.40 (0.18)	P2LAX89122	P2LAX81122
			1/4	1.3	0.73 (0.33)	P2LBX89222	P2LBX81222
			3/8	2.5	1.56 (0.71)	P2LCX89322	P2LCX81322
			1/2	2.7	1.61 (0.73)	P2LDX89422	P2LDX81422

* Valve lever movement 90° to ports.

 Most popular.

 For inventory, lead times, and kit
lookup, visit www.pdnplu.com

E15

 Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics
Directair 2
& 4 SeriesViking Xtreme
Lever Series42 Lever /
Pedal Series

M0 Series

Safety

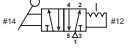
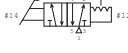
E

Manual / Mechanical
ValvesBrass Poppet /
Sliding SealControl Panel
Products

Sensing

Common Part Numbers

Manual / Mechanical Products
Viking Xtreme Manual Series

3/2 - 2-Position	Symbol	Valve Type	Port Size	Cv		Part Number NPT	Part Number BSPP
		Twist Handle Detent	1/4	1.3	0.73 (0.33)	P2LBX392JJ	P2LBX312JJ
5/2 - 2-Position	Symbol	Valve Type	Port Size	Cv		Part Number NPT	Part Number BSPP
		Twist Handle Detent	1/4	1.3	0.73 (0.33)	P2LBX592JJ	P2LBX512JJ
5/2 - 2-Position *	Symbol	Valve Type	Port size	Cv		Part Number NPT	Part Number BSPP
		Lever Spring Return	1/4	1.3	0.73 (0.33)	P2LBX592ZS	P2LBX512ZS
		Lever Detent	1/4	1.3	0.73 (0.33)	P2LBX592ZZ	P2LBX512ZZ

* Valve lever movement inline to ports.

Viking Xtreme Manual Operated Valves

Vacuum to 232 PSIG (Vacuum to 16 bar) -40°F to 140°F (-40°C to 60°C)

P2L A X 5 91 VS

Valve Size	
1/8"	A
1/4"	B
3/8"	C
1/2"	D

Valve Type / Function	
3/2 NC - 2-Position	3
5/2 2-Position	5
5/3 3-Position, APB	6
5/3 3-Position, PC	7
5/3 3-Position, CE	8

Actuator / Position / Lever	
JJ*	Twist Handle Detent, 2-Position
VS	Spring Return Lever, 2-Position, 90° to Ports
VV	Lever, Detent, 2-Position, 90° to Ports
ZS**	Spring Return Lever, 2-Position, Inline to Ports
ZZ**	Lever Detent, 2-Position, Inline to Ports
11	Spring Centered Lever, 3-Position, 90° to Ports
22	Lever, Detent, 3-Position, 90° to Ports
55**	Spring Return Lever, 3-Position, Inline to Ports
66**	Lever Detent, 3-Position, Inline to Ports

* Not available with 3-position valves or main port thread 1N or 9N, valve size B only.
** Size B valve only.

Main Port Thread	
11	G1/8 (P2LA)
12	G1/4 (P2LB)
1N*	G1/4 (P2LB) NAMUR Mount
13	G3/8 (P2LC)
14	G1/2 (P2LD)
91	1/8" NPT (P2LA)
92	1/4" NPT (P2LB)
9N*	1/4 NPT (P2LB) NAMUR Mount
93	3/8" NPT (P2LC)
94	1/2" NPT (P2LD)

* 5/2, 2-position valve only.

 Most popular.

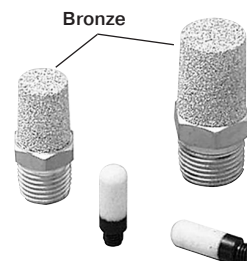


For inventory, lead times, and kit lookup, visit www.pdnplu.com

Exhaust Mufflers

Pipe Thread	Part Number
M5	P6M-PAC5
1/8" NPT	EM12
1/4" NPT	EM25
3/8" NPT	EM37
1/2" NPT	EM50

P6M - Plastic; EM - Sintered bronze

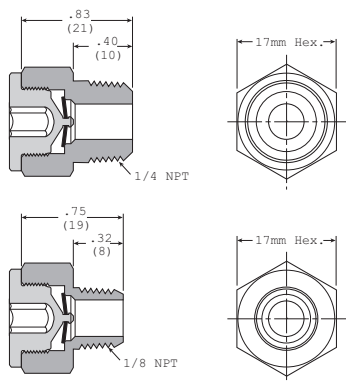


Plastic Silencers

Thread Size	Part Number			A (mm)	B (mm)
	NPT	BSPT	Metric		
M5			AS-5	.43 (11)	.32 (8)
1/8"	ASN-6	AS-6		1.57 (40)	.63 (16)
1/4"	ASN-8	AS-8		2.56 (65)	.83 (21)
3/8"	ASN-10	AS-10		3.35 (85)	.98 (25)
1/2"	ASN-15	AS-15		3.74 (95)	1.18 (30)



Exhaust Protector



Specifications

Operating pressure 0 – 150 PSIG
 (0 to 10 bar, 0 to 1034 kPa)

Operating temperature -40°F to 158°F (-40°C to 70°C)

Material:

Body and pipe adapter Brass
 Membrane Fluorocarbon

Flow Data (SCFM)

Part Number	Size	60 PSIG Inlet	90 PSIG Inlet	125 PSIG Inlet
E90016	1/8"	40.1	56.5	75.5
E90017	1/4"	44.6	62.7	83.5

Features

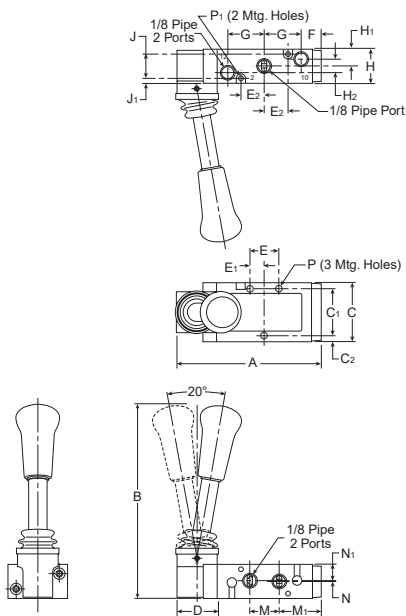
- 1/8 and 1/4 NPT male sizes
- Fitted with a brass pipe adapter and a fluorocarbon membrane
- Resistant to rust, clog, wash down and contamination

Applications

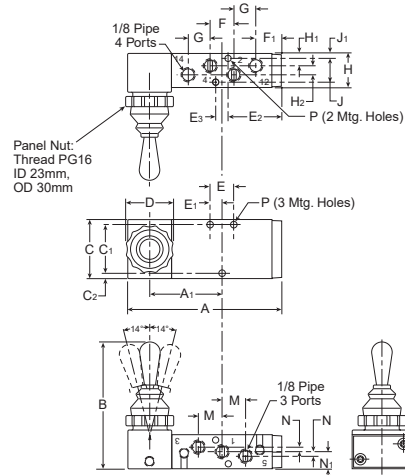
These protectors are intended for mobile applications, quick venting applications and alternative exhaust port breathers that require protection against clogging.

Ideal for valves exposed to harsh environmental conditions (which can cause a "caking up" in the exhaust pipe ports where the bronze mufflers or breather vents are installed).

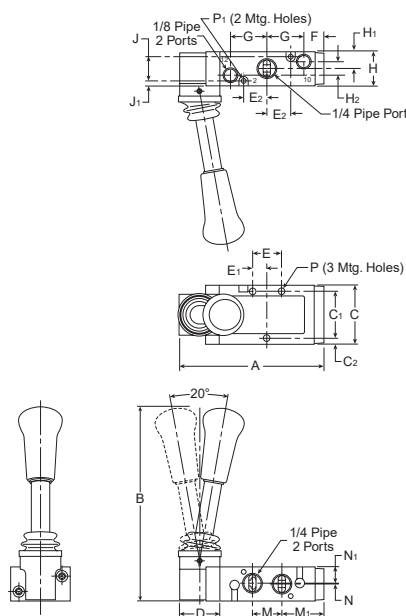
Particularly suitable for time-sensitive applications such as axle-lift suspensions or pushers or tag axles.

Dimensional Data**P2LAX 3/2 Hand Lever Operated**
Lever operation 90° to ports movement**P2LAX 3/2**

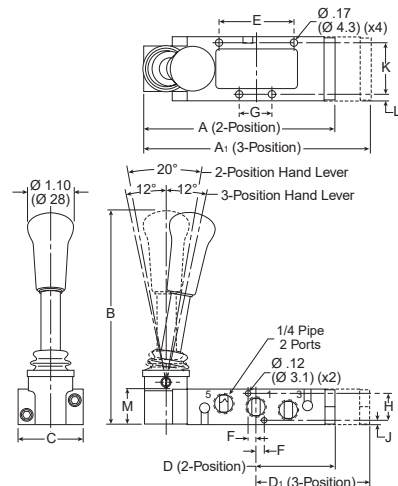
A	B	C
3.88 (99)	5.23 (133)	1.57 (40)
C ₁	C ₂	D
1.26 (32)	.16 (4)	1.06 (27)
E	E ₁	E ₂
.79 (20)	.39 (10)	.63 (16)
F	G	H
.55 (14)	.98 (25)	.87 (22)
H ₁	H ₂	J
.42 (10.6)	.02 (0.5)	.65 (16.5)
J ₁	M	M ₁
.11 (2.9)	.79 (20)	1.14 (29)
N	N ₁	P
.18 (4.5)	.26 (6.6)	Ø .17 Ø (4.3)
P ₁		
Ø .12 Ø (3.1)		
Inches (mm)		

Manual / Mechanical Products
Viking Xtreme Manual Series**P2LAX 5/2 & 5/3 Hand Lever Operated**
Lever operation 90° to ports movement**P2LAX 5/2 & 5/3**

A	A ₁	B
4.02 (102)	1.89 (48)	3.23 (82)
C	C ₁	C ₂
1.57 (40)	1.30 (33)	.14 (3.5)
D	E ₂	E ₃
1.18 (30)	1.42 (36)	.33 (8.5)
F	F ₁	G
.63 (16)	.67 (17)	.59 (15)
H	H ₁	H ₂
.87 (22)	.31 (8)	.24 (6)
J	J ₁	M
.63 (16)	.12 (3)	.63 (16)
N	N ₁	P
.12 (3)	.43 (11)	Ø .16 Ø (4.1)
Inches (mm)		

P2LBX 3/2 Hand Lever Operated
Lever operation 90° to ports movement**P2LBX 3/2**

A	B	C
3.88 (99)	5.23 (133)	1.57 (40)
C ₁	C ₂	D
1.26 (32)	.16 (4)	1.06 (27)
E	E ₁	E ₂
.79 (20)	.39 (10)	.63 (16)
F	G	H
.55 (14)	.98 (25)	.87 (22)
H ₁	H ₂	J
.42 (10.6)	.02 (0.5)	.65 (16.5)
J ₁	M	M ₁
.11 (2.9)	.79 (20)	1.14 (29)
N	N ₁	P
.18 (4.5)	.26 (6.6)	Ø .17 Ø (4.3)
P ₁		
Ø .12 Ø (3.1)		
Inches (mm)		

P2LBX 5/2 & 5/3 Hand Lever Operated
Lever operation 90° to ports movement**P2LBX 5/2 & 5/3**

A	A ₁	B
4.67 (118.5)	5.51 (140)	5.19 (131.8)
C	D	D ₁
1.57 (40)	1.93 (49)	2.35 (59.8)
E	F	G
1.81 (46)	.20 (5)	.79 (20)
H	J	K
.65 (16.5)	.11 (2.85)	1.26 (32)
L	M	
.16 (4)	.87 (22.2)	
Inches (mm)		

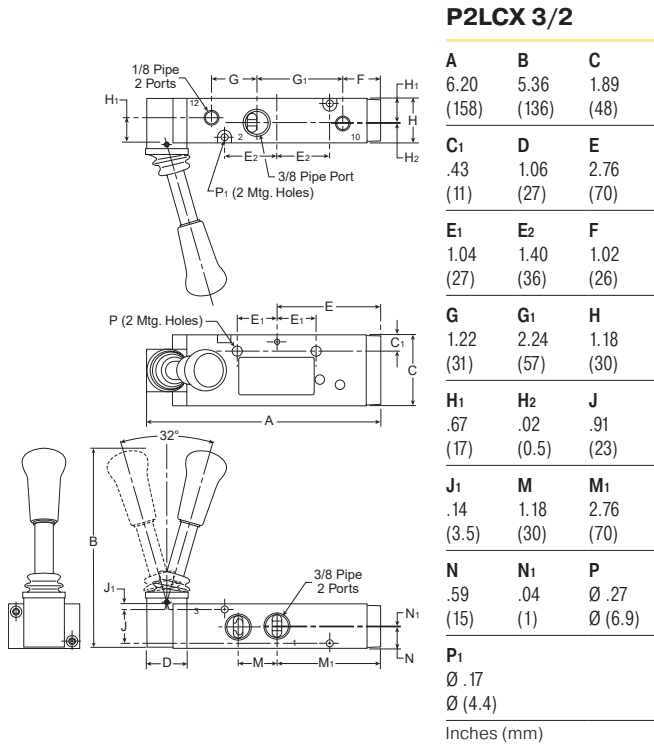


For inventory, lead times, and kit
lookup, visit www.pdnplu.com

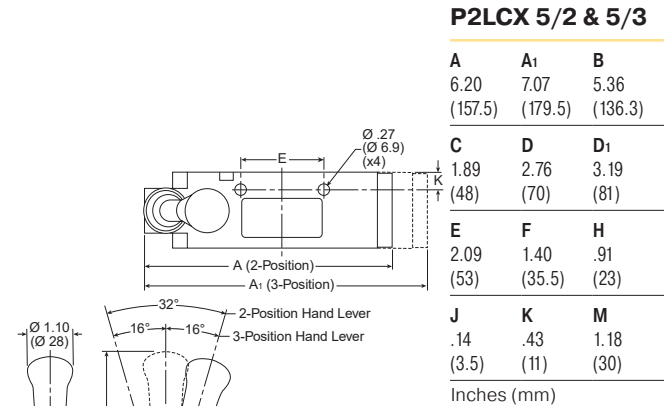
E17-a

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

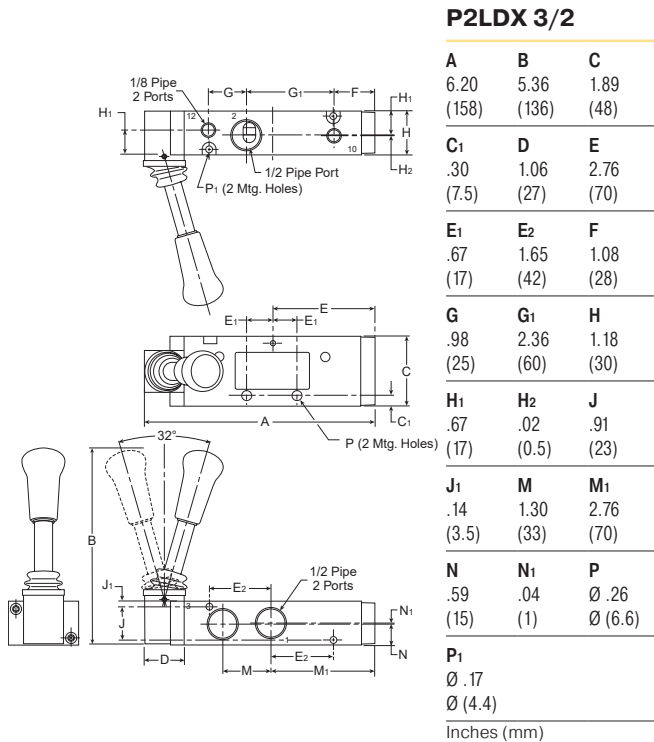
P2LCX 3/2 Hand Lever Operated
 Lever operation 90° to ports movement



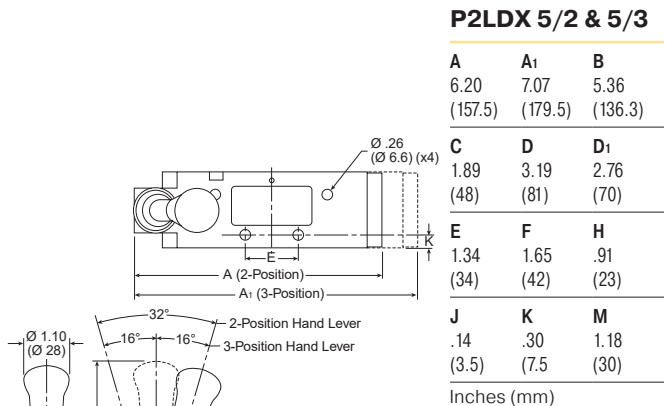
P2LCX 5/2 & 5/3 Hand Lever Operated
 Lever operation 90° to ports movement



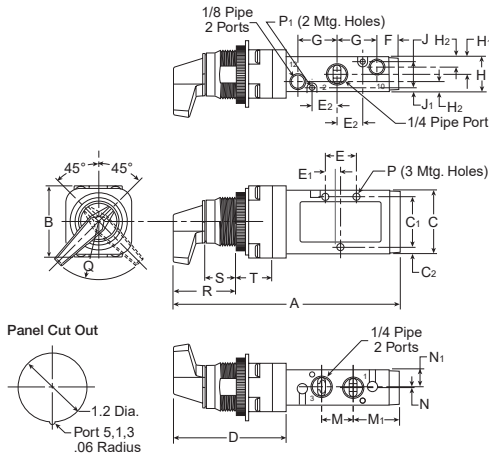
P2LDX 3/2 Hand Lever Operated
 Lever operation 90° to ports movement



P2LDX 5/2 & 5/3 Hand Lever Operated
 Lever operation 90° to ports movement



P2LBX 3/2 Twist Lever Operated

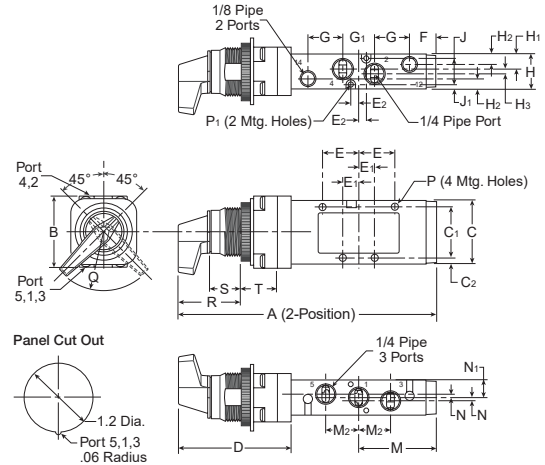


P2LBX 3/2

A	B	C	C ₁	C ₂	D	E	E ₁	E ₂
5.67 (144)	1.79 (45.5)	1.57 (40)	1.26 (32)	.16 (4)	2.87 (73)	.79 (20)	.39 (10)	.63 (16)
F	G	H	H ₁	H ₂	J	J ₁	M	M ₁
.55 (14)	.98 (25)	.87 (22.2)	.44 (11.1)	.26 (6.6)	.65 (16.5)	.11 (2.9)	.79 (20)	1.14 (29)
N	N ₁	P	P ₁	Q	R	S	T	
.02 (0.5)	.42 (10.6)	Ø .17 Ø (4.3)	Ø .12 Ø (3.1)	1.5R (38.1)R	1.85 (47)	1.10 (28)	.67 (17)	

Inches (mm)

P2LBX 5/2 Twist Lever Operated

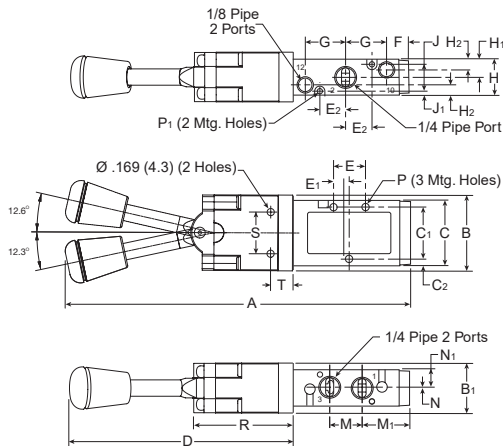


P2LBX 5/2

A	B	C	C ₁	C ₂	D	E	E ₁	E ₂	F
6.46 (164)	1.79 (45.5)	1.57 (40)	1.26 (32)	.15 (4)	2.87 (73)	.91 (23)	.39 (10)	.20 (5)	.67 (17)
G	G ₁	H	H ₁	H ₂	H ₃	J	J ₁	M	M ₂
.87 (22)	.79 (20)	.87 (22.2)	.44 (11.1)	.26 (6.6)	.12 (3)	.65 (16.5)	.11 (2.9)	1.93 (49)	.79 (20)
N	N ₁	P	P ₁	Q	R	S	T		
.08 (0.2)	.44 (11.1)	Ø .17 Ø (4.3)	Ø .12 Ø (3.1)	1.5R (38.1)R	1.85 (47)	1.10 (28)	.67 (17)		

Inches (mm)

P2LBX 3/2 Knob Lever Operated
 Lever operation inline with ports

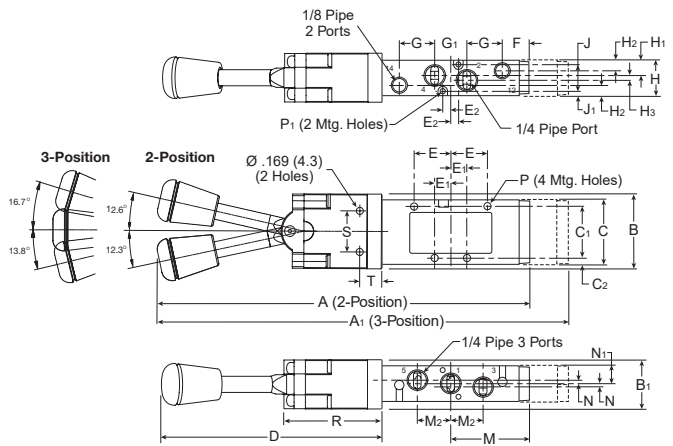


P2LBX 3/2

A	B	B ₁	C	C ₁	C ₂	D	E	E ₁
8.19 (208)	1.79 (45.5)	1.2 (30.5)	1.57 (40)	1.26 (32)	.16 (4)	5.39 (137)	.79 (20)	.39 (10)
E ₂	F	G	H	H ₁	H ₂	J	J ₁	M
.63 (16)	.55 (14)	.98 (25)	.87 (22.2)	.44 (11.1)	.26 (6.6)	.65 (16.5)	.11 (2.9)	.79 (20)
M ₁	N	N ₁	P	P ₁	R	S	T	
1.14 (29)	.02 (0.5)	.42 (10.6)	Ø .17 Ø (4.3)	Ø .12 Ø (3.1)	2.38 (60.5)	.98 (25.0)	.52 (13.2)	

Inches (mm)

P2LBX 5/2 & 5/3 Knob Lever Operated
 Lever operation inline with ports



P2LBX 5/2 & 5/3

A	A ₁	B	B ₁	C	C ₁	C ₂	D	E	E ₁
8.97 (228)	9.84 (250)	1.79 (45.5)	1.2 (30.5)	1.57 (40)	1.26 (32)	.15 (4)	5.39 (137)	.91 (23)	.39 (10)
E ₂	F	G	G ₁	H	H ₁	H ₂	H ₃	J	J ₁
.20 (5)	.67 (17)	.87 (22)	.79 (20)	.87 (22.2)	.44 (11.1)	.26 (6.6)	.12 (3)	.65 (16.5)	.11 (2.9)
M	M ₂	N	N ₁	P	P ₁	R	S	T	
1.93 (49)	.79 (20)	.08 (0.2)	.44 (11.1)	Ø .17 Ø (4.3)	Ø .12 Ø (3.1)	2.38 (60.5)	.98 (25.0)	.52 (13.2)	

Inches (mm)

42 Lever / Pedal Series

Heavy duty lever

- Parallel mount handle
- Perpendicular mount handle

Heavy duty foot pedal

1 port size

- 3/8" port – 1.3 to 2.9 Cv

2-position

- 4-way

3-position valves

- All ports blocked
- Center exhaust

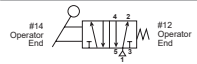
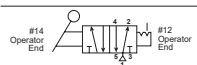
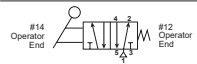
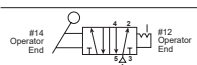


Operating Information

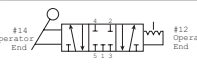
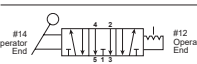
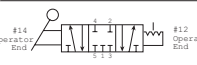
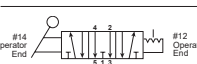
Operating pressure: Vacuum to 150 PSI (710 mmHg to 1035 kPa)

Temperature range: 0°F to 140°F (-18°C to 60°C)

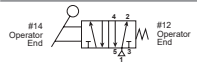
Lever Valve - 2-Position

	Symbol	Port Size	Cv	Description	Valve Type	Part Number
		3/8"	2.9	Inline, parallel	2-position, spring return	422CS021K
		3/8"	2.9	Inline, parallel	2-position, detent	422CS021W
		3/8"	2.9	Inline, perpendicular	2-position, spring return	422CR021K
		3/8"	2.9	Inline, perpendicular	2-position, detent	422CR021W

Lever Valve - 3-Position

	Symbol	Port Size	Cv	Description	Valve Type	Part Number
		3/8"	1.3	Inline, parallel	3-position, APB	422CS023W
		3/8"	1.3	Inline, parallel	3-position, CE	422CS024W
		3/8"	1.3	Inline, perpendicular	3-position, APB	422CR023W
		3/8"	1.3	Inline, perpendicular	3-position, CE	422CR024W

Foot Pedal Valve - 2-Position

	Symbol	Port Size	Cv	Description	Valve Type	Part Number
		3/8"	2.9	Foot pedal	2-position, spring return	422CT021K

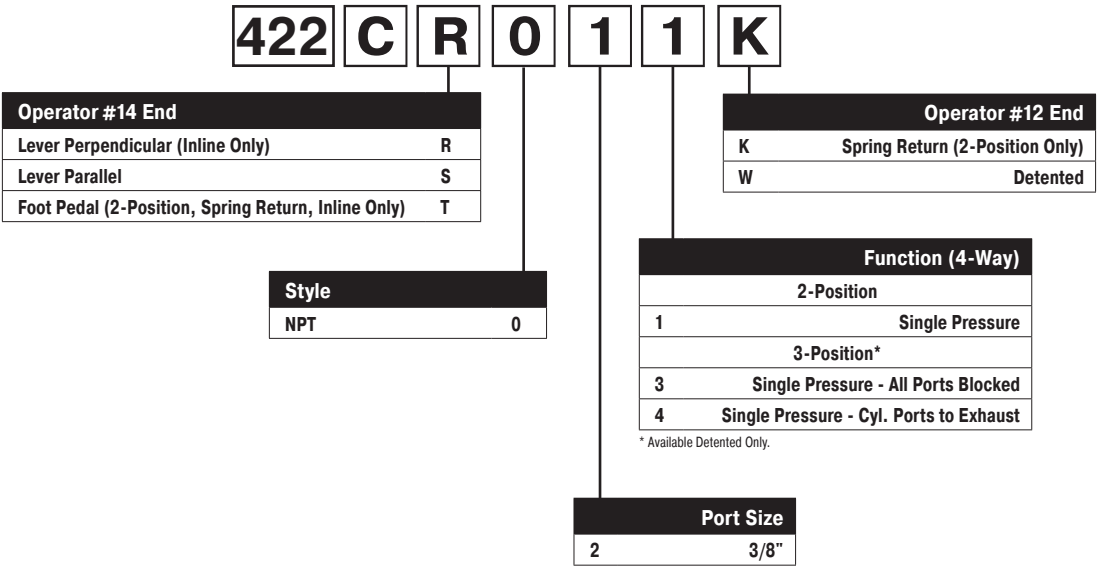
**CAUTION:**

This valve shall not be used to actuate a punch press.

Do not use this valve on punch presses or press brakes. See OSHA 1910.217.

 Most popular.
For inventory, lead times, and kit lookup, visit www.pdnpju.com

42 Lever / Pedal Series



Valve body service kits

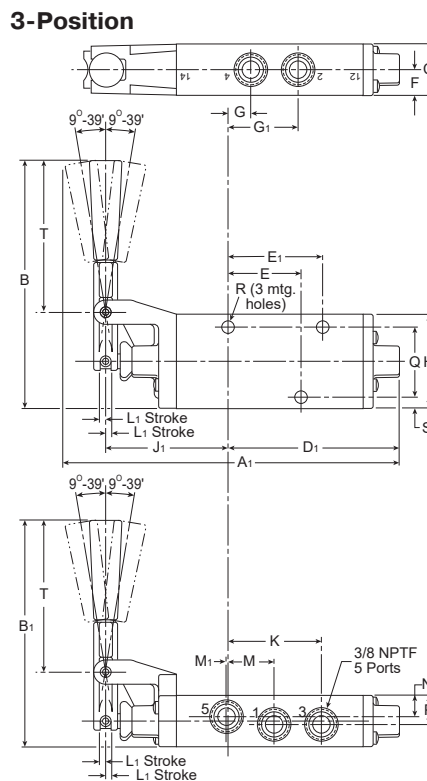
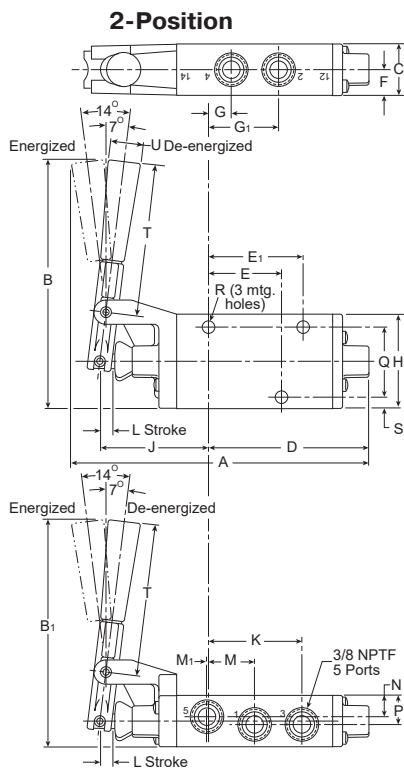
2-position valve	Single pressure	PS2038P
	Dual pressure	PS2039P
3-position valve	Single pressure	PS2041P

Kit includes: all soft seals and spool.

Most popular.



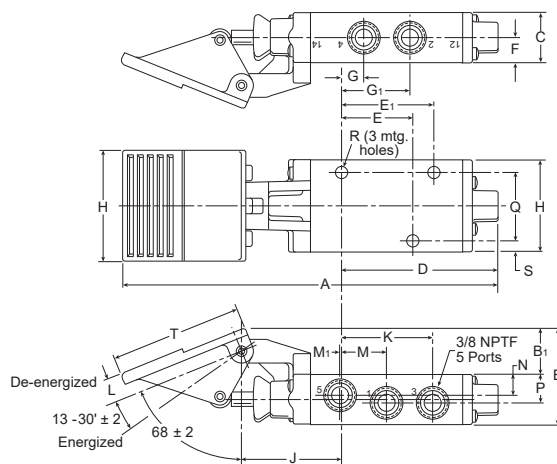
For inventory, lead times, and kit lookup, visit www.pdnplu.com



Lever Valve

A	A ₁	B	B ₁	C
6.70 (170)	7.58 (193)	5.55 (141)	5.05 (128)	1.15 (29)
D	D ₁	E	E ₁	F
3.59 (91)	3.83 (97)	1.58 (40)	2.06 (52)	.57 (14)
G	G ₁	H	J	J ₁
.55 (14)	1.51 (38)	2.13 (54)	2.44 (62)	2.80 (71)
K	L	L ₁	M	N
2.13 (54)	.25 (6)	.18 (5)	1.03 (26)	.25 (6)
L ₁	M	M ₁	N	P
.18 (5)	1.03 (26)	.06 (2)	.50 (13)	.65 (17)
Q	R	S	T	U Dia
1.58 (40)	.33 (8)	.27 (7)	3.42 (87)	.75 (19)

Inches (mm)



Foot Pedal Valve

A	B	B ₁	C	D
8.64 (220)	2.18 (55)	1.03 (26)	1.15 (29)	3.59 (91)
E	E ₁	F	G	G ₁
1.58 (40)	2.06 (52)	.57 (14)	.55 (14)	1.51 (38)
H	H ₁	J	K	L
2.13 (54)	2.50 (64)	2.32 (59)	2.13 (54)	.60 (15)
M	M ₁	N	P	Q
1.03 (26)	.06 (2)	.50 (13)	.65 (17)	1.58 (40)
R	S	T	U	
.33 (8)	.27 (7)	3.00 (76)	.48 (11)	

Inches (mm)

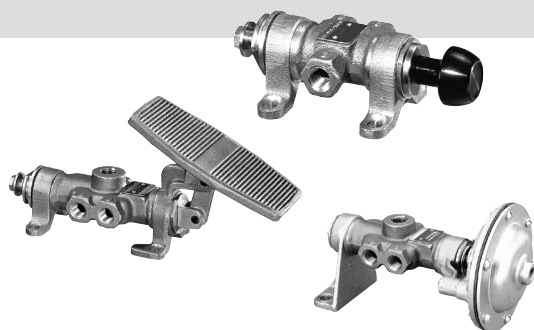


CAUTION:

*This valve shall not be used to actuate a punch press.
Do not use this valve on punch presses or press brakes.
See OSHA 1910.217.*

MO Series

- 1/4" to 3/4" NPTF ports
- Standard operators listed. Consult factor for variations in orientation
- Standard 2 position 3-way and 4-way valves listed. Consult factory for 2-way and 3 position valves
- Corrosion resistant bronze body
- High flow brass spacers position o-ring, permit reverse piping and vacuum service
- Specially compounded o-rings suitable for non-lube air service and low pressure oil service
- Floating stem of hard chrome plated stainless steel; no metal to metal contact
- Closed at crossover design for air savings
- Piped exhaust convenient for muffling
- Interchangeable operators
- Interchangeable end sections
- Service without disturbing plumbing
- Dual mounting brackets on most models



Operating Information

Pressure limitations

Knob (manual and spring return) and palm operators (manual and spring return)

	Port size	PSI (kPa)	
Media		3-way	4-way
Air and Hydraulic	1/4	200 (1380)	180 (1240)
	3/8	175 (1210)	170 (1170)
	1/2	160 (1100)	150 (1030)
	3/4	150 (1030)	150 (1030)
Vacuum	All	Within 1" Hg of perfect	
Other	Consult factory		

Pressure limitations

Knob (detent), lever, pedal, treadle, clevis, cam air operated diaphragm and cylinder

Media	Port size	PSI (kPa)	
		3-way	4-way
Air and Hydraulic	1/4	225 (1550)	225 (1550)
	3/8	225 (1550)	225 (1550)
	1/2	215 (1480)	215 (1480)
	3/4	200 (1380)	200 (1380)
Vacuum	All	Within 1" Hg of perfect	
Other	Consult factory		

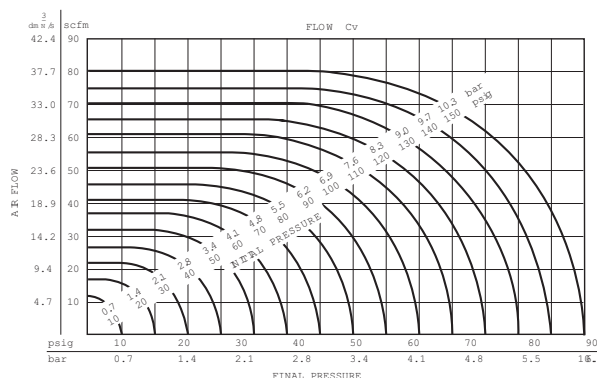
Temperature range: -15°F to 200°F (-26° to 93°C)

Lubrication: For best results and service life use clean, moisture free lubricated air.

Flow Cv ratings

Valve Type	Port Size	Port 1 to 2	Port 1 to 3	Port 2 to 3	Port 2 to 4	Port 3 to 4
3-Way 2-Position	1/4	2.4	—	2.4	—	—
	3/8	3.2	—	3.4	—	—
	1/2	5.0	—	5.1	—	—
	3/4	9.5	—	9.8	—	—
4-Way 2-Position	1/4	2.4	2.4	—	2.0	2.2
	3/8	3.4	3.2	—	3.0	3.1
	1/2	5.2	5.3	—	4.7	4.7
	3/4	8.7	9.2	—	7.9	8.0

Flow Cv



Flow capacities

The capacity curves shown in the chart are for a theoretical valve having a Cv = 1.0 for air at standard conditions.

Flow rating determined in accordance with NFPA recommended standard NFPA/T3.21.3 - 1974.

Material specifications

Body	High pressure valve bronze
Knobs and palm buttons	Anodized aluminum
Operators	Iron castings; steel rod, bar and tube, and plated for corrosion resistance
O-rings	Buna-N and impregnated with Molybdenum Disulfide
Spacers and end bearings	Brass bar stock
Springs	high quality steel and plated for corrosion resistance
Stem	Stainless steel and hard chrome plated

Warnings



Install guards on all hand operated valves if accidental operation can cause personal injury.



Foot operated valves must be protected against inadvertent operation that can cause serious bodily injury. Use of a guard is strongly recommended as it will reduce the likelihood of inadvertent operation.



For inventory, lead times, and kit lookup, visit www.pdnplu.com

MO Series Air Pilot, Manual & Mechanically Actuated Valves

3-Way And 4-Way Knob Operated	Description	Part Number 1/4 NPT	Part Number 3/8 NPT	Part Number 1/2 NPT	Part Number 3/4 NPT
	 3-way, detent ball, foot bracket	M05422448	M05432448	M05442448	M05462448
	 3-way, detent ball, panel mount with nut	M05822451	M05832451	M05842451	M05862451
	 3-way, N.C., manual, foot bracket	M08521848	M08531848	M08541848	M08561848
	 3-way, N.C., manual, panel nut	M08521851	M08531851	M08541851	M08561851
	 3-way, N.C., pull to operate, spring return, foot bracket	M09721848	M09731848	M09741848	M09761848
	 3-way, N.C., pull to operate, spring return, panel mount with nut	M06421851	M06431851	M06441851	M06461851
	 3-way, N.C., push to operate, spring return, foot bracket	M09821848	M09831848	M09841848	M09861848
	 3-way, N.C., push to operate, spring return, panel mount with nut	M06521851	M06531851	M06541851	M06561851
	 4-way, detent ball, foot bracket	M05425448	M05435448	M05445448	M05465448
	 4-way, detent ball, panel mount with nut	M05825451	M05835451	M05845451	M05865451
	 4-way, manual, foot bracket	M08524648	M08534648	M08544648	M08564648
	 4-way, manual, panel nut	M08524651	M08534651	M08544651	M08564651
	 4-way, pull to operate, spring return, foot bracket	M09724648	M09734648	M09744648	M09764648
	 4-way, pull to operate, spring return, panel mount with nut	M06424651	M06434651	M06444651	M06464651
	 4-way, push to operate, spring return, foot bracket	M09824648	M09834648	M09844648	M09864648
	 4-way, push to operate, spring return, panel mount with nut	M06524651	M06534651	M06544651	M06564651
3-Way and 4-way Palm Button Operated					
	 3-way, N.C., pull palm button to operate, spring return, panel mount with nut	M06421859	M06431859	M06441859	M06461859
	 3-way, N.C., push palm button to operate, spring return, panel mount with nut	M06521859	M06531859	M06541859	M06561859
	 4-way, pull palm button to operate, spring return panel mount with nut	M06424659	M06434659	M06444659	M06464659
	 4-way, push palm button to operate, spring return, panel mount with nut	M06524659	M06534659	M06544659	M06564659
3-Way and 4-Way Lever Operated					
	 3-way, detent ball, foot bracket	M05422443	M05432443	M05442443	M05462443
	 3-way, manual, foot bracket	M08521843	M08531843	M08541843	M08561843
	 3-way, N.C., pull lever to operate, spring return, foot bracket	M09621843	M09631843	M09641843	M09661843
	 3-way, N.C., push lever to operate, spring return, foot bracket	M09521843	M09531843	M09541843	M09561843
	 4-way, detent ball, foot bracket	M05425443	M05435443	M05445443	M05465443
	 4-way, manual, foot bracket	M08524643	M08534643	M08544643	M08564643
	 4-way, pull lever to operate, spring return, foot bracket	M09624643	M09634643	M09644643	M09664643
	 4-way, push lever to operate, spring return, foot bracket	M09524643	M09534643	M09544643	M09564643

Red Square = Discontinued

 Most popular.For inventory, lead times, and kit
lookup, visit www.pdnplu.comDirectair 2
& 4 SeriesViking Xtreme
Lever Series42 Lever /
Pedal Series

MO Series

Safety

E

Manual / Mechanical
ValvesBrass Poppet /
Sliding SealControl Panel
Products

Sensing

Common Part Numbers

MO Series

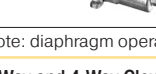
MO Series Air Pilot, Manual & Mechanically Actuated Valves

3-Way and 4-Way, Foot Operated: Treadle / Pedal Type	Description	Part Number 1/4 NPT	Part Number 3/8 NPT	Part Number 1/2 NPT	Part Number 3/4 NPT
	 3-way, treadle operated, detent ball, foot bracket	M05422488	M05432488	M05442488	—
	 3-way, treadle operated, manual return, foot bracket	M08521888	M08531888	M08541888	—
	 3-way, N.C., spring return, pedal operated, foot bracket	M06221840	M06231840	M06241840	—
	 4-way, treadle operated, detent ball, foot bracket	M05425488	M05435488	M05445488	—
	 4-way, treadle operated, manual return, foot bracket	M08524688	M08534688	M08544688	—
	 4-way, spring return, pedal operated, foot bracket	M06224640	M06234640	M06244640	—

**CAUTION:**

This valve shall not be used to actuate a punch press. Do not use this valve on punch presses or press brakes. See OSHA 1910.217.

3-Way and 4-Way Air Operated : Diaphragm or Cylinder

	 3-way, N.C., single air diaphragm, air signal to actuate, spring return foot bracket	M08421830	M08431830	M08441830	—
	 3-way, single air cylinder signal to actuate, spring return foot bracket	M08521826	M08531826	M08541826	M08561826
	 3-way, double air diaphragm	M03321833	M03331833	M03341833	—
	 3-way, double air cylinder foot bracket	M01921819	M01931819	M01941819	M01961819
	 4-way, single air diaphragm, air signal to actuate, spring return foot bracket	M08424630	M08434630	M08444630	—
	 4-way, single air cylinder signal to actuate, spring return foot bracket	M08524626	M08534626	M08544626	M08564626
	 4-way, double air diaphragm	M03324633	M03334633	M03344633	—
	 4-way, double air cylinder foot bracket	M01924619	M01934619	M01944619	M01964619

Note: diaphragm operators : pilot signal pressures from 20 to 60 psi. Cylinder operators : pilot signal pressures from 20 to 250 psi.

3-Way and 4-Way Clevis Operated

	 3-way, manual, foot bracket	M08521805	M08531805	M08541805	M08561805
	 3-way, N.C., pull to operate, spring return foot bracket	M09621805	M09631805	M09641805	M09661805
	 3-way, N.C., push to operate, spring return, foot bracket	M09521805	M09531805	M09541805	M09561805
	 4-way, manual, foot bracket	M08524605	M08534605	M08544605	M08564605
	 4-way, pull clevis to operate, spring return, foot bracket	M09624605	M09634605	M09644605	M09664605
	 4-way, push clevis to operate, spring return, foot bracket	M09524605	M09534605	M09544605	M09564605

3-Way and 4-Way Cam Operated

	 3-way, N.C., spring return, cam operated, foot bracket	M09521803	M09531803	M09541803	M09561803
	 4-way, spring return, cam operated, foot bracket	M09524603	M09534603	M09544603	M09564603

Red Square = Discontinued

 Most popular.



For inventory, lead times, and kit lookup, visit www.pdnplu.com

MO Valve: 1/4", 3/8", 1/2" Port Size

M0

85

3

18

48

Valve Series

Basic Series

M0

Left End Section

Double Cylinder	19
Double Air Diaphragm	33
Ball Detent, Small Bracket	54
Ball Detent, Panel Mounted	58
Direct Acting Spring Return, Less Bracket (Push Lever)	62
Reverse Acting Spring Return, Less Bracket (Pull Lever)	63
Light Spring Return Direct Acting, Less Bracket (Pull Knob)	64
Light Spring Return Reverse Acting, Less Bracket (Push Knob)	65
Stem Stop, Large Bracket	84
Stem Stop, Small Bracket	85
Direct Acting Spring Return, Small Bracket (Push Lever)	95
Reverse Acting Spring Return, Small Bracket (Pull Lever)	96
Light Spring Return Direct Acting, Small Bracket (Pull Knob)	97
Light Spring Return Reverse Acting, Small Bracket (Push Knob)	98

Pipe Size

NPT	Port Size
1/4	2
3/8	3
1/2	4

Operating End Section: Right End

03	Cam Follower
05	Clevis, Small Bracket
19	Double Cylinder
26	Single Cylinder
30	Single Diaphragm, Std. Spring
33	Double Diaphragm
40	Pedal
43	Lever, Mounting Feet
48	Knob, Small Bracket
51	Knob, Panel Mounted
59	Palm Button, Panel Mounted
88	Treadle
99	Palm Button

Body / Function

18	3-Way
24*	3-Way, 2-Position Detent
46	4-Way
54*	4-Way, 2-Position Detent

* At least one end section must be coded 54.

MO Valve: 3/4" Port Size

MO

85

6

18

48

Valve Series

Basic SeriesMO

Left End Section

Double Cylinder	19
Ball Detent, Small Bracket	54
Ball Detent, Panel Mounted	58
Direct Acting Spring Return, Less Bracket (Push Lever)	62
Reverse Acting Spring Return, Less Bracket (Pull Lever)	63
Light Spring Return Direct Acting, Less Bracket (Pull Knob)	64
Light Spring Return Reverse Acting, Less Bracket (Push Knob)	65
Stem Stop, Small Bracket	85
Direct Acting Spring Return, Small Bracket (Push Lever)	95
Reverse Acting Spring Return, Small Bracket (Pull Lever)	96
Light Spring Return Direct Acting, Small Bracket (Pull Knob)	97
Light Spring Return Reverse Acting, Small Bracket (Push Knob)	98

Pipe Size

NPT	Port Size
3/4	6

Operating End Section: Right End

03	Cam Follower
05	Clevis, Small Bracket
19	Double Cylinder
26	Single Cylinder
43	Lever, Mounting Feet
48	Knob, Small Bracket
51	Knob, Panel Mounted
59	Palm Button, Panel Mounted
99	Palm Button

Body / Function

18	3-Way
24*	3-Way, 2-Position Detent
46	4-Way
54*	4-Way, 2-Position Detent

!

CAUTION:

Be sure to order end sections that are

* At least one end section must be coded 54.



CAUTION:

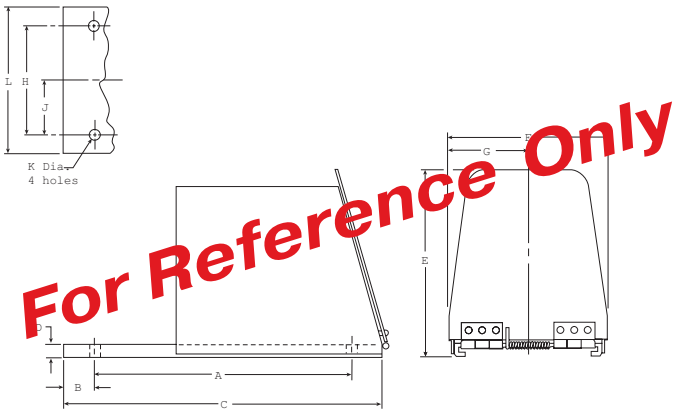
Be sure to order end sections that are functionally effective with each other and with the body section selected. Model number combinations are possible which may not operate.

Pedal Guard
(Fits All Pedal Operated Valves)

Description	Model number
Guard with door	M232001
Guard without door	M232002
Guard with door for 1/4 and 3/8 valve	M232003*
Guard without door for 1/4 and 3/8 valve	M232004*
Guard with door for 1/2 and 3/4	M232005*
Guard without door for 1/2 and 3/4	M232006*

* Includes mounting hardware.

CAUTION:
Foot valves utilizing this guard shall not be used to actuate a punch press.
Do not use this valve on punch presses or press brakes.
See OSHA 1910.217.



Dimensions

A	B	C	D	E	F	G
10.50	1.25	13.00	.50	7.38	6.36	3.18
266.7	31.8	330.2	12.7	187.4	161.5	80.8
H	J	K	L			
4.50	2.25	.44	6.00			
114.3	57.2	11.2	152.4			

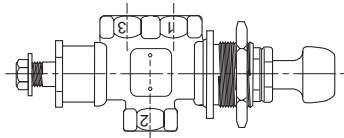
MO valve 9 digit part number dissection

The MO Valve Series has with wide variety of operating and return ends which can be ordered either on the left or right hand side of the valve body. Common part numbers on the previous pages can be ordered with the left and right hand ends swapped. Swapping operator and return end sections does not change the spool function, but can reverse the expected

function of the valve. For example, a 3-way, normally closed, "NC", spring return valve will become a 3-way normally open, "NO", valve when the operator and return section is swapped. There are other non-cataloged options available and this part number dissection will enable you to discuss your valve part number with the factory for options.

3-way

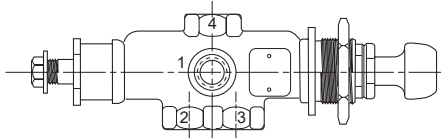
Series name	Left end	Port size	Body function	Right end
MO	XX	X	XX	XX



Left End Section in relation to port #2 Right End Section in relation to port #2

4-way

Series name	Left end	Port size	Body function	Right end
MO	XX	X	XX	XX



Left End Section in relation to port #2 Right End Section in relation to port #3

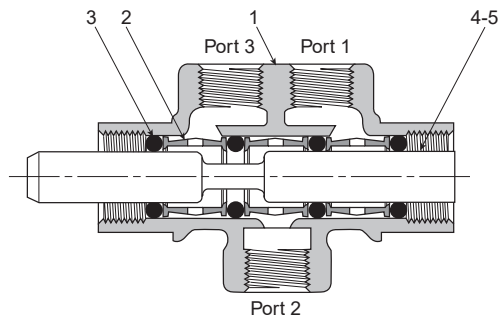
Red Square = Discontinued

Most popular.

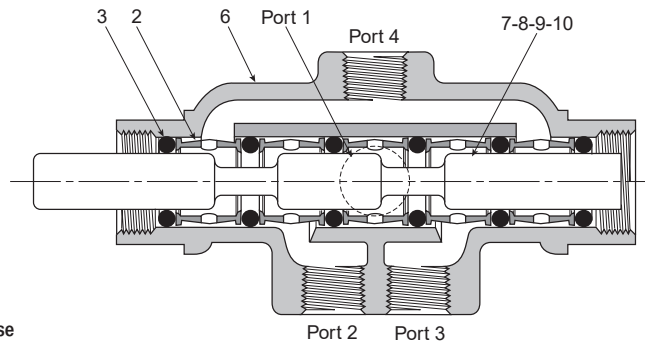


For inventory, lead times, and kit lookup, visit www.pdnplu.com

Body Sections



M032*18
Standard 3-Way
M032*24
2-Position Detent 3-Way



M032*46
Standard 4-Way
M032*54
2-Position Detent 4-Way

Port Size	Use No. *
1/4	2
3/8	3
1/2	4
3/4	6

Item No.	Part Number				Description
	1/4"	3/8"	1/2"	3/4"	
1	M053007	M053019	M053030	M053038	Body - 3-Way
2	M313004	M313011	M313013	M313017	Spacer (2-3-5)
3	H13466	H13588	H13580	H13584	O-Ring (3-4-6)
4	M373014	M373060	M373102	M373142	Stem - 3-Way
5	M373020	M373064	M373103	M373146	Stem - 3-Way 2-Pos. Detent
6	M053003	M053020	M053033	M053039	Body - 4-Way
7	M373033	M373074	M373116	M373156	Stem - 4-Way
8	M373039	M373076	M373118	—	Stem - 4-Way 2-Pos. Detent

NOTE: () denotes quantity required when more than one.

Service Kits

(Field service instructions)

Description (For all 3 & 4-way valves)	1/4	3/8	1/2	3/4
Manual & mechanical operators	M242001	M242002	M242003	M242004
Cylinder (single, double & double-acting)	M242006	M242007	M242008	M242009
Diaphragm (single & double)	M242011	M242012	M242013	M242014

Replacement Knobs & Palm Buttons



Description	1/4" & 3/8"	1/2"	3/4"
Knob & Adapter Kit	M122001	M122002	M122003
Palm Button & Adapter Kit	M122004	M122005	M122006

Knob & Adapter Kit

Palm Button & Adapter Kit

Hex Drive Pipe Plugs

Port Size	1/4"	3/8"	1/2"	3/4"
Part Number	K21R02025L	K21R02037L	K21R02050L	K21R02075L

Red Square = Discontinued



For inventory, lead times, and kit lookup, visit www.pdnplu.com

E27

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Directair 2
& 4 Series

Viking Xtreme
Lever Series

42 Lever /
Pedal Series

MO Series

Safety

E

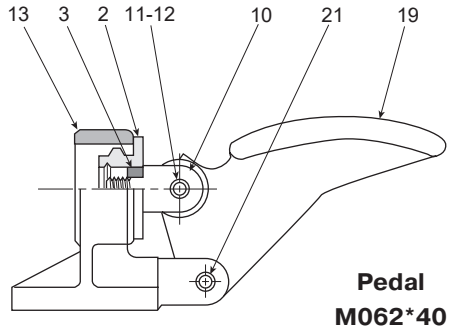
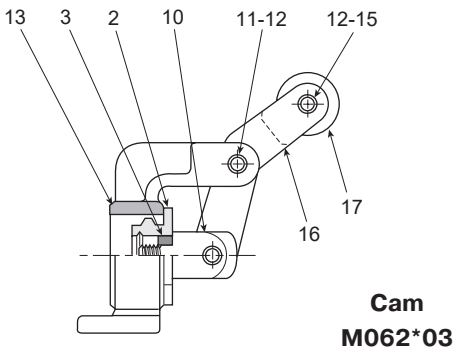
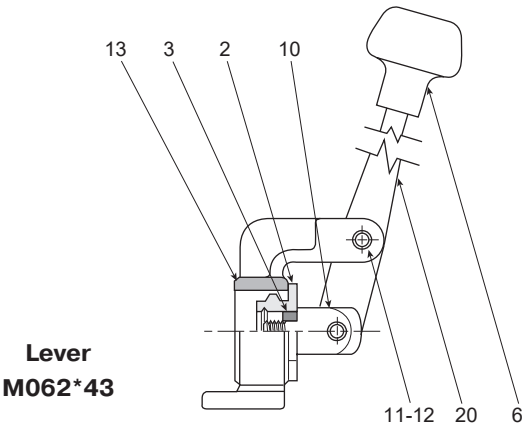
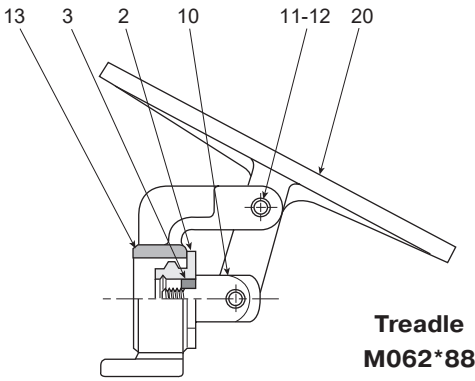
Manual / Mechanical
Valves

Brass Poppet /
Sliding Seal

Control Panel
Products

Sensing

Manual & Mechanical Operators



Port Size	Use No. *
1/4	2
3/8	3
1/2	4
3/4	6

Item No.	Part Number				Description
	1/4"	3/8"	1/2"	3/4"	
2	M103012	M103047	M103066	M103108	End Bearing
3	H17705	H17705	H17706	H17408	Lockwasher
6	H05028	H05028	H05028	H05028	Knob
10	M133003	M133003	M133012	M133018	Clevis
11	H07229	H07229	M333013	M333013	Pivot Pin (2)
12	—	—	H08903	H08903	Retaining Ring (4)
13	M073009	M073022	M073033	M073042	Bracket
14	M273022	M273022	M273023	M273024	Lever
15	—	H07230	M333016	M333016	Roller Trunnion
16	M273002	M273002	M273006	M273007	Cam Arm
17	M443003	M443003	M443002	M443002	Roller
19	M323005	M323005	M323006	M323007	Pedal
20	M553004	M553004	M553005	—	Treadle
21	H07229	H07229	M333013	M333014	Pivot Pin

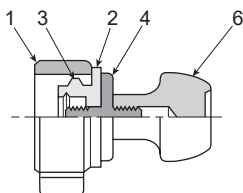
NOTE: () denotes quantity required when more than one.

Red Square = Discontinued

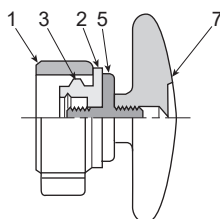


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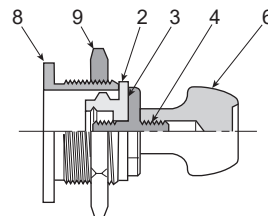
Manual & Mechanical Operators



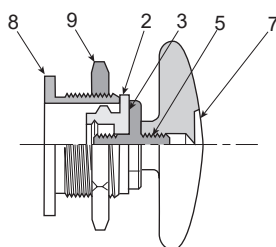
Knob
M062*48



Palm Button
M062*99

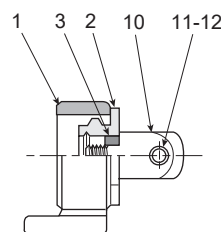


Panel Mounted Knob
M062*51



Panel Mounted Palm Button
M062*59

Port Size	Use No. *
1/4	2
3/8	3
1/2	4
3/4	6



Clevis
M062*05

Item No.	Part Number				Description
	1/4"	3/8"	1/2"	3/4"	
1	M073016	M073026	M073037	M073046	Bracket
2	M103012	M103047	M103066	M103108	End Bearing
3	H17705	H17705	H17706	H17408	Lockwasher
4	M013011	M013011	M013012	M013013	Knob Adapter
5	M013011	M013011	M013012	M013013	Palm Knob Adapter
6	H05028	H05028	H05028	H05028	Knob
7	H05029	H05029	H05029	H05029	Palm Button
8	M013014	M013015	M013016	M013017	Panel Adapter
9	M303005	M303006	M303007	M303008	Jam Nut
10	M133003	M133003	M133012	M133018	Clevis
11	H07229	H07229	M333013	M333013	Pivot Pin (2)
12	—	—	H08903	H08903	Retaining Ring (4)

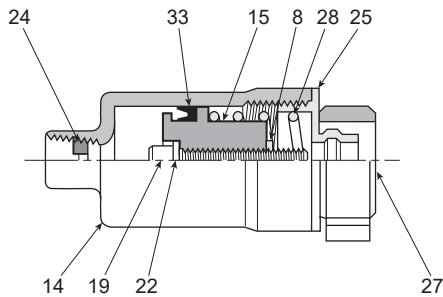
NOTE: () denotes quantity required when more than one.

Red Square = Discontinued

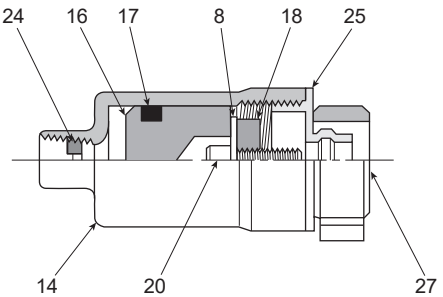


For inventory, lead times, and kit lookup, visit www.pdnplu.com

Pneumatic Operators



**Single Cylinder
M062*26**



**Double Cylinder
M062*19**

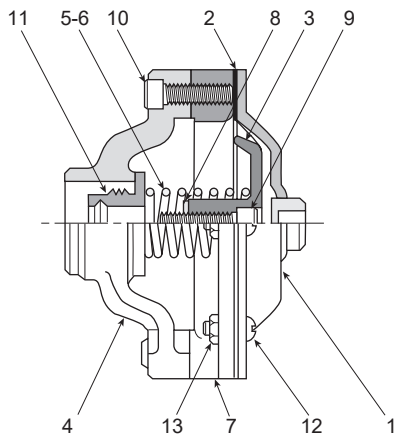
Port Size	Use No. *
1/4	2
3/8	3
1/2	4
3/4	6

Item No.	Part Number				Description
	1/4"	3/8"	1/2"	3/4"	
8	H17705	H17705	H17706	H17408	Lockwasher
14	M243028	M243028	M243028	M243036	Housing
15	M343019	M343019	M343018	M343027	Piston – Single Act.
16	M343022	M343022	M343022	M343028	Piston – Double Cyl.
17	H14515	H14515	H14515	H14520	Packer
18	M013005	M013005	M013007	M013009	Adapter
19	H10121	H10121	H10147	H10219	Screw – Single Act.
20	H10117	H10117	H10145	H10215	Screw – Double Act.
22	H17514	H17514	H17519	H17524	Lockwasher
24	M363002	M363002	M363002	M363002	Restrictor
25	M383007	M383011	M383018	M383029	Retainer
27	M073016	M073026	M073037	M073046	Bracket
28	M493015	M493015	M493015	M493020	Spring
33	H22232	H22232	H22232	H14520	Packer

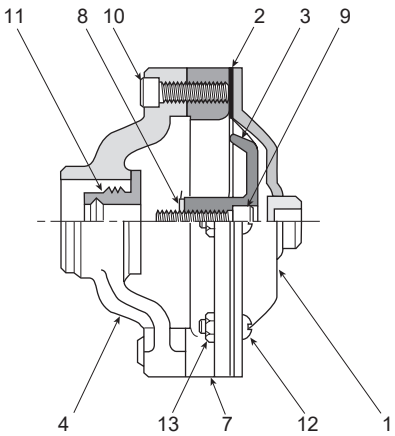
NOTE: () denotes quantity required when more than one.

Red Square = Discontinued

Pneumatic Operators



Single Diaphragm
M062*30



Double Diaphragm
M062*33

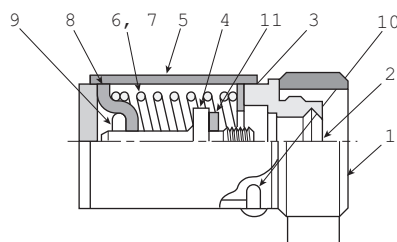
Port Size	Use No. *
1/4	2
3/8	3
1/2	4
3/4	6

Item No.	Part Number				Description
	1/4"	3/8"	1/2"	3/4"	
1	M163005	M163005	M163005	M163012	Cover
2	M193002	M193002	M193002	M193005	Diaphragm
3	M343038	M343038	M343032	M343039	Piston
4	M573004	M573003	M573001	M573011	Yoke
5	M493024	M493024	M493010	M493023	Spring
6	M493022	M493022	M493009	—	Spring (Inst. Air)
7	M423002	M423002	M423002	M423004	Ring
8	H17705	H17705	H17706	H17408	Lockwasher
9	H10119	H10119	H10145	H10217	Screw
10	H10115	H10115	H10115	H10115	Screw (2)
11	M103012	M103047	M103066	M103108	End Bearing
12	H11333	H11333	H11333	H11333	Screw (6)
13	H06416	H06416	H06416	H06416	Nut (6)

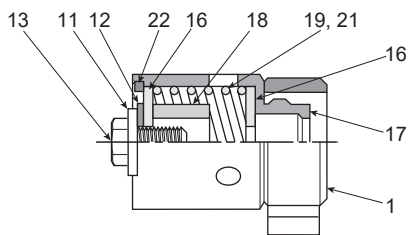
NOTE: () denotes quantity required when more than one.

Red Square = Discontinued

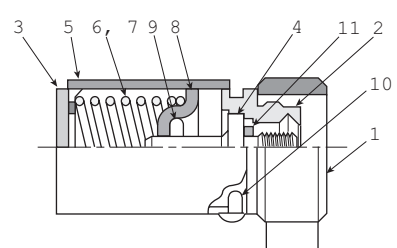
End Sections



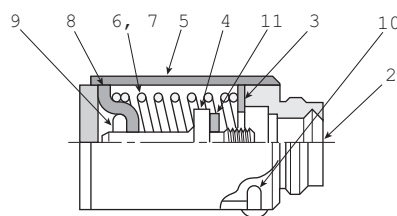
**Direct Acting Spring Return
with Bracket**
M062*95 Push Lever
M062*97 Pull Knob



Spring Centered Neutral
M062*74 Standard Spring
M062*78 Heavy Spring

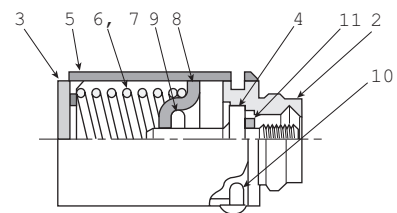


**Reverse Acting Spring Return
with Bracket**
M062*96 Pull Lever
M062*98 Push Knob



Direct Acting Spring Return Less Bracket
M062*62 Push Lever
M062*64 Pull Knob

Port Size	Use No. *
1/4	2
3/8	3
1/2	4
3/4	6



**Reverse Acting Spring Return Less
Bracket**
M062*63 Pull Lever
M062*65 Push Knob

Item No.	Part Number				Description
	1/4"	3/8"	1/2"	3/4"	
1	M073016	M073026	M073037	M073046	Bracket
2	M103111	M103112	M103113	M103114	End Bearing
3	M413015	M413015	M413016	M413017	Spring Retainer Washer
4	M523009	M523009	M523010	M523011	Stem Stop - Guide
5	M243043	M243043	M243044	M243045	Spring Housing
6	M493037	M493037	M493027	M493026	Spring - Knob Oper.
7	M493038	M493038	M493011	M493012	Spring - Other Oper.
8	M383032	M383032	M383033	M383034	Spring Retainer
9	H07254	H07254	H07270	H07271	Roll Pin
10	H11215	H11215	H11216	H11217	Screw
11	H17705	H17705	H17706	H17408	Lockwasher
12	M563002	M563002	M563006	M563014	Stem Stop
13	H09626	H09626	H09645	H09706	Stem Stop Screw
16	M563007	M563009	M563008	M563016	Washer
17	M243008	M243019	M243027	M243032	Spring Housing
18	M083003	M083004	M083005	M083008	Spacer
19	M493008	M493008	M493008	M493014	Spring
21	M493006	M493006	M493006	M493007	Spring - Dbl. Act. Cyl.
22	H09025	H09025	H09025	H09012	Retainer Ring

Red Square = Discontinued

NOTE: () denotes quantity required when more than one.

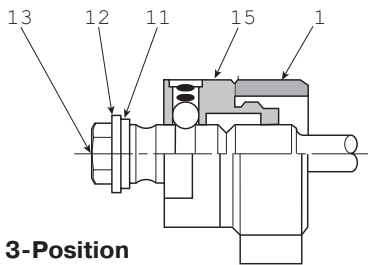


For inventory, lead times, and kit
lookup, visit www.pdnplu.com

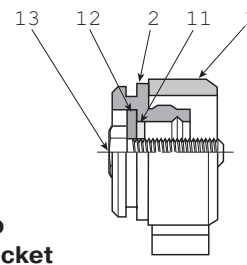
E32

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

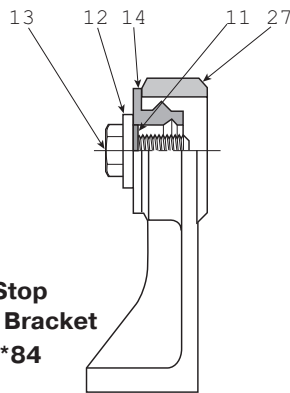
End Sections



Ball Detent, 3-Position
M062*54



Stem Stop
with Small Bracket
M062*85



Stem Stop
with Large Bracket
M062*84

Port Size	Use No. *
1/4	2
3/8	3
1/2	4
3/4	6

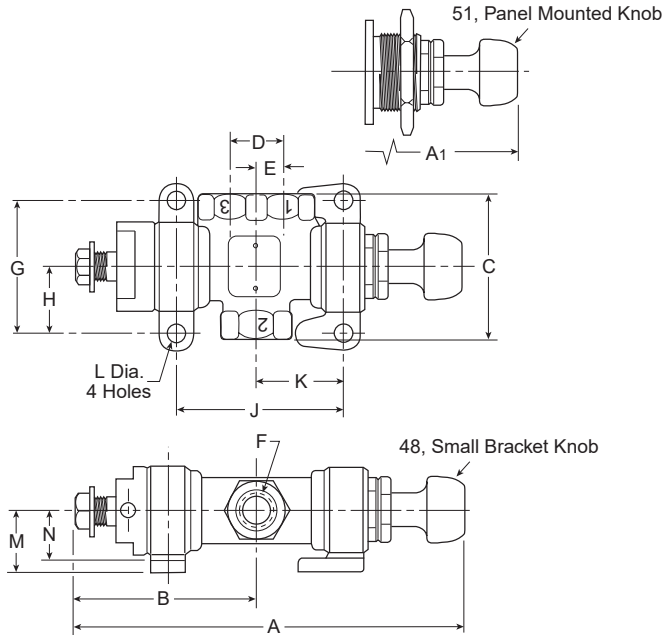
Item No.	Part Number				Description
	1/4"	3/8"	1/2"	3/4"	
1	M073016	M073026	M073037	M073046	Bracket
2	M103111	M103112	M103113	M103114	End Bearing
11	H17705	H17705	H17706	H17408	Lockwasher
12	M563002	M563002	M563006	M563014	Stem Stop
13	H09626	H09626	H09645	H09706	Stem Stop Screw
14	M103012	M103047	M103066	M103108	End Bearing – Plain
15	M012001	M012002	M012003	M012005	Ball Detent Assembly
27	M073006	M073017	M073028	—	Large Bracket

NOTE: () denotes quantity required when more than one.

Knob Operated, 2-Position Detent, Ball Detent

M054 Ball Detent, Small Bracket & M058 Ball Detent, Panel Mounted

3-Way

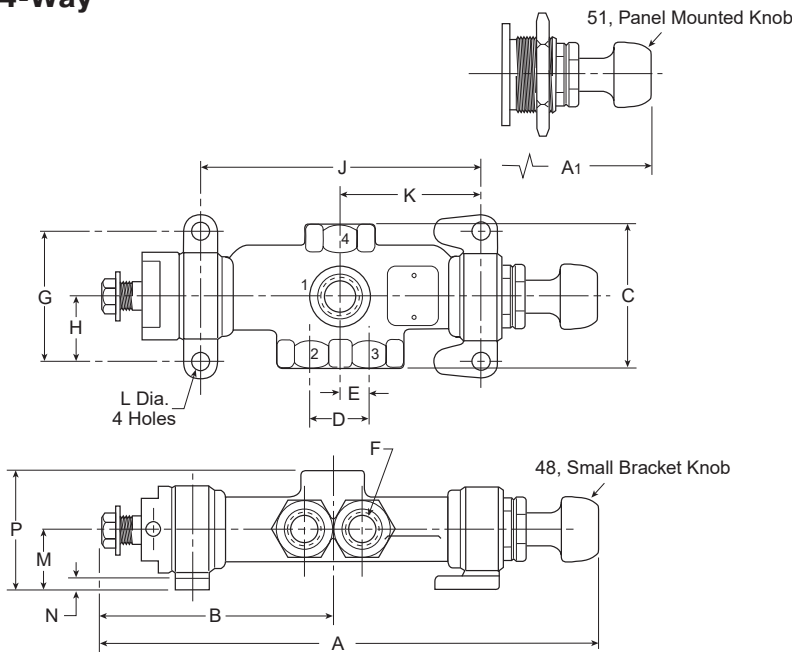


	1/4	3/8	1/2	3/4
A	6.57 (166.9)	7.30 (185.4)	8.56 (217.4)	10.40 (264.2)
A1	6.57 (166.9)	7.30 (185.4)	8.56 (217.4)	10.40 (264.2)
B	3.25 (82.6)	3.66 (93.0)	4.39 (111.5)	5.41 (137.4)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.63 (66.8)	3.13 (79.5)	3.72 (94.5)	4.56 (115.8)
K	1.31 (33.3)	1.56 (39.6)	1.86 (47.2)	2.28 (57.9)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)

Inches (mm)

M054 Ball Detent, Small Bracket & M058 Ball Detent, Panel Mounted

4-Way



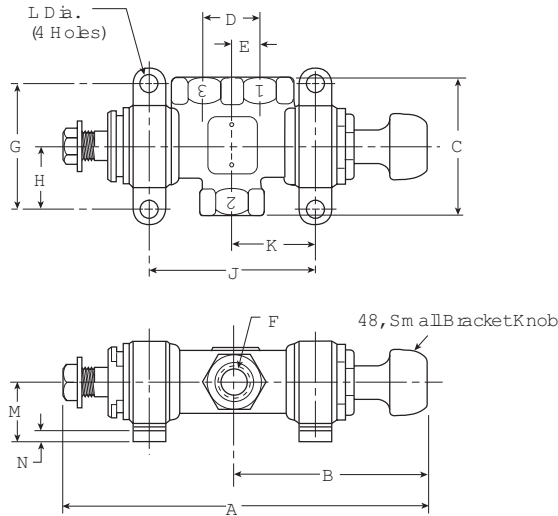
	1/4	3/8	1/2	3/4
A	8.02 (203.7)	9.13 (231.9)	11.17 (283.7)	13.10 (332.7)
A1	8.02 (203.7)	9.13 (231.9)	11.17 (283.7)	13.10 (332.7)
B	4.00 (101.6)	4.57 (116.1)	5.44 (138.2)	6.76 (171.7)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)

Inches (mm)

Knob Operated, Manual Return, Stem Stop

M085 Stem Stop, Small Bracket

3-Way

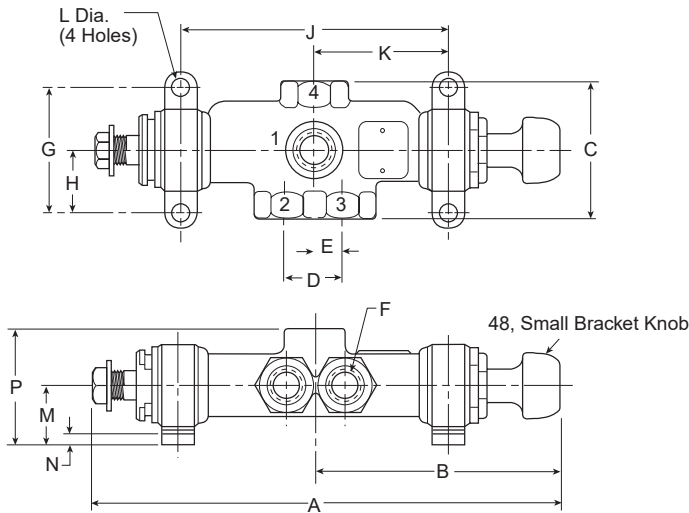


	1/4	3/8	1/2	3/4
A	5.99 (152.2)	6.69 (169.9)	7.90 (200.7)	9.60 (243.8)
B	3.32 (84.3)	3.64 (92.5)	4.17 (105.9)	4.99 (126.8)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.64 (67.1)	3.14 (79.8)	3.73 (94.7)	4.67 (118.6)
K	1.32 (33.5)	1.57 (39.9)	1.87 (47.5)	2.33 (59.2)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

M085 Stem Stop, Small Bracket

4-Way



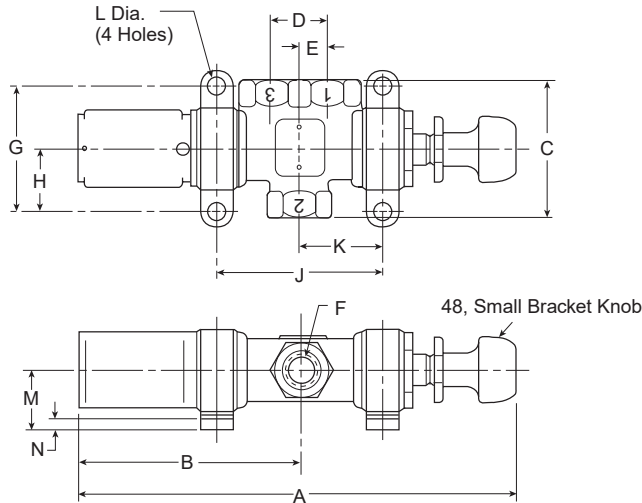
	1/4	3/8	1/2	3/4
A	7.49 (190.2)	8.53 (216.7)	10.01 (254.2)	12.31 (312.7)
B	4.02 (102.1)	4.56 (115.8)	5.73 (145.5)	6.34 (161.0)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.93 (74.4)	3.69 (93.7)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

Knob & Palm Button Operated, Light Spring Return

**M097 Light Spring Return Direct Acting,
Small Bracket (Pull Knob)**

3-Way

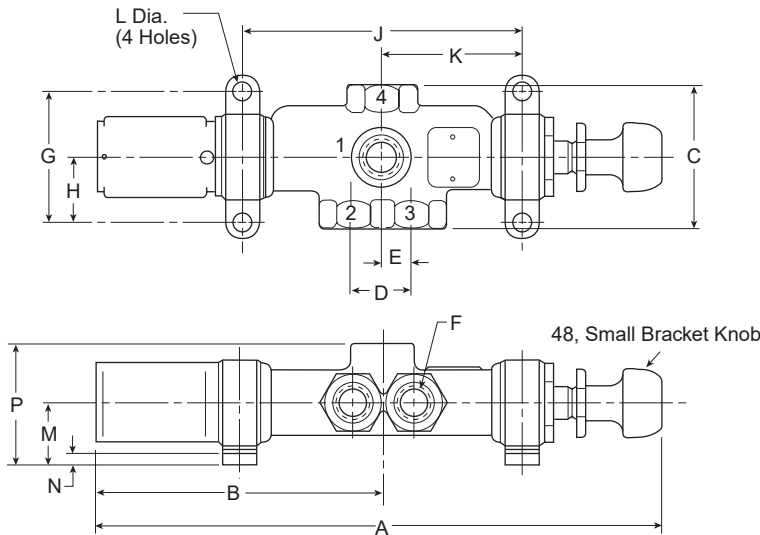


	1/4	3/8	1/2	3/4
A	7.86 (199.8)	8.55 (217.2)	10.36 (263.1)	13.01 (330.4)
B	3.92 (99.6)	4.24 (107.7)	5.32 (135.2)	6.92 (175.8)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.64 (67.1)	3.14 (79.8)	3.73 (94.7)	4.67 (118.6)
K	1.32 (33.5)	1.57 (39.9)	1.87 (47.5)	2.33 (59.2)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

**M097 Light Spring Return Direct Acting,
Small Bracket (Pull Knob)**

4-Way



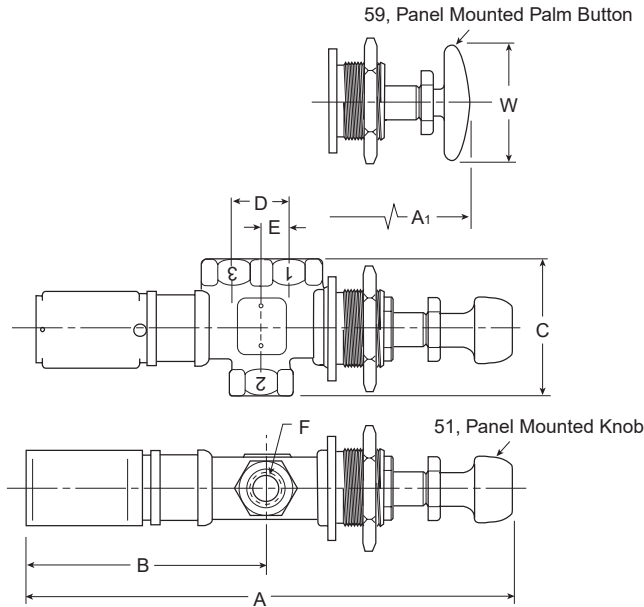
	1/4	3/8	1/2	3/4
A	9.36 (237.9)	10.39 (263.9)	12.48 (317.0)	15.73 (399.5)
B	4.67 (118.5)	5.15 (130.8)	6.37 (161.8)	8.27 (210.1)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.93 (74.4)	3.69 (93.7)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

**Panel Mounted, Knob & Button Operated,
 Light Spring Return**

**M064 Direct Acting, Less Bracket (Pull Knob) &
 M065 Reverse Acting, Less Bracket (Push Knob)**

3-Way

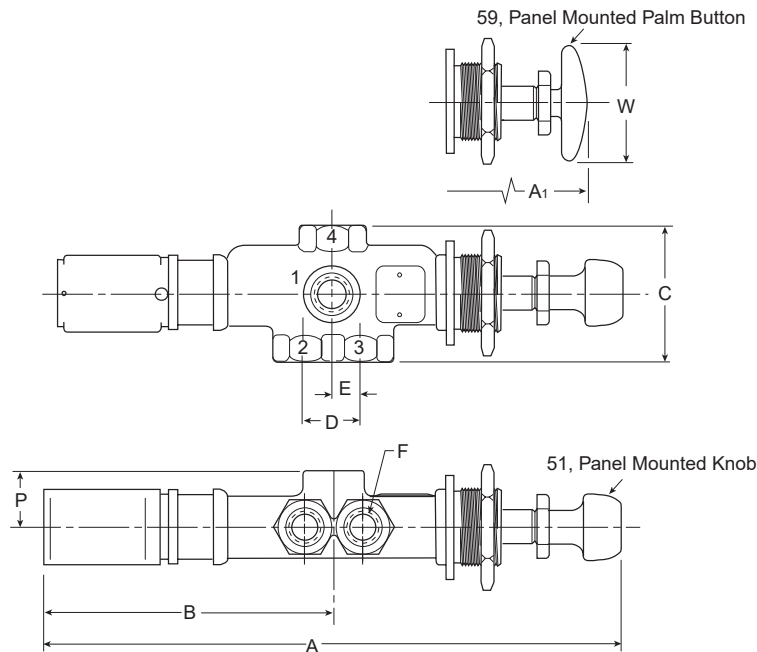


	1/4	3/8	1/2	3/4
A	7.86 (199.6)	8.55 (217.1)	10.36 (263.1)	13.01 (330.4)
A1	7.55 (191.8)	8.24 (209.3)	10.05 (255.3)	12.70 (322.6)
B	3.96 (99.5)	4.23 (107.4)	5.31 (134.9)	6.91 (175.5)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
W	2.25 (57.2)	2.25 (57.2)	2.25 (57.2)	2.25 (57.2)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

**M064 Direct Acting, Less Bracket (Pull Knob) &
 M065 Reverse Acting, Less Bracket (Push Knob)**

4-Way



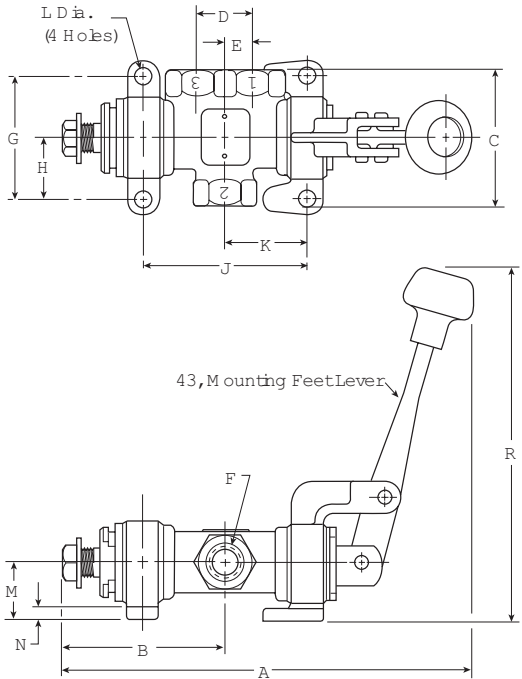
	1/4	3/8	1/2	3/4
A	9.36 (237.7)	10.39 (263.9)	12.48 (317.0)	15.73 (399.5)
A1	9.05 (229.9)	10.08 (256.0)	12.17 (309.1)	15.42 (391.7)
B	4.67 (118.5)	5.15 (130.8)	6.37 (161.8)	8.27 (210.1)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
W	2.25 (57.2)	2.25 (57.2)	2.25 (57.2)	2.25 (57.2)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

Lever Operated, Manual Return, Stem Stop

M085 Stem Stop, Small Bracket

3-Way

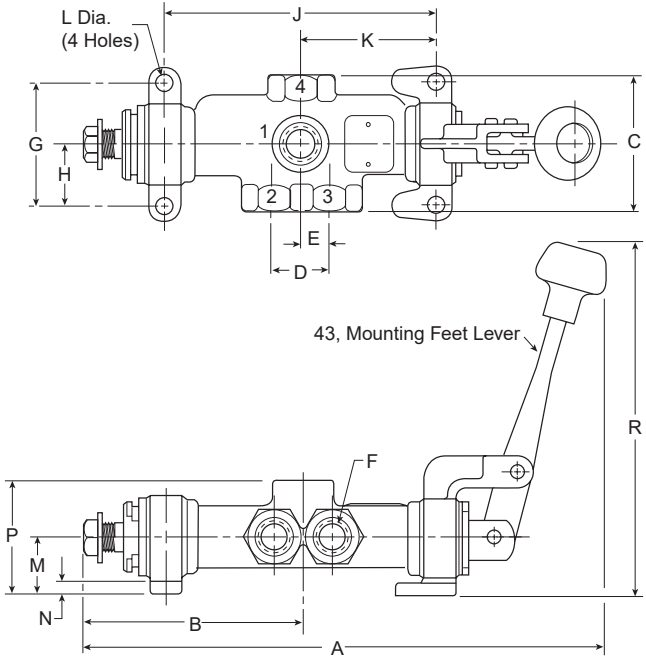


	1/4	3/8	1/2	3/4
A	6.77 (172.0)	7.76 (197.1)	9.29 (236.0)	11.46 (291.1)
B	2.67 (67.8)	3.05 (77.5)	3.72 (94.5)	4.61 (117.1)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.63 (66.8)	3.13 (79.5)	3.72 (94.5)	4.56 (115.8)
K	1.31 (33.3)	1.56 (39.6)	1.86 (47.2)	2.28 (57.9)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
R	6.78 (172.2)	6.78 (172.2)	8.10 (205.7)	10.73 (272.5)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

M085 Stem Stop, Small Bracket

4-Way



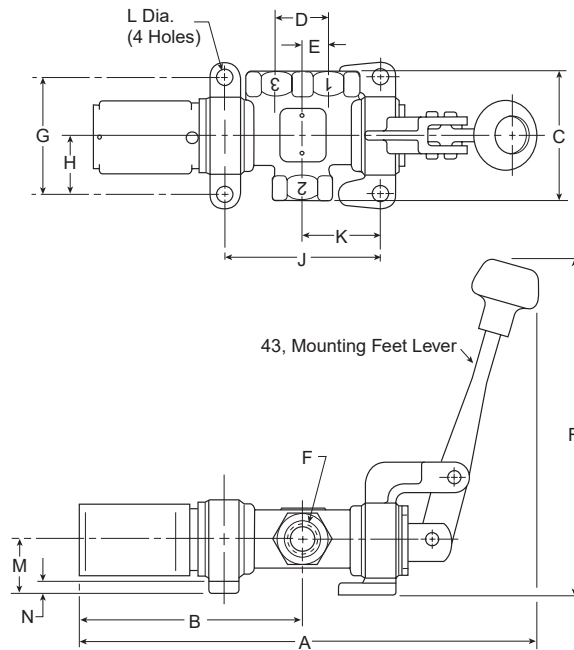
	1/4	3/8	1/2	3/4
A	8.28 (210.3)	9.60 (243.8)	11.08 (281.4)	14.17 (359.9)
B	3.42 (86.9)	3.97 (100.8)	4.78 (121.4)	5.97 (151.6)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R	6.78 (172.2)	6.78 (172.2)	8.10 (205.7)	10.73 (272.5)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

Lever Operated, Spring Return

M095 Direct Acting, Small Bracket (Push Lever) & M096 Reverse Acting, Small Bracket (Pull Lever)

3-Way

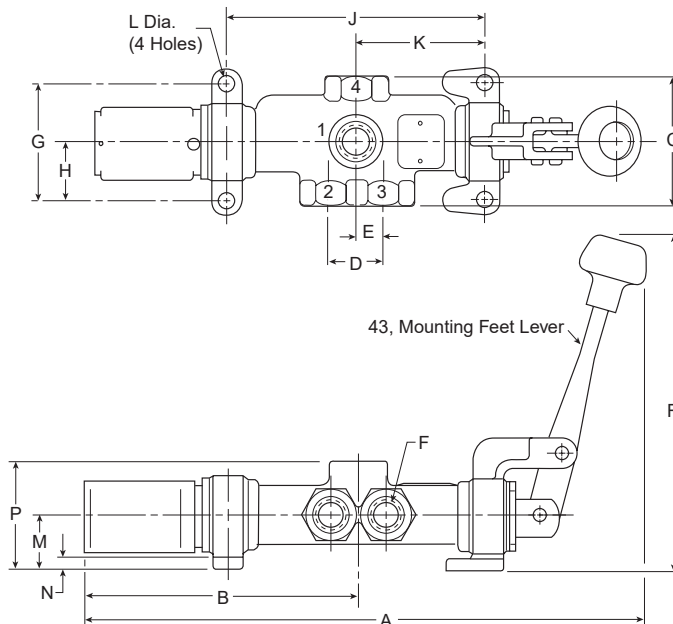


	1/4	3/8	1/2	3/4
A	7.99 (202.8)	8.94 (227.0)	10.88 (276.4)	13.76 (349.5)
B	3.92 (99.5)	4.24 (107.6)	5.31 (134.9)	6.92 (175.8)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.63 (66.8)	3.13 (79.5)	3.72 (94.5)	4.56 (115.8)
K	1.31 (33.3)	1.56 (39.6)	1.86 (47.2)	2.28 (57.9)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
R	6.78 (172.2)	6.78 (172.2)	8.10 (205.7)	10.73 (272.5)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

M095 Direct Acting, Small Bracket (Push Lever) & M096 Reverse Acting, Small Bracket (Pull Lever)

3-Way



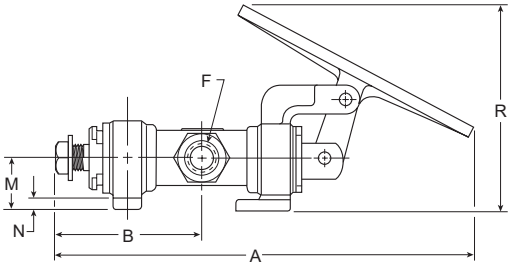
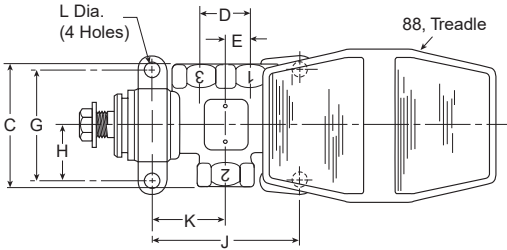
	1/4	3/8	1/2	3/4
A	9.53 (242.1)	10.78 (273.8)	12.67 (321.8)	16.47 (418.3)
B	4.67 (118.6)	5.15 (130.8)	5.68 (144.3)	8.27 (210.1)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R	6.78 (172.2)	6.78 (172.2)	8.10 (205.7)	10.73 (272.5)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

Treadle Operated, Manual Return, Stem Stop

M085 Stem Stop, Small Bracket

3-Way

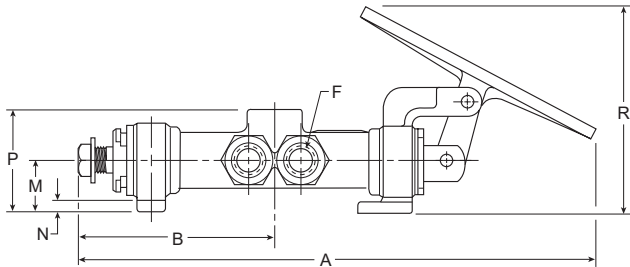
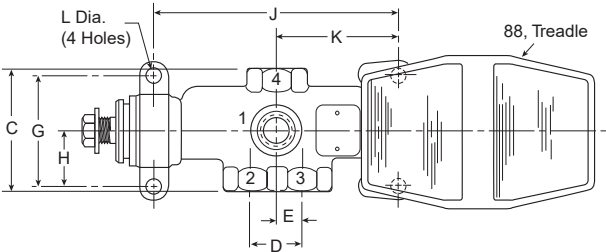


	1/4	3/8	1/2
A	8.01 (203.4)	8.73 (221.7)	10.32 (262.1)
B	2.67 (68.8)	3.06 (77.7)	4.06 (103.1)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)
J	2.63 (66.8)	3.13 (79.5)	3.72 (94.5)
K	1.31 (33.3)	1.56 (39.6)	1.86 (47.2)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)
R	4.51 (114.6)	4.65 (118.1)	4.85 (123.2)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)

Inches (mm)

M085 Stem Stop, Small Bracket

4-Way

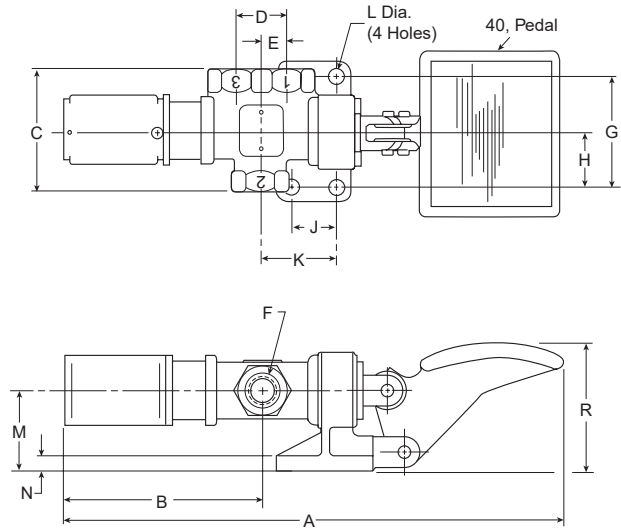


	1/4	3/8	1/2
A	9.52 (241.8)	10.57 (268.5)	12.11 (307.6)
B	3.42 (86.9)	3.97 (100.8)	4.78 (121.4)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)
R	4.51 (114.6)	4.65 (118.1)	4.85 (123.2)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)

Inches (mm)

Pedal Operated, Spring Return

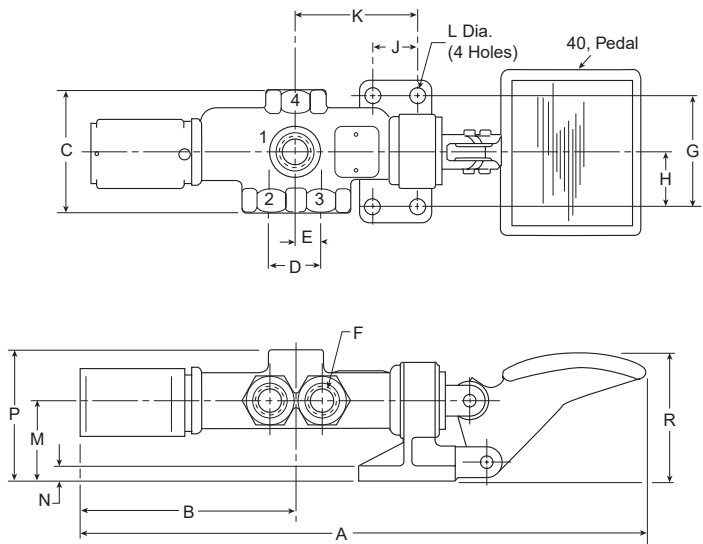
M062 Direct Acting Spring Return, Less Bracket (Push Lever)
3-Way



	1/4	3/8	1/2
A	9.99 (253.8)	10.50 (269.2)	12.66 (321.6)
B	3.92 (99.5)	4.23 (107.4)	5.31 (134.9)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)
J	0.97 (24.6)	0.97 (24.6)	1.12 (28.4)
K	1.44 (36.6)	1.56 (39.6)	1.83 (46.5)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)
M	1.72 (43.7)	1.72 (43.7)	2.00 (50.8)
N	0.31 (7.9)	0.31 (7.9)	0.38 (9.6)
R	2.66 (67.6)	2.71 (68.8)	2.74 (69.6)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)

Inches (mm)

M062 Direct Acting Spring Return, Less Bracket (Push Lever)
4-Way



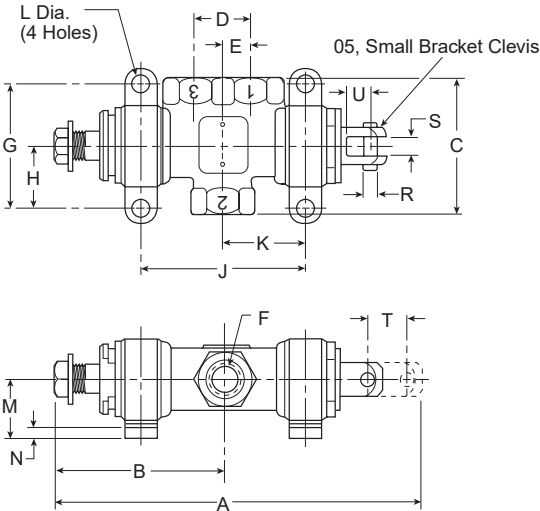
	1/4	3/8	1/2
A	11.50 (292.1)	12.44 (315.9)	14.45 (367.0)
B	4.67 (118.5)	5.15 (130.8)	5.68 (144.3)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)
J	0.97 (24.6)	0.97 (24.6)	1.12 (28.4)
K	2.19 (55.6)	2.48 (63.0)	2.89 (73.4)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)
M	1.72 (43.7)	1.72 (43.7)	2.00 (50.8)
N	0.31 (7.9)	0.31 (7.9)	0.38 (9.6)
P	2.72 (69.1)	2.78 (70.6)	3.38 (85.8)
R	2.66 (67.6)	2.71 (68.8)	2.74 (69.6)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)

Inches (mm)

Clevis Operated, Mechanical Return, Stem Stop

M085 Stem Stop, Small Bracket

3-Way

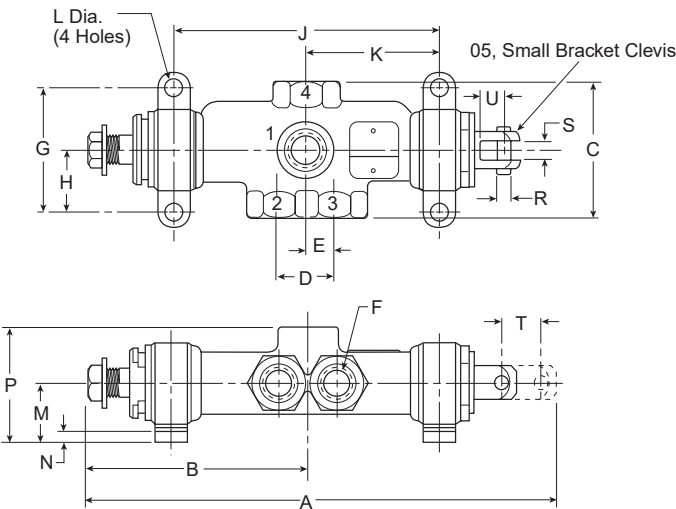


	1/4	3/8	1/2	3/4
A	5.31 (134.9)	6.01 (152.6)	7.36 (186.9)	8.92 (226.6)
B	2.68 (68.1)	3.06 (77.7)	4.85 (123.2)	4.62 (117.3)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.64 (67.1)	3.14 (79.8)	3.73 (94.7)	4.67 (118.6)
K	1.32 (33.5)	1.57 (39.9)	1.87 (47.5)	2.33 (59.2)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
R	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
S	0.38 (9.6)	0.38 (9.6)	0.44 (11.2)	0.44 (11.2)
U	0.47 (11.9)	0.47 (11.9)	0.56 (14.2)	0.62 (15.8)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

M085 Stem Stop, Small Bracket

4-Way



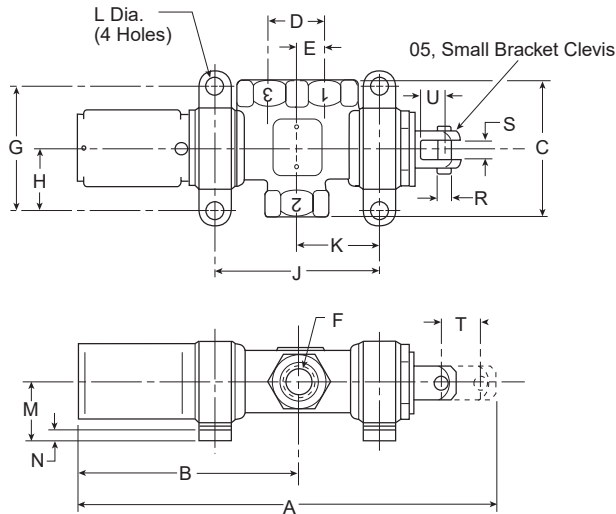
	1/4	3/8	1/2	3/4
A	6.81 (173.0)	7.85 (199.4)	9.48 (240.8)	11.64 (295.7)
B	3.42 (86.9)	3.97 (100.8)	5.91 (150.1)	5.97 (151.6)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
S	0.38 (9.6)	0.38 (9.6)	0.44 (11.2)	0.44 (11.2)
U	0.47 (11.9)	0.47 (11.9)	0.56 (14.2)	0.62 (15.8)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

Clevis Operated, Spring Return, Small Bracket

**M095 Direct Acting (Push Lever) &
M096 Reverse Acting (Pull Lever)**

3-Way

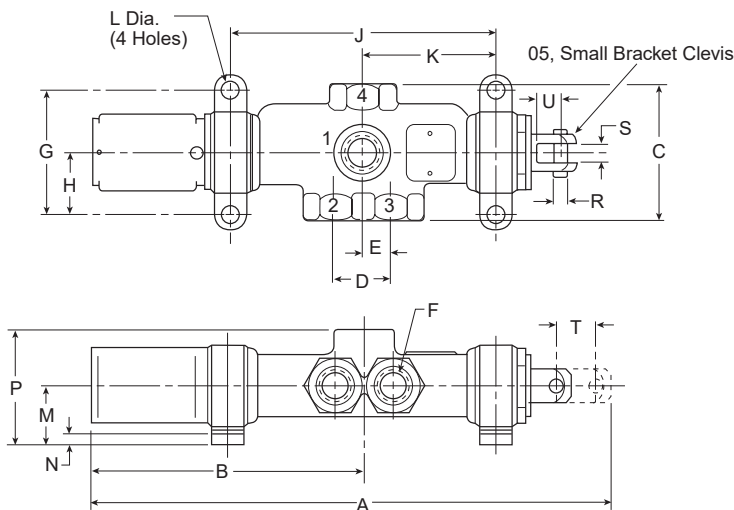


	1/4	3/8	1/2	3/4
A	6.56 (166.5)	7.19 (182.6)	8.95 (227.3)	11.22 (285.0)
B	3.92 (99.5)	4.24 (107.6)	5.31 (134.9)	6.92 (175.8)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.63 (66.8)	3.13 (79.5)	3.72 (94.5)	4.56 (115.8)
K	1.31 (33.3)	1.56 (39.6)	1.86 (47.2)	2.28 (57.9)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
R	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
S	0.38 (9.6)	0.38 (9.6)	0.44 (11.2)	0.44 (11.2)
U	0.47 (11.9)	0.47 (11.9)	0.56 (14.2)	0.62 (15.8)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

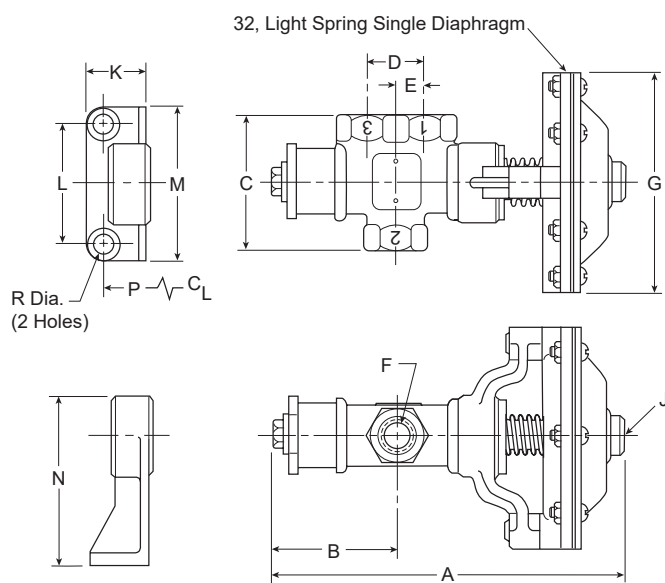
**M095 Direct Acting (Push Lever) &
M096 Reverse Acting (Pull Lever)**

4-Way



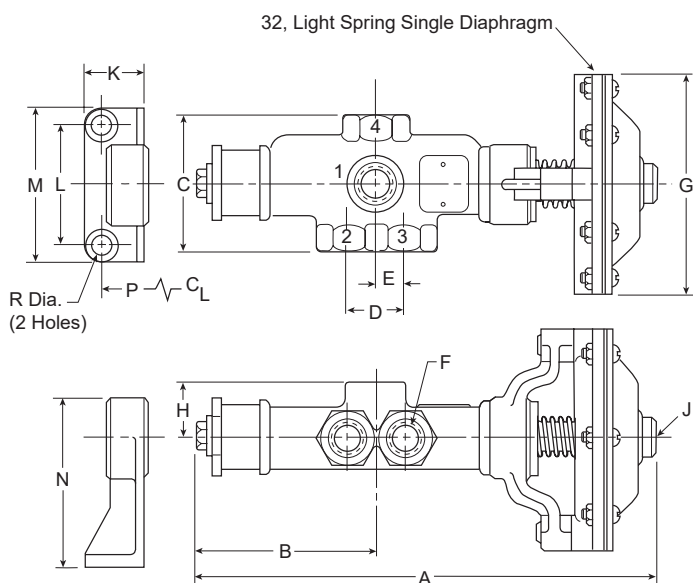
	1/4	3/8	1/2	3/4
A	8.06 (204.6)	9.03 (229.3)	11.07 (281.2)	13.94 (354.1)
B	4.67 (118.6)	5.15 (130.8)	5.68 (144.3)	8.27 (210.1)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.9 (74.2)	3.69 (93.7)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
S	0.38 (9.6)	0.38 (9.6)	0.44 (11.2)	0.44 (11.2)
U	0.47 (11.9)	0.47 (11.9)	0.56 (14.2)	0.62 (15.8)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

Dimensional Data**MO Series****Single Diaphragm Operated, Spring Return Stem Stop****M084 Stem Stop, Large Bracket****3-Way**

	1/4	3/8	1/2	3/4
A	6.14 (156.0)	6.85 (174.0)	8.03 (204.0)	9.89 (251.2)
B	2.03 (51.6)	2.36 (59.9)	2.83 (71.9)	3.48 (88.4)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	4.34 (110.2)	4.34 (110.2)	4.34 (110.2)	5.27 (133.9)
J	1/8" Pipe	1/8" Pipe	1/8" Pipe	1/8" Pipe
K	1.12 (28.4)	1.12 (28.4)	1.75 (44.4)	2.00 (50.8)
L	2.00 (50.8)	2.38 (60.4)	2.00 (50.8)	3.25 (82.6)
M	2.75 (69.8)	3.00 (76.2)	3.00 (76.2)	4.19 (106.4)
N	3.22 (81.8)	3.28 (83.3)	3.40 (86.4)	4.00 (101.6)
P	1.81 (46.0)	2.03 (51.6)	2.74 (69.6)	3.18 (80.8)
R	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

M084 Stem Stop, Large Bracket**4-Way**

	1/4	3/8	1/2	3/4
A	7.65 (194.3)	8.69 (220.7)	9.82 (249.4)	12.60 (320.0)
B	2.79 (70.9)	3.28 (83.3)	3.89 (98.8)	4.84 (122.9)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	4.34 (110.2)	4.34 (110.2)	4.34 (110.2)	5.27 (133.9)
H	1.00 (25.4)	1.06 (26.9)	1.38 (30.0)	1.50 (38.1)
J	1/8 Pipe	1/8 Pipe	1/8 Pipe	1/8 Pipe
K	1.12 (28.4)	1.12 (28.4)	1.75 (44.4)	2.00 (50.8)
L	2.00 (50.8)	2.38 (60.4)	2.00 (50.8)	3.25 (82.6)
M	2.75 (69.8)	3.00 (76.2)	3.00 (76.2)	4.19 (106.4)
N	3.22 (81.8)	3.28 (83.3)	3.40 (86.4)	4.00 (101.6)
P	2.57 (65.3)	2.95 (74.9)	3.80 (96.5)	4.54 (115.3)
R	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)



For inventory, lead times, and kit
lookup, visit www.pdnplu.com

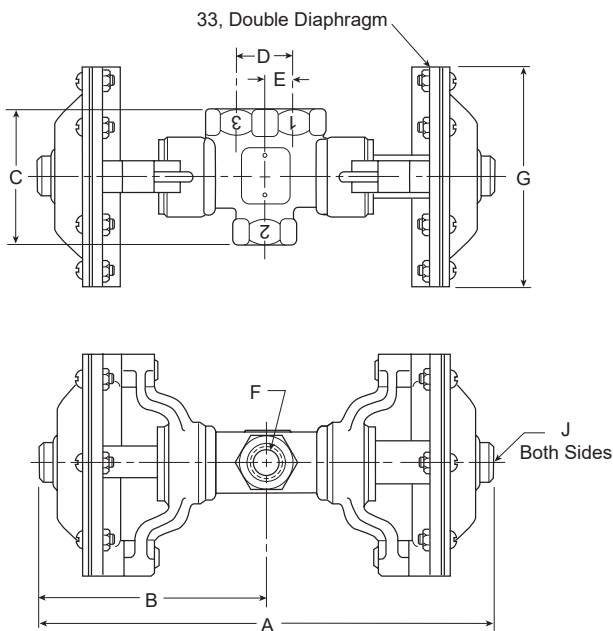
E44

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Double Diaphragm Operated

M033 Double Diaphragm

3-Way

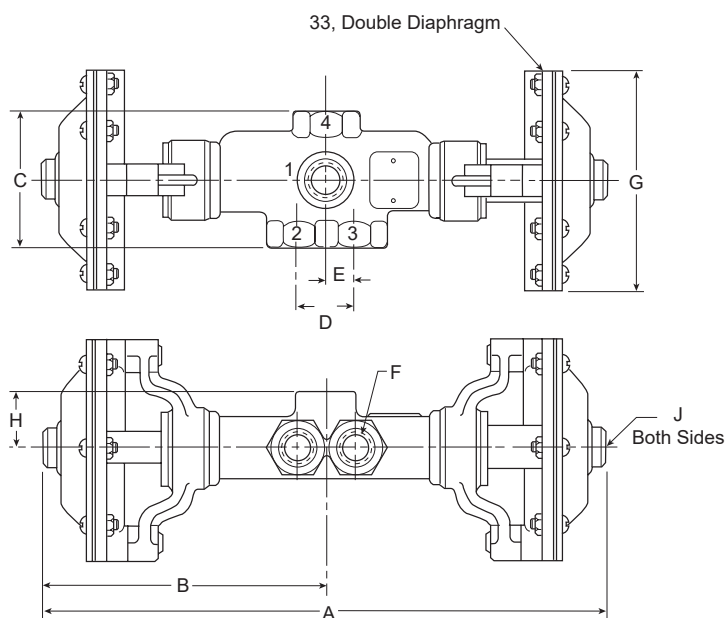


	1/4	3/8	1/2	3/4
A	8.22 (208.8)	8.98 (228.1)	10.40 (264.2)	12.82 (325.6)
B	4.11 (104.4)	4.49 (114.0)	5.20 (132.1)	6.41 (162.8)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	4.34 (110.2)	4.34 (110.2)	4.34 (110.2)	5.27 (133.9)
J	1/8" Pipe	1/8" Pipe	1/8" Pipe	1/8" Pipe

Inches (mm)

M033 Double Diaphragm

4-Way



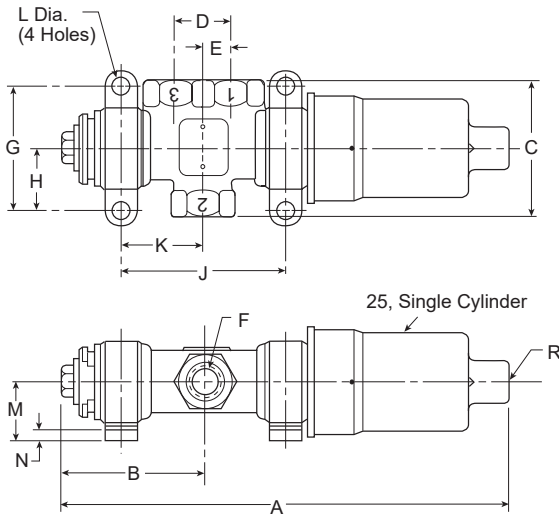
	1/4	3/8	1/2	3/4
A	9.72 (246.9)	10.82 (274.8)	11.86 (301.2)	15.52 (394.2)
B	4.86 (123.4)	5.41 (137.4)	5.93 (150.6)	7.76 (197.1)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	4.34 (110.2)	4.34 (110.2)	4.34 (110.2)	5.27 (133.9)
H	1.00 (25.4)	1.06 (26.9)	1.38 (30.0)	1.50 (38.1)
J	1/8" Pipe	1/8" Pipe	1/8" Pipe	1/8" Pipe

Inches (mm)

Single Cylinder Operated, Spring Return, Stem Stop

M085 Stem Stop, Small Bracket

3-Way

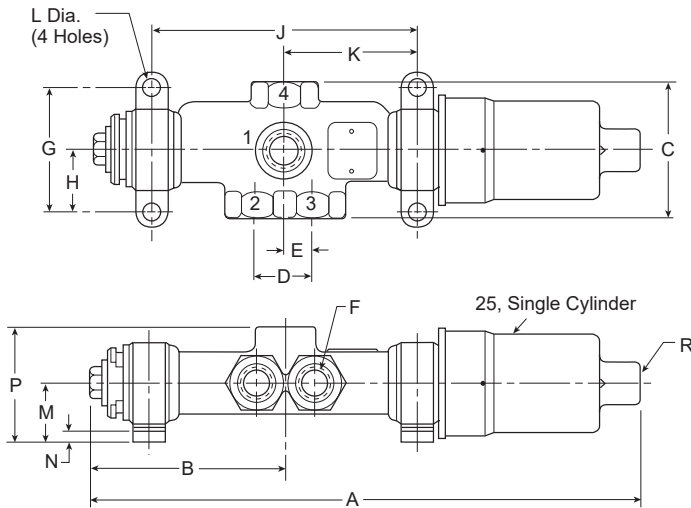


	1/4	3/8	1/2	3/4
A	7.50 (190.5)	8.14 (206.8)	9.03 (229.4)	11.18 (284.0)
B	2.03 (51.6)	2.36 (59.9)	2.83 (71.9)	3.48 (88.4)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.64 (67.1)	3.14 (79.8)	3.73 (94.7)	4.67 (118.6)
K	1.32 (33.5)	1.57 (39.9)	1.87 (47.5)	2.33 (59.2)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
R	1/4" Pipe	1/4" Pipe	1/4" Pipe	1/4" Pipe
Travel	.62 (15.7)	.69 (17.5)	.88 (22.4)	1.12 (28.4)

Inches (mm)

M085 Stem Stop, Small Bracket

4-Way



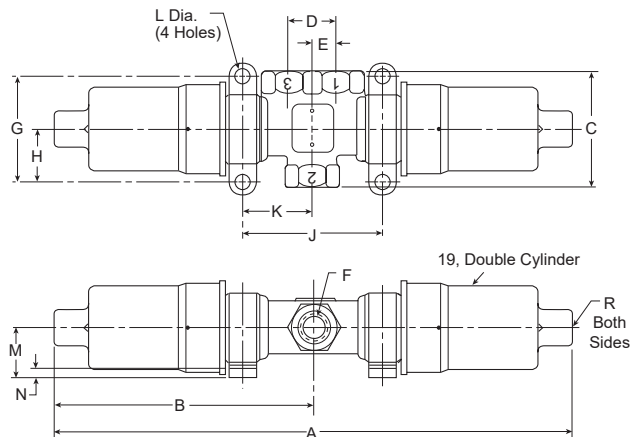
	1/4	3/8	1/2	3/4
A	9.00 (228.6)	9.98 (253.5)	11.15 (283.2)	13.90 (353.1)
B	2.79 (70.9)	3.28 (83.3)	3.89 (98.8)	4.84 (122.9)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R	1/4" Pipe	1/4" Pipe	1/4" Pipe	1/4" Pipe
Travel	.62 (15.8)	.69 (17.5)	.88 (22.4)	1.12 (28.4)

Inches (mm)

Double Cylinder Operated

M019 Double Cylinder

3-Way

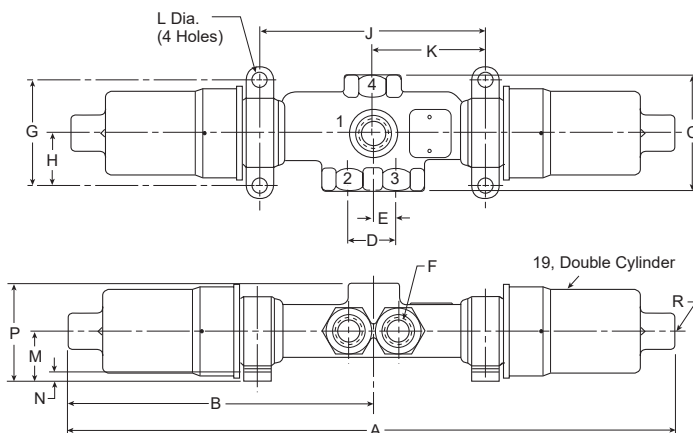


	1/4	3/8	1/2	3/4
A	10.94 (277.9)	11.56 (293.6)	12.40 (315.0)	15.40 (391.2)
B	5.47 (138.9)	5.78 (146.8)	6.20 (157.5)	7.70 (195.6)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.64 (67.1)	3.14 (79.8)	3.73 (94.7)	4.67 (118.6)
K	1.32 (33.5)	1.57 (39.9)	1.87 (47.5)	2.33 (59.2)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
R	1/4" Pipe	1/4" Pipe	1/4" Pipe	1/4" Pipe

Inches (mm)

M019 Double Cylinder

4-Way

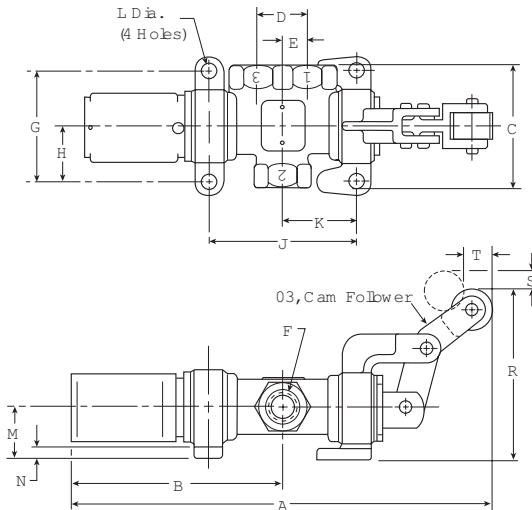


	1/4	3/8	1/2	3/4
A	12.42 (315.5)	13.40 (340.4)	14.52 (368.8)	18.12 (460.2)
B	6.21 (157.7)	6.70 (170.2)	7.26 (184.4)	9.06 (230.1)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R	1/4" Pipe	1/4" Pipe	1/4" Pipe	1/4" Pipe

Inches (mm)

Cam Operated, Spring Return

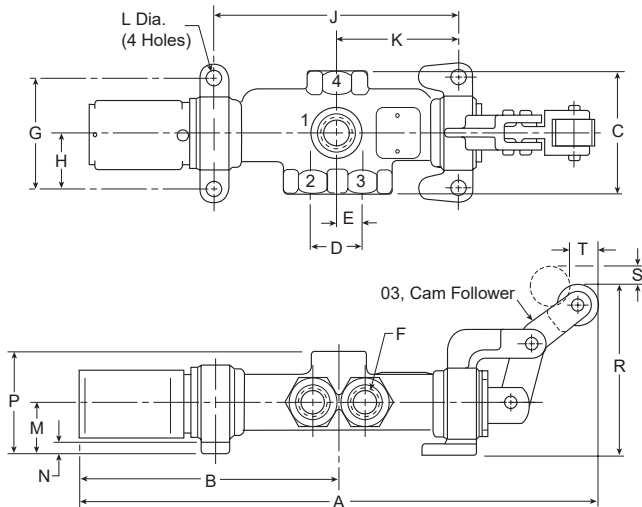
M095 Direct Acting, Small Bracket (Push Lever)
3-Way



	1/4	3/8	1/2	3/4
A	7.98 (202.6)	8.72 (221.5)	10.77 (273.6)	13.54 (343.9)
B	3.92 (99.6)	4.24 (107.7)	5.31 (134.9)	6.92 (175.8)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.63 (66.8)	3.13 (79.5)	3.72 (94.5)	4.56 (115.8)
K	1.31 (33.3)	1.56 (39.6)	1.86 (47.2)	2.28 (57.9)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (38.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
R	3.88 (98.6)	3.88 (98.6)	4.23 (107.4)	4.88 (124.0)
S	.43 (10.9)	.47 (11.9)	.70 (17.8)	.67 (17.0)
Travel	.53 (13.5)	.59 (15.0)	.75 (19.0)	.81 (20.6)

Inches (mm)

M095 Direct Acting, Small Bracket (Push Lever)
4-Way



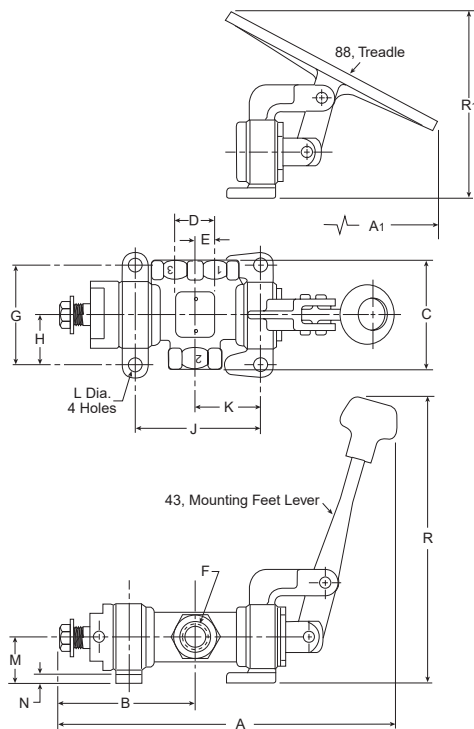
	1/4	3/8	1/2	3/4
A	9.48 (204.7)	10.56 (268.2)	12.89 (327.4)	16.26 (413.0)
B	4.67 (118.6)	5.15 (130.8)	5.68 (144.3)	8.27 (210.1)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R	3.88 (98.6)	3.88 (98.6)	4.23 (107.4)	4.88 (124.0)
S	.43 (10.9)	.47 (11.9)	.70 (17.8)	.67 (17.0)
Travel	.53 (13.5)	.59 (15.0)	.75 (19.0)	.81 (20.6)

Inches (mm)

Lever & Treadle Operated, 2-Position Ball Detent

M054 Ball Detent, Small Bracket

3-Way

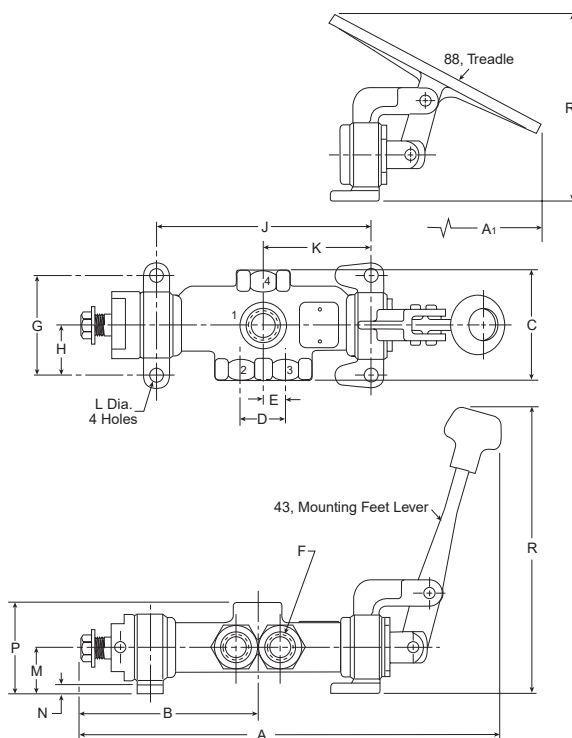


	1/4	3/8	1/2	3/4
A	7.35 (186.7)	8.36 (212.3)	9.95 (252.7)	12.25 (311.2)
A1	8.59 (218.2)	9.33 (237.0)	10.65 (270.5)	12.90 (327.7)
B	3.25 (82.6)	3.66 (93.0)	4.39 (11.5)	5.41 (137.4)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.63 (66.8)	3.13 (79.5)	3.72 (94.5)	4.56 (115.8)
K	1.31 (33.3)	1.56 (39.6)	1.86 (47.2)	2.28 (57.9)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
R1	6.78 (172.2)	6.78 (172.2)	8.10 (205.7)	10.73 (272.5)
R2	4.51 (114.6)	4.65 (18.1)	4.85 (123.2)	6.03 (153.2)

Inches (mm)

M054 Ball Detent, Small Bracket

4-Way



	1/4	3/8	1/2	3/4
A	8.86 (225.0)	10.20 (259.1)	11.74 (298.2)	14.96 (380.0)
A1	10.01 (254.2)	11.17 (283.7)	12.77 (324.4)	15.62 (396.8)
B	4.00 (101.6)	4.57 (116.1)	5.44 (138.2)	6.76 (171.7)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R1	6.78 (172.2)	6.78 (172.2)	8.10 (205.7)	10.73 (272.5)
R2	4.51 (114.6)	4.65 (18.1)	4.85 (123.2)	6.03 (153.2)

Inches (mm)

Features

Parker is protecting your most valuable assets...



Standard 190.147

- This applies to the servicing and maintenance of a machine or equipment.
- Any new, replacement, repair, or renovation to a machine must include an energy isolation device that can accept a lock out device.
- Lock out devices should not be used for any other purposes
- Verification of energy isolation is required



Standard Z244

- This applies to all machines
- Lockout / tagout is the primary method of hazardous energy control
- Machines shall be designed, manufactured, supplied, and installed with energy isolating devices



B155.1

- B 11.0 applies to a broad range of machines, B 11.TR6 is specific to machine tools, and B 155.1 is specific to packaging and converting machines
- Energy isolating device shall:
 - Be capable of being locked in the OFF position only
 - Be easy to operate
 - Have an exhaust port equal or greater than its supply port
 - Have a pressure indicator that is visible to an operator to verify line is relieved of pressure

...By offering the best in pneumatic safety for machine maintenance:

Traditional Ball Valve

- Not a dedicated energy isolation device ✗
- Not a full exhaust port ✗
- No verification of line exhaust ✗
- Can be locked ON ✗
- Not easily identifiable ✗

Parker Solution

- ✓ Dedicated energy isolation device
- ✓ Full exhaust port
- ✓ Verification of line exhaust
- ✓ Only lockable in OFF position
- ✓ Easily identifiable

LV / LVSS Series

Lockout valves are installed in pneumatic drop legs, or individual pneumatic control lines. In accordance with OSHA procedures, lockout valves are used during maintenance and service procedures of pneumatically (air) operated equipment.

- Used for compliance with OSHA 29 CFR part 1910
- 1/4" to 2" pipe sizes. NPT or BSPP
- Yellow cast aluminum body with red handle or stainless steel (NACE MR0175 / ISO 15156)
- Inline or surface mountable
- Built in port for pressure verification to meet ANSI B11 and PMMI B155 requirements
- Fluorocarbon slipper seals for easy shifting, even after long periods of inactivity

Material specifications

Description	LV	LVSS
Body:	Cast aluminum alloy	Stainless steel
Handle:	Plastic	Stainless steel
Spool:	Aluminum	Stainless steel
Seals:	Carboxylated nitrile	Fluorocarbon
Detent spring:	Stainless steel	Stainless steel
Grease:	Magnalube G [†]	Magnalube G [†]

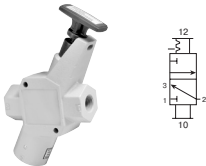
[†] Trademark Magnalube

Compact



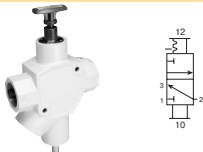
Port In/Out	Port Exhaust	SCFM In/Out	SCFM Exhaust	Wt (lb)	Part Number *
1/4	3/8	41.8	40.7	0.9	LV2N3B
3/8	3/8	60.7	60.7	0.9	LV3N3B

Standard



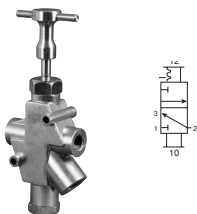
Port In/Out	Port Exhaust	SCFM In/Out	SCFM Exhaust	Wt (lb)	Part Number *
3/8	3/4	107.7	81.1	2.0	LV3N6B
1/2	3/4	161.4	90.9	2.0	LV4N6B
3/4	3/4	187.7	93.2	2.0	LV6N6B
3/4	1-1/4	297.7	204	3.2	LV6NAB
1	1-1/4	375	216	3.2	LV8NAB
1-1/4	1-1/4	436.4	221	3.2	LVANAB

High Flow



Port In/Out	Port Exhaust	SCFM in/out	SCFM Exhaust	Wt (lb)	Part Number *
1-1/2	2	761.4	1156	8.2	LVBNCB
2	2	918.2	1186	8.2	LVCNCB

Stainless Steel



Port In/Out	Port Exhaust	SCFM In/Out	SCFM Exhaust	Wt (lb)	Part Number *
1/4	1/4	48.6	47.2	3.8	LV2N2BSS
3/8	1/2	131.6	142	6.0	LV3N4BSS
1/2	1/2	131.6	142	6.0	LV4N4BSS
3/4	1	325	386	13	LV6N8BSS
1	1	325	386	13	LV8N8BSS
1-1/2	2	889	1023	35	LVBNCBSS
2	2	889	1023	35	LVCNCBSS

NOTE: Exhaust flow rates calculated using inlet pressure 100 psig (6.7 bar), pressure drop 5 psi (0.34 bar), air temp 68°F (20°C), and 36% relative humidity.

* For BSPP ports, change 4th digit from "N" to "B"

Most popular.



Operating Information

Operating pressure:	LV	LVSS
Compact	15 to 145 PSIG	–
Standard	15 to 300 PSIG	15 to 300 PSIG
High flow	15 to 300 PSIG	–
Operating temperature:	40°F to 175°F	30°F to 175°F
Operating media:	Clean, dry, compressed air (5 micron)	

Directair 2
& 4 Series

Viking Xtreme
Lever Series

4/2 Lever /
Pedal Series

MO Series

Safety

E

Manual / Mechanical
Valves

Brass Poppet /
Sliding Seal

Control Panel
Products

Sensing

EZ Series

The EZ series meets all the same standards as the LV series with the added feature of a soft start when opened. There are still 2 detented positions for the handle (push close, pull to open), but when pulled open, an adjustable needle valve controls the rate of pressure build-up. This can protect equipment during start up after maintenance. The EZ is distinguishable from the LV series by the blue dot on the label.

Features

- Combines lockout and soft-start functions in a single unit
- Used in systems for compliance with OSHA standard 29 CFR part 1910
- 3/8 Inch to 1-1/4 inch pipe sizes
- Cv's from 3.7 to 13.7
- 3/4 and 1-1/4 inch: exhaust ports available
- Exhaust port threaded for installation of silencer or line for remote exhausting
- Inline or surface mountable
- Yellow cast aluminum body with red handle. Blue dot on body indicates EZ Series valve
- Fluorocarbon slipper seals for easy shifting, even after long periods of inactivity



3/4" Exhaust Shown

Operating Information

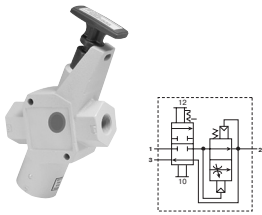
Operating pressure:	
Standard	15 to 300 PSIG
Operating temperature:	40°F to 175°F
Operating media:	Clean, dry, compressed air (5 micron)

Material specifications

Description

Body:	Cast aluminum alloy
Handle:	Plastic
Spool:	Aluminum
Seals:	Carboxylated nitrile
Detent spring:	Stainless steel
Grease:	Magnalube G †

† Trademark Magnalube



NOTE: Exhaust flow rates calculated using inlet pressure 100 psig (6.7 bar), pressure drop 5 psi (0.34 bar), air temp 68°F (20°C), and 36% relative humidity.
* For BSPP ports, change 5th digit from "N" to "B"

Most popular.



For inventory, lead times, and kit lookup, visit www.pdnplu.com

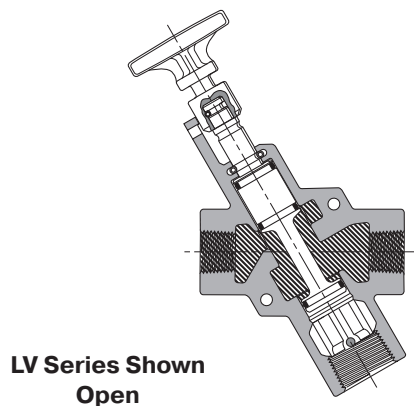
Applications

Lockout valves are installed in pneumatic drop legs, or individual pneumatic control lines (see Figure 1). In accordance with OSHA procedures, EZ valves are used during maintenance and service procedures of pneumatically (air) operated equipment. Prior to servicing, the red handle is pressed inward, blocking pressure and relieving all downstream air pressure. A padlock is installed through the locking hasp, preventing accidental actuation during the maintenance procedure. Following maintenance, the padlock is removed and the red handle is pulled outward, gradually returning air pressure to the system. (For complete Lockout / Tagout procedures, consult OSHA Standard 29 CFR Part 1910 in U.S. Federal Register/Vol. 54 No. 169, Friday, September 1, 1989 / Page 36644.)

LV / LVSS Operation

Normal Machine Operation – Valve Open

With the handle pulled outward. Inlet Port 1 is open to outlet Port 2. Exhaust Port 3 is blocked.



Mounting

Valves can be inline mounted or surface mounted using the two mounting holes provided in the valve body. Mount valves in plain view with the handle oriented for accessibility.

Placement of Lockout Device

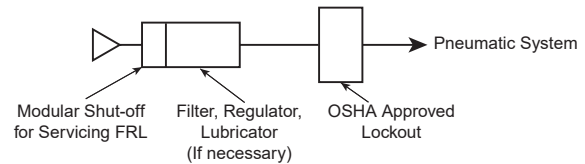
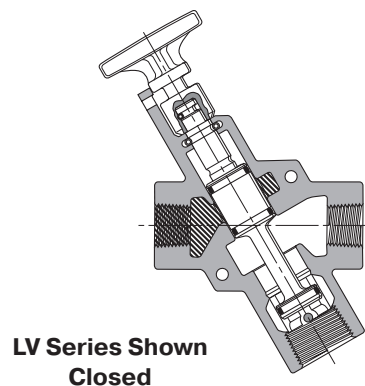


Figure 1.

Lockout Operation – Valve Closed

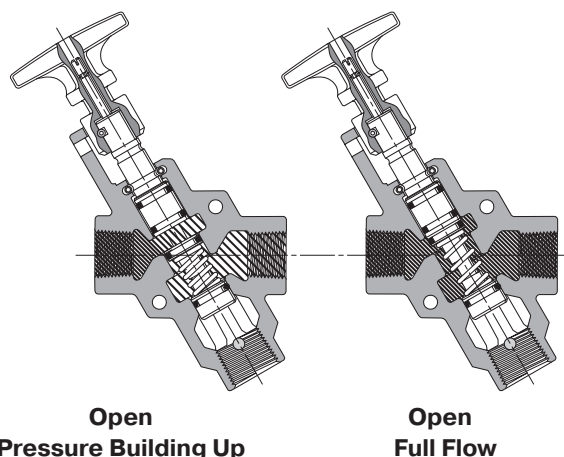
With the handle pushed inward. Inlet Port 1 is blocked. Outlet Port 2 is open to Exhaust Port 3.



EZ Operation

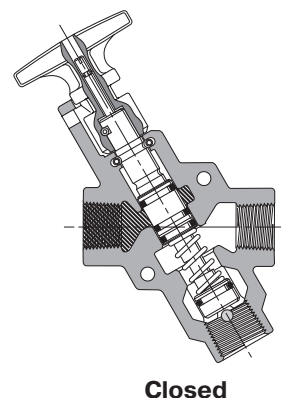
Normal Machine Operation – Valve Open

When the red handle is pulled outward, the adjustable needle valve (accessed through the top of the handle) setting determines the rate of pressure buildup. When downstream pressure reaches the full flow described in the specifications below, Inlet Port 1 is open to outlet Port 2. Exhaust Port 3 is blocked.



Lockout Operation – Valve Closed

When the red handle is pushed inward, the Inlet Port 1 is blocked. Downstream air is exhausted through Exhaust Port 3.



Corrosion resistant mufflers for harsh environments



Port Size	Construction	Threads	Dimensions In. (mm)		Part Number
			Width	Length	
1/4	Stainless steel	Male, NPT	0.56 (14.2)	1.75 (44.5)	5500A2004
1/2	Stainless steel	Male, NPT	0.87 (22.1)	2.75 (69.7)	5500A4004
1	Stainless steel	Male, NPT	1.31 (33.3)	3.87 (98.3)	5500B6004
2	Nickel plated	Male, NPT	2.37 (60.2)	5.50 (139.7)	5500A9004*

* Nickel plated



* NPT ports standard, for BSPT ports, add a "B" after the "S"

Pop-up Pressure Indicator



Brass – Part # **988A30** – Can be used on all LV or EZ series to provide visual verification of line exhaust



Stainless – Part# **1155H30** – Can be used on SS LV series to provide visual verification of line exhaust

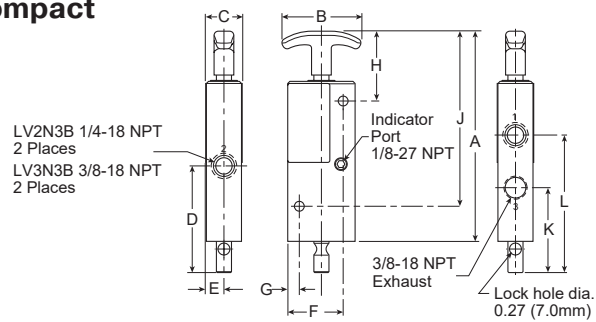
Pressure Switch



- Part # **PPS1-2C3-RHM** (DIN 9.4mm connector)
- Part # **PPS1-2C3-RWL** (18" leads)
- Signal verification of line exhaust
- Field adjustable set point

LZ Series, Exhaust Port - Compact, Standard, High Flow

Compact

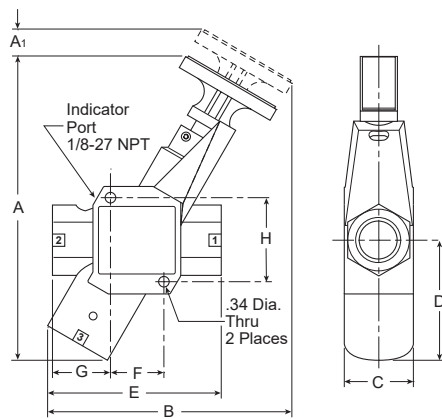


Compact LV Series, 3/8" Exhaust Port Dimensions

A	B	C	D	E	F
6.50 (165)	2.25 (57)	1.05 (27)	3.04 (77)	.51 (13)	1.58 (40)
G	H	J	K	L	
.33 (8)	1.99 (51)	4.99 (127)	2.42 (62)	3.92 (100)	

Inches (mm)

Standard



Compact LV Series, 3/4" Exhaust Port Dimensions

A	A1	B	C	D	E
8.32 (211)	0.64 (16)	6.60 (168)	2.00 (51)	3.06 (78)	4.24 (108)
F	G	H			
1.32 (111)	1.56 (40)	2.21 (56)			

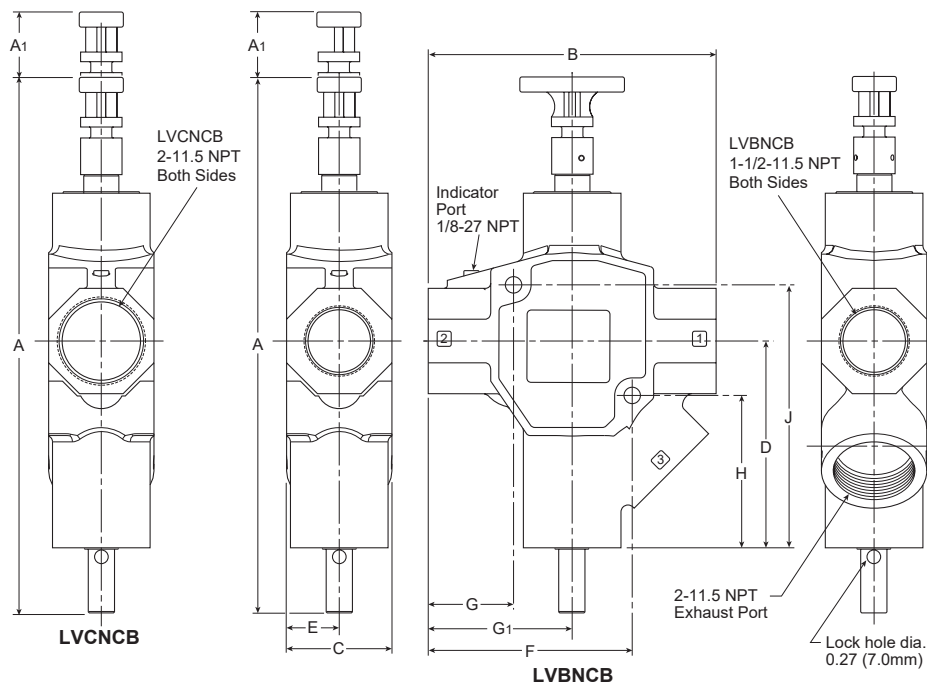
Inches (mm)

Compact LV Series, 1-1/4" Exhaust Port Dimensions

A	A1	B	C	D	E
9.91 (252)	0.85 (22)	7.95 (202)	2.25 (57)	3.91 (99)	5.65 (144)
F	G	H			
1.74 (44)	1.89 (48)	2.74 (70)			

Inches (mm)

High Flow



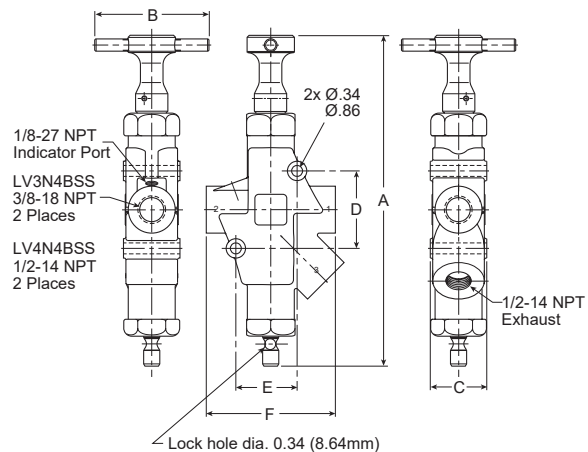
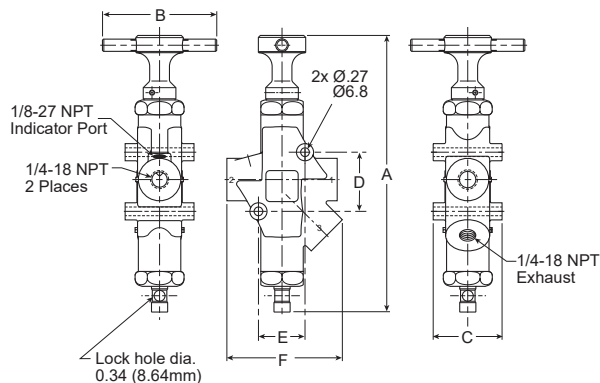
High Flow LV Series, 2" Exhaust Port Dimensions

A	A1	B
14.82 (376)	1.87 (47)	8.20 (208)
C	D	E
3.00 (76)	5.89 (150)	1.50 (38)
F	G	G1
5.81 (148)	2.43 (62)	4.10 (104)
H	J	
4.34 (110)	7.49 (190)	

Inches (mm)

LZ Series, Exhaust Port - Compact, Standard, High Flow

Stainless Steel



Stainless Steel LV Series, 1/4" Exhaust Port Dimensions

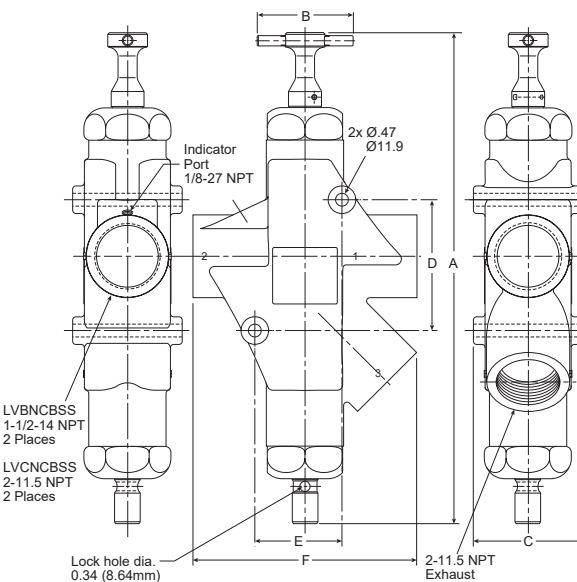
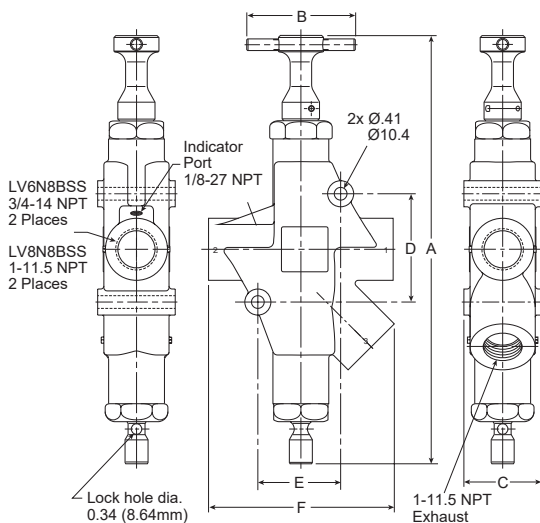
A	B	C	D	E	F
8.47 (215)	3.50 (89)	2.11 (54)	1.81 (46)	1.43 (36)	3.54 (90)

Inches (mm)

Stainless Steel LV Series, 1/2" Exhaust Port Dimensions

A	B	C	D	E	F
10.24 (260)	3.50 (89)	1.75 (45)	2.40 (61)	1.90 (48)	4.00 (102)

Inches (mm)



Stainless Steel LV Series, 1" Exhaust Port Dimensions

A	B	C	D	E	F
13.80 (351)	3.50 (89)	2.50 (64)	3.49 (89)	2.67 (68)	5.99 (152)

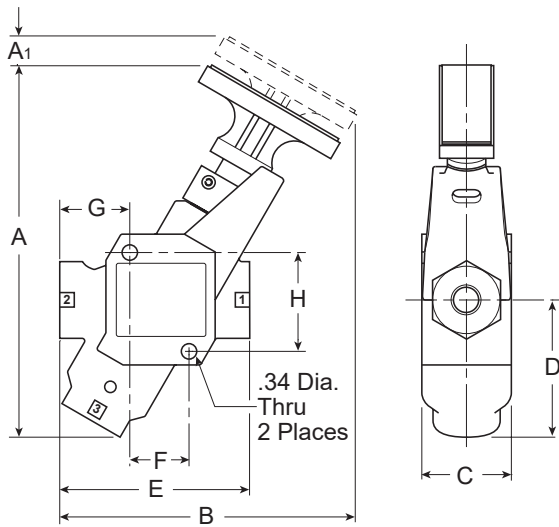
Inches (mm)

Stainless Steel LV Series, 2" Exhaust Port Dimensions

A	B	C	D	E	F
17.92 (455)	3.50 (89)	4.00 (102)	4.77 (121)	3.18 (81)	8.16 (207)

Inches (mm)

EZ Series, Exhaust Port - Standard Flow



EZ 3/4" Exhaust Port Dimensions

A	A1	B	C	D
8.32 (211)	0.64 (16)	6.60 (168)	2.00 (51)	3.06 (78)
E	F	G	H	
4.24 (108)	1.32 (111)	1.56 (40)	2.21 (56)	
Inches (mm)				

EZ 1-1/4" Exhaust Port Dimensions

A	A1	B	C	D
9.91 (252)	0.85 (22)	7.95 (202)	2.25 (57)	3.91 (99)
E	F	G	H	
5.65 (144)	1.74 (44)	1.89 (48)	2.74 (70)	
Inches (mm)				

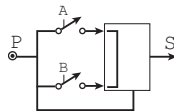
Two-Hand Controls

Two-Hand Controls

- The pre-assembled two-hand control enclosure occupies both hands of an operator by requiring nearly simultaneous operation of two pushbuttons
- Poppet – snap-acting (no spools)
- Same air as in cylinders – Filtration: 40 micron
- No lubrication required



Part number	Connection
PXP-C111-A	5/32" Instant



General Characteristics

Operating Pressure	40 to 120 PSI (3 to 8 bar)
Permissible Fluids –	Air or neutral gas 40 micron filtration, lubricated or dry
Flow at 90 PSI (6 bar)	7 SCFM (200 l/mn ANR)
Operating Temperature	-5°F to 140°F (-15°C to 60°C) Below 40°F (5°C), an air dryer is required
Storage Temperature	-40°F to 160°F (-40°C to 70°C)
Number of operations with dry air at 90 PSI (6 bar), 68°F (20°C), frequency 1 Hz	1 Million Operations
Vibration resistance –	Conforms to section 19-2 of bureau Véritas regulations (November 1987)
Materials –	Body: Glass Filled Nylon Operating Head: Zinc Alloy and Plastic
Connections:	5/32" instant

Mounting

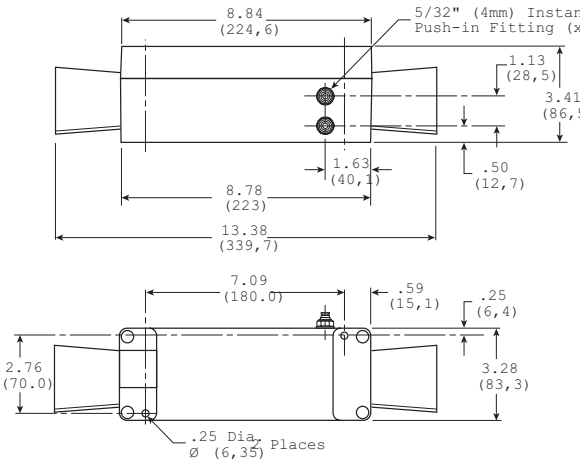
Approvals:

- In accordance with European Standard EN 574 - September 1996
- Conforms to the model that has obtained CE Type Test Certificate No. 02526 520 4631 0397

WARNING

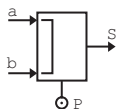
These devices should **NOT** be used in any application involving rotary clutch presses. Two hand control modules do not of themselves insure the safety of any machine. Users and original equipment manufacturers are responsible for making sure that installations meet all relevant safety regulations.

Notes: These two-hand control modules provide an output signal upon nearly concurrent operation of two pushbuttons.



Inches (mm)

Two-Hand Control Module

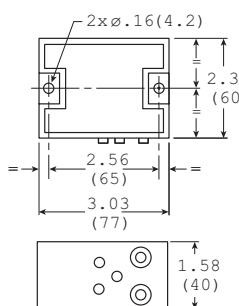


S = Output
AdB = Momentary input
P = Pressure supply



PXP-A11-A

Part number	Connection
PXP-A11-A	5/32" Instant



Specifications

Air Quality –	Standard Shop Air, Lubricated or Dry	40 µm Filtration
Materials –	Body	Polyamide
	Operating Head	Zinc Alloy & Plastic
Flow at 90 PSI (6 bar) in SCFM (l/mn ANR)		7 (200)
Number of Operations with Dry Air at 90 PSI (6 bar) and 68°F (20°C) - Frequency	1 Hz	1 million Operations
Operating Positions		All Positions
Operating Pressure –		15 to 115 PSIG (1 to 8 bar)
Ports	5/32" Instant for Semi-Rigid Nylon or Polyurethane Tube	
Operating Temperature –		
	Operating	32°F to 122°F (0°C to 50°C)
	Storage	-22°F to 140°F (-30°C to 60°C)
Vibration resistance:	Conforms to section 19-2 of bureau Veritas regulations (November 1987)	

WARNING

These devices should **NOT** be used in any application involving rotary clutch presses. Two hand control modules do not of themselves insure the safety of any machine. Users and original equipment manufacturers are responsible for making sure that installations meet all relevant safety regulations.

Notes: These two-hand control modules provide an output signal upon nearly concurrent operation of two pushbuttons.

Two-Hand Control Module Guard



PPRL15

Part number	Base component
PPRL15	PXP-C111-A

Two Hand Repair Parts

Part number	Quantity required	Description
PXP-A11-A	1	Control Module
PXBB4931	2	Valve Body & Mounting Ring
ZB4BR*	2	Push Button
PPRL15	2	Control Module Guard

* 2 = Black, 3 = Green, 4 = Red

PL / VL Series

These are 4-Way, 3-Position, rotary disc, direct-operated air valves. Two different types of control are offered. The forged bronze disc and the cast iron surface upon which the disc works are ground and lapped to provide a leak-proof seal. Air pressure from the inlet port is confined beneath the disc, making the seal tighter as the pressure increases, yet friction between the lapped surfaces is so low that only 15 pounds of force is required to move the lever at 100 PSI line pressure. The need for packing to seal around the stem is eliminated.

Valve can be furnished for gasketing to a manifold on customer's machine or with an adaptor for tapped bottom porting.

Valves are detented.

Operating handles may be installed in any of four positions.

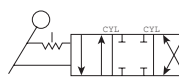


Operating Information

Operating pressure:	0 to 150 PSI (0 to 1035 Pa)
Temperature range:	18°F to 200°F (-8°C to 93°C)
Lubrication:	Filtered and lubricated air recommended for maximum valve life and minimum maintenance.

PL Series Valves

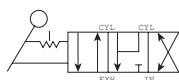
This type has a 90° lever movement. In neutral position, inlet is closed to pressure – outlets closed to exhaust. With clockwise (CW), inlet is connected to cylinder port directly opposite. Other cylinder port is connected to exhaust. With counterclockwise (CCW), inlet is connected to cylinder port diagonally opposite. Other cylinder port is connected to exhaust. Recommended for stationary air cylinders, arbor presses, and as a throttling valve for positioning air cylinders.



Port Size	Description	Cv	Part Number
3/8" NPT	4-Way, 3-Position, Detent, Closed Center	3.0	PL37
1/2" NPT	4-Way, 3-Position, Detent, Closed Center	6.2	PL50

VL Series Valves

This type has a 90° lever movement. In neutral position, inlet is closed to pressure – outlets open to exhaust. With clockwise (CW), inlet is connected to cylinder port directly opposite. Other cylinder port is connected to exhaust. With counterclockwise (CCW), inlet is connected to cylinder port diagonally opposite. Other cylinder port is connected to exhaust. This valve is particularly suited for pneumatic chuck operation.



Port Size	Description	Cv	Part Number
3/8" NPT	4-Way, 3-Position, Detent, Exhaust Center	3.0	VL37
1/2" NPT	4-Way, 3-Position, Detent, Exhaust Center	6.2	VL50

Service kits

Description	Valve Size	Part Number
Lever Assembly Service Kits	PL37, PL37HP, VL25, & VL37	PL2425P
	PL50, PL50HP & VL50	PL2424P
Body Gasket	PL37, PL37HP, VL25, & VL37	P66837
	PL50, PL50HP & VL50	P66829

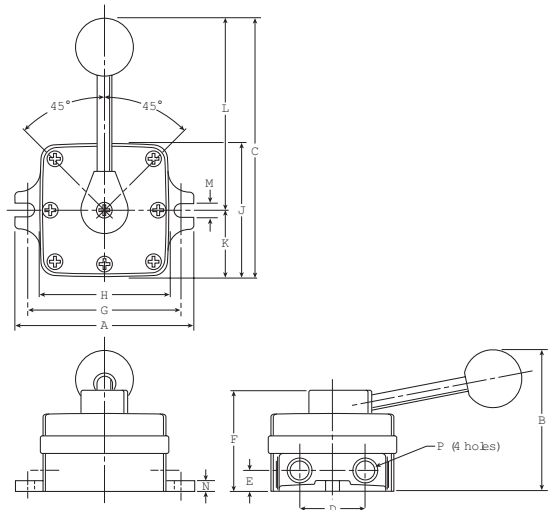
Most popular.



For inventory, lead times, and kit lookup, visit www.pdnplu.com

E60

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics



PL-VL Dimensions

	A	B	C	D	E	F	G	H	J	K	L	M	N	P
PL37	4.75	3.81	6.81	1.69	.56	2.75	4.12	3.50	3.50	1.69	5.06	.34	.28	3/8
VL37	(121)	(97)	(173)	(43)	(14)	(70)	(105)	(89)	(89)	(43)	(129)	(9)	(7)	NPT
PL50	5.62	4.44	8.94	2.12	.66	3.25	5.00	4.38	4.38	2.12	6.75	.34	.34	1/2
VL50	(143)	(113)	(227)	(54)	(17)	(83)	(127)	(111)	(111)	(54)	(171)	(9)	(9)	NPT

inches (mm)

Directair 2
& 4 Series

Viking Xtreme
Lever Series

42 Lever /
Pedal Series

M0 Series

Safety

E

Manual / Mechanical
Valves

Brass Poppet /
Sliding Seal

Control Panel
Products

Sensing

Directair 2
& 4 Series

Viking Xtreme
Lever Series

4/2 Lever /
Pedal Series

MO Series

Safety

E

Manual / Mechanical
Valves

Brass Poppet /
Sliding Seal

Control Panel
Products

Sensing

HV Valve Series

- Compact and simple design
- Rotary disc, direct operated valves
- Side porting
- Detent action smooth lever actuation
- General pneumatic applications



Material specifications

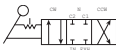
Cover	Zinc
Body	Aluminum
Seals	Polyurethane

Operating Information

Operating pressure:	0 to 150 PSI (0 to 10 bar)
Temperature range:	32°F to 166°F (0°C to 60°C)
Lubrication:	Filtered and lubricated air recommended for maximum

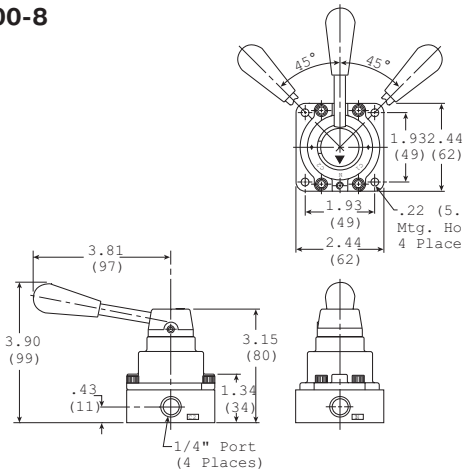
HV Series Valves

These closed center valves have a 90° lever movement. In neutral position, the inlet is closed to pressure and outlets are closed to exhaust. With clockwise (CW) rotation, inlet (IN) is connected to C2, C1 is connected to exhaust (EXH). With counter-clockwise (CCW) rotation, inlet (IN) is connected to C1, C2 is connected to exhaust (EXH). These valves are recommended for stationary air cylinders, and as throttling valves for positioning air cylinders. They are not to be used on punch presses or press brakes.

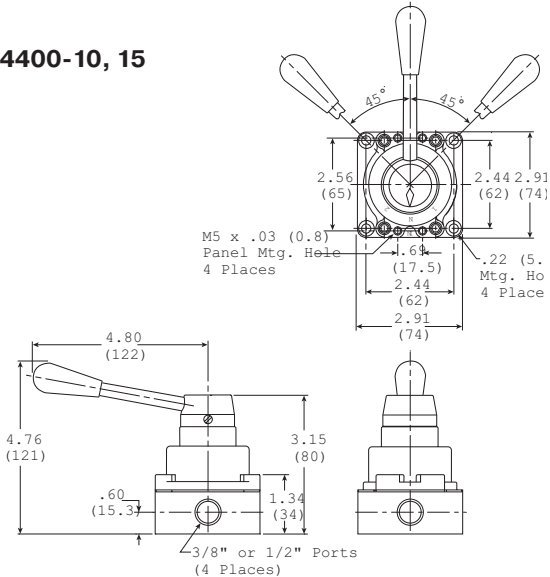


Port Size	Description	Cv (ANSI)	Cv (JIS)	Part Number
1/4" NPT	4-Way, 3-Position	0.5	0.4	HVN4200-8
3/8" NPT	4-Way, 3-Position	1.4	2.72	HVN4400-10
1/2" NPT	4-Way, 3-Position	1.5	3.26	HVN4400-15

HVN4200-8



HVN4400-10, 15



Service kits

Description	Valve Size	Part Number
Disk & Seal	HV4200	HVRK420001
Service Kits	HV4400	HVRK440001

Most popular.

ANSI Cv vs. JIS Cv

For Pneumatic Valve flow, the measurement Cv – Coefficient of Flow – is used to convey to the user how much air can flow through a given valve. Most valve manufacturers publish this information in their catalogs to assist the user in choosing the proper valve for their application. In publishing this data however, there are discrepancies in how the Cv is calculated, resulting in some Cv's being OVERSTATED by 20 to 40%. This can adversely affect the user's application because the valve flows LESS than the published Cv.

The reason for the large discrepancy is in the method of calculation - the ANSI (NFPA) or the JIS standard. Parker's Cv valve is calculated using the ANSI (NFPA) T3.21.3-1990 standard. The ANSI (NFPA) method is a structured test using very specific tube sizes and lengths, inlet pressures and pressure drops, and volume chambers.



For inventory, lead times, and kit lookup, visit www.pdnplu.com

Hand Operated Sliding Seal Valves

Sliding seal valves provide 3 or 4-Way directional control in a compact body size. Comfortable hand lever is easy to operate and maintains set position. Disc type valve has minimum number of moving parts. Valves should be used with filtered and lubricated air.

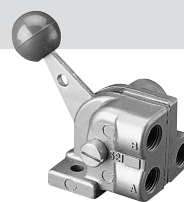


CAUTION:

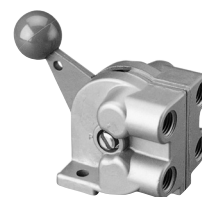
Install guards on all hand operated valves.
 Accidental operation can cause personal injury.

Material specifications

Internal components	Brass, stainless steel
Body	Die cast zinc
Seals	Buna N



1/8" 3-Way



1/4" 4-Way

Operating Information

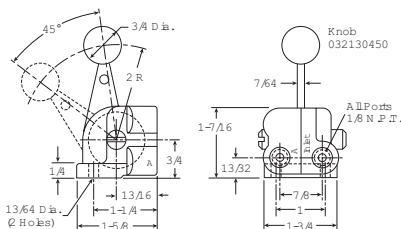
Operating pressure:	Max. 200 PSIG air only Min. 26" Hg vacuum
Temperature range:	-40°F to 212°F (-40°C to 100°C) (If it is possible that the ambient temperature may fall below freezing, the medium must be moisture free to prevent internal damage or unpredictable behavior.)

Hand Operated Sliding Seal Valve

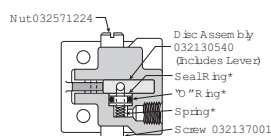
Symbol	Port Size	Function	Cv (Avg)	Service Kit*	Part Number
	1/8"	3-Way, 2-Position, Detented	0.54	032130899	032130599
	1/8"	4-Way, 2-Position, Detented	0.54	032130899	032140299
	1/4"	4-Way, 3-Position, Detented, Center Blocked	1.25	008230299	008240109

Note: 3-Way exhaust passage is through an untapped hole in bottom side of valve.

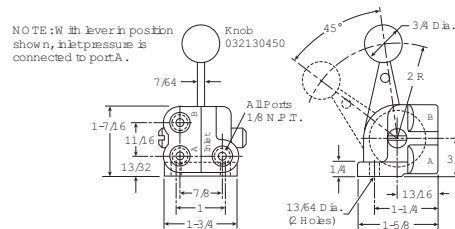
1/8" 3-Way 032130599



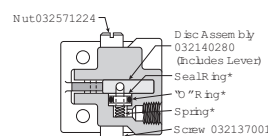
Service Kit 032130899*



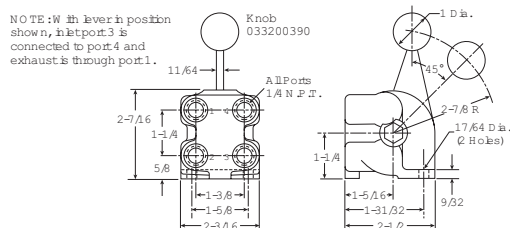
1/8" 4-Way 032140299



Service Kit 032130899*

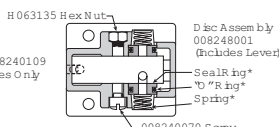


1/4" 4-Way 008240109



Service Kit 008230299*

K01R011025 Ball Supplied on #008240109
 008240080 Spring Four Way Valves Only



Most popular.

* Service kits contain asterisk items



For inventory, lead times, and kit
 lookup, visit www.pdnplu.com

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Parker Hannifin Corporation
 Pneumatic Division
 Richland, Michigan
www.parker.com/pneumatics

Directair 2
 & 4 Series

Viking Xtreme
 Lever Series

42 Lever /
 Pedal Series

M0 Series

Safety

E

Manual / Mechanical
 Valves

Brass Poppet /
 Sliding Seal

Control Panel
 Products

Sensing

Directair 2
& 4 Series

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Pedal Series

MO Series

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Control Panel
Products

Sensing

Button Operated Valves

2 & 3-way normally closed poppet, 1/4" Port valve operates at the press of a button and may be installed in a pipe line or used as a portable blow gun attached to a length of hose.

CAUTION:
Install guards on all hand operated valves.
Accidental operation can cause personal injury.



Material specifications

Internal components	Brass, stainless and plated steel
Body	Brass
Seals	Buna N

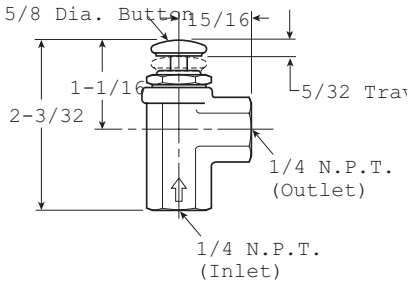
Operating Information

Operating pressure:	Max. 150 PSIG air only Min. 0 PSIG
Temperature range:	-20°F to 180°F (-28°C to 82°C)

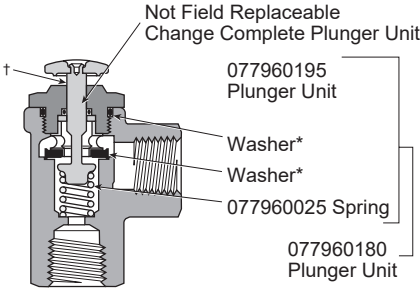
Button Operated Valves

	Port Size	Function	Cv (Avg)	Old Number	Service Kit	Part Number
	1/4"	2-way	0.94	7796SP1	077960105	077960199
	1/4"	3-way	0.94	8187	077960105	081870129

Dimensions



Replacement Parts

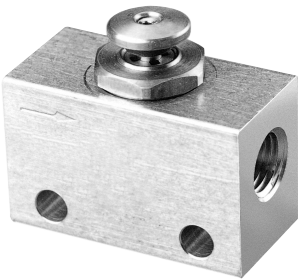


† 077960199 2-Way valve shown.
* Included in service kits listed above.

Hand / Cam Operated Valves

Inline, button-operated, 2 & 3-way normally closed poppet, 1/4" port valve has mounting holes for single or gang mounting. Actuation by hand, cam or mechanical fingers. Valves should be used with filtered and lubricated air.

CAUTION:
Install guards on all hand operated valves.
Accidental operation can cause personal injury.



Operating Information

Operating pressure:

Max. 150 PSIG air only
Min. 0 PSIG

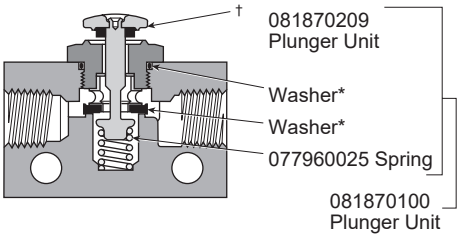
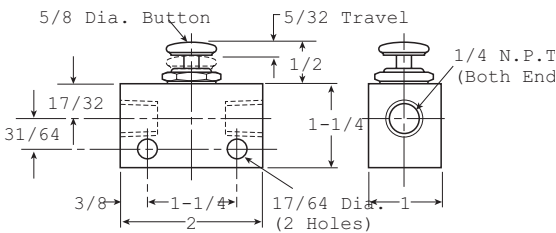
Temperature range:

-20°F to 180°F (-28°C to 82°C)

Hand / Cam Operated Valves

	Port Size	Function	Cv (Avg)	Old Number	Service Kit	Part Number
	1/4"	2-Way	0.94	7796SP5	077960105	077960319
	1/4"	3-Way	0.94	8187SP1	077960105	081870139

Replacement Parts



† 081870139 3-Way valve shown.
* Included in service kits listed above.



For inventory, lead times, and kit lookup, visit www.pdnplu.com

Directair 2 & 4 Series	Viking Xtreme Lever Series	42 Lever / Pedal Series	M0 Series	Safety	E	Manual / Mechanical Valves	Brass Poppet / Sliding Seal	Control Panel Products	Sensing
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Directair 2
& 4 Series

Viking Xtreme
Lever Series

4/2 Lever /
Pedal Series

MO Series

Safety

M

Manual / Mechanical
Valves

Brass Poppet /
Sliding Seal

Control Panel
Products

Sensing

Bleed Valves

This 2-way normally closed bleeder valve is an accessory that may be used with any double pilot-operated valve (bleed type). It provides manual or cam-operated control. A 1/4" pipe thread fits either the pilot valve port or the feeder airline. Opposite end has standard 1/2-20 thread for easy mounting on machine or panel. Valves should be used with filtered and lubricated air.



Material specifications

Internal components	Brass, stainless steel
Body	Brass
Seals	Fluorocarbon

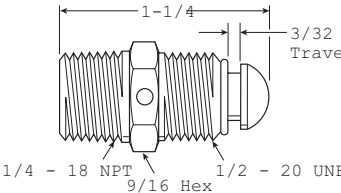
Operating Information

Operating pressure:	Max. 150 PSIG air only Min. 0 PSIG
Temperature range:	-40°F to 450°F (-40°C to 232°C)

Bleed Valves

	Port Size	Function	Part Number
	1/4"	2-way	315139000

Dimensions



Control Panel Products

HUMAN-MACHINE DIALOG requires devices such as push buttons and selector switches to provide command inputs. A wide variety of these devices are available to meet most application needs; in both pneumatic and electrical switch bodies. All of these devices use the 22 mm (7/8") mounting standard.



Complete Assemblies— 3/2 Valve Bodies with 5/32" Instant Straight Connections

Flush Push Buttons

	Color	Function	Type of Switching*	Part Number
	Black		NNP	PXBB3111BA2
	Green	Spring Return		PXBB3111BA3
	Red			PXBB3111BA4
	Black	Spring Return	NNP+NP	PXBB3251BA2
	Black		Single Universal 3-Way	PXBB4131BA2
	Green	Spring Return		PXBB4131BA3
	Red			PXBB4131BA4
	Black	Spring Return	Dual Universal 3-Way	PXBB4231BA2

* Type of switching: Universal 3-way: valve can be connected either as NP or NNP as required by connecting the primary air supply to port 1 or port 3.

Note: Mount up to three valves on mounting ring.

Mushroom Head Push Buttons (40mm Diameter)

	Color	Function	Type of Switching*	Part Number
	Black	Spring Return	NNP	PXBB3111BC2
	Red	Push-Pull		PXBB3111BT4
	Red	Push-Pull	NP	PXBB3121BT4
	Black	Spring Return	Single Universal 3-Way	PXBB4131BC2
	Red	Push-Pull		PXBB4131BT4

* Type of switching: Universal 3-way: valve can be connected either as NP or NNP as required by connecting the primary air supply to port 1 or port 3.

Note: Mount up to three valves on mounting ring.

Selector Switches

	Color	Function	Type of Switching*	Part Number
	Black	2 Maintained	NNP	PXBB3111BD2
	Black	Positions with	NNP+NNP	PXBB3211BD2
	Black	Std. Handle	NNP+NP	PXBB3251BD2
	Black	3 Maintained	NNP+NNP	PXBB3211BD3
	Black	Positions with Cdle	NNP+NP	PXBB3251BD3
	Black	3 Positions, Spring Return to Center with Long Handle	NNP+NNP	PXBB3211BJ5
	Black	2 Maintained Positions with Std. Handle	Single Universal 3-Way	PXBB4131BD2
	Black	2 Maintained Positions with Std. Handle	Dual Universal 3-Way	PXBB4231BD2
	Black	3 Maintained Positions with Std. Handle	Dual Universal 3-Way	PXBB4231BD3
	Black	3 Maintained Positions with Long Handle	Dual Universal 3-Way	PXBB4231BJ5

* Type of switching: Universal 3-way: valve can be connected either as NP or NNP as required by connecting the primary air supply to port 1 or port 3.

Most popular.



For inventory, lead times, and kit lookup, visit www.pdnplu.com

E67

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Directair 2
& 4 SeriesViking Xtreme
Lever Series42 Lever /
Pedal Series

M0 Series

Safety

E

Manual / Mechanical
ValvesBrass Poppet /
Sliding SealControl Panel
Products

Sensing

For Use With PXBB Valve Bodies and ZBE Electrical Switch Bodies

Push Buttons

				Plastic Head**	Metal Head*
	Color	Function	Type	Part Number	
	Black	Spring Return	Flush	ZB5AA2	ZB4BA2
	Green			ZB5AA3	ZB4BA3
	Red			ZB5AA4	ZB4BA4
	Yellow			—	ZB4BA5
	Blue			—	ZB4BA6
	Black	Spring Return	Extended	ZB5AL2	ZB4BL2
	Green			ZB5AL3	ZB4BL3
	Red			ZB5AL4	ZB4BL4
	Yellow			—	ZB4BL5
	Blue			—	ZB4BL6
	Black	Spring Return	Booted	—	ZB4BPA2
	Green			—	ZB4BPA3
	Red			—	ZB4BPA4
	Yellow			—	ZB4BPA5
	Blue			—	ZB4BPA6
	Black	Detent 2 Position	Flush	—	ZB4BH02
	Green			—	ZB4BH03
	Red			—	ZB4BH04
	Yellow			—	ZB4BH05
	Blue			—	ZB4BH06

* ZB4*** model numbers are metal head operators

** ZB5*** model numbers are plastic head operators, use with plastic mounting ring.



For Push Buttons and Visual Indicators

Mounting Ring for Valve Bodies, Switch Bodies and Operating Heads

Description	Part Number
 Metal Mounting Ring	ZB4BZ009
 Plastic Mounting Ring	ZB5AZ009

Note: To release push button from mounting ring, pull lever on top of mounting ring up and remove push button operator. To assemble push button operator to mounting ring, align arrows and snap into place.

Selector Switches



Standard black handle			
Description	Function	Part Number*	
Maintained	2 positions	ZB4BD2	
Spring Return from Right to Left		ZB4BD4	
Maintained	3 positions	ZB4BD3	
Spring Return to Center from Left and Right		ZB4BD5	
Maintained Right Spring Return from Left to Center	3 positions	ZB4BD7	
Maintained Left Spring Return from Right to Center	3 positions	ZB4BD8	



Long Black Handle			
Maintained	2 positions	ZB4BJ2	
Spring Return from Right to Left		ZB4BJ4	
Maintained	3 positions	ZB4BJ3	
Spring Return to Center from Left and Right		ZB4BJ5	

* ZB4*** model numbers are metal head operators

Key Operated Selectors

Key Withdrawal	Function	Part Number*
Left	2 Maintained Positions	ZB4BG2
Left and Right		ZB4BG4
Center	3 Maintained Positions	ZB4BG3
Left and Right		ZB4BG5
Center	3 Positions 2 Spring Return to Center	ZB4BG7

* ZB4*** Model numbers are metal head operators

Mushroom Head Push Buttons with Key Select

Color	Function	Description	Part Number*
Red	Latching Turn to Release	Ø 40mm head	ZB4BS844
Red	Key Latching		ZB4BS944

* ZB4*** model numbers are metal head operators

Most popular.



For inventory, lead times, and kit lookup, visit www.pdnplu.com

For Use With 2B4* Metal Operating Heads**



* NNP: Normally non-passing.
Note: Mount up to 3 valves on mounting ring for push buttons.
Mount up to 2 valves on mounting ring for selector switches, valves cannot be mounted in center position.

Specifications

Air Quality – Standard Shop Air, Lubricated or Dry		40 µm Filtration
Flow –	PXBB3•	Cv=.08
	PXBB4•	Cv=.18
Materials –	Body	Polyamide
	Operating Head	Zinc Alloy & Plastic
Operating Positions		All Positions
Operating Pressure –		
	PXBB3•	15 to 115 PSIG (1 to 9 bar)
	PXBB4•	15 to 145 PSIG (1 to 10 bar)
Ports	5/32" Instant for Semi-Rigid Nylon or Polyurethane Tube	
Operating Temperature –	5°F to 140°F (-15°C to 60°C)	

Additional Valve Bodies



Connections	Function	Type of Switching*	Part Number
5/32" instant straight	3/2	NNP	PXBB3911
5/32" instant swivel			PXBB3912
5/32" instant straight	3/2	NP	PXBB3921
5/32" instant swivel			PXBB3922
5/32" instant straight	3/2	Universal	PXBB4931
5/32" instant swivel			PXBB4932

* NNP: Normally non-passing.

Most popular.



For inventory, lead times, and kit lookup, visit www.pdnplu.com

Directair 2 & 4 Series	Viking Xtreme Lever Series	42 Lever / Pedal Series	M0 Series	Safety	E	Manual / Mechanical Valves	Brass Poppet / Sliding Seal	Control Panel Products	Sensing
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For Push Buttons and Visual Indicators

Legend Plates for PXBB Devices (22mm)

Description	Part Number
Without Text for Customer Engraving	
Black / red background (white letters)	ZBY2101
Yellow / white background (black letters)	ZBY4101
With Text for Push Buttons	
Start	ZBY2303
Stop	ZBY2304
Forward	ZBY2305
Reverse	ZBY2306
Up	ZBY2307
Down	ZBY2308
On	ZBY2311
Off	ZBY2312
Open	ZBY2313
Close	ZBY2314
Inch	ZBY2321
Reset	ZBY2323
Power On	ZBY2326
Slow	ZBY2327
Fast	ZBY2328
Emergency stop	ZBY2330
Run	ZBY2334
With Text for 2-Position Selectors	
Off On	ZBY2367
With Text for 3-Position Selectors	
Hand Off Auto	ZBY2387



Blank Legend Plates for Inscription

For PXBB devices (2 lines of 11 characters maximum)
Please indicate the required text when ordering.

Description	Part Number
Black Background / White Letters	ZBY2002

For 22mm Visual Indicators Only

2 lines of 11 characters maximum
Please indicate the required text when ordering.

Description	Part Number
Black Background / White Letters	ZB2BY2002

Electrical Switch Bodies

When combined with pneumatic valves, these contact blocks allow different forms of power to be provided from a single push button. Can be mounted with both types of valves PXBB3 / PXBB4.

Type of contact	Part Number
Normally Open (NO)	ZBE101
Normally Closed (NC)	ZBE102



Note: Plastic mounting ring ZB5AZ009 to be used with ZB5 plastic operating heads.
Metal mounting ring ZB4BZ009 to be used with ZB4 metal operating heads.

Electrical specification: 240V, 10 Amp

 Most popular.



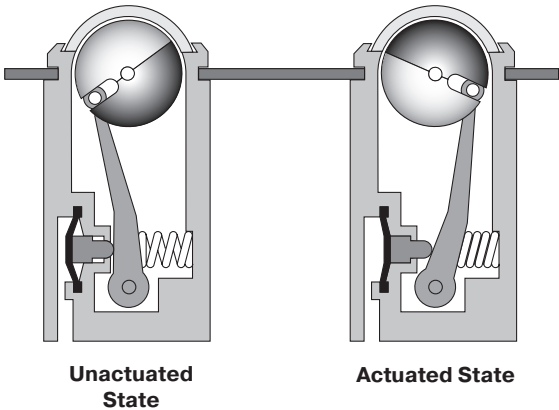
For inventory, lead times, and kit lookup, visit www.pdnplu.com

E70

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Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Pneumatic Visual Indicators

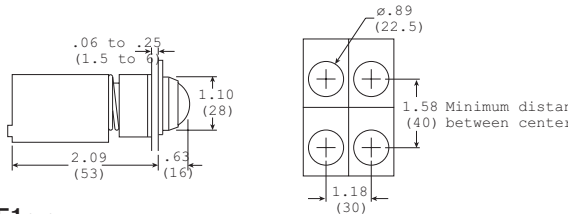
An indicator ball is rotated by a pneumatic input, changing the visible color. The ball sits behind a clear plastic window, providing a wide field of view. The visual indicators are available in five brightly colored Day-Glow paints for increased visibility. Like push buttons and selector switches, visual indicators use the 22mm (7/8") mounting standard.



With 5/32" Instant Connections



Notes: The Pneumatic Indicators are black in one position and colored in the other. The colored position corresponds either to the presence of a pressure ("ON" Indicator) or the absence of pressure ("OFF" Indicator).



PXVF1 • •

Specifications

Air Quality –	
Standard Shop Air, Lubricated or Dry	40 µm Filtration
Materials –	
Body	Polyamide
Operating Head	Zinc Alloy & Plastic
Number of Operations with Dry Air at 90 PSI (6 bar) and 68°F (20°C) - Frequency 1 Hz	
Mushroom Head	300,000 Operations
Operating Positions	All Positions
Operating Pressure –	15 to 115 PSIG (1 to 8 bar)
Ports	5/32" Instant for Semi-Rigid Nylon or Polyurethane Tube 10-32 UNF Available
Operating Temperature –	
Operating	32°F to 122°F (0°C to 50°C)
Storage	-22°F to 140°F (-30°C to 60°C)

Mounting Accessories

	Color	Description	Part Number
	—	Plastic Head (ZB5) Mounting Nut Tightening Tool	ZB5AZ905
	Black Plastic	Guard for 40mm	ZBZ1602

Most popular.

Modular Pneumatic / Electric Push Buttons

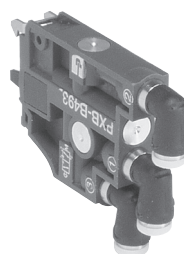
As with electrical contact switches, pneumatic valve modules can be mounted on a number of different operating heads.

- Pneumatic normally non passing (NNP) is equivalent to electrical normally open (N.O.).
- Pneumatic normally passing (NP) is equivalent to electrical normally closed (N.C.).

Note: Electrical switches can be stacked, but the rear connection on pneumatic switches prevents stacking. Therefore, when mixing electrical and pneumatic switch bodies on the same operator, the pneumatic switch must be mounted last.



PXBB3911



PXBB4932



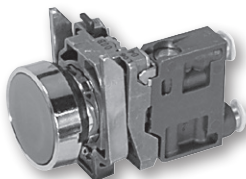
PXBB4931

Push Buttons

Spring Return or Latching
Mushroom Headed Push Buttons



Standard
Push Button



Visual indicators



Selector Switches

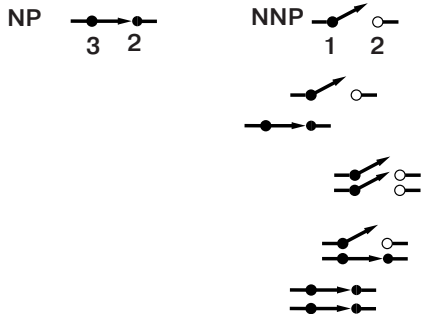
2 or 3 Positions,
Fixed or
Return To Center



Functionality Explanation

Fluid Power			Electrical	
Function	Symbol	Universal Description	Function	Symbol
Normally Closed (N.C.)		Normally Non-Passing (NNP)	Normally Open (N.O.)	
Normally Open (N.O.)		Normally Passing (NP)	Normally Closed (N.C.)	

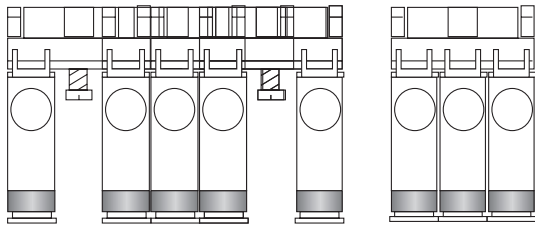
Type of Switching: Universal 3-Way: Valve can be connected either as NP or NNP as required by connecting the primary air supply to port 1 or port 3.



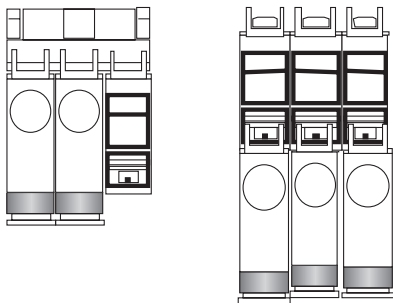
Combination of Output Devices On a Single Mounting Block

Up to 3 output devices (valves or electrical contacts) can be mounted side by side on 1 mounting block.

Note: The central position can only be activated by push button heads.



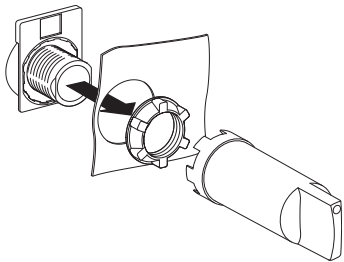
Electrical Contacts and Valves can be Combined Either Side by Side, or by Mounting the Valve on the Back of the Electrical Contact.



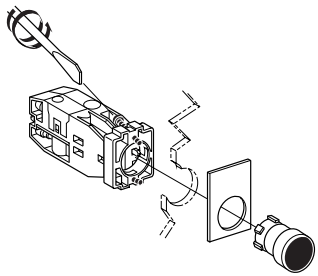
Side by Side Combination

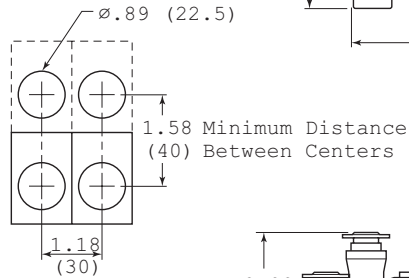
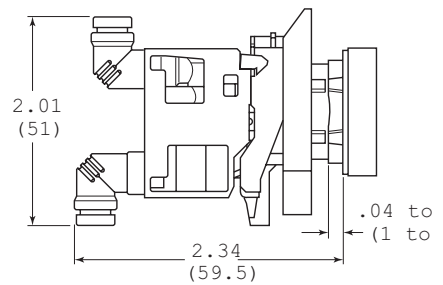
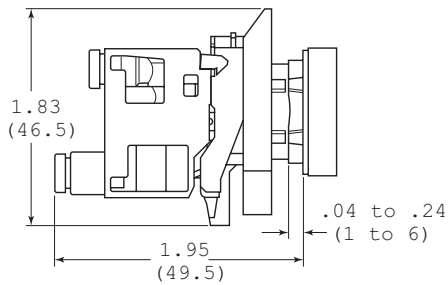
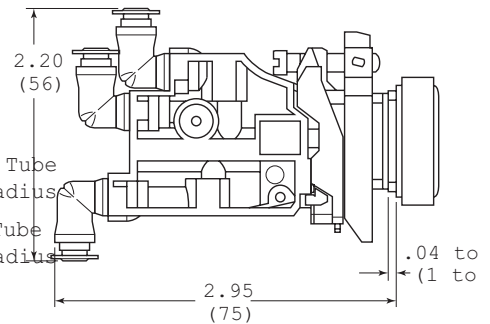
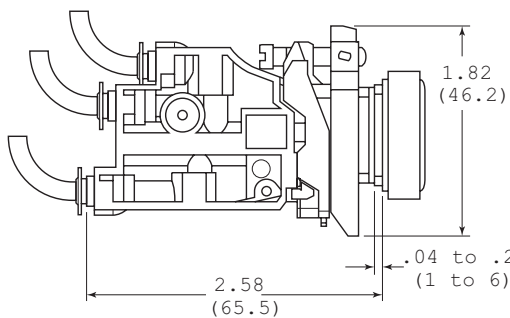
Combination by Mounting Valves On the Back of the Electrical Contact

Assembling Output Devices and Heads On ZB5 Series Mounting Block



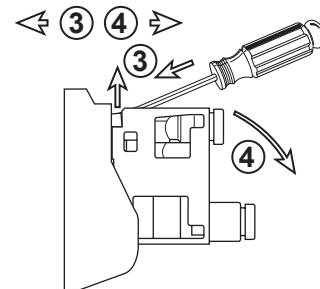
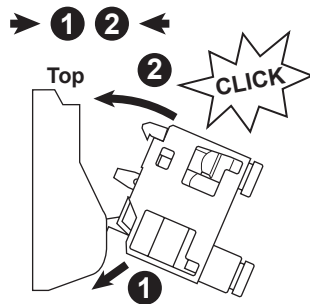
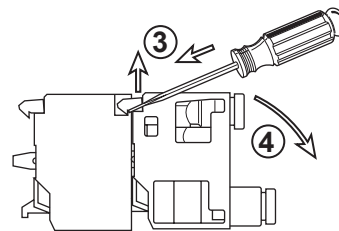
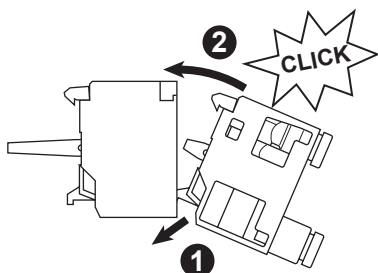
Replacement Old Style Mounting



Dimensional Data**PXB-B3 Dimensions****PXB-B4 Dimensions**

Tube Bending Radius
For PXBB3 and PXBB4

- 4 mm O.D. x 2 mm I.D. Tube = Minimum 0.39 (10) Radius
- 4 mm O.D. x 2.7 mm I.D. Tube = Minimum 0.59 (15) Radius

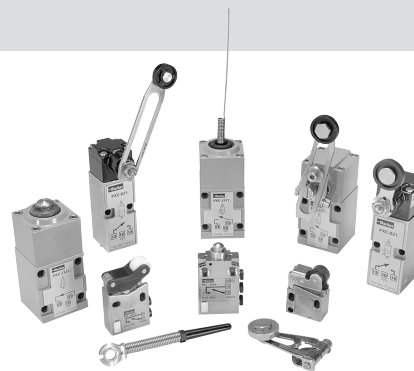
Assembly**Assembling PXB Valves On Mounting Block****Assembling PXB Valves On the Back of the Electrical Contact**

Limit Switches

To achieve the sensing or feedback function, pneumatic sensors can be:

- Limit switches in a variety of sizes and configurations
- Pressure switches with many adjustable ranges
- Components designed specifically for pneumatic technology using pressure variation, air bleed or blocking for detection.

A wide variety of pneumatic sensors are available to suit any application requirement.



Material specifications

Body	Zinc alloy
Poppets	Polyurethane
Seals	Nitrile (Buna N)

Operating information

Operating pressure:	40 to 115 PSIG (3 to 8 bar)
Operating temperature:	
Operating	32°F to 122°F (0°C to 50°C)
Storage	-22°F to 140°F (-30°C to 60°C)

3/2 Miniature Direct Acting Limit Switches 1/16" I.D. Internal Orifice

	Actuator	Type of switching*	Flow SCFM (NI/min)	Nominal Bore	Connection	Part Number
	Steel Plunger Operating Levers Available	NNP	2.2 (60)	1/16" (1.5mm)	5/32" instant	PXCM111
					10-32 UNF	PXCM115
	Plastic Roller	NNP	3.0 (85)		5/32" Instant	PXCM121
					10-32 UNF	PXCM125

7/64" I.D. Internal Orifice

	Plastic Roller	NNP	8.8 (250)	7/16" (2.5mm)	5/32" Instant	PXCM521
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Actuators For Steel Plunger (Use with PXCM11*)

	Plastic Roller Lever	PXCZ11
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* NNP: Normally non-passing.



Specifications

Air Quality – Standard Shop Air, Lubricated or Dry	40 µm Filtration
Maximum Operating Frequency	5 Hz
Number of Operations with Dry Air at 90 PSI (6 bar) and 68°F (20°C) - Frequency 1 Hz	10 million
Operating Positions	All Positions

 Most popular.



For inventory, lead times, and kit lookup, visit www.pdnplu.com

E75

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Directair 2
& 4 SeriesViking Xtreme
Lever Series42 Lever /
Pedal Series

M0 Series

Safety

E

Manual / Mechanical
ValvesBrass Poppet /
Sliding SealControl Panel
Products

Sensing

3/2 Compact Pilot Operated Limit Switches
7/64" I.D. Internal Orifice, 5/32" Instant Connections, Pipeable Exhaust Port

Actuator	Type of Switching*	Flow SCFM (NI/min)	Nominal Bore	Connection	Part Number
 Steel Plunger Operating Levers Available					PXCM601A110
 Steel Roller Plunger	NNP	8.8 (250)	7/64" (2.5mm)	5/32" instant	PXCM601A102
 90° Steel Roller Plunger					PXCM601A103

Standard Duty Limit Switches – “K” Series

Plunger Operated Limit Switches
1/8" I.D. Internal Orifice, 5/32" Instant Connections, Pipeable Exhaust Port

Actuator	Type of Switching*	Flow SCFM (NI/min)	Nominal Bore	Connection	Part Number
 Steel Plunger	NNP				PXCK21101
	NP				PXCK22101
 Steel Roller Plunger	NNP				PXCK21102
	NP				PXCK22102
 Plastic Roller Plunger	NNP	7.4 (210)	1/8" (3mm)	5/32" instant	PXCK21121
	NP				PXCK22121
 Cats Whisker	NNP				PXCK21106
	NP				PXCK22106

* NNP: Normally non-passing.



 Most popular.



For inventory, lead times, and kit lookup, visit www.pdnplu.com

Roller Operated Limit Switches
1/8" I.D. Internal Orifice, 5/32" Instant Connections, Pipeable Exhaust Port

Actuator	Type of Switching*	Flow SCFM (NI/min)	Nominal Bore	Connection	Part Number
	Fixed Delrin Roller Lever Multi-Function Head Actuates: - from Right and Left - from Right - from Left	7.4 (210)	1/8" (3mm)	5/32" Instant	PXCK2110031
					PXCK2210031
	Adjustable Delrin Roller Lever Multi-Function Head Actuates: - from Right and Left - from Right - from Left				PXCK2110041
					PXCK2210041

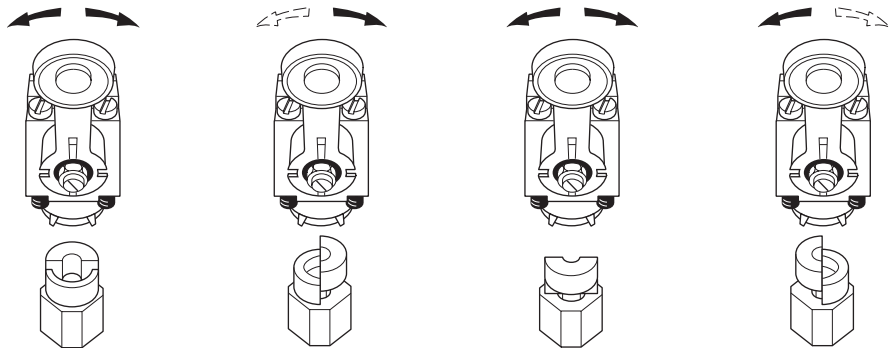
Separate Pneumatic Switch Bodies

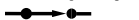
Actuator	Type of Switching*	Part Number
	For Use with Zck Series Operating Heads	PXCK211
		PXCK221

Pneumatic Switch Bodies with Rotary Heads

Actuator	Type of Switching*	Part Number
	Multi-Function Head Actuates: - from Right and Left - from Right - from Left	PXCK21100
		PXCK22100

Field Conversion of Rotary Operating Head



* NNP: Normally non-passing. 
NP: Normally passing. 

 Most popular.



For inventory, lead times, and kit lookup, visit www.pdnplu.com

E77

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Pneumatic Division
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Directair 2
& 4 Series

Viking Xtreme
Lever Series

42 Lever /
Pedal Series

M0 Series

Safety

E

Manual / Mechanical
Valves

Brass Poppet /
Sliding Seal

Control Panel
Products

Sensing

Standard Duty Limit Switches – “K” Series

Operating Heads For Use With PXCK Switch Bodies

Actuator	Description	Part Number
Rotary operated		
	Die Cast Zinc	ZCKG00
Plunger operated		
Roller plunger	Plunger Operated	ZCKD02
Whisker		ZCKD06
Rod plunger		ZCKD10
Delrin roller lever on plunger		ZCKD21
Steel roller lever on plunger		ZCKD23

Operating Levers for Rotary Heads For Use With Rotary Head ZCKG00

Actuator	Description	Part Number
	Steel 1/8" Square	ZCKY51
	Fiberglass 1/8" Dia. Round	ZCKY52
	Plastic Spring Rod Lever	ZCKY81
	Metal Spring Rod Lever	ZCKY91
	Delrin Roller Lever	ZCKY11
	Steel Roller Lever	ZCKY13
	Adjust. Delrin Roller Lever	ZCKY41
	Adjust. Steel Roller Lever	ZCKY43

Heavy Duty Limit Switches – “J” Series

Switch Bodies Only

	Type of Switching*	Part Number
	NNP	PXCJ117
	NP	PXCJ127

Separate Pneumatic Switch Bodies

Direction of Actuator	Type of Switching*	Part Number
	Right & Left, Spring Return	PXCJ11701
	Right or Left, Spring Return	PXCJ11705
	Right & Left, Spring Return	PXCJ12701
	Right or Left, Spring Return	PXCJ12705

Operating Levers for Rotary Heads Die Cast Zinc. For Use With PXCJ Switch Bodies

Operator	Description	Part Number
	Delrin Roller	ZC2JY11
	Steel Roller	ZC2JY13
	Offset Delrin Roller	ZC2JY21
	Plastic Spring Rod	ZC2JY81
	Metal Spring Rod	ZC2JY91
	Delrin Roller	ZC2JY31
	Offset Delrin Roller	ZC2JY41
	Single Track, Delrin Roller	ZC2JY71
	Double Track, Delrin Rollers	ZC2JY61

Top Plunger & Rotary Operating Heads Die Cast Zinc. For Use With PXCJ Switch Bodies

Operation	Description	Part Number
Top Plunger Type		
	Top Push	ZC2JE61
	Top Roller Push	ZC2JE62
	Side Push	ZC2JE63
	Cat's Whisker	ZC2JE70
Rotary Type		
	From Left & Right	ZC2JE01
	Counterclockwise from Right	ZC2JE02
	Clockwise from Left	ZC2JE03
	From Left or Right	ZC2JE05
	Maintained Positions	ZC2JE09

* NNP: Normally non-passing.
NP: Normally passing.

 Most popular.

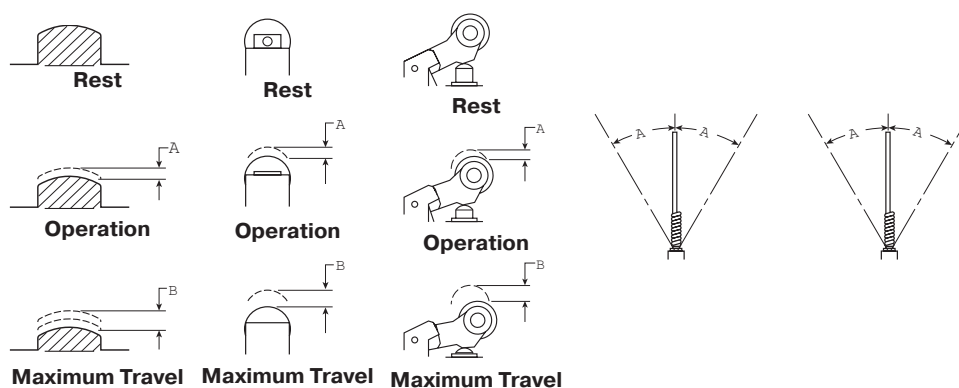


For inventory, lead times, and kit lookup, visit www.pdnplu.com

Operator Specifications

	PXCK2••01	PXCK2••02	PXCK2••03	PXCK2••06	PXCK2••00 + Actuator
Differential Angle	—	—	—	12°	3°
Differential Travel	.008" (0.2 mm)	.008" (0.2 mm)	.008" (0.2 mm)	—	—
Maximum Angle of Travel	—	—	—	—	80°
Maximum Travel (B) at 90 PSIG (6 bar)	.228" (5.8 mm)	.228" (5.8 mm)	.228" (5.8 mm)	—	—
Minimum Pre-Travel (A) at 90 PSIG (6 bar)	.087" (2.2 mm)	.087" (2.2 mm)	.102" (2.6 mm)	—	—
Minimum Operating Force at 90 PSI (6 bar)	3.6 lbf (16N)	4.5 lbf (20N)	3.4 lbf (15N)	—	—
Minimum Operating Torque at 90 PSI (6 bar)	—	—	—	17.0 oz in (120mNm)	29.8 oz in (210mNm)
Operating Angle	—	—	—	35°	31° (Minimum lever travel including pre-travel required for operation)

Operating Diagram



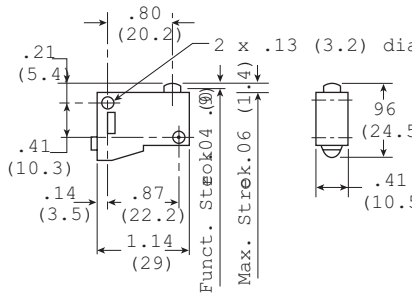
Operators

	PXCM111	PXCM121	PXCM521
Differential Travel at 90 PSI (6 bar)	.006" (0.15 mm)	.012" (0.3 mm)	.020" (0.5 mm)
Maximum Travel (B) at 90 PSIG (6 bar)	.055" (1.4 mm)	.126" (3.2 mm)	.228" (5.8 mm)
Minimum Pre-Travel (A) at 90 PSIG (6 bar)	.035" (0.9 mm)	.079" (2 mm)	.087" (2.2 mm)
Minimum Operating Force at 90 PSI (6 bar)	2.5 lb (11 N)	1.0 lb (4.5 N)	1.6 lb (7 N)
Operating Diagram			

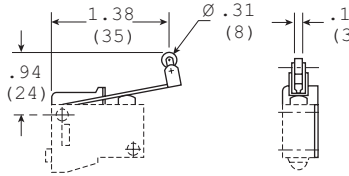
	PXCM601A110	PXCM601A102	PXCM601A103	PXCM601A110 + XCMZ24
Differential Travel at 90 PSI (6 bar)	.012" (0.3 mm)	.008" (0.2 mm)	.020" (0.5 mm)	.047" (1.2 mm) (A)
Maximum Travel (B) at 90 PSIG (6 bar)	.197" (5 mm)	.197" (5 mm)	.197" (5 mm)	—
Minimum Pre-Travel (A) at 90 PSIG (6 bar)	.066" (1.7 mm)	.066" (1.7 mm)	.066" (1.7 mm)	.370" (9.4 mm) (A)
Minimum Operating Force at 90 PSI (6 bar)	5.4 lbf (24 N)	5.2 lbf (23 N)	5.2 lbf (23)	4.3 lbf (19)
Operating Diagram	A = cam travel			

Miniature Limit Switches

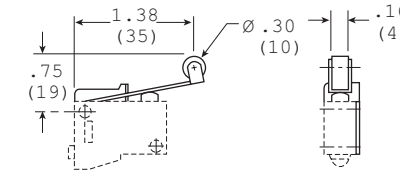
PXCM111



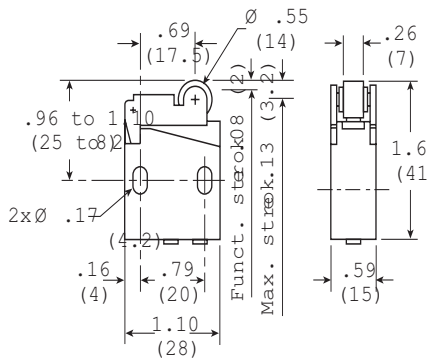
PXCZ12



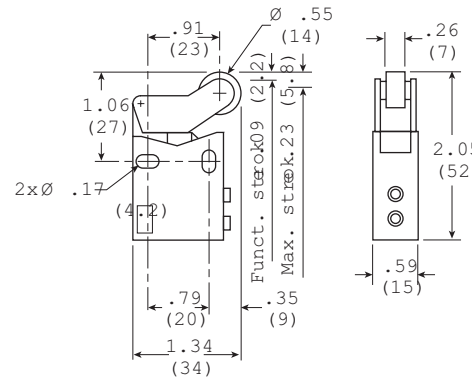
PXCZ11



PXCM121, PXCM131

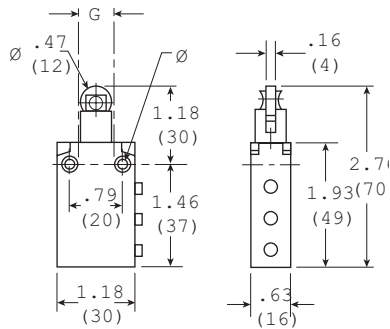


PXCM521

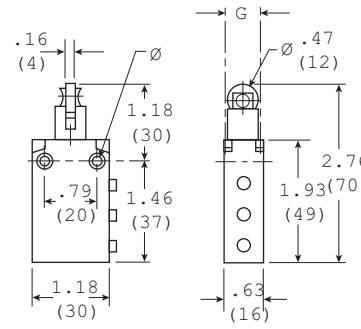


Compact Limit Switches

PXCM601A102

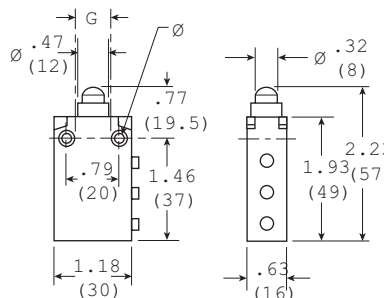


PXCM601A103



Ø:
 2 mounting holes Ø .17" (4.3)
 2 countersunk Ø .32" (8.2)
 depth 4 mm

PXCM601A110

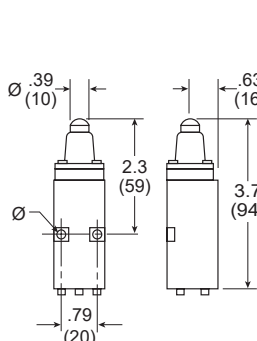


G:
 top mounting holes, 2 x M5
 .71" (18 mm) centers

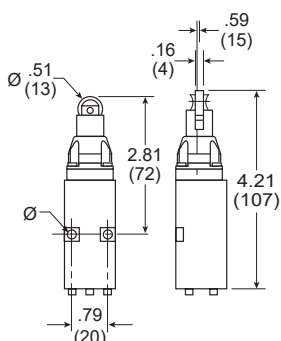
Dimensional Data

K Series

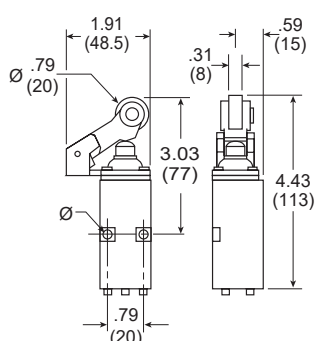
PXCK21101, PXCK22101



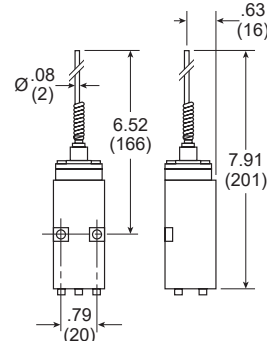
PXCK21102, PXCK22102



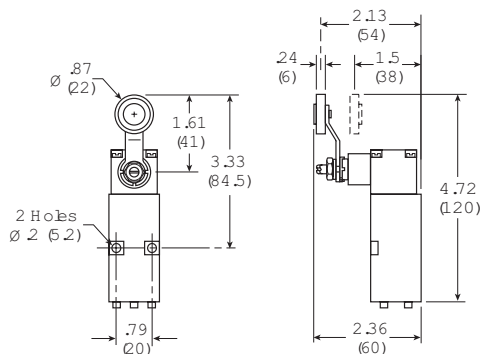
PXCK21121, PXCK22121



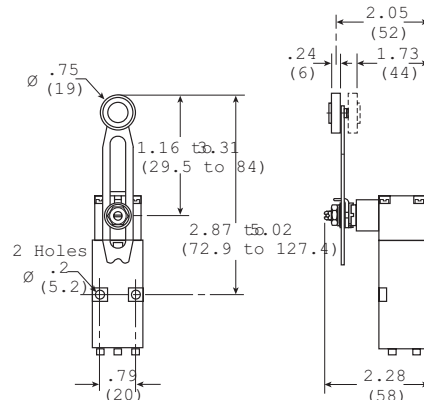
PXCK21106, PXCK22106



PXCK2110031, PXCK2210031

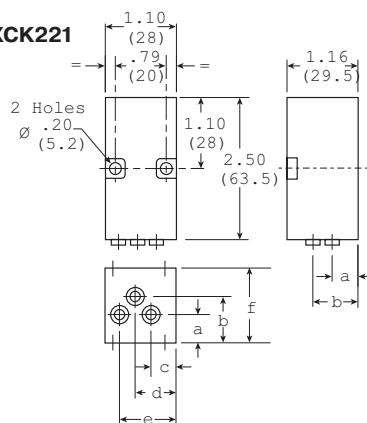


PXCK2110041, PXCK2210041



Pneumatic Switch Bodies

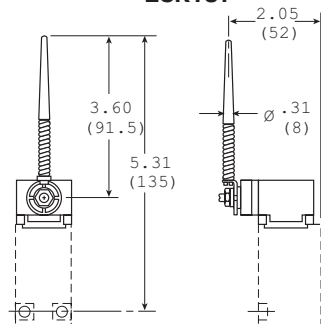
PXCK211, PXCK221



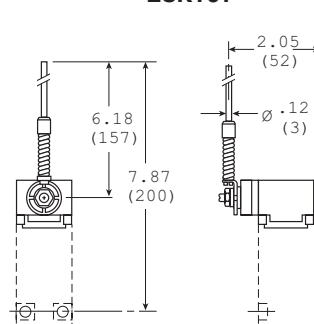
	inch	mm
a	.39	10
b	.77	19.5
c	.35	9
d	.61	15.5
e	.87	22
r	1.66	29.5

Rotary Heads with Operating Levers

ZCKY81



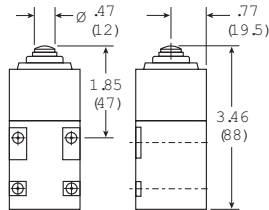
ZCKY91



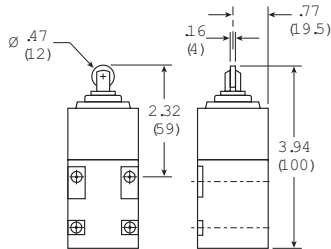
J Series

Switch Body With Plunger Heads

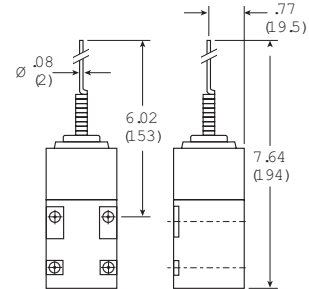
With ZC2JE61



With ZC2JE62

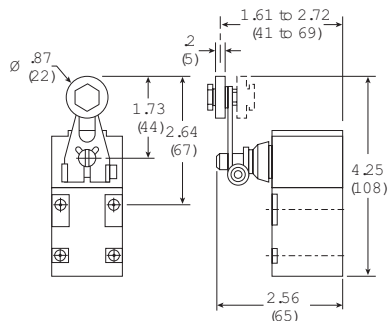


With ZC2JE70

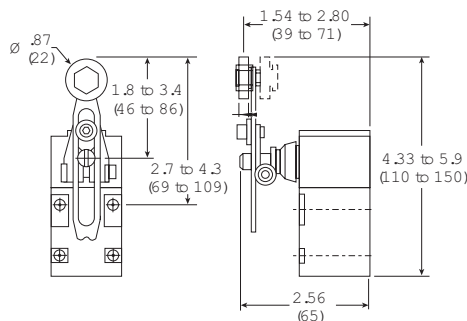


Switch Body With Rotary Heads and Operating Levers

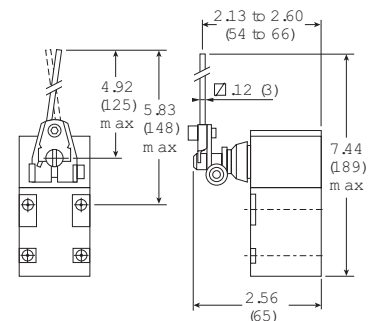
With ZC2JY11



With ZC2JY31

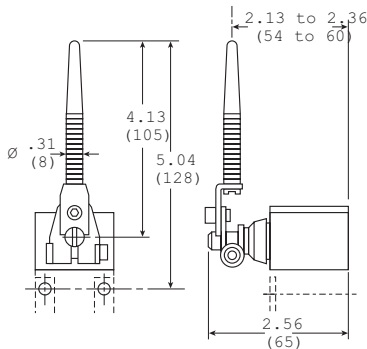


With ZC2JY51

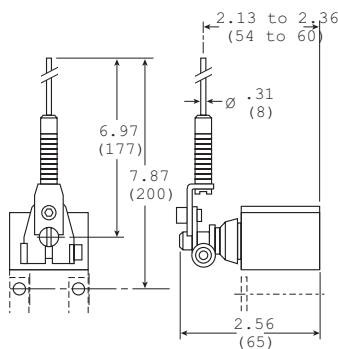


Rotary Heads With Operating Levers

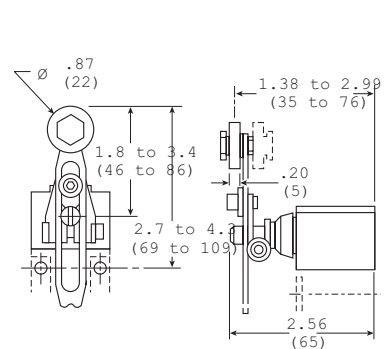
ZC2JY81



ZC2JY91

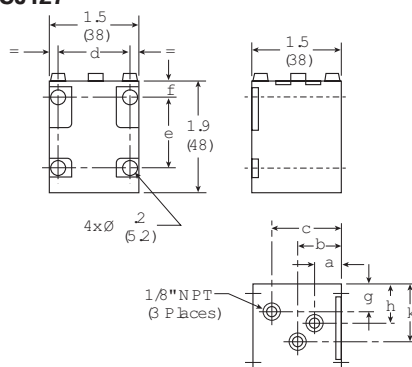


ZC2JY41



Pneumatic Switch Bodies

PXCJ117, PXCJ127



	inch	mm
a	.47	12
b	.75	19
c	1.16	29.5
d	1.14 to 1.18	29 to 30
e	1.18	30
f	.28	7
g	.43	11
h	.51	13
k	.94	24

Directair 2 & 4 Series	Viking Xtreme Lever Series	42 Lever / Pedal Series	MO Series	Safety		Manual / Mechanical Valves	Brass Poppet / Sliding Seal	Control Panel Products	Sensing
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For inventory, lead times, and kit
lookup, visit www.pdnplu.com