BPV Series
Pneumatic
Pinch Valves

We make
things MOVE

We Make Things Move®

A forward-thinking innovator, Bimba provides industry-leading pneumatic, hydraulic, electric, and vacuum motion solutions that are easy-to-use, reliable and ready for your engineering challenges.

Doing whatever it takes to help you get the job done is what the Bimba companies do best. With an extensive line of industry-leading air cylinders, rotary actuators, linear thrusters, rodless cylinders, NFPA, hydraulics, flow controls, position-sensing cylinders, valves, switches, and air preparation equipment, the people of Bimba are ready to tackle your toughest applications.

Bimba is part of IMI Precision Engineering, a world leader in motion and fluid control technologies. Wherever precision, speed, and engineering reliability are essential, we deliver exceptional solutions which improve the productivity and efficiency of customers' equipment.

Our range of high-performance products, such as actuators, valves, valve islands, pressure monitoring controls and air preparation products together with trusted products brands including IMI Norgren, IMI Buschjost, IMI FAS, IMI Herion and IMI Maxseal underpin our position as a leading global supplier.

Part of IMI plc, we have a sales and service network in 75 countries, as well as manufacturing capability in the USA, Germany, China, UK, Switzerland.

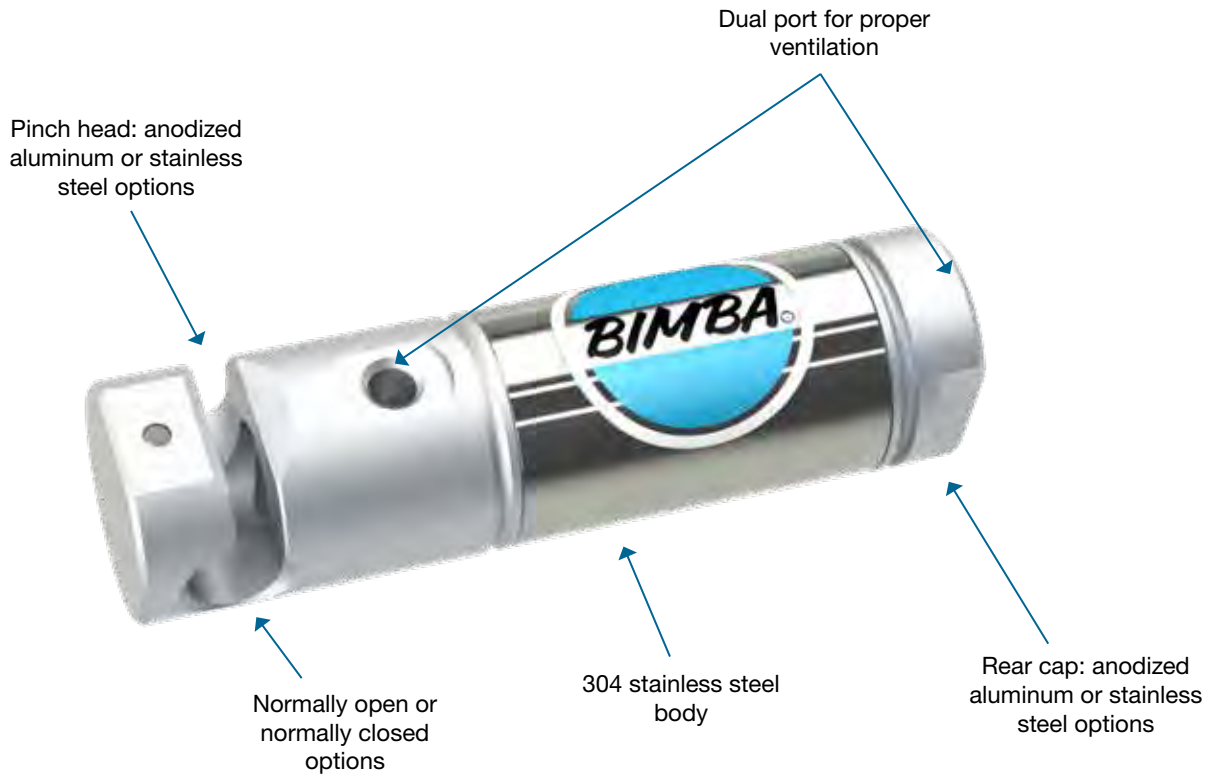# Contents

BPV Series Pneumatic Pinch Valves

Get a more affordable option when controlling the flow of media within your application by using Bimba's new BPV Series Pneumatic Pinch Valves. This series of pinch valves was designed to open and close flexible tubing to get a more accurate control of media flow.

This affordable yet compact pinch valve series is an ideal fit for various market segments from food and beverage, chemical processing, to industrial laboratory sciences and medical device industries. Designed for disposable tubing, these pinch valves provide a simple, easy changeout.

Bimba offers four models with tube slot sizes starting at 3/32" up to 1/2". We even offer configurable mounting options and seal materials.

Product Features

Dual port for proper ventilation

Pinch head: anodized aluminum or stainless steel options

Normally open or normally closed options

304 stainless steel body

Rear cap: anodized aluminum or stainless steel options

Features and Benefits

- Compact in size allowing for placement in tight spaces
- Easy and fast tube replacement
- Long performance with a rated life expectancy of 3 million cycles
- Eliminates the potential chance for media contamination
- All stainless steel:
  » Chemical resistance
  » Washdown compatible
  » Ideal for sterile environments

- Affordable, cost-effective solution with the ability to be configured:
  » Multiple tube slot sizes
  » Optional mounting brackets
  » Optional magnetic position sensing
  » Aluminum or stainless steel options
  » Viton seals, Buna, or FDA seals available

The BPV Series Pneumatic Pinch Valves are designed specifically to open and close tubing in order to control the flow of various forms of media. The tubing is squeezed at the middle of the valve, clamping or pinching its walls together to close the flow path. Our pinch valves are available in models that are either normally closed or normally open that will either stop the flow of fluid or allow the flow of fluid in an unpressurized state.

Materials of Construction

Pneumatic Pinch Valve	
Pinch Head	Anodized Aluminum or Stainless Steel
Rear Cap	Anodized Aluminum or Stainless Steel
Body	Anodized Aluminum or Stainless Steel
Seals	Buna-N, optional Viton or FDA

How It's Used

Market Ideas

- Food and beverage applications
- Industrial industries
- Chemical processing
- Laboratories/medical Devices
- Industrial painting

- Water treatment
- Dispensing, filling, and mixing: resin, glue, epoxy, adhesive, paint, slurries, and other media

Target Applications

The BPV Pneumatic Pinch Valves are uniquely suited for a wide range of applications where the control of fluid from normally closed to normally open is critical. This pinch valves series is ideal for industries where high quantities are necessary and unit price is critical.

- Medical and surgical industries
- Applications requiring linear flow
- Food and beverage
- 3D printing
- Powder feed
- Chromatography - analyzers

Advantages

Feature	Advantage	Benefit
Optional all stainless steel	Eliminates potential contamination of media	Ideal for sterile and washdown applications
Lightweight, compactness	Easily installs in confined spaces or where limited space is available	Easy access to install or replace unit as needed
Affordable	Reduce overall valve costs	Save money and time
Precision and accuracy	Instantly seals or opens	Controls the fluid whereas other solutions may take longer to act or retain dead volumes within
Easy snap-in tube slot	Avoid downtime and saves time	Quick unloading and loading procedures without the entire system going down

Specifications

Key specification information for the BPV Series Pneumatic Pinch Valves is given below. For additional specification information, contact Bimba Customer Service at cs@bimba.com, or 800.44.BIMBA (800.442.4622).

Detail Specifications	
Compliance	RoHS and Reach
Supply Pressure	50 psi minimum; 125 psi maximum
Noise Level	65 dB(A) maximum

Specifications				
Model Number	02	04	06	08
Tube Size, O.D. Supported - Inch (mm)*	0.094 to 0.125 (2.36 to 3.17)	0.156 to 0.250 (4.78 to 6.35)	0.250 to 0.375 (6.35 to 9.5)	0.375 to 0.500 (9.5 to 12.7)
Tube Wall Thickness Supported - Inch (mm)*	0.031 min. (0.78)	0.063 min. (1.6)	0.063 min. (1.6)	0.063 min. (1.6)
Media Pressure, Maximum - psig (barg)	30 (2.07)	30 (2.07)	30 (2.07)	30 (2.07)
Recommended Tubing Durometer**	Up to 65 Shore A	Up to 65 Shore A	Up to 65 Shore A	Up to 65 Shore A
Default (Normal) State	NC and NO	NC and NO	NC and NO	NC and NO
Pinch Gap - Inch (mm)	0.040 (1.016)	0.080 (2.032)	0.080 (2.032)	0.080 (2.032)
Total Opening Nominal - Inch (mm)	0.125 (3,2)	0.250 (6,4)	0.375 (9,5)	0.500 (12,7)
Pinching Force Nominal - LbF (kgF)	Up to 1.8 (0.82)	Up to 4.5 (2.04)	Up to 6.9 (3.13)	Up to 12.2 (5.53)
Min. to Max. Ambient Temperature - F° (C°)	-20° to 200°F (-29° to 90°C)	-20° to 200°F (-29° to 90°C)	-20° to 200°F (-29° to 90°C)	-20° to 200°F (-29° to 90°C)

*Other tubing wall thickness and diameters can potentially be used. Please contact factory with any questions.

**Tube material dependent

Dimensions
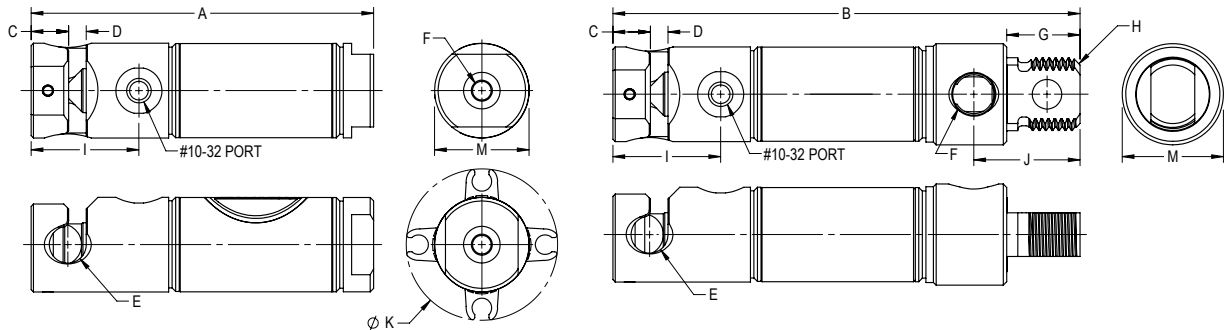
Bore	A	B	C	D	E	F	G	H*	I	J	K	M
02	2.418	2.887	0.258	0.07	0.188	#10-32	0.437	7/16-20	0.73	0.563	1.06	0.62
04	2.920	3.983	0.320	0.15	0.315	1/8 NPT	0.625	5/8-18	0.92	0.906	1.26	0.86
06	3.685	4.560	0.528	0.19	0.438	1/8 NPT	0.625	5/8-18	1.32	0.906	1.60	1.12
08	4.498	5.622	0.625	0.25	0.625	1/8 NPT	0.812	3/4-16	1.59	1.187	1.79	1.33

*Intended for use as a stud mount, pivot is not recommended.

When ordering T1, T2, T3, and T4 use the drawing below for track locations:
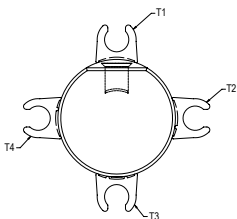
How to Accessorize

Accessories such as switches and mounting brackets are available. When ordering a magnet option for position sensing, any version of a band mounted switches can be used, but we highly recommend using Bimba's mini track mounted switches for a more low profile design.

Track Mounted Switches

MHF-90, MHC-90, MHK-90, MR, MR-90, MS, MS-90, MSC, MSC-90, MSK, MSK-90

EdgeSwitch™ Solid-State Switch Features:
- Solid-State construction
- Precise Edge Detection technology senses magnet edges/thickness
- Smaller operating window
- Improved repeatability
- Longer life
- Low leakage currrent, 0.1 mA at 28VDC

4mm Round (C-Slot) Features:
- Reed, GMR or Edge switch sending technology
- CE, RoHS compliant
- Stock units
- 90° versions now available

90° Switch

Mini EdgeSwitch™ Track Mounted Switches

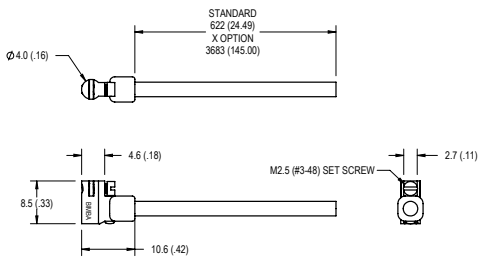| Part Number	Description
MHF-90	Mini EdgeSwitch™, 2-wire, Solid-State Type, LED, 10-28VDC, 50mA, 24" Pigtail Leads, 90° version
MHFX-90	Mini EdgeSwitch™, 2-wire, Solid-State Type, LED, 10-28VDC, 50mA, 144" Pigtail Leads, 90° version
MHFQS-90	Mini EdgeSwitch™, 2-wire, Solid-State Type, LED, 10-28VDC, 50mA, with M8 Male Swivel Connector, 90° version
MHFQCS-90	Mini EdgeSwitch™, 2-wire, Solid-State Type, LED, 10-28VDC, 50mA, with M8 Male Swivel Connector and 2m Mating Cable, 90° version
MHFQCXS-90	Mini EdgeSwitch™, 2-wire, Solid-State Type, LED, 10-28VDC, 50mA, with M8 Male Swivel Connector and 5m Mating Cable, 90° version
MHC-90	Mini EdgeSwitch™ Sourcing Switch (PNP), 3-wire, Solid-State Type, LED, 5-28VDC, 100mA, 24" Pigtail Leads, 90° version
MHCX-90	Mini EdgeSwitch™ Sourcing Switch (PNP), 3-wire, Solid-State Type, LED, 5-28VDC, 100mA, 144" Pigtail Leads, 90° version
MHCQS-90	Mini EdgeSwitch™ Sourcing Switch (PNP), 3-wire, Solid-State Type, LED, 5-28VDC, 100mA, with M8 Male Swivel Connector, 90° version
MHCQCS-90	Mini EdgeSwitch™ Sourcing Switch (PNP), 3-wire, Solid-State Type, LED, 5-28VDC, 100mA, with M8 Male Swivel Connector and 2m Mating Cable, 90° version
MHCQCXS-90	Mini EdgeSwitch™ Sourcing Switch (PNP), 3-wire, Solid-State Type, LED, 5-28VDC, 100mA, with M8 Male Swivel Connector and 5m Mating Cable, 90° version
MHK-90	Mini EdgeSwitch™ Sinking Switch (NPN), 3-wire, Solid-State Type, LED, 5-28VDC, 100mA, 24" Pigtail Leads, 90° version
MHKX-90	Mini EdgeSwitch™ Sinking Switch (NPN), 3-wire, Solid-State Type, LED, 5-28VDC, 100mA, 144" Pigtail Leads, 90° version
MHKQS-90	Mini EdgeSwitch™ Sinking Switch (NPN), 3-wire, Solid-State Type, LED, 5-28VDC, 100mA, with M8 Male Swivel Connector, 90° version
MHKQCS-90	Mini EdgeSwitch™ Sinking Switch (NPN), 3-wire, Solid-State Type, LED, 5-28VDC, 100mA, with M8 Male Swivel Connector and 2m Mating Cable, 90° version
MHKQCXS-90	Mini EdgeSwitch™ Sinking Switch (NPN), 3-wire, Solid-State Type, LED, 5-28VDC, 100mA, with M8 Male Swivel Connector and 5m Mating Cable, 90° version

Mini 4mm Round (C-Slot) Track Mounted Switches

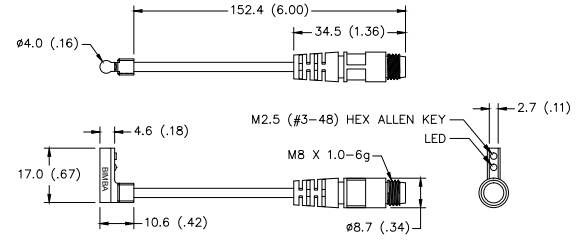| Part Number	Description
MR	Reed Switch, 2 wire, LED, 5-120VAC/VDC, 30mA, 1m Pigtail Leads
MR-90	Reed Switch, 2 wire, LED, 5-120VAC/VDC, 30mA, 1m Pigtail Leads, 90° version
MRQ	Reed Switch, 2 wire, LED, 5-120VAC/VDC, with M8 Male Connector
MRQ-90	Reed Switch, 2 wire, LED, 5-120VAC/VDC, 30mA, with M8 Male Connector, 90° version
MRQC	Reed Switch, 2 wire, LED, 5-120VAC/VDC, with M8 Male Connector and 2m Mating Cable
MRQC-90	Reed Switch, 2 wire, LED, 5-120VAC/VDC, 30mA, with M8 Male Connector and 2m Mating Cable, 90° version
MRQCX	Reed Switch, 2 wire, LED, 5-120VAC/VDC, with M8 Male Connector and 5m Mating Cable
MRQCX-90	Reed Switch, 2 wire, LED, 5-120VAC/VDC, 30mA, with M8 Male Connector and 5m Mating Cable, 90° version
MRX	Reed Switch, 2 wire, LED, 5-120VAC/VDC, with 144" Pigtail Leads
MRX-90	Reed Switch, 2 wire, LED, 5-120VAC/VDC, 30mA, with 144" Pigtail Leads, 90° version
MS	Auto Configure, PNP or NPN, 3 wire, LED, 30VDC, 100mA, with 24" Pigtail Leads
MS-90	Auto Configure, PNP or NPN, 3 wire, LED, 30VDC, 100mA, with 24" Pigtail Leads, 90° version
MSQ	Auto Configure, PNP or NPN, 3 wire, LED, 30VDC, 100mA, with M8 Male Connector
MSQ-90	Auto Configure, PNP or NPN, 3 wire, LED, 30VDC, 100mA, with M8 Male Connector, 90° version
MSQC	Auto Configure, PNP or NPN, 3 wire, LED, 30VDC, 100mA, with M8 Male Connector and 2m Mating Cable
MSQC-90	Auto Configure, PNP or NPN, 3 wire, LED, 30VDC, 100mA, with M8 Male Connector and 2m Mating Cable, 90° version
MSQCX	Auto Configure, PNP or NPN, 3 wire, LED, 30VDC, 100mA, with M8 Male Connector and 5m Mating Cable
MSQCX-90	Auto Configure, PNP or NPN, 3 wire, LED, 30VDC, 100mA, with M8 Male Connector and 5m Mating Cable, 90° version
MSX	Auto Configure, PNP or NPN, 3 wire, LED, 30VDC, 100mA, with 144" Pigtail Leads
MSX-90	Auto Configure, PNP or NPN, 3 wire, LED, 30VDC, 100mA, with 144" Pigtail Leads, 90° version
MSC	Sourcing Switch (PNP), LED, 30VDC, 50mA, with 24" Pigtail Leads
MSC-90	Sourcing Switch (PNP), LED, 30VDC, 200mA, with 24" Pigtail Leads, 90° version
MSCQ	Sourcing Switch (PNP), LED, 30VDC, 200mA, with M8 Male Connector
MSCQ-90	Sourcing Switch (PNP), LED, 30VDC, 200mA, with M8 Male Connector, 90° version
MSCQC	Sourcing Switch (PNP), LED, 30VDC, 200mA, with M8 Male Connector and 2m Mating Cable
MSCQC-90	Sourcing Switch (PNP), LED, 30VDC, 200mA, with M8 Male Connector and 2m Mating Cable, 90° version
MSCQCX	Sourcing Switch (PNP), LED, 30VDC, 200mA, with M8 Male Connector and 5m Mating Cable
MSCQCX-90	Sourcing Switch (PNP), LED, 30VDC, 200mA, with M8 Male Connector and 5m Mating Cable, 90° version
MSCX	Sourcing Switch (PNP), LED, 30VDC, 200mA, with 144" Pigtail Leads
MSCX-90	Sourcing Switch (PNP), LED, 30VDC, 200mA, with 144" Pigtail Leads, 90° version
MSK	Sinking Switch (NPN), LED, 30VDC, 200mA, with 24" Pigtail Leads
MSK-90	Sinking Switch (NPN), LED, 30VDC, 200mA, with 24" Pigtail Leads, 90° version
MSKQ	Sinking Switch (NPN), LED, 30VDC, 200mA, with M8 Male Connector
MSKQ-90	Sinking Switch (NPN), LED, 30VDC, 200mA, with M8 Cable Connector, 90° version
MSKQC	Sinking Switch (NPN), LED, 30VDC, 200mA, with M8 Male Connector and 2m Mating Cable
MSKQC-90	Sinking Switch (NPN), LED, 30VDC, 200mA, with M8 Cable Connector and 2m Mating Cable, 90° version
MSKQCX	Sinking Switch (NPN), LED, 30VDC, 200mA, with M8 Male Connector and 5m Mating Cable
MSKQCX-90	Sinking Switch (NPN), LED, 30VDC, 200mA, with M8 Cable Connector and 5m Mating Cable, 90° version
MSKX	Sinking Switch (NPN), LED, 30VDC, 200mA, with 144" Pigtail Leads
MSKX-90	Sinking Switch (NPN), LED, 30VDC, 200mA, with 144" Pigtail Leads, 90° version

BPV PNEUMATIC PINCH VALVES

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How to Accessorize
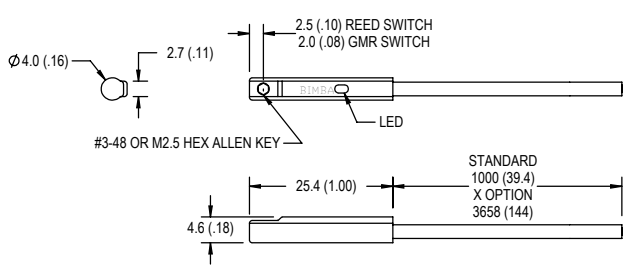
Dimensions

STANDARD
622 (24.49)
X OPTION
3683 (145.00)

Ø4.0 (.16)

4.6 (.18)

M2.5 (#3-48) SET SCREW

2.7 (.11)

8.5 (.33)

10.6 (.42)

MHF-90, MHFX-90, MHC-90, MHCX-90, MHK-90, MKX-90

152.4 (6.00)

34.5 (1.36)

Ø4.0 (.16)

2.7 (.11)

M2.5 (#3-48) HEX ALLEN KEY

LED

17.0 (.67)

4.6 (.18)

M8 X 1.0-6g

10.6 (.42)

Ø8.7 (.34)

MSCQ-90, MSCQC-90, MSCQCX-90,
MSKQ-90, MSKQC-90, MSKQCX-90

2.5 (.10) REED SWITCH
2.0 (.08) GMR SWITCH

Ø4.0 (.16)

2.7 (.11)

LED

#3-48 OR M2.5 HEX ALLEN KEY

STANDARD
1000 (39.4)
X OPTION
3658 (144)

25.4 (1.00)

4.6 (.18)

MR, MRX, MS*, MSX, MSC*, MSCX, MSK*, MSKX

*Standard pigtail length for MS, MSC, and MSK switches is 622 (24.49)
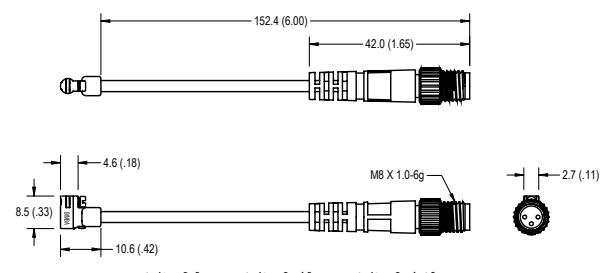
152.4 (6.00)

42.0 (1.65)

4.6 (.18)

M8 X 1.0-6g

2.7 (.11)

8.5 (.33)

10.6 (.42)

MHFQS-90, MHFQCS-90, MHFQCXS-90,
MHCQS-90, MHCQCS-90, MHCQCXS-90
MHKQS-90, MHKQCS-90, MHKQCXS-90

STANDARD
622 (24.49)
X OPTION
3683 (145.00)

Ø4.0 (.16)

4.6 (.18)

M2.5 (#3-48) HEX ALLEN KEY

2.7 (.11)

LED

22.5 (.89)

10.6 (.42)

MR-90, MRX-90, MS-90, MSX-90

2.5 (.10) REED SWITCH
2.0 (.08) GMR SWITCH

4.0 (.16)

2.7 (.11)

M8 X 1-6g

#3-48 OR M2.5 HEX ALLEN KEY

LED

8.7 (.34)

25.4 (1.00)

152.4 (6.00)

44.3 (1.74)

4.6 (.18)

MRQ, MRQC, MRQCX, MSQ, MSQC,
MSQCX, MSCQ, MSCQC, MSCQCX,
MSKQ, MSKQC, MSKQCX

2.5 (.10) REED SWITCH
2.0 (.08) GMR SWITCH

4.0 (.16)

2.7 (.11)

M8 X 1-6g

#3-48 OR M2.5 HEX ALLEN KEY

LED

8.7 (.34)

25.4 (1.00)

152.4 (6.00)

44.3 (1.74)

4.6 (.18)
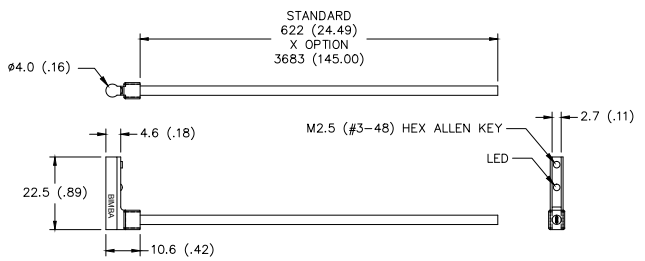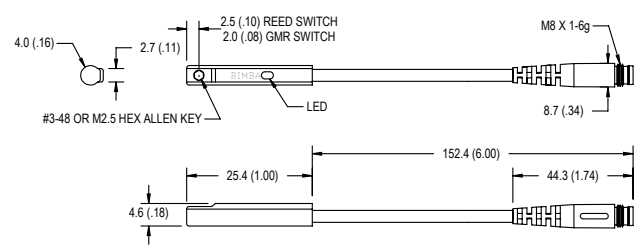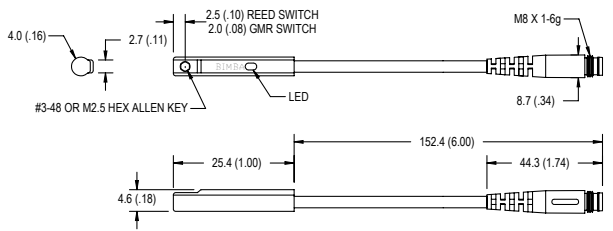
MRQ-90, MRQC-90, MRQCX-90,
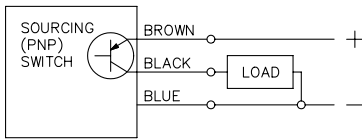MSQ-90, MSQC-90, MSQCX-90

Wiring Diagrams
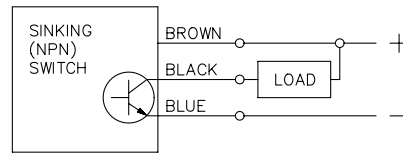
MHF (All types)
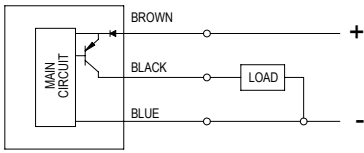
Reverse Polarity Not Protected

On Quick Connect switch models, connect only the Blue and Brown wires on the mating cable and cut back the Black wire. Do not connect switch to a mating cable that has been previously wired for a three-wire solid state switch as it will short the MDFQ switch.
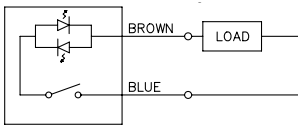
MHC, MSC (All types) (PNP, Sourcing, Solid State)


MHK, MSK (All types) (NPN, Sinking, Solid State)

MR (All types) (Reed Switch)

Reverse Polarity Not Protected

On Quick Connect switch models, connect only the Blue and Brown wires on the mating cable and cut back the Black wire. Do not connect switch to a mating cable that has been previously wired for a three-wire solid state switch as it will short the MRQ switch.

MS (All types) (Auto Configure PNP, Sourcing)
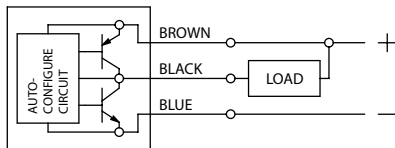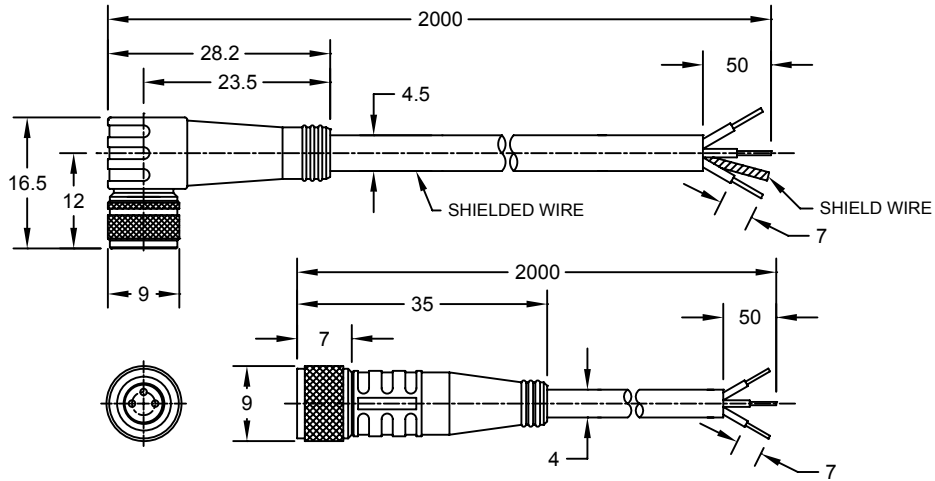

MS (All types) (Auto Configure NPN, Sinking)
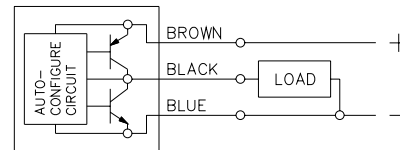
Color Codes	
Brown	(+) Positive
Black	Output
Blue	(-) Negative

How to Accessorize

Dimensions

M8 Femle Quick Connect Cables

SHIELDED WIRE
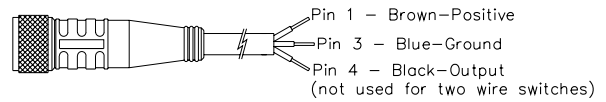
SHIELD WIRE

Pin and Wire Assignments for Quick Connect

Switch "Q" Option Male Connector
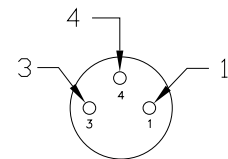#### Face View of M8 Male Connector
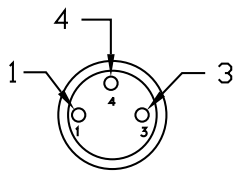
1. POSITIVE / HOT
3. NEGATIVE / NEUTRAL
4. OUTPUT
   NOT CONNECTED
   FOR 2 WIRE SWITCH
   MODELS

C4 and C5 Cable Female Connector
Side View of M8 Female Connector

Pin 1 — Brown—Positive
Pin 3 — Blue—Ground
Pin 4 — Black—Output
(not used for two wire switches)

Face View of M8 Female Connector

M8 Female Quick Connect Cables (C4 and C5)

| Part Number	Description
C4	Straight M8 Female Connector, Threaded Connection with 2 Meter Cable
C4-S	Straight M8 Female Connector, Threaded Connection with 2 Meter Shielded Cable
C4X	Straight M8 Female Connector, Threaded Connection with 5 Meter Cable
C4X-S	Straight M8 Female Connector, Threaded Connection with 5 Meter Shielded Cable
C5-S	Right Angle M8 Female Connector, Threaded Connection with 2 Meter Shielded Cable
C5X-S	Right Angle M8 Female Connector, Threaded Connection with 5 Meter Shielded Cable

How to Accessorize

Mounting Bracket Options

For mounting options, our stud mount offers the ability to use a foot bracket and mounting nut to mount the pinch valve from the rear.
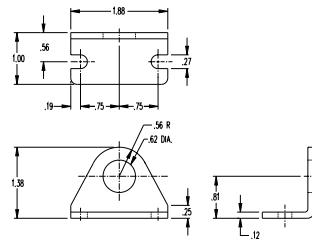
Model Number	02	04	06	08
Mounting Bracket, Zinc	D-770	D-129		D-241
Mounting Nut, Plated Steel	D-154	D-9		D-3556
Mounting Bracket, Stainless Steel	D-770-SS	D-129-SS		D-241-SS
Mounting Nut, Stainless Steel	D-154-SS	D-9-SS		D-3556-SS

D-770
D-770-SS
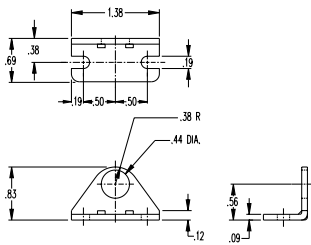
Mounting Bracket

D-129
D-129-SS

Mounting Bracket

D-9
D-9-SS
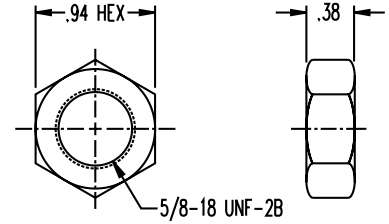
Mounting Nut
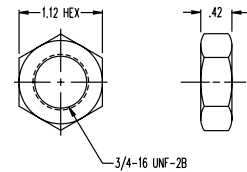
D-154
D-154-SS
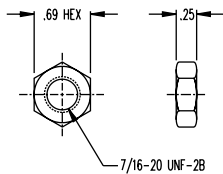
Mounting Nut

D-241
D-241-SS
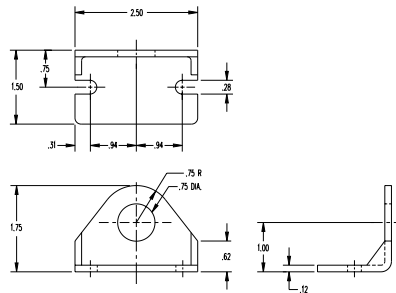
Mounting Bracket

D-3556
D-3556-SS
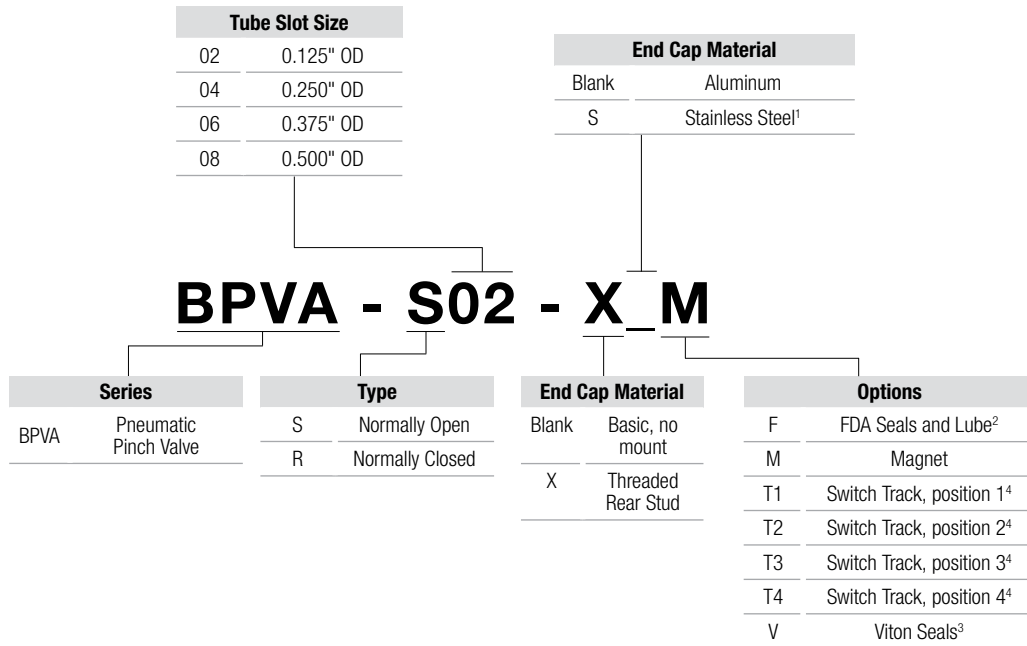

Mounting Nut

The model numbers of the BPV Series Pneumatic Pinch Valves consist of an alphanumeric cluster designating series, type, tube slot size, mounting, end cap matieral, and additional options that together make up the complete part number to use when ordering. Use the ordering information below to build a valid part number.

An example of a BPV Series Pneumatic Pinch Valve that is normally closed, 0.125" OD tube slot, threaded rear stud mounting, aluminum end cap with a magnet is shown below in the part number configurator.

Tube Slot Size	
02	0.125" OD
04	0.250" OD
06	0.375" OD
08	0.500" OD

End Cap Material	
Blank	Aluminum
S	Stainless Steel[1]

BPVA - S02 - X_M

Series	
BPVA	Pneumatic Pinch Valve

Type	
S	Normally Open
R	Normally Closed

End Cap Material	
Blank	Basic, no mount
X	Threaded Rear Stud

Options	
F	FDA Seals and Lube[2]
M	Magnet
T1	Switch Track, position 1[4]
T2	Switch Track, position 2[4]
T3	Switch Track, position 3[4]
T4	Switch Track, position 4[4]
V	Viton Seals[3]

[1]Stainless steel end cap option is not compatible with T1, T2, T3, or T4 switch track
[2]Cannot be ordered with Viton Seals
[3]Cannot be ordered with FDA Seals and Lube. If ordered with "M" option, magnet is not reliable above 200°F
[4]A maximum of two track options can be ordered together

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