



Control Panel Products

Human / Machine Dialog

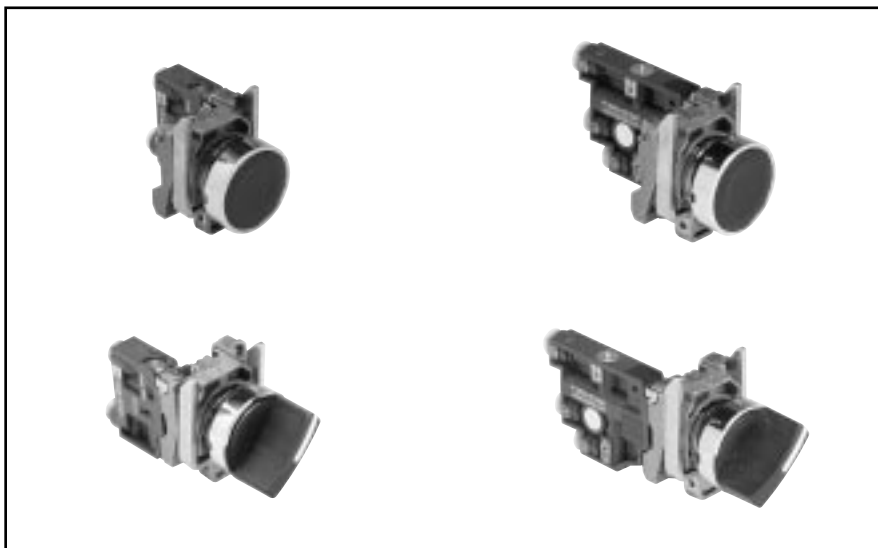
Section C



Basic Features	C2-C3	Joystick Operators.....	C13
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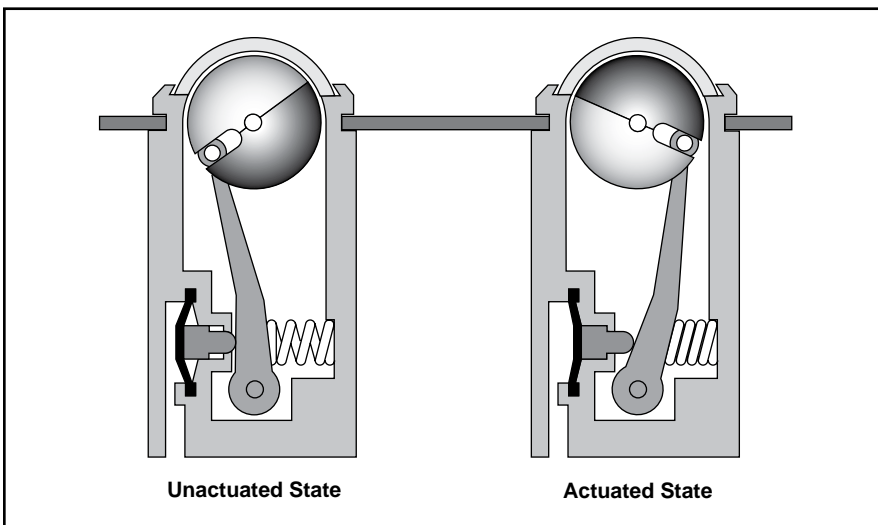
HUMAN-MACHINE DIALOG requires devices such as push buttons and selector switches to provide command inputs. A wide variety of these devices is available to meet most application needs. Both pneumatic and electrical switch bodies are available to match system technology. All of these devices use the 22 mm (7/8") mounting standard.



C

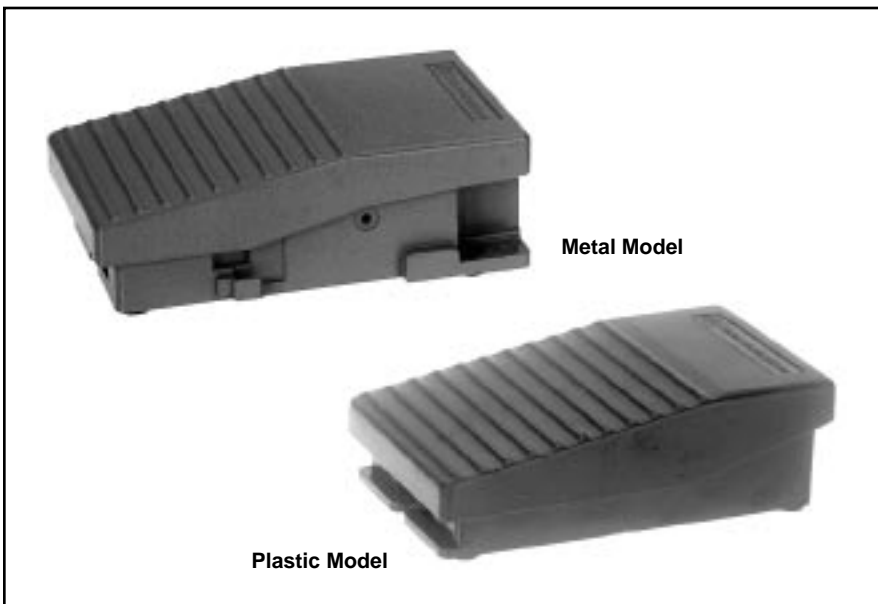
PNEUMATIC VISUAL INDICATORS

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.



FOOT PEDAL SWITCHES

When the application requires the use of foot pedals, these devices can be used to initiate a cycle or a step within a cycle. A metal foot pedal is available with protective guard.

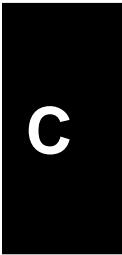
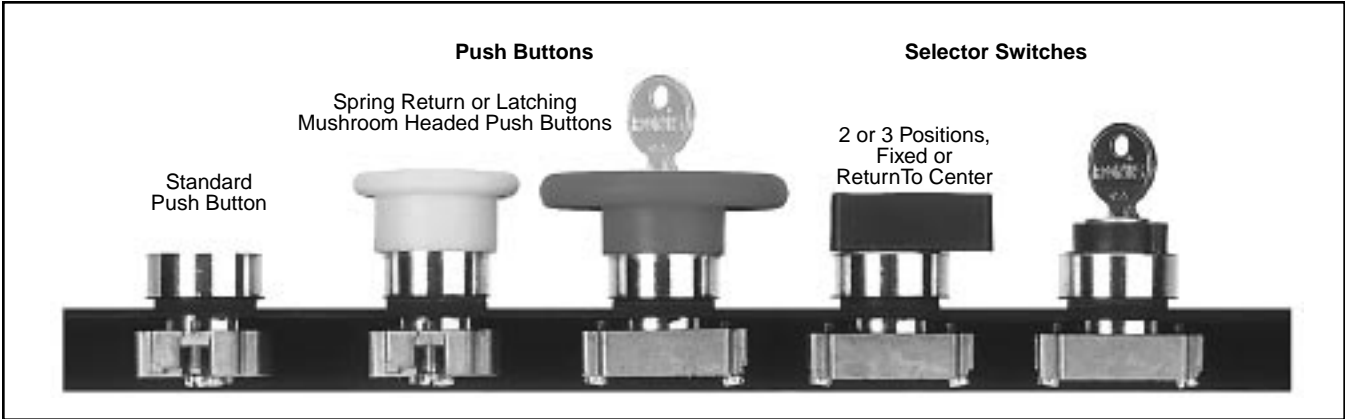
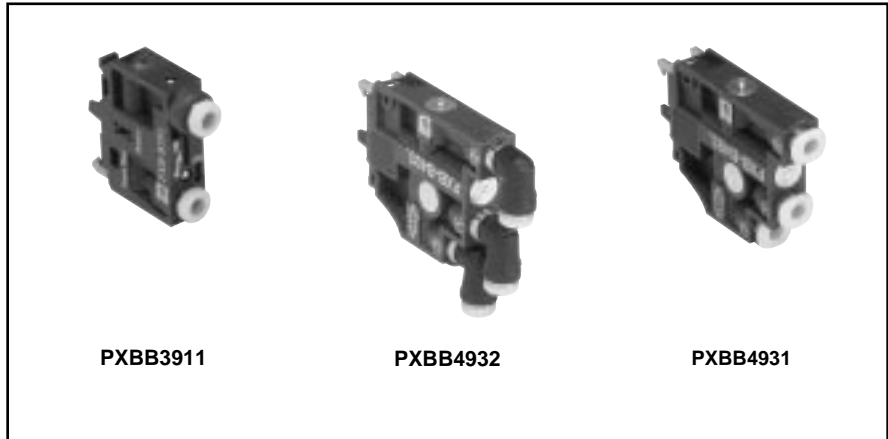


**MODULAR
PNEUMATIC / ELECTRIC
PUSH BUTTONS**

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.



With 3/2 Valve Bodies 5/32" Instant Straight Connections

Flush Push Buttons

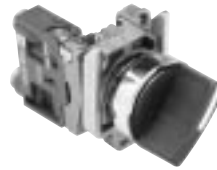


PXBB3111BA2

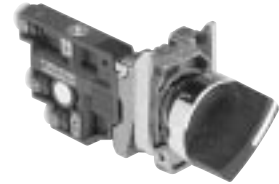


PXBB4131BA2

Selector Switches



PXBB3111BD2



PXBB4131BD2

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

* 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.

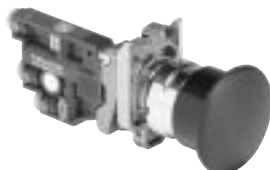
Part Number	Color	Function	Type of Switching*
PXBB3111BD2	Black	2 Maintained	NNP
PXBB3211BD2	Black	Positions with	NNP+NNP
PXBB3251BD2	Black	Std. Handle	NNP+NP
PXBB3211BD3	Black	3 Maintained Positions with Std. Handle	NNP+NNP
PXBB3251BD3	Black		NNP+NP
PXBB3211BJ5	Black	3 Positions, Spring Return to Center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

* 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.

Mushroom Head Push Buttons (40mm Diameter)



PXBB3111BC2



PXBB4131BC2

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

* 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.

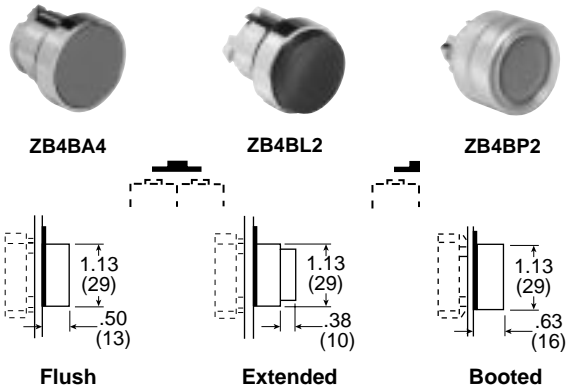
Note: Mount up to three valves on mounting ring.

NOTE: BOLD ITEMS ARE READY (STOCK)

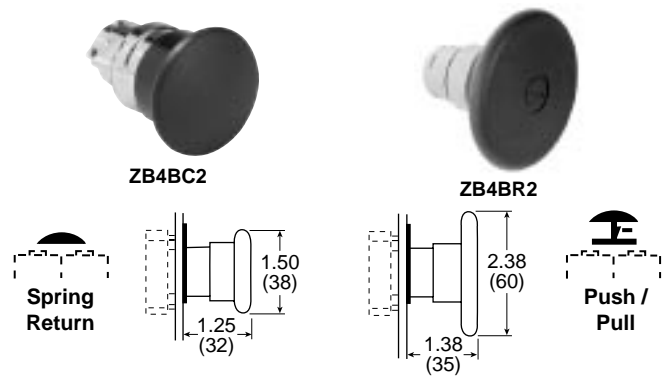
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For Use With PXBB Valve Bodies and ZBE Electrical Switch Bodies

Push Buttons



Mushroom Head Push Buttons



Plastic Head ZB5**	Metal Head ZB4*	Color	Function	Description
ZB5AA2	ZB4BA2	Black	Spring Return	Flush
ZB5AA3	ZB4BA3	Green		
ZB5AA4	ZB4BA4	Red		
—	ZB4BA5	Yellow		
—	ZB4BA6	Blue		
ZB5AL2	ZB4BL2	Black	Spring Return	Extended
ZB5AL3	ZB4BL3	Green		
ZB5AL4	ZB4BL4	Red		
—	ZB4BL5	Yellow	Spring Return	Booted
—	ZB4BP2	Black		
—	ZB4BP3	Green		
—	ZB4BP4	Red		

Part Number*	Color	Function	Description
ZB4BC2	Black	Spring Return	Ø 40mm Head
ZB4BC3	Green		
ZB4BC4	Red		
ZB4BT2	Black	Latching Push-Pull	
ZB4BT4	Red		
ZB4BR2	Black	Spring Return	Ø 60mm Head
ZB4BR3	Green		
ZB4BR4	Red		

* ZB4*** Model Numbers are Metal Head Operators

* ZB4*** Model Numbers are Metal Head Operators
 ** ZB5*** Model Numbers are Plastic Head Operators

Push / Push Buttons



ZB4BH02

Part Number*	Color	Function	Description
ZB4BH02	Black	Detent 2-Position	Flush
ZB4BH03	Green		
ZB4BH04	Red		

* ZB4**** Model Numbers are Metal Head Operators

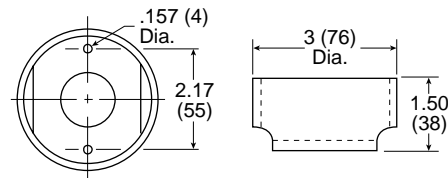
Mounting Accessories



ZB2BZ19



ZB5AZ905



Part Number	Color	Description
ZB2BZ19	Black Plastic	Guard for 60mm Mushroom Heads
ZB5AZ905	—	Plastic Head (ZB5) Mounting Nut Tightening Tool

NOTE: BOLD ITEMS ARE READY (STOCK)

For Use With PXBB Variable Composition Switch Bodies

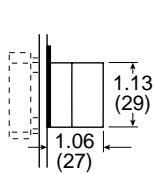
Selector Switches



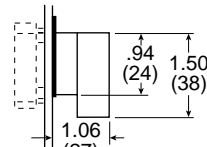
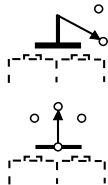
ZB4BD3



ZB4BJ3



Standard Selector

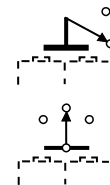
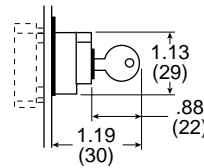


Knob Lever

Key Operated Selectors



ZB4BG2



Standard Black Handle		
Part Number*	Description	Function
ZB4BD2	Maintained	2-Positions
ZB4BD4	Spring Return from Right to Left	
ZB4BD3	Maintained	3-Positions
ZB4BD5	Spring Return to Center from Left and Right	
ZB4BD7	Maintained Right Spring Return from Left to Center	3-Positions
ZB4BD8	Maintained Left Spring Return from Right to Center	3-Positions
Long Black Handle		
ZB4BJ2	Maintained	2-Positions
ZB4BJ4	Spring Return from Right to Left	
ZB4BJ3	Maintained	3-Positions
ZB4BJ5	Spring Return to Center from Left and Right	

* ZB4*** Model Numbers are Metal Head Operators

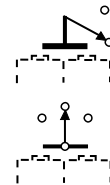
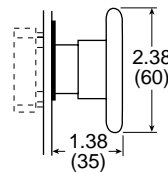
Key Operated		
Part Number*	Key Withdrawal	Function
ZB4BG2	Left	2 Maintained
ZB4BG4	Left and Right	Positions
ZB4BG3	Center	3 Maintained
ZB4BG5	Left and Right	Positions
ZB4BG7	Center	3 Positions 2 Spring Return to Center

* ZB4*** Model Numbers are Metal Head Operators

Mushroom Head Push Buttons with Key Select



ZB4BS24



Part Number*	Color	Function	Description
ZB4BS54	Red	Latching Turn to Release	Ø 40mm Head
ZB4BS14	Red	Key Latching	
ZB4BS64	Red	Latching Turn to Release	Ø 60mm Head
ZB4BS24	Red	Key Latching	

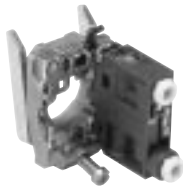
* ZB4**** Model Numbers are Metal Head Operators

Note: Bold Items are Ready (Stock)

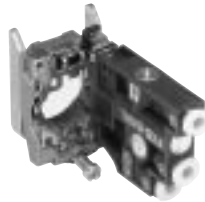
C

For Use With 22mm (7/8") Metal Operating Heads 5/32" Instant Connections

3/2 Valve Bodies with Mounting Ring



PXBB3111B



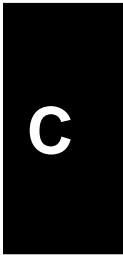
PXBB4131B

Part Number	Connections	Function	Type of Switching*
PXBB3111B	5/32" Instant	3/2	NNP
PXBB3121B	5/32" Instant	3/2	NP
PXBB4131B	5/32" Instant	3/2	Universal 3-Way

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)
- Ports5/32" Instant for Semi-Rigid Nylon or Polyurethane Tube**
- Temperature –**
 Operating5°F to 140°F (-15°C to + 60°C)



Additional Valve Bodies



PXBB3911



PXBB4932



PXBB4931

Part Number	Connections	Function	Type of Switching*
PXBB3911	5/32" Instant Straight	3/2	NNP
PXBB3912	5/32" Instant Swivel		
PXBB3921	5/32" Instant Straight	3/2	NP
PXBB3922	5/32" Instant Swivel		
PXBB4931	5/32" Instant Straight	3/2	Universal 3-Way
PXBB4932	5/32" Instant Swivel		

Note: **Bold Items are Ready (Stock)**

Replacement Valve Bodies for PXBB1 and PXBB2 Push Button Valve Series



PXBB1911



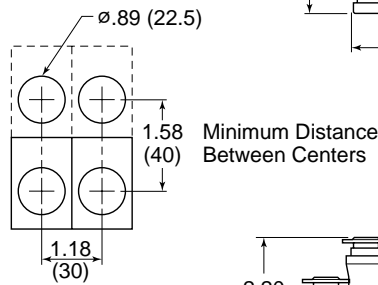
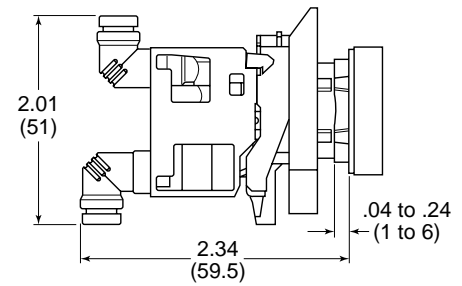
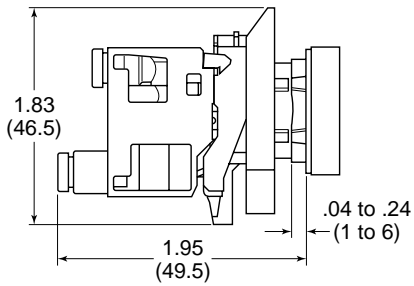
PXBB1922



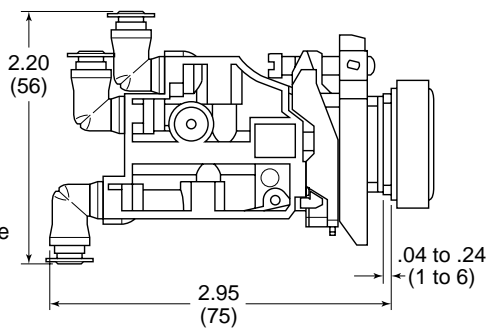
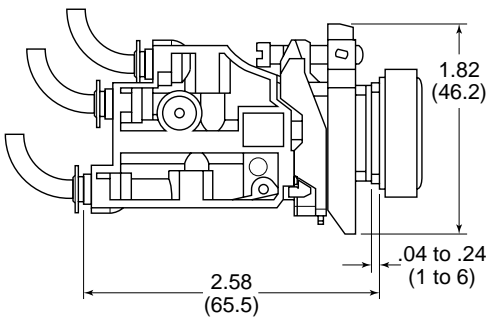
PXBB2911

Part Number	Part Number	Connections	Function	Type of Switching*
1/16" ID Body	1/8" ID Body			
PXBB1911	PXBB2911	5/32" Instant Straight	3/2	NNP
PXBB1912	—	5/32" Instant Swivel		
PXBB1915	PXBB2915	10-32 UNF Threaded	3/2	NP
PXBB1921	PXBB2921	5/32" Instant Straight		
PXBB1922	—	5/32" Instant Swivel	3/2	NP
PXBB1925	PXBB2925	10-32 UNF Threaded		
PXBB1911SE	—	5/32" Instant Straight	2/2	NNP NP
PXBB1921SE	—	5/32" Instant Swivel		

PXB-B3 Dimensions



PXB-B4 Dimensions



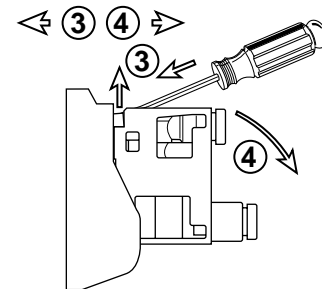
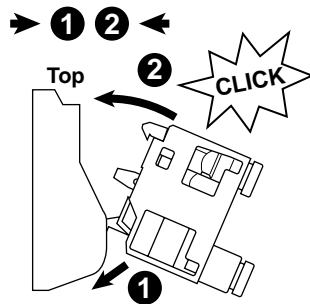
Tube Bending Radius For PXBB3 and PXBB4

- 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

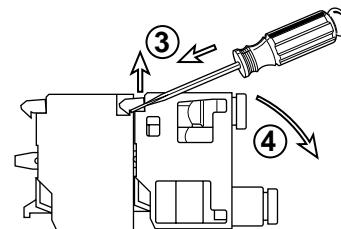
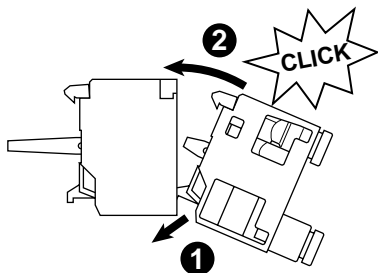
C

Assembly

Assembling PXB Valves On Mounting Block



Assembling PXB Valves On the Back of the Electrical Contact



For Push Buttons and Visual Indicators

**Legend Plates for PXBB Devices
 (22mm)**



ZBY****

Part Number	Description
Without Text For Customer Engraving	
ZBY2101	Black / Red Background (White Letters)
ZBY4101	Yellow / White Background (Black Letters)
With Text For Push Buttons	
ZBY2303	Start
ZBY2304	Stop
ZBY2305	Forward
ZBY2306	Reverse
ZBY2307	Up
ZBY2308	Down
ZBY2309	Right
ZBY2310	Left
ZBY2311	On
ZBY2312	Off
ZBY2313	Open
ZBY2314	Close
ZBY2321	Inch
ZBY2323	Reset
ZBY2326	Power On
ZBY2327	Slow
ZBY2328	Fast
ZBY2330	Emergency Stop
ZBY2334	Run
With Text For 2-Position Selectors	
ZBY2367	Off On
With Text For 3-Position Selectors	
ZBY2387	Hand Off Auto

Blank Legend Plates for Inscription

For PXBB Devices (2 lines of 11 characters maximum) Please indicate the required text when ordering. (Allow 3 weeks for delivery)	
Part Number	Description
ZBY2002	Black Background / White Letters

For 22mm Visual Indicators Only

2 lines of 11 characters maximum

Please indicate the required text when ordering.
 (Allow 3 weeks for delivery)

Part Number	Description
ZB2BY2002	Black Background / White Letters

Accessories





ZBE101

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.

Electrical Specification: 240V, 10Amp

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

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.



Metal: ZB4BZ009



Plastic: ZB5AZ009

Mounting Ring for Valve Bodies, Switch Bodies and Operating Heads

To make up a complete push button with one to three switching elements with 5/32" instant connections, use this mounting block and select the operating heads and bodies in this Section.

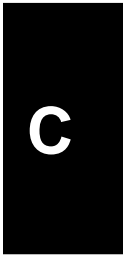
Part Number	Description
ZB4BZ009	Metal Mounting Ring
ZB5AZ009	Plastic Mounting Ring

To make up a complete selector switch with one or two switching elements with 5/32" instant connections, use this mounting block and select the operating heads and bodies in this Section.

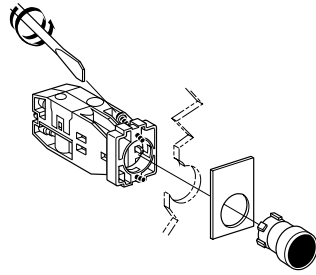
Part Number	Description
ZB4BZ009	Metal Mounting Ring
ZB5AZ009	Plastic Mounting Ring

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.

Note: **Bold Items are Ready (Stock)**



Mounting



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.



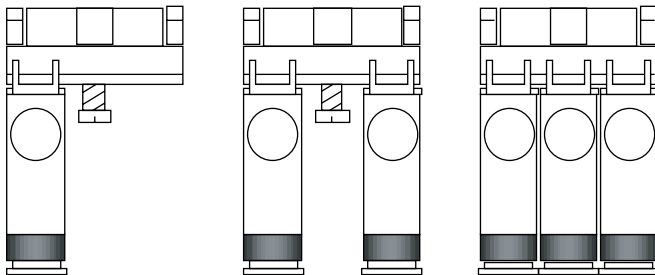
- NNP: Normally Non-Passing.
- NP: Normally Passing.
- NNP + NNP: Double Switch Body, Both Normally Non-Passing.
- NNP + NP: Normally Non passing and Normally-Passing.
- NP + NP: Both Normally Passing.

Universal Description	Electrical		Fluid Power					
	Function	Symbol	Function	Symbol				
Normally Non-Passing (NNP)	Normally Open (N.O.)		Normally Closed (N.C.)	<table border="1"> <tr> <td>2-Way</td> <td>3-Way</td> </tr> <tr> <td></td> <td></td> </tr> </table>	2-Way	3-Way		
2-Way	3-Way							
Normally Passing (NP)	Normally Closed (N.C.)		Normally Open (N.O.)	<table border="1"> <tr> <td>2-Way</td> <td>3-Way</td> </tr> <tr> <td></td> <td></td> </tr> </table>	2-Way	3-Way		
2-Way	3-Way							

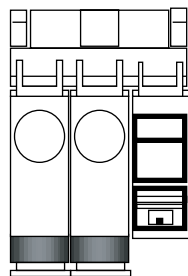
Combination of Output Devices On a Single Mounting Block

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

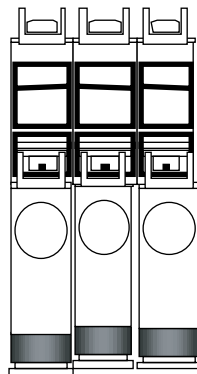
Note: The central position can only be activated by push button heads.



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

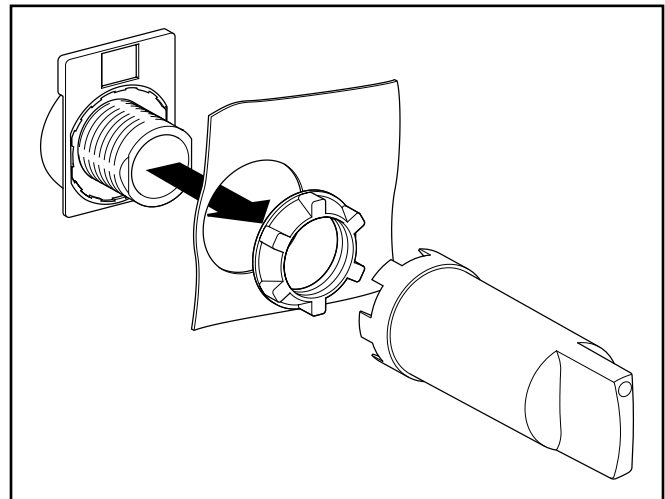


Side by Side Combination



Combination by Mounting Valves On the Back of the Electrical Contact

Assembling Output Devices and Heads On ZB5 Series Mounting Block

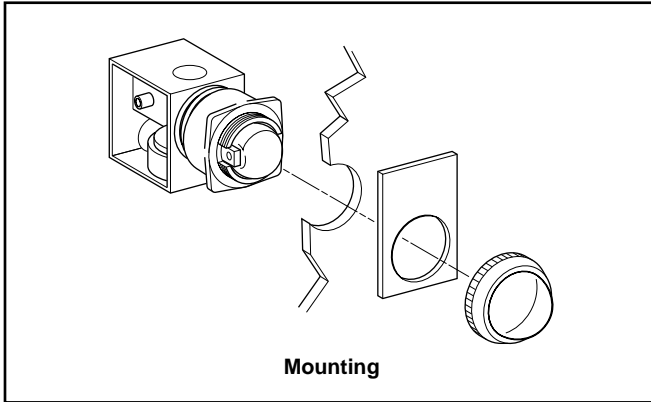


With 5/32" Instant Connections

22mm Visual Indicators



PXVF131



Mounting

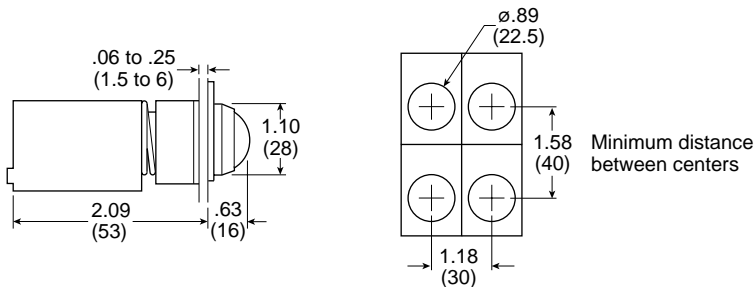
Black Plastic Bezel		
Part Number "ON" Indicator	Part Number "OFF" Indicator	Color
PXVF131	PXVF1213	Green
PXVF141	PXVF1214	Red
PXVF151	PXVF1215	Yellow
PXVF161	PXVF1216	Blue
PXVF111	PXVF1211	White

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).
- For Legend Plates, see page C9.

Dimensions

PXVF1••



Specifications

Air Quality –

Standard Shop Air, Lubricated or Dry, 40µm 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..... 1 million Operations

Mushroom Head 300,000 Operations

Operating Positions..... All Positions

Operating Pressure 15 to 115 PSIG (1 to 8 bar)

Ports –

Standard5/32" Instant for Semi- Rigid Nylon or Polyurethane Tube

10-32 UNF Available

Temperature –

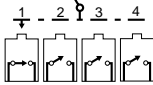
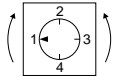
Operating32°F to 122°F (0°C to + 50°C)

Storage -22°F to 140°F (-30°C to +60°C)



With 5/32" Instant Connections, 1/16" I.D. Internal Orifice

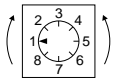
4-Positions, 4-Outputs 3/2



PXBDD104

Without Mechanical Stop		
Part Number	Operating Head	Type of Switching*
PXBDD104	Black Handle with 2.5" x 2.5" (64 x 64 mm) Legend Plate, Red or Black Background	NNP

8-Positions, 8-Outputs 3/2



PXBDD508

Without Mechanical Stop		
Part Number	Operating Head	Type of Switching*
PXBDD508	Black Handle with 2.5" x 2.5" (64 x 64 mm) Legend Plate, Red or Black Background	NNP

Specifications

- Air Quality –**
 Standard Shop Air, Lubricated or Dry, 40µm Filtration
- Materials –**
 Body..... Polyamide
 Operating Head..... Zinc Alloy & Plastic
- Minimum Operating Force** 9.4 Lb (42 N)
- Number of Operations with Dry Air at 90 PSI (6 bar) and 68°F (20°C) - Frequency 1 Hz**..... 1 million Operations
 Mushroom Head..... 300,000 Operations
- Operating Positions**..... All Positions
- Operating Pressure** 15 to 115 PSIG (1 to 8 bar)
- Ports –**
 Standard: 5/32" Instant for Semi- Rigid Nylon or Polyurethane Tube
 10-32 UNF Available.
- Temperature –**
 Operating 32°F to 122°F (0°C to + 50°C)
 Storage -22°F to 140°F (-30°C to +60°C)

Notes:

These Rotary Switches operate in either direction. They come assembled with switch PXBB1921 (Normally Passing). All switches are held in the actuated non-passing position except the one associated with a given dial position, which is in the unactuated Normally Passing position.

Example of Operation: Rotation from Position 1 to Position 2:

- Switch 1 changes from unactuated Normally Passing to actuated non-passing.
- Switch 2 changes from actuated non-passing to unactuated Normally Passing.

Units will accept all switch bodies shown earlier in this Section, but care must be taken in selecting switch type.

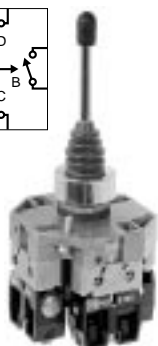
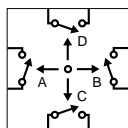
C

With 5/32" Instant Connections, 1/16" I.D. Internal Orifice

2-Position Unit

4-Position Unit

Specifications



PXBGA8211

PXBGA8411

Note: These Joystick Operators come assembled with switch type PXBB1911, but will accept all Switch Bodies shown later in this Section.

Part Number	Position	Function	Type of Switching*	Operating Head
PXBGA8211	2	Maintained Position in Each Direction	NNP	Chrome Plated Lever with Protective Bellows 1.6" x 2.5"
PXBGA8411	4			
PXBGA8221	2	Spring Return in Each Direction	NNP	(40 x 64 mm) Legend Plate Red or Black Background
PXBGA8421	4			

* NNP: Normally Non-Passing.

Air Quality –

Standard Shop Air, Lubricated or Dry, 40µm Filtration

Flow at 90 PSI (6 bar) in SCFM (l/mn ANR) 1.8 (50)

Materials –

Body..... Polyamide
 Operating Head..... Zinc Alloy & Plastic

Nominal Bore Ø in Inches (mm)..... 1/16" (1.5)

Number of Operations with Dry Air at 90 PSI (6 bar) and 68°F (20°C) - Frequency 1 Hz..... 1 million Operations

Operating Angle..... 18°

Operating Positions..... All Positions

Operating Pressure 15 to 115 PSIG (1 to 8 bar)

Operating Torque 59.5 oz-in (420 mNm)

Ports –

Standard: 5/32" Instant for Semi- Rigid Nylon or Polyurethane Tube

10-32 UNF Available.

Temperature –

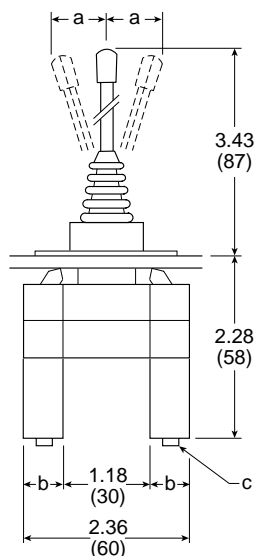
Operating 32°F to 122°F (0°C to + 50°C)

Storage -22°F to 140°F (-30°C to +60°C)



Dimensions

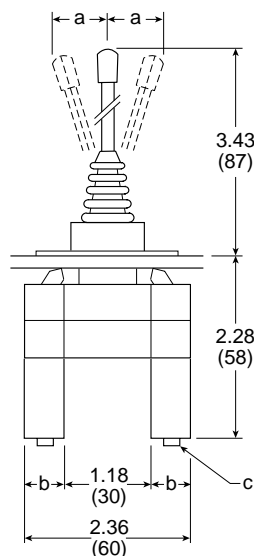
PXBGA82**



	inch	mm
a*	1.57	40
b	.59	15
c	5/32 Dia.	4 Dia.

* In both directions

PXBGA84**



	inch	mm
a*	1.57	40
b	.59	15
c	5/32 Dia.	4 Dia.

* In all 4 directions

Standard Duty 1/6" I.D. Valves with 5/32" Instant Connections

Protective Guard



PXPEM510

Foot Switches Without Protective Guard



PXPEA110

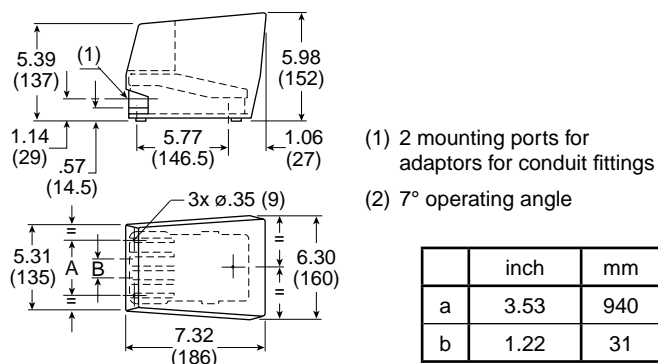
Part Number	Function	Material	Type of Switching*
PXPEM510	High resistance protective guard, with interlock mechanism to prevent accidental operation by a falling object.	Metal	NNP

Part Number	Function	Material	Type of Switching*
PXPEA110	Spring Return	Plastic	NNP
PXPEM110	Spring Return	Metal	NNP

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.

Dimensions

PXPEM510

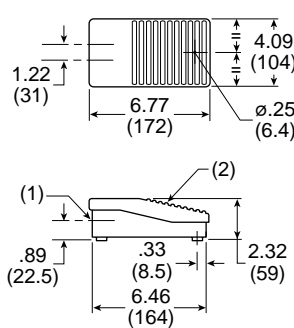


Notes: These Foot Pedal Operators come assembled with switch PXBB1921 (Normally Passing). With the pedal in the unoperated position, the switch is in the actuated non-passing position. With the pedal actuated, the switch is in the unactuated Normally Passing position.

Units will accept all switch bodies shown earlier in this Section, but care must be taken in selecting switch type.

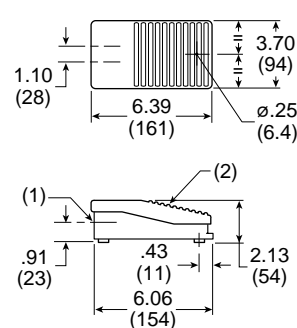
Dimensions

PXPEM110



(1) .825" diameter thru hole
 (2) 6° operating angle

PXPEA110



Specifications

- Air Quality –**
 Standard Shop Air, Lubricated or Dry, 40µm Filtration
- Flow at 90 PSI (6 bar) in SCFM (l/mn ANR) 1.8 (50)**
- Materials –**
 Body..... Polyamide
 Operating Head..... Zinc Alloy & Plastic
- Nominal Bore Ø in Inches (mm) 1/16" (1.5)**
- 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
- Temperature –**
 Operating 32°F to 122°F (0°C to + 50°C)
 Storage -22°F to 140°F (-30°C to +60°C)

* NNP: Normally Non-Passing.

Features

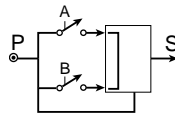
- The pre-assembled two-hand control enclosure occupies both hands of an operator by requiring nearly simultaneous operation of two pushbuttons
- Poppet – snap-acting (no spools)
- Same air as in cylinders – Filtration: 40 micron
- No lubrication required



PXPC111

Part Number	Connections
PXPC111	5/32" Instant

Operation



- Output "S" will appear only if "A" and "B" are simultaneously operated (within .5 seconds or less of each other).
- If the operator actuates only one pushbutton, either "A" or "B", or if both "A" and "B" are actuated but at an interval greater than .5 seconds, output "S" will not appear.
- Output "S" is regenerated by supply "P". Output "S" will therefore disappear if supply "P" is cut off.
- Output "S" will disappear if either "A" or "B" is released.
- If output "S" disappears for any reason, "A" and "B" must be nearly simultaneously actuated to again provide output "S".
- Since output "S" is regenerated it appears sharply, at full force (snap-acting), and is quickly exhausted upon deactivation. In addition the module is not affected by the length or diameter of tubing used for output "S".

General Characteristics

Operating Pressure40 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:

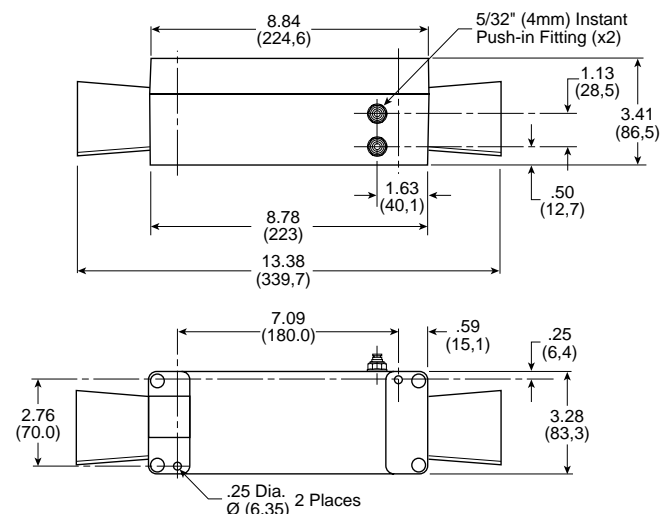
- In accordance with European Standard EN 574 - September 1996
- Conforms to the model that has obtained CE Type Test Certificate No. 02526 520 4631 0397

WARNING

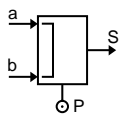
These devices should NOT be used in any application involving rotary clutch presses. Two hand control modules do not of themselves insure the safety of any machine. Users and original equipment manufacturers are responsible for making sure that installations meet all relevant safety regulations.

Dimensions

Inches (mm)



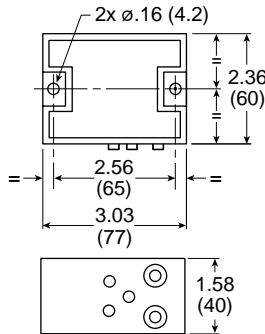
Two-Hand Control Module



PXPA11

Part Number	Connections
PXPA11	5/32" Instant

Dimensions



PXPA11

Specifications

- Air Quality –**
 Standard Shop Air, Lubricated or Dry, 40µm Filtration
Flow at 90 PSI (6 bar) in SCFM (l/mn ANR) 7 (200)
- Materials –**
 Body..... Polyamide
 Operating Head..... Zinc Alloy & Plastic
Nominal Bore Ø in Inches (mm) 7/64" (2.5)
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 40 to 115 PSIG (3 to 8 bar)
- Ports –**
 5/32" Instant for Semi-Rigid Nylon or Polyurethane Tube
- 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 Véritas 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	PXPC111

Two Hand Repair Parts

Part Number	Quantity Required	Description
PXPA11	1	Control Module
PXPB311B	2	Valve Body & Mounting Ring
ZB4BR*	2	Push Button
PPRL15	2	Control Module Guard

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

Safety Guide For Selecting And Using Pneumatic Division Products And Related Accessories

WARNING:

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF PNEUMATIC DIVISION PRODUCTS, ASSEMBLIES OR RELATED ITEMS (“PRODUCTS”) CAN CAUSE DEATH, PERSONAL INJURY, AND PROPERTY DAMAGE. POSSIBLE CONSEQUENCES OF FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THESE PRODUCTS INCLUDE BUT ARE NOT LIMITED TO:

- Unintended or mistimed cycling or motion of machine members or failure to cycle
 - Work pieces or component parts being thrown off at high speeds.
 - Failure of a device to function properly for example, failure to clamp or unclamp an associated item or device.
 - Explosion
 - Suddenly moving or falling objects.
 - Release of toxic or otherwise injurious liquids or gasses.
- Before selecting or using any of these Products, it is important that you read and follow the instructions below.

1. GENERAL INSTRUCTIONS

- 1.1. Scope:** This safety guide is designed to cover general guidelines on the installation, use, and maintenance of Pneumatic Division Valves, FRLs (Filters, Pressure Regulators, and Lubricators), Vacuum products and related accessory components.
- 1.2. Fail-Safe:** Valves, FRLs, Vacuum products and their related components can and do fail without warning for many reasons. Design all systems and equipment in a fail-safe mode, so that failure of associated valves, FRLs or Vacuum products will not endanger persons or property.
- 1.3. Relevant International Standards:** For a good guide to the application of a broad spectrum of pneumatic fluid power devices see: ISO 4414:1998, Pneumatic Fluid Power – General Rules Relating to Systems. See www.iso.org for ordering information.
- 1.4. Distribution:** Provide a copy of this safety guide to each person that is responsible for selection, installation, or use of Valves, FRLs or Vacuum products. Do not select, or use Parker valves, FRLs or vacuum products without thoroughly reading and understanding this safety guide as well as the specific Parker publications for the products considered or selected.
- 1.5. User Responsibility:** Due to the wide variety of operating conditions and applications for valves, FRLs, and vacuum products Parker and its distributors do not represent or warrant that any particular valve, FRL or vacuum product is suitable for any specific end use system. This safety guide does not analyze all technical parameters that must be considered in selecting a product. The user, through its own analysis and testing, is solely responsible for:
 - Making the final selection of the appropriate valve, FRL, Vacuum component, or accessory.
 - Assuring that all user's performance, endurance, maintenance, safety, and warning requirements are met and that the application presents no health or safety hazards.
 - Complying with all existing warning labels and / or providing all appropriate health and safety warnings on the equipment on which the valves, FRLs or Vacuum products are used; and,
 - Assuring compliance with all applicable government and industry standards.
- 1.6. Safety Devices:** Safety devices should not be removed, or defeated.
- 1.7. Warning Labels:** Warning labels should not be removed, painted over or otherwise obscured.
- 1.8. Additional Questions:** Call the appropriate Parker technical service department if you have any questions or require any additional information. See the Parker publication for the product being considered or used, or call 1-800-CPARKER, or go to www.parker.com, for telephone numbers of the appropriate technical service department.

2. PRODUCT SELECTION INSTRUCTIONS

- 2.1. Flow Rate:** The flow rate requirements of a system are frequently the primary consideration when designing any pneumatic system. System components need to be able to provide adequate flow and pressure for the desired application.
- 2.2. Pressure Rating:** Never exceed the rated pressure of a product. Consult product labeling, Pneumatic Division catalogs or the instruction sheets supplied for maximum pressure ratings.
- 2.3. Temperature Rating:** Never exceed the temperature rating of a product. Excessive heat can shorten the life expectancy of a product and result in complete product failure.
- 2.4. Environment:** Many environmental conditions can affect the integrity and suitability of a product for a given application. Pneumatic Division products are designed for use in general purpose industrial applications. If these products are to be used in unusual circumstances such as direct sunlight and/or corrosive or caustic environments, such use can shorten the useful life and lead to premature failure of a product.
- 2.5. Lubrication and Compressor Carryover:** Some modern synthetic oils can and will attack nitrile seals. If there is any possibility of synthetic oils or greases migrating into the pneumatic components check for compatibility with the seal materials used. Consult the factory or product literature for materials of construction.
- 2.6. Polycarbonate Bowls and Sight Glasses:** To avoid potential polycarbonate bowl failures:
 - Do not locate polycarbonate bowls or sight glasses in areas where they could be subject to direct sunlight, impact blow, or temperatures outside of the rated range.
 - Do not expose or clean polycarbonate bowls with detergents, chlorinated hydro-carbons, ketones, esters or certain alcohols.
 - Do not use polycarbonate bowls or sight glasses in air systems where compressors are lubricated with fire resistant fluids such as phosphate ester and di-ester lubricants.

Safety Guide

- 2.7. Chemical Compatibility:** For more information on plastic component chemical compatibility see Pneumatic Division technical bulletins Tec-3, Tec-4, and Tec-5
- 2.8. Product Rupture:** Product rupture can cause death, serious personal injury, and property damage.
- Do not connect pressure regulators or other Pneumatic Division products to bottled gas cylinders.
 - Do not exceed the maximum primary pressure rating of any pressure regulator or any system component.
 - Consult product labeling or product literature for pressure rating limitations.

3. PRODUCT ASSEMBLY AND INSTALLATION INSTRUCTIONS

- 3.1. Component Inspection:** Prior to assembly or installation a careful examination of the valves, FRLs or vacuum products must be performed. All components must be checked for correct style, size, and catalog number. DO NOT use any component that displays any signs of nonconformance.
- 3.2. Installation Instructions:** Parker published Installation Instructions must be followed for installation of Parker valves, FRLs and vacuum components. These instructions are provided with every Parker valve or FRL sold, or by calling 1-800-CPARKER, or at www.parker.com.
- 3.3. Air Supply:** The air supply or control medium supplied to Valves, FRLs and Vacuum components must be moisture-free if ambient temperature can drop below freezing

4. VALVE AND FRL MAINTENANCE AND REPLACEMENT INSTRUCTIONS

- 4.1. Maintenance:** Even with proper selection and installation, valve, FRL and vacuum products service life may be significantly reduced without a continuing maintenance program. The severity of the application, risk potential from a component failure, and experience with any known failures in the application or in similar applications should determine the frequency of inspections and the servicing or replacement of Pneumatic Division products so that products are replaced before any failure occurs. A maintenance program must be established and followed by the user and, at minimum, must include instructions 4.2 through 4.10.
- 4.2. Installation and Service Instructions:** Before attempting to service or replace any worn or damaged parts consult the appropriate Service Bulletin for the valve or FRL in question for the appropriate practices to service the unit in question. These Service and Installation Instructions are provided with every Parker valve and FRL sold, or are available by calling 1-800-CPARKER, or by accessing the Parker web site at www.parker.com.
- 4.3. Lockout / Tagout Procedures:** Be sure to follow all required lockout and tagout procedures when servicing equipment. For more information see: OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – (Lockout / Tagout)
- 4.4. Visual Inspection:** Any of the following conditions requires immediate system shut down and replacement of worn or damaged components:
- Air leakage: Look and listen to see if there are any signs of visual damage to any of the components in the system. Leakage is an indication of worn or damaged components.
 - Damaged or degraded components: Look to see if there are any visible signs of wear or component degradation.
 - Kinked, crushed, or damaged hoses. Kinked hoses can result in restricted air flow and lead to unpredictable system behavior.
 - Any observed improper system or component function: Immediately shut down the system and correct malfunction.
 - Excessive dirt build-up: Dirt and clutter can mask potentially hazardous situations.

Caution: Leak detection solutions should be rinsed off after use.

- 4.5. Routine Maintenance Issues:**
- Remove excessive dirt, grime and clutter from work areas.
 - Make sure all required guards and shields are in place.
- 4.6. Functional Test:** Before initiating automatic operation, operate the system manually to make sure all required functions operate properly and safely.
- 4.7. Service or Replacement Intervals:** It is the user's responsibility to establish appropriate service intervals. Valves, FRLs and vacuum products contain components that age, harden, wear, and otherwise deteriorate over time. Environmental conditions can significantly accelerate this process. Valves, FRLs and vacuum components need to be serviced or replaced on routine intervals. Service intervals need to be established based on:
- Previous performance experiences.
 - Government and / or industrial standards.
 - When failures could result in unacceptable down time, equipment damage or personal injury risk.
- 4.8. Servicing or Replacing of any Worn or Damaged Parts:** To avoid unpredictable system behavior that can cause death, personal injury and property damage:
- Follow all government, state and local safety and servicing practices prior to service including but not limited to all OSHA Lockout Tagout procedures (OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – Lockout / Tagout).
 - Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
 - Disconnect air supply and depressurize all air lines connected to system and Pneumatic Division products before installation, service, or conversion.
 - Installation, servicing, and / or conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
 - After installation, servicing, or conversions air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or if the product does not operate properly, do not put product or system into use.
 - Warnings and specifications on the product should not be covered or painted over. If masking is not possible, contact your local representative for replacement labels.
- 4.9. Putting Serviced System Back into Operation:** Follow the guidelines above and all relevant Installation and Maintenance Instructions supplied with the valve FRL or vacuum component to insure proper function of the system.

Offer of Sale

The items described in this document and other documents or descriptions provided by Parker Hannifin Corporation, its subsidiaries and its authorized distributors, are hereby offered for sale at prices to be established by Parker Hannifin Corporation, its subsidiaries and its authorized distributors. This offer and its acceptance by any customer ("Buyer") shall be governed by all of the following Terms and Conditions. Buyer's order for any such item, when communicated to Parker Hannifin Corporation, its subsidiaries or an authorized distributor ("Seller") verbally or in writing, shall constitute acceptance of this offer.

1. Terms and Conditions of Sale: All descriptions, quotations, proposals, offers, acknowledgments, acceptances and sales of Seller's products are subject to and shall be governed exclusively by the terms and conditions stated herein. Buyer's acceptance of any offer to sell is limited to these terms and conditions. Any terms or conditions in addition to, or inconsistent with those stated herein, proposed by Buyer in any acceptance of an offer by Seller, are hereby objected to. No such additional, different or inconsistent terms and conditions shall become part of the contract between Buyer and Seller unless expressly accepted in writing by Seller. Seller's acceptance of any offer to purchase by Buyer is expressly conditional upon Buyer's assent to all the terms and conditions stated herein, including any terms in addition to, or inconsistent with those contained in Buyer's offer. Acceptance of Seller's products shall in all events constitute such assent.

2. Payment: Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Amounts not timely paid shall bear interest at the maximum rate permitted by law for each month or portion thereof that the Buyer is late in making payment. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment.

3. Delivery: Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

4. Warranty: Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of 18 months from date of shipment from Parker Hannifin Corporation. THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED.

NOTWITHSTANDING THE FOREGOING, THERE ARE NO WARRANTIES WHATSOEVER ON ITEMS BUILT OR ACQUIRED WHOLLY OR PARTIALLY, TO BUYER'S DESIGN OR SPECIFICATIONS.

5. Limitation of Remedy: SELLER'S LIABILITY ARISING FROM OR IN ANY WAY CONNECTED WITH THE ITEMS SOLD OR THIS CONTRACT SHALL BE LIMITED EXCLUSIVELY TO REPAIR OR REPLACEMENT OF THE ITEMS SOLD OR REFUND OF THE PURCHASE PRICE PAID BY BUYER, AT SELLER'S SOLE OPTION. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, INCLUDING BUT NOT LIMITED TO LOST PROFITS ARISING FROM OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR ITEMS SOLD HEREUNDER, WHETHER ALLEGED TO ARISE FROM BREACH OF CONTRACT, EXPRESS OR IMPLIED WARRANTY, OR IN TORT, INCLUDING WITHOUT LIMITATION, NEGLIGENCE, FAILURE TO WARN OR STRICT LIABILITY.

6. Changes, Reschedules and Cancellations: Buyer may request to modify the designs or specifications for the items sold hereunder as well as the quantities and delivery dates thereof, or may request to cancel all or part of this order, however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller's discretion, and shall be upon such terms and conditions as Seller may require.

7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitations, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any

charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

8. Buyer's Property: Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer, or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

9. Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

10. Indemnity For Infringement of Intellectual Property Rights: Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets (hereinafter "Intellectual Property Rights"). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgments resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

11. Force Majeure: Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter "Events of Force Majeure"). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.

12. Entire Agreement/Governing Law: The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.

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