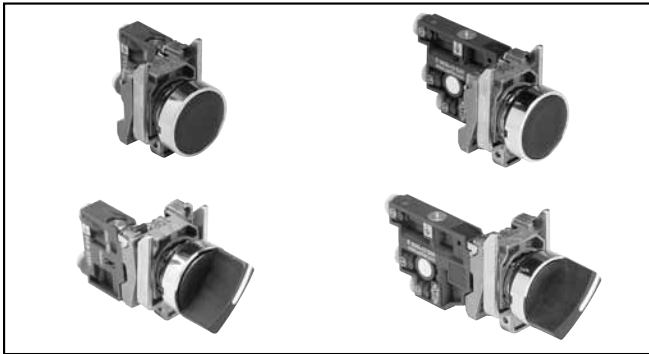


Basic Features

Pneumatic Push Button & Visual Indicators

A
Basic Features
Push Buttons
Selector Switches
Valve Bodies & Accessories
Visual Indicators
Foot Pedal Operated Switches
Two Hand Controls

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.



MODULAR PNEUMATIC / ELECTRIC PUSH BUTTONS

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

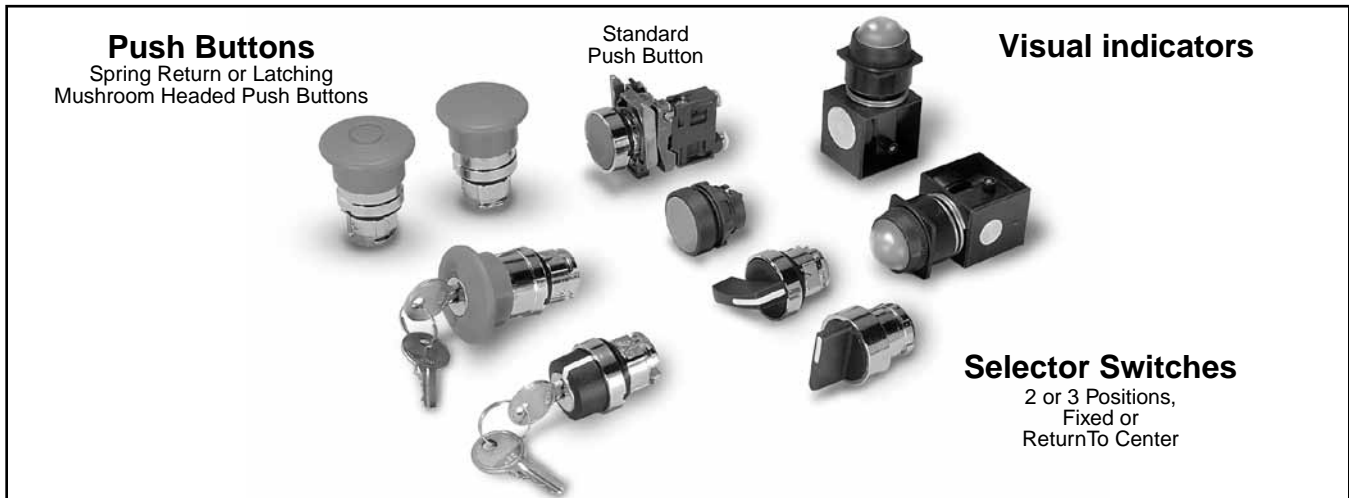
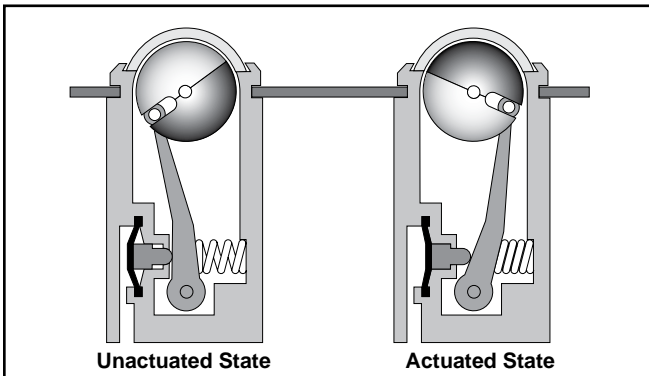
- Pneumatic normally non passing (NNP) is equivalent to electrical normally open (N.O.).
- Pneumatic normally passing (NP) is equivalent to electrical normally closed (N.C.).

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.



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

Flush Push Buttons



PXBB3111BA2



PXBB4131BA2

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.

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.

Selector Switches



PXBB3111BD2



PXBB4131BD2

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.

BOLD ITEMS ARE MOST POPULAR.

A

Basic Features

Push Buttons

Selector Switches

Valve Bodies & Accessories

Visual Indicators

Foot Pedal Operated Switches

Two Hand Controls

For Use With PXBB Valve Bodies and ZBE Electrical Switch Bodies

A

Basic Features

Push Buttons

Selector Switches

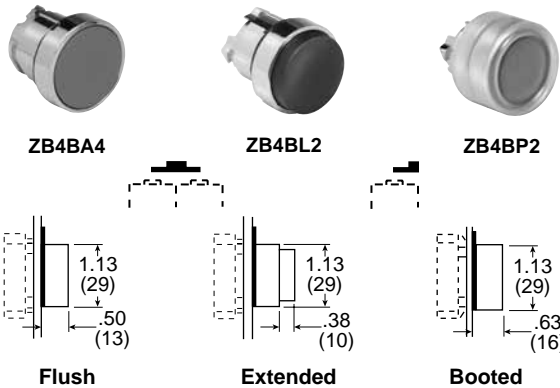
Valve Bodies & Accessories

Visual Indicators

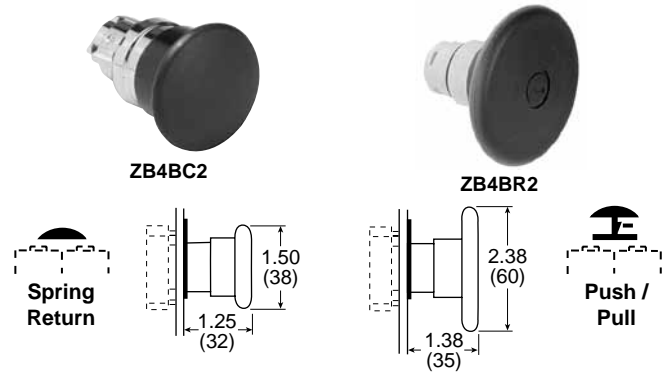
Foot Pedal Operated Switches

Two Hand Controls

Push Buttons



Mushroom Head Push Buttons



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

Part Number*	Color	Function	Description
ZB4BC2	Black	Spring Return	Ø 40mm Head
ZB4BC3	Green		
ZB4BC4	Red		
ZB4BT2	Black	Latching Push-Pull	
ZB4BT3	Green		
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



ZB5AZ905

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

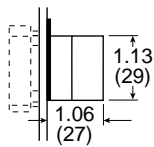
BOLD ITEMS ARE MOST POPULAR.

For Use With PXBB Variable Composition Switch Bodies

Selector Switches



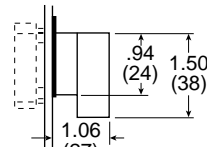
ZB4BD3



Standard Selector



ZB4BJ3

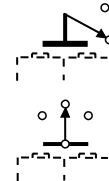
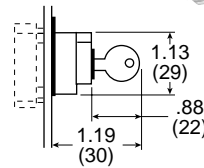


Knob Lever

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

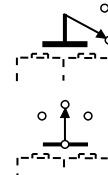
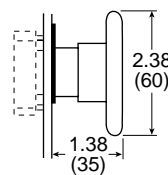
Key Operated		
Part Number*	Key Withdrawal	Function
ZB4BG2	Left	2 Maintained Positions
ZB4BG4	Left and Right	
ZB4BG3	Center	3 Maintained Positions
ZB4BG5	Left and Right	
ZB4BG7	Center	3-Positions 2 Spring Return to Center

* ZB4*** Model Numbers are Metal Head Operators

Mushroom Head Push Buttons with Key Select



ZB4BS24



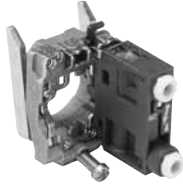
Part Number*	Color	Function	Description
ZB4BS54	Red	Latching Turn to Release	Ø 40mm Head
ZB4BS14	Red	Key Latching	
ZB4BS64	Red	Latching Turn to Release	Ø 60mm Head
ZB4BS24	Red	Key Latching	

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

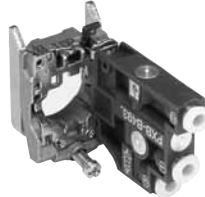
BOLD ITEMS ARE MOST POPULAR.

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 –
 Operating.....5°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 Straigh	3/2	NP
PXBB3922	5/32" Instant Swivel		
PXBB4931	5/32" Instant Straight	3/2	Universal 3-Way
PXBB4932	5/32" Instant Swivel		

BOLD ITEMS ARE MOST POPULAR.

A

Basic Features

Push Buttons

Selector Switches

Valve Bodies & Accessories

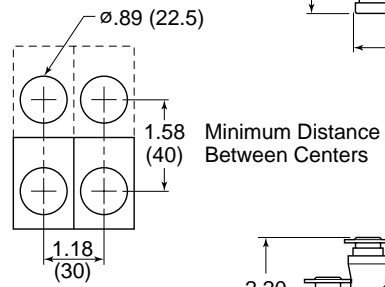
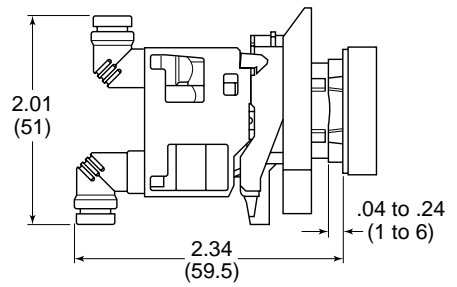
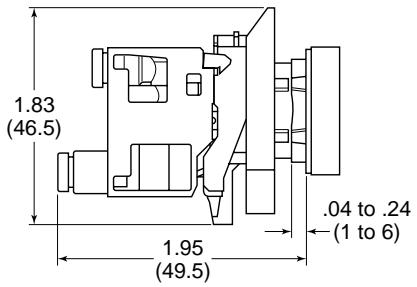
Visual Indicators

Foot Pedal Operated Switches

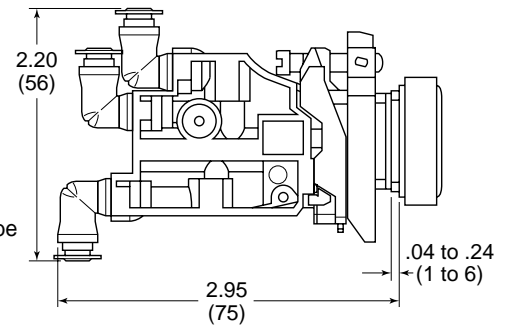
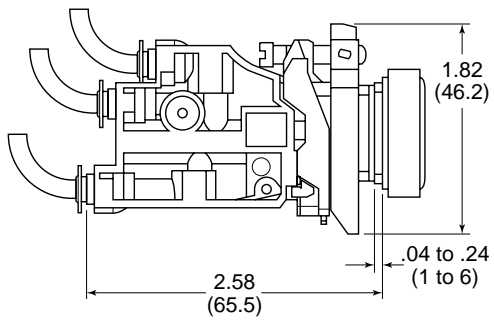
Two Hand Controls

Dimensions & Assembly

PXB-B3 Dimensions



PXB-B4 Dimensions

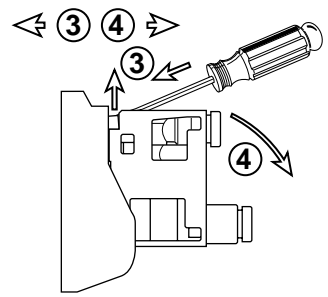
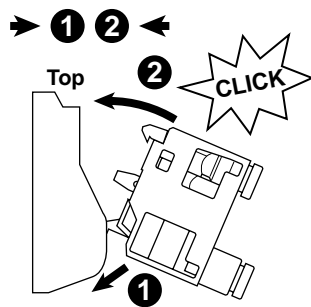


Tube Bending Radius For PXBB3 and PXBB4

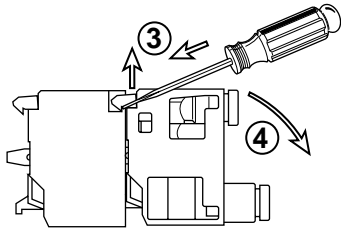
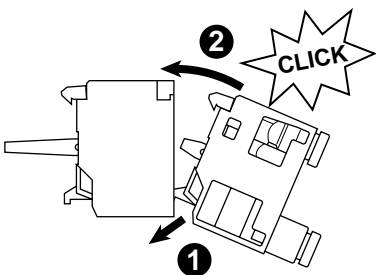
- 4 mm O.D. x 2 mm I.D. Tube = Minimum 0.39 (10) Radius
- 4 mm O.D. x 2.7 mm I.D. Tube = Minimum 0.59 (15) Radius

Assembly

Assembling PXB Valves On Mounting Block



Assembling PXB Valves On the Back of the Electrical Contact



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Basic Features
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Two Hand Controls

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Basic Features
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For Push Buttons and Visual Indicators

Legend Plates for PXBB Devices (22mm)



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

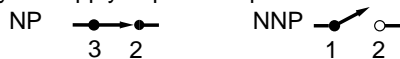
Note: To release push button from mounting ring, pull lever on top of mounting ring up and remove push button operator. To assemble push button operator to mounting ring, align arrows and snap into place.

BOLD ITEMS ARE MOST POPULAR.

Functionality Explanation

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

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.

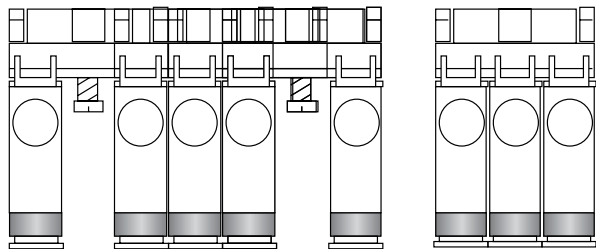


- NNP: Normally Non-Passing.
- NP: Normally Passing.
- NNP + NNP: Double Switch Body, Both Normally Non-Passing.
- NNP + NP: Normally Non passing and Normally-Passing.
- NP + NP: Both Normally Passing.

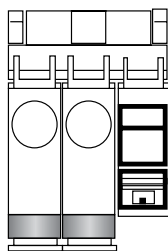
Combination of Output Devices on a Single Mounting Block

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

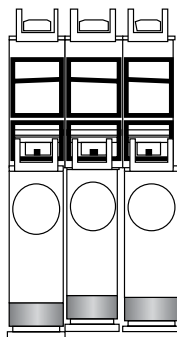
Note: The central position can only be activated by push button heads.



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

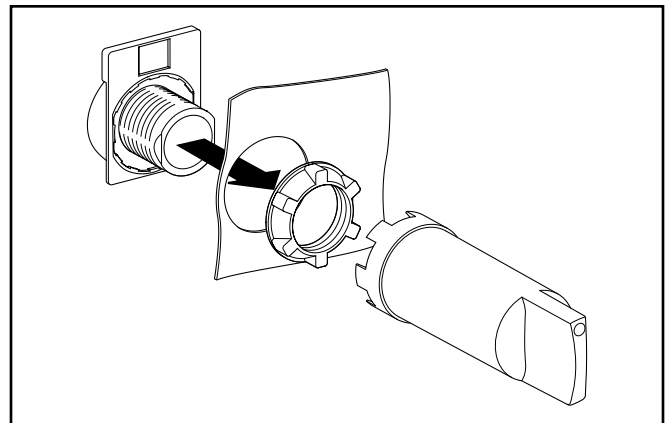


Side by Side Combination

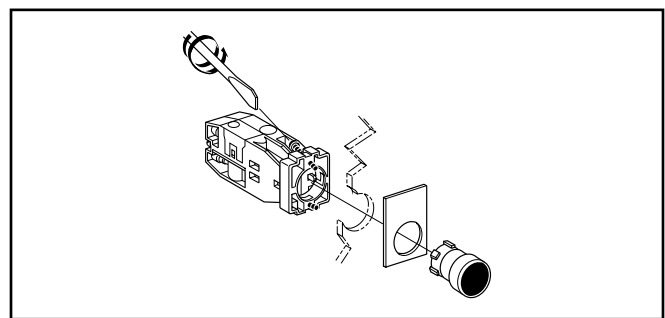


Combination by Mounting Valves On the Back of the Electrical Contact

Assembling Output Devices and Heads on ZB5 Series Mounting Block



Replacement Old Style Mounting



A

Basic Features

Push Buttons

Selector Switches

Valve Bodies & Accessories

Visual Indicators

Foot Pedal Operated Switches

Two Hand Controls

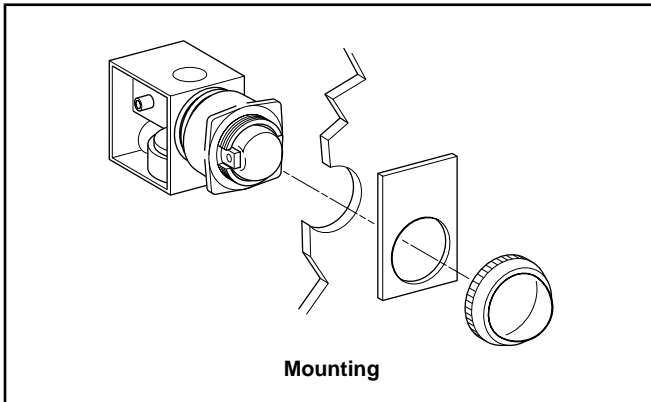
A
Basic Features
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Two Hand Controls

With 5/32" Instant Connections

22mm Visual Indicators



PXVF131



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 –
 - 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)

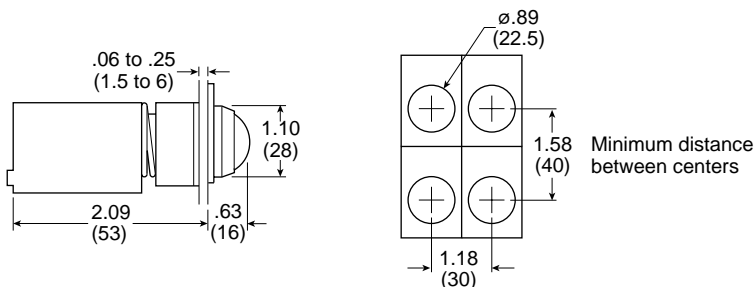
Black Plastic Bezel		
Part Number "ON" Indicator	Part Number "OFF" Indicator	Color
PXVF131	PXVF1213	Green
PXVF141	PXVF1214	Red
PXVF151	PXVF1215	Yellow
PXVF161	PXVF1216	Blue
PXVF111	PXVF1211	White

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 F9.

Dimensions

PXVF1••



Pre-Assembled Two-Hand Control Enclosure

Features

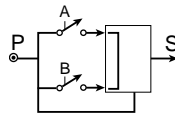
- The pre-assembled two-hand control enclosure occupies both hands of an operator by requiring nearly simultaneous operation of two pushbuttons
- Poppet – snap-acting (no spools)
- Same air as in cylinders – Filtration: 40 micron
- No lubrication required



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 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 Veritas regulations.... (November 1987)

Materials –

Body..... Glass Filled Nylon

Operating Head Zinc Alloy and Plastic

Connections:..... 5/32" instant

Mounting Approvals:

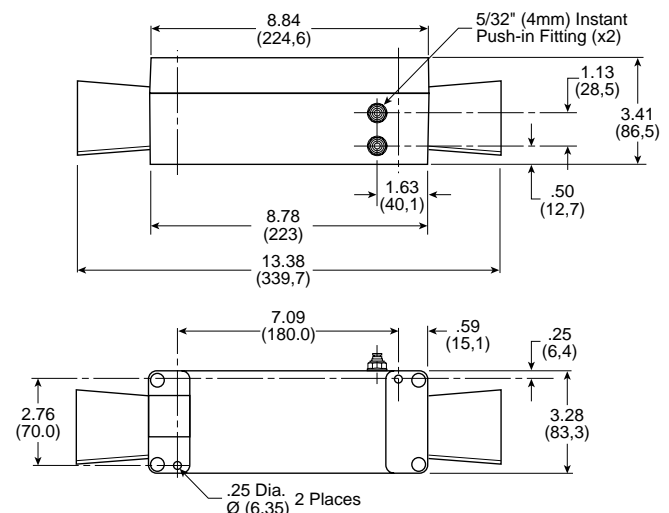
- In accordance with European Standard EN 574 - September 1996
- Conforms to the model that has obtained CE Type Test Certificate No. 02526 520 4631 0397

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

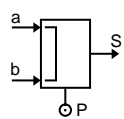
Inches (mm)



- A
- Basic Features
- Push Buttons
- Selector Switches
- Valve Bodies & Accessories
- Visual Indicators
- Foot Pedal Operated Switches
- Two Hand Controls

Control Module & Repair Parts

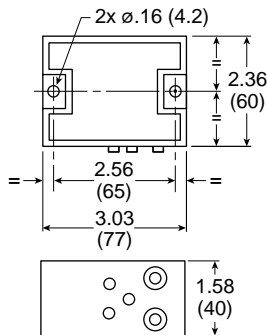
Two-Hand Control Module



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

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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
PXBB3111B	2	Valve Body & Mounting Ring
ZB4BR*	2	Push Button
PPRL15	2	Control Module Guard

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