Control Panel Products

Basic Features	. G4-G5
Push Button, Selector Switches with Bodies	G6
Push Buttons	G7
Selector Switches	G8
Valve Bodies & Accessories	G9
Dimensions & Assembly	G10

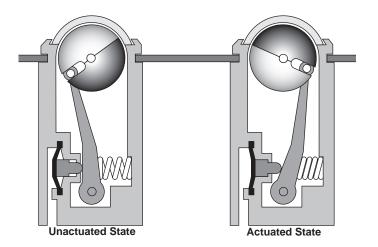
egend Plates, Specifications	G11
Mounting	G12
/isual Indicators 22mm (7/8")	G13
Foot Pedal Operated Switches	G14
wo-Hand Controls	G15-G16

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.



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.



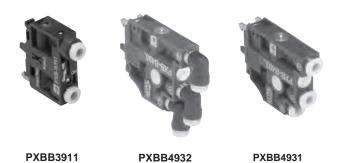
Plastic Model

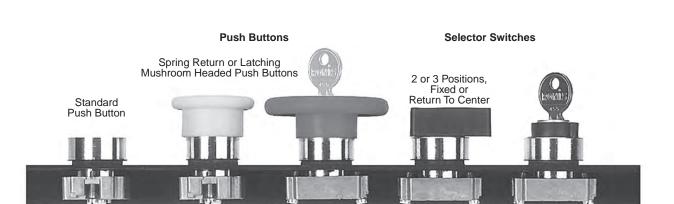
Modular Pneumatic / Electric Push Buttons

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.





Airline Accessories

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

Flush Push Buttons





PXBB3111BA2 PXBB4131BA2

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









PXBB4131BC2

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

Selector Switches







PXBB3111BD2

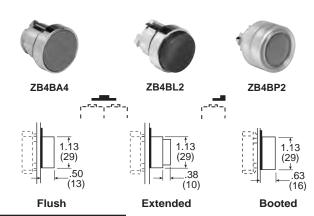
PXBB4131BD2

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	NNP+NNP
PXBB3251BD3	Black	Positions with Std. Handle	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.

For Use With PXBB Valve Bodies and ZBE Electrical Switch Bodies

Push Buttons



Plastic Head ZB5**	Metal Head ZB4*			
Part Number	Part Number	Color	Function	Description
ZB5AA2	ZB4BA2	Black		
ZB5AA3	ZB4BA3	Green	0	
ZB5AA4	ZB4BA4	Red	Spring Return	Flush
_	ZB4BA5	Yellow	Retuin	
_	ZB4BA6	Blue		
ZB5AL2	ZB4BL2	Black		
ZB5AL3	ZB4BL3	Green	Spring	Extended
ZB5AL4	ZB4BL4	Red	Return	Exterided
_	ZB4BL5	Yellow		
_	ZB4BP2	Black	Carian	
_	ZB4BP3	Green	Spring Boote	Booted
_	ZB4BP4	Red	rtotuiii	

^{*} ZB4*** Model Numbers are Metal Head Operators

Push / Push Buttons



ZB4BH02

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

^{*} ZB4**** Model Numbers are Metal Head Operators

Mushroom Head Push Buttons



Part Number*	Color	Function	Description
ZB4BC2	Black		
ZB4BC3	Green	Spring Return	
ZB4BC4	Red		Ø 40mm Head
ZB4BT2	Black	Latching Push-Pull	9 40mm nead
ZB4BT3	Green		
ZB4BT84	Red	i usii-i uii	
ZB4BR2	Black		
ZB4BR3	Green	Spring Return	Ø 60mm Head
ZB4BR4	Red		

^{*} ZB4*** Model Numbers are Metal Head Operators

Mounting Accessories



ZB5AZ905

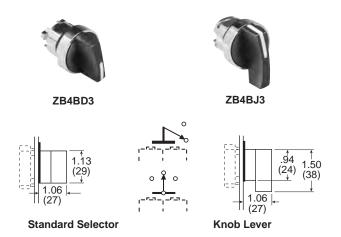
Part Number	Color	Description
ZB5AZ905	_	Plastic Head (ZB5) Mounting Nut Tightening Tool

^{**} ZB5*** Model Numbers are Plasticl Head Operators

G

For Use With PXBB Variable Composition Switch Bodies

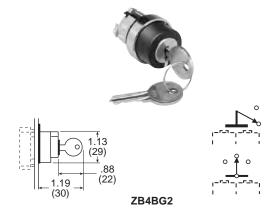
Selector Switches



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

^{*} ZB4*** Model Numbers are Metal Head Operators

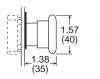
Key Operated Selectors



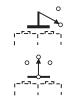
Key Operated		
Part Number*	Key Withdrawal	Function
ZB4BG2	Left	2 Maintained
ZB4BG4	Left and Right	Positions
ZB4BG3	Center	3 Maintained
ZB4BG5	Left and Right	Positions
ZB4BG7	Center	3 Positions 2 Spring Return to Center

^{*} ZB4*** Model Numbers are Metal Head Operators

Mushroom Head Push Buttons with Key Select







ZB4BS944

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

^{*} ZB4**** Model Numbers are Metal Head Operators

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.

Specifications

Air Quality – Standard Shop Air, Lub	ricated or Dry 40 µm Filtra	ation
Flow – PXBB3• PXBB4•	•	=.08 =.18
Materials – Body Operating Head	Polyar Zinc Alloy & Pla	
Operating Positions	All Posit	ions
Operating Pressure – PXBB3• PXBB4•	15 to 115 PSIG (1 to 9 15 to 145 PSIG (1 to 10	,
Ports	5/32" Instant for Semi-Rigid Nylo	n or
	Polyurethane 1	ube
Temperature – Operating	5°F to 140°F (-15°C to + 60	O°C)

Additional Valve Bodies







PXBB3911

PXBB4932

PXBB4931

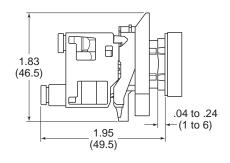
Part Connections		Function	Type of Switching*	
PXBB3911 5/32" Instant		3/2	NINID	
PXBB3912	5/32" Instant Swivel	3/2	NNP	
PXBB3921	5/32" Instant Straight		NP	
PXBB3922	5/32" Instant Swivel	3/2	INP	
PXBB4931	5/32" Instant Straight	3/2	Universal	
PXBB4932	5/32" Instant Swivel	3/2	3-Way	



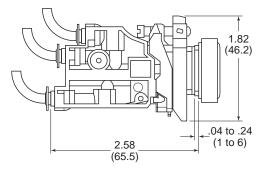
[•] Mount up to 2 valves on mounting ring for selector switches, Valves **cannot** be mounted in center position.

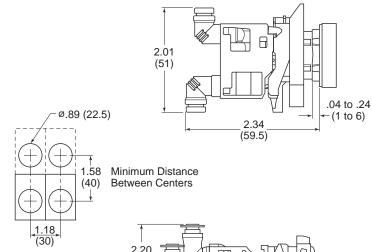
Dimensions

PXB-B3 Dimensions



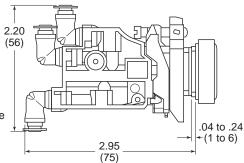
PXB-B4 Dimensions





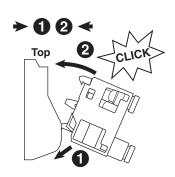
Tube Bending Radius For PXBB3 and PXBB4

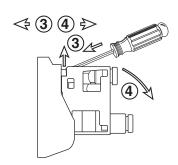
- 4 mm O.D. x 2 mm I.D. Tube = Minimum 0.39 (10) Radius
- 4 mm O.D. x 2.7 mm I.D. Tube = Minimum 0.59 (15) Radius



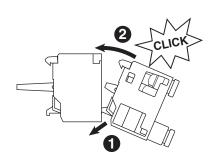
Assembly

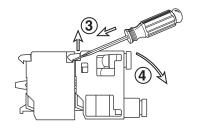
Assembling PXB Valves On Mounting Block





Assembling PXB Valves On the Back of the Electrical Contact





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 (Wh	nite Letters)	
ZBY4101	Yellow / Whi	te Background (B	lack 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 Sel	ectors		
ZBY2367		Off	On	
With Text For	3-Position Sel	ectors		
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)

(/ thow o 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.



Functionality Explanation

Fluid Power		Universal Description	Electrical		
Function Symbol		Universal Description	Function	Symbol	
Normally Closed (N.C.)	2-Way	3-Way	Normally Non-Passing (NNP)	Normally Open (N.O.)	~~~
Normally Open (N.O.)	2-Way	3-Way	Normally Passing (NP)	Normally Closed (N.C.)	

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

NP NNP 0-

NNP: Normally Non-Passing.
NP: Normally Passing.

NNP + NNP: Double Switch Body,

Both Normally Non-Passing.

NNP + NP: Normally Non passing and

Normally-Passing.

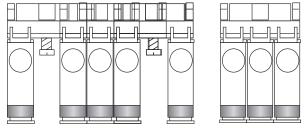
NP + NP: Both Normally Passing.

On a Single Mounting Block

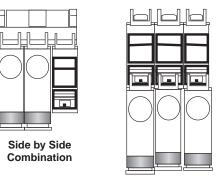
Combination of Output Devices

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.

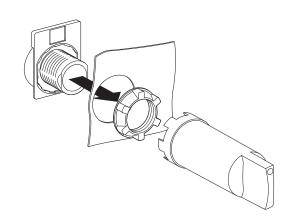


Electrical Contacts and Valves can be Combined Either Side by Side, or by Mounting the Valve on the Back of the Electrical Contact.

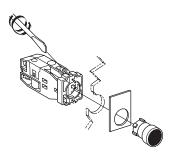


Combination by Mounting Valves
On the Back of the
Electrical Contact

Assembling Output Devices and Heads On ZB5 Series Mounting Block



Mounting

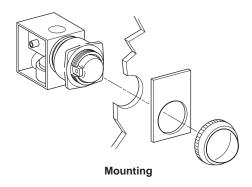


With 5/32" Instant Connections

22mm Visual Indicators







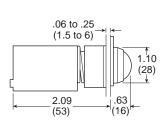
Black Plastic Bezel				
Part Number "ON" Indicator	Color			
PXVF131	PXVF1213	Green		
PXVF141	PXVF1214	Red		
PXVF151	PXVF1215	Yellow		
PXVF161	PXVF1216	Blue		
PXVF111	PXVF1211	White		

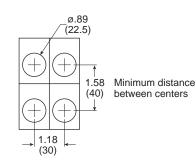
Notes:

- 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 G11.

Dimensions

PXVF1••





Specifications

Air Quality -

Standard Shop Air, Lubricated or Dry, 40µm Filtration

Body Polyamide Zinc Alloy & Plastic Operating Head

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)

Airline Accessories

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

Protective Guard



PXPEM510

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

Foot Switches Without Protective Guard



PXPEA110

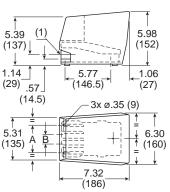
Part Number	Function	Material	Type of Switching*
PXPEA110	Spring Return	Plastic	NNP
PXPEM110	Spring Return	Metal	NNP

/!\ 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.

PXPEA110

Dimensions PXPEM510



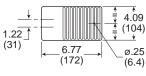
- (1) 2 mounting ports adaptors for conduit fittings
- (2) 7° operating angle

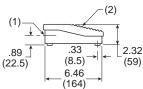
	inch	mm
а	3.53	940
b	1.22	31

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





(94)1.10 (28)6.39 ø.25 (6.4)

3.70

- 43 2.13 .91 (11)(23)6.06 (154)
- (1) .825" diameter thru hole
- (2) 6° operating angle

Specifications

Air Quality –

Standard Shop Air, Lubricated or Dry, 40µm Filtration

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

Materials -

Polyamide Body 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 Storage

32°F to 122°F (0°C to + 50°C) -22°F to 140°F (-30°C to + 60°C)

* NNP: Normally Non-Passing. __





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 Push buttons
- Poppet Snap-acting (No Spools)
- Same Air as in Cylinders Filtration: 40 Micron
- · No Lubrication Required

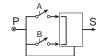


PXPC111

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 push button, 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".

Specifications

Operating Pressure 40 to 120 PSI (3 to 8 bar)

Permissible Fluids -

Air or neutral gas 40 micron filtration, lubricated or dry

Flow at 90 PSI (6 bar) 7 SCFM (200 l/mn ANR)

Operating Temperature -5°F to 140°F (-15°C to 60°C) Below 40°F (5°C), an air dryer is required

Storage Temperature -40°F to 160°F (-40°C to 70°C)

Number of operations with dry air at 90 PSI (6 bar),

68°F (20°C), frequency 1 Hz 1 Million Operations

Vibration resistance -

Conforms to section 19-2 of bureau Véritas regulations (November 1987)

Materials -

Body Glass Filled Nylon
Operating Head Zinc Alloy and Plastic
Connections 5/32" instant

Mounting

Approvals:

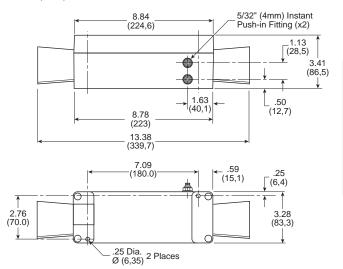
- In accordance with European Standard EN 574 - September 1996
- Conforms to the model that has obtained CE Type Test Certificate No. 02526 520 4631 0397

№ WARNING

These devices should <u>NOT</u> 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



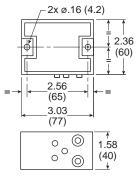




PXPA11

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 (I/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 <u>NOT</u> 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 push buttons.

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