



## PBUM3500 Series

# High Purity Automatic Switchover Manifolds Liquid Cylinders (Main) by High Pressure Cylinders(Reserve)

Gas is always delivered from the liquid cylinder main side as long as the pressure is high enough ... otherwise the high pressure reserve cylinders take over

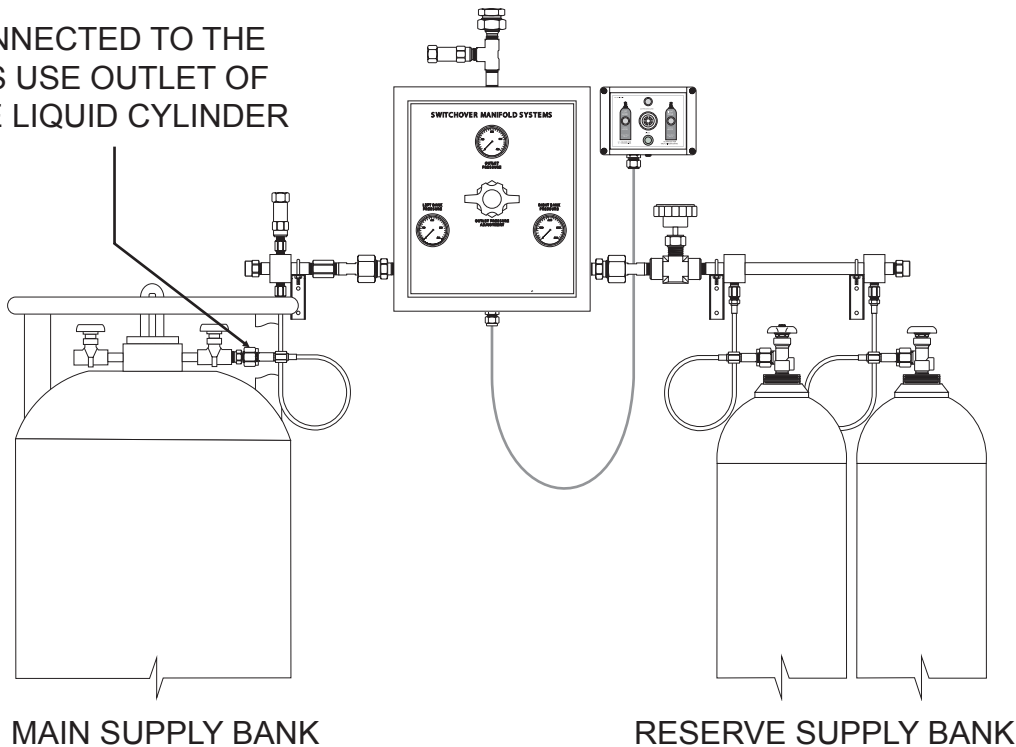
### Key Features

**Pressure differential automatic switchover**  
No fancy electronics and yet no lever to rotate

**Large stainless steel diaphragm regulators**  
Maintain gas purity  
Withstand low temperature  
Surprising high flow

**Perfect for demanding applications**  
When connected to the proper ambient vaporizers, this manifold can deliver up to 3500 scfh of gas.

CONNECTED TO THE  
GAS USE OUTLET OF  
THE LIQUID CYLINDER



## High Purity Automatic Switchover Manifolds Liquid Cylinders (Main) by High Pressure Cylinders (Reserve)

### Description

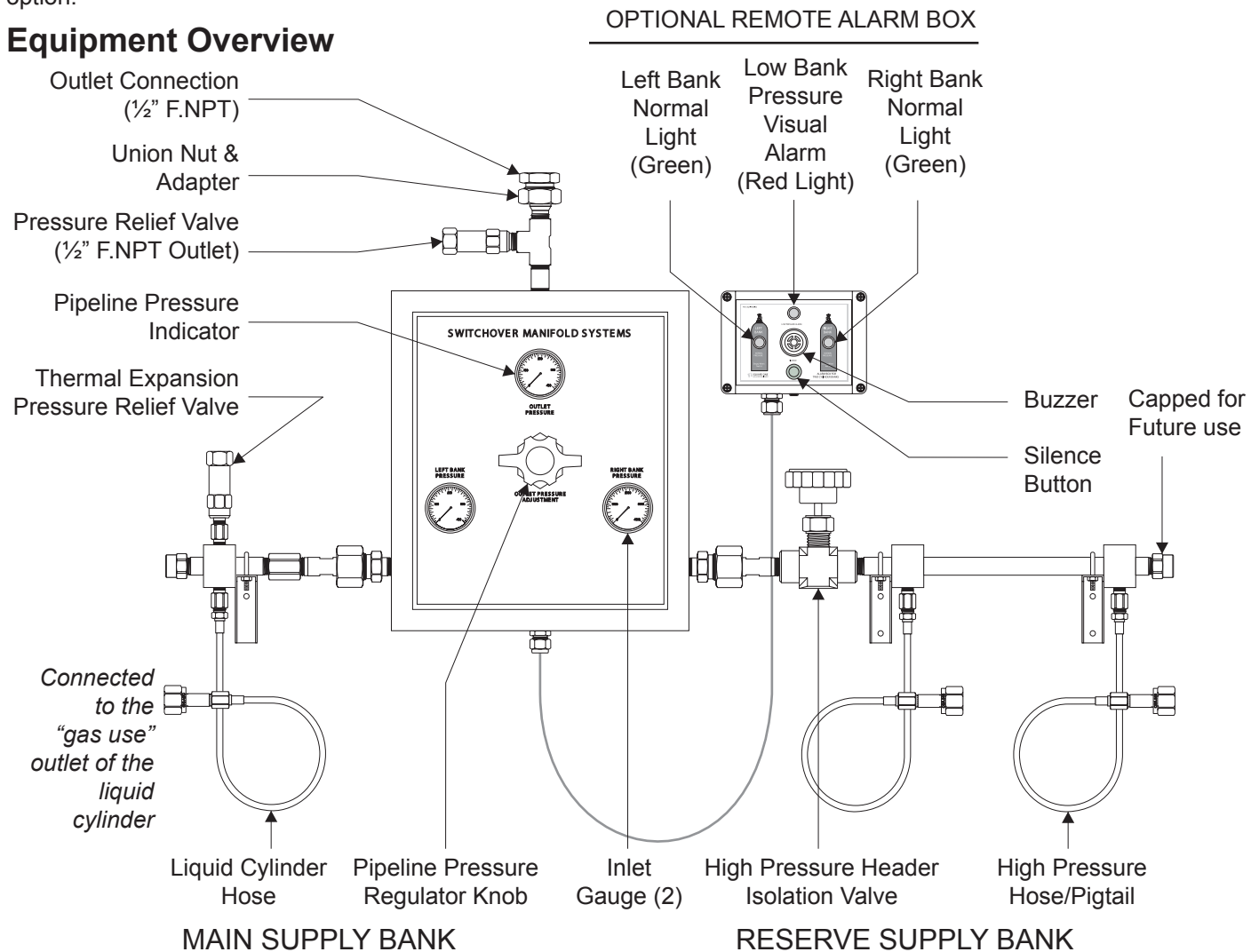
The PBUM3500 Series automatic switchover manifolds are designed to supply an uninterrupted flow of high purity gases. The system automatically supplies gas from the liquid cylinder side as long as the pressure is higher than the switchover pressure setpoint. Low pressure on the liquid cylinder side can be caused by either:

- an empty cylinder;
  - the economizer of the liquid cylinder is not properly adjusted (the liquid cylinder may not be empty);
  - the flow of gas is too high for the capacity of the liquid cylinder pressure build-up regulator (cyl. may not be empty)
- In any of the above mentioned situations, the high pressure reserve will kick in to temporarily supply gas. Once the pressure on the main liquid cylinder side is back to normal (higher than the switchover setpoint), the gas will flow automatically back from that main side without interruption, without lever to rotate. All functional components are enclosed in a tamper-resistant metal case.

### Optional remote alarm

Internal pressure switches, a low bank pressure light and a buzzer indicate low bank pressure and the need to change out the depleted cylinders. Although the alarm box is optional, we strongly recommend to order your manifold with the alarm option.

### Equipment Overview



## High Purity Automatic Switchover Manifolds Liquid Cylinders (Main) by High Pressure Cylinders (Reserve) Materials

<b>Enclosure</b>	Material: Steel - Paint: Powder Coated - Color: Light Gray
<b>Headers</b>	Brass ASTM B16 - CDA377
<b>Tubing</b>	Copper ASTM B280 - ASTM B75
<b>Fittings</b>	Brass ASTM B16 - Brass ASTM B124
<b>Hoses</b>	Thermoplastic Hoses: Innercore: Nylon - Fittings: Steel - Specs: SAE J517 100R8 - Color: Black Teflon Hose: Innercore: Teflon - Fittings: Brass - Braiding: Stainless Steel Stainless Steel Hoses: Core: Stainless Steel - Braiding: Stainless Steel - Fittings: Stainless Steel
<b>Header Valves</b>	Body: Brass - Packing Nut: Brass - Packing: PTFE - Handle: Plastic - Soft Stem Tip: Kel-F Stem: 316 Stainless Steel
<b>Relief Valve</b>	Body, seat retainer: brass ASTM B16 - adjusting screw, springs: stainless steel 316 - Disc: PTFE
<b>Regulators</b>	Body, bonnet: brass - diaphragm: stainless steel - seal and seat: PTFE - Filter: Sintered Bronze - Seat Return Spring: PH 17-7 Stainless Steel
<b>Pressure Switches</b>	Piston: stainless steel - "O"-ring: Buna-N - connection: brass

For more information on our alarm box, please refer to our RAB-2 brochure

### Specifications

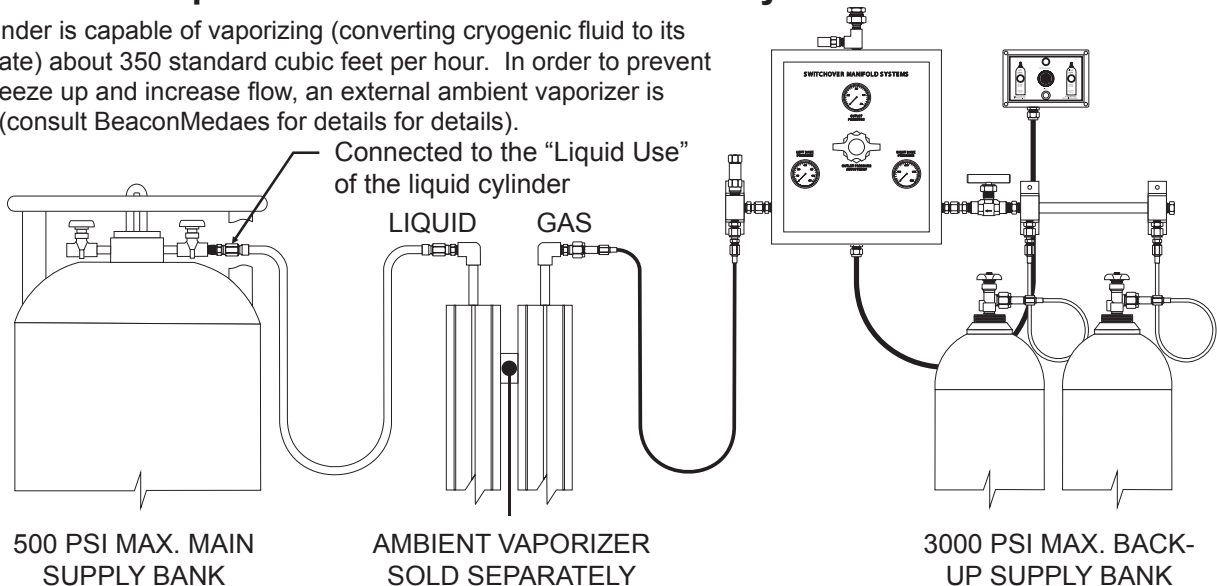
<b>Gas</b>	Refer to part number matrix
<b>Maximum Inlet Pressure</b>	Main: 350 PSIG or 500 PSIG Reserve: 3000 PSIG
<b>Outlet Pressure Range</b>	10-100 PSIG
<b>Flow</b>	Cv = 0.4
<b>Operating Temperature</b>	-40°F to + 100°F
<b>Default Switchover Pressure</b>	110 PSIG*
<b>Power Requirement</b>	110 VAC (for the alarm box)

<b>Inlet Connections</b>	Gas Specific CGA fittings
<b>Pressure Relief Valve</b>	Inlet: 400 PSIG or 600 PSIG Outlet: 150 PSIG
<b>Header</b>	1/2" NPS, brazed, plated
<b>Audible &amp; Visual Alarm</b>	Optional
<b>Outlet Connection</b>	1/2" F.NPT
<b>Hose/Pigtail Length</b>	Main: 72 inches Reserve: 36 inches

\* The liquid cylinder must maintain at least 115 PSIG before the high pressure cylinder reserves kicks in. The low pressure alarm will be actuated at 120 PSIG.

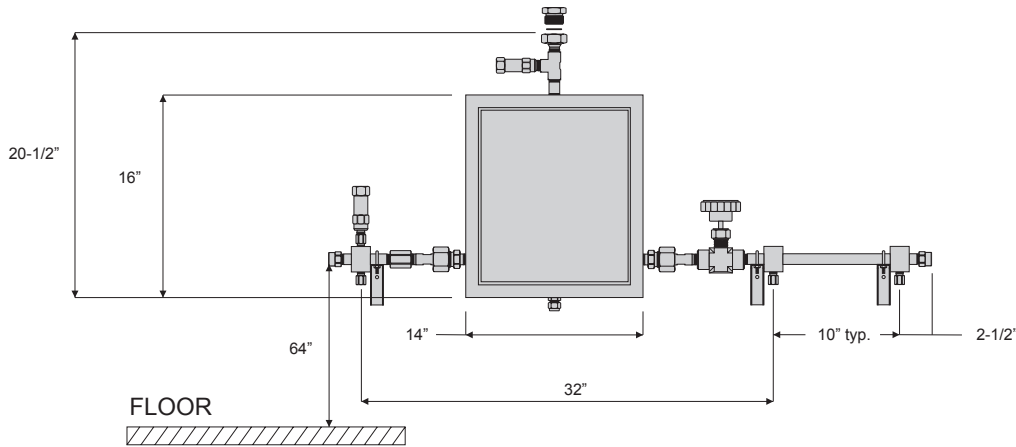
### Using Ambient Vaporizers to Increase Gas Delivery Flow

A liquid cylinder is capable of vaporizing (converting cryogenic fluid to its gaseous state) about 350 standard cubic feet per hour. In order to prevent regulator freeze up and increase flow, an external ambient vaporizer is necessary (consult BeaconMedaes for details for details).

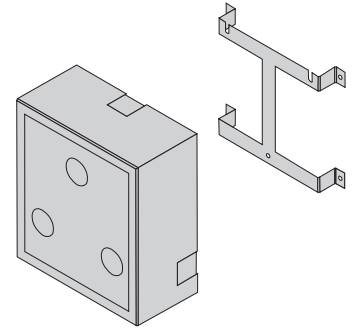


## High Purity Automatic Switchover Manifolds Liquid Cylinders (Main) by High Pressure Cylinders (Reserve)

### Dimensions



### Installation



Wall mount bracket included for easy wall installation

### Ordering Information



Gas	Inscribe
Argon	CGA 580
Carbon dioxide	CGA 320
Nitrogen	CGA 580
Nitrous oxide	CGA 326
Oxygen	CGA 540

No. of Cylinders (Main)	Inscribe
Typically 1 or 2	

No. of Cylinders (Reserve)	Inscribe
Typically enough to supply gas for about 2-3 days	

Alarm Box	Inscribe
Manifold with alarm box	AB
Manifold without alarm box	Leave Blank

Options	Inscribe
Outside Installation	3R

Installation Hardware	Inscribe
Wall mount bracket	WM
Floor stand	FS

Header Style	Inscribe
Standard 10" center	10S
Staggered 5" center	5S
Vertical crossover 5" center	5V

Hoses & Pigtails	Inscribe
Teflon core hose	TCH
Thermoplastic hose	NCH
All stainless steel hose	SSH
Rigid copper pigtail	RCP
Rigid stainless steel pigtail	SSP

### OUTSIDE INSTALLATION (OPTION 3R)

PBUM Series Manifolds are designed for indoor installations. Should you require to install your manifold outside, by selecting the option 3R, the alarm box will be installed in a Nema 4X enclosure with a transparent cover. Please be aware that the PBUM enclosure, even with option 3R, will rust over time as it is made out of steel.

Our policy is one of continuous research and development.  
We reserve the right to modify without notice the specifications given in this document.

