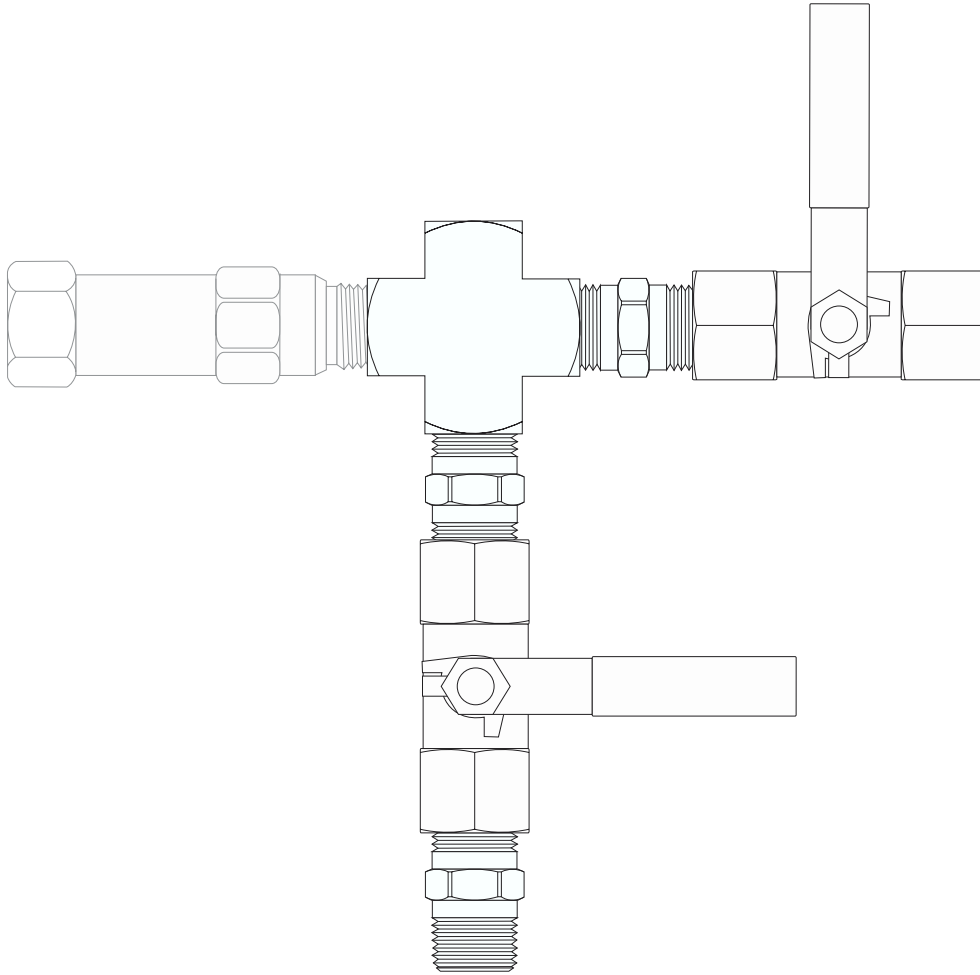


THIS BOOKLET CONTAINS PROPRIETARY INFORMATION OF BEACONMEDÆS AND IS PROVIDED TO THE PURCHASER SOLELY FOR USE IN CONJUNCTION WITH TIK SERIES PIPELINE TIE-IN KIT.



Important

These instructions are for experienced operators who know the general principles and safety precautions to be observed in handling compressed gases. If you are not certain you fully understand the safety precautions for handling gases, we urge you to obtain and read the Material Safety Data Sheet (MSDS) for each gas being used.

Do not permit untrained persons to install, operate, or maintain these manifolds. Do not attempt to install or operate these manifolds until you have read and fully understand these instructions. If you do not fully understand these instructions, contact BeaconMedæS.

Be sure this information reaches the operator. Your supplier has extra copies.

1 - Safety Precautions

Protect yourself and others. Read and understand the following instructions before attempting to use this equipment. Failure to understand and follow these instructions could result in serious personal injury and/or damage to equipment. Because of the many potential hazards associated with gases, read the Material Safety Data Sheet for each gas you will be using.

- Know and understand the physical and chemical properties of the gas being used.
- Observe general precautions for the use of gases.
- Observe safety precautions for the gas being used.
- Read and follow precautions on cylinder labels.
- Never use equipment with gases not compatible with the materials of construction. The use of gases not compatible with the materials of construction may cause damage to equipment or injury to personnel.
- If toxic or flammable gases are used with gas equipment do not locate it near open flames or any other source of ignition.
- Many gases can cause asphyxiation by displacing oxygen in the atmosphere. Make certain the area where these manifolds are operated is well ventilated. Provide a device to warn personnel of oxygen depletion in the work area.
- Do not release toxic or flammable gases in the vicinity of personnel. Use this equipment only in well ventilated areas. Vent gases to the outside atmosphere, and in an area away from personnel. Be sure that venting and disposal methods are in accordance with Federal, State, Provincial and local requirements. Locate and construct vent lines to prevent condensation or gas accumulation. Be sure the vent outlet is **NOT** obstructed by rain, snow, ice, insects, birds, etc. Do not inter-connect vent lines; if more than one vent is needed, use separate lines.
- Relief devices should be installed and properly vented in all gas handling systems to protect against equipment failure and over-pressurization.
- Never connect gas equipment to a supply source having a pressure greater than the maximum rated pressure. Refer to the Product Specifications for maximum inlet pressures.
- Never permit oil, grease, or other combustible materials to come in contact with cylinders, manifolds, and connections. Oil and grease may react and ignite when in contact with some gases – particularly oxygen and nitrous oxide.
- Cylinder, header, and master valves should always be opened very s-l-o-w-l-y. Heat of recompression may ignite combustible materials.
- Flexible hoses should never be kinked, twisted, or bent into a radius smaller than 3 inches. Mistreatment may cause the flexible hoses to burst.
- Do not apply heat. Some materials may react and ignite while in contact with some gases – particularly oxygen and nitrous oxide.
- Cylinders should always be secured with racks, chains, or straps. Unrestrained cylinders may fall over and damage or break off the cylinder valve which may propel the cylinder with great force.
- Oxygen equipment and cylinders should be grounded. Static discharges and lightning may ignite materials in an oxygen atmosphere, creating a fire or explosive force.
- Welding should not be performed near nitrous oxide piping. Excessive heat may cause the gas to dissociate, creating an explosive force.
- Do not use leak test solution that contains ammonia. Solutions containing ammonia may cause brass tubing to crack.
- Always use oxygen compatible leak test solution on oxygen or nitrous oxide service equipment.

2 - Abbreviations

C	Common	OSHA	Occupational Safety & Health Administration
CGA	Compressed Gas Association	PSIG	Pounds per Square Inch Gauge
FT-LBS	Foot-Pounds	SCFH	Standard Cubic Feet per Hour
IN-LBS	Inch-Pounds	VAC	Voltage, Alternating Current
N/C	Normally Closed	VDC	Voltage, Direct Current
N/O	Normally Open	PCB	Printed Circuit Board
NPT	National Pipe Taper		

3 - Disclaimer

BeaconMedæs shall not be liable for errors contained herein or incidental or consequential damages in connection with providing this manual or the use of material in this manual.

4 - Manufacturer Statement

The information contained in this instruction booklet has been compiled by BeaconMedæs, from what it believes are authoritative sources, and is offered solely as a convenience to its customers. While BeaconMedæs believes that this information is accurate and factual as of the date printed, the information, including design specifications, is subject to change without prior notice.

5 - Introduction

These instructions are intended for use by experienced operators only. BeaconMedæs tie-in kits are tested and prepared for the indicated gas service and are built following National Fire Protection Association and Compressed Gas Association guidelines. This tie-in kit is composed of an inlet valve, a tie-in valve and a cross. Optional pressure relief valves, pressure gauges and diaphragm valves can be added to the tie-in kit.

6 - Description & Specifications

The TIK Series Pipeline Tie-In Kit is ideal for installation right after any cabinet-style manifold systems. It allows to perform the following tasks without interruption of gas supply:

- Piping reserve manifold into primary gas supply line
- Allows for shut down of primary gas supply permitting routine maintenance and repair
- Emergency supply tie-in point
- Purge gas inlet
- Pipeline venting
- Gas sampling
- Installation of pipeline relief valve or pipeline pressure gauge

Materials of Construction (Wetted)

Ball Valve

2000-PSI Rated, High Purity, Type 316
Stainless Steel

Fittings

Brass

Pressure Relief Valve

Brass Construction with Teflon Disc

Specifications

Maximum Working Pressure (Without Relief Valve)	2000 PSIG
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Inlet & Outlet Connections

Gas Inlet	1/2" M.NPT
Tie Valve	1/2" F.NPT
Gas Service	1/2" F.NPT
Spare	1/2" F.NPT

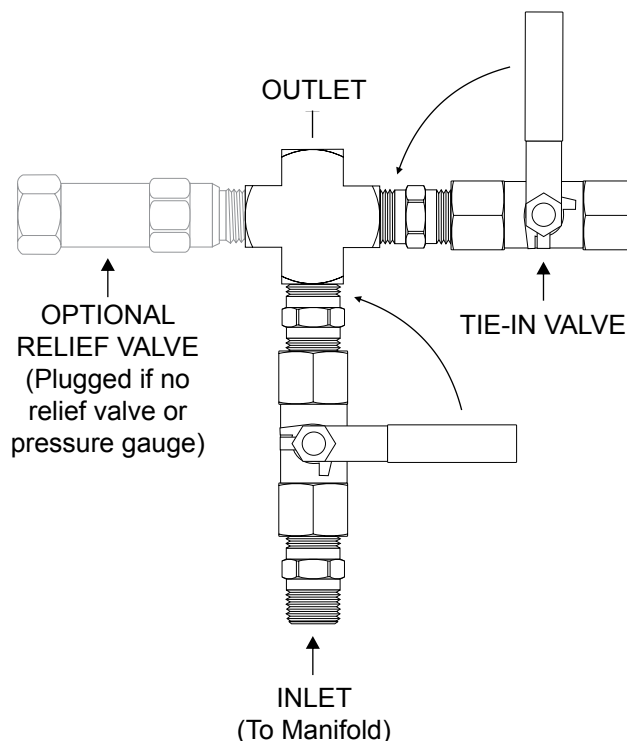


Figure 1 – TIK Main Components

7 - Ordering Information

TIK - 1/2 -

Size	Inscribe
1/2" NPS	1/2"

Options	Inscribe
1/2" Pressure Relief Valve*	PRV
Pipeline Pressure Gauge*	PG
Diaphragm Valves Instead of Ball Valves	DV

*Please provide pressure for both

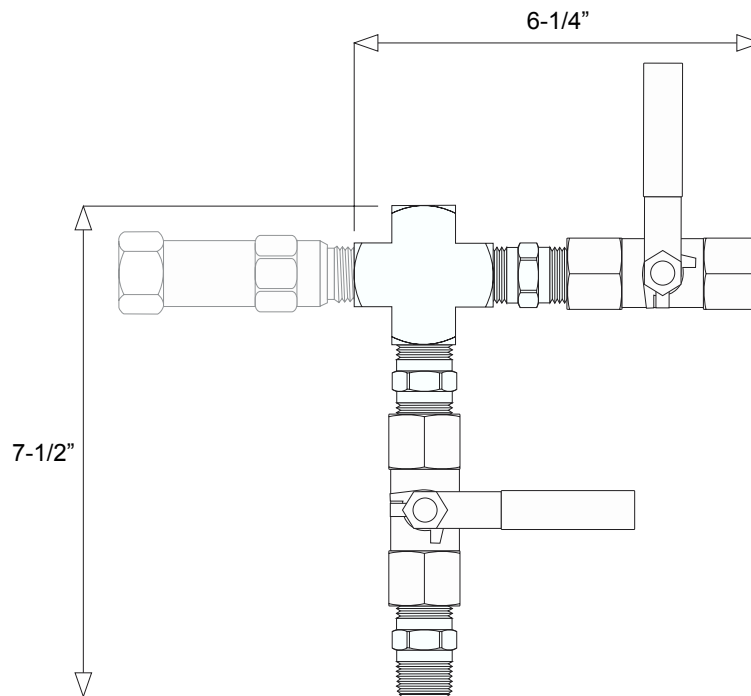
8 - Dimensions


Figure 2 – Typical Dimensions

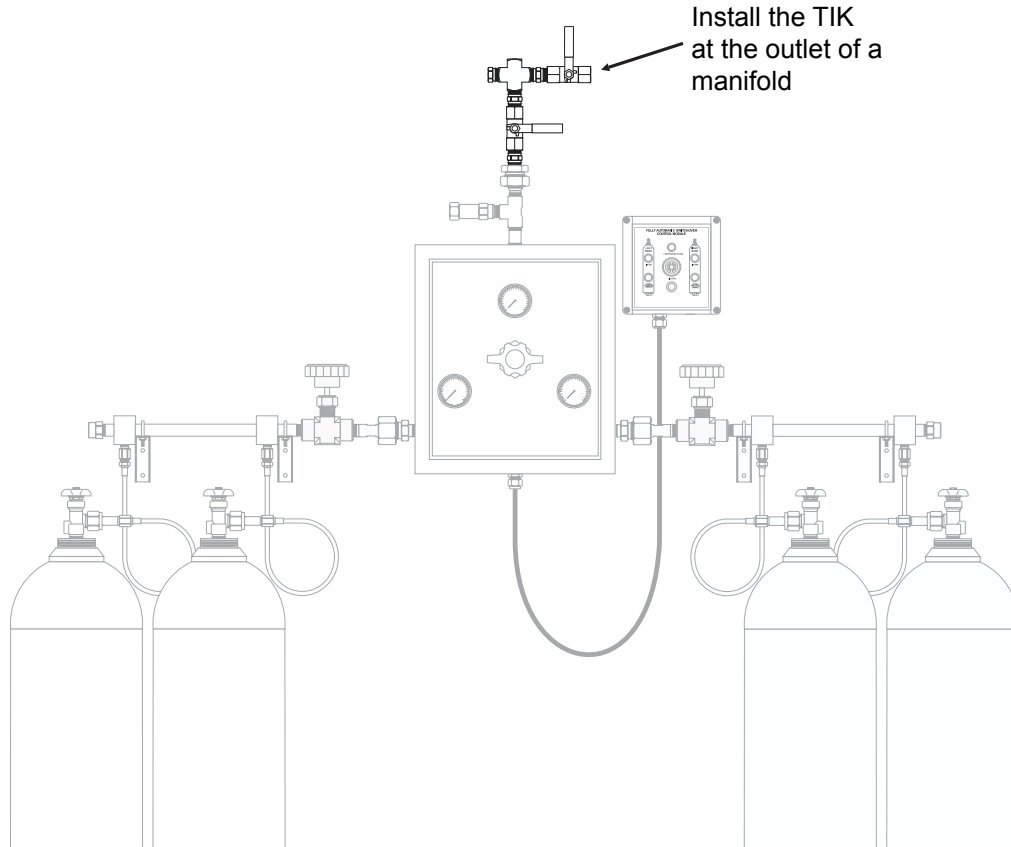
9 - Installation


Figure 3 – Typical TIK Location

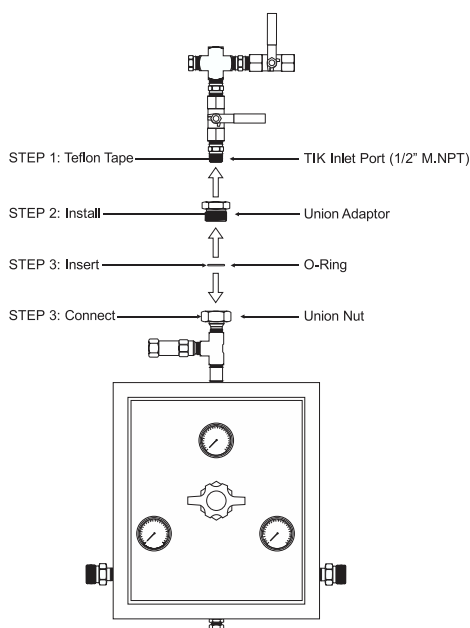


Figure 4 – Installation to the Manifold

STEP 1

The first step is to apply good quality Teflon tape to the 1/2" M.NPT inlet port of the TIK.

STEP 2

Remove the union adaptor for the manifold outlet and screw that adaptor to the 1/2" M.NPT inlet of the TIK.

STEP 3

The union adaptor comes with a Viton o-ring. This Viton o-ring must be placed back into the groove of the union adaptor.

STEP 4

Put the entire assembly (TIK + Union Adaptor + O-ring) to the union nut. Tighten by hand the union nut to the union adaptor. Then, with one wrench to the union adaptor, tighten the union nut with a wrench (no more than 1/4 of a turn).

Important

The manifold outlet is a zero clearance assembly. That means it relies on a flat and leveled installation. Therefore, it is important to install the manifold first and then the tie-in kit. The pipeline installation can only be done AFTER the tie-in kit is installed.

10 - Plumbing

In high purity piping installations, the quality of tubing and fittings are of paramount importance. Therefore, the piping installer should be familiar with and experienced in such critical applications. Hereunder is a list of important points to consider:

- Privilege stainless steel tubing over copper, and copper over soft tubing such as Teflon or nylon.
- Always verify material compatibility with the service gas.
- A good piping network is always protected against overpressure with a safety (pressure) relief valve (vented to a safe location).
- If your equipment has not been ordered with an outlet valve, the installer should install one near the PDC Series outlet line regulator.
- Always have a mean to allow easy removal of the equipment off the wall such as unions or compression fittings.

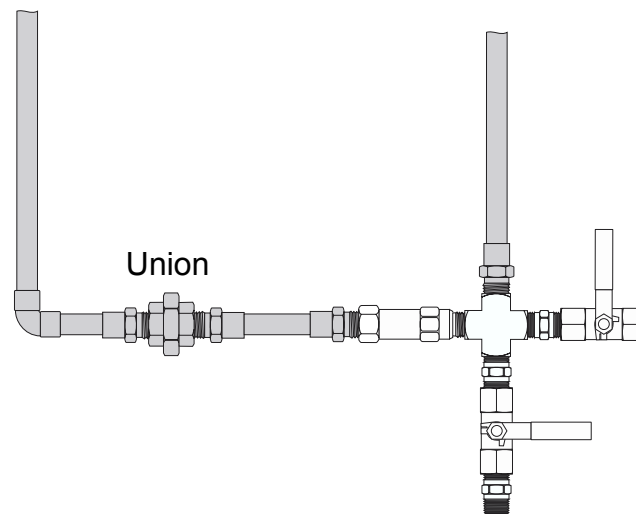


Figure 5 – Suggested Plumbing

Technical Tips and Suggestions

Install Union Downstream of the PRV – If you have ordered the TIK with the PRV option. We strongly recommend to install a union downstream of the PRV. The union will allow to service or replace the PRV should maintenance be required.

Silver Brazing – The male adaptor(s) that will be connected to the tie-in kit should be brazed to the pipe prior its installation to the tie in kit. Make sure you use a wet rag or any type of heat sink to absorb the heat coming from nearby acetylene torch during silver brazing. The valves are mounted with Teflon seals and packing that could be damaged by the intense heat of the flame or any heat radiating from the pipe.

Install the Tie-In Kit before Connecting the Pipe – As mentioned in the previous section, the union adaptors of the manifold is a zero clearance type. If the tie-in kit or the piping is not plumbed, they may force the zero clearance fittings to “open” and therefore creating a leak path.

11 - Warning

Our equipment is primarily intended for use in compressed gas systems. BeaconMedæS products are designed for use by persons technically trained in the proper use and safe handling of gas delivery systems. Due to the high pressure and hazardous gases employed in these processes, misapplication could result in injury or death. BeaconMedæS expressly warns against the sale to, or use of our products by, anyone other than professionally trained personnel. Do not use this equipment where pressures and temperatures can exceed those listed under the « Specifications » section.

Through misuse, age, or malfunction, components used with inert, combustible, corrosive, toxic, or oxidizing gases can fail in various modes. The system designer is warned to consider the failure modes of all component parts used with the above mentioned gases and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure modes. Adequate safeguards can be, but are not limited to:

- Pressure relief devices adequately piped to a safe location;
- Gas detection devices connected to a proper warning audible and visual alarm;
- Automatic shutoff valves and/or manual shutoff valves with an emergency stop push button;
- Self-contained breathing apparatus;
- Pipeline purge system with inert gas;
- Fire extinguishers and/or automatic sprinklers.

System designers must provide a warning to end users in the systems instructional manual if protection against a failure mode cannot be adequately provided for.

It should be recognized that warnings are valid for any equipment, regardless of manufacturer, and are not restricted to equipment manufactured by BeaconMedæS. BeaconMedæS's reputation for equipment quality performance is well established. We feel we have the additional obligation to provide information or warnings to customers to assist them in applying our equipment in a reasonable and safe manner.

12 - Design Changes

In line with our commitment to continuous improvement, BeaconMedæS reserves the right to make design modifications or discontinue manufacture of any equipment without prior notice.

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LIMITED WARRANTY

WARRANTY: The Seller expressly warrants that the products manufactured by it will be free from defects in material, workmanship and title at the date of shipment. This warranty is exclusive and is IN LIEU OF ALL IMPLIED OR STATUTORY WARRANTIES (INCLUDING WITHOUT LIMITATION, WARRANTIES AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM COURSE OF DEALING OF USAGE OR TRADE) or any other express or implied warranties or representations. All claims under this warranty must be made in writing and delivered to the seller prior to the expiration of 1 year from the date of shipment from the factory, or be barred. Upon receipt of a timely claim, the seller shall inspect the item or items claimed to be defective, and seller shall, at its option, modify, repair, or replace free of charge, any item or items which the seller determines to have been defective at the time of shipment from the factory, excluding normal wear and tear. Inspection must be performed at the seller's plant and in such event, freight for returning items to the plant shall be paid by Buyer. Seller shall have no responsibility if such item has been improperly stored, installed, operated, maintained, modified and/or repaired by an organization other than the seller. Adjustment for products not manufactured by Seller shall be made to the extent of any warranty of the manufacturer or supplier thereof. The foregoing shall be the Seller's sole and exclusive liability and buyer's sole and exclusive remedy for any breach of warranty or for any other claim based on any defect in, or non-performance of, the products whether based on breach of contract or in tort, including negligence or strict liability.