

Operating Manual



truflo®

Read the user's manual carefully before starting to use the unit.
Producer reserves the right to implement changes without prior notice.

Safety Information

- De-pressurize and vent system prior to installation or removal
- Confirm chemical compatibility before use
- **DO NOT** exceed maximum temperature or pressure specifications
- **ALWAYS** wear safety goggles or face-shield during installation and/or service
- **DO NOT** alter product construction



Warning | Caution | Danger

Indicates a potential hazard. Failure to follow all warnings may lead to equipment damage, injury, or death.



Personal Protective Equipment (PPE)

Always utilize the most appropriate PPE during installation and service of pressure products.



Note | Technical Notes

Highlights additional information or detailed procedure.



Pressurized System Warning

Sensor may be under pressure. Take caution to vent system prior to installation or removal. Failure to do so may result in equipment damage and/or serious injury.



Please ensure that the Instruments are not to be subject to water hammer or pressure spikes! Always Pressure Test System with H2O Prior to Initial Start-Up

Before installation be certain the appropriate instrument has been selected considering operating pressure, full scale pressure, wetted material requirements, media compatibility, operating temperature, vibration, pulsation, and desired accuracy. Failure to do so could result in equipment damage, failure and/or personal injury. Ensure only qualified personnel are permitted to install and maintain this instrument.



Pressurize System Warning

Sensor may be under pressure, take caution to vent system prior to installation or removal. Failure to do so may result in equipment damage and/or serious injury.



Intended Use

The GI Isolator is used for Transmitting Media Pressure to a Pressure Gauge or Pressure Transmitter.

Only operate the GI Isolator if it is in perfect technical condition and only use it as intended:

- Use the GI Series Isolator to protect the gauge/instrument from the process media
- Use the GI Series Isolator with an approved pressure gauge
- Use the GI Series Isolator only with solid free media
- Adhere to the operating limits
- Install the GI Series Isolator in the following manner:
 - The Process Connection is connected to the pressurized pipe - See Fig. 1 (Item #4)
 - The Pressure Gauge/Instrument is mounted into the Upper Bonnet - See Fig. 1 (Item #1)

The technical data listed in the current data sheet are engaging and must be complied with. If the data sheet is not available, please order or download it from our homepage (www.iconprocon.com).

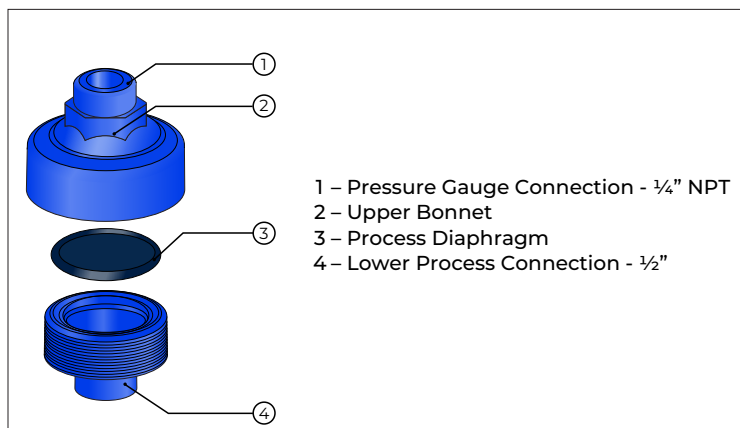


Fig. 1. Layout and Function

Personnel for Installation, Commissioning, and Operation

All operations described in this instruction manual must be carried out only by trained personnel or an accredited person. The qualified personnel must have read and understood the operating instructions in this manual and must follow said instructions accordingly.

Only trained technicians should carry out the following:

- Installation Repair and Maintenance work
- Work on the electrical system

Only carry out work on the fitting if the following requirements are met:

- ✓ System is empty
- ✓ System has been flushed
- ✓ System is de-pressurized
- ✓ System has cooled down
- ✓ System is secured against being switched back on again



Do Not Make Any Modifications to the Device!

Hazardous Media

When handling hazardous media (e.g. hot, flammable, explosive, toxic, hazardous to health or the environment), observe the safety regulations for the handling of hazardous substances.

Use personal protective equipment when carrying out any work on the GI series isolator.

Product Description

Truflo GI Series Gauge Isolators allow pressure gauges or any other pressure instrument to be used in corrosive services. The upper chamber (gauge side) is filled with a stable fluid such as glycerin or silicone.

A Teflon® bonded diaphragm separates it from the lower chamber which receives the media under pressure. Customers can easily fill isolators and install their own gauges, ensuring flexible and customizable application across various industrial settings.

Separation Diaphragm :

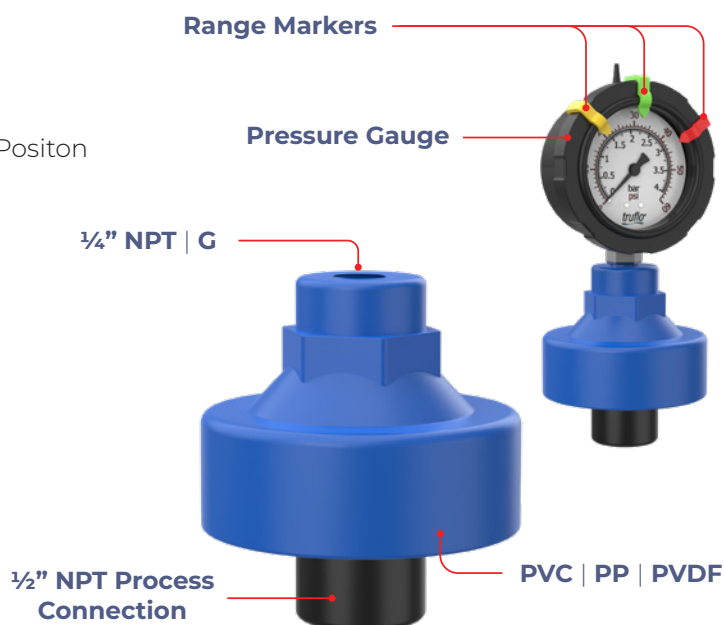
- FPM or PTFE Bonded EPDM Diaphragm Seal

Mounting Position :

- Any
- Pressure Instrument or Gauge Preferably in an Upright Position

Features

- ✓ PTFE Teflon® Bonded Diaphragm
- ✓ Glass Filled PP Bonnet
- ✓ PVC | PP | PVDF Process Connection
- ✓ ½" NPT Process Connection



Technical Specifications

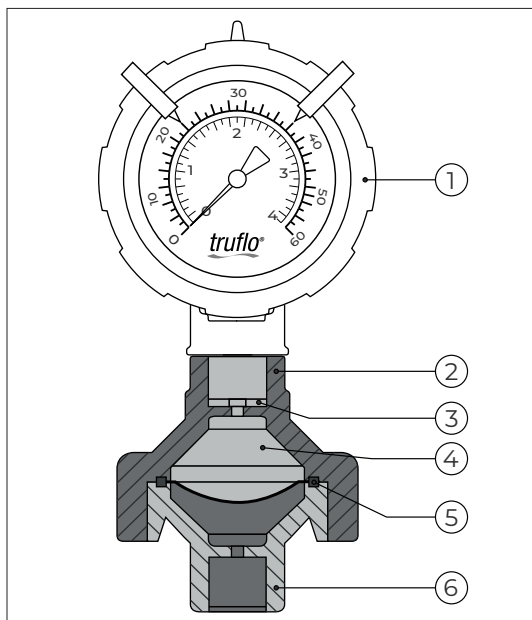


Fig. 2. Section Drawing

No.	Part	Materials
1	Pressure Gauge	PP 316 SS
2	Bonnet	PP PVDF
3	O-Ring	FPM (G-Thread Only)
4	Liquid Fill	Glycerin Silicone
5	Diaphragm	PTFE Teflon® Bonded
6	Lower Chamber	PVC PP PVDF

Optional Gauges

Truflo® offers the gauges mounted to isolator and pre-filled with glycerin, silicone or special fluid for chlorine applications (see Page 7). Truflo® gauges have a PP plastic housing and the cases are normally filled with either glycerin or silicone for corrosion resistance and dampening.

Truflo® GI Series gauge isolators are not recommended for vacuum applications.

Other Options

Flanged Process Connections.

Working Pressure (Psi) – Non Shock

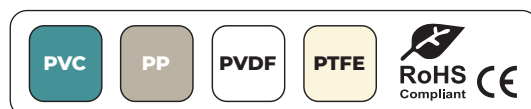
Material	10 – 20°C 50 – 68°F	30°C 86°F	40°C 104°F	50°C 122°F	60°C 140°F	70°C 158°F	80°C 176°F	90°C 194°F	100°C 212°F	120°C 248°F
PVC	150	100	80	45	15	-	-	-	-	-
PP	150	125	100	80	65	45	-	-	-	-
PVDF	150	150	150	125	105	85	70	60	45	30

Temperature Ranges

PVC : 0 to 60°C (32 to 140°F) | PP : 10 to 80°C (50 to 176°F) | PVDF : -30 to 120°C (-22 to 248°F)

Model Selection

GI Series — All Plastic Gauge Guard	
Part Number	Material
GI-P	PVC with PTFE Bonded Teflon® Diaphragm
GI-PP	PP with PTFE Bonded Teflon® Diaphragm
GI-PF	PVDF with PTFE Bonded Teflon® Diaphragm



Transport, Storage, and Disposal

Unpacking & Inspection on Delivery

1. Unpack the GI Series when received and inspect it for damage that may have occurred during transportation.
2. Report any damage to the manufacturer immediately.
3. For immediate installation, dispose of packaging material according to local regulations.

Storage



Store the Fitting Properly to Avoid Material Damage!

Make sure the storage room meets the following conditions:

- Dry
- Not in direct sunlight
- Storage temperature 50°F to 140°F (10°C to 60°C)

Disposal



Plastic parts can be contaminated by poisonous or radioactive media to such an extent that cleaning will not be sufficient.

- Use personal protective equipment when carrying out any work on the fitting.
- Before disposing of the fitting:
 - Collect escaping medium and dispose separately according to local regulations.
 - Neutralize residues of medium in the fitting.
- Remove plastic parts and dispose of them in accordance with local regulations.
- Dispose of fitting in accordance with local regulations.

Installation and Connection

Preparing for Installation

Check Operating Conditions :

1. Ensure the GI Series Isolator is suitable for the purpose intended:
 - Materials (of construction).
 - Medium (Liquids).
2. Ensure the required operating conditions are met.
3. Consult with the manufacturer regarding any other use of the device.

Check the Installed Condition of the GI Series Isolator :

- Check the installed condition of the fitting and depending on the situation proceed as follows:
 - Ensure GI Series Isolator has been properly filled with the non-compressible fluid and pressure gauge has been installed properly.

Planning Pipelines



Risk of Leaks Due to Impermissible Pipework Forces!

Ensure that the fitting is not subject to any pulling or thrusting forces or bending moments.

- Plan Pipes safely:
 - Optional flow directions
 - Optional installation position and direction
 - Adjust for changes in length due to temperature changes (compensators, expansion shanks)

Installing the Fitting



Before installation in the pipeline, the GI Series Isolator must be filled and the pressure gauge must be filled and mounted. Follow the section drawing for assembly (Fig. 2, Page 4).

Use the recommended non-compressible fluid.

Filling the GI Series Isolator

1. Fill upper chamber (2) with suitable non-compressible fluid. Ensure there are no air bubbles trapped inside chamber.



Damage to the Process Diaphragm Due to Lack of Non-compressible Fluid!

- Before commissioning, make sure that the GI Series isolator is sufficiently filled with non-compressible fluid.

Damage to the Process Diaphragm Using Compressed Air!

- Apply Compressed Air to the fitting only for Low Pressure Under 20 Psi. When doing so, do not exceed the permissible pressure of the pressure gauge that is used.

2. Screw the Pressure Gauge (1) Clockwise into the Upper Chamber (2).
3. Rotate the Fitting until the Pressure Gauge (1) is Facing Vertically Downwards.
4. Connect the Compressed Air supply to the Process Connection (Bottom Section) (6).
5. Switch on the Compressed Air Supply and Apply Compressed Air to the Isolator for a Short Period (Low Pressure) of time. This will ensure the Non-Compressible Fluid is Forced into the Bourdon Tube.
6. Switch Off the Compressed Air Supply and Carefully Detach it from the Isolator .
7. Rotate the Isolator until the Pressure Gauge (1) is in the Upright Position.
8. Unscrew the Pressure Gauge (1) from the Upper Chamber (2).
9. Check the Fill Level in the Upper Chamber (2) and Depending on the Liquid Level proceed as follows:
 - If the fill level is Sufficient - Liquid Level at Top of Upper Chamber - Continue with Process.
 - If the Fill Level is Too low: Top Up the non-compressible fluid (4) in the Upper Chamber (2). Repeat Steps 2-10.
10. Check the Thread Seal to ensure there are no leaks.
 - G Type or BSP: Ensure that the O-ring Seal is Located within the Upper Chamber (See Item 3) .
 - NPT Thread: If Necessary Wrap Sealing Tape Around the Thread of the Pressure Gauge (1).
11. Screw the Pressure Gauge Clockwise into the Upper Chamber (2).
12. Ensure the Pressure Gauge is Zeroed. The Isolator is Now Ready to be Installed.

Installing Isolator into Piping System

- ✓ The Pressure Gauge Must Be Mounted on the Isolator
- ✓ The Isolator Must Be Filled with the Non-compressible Fluid.
- ✓ The Bourdon Tube of the Pressure Gauge Must Be Filled with the Non-compressible Fluid.



Risk of Injury or Environmental Damage from Liquid Media!

Leak due to faulty installation.

- Installation should only be performed by technicians who have been properly trained.

1. Align the Isolator together with the pressure gauge, preferably in a upwards position.
2. Install the Isolator into Piping System - Perform Hydrostatic Test.

Performing the Hydrostatic Test - Mandatory



Pressure Test using Neutral Medium, e.g. Water.

1. Pressurize the fitting
 - Test pressure < Permissible System Pressure
2. Check the GI Series for leaks

Troubleshooting



Risk of Injury Due to Hazardous or Hot Process Media!

- Use personal protective equipment when carrying out any work on the fitting.
- Safely collect the media and dispose of it in accordance with environmental regulations.

Consult with the manufacturer regarding faults which are not identified in the following table, or which cannot be traced to the indicated causes.

Error	Possible Causes	Corrective Action
Incorrect Measurement Value	Air bubbles in the non-compressible fluid.	• Check that the fitting is sufficiently filled with non-compressible fluid, top it up if necessary.
Medium in the Non-Compressible Fluid	Defective separation diaphragm.	• Change the process diaphragm.
Medium is Leaking	Defective seal at process connection side.	• Check the seal at the connection to the pipeline and tighten or replace.

Dimensions

Gauge Diameter	Item No.	Gauge Connection	Housing	Bourdon Tube	Window	Accuracy	Dimension	
							C	D (max)
2-1/2"	OBS-xx	1/4"	PP	316 SS	Polycarbonate	±0.75% of span	3.6	3.1
2-1/2" Double-Sided	OBS-DGOxx-	1/4"	PP	316 SS	Polycarbonate	±0.75% of span	3.6	3.1
2-1/2" Back Mount	OBS--xx-	1/4"	PP	316 SS	Polycarbonate	±0.75% of span	3.6	3.1
4-1/2"	OBS4--xx-	1/4"	PP	316 SS	Polycarbonate	±0.5% of span	6.0	6.0

"xx" denotes the maximum gauge pressure (i.e. 30 | 60 | 100 | 160 Psi).

Other Ranges are Available.

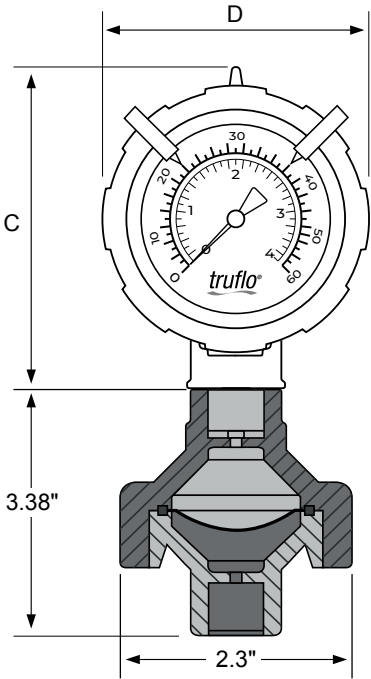
Upper Chamber Liquid Fill

Icon recommends the following Non-compressible Fluids for Upper Chamber

Non-compressible Fluid
Glycol (ethylene glycol) Glycerin Silicone
Antifreeze
De-mineralized water / Halo Carbon

Tightening Torques

Description	Torque
Pressure Gauge	22 ft-lbs
Process Connection	Hand-Tight



Warranty, Returns and Limitations

Warranty

Icon Process Controls Ltd warrants to the original purchaser of its products that such products will be free from defects in material and workmanship under normal use and service in accordance with instructions furnished by **Icon Process Controls Ltd** for a period of one year from the date of sale of such products. **Icon Process Controls Ltd** obligation under this warranty is solely and exclusively limited to the repair or replacement, at Icon Process Controls Ltd option, of the products or components, which **Icon Process Controls Ltd** examination determines to its satisfaction to be defective in material or workmanship within the warranty period. **Icon Process Controls Ltd** must be notified pursuant to the instructions below of any claim under this warranty within thirty (30) days of any claimed lack of conformity of the product. Any product repaired under this warranty will be warranted only for the remainder of the original warranty period. Any product provided as a replacement under this warranty will be warranted for the one year from the date of replacement.

Returns

Products cannot be returned to **Icon Process Controls Ltd** without prior authorization. To return a product that is thought to be defective, go to www.iconprocon.com, and submit a customer return (MRA) request form and follow the instructions therein. All warranty and non-warranty product returns to **Icon Process Controls Ltd** must be shipped prepaid and insured. **Icon Process Controls Ltd** will not be responsible for any products lost or damaged in shipment.

Limitations

This warranty does not apply to products which: 1) are beyond the warranty period or are products for which the original purchaser does not follow the warranty procedures outlined above; 2) have been subjected to electrical, mechanical or chemical damage due to improper, accidental or negligent use; 3) have been modified or altered; 4) anyone other than service personnel authorized by **Icon Process Controls Ltd** have attempted to repair; 5) have been involved in accidents or natural disasters; or 6) are damaged during return shipment to **Icon Process Controls Ltd** reserves the right to unilaterally waive this warranty and dispose of any product returned to **Icon Process Controls Ltd** where: 1) there is evidence of a potentially hazardous material present with the product; or 2) the product has remained unclaimed at **Icon Process Controls Ltd** for more than 30 days after **Icon Process Controls Ltd** has dutifully requested disposition. This warranty contains the sole express warranty made by **Icon Process Controls Ltd** in connection with its products. **ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY DISCLAIMED.** The remedies of repair or replacement as stated above are the exclusive remedies for the breach of this warranty. **IN NO EVENT SHALL Icon Process Controls Ltd BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND INCLUDING PERSONAL OR REAL PROPERTY OR FOR INJURY TO ANY PERSON. THIS WARRANTY CONSTITUTES THE FINAL, COMPLETE AND EXCLUSIVE STATEMENT OF WARRANTY TERMS AND NO PERSON IS AUTHORIZED TO MAKE ANY OTHER WARRANTIES OR REPRESENTATIONS ON BEHALF OF Icon Process Controls Ltd.** This warranty will be interpreted pursuant to the laws of the province of Ontario, Canada.

If any portion of this warranty is held to be invalid or unenforceable for any reason, such finding will not invalidate any other provision of this warranty.

For additional product documentation and technical support visit:

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