

2" & 3" TP and TPL Turbo-Meters Safety Interlock Device

Save these instructions
for future reference.

Introduction

The instructions packed with each Sensus Metering Systems 2" and 3" TP and TPL Turbo-Meter caution users to relieve all pressure inside the meter body prior to attempting disassembly of the meter.

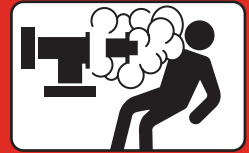
In addition, metal caution badges are affixed to each of the meter half-clamps warning users to relieve pressure inside the meter before removing the half-clamps.

In spite of these warnings and established industry practices, Sensus Metering Systems has been advised that some users have attempted meter disassembly with pressure inside the meter body.



DANGER

**METER UNDER PRESSURE
DEATH OR PERSONAL INJURY
CAN RESULT IF HALF-CLAMPS
ARE LOOSENED BEFORE PRESSURE
IN METER IS FULLY RELIEVED**



Sensus Metering Systems has made available a Safety Interlock Device for 2" and 3" TP and TPL Turbo-Meters. When installed, this device provides an audible warning of pressure inside the meter before disassembly occurs.

New 2" and 3" TPL Turbo-Meters shipped since January 1, 1985, have the Safety Interlock Device installed.

Retro-fit kits are available for installation on 2" or 3" TP and TPL Turbo-Meters shipped in prior years.

See Parts List MP-1081 for kit part numbers.

Operation

When installed, the Safety Interlock Device covers the meter half-clamps to prevent access to the half-clamp bolts while the meter is under pressure. In order to access the half-clamps bolts, it is first necessary to back off the safety relief valve stem, (#3 in drawing).

Doing so allows line pressure to be relieved to atmosphere through a restricted 1/16" opening causing a noise, thereby providing a warning to the operator of pressure inside the meter body. The operator then uses the piping system blow-down valve to relieve pressure in the meter body until such time as the noise through the relief valve no longer occurs.

With relief valve stem backed off, the Safety Interlock Device can be moved toward the meter inlet flange, thereby exposing the half-clamp bolts. When all pressure inside the meter has been relieved, disassembly of the meter can proceed.

Following inspection and maintenance of the meter, the half-clamps and bolts are re-assembled on the meter in the normal manner. Prior to repressuring the meter, the Safety Interlock Device must be repositioned over the half-clamps. When this is done, the relief valve stem can be screwed into its body to provide a gas-tight seal.

Following re-assembly, pressurize the meter and check all joints for leaks prior to leaving the meter site.



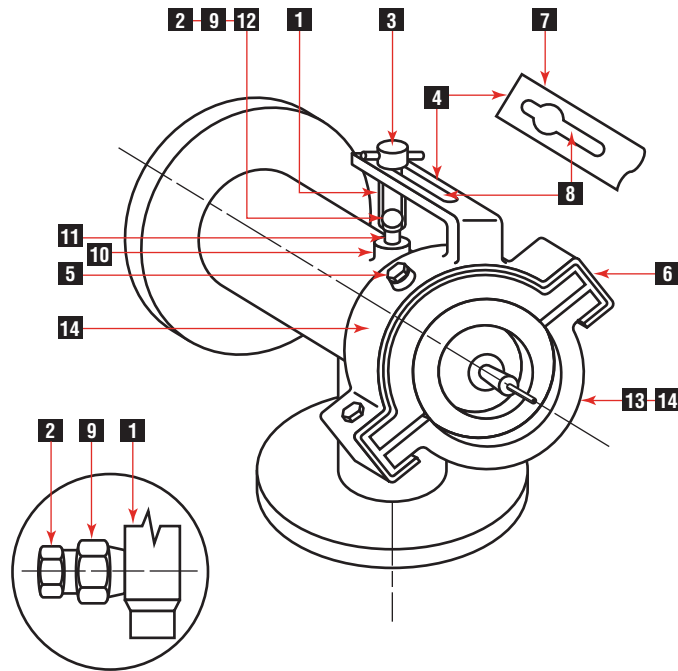
2" & 3" TP and TPL Turbo-Meters Safety Interlock Device

Description

The Safety Interlock Device was designed for use on Sensus Metering Systems angle body Turbo-Meters to prevent accidental disassembly of the half-clamps before internal pressure has been fully relieved. The device was designed with your safety in mind; however, no device can be safer than the user. Therefore, it is important that these instructions be carefully followed and maintained for future reference.

Part Identification:

Item Number	Description
1	Safety Relief Valve Body
2	1/4" NPT Pipe Plug
3	Safety Relief Valve Stem
4	Interlock Arm
5	Anti-Rattle Set Screw
6	Half-Clamp Safety Cover
7	Valve Stem Locking Counter Bore
8	Interlock Arm Slot
9	1/4" to 1/8" Reducer
10	Meter Body Pressure Tap Connection
11	Loctite #277 (Red)
12	Roll Pin
13	Half-Clamp
14	Danger Badges

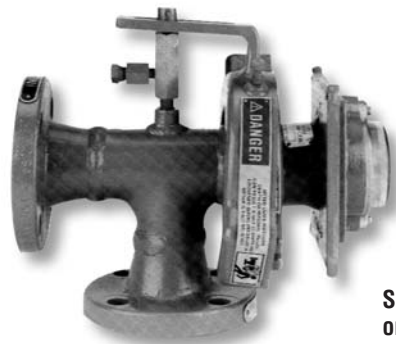


Field Kit Assembly Number*	Turbo-Meter Model Designation
00616-677-00000	2" TP-4
00616-677-01000	2" TPL-9
00620-677-00000	3" TPL-9 & TP-9

* Field kits must be ordered for the specific meter model on which they will be installed.



Safety Interlock Device Retrofit Field Kit



Safety Interlock Device installed on 2" TP-4 Turbo-Meter

Important Instructions

Sensus Metering Systems TP & TPL Turbo-Meter Half-Clamp Safety Interlock Device

Initial Installation: (For Retrofit Field Kits Only)

Make sure the model number of your safety device corresponds with the model of meter for intended use. (Model Stamped on item 4)



A. **DANGER**

For field installations. First isolate the meter by closing inlet and outlet block valves. Then fully relieve line pressure from the meter.

- B. Remove pipe plug or connection from pressure tap **10**.
- C. Loosen relief valve stem **3** and slide relief valve assembly **1** & **3** to the end of the slot away from counter bore **7**.
Note that valve stem 3 cannot be completely removed from valve 1.
- D. Apply Loctite **11** (as supplied) to threads of valve **1** as a sealant and to prevent removal. (Use only Loctite #277). Align relief valve **1** with pressure tap **10**. Place interlock device over body, and tighten relief valve **1** into pressure tap **10**.
- E. Pry off old caution badges and stick on new danger badges **14** on both half-clamps **13**.
- F. If necessary, loosen the half-clamp retaining bolts and rotate the half-clamps **13** to line up with clamp safety cover **6**. Re-tighten half-clamp bolts.
- G. Slide clamp safety cover **6** over the half-clamps **13**. It may be necessary to first loosen the anti-rattle set screw **5**.
- H. Align locking counter bore **7** with relief valve stem **3**. Then tighten down the valve stem **3**.
- I. Tighten the anti-rattle set screw **5** to restrain the clamp safety cover **6** during shipment or from line vibrations.
- J. A pressure recording device can be connected to the 1/4" NPT pressure tap **9**.
- K. Check for leaks at all connections.

Operating Instructions

Removal Instructions:



A. **DANGER**

- Isolate the meter by closing inlet and outlet block valves. Fully relieve line pressure from meter through the system blowdown valve. Then loosen the relief valve stem **3**.
- B. Once pressure has been safely relieved, continue to loosen valve stem **3** until completely out of counterbore **7**. Loosen anti-rattle set screw **5**. This will allow the interlock arm **4** to slide in the slot **8**. Note that valve stem **3** cannot be completely removed from valve **1**.
- C. Slide the clamp safety cover **6** to uncover the half-clamps **13**. The half-clamp retaining bolts may now be removed.

Re-Assembly Instructions

- A. Align half-clamps **13** with clamp safety cover **6** and tighten half-clamp retaining bolts.
- B. Slide interlock arm **4** using slot **8** until the half-clamps **13** are covered and the counter bore **7** lines up with the relief valve stem **3**.
- C. Tighten the relief valve stem **3** and tighten the anti-rattle set screw **5**.
- D. Check for leaks at all connections.

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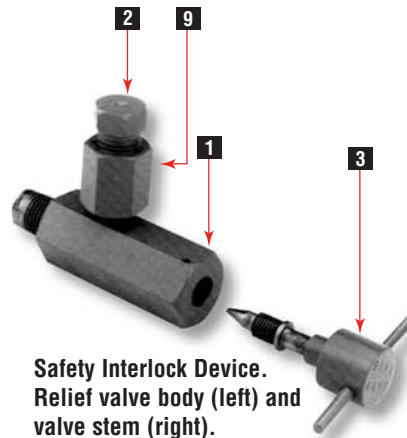
**Safety Interlock Device
 installed on 2" TP-4
 Turbo-Meter**



**Safety Interlock Device
 positioned to expose
 half-clamp bolts.
 Note: Index plate and
 housing removed for clarity**



**Safety Interlock Device
 on 3" TPL-9 Turbo-Meter**



**Safety Interlock Device.
 Relief valve body (left) and
 valve stem (right).
 Refer to drawing.**

Limited Warranty

Seller warrants the Goods to be free from defects in materials manufactured by Seller and in Seller's workmanship for a period of **(one(1) year)** after tender delivery (the "Warranty Period").

THIS LIMITED WARRANTY (A) IS IN LIEU OF, AND SELLER DISCLAIMS AND EXCLUDES, ALL OTHER WARRANTIES, STATUTORY, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR OF CONFORMITY TO MODELS OR SAMPLES;

(B) does not apply to any Goods which have been (I) repaired, altered or improperly installed; (II) subjected to improper use or storage; (III) used or incorporated with other materials or equipment, after Buyer or anyone using the Goods has, or reasonably should have, knowledge of any defect or nonconformance of the Goods; or (IV) manufactured, fabricated or assembled by anyone other than the Seller;

(C) shall not be effective unless Buyer notifies Seller in writing of any purported defect or nonconformance within **(thirty (30) days)** after Buyer discovers or should have reasonably discovered such purported defect or nonconformance; and

(D) shall only extend to Buyer and not to any subsequent buyers or users of the Goods. Buyer shall provide Seller access to the Goods as to which Buyer claims a purported defect or nonconformance; upon request by Seller, Buyer shall, at its own risk and expense, promptly return the Goods in question to Seller's Plant.