

# TANK GAUGING SYSTEMS

TGS SIDE MOUNTED SOUR SERVICE  
MECHANICAL LEVEL GAUGE

[www.tankgaugingsys.com](http://www.tankgaugingsys.com)

TGS - 5012

## Glycol Filled Gauging System

Prevents freezing, sticking and jamming of indicator-coupler or any moving parts

Magnetic gauge board for "tank-in-service" installations (No welding required)

No external gears or pulleys to jam or freeze

Field adjustable, CSA Class 1, Div. 1, Proximity switches can be added for high/low level alarms (optional)

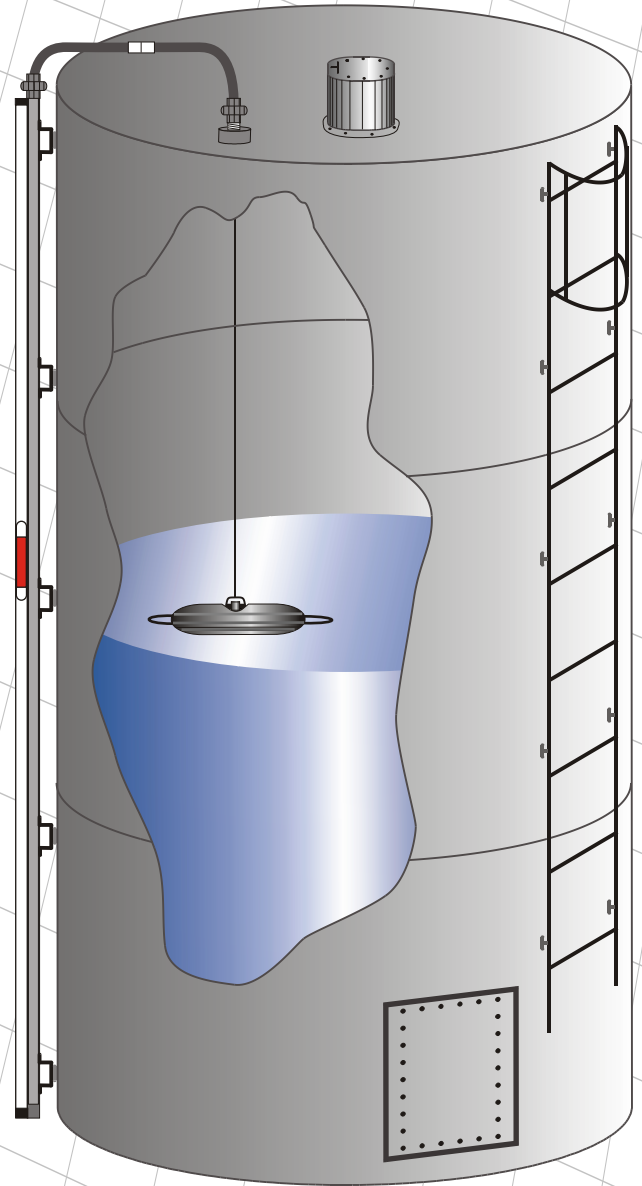
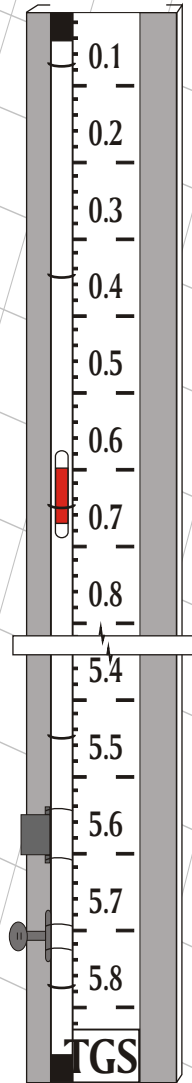
Large easy to read gauge board with reflective, long-life 3M decal

Corrosion resistant materials

Pneumatic output (optional)

4-20mA output (optional)

Fiberglass float with Stainless Steel Swivel can be used with or without float guide wires



Edmonton

780-474-2365 (fax) 477-1576

Calgary

403-685-8867 (fax) 685-8868



Head Office: 12532 - 124St. Edmonton, AB, T5L 0N5

# TANK GAUGING SYSTEMS

## TGS SIDE MOUNTED SOUR SERVICE MECHANICAL LEVEL GAUGE TGS - 5012

### System Components

Made from non-metallic components (Aluminum, Stainless Steel, PVC, Teflon and Fiberglass) to ensure long lasting durability of the gauge.

## Features

### Decals

3M reflective decals on Gauge Board & Indicator. Provides excellent visibility day or night & the longest warranty available against fading, peeling or cracking.

### PVC Cable Guide

Field adjustable with high strength PVC unions for a pressure tight seal against harmful vapours. Glycol from the Coupling Tube coats the cable guide preventing freezing or sticking. 3/4" process connection or Tank-In-Service connection.

### Aluminum Gauge Board

Can be mounted to Vessel with Magnetic Mounting Brackets (no Welding required) for Tank-In-Service installations. Corrosion resistant.

### Magnetic Indicator

Teflon coated & rapped in 3M red. Provides excellent visibility with maximum resistance to freezing, sticking or wearing.

### Electronic Outputs - Magnetically Activated

CSA Class 1 Div. 1  
Relay, Pneumatic or 4-20mA  
Can be added, replaced or repaired without opening the Vessel. Field Adjustable.

### Site Tube

Clear sealed Lexan site tube. Sealed against external elements.

### Glycol Filled Coupling Tube

PVC tubing is filled with Glycol and mounted behind the Gauge Board. A Stainless Steel Magnetic Coupler with Teflon Sleeve is connected to the float via Stainless Steel cable and rides up & down inside the Glycol filled tubing. The Magnetic Coupler repels the indicator in the site tube (in front of gauge board) to show tank level directly proportional to fluid. Filling the tube with Glycol prevents freezing, sticking or jamming of moving parts.

### Fiberglass Float

Unique fiberglass float with Stainless Steel Swivel - Float rotates independent of cable preventing premature wearing, knotting or kinking. Can be use with or without float guide wires. Fits through 6" dia thief hatch for Tank-In-Service Installations.

**Failsafe:** Only float and cable inside tank - should cable brake indicator will fall to bottom of clear tube alerting operator of problem.

**Counter Weight** between float and Magnetic Coupler (inside Glycol tube) prevents float from "swimming" around in the tank. For tanks with rapid filling or turbulence float guide wires can be used.

## Technical Specifications

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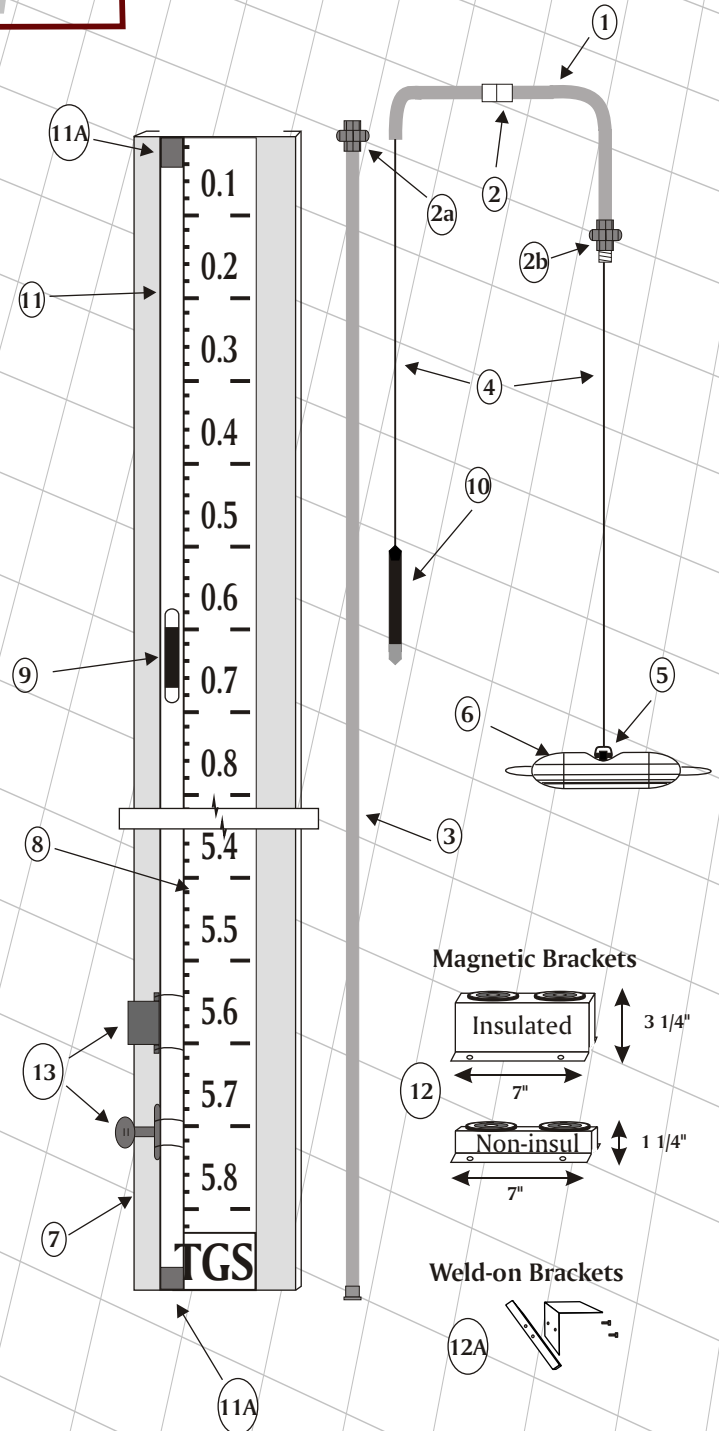
# TANK GAUGING

## TGS SIDE MOUNTED SOUR SERVICE MECHANICAL LEVEL GAUGE

TGS - 5012

## SYSTEMS

ITEM	DESCRIPTION / MATERIAL
1.)	PVC External Cable Guide Tube <ul style="list-style-type: none"> <li>• 3/4" Schedule 40 PVC, two 90° pieces</li> <li>• Approximately 3' length, cut to size</li> </ul>
2.)	2) 3/4" PVC Coupler, 2a) 1" PVC Union w/ 3/4" Reducer, 2b) 3/4" Union w/ 3/4" M Thread
3.)	Glycol Filled PVC Gauging Tube <ul style="list-style-type: none"> <li>• 1" Series 200 PVC</li> </ul>
4.)	Stainless Steel Gauging Cable <ul style="list-style-type: none"> <li>• 3/32" diameter, 316 Stainless Steel</li> </ul>
5.)	Heavy Duty Stainless Steel Swivel - 316SS
6.)	Fiberglass Float (optional Stainless Steel) <ul style="list-style-type: none"> <li>• 5 3/4" dia x 15" long c/w S.S. swivel &amp; guide wire hooks (used if required)</li> </ul>
7.)	Gauge Board <ul style="list-style-type: none"> <li>• 14 Gauge Aluminum; 9" wide</li> </ul>
8.)	Decal <ul style="list-style-type: none"> <li>• Highly reflective 3M decal, 4" width</li> </ul>
9.)	Teflon Coated Magnetic Indicator - Bright Red
10.)	Stainless Steel Magnetic Coupler <ul style="list-style-type: none"> <li>• Teflon coated - 7/8" dia x 10" long</li> </ul>
11.)	Lexan Tube - 1.315" O.D., 1.190" I.D.
11A)	PVC Plug
12.)	Magnetic Mounting Bracket
12A)	Weld-on Mounting Bracket
13.)	Magnetically Activated Switches (optional) <ul style="list-style-type: none"> <li>• Attached via Stainless Steel tube clamps</li> <li>• Field adjustable; Relay or Pneumatic</li> </ul>
<b>OPERATING</b>	
<ul style="list-style-type: none"> <li>• Temperature - 60°C max. (standard)</li> <li>• Pressure - Up to 50PSI (standard)</li> <li>• Measurement Range - up to 24ft(standard)</li> </ul>	



\*\* Typical Shipping Weight: 65lbs

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# TANK GAUGING SYSTEMS

# 5012

## TGS - 5012 Technical Order Guide

Model TGS 5012 provides local indication of tank fluid level using the highest quality mechanical components to insure long lasting, reliable fluid monitoring. Standard Gauging packages includes TGS's unique Fiberglass Float with Stainless Steel Swivel, Aluminum Gauge Board, Teflon coated Indicator & Magnetic Coupler, Decals manufactured from highly reflective 3M material, 316 Stainless Steel Cable, Stainless Steel Cable Clamp, 3/4" Process Connection, Ucartherm and TGS's unique friction fit Weld-on Mounting System or Magnetic Mounting Brackets.

ORDERING CODE: TGS 5012 - A / B / C / D / E / F / G .

CODE	TANK SIZE / HEIGHT (A)
X	Tank Height Example - 20ft

CODE	DECAL CALIBRATION (B)
M	Metric - 1cm Increments - Standard
C	Cubic Meters
BBL	Barrels
FT	Standard - Ft & Inch
X	Other - Specify

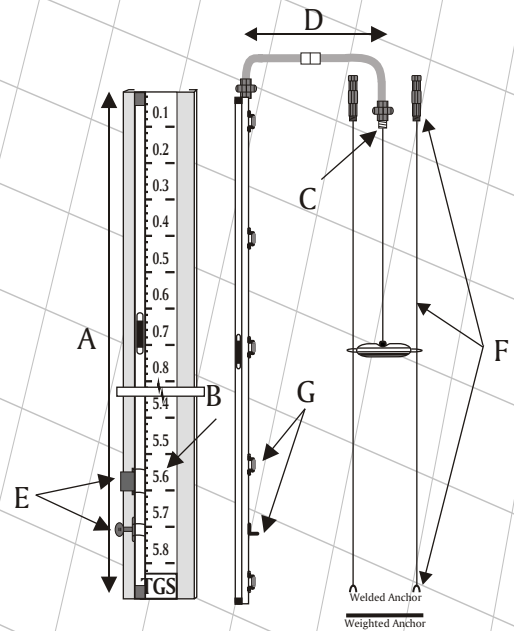
CODE	TANK CONNECTION (C)
3/4"	3/4" - Standard
X	Other - Specify

CODE	CABLE GUIDE (D)
30"	30" - Standard
X	Longer - Specify

CODE	OUTPUTS (E)
N	No Outputs
R	Relay
P	Pneumatic

CODE	CABLE GUIDED FLOAT (F)
N	NO Cable Guides with Tensions
Y	Cable Guides with Tensioners
W or A	(W) Weld-on (A) Weighted Anchor

CODE	BRACKETS (G)
W	Weld-on Mounting Brackets Non-Ins. Tank
WI	Weld-on Mounting Brackets Insulated Tank
NIM	Magnetic Bracket Non-Insulated Tank
IM	Magnetic Bracket Insulated Tank



TANK SPECIFICATIONS:	
Tank Heated:	Yes/No
Temperature:	Ambient Other:
Fluid:	SG:

### Customer Information

Company Name: \_\_\_\_\_ Contact Name: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_  
 Date Required: \_\_\_\_\_ PO / Ref Number: \_\_\_\_\_ Ship Via: \_\_\_\_\_  
 Invoicing: \_\_\_\_\_  
 Shipping: \_\_\_\_\_

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## TGS 5012 SIDE MOUNTED SOUR SERVICE INSTALLATION INSTRUCTIONS GLYCOL SYSTEM

Please read the complete installation instructions prior to installation. Follow the steps in order to ensure trouble free installation and operation. Your new Glycol Filled Above Ground Level Gauge operates using Rare Earth magnets to provide a sealed, pressure tight system. All parts used in the construction of the gauge are corrosion resistant and non-metallic as not to interfere with the magnetic operation of the gauge. Do not at anytime replace nuts, bolts, brackets etc. with steel parts.

Before installation:

- Depending on the tank height your new Glycol Filled Level Gauge may be shipped pre-assemble or in sections
- If shipped in 10ft sections assemble the gauge board together via the joints at the end of each 10ft section. Place the clear site tube on front of the gauge board and the white Glycol tube inside the aluminum gauge board aligning them in the pre-drilled holes for the U-Bolts.
- The Magnetic indicator has been shipped inside the clear site tube. Magnets have N. and S. polarities. **The indicator placed one way will repel from the Magnetic Coupler and when flipped 180 degrees will attract the coupler. The gauge has been shipped with the indicator in the repel position.**

**1. Mounting the Gauge Board:** The gauge board will be mounted to the tank via Magnetic Mounting Brackets or Weld-on Mounting Brackets. Attach magnetic brackets (if not shipped pre-assembled) to the gauge board and mount the gauge board to the tank. If using weld-on brackets the gauge board has pre-designated weld-on bracket positioning. Refer to TGS bracket positioning guide. The gauge has been designed to be installed and serviced while the tank is in-service. If possible always try to mount the gauge board so that the top of the gauge board is level with the roof of the tank (the point at which the roof begins to slope) and is close to the thief hatch so the float can be reached through the thief hatch.

**2. Cable Guide:** The PVC cable guide has been shipped in one or two pieces. One end of the cable guide will connect to the union on the PVC tube (Glycol filled tube) connected to the gauge board. Connect the other end of the cable guide with  $\frac{3}{4}$ " process connection into your process connection on the tank. If possible try to place the cable guide approximately 1 to 1  $\frac{1}{2}$  ft away from the thief hatch so the float can be inserted and serviced through the thief hatch. Once one end of the PVC cable guide is attached to the tank, cut and fit the second piece of the cable guide to the Glycol filled Gauging tube. Try to make the cable guide as level as possible and ALWAYS ream the inside of the cable guide (PVC tubing) after cutting. This ensures all burrs and rough edges do not interfere with the Stainless Steel Cable that run inside the cable guide. The cable guide should be completely installed and all couplings could be glued at this time.



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- 3. Calibration (option 1):** Dip the tank to find the appropriate fluid level. Split the union on top of the gauge board and drop the Magnetic Coupler attached to the Stainless Steel cable inside the Glycol filled gauging tube until it reaches the bottom and picks up the Magnetic Indicator in the clear site tube. Run the other end of the cable through the Cable Guide and pull it up through the thief hatch, pulling the excess cable through the cable guide. Re-attached union. With the Indicator & Coupler resting on the bottom of the gauge board the tank would be considered full and therefore the float would be floating near the top of the tank. Taking into consideration the tank roof is sloped the float would be attached approximately 6 inches from the tank roof. Measure approximate 6 inches of cable from the point where the cable guide enters the tank and securely attached the float at that point via the Stainless Steel cable clamp supplied. The Gauge should now be calibrated to the appropriate fluid level. Gently lower the float into the tank. The gauge can be adjusted by moving the cable clamp on the Float to further calibrate the gauge.
- 4. Calibration (option 2):** This option requires the Indicator to be removed from the clear sight tube. **THE Coupler & Indicator must be in the repel position. The indicator is originally in the repel position from TGS shop and marked top (colored black) & bottom (colored grey). Failure to re-position the Indicator (Top) properly will result in gauge “sticking” in position.** Dip tank to find the fluid level. Install guide wire assembly (if required - optional). Attached float to gauging cable via Stainless Steel Cable Clamp and install in vessel. After running the cable through the cable guide LOOSELY attached magnetic coupler with indicator to the end of the cable and hang the cable down the OUTSIDE of the gauge board. Position the magnetic coupler to the correct calibration on the gauge board. Once the Indicator shows the correct fluid level permanently fasten the cable to the magnetic coupler. The Coupler can then be placed inside the glycol filled tube with the Indicator inside the clear site tube and lowered SLOWLY into position. Be sure to use the silicon supplied to seal the top plug on the clear site tube to provide a sealed environment for the indicator.
- 5. Filling the Gauge with Glycol:** Once the gauge has been calibrated to the correct level, fill the White Gauging Tube (mounted inside the Gauge Board) with Glycol supplied.
- 6. Seal the Tank:** Be sure to glue all the joints with PVC glue supplied. This will completely seal the tank from atmosphere. BE sure the unions are threaded together tightly. Should Glycol ever need to be added or servicing is required, the cable guide can be taken apart by undoing the unions.



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- 7. Check:** Be sure all U-Bolts between the Site Tube, Gauge Board and Glycol Tube are secure but not over tightened to squeeze the clear site tube. Check end caps on the clear sight tube are totally sealed and the tube itself is clear and in good working condition. NOTE: should the indicator ever brake free of the Magnetic Coupler reach into the thief hatch and manually raise the float to the top of the tank via the Stainless Steel Cable. This will bring the Magnetic Coupler to the bottom of the Glycol tube thus picking up the indicator or contact Tank Gauging Systems for a magnetic pick-up.
- 8. Long Cable Guides:** The standard length of a TGS cable is approximately 30 inches. TGS recommends the distance between the cable guide be as short as possible. In circumstances were a longer cable guide is being used consult TGS regarding a Cable Guide Stabilizer. The Stabilizer is a Magnetic Mounting Bracket attached to the top of the tank and the Cable Guide. The bracket is used to support the cable guide & make the cable guide level as possible.

\*\* If using float cable guide assembly, mounting connections are 18" center to center

FOR proper operation always make sure the Glycol tube and the Site Tube are held as close as possible to the Aluminum Gauge Board. If using proximity switches (instructions enclosed) make sure the thinnest part of the strapping is between the Clear Site tube and the Gauge Board.

