

TANK GAUGING

SYSTEMS

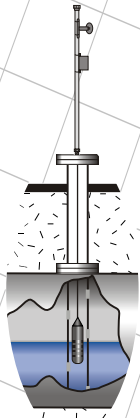
www.tankgaugingsys.com

5020
Top Mounted Sour Service
Mechanical Level Gauge
TGS - 5020

Solutions for Storage Tanks

1.) POINT SWITCH

- CSA Class 1, Div.1 Magnetically Activated Proximity Switches for high/low level alarms
- Field adjustable set points
- Unlimited number of switches can be added at any time
- Pneumatic output available



3.) CONTINUOUS -

MECHANICAL

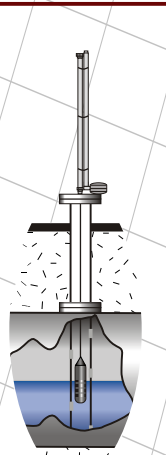
- No Power required
- Simple installation
- Aluminum gauge board with 3M decal



2.) CONTINUOUS -

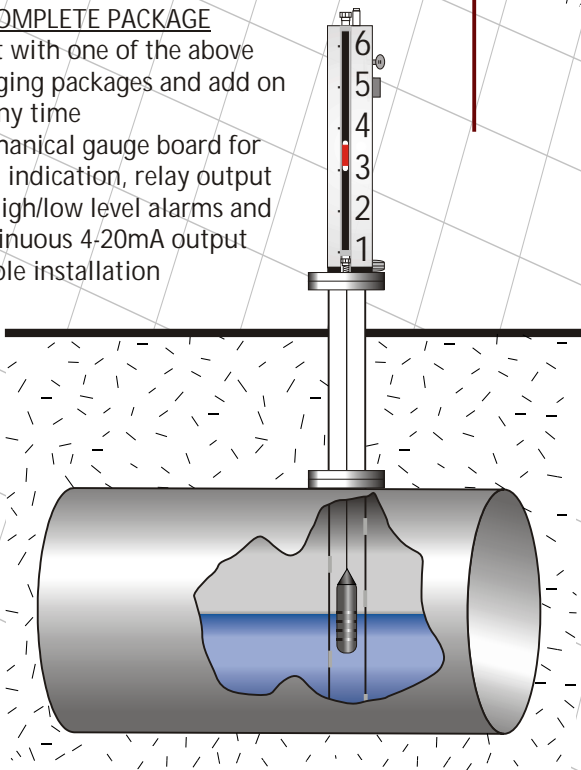
ELECTRONIC

- 2-wire 4-20mA output
- CSA Class 1, Div.1
- No maintenance or calibration required



THE COMPLETE PACKAGE

- Start with one of the above gauging packages and add on at any time
- Mechanical gauge board for local indication, relay output for high/low level alarms and continuous 4-20mA output
- Simple installation



FEATURES

- Accommodates standard 3" or 4" diameter risers (other sizes available)
- Tank Internals consist of Stainless Steel, Teflon and Fiberglass
- Stillwell / stinger can be provided if required (fits standard 3-4" risers - other sizes available)
- Unique Magnetic coupling provides a pressure tight seal against harmful vapors
- Floats manufactured with coned roofs preventing buildup on top of float

Edmonton

780-474-2365 (fax) 477-1576

Calgary

403-685-8867 (fax) 685-8868



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

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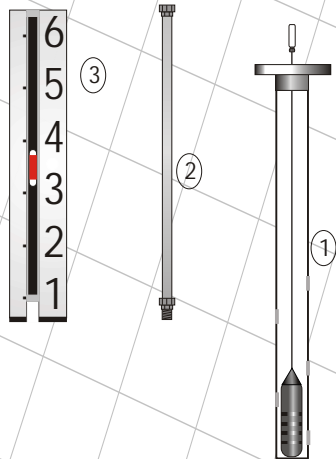
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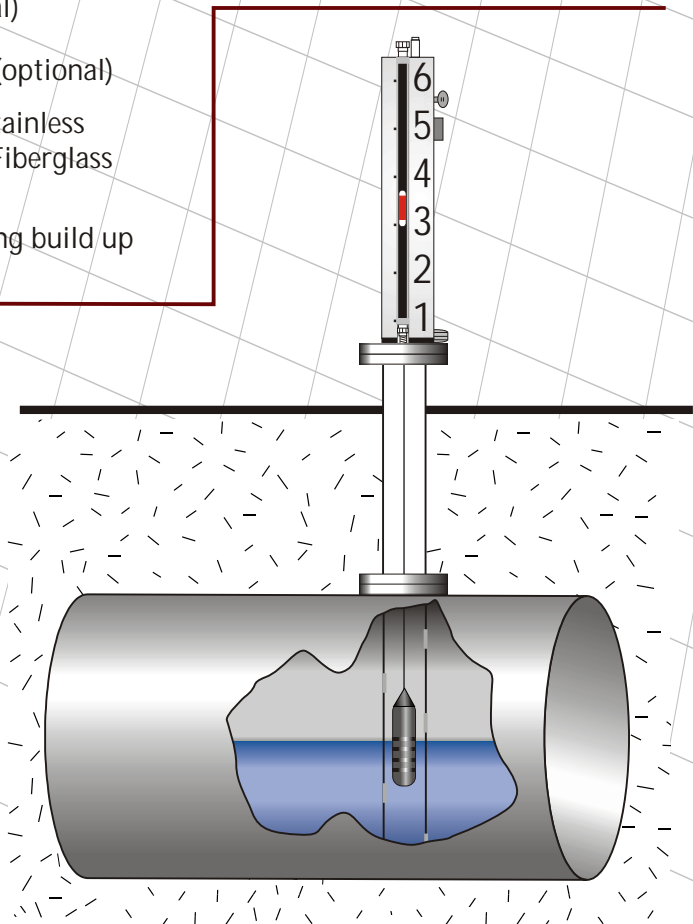
Utilizing the most powerful Magnetic strength on earth to provide the safest, most reliable gauging protection for Under Ground Tanks

- Accommodates standard 3 or 4" diameter risers (other sizes available)
- Teflon coated Magnetic indicator and coupler are used for the greatest possible degree of chemical resistance and protection against mechanical failure
- Magnetically Activated Proximity switches can be added for high or low level alarm set points, field adjustable, CSA Class 1, Div. 1 (optional)
- Pneumatic output (optional)
- 4-20mA Electronic output (optional)
- Tank internals consist of Stainless Steel, Industrial Strength Fiberglass and Teflon
- Coned roof floats preventing build up



3 Simple Steps for Installation

- Install float with gauging rod into stillwell (stillwell can be supplied)
- Attach S.S. tube to 1" process connection
- Bolt Gauge Board to flange



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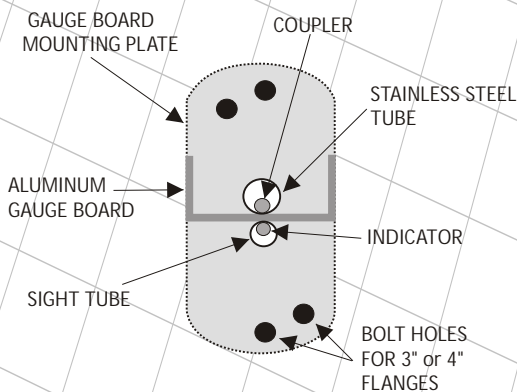
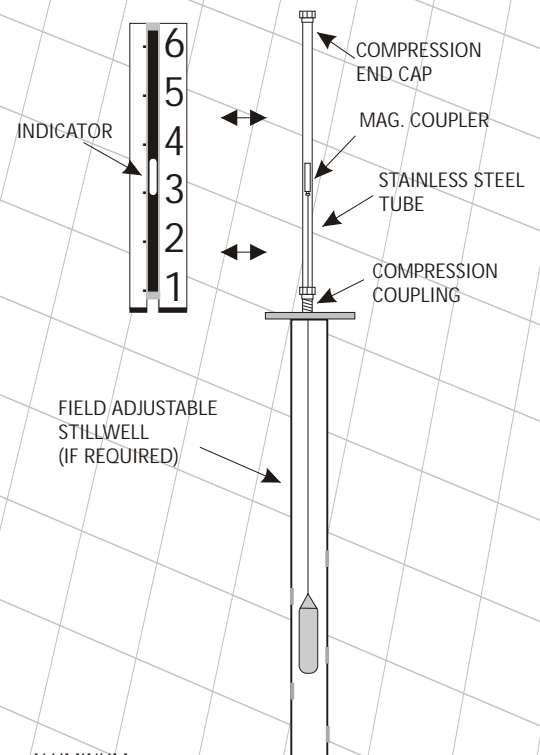
TANK GAUGING SYSTEMS

Top Mounted Sour Service Mechanical Level Gauge TGS - 5020

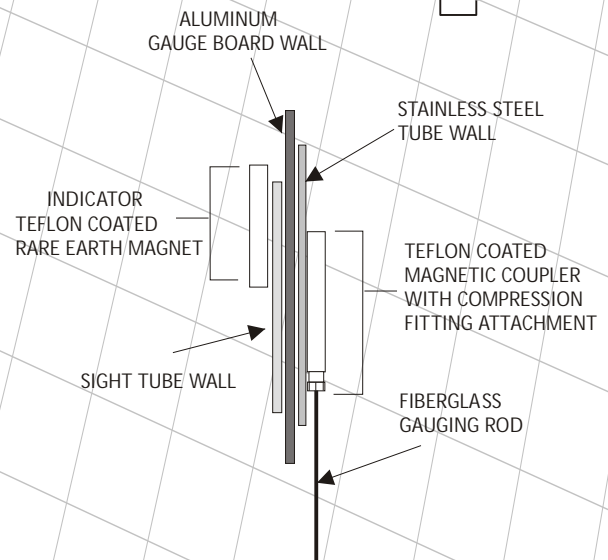
The TGS Sour Service Mechanical Level Gauge provides safe and reliable level monitoring of Under Ground Storage tanks utilizing the most powerful Magnetic strength on earth.

Simply designed, a fiberglass float is attached to a fiberglass rod riding in a stillwell (can be supplied). As the float moves with the fluid, a Teflon coated Rare Earth Magnetic Coupler rides up and down in a completely sealed Stainless Steel tube. The tube, sealed on both ends via high strength compression coupling and end cap, is threaded into a 1" NPT process connection to provide a pressure safe coupling.

Attached to the outside of the S.S. tube and bolted to the flange is a corrosion resistant Aluminum gauge board that provides clear easy to read level indication. Mounted on the front of the gauge board is a clear sealed sight tube. Inside this tube, Teflon coated Rare Earth Magnets (the indicator) are Magnetically repelled to the coupler. Teflon coating the coupler and indicator not only provides near frictionless surface movement, but also prolongs the durability and dependability of all parts involved.



TOP VIEW (GAUGE BOARD)



SIDE VIEW (INDICATOR - COUPLER)

Technical Specifications

Tank Gauging Systems, Edmonton - Calgary

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Calgary: 403-685-8867 (fax) 685-8868

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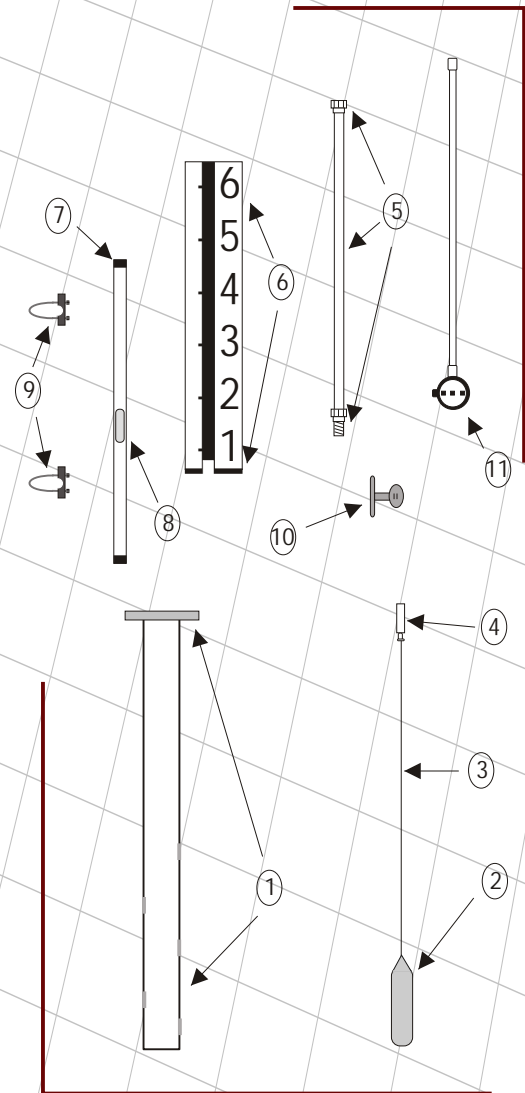
Top Mounted
Sour Service
Mechanical Level Gauge
TGS - 5020

SPECIFICATIONS

- 1.) Fiberglass Stillwell with Top Flange Attachment
 - 1" NPT thread in flange
 - fits in 3 or 4" diameter risers (standard)
 - (only use stillwell if not supplied with tank)
- 2.) Heavy Duty Fiberglass Float - 2 3/8" Dia x 17" Height
(Optional 3 1/4" dia x 8" height)
- 3.) Fiberglass Gauging Rod - 3/16" Diameter (20ft max.)
- 4.) Teflon Coated Magnetic Coupler
 - Attach to rod via S.S. compression fitting
- 5.) 1" Diameter Stainless Steel Tube with Stainless Steel compression coupling and end cap
- 6.) Aluminum Gauge Board with Bolt on Flange Plate
 - c/w 3M decal in linear meters
- 7.) Clear Sealed Sight Tube - Polycarbonate - 3/4" OD
- 8.) Teflon Coated Magnetic Indicator - 3M red
- 9.) Aluminum U-Bolt and Back Plate
 - Used to secure the sight tube - gauge board and stainless steel tube in place
- 10.) Magnetically Activated Switch (optional)
 - Attach to Stainless Steel tube via Stainless Steel tube clamps. Relay or Pneumatic
 - Field adjustable; CSA Class 1, Div. 1
- 11.) Level Transmitter (optional)
 - 2 wire 4-20mA, 24VDC, CSA Class 1, Div. 1

OPERATING

Temperature: -40C to 80C Standard
 Venting Pressure: 900PSI
 Operating Pressure: Float Dependant - 50PSI (standard)



Approximate Floating Level - 20ft Rod

SG of 1 = 8" (2 3/8" OD Float) / 4" (3.25" OD Float)
 SG of .9 = 9" (2 3/8" OD Float) / 4.5" (3.25" OD Float)
 SG of .8 = 10" (2 3/8" OD Float) / 5" (3.25" OD Float)
 SG of .7 = 11.5" (2 3/8" OD Float) / 6" (3.25" OD Float)
 SG of .6 = 13" (2 3/8" OD Float) / 7" (3.25" OD Float)

** Typical Shipping Weight: 25lbs

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TANK GAUGING SYSTEMS

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TGS - 5020 Technical Order Guide

Model 5020 provides local indication of tank fluid level while proving standard Flare Knock Out specifications of 50PSI (standard - float dependant). Standard Gauging packages include fiberglass float & rod assembly (20ft), stainless steel compression fittings & tubing, magnetic teflon coupler & indicator, aluminum gauge board with flange plate for 3" or 4" flange (standard), reflective 3M decals calibrated in linear meters (cm).

ORDERING CODE: TGS 5020 - 4 / 55" / F4 / 4FF / RS2

CODE	TANK SIZE / DIAMETER (A)
4	4ft diameter tank
6	6ft diameter tank
8	8ft diameter tank
10	10ft diameter tank (price adder)
X	Other (indicate diameter)
ST	Add "ST" behind code letter if Stillwell required
P/F/S	P-PVC, F-Fiberglass, S-Steel Add (P,F,S) behind "ST" code

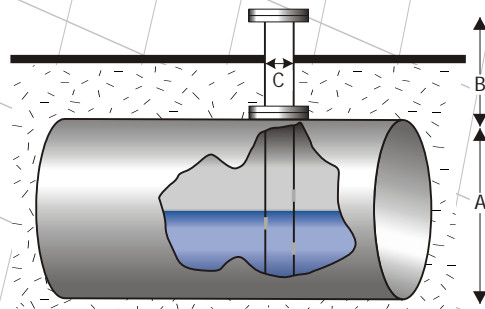
CODE	BURIAL DEPTH (B)
X	BURIAL depth / riser length * distance from top of vessel to flange connection

CODE	FLOATS
F2	1 3/4" Dia x 20" Long
F3	2 3/8" Dia x 17" Long
F4	3 1/4" Dia x 8" Long
FX	Custom Float - Specify in Notes

NOTES:

CODE	OUTPUT REQUIRED
N	NO OUTPUTS
RS	Proximity Switch - Relay
PS	Pneumatic Switch
AT	4-20mA Output
X	Number of outputs required Add behind code

CODE	TANK CONNECTION / RISER SIZE (C)
2	2" diameter riser - flanged
3	3" diameter riser - flanged
4	4" diameter riser - flanged
6	6" diameter riser - flanged
8	8" diameter riser - flanged
FF	Add FF behind code letter if flange is required



ORDER CODE: TGS 5020 - / / / / /

Customer Information

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

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TANK GAUGING SYSTEMS CORP.

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TGS 5020 TOP MOUNTED SOUR SERVICE INSTALLATION INSTRUCTIONS

Please read the complete installation instructions prior to installation. Follow the steps in order to ensure trouble free installation and operation. Your new Under 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. For shipping purposes TGS tightens all Compression fittings, U-Bolts, Switches, Nuts/Bolts onto the gauge. Proper installation may require components to be loosened, installed and tightened.

Before installation:

- Make sure there is a 1" process connection in the flange
- The Gauge Board bolts down on top of the flange. If possible use a flat faced flange, if using a RF (raised face) flange remember to place shims (gasket or washers) at the bolt holes.
- Be sure a stillwell is installed in the Tank. If using a stillwell supplied by Tank Gauging Systems (TGS) it may need to be cut to the proper length (from the bottom of the tank to the top of the flange).
- TGS standard float sizes: (F4) 3 1/4" O.D. x 8" which will begin floating in approximately 4 inches of fluid and therefore the bottom 4 inches of the tank or vessel cannot be measured. The second float is (F3) 2 3/8" O.D. x 17" which will begin floating in approximately 8 inches of fluid. The third float is (F2) 1 3/4" OD x 20" which begins floating in approximately 13".
- TGS recommends using cable guide wires to stabilize the Gauge Board on any gauge over Eight feet in height. Eyebolts are fixed to the top of the Gauge Board for this purpose.

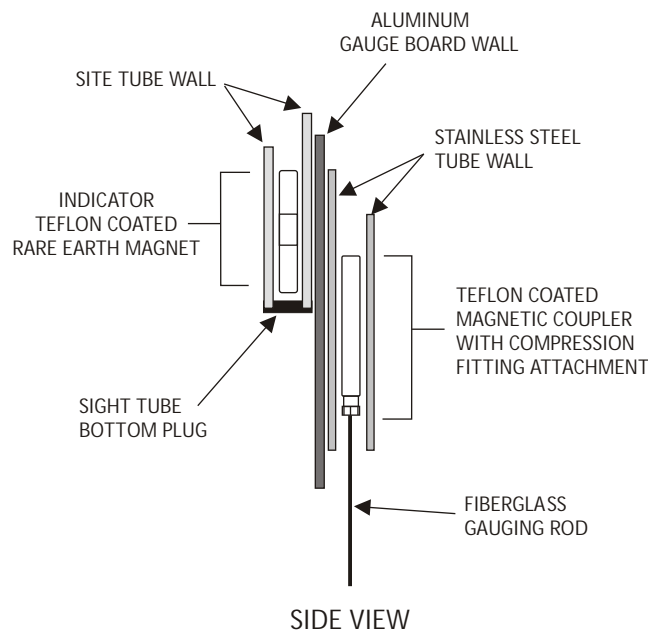
1. Due to changing or varying specific gravity of different fluids and the length at which the fiberglass-gauging rod is cut (calibrated), accuracy may vary slightly. To get an exact level measurement, dip the tank when there is fluid in the tank and calibrate the gauge at that time.
2. Installing Float and Fiberglass Rod: Remove the top flange and insert the float with fiberglass rod into stillwell. Float will bob freely in the fluid, or rest at the tank bottom if the tank is empty. The fiberglass rod will protrude from flange connection. Place blind flange with 1" process connection over the protruding rod. Place a few bolts in the flange, but do not bolt down the flange yet. (If using stillwell supplied by TGS place float and rod into stillwell and insert stillwell into vessel)
3. Calibrating: Cut the fiberglass-gauging rod to the proper length such that the top of the Magnetic Coupler, when aligned to the Indicator, indicates the proper fluid level. This would equal approximately 4" from Zero on an empty tank when using the 3 1/4" O.D. float, approximately 8" when using the 2 3/8" O.D. float & 13" on the 1 3/4" OD Float. The fiberglass rod is then cut such that the Indicator corresponds to this fluid level (4", 8" or 13"). Attach the Magnetic Coupler to the fiberglass rod via the Stainless Steel compression fitting. Your gauge is now calibrated to the fluid level.



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4. Stainless Steel Tube and Gauge Board: Teflon tape the 1" compression coupling on the Stainless Steel tube and thread into flange. Loosening the U-Bolts on the back of the gauge board will allow the Stainless Steel tube and Gauge Board to move independent of one another. REMEMBER if there are Relay or Pneumatic switches on the gauge to remove them before tightening the Stainless Steel tube into the flange.
5. Link Indicator and Follower: At this point the indicator should be magnetically repelled or lying on the bottom of the sight tube. As fluid fills the tank the float will begin to float moving the Magnetic Coupler upward inside the Stainless Steel tube. The indicator will automatically move being magnetically repelled from the coupler to the corresponding fluid level. Remember that the Indicator should always rest at the bottom of the Sight Tube when the tank is empty. NOTE: magnets have N. and S. polarities. The indicator placed one way will repel from the coupler inside the Stainless Steel Tube and when flipped 180 degrees will attract the coupler. The gauge has been shipped with the indicator in the repel position.



6. Flange Connection & U-Bolts: Tighten the U-Bolts holding the Stainless Steel Tube and Sight Tube. BE CAREFUL not to over tighten the U-Bolts. Bolt down the flange with Gauge Board and tighten the end cap on the Stainless Steel Tube. Tighten bolts on the top of the Gauge Board to hold S.S. tube in place.



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7. Check: Be sure all U-Bolts between the Site Tube, Gauge Board and Stainless Steel Tube are tight. Make sure compression fittings are tight. Check end caps on the clear sight tube are totally sealed and the tube itself clear and in good working condition. NOTE: should the indicator ever brake free of the Magnetic field simply loosen the U-Bolts on the Gauge Board and slide the sight tube up on the Gauge Board OR consult Tank Gauging Systems.

FOR proper operation always make sure the Stainless Steel tube and 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 Stainless Steel tube and the Gauge Board.

