



## Float & Tape Tank Gauging Solutions for Bulk Liquid Storage Tanks

Simple, Safe and Reliable Inventory-Grade Level Measurement

**Varec**<sup>®</sup>

# Varec Float & Tape - Automatic Tank Gauging

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



The Varec® brand of automatic tank gauges are often referred to as 'float and tape devices' due to the manner in which the product level is measured (or gauged). This simple design has changed very little over the years due to its reliability and industry-wide acceptance. It provides continuous level measurement and allows the gauge to perform with minimal maintenance throughout its operating life.

## Simple Mechanics - Complete Solutions

Varec has maintained all the options and accessories you would expect, including:

- Installation kits and accessories for product compatibility and tank conditions
- Spare parts and maintenance kits to keep your gauge operating smoothly
- Tank gauge transmitters for level and temperature measurement integration and inventory control applications
- Additional support services, such as preventative maintenance programs and training classes

## Inventory Grade Level Accuracy Meets API Chapter 3.1B

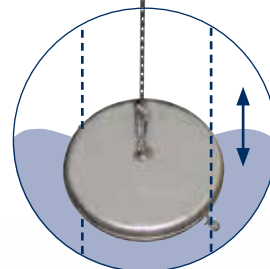
The 2500, 2520 and 6700 offer a level accuracy of 0.2-1" (4-25 mm). The 2500 and 2520 display the measured level using a dial and counter in increments of 1/16th inch (1.58 mm) and the 6700 uses a gaugeboard with 1" (25 mm) increments.



The 2500/2520 Automatic Tank Gauges utilize a dial and counter within the gaugehead to display the level of product in your tank.



The gauge board of the model 6700 can easily be seen from long distances and provides the simplest form of tank gauging.



A large float follows the level of the product as it moves up and down in the tank. The float is connected to a tape or wire that in turn is connected to an indicator on the outside of the tank.



2500 Automatic Tank Gauge (ATG)



2520 High Pressure Automatic Tank Gauge (ATG)



6700 Liquid Level Gauge

“Providing the first steps to inventory management and control - Level and temperature measurement data is encoded by a tank gauge transmitter and output via industry standard communications to the control room.”

### Tank Gauge Transmitters

Tank gauge transmitters vary in capabilities and application, from float & tape driven switches for the indication of alarms or relays, to level and temperature transmitters that can be mounted to all standard float gauges. When a tank gauge transmitter is used, communications and power are required at the gauge head.

Transmitters convert the measurement parameter (rotation, resistance, etc.) to an electrical signal for transmission over an instrumentation field bus or communications loop to the control room.

### Temperature Corrected Volumes

Throughout the oil and gas industry, spot temperature sensors are used for float & tape tank gauging systems, while average temperature devices are generally associated with radar or servo tank gauges due to the increased accuracy obtained from the level device.

Temperature sensors connected to a transmitter allow the inventory system, such as FuelsManager® Oil & Gas software, to calculate volumes that are temperature corrected. Using FuelsManager’s standard displays, operators can react quickly to changing conditions, alarms or events within your facility.

### Do I Need a Transmitter?

If you have a stand alone float and tape gauge, such as a 2500 ATG, currently installed and can answer yes to any of the following requirements - you need a Varec tank gauge transmitter.

- Visualize gauge data using your control room computer system?
- Integrate temperature measurement?
- Use standard net volume or mass calculations for accounting?
- Integrate gauge data into PLC or DCS systems?
- Require a status indication using inputs and outputs to meters, alarm lights, horns, etc.



FuelsManager Oil & Gas obtains inventory data from a Varec Float & Tape Transmitter connected to an automatic tank gauge (ATG) at the tank side.

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



“Over 50 years ago, the oil and gas industry quickly adopted both the API Standard and Varec float and tape tank gauges as the standard for level measurement and continues to support them today.”

2520 High Pressure Automatic Tank Gauge (ATG) is provided in kits for measuring 16, 48 or 60 ft (5, 15, or 18.3 m) spheres and bullet shaped tanks.

The 2500 ATG extended range kits, for use on large tanks, provide a measuring range up to 97 ft (30 m).

The 6700 is available with a half-travel kit for tanks up to 97 ft (30 m) in height.

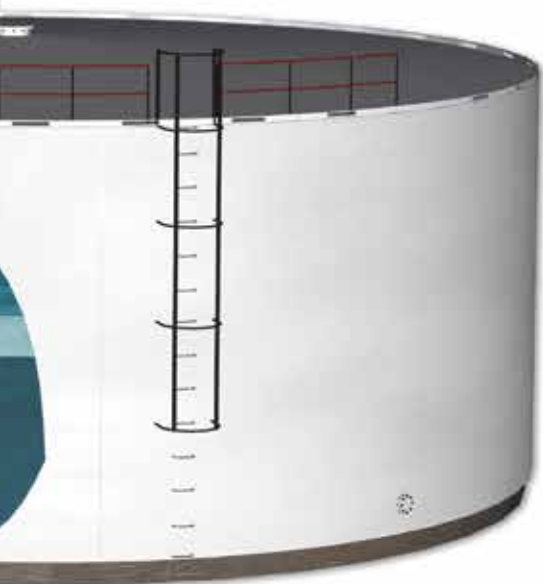


Installation - Suitable for almost all product applications and tank types

## Tank Type

For float and tape tank gauge applications, the most important question by far is “what type of tank installation is required?” Varec can recommend gauge solutions based on various tank requirements, including:

- Roof or ground reading
- External floating roofs
- Internal floating roofs (pans)
- Floatwells
- Stillingwells
- Extreme pressures
- Bolted tanks
- Spheres and bullets



## Float Guidewires

Guidewires provide stability for the float during turbulent conditions and increased accuracy by reducing the horizontal movement of the float across the surface of the product. Accessories are available to allow in-service installations, such as weighted anchors that maintain tension in the guidewires without the need for welding inside the tank.

## Product Type

Due to the float and tape measurement technique, the following are just some of the products suitable for level measurement using a float and tape device:

- Crudes
- Gasoline
- Jet fuel
- AV (aviation) gas - high octane gas for small aircraft
- Diesel
- Chemicals
- Additives
- Solvents
- Water

## Special Materials

Standard, moderate, severe and extreme service kits are available for applications involving extreme temperatures, pressures or aggressive products. These kits include material options for specific parts that make contact with the product in the tank, tape piping or gaugehead, such as:

- Steel
- Aluminum
- Stainless steel
- Fiber reinforced vinyl ester
- Carpenter 20 steel
- Monel



“Our aim is to optimize the quality and performance of your tank gauging and measurement system, allowing you to get the most from your operations, now and in the future. That is why we offer the most comprehensive range of services all backed by a 24x7 technical and application support center.

Dual entries in the precision die-cast housing allow the 2500 ATG to be mounted at the tank side or on the tank roof.

The large, easy-to-read display is available in metric or imperial units.

The display is driven via a direct drive manufactured from brass bushings for smooth accurate operation.

The float operation check knob allows the technician to ensure the gauge is operating correctly.

Various shapes and sizes of hollow shell floats are available that suit different applications.

Guidewires can be installed while the tank is in service using weighted anchors.

Tank gauge transmitter attaches to the back of the gauge and is engaged on the direct drive coupling.

The 2500 ATG is Factory Mutual and ATEX approved for use in potentially explosive atmospheres.

The negator cassette simplifies the process of negator motor replacement and improves the performance of your float and tape tank gauge.

Guidewires prevent horizontal movement of the float as it follows the product level.

Operation - Keep your gauge operating at peak performance for years to come

## Maintenance & Service

As with all instruments, a regular schedule of maintenance is recommended. The frequency of such inspections depends on the specific environmental conditions and operations involved. Due to the various conditions, even from tank to tank on the same site, installations should be studied and a routine of inspection and maintenance should be planned that is best suited to individual needs.

We can provide a multi-step maintenance program for your specific facility with a single aim - to improve the operations of your business by restoring and maintaining your ATGs to their original level of quality and performance.

Our programs include a full site survey and report. After the program has been implemented, we guarantee the operation of your gauges for two years (parts and labor).

## Spare Parts

We are the only manufacturer of genuine Varec spare parts. In addition to single spare parts, we have used our experience to create a number of spare parts kits for specific maintenance tasks from basic maintenance to an overhaul kit for a gauge on a tank undergoing an API 653 inspection.

To assist your technicians, we have created a complete set of documents that are available from our website or sales representatives. Each document will help you identify the part you require and simplify the order process.

[www.tankgauging.com/spareparts/spareparts.html](http://www.tankgauging.com/spareparts/spareparts.html)

Replacing parts in a Varec product with parts that are manufactured by third parties will reduce the effectiveness of your instrument and may void the hazardous area approval certification.

## Accessories

Varec manufactures a complete range of accessories to help reduce wear from the float and tape to the gaugehead components, thereby simplifying and reducing the maintenance required for specific applications.

- Inspection and manhole cover
- Negator cassette
- Conduit vent
- Oil seal
- Condensate reservoir
- Tape wipe
- Float connector

## Training

If you have your own service technicians, we can provide factory-certified training. These classes are very effective for anyone that maintains the operation of float and tape gauges. The classes can be conducted at your facilities, in your time frame by a certified instructor with over 15 years Varec field service experience.

- Learn how to correctly align all parts to prevent a tape breakage and eliminate gauge hang-ups
- Learn which parts should be lubricated and which lubricants to use
- Learn other tips and tricks that will keep your gauge running smoothly year after year



Our You Tube channel provides basic how to videos for many installation, operation and maintenance procedures



[www.youtube.com/user/varectankgauging](http://www.youtube.com/user/varectankgauging)

# Float & Tape Tank Gauging Solutions for Bulk Liquid Storage Tanks

## For More Information

### Varec Headquarters

5834 Peachtree Corners East  
Norcross (Atlanta), GA 30092  
USA

Tel: +1 (770) 447-9202  
Toll Free: +1 (866) 698-2732  
Fax: +1 (770) 662-8939

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

### Houston Sales Office

9801 Westheimer Road  
Houston, TX 77042  
USA

Tel: (281) 820-7826  
Fax: (281) 498-0183

### Asia Pacific Sales Office

Level 8, 91 William St.  
Melbourne  
Victoria 3000  
Australia

Tel: +61 3 8623 6400  
Fax: +61 3 8623 6401

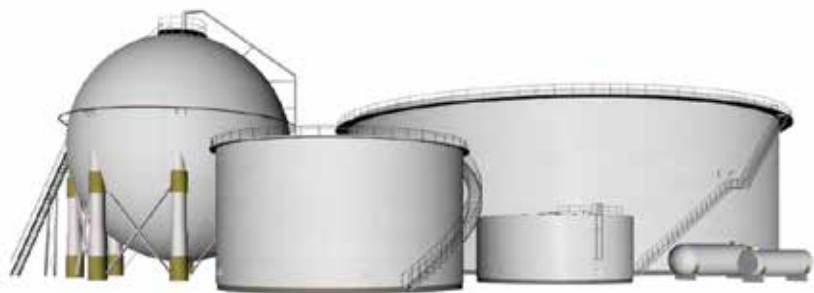
[www.varec.com.au](http://www.varec.com.au)

### Europe Sales Office

Suite 120, 94 London Road  
Headington, Oxford  
Oxfordshire, OX3 9FN  
United Kingdom

Tel: 0800 044 5704  
Fax: 0844 544 1874

[www.varec.co.uk](http://www.varec.co.uk)



The Varec logo, featuring the word "Varec" in a stylized, red, cursive font with a registered trademark symbol (®) to the upper right.

Measurement | Control | Automation | Integration | Enterprise | Support