



Mechanical Tank Gauge Comparison:

The GSI-2570 Mechanical Tank Gauge vs. the Competition

The GSI-2570 mechanical tank gauge was designed to eliminate the problems found in other mechanical gauge designs. Enclosed is a list of features that illustrates the mechanical difference between GSI-2570 and the competition.



- The GSI-2570 uses all Stainless Steel fasteners (screws, bolts, etc.), other manufacturers use cadmium plated steel fasteners. Thus, the GSI 2570 mechanical gauge fasteners do not rust up over time when exposed to the elements, other manufacturers fasteners do rust and bind. This creates additional time when calibrating, inspecting, or repairing their gauges. (1 & 2)
- The GSI-2570's counter assembly is precision drilled and milled. There are no excessively slotted mounting holes on the GSI counter assembly.
- With another manufacturer's gauge it is possible to shift the counter assembly too far to the right, thus jamming the counter assembly into the counter pinion gear, binding the gauge, and hanging the float or stripping the pinion gear. (1)
- A second manufacturer's gauge, the counter assembly is driven by a shaft assembly suspended from a support bearing. Measurement errors occur when the support shaft is bent or when transmitter couplings are not mated correctly. (2)
- The GSI-2570 gauge is provided with an "Easy to grip" cast aluminum gauge check handle. Other manufacturer provides plastic knobs that with exposure to direct sun light wear out over time. The plastic knobs are slippery in contrast to a handle that's easy to grip. (1)

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- The function of the gauge check in the GSI-2570 is to ratchet the movement of the tape storage sheave assembly, thus picking up the tape and float roughly 1" to 2" within the tank. This is used for verifying gauge operation, double check the calibration of the gauge, plumbing of a roof weight (pan roof with no gauge well), or freeing hang-ups or sticking gauges.
- Another manufacturer uses a hammer assembly that only bumps the tape TSSA pulley, thus creating a movement of maybe 1/16" to 1/8". With this method, there is no way by which to test the negator motor strength. The loss of negator motor tension creates loss of level accuracy with a mechanical float gauge. (2)
- The GSI-2570 gauge check assembly has an internal "O-Ring" to seal the gauge and prevent vapor or product from leakage around the shaft. Another manufacturers gauge can't be oil filled because of a weak shaft and seal design. (2)
- The GSI – 2570 gauge uses a snap ring on the checker shaft to properly align and insure the functionality of the checker assembly. Another manufacturer's gauge allows the checker shaft to freely move the checker into and out of the tape storage sheave, creating possible hang-ups, and loss of the gauge checker use. (1)
- The GSI-2570 gauge uses a hair pin spring that is wrapped around the checker pawl rivet. This insures that the hair pin spring will stay in place when releasing the checker handle and maintain the functionality of the gauge check. Another manufacturer's gauge check is known for having the hair pin spring pop off the checker shaft when you turn the checker knob and release it. (1)
- The tape keeper within the GSI-2570 is heat treated Spring Stainless Steel. Thus the tape keeper takes on spring steel tension and retains its shape. Another manufacturers uses a Stainless Steel tape keeper that is capable of being bent out of shape by dirt, and kinked tape passing over the tape sprocket, thus causing either the loss of actuation by the counter assembly or the point of actuation. Both of these relate to inaccurate measurement and constant re-calibration of the competitions' gauge. (1 & 2)
- GSI uses only self lubricating brass bushings with the GSI-2570 gauge. Other manufacturer's use Teflon strips inserted as bushings. These have a tendency to flatten out over time causing rough mechanical movement, binding, and dimensional changes that effect the working capability of the gauge. (1 & 2)
- The GSI-2570 gauge head is designed to hold liquid. This means that the gauge can be (recommended) filled using a light oil, thus reducing mechanical wear on parts and reducing maintenance. This is only recommended when there is no chance of contamination of the finished product by the transformer oil or liquid filler. NOTE: The GSI-2570 is also available with condensation bottles to displace the buildup of water within a gauge due to condensation from temperature changes (breathing of the aluminum gauge head enclosure and steel gauge pipe or steam from heated products).

- The GSI Inch Dial Hub Assembly is all stainless - not aluminum. No corrosion or binding of fasteners as opposed to another manufacturer. (1)
- The GSI Inch Dial is pinned to the pinion operator gear.
- The GSI Deluxe Gauge comes with the Dual Calibration Assembly® (DCA) and Negator Cassette® (NC) for safety. These are the original Gauging Systems Inc. designs and not imitations that are mechanically subject to failures. (1)
- The GSI TSSA and sprocket shafts are machined from hex bar stock (not a shaft pressed into a nut like another manufacturers). (1)
- GSI uses solid aluminum parts (Not Puter Die cast parts). Puter is highly susceptible to moisture, corrosion, and chemical attack. (1)
- Only GSI offers external epoxy coating of the gauge head on the Deluxe model. This coating effectively seals the aluminum casting against "breathing" and transpiration of moisture into the gauge head. (1 & 2)
- The GSI elbows utilize a hinged cap with retained fasteners (not yokes or loose bolts) for safety (dropped parts and technician's security) and to ease inspection. (1 & 2)
- GSI elbows are equipped with precision machined UHMW polyethylene pulley for high load bearing, temperature range -90 degrees Fahrenheit to 225 degrees Fahrenheit, excellent abrasion resistance, oil and solvent resistance, high resistance to sunlight and general weather conditions, and extremely high flex-life. Thus, less drag and friction, thus increasing gauge accuracy and reducing maintenance. (1 & 2)
- GSI uses 316 Stainless Steel guide wire with Stainless Steel bolts in bottom anchors, not Carbon Steel. (1 & 2)
- GSI uses a Stainless Steel top anchor spring and lock nuts in the top anchors.
- GSI uses a special 316 Stainless Steel punched tape that is more flexible and wears longer than other manufacturers tape. (1 & 2)
- GSI uses Hollow Shell Floats with a swivel to reduce wear on tape, etc. The swivel is designed to accommodate cable or tape around the spool - not through it (commonly frays from another manufacturers design). (1 & 2)
- GSI Float guides and clips are designed for easy of installation. GSI doesn't use non-closed clips that are subject to slipping the guide wires in agitated product. (1)
- The GSI Negator Spring Motor has been "heat treated" for "stress relief" insuring longer life and evenly distributed power. (1 & 2)

In addition, Gauging Systems Inc. designed gauge kits to not only meet the physical tank roof construction, but to also meet the service application and product application.

- Heavy product gauge kit - Designed for viscous products. Kit includes: Float with inverted float clips below product surface, extended tape connector to float, liquid seal..
- High accuracy gauge kit - Poll mounted next to tank to eliminate reference point movement, i.e., roof fluctuation or shell movement. Flexible coupling from poll arm to tape conduit opening on the tank.
- Turbulent product gauge kit - Designed to eliminate maintenance and measurement issues dealing with turbulent agitation from mixers or air purging of lines into tanks. Kit includes: Cone dampener float (Sea buoy, ice burg design) or Pan dampener float.
- Closed tank (Magnetic) gauge kit - Donut float with magnetic ring rides a closed tube with the tape and magnetic coupler. Gauge head is completely closed to vapors or product from within the tank. Gauge head hand crank comes as standard on this kit.
- External tank dike gauge kit - Designed for metal dikes on tanks, where gauge is mounted on the dike wall. Kit includes: Tape carriers, tape conduit drains, etc.
- Other application kits are available.. What problems are you having?

Summary:

The design of the 2570 Mechanical Tank Gauge came from listening to our customer's suggestions, field service experience with other manufacturers gauges, common sense, and solid mechanical design. The GSI 2570 is the best built , most reliable, and the most accurate mechanical tank gauge on the market.

NOTE: Gauging Systems Inc. has a Patent Pending on the 2570 gauge and gauge kit components, i.e., and the improvements over prior mechanical tank gauge patents as partially outlined within this White Paper. This is to prevent further theft of intellectual property (trade marks, copyrights, etc.) by other manufacturers of Gauging Systems Inc.'s.

For additional information, please contact your Gauging Systems Inc. sales representative:



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