

G-Type Bidirectional Calibrator

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Smith Meter® PD Meter Calibrator

The **G-Type Calibrator** is used whenever it is desirable to operate a meter in either direction. Normal flow through the meter will increase counter registration, whereas, reverse flow will decrease counter registration.

The calibrator is designed so that gear ratios can be varied to permit final corrections of any inaccuracies due to changes in the operating conditions or in the viscosity of the product.

Meter calibration adjustments can be made by removing the calibrator access cover located immediately below the counter. Two small notched shifters and a knurled rotating knob are thereby exposed (Figure 1).

The right-hand shifter bar is for coarse adjustment of variations and the left-hand shifter bar is for fine adjustments. The knurled knob is provided for manual rotation of gears to facilitate meshing of gears moved by the shifters with other gears within the calibrator.

Shifters are released for movement by sliding the adjustment plate to right or left to free the desired shifter.

Meters are calibrated (using constant meter registration) by either:

- A. Slowing down the counter by pulling out the shifters (as required), resulting in an increase in the liquid level of the prover tank.

or

- B. Increasing the speed of the counter by pushing in the shifters (as required), resulting in a decrease in the liquid level of the prover tank.

Each notch on the coarse shifter (right hand) equals 6/10 of one percent or 138.8 cubic inches in 100 gallons while each notch on the fine shifter (left hand) equals 1/20 of one percent or 11.5 cubic inches in 100 gallons.

After adjustment is completed and the access cover replaced, it should be sealed to prevent tampering or unauthorized changing of the adjustment.

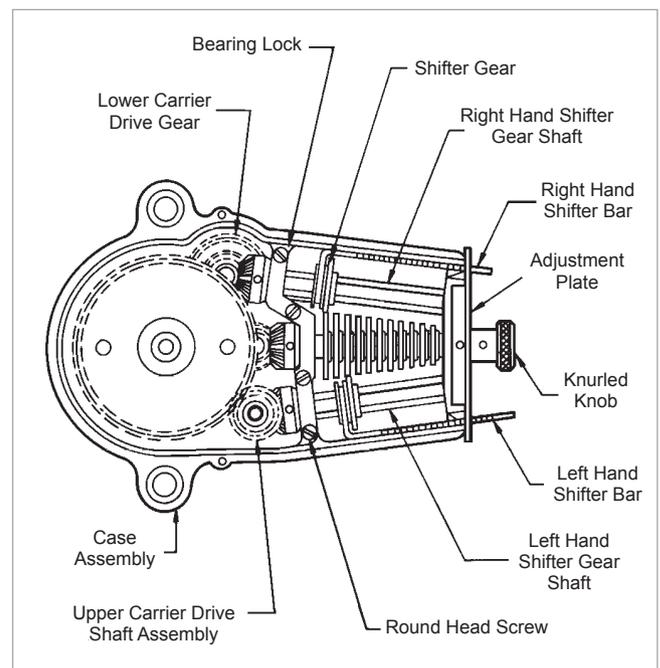


Figure 1

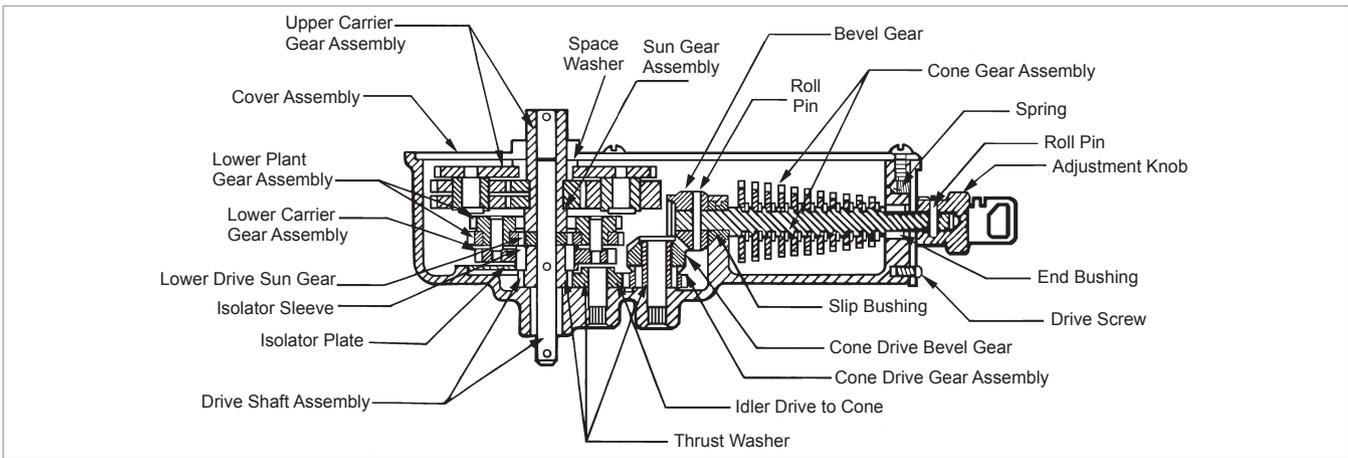


Figure 2

Disassembly (Refer to Figure 2)

Remove the gear. Lift off the upper carrier gear, sun gear assembly, two lower planet gear assemblies, lower driving sun gear, lower carrier gear assembly, isolator sleeve, isolator plate and drive shaft assembly.

Drive out the roll pin and remove the adjustment knob. Remove the adjustment plate drive screw, adjustment plate and spring. This will allow the three end bushings to be removed.

Remove the bearing lock and lift out the right and left-hand shifter assemblies and the cone drive gear assembly. Remove the upper carrier drive shaft assembly, lower carrier drive gear, cone drive bevel gear, cone drive gear assembly and idler gear.

All parts showing excessive wear should be replaced. If the case bushing is worn, it is recommended that the case assembly be replaced, rather than the bushing, as it is necessary to machine finish the bushings after assembly to the case. See Parts List PO01027 for replacement part numbers.

Reassemble in reverse order of disassembly, with the following precautions:

1. Add 14313-001 washers behind bevel gears until ends of teeth line up and minimum backlash is obtained.
2. Be sure the isolator plate key is engaged in the key way of the isolator sleeve and that the slot engages the stop pin.

3. When assembling the two lower planet gears to the lower carrier gear (Figure 3), note that each gear has a center punch mark at one of the teeth. Point the marked tooth of one gear at the drive shaft and the other at a 90° angle to the drive shaft. This is necessary to allow the sun gear assembly to mesh with the planet gears.

The G-Type Calibrator requires only a light coat of oil as all gears have an electro film coating which is self-lubricating. Use S.A.E. 10 or lighter oil.

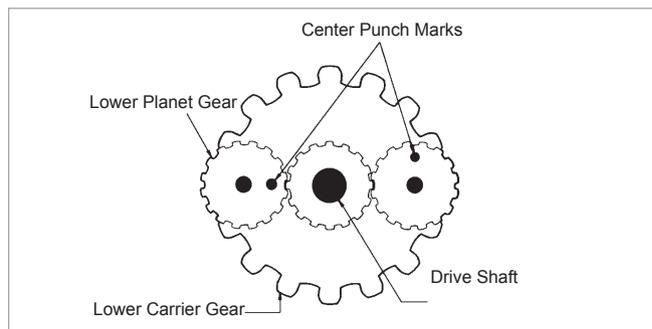


Figure 3

The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.

Contact information is subject to change. For the most current contact information, visit our website at www.fmctechologies.com/measurementsolutions and click on the "Contact Us" link in the left-hand column.