

FILL-RITE®

SERIES 800C METER

Owner's Operation & Safety Manual Models 806C, 807C

SAFETY INSTRUCTIONS

To ensure safe and efficient operation, it is essential to read each of these warnings and precautions, and to follow all instructions listed in this manual.

1. **Improper use or installation of this product can cause serious bodily injury or death.**
2. DO NOT smoke near meter or use meter near an open flame when dispensing flammable fluids. Fire could result.
3. Do not exceed 50 PSI / 3.5 BARS line pressure.
4. **CAUTION: Do not install additional foot valve or check valve during installation without pressure relief valve. Cracking may result.**
5. This product should not be used for fluid transfer into aircraft.
6. This product is not suited for use with fluids for human consumption, including potable water.

INSTALLATION

Meters are furnished for horizontal piping, left to right flow, unless otherwise specified. Use oil and gasoline resistant pipe compound on all threaded joints. Flow ports can be located in any of four positions for horizontal or vertical piping.

1. If fluid flow is left to right, install meter.
2. If fluid flow is other than left to right, determine direction of fluid flow.
3. Lay meter dial face down on a clean flat surface.
4. Arrow mark on meter housing indicates fluid flow direction.
5. Remove four screws (item 20).
6. Lift meter housing (item 19) and chamber assembly (item 26) and rotate together to desired flow direction.

CAUTION: Chamber opening must face towards inlet port of meter.

7. Replace four screws (item 20).
8. Install meter.

CALIBRATION

The Fill-Rite Series 800C meters can be calibrated for either U.S. gallons or liters. Calibration is required after disassembly, when metering a different fluid, or after significant wear. Depending on the model, Series 800C meters are factory calibrated in either U.S. gallons or liters using mineral spirits.

Meter calibration can be easily changed by using the calibration procedure noted. A container of KNOWN volume will be needed for the calibration procedure. It is recommended that the container's volume be at least five gallons or larger.

Procedure for Calibration

1. For the most accurate calibration, install the meter in the application. Fill a container to a known volume with the liquid to be measured.
2. If indicated amount does not match known volume, insure pump is off and pressure relieved, then remove seal screw (item 23) and turn calibration screw (item 21) counterclockwise to reduce indicated amount or clockwise to increase the amount. A full turn will change the indicated amount by approximately 0.1 Gal. (0.4L). Reinstall seal screw.
3. Repeat step 1 and 2 until calibration is acceptable.

OPERATING INSTRUCTIONS

For accurate measurement, meter and piping must always be filled with liquid and free of air. Meter should be calibrated per instructions in this manual prior to its use.

1. Stop flow of liquid.
2. Reset meter to "0".
3. Meter is ready for use. Start flow of liquid. Do not exceed 50 PSI line pressure.

MAINTENANCE

Meter should operate maintenance free. However, certain liquids can dry out while in the meter housing, causing the meter to stop. If this happens, meter should be thoroughly cleaned (see instructions below).

Cleaning Instructions:

Run a flushing fluid through meter. For a more thorough cleaning, disassemble meter per "ASSEMBLY / DISASSEMBLY" section, "Meter Chamber Assembly" subsection. Rinse all meter components. Recalibrate meter following calibration instructions above.

Storage:

If meter is to be stored for a period of time, clean thoroughly. This will help protect meter from damage.

TROUBLESHOOTING GUIDE

Counter is reading high or low:

Check calibration and recalibrate if necessary. Check for air in product and repair air leaks. Measuring chamber or gears could be sticking. Correct by cleaning or replacing internal metering components.

Shaft seal leakage:

Possible causes are dirty or damaged seals. Correct by cleaning o-ring and seat area or replacing seal.

Gasket leakage:

Correct loose gasket by tightening joints. Clean dirty gaskets and seat area. Replace damaged gaskets.

Low flow capacity:

Clean clogged meter chamber; clean or replace screens and filters in piping.

Meter body cracks:

Install pressure relief valve to allow high pressure to bleed back to tank.

Nutating disc breaks:

Avoid flow surge by putting shut-off valve on outlet of meter; place meter as close as possible to pump; keep piping full of liquid.

FLUID COMPATIBILITY

The 800C is compatible with the following fluids:

- Diesel Fuel, Gasoline, Kerosene, Mineral Spirits, Heptane, and Hexane

The 800C is NOT compatible with the following fluids:

- Bleach, Hydrochloric Acid, Ink, Sulfuric Acid, and Salt Water

If in doubt about compatibility of a specific fluid, contact supplier of fluid to check for any adverse reactions to the following wetted materials.

Ryton	Aluminum	Stainless Steel
EPDM	Flourocarbon	Buna N
Teflon®	Nickel	

ASSEMBLY / DISASSEMBLY

Meter consists of a chamber housing, measuring chamber, gear train, counter assembly and cover. Meter can be completely disassembled without disturbing piping.

Counter Assembly

For access to counter assembly, remove reset knob (item 3) by grasping edges and pulling firmly. Remove two screws (item 29) and lift counterface (item 2) and cover (item 1) off. Remove two screws (item 13) to extract counter (item 4). Reassemble by reversing procedure.

Meter Chamber Assembly

To expose meter chamber assembly, tilt the meter at least slightly face down, so that no parts fall out when removing meter housing. Remove the four screws (item 20), then remove meter housing (item 19). Meter chamber assembly consists of upper and lower chambers, a nutating disc and seal gasket. Reassemble by reversing procedure.

If replacement of any components of the meter chamber assembly is required, the complete assembly must be replaced due to the precise method of its construction. This assures a proper fit and a correctly operating chamber.

Gear Train and Seal

To disassemble gear train and seal, remove gear frame (item 12) by prying slightly. Remove cluster gear (item 10) and washer (item 11) from shaft (item 9). Remove drive gear (item 8) and washers (item 7) by rotating and pulling drive gear. Remove O-ring seal (item 6).

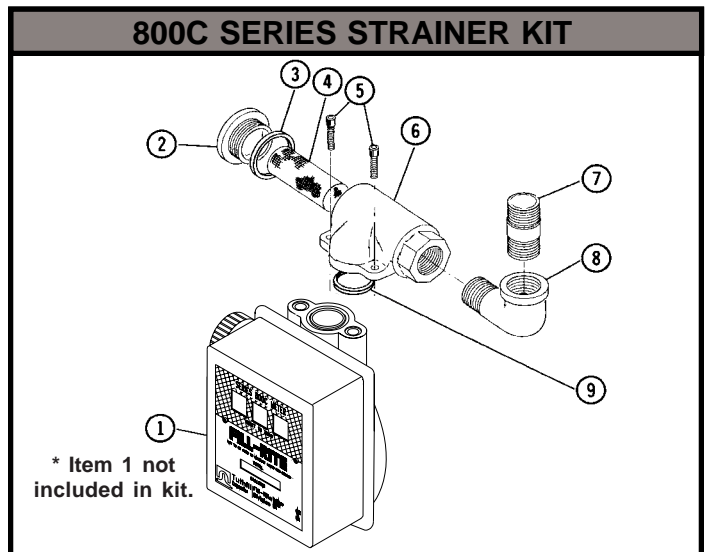
When reassembling seal, lubricate O-ring liberally with oil or petroleum jelly and replace in cover. Place washer on drive gear shaft. Carefully rotate and push shaft through O-ring and cover to prevent damage to O-ring. Shaft must then be guided into pinion bevel (item 28) if counter has not been removed. Replace remaining parts to complete assembly by reversing disassembly procedure.

REPAIR

Meters needing repair should be taken to an authorized repair shop for service. Meters must be thoroughly triple-rinsed before being taken in for repair.

PRIOR TO SERVICE, ADHERE TO FOLLOWING INSTRUCTIONS:

Meters must be triple-rinsed and accompanied by a note indicating the chemicals which have been pumped through the unit. Meters not adhering to these specifications may be refused service.



ITM. NO.	PART NO.	DESCRIPTION	QTY.
1	800G1325	806C, 1", U.S. Gallon	1
	800G2727	806C, 1", U.S. Gallon, Nickel Plated	Opt.
	800G1387	806C, 1", U.S. Gallon, Teflon® Coated	Opt.
	800G1998	806C, 1" BSP, Liters	Opt.
	800G2705	806C, 1" BSP, Liters, Nickel Plated	Opt.
	800G1440	806C, 1" BSP, Liters, Teflon® Coated	Opt.
2	800F4360	Cover	1
	800F4362	Cover, Nickel Plated	Opt.
	800F4361	Cover, Teflon® Coated	Opt.
3	800F4380	O-Ring (-131), Buna-N	1
	800F4381	O-Ring (-131), Viton	Opt.
4	800F4350	Screen	1
5	800F4320	5/16-18 x 7/8 SHCS	2
6	800F4340	Strainer Housing	1
	800F4343	Strainer Housing, Nickel Plated	Opt.
	800F4342	Strainer Housing, Teflon® Coated	Opt.
	800F4337	Strainer Housing, BSP Threads	Opt.
	800F4339	Strainer Housing, BSP Threads, Teflon	Opt.
	800F4338	Strainer Housing, BSP Threads, Nickel	Opt.
7	800F4390	1 x 2 Pipe Nipple	1
8	800F4400	1" Street Elbow	1
9	700F2800	O-Ring (-218)	1
	700F2801	O-Ring (-218), Viton	Opt.
	TH18	Strainer Kit, 1", U.S. (Includes items 2-6, 9)	
	TH18T	Strainer Kit, 1", U.S., Teflon® Ctd. (items 2-9)	
	TH18X418	Strainer Kit, 1" BSP (Includes items 2-6, 9)	
	TH18TX418	Strainer Kit, 1" BSP, Teflon Ctd. (items 2-6, 9)	

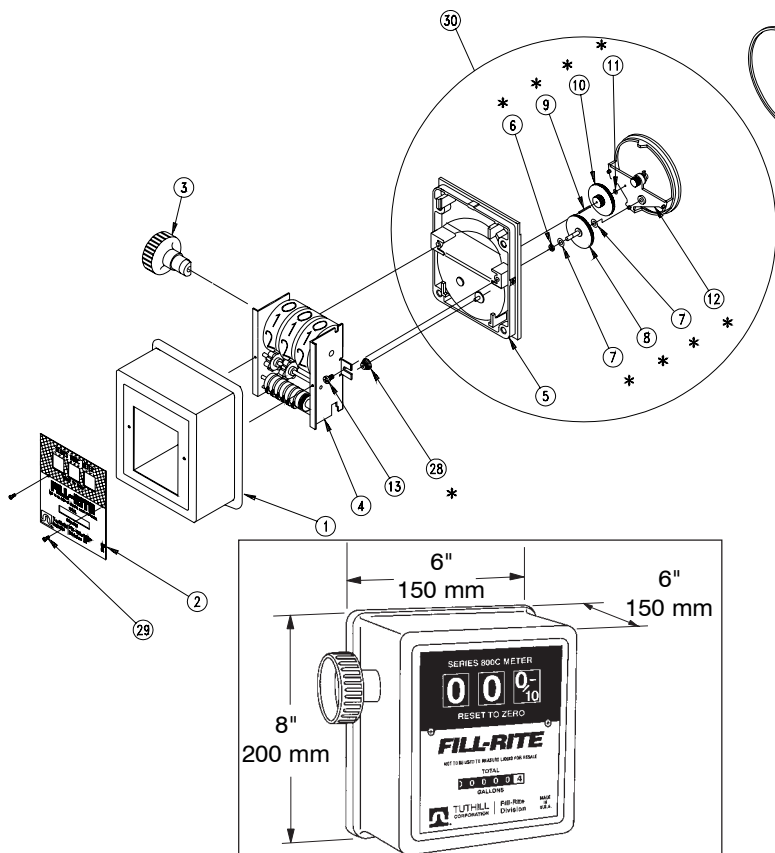
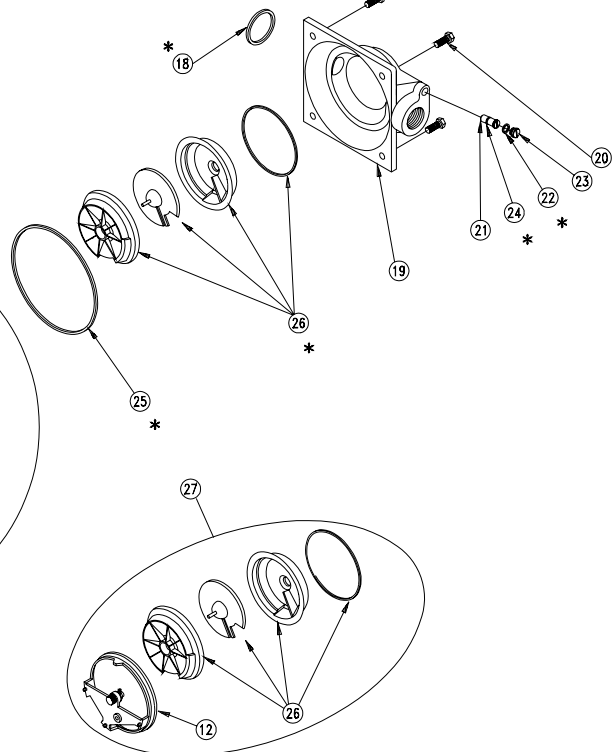
800B/800C SERIES REPAIR PARTS KITS	
PART NO.	DESCRIPTION
800KTG2540	Repair Kit, U.S. Gallon (Standard Seals) (Includes items 6-12, 18, 22, 24-26, 28)
800KTG2541	Repair Kit, U.S. Gallon (Viton Seals) (Includes items 6-12, 18, 22, 24-26, 28)
800KTG2542	Repair Kit, Liter (Standard Seals) (Includes items 6-12, 18, 22, 24-26, 28)
800KTG2543	Repair Kit, Liter (Viton Seals) (Includes items 6-12, 18, 22, 24-26, 28)
800KTG2579	Repair Kit, U.S. Gallon, (EPDM Seals) (Includes items 6-12, 18, 22, 24-26, 28)

800C METER PARTS LIST

ITM. NO.	PART NO.	DESCRIPTION	QTY.
1	800G2246	Counter Cover	1
2	800G0208	Counter Face, U.S. Gallon	1
	800G0241	Counter Face, Liter	Opt.
3	800G8870	Knob	1
4	800F4080	Counter - U.S. Gallon	1
	800F4081	Counter - Liter	Opt.
5	800G2246	Meter Cover	1
	800G2247	Meter Cover, Nickel Plated	Opt.
	800G2248	Meter Cover, Teflon® Coated	Opt.
6	800F4191	O-ring (5-106) Fluorocarbon	1
	800F4033	O-ring (5-106) EPDM	Opt.
7	800F3980	Washer	2
8	800F3845	Drive Gear (70T) - U.S. Gallon	1
	800F3846	Drive Gear (84T) - Liter	Opt.
	800F4185	Drive Gear (73T) - Imperial Gallon	Opt.
9	800F3820	Shaft, Cluster Gear	1
10	800F3841	Cluster Gear (22T/67T) - U.S. Gallon	1
	800F3843	Cluster Gear (10T/67T) - Liter	Opt.
	800F3541	Cluster Gear (19T/67T) - Imperial Gallon	Opt.
11	800F3830	Washer	1
12	800G2250	Gear Frame Assembly	1
13	900F4007	#8-32 x 5/16 PHMS ACR II	2
18	700F2800	O-ring (-218), Buna-N (800A, 700A/B)	Opt.
	700F2801	O-ring (-218), Fluorocarbon (800A, 700A/B)	Opt.
	800G2601	O-ring (-218), EPDM (800A, 700A/B)	Opt.
19	800G2236	3/4 Inlet - 3/4 Outlet Housing	1
	800G2237	3/4 Inlet - 3/4 Outlet Hsg., Nickel Plated	Opt.
	800G2238	3/4 Inlet - 3/4 Outlet Hsg., Teflon® Coated	Opt.
	800G2242	1 Inlet - 1 Outlet U.S. Housing	Opt.
	800G2243	1 Inlet - 1 Outlet U.S. Hsg., Nickel Plated	Opt.
	800G2244	1 Inlet - 1 Outlet U.S. Hsg., Teflon® Coated	Opt.
	800G2255	1 Inlet - 1 Outlet BSPT Housing	Opt.
	800G2256	1 Inlet - 1 Outlet BSPT Hsg., Nickel Plated	Opt.
	800G2257	1 Inlet - 1 Outlet BSPT Hsg., Teflon® Coated	Opt.

ITM. NO.	PART NO.	DESCRIPTION	QTY.
20	800G8892	5/16-18 x 1 HWTRS	4
21	800F4463	Calibration Screw (Includes Item 24)	1
22	800F4449	O-ring (-012) Fluorocarbon	1
	800F3389	O-ring (-012) EPDM	Opt.
23	800F4440	Seal Screw	1
24	800F4036	O-ring (-008) (Included w/Item 21) Fluorocar	1
	800F4034	O-ring (-008), EPDM	Opt.
25	800F4010	O-ring (-156), Buna-N	1
	800F4011	O-ring (-156), Fluorocarbon	Opt.
	800F4032	O-ring (-156), EPDM	Opt.
26	800G2262	Meter Chamber Assembly - Buna-N	1
	800G2599	Meter Chamber Assembly - Fluorocarbon	Opt.
	800G2600	Meter Chamber Assembly - EPDM	Opt.
27	800G2531	Meter Chamber Assembly, Buna-N (Includes Items 12 & 26)	1
28	800F3959	Pinion Bevel	1
29	35F1397	#4 x 3/8 PHSMS	2
30	800G2532	Cover Assembly - U.S. Gallon	1
	800G2533	Cover Assy. - U.S. Gallon - Nickel Plated	Opt.
	800G2534	Cover Assy. - U.S. Gallon - Teflon® Coated	Opt.
	800G2535	Cover Assembly - Liter	Opt.
	800G2536	Cover Assembly - Liter, Nickel Plated	Opt.
	800G2537	Cover Assembly - Liter, Teflon® Coated	Opt.
	800G2544	Cover Assembly - Imperial Gallon	Opt.
	800G2765	Cover Assy. - U.S. with EPDM Seal	Opt.
	800G2778	Cover Assy. - U.S. Nickel with EPDM Seal	Opt.
	800G2900	Cover Assembly - Liter with EPDM Seal	Opt.

*These parts are in the 800C Series Repair Parts Kit.



WHEN ORDERING REPAIR PARTS, BE SURE TO GIVE REPLACEMENT PART NUMBER, DATE OF MANUFACTURE AND METER SERIES NUMBER. THIS WILL ENSURE THAT THE CORRECT REPLACEMENT PART IS SUPPLIED.
TOLL FREE CUSTOMER SERVICE NUMBER
800 634 2695



TUTHILL
 Transfer Systems

8825 Aviation Drive
 Fort Wayne, Indiana USA 46809
 Tel 260 747-7524 Fax 260 747-3159

www.tuthill.com