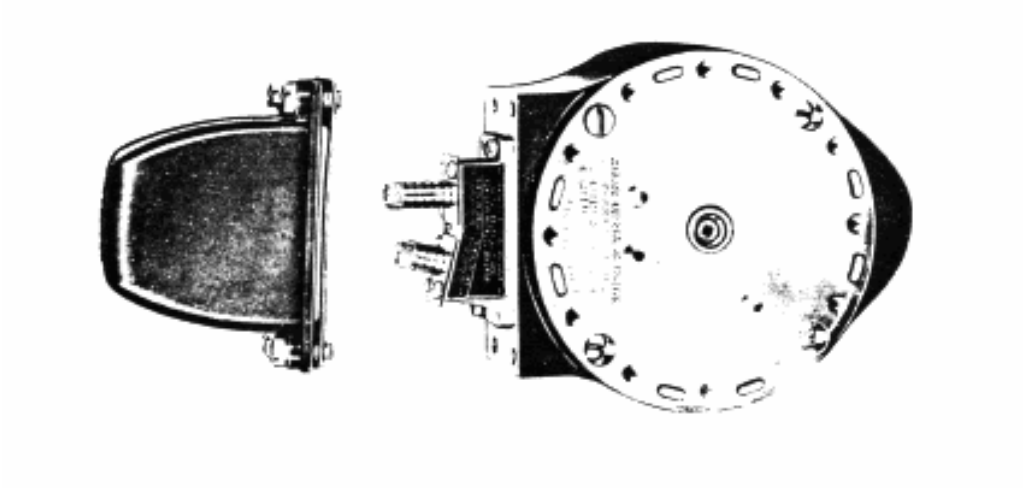
SERVICE INSTRUCTIONS

MODEL 4000 ADJUSTOR

Revision 01



CAUTION: It is recommended that this publication be read in its entirety before performing any operation. Failure to understand and follow these instructions could result in serious personal injury and/or damage to the equipment.

Should this equipment require repair or adjustment, contact the nearest District Sales Office. It is important that servicing be performed only by trained and qualified service personnel. If this equipment is not properly serviced, serious personal injury and/or damage to the equipment could result.

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Parts List

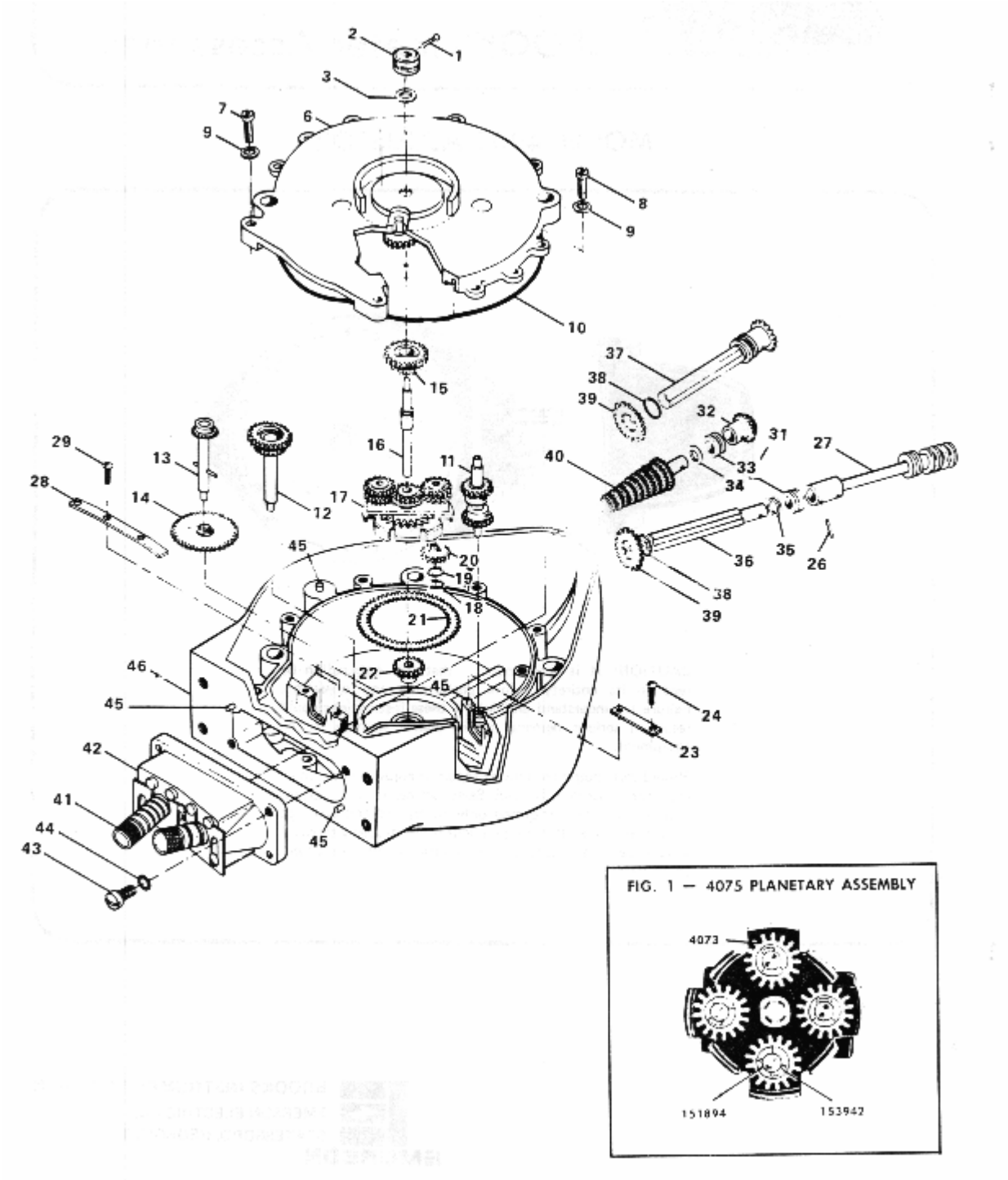


FIG. 1 — 4075 PLANETARY ASSEMBLY

Service

The Model 4000 Adjustor should be inspected and cleaned at regularly scheduled intervals. At these times all parts should be thoroughly cleaned in kerosene or solvent; all gears, shafts, and bushings checked for excessive wear; and "O" rings checked for wear or nicks. Any defective or doubtful parts should be replaced.

ITEM	DESCRIPTION	REQ.	NO.
1	Cotter Pin	1	153906
2	Coupling Assembly	1	4125
3	Shim .010 Thick	1	152516
6	Base Assembly	1	4115
7	Screw	2	156308
8	Screw	6	156307
9	Lockwasher	11	152255
10	"O" Ring	1	152089
11	Fine Adjustment Jack Shaft Assembly	1	4085
12	Input Jack Shaft Assembly	1	4110
13	Course Adjustment Jack Shaft Assembly	1	4100
14	Course Adjustment Gear Assembly	1	4105
15	Input Sun Gear Assembly	1	4080
16	Main Shaft	1	4083
17	Planetary Assembly, Main	1	4075
18	Spring Clip	4	153942
19	Washer	4	151894
20	Planetary Gear (16T)	4	4073
21	Ring Gear (48T x 60T)	1	4053
22	Output Gear (16T)	1	4052
23	Cap Bearing	1	11517
24	Screw	1	156141
25	Pin, Groove	4	153682
26	Pin, Groove	1	153702
27	Shaft Assembly, Worm Gear	1	4040
28	Cap, Bearing	1	5028
29	Screw	3	156141
30	Housing Assembly	1	4006
31	Pin, Groove	1	153501
32	Gear, Long Miter	1	4026
33	Bearing, Shaft	2	5027
34	Washer	2	151893
35	Washer, Thrust	1	5026
36	Shaft, Adjustment	1	5037
37	Shaft and Gear Assembly, Adjustment	1	4030
38	Retainer, Gear	2	5036
39	Gear Adjustment	2	5034
40	Stack Assembly, Gear (Remited)	1	5010
41	Sleeve, Adjustment	2	5031
42	Housing Assembly, Adjustment Gear	1	4045
43	Screw	2	156323
44	Washer	2	152257
45	Groove Pin	4	153682
46	Adjustor Housing Assy.	1	4006

NOTE: FOR CERTIFIED DIMENSIONAL PRINTS CONSULT FACTORY.

TO DISASSEMBLE ADJUSTOR

1. Remove 153906 cotter pin (item 1) and 4125 coupling (item 2).

2. Take out the six 156307 and two 156308 screws (item 8 and item 7), remove 4115 base assembly (item 6).

3. The following parts and assemblies may now be removed: 4083 main shaft, 4080 input gear, 4085 jackshaft, 4100 jackshaft,4105 gear,4110 jackshaft, 4075 planetary assembly, 4053 ring gear, and 4052 output gear.

Further disassembly should not be necessary.

Note: If replacement of a 4026 miter gear is necessary, be careful not to bend the shaft when removing or replacing 153501 groove pin.

TO REASSEMBLE ADJUSTOR

Lubricate all gears, shafts, bushings, and "O" rings sparingly with Aero-Lubriplate before replacing.

1. If any 4073 gears (item 20) were removed from the 4075 planetary assembly (item 17) replace them together with 151894 washer (item 19) and 153942 spring clip (item 18).

2. Replace 4053 ring gear (item 21) on 4075 planetary assembly (with side up as shown in fig 1). Be sure ring gear is in mesh with the four 40 .- gears. Install 4052 output gear (item 22) on planetary assembly in mesh with the four 4073 gears. Holding this assembly, place the 4006 adjustor housing (item 30) down over the 4052 output gear.

3. Replace 4080 input gear (item 15) and 4083 main shaft (item 16).

4. Replace 4105 gear (item 14) with slotted side up and 4100 jackshaft assembly (item 13).

Note: Be certain the pin in the jackshaft is fully engaged by the slot in the gear hub.

5. Replace 4110 jackshaft assembly (item 12).

6. Replace 4085 jackshaft assembly (item 11).

7. With 152089 "O" ring (item 10) in place, install 4115 base assembly (item 6).

Note: Do not force the base assembly. Turn the adjustor by means of the adjusting knobs until all gears are in mesh and all shafts have entered their bushings.

8. With all screws and 4125 coupling in place, check the adjustor for freeness of operation. The adjustor must operate without binds or catches when turned by the 4125 coupling. Allow coupling to hang freely while turning.

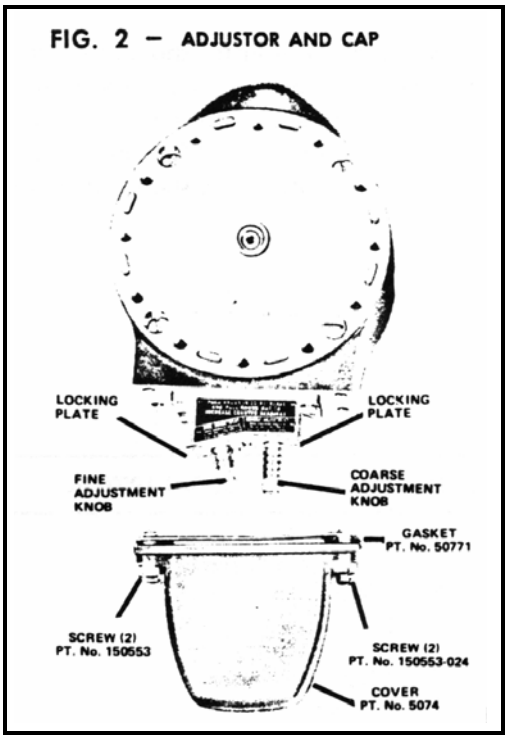
Accuracy Adjustment

Bi-Rotor Meters are adjusted for accuracy by changing the gear ratio between the meter packing shaft and the counter until the counter registers the amount of liquid measured.
The Model 4000 Adjustor accomplishes this change in positive and definite increments with its two adjusting knobs—one for coarse adjustments and one for fine adjustments.
To make an adjustment, lift locking plate and push knob IN TO DECREASE counter reading or pull knob OUT TO INCREASE counter reading.

Each Groove of Fine Adjustment = .05(1/20) percent of volume delivered
= .0005 gals. per gallon delivered
= .116 cu. in. (U.S.) per gallon delivered
= .064 oz. (U.S.) per gallon delivered
= .139 cu. in. (Br. Imp.) per gal. delivered
= .50 c.c. per liter delivered

Each Groove of Coarse Adjustment = .6016/10) percent of volume delivered
=.006 gals. per gallon delivered
= 1.386 cu. in (U.S.) per gallon delivered
=.768 oz. (U.S.) per gal. delivered
= 1.665 cu. in, {Br. Imp.) per gal. delivered
=6 c.c. per liter delivered

FIG. 2 – ADJUSTOR AND CAP



Each Coarse Groove Equals:	Each Fine Groove Equals:
.6% of Vol. Delivered	.05% of Vol. Delivered

CALIBRATING METER INTO PROVER TANK

Make run into prover to wet lines and tank. Drain tank. (NOTE: Drain tank the same length of time for each run.)

Make at least two calibrating runs into prover that agree closely. Sketch below illustrates counter over-registration (short gallon) and counter under-registration (long gallon).

COUNTER REGISTERS EXACTLY 100

COUNTER INDICATES MORE THAN AMOUNT ACTUALLY DELIVERED–PUSH KNOBS IN TO DECREASE COUNTER READING.

COUNTER INDICATES LESS THAN AMOUNT ACTUALLY DELIVERED–PULL KNOBS OUT TO INCREASE COUNTER READING.

Record adjustor setting before making an adjustment by

IMPERIAL MEASUREMENT

6 gals. In 1000 gals.	1/2 gals. In 1000 gals.
3 gals. In 500 gals.	69.4 cu. in. In 500 gals.
166.5 cu. in. In 100 gals.	13.9 cu. in. In 100 gals.
83.3 cu. in. In 50 gals.	6.9 cu. in. In 50 gals.
41.6 cu. in. In 25 gals.	3.5 cu. in. In 25 gals.
16.65 cu. In. In 10 gals.	1.4 cu. in. In 10 gals.

U. S. M EASUREMENT

6 gals. In 1000 gals.	1/2 gals. In 1000 gals.
3 gals. In 500 gals.	57.8 cu. in. in 500 gals.
138.6 cu. in. in 100 gals.	11.6 cu. in. in 100 gals.
69.3 cu. in. in 50 gals.	5.8 cu. in. in 50 gals.
34.7 cu. In. in 25 gals.	2.9 cu. in. in 25 gals.
13.9 cu. in. in 10 gals.	1.2 cu. in. in 10 gals.

METRIC MEASUREMENT

6 liters In 1000 liters	2.5 liters In 5000 liters
30 liters In 5000 liters	1500 c.c. In 3000 liters
181 liters In 3000 liters	1500 c.c. In 1000 liters
3 liters In 500 liters	250 c.c. In 500 liters
1200 c.c. In 200 liters	100 c.c. In 200 liters

counting grooves from end of knobs to locking plate. For example, setting of adjustor in Figure 2 would be: Coarse—6; Fine—4.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.