LUBRIQUIP
Centralized Lubrication Systems

Trabon and *Manzel*

Model MH3000 Lube Meter Product Service/Maintenance

Bulletin 44630

INSTALLATION

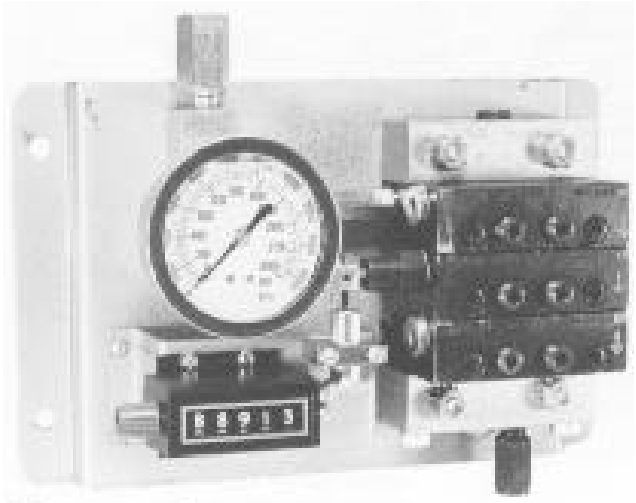
The Lubriquip® Lube-Meter is shipped completely assembled, adjusted and ready to install and operate.

Install the Lube-Meter in the lube oil line between the pump and master feeder. It can be mounted either on the equipment or on a separate panel, and should be located where the gauge and counter can be easily read. Be certain the inlet is at the bottom and the outlet is on the top to facilitate removal of air from the lube-meter.

NOTE: Installation of a 25 micron or finer filter in the oil line between the pump and Lube-Meter is recommended.

After mounting, remove air from the inlet line and Lube-Meter. To do this, leave the outlet line disconnected, connect the inlet line and run pump until air-free oil comes out of the outlet fitting. Then connect the outlet line, start the pump and remove air left in the Lube-Meter using the bleed screws at the top of the feeder assembly. (See Bulletin 30103, "How to Remove Air from a Trabon System", for further information.

NOTE: Do not use the Lube-Meter on systems which exceed 3,000 psi.

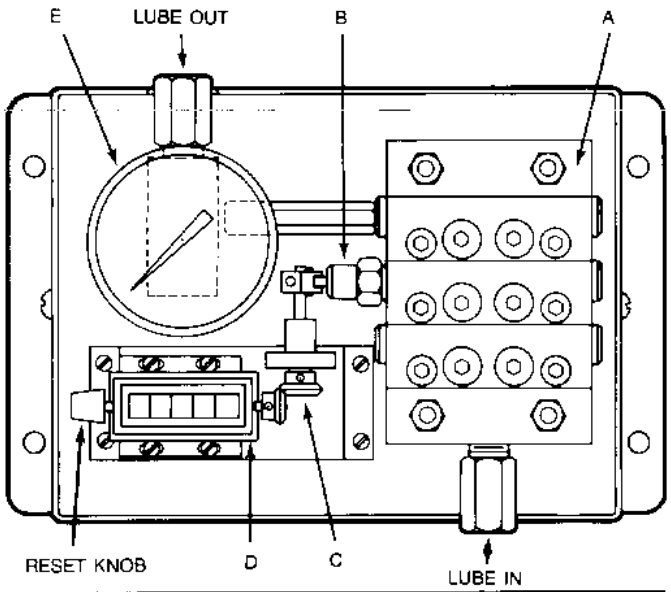


Cover removed.

OPERATION

The Lube-Meter mounts in series in the oil line between the pump and the master feeder on the operating equipment. It is operated entirely by the flow of oil through it.

The Lube-Meter incorporates an MH Series Progressive Divider Valve (A) ported for one inlet and one outlet line. The pressure gauge (E) monitors system pressure in the outlet line. An indicator pin (B) is connected to one of the divider valve pistons. It makes one complete in-and-out cycle with passage of specific volume of oil. The pin's in-and-out motion rotates a sturdy bevel gear (C) which drives the mechanical counter (D). The counter, in turn, records one count (or cycle) with each completed cycle of the divider valve.



OPERATION (Continued)

The Lube-Meter continuously records the flow of oil to the lubrication system. All an operator does is to observe and record the counter reading as specified by local operating procedures. To determine lube oil usage for most applications, the operator can convert the number of counts per hour to pints per day or liters per day directly from a table on the nameplate. For volumes higher than 20 pints or 20 liters per day one of the following calculations must be made:

Counts per minute × 7.17 = Pints per day
Counts per minute × 3.40 = Liters per day

SERVICE AND MAINTENANCE

Periodically remove the cover. Check the counter drive system to be sure the gears mesh smoothly and the unit records one count for each indicator pin cycle. If needed, clean the gears of dirt and contaminants. They should be coated with a light film of oil. Also check all fitting and connections for leakage. Replace or repair defective parts or seals as needed.

DISASSEMBLY

Counter Linkage —
To remove the assembly that connects the indicator pin to the counter:

TROUBLESHOOTING

WARNING

Always relieve the pressure in the system before loosening any oil lines or fittings.

TROUBLE	ACTION/CAUSE	SOLUTION
Counter not counting. Gauge indicates pressure.	a. Check linkage to counter for loose or worn parts. (Out of adjustment)	a. Tighten loose connections or replace worn parts. Adjust linkge for one count each cycle.
	b. If linkage is OK, counter is not working.	b. Replace counter.
Gauge indicates no pressure but counter is counting	a. Look for leakage in the Lube-Meter or outlet line.	a. Repair any leaks.
	b. If no leakage is found, gauge is bad.	b. Replace gauge.
System warning device indicates excessive pressure.	Look for a blockage as follows:	
	a. Lube-Meter gauge records high pressure-cause of high pressure (blockage) is downstream of Lube-Meter.	a. Locate and repair system blockage. (See Trabon bulletin 30101 "Locating blockage in Series-Flo Systems").
	b. Lube-Meter gauge does not record any pressure-cause of high pressure (blockage) is between pump and gauge. Shut off supply pump. Carefully & slowly loosen inlet connection to Lube-Meter and remove lube supply line. Start pump.	
	b-1. If no oil flows from lube supply line at inlet to Lube-Meter, in-line, filter is blocked.	b-1. Replace filter element.
	b-2. If oil flows from lube supply line at lube inlet blockage is in Lube-meter.	b-2. Replace all valve block section in MH feeder. Slowly loosen and remove two socket head screws holding valve sections to base. Remove old valve block section and replace with new one. After all valve sections have been replaced and the indicator pin attached to counter mechanism, run pump. Remove all air from MH Feeder as described under installation. Check MH Feeder for leaks, and adjust counter mechanism to record one count for each complete in and out cycle of indicator pin.

SERVICE AND MAINTENANCE
(Continued)

1. Loosen the set screw that holds the drive arm (Item 11) to the shaft (Item 13.)
2. Remove the two round head screws which hold the bearing assembly (Item 14) on the counter mounting bracket.

Feeder Assembly —
To remove the entire feeder assembly:

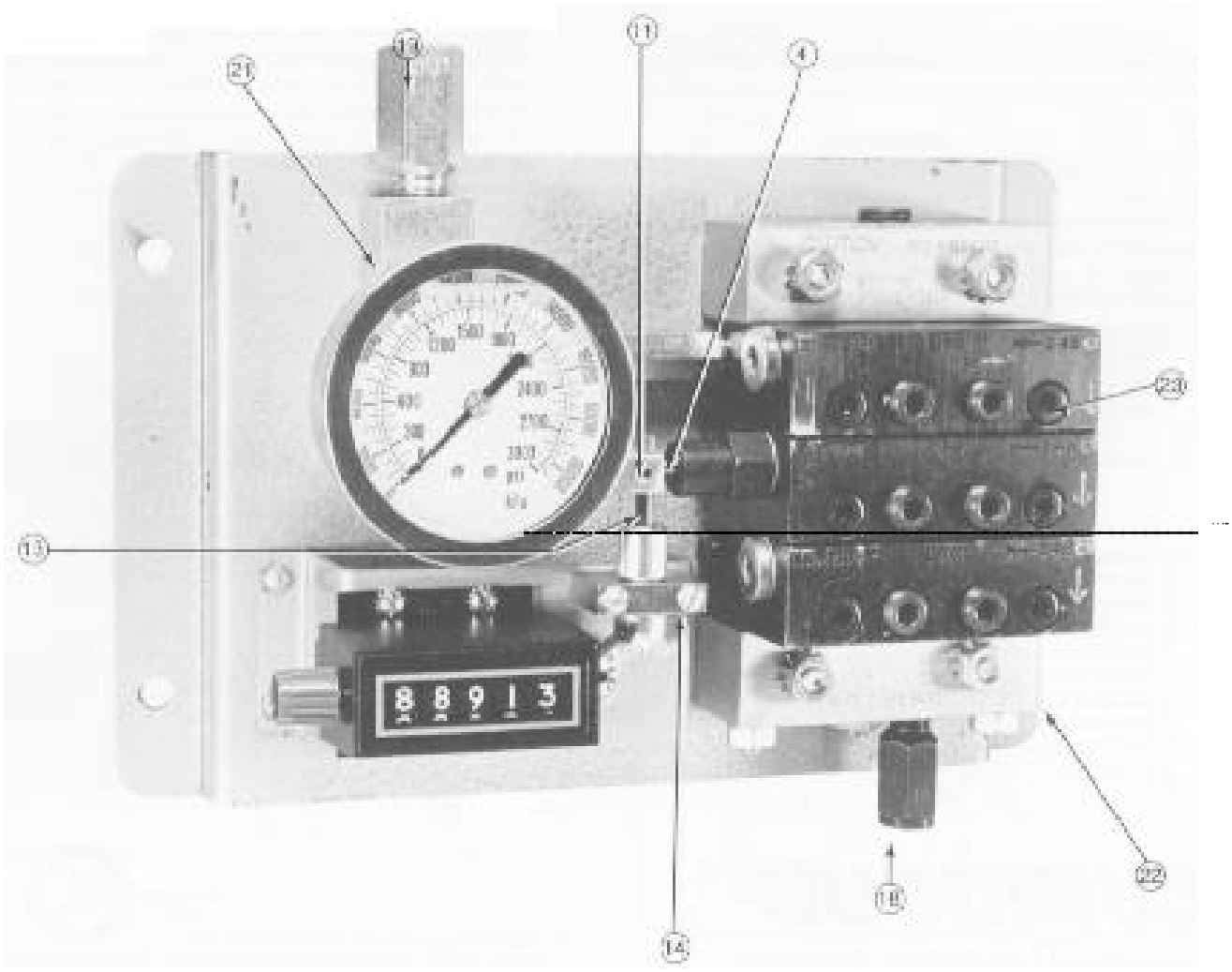
1. Disconnect inlet, (Item 18) and outlet (Item 19) lines at Lube-Meter.
2. Remove Lube-Meter from equipment.
3. Loosen the set screw which holds the drive arm (Item 11) to the shaft (Item 13) of the counter linkage assembly.
4. Remove the two screws which hold the gauge manifold block (Item 21) to the enclosure base.
5. Remove the four screws (Item 22) which hold the feeder assembly to the enclosure base.
6. Slide the feeder assembly up to disconnect the indicator pin assembly (Item 4) from the linkage assembly.

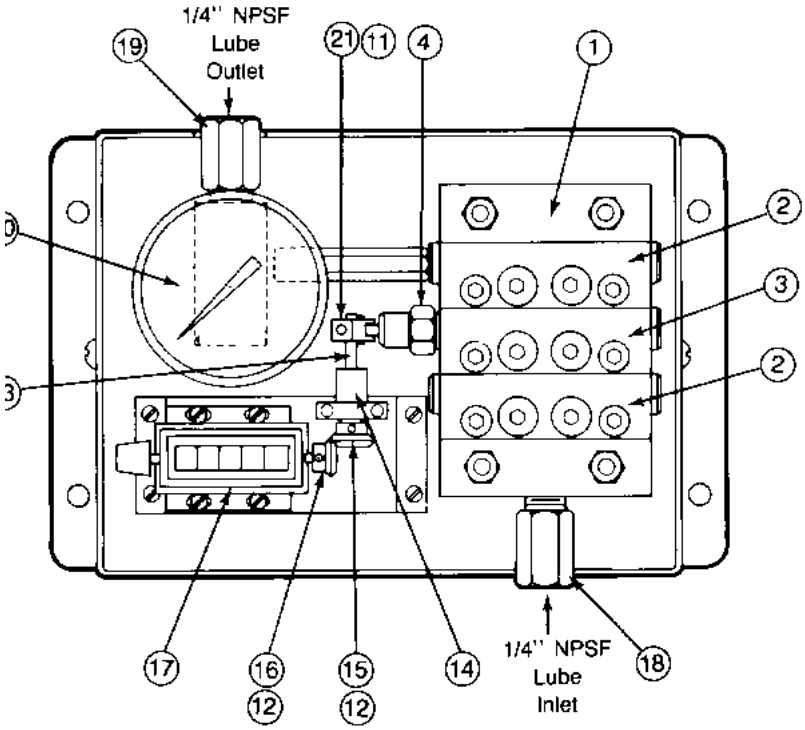
Valve Blocks —
To remove a valve block from the feeder assembly, remove the two socket head screws (Item 23) which hold the block to the intermediate section. For the center valve block, also loosen the set screw which holds the drive arm (Item 11) to the shaft of the counter linkage assembly, pivot the block up and slide the drive arm off the shaft.

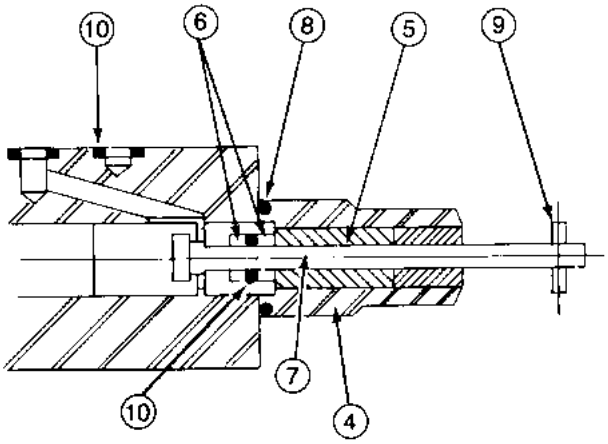
TESTING

After re-assembly bleed air from the oil lines and Lube-Meter and make the following two tests:

a. Plug the outlet. Raise the oil pressure to 3,000 psi on the pressure gauge and look for oil leaks.
b. Connect the outlet line and begin pumping oil. Be sure the counter records one count for each indicator pin cycle.







UBE-METER 510-770-110 PARTS LIST

TEM NO.	PART NO.	DESCRIPTION	QTY.
1	501-770-210	Feeder Assy. Includes Items 2, 3 & 4	1
2	510-770-400	Valve Block Assy. (.024)	2
3	510-770-340	Valve Cycle Pin Assy. (Includes Items 4-10)	1
4	527-000-890	Indicator Assembly Includes Items 5, 6, & 10	1
5	527-000-470	Bearing Insert	1
6	527-000-760	Back-Up Ring	2
7	510-770-350	Cycle Indicator Pin	1
8	527-000-240	Gasket-Enclosure Plug	1
9	411-100-570	Groove Pin 1/16 DIA x 3/8 LG	1
0	527-000-810	O-Ring (-600) Viton Brown (Used on Valve Block Assy. & on Base Intermediate Assy.)	63
1	511-356-001	Drive Arm	1
2	417-500-030	4-40 x 1/4 Fl. Pt. Set Screw	2
3	510-770-290	Shaft	1
4	510-770-260	Bearing Assy.	1
5	510-770-270	Miter Gear 20T	1
6	510-770-280	Miter Gear 16T	1
7	507-800-000	Counter	1
8	509-365-030	Inlet Check Valve	1
9	509-360-030	Outlet Check Valve	1
0	510-770-240	Gauge 0-3,000 psi Liquid Filled	1
1	417-540-030	–6-32x3/16 PLPT Set Screw	1

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CERTIFICATE A3061 ISO 9

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