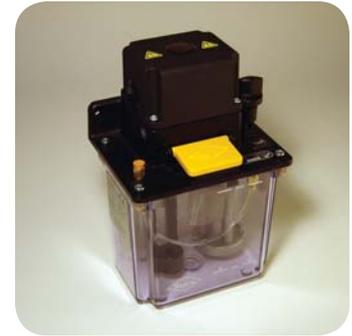


TMD-5 Lubricator

Automatic Cyclic

Before installing or operating this lubricator, please read this manual carefully. Failure to follow instructions can result in damage to the product and/or serious bodily injury. The TMD-5 lubricator meets all operating parameters for single line resistance centralized lubricating systems incorporating Bijur Delimon meter units.



Definition of Precautions and Symbols

The following symbols, used to identify safety instructions, are defined as follows:	The following symbols, used to identify the lubricant low level switch within the lubricator, are defined as follows:
Non-compliance will affect safety.	Normally closed electrical contacts (contacts close on low lubricant level).
Electrical safety is involved.	Normally open electrical contacts (contacts close on low lubricant level).
Safe operation of the lubricator and/or protection of the lubricator should be considered.	The electric motor.
Electrical connections made to Earth ground.	AC - alternate current voltage.
Conditions and actions that pose hazards to the user.	DC - direct current voltage.
Increase and decrease of lubricant discharge adjustment. Lifting collar and turning counter-clockwise will increase lubricant discharge.	

Declaration of Conformity

Bijur Model TMD-5, Automatic, Cyclic Lubricator

MANUFACTURER

Bijur Lubricating Corporation, A Subsidiary of Industrial Manufacturing Company International

STATEMENT OF CONFORMITY

Based on test results using appropriate standards, the product is in conformity with:

- + Machinery Directive 89/392/EEC
- + Electromagnetic Compatibility Directive 89/336/EEC
- + Low Voltage Directive 73/23/EEC
- + Amendments 93/68/EEC, 92/31/EEC

This Conformity is indicated by the symbol CE i.e. 'Conformité européenne'

SAMPLE TESTS

Standards used:

- + Safety of Household and Similar Electrical Appliances, EN 60335-1 (including amendments A2, A5, A6, A51, A53, and A54), EN 60335-2-41 (including amendment A1)
- + Electromagnetic Compatibility Generic Emissions Standard, EN 50081-1 (1992)
- + Electromagnetic Compatibility Generic Immunity Standard, EN 50082-1 (1992)
- + Pumps and Pump Units for Liquids General Safety Requirements, prEN 809 (1995)

All tests have been performed in a typical configuration.

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Operation

The TMD-5 lubricator includes a motor-driven, spring discharge piston pump. The unit may be operated manually by raising and releasing the manual feed knob. Volume of lubricant discharged for each cycle is selected using adjustment shown on marked indicator rod. Cycle time is fixed by an internal gear reduction motor which runs continuously when powered. A lubricant low level switch is provided for signalling low level condition.

ATTENTION

Use clean oil only of the type and viscosity recommended by machine manufacturer.

WARNING

This lubricator must not be used in explosive atmospheres and must not be used for pumping highly flammable liquids.

Technical Data

Motor	Single phase
Power Rating	3 watts, 50/60 Hz
Current (Average Values)	15mA (230 VAC), 30mA (115 VAC). 33mA (24 VDC)
Supply Voltage	115/230 VAC ~ ±10%, 50/60 Hz , 24 VDC
Protection	IP52
Discharge Volume	Adjustable, 1-5cc per cycle
Discharge Pressure	4.1 bar (60 psi) maximum
Connection Port	5/16-24 inch female for tube Ø 4mm (5/32") O.D.
Reservoir Lubricant	1.8 liters (110 cu. in.) plastic
Viscosity	27-1700 cSt (150-8000 SSU) at operating temperature
Operating Temperature	5°C to 40°C (40°F to 105°F)
Suction Filter	40 micron (nominal)
Low Level Switch	Contact rating: 10 watts maximum
Weight	2 kg (4.5 lbs)
Noise Emission	Less than 70dB(A)

Low Level Switch

This lubricator is equipped with a low lubricant level switch. It is factory set to open an electrical circuit whenever the lubricant level in the reservoir becomes low and must be refilled.

The switch contacts may be changed from normally open (empty reservoir) to normally closed by inverting the float. The switch will then close an electrical circuit whenever the lubricant level is approaching empty.

ATTENTION This switch is not intended to directly turn off the motor or illuminate a lamp. The electrical circuit for the level switch must not exceed 10 watts.

Volts	Amperes	
	AC	DC
0-50	.20	.13
115	.08	.05
230	.04	.02

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Installation

Mounting: Two 7mm (0.27") diameter holes are provided near the back of the lubricator for mounting. The surface on which the lubricator is mounted must be capable of supporting 3.4 kg (7.5 lbs). In order to access electrical connections without removing the lubricator from mounting surface, allow for sufficient space above the lubricator.

Note: For reservoir removal, allow 115mm (4.5 inches) below bottom of reservoir. Removal of the reservoir is required to change the suction filter disc.

Electrical

Access to electrical connections is accomplished through two 22mm diameter holes provided in the cover.



The main power supply must be fused, since protection is not supplied internally with the lubricator. An electrical noise suppressor is included and has been factory installed for 115 VAC operation. For 230 VAC operation, see the wiring change required below.



115 Volt AC Operation

The neutral conductor must be connected to terminal number 6 indicated by "N." The hot conductor must be connected to terminal number 5. The ground wire must be attached to terminal number 1 indicated by \oplus .

Do not connect any wires to terminal number 4. The suppressor is factory supplied attached to terminals 5 and 6 for 115 volt operation.



230 Volt AC Operation

The neutral conductor must be connected to terminal number 6 indicated by "N." The hot conductor must be connected to terminal number 4. The ground wire must be attached to terminal number 1 indicated by \oplus .

The suppressor wire must be removed from terminal number 5 and installed in terminal number 4. The red motor wire remains connected to terminal number 5.



24 Volt DC Operation

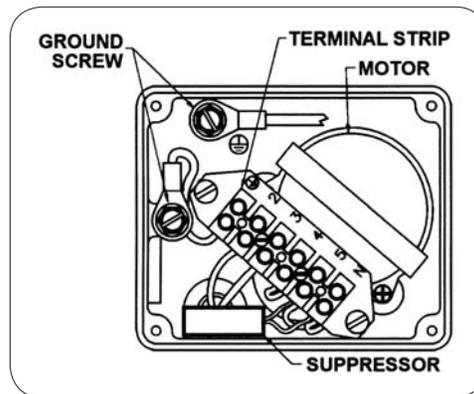
Connect 24 VDC power to the motor, wire codes: Red wire positive / Black wire is negative.



Before performing service to lubricator, always turn off and disconnect electrical power.

WARNING

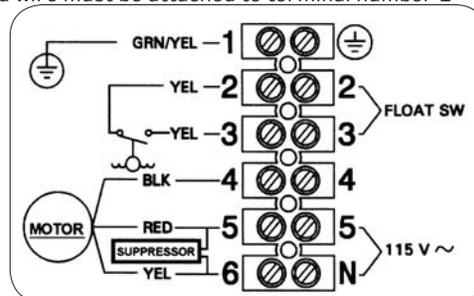
When connecting lubricator, make sure that unit is securely and adequately grounded. Failure to ground properly may cause serious injury.



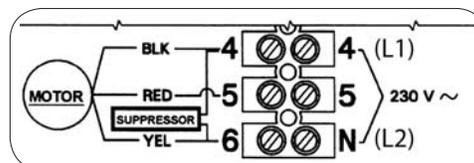
View of Electrical Strip
(shown with suppressor wired for 115 VAC connection)

ATTENTION

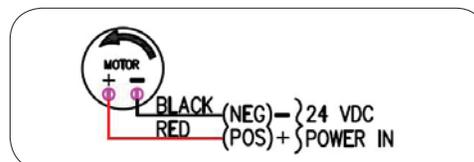
An approved electrical connection fitting must be used to prevent ingress of fluid into the motor compartment.



Wiring Diagram (115 VAC)



Wiring Diagram (230 VAC)



Wiring Diagram (24 VDC)

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Startup Instructions

ATTENTION Fill reservoir with clean approved lubricant until lubricant level is within 25mm (1 inch) from the top of the reservoir. Attach 5/16-24 inch tube fitting to discharge port and tighten to 3.4 Nm (30 in. lb.) torque.

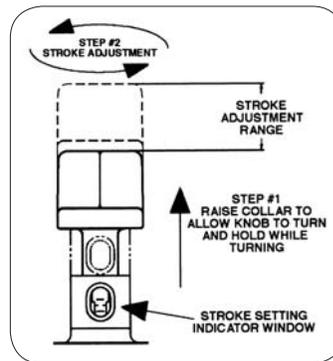
If lubricant distribution system has not been previously primed with lubricant, it is necessary to prime the system manually to purge air from the system before operating machinery. This may be accomplished by manually operating the TMD-5 lubricator. Raise and release the manual feed knob several times until lubricant flows at all bearing points. Adjust lubricant delivery volume as needed.

Lubricant Discharge Adjustment

The amount of lubricant delivered for each stroke of the piston is adjustable from 1 to 5 cubic centimeters. Adjustment is made by raising the collar with indicator window and turning manual feed knob and collar.

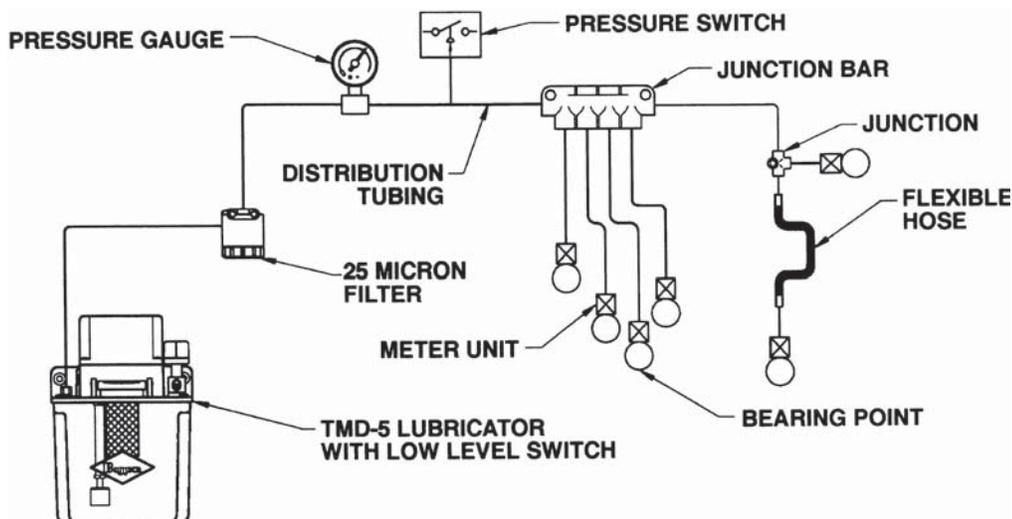


To decrease delivery volume, turn clockwise. To increase delivery, turn counter-clockwise. Return collar to original position to “lock” adjustment setting in place.



Approximate lubricant discharge setting in cubic centimeters is indicated by graduations appearing near the center of the window in the collar. For exact delivery, it is always best to measure delivery using a graduated cylinder. Lubricant delivery per hour is equal to the number of cycles per hour times the discharge volume per cycle.

Typical System Layout



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How to Order

Name	Cycle Time		Part #	
	50 Hz	60 Hz	115/230 VAC	24 VDC
TMD-5 Lubricator	6.4 min.	5.3 min.	26350-1	-
	10.7 min.	8.9 min.	26350-2	-
	16.0 min.	13.3 min.	26350-3	-
	33.2 min.	27.7 min.	26350-4	32295
	64.0 min.	53.3 min.	26350-5	-
	128.0 min.	106.7 min.	26350-6	-



Before performing service to lubricator, always turn off and disconnect electrical power.

WARNING

When connecting lubricator, make sure that unit is securely and adequately grounded. Failure to ground properly may cause serious injury.

When ordering, specify by name and part number, e.g. TMD-5 Lubricator, Part #26350-3.

Service Parts

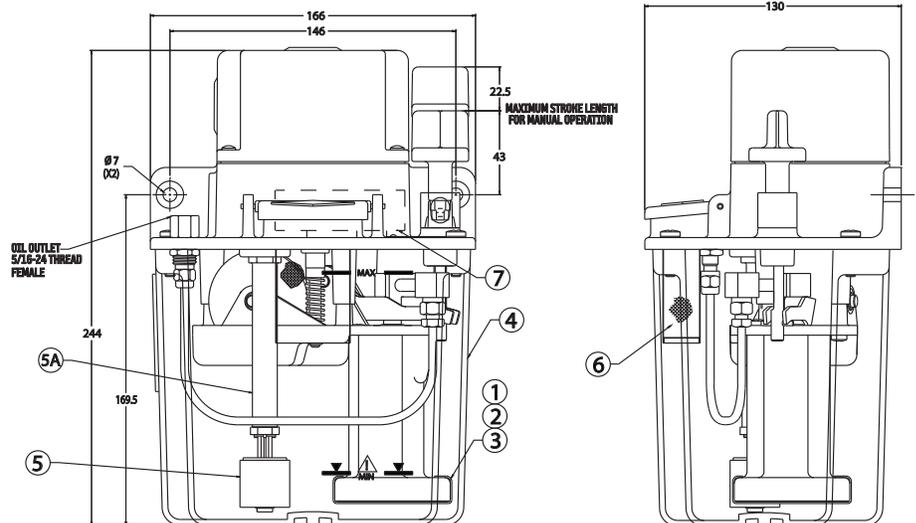
Order by part number and name shown below. If you are unsure of the service part needed, include complete lubricator part number and serial letters as shown on nameplate. For major repairs requiring parts not identified on the drawing, return the lubricator for factory rebuilding and adjustment. If a new lubricator is required for replacement, order by part number shown on the nameplate.

Item	Part #	Description
1-3*	26361	Filter Group Kit
1*	20577	Spring Clip
2*	B3747	Filter Disc
3*	B3746	Filter Screen
4	20324-KIT	Reservoir
5	B9640	Level Switch N.O.**
5A	20256	Level Switch N.O. with rod**
6	22285	Filler Screen
7	24278-3	Motor/Lubricator 26350-1
	24278-1	Motor/Lubricator 26350-2
	24278-6	Motor/Lubricator 26350-3
	24278-2	Motor/Lubricator 26350-4
	24278-4	Motor/Lubricator 26350-5
	24278-5	Motor/Lubricator 26350-6
	32306	Motor/Lubricator 32295

* Recommended spare parts.

** Also available in NC, p.n.B9640-1 & 20256-1

Measurements shown in inches.



Accessories

Description	Part #
Line Filter, 1 inch, 25 micron	19850
Line Filter, 3 inch, 25 micron	19848
Pressure Switch, SPST - N.O., 0.8 Bar (12 psi)	26410
Pressure Switch, SPST - N.C., 0.7 Bar (10 psi)	26393
Pressure Gauge, 0-7 Bar (0-100 psi)	B5610

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Maintenance

1. Use only clean and approved lubricant. Check lubricant level daily and refill as needed to maintain proper level in reservoir at all times. Failure to maintain proper lubricant level may result in serious damage to lubricator and machine being lubricated.



Before disassembling lubricator to perform routine maintenance, always turn off and disconnect electrical power.

2. Install a 25 micron filter in the main line near the lubricator whenever meter units are used.
3. Replace suction filter annually or as frequently as necessary by following the steps below:
 - a. Remove reservoir by unscrewing 4 screws. If sediment has accumulated inside the reservoir, wipe with clean cloth to remove.
 - b. Remove spring clip and pry out old suction filter element and screen.
 - c. Insert screen and new filter disc (screen first).
 - d. Install spring clip and reservoir.
 - e. Refill with clean lubricant.
4. Incorporate a pressure gauge downstream from the in-line filter to provide visual indication of lubrication cycles.
5. Install a pressure switch downstream from the in-line filter to provide electronic monitoring of lubrication cycles.
6. All tubing, flexible hoses and fittings must be compatible with the lubricant, operating pressure and surrounding environment.



Before performing service to lubricator, always turn off and disconnect electrical power.

Troubleshooting

Symptom	Possible Cause	Remedy
Lubricator does not pump automatically.	1. Motor not running - poor electrical connection.	1. Check electrical connections to insure power is being supplied to motor. If motor will not run, replace motor.
Motor runs but lubricator does not pump within specified cycle time.	1. Discharge setting incorrect.	1. Readjust setting - refer to lubricant discharge adjustment.
	2. Clogged suction filter disc.	2. Replace suction filter disc.
	3. Use of non-approved lubricant.	3. Replace suction filter disc and use approved lubricant.
Lubricator will not pump when manually operated.	1. Rocker arm near top of cam for piston stroke.	1. Allow motor to run until lubrication cycle is initiated.
	2. Discharge setting incorrect.	2. Readjust setting - refer to lubricant discharge adjustment.
	3. Clogged suction filter disc.	3. Replace suction filter disc.
	4. Use of non-approved lubricant.	4. Replace suction filter disc and use approved lubricant.
Air bubbles in lubricant when discharged from lubricator.	1. Clogged suction filter disc.	1. Replace suction filter disc.
	2. Use of non-approved lubricant.	2. Replace suction filter disc and use approved lubricant.
	3. Reservoir low on lubricant.	3. Refill reservoir.
Lubricant level switch does not operate properly.	1. Switch contacts reversed.	1. Invert float on level switch stem - refer to low lubricant level indication.
	2. Switch contact rating exceeded.	2. Replace lubricant level switch assembly.

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