

SureFire II Lubricator Three Phase

Quick Start Manual

SAFETY



General safety instructions



Electrical safety instructions

ATTENTION Safety instructions which promote safe operation of the lubricator



Electrical connections made to Earth ground are identified by this symbol

WARNING Conditions and actions that pose potential hazards to the user are marked by this sign

All safety and/or warning labels affixed to the SureFire II lubricator must be maintained in a completely legible condition. Also, any modifications made to the SureFire II Lubricator (or to any of its components) must be approved by Bijur Delimon. prior to its use, otherwise the warranty and any liability by Bijur Delimon will be null and void.

PDI Operation

The SureFire II PDI Lubricator has a motor-driven pump that pulls lubricant in from the reservoir and delivers pressurized lubricant to the distribution network through the outlet(s) in the top plate. Pressurizing the distribution network forces all of the positive displacement injectors (PDIs) in the system to fire, discharging the lubricant that was stored in each of their discharge chambers during the last pump cycle.

The pressure in the main line continues to rise activating the pressure switch until relief pressure is reached, at which stage, the relief valve opens and discharges the pressurized lubricant back into the reservoir. A pressure switch can be used to trigger the motor to stop, and momentary pressure in the main line becomes greater than the pressure at the outlet side of the gear pump. This pressure differential actuates a quick dump valve which relieves the main line pressure back into the reservoir.

SLR Operation

The SureFire II SLR Lubricator has a motor-driven pump that pulls oil in from the reservoir and delivers pressurized oil to the distribution network through the outlet(s) in the top plate. Pressurizing the distribution network forces all of the resistance fittings in the system to discharge the oil in proportioned quantities to the friction points. The resistance fittings continue to flow and the pump builds pressure until pressure relief valve setting is reached (130 psi/9 bar). Once the motor is shut off, pressure in the distribution network returns to near 0 psi via a quick dump valve.

Installation and Commissioning



ATTENTION Install the SureFire II Lubricator in the horizontal position ONLY. Attach the lubricator in the desired location and to the desired equipment by means of an appropriately sized bolt through each of the (2) mounting holes in the top plate. (3L=M6, 6L/12L=M8, 30L=M10) The lubricator should be installed in a location that is easy to access, for purposes of viewing the front panels, for ease of reservoir-filling, for ease of service and for ease of attachment to the distribution network plumbing.

Remember the SureFire II lubricator allows attachment of distribution plumbing to either (or both) sides of the top plate. If only one side is used, be sure to plug the unused outlet with a G1/4 BSPP plug (two plugs are included with each lubricator). The return line is G3/8BSPP (Return Port not present with Pressure or Flow Bypass)

One liquid tight fitting is supplied on the motor. Use the liquid tight fitting to secure the electrical wiring for the motor and to prevent ingress of fluids or dirt into the motor electrical enclosure compartment.

All tubing, flexible hoses and fittings must be compatible with the lubricant, operating pressure and surrounding

environment. In general, try to install the lubricator in the lowest position (vertically) with relation to the rest of the distribution network and do not allow the tubing to rise and fall when avoiding obstacles. This is in case air enters the distribution lines, the bubbles will tend to rise towards the end of the distribution lines and not get caught anywhere along the way. Any air bubbles trapped in the distribution network plumbing may prevent the PDI injectors from working properly.



ATTENTION All electrical connections are to be made by a qualified technician and all local electrical codes are to be followed. When electrical connections are being made, do so before the power leads are connected and before the power is supplied.

Consult the wiring diagram on page 4 for the correct wiring for your SureFire II lubricator.



ATTENTION The installation should include a means of disconnecting the power supply for servicing. Such means shall allow for switching off the power during normal operation and/or in an emergency. Also, a residual current device is required to automatically disconnect the power supply in the event of a failure in basic insulation.

This emergency disconnecting switch shall be located in close proximity to the equipment and be within easy reach. The switch should be marked as the disconnecting device of the equipment, shall have ON/OFF positions clearly identified and should meet the requirements of IEC60947-1 or IEC60947-3.

Be sure that all plumbing distribution lines are clean, are not kinked and are free from any chips or any other impurities.

WARNING Fill the reservoir through the fill cap and/or fill cap strainer with clean lubricant specified by the Original Equipment Manufacturer and that meets all of the lubricant specifications to the right.

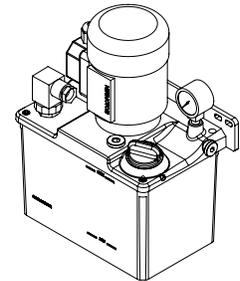
WARNING Do not overfill the reservoir. Never fill past the "MAX" level as noted on the reservoir. Overfilling could cause damage to your Surefire II.

Pump Priming

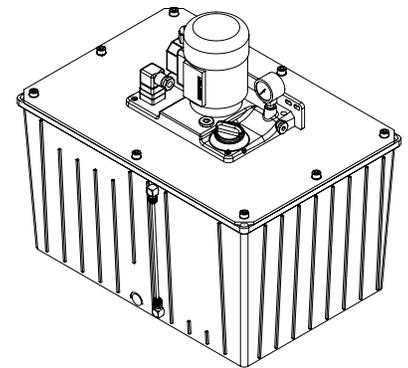
Filling the reservoir and turning on the lubricator is usually enough to prime the pump. However, in the case of a very thick lubricant, sometimes it's necessary to assist priming the pump. Upon initial startup, if no lubricant is being delivered to the pump outlet, make sure the pump is primed.

Avoid all kinds of impurities as dirt particles are the most common cause of gear pump failure. If you wish to determine whether the lubricant you plan on using is approved for use with Bijur Delimon International Systems, you can consult the Customer Service Department.

To prime the distribution network, plumb the entire system (mainline tubing, manifolds, junctions, air/oil blocks, injectors, injector outlet tubing to bearing points, meter units etc.). Then, remove a plug or injector at the point furthest away from the pump. Now, run the pump until bubble-free lubricant flows from this point. Replace the plug or last injector.



3 Liter Three Phase



30 Liter Three Phase

Lubrication Specifications:

Standard Oil version:

20 to 1500 cSt @ operating temperature

Light Oil version:

5-40 cSt @ operating temperature

Grease version(PDI only):

NLGI grade 000 - 00 (40,000 cSt max)



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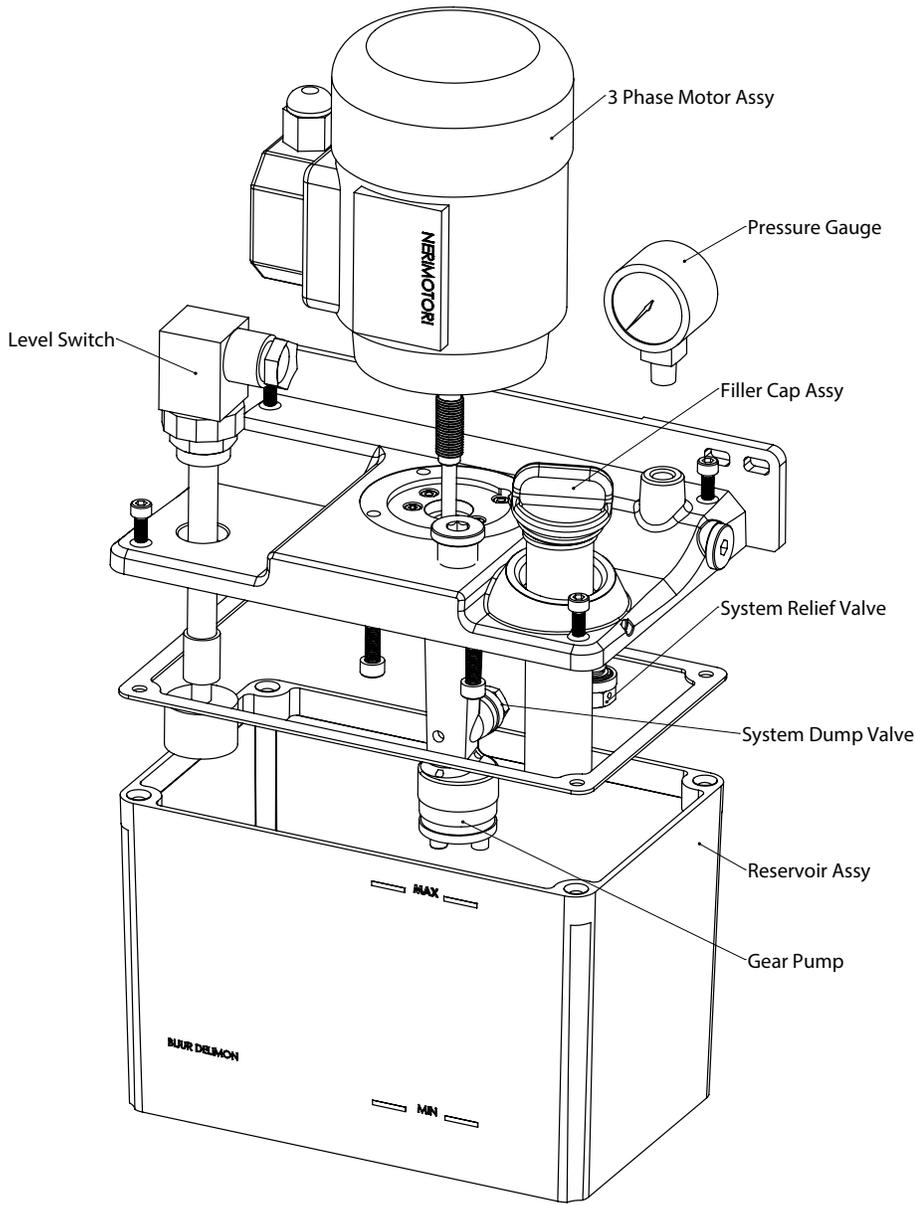
2250 Perimeter Park Dr., Suite 120
Morrisville, NC 27560

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Motor Duty Cycle:

3 Phase motor: S1, Continuous Duty

Component Illustration



Maintenance and Service

The SureFire II lubricator does not require much maintenance. After initial set-up, the lubricator requires only the following maintenance:

- When filling the reservoir with oil, the lubricant must be poured through the oil-filler screen
- The oil-filler screen must be inspected after every 4 or 5 fillings and cleaned if necessary
- If filling with a fluid grease, due to the fact that SureFire II PDI fluid grease models omit the filter screens, be sure the grease is fresh, clean, and is not higher than 40,000 cSt viscosity.
- Do not use aggressive cleaners to clean the lubricator. Use only mild cleaners or degreasers to clean the lubricator

ATTENTION In the event of having to replace a pressure gauge, appropriate pipe thread sealant applied to the male thread of the new gauge is recommended.

SureFire II Spare Parts

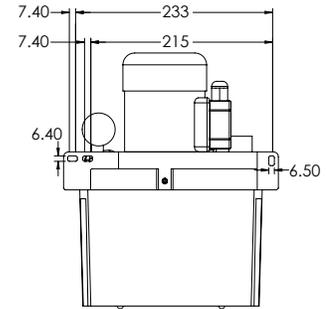
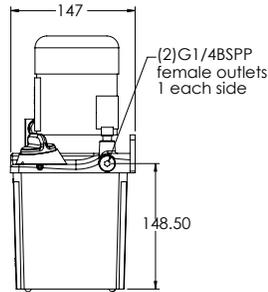
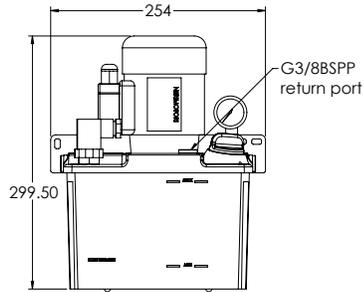
SureFire II Reservoir Size:	3 Liter	6 Liter	12 Liter	30 Liter
Part Description	Part #	Part #	Part #	Part #
3 Phase Motor Kit (includes driveshaft + Coupling)	71168-3	71168-6	71168-12	71168-30
Reservoir Kit PLASTIC (gasket included)	71115	71116	N/A	N/A
Reservoir Kit METAL (gasket included)	71066	71068	71135	71079
Level Switch Kit (Standard Oil Option)	71090-3	71090-6	71090-12	71090-30
Filler Cap Kit (with Inlet Filter Unit)		71121		
Gear Pump Kit 500cc		71167		
Pressure Gauge (PDI)		71129		
Pressure Gauge (SLR)		71130		
Dump Valve Kit		71131		
Relief Valve Kit (PDI)		71132		
Relief Valve Kit (SLR)		71176		

Refer to the following documents:

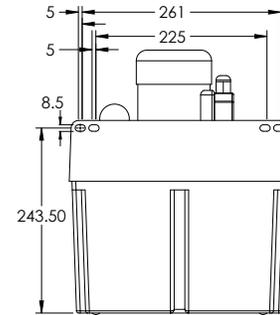
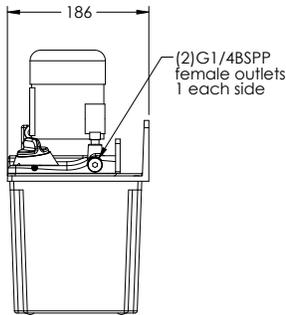
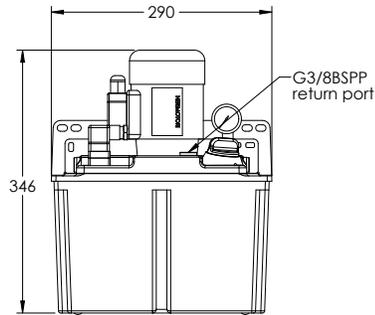
+ Data sheet #36701: Surefire II

SureFire II 3, 6 & 12 Liter Three Phase

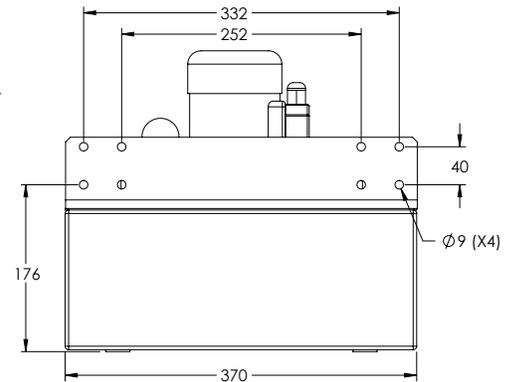
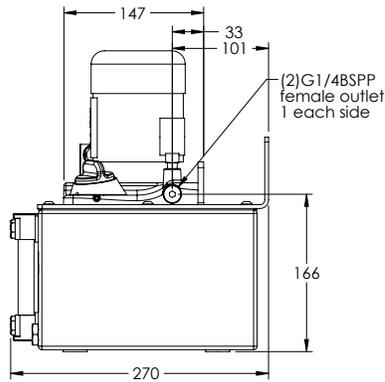
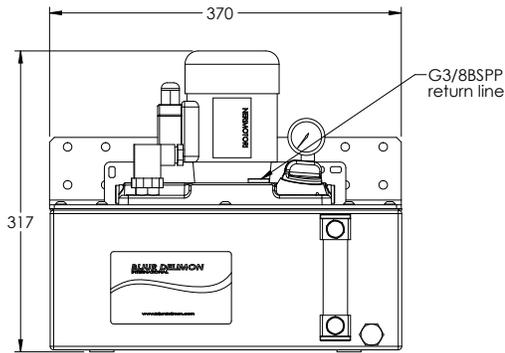
3 Liter



6 Liter



12 Liter



Troubleshooting

Pre-mature wear of the gear pump and the other moving parts is usually caused by dirty or contaminated lubricant.

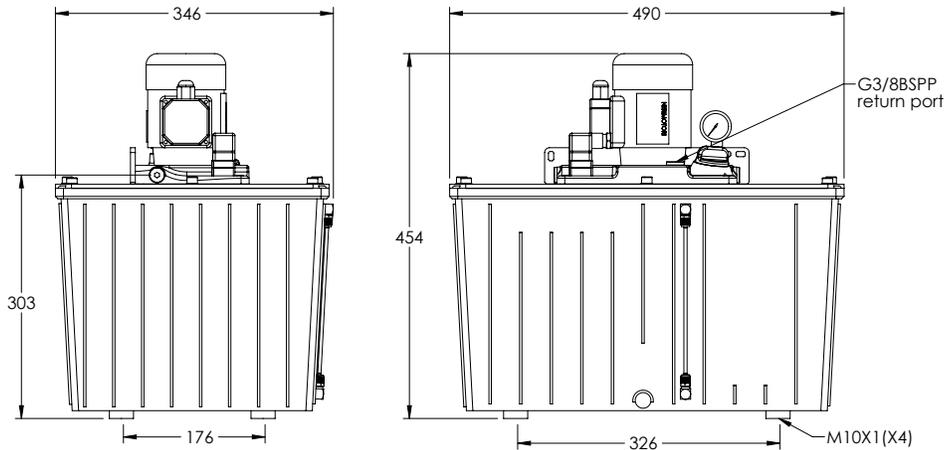
Failure of the PDI injectors or SLR Meter Units to deliver lubricant can be caused by an incorrect commissioning sequence, resulting in either air or dirt being trapped in the distribution network.

Dimensional Schematics

SureFire II 30 Liter Three Phase

Measurements shown in millimeters.

30 Liter



Surefire II Three Phase Technical Specifications:

Output Volume -

Three Phase:

500cc/min @ 60 Hz (416cc/min @ 50 Hz)

250cc/min @ 60 Hz (167cc/min @ 50 Hz)

Output Pressure (max.):

PDI: 450 psi (31 bar)

SLR: 130 psi (9 bar)

Motor Voltage Options:

230/480 VAC 50/60 Hz Three Phase

Motor Power Requirements:

Three Phase: 0.5 amps

Motor Duty Cycle:

3 Phase motor: S1, Continuous Duty

Operating Temperature Range:

40°F through 105°F (5°C through 40°C)

Electrical Fitting:

Liquid tight cable gland

Output Connection (x2, one each side):

G 1/4 BSPP

Return Line Connection:

G 3/8 BSPP

or

Flow/Pressure Bypass Adjustment Screw

Reservoir Fill Screen (oil only):

40 mesh, removable

Single (main) Feed Line:

6mm O.D. minimum recommended

Reservoir Volume:

3, 6, 12 & 30 Liter

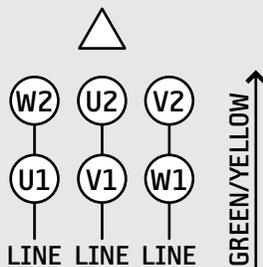
Reservoir Material:

Luran (Blue Tint) for 3, and 6 liter

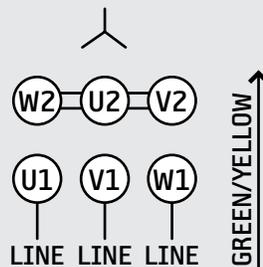
Steel for 3, 6, 12 and 30 liter

3 Phase Wiring Diagrams

220-240 VAC, 50/60 Hz or
255-280 VAC, 50/60 Hz



380-420 VAC, 50/60 Hz or
440-480 VAC, 60 Hz



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