

SureFire II Lubricator

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. The pressure switch can be used to stop the motor, 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 (75 psi/5 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. (2L&3L=M6, 6L=M8) 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).

Two liquid tight fittings are supplied with the lubricator. Use the liquid tight fittings to secure the electrical wiring for the lubricator and to prevent ingress of fluids or dirt into the motor compartment. Typically one of the fittings is used to bring "power" into the motor compartment and the other fitting is used to bring "signal" into or out of the motor 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 (located under the motor cover) 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.

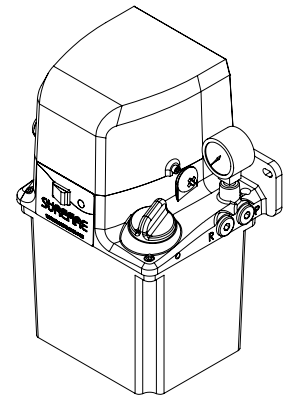
WARNING Do not overfill the reservoir. Never fill past the "MAX" level as noted on the reservoir. Overfilling could cause damage to the electrical components located under the motor cover.

Pump Priming

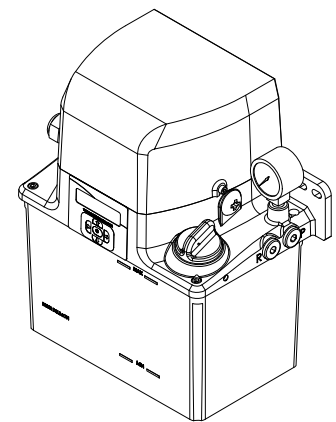
Filling the reservoir and turning on the lubricator is usually enough to prime the pump. However, in the case of a very thick lubricant, sometimes it's necessary to assist priming the pump. Upon initial startup, if no lubricant is being delivered to the pump outlet, make sure the pump is primed.

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 Lubricating 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.



2 Liter Single Phase Standard



3 Liter Single Phase w/ Controller

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)

Motor Duty Cycle:

100/115VAC & 200/230VAC motors: S3, 20%, 15 Min.

This means that the maximum continuous "on time" for any cycle is 3 minutes, and if the motor continuous "on time" for a cycle is X, the required minimum "off time" for that same cycle is at least 4X. Each motor has an internal high temperature cutoff switch.

24VDC motor: S1, Continuous Duty



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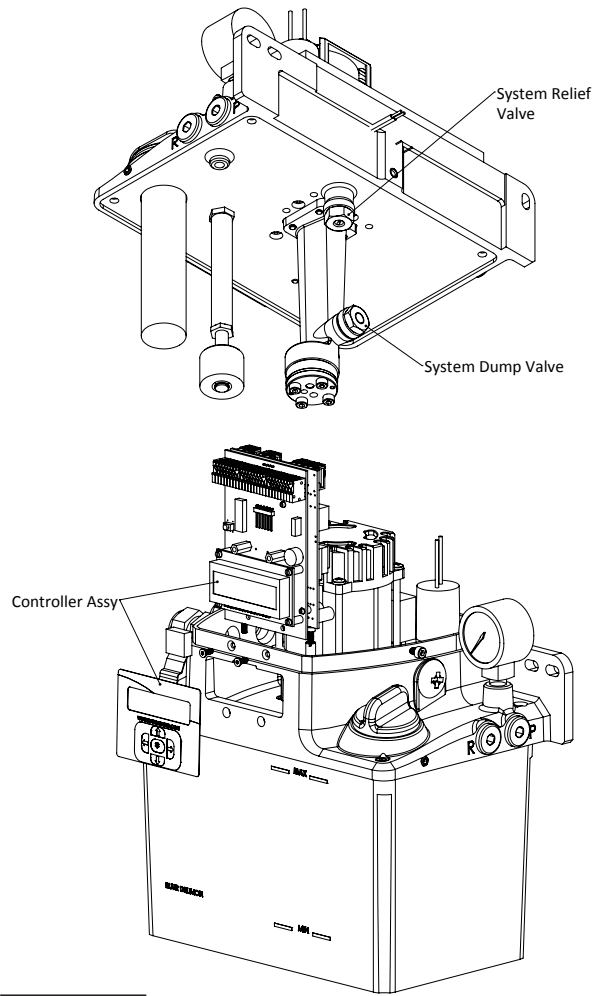
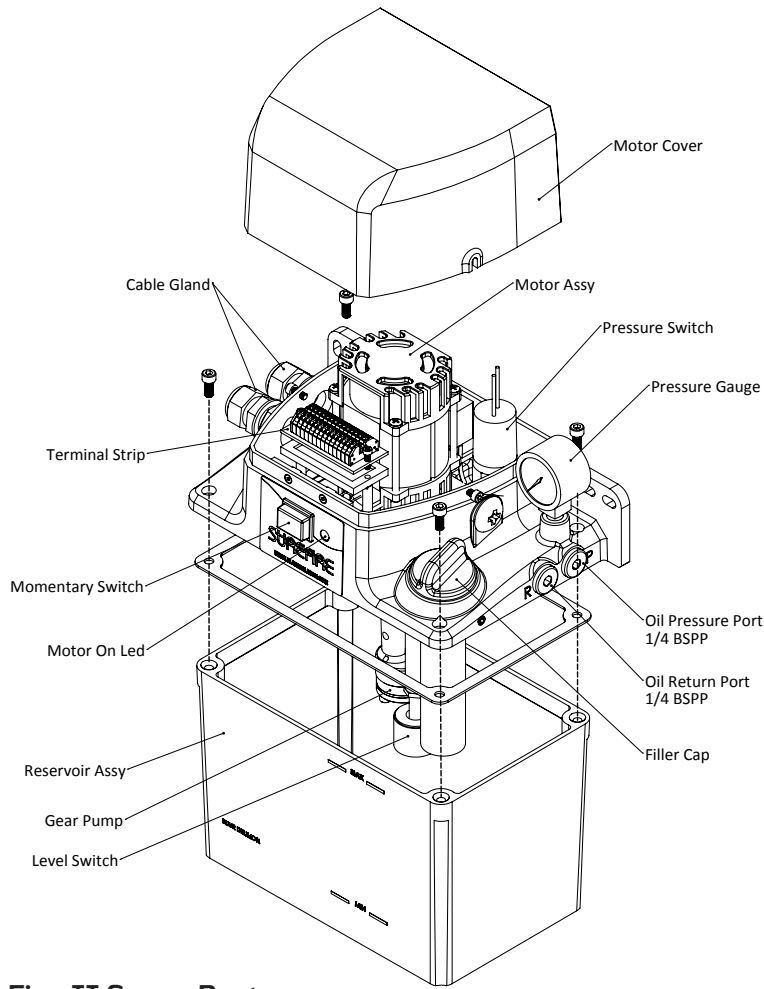
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Component Illustration



SureFire II Spare Parts

SureFire II Reservoir Size:	2 Liter	3 Liter	6 Liter	12 Liter
Part Description	Part #	Part #	Part #	Part #
24VDC Motor Kit (includes driveshaft + Coupling)	71111-2		71111-6	71111-12
115VAC Motor Kit (includes driveshaft + Coupling)	71112-2		71112-6	71112-12
230VAC Motor Kit (includes driveshaft + Coupling)	71113-2		71113-6	71113-12
Reservoir Kit PLASTIC (gasket included)	71114	71115	71116	N/A
Reservoir Kit METAL (gasket included)	71064	71066	71068	71135
Motor Cover Kit	71117	71118	71118	71118
Pressure Switch Kit PDI Pump		71119		
Pressure Switch Kit SLR Pump		71120		
Filler Cap Kit (with Inlet Filter Unit)		71121		
Terminal Strip Kit		71122		
Controller Kit - TIMER		71123-T		
Controller Kit - LITE Controller		71123-L		
Controller Kit - PREMIUM Controller		71123-P		
Membrane Switch/Label Kit for Timer/Controllers		71029		
Level Switch Kit (Standard Oil Option)	71124-2		71124-6	71124-12
Momentary Switch Kit		71125		
Motor on LED 115VAC / 230VAC		71126		
Motor on LED 24VDC		71127		
Gear Pump Kit		71128		
Pressure Gauge (PDI)		71129		
Pressure Gauge (SLR)		71130		
Dump Valve Kit		71131		
Relief Valve Kit (PDI)		71132		
Relief Valve Kit (SLR)		71133		
Cable Gland Kit		71134		

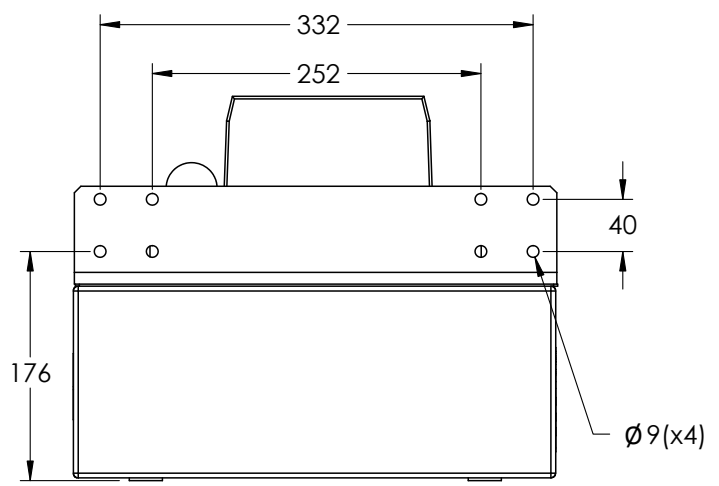
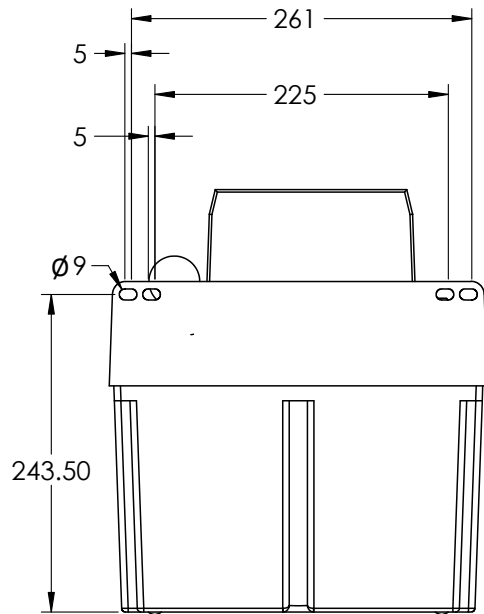
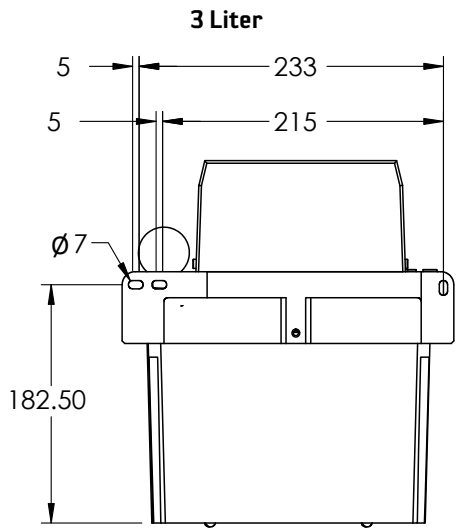
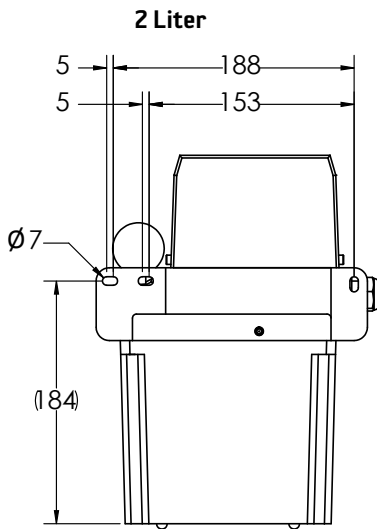
Maintenance and Service

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 2, 3, 6 & 12 Liter (115 VAC, 230 VAC and 24 VDC Single Phase)

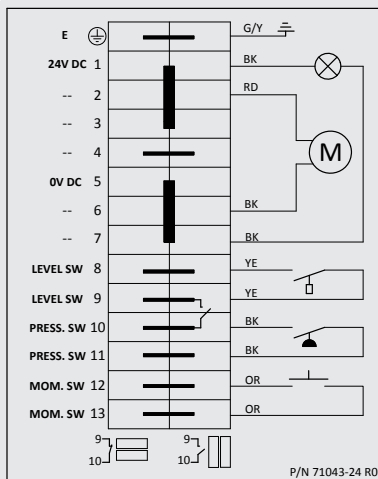


Troubleshooting

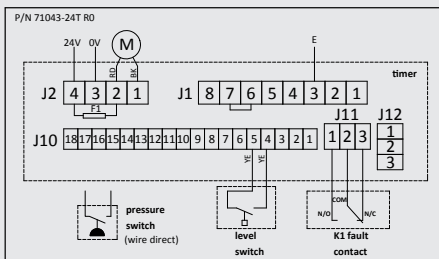
Pre-mature wear of the gear pump and the other moving parts is usually caused by dirty or contaminated lubricant.

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.

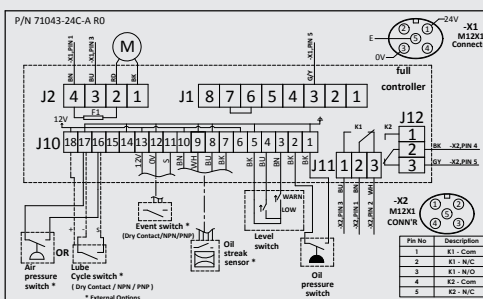
24VDC Wiring Diagrams



24VDC PDI TERM BLOCK



24VDC PDI TIMER



24VDC PDI CONTROLLER

Surefire II Technical Specifications:

Output Volume - 115 VAC, 230 VAC (max.)

Single Phase:

250cc/min @ 60 Hz

210cc/min @ 50 Hz

Output Volume - 24 VDC (max.):

250cc/min

Output Pressure (max.):

PDI: 450 psi (31 bar)

SLR: 75 psi (5 bar)

Motor Voltage Options:

100/115 VAC 50/60 Hz Single Phase

200/230 VAC 50/60 Hz Single Phase

24 VDC

Motor Power Requirements:

100/115 VAC Single Phase: 1.0 amps

200/230 VAC Single Phase: 0.70 amps

24VDC: 2.4 amps

Motor Duty Cycle:

100/115VAC and 200/230VAC: S3, 20%,15 Min.

This means that the maximum continuous "on

time" for any cycle is 3 minutes, and if the motor

continuous "on time" for a cycle is X, the

required minimum "off time" for that same cycle

is at least 4X. Each motor has internal high

temperature cutoff switch.

24VDC motor: S1, Continuous Duty

Operating Temperature Range:

40°F through 105°F (5°C through 40°C)

IP Enclosure Rating:

IP-54

Electrical Fitting:

Liquid tight cable gland

Output Connection (x2, one each side):

G 1/4 BSPP

Return Line Connection:

G 1/4 BSPP

Reservoir Fill Screen (oil only):

40 mesh, removable

Single (main) Feed Line:

6mm O.D. minimum recommended

Reservoir Volume:

2, 3, 6 & 12 Liter

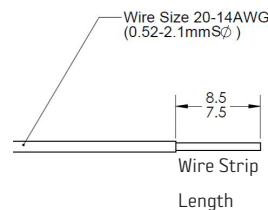
Reservoir Material:

Luran (Blue Tint) for 2, 3 and 6 liter

Steel for 2, 3, 6 and 12.0 liter

Wire Sizes - Terminal Block

Contact	Description	Wire Type	Size	Strip Length
All	All User Terminals (Quick Connection)	Solid Wire / Stranded Wire	20-14 AWG (0.52 - 2.1mm ²)	7.5-8.5 mm

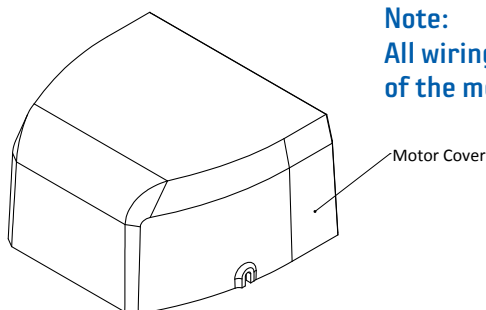


Wire Sizes - Controller/Lite Controller/Timer

Contact	Description	Wire Type	Size	Strip Length
J1 & J2	Power Input (Quick Connection)	Solid Wire / Stranded Wire	24-14 AWG (0.2 - 2.08mm ²)	9-10 mm
J11 & J12	Fault Contact (Screw Connection)	Solid Wire / Stranded Wire	24-16 AWG (0.2 - 1.5mm ²)	5-6 mm
J10	All other inputs (Quick Connection)	Solid Wire / Stranded Wire	26-20 AWG (0.13 - 0.52mm ²)	9-10 mm

Note:

All wiring diagrams are located on the inside of the motor cover of Surefire II.



Refer to the following documents:

+ Data sheet #36410: Surefire II

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