

# Ultimate Wireless Luber 100 User and Installation Manual

The Ultimate Wireless Luber 100 is an automated wireless lubing device that has been built on top of already proven lubing technology. The Wireless luber extends the basic function of a pre-set timing based system, to allow functional monitoring. The UWL has a replaceable, one-time use cartridge that can be changed in seconds. It contains a powerful motor that can create and produce over 200 psi of dispense pressure. Its biggest feature is that it can be wireless monitored from a remote location, no more need for technician lead site inspection of grease level and operating conditions!

FCC ID: RQ6-WISSLUB-01  
IC ID:10853A -WISSLUB-01

## FCC:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

## IC:

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device

Le present appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisee aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'appareil doit accepter tout brouillage radioelectrique subi, meme si le brouillage est susceptible d'en compromettre le fonctionnement

**Caution:** User changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## System Description

The Ultimate Wireless Luber (UWL) is an End Device in a portion of a wireless network meant to operate within the 433 Mhz RF Frequency band. Specifically in this current form the device operates on a single channel at 434.375 MHz. The system consists of device acting as an Access Point (AP) in a star network, connecting with an RF based Wireless monitoring Luber (UWL).

## Basic Operating Methods

The units are battery powered and have included batteries inside of the casings. In order to activate, or begin operation, the luber's main lid must be un-screwed and the battery connected.

Upon power up, the luber powers on the GREEN LED for approximately 1 second, then proceeds to cycle through all three LED's at a rate of approximately 1 per second. The sequence goes GREEN-RED-BLUE-RED-GREEN. After this cycle, the Luber powers up the motor, turning the shaft until the shaft count switch has been activated. This is displayed by a GREEN LED flash. After a switch 'hit' has been detected, the Luber then enters operational mode.

Operational mode depends on whether the Luber is operating as an RF device in a network, or as a local device with *no* RF capabilities. The operating mode is governed by the switch settings, primarily SW position #8. If the switch is in the "ON" position, the luber is operating in RF mode. If the switch is in the "OFF" position, the luber is operating in manual or local control mode.

## Operating Procedure – Manual (Local)

If it is desired to increase or decrease the lubricant dispensing rate during operations, simply click the switch or switches in use to OFF, Then click on the new switch setting for the revised rate.

To turn OFF the LUBER set all switches to OFF. The LUBER can be removed at any time without lubricant discharge.

Switch 7 is a purge switch. If your bearing requires an immediate shot of grease, turn ON switch 7.

When the LUBER starts operating, turn switch 7 OFF. The LUBER will run for approximately 1 minute. If you require more purging, repeat the procedure.

While the unit is operational, the LED light will flash green once every 20 seconds, indicating the electronics are functioning properly.

During the pump cycle, the LED will flash green approximately once per second, indicating that the pump is turning and pumping grease.

If there is a problem with the unit it will be indicated by the Red or Blue LED flashing every 20 seconds as follows:

- 1 red flash indicates that the unit has an internal limit switch error and is running in the failsafe mode. (Limit switch is used to control the dispensed volume, if it fails; the unit goes into a "failsafe" mode to dispense by time)
- 2 red flashes indicate that the battery is low and must be replaced shortly.
- 1 blue flash indicates that the grease cartridge is low and should be replaced shortly.

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- 2 blue flashes indicate that the unit is operating via the remote control option.
- 4 blue flashes indicate that the unit's operation is halted due to a low ambient temperature.

## Operating Procedure – Remote (RF)

While operating under normal remote RF monitor mode, the local switch positions control the base lube timer but it can also be overridden under remote control. The switch positions should be taken as a guide. However, changing switch positions locally resets the luber to 'local' time settings.

If Switch 8 is moved into the "ON" position, the luber will try to establish an RF link with an Access Point in a star type network. If Switch 8 is in the "ON" position when power is applied, after the appropriate power up sequence, the Luber will attempt to establish an RF connection with an Access Point before proceeding to the main application.

If no Access Point (AP) is available, the luber will continue attempts at approximately 1 second intervals until a connection has been established, or, switch position 8 is moved into the "OFF" position.

Assuming for a moment there is no AP connection, the lack of connection is signaled locally by a flashing RED LED. The RED LED will flash at the approximately 1 second intervals mentioned above while attempts are made to establish a connection. Should the attempt become successful and connection with an AP established, the GREEN LED will flash. It should be noted, if upon power being applied, an RF connection is able to be established, the combination of RED/GREEN flash occurs very fast. Like a 'blink'.

Upon successful connection with an AP, the luber will enter normal operating mode and operate very similarly to the Manual or local mode. However, the indication to a local observer the luber is in RF mode is; 2 blue LED flashes replace the Manual operating green flashes every 20 seconds.

Switch position 7 acts as the purge switch as it does for Manual (local) operation. It is **not required** to move switch 8 local/manual in order for Switch 7's purge function to operate. To purge, simply move Switch 7 to the "ON" position. When the LUBER starts operating, turn switch 7 OFF. The LUBER will run for approximately 1 minute. If you require more purging, repeat the procedure.

If there is a problem with the unit it will be indicated by the Red with Green or Blue LED flashing every 20 seconds as follows:

- 1 red flash indicates that the unit has an internal limit switch error and is running in the failsafe mode. (limit switch is used to control the dispensed volume, if it fails, the unit goes into a "failsafe" mode to dispense by time). It could also mean a lack of RF Network connection upon power up.
- 2 red flashes indicate that the battery is low and must be replaced shortly.
- 4 red AND blue flashes indicate that the unit's operation is halted due to a low ambient temperature.

Further, when in RF/remote mode, the Luber flashes a combination of GREEN and RED LED's to indicate transmissions are taking place. Under normal circumstances this occurs very fast. Sometimes so fast the eye has trouble catching it. When the Luber initiates a conversation with the AP, and a package is transmitted, the GREEN LED is turned on. If the AP replies to acknowledge and/or pass back a control message as an answer, the RED LED is flashed ON/OFF and the GREEN LED is turned off.

If there is a problem in the exchange, or for example the AP loses power; the Luber will display a much slower GREEN LED indicating lost packet transmission. If normal connections are re-established, the operation is returned to the rapid GREEN-RED led flash.

### Samples Switch Settings (Contained)

There are 8 switch positions; 1 position (MSB) allowing for local override of RF, 1 position for local luber purging, 6 positions for determine the length of time until empty for a full lube container. A short sample of settings is provided below.

Switch Positions								Jack-Luber TM Dispensing Rate Chart 125 cc				
15 Day	30 Day	60 Day	120 Day	240 Day	480 Day	Purge	Local Override	Days to empty	Lube Schedule	Cycle Time	Minutes Until Dispense	Approx Daily Output
1	2	3	4	5	6	7	8		Override RF			
1	2	3	4	5	6	7	8		Purge			
1	2	3	4	5	6	7	8			Hrs	Mins	in CC's
										1.4	84	8.33
												0.51

When switch position 8 is set to the 'ON' position, the luber enters "RF Operation", or "RF Override", which is to say, RF monitoring applies. When switch position 8 is in the 'OFF' position, RF *no longer* applies. The Luber will either not ask for an RF connection, or enter into a Controlled decommissioning of the RF link (if the luber was commissioned in a network).

Once the Luber is decommissioned from a network, no RF transmission will take place. This local switch setting is provided to conserve battery power and prevent unwanted or unneeded transmissions from the Luber device.

Switch position 7 performs a 'purge' function when set to the 'ON' position. When switch 7 is positioned "ON", after setup, the device enters a purge state and dispenses lube for a pre-determined period of time.

Switch positions 6 through 1 are also used for 2 purposes;

During nominal operation of the luber, these positions (1 – 6) are used to determine the **manual** lube dispense characteristics roughly determine by the chart below. Should the switches be left in a reference setup position, they will be assumed to be the operational state (assigning the manual lube characteristics) unless a switch value has changed at which point the new value will be assumed. Please note; all switches left in the "OFF" position means there is NO lube dispense cycle and no controlled by the RF link.



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## Appendix B: Switch Positions