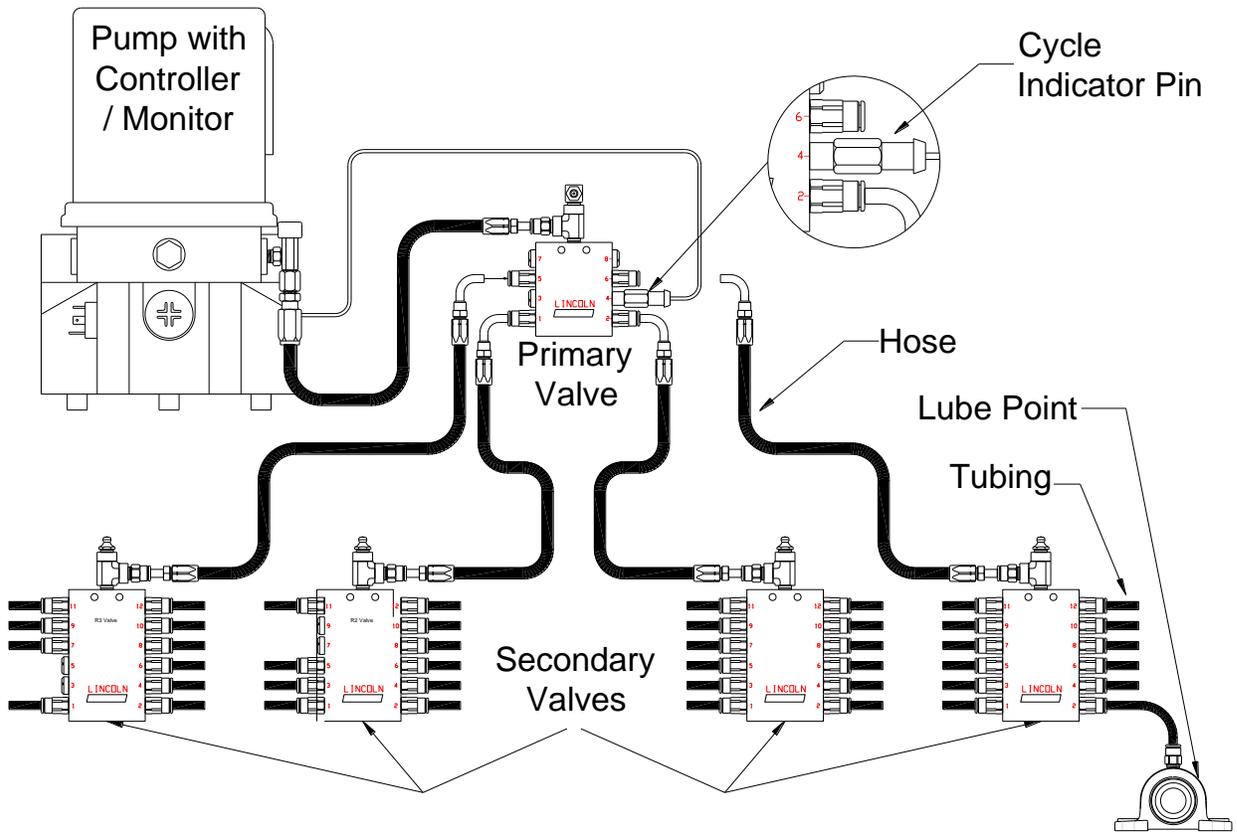


Lincoln Quicklub System Operation and Troubleshooting Guide

System Operation

The key components of the Quicklub system are:

1. **Pump** with integrated system control and monitoring
2. **Proximity Switch**
3. Divider valve network consisting of a **Primary Valve** and **Secondary Valves**
4. A lubrication event is initiated by actuating the pump via the integrated controller based on a preset “pause time” or time between lubrication events.
5. The **Pump** dispenses lubricant to the primary divider valve
6. The **Primary Valve** distributes the lubricant to the secondary valves
7. The **Secondary Valves** distribute and dispense lubricant to the lubrication points.
8. Lubricant flow through the divider valves actuates the **Proximity Switch**, which sends a signal back to the integrated controller/monitor acknowledging proper system operation and turning off the pump.
9. The controller now begins countdown for the next lubrication event.



System Troubleshooting

The integrated controller can diagnose certain faults and provides an indication of which fault it is via a flashing indicator light. Here are a list of the faults and the fault indication:



Fault indication light and pushbutton

Fault Indication	Malfunction
A: LED flashes continuously for one second ON and one second OFF	Drive motor defective or electrical line is damaged (see causes and solutions under "A" below)
LED flashes for ½ of a second ON and one second OFF	Lubrication system malfunctioning (see causes and solutions under "B" below)
LED flashes ½ of a second ON and ½ of a second OFF	Reservoir is empty
LED is continuously ON	Lube fault has been acknowledged by pressing the pushbutton. Note: Fault acknowledgement does not clear the fault. Clearing the fault is accomplished by solving the cause of the fault and pressing the pushbutton for more than two seconds, which will initiate a lube cycle. The fault is cleared once the system has completed a lubrication cycle.

A: Fault: The pump motor does not run	
Cause:	Remedy:
Voltage supply interrupted	Check the voltage supply to the pump. If necessary, eliminate the cause of the fault.
Voltage supply to the printed-circuit board is interrupted	Check the line leading from the pump plug to the printed circuit board. If the voltage is applied, the left-hand LED is lit.
Printed circuit board defective	Replace the printed circuit board.
B: Fault: The pump motor runs continuously for duration of the monitoring time (30 minutes)	
Cause:	Remedy:
Proximity Switch defective.	Disconnect the main line leading to the monitored metering device Unscrew the proximity switch and test it by insert a metallic pin into the borehole of the detector and hold it there for over 2 seconds and then remove it. If the pump is not switched off afterwards, check the cable connections to the pump. If necessary, replace the proximity switch along with the connector
Cable connection of the proximity switch to the pump interrupted	Check the cable connections to the pump. If necessary, replace the proximity switch with the connector.
Printed circuit board defective	Replace the printed circuit board
Grease line blocked	Clear the blockage (See section below on locating blockages)
Reservoir Empty	Refill the reservoir
Air in the system	Purge the air from the system. Note: always pre-fill lines and divider valves prior to installation
Broken supply line to divider valve with Proximity switch	Repair the supply line

Locating Blockage in Lincoln Quicklub Systems

Description

In a Lincoln Quicklub Lubrication System, free flow of lubricant from the pump through the transmission system and the bearings is necessary. If any portion of this transmission system (a divider valve, line fitting or any bearing) does not freely accept and pass its portion of the lubricant a blockage has occurred. This blockage will cause a higher than normal pumping pressure to be developed by the pump. Depending on the application or system design, this blockage with its resultant high pump pressure will usually cause a complete loss of lubricant flow into the total system and no bearing will be receiving lubricant. The loss of flow due to a blockage is first indicated with the higher than normal system pressure that is developed by the pump as it attempts to overcome this blockage.

This abnormally higher pressure that is a result of a blockage is limited, isolated, and signalled through the use of various performance indicators, reset and relief, incorporated into the system design.

Divider Valve

A Quicklub divider valve is a proportioning device consisting of a minimum of three pistons. A primary divider valve is the first divider valve downstream from the lube pump. A secondary divider valve is any divider valve receiving lubricant from the primary divider valve.

Outlets

Each outlet on a Quicklub divider valve dispenses .012 in³ per cycle. If an outlet is plugged, the lubricant will be diverted to the next outlet down allowing proper proportioning of lubricant to all lubrication points.

Warning —Never block lube outlets numbered one and two.

Locating Blockage

If a blockage exists in a Quicklub lubrication system it is caused by one of the following reasons:

- (1) Crushed transmission line in the System.
- (2) Blocked bearing in the system.
- (3) Improperly drilled fitting in the system.
- (4) Blocked divider valve in the system.

All servicing and disassembling should be carried out under the cleanest conditions possible. A blockage in a Quicklub system will be indicated by the fault light and by the pump element relief indicator, exhausting lubricant to atmosphere. Before proceeding as outlined, make a visual inspection of the system and check for crushed lines or improper divider valve installation. Verify that each divider valve outlet required to discharge lubricant can do so and that no plugs have been installed in an outlets one and two of any valve.

Use Filtered Lubricant Only.

Note: Dirt and foreign material are the worst enemies of any lubricating system.

Procedure

1. Use a manual pump with a gauge. Fill the pump with clean, filtered lubricant common to the system. Connect the manual pump into the inlet of the primary valve and slowly operate pump. If system will not cycle freely below 1,500 PSI, see Step 2.
2. With pressure on the primary as outlined in step 1, remove one at a time each supply line (if the supply lines cannot be removed, remove outlet fittings starting from the bottom and working towards the valve inlet) and attempt to operate manual pump after each line is removed. Do not exceed 2,000 PSI. If pressure drops and primary cycles freely after a line is removed then blockage is downstream in the area that is being served from that outlet. See Step 3. If all feed lines are removed and primary will not cycle, blockage is in this divider valve. Note: When a feed line of a blocked area is removed a small shot of

trapped lubricant will usually surge out of this outlet as the inlet pressure on the divider valve drops. If testing in Step 2 indicates a blockage in the primary divider valve, this divider valve must be replaced.

3. Testing accomplished in Step 2 has indicated the blockage is downstream of the primary divider valve. Reinstall the feed line into the primary valve and proceed to downstream secondary divider valve and repeat step 2 on the secondary valve. If lubricant can be discharged freely through the secondary valve, the blockage is in the supply line between the primary and the secondary valve.
4. If high pressure exists on one of the secondary outlets, blockage has been located. Look for crushed line, tight bearing, and/or improperly drilled fittings and/or lube inlet port. Correct as necessary.

Contamination

If dirt, foreign material or any other form of contamination is found as the source of the blockage, clearing the blockage will only temporarily solve contamination blockage problems. The **source of the contamination must be eliminated for satisfactory service**. The reservoir must be inspected and cleaned if necessary. The reservoir filling method should be reviewed to eliminate any chance of foreign material entering the reservoir during filling. All lubricating systems require filtered lubricant.

Grease Separation Blockage

If a hard wax or soap like material is found in the valve outlets, grease separation is occurring. This means that the oil is being squeezed from the grease at normal system operating pressure and the grease thickener is being deposited in the divider valve. Cleaning the divider valve will usually result in only temporarily solving the problem. Consult your lubricant supplier for recommendations on alternate lubricants and your local Lincoln Distributor to verify compatibility with centralized lubricating systems