Trouble-Shooting the "ER" Fault:

While the meaning of the "ER" fault is very simple. The causes can be very complex and misleading. This, oftentimes, leads to it being misdiagnosed resulting in a return trip and/or an unresolved fault condition. This fault condition continues to confuse and complicate trouble-shooting measures on both new and old installations.

The purpose of this section is to describe the "ONE" correct method of trouble-shooting this fault condition. The goal here being to quickly identify the correct cause through a process of elimination. This process will identify the cause by eliminating possible culprits one at a time. As this process proceeds, the cause will become obvious to even the relatively untrained mechanic.

Taking this process out of order or proceeding only partially **WILL** result in an improperly diagnosed fault cause and an unresolved fault condition. You **MUST** follow these steps through to the cause. There are no short-cuts.

In most cases, the "ER" fault, while a system fault, is created by something wrong with the machine or a lubricant problem. Stay patient, by generating the fault, the system is doing its job. Through the process, the system will tell you and lead you to the problem. ***Patience is Key!!!***

Trouble-Shooting the "ER" Fault: A Step-by-Step Guide

Step 1: Look at the pressure relief. Is Grease coming out? If yes, go to **Step 9.** If no, go to **Step 2**

Step 2: If no grease is at pressure relief, disconnect main grease line at pressure relief and manually cycle the pump. If no grease check the reservoir for air and proceed to **Step 3.** If there is grease coming out, proceed to **Step 4**

Step 3: If reservoir is full with appropriate grease, verify that the pump is running. If not, check check ground and voltage to pump. Next, remove and inspect pump element. Replace the pump element if necessary. Reconnect and run system

Step 4: If grease is being pumped out, check the pressure with a pressure gauge. Another method is to hold your finger over the output of the pump element. If you "feel" the grease being dispensed but "sucked" back in, the element is bad. Replace the element, reconnect the system, and test.

Step 5: If the element tests fine, the problem is not a blockage. That would cause the relief to discharge. Verify, at this point, that the system is physically cycling. The problem surrounds the pump receiving the signal from the proximity switch. Verify, at the pump, that the proximity wire is firmly connected. Next, trace the proximity wire to the switch. Inspect for frays, breaks, or cuts. Repair as necessary.

Step 6: If wire is fine, run the system manually and inspect the proximity switch indicator light. The light will turn on and off as the valve cycles. If the valve cycles, but the switch light does not, replace the proximity switch. If the light does cycle with the valve, the problem may then either be the PCB board in the pump or the proximity switch.

Trouble-Shooting the "ER" Fault: A Step-by-Step Guide

Step 7: First, remove the proximity switch from the valve. Cycle the pump manually. Use an Allen key to actuate the proximity switch. As you slowly insert the Allen key, verify that the light turns on and off. If the pump shuts off, the problem is not the pump or the switch, but the valve. IMPORTANT – the proximity switch must not be installed in the outlets furthest from the valve inlet. This will short stroke the switch and cause a fault. Otherwise, make sure that the switch is installed correctly in the valve. Change the valve as needed.

Step 8: If the pump does not shut off, the problem is on the PCB board. Replace the PCB board in the pump. Test the system.

Step 9: Grease coming out of the pressure relief indicates a system restriction. Cycle each secondary valve with a grease gun. Do not do this with a pneumatic gun as you will not be able to "feel" the resistance in each line. Do not try to cycle the primary valve as grease will only come out of the pressure relief confirming what you already know. As you test each valve, you will encounter one valve that either does not cycle, or cycles with a great amount of resistance. Remember – the pressure relief is set at 3,800 psi. Anything over that pressure will cause it to discharge.

Step 10: Now that you have identified the blocked or "slow" valve, you have to determine the cause. Inspect all of the outlet lines from that valve. Look for the one that is under back-pressure. It will be extended and will not "wiggle" in the outlet coupling.

Step 11: Once you have identified the line with the restriction, disconnect it from the bearing. Cycle the system again. If OK, the bearing is the issue. If not, go to **Step 12.**

Trouble-Shooting the "ER" Fault: A Step-by-Step Guide

Step 12: If the line is still blocked, reconnect the line to the bearing. Disconnect the same line at the valve and cycle again. If OK, the line is the problem. Repair or replace as necessary. Test the system

Step 13: If the blockage remains, disconnect all lube lines from the valve. Manually cycle the valve. If still blocked, the problem is the valve. Replace valve and test.

Step 14: If the valve was the culprit, the cause may still not be known. Inspect the lube valve Look for signs of contamination. If yes, inspect all other valves and purge system again to clear contaminants. Also, check the reservoir for contamination.

Step 15: If no contamination is evident, inspect the valve for incorrect fittings. An incorrect inlet installed in a valve outlet can cause a bypass that can "fool" a proximity switch. If yes to incorrect fittings, check all other valves in the system.

Step 16: If in the course of the trouble-shooting, no blockage or restriction was found then, and only then, should the pressure relief be the suspected cause. Re-adjust or replace as necessary.

Note: there is only one reason for the "ER" message. While there are a multitude of causes for this condition. The pump generates the "ER" fault simply because it did not receive the cycle signal from the proximity switch within the 30 minute monitoring or alarm time.

Trouble-Shooting the "ER" Fault: A Step-by-Step Guide

Important!!

"ER" faults can be caused by a multitude of reasons. Sometimes, phantom faults can occur on cold mornings or evenings when the grease viscosity increases with dropping temperatures. This causes the system pressure to increase above the setting on the pressure relief. Other times, a fault may occur in winter due to the grease being too high a viscosity. It is always recommended that the customer switch from NLGI #2 to NLGI#1 during winter months.

Important!!

"ER" faults can be caused by contamination. Removing a reservoir lid for filling or using improper filling techniques can allow contamination to enter the system. The use of greases with MOLY contents higher than 3% or solid contents higher than 5% can cause blockages as these concentrations react with the system the same as contaminants. The result will be an "ER" fault due to contamination

Contamination Control: Proper Reservoir Filling

- Always fill the reservoir from the included fill port.
- Always clean the nozzle before filling the reservoir
- Always completely fill the reservoir until grease comes out the over-flow tube
- Never half or partially fill the reservoir
- Never allow the reservoir to run out of grease
- Always maintain high level in the reservoir. Fill the reservoir often.
- Never remove the reservoir to fill it
- Never fill the reservoir with grease combined from two or more “empty” drums
- Never pump air into the reservoir.
- If possible, try to cycle the pump at least once while filling to mix the grease
- Never combine one or more different types of grease in the reservoir
- Never make a “top fill” port on a lidless reservoir.