PMP Pulse

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For Operators, Installers and Technicians

Liquid Controls® Meter Lock-ups

Is your diesel dispenser showing any of the following symptoms?

- There is trickle flow (1-2 GPM) when the dispenser is authorized for full flow and the nozzle is open, but no gallonage is displayed?
- The meter output shaft is not turning even though there is flow from the nozzle?
- There is full flow for a short time, then flow drops to trickle flow, or no flow for no apparent reason?
- The meter was recently replaced, and is now locked-up just like the previous meter.
- When the meter has been removed, it appears to be "locked-up".

If so, you need to inspect the components on the supply side of the meter:

- Pipe coming to the meter: Are there rust nodules or corrosion scale attached to the inside of the pipe? When you wipe your finger inside the pipe, can you easily loosen chunks of material?
- Spin-on-filter: Are there rust nodules or flakes visible?
- Strainer basket: Are there rust nodules or flakes in the basket? These often look like "coffee grounds".
- Is the strainer's wire-cloth mesh corroded, frayed, or missing pieces of mesh material?

If any of these symptoms or conditions are present, *DO NOT INSTALL* a replacement meter! The existing equipment may have been damaged by corrosive (acidic) material produced from contaminated fuel. This condition has been observed in systems dispensing Ultra Low Sulfur Diesel - ULSD. The product piping and equipment must be thoroughly inspected and repaired or replaced before a new meter can be installed. The LC® meter has low tolerance for ingested debris. A single rust nodule or strand of strainer mesh can jam a meter. (See photos on back.)

See the report by the Battelle Institute dated September 2012 for a comprehensive explanation of ULSD corrosion issues. The report is posted at:

http://www.clean-diesel.org/pdf/ULSDStoringSystemCorrosion.pdf

In a small minority of cases, there are other reasons for no flow or slow flow:

- Solenoid valve or driver board failure
- Clogged filter/strainer
- Low level of fuel in tank
- Miscellaneous debris has gotten into the piping or meter: metal or plastic bits, pipe dope, etc.
- Pulser is defective or not plugged in correctly - preventing proper display or valve authorization.

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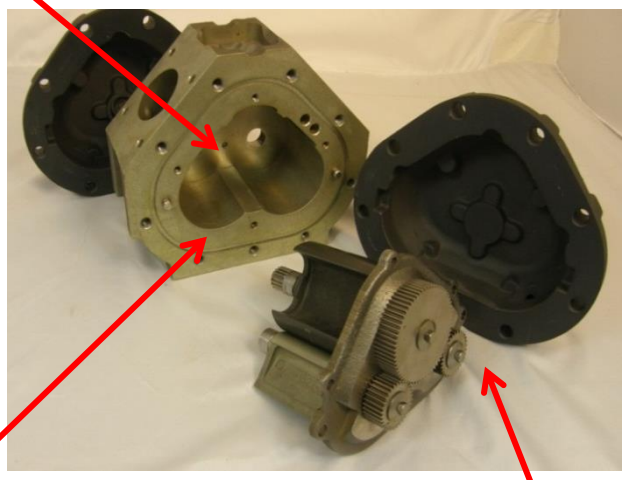
LC meters that locked up due to debris.

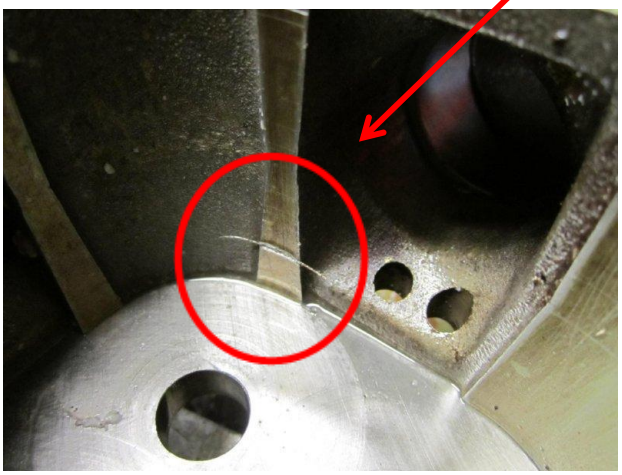
Particles that caused meter to lockup

Rust particles that caused meter lockup

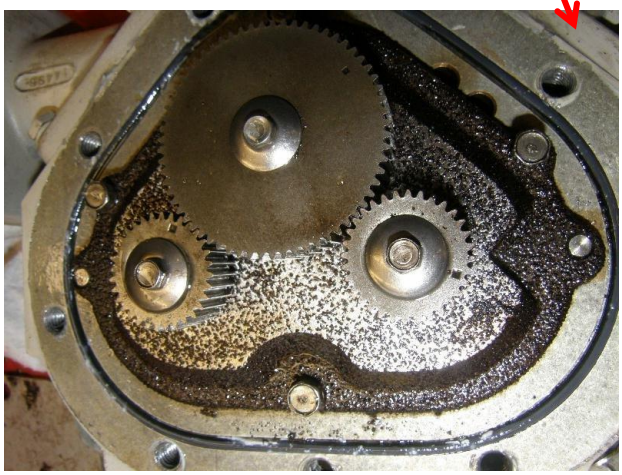
LC-M5 meter



LC Meter disassembled - internal view



Wire from strainer that caused meter lockup



This is corrosion of the meter bearing plate due to long term exposure to ULSD.