

CTRL Systems, Inc. Best Practices

Industry

Maintenance

Application

Solenoid Valve Operation

System

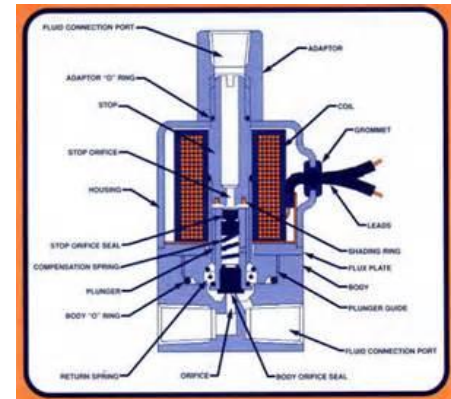
Hydraulic

Component

Solenoid Valve

Current Problem

Solenoid valves are reliable and fairly simple devices in any system, and for the most part a very healthy component. But when solenoid valves do experience a malfunction, the best way to a quick recovery is to first identify symptoms of the problem, 1.Failure to open; 2.Failure to close; 3.Internal or external leakage; and 4.Creating noise when energized.



CTRL's Sound Solution.

1. After a short training lesson of familiarization and application of CTRL's UL101, the maintenance technician selects the UL101 receiver, headset, and solid probe from kit.
2. Verify operation of UL101 in accordance with the operator's manual.
3. Ensure hydraulic system under test is safely energized.
4. Without opening anything, begin at one end of the hydraulic solenoid block and systematically contact each solenoid with the UL101 with solid probe attachment.
5. Listening for plunger clicks when the coil energizes and de-energizes and for fluid flow.
6. Once a determination is made concerning the failed solenoid, repair or replace the solenoid valve and re-verify using procedure above.

Benefit

Solenoid valve troubleshooting can be a daunting task in a noisy manufacturing environment. Listening for the opening and closing clicks of solenoid plungers or fluid flow while surrounding machinery is in operation with multiple solenoids on a single block may be impossible.

The UL101 ultrasound detector can be used during scheduled machine maintenance to listen to and determine the current solenoid valve condition, or while troubleshooting to define one of the four failure conditions listed above. In either case, the manufacturing environment noise will have no effect on the UL101s operation to allow the maintenance technician to conclude the solenoids operating condition.