

**CTRL Systems, Inc. Best Practice**

**Industry**

Manufacturing

**Application**

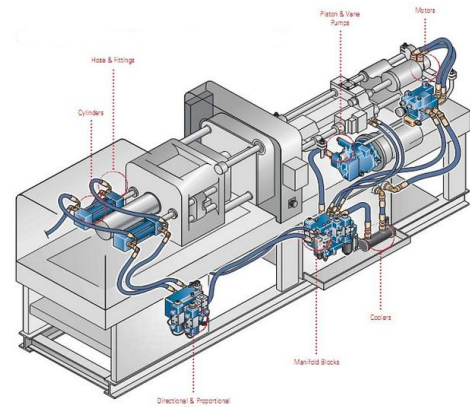
Leak Detection

**System**

Hydraulic

**Component**

Injection Molding Machine



**Current Procedures**

Injection Molding Machines are fed from a main hydraulic pump with an accumulator tank installed to stabilize pressure demands. Leak by the seals of directional and proportional valves causes the accumulator to lose charge and the pump is increased until it is unable to compensate for continued demand. This results in shutting down a production line for troubleshooting and repairs.

**CTRL's Sound Solution.**

1. After a short training lesson of familiarization and application of the UL101. The maintenance technician selects the UL101 Receiver, Headset, and solid probe from case.
2. Attach solid probe and plug in headset to UL101 Receiver.
3. Test battery by moving output switch to headset only position. If meter needle is below the 5-10 (½ scale) of the meter, replace the battery. Return output switch to headset/meter position.
4. Turn gain switch to ½ scale (half-moon); adjust potentiometer knob between 1 and 2.
5. Begin at one end of the injection molding machine hydraulic system. Place the UL101 solid probe attachment onto input and output hoses and lines of directional and proportional valves and listen for leak by while the machine is under pressure.
6. A leak is indicated by a jump in the meter and a loud rushing sound through the headset.
7. Indicate the location of the leak and issue a work order for repair. Verify repairs with UL101.

**Benefit**

A hydraulic leak past the seals in valves is detected from the ultra sound created by turbulence within the valve. Since these are high-pressure systems it is easy to determine if flow, even a small leak, is present. Leak by would be heard as flow or turbulence beyond the valve indicating improper seal or closure. A lack of detectable sound would indicate proper operation.

An efficient means of leak detection for hydraulic system components greatly enhance the operating efficiency of the injection molding machine. Power plant operating expenses and down time can be minimized.

The UL101 is much faster and more effective at locating leaks, even during peak operation. Leak location and identification is not impeded by ambient noise and therefore, less down time and less guess work are involved in leak isolation. Maintenance technicians do not have to wait for a quiet day to find leaks. More leaks can be found and properly identified for repair. Monitoring with the UL101 provides instantaneous real-time information.