

Hydraulic Clamp Safety System Enhancement

For All Uniloy And Liberty Reciprocating Screw Blow Molding Machines

This month we offer a new hydraulic clamp safety system, which features a spool monitored cartridge valve with its own independent Siemens Controller. This hydraulic valve is installed on the working side between the directional valve and the clamp actuator. The blocking spool is monitored for correct positioning when the safety gate is opened and closed. Should the spool not move to the “blocked position” when the safety gate is opened, an electrical signal is sent to the control outputs and shuts off the hydraulic pump motor preventing further clamp movement. This condition will present an alarm indication and will not permit restarting of the hydraulic pump until the hydraulic clamp safety valve is functioning properly.

This enhancement is being offered in response to the recently revised ANSI standard, ANSI/SPI B151.15—2000; Safety Requirements for the Construction, Care and Use of Extrusion Blow Molding Machines. The intent of this standard is for you to block the working oil in the clamp circuit with a spool-monitored valve within 3 years of the approval date—September 29, 2000. For a copy of this Standard, contact the American National Standards Institute (ANSI) at 212-642-4900 or on the Web at <http://www.ansi.org>

Over the years Uniloy has strived to keep its customers informed of new technology and safety requirements, which impact the safe operation and maintenance of Uniloy equipment. All Uniloy and Liberty machine lines conformed to applicable safety standards at the time of their original shipment.

The following list includes most of our common machines and the hydraulic safety valve originally supplied. Please note that none of these systems monitor the spool position:

Machine Model	Power Unit	Blocking Function	Spool Monitored
2000 to 7000 Series	Dbl A	Pilot Oil Blocking	No
350R to 400R Series	Dbl A	Working Oil Blocking	No
350R to 400R Series	Rexroth	Pilot Oil Blocking	No
All Libertys	Vickers	Working Oil Blocking	No

Includes:

- Rexroth Cartridge Valve with Spool Position Monitor
- Siemens Controller with Software
- Enclosure with Sub-Plate and Legend Plate
- Mounting Flanges, Wire Duct, Fittings, Hose and Terminal Blocks
- Circuit Breaker, Relays, and Red Pushbutton
- Hydraulic and Electrical Schematics, Partial Assembly at Uniloy

*Note: The above pricing does not include field installation. Delivery: Normally this retrofit is in stock. In the event that we are temporarily out of stock, delivery may take up to four weeks.

System Verification

After installation, verify proper operation of the upgrade by following the steps below:

1. Power up the machine, including control power, and hydraulic pump, but leave the machine out of auto cycle. Press safety reset, where applicable.
2. Start with all safety doors closed, press the mold open/close button to verify that the clamp will move in the safe condition.
3. Open one clamp door. If the blocking valve is working correctly, the hydraulic pump should remain running, but the clamp should not move when the mold open/close button is pressed.
4. Close the clamp safety doors again, press the safety-reset button if you have one, and press the mold open/close button to verify that the clamp will move in the safe condition.
5. Unplug the cable going to the spool monitor on the new valve.
6. Open one clamp safety door. When the clamp door is opened, the Siemens controller should fail to get a signal from the spool monitor on the new valve and as a result the hydraulic pump should power down automatically. Pressing the pump start button should not restart the hydraulic pump.
7. Close the clamp safety door, press the safety-reset button, and try to restart the hydraulic pump. The pump should not start until the spool monitor cable is replaced, giving the Siemens controller the signal that the spool monitor is in the correct position.
8. Replace the cable going to the spool monitor, verify all clamp doors are closed, press the safety-reset button if your machine has one, and press the hydraulic pump start button. The hydraulic pump should come on and the clamp should move when the mold open/close button is pressed.
9. Repeat steps 5 thru 8 for all clamp safety doors to verify that all doors are interlocked correctly.

***IMPORTANT NOTE:** If any of the steps in the verification procedure does not produce the expected results, check the hydraulic and electrical installation and re-verify until the system checks out.