

Uniloy is proud to introduce this month's product focus, which is a menu of safety retrofits available for your Uniloy Reciprocating Screw blow molding machine. These retrofits are available for all Uniloy machine models. The menu options are based on the requirements spelled out in ANSI / SPI B151.15-2003 Extrusion Blow Molding Machines – Safety Requirements for Manufacture, Care, and Use. Please note that this ANSI standard is written such that multiple interpretations are possible, this menu is based on our best efforts to interpret this standard for your Uniloy machine.

Safety is our top priority!

UNILOY SAFETY MENU

Section 1: The Machine		Machine Option 1	Machine Option 2	Machine Option 3
Clamp				
1	UR Series Front Guard Enclosure	X		
2	Product Safety Sign Package	X	X	X
Side Clamp Guard				
3	Side Safety Doors		X	X
4	Polycarbonate Side Guards		X	X
Top Platen Guards (Choose From 3 Options)				
5	Either Fixed Standard, Fixed Scalloped, or Sliding Front			X
Stripper Guards				
6	Fixed Stripper Guard			X
7	Hinged Die Adjust Door/ Stripper Guard		X	
Z Step Access Way (Choose From 3 Options)				
8	Either Solid Z Step or Hinged Z Step		X	X
Hydraulic/Pneumatic				
9	Electrical Disconnect for the Hydraulic Pump Motor	X	X	X
10	Hydraulic Accumulator Auto Dump Retrofit	X	X	X
11	Clamp Blocking Valve	X	X	X
Double Solenoid Valve Enhancements				
12	For the Swing Arm Valve	X	X	X
12	For the Side Shift Valve	X	X	X
12	For the Stripper Valve	X	X	X
12	For the Prefinish Valve	X	X	X
Extruder				
13	Extruder Belt Guard	X	X	X
Electrical				
14	Main Electrical Cabinet Door Interlock Assembly	X	X	X
15	Emergency Stop Buttons with Backing Labels	X	X	X
Section 2: The Part Exit		Transfer Screw	Cooling Bed	Direct Load Trimmer
		Shuttle		

Section 2: The Part Exit					
	Lower Clamp and Part Exit Guards	Shuttle	Transfer Screw	Cooling Bed	Direct Load Timmer
16	Hinged Front Clamp Doors	X	X		
17	Side Exit Enclosures (Dog Houses)	X	X		
18	Cooling Bed Crossover			X	
19	Swing Arm Photo Eye Retrofit		X	X	X

Section 3: The Trimmer			
	Lower Clamp and Part Exit Guards	Trimmer Option 1	Trimmer Option 2
20	Extruded Aluminum Safety Enclosure	X	
21	High Hat Trimmer Upper Guard	X	X
22	Product Safety Sign Package	X	X
23	Keyed Safety Switch Retrofit		X
24	Gull Wing Style Safety Door		X
For Spin Trimmers			
25	Extruded Aluminum Safety Enclosure	X	
26	Automatic Jam Detect/ Bottle Drop	X	
27	Product Safety Sign Package	X	

Menu Item Descriptions

Section 1: The Machine

Clamp

1.) Complete Front Guard Enclosure

This enclosure is similar to those supplied on the new UR Series machines. It includes an access platform with handrails and ladder, as well as fully interlocked front and side hinged doors. This option is available for machines with a PLC and an operator interface mounted in a roll around pedestal or on a machine mounted swing arm. If this option is selected, no other clamp guarding is required.



2.) Product Safety Sign Package

These signs are designed and constructed in accordance with the ANSI Z535 safety standards for product safety signs. We have taken an extra measure in providing English and Spanish verbiage along with a descriptive pictogram on each aluminum safety sign.

3.) Side Safety Doors

These doors provide a Class IV safety rating through the use of uniquely coded non-contact RFID switches. They also offer improved functionality and a new clean aesthetic look. Nuisance safety circuit trips are eliminated by the smart placement of the switches and closure magnets that keep the doors closed during normal machine operation.

The new clamp doors are available for all Uniloy clamp sizes which featured sliding doors originally. The new doors are designed to be a direct replacement of older door assemblies, and the door frames are predrilled to match the existing door mounting holes. The new doors are preassembled and prewired making installation less time consuming.



4.) Polycarbonate Side Guards

These two guards cover the openings between the side safety door top rail and the bridge. Slots are positioned to provide access to die adjustment bolts on non front die adjust style heads.



5a.) Fixed Top Platen Guard-Standard

A standard set of fixed top platen guards are positioned directly above the front and center platen. The platen covers are supported by the side safety door upper track. The covers are positioned vertically such that the die adjustment bolts are above the covers. These are fixed guards, which means they are bolted in place and require a tool to remove. The standard platen guard is normally used when the machine has a stripper assembly.



5b.) Fixed Top Platen Guard-Scalloped

Scalloped inserts can be added to a standard set of fixed platen guards to reduce the open area between the platen cover and the die. These guards are cut to fit closely around each die head. They are made from sheet metal and they include sight access windows which are filled with expanded metal. The scalloped platen guard is normally used when the machine does not have a stripper.

5c.) Sliding Top Platen Guard

This option offers the ability to slide the front platen cover open for quicker access to the top of the mold and the head tooling. The front platen cover is mounted in tracks and is interlocked with safety switches which are tied into the side door safety circuit. The front platen cover slides forward under the Z-step, the rear platen cover remains a fixed guard.

6.) Fixed Stripper Guard

This stationary guard protects the machine operator from hazardous movement and pinch points around the stripper assembly. The guard mounts to the crossmember and covers the stripper cylinder, guide rods, limit switch, and carrier.

7.) Hinged Die Adjust Door and Stripper Guard

This door is positioned in front of the stripper assembly and feed throats. The door assembly is aluminum extrusion construction with a top hinge and gas shock for smooth easy operation. The door is interlocked with the same style switches as the side safety doors. With the door in the closed position the die adjustment bolts are accessed with an extension thru carefully positioned slots. With the door open, full access to shear steels and head tooling is available.



8.) Z Step Access Way

This enhancement will benefit your blowmolding operation by providing easier and safer access to the die head assembly, blow pin assemblies and stripper assemblies. This upgrade allows your operators to properly adjust and maintain these assemblies in a safe and productive manner.

The Z Step can be ordered as a solid one piece construction or for additional access, the top step can be hinged. The hinge option makes it possible to rotate the top step forward opening up access to the front platen tie bar nuts and the top of the molds.



Hydraulic/Pneumatic

9.) Electrical Disconnect For the Hydraulic Pump Motor

This is an approved electrical disconnect for the hydraulic pump motor. This disconnect provides the ability to lock out/tag out the hydraulic system independently. This feature allows for the extruder heaters to remain on while hydraulic system maintenance or clamp and tooling set up is performed. This disconnect is located in the hydraulic compartment.



10.) Hydraulic Accumulator Auto Dump Retrofit

This retrofit enhances the safety of the machine by automatically discharging the stored hydraulic pressure in the accumulator bottles whenever the pump is shut off. This prevents accidental discharge of hydraulic oil and pressure during routine machine maintenance.

The Accumulator Auto Dump Retrofit is a pilot operated hydraulic directional valve which allows the accumulators to drain back to tank over an orifice whenever the pilot signal is lost. The pilot signal is taken from the high pressure line between the pump and the check valve which isolates the accumulators from the clamp circuit. Whenever the pump is shut off, either by an E-Stop, by the clamp blocking valve spool monitor, or by the start up station hydraulic pump on/off button, the pilot signal to the accumulator auto dump valve is lost causing the valve to shift allowing the hydraulic oil to drain from the accumulators over an orifice back to tank.

11.) Clamp Blocking Valve

The hydraulic clamp blocking valve features a spool monitored cartridge valve with its own independent Siemens Controller. This hydraulic valve is installed in line between the directional valve and the clamp's rotary 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, shutting 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.

12.) Double Solenoid Valve Enhancement

You can enhance your Uniloy Reciprocating Screw blow molding machine by converting valves that cause machine movement from single solenoid to double solenoid. This conversion causes the movement of machine assemblies to stop and remain in the stationary position whenever the electrical circuit is broken or there is power loss. By installing double solenoid valves, extended service life on your blowmolding operations should be expected. The valves on a Uniloy Recip that are required to be double solenoid are:

- Swing Arm Valve
- Clamp Side Shift Valve
- Stripper Valve
- Prefinish Valve

Extruder

13.) Extruder Belt Guard

The extruder belt guard assembly is designed to eliminate hazardous contact with the drive belts running between the main drive motor and the extruder gearbox. This guard assembly is typically positioned on the hydraulic side of the machine, to the rear of the bulkhead which divides the hydraulic compartment from the extruder drive compartment. This guard is required for all machines that do not have the large expanded metal doors over the hydraulic and drive compartments. If the machine does have these sliding doors, they can be interlocked, padlocked, or bolted closed eliminating the need for separate belt guards. If the sliding doors are not fixed in one of the ways listed above, this belt guard is required.



Electrical

14.) Main Electrical Cabinet Door Interlock Assembly

This assembly is to replace existing assemblies which are broken. The assembly includes:

- Handle
- Interlock Kit
- Gasket
- Circuit Breaker
- Circuit Breaker Bracket

15.) Emergency Stop Buttons with Backing Labels

This option replaces "old style" Emergency stop buttons. Vintage Uniloy equipment may have been originally built with momentary E-stops. Improvements in electrical safety codes have since made these E-stops noncompliant. Current safety standards require that emergency stop buttons, when depressed will mechanically break the control contact and physically maintain that "open" position until manually reset. "Momentary" E-stops are not acceptable.

Section 2: The Part Exit

16.) Hinged Front Clamp Doors

The hinged front clamp doors are positioned directly under the z step access way and are used to enclose the under side of the clamp. This is necessary when the machine is equipped with a transfer screw take away system or a drop chute and shuttle system. The doors are fully interlocked using uniquely coded non-contact RFID switches

17.) Side Exit Enclosures (Dog Houses)

Side exit enclosures are used to protect machine operators from hazards created by moving parts on part take out assemblies such as transfer screws and shuttles. These enclosures are extruded aluminum construction with hinged interlocked access doors for user friendly operation.

18.) Cooling Bed Crossover

The cooling bed crossover works in conjunction with the z step access way to provide operators with quick and safe access to adjustment points on the blow molder's head, air and clamp assemblies. This freestanding crossover is positioned in front of the clamp and above the cooling bed and features sturdy construction, built in handrails, toe kick plates, and skid proof steps and platform.

19.) Swing Arm Photo Eye Retrofit

This photo eye is mounted to the swing arm actuator bracket. The beam reflector is mounted on the opposite side of the clamp on the swing arm bearing bracket. This placement, positions the photo eye beam between the swing arm shaft and the moving front platen. If this beam is broken by an obstruction, the machines safety circuit is tripped causing all machine motion to stop.

Section 3: The Trimmer

Impact Trimmers

20.) Extruded Aluminum Safety Enclosure for 10026, 10039 and 10041 Trimmers

This option features a new safety enclosure with extruded aluminum frame to replace the existing pull up "gull wing" doors. Engineered for easy installation, the enclosure bolts to the existing safety door frame after removal of the old doors and hinges. It features swing out doors with slam latches and magnetic safety switches. A keyed safety switch is included for retrofitting the trimmers existing top door. Two additional e-stops are added (one at each end of the enclosure), the existing momentary e-stops are replaced with positive break pushbuttons and a new safety relay is installed which will interrupt control power and monitor the safety system. Also included are new safety signs. An optional 6th door can also be added at the exit end of the enclosure.

21.) High Hat Trimmer Upper Guard

This sheet metal box fits on top of the upper platen and guards the S bar guide rods and vertical position stop. This guard is available for any impact trimmer with an S-bar assembly.



22.) Product Safety Sign Package

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23.) Keyed Safety Switch Retrofit for a Trimmer

This retrofit features keyed "positive break" switches and a safety relay which will interrupt control power and monitor the safety system. This design minimizes proneness to defeat ability. This retrofit includes:

- Keyed Safety Limit Switches (5)
- Switch Back Up Plates (5)
- Bushing and Clamp-Tite Collars (10)

- Safety Relay (1)
- Contact Blocks (2)
- E Stops (2)
- Electrical Enclosure with Sub Panel
- Miscellaneous Mounting Hardware



24.) "Gull Wing" Style Trimmer Safety Doors

This option completes a new "gull wing" style safety enclosure if combined with items in section 23.

Includes:

- Polycarbonate Doors and Covers
- Safety Signs

Spin Off Trimmers

25.) Extruded Aluminum Safety Enclosure

The new and improved extruded aluminum safety enclosure features keyed safety switches, sliding side doors, and hinged top access doors. The extruded aluminum construction provides durable, smooth operation and improved operator safety.

26.) Automatic Jam Detect/Bottle Drop

The jam detect/bottle drop is a safety enhancement aimed at providing automatic bottle jam clearing in your Uniloy Spin Trimmer. The retrofit includes a photo eye to detect the bottle jam, a split dome guide assembly and a pneumatic valve and cylinder. The cylinder is mounted between the trimmer frame and the new split dome guide, when a jam is detected the valve is energized and the cylinder retracts the dome guide clearing the jam. This retrofit reduces operator exposure to hazards in the trimming area.

27.) Product Safety Sign Package

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Sales and Service

For more information on these upgrades, please contact your local Uniloy Parts Sales Representative. Trained Uniloy Service Representatives are available to assist in the installation of these packages at your facility.