



FOLLOW MANUFACTURES SHUT DOWN PROCEDURE

FOLLOW MANUFACTURES STARTUP PROCEDURE



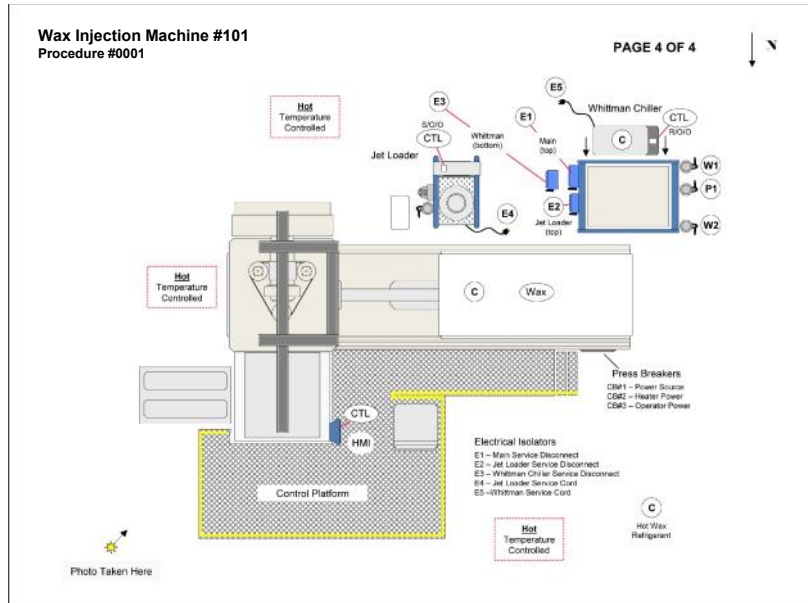
“SERVICING OR MAINTENANCE IS NOT PERMITTED UNLESS THIS EQUIPMENT IS ISOLATED FROM ALL HAZARDOUS ENERGY SOURCES. THIS IS THE EXCLUSIVE RESPONSIBILITY OF ‘DESIGNATED’ AUTHORIZED EMPLOYEES WHO MUST FOLLOW THE COMPLETE LOCKOUT/TAGOUT PROCEDURE AS PUBLISHED BY STEVENS WAX INJECTION LIMITED, ATLANTA, GEORGIA.  
**FAILURE TO FOLLOW THIS INSTRUTION COULD RESULT IN DISCIPLINARY ACTION UP TO AND INCLUDING DISCHARGE.”**

**Hazardous Energy Sources**

Type	Magnitude
E1 – Electrical	480 volts
E2/E3/E4/E5 – Electrical	240 volts
P1 – Pneumatic Pressure	110 psi
W1/W2 – Water Pressure (Pressure)	65 psi
Hydraulics	2000 psi
Temperature	155 degrees F.

**Required Safety Equipment**

Tagout Tag(s)	(4)
Interlocking Hasp(s)	(4)
Padlock(s)	(4)
Ball Valve Lockout(s)	(3)



**Note:** Refer to the Safety Data Sheet (SDS) for information regarding the physical and chemical hazards and personal protective equipment requirements for this machine.

**I. SHUT DOWN PROCEDURES - (See Established Shutdown Procedure)**

Notify all affected employees that a lockout or tagout system is going to be utilized and the reason for its application. The authorized employee shall know the type and magnitude of energy that the machine or equipment utilizes and shall understand the associated hazards. Review the Lock, Tag & Verify (LTV) Procedural Guide, and the JSA (if applicable).

**Warning:** This equipment has a manufacture's established written **Shut Down** procedure, which should be followed to avoid damage to the equipment or possible injury prior to commencing lockout procedures. The Control Room Operator will initiate all shutdown procedures at the request from the remote maintenance technician as he follows the contents of this document including the verification step for various energy sources that are included during this lockout tagout sequence.

**Warning:** To avoid possible injury or damage to the equipment while conducting maintenance ensure adequate personal protective equipment is worn for numerous thermal hazards.

**Electrical:** (Located in Chem Room on North Side of Pump Skid, facing North). Rotate the local service disconnect for the Phosphate feed pumps to "OFF" to isolate the flow of chemical service.

**Mechanical:** **Caution:** Allow Wax Injection Machine #101's components to come to a complete stop before continuing.



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**II. ENERGY ISOLATION PROCEDURES**

**E3 Electrical:** (Located on the east side of the transformer support stand under the main service disconnect at the southwest corner of the press, facing east).  
Pull the Whittman chiller's main service disconnect to "OFF" to isolate the electrical POWER.

**E2 Electrical:** (Located on the east side of the transformer support stand at the southwest corner of the press, facing east).  
Pull the Jet Loader's main service disconnect to "OFF" to isolate the electrical POWER.

**E1 Electrical:** (Located on the east side of the transformer support stand at the southwest corner of the press, facing east).  
Pull the Press's main service disconnect to "OFF" to isolate the electrical POWER.

**P1 Pneumatic:** (Located on the west side of the transformer support stand at the southwest corner of the press).  
Rotate the main air valve to the "CLOSED" position to block the air service.

**W1 Water (Supply)** (Located on the west side of the transformer support stand at the southwest corner of the press).  
Rotate the water supply valve to the "CLOSED" position to block the water service.

**W2 Water (Return)** (Located on the west side of the transformer support stand at the southwest corner of the press).  
Rotate the water return valve to the "CLOSED" position to block back pressure.

**Note:** Hydraulic pressure automatically bleeds down when POWER is removed.

**Temperature:**  
Allow the Wax Injection Machine and it's components to cool within safe limits.

**III. LOCKOUT/TAGOUT PROCEDURES**

Lockout the main disconnect using an interlocking hasp, padlock, and tagout tag. After the main disconnect is locked out in the "OFF" position, "Try" the disconnect to ensure it cannot be moved to the "ON" position.

Lockout the air service valve using a ball valve lockout, interlocking hasp, padlock, and tagout tag. After the air service valve is locked out in the "CLOSED" position, "Try" the valve to ensure it cannot be moved to the "OPEN" position.

Lockout the water service pressure and return valves using ball valve lockouts, interlocking hasps, padlocks, and tagout tags. After each water service valve is locked out in the "CLOSED" position, "Try" the valve to ensure it cannot be moved to the "OPEN" position.

**Note:** Refer to the Safety Data Sheet (SDS) for information regarding the physical and chemical hazards and personal protective equipment requirements for this machine.

**IV. VERIFICATION PROCEURES**

"Try" the equipments start controls (e.g. by first pulling the "Emergency STOP" button out and then attempting to start any of the press equipment by pressing the "START/STOP" button to "ON" or "START" position and attempt to "START" the equipment while observing that the components do not operate) after lockout/tagout to make sure the correct isolation device has been secured and that the device is in the open or safe position. Press the "START/STOP" button to "STOP" or "OFF" position. Press the "Emergency STOP" button to completely de-energize the machine. "IF" electrically qualified and authorized to do so, verify blade openings visually on electrical conductors or energized parts. Test for no voltage on phase-to-phase and phase-to-ground before beginning work.

Verify isolation and dissipation of the air service by observing the air pressure gauge indicates "ZERO".

Verify blockage of the water service by observing the water pressure gauge indicates "ZERO".

Verify isolation and dissipation of the hydraulic service by observing the hydraulic pressure gauge indicates "ZERO".

Verify cool down of the unit by observing the temperature gauge or probe indicates a lowering of the temperature to safe levels.

**V. RETURNING TO SERVICE – (See Established Restart Procedure)**

Check Wax Injection Machine #0001 and the immediate area around the equipment to ensure that nonessential items have been removed and that the Machine's components are operationally intact.

Check the work area to ensure that all employees have been safely positioned or removed from the work area.

**Warning:** This equipment has a manufacture's established written **Restart** procedure, which should be followed to avoid damage to the equipment or possible injury.

- E1:** Remove the tagout tag, padlock, and interlocking hasp from the main disconnect and push the disconnect to the "ON" position.
- W1:** Remove the tagout tag, padlock, interlocking hasp and ball valve lockout from the water pressure valve and rotate the valve to the "OPEN"
- W2:** Remove the tagout tag, padlock, interlocking hasp and ball valve lockout from the water return valve and rotate the valve to the "OPEN"
- P1:** Remove the tagout tag, padlock, interlocking hasp, and ball valve lockout from the air service line and rotate the main air service valve to the "OPEN" position.
- Electrical:** Rotate the Whittman "Selector" knob to "ON" to energize the chiller.
- Electrical:** Rotate the Jet loader "Selector" knob to "ON" to energize the Loader.
- Electrical:** Switch it three (3) Press Breakers to the "ON" position.  
CB #1 Power Source  
CB #2 Heater Power  
CB #3 Operator Power

**Note:** Confirm all doors closed

**Electrical:** Pull the "Emergency STOP" button "OUT" to energize the press.

Notify affected employees that the maintenance is completed and Wax Injection Machine #0001 is ready for operation.

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# Wax Injection Machine #101 Procedure #0001

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