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Service—

64040/64050E6N Washer-Extractors



Lubrication and Preventive Maintenance For 64" and 72"ExN and JxN Models

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1. Required Equipment

Maintenance procedures require a hand operated grease gun and the specified lubricants.

2. Lubrication Requirements

To achieve the optimum performance and service life from the Milnor® machine, and as a warranty requirement, the machine must be lubricated in strict accordance with the instructions in this section.

DANGER [1]: Entangle and Crush Hazard—Belts and pulleys can entangle and crush body parts.

- Lock OFF and tag out power at the wall disconnect before servicing, except where specifically instructed otherwise in this section.
- Insure belt and pulley guards are in place during service procedures.
- Permit only qualified maintenance personnel to perform these procedures.

3. Correct Grease Gun Procedures

1. Do not use a pneumatic grease gun. Pump grease slowly, taking 10-12 seconds to complete each stroke. A grease gun can build up extremely high pressure which will force seals out of position and cause them to leak, even though both the seal and bearing housing are equipped with spring loaded relief plugs.
2. Apply quantity of grease called for in the checklist. Over-lubrication can be as damaging as under-lubrication. Where quantities are stated in strokes, one stroke of the grease gun is assumed to provide .0624 fluid oz. (1.77 grams) (by volume) of grease. Therefore, one fluid ounce (28.3 grams) of grease would be provided by 16 strokes of the grease gun. Determine the flow rate of your grease gun by pumping one ounce into a calibrated container. If fewer than 16 strokes are required, all quantities in strokes in the chart should be reduced accordingly, and if more than 16 strokes are required, the number of strokes should be increased. Before starting lubrication, make sure your grease gun is working and that you get a full charge of grease with every stroke.
3. Do not pump grease in until it oozes out of the spring loaded relief plugs. Plugs bleed out excess grease and help prevent abnormal pressures from building up in the housing during operation (especially when the machine is first commissioned and after each lubrication). Plugs will not protect against over-lubrication.
4. Do not over-lubricate motors. Over-lubrication of a motor can seriously damage it by forcing grease into motor windings. Over-lubrication of the extract motor can force grease into the centrifugal switch causing it to malfunction.
5. Do not allow grease to drip on the brake disk or clutch tire/drum during lubrication. This will reduce the braking action considerably, and may permit the cylinder to creep while loading and unloading.

Table 1: Lubricant Specifications

| Assembly (location) | Components | Specifications |
|-------------------------------------|---|--|
| Bearing housing (Figure 1) | Seals and bearings | Shell Alvania EP or equivalent |
| Hydraulics (Figures 1 and 3) | Shell pivot grease fittings, hydraulic cylinder grease fittings, pump | Shell Alvania EP or equivalent |
| | Hydraulic fluid reservoir | Shell Tellus 68 or equivalent |
| Motors (Figure 1) | Motor bearings | See motor nameplate. If not specified, use Shell Alvania EP or equivalent. |
| Gear reducer (Figure 1) | Gear reducer | Shell Morlina 220 |
| Braking (Figure 2) | Brake reservoir | DOT 3 brake fluid or equivalent |
| Isolators (Figure 4) | Isolator bodies | 10W30 (ISO 30-100) motor oil or equivalent |
| Load door (Figure 5) | Locking latches | Door-ease stick lubricant or equivalent |
| | Gears and hinges | Shell Alvania EP or equivalent |

4. Greasing Bearings and Seals

DANGER [2]: Entangle and Crush Hazard—Belts and pulleys can entangle and crush body parts. Power is ON and cylinder is turning during the following procedure.

- Insure belt and pulley guards are in place during service procedures.
- Use extreme care when working near moving components

Grease seals and main bearing as follows:

1. Locate the seal and bearing grease fittings (Figure 1, item 9).
2. Place the machine in a wash step.
3. With the cylinder turning, grease the seals and bearings as called for on the “Preventive Maintenance Checklist.”

5. Maintenance Checklist

Table 2: Preventive Maintenance Checklist

| Components | | Action | Frequency (hours of operation) | Figure Number |
|--|---|---|--------------------------------|---------------|
| Pulleys and Belts | Pulley condition and alignment (See Note 1) | Check sheaves for wear and alignment | Monthly (200 hours) | Figure 1 |
| | Belts | Check for wear, replace if required | | |
| Gear Reducer, Motors and Drive Components | Drive gear reducer | Check level at plug, add oil as required | Semiannually | |
| | | Change oil (drain valve below) | Annually | |
| | Centrifugal switch | Check brushes for wear, replace as required | Monthly | |
| | Jack shaft (Note 3) | 0.18 ounces (5.31 grams) (three strokes) at two locations | Monthly | |
| | Low extract motor (Note 2) | See "BALDOR MOTOR MAINTENANCE..." MSSM0274AE in this manual. | | |
| | Drain motor (Notes 2 and 4) | | | |
| | High extract motor (Notes 2 and 4) | | | |
| | Wash motor | | | |
| | Air clutch quick release valve | Change internal diaphragm | Annually | |
| Bearing Housing | Front bearing grease fitting (Note 3) | Slowly grease: 1.87 ounces (53.1 grams), thirty strokes at one location | Monthly (200 hours) | |
| | Rear bearing grease fitting (Note 3) | Slowly grease: 0.62 ounces (17.7 grams), ten strokes at one location | | |
| | Seal grease fitting (except J2N) | Slowly grease: 0.19 ounces (5.31 grams), three strokes at one location | | |
| | J2N seal grease fitting | Slowly grease: 0.19 ounces (5.31 grams), three strokes at one location | Weekly (40 hours) | |
| | Main bearing air pad gauge | Verify pressure: 10 psi (0.70 kg/cm ²) | Monthly (200 hours) | |
| Brake Components | Reservoir (Note 4) | Check levels, add fluids if required | Monthly (200 hours) | Figure 2 |
| | Pad/Shoes | Check for wear, replace if required | Monthly (200 hours) | |
| Hydraulic Components | Hydraulic cylinders | 0.12 ounces (3.54 grams) (two strokes) at two locations | Monthly (200 hours) | Figure 1 |

| Components | | Action | Frequency (hours of operation) | Figure Number |
|-----------------------------|---------------------------|--|--------------------------------|---------------|
| | Shell pivot | 0.12 ounces (3.54 grams) (two strokes) at two locations | Monthly (200 hours) | Figure 3 |
| | Shell stop(s) | Check for wear, replace if required | Semiannually | |
| | Line pressure (Note 4) | Check pressure while machine is tilting to the load position 900-1000 PSI (62-69 bar) E6N and J5N machines | Daily | |
| | Filter | Replace | Semiannually | |
| | Filter pressure | Check pressure while machine is tilting to the load position 30-60 PSI (2-4 bar) | Daily | |
| | Pump motor | 0.12 ounces (3.54 grams) (two strokes) at two locations | Semiannually | |
| | All hoses/couplings | Check for leaks, cracks and bulges | Monthly (200 hours) | |
| | Reservoir level | Check level with machine tilted to the load position. Add if below black mark on gauge | Daily | |
| | | Replace fluid, ExN and J5N - 47.5 U. S. Gallons (179.9 Liters) J2N - 11.5 U.S. Gallons (43.3 Liters) | Annually | |
| Shocks and Isolators | Isolators | Check oil level | Quarterly | Figure 4 |
| | | Replace oil | Annually | |
| | Shocks | Check for leaks, replace as required (four locations) | Semiannually | |
| | Isolator cushions | Check cushions for cracks and deterioration (eight locations) | Monthly (200 hours) | |
| Doors | Gears | Lubricate | Monthly (200 hours) | Figure 5 |
| | Hinges | 0.12 ounces (3.54 grams) (two strokes) at three locations | | |
| | Locking latches | Lubricate (two locations) | | |
| Water | Cooldown water adjustment | Adjust as required | Monthly (200 hours) | Figure 6 |
| | Water pressure regulator | Check water pressure (28 PSI) when there is no flow of flushing or balancing water | | Figure 7 |
| Inverter | Enclosure, screen and fan | Vacuum out enclosure, clean screen and verify fan operation | Weekly (40 hours) | Figure 8 |
| | Inverter vents | Vacuum out vents | | Figure 9 |

| Components | | Action | Frequency (hours of operation) | Figure Number |
|--------------------------------|---------------------------------------|--|--------------------------------|---------------|
| Recirculation (if so equipped) | All recirculation hoses and couplings | Check for leaks, cracks and bulges | Monthly (200 hours) | Figure 10 |
| | Door hose | Replace door hose every 6 months or 840 hours, whichever occurs first. | Semiannually | |

Note 1: See “Tensioning and Aligning Main Drive Belts...BIIEUM01” in this manual.

Note 2: J2N machines have two motors: one wash/drain motor (Figure 1, item 8) and one extract motor (Figure 1, item 4).

Note 3: Main bearings and jack shaft bearings (if equipped) are pre-packed with lubricant at the factory. Do not grease for 30 days. Some grease will ooze out of the grease relief fittings during the first month of operation and every time the bearings are re-lubricated. These fittings avoid overheating by permitting excessive grease to escape. The escaping lubricant does not have to be replaced. Bearings run hot enough to be uncomfortably warm to the touch. This is normal.

Note 4: E6N and J5N machines only.

6. Maintenance Points

Figure 1: Motor Platform, Hydraulic Cylinder, Shell and Suspension Maintenance Points

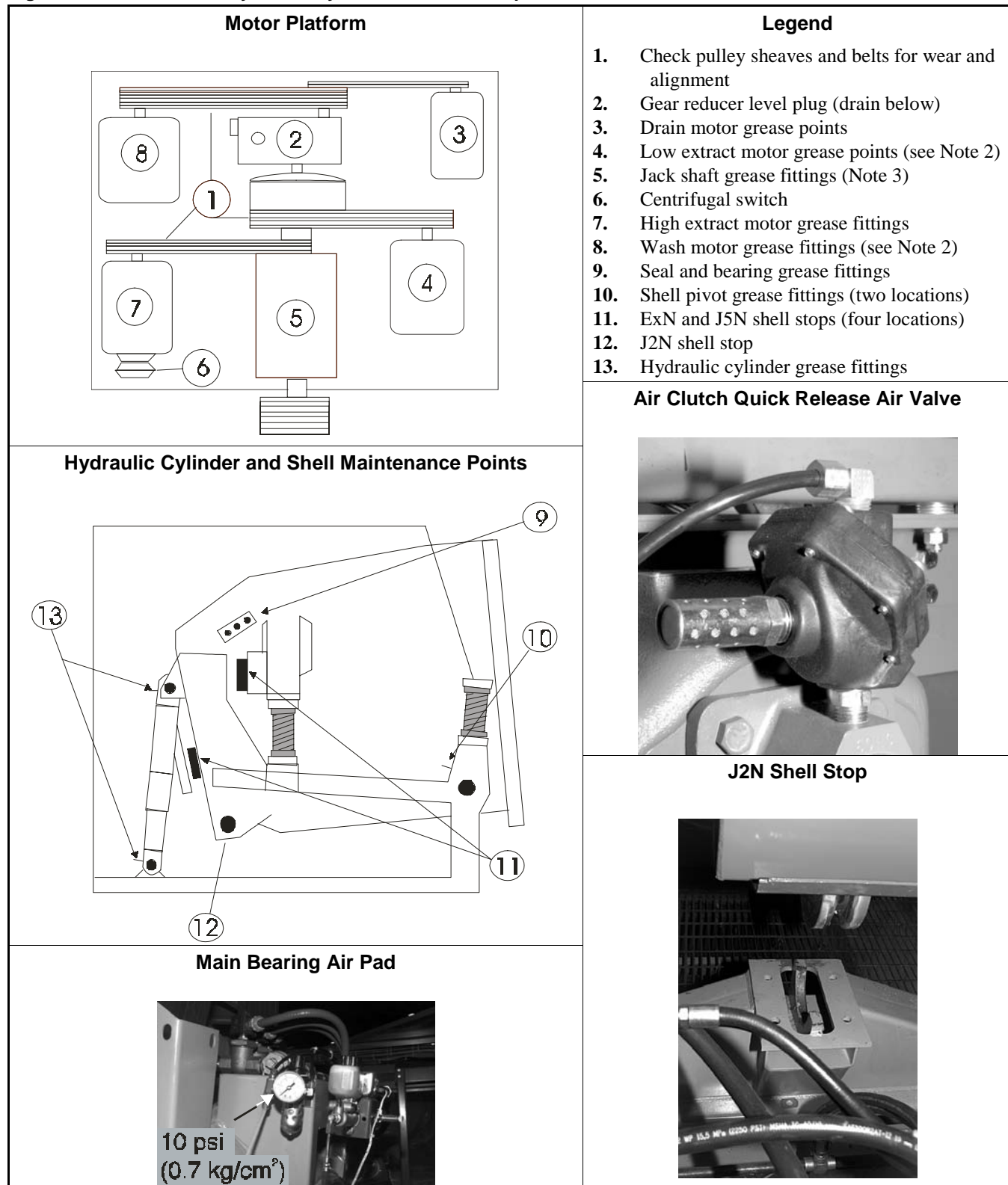


Figure 2: Brake Components

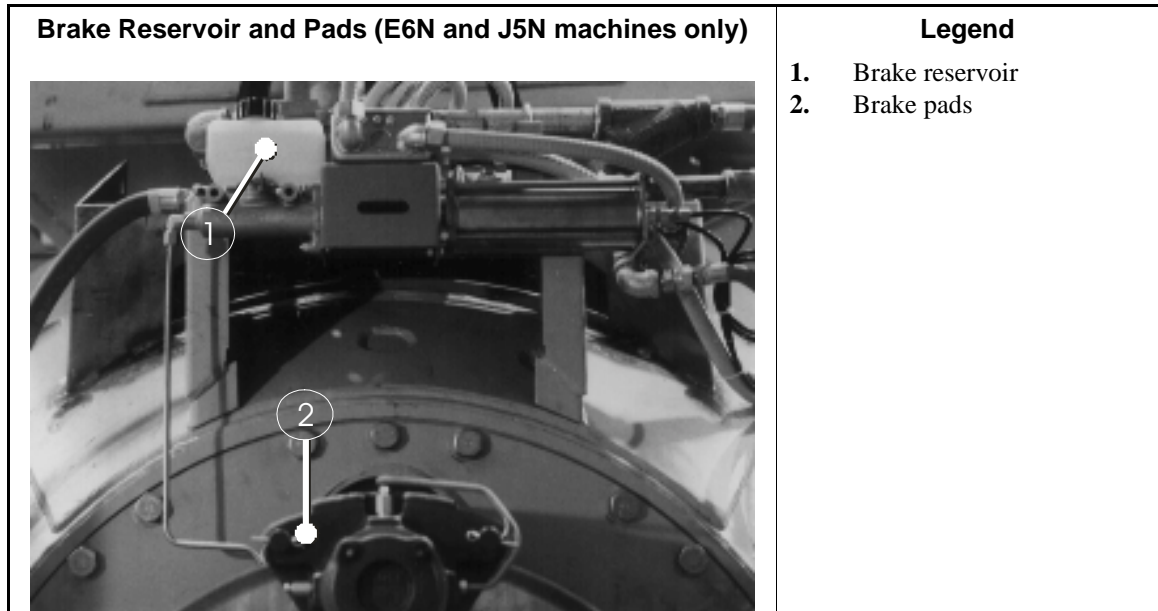


Figure 3: Hydraulic System Maintenance Points

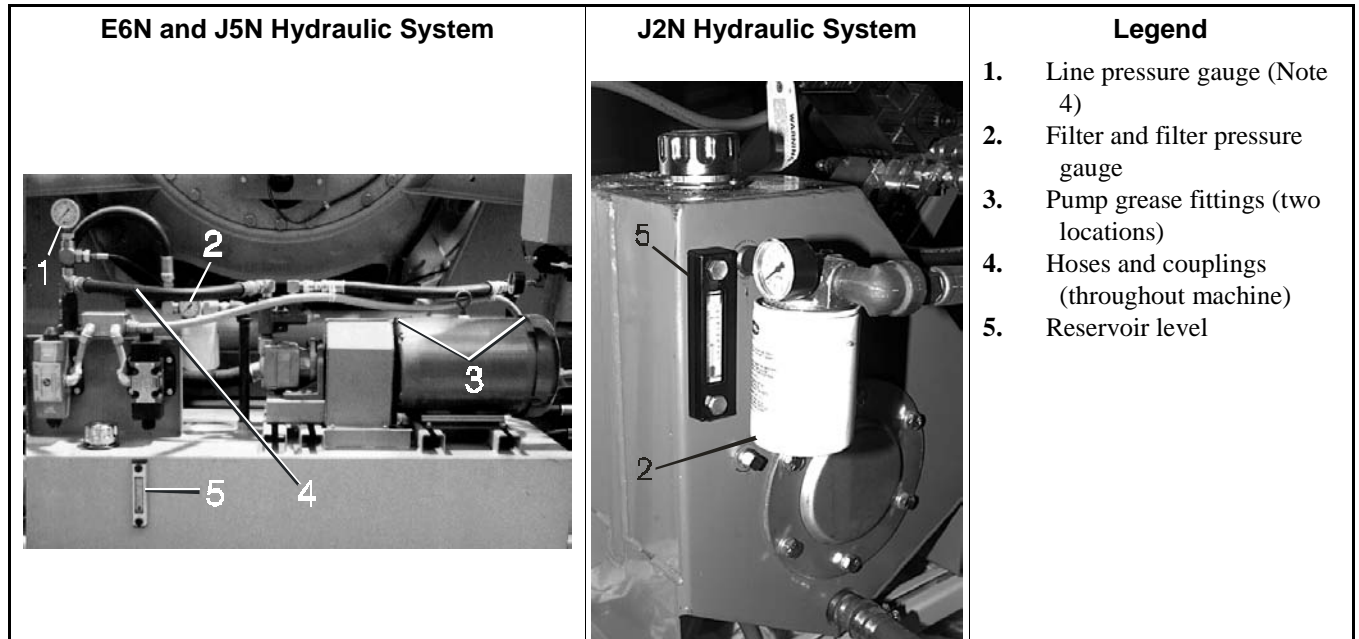


Figure 4: Isolators and Shocks

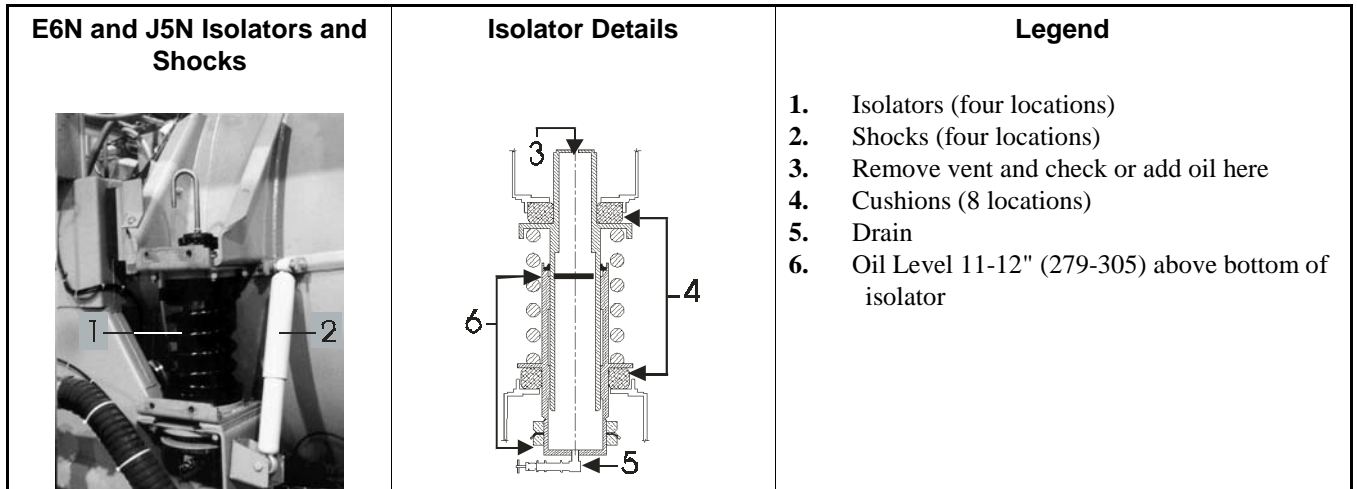


Figure 5: Door Maintenance Points

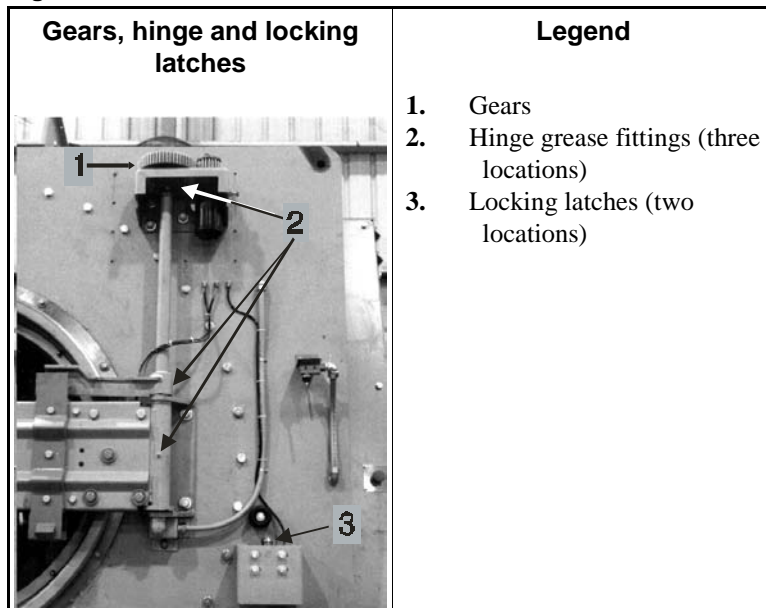


Figure 6: Cooldown Vernier Valve

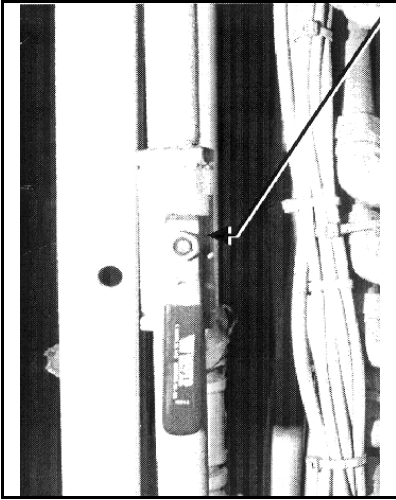


Figure 7: Water Pressure Adjustment

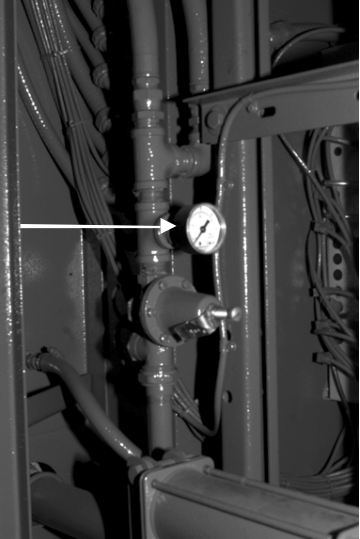
| | |
|---|---|
| <p>Water pressure regulator</p>  A black and white photograph of a water pressure regulator. It features a vertical pipe with a gauge and an adjustment knob. An arrow points to the gauge. The regulator is mounted on a metal structure, and there are other pipes and cables visible in the background. | <p>Legend</p> <p>Use hot water if it is available.</p> <p>Set pressure regulator for 28 psi when there is no flow of flushing or balancing water.</p> |
|---|---|

Figure 8: Inverter Enclosure, Screen and Fan

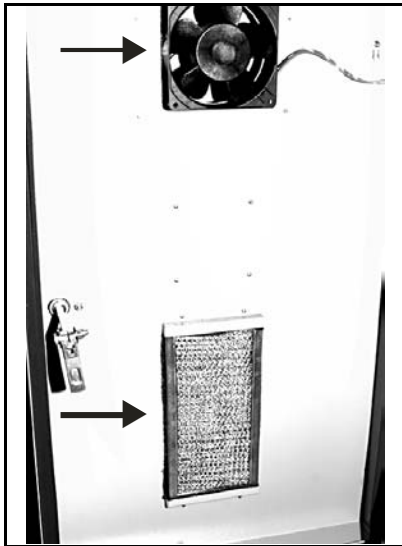


Figure 9: Inverter Vents



Figure 10: Recirculation Equipped Machines

| Recirculation hoses | Legend |
|---------------------|---|
| | <p>The hose behind this plate must be replaced every 6 months or 840 hours of operation. A weak hose can burst, causing hot bath liquor to spray onto personnel, scalding them.</p> |