

PREVENTIVE MAINTENANCE FOR THE 30022 SUSPENDED WASHER-EXTRACTOR

As required by the warranty and to achieve optimum performance and service life from Milnor[®] washer-extractors, **the schedules, instructions, and precautions herein must be strictly followed.**

Main Bearing Housing Preventive Maintenance

▲ WARNING ▲

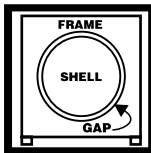


ENTANGLE AND CRUSH HAZARD—Belts and pulleys can entangle and crush body parts.

☞ **Lock OFF and tag out power at the wall disconnect before servicing, except where specifically instructed otherwise in this section.**

☞ **Permit only qualified maintenance personnel to perform these procedures.**

▲ CAUTION ▲



PINCH HAZARD—Vibrating cylinder will pinch fingers caught between shell and frame.

☞ **NEVER place fingers in gap between shell and frame.**

Bearing Lubrication Procedures

1. Lock OFF and tag out power at the wall disconnect.
2. Remove the rear panel.
3. Remove the drain plug on the bottom of the main bearing housing and allow the bearing housing to drain completely. Inspect the leak-off, drained oil, and magnetic drain plug for water and/or metal particles. Water and/or metal particles can indicate worn or damaged seals and bearings. Reinstall the drain plug.
4. After locating the oil fill plug, refill the bearing housing following lubrication specifications.
5. Reinstall the fill plug and clean excess lubricant from the machine.

Water Seal Lubrication

Grease Gun Precautions

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 water seals out of position and cause them to leak, even though the seal is equipped with spring loaded relief plug.
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 plug.** 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.**

Water Seal Lubrication Procedure

▲ WARNING ▲



ENTANGLE AND CRUSH HAZARD—Belts and pulleys can entangle and crush body parts. Power is ON and cylinder is turning during the following procedure.

☞ Use extreme care when working near moving components.

Grease the water seals as follows:

1. Restore power to machine.
2. Locate the water seal grease fitting (FIGURE 2)
3. Place the machine in a wash step.
4. With the cylinder turning, grease the seals as called for on the “Preventive Maintenance Checklist.”

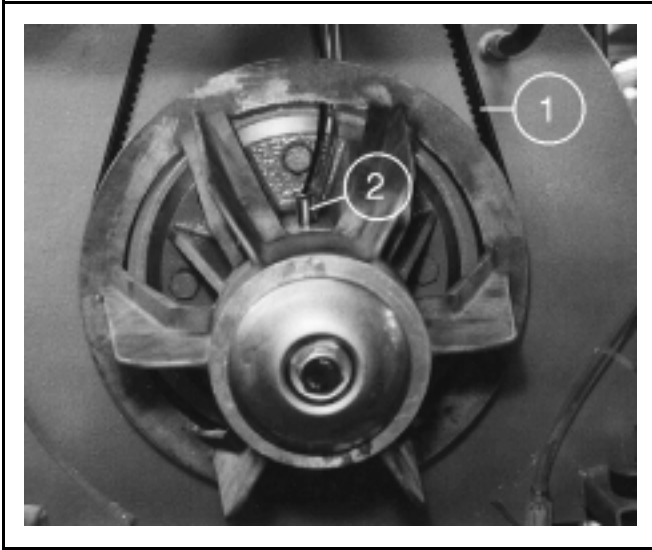


FIGURE 1 (MSSMA424AE)
**Main Bearing Housing
 Maintenance Points**



FIGURE 2 (MSSMA424AE)
Water Seal Grease Point

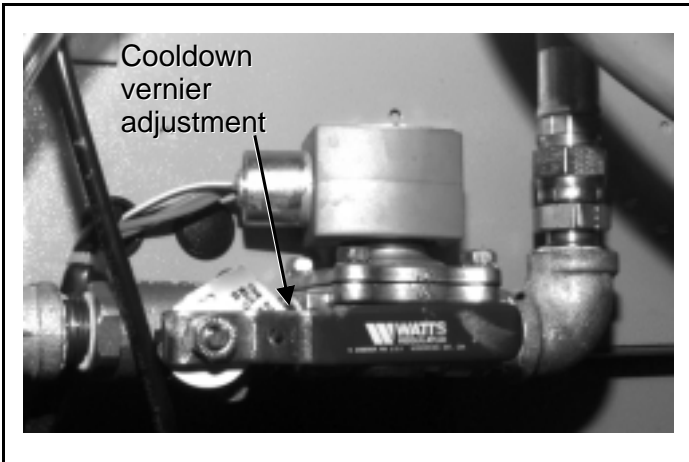


FIGURE 5 (MSSMA424AE)
Cooldown Vernier Valve

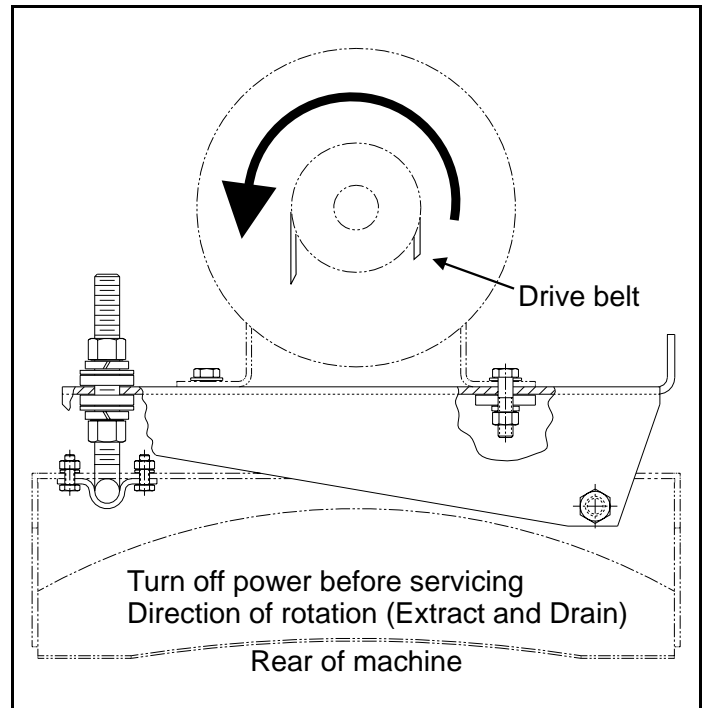


FIGURE 6 (MSSMA424AE)
Rotation Direction

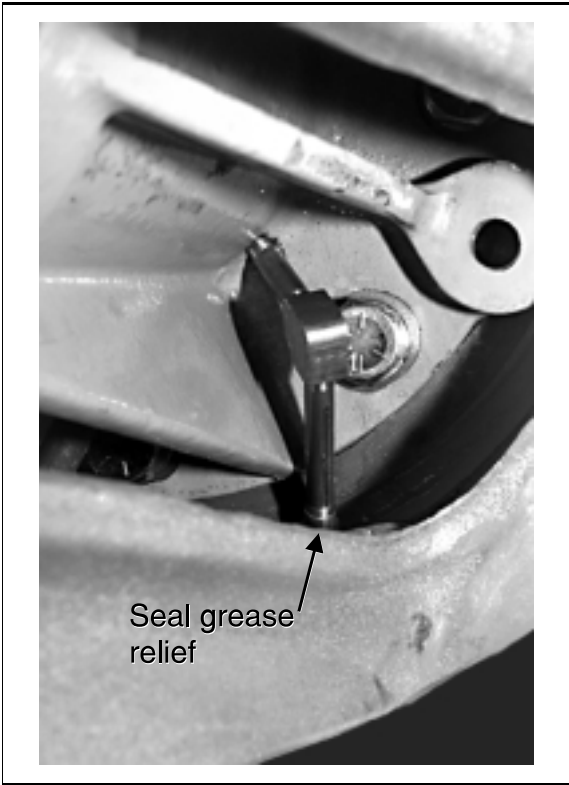


FIGURE 3 (MSSMA424AE)
Water Seal Grease Relief

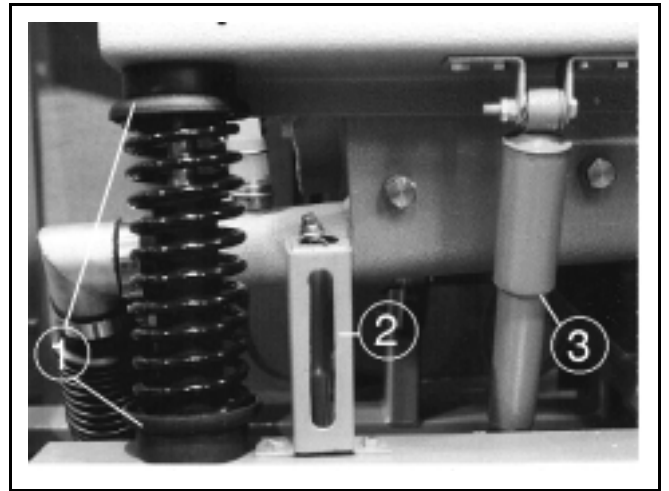


FIGURE 4 (MSSMA424AE)
**Isolator and Shock
Maintenance Points**



FIGURE 7 (MSSMA424AE)
Inverter

Preventive Maintenance Schedule

Component	Action	Frequency: Monthly (See NOTE) = M Every four months = F Annually = A	Specifications
		Additional Information	
Main bearing housing	Change lubricant, 22 US ounces (0.65 liter).	FIGURE 1 (Item 2)	F Shell Morlina ISO 220 (SAE 50) or equivalent
Water seals	Slowly grease, 2 strokes (0.125 fluid ounces - 3.54 grams) at one location.	FIGURES 2, 3, and BMP980022	M Shell Alvania EP LF (or equivalent)
Foundation bolts	Check bolt tightness and wear. Adjust or replace if necessary.	Dimensional drawing	F
Drive train	Check belt tension and pulleys for wear. Replace if necessary.	FIGURES 1 (Item 1), 6, and 8	F See "Testing Belt Tension" in this section.
Isolators	Check cushions for cracks and deterioration (eight locations).	FIGURE 4 (Items 1 and 2)	M
	Check oil levels.		F
	Replace oil, 3.5 US ounces (0.1 liter) per isolator.		A
Shocks	Check for oil leaks, replace as required (two locations).	FIGURE 4 (Item 3)	F
Peristaltic supply (if so equipped)	Check for leaks, observe operation.		F
Cooldown vernier valve (if equipped)	Verify setting. Adjust if required.	FIGURE 5	F
Flushing supply injector (if so equipped)	Inspect and clean the strainers in supply injector water valves and each compartment.	See "Bleach Note" in this section.	F
Inverter fans and vents	Vacuum out inverter vents and verify fan operation.	FIGURE 7	M
Steam strainer (if so equipped)	Inspect and clean strainer.		F

NOTE: MONTHLY/200 HOURS= Once a month or once every 200 operating hours, whichever comes first.

Testing Belt Tension

NOTE: Do not refer to instruction sheet provided with tension testing tool. Use the “Initial tension” column when adjusting belts that have never been used. Use the “Final tension” column when adjusting belts that have been used.

Check belt tension (see FIGURE 8) when replacing and adjusting drive train components. A belt tension testing tool (Milnor® part number 30T001), straight edge, and Belt Tension Specification table is required when setting belt tension. Check tension for new belts according to the following schedule.

- After 24 hours operation (three eight-hour shifts)
- After 80 hours operation (ten eight-hour shifts)
- After 160 hours operation (twenty eight-hour shifts)

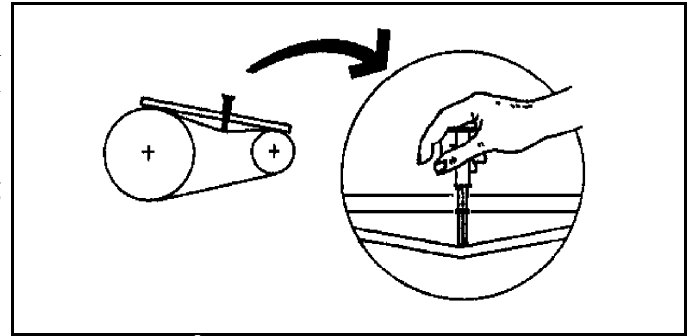


FIGURE 8 (MSSMA424AE)
Testing Belt Tension

Set belt tension as follows:

1. Move upper O-ring on tension testing tool to uppermost position (resting against bottom edge of sliding cap).
2. Determine belt deflection for the tested belt (see FIGURE 1, Item 1 for the belt location, and Table below for the setting). Move lower O-ring to the correct setting (inches or centimeters) on scale. Read the bottom edge of the O-ring.
3. Place a straight edge along the top edge (pulley to pulley) of the belt to be tested. Depress the tension testing tool by sliding the cap against the middle of the belt span until the bottom edge of the lower O-ring aligns with the straight edge as shown in FIGURE 8.
4. Read the top of the upper O-ring position and determine if it is within specified range.
 - See specifications in the “Initial tension” column for **belts that have never been used**.
 - See specifications in the “Final tension” column for **belts that have been used**.
5. If reading is below specified range, belt must be tightened. If reading is above specified range, belt must be loosened. Adjust belt and repeat Steps 1 through 4 until tension is within specified range.

Belt Tension Specification

Belt	Belt deflection inches (millimeters)	Hertz	Initial tension pounds (kilograms)	Final tension pounds (kilograms)
Drive	24/64 (9.5)	All	6.7 - 9.8 (3.0 - 4.4)	5.2 - 7.6 (2.4 - 3.4)

About Belts—All V-belts are not alike. So called “Super” or “High Capacity” belts frequently have considerably higher capacities than “Standard” belts. Sometimes a particular manufacturer’s V-belt will be more suitable for a certain application, and another manufacturer’s V-belt may be suitable for a different application. This may occur in spite of the fact that both manufacturer’s V-belts are reputedly “interchangeable”. Because of this, it is always best to purchase replacement belts from the original manufacturer of the equipment. If you do not wish to do this, we suggest that when you replace the belts, you purchase the exact style and type belts with which the machine was originally equipped. This is the best way to achieve belt life on your replacement belts equal to the life of the original set. (If you are not satisfied with the life of the original set, you should ask our factory if a better belt has been developed for the specific application).

Bleach Note

Dry bleaches may cause the inside of the supply injector to show evidence of mild rusting. If this condition occurs, be certain to carefully clean away the rusting at least once a week. Always inject dry bleach from the cup or scoop. **Never allow the dry bleach to come in direct contact with the stainless steel components of the supply injector.**