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Service—

64040/64050E6N Washer-Extractors

Read the Safety Manual

PELLERIN MILNOR CORPORATION POST OFFICE BOX 400, KENNER, LOUISIANA 70063-0400, U.S.A.

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

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Applicability.....IEA

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/cm2)	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)	
	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	Figure 3
	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).

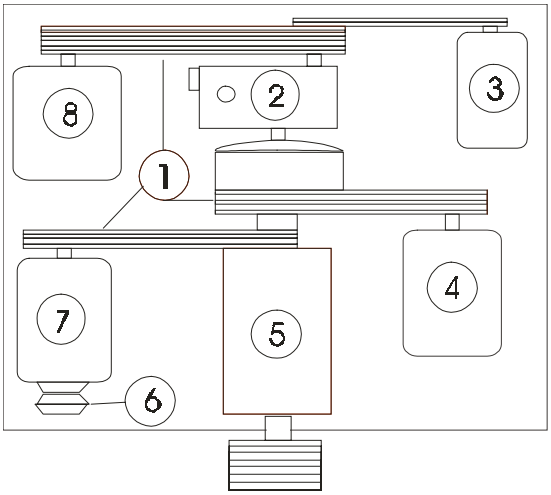
Note 3: Main bearings and jack shaft bearings (if equipped) are pre-packed with lubricant at the factory. Do not grease for 30 days.
Some grease will ooze out of the grease relief fittings during the first month of operation and every time the bearings are re-lubricated. These fittings avoid overheating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

Note 4: E6N and J5N machines only.

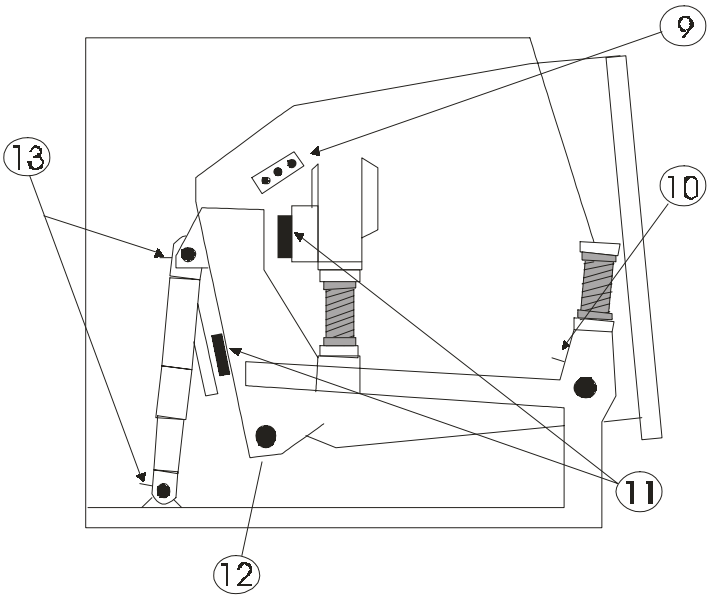
6. Maintenance Points

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

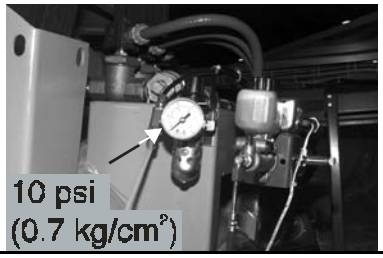
Motor Platform



Hydraulic Cylinder and Shell Maintenance Points



Main Bearing Air Pad



Legend

1. Check pulley sheaves and belts for wear and alignment
2. Gear reducer level plug (drain below)
3. Drain motor grease points
4. Low extract motor grease points (see Note 2)
5. Jack shaft grease fittings (Note 3)
6. Centrifugal switch
7. High extract motor grease fittings
8. Wash motor grease fittings (see Note 2)
9. Seal and bearing grease fittings
10. Shell pivot grease fittings (two locations)
11. ExN and J5N shell stops (four locations)
12. J2N shell stop
13. Hydraulic cylinder grease fittings

Air Clutch Quick Release Air Valve

J2N Shell Stop

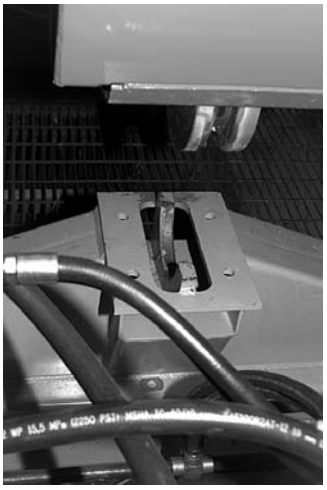


Figure 2: Brake Components

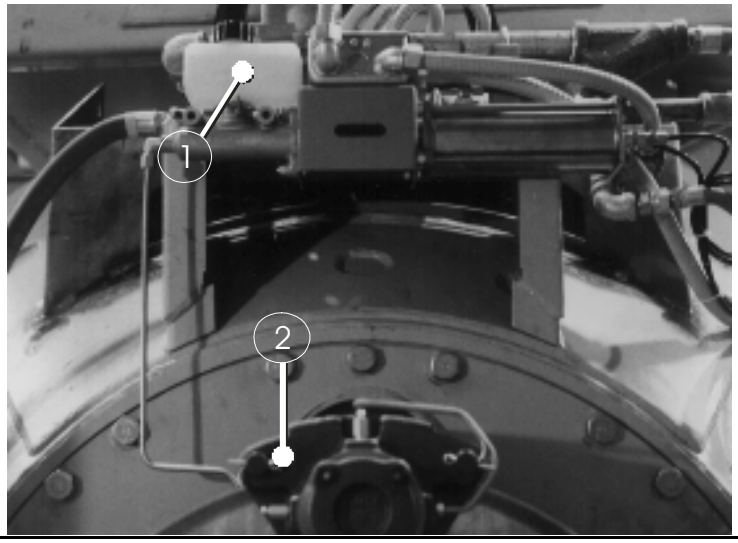
Brake Reservoir and Pads (E6N and J5N machines only)	Legend
	**1.** Brake reservoir **2.** Brake pads

Figure 3: Hydraulic System Maintenance Points

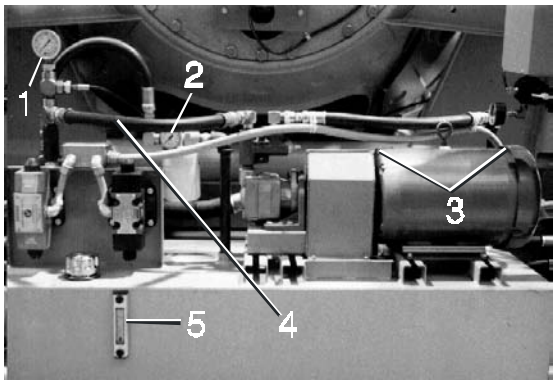
E6N and J5N Hydraulic System	J2N Hydraulic System	Legend
		**1.** Line pressure gauge (Note 4) **2.** Filter and filter pressure gauge **3.** Pump grease fittings (two locations) **4.** Hoses and couplings (throughout machine) **5.** Reservoir level

Figure 4: Isolators and Shocks

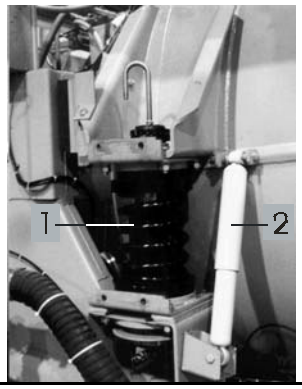
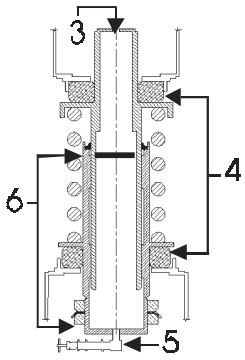
E6N and J5N Isolators and Shocks	Isolator Details	Legend
		**1.** Isolators (four locations) **2.** Shocks (four locations) **3.** Remove vent and check or add oil here **4.** Cushions (8 locations) **5.** Drain **6.** Oil Level 11-12" (279-305) above bottom of isolator

Figure 5: Door Maintenance Points

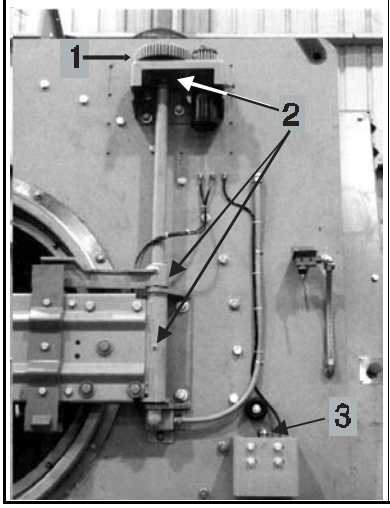
Gears, hinge and locking latches	Legend
	**1.** Gears **2.** Hinge grease fittings (three locations) **3.** Locking latches (two locations)

Figure 6: Cooldown Vernier Valve

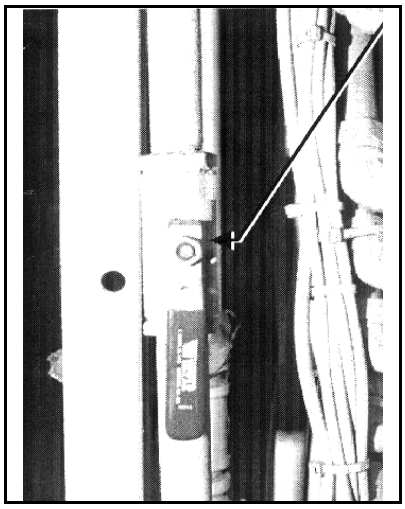


Figure 7: Water Pressure Adjustment

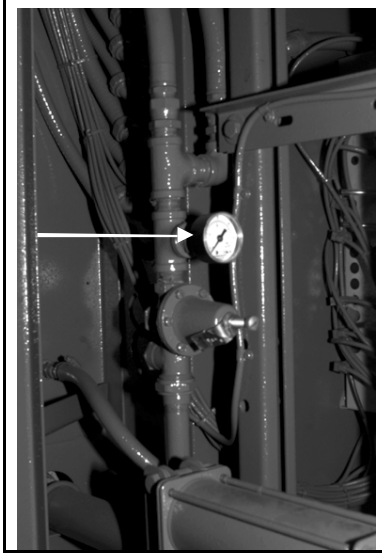
Water pressure regulator	Legend
	**Use hot water if it is available.** Set pressure regulator for 28 psi when there is no flow of flushing or balancing water.

Figure 8: Inverter Enclosure, Screen and Fan

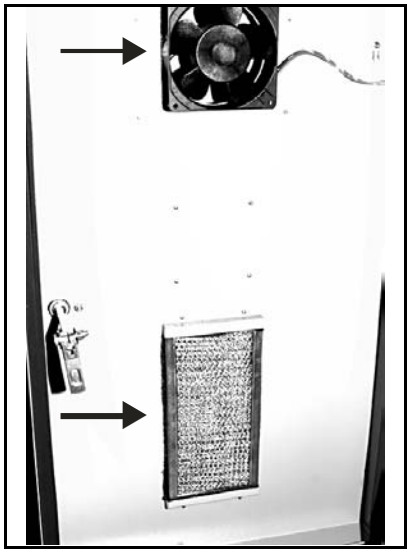


Figure 9: Inverter Vents

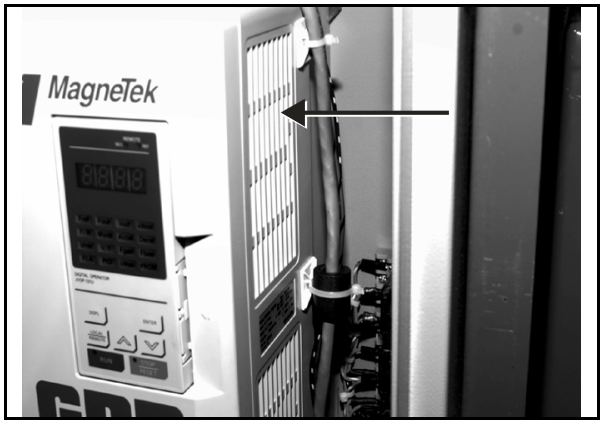
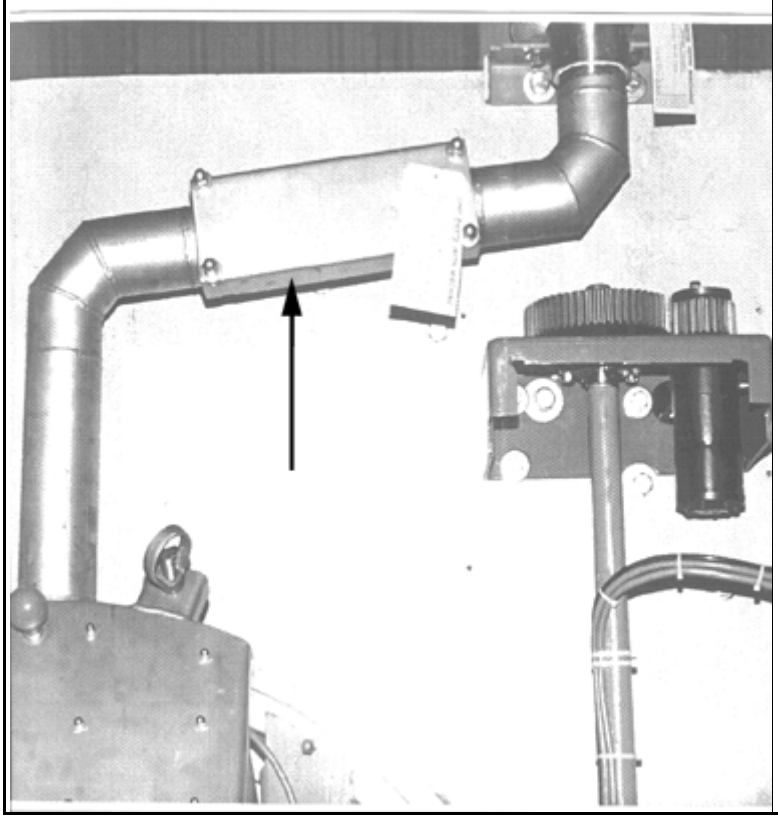


Figure 10: Recirculation Equipped Machines

Recirculation hoses	Legend
	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.

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