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Service & Mechanical Parts— 36021BWP, CPE, NSP

Preventive Maintenance and Lubrication for BWP, CPE, and NSP

Components	Action	Related Information	Frequency (See NOTES 1 and 2)
BEARING HOUSING			
Add grease (Pump SLOWLY with cylinder turning at wash or drain speed while greasing and for 1 minute after.)			
• Front bearing grease fitting	.12 oz. (3.54 grams) (2 strokes) at one location	FIGURES 1 and 2	Monthly/200 hours
• Rear bearing grease fitting	.12 oz. (3.54 grams) (2 strokes) at one location		
• Seals	.06 oz. (1.77 grams) (1 stroke) at one location		Every 6 months
GEAR REDUCERS & MOTOR BEARINGS			
• Gear Reducers	Check oil level and refill if required.	FIGURES 4, 6	Every 6 months
	Drain and replenish to level of side plug.		Yearly
	Clean mag. drain plug before replacing.		
• Motor Bearings (Motors with grease fittings)	See “BALDOR MOTOR MAINTENANCE...,” MSSM0274AE, in this manual. Pump grease slowly. If motor has drain plug, remove plug and run motor for 20 minutes then replace plug. See NOTE 3 below.	FIGURE 7	Quarterly/500 hours
HYDRAULIC SENSING DEVICE			
• Hydraulic Sensing Device (Balancing Mechanism)	Verify that the oil level is approximately halfway up the sight glass. Refill as needed. Turn Master Switch OFF before filling reservoir. (If the oil level drops far enough to expose the balance sensing device to air, refer to MSSMA401AE for bleeding and refilling instructions.	FIGURE 8	Check daily. Refill when level drops to 1/4 of sight glass.
COMMUTATOR			
• Cam	Check and readjust breaker point clearance	MSSMA401AE	After 160 hours of operation
	Relubricate with Wells CL200A cam lubricant—only insert a small amount as excess may interfere with operation.		After 160 hours of operation
	Check breaker point clearance and relubricate commutator		Every 6 months
DRIVE COMPONENTS			
• Belts	Check for worn or slipping belts.	FIGURE 5	Every 6 months
		MSSM0204AE	
		MSSM0501AE	
		MSSM0215AE	
DOOR INTERLOCK			
• Door interlock	Lubricate plunger with a few drops of oil.	FIGURE 3	Weekly
BELTS			
• Belts	Ensure hose in in good repair and the clamps are tight		Yearly
	Replace hoses		Every 2 to 3 years
CHEMICALS			
• Supply injector	Inspect inside for rust. If rusting, carefully clean away rust.		Every 6 months
COOLDOWN VALVE			
• Direct cooldown vernier valve	Ensure proper operation. Adjust if needed.		Every 6 months

NOTE 1: Monthly/200 Hours = Once a month, or every 200 operating hours, whichever comes first.

NOTE 2: Quarterly/500 Hours = Once every three months, or every 500 operating hours, whichever comes first.

NOTE 3: If motor manufacturer’s instructions conflict with manual section MSSM0274AE, follow manufacturer’s instructions. Motors are warrantied by the manufacturer, not by Milnor®.

BALDOR MOTOR MAINTENANCE

MSSM0274AE/9731AV

Most of the information in this document is taken from the *Baldor Electric Company Instruction, Operation, and Maintenance Manual*, and provides a means of more accurately determining motor lubrication requirements based on local conditions.

General Maintenance

Inspect, clean, and test motors at regular intervals— approximately every 500 operating hours or every three months, whichever comes first. Lubricate motors at the intervals determined herein. Keep accurate maintenance records.

DANGER: Electrocuting and Electrical Burn Hazards



Contact with high voltage will electrocute or burn you. Power switches on the machine and the control box do not eliminate these hazards. High voltage is present at the machine unless the main power is off. Electrical power can cause death or severe injury.

- Do not service machine unless qualified and authorized.
- Lock OFF and tag out power at the wall disconnect before servicing, or in accordance with factory service procedures.

DANGER: Entangle and Crush Hazard



Contact with moving components normally isolated by guards, covers, and panels, can entangle and crush your limbs. These components move automatically.

- Do not service machine unless qualified and authorized.
- Lock OFF and tag out power at the wall disconnect before servicing, or in accordance with factory service procedures.

Clean—Keep the exterior of the motor free of dirt, oil, grease, water, etc. Keep ventilation openings clear. Oily vapor, paper pulp, textile lint, etc., can accumulate and block ventilation, causing overheating and early motor failure.

Test—Periodically, check the motor and winding insulation integrity using a “megger.” Record the megger readings and immediately investigate any significant drop in insulation resistance. Check all electrical connectors to be sure they are tight.

Lubricate—Determine the proper lubrication interval for your motor as explained in “How to Determine Lubrication Interval” in this section, and lubricate accordingly.

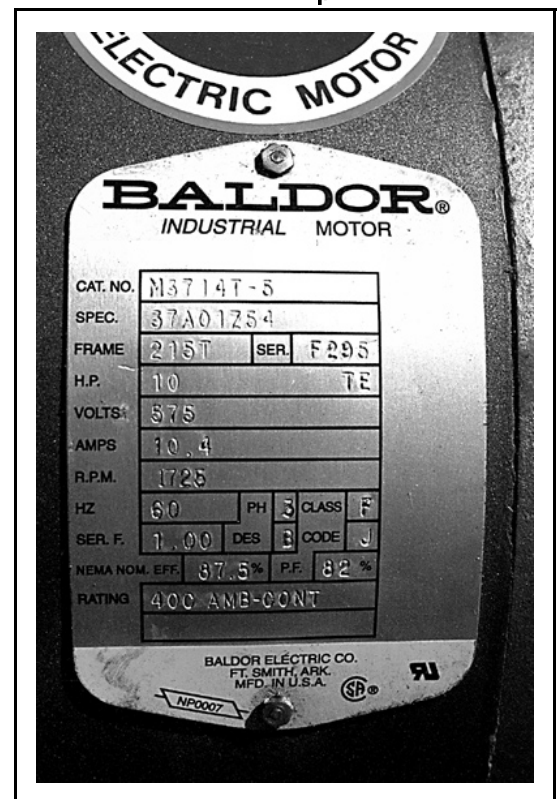


FIGURE 1 (MSSM0274AE)
Typical Motor Data Plate

How to Determine Lubrication Interval—The useful life of antifriction bearing grease can be estimated, based on service conditions, frame type, and motor rpm. An example of determining the correct lubrication interval is provided below.

Ex: A fan motor, operating at an ambient temperature of 109°F (43°C) in a moderately corrosive atmosphere. The motor has a NEMA 286T/(IEC 180) frame and is rated at 1750 rpm.

1. Table 1 classifies the service condition as “severe.”
2. Table 2 specifies a 0.5 service condition multiplier value for “severe” service condition.
3. Table 3 specifies 9500 hours as the recommended lubrication interval for frame sizes 254 to 286 (see nameplate), given standard service conditions.
4. Multiply .5 (*service condition multiplier value*) by 9500 hours (*recommended lubrication interval*) = 4750 hours (*calculated lubrication interval*).
5. Table 4 shows that the amount of grease to be added is 0.32 ounces (9.1 grams).

Table 1 — Determining the Service Condition

Severity of Service	Maximum Ambient Temperature	Atmospheric Contamination	Type of Bearing
Standard	104°F (40°C)	Clean, little corrosion	Deep groove ball bearing
Severe	122°F (50°C)	Moderate dirt, corrosion	Ball thrust, Roller
Extreme	>122°F (>50°C) or Class H Insulation (Note 1)	Severe dirt, abrasive dust, corrosion	All bearings
Low Temperature	-22°F (-30°C) (Note 2)		

Note 1: Special high temperature grease is recommended.

Note 2: Special low temperature grease is recommended.

Table 2 — Service Condition Multiplier Value

Operating Condition	Multiplier
Standard	1.0
Severe	0.5
Extreme	0.1

Table 3 — Recommended Lubrication Intervals at Standard Service Conditions

NEMA (IEC) Frame Size	Rated Speed - RPM			
	3600	1800	1200	900
Up to 215 (132)	5500 Hrs.	12000 Hrs.	18000 Hrs.	22000 Hrs.
254 to 286 (160 - 180)	3600 Hrs.	9500 Hrs.	15000 Hrs.	18000 Hrs.
324 to 365 (200 - 225)	2200 Hrs.(Note 3)	7400 Hrs.	12000 Hrs.	15000 Hrs.
404 to 5000 (280 - 315)	2200 Hrs.(Note 3)	3500 Hrs.	7400 Hrs.	10500 Hrs.

Note 3: Bearings in 404 through 5000 frame, 2 pole motors are either 6313 or 6314 bearings and the lubrication interval is shown in the table. **If roller bearings are used, the bearings must be lubricated more frequently. Divide the listed lubrication interval by two.**

Table 4 — Lubrication Amounts per Frame

NEMA (IEC) Frame Size	Bearing Description					
	These are the “Large” bearings (Shaft End) in each frame size (Note 4)					
	Largest bearing in size category	OD D mm	Width B mm	Grease gun strokes (Note 5)	Volume of grease to be added	
ounces					grams	
Up to 215 (132)	6307	80	21	2.5	0.16	4.7
254 to 286 (160 - 180)	6311	120	29	5.0	0.32	9.1
324 to 365 (200 - 225)	6313	140	33	7.0	0.43	12.2
404 to 5000 (280 - 315)	NU322	240	50	18.0	1.11	31.5

Note 4: Smaller bearings in size category may require reduced amounts of grease.

Note 5: See “Correct Grease Gun Procedures” for information on estimating the output of hand-operated grease guns.

Lubrication Recommendations

Type of Grease—Use Shell Dolium R (factory installed) or Chevron SRI greases for standard service conditions. The extreme and low temperature conditions are not normally encountered in the laundry. However, for extreme conditions, use Darmex 707 and for low temperature conditions, use Arrowsell 7. Contact Baldor for equivalents, if necessary.

Correct Grease Gun Procedures

1. Use hand-operated grease gun, not a pneumatic grease gun. Pump grease slowly, taking 10 to 12 seconds to complete each stroke.
2. Apply quantity of grease called for. 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. 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 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.
4. 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.

Lubrication Procedure

	NOTICE: Motor Damage
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To avoid damage to motor bearings, grease must be kept free of dirt. For an extremely dirty environment, contact your Baldor distributor or an authorized Baldor Service Center for additional information.

1. Clean grease fittings.
2. Remove grease outlet plug.
3. Add recommended amount of grease. Be sure grease to be added is compatible with the grease already in motor. Consult your Baldor distributor or an authorized Baldor Service Center if grease other than recommended is to be used. Stop when new grease appears at shaft hole in the endplate or grease outlet plug.
4. Replace grease outlet plug.