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Service—

30022H7x & H8x Washer-Extractors

Section
Service and Maintenance

1

30022H7J AND 30022H8J PREVENTIVE MAINTENANCE

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

Preventive Maintenance Schedule

Component	Procedure	See FIGURE	Frequency
Door interlock	Test functioning for safe operation.	BMP990012	daily
Water seal grease point	Slowly grease at one location until grease seeps from grease seal relief	FIGURES 1 and 3	monthly
Water inlet strainers	Clean as required	FIGURE 4	every four months
Foundation bolts	Check bolt tightness and wear. Adjust or replace if necessary.	Dimensional drawing	every four months
Drive train	Check belt tension and wear. Check pulleys and other drive components for wear. Replace if necessary.	FIGURE 5	every four months
Main bearing housing	Change lubricant.	FIGURES 2 and 3	every two years

Main Bearing Housing Preventive Maintenance

⚠ DANGER ⚠



ELECTROCUTION HAZARD—High voltage is present inside electric boxes, motors, and many other components. Power switches on machine disable only control circuit power in certain boxes. You can be killed or seriously injured on contact with high voltage.

☞ Lock OFF and tag out power at the wall disconnect before servicing.

⚠ 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.

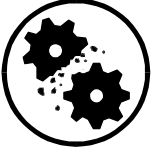
☞ Permit only qualified maintenance personnel to perform these procedures.

⚠ CAUTION ⚠

MALFUNCTION HAZARD—Oil spilled on components may cause machine malfunction.

☞ Refill bearing housing carefully.

▲ CAUTION ▲



MACHINE DAMAGE HAZARD—Mixing incompatible lubricants will result in severe machine damage.

☞ **DO NOT** mix different base lubricants.

☞ **Before using a non-specified lubricant, consult the lubricant manufacturer to determine compatibility.**

Lubrication Specifications

Component	Lubricant/Type	Amount of Lubricant
Main bearing housing	High quality SAE 50 (ISO 220) heavy duty motor oil, non-detergent if available	22 fluid ounces (651 milliliters)
Water seal grease	Shell Alvania EP LF (or equivalent)	Preventive Maintenance Schedule

Lubrication Procedures

See the appropriate *main bearing drawing* (if provided) during this procedure (see Table of Contents).

1. Remove the rear belt cover.
2. Remove the drain plug (FIGURE 3) 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. Install the drain plug.
3. Locate the oil fill plug (FIGURE 2) on the bearing housing. Clean the surrounding area and remove the oil fill plug.
4. Refill the bearing housing. After refilling the bearing housing, reinstall the oil fill plug and clean any excess lubricant from the machine.

Preventive Maintenance Items

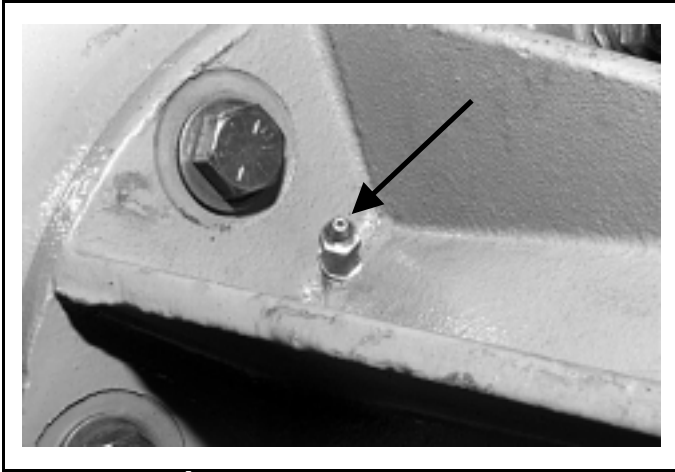


FIGURE 1 (MSSM0712AE)
Water Seal Grease Point

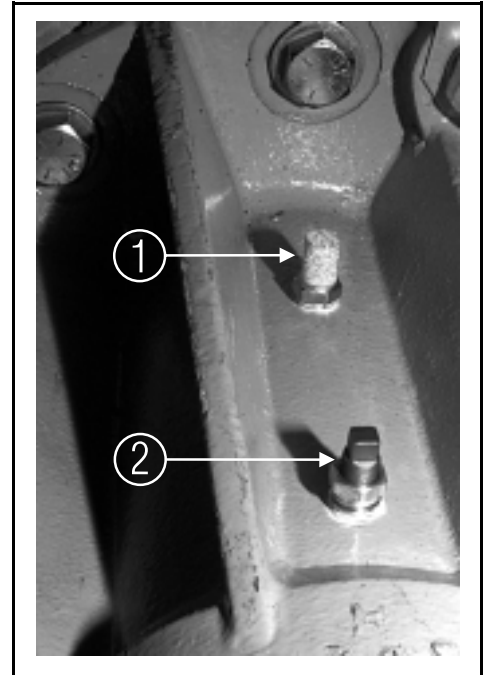


FIGURE 2 (MSSM0712AE)
**Main Bearing Housing
Vent (1) and Oil Fill (2)**

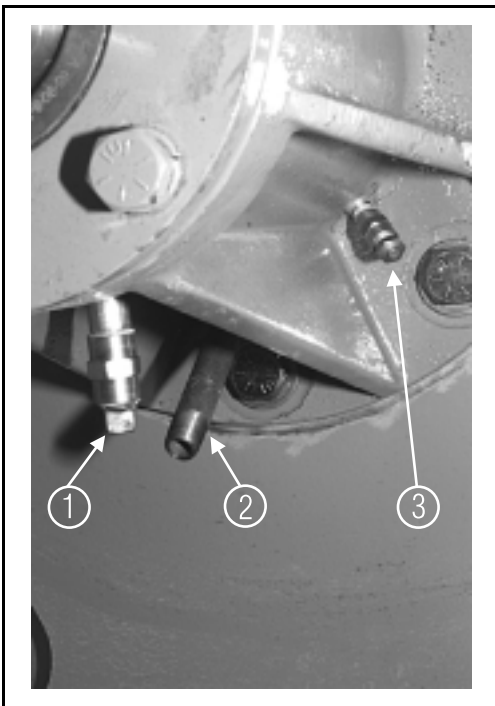


FIGURE 3 (MSSM0712AE)
**Bearing Housing Oil Drain
Plug (1), Leak-off (2), and
Seal Grease Relief (3)**



FIGURE 4 (MSSM0712AE)
Inlet Valve Strainers

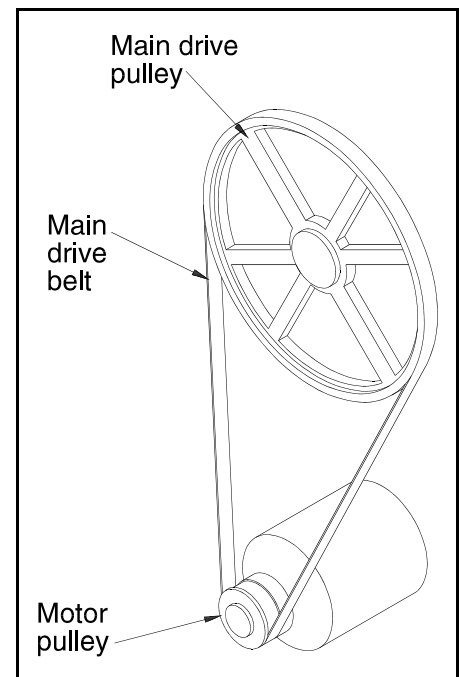


FIGURE 5 (MSSM0712AE)
Drive Train

Testing Belt Tension

NOTE: Use the “Initial Tension” column (Table below) when adjusting belts that have never been used. Use the “Final Tension” column when adjusting belts that have been used.

Check belt tension when replacing and adjusting drive train components. Belt tension testing tool (Milnor[®] part number 30T001), straight edge, and Belt Tension Tables are required when setting belt tensions. **Do not refer to instruction sheet provided with tension testing tool.** Check tensions for new belts according to the following schedule:

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

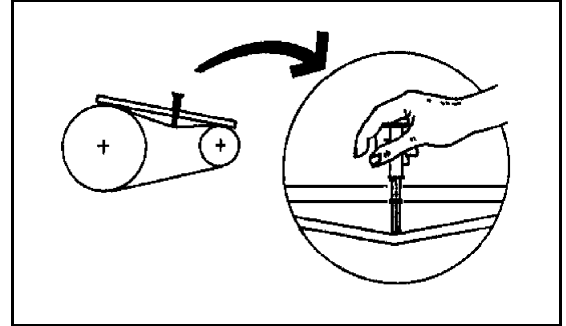


FIGURE 6 (MSSM0712AE)
Setting Belt Tension

1. Move upper O-ring on the tension testing tool to the uppermost position (resting against the bottom edge of sliding cap).
2. Determine deflection for the main drive belt (see FIGURE 5 for the belt location and Table for the setting range). 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. 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 6.
4. Read the top edge of the upper O-ring position and determine if it is within the specified range. If the readings are below the specified range, tighten the belt. If the readings are above the specified range, loosen the belt. Adjust the belt and repeat steps one through four until tension is within the specified range.

Replacing Belts

Remove motor drive belt by loosening the threaded jacking rods that determine the belt tension for the pulley. **Do not force belts off by prying and turning pulley.** Check belt tension and pulley alignment after replacing the belts.

Table — Main Drive Belt Tension Specifications

Model	Cycle	Belt Deflection (centimeters)	Initial Tension pounds (kilograms)	Final Tension pounds (kilograms)
30022H7J 30022H8J	All	24/64 (0.95)	6.7—9.8 (3.0—4.4)	5.2—7.6 (2.4—3.4)

Removing and Installing the Main Drive Pulley

Replace the pulleys if the side walls are chipped, broken, or excessively worn. Remove the console top and belt guards, then remove the appropriate belts, dirt, or paint from the shaft end and see instructions below.

Taper Lock Bushing Pulleys

▲ CAUTION ▲

DO NOT use lubricants, “Loctite” or other compounds on taper lock bushings, pulleys, or shafts.

1. Loosen and remove all three bushing bolts. Thread two bolts into the push-off holes in the bushing (FIGURE 7) and alternately tighten them until the bushing and pulley separate and can be removed from the shaft.
2. Remove the burrs from the shaft, then clean and polish shaft. Clean tapered surfaces of bushing and inside bore of pulley. Determine that inside bore of bushing is clean and clear.
3. Place the key in shaft. Check for a proper fit. Key must fit snugly; if not, replace the key or bushing.
4. Insert the bushing loosely into the pulley and start all three bolts. Install the pulley on the shaft and approximately align it with the corresponding pulley.
5. Gradually tighten the bolts in an alternating pattern until the bushing is seated within the pulley. Rotate the pulley and check for wobble or runout.
6. Install the belts, adjust out all slack, and align the pulleys (see “Aligning Pulley” in this section).
7. Tighten the bushing bolts and the set screw to the “Recommended Bushing Torques” in Table below, and adjust the belt tension according to “Testing Belt Tension” in this section.

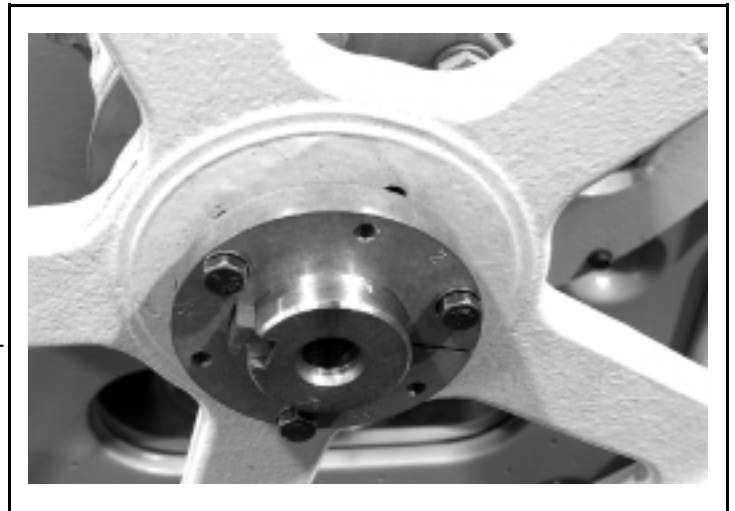


FIGURE 7 (MSSM0712AE)
Aligning the Pulley

Recommended Bushing Torques

Size Code (Stamped on bushing)	Fasteners	Bushing Bolt Torque inch pounds (kilogram/meters)	Set Screw Torque inch pounds (kilogram/meters)
SK	5/16"– 20 bushing bolt	180 (2)	—
	1/4"– 20 set screw	—	87 (1)

Aligning Pulley

After replacing the drive train components, check the pulley alignment.

1. Stretch a string from the motor pulley to the drive pulley as shown on FIGURE 8.
2. Adjust the position of the main drive pulley until the string touches *A*, *B*, *C*, and *D*. Secure the pulley.

⚠ WARNING ⚠

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

☞ **Insure belt and pulley guards are in place before operating machine.**

Testing Belt Alignment—After aligning the belts, observe the belts with the machine operating. **If an adjustment is necessary, lock OFF and tag out power before proceeding.**

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 manufacturers 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 belt, 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.

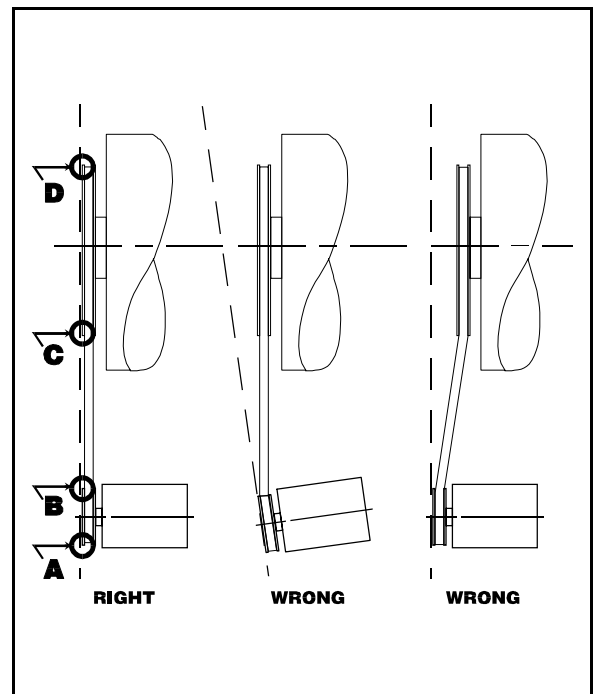


FIGURE 8 (MSSM0712AE)
Aligning Pulley



MANUALLY OPENING A LOCKED 30022H7x OR 30022H8x DOOR

MSSM0288AE/2000266V

DANGER: ENTANGLE AND CRUSH HAZARD



Contact with moving components normally isolated by doors, guards, covers, and panels, can entangle and crush body parts. These components move automatically.

-  Maintenance must be performed by qualified, authorized service personnel. Do not service unless qualified and authorized.
-  Lock OFF and tag out power at the wall disconnect before servicing the door latch.

WARNING: MACHINE MALFUNCTION HAZARD



Missing or improperly installed components may prevent positive door closure, endangering the operator. All components must be properly reassembled for machine operation.

-  Ensure proper reassembly by testing machine operation before returning the machine to normal service.

The door is designed to lock as soon as the machine starts a wash cycle. If electrical power to the machine is interrupted during the washing cycle, or if the door interlock mechanism fails to unlock, the door handle assembly can be removed by **qualified, authorized service personnel**, allowing access to goods inside the washer. See BMP990012 and BMP99005 for details.

Disassembling the door locking handle

1. Remove door handle retaining clip.
2. Remove the set screw from the top spoke of the door handle (FIGURE 1). Hold a finger over the hole and turn handle with other hand until the spoke is at the six o'clock position. Release handle and put free hand under index finger. Remove finger from hole and allow spring and ball to fall into hand (FIGURE 2). If the spring and ball don't fall out, then rock handle slightly until both fall out.
3. Repeat for other three spokes.
4. Remove the outer retaining ring and thrust bearing (FIGURE 3). If necessary, push in on the door handle to release the retaining ring. Pull the door handle off the shaft.
5. Remove flange bearing and inner retaining ring (FIGURES 4 and 5). Push against the door to release the inner retaining ring.
6. Open door, allowing the shaft to slide out of the door. The shaft remains in the door locking mechanism. Make sure that the return spring (FIGURE 6) slides out of the retaining hole in the door shaft cam.

7. Remove cover (not shown) from the door locking mechanism (FIGURE 7). Use screwdriver to push down the door lock slider pin (FIGURE 7). Rotate the shaft (FIGURE 8), counter-clockwise to remove from the locking mechanism.
8. If door was locked due to a power failure, remove the goods, then see “Assembling the door locking handle” in this section. If the door was locked due to an interlock failure, determine the cause of the failure (coil failure, mechanical interference, etc.) and repair, then see “Assembling the door locking handle.”

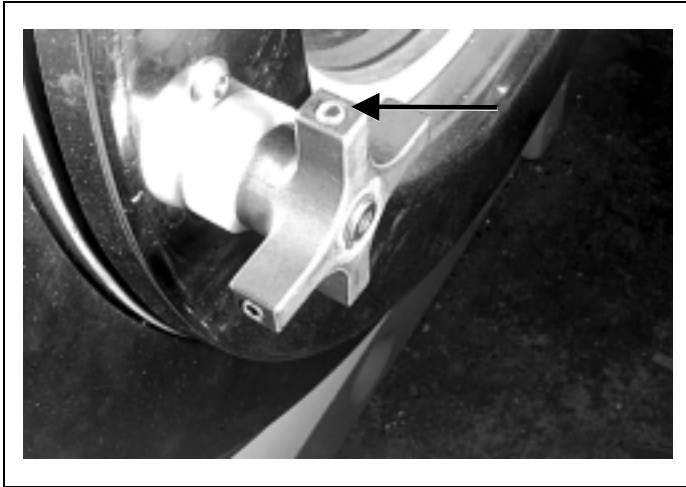


FIGURE 1 (MSSM0288AE)
Door Handle Spoke Set Screw



FIGURE 2 MSSM0288AE
Handle Spoke Spring and Ball

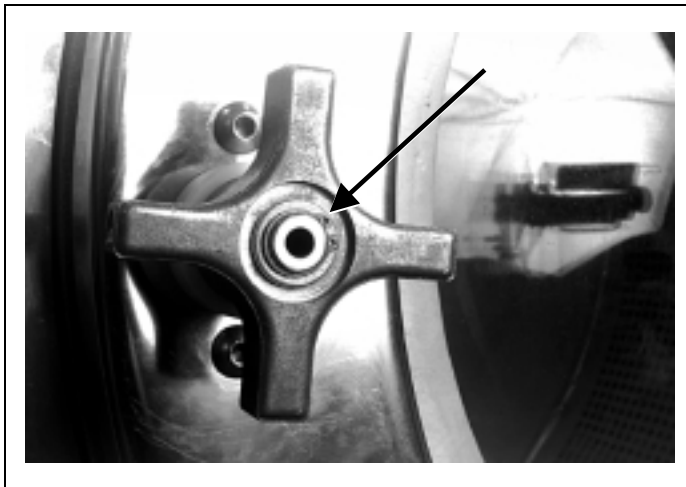


FIGURE 3 (MSSM0288AE)
Retaining Ring and Thrust Bearing



FIGURE 4 (MSSM0288AE)
Door Flange Bearing

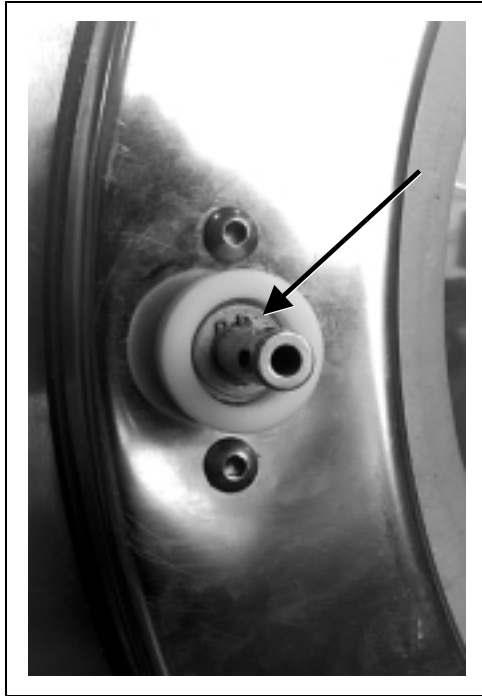


FIGURE 5 (MSSM0288AE)
Inner Retaining Ring

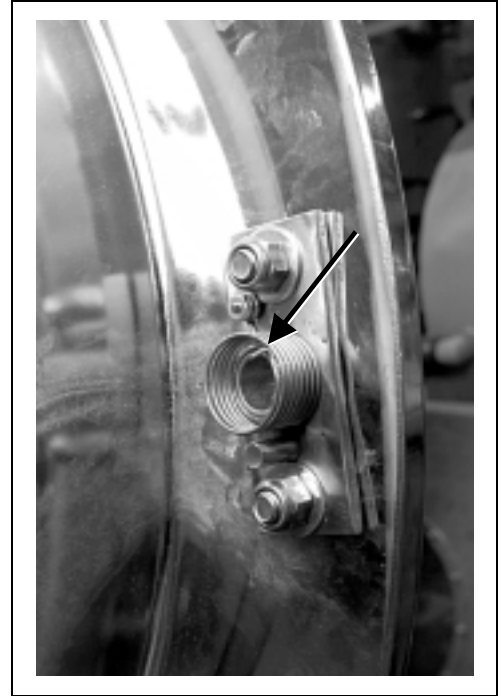


FIGURE 6 (MSSM0288AE)
Return Spring

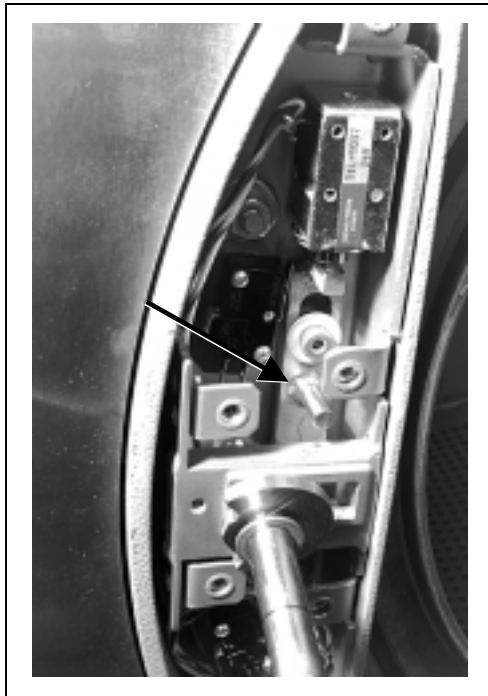


FIGURE 7 (MSSM0288AE)
Door Lock Slider Pin

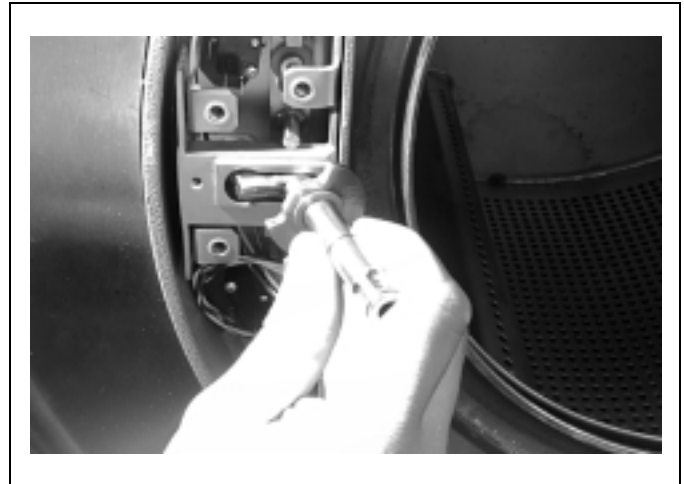


FIGURE 8 (MSSM0288AE)
Freeing the Shaft from the Locking Mechanism

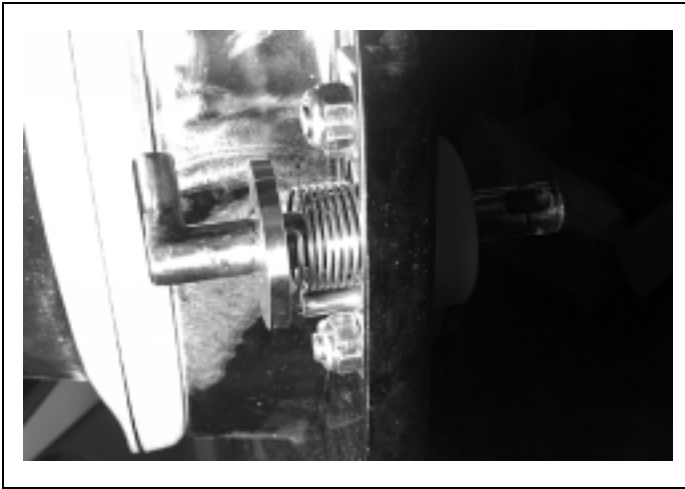


FIGURE 9 (MSSM0288AE)
Shaft with Return Spring Installed

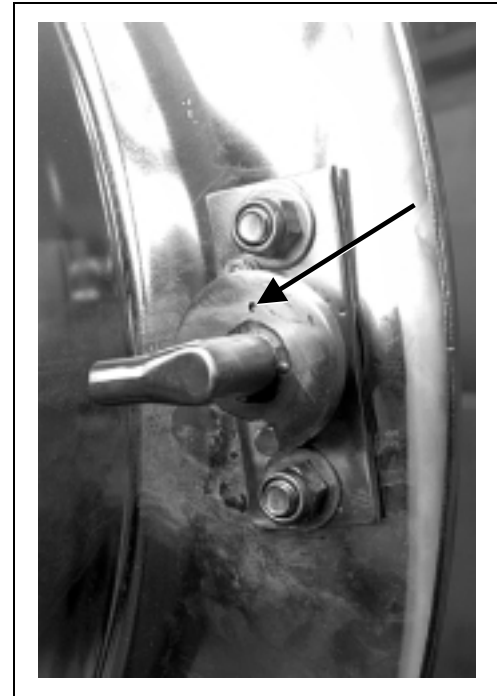


FIGURE 10 (MSSM0288AE)
Shaft in the 9 O'Clock Position showing
Spring Retaining Hole

Assembling the door locking handle

1. Reinstall locking mechanism cover.
2. Insert shaft into door and insert return spring end into retaining hole in door shaft cam (FIGURES 9 and 10).
3. Install inner retaining ring. When the door shaft is correctly installed, the shaft finger is held at the 9 o'clock position (when looking at the back of the door) by spring tension.
4. Rotate shaft counter-clockwise until the locking mechanism notch lines up with the finger and push in fully (FIGURES 10 and 11).
5. Install flange bushing, door handle, thrust bearing and outer retaining ring.
6. Install the ball and spring in each door handle as follows:
 - a. Drop ball in hole of door handle top spoke.
 - b. Install spring on top of the ball.
 - c. Install set screw. Tighten set screw until the set screw is flush with the handle.
 - d. Rotate door handle counter-clockwise to the 3 o'clock position. Door handle must rotate easily through 90 degrees. If handle does not rotate easily, back out each set screw a quarter of a turn. A correctly adjusted door handle offers light resistance as the ball moves out of the slot in the latch cam then moves freely until the door handle reaches the 3 o'clock position.
 - e. Repeat steps for the other 3 door handle spokes.
7. Install door handle retaining clip.



FIGURE 11 (MSSM0288AE)
Shaft Finger Aligned with Locking
Mechanism Notch
(Cover removed for clarity)



FIGURE 12 (MSSM0288AE)
Inserting Ball and Spring in
Handle Spoke



FIGURE 13 (MSSM0288AE)
Adjusting Set Screw