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Kit Instruction - KRBA00100



**Read the
separate
safety
manual
before
installing,
operating,
or servicing**

BEARING HOUSING REPLACEMENT— 48" HYDROCUSHION MACHINES

- Symptoms of Impending Bearing Failure and How to Avoid It
- Synopsis of Changeout Procedures
- Bearing Housing Changeout Procedures

Symptoms of Impending Bearing Failure and How to Avoid It

The bearings on your MILNOR machine are designed for long, trouble-free service under continuous use. Strict adherence to the lubrication schedule is the best way of prolonging service life. Eventually, however bearings and seals may require replacement. Aside from catastrophic bearing failure which will probably cause the machine to seize up, some possible early warning signs of bearing failure are as follows:

- Extract motor overload trips—If this begins to occur with increasing frequency and all other possible causes (such as a dragging clutch tire or improper draining of machine) are ruled out, then suspect the bearings.
- Water constantly flowing or dripping from the bearing housing leak off cavities during operation—indicating that the bearing housing seals are leaking.
- A grinding noise coming from the bearing housing—Even though such a noise probably indicates that the bearings are going bad, their service life might be extended somewhat by greasing the bearings more frequently than called for on the preventive maintenance schedule, especially if this action is found to reduce the grinding noise.
- Bearing housing hotter than normal—It is normal for the bearing housing to heat up during operation. If however, the housing seems much hotter than the hottest bath temperature, suspect a bearing problem.

Bearing replacement is major maintenance which should only be performed by qualified maintenance personnel experienced in this type of procedure. If the customer does not have such personnel, it is recommended that the authorized MILNOR dealer perform this maintenance.

The best way to minimize down-time resulting from bearing failure is to perform the bearing changeout before the bearings on your machine catastrophically fail. This means **inspecting your machine regularly** and making all preparations for bearing housing replacement when the symptoms of bearing failure appear, including having the fixtures described herein and replacement housing on hand.

Synopsis of Changeout Procedures

The recommended procedure for bearing replacement is to replace the entire bearing housing. Replacement housing assemblies and the two fixtures required are available from the MILNOR factory. The fixtures are supplied on a rental basis and returned to the MILNOR factory, along with the old bearing housing after completing the changeout procedure. A credit will be issued for the salvageable parts of the old bearing assembly.

One fixture is mounted to the front of the machine and supports the cylinder once it is detached from the cylinder shaft. **It is not necessary to remove the shell front or cylinder from the machine.** To access the bearing housing, the following components must be removed from the machine:

- Rear HYDRO-CUSHION cylinder.
- Rear intermediate cross brace—some pneumatic lines, water piping, etc., must be disconnected in order to remove this component. Electric boxes need not be removed.
- Main drive belts and pulley.

The other fixture supplied with the changeout kit consists basically of a rail, trolley and hoist. This fixture is mounted to the rear of the machine and is used to support the weight of the bearing housing as it is withdrawn from the shell.

The replacement bearing housing and other components are reinstalled in the reverse order of removal. When withdrawing the old housing and positioning the new one, a maintenance person is required inside the cylinder to help guide and support the housing.

Bearing Housing Changeout Procedures

Setup

1. Have a minimum of two qualified maintenance personnel on hand for the entire procedure.
2. Verify that all components of the changeout kit have been provided (refer to kit parts list).
3. The bearing housing replacement procedures require that the cylinder is positioned with one rib at the 12 o'clock position and the door open. Energize the washer and jog the cylinder into position.

▲ WARNING ▲



CRUSHING AND ENTANGLEMENT HAZARDS

- Drive belts and other moving parts in this machine can entangle, crush, and sever limbs.
- Lock OFF and tag out washer-extractor power at the external disconnect box before continuing this procedure.

Gaining Access to Bearing Housing—Refer to FIGURE 1 and proceed as follows:

1. Remove the rear access panels.
2. Measure and record the distance between the shell rear bracket and the lower cross brace prior to removing the HYDRO-CUSHION cylinder.
3. Remove the rear HYDRO-CUSHION cylinder.

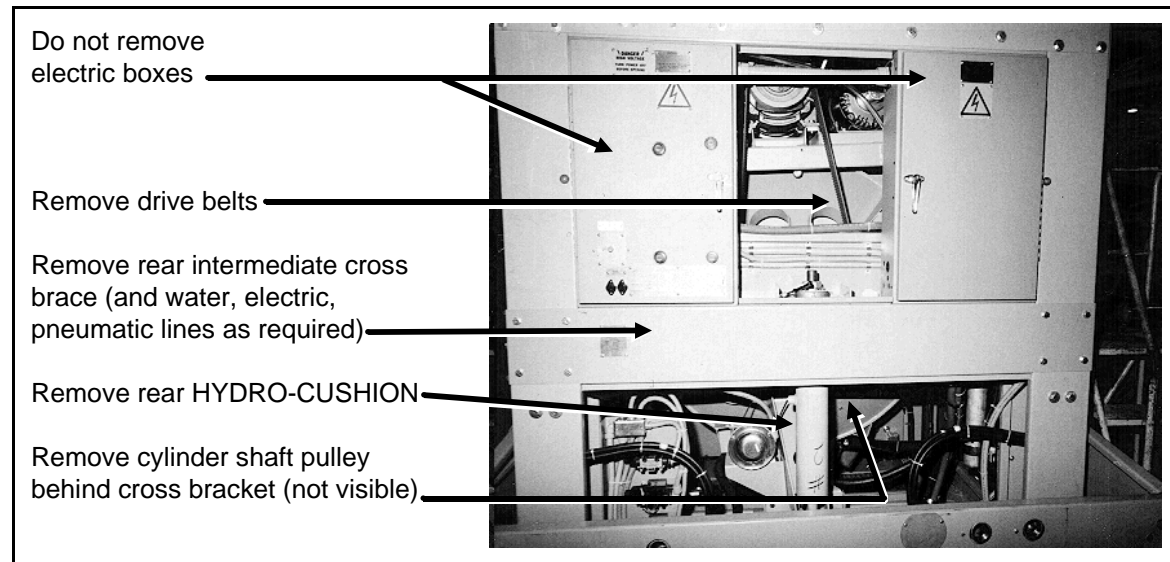


FIGURE 1 (MSSMA403AE)
Gaining Access to Bearing Housing

4. Remove the rear intermediate cross brace. Inspect brace for any pneumatic lines, water piping, hoses, electric lines, etc. Disconnect only those lines that are in the way and **be sure to mark them for proper reconnection.**
5. Remove the drive belts and cylinder shaft drive pulley.

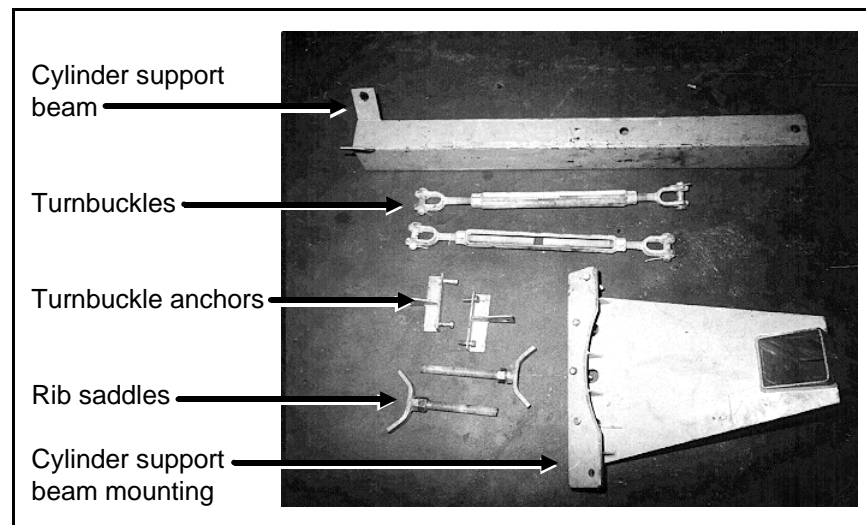


FIGURE 2 (MSSMA403AE)
Components of Cylinder Support Fixture

Installing the Cylinder Support Fixture

1. Identify the components of this fixture as shown in FIGURE 2.
2. Remove the clamping ring from the shell front.
3. As can be seen in FIGURE 3, this fixture mounts to the shell front using the top 5 shell front mounting bolt holes and 4 holes on the bottom of the shell front (2 pair of holes separated by 3 bolts). Remove these nine bolts from the shell front.
4. Install the following components of the fixture in the order indicated. Use the longer bolts provided with the kit.
 - a) Cylinder support beam mounting bracket
 - b) Turnbuckle anchors
 - c) Cylinder support beam (see FIGURE 3)
 - d) Turnbuckles—Tighten to hold the Cylinder Support Beam horizontal.
5. With a cylinder rib in the 12 o'clock position as previously explained, install the rib saddles as shown in FIGURE 4 below, and tighten against the rib until the weight of the cylinder is resting on the support beam.

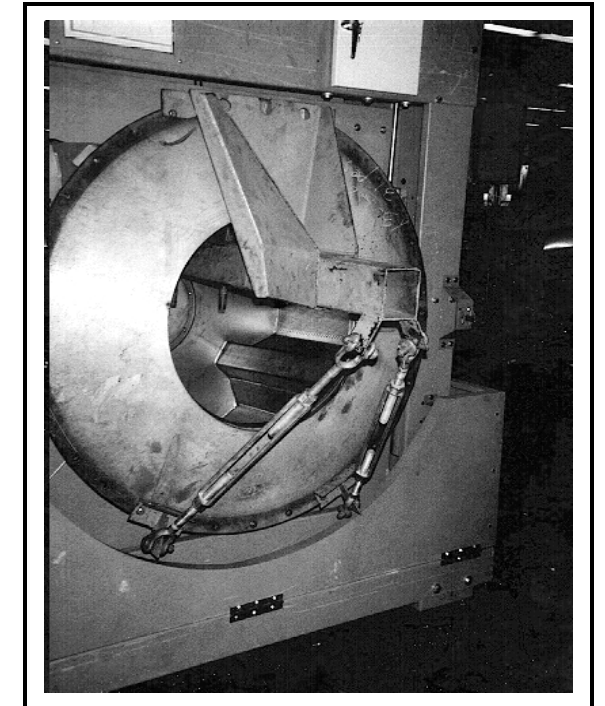


FIGURE 3 (MSSMA403AE)
Cylinder Support Fixture in Position

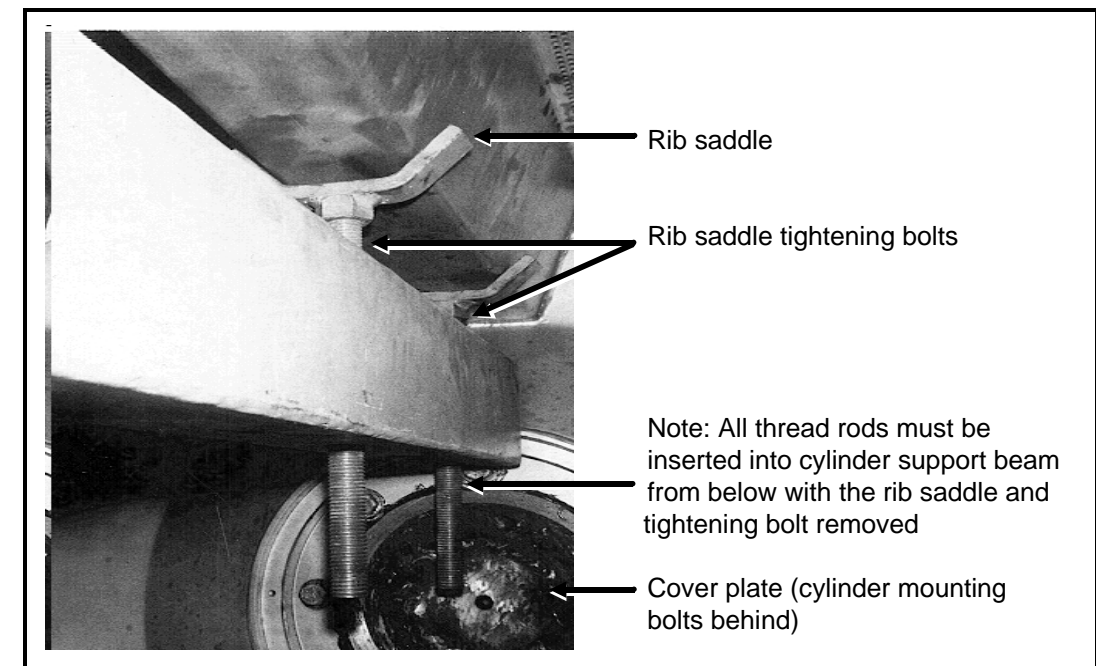


FIGURE 4 (MSSMA403AE)
Tightening Rib Saddles Against Rib

Dismounting the Cylinder

1. Remove the cover plate from the rear of the cylinder to expose cylinder mounting bolts (refer to FIGURE 4).
2. Remove the cylinder mounting bolts. Note that when these are removed, the cylinder will be supported only by the Cylinder Support Fixture.
3. Install the leverage arm from the Bearing Housing Support Fixture on the end of the bearing housing using the bolts provided.

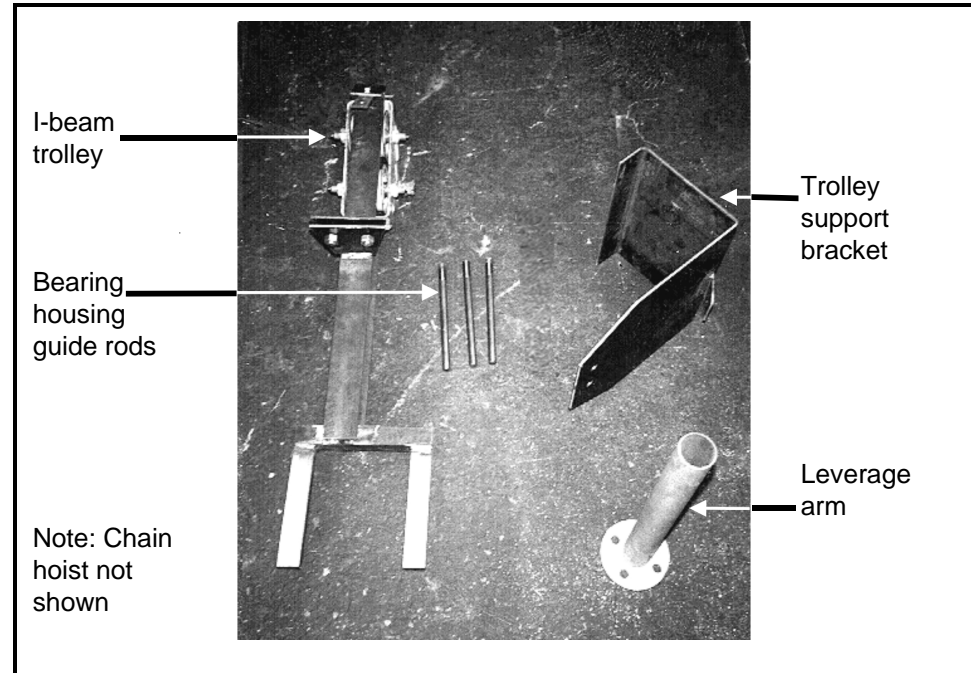


FIGURE 5 (MSSMA403AE)
Components of Bearing Housing Support Fixture

Installing the Bearing Housing Support Fixture

1. Identify the components of this fixture as shown in FIGURE 5.
2. Install the following components of this fixture in the order indicated, as shown in FIGURE 6 .
 - a) I-beam trolley
 - b) Trolley support bracket
 - c) Chain hoist
3. Remove the top bolt from the bearing housing rear plate, install the 5/8" eyebolt as shown in FIGURE 7, and place the chain hoist hook through this eyebolt, and take up the slack in the chain.

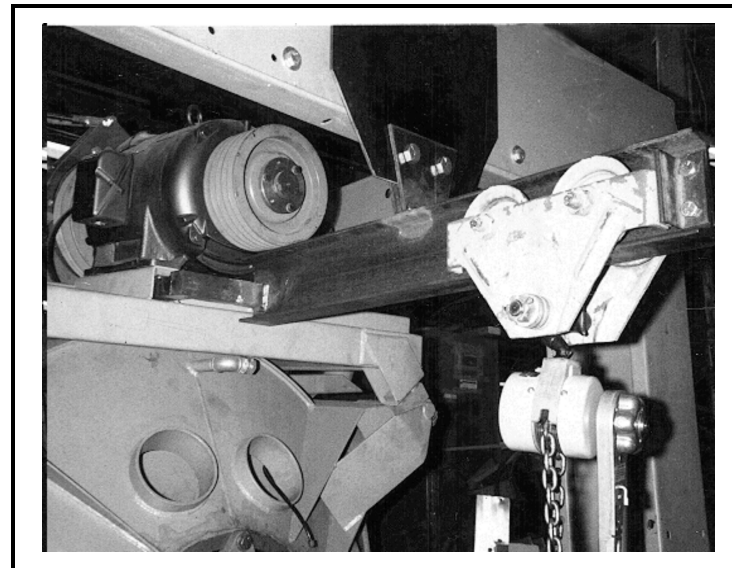


FIGURE 6 (MSSMA403AE)
Bearing Housing Support Fixture
in Position

Removing the Bearing Housing

1. Remove the three grease lines from the bearing housing.
2. Working through the access holes in the rear cone, remove the bearing housing mounting bolts from the center flange of the bearing housing. Refer to FIGURE 7.
3. Remove the bolts from the rear spider flange of the bearing housing.
4. Install the three bearing housing guide rods into three of the bolt holes in the bearing housing center flange and install these bolts into the threaded push-off holes in the center flange, as shown in FIGURE 8.
5. Tighten the three push-off bolts alternately and equally to dismount the housing.



FIGURE 7 (MSSMA403AE)
Unbolting the Bearing Housing

▲ CAUTION ▲

Do not attempt to dismount the housing by prying between the cone and the spider plate as this will break the spider plate.

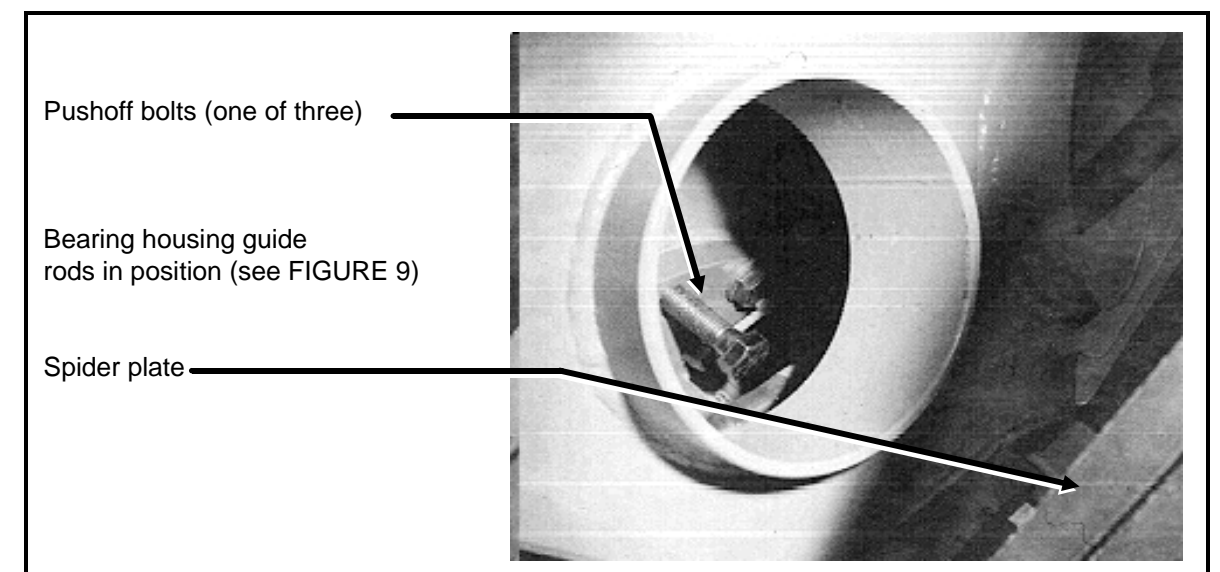


FIGURE 8 (MSSMA403AE)
Preparing to Dismount Bearing Housing

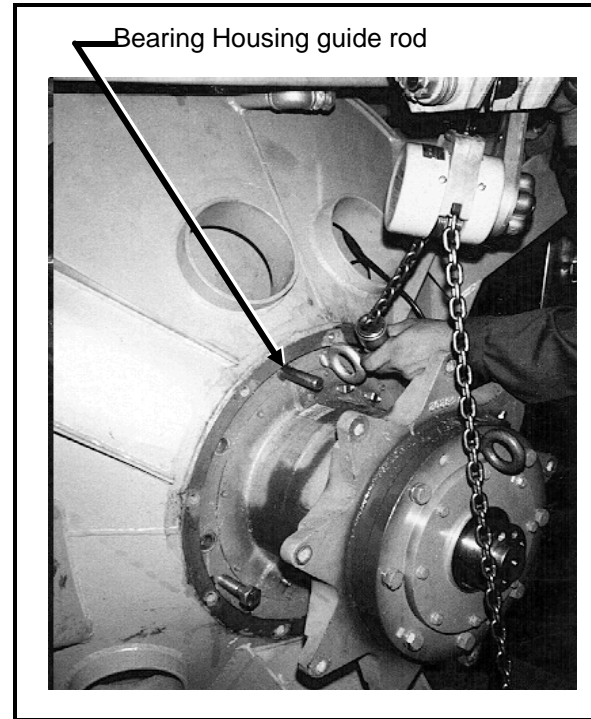


FIGURE 9 (MSSMA403AE)
Moving the Eye Bolt for Lifting

6. Once the bearing housing is loose, work it only partially out of the shell with one person pulling from the rear and another person guiding it out with the Leverage Arm from inside the basket.
7. When the center flange of the housing is even with the rear end of the cone as shown in FIGURE 9, install the 1/2" eye-bolt in the top push-off hole in the center flange and move the chain hoist hook to this eyebolt.
8. Now remove the bearing housing completely, carefully allowing the weight of the housing to be transferred to the chain hoist as shown in FIGURE 10.

Installing the New Bearing Housing—The new housing is installed in the reverse order of disassembly. When installing the new assembly, observe the following precautions:

1. It is essential that the large O-ring supplied with the new housing is in position on the front side of the housing center flange, as shown in FIGURE 11.
2. Three people may be required to insert the bearing housing into the cone—two people to push the housing in and a third to position it with the chain hoist.
3. Use the center flange mounting bolts to tighten down the housing, not the spider flange bolts as the spider flange will break.
4. When remounting the cylinder, align it to the bearing housing by turning the lower nuts on the rib saddles to raise or lower the cylinder.

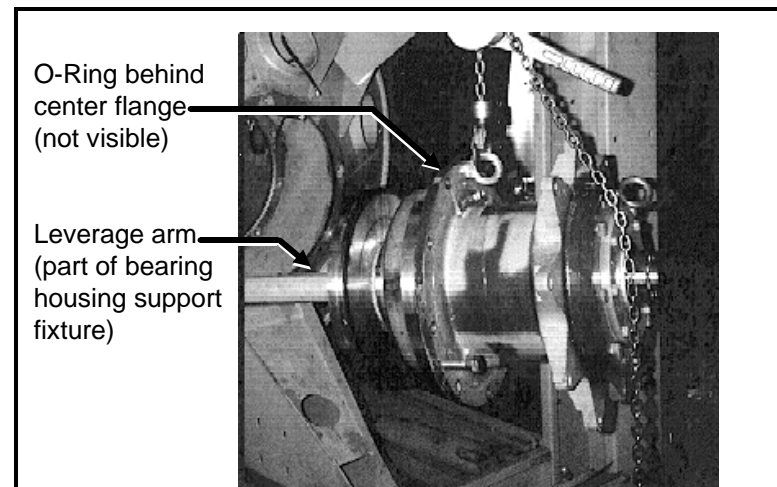


FIGURE 11 (MSSMA403AE)
New Bearing Housing

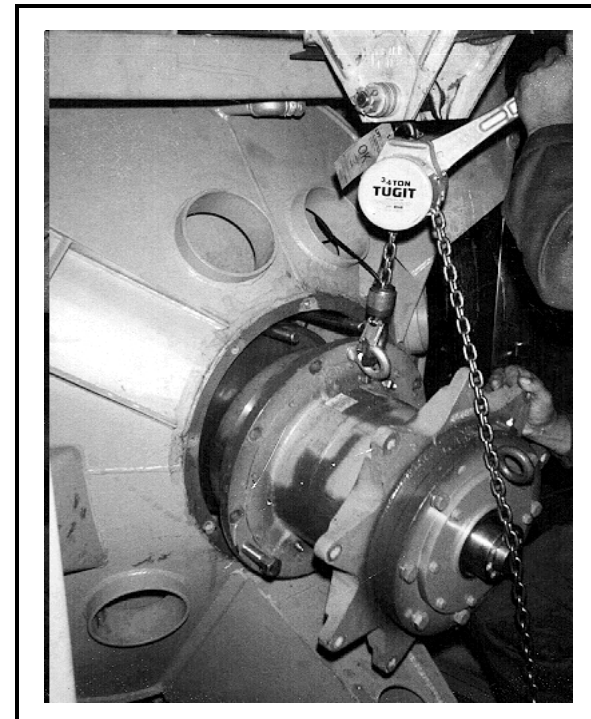


FIGURE 10 (MSSMA403AE)
Lifting the Bearing Housing

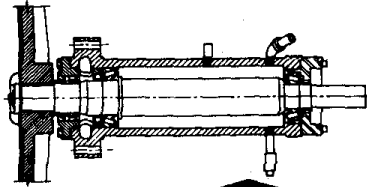
5. Bolts should be tightened in accordance with the “BOLT TORQUE REQUIREMENTS . . .” in the technical manual.

Reinstalling the Rear Cross Brace and HYDRO-CUSHION Cylinder—These components are installed in the reverse order of disassembly. When reinstalling these components, observe the following precautions:

1. When tightening the bolts on the rear intermediate cross brace, refer to “BOLT TORQUE REQUIREMENTS . . .” in the technical manual.
2. When installing the HYDRO-CUSHION cylinder, be sure to adjust the cylinder bolts to achieve the proper hanging angle of the shell. Refer to “SUSPENSION ADJUSTMENTS . . .” in the technical manual.
3. Use care in properly matching any pneumatic water or electric lines that were disconnected when removing the cross brace.

Maintenance Bulletin

PELLERIN MILNOR CORPORATION
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MAINTENANCE BULLETIN B22MB84006
October 21, 1983

RE: PROPER BELT TENSIONING

Gentlemen:

Proper belt tensioning is important not only to the service life of the belts themselves but also motor and bearing life. Of course, the service life of V belts depends on other normal maintenance functions.

Upon installation, the pulleys should be checked for alignment and that the pulleys are not cocked, chipped or damaged in any way. Also, be sure there is no foreign matter build up inside the grooves.

New V belts will stretch their most during their first 6 to 8 weeks of operation. Therefore, after proper installation, tension should be checked after the first 6 to 8 weeks of operation and at least once a year thereafter. And most certainly if a squeal is detected.

Finally, V belts must be kept relatively clean. This means a periodic check and cleaning by blower, vacuum, etc. of the belts dust, lint, etc. which settle from the air. Liquids of any type (water or oil) should be kept away from belts.

In this regard we are pleased to provide the attached instructions for checking and adjusting V belt tension on MILNOR washer-extractors. These instructions are provided in four different sections, each containing tension tables for various size machines. Only one copy of each is attached but we will provide more upon request at no charge. It is suggested that you order one complete set for each mechanic.

The belt tension tester, mentioned in the instructions, is available from MILNOR under our part number 30T001. Please check with our Parts Department for price.

We are happy to offer these instructions and if there are any questions, please contact anyone in our Service Engineering Department.

Very truly yours,

PELLERIN MILNOR CORPORATION


Leroy J. Leveigne
Supervisor, Service Engineering

LJT/kf

Attachment

V-BELT TENSION ADJUSTMENTS

This instruction is to be used for adjusting the belt tension on the following machine models:

42031WE2	42031SG2	42031WE3	42031SG3
42044WE2	42044SG2	42044WE3	42044SG3

A belt tension testing device (Milnor[®] part number 30T001) and a straight edge are required when using these instructions.

Tension Settings

Set the o-rings on the tension testing device (FIGURE 1) as follows:

1. Move the upper o-ring to the topmost position, resting against the bottom edge of the cap.
2. Find the proper Belt Deflection setting (by machine model and belt function) in the appropriate table in this section.
3. Move the lower o-ring on the tension tester to this deflection setting on the inches scale.

NOTE 1: The tension testing device is marked on one side in inches and pounds and on the other side in centimeters and kilograms. All values in the tables are in inches (in) and pounds (lbs).

NOTE 2: The instruction sheet provided with the tension testing device should not be used. Use only the instructions provided herein.

NOTE 3: The reference (ref) codes shown in the tables are for factory use only.

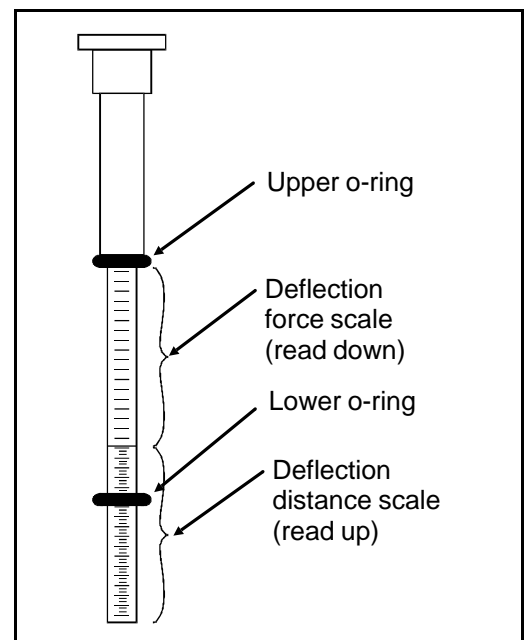


FIGURE 1 (MSSM0301AE)
Tension Tester Scales

Belt Tension Measurements

1. Place a straight edge along the top edge of the belt to be tested so that it spans both pulleys. Place the tension tester in the center of the belt and press down on the cap until the lower o-ring is in line with the straight edge, as shown.
2. Read the setting of the upper o-ring on the lbs scale of the tension tester.
3. Compare this value with the acceptable range in the appropriate table. If the belt is brand new (has never been run), use the range in the Initial Tension column. If the belt is not brand new, locate the acceptable range in the Final Tension column.
4. If the reading on the tension tester is *less* than the range shown in the table, the belt is *too loose* and must be tightened. If the reading is *greater* than the range shown in the table, the belt is *too tight* and must be loosened. Adjust the belt until the reading falls within the acceptable range in the table.

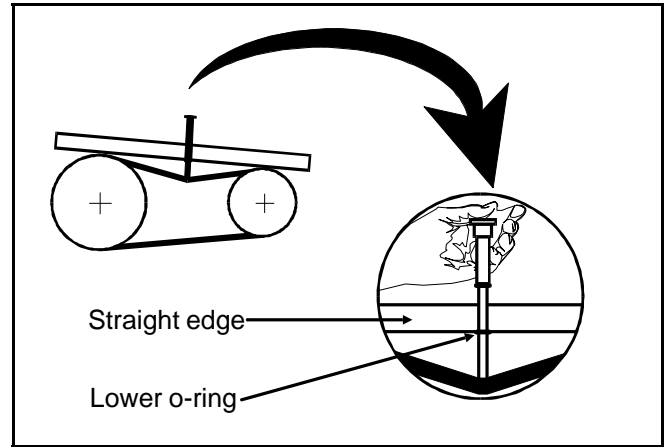


FIGURE 2 (MSSM0301AE)
Taking Measurements with
the Tension Tester

42031WE2/WE3 and 42044WE2/WE3 Belt Tension Measurements

	Belt Deflection (inches)	Initial Tension		Final Tension	
		(LBS)	(REF)	(LBS)	(REF)
Wash/2-Speed Wash	11/64	9.6-13.0	MP3	7.4-10.0	MN
Drain	3/8	8.0-11.0	LP3	6.2-8.5	LN
Main	50Hz	10.5-14.3	NP3	8.1-11.0	NN
	60Hz				

42031SG2/SG3 and 42044SG2/SG3 Belt Tension Measurements

	Belt Deflection (inches)	Initial Tension		Final Tension	
		(LBS)	(REF)	(LBS)	(REF)
Wash/2-Speed Wash	11/64	9.6-13.0	MP3	7.4-10.0	MN
Drain	3/8	8.0-11.0	LP3	6.2-8.5	LN
E1 (optional)	11/32	9.6-13.0	MP3	7.4-10.0	MN
Upper Jackshaft to Lower Jackshaft	50Hz	10.5-14.3	NP3	8.1-11.0	NN
	60Hz				

V-BELT TENSION ADJUSTMENTS FOR 30" AND 36" B-TYPE MACHINES AND 42" Q-TYPE MACHINES

This instruction is to be used for adjusting the belt tension on the following machine modes:

30016BWE	42026QHE
36021BWE	42026QTG
360326QWE	42026QTH
42026QWE	

A belt tension testing device (Milnor® part number 30T001) and a straight edge are required when using these instructions.

Tension Settings

Set the o-rings on the tension testing device (see FIGURE 1) as follows:

1. Move the upper o-ring to the topmost position, resting against the bottom edge of the cap.
2. Find the proper belt deflection setting (by machine model and belt function) in the appropriate table below.
3. Move the lower o-ring on the tension tester to this deflection setting on the inches scale.

NOTE 1: The tension testing device is marked on the one side in inches and pounds and on the other side in centimeters and kilograms. All values in the tables are marked.

NOTE 2: The instruction sheet provided with the tension testing device should not be used. Use only the instructions provided herein.

NOTE 3: The reference (ref.) codes shown in the tables are for factory use only.

Belt Tension Measurements

1. Place a straight edge along the top edge of the belt to be tested so that it spans both pulleys. Place the tension tester in the center of the belt and press and down on the cap until the lower o-ring is in line with the straight edge, as shown.
2. Read the setting of the upper o-ring on the LBS scale of the tension tester.
3. Compare this value with the acceptable range in the appropriate table. If the belt is brand new (has never been run), use the range in the Initial Tension column. If the belt is not brand new, locate the acceptable range in the Final Tension column.

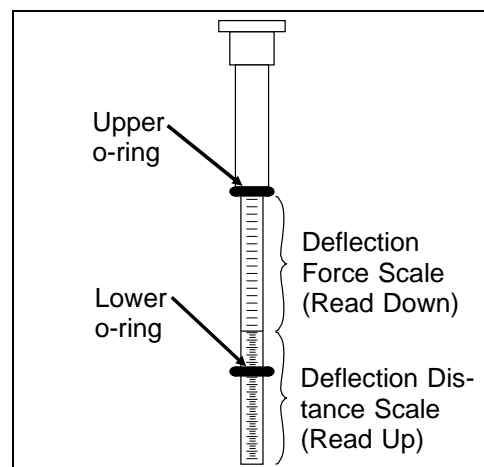


FIGURE 1 (MSSM0204AE)
Tension Tester Scales

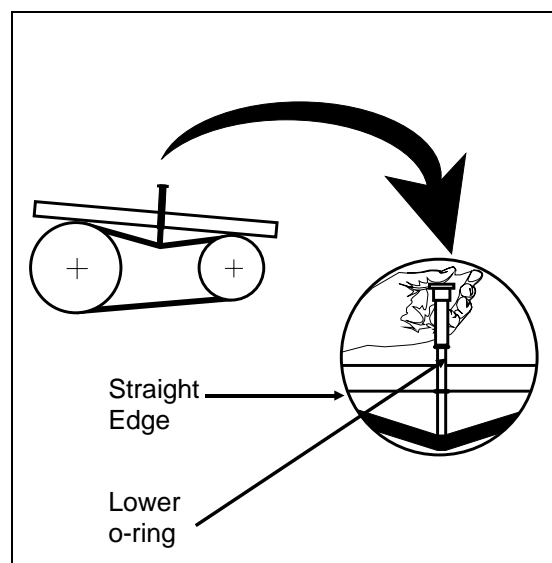


FIGURE 2 (MSSM0204AE)
Taking Measurements with the Tension Tester

4. If the reading on the tension tester is less than the range shown in the table, the belt is too loose and must be tightened. If the reading is greater than the range shown in the table, the belt is too tight and must be loosened. Adjust the belt until the reading falls within the acceptable range in the table.

30016BWE

	Belt Deflect. (inches)	Initial Tension (lbs.) (ref.)		Initial Tension (lbs.) (ref.)		Belt Deflect (IN)	Initial Tension (lbs.) (ref.)		Initial Tension (lbs.) (ref.)		
		(lbs.)	(ref.)	(lbs.)	(ref.)		(lbs.)	(ref.)	(lbs.)	(ref.)	
WASH/ 2 SPEED WASH	50C	5/16	6.6 – 9.2	KP3	5.1 – 7.1	KN	13/32	2.4 – 2.8	DP2	2 – 2.4	DN
	60C	11/32	2.4 – 2.84	DP2	2.0 – 2.4	DN	13/32	2.4 – 2.8	DP2	2 – 2.4	DN
DRAIN	50C	5/16	9.6 – 13.0	MP3	7.4 – 10.0	MN	25/64	9.6 – 13.0	MP3	7.4 – 10.0	MN
	60C	11/32	2.8 – 4.0	EP2	2.4 – 3.37	EN	13/32	2.8 – 4.0	EP2	2.4 – 3.4	EN
HIGH SPEED EXTRACT	50C	25/64	10.5 – 14.3	NP3	8.1 – 11.0	NN	27/64	10.5 – 14.3	NP3	8.1 – 11.0	NN
	60C	25/64	8.0 – 11.0	LP3	6.2 – 8.5	LN	27/64	9.6 – 13.0	MP3	7.4 – 10.0	MN
LOW SPEED EXTRACT	50C	11/64	9.0 – 13.0	MP3	7.4 – 10.0	MN	11/64	6.6 – 9.2	KP3	5.1 – 7.1	KN
	60C	5/32									

36021BWE

36026QWE

	Belt Deflect. (inches)	Initial Tension (lbs.) (ref.)		Initial Tension (lbs.) (ref.)		Belt Deflect (IN)	Initial Tension (lbs.) (ref.)		Initial Tension (lbs.) (ref.)		
		(lbs.)	(ref.)	(lbs.)	(ref.)		(lbs.)	(ref.)	(lbs.)	(ref.)	
WASH/ 2 SPEED WASH	50C	13/32	2.4 – 2.84	DP2	2.0 – 2.4	DN	11/32	9.6 – 13.0	MP3	7.4 – 10.0	MN
	60C	13/32					23/64				
DRAIN	50C	25/64	9.6 – 13.0	MP3	7.4 – 10.0	MN	23/64	2.8 – 4.0	EP2	2.4 – 3.4	EN
	60C	13/32	2.8 – 4.0	EP2	2.4 – 3.34	EN	23/64				
HIGH SPEED EXTRACT	50C	7/16	9.6 – 13.0	MP3	7.4 – 10.0	MN	7/16	9.6 – 13.0	NP3	8.1 – 11.0	NN
	60C	7/16	8.0 – 11.0	LP3	6.2 – 8.5	LN	7/16	9.6 – 13.0	MP3	7.4 – 10.0	MN
LOW SPEED EXTRACT	50C	3/16	9.6 – 13.0	MP3	7.4 – 10.0	MN	1/4	6.6 – 9.2	MP3	7.4 – 10.0	MN
	60C	3/16					1/4				

42026QWE

42026QHE, QTG, QTH

	Belt Defl. (inches)	Initial Tension (lbs.) (ref.)		Final Tension (lbs.) (ref.)		
		(lbs.)	(ref.)	(lbs.)	(ref.)	
WASH/ 2 SPEED WASH	19/64	9.62 – 13.0	MP3	7.4 – 10.0	MN	
DRAIN	5/32	10.5 – 14.3		8.1 – 11.0		
MAIN	50C	31/64	10.5 – 14.3	NP3	8.1 – 11.0	NN
	60C	15/32				
OPTIONAL LOW SPEED EXTRACT	19/64	8.0 – 11.0	LP3	6.2 – 8.5	LN	

V-BELT TENSION ADJUSTMENTS FOR 30" AND 36" B-TYPE MACHINES AND 42" Q-TYPE MACHINES

This instruction is to be used for adjusting the belt tension on the following machine modes:

30016BWE	42026QHE
36021BWE	42026QTG
360326QWE	42026QTH
42026QWE	

A belt tension testing device (Milnor® part number 30T001) and a straight edge are required when using these instructions.

Tension Settings

Set the o-rings on the tension testing device (see FIGURE 1) as follows:

1. Move the upper o-ring to the topmost position, resting against the bottom edge of the cap.
2. Find the proper belt deflection setting (by machine model and belt function) in the appropriate table below.
3. Move the lower o-ring on the tension tester to this deflection setting on the inches scale.

NOTE 1: The tension testing device is marked on the one side in inches and pounds and on the other side in centimeters and kilograms. All values in the tables are marked.

NOTE 2: The instruction sheet provided with the tension testing device should not be used. Use only the instructions provided herein.

NOTE 3: The reference (ref.) codes shown in the tables are for factory use only.

Belt Tension Measurements

1. Place a straight edge along the top edge of the belt to be tested so that it spans both pulleys. Place the tension tester in the center of the belt and press and down on the cap until the lower o-ring is in line with the straight edge, as shown.
2. Read the setting of the upper o-ring on the LBS scale of the tension tester.
3. Compare this value with the acceptable range in the appropriate table. If the belt is brand new (has never been run), use the range in the Initial Tension column. If the belt is not brand new, locate the acceptable range in the Final Tension column.

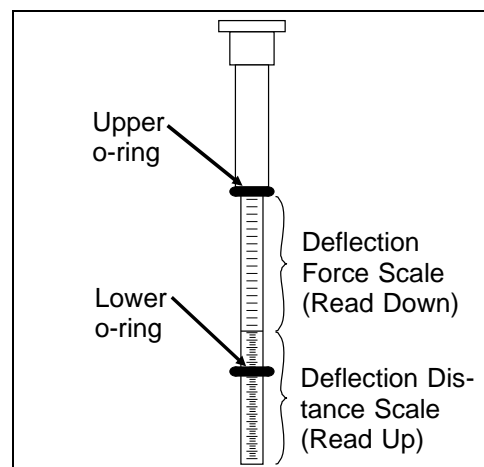


FIGURE 1 (MSSM0204AE)
Tension Tester Scales

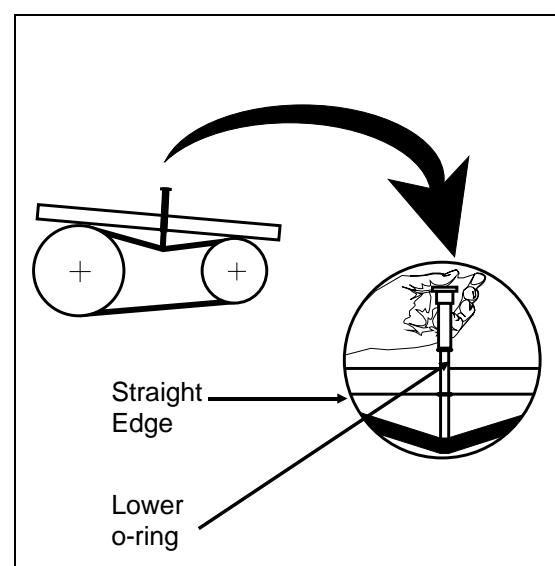


FIGURE 2 (MSSM0204AE)
Taking Measurements with the Tension Tester

4. If the reading on the tension tester is less than the range shown in the table, the belt is too loose and must be tightened. If the reading is greater than the range shown in the table, the belt is too tight and must be loosened. Adjust the belt until the reading falls within the acceptable range in the table.

30016BWE

	Belt Deflect. (inches)	Initial Tension (lbs.) (ref.)	Initial Tension (lbs.) (ref.)	Belt Deflect (IN)	Initial Tension (lbs.) (ref.)	Initial Tension (lbs.) (ref.)
WASH/ 2 SPEED WASH	50C	5/16	6.6 – 9.2	KP3	5.1 – 7.1	KN
	60C	11/32	2.4 – 2.84	DP2	2.0 – 2.4	DN
DRAIN	50C	5/16	9.6 – 13.0	MP3	7.4 – 10.0	MN
	60C	11/32	2.8 – 4.0	EP2	2.4 – 3.37	EN
HIGH SPEED EXTRACT	50C	25/64	10.5 – 14.3	NP3	8.1 – 11.0	NN
	60C	25/64	8.0 – 11.0	LP3	6.2 – 8.5	LN
LOW SPEED EXTRACT	50C	11/64	9.0 – 13.0	MP3	7.4 – 10.0	MN
	60C	5/32				

36021BWE

	Belt Deflect (IN)	Initial Tension (lbs.) (ref.)	Initial Tension (lbs.) (ref.)
13/32	2.4 – 2.8	DP2	2 – 2.4
13/32	2.4 – 2.8	DP2	2 – 2.4
25/64	9.6 – 13.0	MP3	7.4 – 10.0
13/32	2.8 – 4.0	EP2	2.4 – 3.4
27/64	10.5 – 14.3	NP3	8.1 – 11.0
27/64	9.6 – 13.0	MP3	7.4 – 10.0
11/64	6.6 – 9.2	KP3	5.1 – 7.1
11/64			

36026QWE

	Belt Deflect. (inches)	Initial Tension (lbs.) (ref.)	Initial Tension (lbs.) (ref.)	Belt Deflect (IN)	Initial Tension (lbs.) (ref.)	Initial Tension (lbs.) (ref.)
WASH/ 2 SPEED WASH	50C	13/32	2.4 – 2.84	DP2	2.0 – 2.4	DN
	60C	13/32				
DRAIN	50C	25/64	9.6 – 13.0	MP3	7.4 – 10.0	MN
	60C	13/32	2.8 – 4.0	EP2	2.4 – 3.34	EN
HIGH SPEED EXTRACT	50C	7/16	9.6 – 13.0	MP3	7.4 – 10.0	MN
	60C	7/16	8.0 – 11.0	LP3	6.2 – 8.5	LN
LOW SPEED EXTRACT	50C	3/16	9.6 – 13.0	MP3	7.4 – 10.0	MN
	60C	3/16				

42026QWE

	Belt Deflect (IN)	Initial Tension (lbs.) (ref.)	Initial Tension (lbs.) (ref.)
11/32	9.6 – 13.0	MP3	7.4 – 10.0
23/64	2.8 – 4.0		
23/64	10.5 – 14.3	EP2	2.4 – 3.4
7/16	9.6 – 13.0	NP3	8.1 – 11.0
7/16	9.6 – 13.0	MP3	7.4 – 10.0
1/4	6.6 – 9.2	MP3	7.4 – 10.0
1/4			
1/4	6.6 – 9.2	KP3	5.1 – 7.1
1/4			

42026QHE, QTG, QTH

	Belt Defl. (inches)	Initial Tension (lbs.) (ref.)	Final Tension (lbs.) (ref.)
WASH/ 2 SPEED WASH	19/64	9.62 – 13.0	7.4 – 10.0
DRAIN		10.5 – 14.3	8.1 – 11.0
MAIN	50C	31/64	10.5 – 14.3
	60C	15/32	10.5 – 14.3
OPTIONAL LOW SPEED EXTRACT	19/64	8.0 – 11.0	6.2 – 8.5

V-BELT TENSION ADJUSTMENTS FOR 48", 52", 60" AND 72" WASHER-EXTRACTORS

This instruction is to be used for adjusting the belt tension on the following machine models:

48032BHE	48032BTG	48032BTH	48036QHE	48036QTG	48036QTH		
52038WE1	52038WTF	52038WTB	52038WTG	52038WTH			
60036WE2	60036WE3	60036SG2	60036SG3	60044WE2	60044WE3	60044SG2	60044SG3
72044SG2	72044SG3	72044WE2	72044WE3	72044WTB	72044WTG	72044WTH	

A belt tension testing device (Milnor[®] part number 30T001) and a straight edge are required when tensioning unbanded belts.

Tension Settings—Unbanded Belts

Set the o-rings on the tension testing device (see FIGURE 1) as follows:

1. Move the upper o-ring to the topmost position, resting against the bottom edge of the cap.
2. Find the proper belt deflection setting (by machine model and belt function) in the appropriate table below.
3. Move the lower o-ring on the tension tester to this deflection setting on the inches scale.

NOTE 1: The tension testing device is marked on one side in inches and pounds and on the other side in centimeters and kilograms. All values in the tables are in inches (in.) and pounds (lbs.).

NOTE 2: The instruction sheet provided with the tension testing device should not be used. Use only the instructions provided herein.

NOTE 3: The reference (ref.) code shown in the tables are for factory use only.

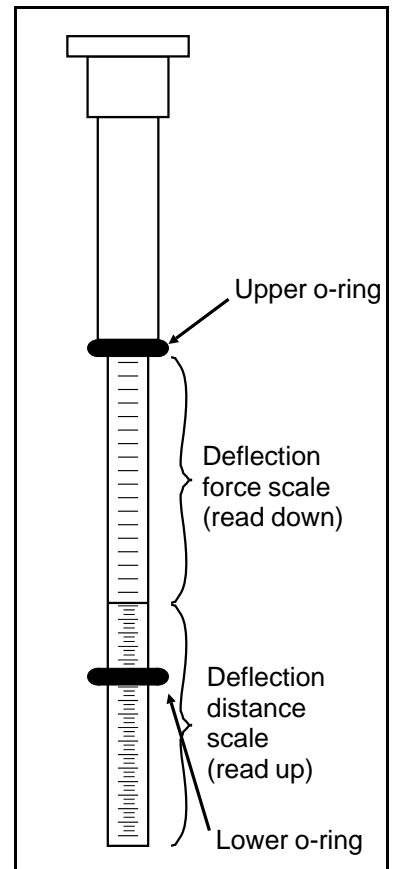


FIGURE 1 (MSSMA405AE)
Tension Settings

Belt Tension Measurements

Unbanded Belts

1. Place a straight edge along the top edge of the belt to be tested so that it spans both pulleys. Place the tension tester in the center of the belt and press down on the cap until the lower o-ring is in line with the straight edge, as shown.
2. Read the setting of the upper o-ring on the lbs scale of the tension tester.
3. Compare this value with the acceptable range in the appropriate table. If the belt is brand new (has never been run), use the range in the Initial Tension column. If the belt is not brand new, locate the acceptable range in the Final Tension column.
4. If the reading on the tension tester is *less* than the range shown in the table, the belt is *too loose* and must be tightened. If the reading is *greater* than the range shown in the table, the belt is *too tight* and must be loosened. Adjust the belt until the reading falls within the acceptable range in the table.

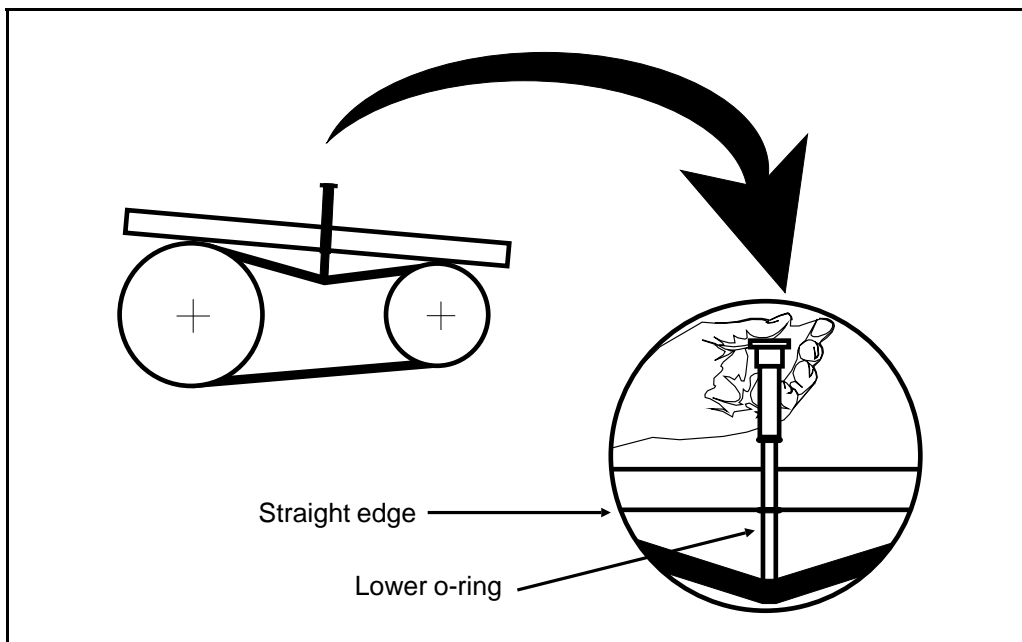


FIGURE 2 (MSSMA405AE)
Measuring Belt Tension

Tensioning Banded Belts

48032BHE, BTG, BTH

48036QHE, QTG, QT

	Belt Deflect. (inches)	Initial Tension		Initial Tension		Belt Deflect (in.)	Initial Tension		Initial Tension	
		(lbs.)	(ref.)	(lbs.)	(ref.)		(lbs.)	(ref.)	(lbs.)	(ref.)
WASH/ 2 SPEED WASH	9/32	6.6 - 9.2	KP3	5.1 - 7.1	KN	5/16	5.7 - 7.6	JP3	4.4 - 5.9	JN
DRAIN	5/32	5.7 - 7.6	JP3	4.4 - 5.9	JN	5/32	6.6 - 9.2	KP3	5.1 - 7.1	KN
MAIN	50C 35/64	10.5 - 14.3	NP3	8.1 - 11.0	NN	17/32	10.5 - 14.3	NP3	8.1 - 11.0	NN
	60C 17/32									
LOW SPEED EXTRACT	13/64	6.6 - 9.2	KP3	5.1 - 7.1	KN	3/16	9.62 - 13.0	MP3	7.4 - 10.0	MN

52038WE1, WTF, WTB, WTG, WTH

60036 + 60044WE2 + WE3

	Belt Deflect. (inches)	Initial Tension		Initial Tension		Belt Deflect (in.)	Initial Tension		Initial Tension	
		(lbs.)	(ref.)	(lbs.)	(ref.)		(lbs.)	(ref.)	(lbs.)	(ref.)
WASH/ 2 SPEED WASH	25/64	10.5 - 14.3	NP3	8.1 - 11.0	NN	3/16	5.7 - 7.6	JP3	4.4 - 5.9	JN
DRAIN	5/32	10.5 - 14.3	NP3	8.1 - 11.0	NN	13/32	6.6 - 9.2	KP3	5.1 - 7.1	KN
E1	1/4	6.6 - 9.2	KP3	5.1 - 7.1	KN	17/64	6.6 - 9.2	KP3	5.1 - 7.1	KN
E2	1/2	6.6 - 9.2	KP3	5.1 - 7.1	KN	11/32	6.6 - 9.2	KP3	5.1 - 7.1	KN
MAIN	50C 11/16	18.2 - 26.0	SP3	14.0 - 20.0	SN	43/64	16.9 - 20.8	RP3	13.0 - 16.0	RN
	60C 23/32	16.9 - 20.8	RP3	13.0 - 16.0	RN	45/64				

48032BHE, BTG, BTH

48036QHE, QTG, QT

	Belt Deflect. (inches)	Initial Tension		Initial Tension		Belt Deflect (in.)	Initial Tension		Initial Tension	
		(lbs.)	(ref.)	(lbs.)	(ref.)		(lbs.)	(ref.)	(lbs.)	(ref.)
WASH/ 2 SPEED WASH	1/4	5.7 - 7.6	JP3	4.4 - 5.9	JN	17/64	5.7 - 7.6	JP3	4.4 - 5.9	JN
DRAIN	3/64	6.6 - 9.2	KP3	5.1 - 7.1	KN	33/64	6.6 - 9.2	KP3	5.1 - 7.1	KN
E-1	9/32	6.6 - 9.2	KP3	5.1 - 7.1	KN	17/64	6.6 - 9.2	KP3	5.1 - 7.1	KN
E-2	39/64	6.6 - 9.2	KP3	5.1 - 7.1	KN	5/8	6.6 - 9.2	KP3	5.1 - 7.1	KN
UPPER JACK TO LOWER JACK LOWER JACK TO UPPER JACK	BANDED BELTS NEED SPECIAL INSTRUCTIONS					BANDED BELTS NEED SPECIAL INSTRUCTIONS				

52038WE1, WTF, WTB, WTG, WTH

60036 + 60044WE2 + WE3

	Belt Deflect. (inches)	Initial Tension		Initial Tension		Belt Deflect (in.)	Initial Tension		Initial Tension		
		(lbs.)	(ref.)	(lbs.)	(ref.)		(lbs.)	(ref.)	(lbs.)	(ref.)	
WASH/ 2 SPEED WASH	15/64	5.7 - 7.6	JP3	4.4 - 5.9	JN	15/64	5.7 - 7.6	JP3	4.4 - 5.9	JN	
DRAIN	13/32	6.6 - 9.2	KP3	5.1 - 7.1	KN	25/64	6.6 - 9.2	KP3	5.1 - 7.1	KN	
E1	17/64	6.6 - 9.2	KP3	5.1 - 7.1	KN	17/64	6.6 - 9.2	KP3	5.1 - 7.1	KN	
E2	5/16	6.6 - 9.2	KP3	5.1 - 7.1	KN	5/16	6.6 - 9.2	KP3	5.1 - 7.1	KN	
MAIN	50C	45/64	16.9 - 20.8	RP3	13.0 - 16.0	RN	3/4	16.9 - 20.8	RP3	13.0 - 16.0	RN
	60C	11/16	16.9 - 20.8	RP3	13.0 - 16.0	RN	23/32	16.9 - 20.8	RP3	13.0 - 16.0	RN

May 18, 1994

IMPORTANT INFORMATION ON BEARING HOUSING REPLACEMENTS

The following information is provided to customers requesting a quotation or placing an order for a replacement bearing housing in the washer/extractor size ranges from 48036 to 72058.

These bearing assemblies are covered under an extended/prorated warranty. The end cost of a bearing replacement in a machine is substantially reduced due to a full credit for the shaft and housing (if reusable) and this extended/prorated warranty. If the bearing housing fails within 5 years, the extended/prorated warranty is applied.

Attached is the warranty policy for these bearing housings. It details the percentage of the extended/prorated warranty and also indicates the shaft and housing number for each particular machine. The value of these shafts and housings should then be deducted from the price of the complete replacement housing (assuming of course that the shaft and housing coming from the machine are in usable condition).

Further questions can be answered by our Warranty Department at 504-467-9591, Ext.324.

Your MILNOR Customer Service Department

GLL/das

Attachment: BWARR0013 & BWARR0014

EXTENDED/PRO-RATED WARRANTY FOR BEARING ASSEMBLIES ON OPEN POCKET MACHINES - 48" AND LARGER

Pellerin MILNOR offers an extended warranty on bearing assemblies in accordance with the following schedule:

BEARING HSG SERVICE LIFE	MILNOR PAYS			
	PARTS ("P" below)	LABOR (see NOTE 2 below)		
2 years or less	100%	100%	up to	\$2,000.00
2 - 3 years	75%	75%	"	1,500.00
3 - 4 years	50%	50%	"	1,000.00
4 - 5 years	25%	25%	"	500.00
5 years +	0%	0%		

Pro-rated warranty is calculated in the following manner:

$(X-[S+H]) \times P = \text{Customer Cost}$

- Where: X = Invoiced price of the housing
- S = Core credit for the shaft. Credit for a usable shaft (see NOTE 1) returned to MILNOR.
- H = Core credit for the housing. Credit for a usable housing (see NOTE 1) returned to MILNOR.
- P = Warranty percentage from above.

ALL PARTS WHICH FAIL UNDER WARRANTY MUST BE RETURNED TO PELLERIN MILNOR, FREIGHT PREPAID

NOTE 1: MILNOR inspects all returned bearing shafts and housings for usability in a remanufactured assembly. If these components meet the specifications of "factory new" components, a credit will be issued. If not, components will be scrapped at MILNOR.

NOTE 2: A labor payment may be requested by any service provider, be it a MILNOR authorized dealer, a qualified end user or qualified mechanic contracted by the end user.

NOTE 3: If the machine is repaired with a replacement bearing housing, utilizing an air inject kit, MILNOR will provide up to \$300.00 for installation labor on this air inject kit. The air supply to this new style housing pushes air under the excluder seal preventing contamination of the seal cavity. This \$300.00 payment is pro-rated over the 5 year term as the other warranty labor payment above.

HANDLING PROCEDURES FOR REPLACEMENT OF MAIN BEARING ASSEMBLIES FOR WASHER/EXTRACTORS SIZES 48032 THRU 72058 (OPEN-POCKET WASHER/EXTRACTORS)

Upon an order for any of the above mentioned bearing assemblies, MILNOR will provide a replacement bearing assembly in the following priority:

1. A remanufactured bearing assembly utilizing a remanufactured shaft and housing.
2. A remanufactured bearing assembly utilizing a remanufactured shaft.
3. A remanufactured bearing assembly utilizing a remanufactured outer housing.
4. A new bearing assembly with new shaft and outer bearing housing.

A remanufactured bearing assembly provided by MILNOR carries a manufacturers warranty identical to a new bearing assembly manufactured by MILNOR. (See warranty policy elsewhere.)

The customer reserves the right to return a used bearing assembly for warranty consideration. Both the shaft and housing are carefully inspected and must meet all new component requirements. Based on these results, the customer is issued a credit equal to that of a new component. Below is the list of component part numbers which can be used for credit calculations.

All parts returned to MILNOR must be sent freight prepaid. MILNOR will not accept collect shipments for warranty return items. All freight is the responsibility of the end user.

<u>MACHINE TYPE</u>	<u>SHAFT NO.</u>	<u>HOUSING NO.</u>
48032/48036	X3 48203	X3 48202
64042	X3 64055	X3 64047
52038/72044	X3 25010A	X3 25106H
64046	X3 65057	X3 25106S
72046/72058	X3 65057A	Y3 25106T

SHIP TO ADDRESS FOR ALL RETURNED PARTS:

PELLERIN MILNOR CORPORATION
 ATTN: Warranty Department
 700 Jackson Street
 Kenner, LA 70062
 504-467-9591

ATTENTION:

WHEN RETURNING BEARING HOUSING TO
PELLERIN MILNOR CORPORATION, PLEASE
INSURE THAT IT IS PACKED ACCORDING TO
THIS ILLUSTRATION.

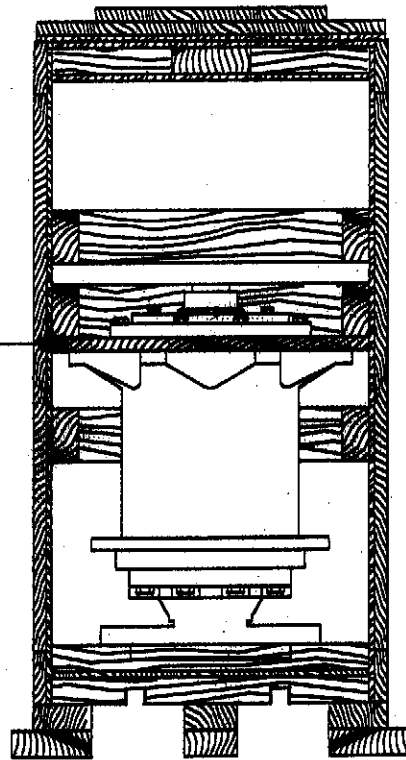
DO NOT NAIL SHUT - USE CLIPS PROVIDED.

BE SURE ARROWS ON BOX WALLS ARE
POINTING UP WHEN BOX IS REASSEMBLED
(ALL 4 SIDES).



THIS SIDE UP

FIXTURE
69F286B



BEARING HOUSING RETURN KIT
FOR 48" BEARING

B2TAG92019/96203A