

**MCI  
2- & 3-SPEED  
FAN DRIVE**



**SUPER REPAIR KIT  
INSTALLATION INSTRUCTIONS**



*Engine **Cooling Solutions** Worldwide®*



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## INTRODUCTION

This manual describes the correct procedures for the repair of the MCI 2- and 3-speed fan drives. These two fan drives appear nearly identical. By comparing parts, notice that the 3-speed fan drive includes a brake.

## General Information

Horton uses the following special notices to give warning of possible safety related problems which could cause serious injury and provide information to help prevent damage to equipment.

### DANGER

Danger is used to indicate the presence of a hazard which will cause severe personal injury, death, or substantial property damage if the warning is ignored.

### WARNING

Warning is used to indicate the presence of a hazard which can cause severe personal injury, death, or substantial property damage if the warning is ignored.

### CAUTION

Caution is used to indicate the presence of a hazard which will or can cause minor personal injury or property damage if the warning is ignored.

### NOTE

Note is used to notify people of installation, operation, or maintenance information which is important but not hazard related.

## Tools Required

- 5/16" hex bit
- T30 Torx® bit
- T40 Torx® bit
- T25 Torx® bit
- 5/32" hex bit
- 1-1/2" hex socket
- 5/8" hex socket
- Snap ring pliers
- Prybar or flat blade screwdriver

## PRE-INSTALLATION AND PREVENTIVE MAINTENANCE

### Vehicle Preparation

You must follow your company safety practices, which should adhere to or be better than Federal or State approved shop safety practices and procedures. Be sure that you read and understand all the procedures and instructions before beginning work on this unit. Before performing tests on the Fan Drive:

1. Apply the vehicle's parking brake.
2. Block the vehicle's wheels.

Before doing work in the area of the fan:

1. Start the vehicle's engine and build air pressure in excess of 90 PSI.
2. Observe the fan and fan drive from a distance, look for vibration, fan blade contact, fan drive slippage, and fan drive operation.
3. Turn engine off.



**Be sure engine is turned off and fan has stopped turning before approaching fan area, to prevent serious personal injury.**

### Each Week

#### Drain Air Filter (if equipped).

If moisture or contamination is detected, the filter must be disassembled and flushed thoroughly with clean parts solvent. Dry carefully before reassembly. Determine the cause of the moisture or contamination and correct the condition.

### Every 25,000 Miles (40,000 Km)

#### Air Leaks

##### NOTE

**Air leaks will cause System Sentry® and/or bearing failure if left unattended.**

1. Check for air leaks around the Air Chamber and Bleed Hole. Install a new Seal Kit if a leak exists.
2. Check for air leaks around the Brake (if equipped). Install a new Super Kit if a leak exists.

#### Drive Line, Fan and Fan Belt Problems

##### NOTE

**Can cause bearing failure if left unattended.**

1. Check drive line condition. Make sure all components are operating properly. Correct if necessary.
2. Check fan for looseness and/or damage such as bent, cracked or missing blades, loose rivets or missing weights. Retorque if loose. Replace if damaged.
3. Check for adequate clearance, according to manufacturer's specifications, between the fan and fan shroud or other engine compartment components. Repair if clearance is inadequate.
4. Check fan belt condition, belt tension and belt alignment. Correct if necessary.

#### Friction Facing

1. Check for wear condition. Replace with a Seal Kit if it is worn to 1/16" thick, oil is spotted, or if burn marks are visible.

## FAN DRIVE DISASSEMBLY AND REPAIR

1. Verify the Fan Drive model and that the correct replacement parts have been obtained.
2. Remove the Fan Drive from the engine. Place the Fan Drive assembly in a vise and tightly clamp the Journal Bracket.

### Adaptor and Cooling Ring

#### **WARNING**

**Magnets are extremely strong. Use caution when removing adaptor from Fan Drive.**

1. Remove the 5/16" Hex Head Cap Screws from the Adaptor/Magnet Assembly.
2. Remove the Adaptor from the Fan Drive. If any Magnets are cracked or broken, replace the Magnet pair with a Magnet Kit (Horton 994358).

#### **NOTE**

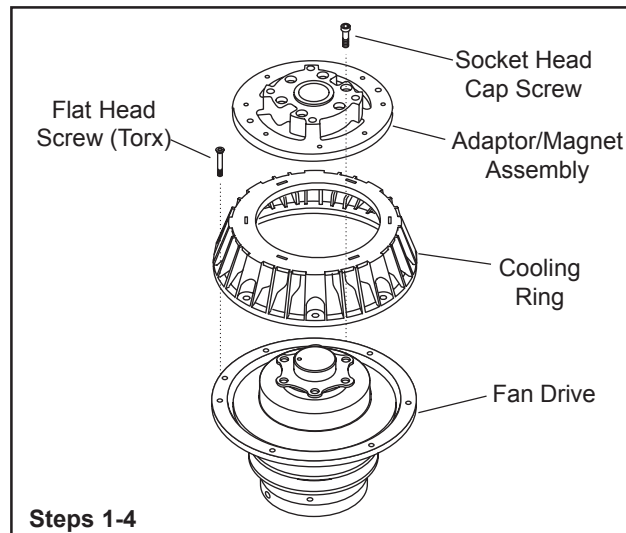
**For ease of disassembly, remove the Adaptor using two prybars or two flat blade screwdrivers.**

3. Remove and discard the T-27 Torx Flat Head Screws from the Cooling Ring.

#### **NOTE**

**Screws may be very difficult to remove. Consider pre-soaking with a liquid penetrant and using an impact hammer to loosen.**

4. Lift the Cooling Ring off of the Fan Drive. Set aside to be re-assembled later.



### Air Chamber

1. Remove the T-30 Torx Socket Head Cap Screws from the Air Chamber (see illustration on page 6). If the Shim is present, remove and set aside to be re-assembled later.

#### **NOTE**

**The Shim is used to properly set an air gap between the Magnetic Adaptor and Cooling Ring.**

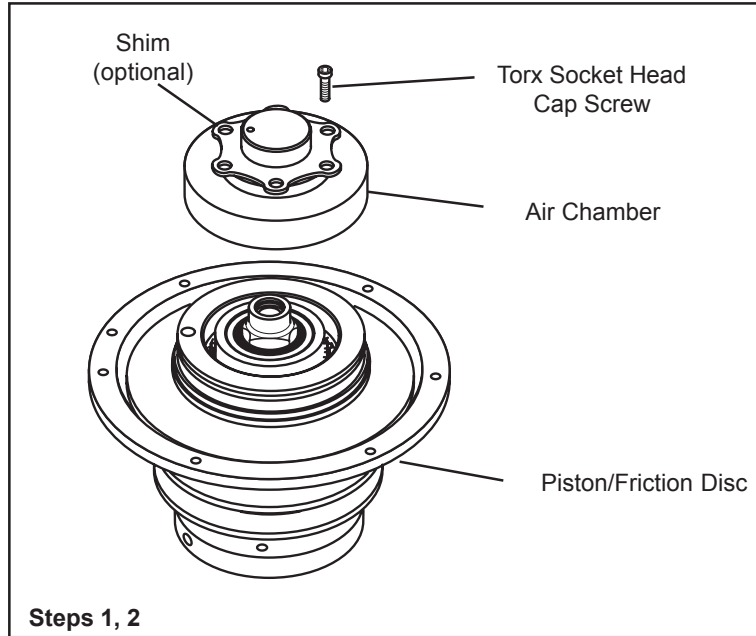
#### **NOTE**

**Applying a small amount of air pressure to the Fan Drive air inlet will aid in removal of the Air Chamber Assembly.**

#### **WARNING**

**Apply air pressure SLOWLY so that the Air Chamber will not pop off quickly, resulting in serious personal injury.**

- Slide the Air Chamber Assembly off the Piston Friction Disc.



### O-Ring and Face Seal

- Remove and discard the two O-Rings and the Wiper Seal, Face Seal and Umbrella Valve. Thoroughly clean the Air Chamber.
- Inspect the Face Seal area for excess carbon buildup. Signs of wear may indicate dirt is in the system.

#### **! CAUTION**

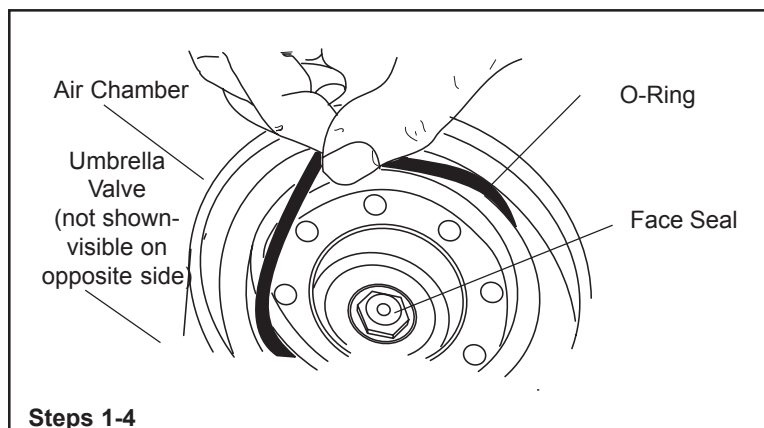
**If dirt or oil exists in the air system, the air system must be cleaned and dried before the Fan Drive is reinstalled. Doing so will avoid premature Fan Drive failure.**

- Fully lubricate the O-Ring surfaces with half a tube of O-Ring lubricant supplied in the Kit.

#### **! CAUTION**

**Kits contain 2 different wiper seals and outer O-Ring seals. Be sure you are using the correct replacement seals.**

- Install the new O-Ring, new Face Seal (to 50 In. Lbs. [5.6 N•m]) and new Umbrella Valve into the Air Chamber. Set aside to be re-assembled later.



## Piston Friction Disc and Friction Facing

1. Remove the Piston Friction Disc from the Splined Hub Assembly.
2. Turn the Piston Friction Disc over and remove the System Sentry Fuse.

### NOTE

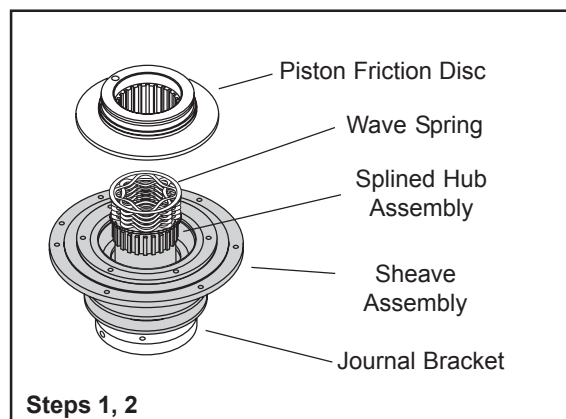
The System Sentry Fuse is left-hand threaded. Turn clockwise to remove.

3. Clean the Piston Friction Disc. Set aside to be re-assembled later.

### NOTE

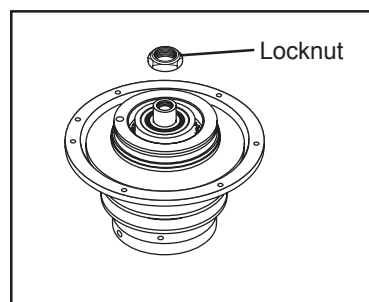
If the Piston Friction Disc is excessively worn, damaged, cracked, or blue in color, it must be replaced. To properly identify the PFD, note the color of the wiper seal. An orange wiper seal is used with PFD #15625 and a white wiper seal is used with PFD #17967.

4. Remove and discard the Button Head Cap Screws, Friction Facing and Wave Spring from the Sheave.



## Sheave

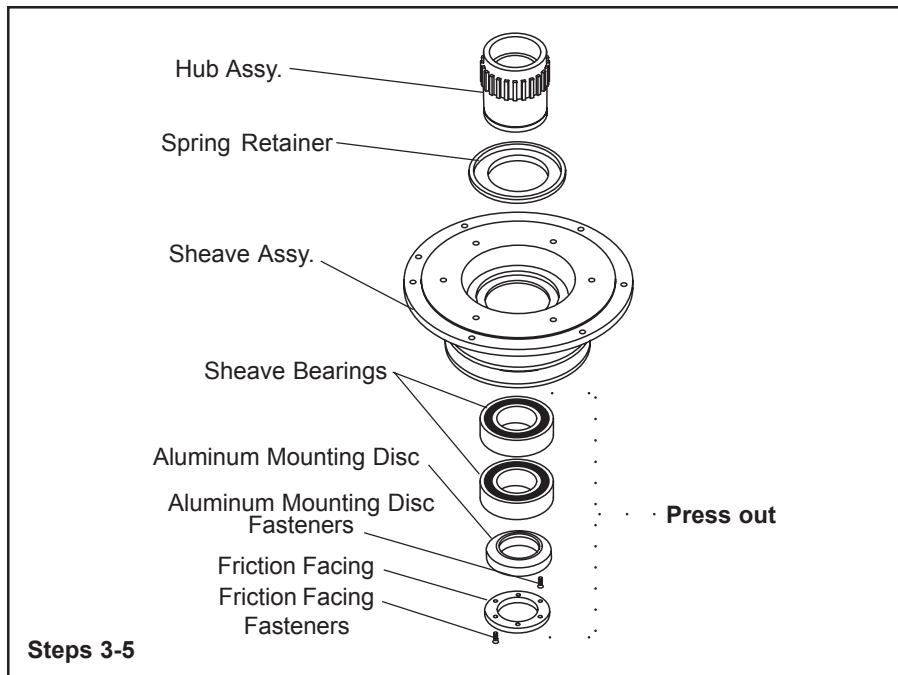
1. Remove and discard the Locknut (which may be difficult to remove) from the Journal Bracket.



2. Carefully slide the Sheave off of the Journal Bracket.

### ⚠ CAUTION

Bearings may fall out when removing the Sheave from the Journal Bracket. Use caution to avoid injury.



3. Turn the Sheave over.
4. Remove the Brake Friction Facing, Aluminum mounting disk, and all fasteners. Set aside the Aluminum Mounting Disk for re-assembly.
5. From the back side of the Sheave press out and discard the Spring Retainer and Hub Assembly.
6. Turn over the Sheave and press out the large Sheave Bearings.
7. Clean the Sheave with solvent. Set aside to be re-assembled later.

### Brake Mode/Journal Bracket

1. Remove and discard the Snap Ring, Air Cartridge, Journal Spacer and Off-Mode Wave Spring.

**NOTE**

**If your Fan Drive does not include a Brake, skip this section.**

2. Remove the Brake Piston from the Journal Bracket.

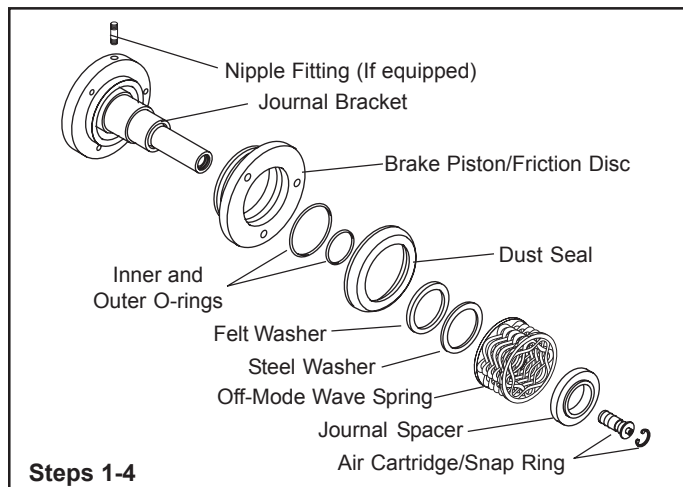
**NOTE**

**Applying a small amount of air pressure to the air inlet will aid in removal of the Brake Piston/ Friction Disc from the journal bracket.**

**⚠ WARNING**

**Apply air pressure SLOWLY. Applying air pressure too quickly could cause the Brake Piston/Friction Disc to pop off. Serious personal injury could occur.**

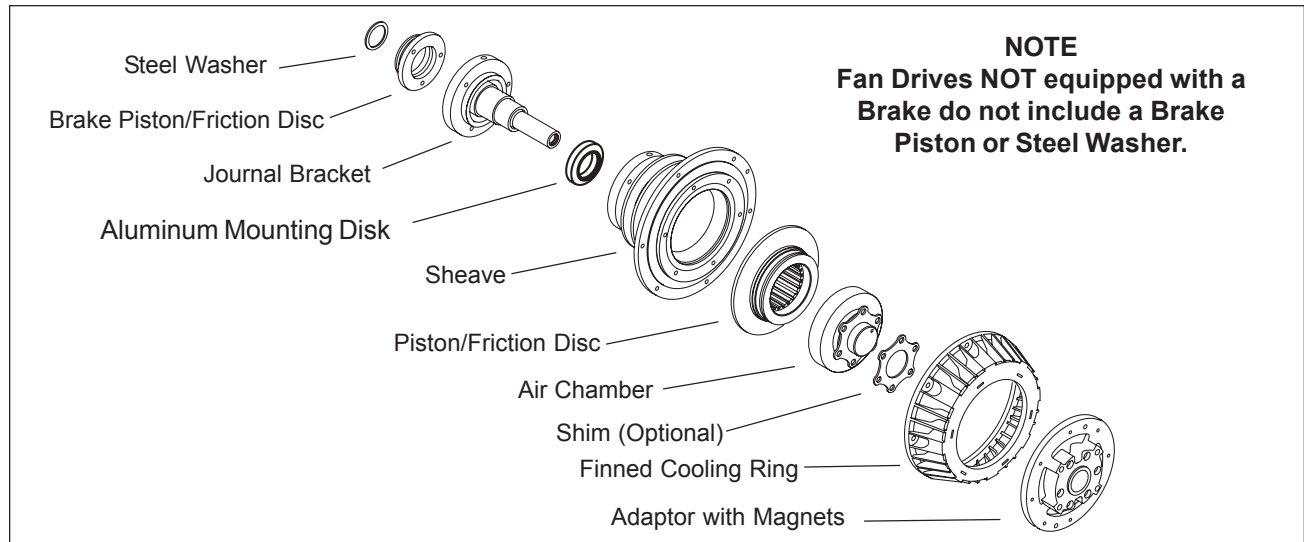
3. Remove the Steel Washer.
4. Remove and discard the felt washer, inner O-ring, outer O-ring, Dust Seal and Nipple Fitting (if equipped).
5. Clean the Journal Bracket, Brake Piston and Steel Washer with solvent. Set aside to be re-assembled later.





## FAN DRIVE REASSEMBLY

The parts shown below are what need to be retained for re-assembly of your Fan Drive.



### Brake Mode

1. Lubricate the new O-Rings and O-Ring contact surfaces on the Brake Piston/Friction Disc with 0.5 ounces of fresh Lubricant supplied in Kit.

**NOTE**

The entire 1.0 ounce tube of O-Ring Lubricant should be used when lubricating the new O-Rings and the O-ring contact surfaces on both the Brake section and the Air Chamber.

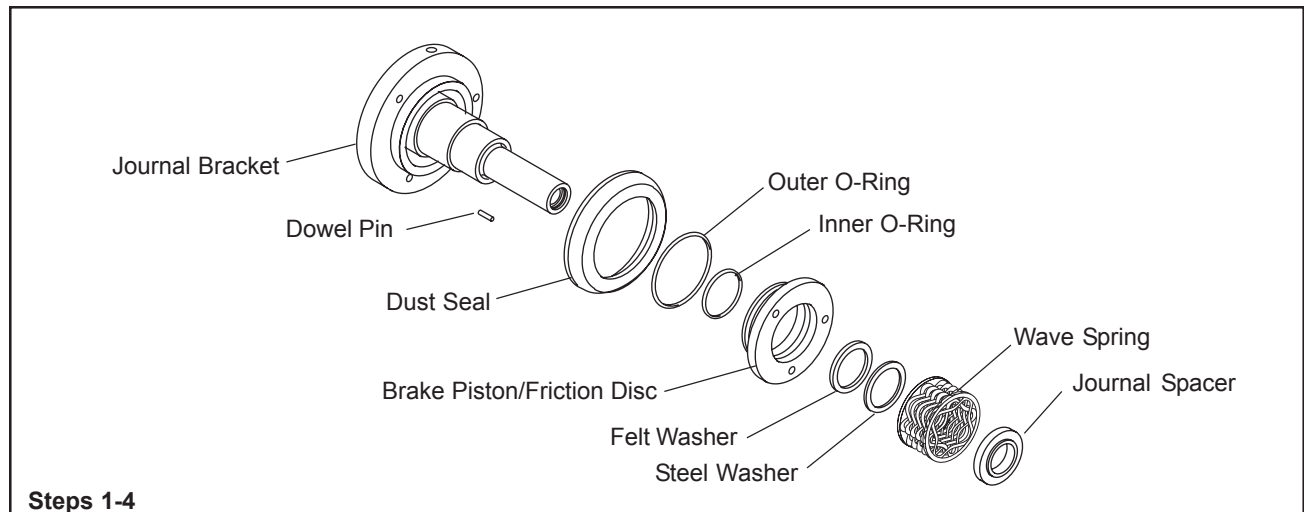
**NOTE**

If your fan drive does not include a brake, skip to “Sheave and Hub Reassembly”

2. Install the new O-Rings into the Brake Piston/Friction Disc.
3. Slide the Brake Piston/Friction Disc onto the Journal Bracket and align dowel pins into holes.
4. Install the new Dust Seal, pre-oiled Felt Washer, original Steel Washer, new Wave Spring, and new Journal Spacer.

**NOTE**

The new Journal Spacer is “capped” over the Wave Spring.

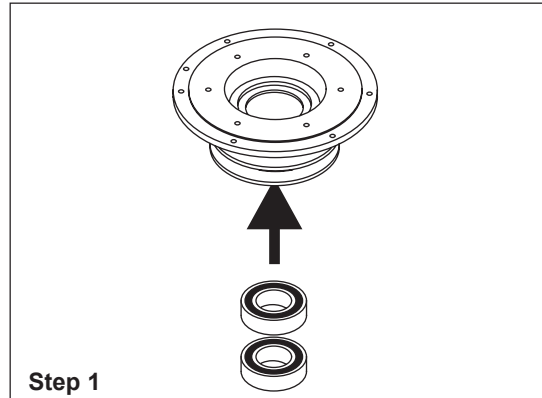


## Sheave and Hub Reassembly

### NOTE

**Hub and Bearings are critical components of the MCI 3-Speed.  
Use extreme care when performing reassembly.**

1. Using the old bearings as fixtures, press the two large Sheave Bearings into the Sheave from the back side.

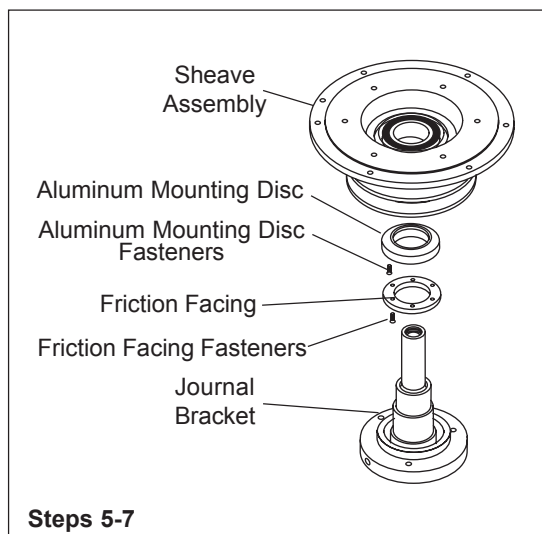
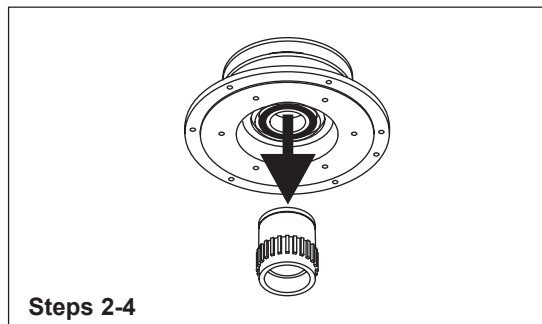


2. Carefully remove the Hub Bearing from its packaging and set it down with the splined section at the bottom.

### NOTE

**Hub is assembled loosely. Components can slide apart.**

3. Install the new Wave Spring Retainer onto the Hub Assembly with its groove facing down.
4. Press the Sheave onto the Hub Assembly using the old bearings as fixtures on the back side of the Sheave.
5. Attach the Aluminium Mounting Disc to the back side of the Sheave using the Socket Head Cap Screws. Alternately and evenly tighten to 65 In.-Lbs. [7.3 N•m].
6. Attach the Friction Facing (if equipped with a brake) to the Aluminum Mounting Disc using the Torx Flat Head Cap Screws. Alternately and evenly tighten to 40 In.Lbs.[4.5 N•m].
7. Carefully turn the Sheave Assembly over and slide it onto the Journal Bracket.



### **⚠ WARNING**

**Hub Assembly Bearings may slide out when turning the Sheave over.**

**Do not allow the inner races of the Hub Bearings to slide out.**

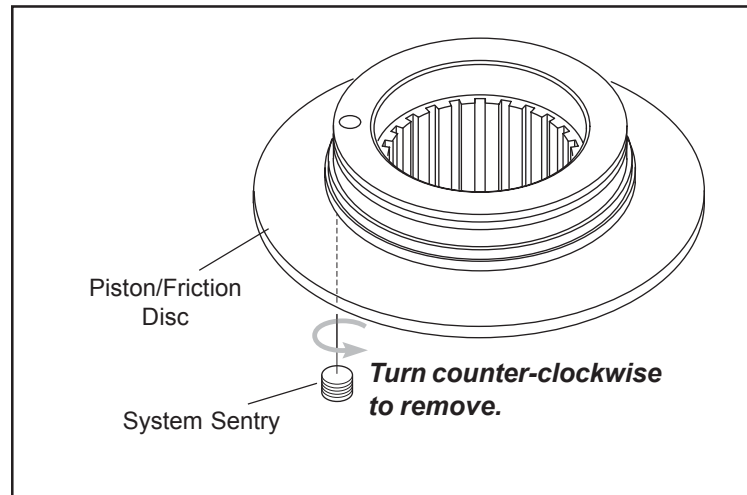
## System Sentry® and Piston Friction Disc Reassembly

### NOTE

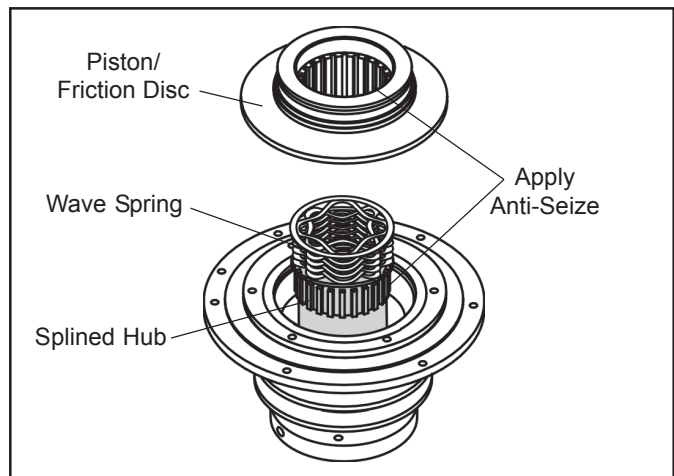
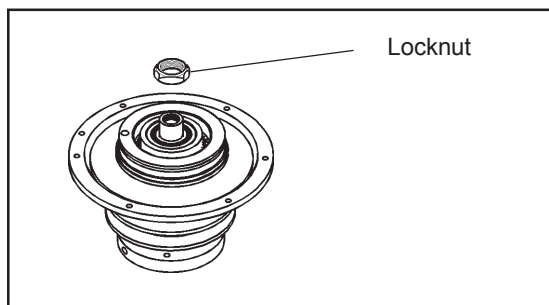
If for any reason excessive heat is building up in the Fan Drive, the System Sentry will release and create an air leak. This shuts down the system to prevent any further damage.

### WARNING

Do not replace the System Sentry with a straight plug. The Piston Friction Disc is balanced and anything other than the Horton System Sentry may cause damage.

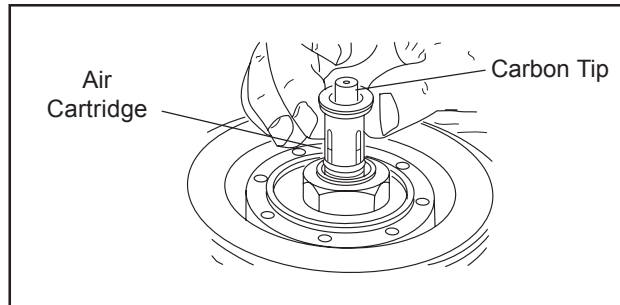


1. Install the new System Sentry and tighten to 45 In.Lbs.[5.1 N•m]. Be sure it is flush with the surface.
2. Alternately and evenly attach the new Friction Liner to the Sheave using Torx Button Head Cap Screws. Tighten to 80 In. Lbs. [9 N•m]
3. Replace and tighten the 1 1/2" Locknut to 150 Ft. Lbs. [203 N•m].
4. Using the Brush provide in the Kit, liberally apply Anti-Seize to the splines on both the Hub Assembly and the Piston/Friction Disc.
5. Assemble the Wave Spring and the Piston Friction Disc onto the Splined Hub.

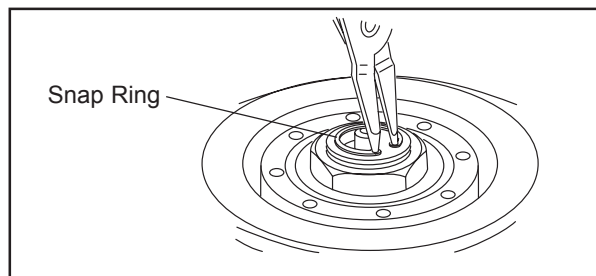


## Air Cartridge and O-Ring

1. Place the new Air Cartridge into the Journal Bracket.

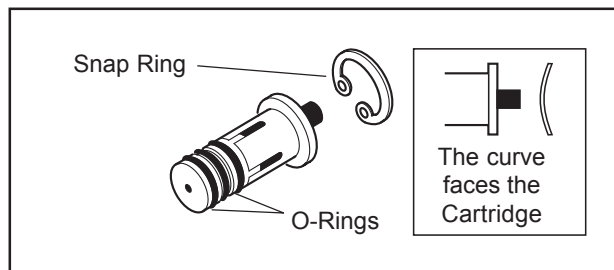


2. Install the new Snap Ring which holds the new Air Cartridge.



### **! CAUTION**

The Snap Ring must be fully seated in the Snap Ring groove to keep the Air Cartridge Assembly from moving. The curved side must be installed facing the Cartridge.



### **! CAUTION**

The carbon tip of the Air Cartridge provides a seal between rotating and non-rotating parts. Do not crack, scratch or damage the carbon tip.

## Air Chamber

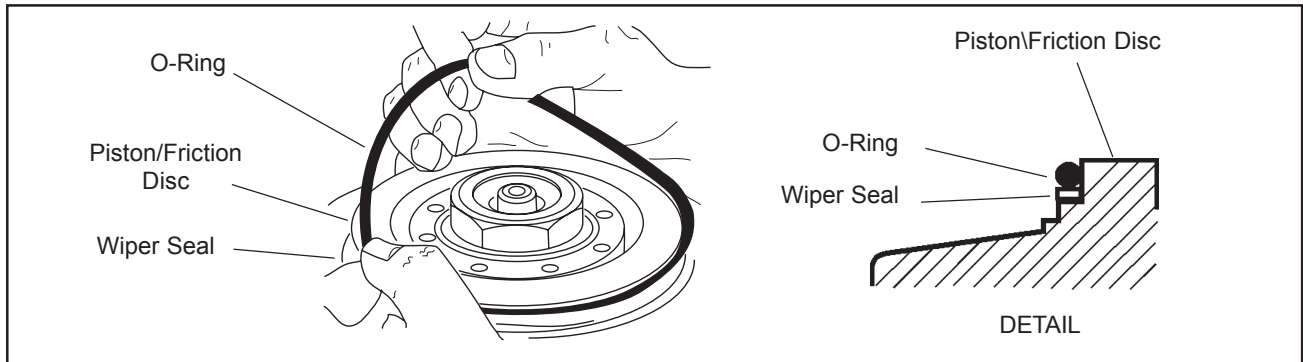
### **! CAUTION**

Extreme care must be exercised when replacing the Air Chamber to avoid damaging the O-Rings.

### **NOTE**

This kit contains two outer O-Rings & two Wiper Seals to satisfy two different models of fan drives. In order to verify which O-Ring or Wiper to use, compare with the original fan drive.

1. Lubricate the outer O-Ring, Wiper Seal and O-Ring contact surfaces and install onto the Piston/Friction Disc.



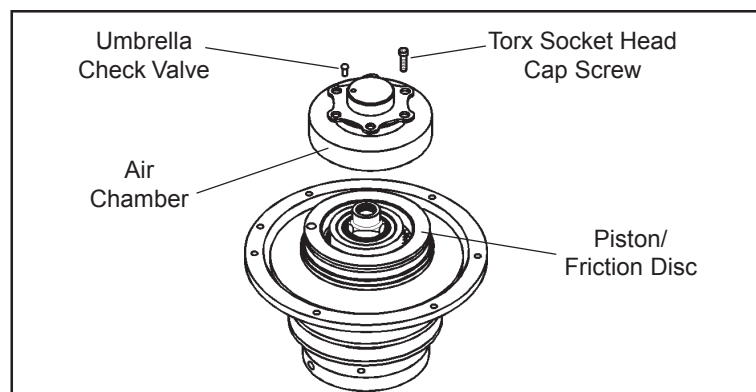
### **! WARNING**

When installing the Air Chamber onto the Fan Drive, make sure the contact surface between the Face Seal and the Carbon Tip is clean.

2. Install the Air Chamber onto the Piston Friction Disc.
3. Alternately and evenly tighten the Torx T30 Socket Head Cap Screws to 180 In. Lbs. [20.3 N•m].
4. Apply 90-120 psi of clean air to the air inlet of the Fan Drive to check for proper engagement of the Piston Friction Disc and Friction Facing. If equipped with a brake, also apply 90 - 120 psi of clean air to the brake air inlet to check for proper engagement of the brake.

### **! WARNING**

If a problem exists, such as an air leak, it must be corrected prior to mounting the Fan Drive onto the vehicle. If the problem is not corrected, the Fan Drive will fail prematurely. If you are not sure of the problem, turn to the Troubleshooting section.



## Cooling Ring and Adaptor

1. Place the Cooling Ring onto the Sheave.
2. Alternately and evenly tighten the Torx T25 Flat Head Cap Screws to 65 In.Lbs. [7.3 N•m].
3. Align bolt holes and place the Adaptor/Magnet Assembly onto the Sheave.

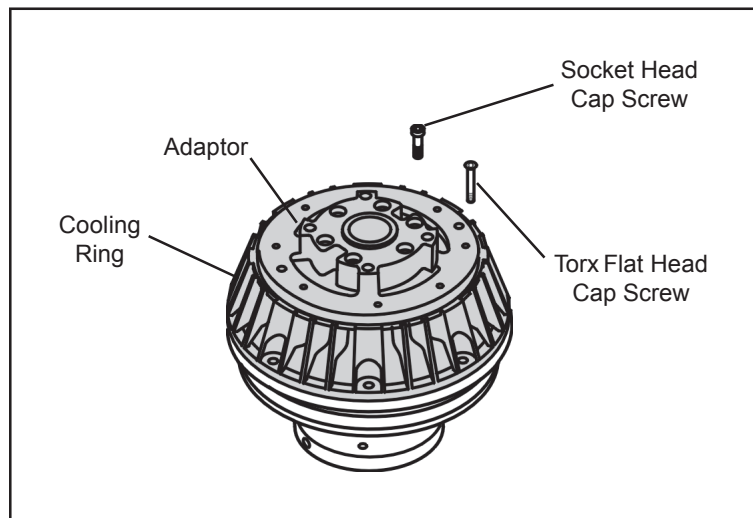
### NOTE

If the Fan Drive is equipped with a Shim, be sure it is re-installed between the air chamber and adaptor magnet assembly.

### CAUTION

Use caution when replacing the Adaptor/Magnet Assembly to avoid personal injury or magnet damage due to the extremely strong magnetic attraction.

4. Alternately and evenly tighten the Socket Head Cap Screws to 250 In.Lbs. [28.2 N•m].



## FAN DRIVE INSTALLATION

1. Using SAE Grade 8 Bolts, secure the Fan Drive to the engine.
2. Tighten the Bolts to MCI specifications.

### NOTE

**Place a gauge at the air inlet of the Fan Drive. Air pressure should measure between 90-120 PSI. This will assure maximum horsepower carrying capacity of the Fan Drive. Low air pressure may cause damage to the Fan Drive.**

3. Replace and adjust the belts according to the manufacturer's specifications.

### CAUTION

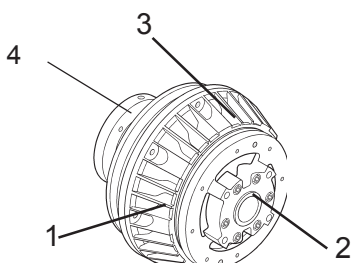
**Be sure all belts are correctly adjusted, aligned and tightened. Improper adjustments will shorten Fan Drive bearing life or and can cause excessive belt wear. Refer to the manufacturer's specifications for proper belt adjustment.**

4. Mount the Fan Drive Shaft onto the Fan Adaptor. Tighten the nuts according to the manufacturer's specifications.
5. Check for proper Fan Drive engagement and disengagement.

### CAUTION

**Insure that all areas around the fan, fan shroud, and pulley are clear, all fasteners are securely tightened, and that the fan can rotate freely.**

## TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	SOLUTION
<p><b>I. Air leaking from Fan Drive.</b></p> <p>1. Bleed hole. 2. Air Chamber. 3. System Sentry 4. Brake</p>	<div style="text-align: center; margin-bottom: 10px;">  </div> <p>1. Worn or damaged Face Seal or Air Cartridge. 2. Worn or damaged O-ring Seals. 3. See Section II. 4. Worn O-Ring Seals</p>	<p>1. Install Seal Kit. 2. Install Seal Kit. 3. See Section II. 4. Install Super Kit</p>
<p><b>II. System Sentry Release.</b></p> <p><b>Excessive Fan Drive slippage will cause System Sentry to disengage</b></p> <p>1. Obstructed Fan. 2. Low air pressure to Fan Drive. 3. Excessive cycling.</p>	<p>1. Loose shroud, bent fan, torn engine mounts, etc.</p> <p>2. a. Restricted air line. b. Restricted Solenoid Valve c. Low system air pressure.</p> <p>3. a. Poor ground or wire connection. b. Improper temperature control setting or ECM Logic.  c. Faulty Thermal Switch or ECM. d. Restriction in front of radiator blocking air flow.</p>	<p>1. Find and remove obstruction, repair or replace damaged parts. Install Seal Kit or Super Kit.</p> <p>2. a. Replace air line. b. Replace Solenoid Valve. c. Determine cause and repair. Install Seal Kit or Super Kit.</p> <p>3. a. Check electrical connections. b. Check temperature setting of all controls. Thermal Switch setting should engage the Fan Drive 10° F [5.5° C] higher than the full open temperature of the thermostat. Check ECM. c. Replace the Thermal Switch. Check ECM. d. Check for winter front, or other restriction in or in front of the radiator.</p>

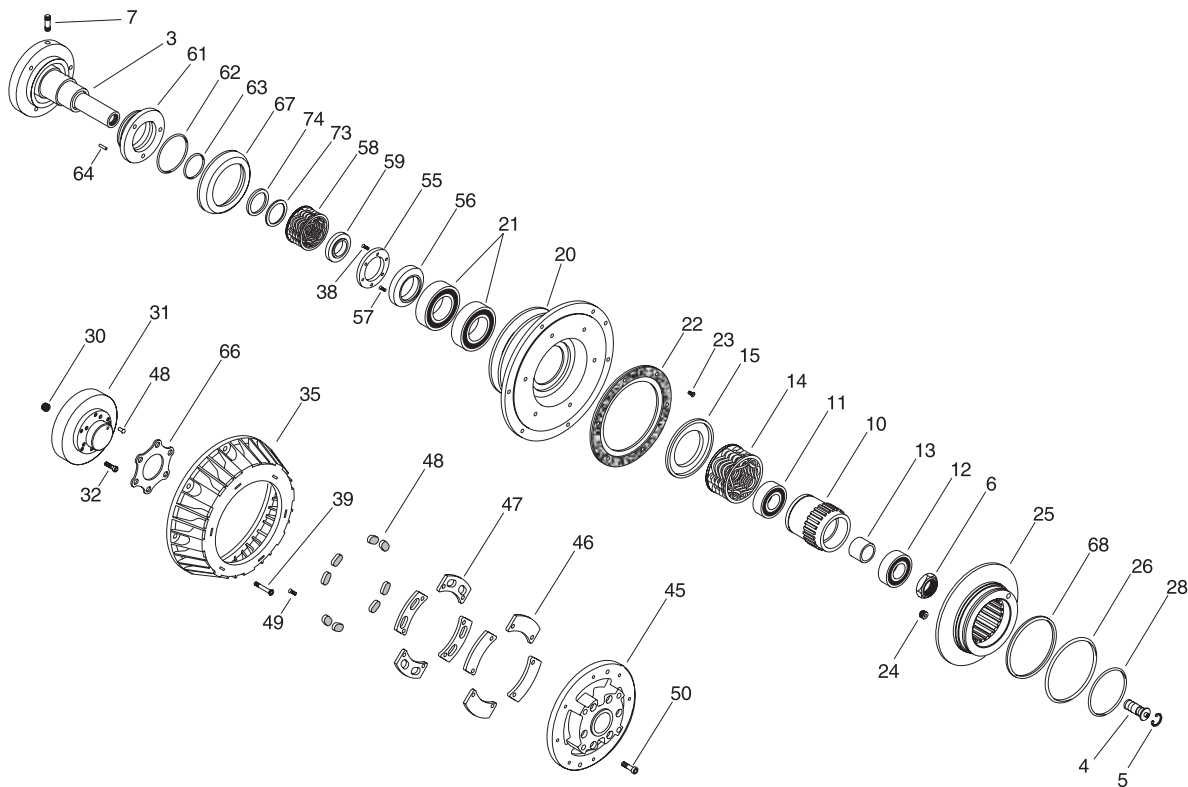


PROBLEM	PROBABLE CAUSE	SOLUTION
<p><b>III. Fan Drive slips excessively causing abnormal heat buildup.</b></p> <ol style="list-style-type: none"> <li>1. Obstructed fan.</li> <li>2. Low air pressure to Fan Drive.</li> <li>3. Excessive cycling.</li> </ol>	<ol style="list-style-type: none"> <li>1. Loose shroud, bent fan, torn engine mounts, etc.</li> <li>2. <ol style="list-style-type: none"> <li>a. Restricted air line or Solenoid Valve.</li> <li>b. Low system air pressure or air leaks.</li> <li>c. Faulty Minimum Pressure Valve/Switch.</li> </ol> </li> <li>3. <ol style="list-style-type: none"> <li>a. Faulty electrical connection.</li> <li>b. Improper temperature control setting or ECM Logic.</li> <li>c. Faulty Thermal Switch or ECM.</li> <li>d. Restriction in front of radiator blocking air flow.</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>1. Find and remove obstruction, repair or replace damaged parts.</li> <li>2. <ol style="list-style-type: none"> <li>a. Replace air line or Solenoid Valve.</li> <li>b. Determine cause and repair. Install Seal Kit or Super Kit.</li> <li>c. Replace Minimum Pressure Valve/Switch.</li> </ol> </li> <li>3. <ol style="list-style-type: none"> <li>a. Check electrical connections.</li> <li>b. Check temperature setting of all controls. Thermal Switch setting should engage the Fan Drive 10°F [5.5°C] higher than the full open temperature of the thermostat. Check ECM.</li> <li>c. Replace the Thermal Switch. Check ECM.</li> <li>d. Check for winter front, or other restriction in or in front of the radiator.</li> </ol> </li> </ol>
<p><b>IV. Fan Drive fails to engage.</b></p>	<p><b>Electrical Problem</b></p> <ol style="list-style-type: none"> <li>1. Broken circuit (Normally Open System)</li> <li>2. Improperly wired.</li> <li>3. Thermal Switch or ECM incorrect for application.</li> <li>4. Bad Solenoid Valve.</li> </ol> <p><b>Air Problem</b></p> <ol style="list-style-type: none"> <li>1. Fan Drive leaking (See Section I).</li> <li>2. Air supply to Fan Drive restricted.</li> <li>3. Bad Solenoid Valve</li> </ol>	<ol style="list-style-type: none"> <li>1. Check wiring according to MCI specifications</li> <li>2. Check wiring according to MCI specifications.</li> <li>3. Check Thermal Switch (N.O. for N.C.). Replace if wrong or defective. Check ECM.</li> <li>4. Replace the Solenoid Valve.</li> </ol> <ol style="list-style-type: none"> <li>1. See Section I.</li> <li>2. Check fittings and air lines for leaks or pinching.</li> <li>3. Replace the Solenoid Valve.</li> </ol>

PROBLEM	PROBABLE CAUSE	SOLUTION
<b>V. Fan Drive fails to disengage.</b>	<b>Electrical Problem</b> 1. Broken circuit (Normally Closed) System. 2. Improperly wired. 3. Thermal Switch incorrect for application or defective. 4. Bad Solenoid Valve	1. Check electrical connections. 2. Check wiring according to diagram. 3. Check Thermal Switch (N.O. or N.C.). Replace if wrong or defective. 4. Replace the Solenoid Valve.
	<b>Air Problem</b> 1. Air line restricted, not allowing air to be released from Fan Drive. 2. Solenoid Valve not exhausting.	1. Check for pinching or plugging of air line between Fan Drive and Solenoid Valve. 2. Check for plugged exhaust port on the Solenoid Valve. Clean or replace the Solenoid Valve.
	<b>Piston Friction Disc will not return</b> 1. Possibly seized due to contamination or dry O-ring Seals.	1. Clean the air supply and install a Seal Kit.
<b>VI. Fan Drive cycles frequently.</b>	<b>Air Problem</b> 1. Air line restricted, not allowing air to be released from Fan Drive. 2. Solenoid Valve not exhausting.	1. Check for pinching or plugging of air line between Fan Drive and Solenoid Valve. 2. Check for plugged exhaust port on the Solenoid Valve. Clean or replace the Solenoid Valve.

PROBLEM	PROBABLE CAUSE	SOLUTION
	<p><b>Electrical Problem</b></p> <ol style="list-style-type: none"> <li>1. Poor ground wire connection.</li> <li>2. Improper temperature control settings.</li> <li>3. A/C Pressure Switch setting too low.</li> <li>4. Restrictions in front of radiator, restricting air flow.</li> <li>5. Faulty Thermal Switch.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check electrical connections.</li> <li>2. Check temperature setting of all controls. Thermal Switch setting should engage the Fan Drive 10°F [5.5°C] higher than the full open temperature of the thermostat.</li> <li>3. Check A/C Pressure switch.</li> <li>4. Check shutter operation, winter fronts, or obstruction in front of radiator.</li> <li>5. Replace the Thermal Switch.</li> </ol>
<p><b>VII. Fan Drive engaged, engine running hot.</b></p>	<ol style="list-style-type: none"> <li>1. Restriction in front of radiator, restricting air flow.</li> <li>2. Fan Blade capacity not large enough.</li> <li>3. Problem in cooling system.</li> <li>4. Fan Drive slipping.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check shutter operation, winter fronts, or obstruction in front of radiator.</li> <li>2. Refer to manufacturer's specifications.</li> <li>3. Refer to engine manual.</li> <li>4. Refer to section I.</li> </ol>
<p><b>VIII. Fan Drive noisy.</b></p>	<ol style="list-style-type: none"> <li>1. Bearings bad.</li> </ol>	<ol style="list-style-type: none"> <li>1. Install Super Kit.</li> </ol>

## PARTS LIST



ITEM	DESCRIPTION	QTY	ITEM	DESCRIPTION	QTY
3	Journal Bracket	1	38	Flat Head Machine Screw (Torx) <sup>1</sup>	6
4	Cartridge Assembly <sup>1,2</sup>	1	39	Flat Head Cap Screw (Torx) <sup>1,2</sup>	8
5	Snap Ring <sup>1,2</sup>	1	45	Adaptor	1
6	Lock Nut <sup>1,2</sup>	1	46	Arc Plate	4
7	Nipple Fitting <sup>1</sup>	1	47	Magnet Holder <sup>3</sup>	4
10	Splined Hub <sup>1</sup>	1	48	Magnet <sup>3</sup>	8
11	Rear Hub (Needle) Bearing <sup>1</sup>	1	49	Flat Head Machine Screw (Torx) <sup>3</sup>	8
12	Rear Hub Bearing <sup>1</sup>	1	50	Socket Head Cap Screw <sup>1,2</sup>	6
13	Bearing Spacer <sup>1</sup>	1	55	Friction Facing (Off Mode) <sup>1</sup>	1
14	Wave Spring <sup>1</sup>	1	56	Aluminum Mounting Disc	1
15	Spring Retainer <sup>1</sup>	1	57	Socket Head Cap Screw <sup>1</sup>	6
20	Sheave	1	58	Wave Spring (Off Mode) <sup>1</sup>	1
21	Sheave Bearing <sup>1</sup>	2	59	Journal Spacer <sup>1</sup>	1
22	Friction Facing Assembly <sup>1,2</sup>	1	61	Brake Piston/Friction Disc	1
23	Button Head Cap Screw <sup>1,2</sup>	6	62	O-ring <sup>1</sup>	1
24	System Sentry Fuse <sup>1,2</sup>	1	63	O-ring <sup>1</sup>	1
25	Piston/Friction Disc	1	64	Dowel Pin	3
26*	O-ring (outer) <sup>1,2</sup>	1	66	Shim (Optional)	-
28	O-ring (inner) <sup>1,2</sup>	1	67	Dust Seal <sup>1</sup>	1
30	Face Seal <sup>1,2</sup>	1	68*	Wiper Seal <sup>1,2</sup>	1
31	Air Chamber	1	69	Umbrella Valve <sup>1,2</sup>	1
32	Socket Head Cap Screw (Torx) <sup>1,2</sup>	6	73	Steel Washer	1
35	Finned Cooling Ring	1	74	Felt Washer <sup>1</sup>	1

1. Included in Super Kit (994344 for the 3-Speed or 994367 for the 2-Speed)

2. Included in Seal Kit (994937)

3. Included in Magnet Kit (994358 - one pair)

## TORQUE SPECIFICATIONS

ITEM	DESCRIPTION	TORQUE
6	Locknut	150 Ft. Lbs. [203 N•m]
23	Button Head Cap Screw (Torx)	40 In. Lbs. [4.5 N•m]
27	Hex Socket Cap Screw	65 In. Lbs. [7.3 N•m]
30	Face Seal	50 In. Lbs. [5.6 N•m]
32	Socket Head Cap Screw (Torx)	180 In. Lbs. [20.3 N•m]
38	Flat Head Machine Screw (Torx)	40 In. Lbs. [4.5 N•m]
39	Flat Head Screw (Torx)	40 In. Lbs. [4.5 N•m]
50	Socket Head Cap Screw	250 In. Lbs. [28.2 N•m]

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