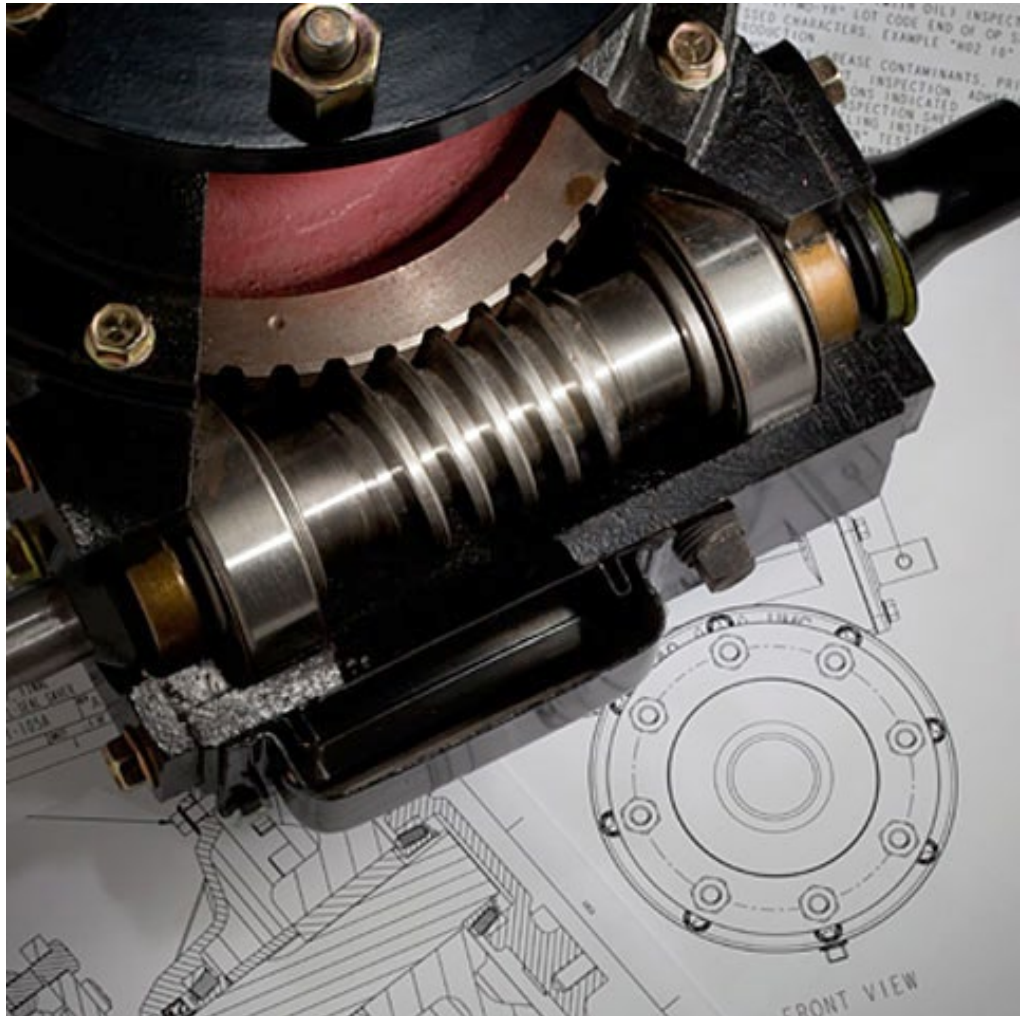




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UMC[®] Maintenance Specifications



Universal Motion Components Co., Inc.

5/2/2024





**IRRIGATION
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DISCLAIMER:

Unless otherwise noted, the maintenance specifications herein apply to all UMC® Final Drive Gearboxes and Power Saver® Center Drives. These specifications are subject to change without notice. For the most recent version refer to the UMC® website, www.umcproducts.com, under the Sales and Service tab.

UMC® Final Drive Gearbox Maintenance

	WARNING	
<ul style="list-style-type: none">• To reduce the potential of a severe electrical shock and to prevent bodily injury from sudden startup of the motor, always disconnect all electrical power sources before initiating any maintenance or repairs.		

FINAL DRIVE GEARBOX OIL CHANGES AND MAINTENANCE:

1. After the first operating season or 3,000 operating hours, whichever occurs first, change the oil in all final drive gearboxes. Fill the gearbox with the proper oil, through the top fill hole, to the operating oil level range. The oil level range is from the top of the shank to the to the bottom of the oil fill hole (at 70°F ambient temperature). See Figure FD-3.
2. After the first oil change, replace the final drive gearbox oil every 3 years or 3,000 operating hours, whichever occurs first. Fill the gearbox with the proper oil, through the top fill hole, to the operating oil level range. The oil level range is from the top of the shank to the to the bottom of the oil fill hole (at 70°F ambient temperature). See Figure FD-3.
3. After each operating season, drain any water and contaminated or emulsified oil from the final drive gearbox and top off the gearbox with the proper oil, through the top fill hole, to the operating oil level range. The oil level range is from the top of the shank to the to the bottom of the oil fill hole (at 70°F ambient temperature). See Figure FD-3.



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FINAL DRIVE GEARBOX LUBRICANTS:

A **GL-5 SAE 85W-140**, **SAE J2360**, or **ISO 460 AGMA 7EP** equivalent gear oil must be used in final drive gearboxes. Some common brands meeting this specification are shown below. Contact your dealer or local petroleum product distributor for other equivalent products. Use of improper oil will void the gearbox warranty.

- Chevron Delo Gear EP-5 SAE 85W-140
 - a. Product Number: 223021
- Chevron MEROPA 460 7EP
 - a. Product Number: 277213
- Sprinkler Lube 1200 OT FORMULA 8
 - a. If Sprinkler Lube is used, UMC® recommends one season of use with standard gear oil prior to using Sprinkler Lube. This allows the gearbox to break in and any fine particles to be drained at the time of the first oil change.

FINAL DRIVE GEARBOX MAINTENANCE TO BE PERFORMED AFTER EACH OPERATING SEASON:

1. The vent hole located on the side of the Expansion Chamber must be kept clear of dirt. Use a soft brush to clear the opening. **DO NOT INSERT ANY OBJECTS INTO THE VENT HOLE, DAMAGE TO THE RUBBER DIAPHRAGM MAY OCCUR.** See Figure FD-1.
2. Inspect input and output shaft seals for leakage. Should either input or output shaft seals show excessive leakage, the seals should be replaced.
3. External Dust Seals should be used to keep dirt and water out of internal seal locations. If the External Dust Seals are damaged or worn, replace with new seals. See Figure FD-2.
4. Inspect the Hub Cap (Shaft Guard), on the unused side of the input shaft, for looseness, damage or corrosion. Replace if necessary or if it is missing. This will protect the input shaft and seals from the elements. See Figure FD-2.
5. Check all 3/8-16 cover and end cap bolts. Torque should be 34-39 ft. lbs. Adjust if necessary.
6. Check all 9/16-18-wheel lug nuts. Torque to irrigation machine manufacturer's specifications.



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7. Ensure that at least 5 x 1/2-13 Grade 8 mounting bolts are used to fasten the gearbox to the base beam. Torque to irrigation machine manufacturer's specifications.
8. Remove the drain plug located at bottom of the gearbox and completely drain any water and contaminated or emulsified oil from the gearbox.
9. After oil is drained, replace the drain plug at the bottom of the gearbox. See Figure FD-2. Fill the gearbox with the proper oil, through the top fill hole, to the operating oil level range. The oil level range is from the top of the shank to the bottom of the oil fill hole (at 70°F ambient temperature). See Figure FD-3.
10. Check Tire Pressure to prevent operating with low pressure, as this can damage the final drive gearboxes. Use irrigation machine manufacturer's recommended tire pressure for specific field conditions.

FIELD MAINTENANCE TO BE PERFORMED AFTER EACH OPERATING SEASON:

1. Ensure that wheel track depth does not exceed 4 inches (100mm). Severe wheel tracks will damage final drive gearboxes. Wheel tracks can be maintained by using track fillers, tillers, discs or flotation tires.

IN SEASON FINAL DRIVE GEARBOX MAINTENANCE:

The Final Drive Gearbox should be inspected periodically during the operating season for the following:

1. Check Tire Pressure before starting the operating season and monthly thereafter to prevent operating with low pressure. Operating with low tire pressure will damage the final drive gearboxes.
2. Expansion chamber vent hole should be kept clear. CAUTION, DO NOT INSERT ANY OBJECT INTO THE VENT HOLE, DAMAGE MAY OCCUR TO THE RUBBER DIAPHRAGM.

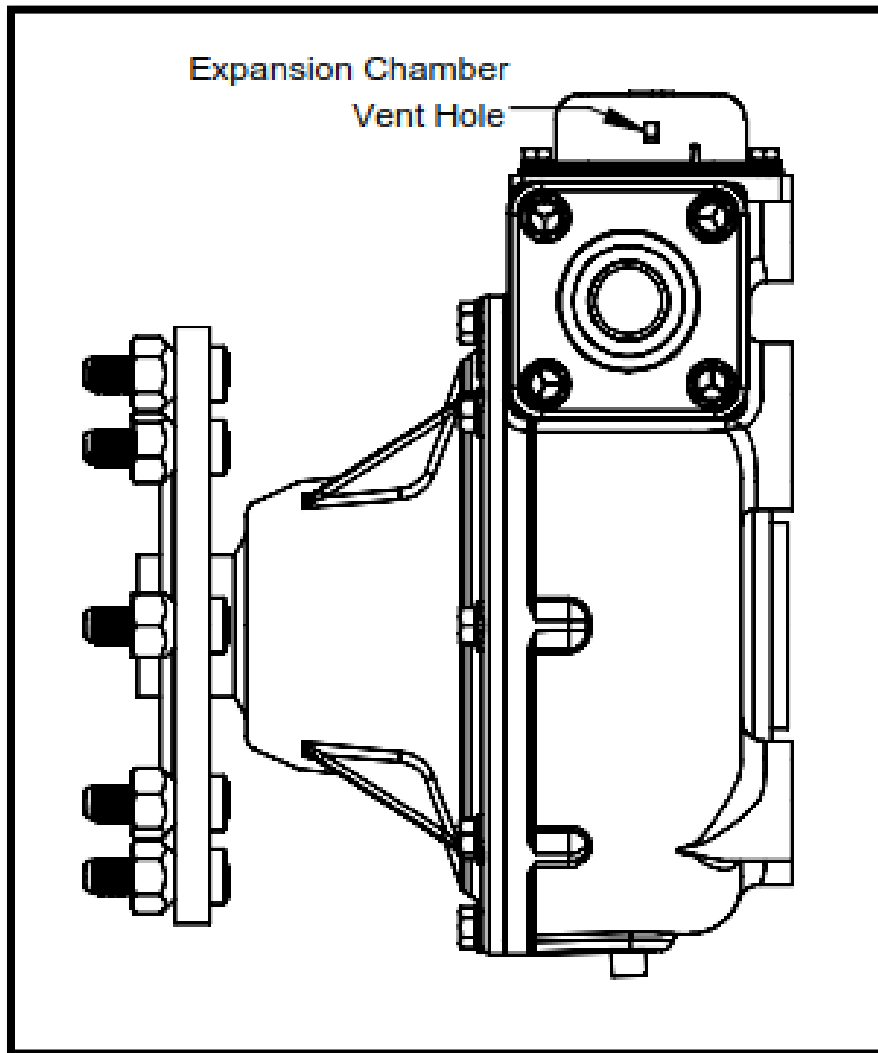


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Figure FD-1

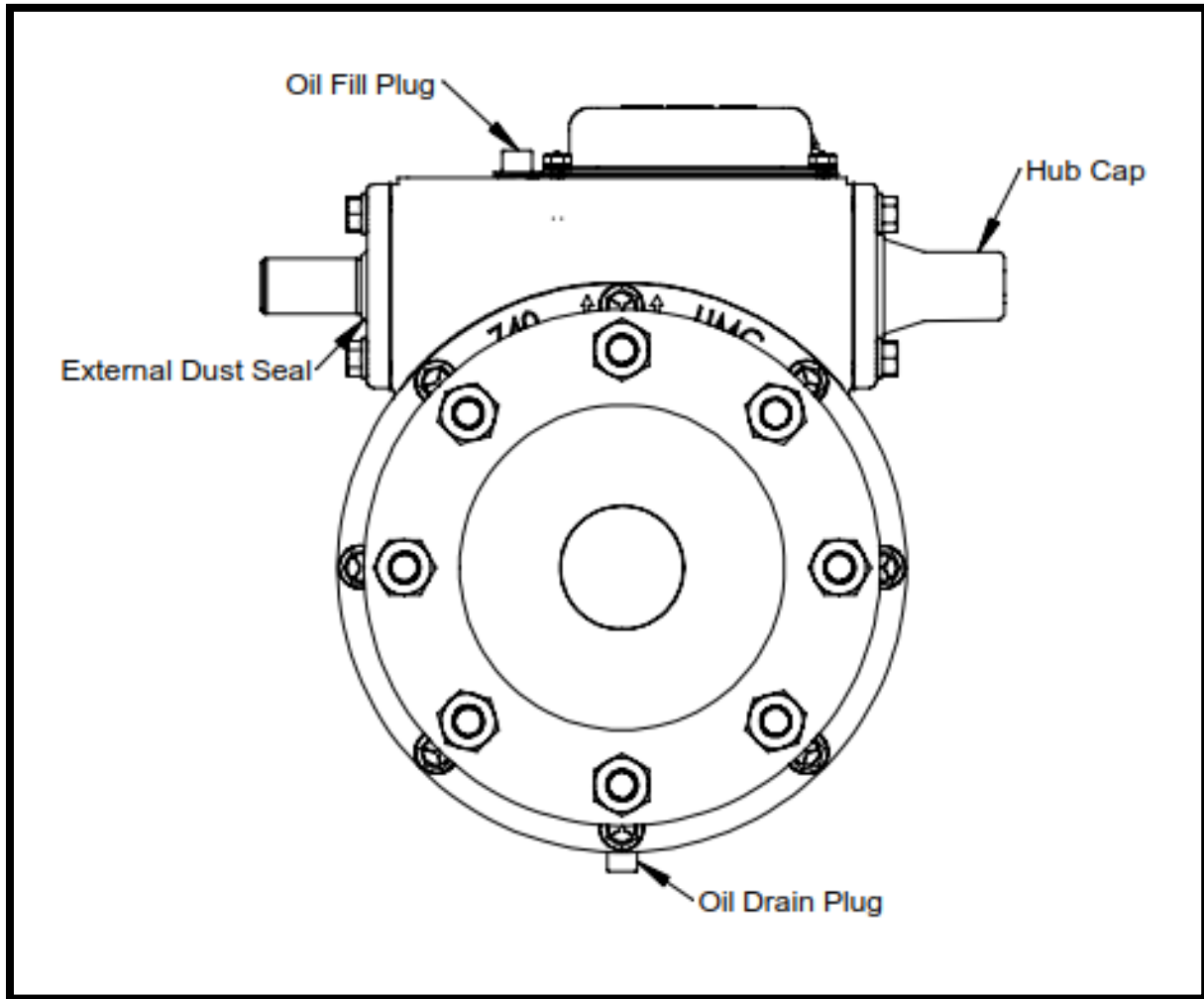




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Figure FD-2

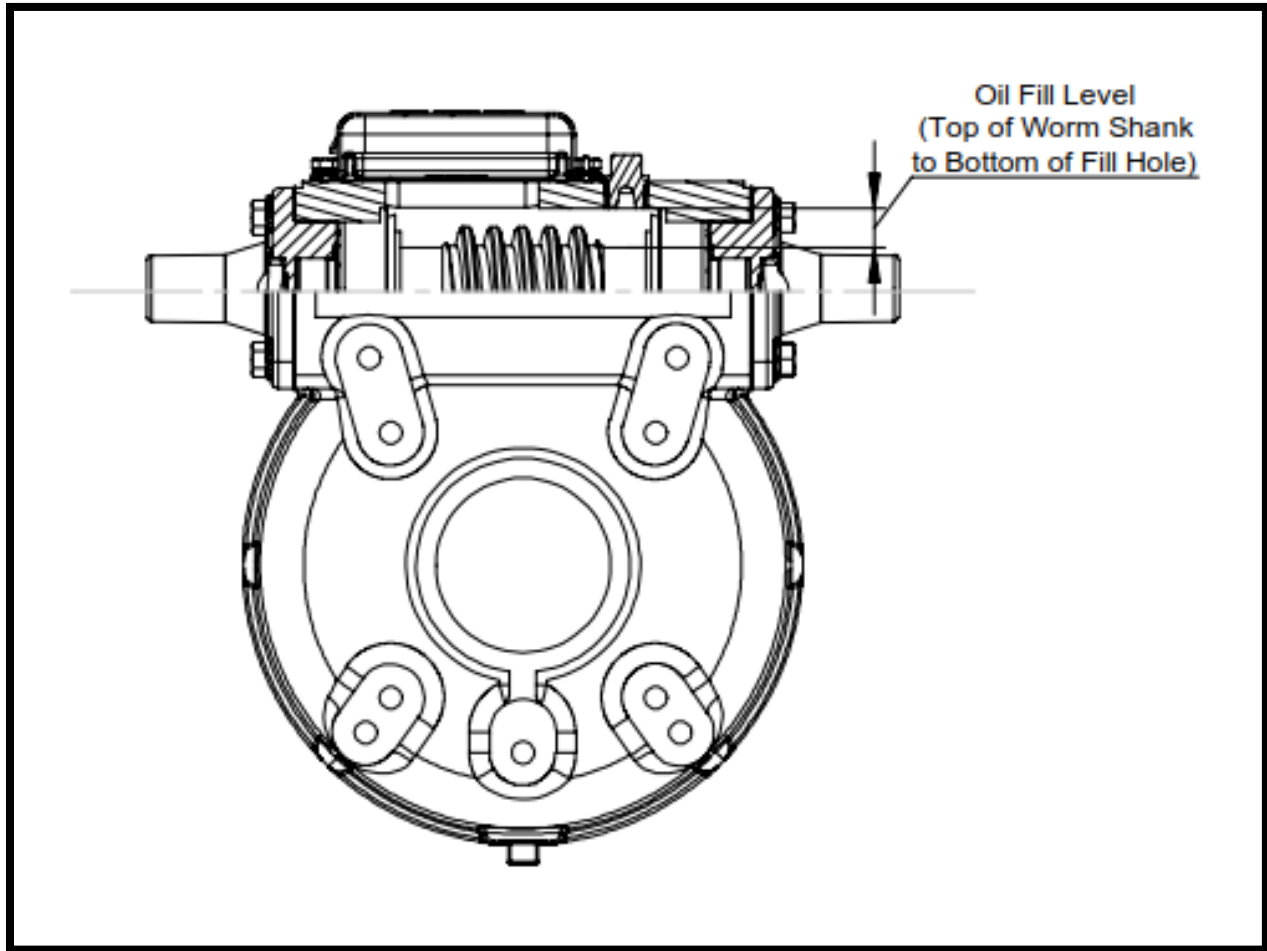




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Figure FD-3





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UMC® Final Drive Gearbox Maintenance Checklist

Maintenance Check Item	Pre-Season	Mid-Season	Post Season	Comments
Change Final Drive Gearbox Oil	x			Change after the 1 st season or 3,000 hours and then every 3 years or 3,000 hours thereafter.
Check Final Drive Gearbox Oil level and drain water & emulsified oil.	x		x	Drain water and emulsified oil at least twice per year and top off the oil.
Check Final Drive Gearbox Seals	x	x	x	Check for leaks.
Check Final Drive Gearbox Wheel Lug Nut Torque	x	x	x	See irrigation machine manufacturer's recommendations.
Check Final Drive Gearbox Mount Bolt Torque.	x	x	x	See irrigation machine manufacturer's recommendations.
Check Driveline Couplers for Damage and / or wear.	x	x	x	U-Joint pucks should be replaced at least every 5 years. Make sure all fasteners are tight. Clean any mud or debris off the coupler to prevent premature wear.
Check Tire Pressure	x	x	x	Low tire pressure will damage gearboxes.
Maintain Wheel Tracks			x	Wheel track depth should not exceed 4 inches (100mm).





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UMC® Power Saver® Center Drive Maintenance



WARNING



- To reduce the potential of a severe electrical shock and to prevent bodily injury from sudden startup of the motor, always disconnect all electrical power sources before initiating any maintenance or repairs.

POWER SAVER® CENTER DRIVE OIL CHANGES AND MAINTENANCE:

1. After the first operating season or 3,000 operating hours, whichever occurs first, change the oil in the Power Saver® Center Drive Gearbox. Fill the gearbox with the proper oil, through the top fill hole, to the operating oil level range (at 70°F ambient temperature). See Figure PS-2 for the oil level range at the bench top and at the pivot-mounted position.
 - a. Oil capacity is 0.4 U.S. Gallons or 1.6 Liters approximately.
2. After the first oil change, replace the oil in the Power Saver® Center Drive Gearbox after each operating season or 3,000 operating hours, whichever occurs first. Fill the gearbox with the proper oil, through the top fill hole, to the operating oil level range (at 70°F ambient temperature). See Figure PS-2 for the oil level range at the bench top and at the pivot-mounted position.
 - a. Oil capacity is 0.4 U.S. Gallons or 1.6 Liters approximately.

POWER SAVER® CENTER DRIVE LUBRICANTS:

A **GL-5 SAE 85W-140, SAE J2360, or ISO 460 AGMA 7EP** equivalent gear oil must be used in Power Saver® Center Drive Gearboxes. Some common brands meeting this specification are shown below. Contact your dealer or local petroleum product distributor for other equivalent products. Use of improper oil will void the warranty.

- Chevron Delo Gear EP-5 SAE 85W-140
 - a. Product Number: 223021
- Chevron MEROPA 460 7EP
 - a. Product Number: 277213



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POWER SAVER® CENTER DRIVE MAINTENANCE TO BE PERFORMED BEFORE, AFTER AND DURING EACH OPERATING SEASON:

1. Ensure that a strain relief is used to connect the motor lead cable to the junction box of the center drive. **FAILURE TO USE A STRAIN RELIEF CAN RESULT IN SEVERE ELECTRIC SHOCK AND/ OR MOTOR FAILURE.**
2. Inspect output oil seals for leakage. Should either of the seals show excessive leakage, the seals should be replaced.
3. External dust exclusion seals should be used to keep dirt and water out of internal seal locations. If the external seals are damaged or worn, replace with new seals.
4. The single motor drain hole located under the motor-can must be kept clear to allow for drainage of accumulated moisture inside the motor. See Figure PS-1.

If any oil is found weeping out of the water drain hole, the motor must be replaced or repaired. **DO NOT OPERATE THE UNIT IF A LEAK IS PRESENT, AS A SEVERE ELECTRICAL SHORT MAY OCCUR IF THE PROBLEM IS NOT CORRECTED.**

5. The proper oil level should be maintained at all times and contaminated or emulsified oil should be replaced with new oil. See Figure PS-2 for proper oil level.

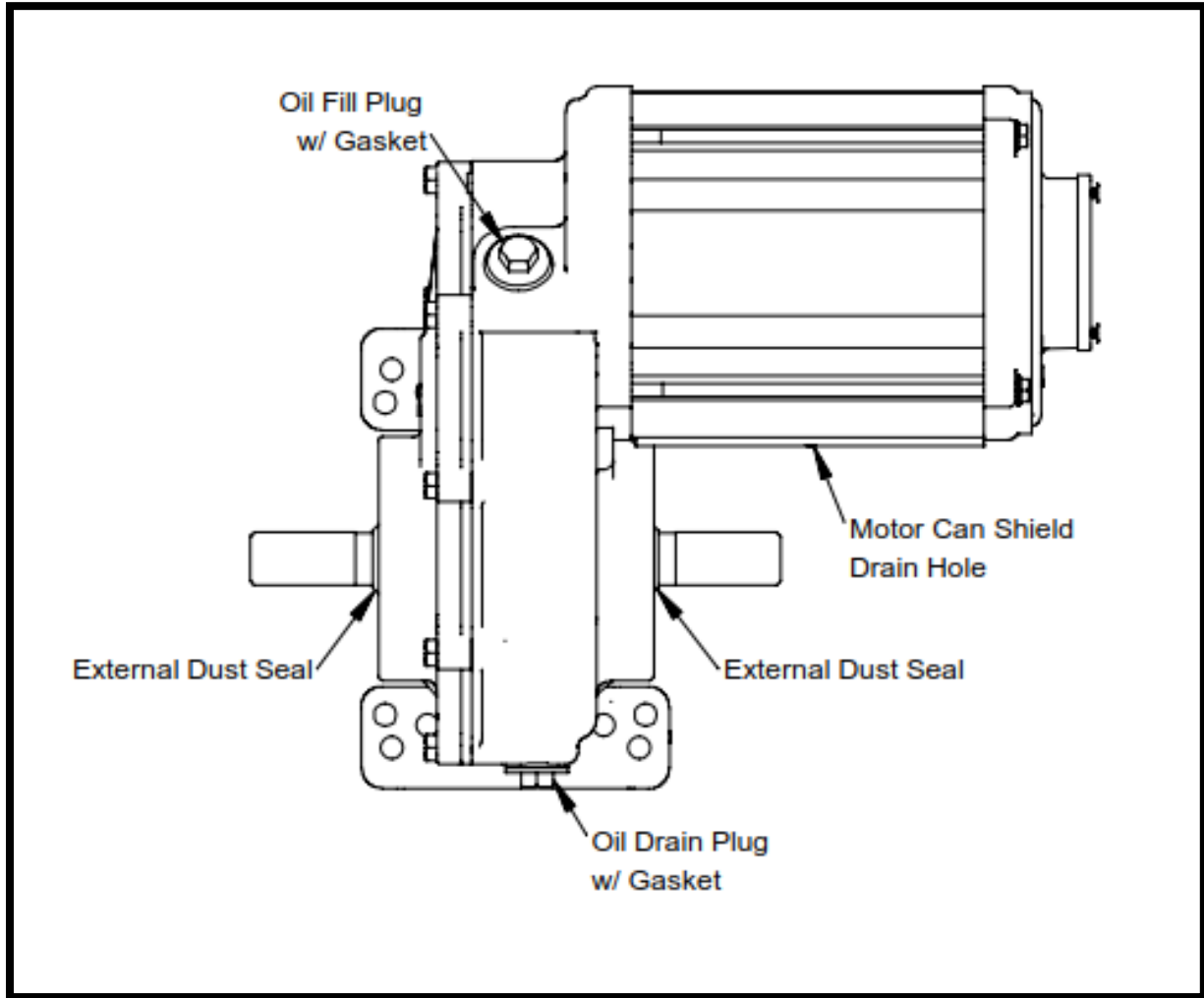


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Figure PS-1

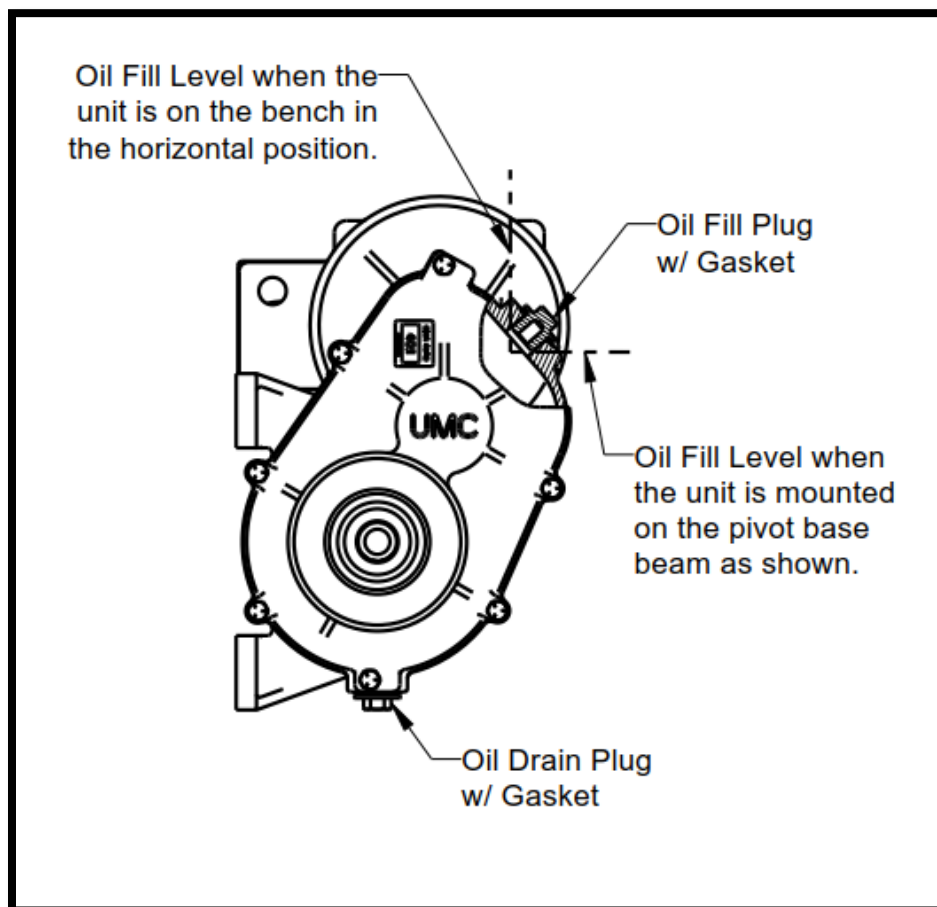




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Figure PS-2



UMC® Power Saver® Center Drive Maintenance Checklist				
Maintenance Check Item	Pre-Season	Mid-Season	Post Season	Comments
Check motor lead cable for damage.	x	x		
Check the motor drain hole.	x	x		Make sure it's clear of debris and check for leaks.
Check / change center drive lubricant.	x		x	See maintenance instructions.
Check the center drive output seals.	x	x	x	
Check Driveline Couplers for Damage.	x	x	x	U-Joint pucks should be replaced every 5 years. Make sure all fasteners are tight. Clean any mud / debris off the coupler.