

FLAIL GROUND ROLLER BEARING REBUILD

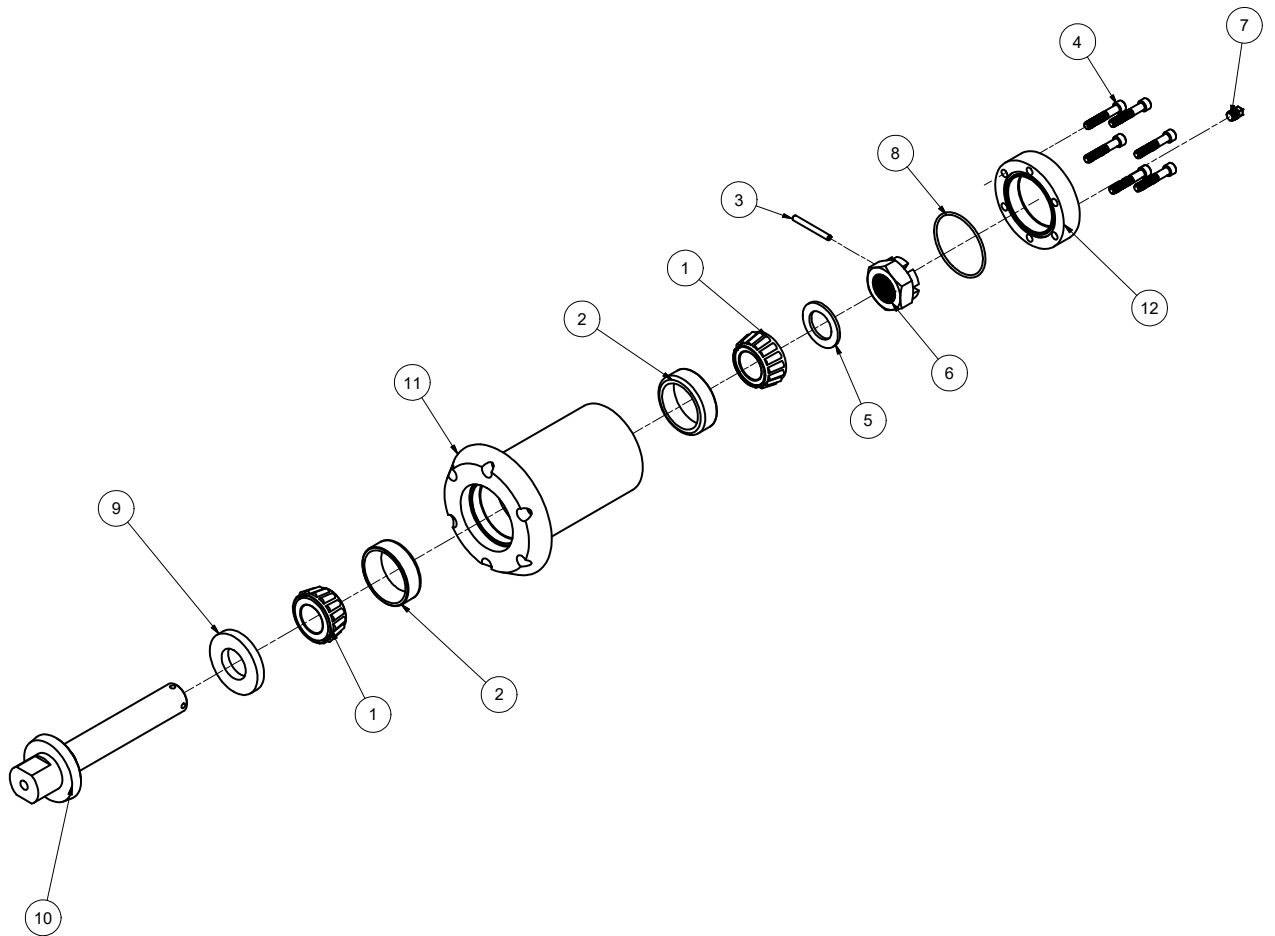
DOC #15-1076

WARRANTY + SERVICE 888.960.0364
PARTS 888.960.0361



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BEARING REBUILD



REF#	PARTS DESCRIPTION	REQ	PART#
1	TAPER BEARING	2	10-1049
2	TAPER BEARING RACE	2	10-1050
3	ROLL PIN	1	11-2006
4	5/16 X 1-3/4 NC SHCS	6	11-2065
5	THRUST WASHER 2.00 OD X 1.26 ID	1	11-2067
6	CASTLE NUT	1	11-2074
7	1/8 NPT PLUG	1	21-1136
8	O RING 2-7/8 OD	1	24-0273
9	SEAL TCM 132713TC	1	33-0031
10	ASSY GROUND ROLLER SHAFT	1	41-1776
11	GROUND ROLLER INSERT	1	90-7045
12	GROUND ROLLER END CAP	1	90-7048

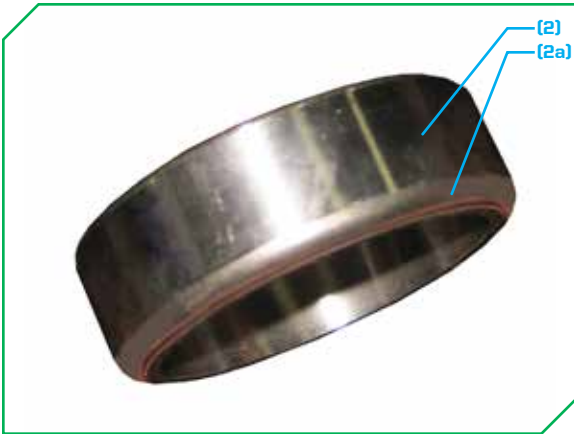
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- Press a taper bearing race₍₂₎ into the face side of the ground roller insert₍₁₎ until the radius_(2a) of the taper bearing race₍₂₎ is fully seated in the interior radius of the ground roller insert₍₁₎.
 - The radiused end_(2a) of a taper bearing race₍₁₎ is **ALWAYS** inserted **FIRST** into the ground roller insert₍₁₎.



- Turn over the ground roller insert₍₁₎. Press a taper bearing race₍₂₎ into the back side of the ground roller insert₍₁₎ until the radius_(2a) of the taper bearing race₍₂₎ is fully seated in the interior radius of the ground roller insert₍₁₎.
 - The radiused end_(2a) of a taper bearing race₍₁₎ is **ALWAYS** inserted **FIRST** into the ground roller insert₍₁₎.



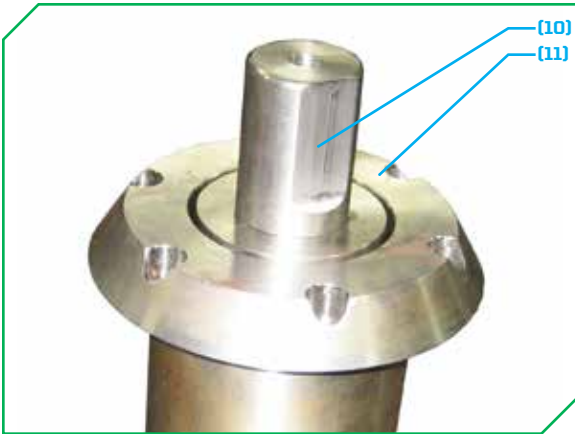
- Turn over the ground roller insert₍₁₎ and place a taper bearing₍₁₎ into the taper bearing race₍₂₎ on the face side of the ground roller insert₍₁₎.

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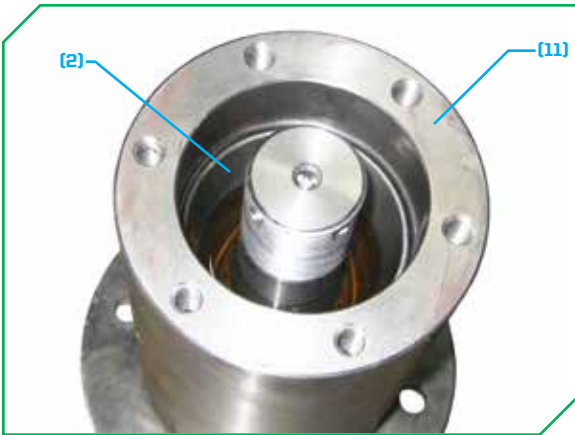
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- Place the seal (9) into the face side of the ground roller insert (11), tapping gently and evenly all around the seal (9) in a criss-cross pattern until it is fully seated.
 - Confirm the “cup” of the seal (9) is facing towards the taper bearing (1), with the flat portion visible as illustrated.
- Grease the interior of the seal (9) liberally with NLGI #2 grease.



- Grease the portion of the ground roller shaft (10) that inserts into the ground roller insert (11) with NLGI #2 grease.
- Place the ground roller shaft (10) into the face side of the ground roller insert (11) and press it in until it is fully seated in the ground roller insert (11).
 - The flange of the ground roller shaft (10) should be flush with the face of the ground roller insert (11).



- Turn over the ground roller insert (11). Pour synthetic SAE 75-90W oil (2) into the ground roller insert (11) until it just touches the taper bearing race (2).



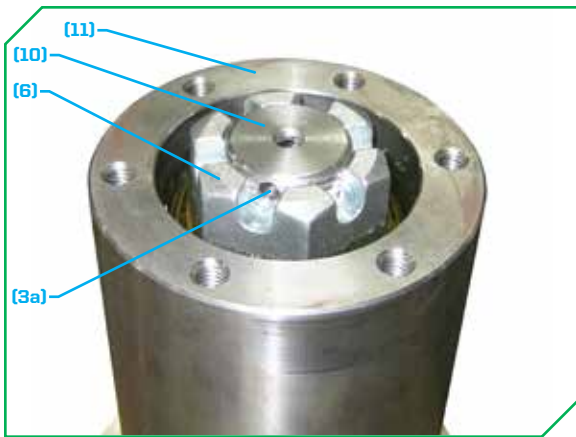
- Place the taper bearing (1) over the ground roller shaft (10) and into the taper bearing race.
- Add more synthetic SAE 75-90W oil until approximately 1/8” (3mm) above the taper bearing (1).

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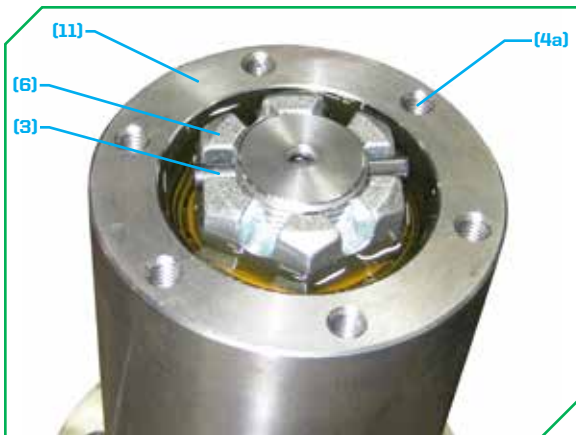
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- Place a thrust washer⁽⁵⁾ over the ground roller shaft and on top of the taper bearing⁽¹⁾.



- Thread the castle nut⁽⁶⁾ onto the ground roller shaft until it just contacts the thrust washer⁽⁵⁾.
 - Find the roll pin hole^(3a); if covered, slightly tighten or loosen the castle nut⁽⁶⁾ (whichever exposes the hole first) until the hole is fully exposed.
- Lift the ground roller insert⁽¹¹⁾, and pull down on the ground roller shaft⁽¹⁰⁾ to check for end-play.
 - No end-play: proceed to the next step.
 - End-play detected: tighten the castle nut⁽⁶⁾ to expose the roll pin hole^(3a) in the next notch on the castle nut⁽⁶⁾.
 - Re-check the end-play again and correct as needed.



- Tap the roll pin⁽³⁾ into the roll pin hole^(3a) until centered in the castle nut⁽⁶⁾.
- Fill the ground roller insert⁽¹¹⁾ to the brim with synthetic SAE 75-90W oil.
 - 7-8oz of oil should have been used at this point.
- Thread a cap screw⁽⁴⁾ into **EACH** of the cap screw hole^(4a) locations to force out any oil that may be in there.
 - **NOTE:** Failure to remove excess oil from the cap screw hole^(4a) locations may result in a cracked ground roller insert⁽¹¹⁾ when the ground roller end cap⁽¹²⁾ is secured.
- Clean any oil or debris off the surface of the ground roller insert⁽¹¹⁾ where the ground roller end cap⁽¹²⁾ will mate.



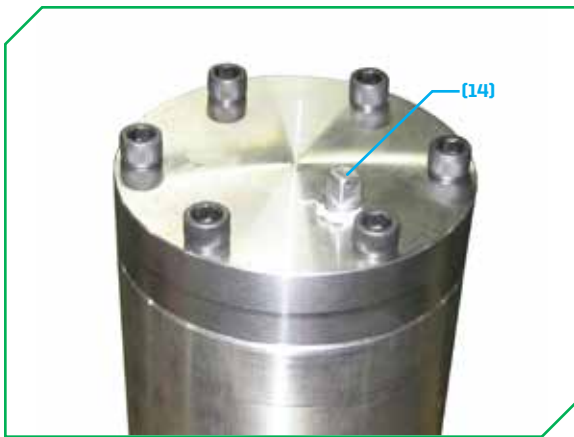
- Place the end cap upside down on the work surface and clean any oil or debris off of the grooved surface where the insert will mate to.
 - Place a dot of NLGI #2 grease on the groove between each hole to assist in retaining the O-ring.
 - Place the O-ring⁽¹²⁾ into the groove on the end cap.

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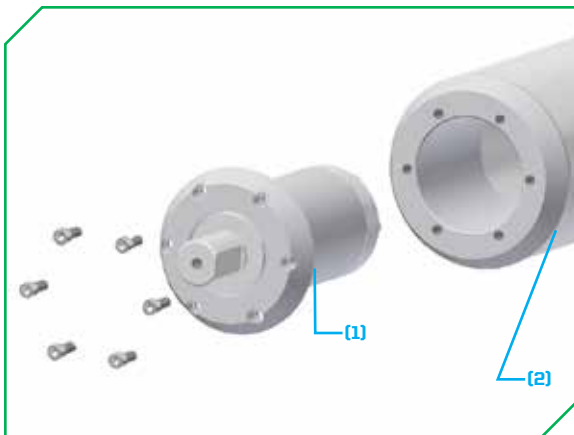
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- Place the end cap onto the ground insert without dislodging the O-ring from its groove⁽¹³⁾.
- Secure the end cap to the insert with the cap screws⁽¹³⁾.
 - Tighten the cap screws evenly in a criss-cross pattern.
 - Torque the cap screws to 29ft-lbs (39Nm).
 - Make sure the plug hole is not blocked to allow air to escape.



- Wrap the 1/8" NPT plug⁽¹⁴⁾ with teflon tape and thread it into the plug hole on the end cap.
 - Tighten until snug.



- Reassemble the bearings⁽¹⁾ into the ground roller⁽²⁾ with their cap screws.
 - Torque the hardware to 51ft-lbs (69Nm).