Westfield MKX130 Augers and Wheatheart X130 Augers

1000RPM PTO Drive Kit
Speed Reducer Gearbox Seal Replacement — Service Manual

Read this manual before using product. Failure to follow instructions and safety precautions can result in serious injury, death, or property damage. Keep manual for future reference.

Part Number: 31027 R0
Revised: June 2017

CONTENTS

1. Safety

Read and understand the safety information in the main auger assembly manual for this model before proceeding. Do not take chances with safety. The components can be large, heavy, and hard to handle. Always use the proper tools, rated lifting equipment, and lifting points for the job.

Read and understand the instructions in this manual before attempting to perform this procedure.

Refer to the main auger operation manual for this model for operation instructions.

2. Remove Gearbox from Auger Boot

To assist in removing the gearbox from the MKX130 or X130 auger boot, see the 1000 RPM PTO Drive Kit Installation Instructions.

3. Gearbox Disassembly

1. Mark the bottom (“B”) of both the front and rear casing halves to ensure easy matching during later reassembly (see Figure 1 and Figure 2). Mistakes in the orientation of components are easy to make during reassembly due to the “appearance” of symmetry.

   Note

   When the speed reducer gearbox is mounted on the auger, the front casing half is the one which has the drain plug in it at the bottom (see red arrow), and is closer to the tractor. The rear casing half is the one which is closer to the auger boot.

Figure 1. Mark Bottom of Casing Halves

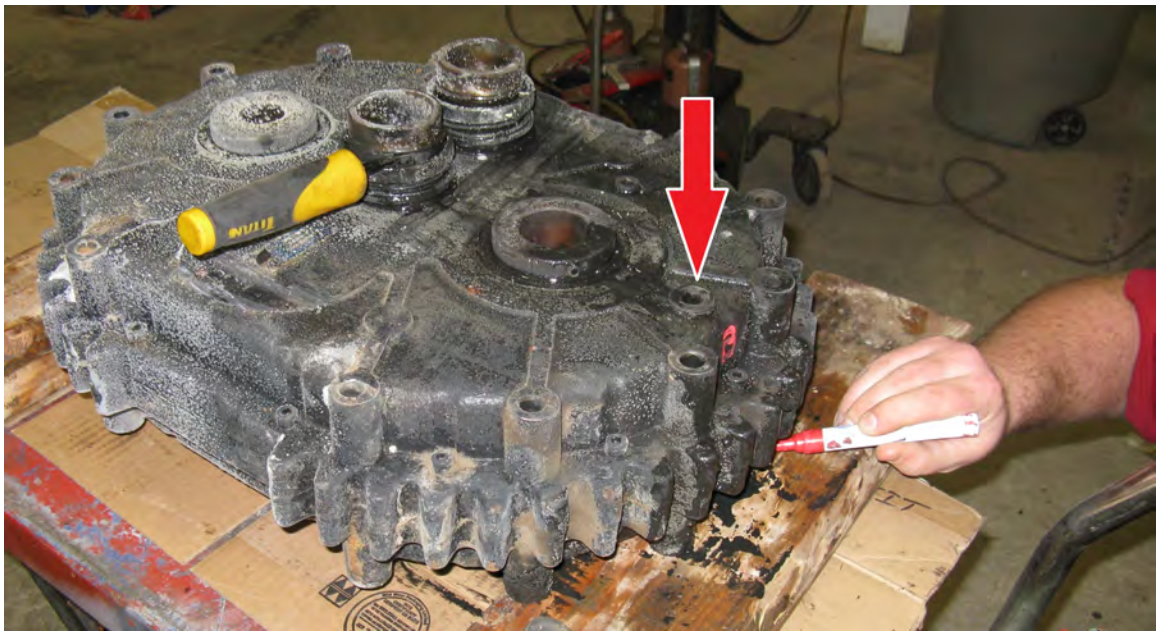


Figure 2. Mark Both Casing Halves

2. Push down the spring top ring on the input gear shaft, and remove the retaining ring (see Figure 3). Also do this on the idler gear shaft.

Figure 3. Removing Retaining Rings

3. Remove the spring top ring, spring, and spring base ring from the input gear shaft (see Figure 4). Also do this for the idler gear shaft.

Figure 4. Removing Springs

4. Remove the ball bearings from the input and idler gear shafts.
5. Remove the snap rings on the input and idler gear shafts (see Figure 5).

Figure 5. Removing Snap Rings

6. Make sure the setscrews on the top and bottom gear shafts are screwed in slightly below flush with the outer diameter of the shafts (see Figure 6) so that when the casing is removed, the seals do not catch on the setscrews.

Figure 6. Screw in Shaft Setscrews

7. Remove the socket head screws, lock washers, and nuts which fasten the casing halves together (see Figure 7).

Figure 7. Removing Socket Head Screws

8. Remove the front casing half off of the rear casing half (see Figure 8 and Figure 9).

Note

When lifting the front casing half off of the rear casing half, hold the gear shafts down in the back casing half with your hands. If the gear shafts are pulled out with the front casing half, the oil will drain out onto the floor, making a mess.

Figure 8. Removing Front Casing Half

Figure 9. Front Casing Half Removed

9. Dump the gears, shafts, and bearings in an oil pan to allow the old oil to drain off them (see Figure 10).

Figure 10. Dump Gearbox Components into Oil Pan

10. Separate the used oil to send for recycling at an appropriate facility.
11. Clean the gear, shaft, and bearing components in Varsol (see Figure 11).

Figure 11. Cleaning Gearbox Components

12. Clean the casing halves with Varsol rags (see Figure 12).

Figure 12. Cleaning Casing Halves

13. Remove the old seals from both casing halves (see Figure 13).

Figure 13. Removing Old Seals

4. Gearbox Reassembly

Important

Make sure not to make mistakes in which components are re-inserted in which spots, and in which orientations they are reassembled. There is one proper way to reassemble, and several mistakes are easy to make due to the “appearance” of symmetry. Examples of distinct features and components which need to be installed in the proper orientation with respect to one another:

- front & rear casing halves,
- placement of top & bottom shafts,
- gears meshing orientation,
- orientation of shaft setscrew holes, and
- relative positions of drain plug, fill plug, and breather plug.

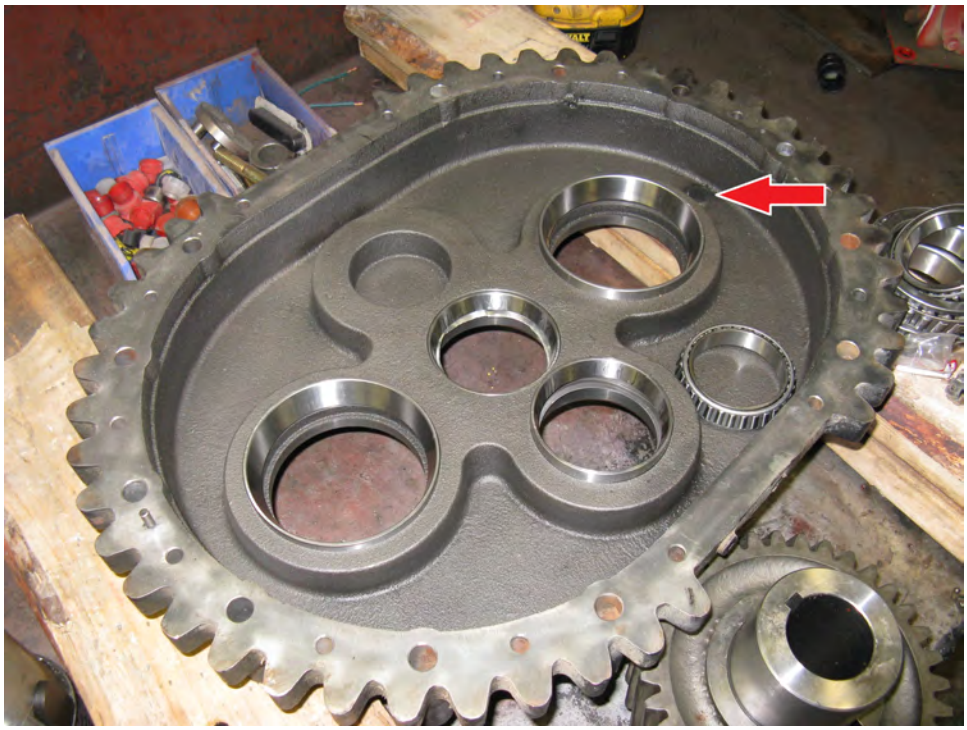
“Notes” are given throughout the procedure to assist in reassembling all components in the proper spots and orientation.

1. Lay the front casing half on the workbench with its inside upward (see Figure 14). Position this casing on wood blocks so that it is raised up from the workbench by 3–4 inches.

   Note

   To correctly identify, the front casing half has the drain plug in it at the bottom (see red arrow).

Figure 14. Positioning Front Casing Half



2. Install the bottom shaft and gear in its bearing nearest the drain plug in the front casing half (see Figure 15).

Note

To correctly identify, the shaft of the bottom gear has the largest hole size of any of the shafts. For correct orientation, the setscrew hole in the shaft should be on the outside of the front casing half.

Figure 15. Installing the Bottom Shaft and Gear

Note

Figure 15 shows new bearing replacement parts being installed. For many seal replacement instances, the bearings will not be replaced with new ones, and will still be fitted onto the gear shafts.

3. Install the input shaft and gear in its bearing in the front casing half (see Figure 16).

Note

For correct orientation, the longer end of the shaft from the gear with the ball bearing holes should be on the outside of the front casing half. Make sure the gear meshing between the bottom gear and input gear are as shown.

Figure 16. Installing the Input Shaft and Gear

4. Install the top shaft and gear (see Figure 17).

Note

For correct orientation, the setscrew hole in the shaft should be on the outside of the front casing half.

Figure 17. Installing the Top Shaft and Gear

5. Install the idler shaft and gear.
6. Temporarily fasten the casing halves together with only two socket head screws and nuts on opposite corners (see Figure 18).

Figure 18. Temporarily Fasten the Casings Together

7. Rotate each gear by hand to ensure the gears are seated properly (see Figure 19). The gears should rotate freely, but they should fit tight (maximum of approximately 0.01” axial movement).

Figure 19. Testing Fit of Gears

8. Flip the gearbox around, lay the rear casing half on the workbench blocks, and remove the front casing half.
9. Apply gasket-maker to the rear and front casing halves (see Figure 20 and Figure 21).

Figure 20. Applying Gasket-Maker to Rear Casing Half

Figure 21. Applying Gasket-Maker to Front Casing Half

10. Fasten the front casing half onto the rear casing half with socket head screws, lock washers, and nuts (see Figure 22). Torque the nuts to approximately 14 ft·lb.

Figure 22. Fastening the Casing Halves Together

11. Flip the gearbox over and install the seals on the rear casing half. To get the seals started onto the shafts, use a flat screwdriver to gently stretch the seal lip over the shaft edge. Tap the seal down onto the shaft until the top seal surface is 1/16” below the casing surface (not quite flush) (see Figure 23).

NOTICE When tapping the seal down onto the shaft, carefully lift the seal lip over the snap ring slot in the shaft. If the seal is cut by the slot, it will leak during operation.

Note

Other useful tools to install the seals without damaging them may be a rubber mallet, a piece of pipe the same size as the seals, and a brass or wood drift pin.

Figure 23. Installing Seals on Rear Casing Half

12. Flip the gearbox over and install the seals on the front casing half (see Figure 24).

Figure 24. Installing Seals on Front Casing Half

13. Install the snap rings on the input and idler gear shafts (see Figure 25).

Figure 25. Installing Snap Rings

14. Install the spring base rings on the input and idler gear shafts (see Figure 26).

Figure 26. Installing Spring Base Rings

15. Install the springs on the input and idler gear shafts (see Figure 27).

Figure 27. Installing Springs

16. Install the spring top ring on the input gear shaft (see Figure 28). Also do this on the idler gear shaft.

Figure 28. Installing Spring Top Rings

17. Insert the ball bearings in the input and idler gear shafts.
18. Push down the spring top ring on the idler gear shaft, and install the retaining ring (see Figure 29). Also do this on the input gear shaft (see Figure 30).

Figure 29. Installing Retaining Ring on Idler Shaft

Figure 30. Installing Retaining Ring on Input Shaft

19. Place lubricating oil on all the spring components on the input and idler gear shafts (see Figure 31).

Figure 31. Lubricate Spring Components

20. With the gearbox standing upright and level, fill the gearbox 1/4 full (up to fill plug to the right of the lower flighting gearbox shaft as shown by the red arrow in Figure 32) with 75W90 synthetic gear oil. This requires exactly 2.5 L of oil.

NOTICE Do not overfill the gearbox with oil (beyond what is stated in this step), or excessive internal air pressure and temperature may cause damage to the gearbox during operation.

Figure 32. Fill Gearbox with Oil

21. Ensure breather vent is installed is facing upright (see Figure 33).

Figure 33. Checking Breather Vent Orientation

5. Reinstall Gearbox onto Auger Boot

To assist in reinstalling the gearbox onto the MKX130 or X130 auger boot, see the 1000 RPM PTO Drive Kit Installation Instructions.

WESTFIELD

P.O. Box 39
Rosenort, Manitoba, R0G 1W0 Canada
Phone: (866) 467-7207 (Canada & USA) or (204) 746–2396
Fax: (866) 768-4852

Website: www.grainaugers.com
Email: sales@grainaugers.com

Printed in Canada

AGI
AG GROWTH INTERNATIONAL