

# **KESMAC 2150 & 2200 MODEL SOD HARVESTERS**

## **SERVICE KIT**

For

## **CONNECTING RODS AND ECCENTRIC SHAFT ASSEMBLY**

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## KESMAC 2150 & 2200 MODEL SOD HARVESTERS CONNECTING ROD SERVICE KIT

In certain conditions, the rear bearings in the Connecting Rods may seize on the Eccentric Shaft and require replacement.

The new design improves the service life of the Connecting Rod Assembly.

H500270 - Connecting Rod Service Kit includes the following parts :

H500269	Connecting Rod Assembly	1
KB23011	Bearing Cone	2
H100592	Washer	1
KX20036	Slotted Nut. ¾ in. – 16	1
KX20037	Dust Cap	1
KB90012	Shaft Seal	1
F910514	Cotter Pin	1
KB51812	Bearing - Needle Roller	2
KB12031	Thrust Washer	4
KB42031	Thrust Bearing - Needle Roller	2
H100245	Axle - Needle Roller Bearing	2
KH80011	Seal	2
H300055	Tie Bolt	1
H100246	Nut - Special - Retainer	1
* H100588	Crank Shaft 16 in. width of cut	1
* H100589	Crank Shaft 18 in. width of cut	1
* H100590	Crank Shaft 24 in. width of cut	1

\* Specify Eccentric Shaft Required. 16, 18 or 24 inch.

### Before starting to install the kit :

- Carefully read and understand the following instructions.
- Check that all of the parts are accounted for and identified.
- Pressure wash the area to be worked on to remove all dirt and grease.
- Plug and cap all hydraulic or tube fittings when removed to prevent dirt from entering the hydraulic system.



### CAUTION

Use lift equipment with a rated capacity to lift the Cutter Head Assembly. Failure to do so could result in serious injury to yourself and others.

- Allow for a minimum lift capacity of 950 lbs. (426 kg.)

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### IMPORTANT

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If in doubt, or lack understanding about these instructions, ask your supervisor or contact Kesmac Engineering Department for clarification.

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**REMOVING THE CONNECTING RODS and ECCENTRIC SHAFT 2150 Model**

**WARNING**

Engage the Lift Latch, or lower the Service Stand, or engage the Cylinder Lock to prevent the accidental lowering of the Conveyor that could result in personal injury.

**Fig.1**  
Remove the Connecting Rod Tie Bolt and Retainer Nut. Remove the 3/8 x 3/4 in. Bolt and the Retainer Washer. Remove the bolts attaching the Side Arm to the Cutter Blade. Swing the Side Arm forward and use a 'puller' to remove the Connecting Rod Assembly from the Eccentric Shaft. To remove the Connecting Rods on the Model 2200 the Cutter Head must be removed from the frame. See page 4.

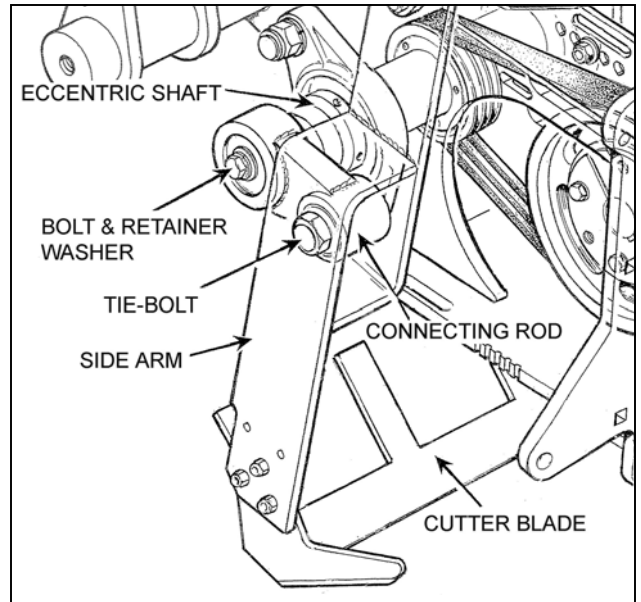


Fig.1

**Fig.2**  
Loosen the four Drive Motor mounting bolts. Release the Adjusting Bolt Lock-nut and 'back-off' the Adjusting bolt as far as possible. Push the Drive Motor 'rearward' and remove the Belt from the Drive Motor Sheave.

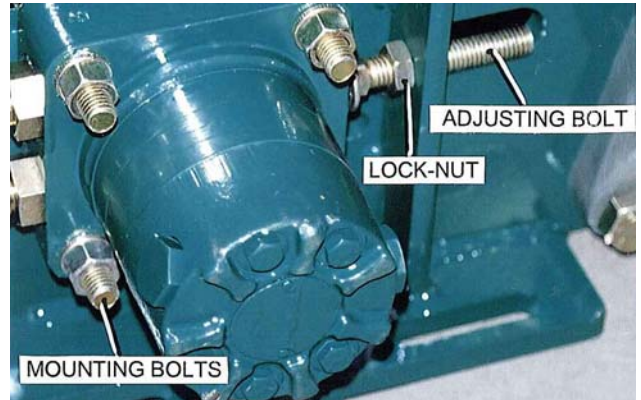


Fig.2

**CAUTION**  
Position a 'bottle jack' under the Eccentric Shaft, before it is removed, to prevent it from dropping and possibly causing personal injury.

**Fig.3**  
Loosen the Set Screws. Release the Lock Collars by tapping 'counter clockwise'. Remove the Flanged Bearings from the Eccentric Shaft. Lower the Eccentric Shaft complete with Driven Sheave and Belt out of the Cutter Head.

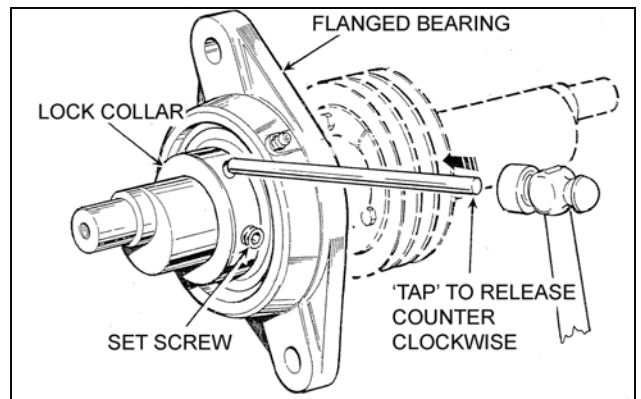


Fig.3

**Fig.4**  
**REMOVING THE DRIVEN SHEAVE**  
Remove the three bolts in the Driven Sheave Taper Lock Bushing and fit them into the threaded holes 'A'. Tighten the bolts 'evenly' into the sheave until the Taper Lock Bushing is loose. Remove the sheave from the shaft.

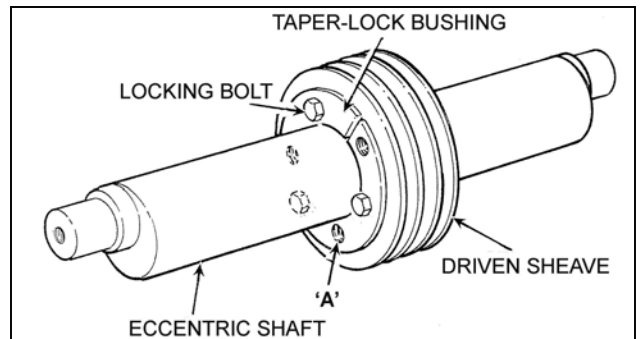


Fig.4

**IMPORTANT**

Check the sheave for excessive wear or damage. If necessary replace it.

The recommended method of installing the new Eccentric Shaft Assembly into the Cutter Head, for 2150 Models, follows, on page 3.

**ECCENTRIC SHAFT ASSY. INSTALLATION. 2150 Model**  
Fig.5

Bolt the left side and the right side Flanged Bearings into place on the Cutter Head Frame.

Attach the Lock Collars only 'finger tight' and with the Set Screw 'backed off'.

Insert the new Eccentric Shaft through the right side bearing. Before the Shaft is fitted into the left side bearing, slide the Driven Sheave ( with the Lock Collar bolts loose) onto the Shaft, also fit the Drive Belt over the Shaft.

Continue to push the Eccentric Shaft through the left side Flanged Bearing

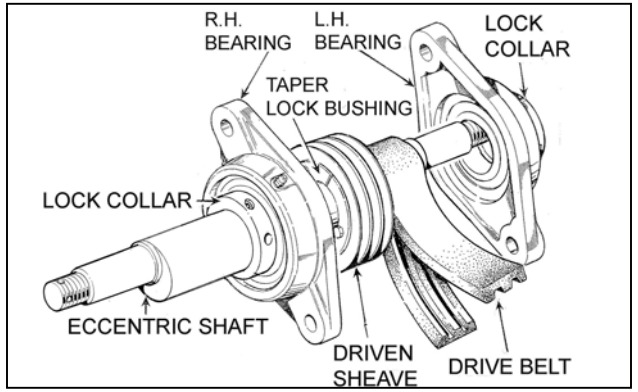


Fig.5

**RE- FITTING THE CONNECTING RODS.**

Fig.6

Pack the Bearings with grease. Insert a Bearing Cone into the 'Inner' Bearing Cup in the Connecting Rod. Carefully fit the Shaft Seal into the Connecting Rod.

Insert a Bearing Cone into the 'outer' Bearing Cup in the Connecting Rod. Slide the Connecting Rod onto the Eccentric Shaft. Do not damage the Seal. Fit the 3/4 in. Washer and Slotted Nut.

**IMPORTANT**

The Taper Roller Bearings **must be pre-Loaded** as follows: Tighten the Slotted Nut 'firmly finger tight '. Continue to tighten the Nut, **while rotating the bearings**, to 150 ft.lbs. Turn the Nut back one flat. Fit the new Cotter Pin. Pack the Dust Cap with grease and fit it into place.

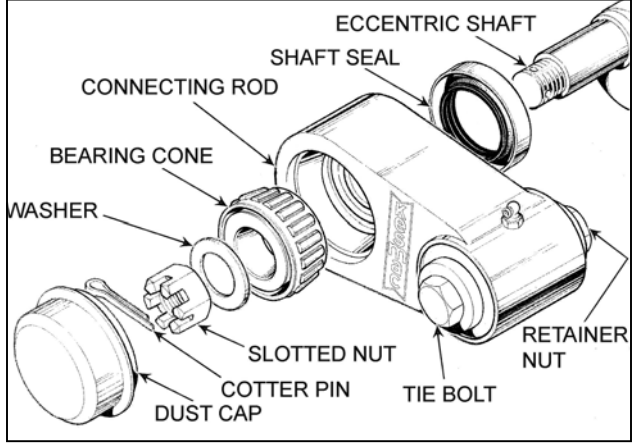


Fig.6

Fig.7

**IMPORTANT**

The Eccentric Shaft **must be 'centered'** in the Cutter Head Frame to align the Connecting Rods with the Side Arms.

Measure from the Connecting Rod face to the Flanged Bearing Face, **dimension 'A'**, not the Lock Collar or bearing housing. Adjust the Eccentric Shaft 'left to right' to get equal measurement on both sides. Tighten the Lock Collars, in the opposite direction to the shaft rotation, and tighten the Set Screw. (Loc-tite the Set Screws).

Remove the Tie bolt and Retainer Nut from the Connecting Rod taking care not to displace the Bearing Axles. Fit the Connecting Rod into the Side Arm. Install the Tie Bolts and Retainer Nut.

Fig.8

**IMPORTANT**

The Driven Sheave and Drive Motor Sheave **must align.**

Place a Straight Edge across the Motor Sheave and adjust the Driven Sheave on the Eccentric Shaft until it is correctly aligned with the Motor Sheave.

Tighten the three bolts in the Taper Lock Collar, while checking that the Sheave does not move on the shaft.



**WARNING**

The above operation will be easier done from under the Cutter Head. If the Cutter Head is raised sufficient to do this, it must be supported on jack stands, or other means capable of supporting the Conveyor / Cutter head Assembly. Failure to do so could result in serious personal injury.

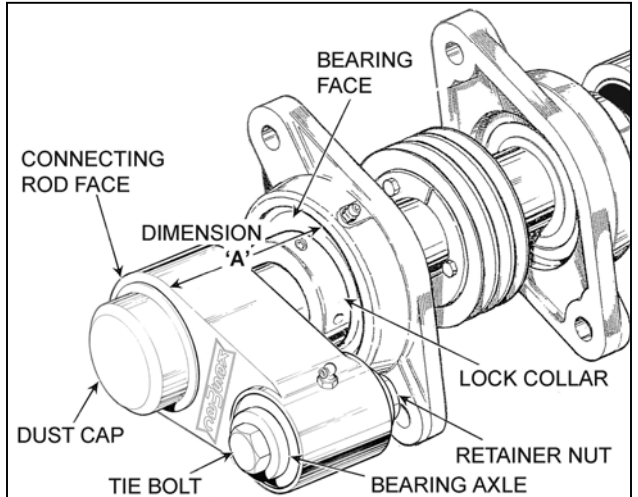


Fig.7

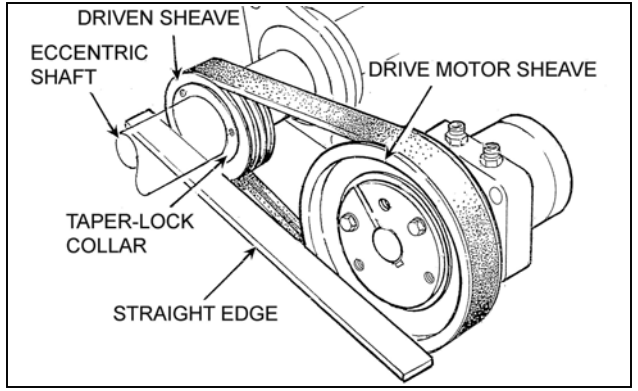


Fig.8

## 2200 HARVESTER CUTTER HEAD REMOVAL

Fig.9

Remove the Tractor to Conveyor Tie - Rod.  
Raise the Conveyor sufficient to lift the Ground Roller off the ground, place blocks under the Crown Roller Bearing points, lower the Conveyor and remove the Lift Arm Chains.

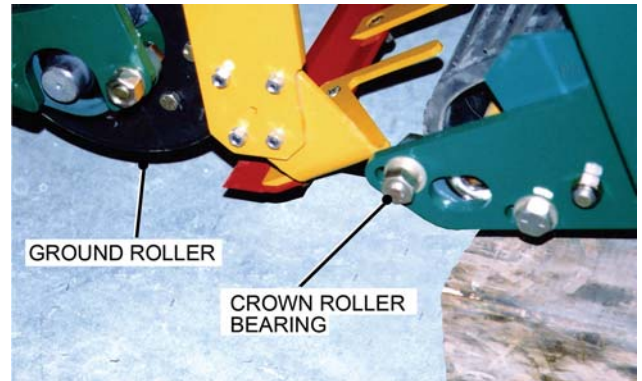


Fig.9

Fig.10

Attach a lift sling as shown.

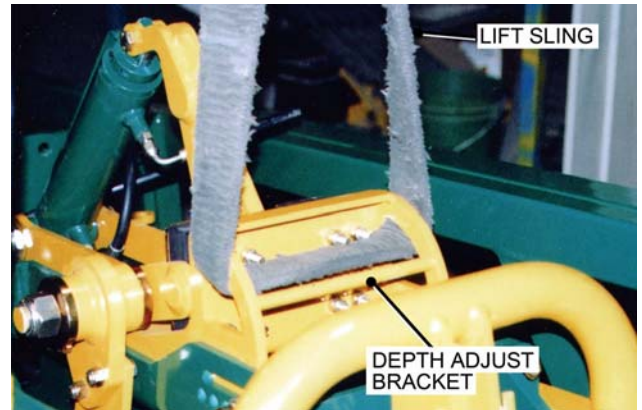


Fig.10



### CAUTION

Use lift equipment with a rated capacity to lift the Cutter Head Assembly. Failure to do so could result in serious injury to yourself and to others.

- Allow for a minimum lift capacity of 950 lbs. (426 kg.)

### IMPORTANT

Clean around areas to be worked on.  
Plug and cap all hydraulic fittings when removed to prevent dirt from entering the hydraulic system.

Fig.11

Remove the Cam Cover Guard and the Centering Springs. Disconnect the Depth Cylinder hoses, at the clamp on the frame rail. Also disconnect the Cutter Drive Motor hoses (and Brush Attachment hoses, if fitted), where they exit the frame rail tube, and pull them out of the tube. Remove the Hose Clamp securing the Drive Motor hoses to the Conveyor frame. Disconnect the Counter Wiring Plug, or the Counter Cable, if fitted.

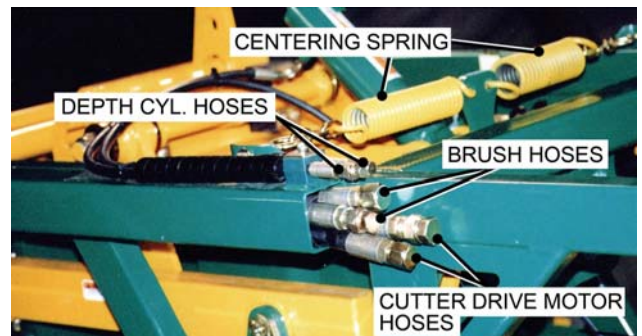


Fig.11

Fig.12

Take the weight of the Cutter Head Assembly on the sling.  
Remove the seven 1/2 inch bolts that attach the Hub Frame to the Conveyor Frame.  
Pull the Cutter Head Assembly clear of the Conveyor Frame.

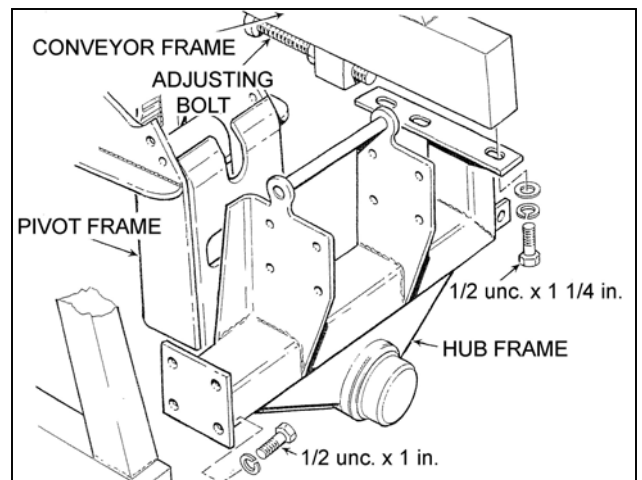


Fig.12

**REMOVAL OF CONNECTING RODS AND ECCENTRIC SHAFT ASSEMBLY. 2200 MODEL**

With the Cutter Head Assembly out of the Conveyor Frame the Connecting Rods can now be removed.

To remove the Connecting Rods, with the Eccentric Shaft in the Cutter Head Frame, use a 'puller' to remove them. Refer to Figure 6 for fitting the new Connecting Rods.

**REMOVING THE ECCENTRIC SHAFT ASSEMBLY**

**NOTE**

The Eccentric Shaft Assembly is heavy, two persons should remove it from the Cutter Head Frame. The Connecting Rods can remain on the Eccentric Shaft when removing it, but removing them reduces the weight of the assembly making it easier to handle.

Fig.13  
Slacken the Cutter Drive Belt and remove it from the Cutter Motor Sheave. See figure 2.  
Loosen the TOP bolts in the Flanged Bearings.  
Remove the BOTTOM bolts from the bearings.  
The assembly will swing down, supported by the top bolts.  
With a person supporting each end of the Eccentric Shaft Assembly, remove the TOP bolts and lower it to the floor.

Fig.14  
To remove the Flanged bearings :  
Loosen the Lock Collar Set Screw and tap the Lock Collar 'counter clockwise' to release it. Remove the bearing.

Fig.15  
To remove the Driven Sheave :  
Remove the three bolts in the Taper Lock Bushing. Fit them into the threaded holes 'A'. Tighten them 'evenly' into the sheave to release the Taper Lock Bushing.  
Remove the sheave from the shaft.

Reverse the procedure for re-assembly and installation of the Connecting Rods, Eccentric Shaft Assembly into the Cutter Head Frame (**see page 3**). The Correct set-up of the Eccentric Shaft and the alignment of the sheaves **must be done as shown on page 3**.

Fig.16  
Refit the Cutter Head Assembly in the reverse order, noting that the Rear Pivot Bearing is correctly located in the Conveyor Frame , and the Hub Frame is hard against the Adjusting Bolt.

**IMPORTANT**

**Do not change the Adjusting Bolt position**, to do so will change the Cutter Head alignment, seriously affecting the cutting operation.

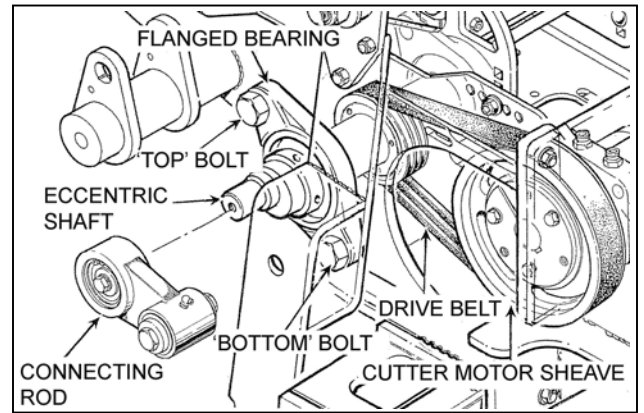


Fig.13

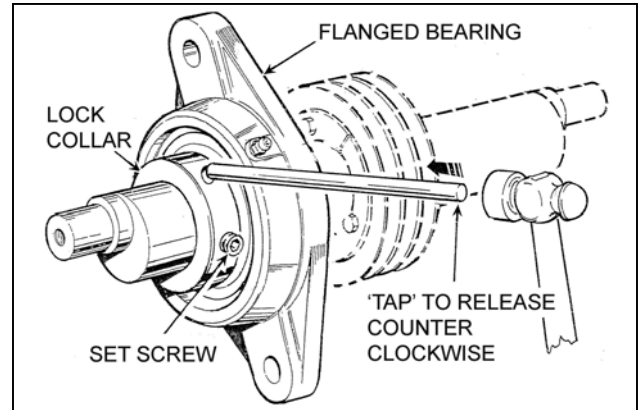


Fig.14

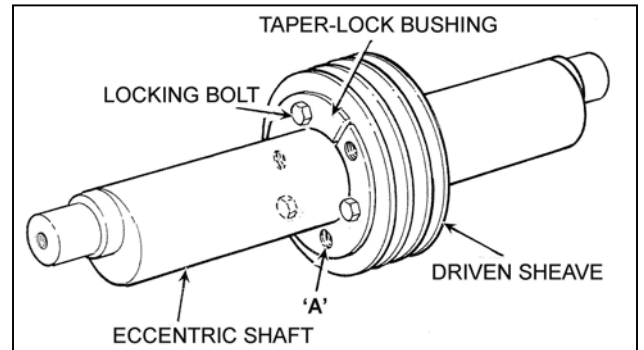


Fig.15

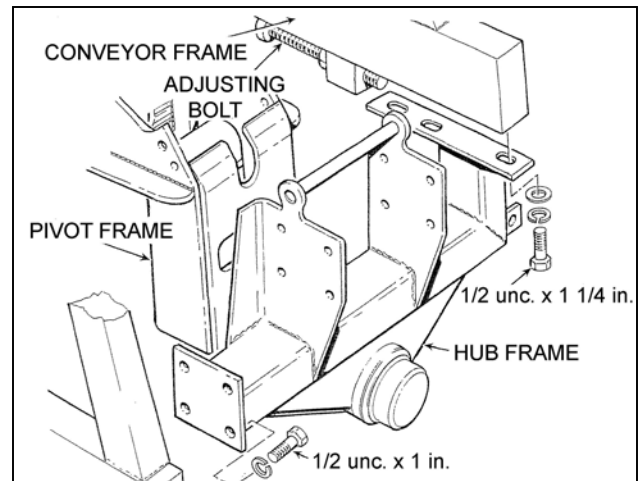


Fig.16