MacDon®

Rake-Up Pick-Up Header Rotor Shim Kit (MD #191794) Installation Instructions

Contents

Rake-Up Pick-Up Header
ROTOR SHIM KIT (MD #191794)
INSTALLATION INSTRUCTIONS

The Rotor Shim kit should be used when replacing the idler rotor assembly (MD #180212) on Rake-Up pick-up headers.

The following tools will be required:

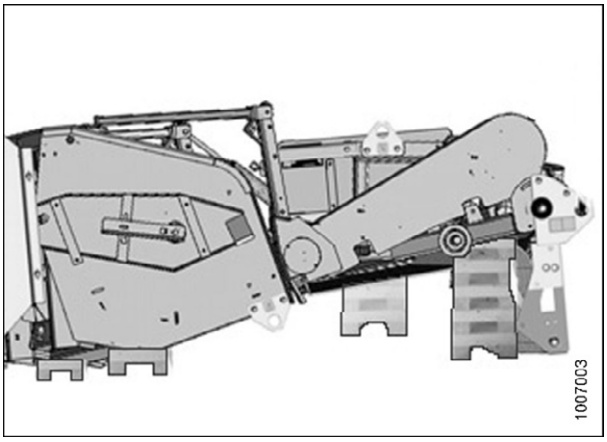
- Torque wrench 29–32 ft lbs (40–44 N·m)
- Loctite® 262 or 3M TL62
- Impact gun
- Reamer/die grinder
- #3 Phillips head screwdriver
- Center/aligning punch
- 9/16, 3/4, and 1/2 sockets and wrenches

Installation Instructions

To replace the idler rotor assembly and install the Rotor Shim kit, follow these steps:

1. For a better working height, lower the header completely to the ground or lower onto blocking as shown at right. Raise the hydraulic hold-down completely. Shut off the combine engine, engage the parking brake, and remove the key from the ignition.

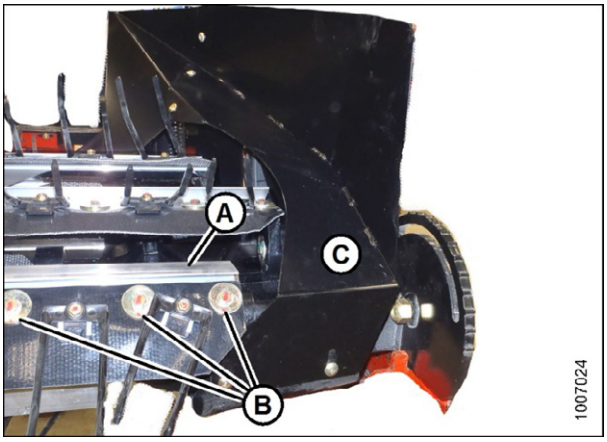
2. Engage the hold-down safety locks.



3. Remove the drive belt shield from the gearbox end of the pick-up. Release the drive belt tension by releasing tension off the spring loaded idler allowing the finger bars to be rotated by hand to access all finger bars.

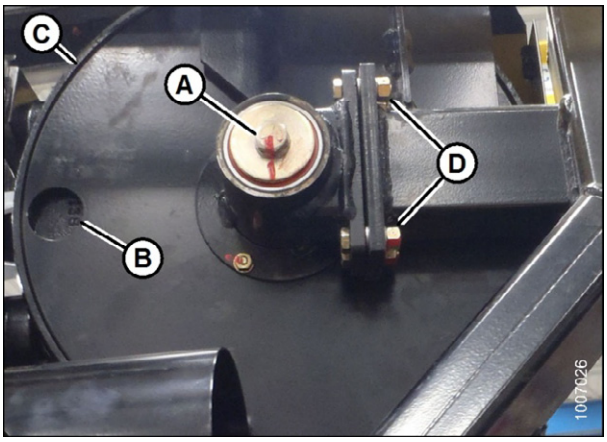
4. The finger bars (A) are secured with bolts coated with Loctite® 262. Remove the four 5/16 inch bolts (B) that secure each end of the finger bar. Start at the drive end, and then go to the idler end, removing one bar at a time. Rotate the finger bars until all six bars are removed. Retain all hardware.

   NOTE: The six Phillips head bolts holding the shielding (C) at the idler end may be removed to make removal and installation of the idler rotor assembly easier.



5. To remove idler rotor assembly (MD# 180212), remove bolt (A), large flat washer, and lock washer from underside of pick-up. Replace bolt, hand tighten, and with a large 3/4 in. (19 mm) drift or block of wood and a hammer, drive the rotor assembly shaft upwards at least 1/2 inch, so that you can remove idler rotor assembly from the topside of the pick-up.

   NOTE: If the shaft does not move, try tapping with a drift through the access hole (B) on the underside the seal plate (C). Turn rotor assembly, and tap all around through access hole (B). It may be necessary to remove entire assembly by removing the four bolts at (D) holding the rotor assembly mount to the frame.

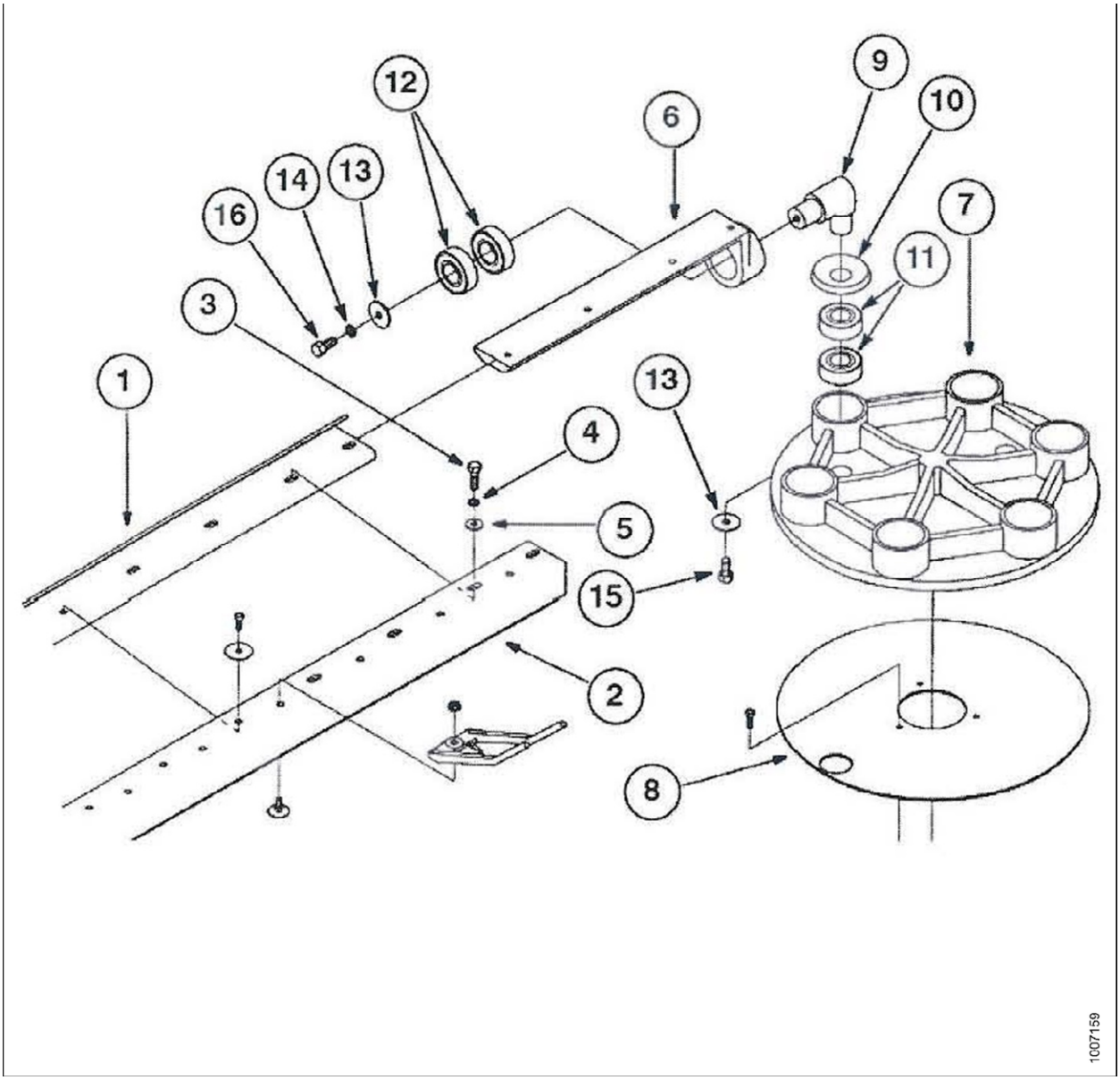


6. Take note of any shim washers on lower bolts between the housing bolts at (D) and the frame mount plate. If present, loosen four bolts (D). Remove the two bolts to remove shim washers. Do not reuse these shim washers upon reassembly.

7. With shaft moved upwards, separate idler rotor assembly complete with finger bar idler arms from the idler roller seal plate to a convenient work bench. Remove all six bolts holding the idler elbows. Remove both washers and reinstall bolt at least half way on threads into elbow. With a hammer or press, tap out each idler elbow complete with idler arm.

Rake-Up Pick-Up Header
ROTOR SHIM KIT (MD #191794)
INSTALLATION INSTRUCTIONS

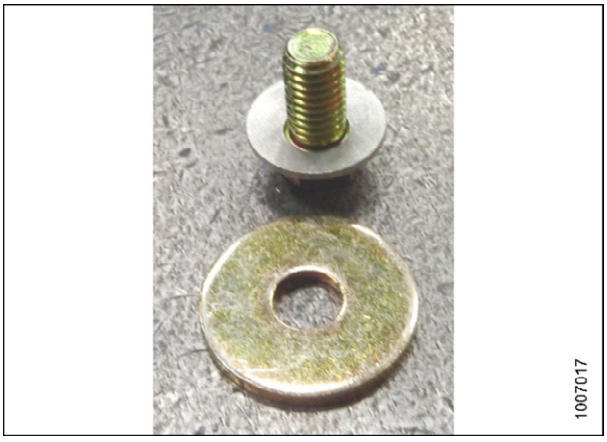
Replacing Idler Rotor Assembly (MD #180212)



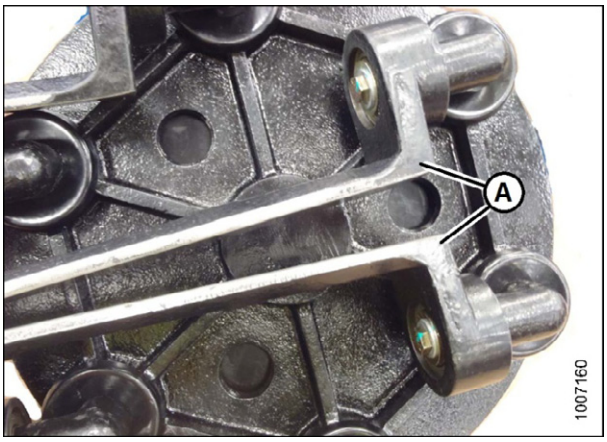
Ref	Description	Ref	Description
1	Finger bar	9	Idler elbow
2	Finger bar belt	10	Bearing seal
3	Bolt – 5/16 x 1 in.	11	Bearing
4	Washer – conical spring M8A	12	Bearing
5	Washer – 3/8 in.	13	Washer – 3/8 in. flat
6	Finger bar idler arm	14	Washer – conical spring M10A
7	Idler end rotor	15	Bolt – 3/8 x 3/4 in.
8	Idler rotor seal plate	16	Bolt – 3/8 x ¾ in.

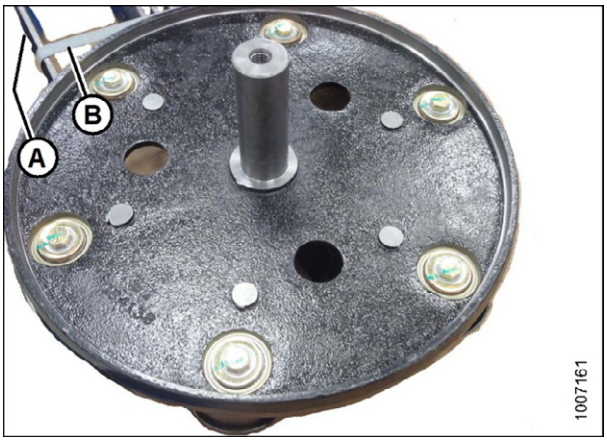
1. Install bearing seal (item 10) over bearing (item 11) on the top side of the new idler rotor assembly. With a press or with a dead blow hammer/mallet install elbow (item 9) with idler arm (item 6) attached. Repeat at all six positions.

2. Install conical washer (item14) cone side up as shown at right and then large flat washer. Insert into elbow and tighten. Repeat for all six. After tightening to 35–42 ft·lbs (48–57 N·m), ensure idler arm (item 6) rotates freely. If stiff, hit elbow with a dead blow hammer to ensure bearings seat and rotate freely.



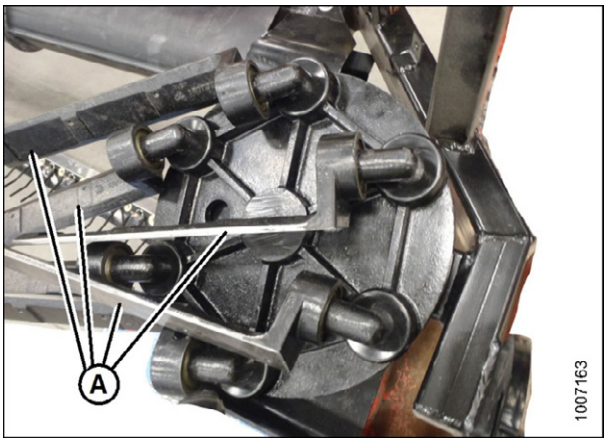
3. To aid in installation of completed assembly, position arms (A) and wire or strap with banding (B) so as to install assembly on to idler rotor bearing housing. Assembly is heavy; check shaft for nick and burrs. **Make certain to get correct orientation for the arms as shown in the images below.**





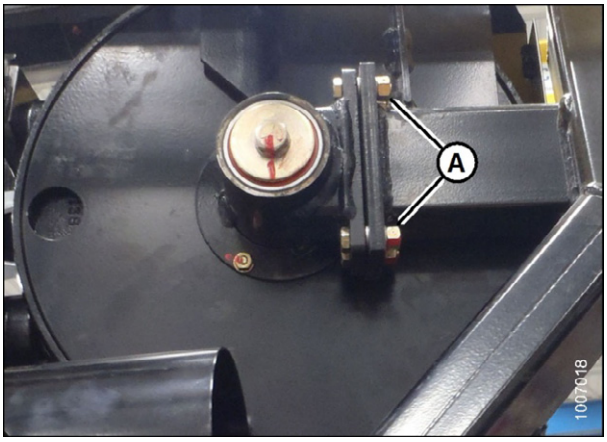
4. Insert shaft into idler rotor bearing housing. Once started undo wiring or strapping and pound fully into bearing housing with a dead blow hammer in the center of the casting until the shaft is fully seated into housing.

5. Install 1/2 X1 in. NC HH bolt regular 1/2 in. lock washer and/or washer previously removed (may be conical M12A) plus large flat washer. Install bolt and torque to 90 ft·lbs (120 N·m).



6. Install Idler Rotor assembly. Ensure any shim washers if present are removed between mounting plates at (A). Tighten hardware

7. Remove wire or banding from arms. Prepare to install finger bars. (See next section.)



Installing Finger Bar Assemblies

IMPORTANT: Follow the instructions exactly to ensure the proper integrity of the idler rotor assembly. The following procedure has been developed specifically to address premature rotor idler assembly failures.

1. Place finger bar assembly into header.

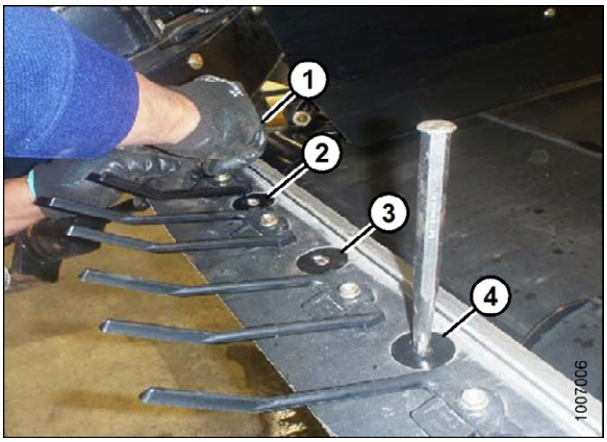
   For used units: Straighten or replace any badly damaged bats.

2. Slide first finger bar onto idler arm side first, and then onto drive rotor arm.

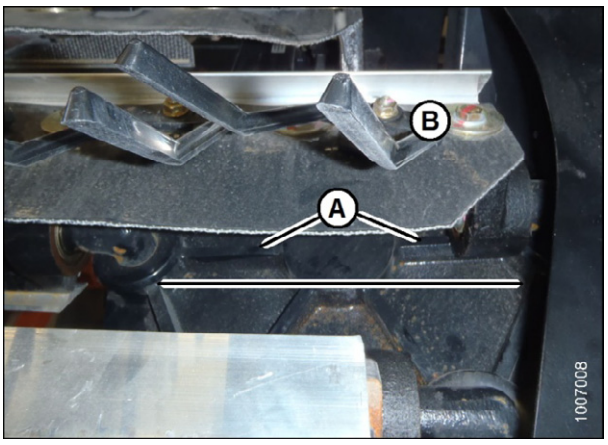
3. Prepare four pieces of hardware for the idler rotor end. Insert a 5/16 x 1 in. hex head bolt through a conical spring M8A washer (MD #184579) with the cone surface up as shown, and then add a large flat washer on top. Add Loctite® 262 to the threads on these four pieces. Install and tighten all four pieces onto idler rotor arm. Torque to 25–29 ft·lbs (34–39 N·m).

4. Prepare another two pieces of hardware for the drive arm. DO NOT apply Loctite® at this time.

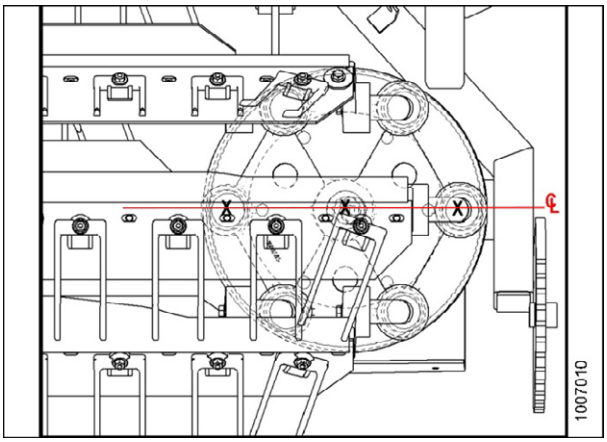
5. Reinstall two of the bolts back in position 1 and 4. Install bolts finger-tight or snug so that washers are loose and finger bar can move as necessary in the following steps.



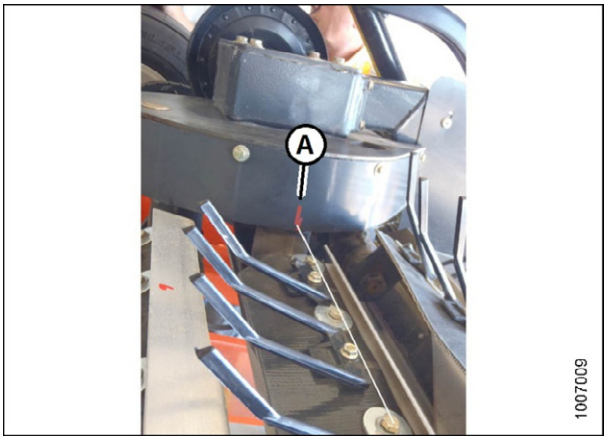
6. **Establish a reference mark.** From this reference mark all finger bar assemblies will be checked in future steps. From the idler rotor arm side align the casting ribs of idler end rotor. Rotate the idler rotor until the casting rib (A) is parallel to the finger bar (B) just installed.



7. Ensure that the finger bar is aligned with the centerline of the rotor. See rotor sketch at right.

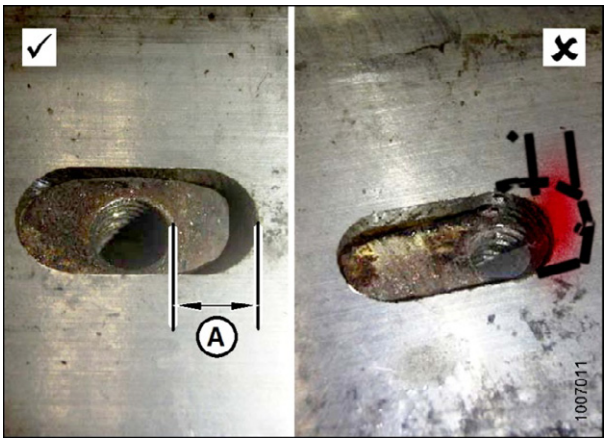


8. At the drive rotor end make a reference mark (A). At this point the finger bar bolts all line up with the drive rotor shaft.



9. With the finger bar at the reference mark (Step 7) observe and mark any slot that dimension at (A) is not at least 6mm (1/4 in).

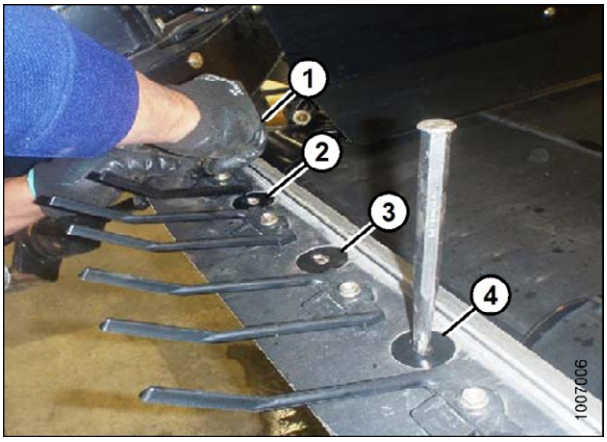
   NOTE: Rubber flap removed for clarity.



10. If any of the four holes are within 6 mm to the edge of the slot as in the illustration above, on either side of the hole the slot must be reamed. Remove the two bolts securing finger bar to arm and block up finger bar and ream out slot in the direction of markings 6–10 mm. Do all four slots on that finger bar.

11. With an aligning bar, line up and install two of the bolts with hardware from Step 4 at positions **(**1) and (4). Install bolts finger tight or snug so that washers are loose and finger bar can move if necessary in Step 16. **DO NOT** install Loctite® at this time.

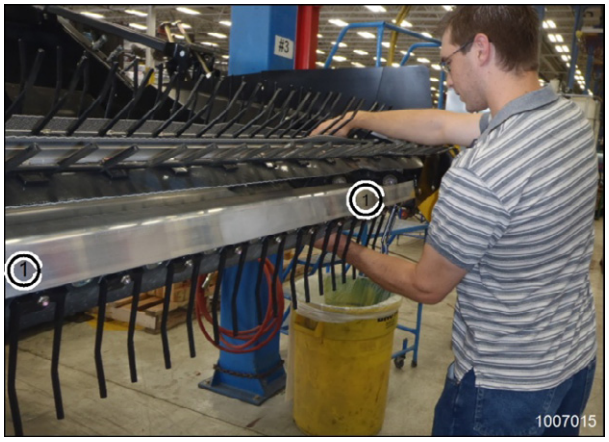
12. Prepare next bat and install as before checking for slot to be 6 mm from edge of bolt hole repeating Steps 4 through 6 until all six finger bars are checked.



IMPORTANT: Do NOT rotate finger bar assembly by the pulley at gearbox.

13. With a permanent marker, number each aluminum finger bar from 1 to 6 at the gearbox end and at the idler rotor end. Rotate the finger bar assembly around by hand four revolutions in the normal operating direction from the idler rotor end as shown in photo at right. **Do not pull on the finger bar you are checking as you are rotating the pickup assembly! The numbers will help you avoid pulling on the finger bar you are about to check.**

    With the first finger bar lined up to the reference mark, check to see if any of the two holes visible are within 6 mm to the edge of slot as in Step 9. If there is the minimum 6 mm clearance as in Step 8, repeat this step for each of the finger bars. If there is insufficient clearance repeat Steps 9 through 12. When all six finger bars have been checked, go to the next step.



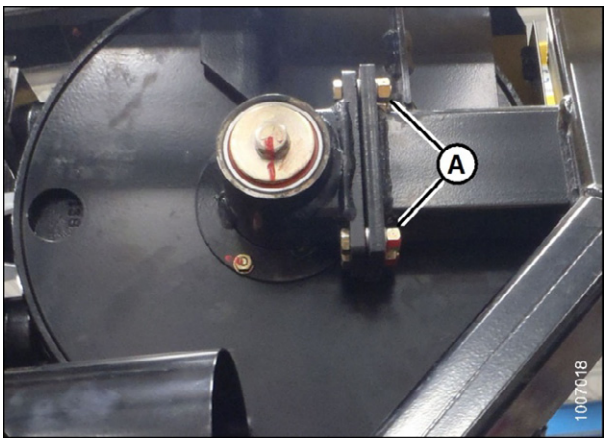
14. Install hardware with Loctite® 262 and torque to 25–29 ft·lbs (34–39 N·m) on the finger bar at the reference mark only.

15. Repeat Steps 12 to 14 rotating finger bars four rotations each time until each of the next adjacent finger bar has been checked at the reference position, hardware installed and tightened. When all six finger bars are complete proceed to the next step.

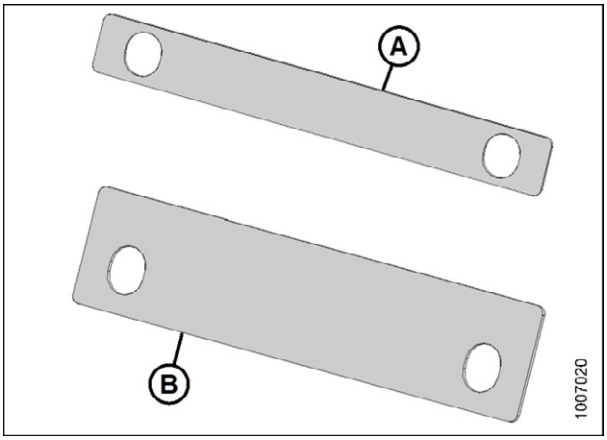
16. Loosen hardware at idler rotor support mount at (A): four bolts about 5 mm at each nut.

17. Look for a gap between plates at (A). Gap may be at bottom two bolts (shown) or at top two bolts. If there is no gap, replace existing bolts and nuts with new hardware: MD #30360 3/8NF x 1.25 lg hex bolt and MD #18866 3/8 in. NF nut. Use existing washer on head of the bolt with Loctite® 262 on threads.

18. Torque to 29–32 ft·lbs (40–44 N·m).

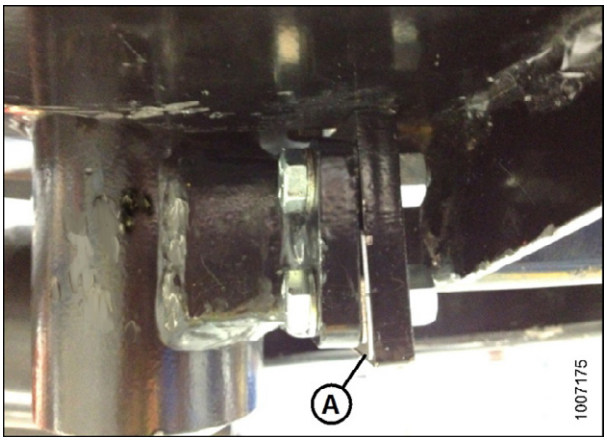


19. If there is a gap, remove the two bolts from the plate and insert the short shim (A) first. If there is still a gap, insert the tall shim (B) to take up as much of the gap as necessary.



A – Short Shim B – Tall Shim

The photo at right is with both shims (A) installed. One shim, both shims, or no shims will depend on how much gap has opened up in step 17.



20. Upon completion, rotate the pick-up assembly four or five times to verify uniform rotational resistance,

    NOTE: There will be some resistance due to fingers contacting draper flap on finger bars.

21. Reinstall belt on pick-up drive and shielding over idler rotor assembly.

Rake-Up Pick-Up Header
ROTOR SHIM KIT (MD #191794)
INSTALLATION INSTRUCTIONS

Part List

This kit includes the following parts:

Ref	Part Number	Description	Quantity
1	191788	PLATE – IDLER ROTOR MOUNT SHIM TALL	1
2	191789	PLATE – IDLER ROTOR MOUNT SHIM	1
A	30360	BOLT – HH 3/8 NF X 1.25 LG GR 5 ZP	4
B	18866	NUT – HEX 3/8 – 24 UNF GR 5 ZP	4

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