

Massey Ferguson®

1745

Round Baler

AHR02235 AND UP

SERVICE MANUAL

4283407M1

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DRIVES

DRIVELINE

Inspection

Make sure the shields rotate freely on the yokes.

Inspect the splines in the front and rear yokes for wear and damage.

Pull the halves of the implement driveline apart and inspect the shafts for wear and damage.

Rotate the Constant Velocity (CV) joint. The CV joint must rotate freely and must not be loose.

Lubricate the two halves of the implement driveline. Align the two halves. Slide the two halves together.

Driveline Removal and Installation

FIG. 1: To remove the implement driveline (1), open the front shield and small driveline shield. Depress the collar (2) toward the implement driveline. Pull the implement driveline off of the input shaft of the gearbox.

To install the implement driveline, depress the collar. Slide the implement driveline onto the input shaft of the gearbox. Release the collar. Move the implement driveline on the shaft until the balls engage in the groove in the shaft.

Pull on the yoke to make sure the yoke cannot be pulled off the shaft.



WARNING: A loose yoke can slip off a shaft and result in injury to personnel or damage to the machine.

After installing a yoke, pull on the yoke to make sure the yoke cannot be pulled off the shaft.

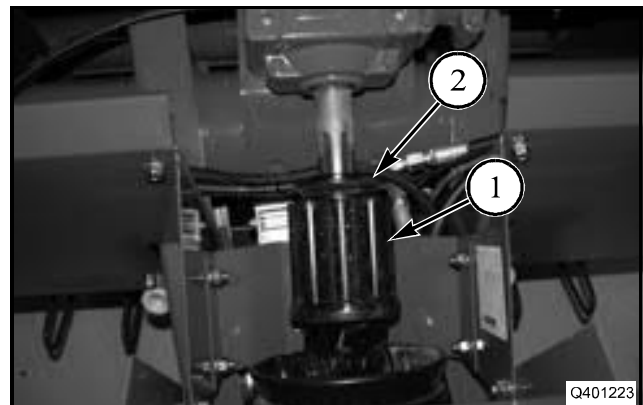


FIG. 1

Drives

Driveline Shield Removal and Installation

FIG. 2: To remove the shield on the implement driveline, lift the lock clip (1).

NOTE: This clip is also the grease fitting for the shield bushing.

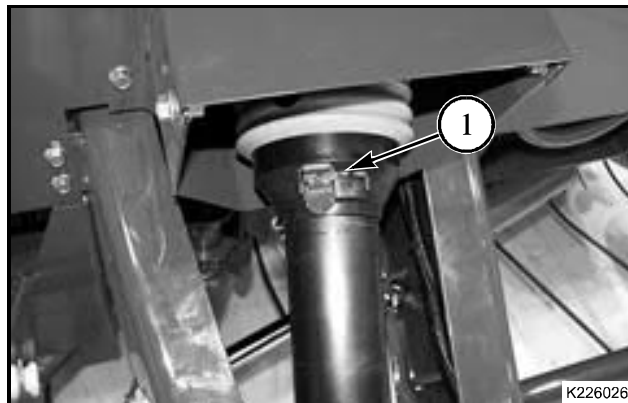


FIG. 2

FIG. 3: Rotate the nylon bearing (1) to align the split in the bearing with the arrow on the shield.

Slide the shield away from the U-joint or CV-joint.

If necessary, remove the nylon bearing.

Clean the bearing groove in the driveline. Apply grease to the bearing groove. Install the nylon bearing.

Install the guard onto the driveline. Align the tabs on the nylon bearing with the slots in the guard.

Turn the nylon bearing to lock the guard into position.

Install the lock clip.



FIG. 3

CV Joint Bearing Replacement

NOTE: The driveline shown in the photos may be different than your driveline. The procedure will be the same.

Disassembly

Remove the implement driveline from the machine. Separate the two halves of the implement driveline and remove the shields.

If the cross grease fittings are installed in the bearing caps, remove the grease fittings.

Start the procedure by removing the yoke that does not have a shaft connected.

The bearing caps are held in the center housing by snap rings.

FIG. 4: If the snap rings are on the outside of the joint, use a hammer and a driver (1) to lightly hit the snap ring. This will drive the bearing cap away from the snap ring and loosen the snap ring. Use a driver that is slightly smaller than the bore. Remove the snap ring.

Repeat the procedure for the snap ring on the opposite end of the cross.

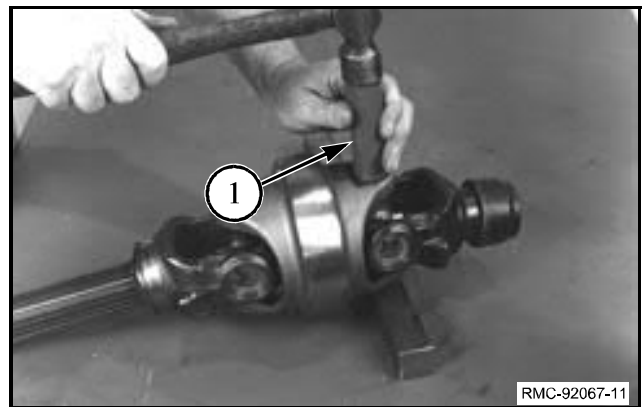


FIG. 4

FIG. 5: If the snap rings are on the inner edge of the bearing cap, put a shop cloth under the snap ring to catch the snap ring. Use a screwdriver and hammer to drive the snap ring off of the bearing cap.

Repeat the procedure for the snap ring on the opposite end of the cross.



FIG. 5

Drives

FIG. 6: Set the quick disconnect yoke on the vise so the ears are supported by the jaws of the vise. Hit the center housing to force the bearing cap (1) out of the center housing. The bearing cap will only be forced part way out of the center housing.

NOTE: When hitting the center housing Never hit the machined surface of the center housing. If the machined area is damaged, the guard will not rotate freely. Never hit the area around the hole for the bearing cap. Distortion of the hole will make removal of the bearing cap difficult.

Repeat the procedure to push the other bearing cap part way out of the center housing.

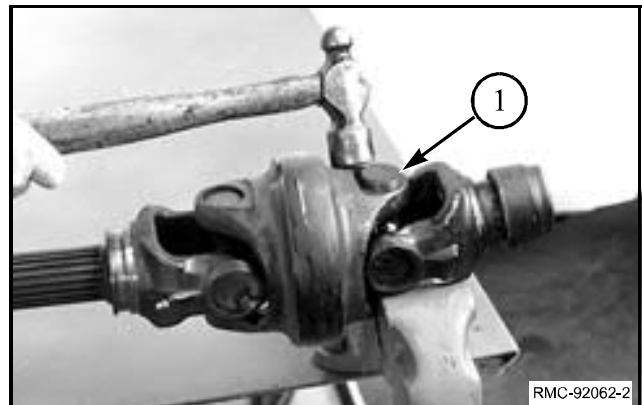


FIG. 6

FIG. 7: Fasten one of the bearing caps in the vise. Make sure the jaws of the vise are as close to the center housing as possible. Hit the center housing to drive the center housing up off the bearing cap. Be careful not to hit the machined surface of the center housing. Do not remove the other bearing cap from the center housing at this time.



FIG. 7

FIG. 8: Remove the quick disconnect yoke from the center housing.

Repeat the procedure to remove the shaft yoke and cross from the center housing.



FIG. 8

FIG. 9: Use the hammer and the driver to remove the bearing caps from the center housing.



FIG. 9

FIG. 10: Use a hammer and a driver to lightly hit the snap rings in the quick disconnect yoke. This will drive the bearing cap away from the snap rings and loosen the snap rings. Use a driver that is slightly smaller than the bore.



FIG. 10

FIG. 11: Remove the snap ring.

Repeat the procedure for the other snap ring in the quick disconnect yoke.



FIG. 11

FIG. 12: Set the quick disconnect yoke on the vise so the trunnions (1) of the cross are supported by the jaws of the vise. Hit the quick disconnect yoke to force the bearing cap out of the quick disconnect yoke. The bearing cap will only be forced part way out of the quick disconnect yoke.

NOTE: When hitting the quick disconnect yoke Never hit the area around the hole in ear. Distortion of the hole will make removal of the bearing cap difficult.

Repeat this procedure to push the other bearing cap part way out of the center housing.



FIG. 12

FIG. 13: Fasten one of the bearing caps in the vise. Make sure the jaws of the vise are as close to the quick disconnect yoke as possible. Hit the quick disconnect yoke to drive the quick disconnect yoke up off the bearing cap.

Use the vice to remove the other bearing cap from the quick disconnect yoke.



FIG. 13

Drives

FIG. 14: The opening between the ears on the quick disconnect yoke is wider on one side of the quick disconnect yoke. Remove the cross from the side with the wider opening.

Remove the cross from the shaft yoke by following the procedure for removing the quick disconnect yoke. Be careful not to hit the grease fitting in the shaft yoke.



FIG. 14

Inspection

Discard the two crosses, all of the bearing caps, and all of the snap rings.

Clean the bores in the center housing and the yokes. Inspect the bores for damage. Replace any parts that are damaged.

Clean the snap ring grooves in the quick disconnect yoke and the shaft yoke. Inspect the snap ring grooves for damage. Replace any parts that are damaged.

FIG. 15: Clean the trunnions (1) of the center plate (2) in the center housing. Make sure none of the needles from the bearings have fallen into the center plate area of the center housing.

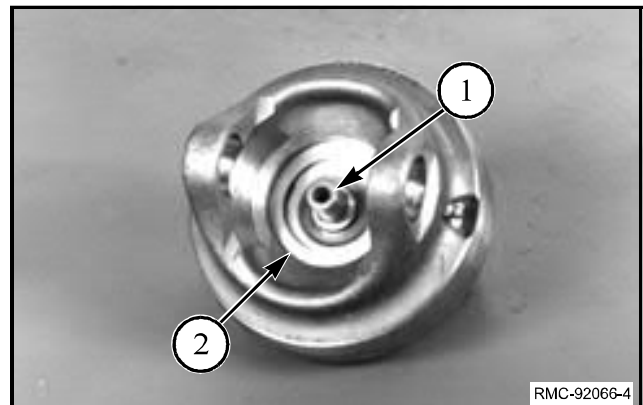


FIG. 15

FIG. 16: Inspect the ball (1) in the quick disconnect yoke and the ball in the shaft yoke for scoring and damage. Check the end play for the balls. The end play must not be more than 0.635 mm (0.025 in). If a ball is bad, replace the yoke.

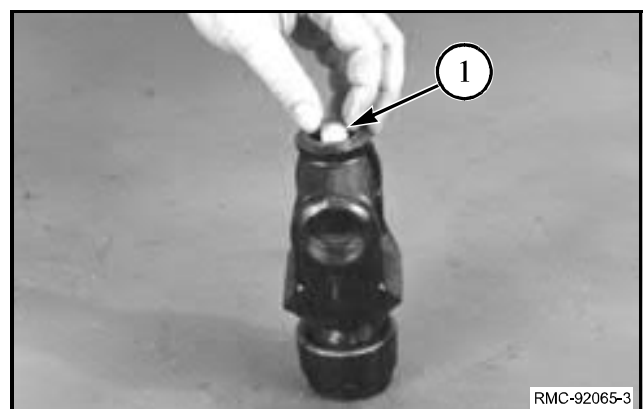


FIG. 16

FIG. 17: Use your finger to check for grease in the ball in the quick disconnect yoke and the ball in the shaft yoke. If there is no grease in a ball, the ball has not been receiving grease. Check the grease fitting and the grease passages in the yoke.



FIG. 17

Assembly

Apply grease to the bores in the quick disconnect yoke, the shaft yoke, and center housing. The grease will make the bearing caps much easier to install.

FIG. 18: If equipped with grease fitting in the crosses, install the grease fittings. Align the grease fitting with the trunnions that have the smaller diameter.



FIG. 18

FIG. 19: Remove the bearing caps from the new crosses and apply grease to the needle rollers in the bearing caps. The grease is used to hold the needle rollers in the bearing caps during installation. Use your finger to push the grease into the needle rollers and to push the needles out against the bearing cap.



FIG. 19

Drives

FIG. 20: Make sure the trunnions of the new cross are clean. Install the large diameter trunnions of the cross through the side of the shaft yoke that has the widest opening. The grease fitting in the cross must be away from the ball in the shaft yoke.

NOTE: In the shaft yoke at the implement end, install the short diameter trunnions in the shaft yoke. The grease fitting in the cross must be away from the ball in the shaft yoke.



FIG. 20

FIG. 21: Push the cross to one side of the yoke. Use the trunnion as a pilot and push the new bearing cap onto the cross and into the opening in the ear.



FIG. 21

FIG. 22: Push the cross into the bearing cap to keep the needles in the bearing cap while driving the bearing cap. Keep the trunnions of the cross parallel with the openings for the bearing caps. Hit the bearing cap lightly with a hammer. Drive the bearing cap into the yoke until the bearing cap is flush with the yoke.



FIG. 22

FIG. 23: Make sure the bearing cap is flat against the bench. Keep the cross in the bearing cap and start the other bearing cap into the yoke. Use a hammer to lightly drive the bearing cap into the yoke just far enough to make sure the bearing cap is straight. If the grease fitting in the yoke is down, support the yoke on a block to prevent damage to the grease fitting.



FIG. 23

FIG. 24: Put the shaft yoke into the vise so the bearing caps are square with the jaws of the vise. Make sure the trunnion is aligned with the bearing caps. Tighten the vise until both bearing caps are flush with the yoke.

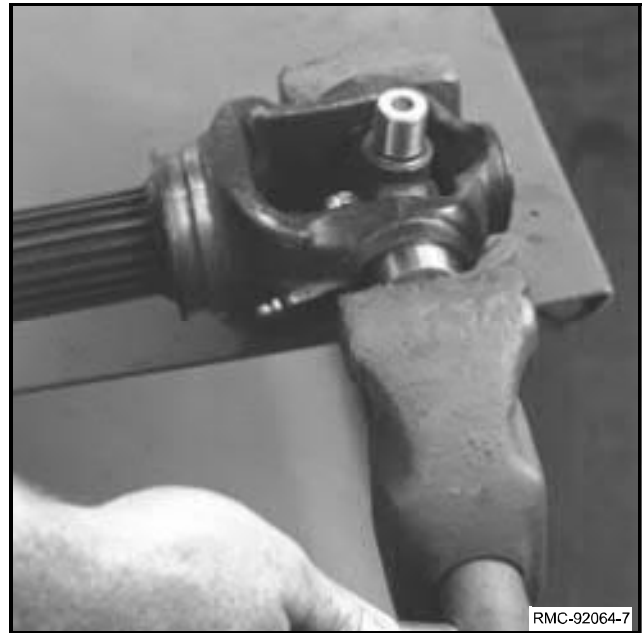


FIG. 24

FIG. 25: Drive one of the bearing caps into the yoke until the groove for the snap ring can be seen. Make sure the ear of the yoke is flat against the bench. If the grease fitting in the yoke is down, support the yoke on a block to prevent damage to the grease fitting.



FIG. 25

FIG. 26: Make sure the groove for the snap ring is clean. Install the snap ring. Use a screwdriver to push the snap ring into the groove all the way around.

Drive the other bearing cap into the yoke until the groove for the snap ring can be seen. Make sure the groove for the snap ring is clean. Install the snap ring. Use a screwdriver to push the snap ring into the groove all the way around.



FIG. 26

Drives

FIG. 27: Make sure the trunnions of the new cross are clean. Install the large diameter trunnions of the cross through the side of the shaft yoke that has the widest opening. The grease fitting in the cross must be away from the ball in the shaft yoke.

NOTE: In the shaft yoke at the implement end, install the short diameter trunnions in the shaft yoke. The grease fitting in the cross must be away from the ball in the shaft yoke.



FIG. 27

FIG. 28: Push the cross to one side of the yoke. Use the trunnion as a pilot and push the new bearing cap onto the cross and into the opening in the ear.



FIG. 28

FIG. 29: Push the cross into the bearing cap to keep the needles in the bearing cap while driving the bearing cap. Keep the trunnions of the cross parallel with the openings for the bearing caps. Hit the bearing cap lightly with a hammer. Drive the bearing cap into the yoke until the bearing cap is flush with the yoke.



FIG. 29

FIG. 30: Keep the cross in the bearing cap and start the other bearing cap into the yoke. Use a hammer to lightly drive the bearing cap into the yoke just far enough to make sure the bearing cap is straight.



FIG. 30

FIG. 31: Put the quick disconnect yoke into the vise so the bearing caps are square with the jaws of the vise. Make sure the trunnion is aligned with the bearing caps. Tighten the vise until both bearing caps are flush with the yoke.



FIG. 31

FIG. 32: Drive one of the bearing caps into the yoke until the groove for the snap ring can be seen.



FIG. 32

FIG. 33: Make sure the groove for the snap ring is clean. Install the snap ring. Use a screwdriver to push the snap ring into the groove all the way around.

Drive the other bearing cap into the yoke until the groove for the snap ring can be seen. Make sure the groove for the snap ring is clean. Install the snap ring. Use a screwdriver to push the snap ring into the groove all the way around.



FIG. 33

FIG. 34: Set the quick disconnect yoke on the vise so the shoulders (1) of the cross are supported by the jaws of the vise. Do not permit the trunnions (2) to contact the vise. Hit the yoke with the hammer to seat the bearing cap against the snap ring. Do not hit the yoke near the opening for the bearing cap.

Turn the quick disconnect yoke over in the vise. Be careful not to damage the trunnions. Hit the yoke with the hammer to seat the other bearing cap against the snap ring. Do not hit the yoke near the opening for the bearing cap.

Use the same procedure to seat the bearing caps against the snap rings in the shaft yoke.

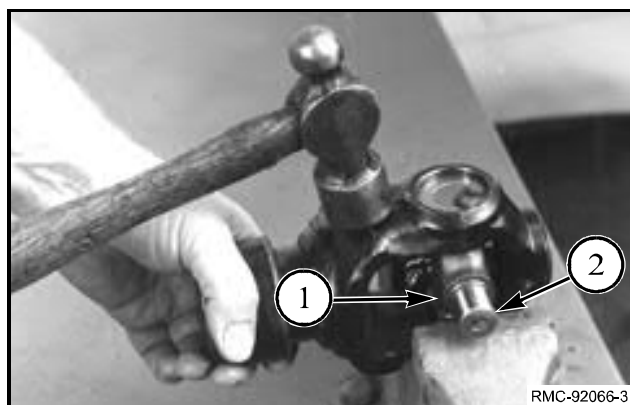


FIG. 34

Drives

FIG. 35: Wrap a shop cloth around the shaft to protect the splines. Clamp the shaft in the vise so the shaft yoke is up.

The ball (1) in the shaft yoke has a flat area around each end of the hole. The flat area is wider on one side of the ball. Rotate the ball so the wide flat area is up.

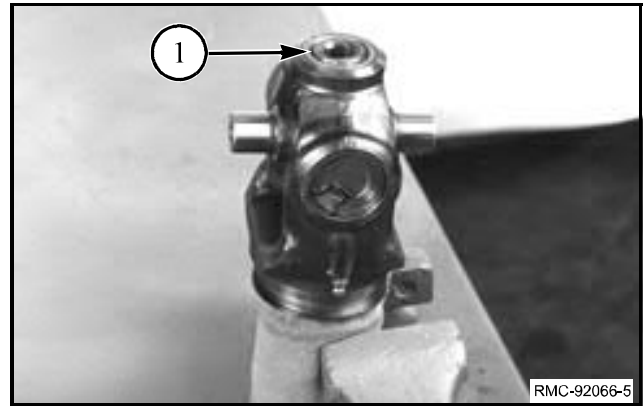


FIG. 35

FIG. 36: Rotate the center housing so the grease fitting is away from the shaft yoke. This will align the grease fitting in the center housing with the hole in the shields. The grease fittings in the center housing and the cross must be toward the same side of the assembly.

Make sure the pin of the center plate in the center housing is clean. Install the pin in the ball and the cross in the ears of the shaft yoke. The cross must be installed through the wide side of the shaft yoke.



FIG. 36

FIG. 37: Make sure there is grease in the holes for the bearing caps in the center housing. Push the cross to one side of the yoke.



FIG. 37

FIG. 38: Use the trunnion as a pilot. Start the new bearing cap on the cross and into the opening in the center housing. Push the cross into the bearing cap while driving the bearing cap to keep the needles in the bearing cap. Keep the trunnions of the cross parallel with the openings for the bearing caps. Hit the bearing cap lightly with a hammer. Drive the bearing cap into the yoke until the bearing cap is flush with the ear.



FIG. 38

FIG. 39: Keep the cross in the bearing cap and start the other bearing cap into the center housing. Use a hammer to drive the bearing cap into the yoke just far enough to make sure the bearing cap is straight.

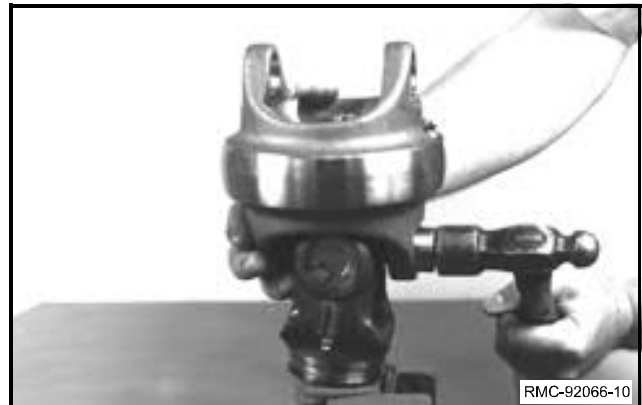


FIG. 39

FIG. 40: Put the center housing into the vise so the bearing caps are square with the jaws of the vise. Make sure the trunnions are aligned with the bearing caps. Tighten the vise until both bearing caps are flush with the ears. Make sure the needle rollers do not fall out of the bearing caps.



FIG. 40

Drives

FIG. 41: Drive one of the bearing caps into the center housing until the groove for the snap ring can be seen.

Install the snap ring. Make sure the snap ring is seated in the groove all the way around.

Drive the other bearing cap into the center housing until the groove for the snap ring can be seen. Install the snap ring. Make sure the snap ring is seated in the groove all the way around.

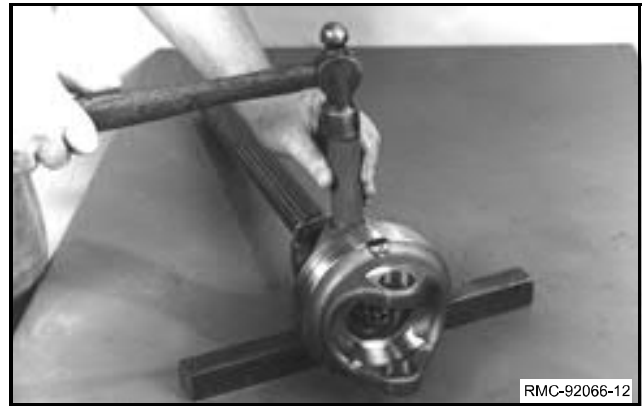


FIG. 41

FIG. 42: Set the shaft yoke on the vise so the ears of the shaft yoke are supported by the jaws of the vise. Carefully hit the center housing with the hammer to seat the bearing cap against the snap ring. Do not hit the center housing on the machined surface or near the opening for the bearing cap.

Turn the shaft yoke over in the vise. Carefully hit the yoke with the hammer to seat the other bearing cap against the snap ring.



FIG. 42

FIG. 43: Wrap a shop cloth around the shaft to protect the splines. Clamp the shaft in the vise so the shaft yoke is up.



FIG. 43

FIG. 44: The ball (1) in the quick disconnect yoke has a flat area around each end of the hole. The flat area is wider on one side of the ball. Rotate the ball so the wide flat area is away from the quick disconnect yoke.

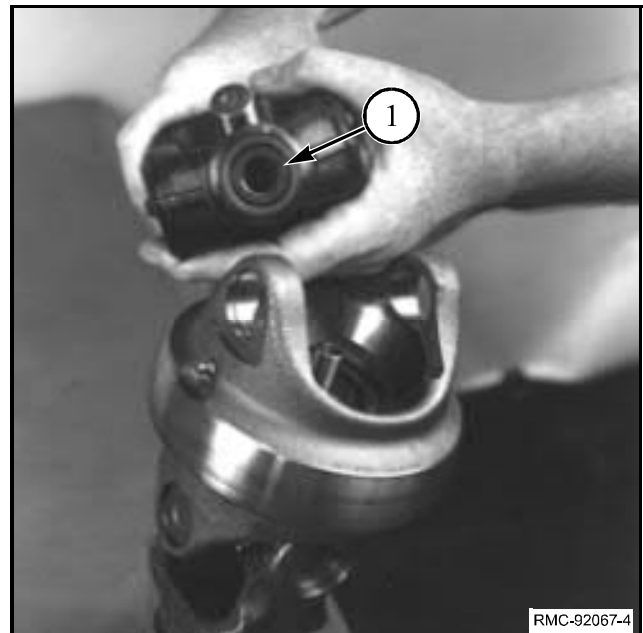


FIG. 44

FIG. 45: Make sure the grease fitting (1) in the cross (if equipped) is on the side of the cross closest to the locking collar (2). Rotate the quick disconnect yoke so the end of the grease fitting in the cross is aligned with the grease fitting (3) in the center housing.

Make sure the pin of the center plate in the center housing is clean. Install the pin in the ball and the cross in the ears.

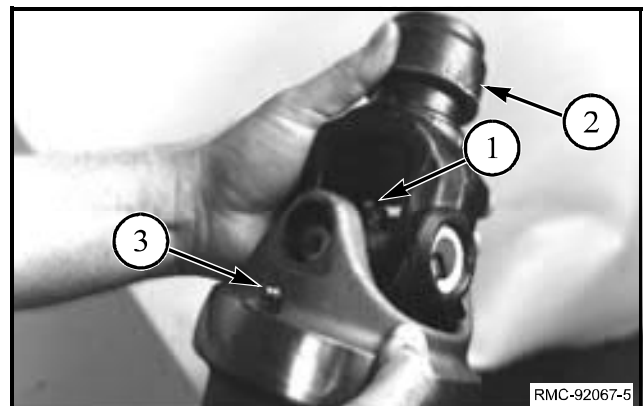


FIG. 45

FIG. 46: Make sure there is grease in the openings for the bearing caps. Push the cross to one side of the quick disconnect yoke.



FIG. 46

Drives

FIG. 47: Use the trunnion as a pilot. Start the new bearing cap on the cross and into the opening in the center housing. Push the cross into the bearing cap to keep the needles in the bearing cap while driving the bearing cap. Keep the trunnions of the cross parallel with the openings for the bearing caps. Hit the bearing cap lightly with a hammer. Drive the bearing cap into the yoke until the bearing cap is flush with the ear.



FIG. 47

FIG. 48: Keep the cross in the bearing cap and start the other bearing cap into the center housing. Use a hammer to drive the bearing cap into the opening just far enough to make sure the bearing cap is straight.



FIG. 48

FIG. 49: Put the center housing into the vise so the bearing caps are square with the jaws of the vise. Make sure the trunnions are aligned with the bearing caps. Tighten the vise until both bearing caps are flush with the ears. Make sure the needle rollers do not fall out of the bearing caps.



FIG. 49

FIG. 50: Drive one of the bearing caps into the center housing until the groove for the snap ring can be seen.



FIG. 50

FIG. 51: Install the snap ring. Make sure the snap ring is seated in the groove all the way around.

Drive the other bearing cap into the center housing until the groove for the snap ring can be seen. Make sure the groove for the snap ring is clean. Install the snap ring. Use a screwdriver to push the snap ring into the groove all the way around.



FIG. 51

FIG. 52: Set the quick disconnect yoke on the vise so the ears of the quick disconnect yoke are supported by the jaws of the vise. Carefully hit the center housing with the hammer to seat the bearing cap against the snap ring. Do not hit the center housing on the machined surface or near the opening for the bearing cap.

Turn the shaft yoke over in the vise. Carefully hit the yoke with the hammer to seat the other bearing cap against the snap ring.

If the cross grease fittings are installed in the cups, install the grease fittings.

See Specifications for the correct grease. Apply grease to grease fittings in the tractor half of the implement driveline as follows:

- Apply grease to the grease fittings in both crosses until grease comes from the seals.
- Ten pumps to the grease fittings in the center housing.
- Ten pumps to the grease fitting in the shaft yoke.
- Remove the extra grease from the components.

Before assembling the two halves of the implement driveline, clean the splines on the shaft. Apply grease to the splines of the shaft and the slip tube.



FIG. 52

Drives

Universal Joint Bearing Replacement

NOTE: The drive shaft shown in the photos may be different than your drive shaft. The procedure will be the same.

Disassembly

If the cross grease fittings are installed in the bearing caps, remove the grease fittings.

Remove all the snap rings on the U-joint. There are two types of snap rings.

FIG. 53: Use a pliers to remove external snap rings.



FIG. 53

FIG. 54: Set the shaft yoke on the vise so the ears are supported by the jaws of the vise. Hit the clamp yoke to force the bearing cap part way out of the clamp yoke.

NOTE: When hitting a yoke never hit the area around the hole for the bearing cap. Distortion of the hole will make removal of the bearing cap difficult.

Repeat the procedure to push the other bearing cap part way out of the clamp yoke.



FIG. 54

FIG. 55: Fasten one of the bearing caps in the vise. Make sure the jaws of the vise are as close to the clamp yoke as possible. Hit the clamp yoke to drive the clamp yoke up off the bearing cap. Do not remove the other bearing cap from the clamp yoke at this time.



FIG. 55

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