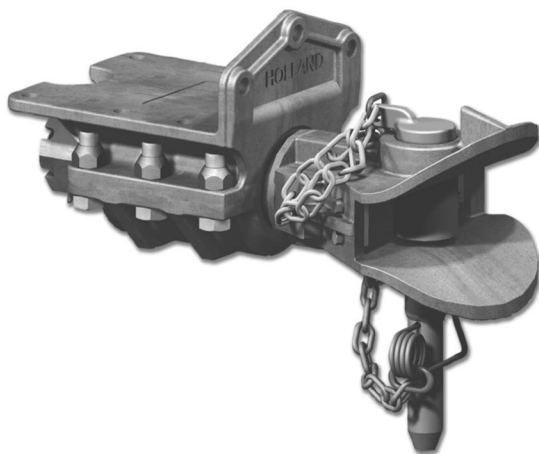


INSPECTION AND REBUILD PROCEDURES



RK-T-551

For PH-990ST71 Pintle Hooks

DISASSEMBLY AND INSPECTION

Please read and understand all instructions before attempting to disassemble or assemble the pintle hook. Clean and inspect the upper housing (*Item 10*) and the lower housing (*Item 15*). Check for cracks along the lower portion of the upper housing as shown in **FIGURE 1**. Next, check for cracks along the side of the lower housing shown in **FIGURE 1**.

If cracks are found in either the upper or lower housings, remove the pintle hook. Disassemble and check for cracks on the pintle hook (*Item 1*) as shown in **STEP 6**.

If cracks are found on both the upper and lower housings, discard the pintle hook assembly and replace with a new PH-990ST71.

If cracks are found on only one of the housings **and** the pintle hook, discard the pintle hook assembly and replace with a new PH-990ST71.

If cracks are found on just one of the three components (housings or pintle hook), replace the cracked component.

If no cracks are found in the upper or lower housings, proceed with the rebuilding process as follows:

1. Support the lower housing (*Item 15*) with a floor jack, applying enough force to adequately secure the lower housing while the bolts are removed (see **FIGURE 2**).
2. Remove the six (6) nuts (*Item 9*) and six (6) bolts (*Item 16*) that secure the upper and lower housings together (see **FIGURE 2**) and discard.

FIGURE 1

UPPER and LOWER HOUSINGS EXAMINE FOR CRACKS

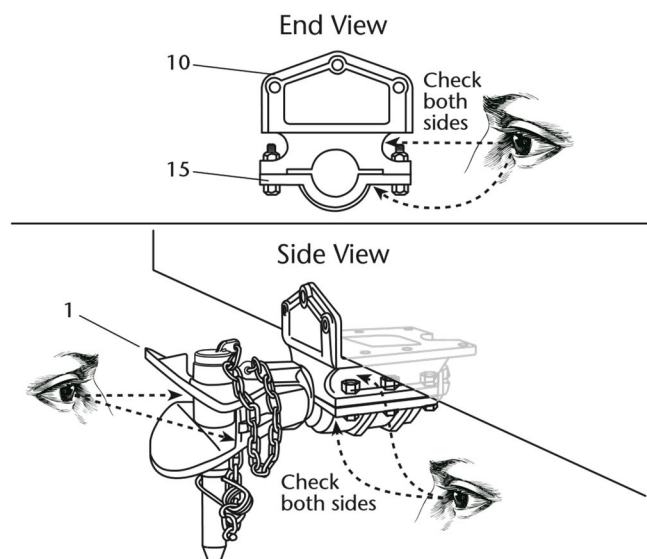
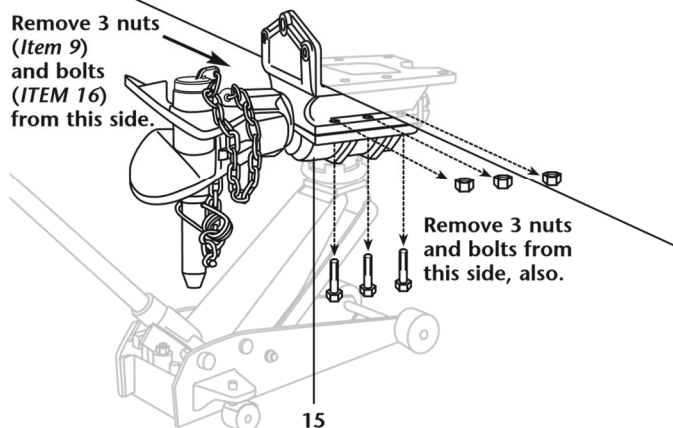
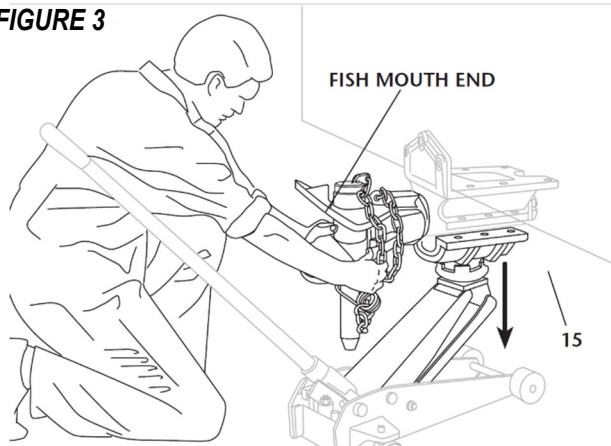


FIGURE 2



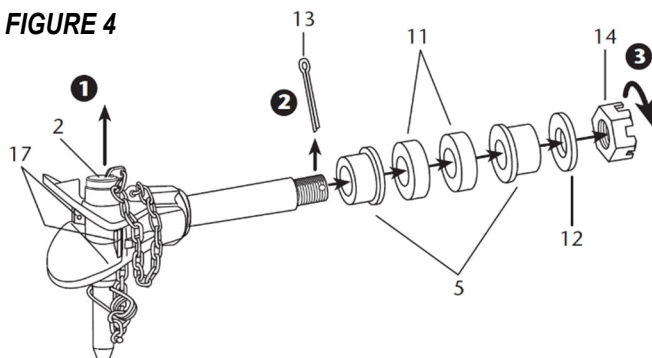
3. Slowly remove the jack pressure. Carefully lower the lower housing (**Item 15**) and pintle hook sub-assembly, taking care to support the fish mouth end of the pintle hook sub-assembly.

FIGURE 3



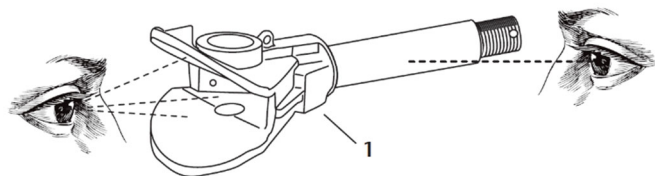
4. **1.** Remove and inspect the clevis pin (**Item 2**) for wear or cracks. Disassemble the pintle hook sub-assembly by **2.** removing the cotter pin (**Item 13**) from the shank, then **3.** remove the slotted nut (**Item 14**) and flat washer (**Item 12**).

FIGURE 4



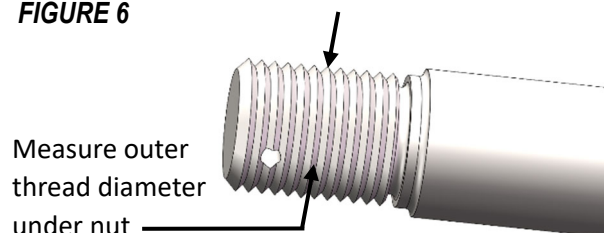
5. Remove and discard the 2 rubber cushions (**Item 11**). If the 2 steel bushings (**Item 5**) have any signs of wear replace them. Remove and discard the two wear plates (**Item 17**) from each side of the fish mouth.
6. Inspect the pintle hook shank and fish mouth assembly for wear or cracks. If cracks exist, or if wear exceeds $1/8"$ ($0.125"$) from the original surface profile, replace the pintle hook.

FIGURE 5



7. Clean all rust and debris from the slotted nut (**Item 14**) and pintle hook shank threads.
8. With a caliper or micrometer measure crest diameter at multiple points around the circumference of the pintle hook threads within the original nut engagement zone (load-bearing thread area) (**FIGURE 6**). If any position on the thread under the nut is less than $2.215"$ (56.26mm) the slotted nut and pintle hook body should not be reused. Replace worn components using parts kit RK-T-551.

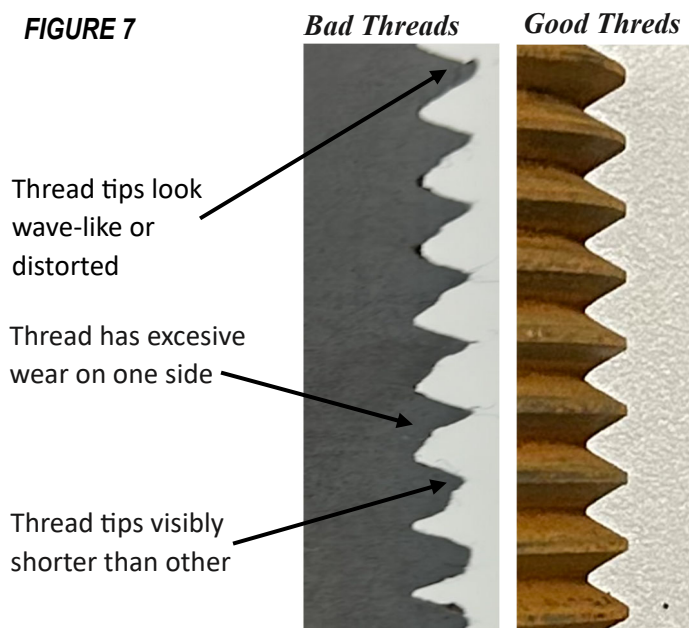
FIGURE 6



9. Inspect the thread profiles of both the pintle hook shaft and the slotted nut prior to reuse. Closely examine the threads beneath the nut bearing surface for signs of wear or corrosion.

Note: Rust can remove material from the threads that carry load. As material is lost, fewer threads are available to support the applied load. This may result in wave-like or distorted thread crests, uneven wear on one side of the threads, or thread crests that appear shorter than surrounding threads (**FIGURE 7**). Components showing these conditions should not be reused.

FIGURE 7



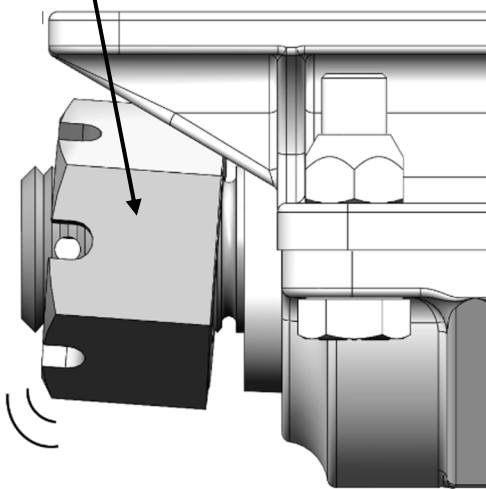
⚠ WARNING

Do not operate the vehicle if excessive corrosion-related damage is present on the coupler threaded shaft or retaining hardware.

10. Reinstall the nut in its original position, without the washer, and check for fit on the threads (**FIGURE 8**). Apply hand pressure to the nut to check for movement. Slight movement due to normal thread fit is acceptable. Reject the components if movement is clearly excessive, including visible rocking, looseness, or separation between the mating thread surfaces.

FIGURE 8

Confirm nut does not have excessive movement.



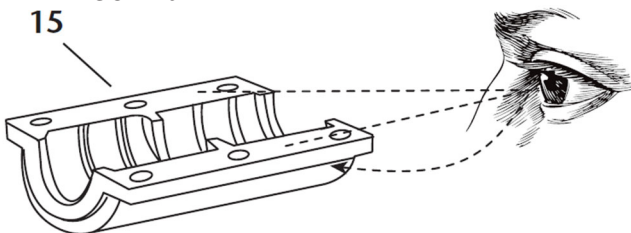
⚠ WARNING

If the nut or coupler exhibits any of the conditions described above, both components must be replaced. Failure to do so could result in tractor-trailer separation, causing death or serious injury.

11. Inspect the lower housing (**Item 15**) for cracks. Replace the lower housing if any cracks are found.

FIGURE 9

15

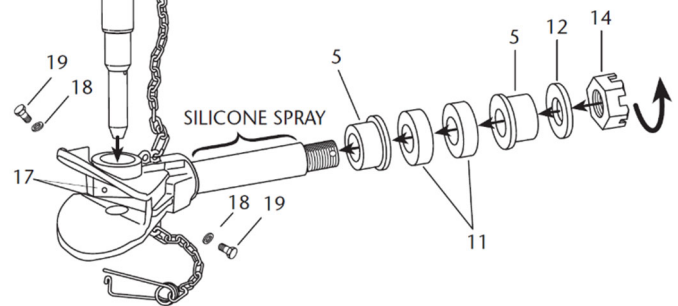


RE-ASSEMBLY

1. Apply a thin coat of paint to the contact surfaces of all parts that are going to be reused before reinstallation. Be sure coating is thoroughly dry before reassembling to avoid coating peel and binding.

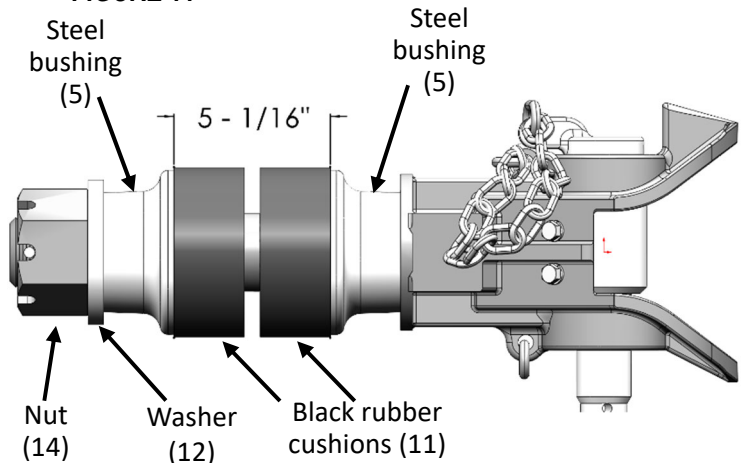
2. Re-assemble the pintle hook assembly as shown in (**FIGURE 10**). Coat the shank of the pintle hook with silicone spray. Then, install the bushings and cushions. Start the slotted nut (**Item 14**) onto the shank of the pintle hook.

FIGURE 10



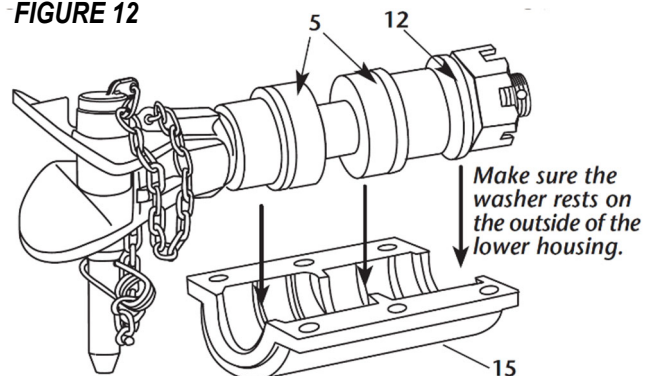
3. Next, slide the two steel bushings (**Item 5**) and rubber cushions (**Item 11**) apart (**FIGURE 11**). Then, tighten the slotted nut (**Item 14**) until the distance between the inside of the steel bushings measures 5.062" (5-1/16").

FIGURE 11



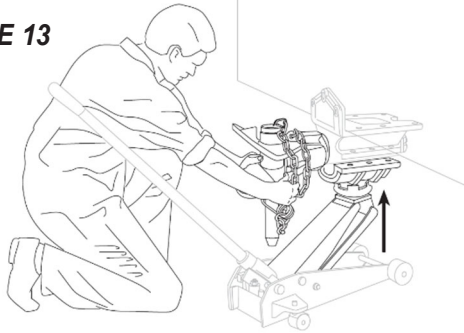
4. Place the pintle hook assembly in the lower housing (**Item 15**). Lubricate the rubber cushions (**Item 11**) with silicone spray or a soapy water solution, if necessary. **NOTE:** The washer (**Item 12**) goes on the outside of the lower housing.

FIGURE 12



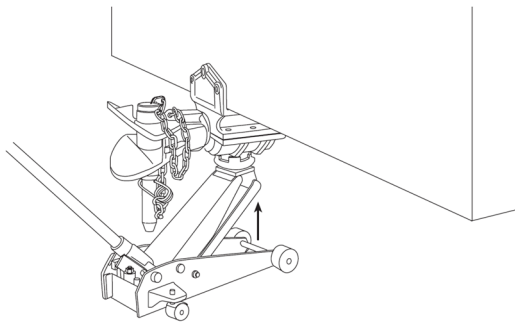
5. Next, place the pintle hook assembly and the lower housing back onto the floor jack to install it back into the upper housing.

FIGURE 13



6. Exert enough jack force to clamp the lower housing against the upper housing, with the pintle hook assembly in place between them.

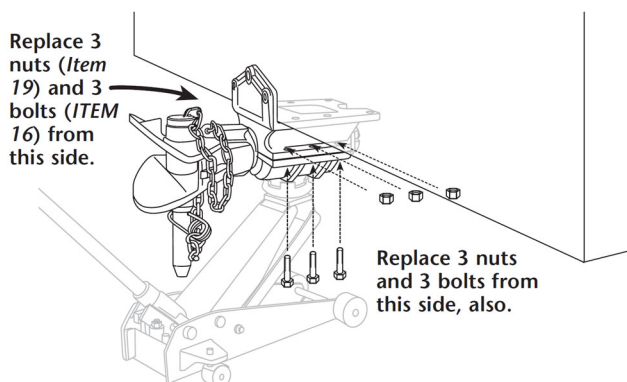
FIGURE 14



7. Insert six (6) new grade 8 bolts (**Item 16**) up through both the lower housing (**Item 15**) and the upper housing (**Item 10**). Secure the bolt with six (6) new grade 8 nuts (**Item 9**).

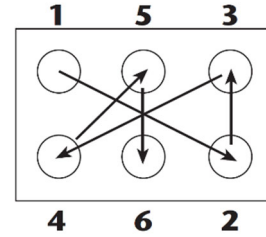
⚠ WARNING Never re-use nuts and bolts! The lock nuts may not lock and the bolts may have been weakened due to corrosion and loads applied. If the bolts break, the pintle may separate from the vehicle and death or serious injury may occur.

FIGURE 15



8. Draw the upper and lower housings together by tightening the six (6) bolts. Tighten the bolts in a crisscross pattern.

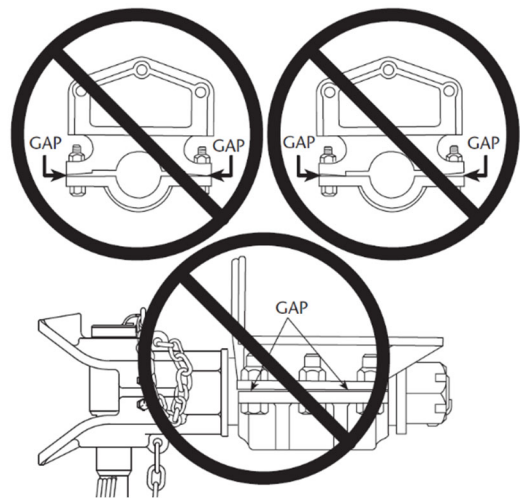
FIGURE 16



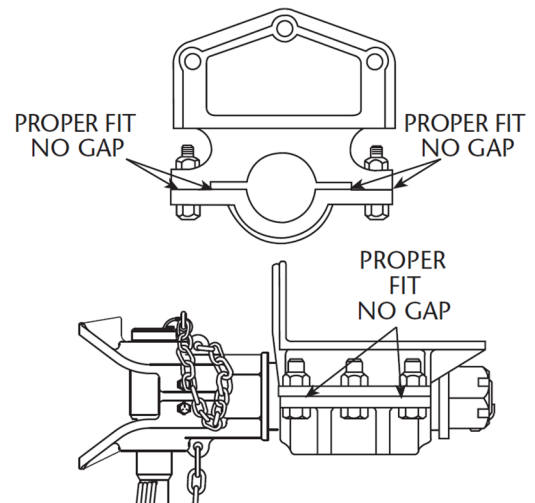
9. After tightening the nuts to 300-400 ft. lb. torque dry, the upper and lower housings must butt together with no air gaps at either the inside or outside mounting surfaces.

IMPROPER FIT

FIGURE 17



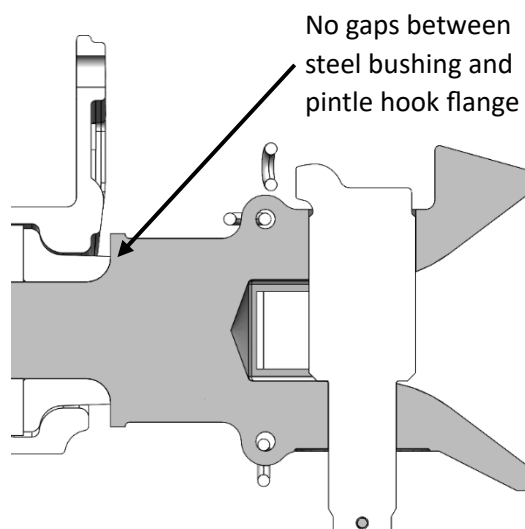
PROPER FIT



10. If there are gaps, i.e. an improper fit, loosen the nuts and re-position the rubber cushions. Add silicone spray or soapy water where necessary. Re-tighten, following STEPS 8 and 9.

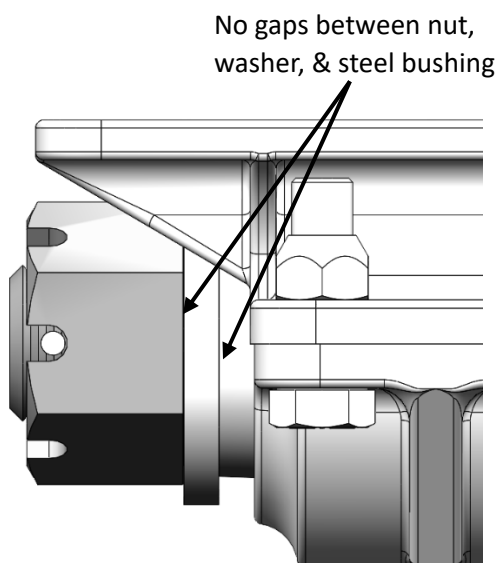
11. Ensure that the coupler body is fully seated in the housing with no gap between the rear bushing and coupler flange.

FIGURE 18



12. If any gaps exist between the nut (**Item 15**), washer (**Item 15**), or front bushing (**Item 15**) advance nut clockwise until the gaps are removed, do not overtighten.

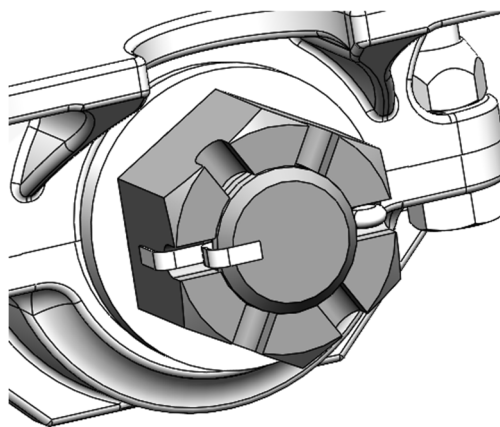
FIGURE 19



13. Advance nut clockwise, until the next slot in the nut lines up with the hole in the coupler body (**FIGURE 19**).

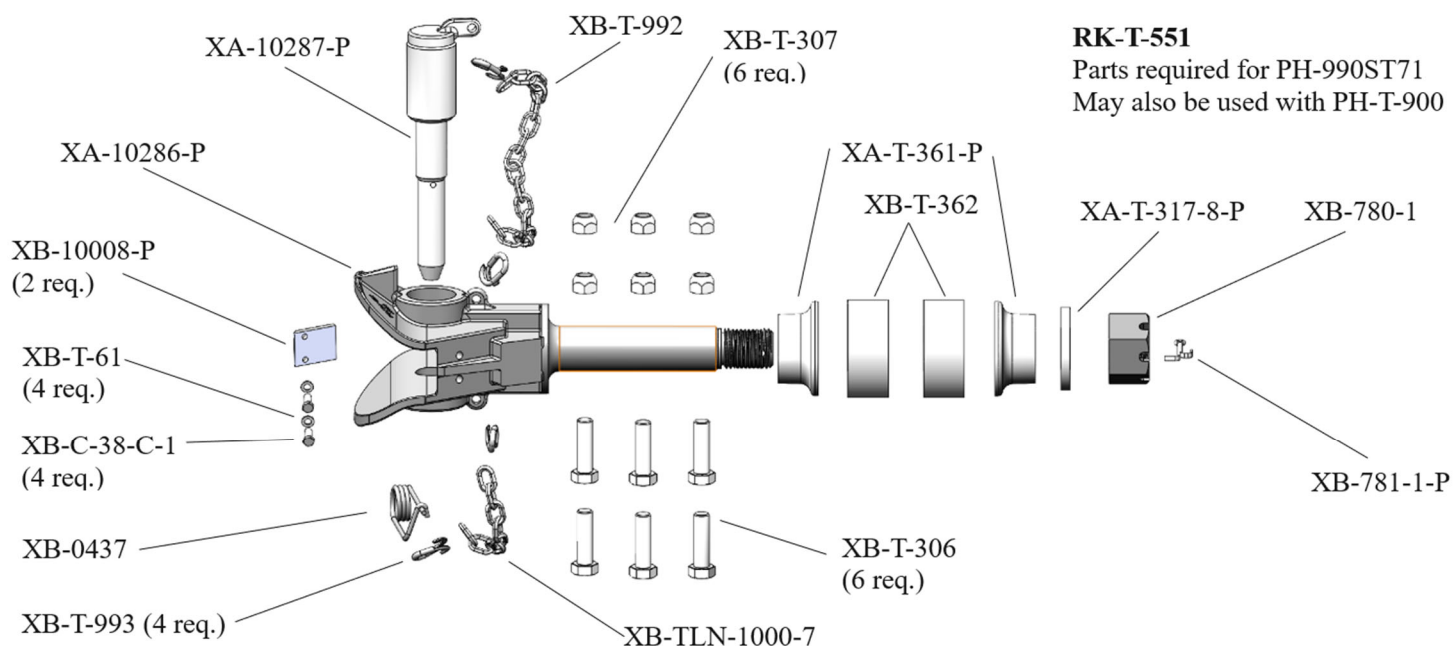
13. Secure the nut to the coupler body by using a new 5/16" x 3 1/2" cotter pin (**Item 13**). Fully bend over both legs of the cotter pin as shown.

FIGURE 20



PH-990ST71 REBUILD KIT PARTS

BREAKDOWN



ITEM NO.	PART NO.	NO. REQ'D.	DESCRIPTION	ITEM NO.	PART NO.	NO. REQ'D.	DESCRIPTION
1	XA-10286-P	1	Pintle hook	11	XB-T-362	2	Rubber cushion
2	XA-10287-P	1	Clevis pin	12	XA-T-317-8-P	1	Washer
3	XB-T-993	3	Open end link	13	XB-781-1-P	1	Cotter pin
4	XB-T-992	1	Chain (16 links)	14	XB-780-1	1	Slotted nut, 2 ¹ / ₄ "
5	XA-T-361-P	2	Steel bushing	15*	XA-T-312-P	1	Housing (lower)
6	XB-TLN-1000-7	1	Chain (8 links)	16	XB-T-306	6	7/8" x 2 ³ / ₄ " HHCS bolt, Grade 8
7	XB-T-993-1	1	Open end link	17	XA-10008-P	2	Wear plate
8	XB-0437	1	Safety pin	18	XB-T-61	4	Washer, 3/8" lock
9	XB-T-307	6	7/8" Lock nut, Grade 8	19	XB-C-38-C-1	4	HHCS 3/8-16 x1
10*	XA-T-311-P	1	Housing (upper)				

* Not included in rebuild kit

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<http://servicelit.safholland.com/ph990st71specs>