

TITLE: Kodiak Clip Replacement and Rotor Bolt Torque Instructions		
AFFECTED SITE(s): VARIOUS		DEPARTMEN/T(s): Quality
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PURPOSE:

Use recall Code **99.02.11**

1. To replace non-hardened caliper retaining clip with hardened clip.
2. To check the torque of the rotor retaining bolts and address any that do not meet the requirement.

MATERIALS:

- 1) Blue Thread Lock
- 2) #3 Philips screwdriver
- 3) Torque wrench
- 4) Socket wrench
- 5) Sockets
- 6) Impact gun or breaker bar
- 7) Rubber/plastic mallet
- 8) Towels
- 9) Appropriate replacement seal
- 10) Hub or gear puller.
- 11) Seal Removal Tool
- 12) Safety equipment including (but not limited to): safety glasses and steel-toed shoes
- 13) 10-ton jack
- 14) 10-ton jack stands (2)
- 15) Replacement 1/4" x 5" long cotter pin
- 16) Grease, Kendall, L-427 Super Blu #2

STEP BY STEP INSTRUCTIONS.

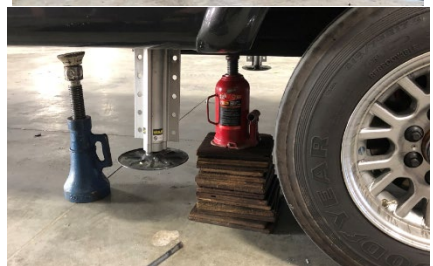
Safety Note:
Properly support the trailer with jack stands while working on the trailer.

1) Identify unit(s) needing to be inspected based on production dates provided by DRV.

No photo

2) Raise and support the trailer.

NOTE: Elevate and support the trailer unit per manufacturers' instructions.



- 3) Remove decorative hub cover with a #3 Phillips screwdriver and set aside.



- 4) Remove the wheel nuts with an impact gun or breaker bar and 15/16" socket and remove the tire and wheel.
a) Set the wheel and wheel nuts aside.



- 5) Remove the caliper, hold down clips, and cap screws.
a) Socket size is 9/16"
b) Remove the cap screws and discard.
c) Remove the clips and discard.
d) Remove the caliper from the bracket and support/suspend the full weight in a way the brake line is not damaged or twisted.





6) Hub-Rotor removal preparation.

- a) Restrict rotation of the hub.
- b) Remove the clear plastic cap and set aside.
 - i) Use either an eight sided 3-5/8" socket (preferred) or a rag and large channel lock pliers to carefully remove the cap.
- c) Straighten the cotter pin, remove, and discard.
- d) Remove the spindle nut and set aside.
- e) Remove the washers and outer bearing cone and set aside.





7) Hub-Rotor removal

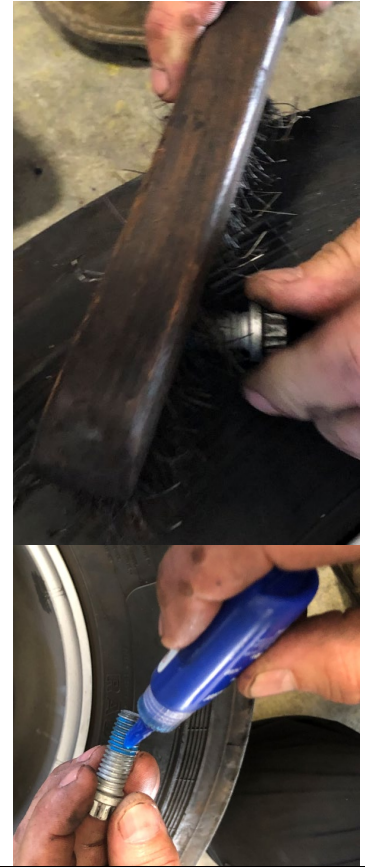
- a) Use of a hub puller is preferred.
- b) You can also install the wheel/tire with two flanged nuts and carefully pull on the tire until the seal un-seats itself from the spindle.
- c) Remove wheel/tire from hub.
- d) Remove the hub-rotor from the spindle and set it inside of the wheel.
- e) Some of the seal components may be left on the spindle, carefully remove these parts and discard.



8) Rotor bolt torque inspection

- a) This step will check the "ON TORQUE" of the rotor bolts.
- b) Set torque wrench to 90 ft lbs.
- c) Apply force to rotor bolt in a "CLOCKWISE" direction.
- d) If rotation is noted before the audible signal that torque is achieved, then the rotor bolt must be addressed.
 - i) Remove rotor bolt, lightly clean threads with wire brush, apply a line of blue thread lock, insert in hole, and tighten to 90 ft lbs.
- e) If an audible signal occurs on the next rotor bolt before movement is noted, then torque meets specification and nothing further needs to be done.
- f) Continue checking the "ON TORQUE" as outlined above until all rotor bolts have been addressed.





9) Lubricate bearings and spindles.

- a) Prior to installing hub-rotor on spindle, do the following:
 - i) Repack the inner and outer bearing cone with Kendall grease, L-427 Super Blu #2 or equivalent #2 NLGI grease.
 - ii) Apply some grease to the spindle bearing journals.
 - iii) Insert inner bearing cone into back of hub and proceed to step 10 to install seal.

No picture.

10) Install a new seal using a hammer and a block of wood or flat piece of steel set on top of the seal. If available, the use of a seal installation tool is preferred.

- a) As you drive the seal in place, you will “FEEL” and “HEAR” a difference when the seal is set all the way to the inboard seal bore face.



11) Carefully remount the hub-rotor onto the spindle by hand.

Caution: Do not force the hub-rotor onto the spindle. When hub-rotor are properly aligned with spindle, it will install with minimal resistance.



- 12) Install outer bearing cone, tapered side in.
- 13) Install 2 flat washers.
- 14) Install the spindle nut as far as you can by hand while rotating hub-rotor.



- 15) Tighten spindle nut and set hub end play.
 - a) While turning hub, tighten spindle nut to 50 ft lbs.
 - b) Loosen spindle nut, do not move hub, finger tighten spindle nut.
 - c) Attempt to install a new cotter pin. If you cannot, rotate spindle nut counterclockwise until the slots on the spindle nut line up with the cotter pin hole in spindle.
 - d) Insert new cotter pin and bend cotter pin legs around spindle.
 - e) Check that you can rotate the spindle nut "slightly" back and forth.
 - f) Check rotation of hub, should rotate easily by hand.



- 16) Install cap by turning clockwise. Ensure plug and O-ring are installed in cap before installation. Do not tighten so much that the O-ring is squeezed out from between the cap and hub.



- 17) Install caliper.
 - a) Compress piston in caliper fully.
 - b) Install inboard brake pad behind rotor and onto caliper bracket.
 - c) Place caliper back onto caliper bracket fully.
 - d) Make sure that the brake line is routed as shown to allow full movement of the axle arm.





18) Install new caliper hold down clip and cap screw.

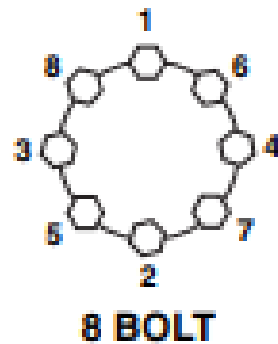


19) Tighten cap screws to 45-50 ft lbs.



20) Remount the tire and wheel.

- a) Start the flanged nuts by hand first to prevent from cross threading.
- b) The use of a battery powered driver is acceptable to speed the install of the flanged nuts but do not attempt to torque the nuts with it.
- c) Do final tightening of the wheel nuts with torque wrench set at 160 ft lbs.




21) Reinstall decorative hub cover and tighten screws with #3 Phillips screwdriver.



Torque Requirements

It is extremely important to apply and maintain proper wheel mounting torque on your trailer axle. Torque is a measure of the amount of tightening applied to a fastener (nut or bolt) and is expressed as length times force. For example, a force of 90 pounds applied at the end of a wrench one foot long will yield **90 Ft. Lbs.** of torque. Torque wrenches are the best method to assure the proper amount of torque is being applied to a fastener.

 CAUTION
<p>Wheel nuts or bolts must be tightened and maintained at the proper torque levels to prevent loose wheels, broken studs, and possible dangerous separation of wheels from your axle, which can lead to an accident, personal injuries or death.</p>

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Level	Date	Reason for change	Writer(s)	Approval
A	8/23/2021	RELEASE	RLP	