

9/11/2020
CAL FTL 35001

Subject: Inspection of ConMet Disc Brake Rotor to Hub Fastener

Models Affected: All Business Class M2, New Cascadia, and Coronado vehicles built from June 1, 2020 through August 24, 2020

Our records indicate that you are the owner of certain vehicles and therefore DTNA is sharing the following documentation with you.

Please see the attached instructions on inspecting the ConMet disc brake rotor to hub fastener. We hope you find this information helpful.

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Work Instructions

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Models Affected: All Business Class M2, New Cascadia, and Coronado vehicles built from June 1, 2020 through August 24, 2020

Work Instructions



DANGER: Before working under the vehicle, place jack stands under the frame rails to ensure the vehicle cannot drop. Failure to follow these steps could result in serious personal injury or death.

NOTE: The following instructions are for an individual wheel end. All wheel ends on the vehicle should be inspected in turn.

1. Park the vehicle on a level surface, shut down the engine, and set the parking brake. Chock the tires.
2. Place jack stands under the frame rails.
3. Following all shop procedures, remove the wheel and tire assemblies.

NOTE: All units affected by this campaign are equipped with a disc brake system.

4. Following all shop procedures, remove the air pressure from the air brake system and cage the drive axle brakes.
5. Remove the air lines at the chambers for each brake assembly.

NOTE: See Sections 33.01 and Sections 35.01 of the **New Cascadia Workshop Manual, 122SD and Coronado Workshop Manual**, or **Business Class M2 Workshop Manual** for specific instructions on preparing the hub for removal.

Due to the low mileage at the time of this inspection, it should not be necessary to back off the caliper slack adjuster to remove the caliper/carrier assembly from the rotor.

6. Remove the bolts holding the carrier/caliper assembly onto the steer or drive spindle.
7. Remove the caliper/carrier assembly. If necessary, follow the procedure to back off Bendix caliper slack adjuster to remove the assembly. Set the caliper/carrier assembly aside to allow removal of the hub and rotor assembly.
8. Remove the ConMet hub and rotor assembly.
9. Follow the "ConMet Flat Rotor Stud Inventory Inspection Work Procedure" in the accompanying document.

IMPORTANT: If one of the hub rotor assemblies fails inspection, replace **both** hub rotor assemblies on the axle in accordance with DTNA standard procedure on brake system replacement.

10. After completing the inspection procedure, re-install the hub and rotor assembly. See Sections 33.01 and Sections 35.01 of the **New Cascadia Workshop Manual, 122SD and Coronado Workshop Manual**, or **Business Class M2 Workshop Manual** for specific instructions.

IMPORTANT: The caliper/carrier assemblies are left- and right-handed. Ensure the correct assembly (left or right) is installed on each side of the vehicle.

NOTE: Always use **new** fasteners when installing the carrier/caliper assembly.

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11. Install the caliper/carrier assembly. See [Fig. 1](#).

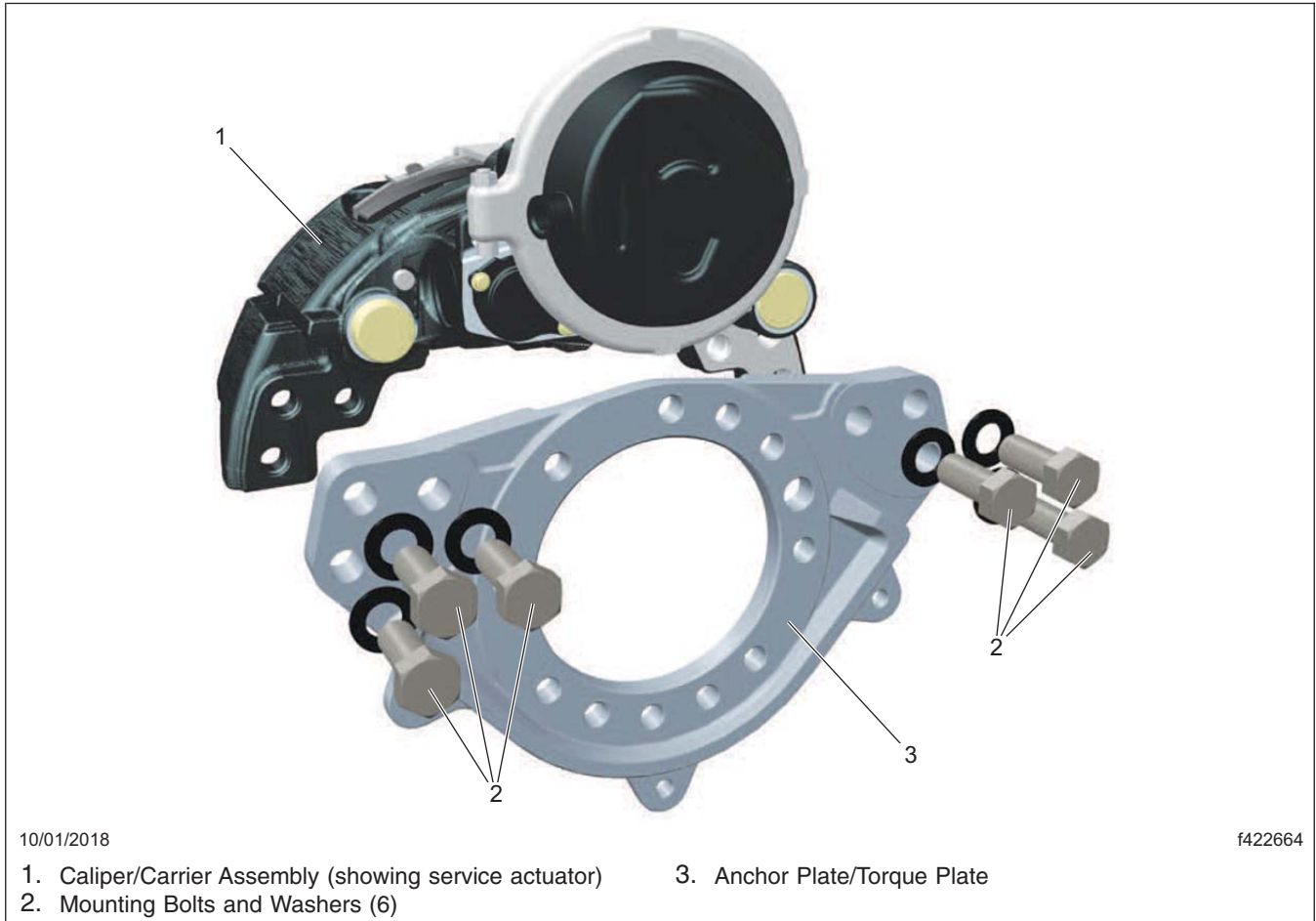


Fig. 1, Axial Mounted Caliper

11.1 Align each caliper/carrier assembly with the rotor by pushing the caliper against the shelf on the torque plate.

NOTE: Where the instructions call for a torque wrench, use a Snap-On torque wrench ATECH4RS600, or equivalent, with a center-to-handle length of 47 inches (119 cm).

Due to limited caliper bolt access on the drive axles, it may be necessary to use tool DDE DSNCHA018005 referenced in tool letter 18TL-18. If the tool is needed, use tool DDE DSNCHA018005 only and no other tools. See [Fig. 2](#).

11.2 Install the caliper/carrier assembly using new caliper mounting bolts. Tighten the caliper/carrier mounting bolts in two steps as follows:

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Fig. 2, Special Tool DDE DSNCHA018005

NOTE: If tool DDE DSNCHA018005 referenced in tool letter 18TL-18 is used, see Table [Table 1](#) for torque specifications.

- 11.3 Start on one side of the caliper and tighten all three bolts 40 ± 20 lbf·ft (54 ± 27 N·m), beginning with the inner-most bolt and moving to the outer-most bolt. Then tighten the three bolts on the other side of the caliper 40 ± 20 lbf·ft (54 ± 27 N·m), beginning with the inner-most bolt and moving to the outer-most bolt. See [Fig. 3](#) for the bolt tightening pattern for the left-hand caliper/carrier mounting bolts and [Fig. 4](#) for the right-hand caliper/carrier mounting bolts.



Fig. 3, Tightening Pattern, Left-Hand Axial Caliper



Fig. 4, Tightening Pattern, Right-Hand Axial Caliper

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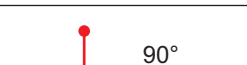
Torque Check with 47 Inch (119 cm) Torque Wrench and Tool DDC DSNCHA018005			
Angle View	Extension Angle (degrees)	Target Torque [lbf·ft (N·m)]	Tool Setting [lbf·ft (N·m)]
 <p>0° 11/28/2016 f422613</p>	0	350 (475)	296 (401)
 <p>45° 11/28/2016 f422614</p>	45		310 (420)
 <p>60° 11/06/2018 f422668</p>	60		320 (434)
 <p>90° 11/28/2016 f422615</p>	90		350 (475)
 <p>120° 11/06/2018 f422669</p>	120		386 (523)
 <p>135° 11/28/2016 f422616</p>	135		402 (545)

Table 1, Torque Check with Special Tool DDC DSNCHA018005

11.4 Repeat the process, increasing the torque value to 375±25 lbf·ft (508±34 N·m).

12. Charge the air system and check for leaks.



WARNING: Do not operate the vehicle until the brakes have been checked for proper operation. To do so could result in inadequate or no braking ability, which could cause personal injury or death, and property damage.

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13. Check brakes for proper operation.

Warranty

Normal warranty applies. See [Table 2](#) for OWL VMRS codes and labor allowance information. Enter this CAL bulletin number in the *Service Bulletin #* field.

OWL VMRS Codes and Labor Allowance					
Primary Failed Part	VMRS Code	Cause Code	SRT Code	Description	Time: Hours
ConMet Hub Rotor Assembly	018-002-001	03	450-5000A	INDIVIDUAL WHEEL END HUB AND ROTOR, R/R	2

Table 2, OWL VMRS Codes and Labor Allowance

ConMet Flat Rotor Stud Inventory Inspection Work Procedure

TOOLS REQUIRED:

- Torque wrench or standard wrench — capable of 40 ft-lb
- 15/16" thin walled socket
- Flat-head screwdriver

PROCEDURE — STEER HUB:

Note: A thin-wall socket must be used to clear the ABS ring on steer hubs.



1. Support the hub in a way that allows up to **40 ft-lb** of torque to be applied to the rotor mounting nuts. Potential methods include setting in an upside down drum or wheel or other fixture or held by a second person.
2. Torque all ten (10) rotor attachment nuts in the tightening direction to **40 ft-lb** (or practical equivalent). If the nut turns, continue to tighten the nut to verify that the stud is being pulled out of the hub. **This is a reject condition.** Note: due to the length of the stud shank and friction between the stud shank and the hub it may not be easy to remove the stud by hand even after the stud rotates freely.



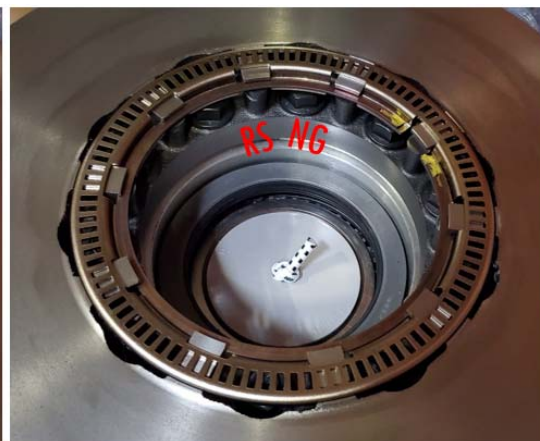
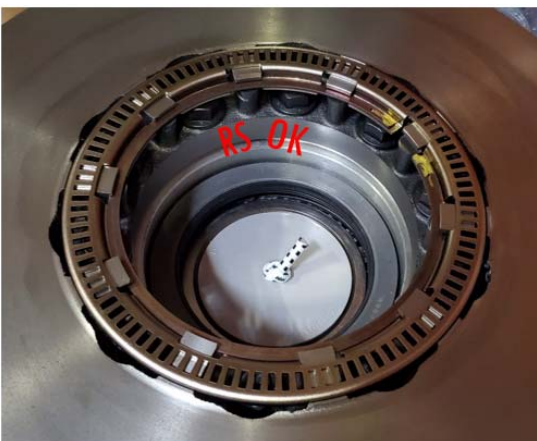
3. Mark rejected hubs as “RS NG” and reserve for ConMet. Replace with a new hub assembly.
4. Mark certified hubs with a “RS OK” on the top of the flat pads on the rotor.
5. If the inspected hub was removed from an axle, replace the seal before reassembling on to the axle.

PROCEDURE — DRIVE HUB:

1. Support the hub in a way that allows up to **40 ft-lb** of torque to be applied to the rotor mounting nuts. Potential methods include setting in an upside down drum or wheel or other fixture or held by a second person.
2. Remove the ABS retaining ring by gently prying it out of the groove with the flat head screwdriver.



3. Remove the ABS ring from the rotor.
4. Torque all ten (10) rotor attachment nuts in the tightening direction to **40 ft-lb** (or practical equivalent). If the nut turns, continue to tighten the nut to verify that the stud is being pulled out of the hub. **This is a reject condition.** Note: due to the length of the stud shank and friction between the stud shank and the hub it may not be easy to remove the stud by hand even after the stud rotates freely.



5. Mark rejected hubs as "RS NG" and reserve for ConMet. Replace with a new hub assembly.
6. Mark certified hubs with a "RS OK".

7. If no failed studs are found, reinstall the ABS ring. Make sure the ABS ring retaining tabs are between the bosses on the rotor.
8. Install the snap ring into the groove in the rotor. Start with one end and work around the rotor ensuring the ring is fully engaged into each tab.
9. If the inspected hub was removed from an axle, replace the seal before reassembling on to the axle.

APPENDIX:

Below images are previous examples of certified inspected hub marking.

