



Mack Chassis - Drive Axle Brake Chamber Rubbing Frame Or Brake Drum - Vehicles Built Between 7 July 2014 And 23 August 2019



> Internal Content

Brake chambers affected by this condition will appear as shown in the photos below:





For vehicles affected with this issue:

Please refer to the parts list below for the correct part numbers to be installed:

Location	PN	Description	Characteristic	Qty
1st Drive Left	21901206	Adapter, Radial, 434	287 Degree	1
1st Drive Right	21901182	Adapter, Radial, 434	73 Degree	1
2nd Drive Left	21854573	Adapter, Radial, 434	88 Degree	1
2nd Drive Right	21854603	Adapter, Radial, 434	272 Degree	1
Caliper to Adapter Plate	220072468	Hex. Socket Screw, CHC	20*1.5*60 10-9 MAGNI 565	16
Adapter to axle flange	22329079	Hexagon Screw, Bolt 5/8-18 x 2.5	5/8" UNF*64 8 GEOM LCK	52
Adapter to axle flange	25085424	Nut Retainer, Hex	5/8" UNF*24 STEEL AMT	52
Adapter to axle flange	22521039	Shim, Washer 17* 25.4*3	BLCK 1000-4	104
	25174931	Retainer		2
	25156060	Retainer, ABS Bushing	BLCK 1000-4	2
	22220894	Bump Stop, Axle		4
	984859	Flange Screw, M14*70	14*2.00*70 10-9 Y1000 SIL	16
	994522	Flange Lock Nut,	14*2.00*23 10	16

		M14*22.9	AMT	
	85148669	Seal - Drive Hub		4
	3199066	Seal - Axle Shaft		4

For Installation Instructions, refer to the document below:

 [Brake Chamber Installation Instructions.pdf](#)

 Tags [k41392514](#) [mack](#)

Related links and attachments

No links or attachments available

 Live UI

 Feedback

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Engineering Release Notice (ERN)	Location	Change Description	A = Added D = Deleted	W = Was	Document Release Status RELEASED
		A: 70 Ft-Lbs + 60° W: 50 Ft-Lbs + 90°			Date Modification Count

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1 Requisite Documents

None

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Document Title
**INSTALLATION
MERITOR AIR DISC BRAKES
DRIVE AXLE**

Document Type
TECHNICAL REQUIREMENT

The legal owner of this document is stated under "Design Location" in KOLA and in the associated "Part Version Report"

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2 Functional Environment

This installation requirement covers installation of a Propreitary Air Disc Brake onto the rear drive axle/axles.

3 Requirements

3.1 Adapter Plate Installation Procedure

- 3.1.1 Before installing the adapter plate to the axle flange, the ABS sensor bushing must be installed into the larger hole (22.024mm diameter). The location of the ABS sensor location may differ as the location depends on the clocking angle of the adapter plate.



Location of Stainless Steel
ABS Bushing

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Figure 1: 410 Adapter Plate

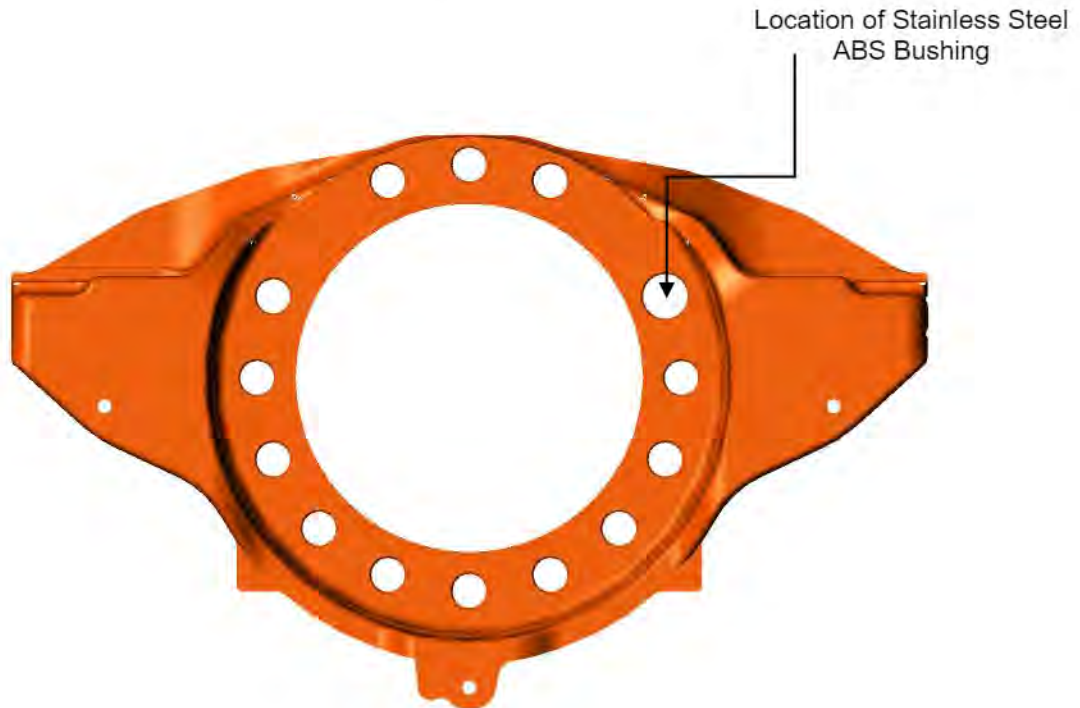


Figure 2: 434 Adapter Plate

- 3.1.2 Install the ABS bushing with the ABS bushing press tool and allow the ABS bushing to be recessed 2mm from the end of the axle flange side of the adaptor plate. This 2mm gap is needed for the ABS retainer's tangs.

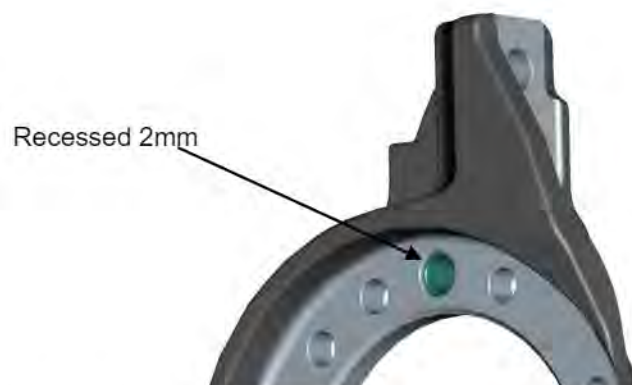


Figure 3: Adapter Plate with ABS Bushing Installed, Axle Flange Side Shown



Figure 4: Adapter Plate with ABS Bushing Installed, Hub Side Shown

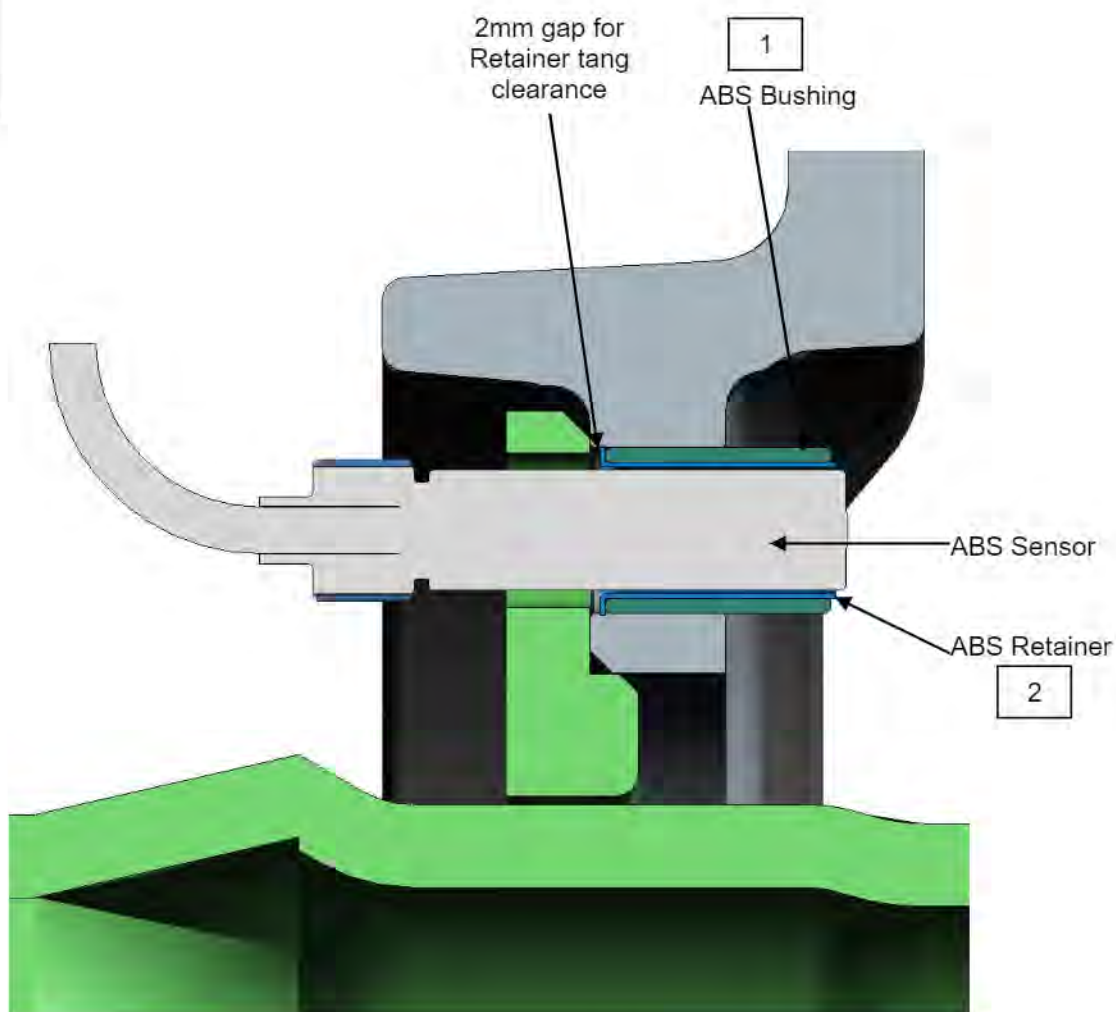


Figure 5: Section View of the ABS Sensor, ABS Bushing and ABS Retainer

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3.1.3 Referencing the Bill of Materials on page 16, use the approved hardware with corresponding torque values depending on the type of adapter plate being used, i.e. 410 or 434.

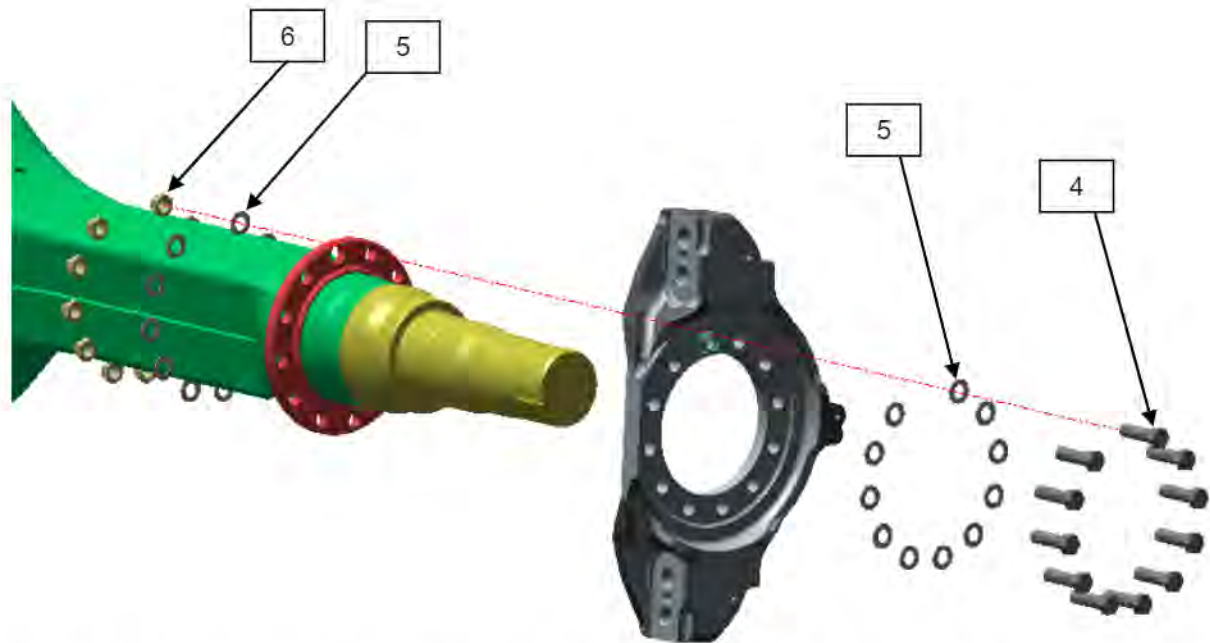


Figure 6: Exploded View of the Axle, and Hardware Needed for the attachment of the 410 Adapter Plate

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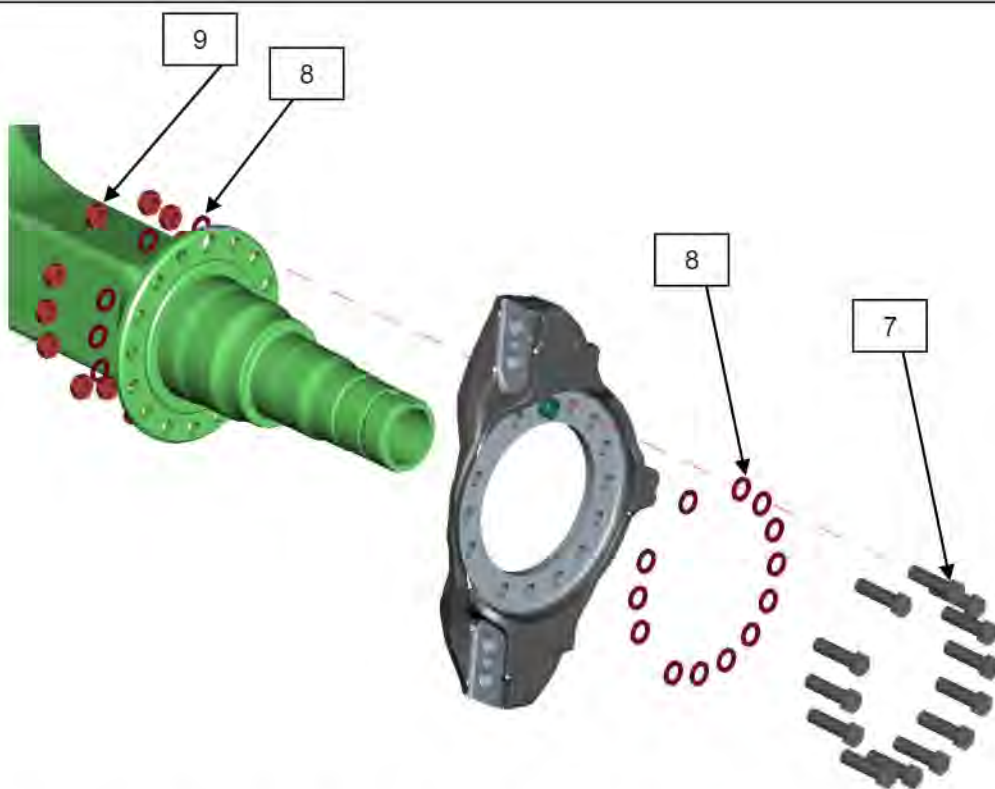


Figure 7: Exploded View of the Axle, and Hardware Needed for the Attachment of the 434 Adapter Plate

3.2 Hub and Rotor Installation Procedure

- 3.2.1 Clean residue and contaminates from the axle spindle before installing the hub/rotor assembly. For an in depth, full installation guide, please refer to the specific hub/rotor's Technical Regulation, TR 8145095.

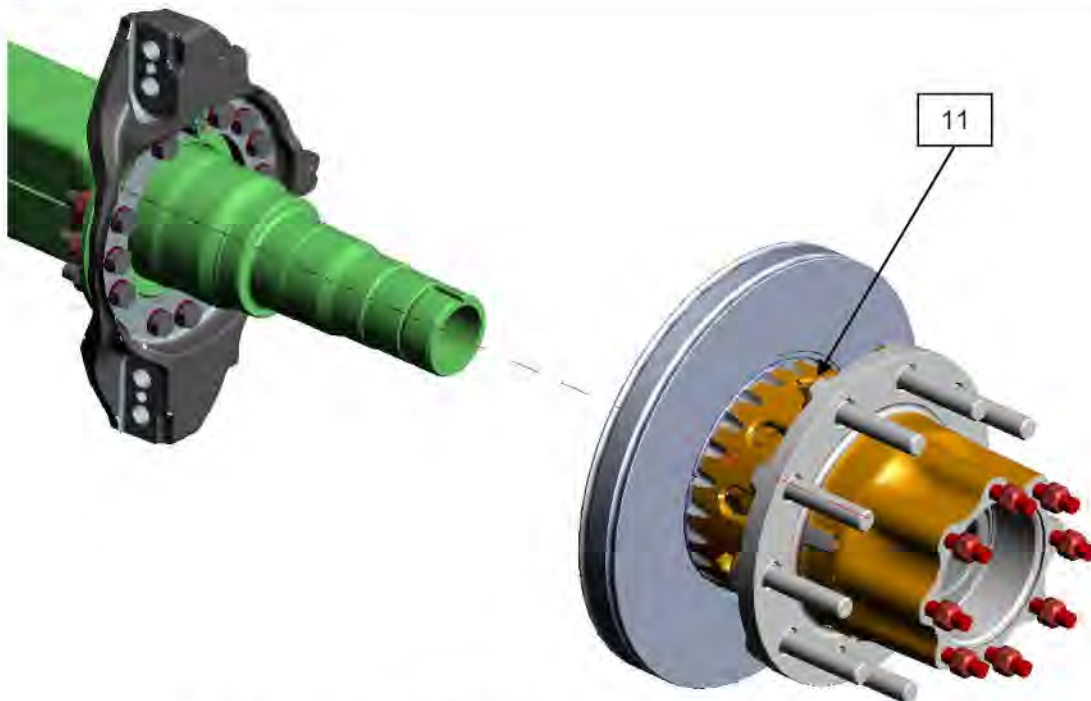


Figure 8: Axle End with the Assembled Adapter Plate Installed

3.3 Caliper Installation Procedure

3.3.1 From the Meritor factory, the brake caliper will come with plastic spacers between the two opposing brake pads. These do not need to be removed prior to installation. When installing the caliper over the rotor, the slight friction between the rotor and pads will release the plastic spacers, pushing them up and out. They can now be discarded.

Place the caliper assembly over the rotor and align the caliper bolt holes.

By hand, manually thread in the specific hardware located in the Bill of Materials on page 16 to prevent cross threading.

Again, referencing the Bill of Materials on page 16, torque the bolts to the specified torques.

Check the caliper assembly to verify that it slides by hand.

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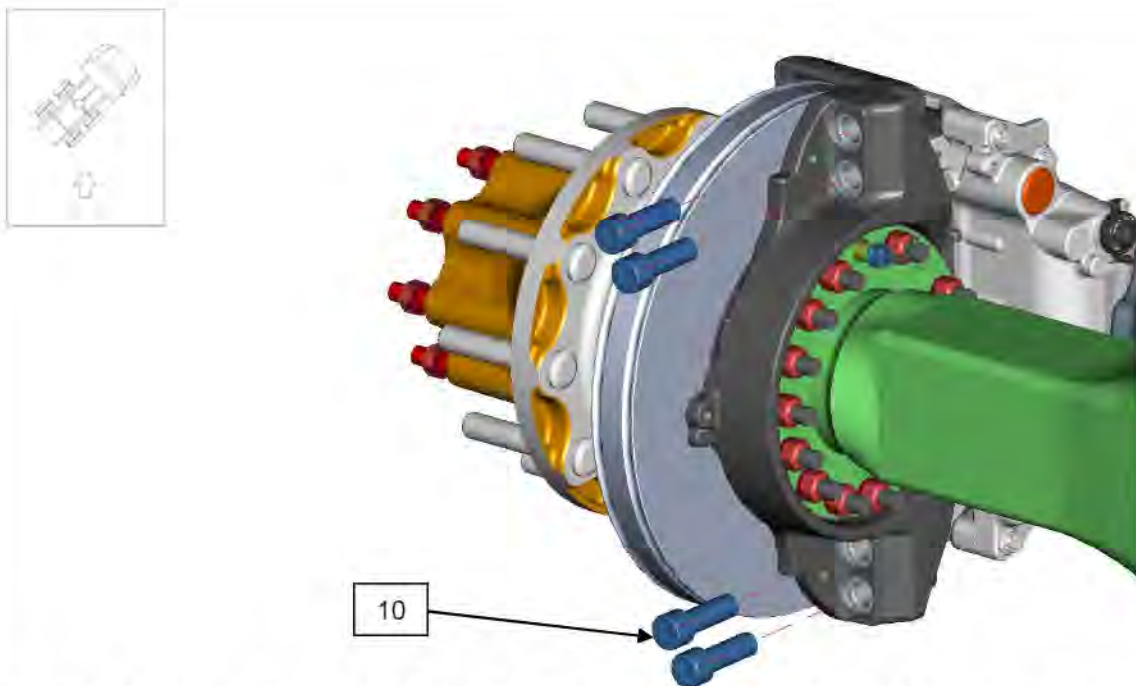


Figure 9: Exploded View of the Axle End and Hardware Needed for the Attachment of the Brake Caliper to the Adapter Plate

3.3.2 There are different types and styles of the ADB calipers. First, there are two different types of calipers, a Type 1 and a Type 2. The floating and fixed pin locations are different between the two; the fixed pin should be mounted toward the front of the truck. Since the pins are location dependant, the type of caliper can be used as a reference to the caliper's location on the truck. Additionally, there is the 410 caliper and two different styles of the 434, an L and a H. There are differences between all three, whether in the material of the caliper, the carrier or the retainer strap. Note the differences below.

TYPE 1

TYPE 2

Outboard side of vehicle

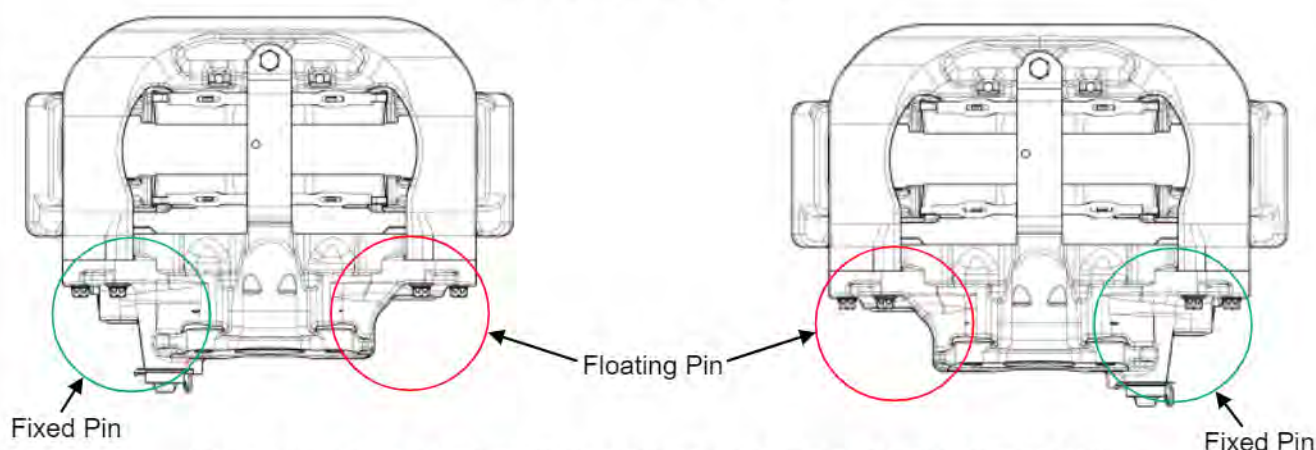


Figure 10: Type 1 Meritor Brake Caliper and a Type 2 Meritor Brake Caliper

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Figure 11: 410 Caliper Assembly and Retaining Strap



Note the difference in off-set as compared to the 410 and 434 H

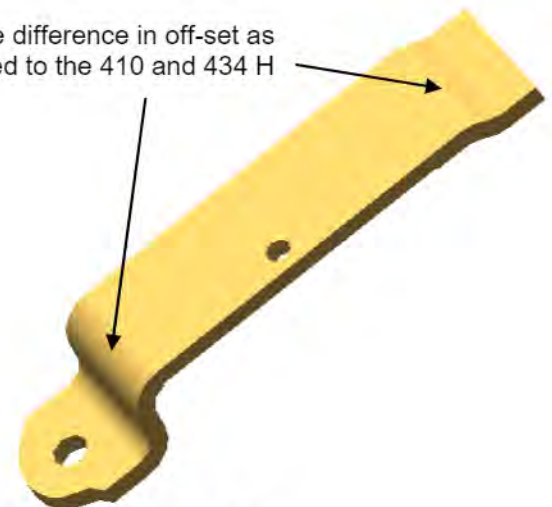


Figure 12: 434 L Type Caliper Assembly and Retainer Strap



Figure 13: 434 H Type Caliper Assembly and Retainer Strap

3.3.3 Drive axle rotor shield installation

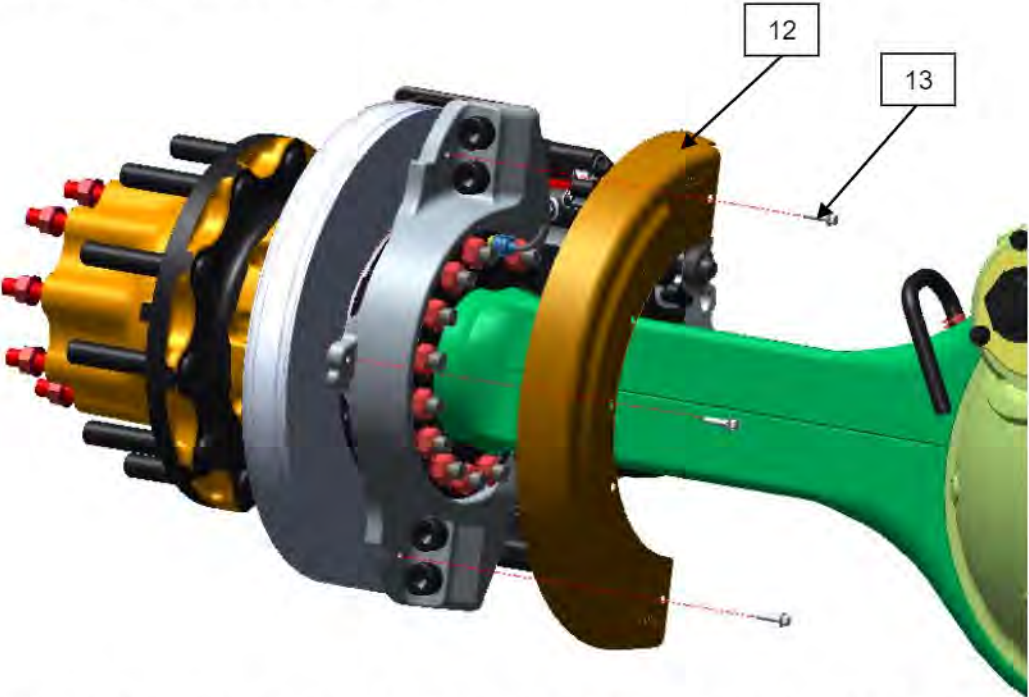


Figure 14: Drive Axle Showing the Hardware Needed to Attach the ADB Rotor Shield

3.4 Air Chamber Installation

3.4.1 For installation of the air chamber onto the caliper, please reference the Technical Regulation, 21922980 for an in depth, full installation guide.

3.5 Caliper Adjustment

- 3.5.1 The Meritor Air Disc Brake comes factory set for rotor/pad clearance. However, if an adjustment in clearance is needed between the rotor and brake pads, adjustments can be made.

Note: Always set the brake pad-to-rotor running clearance with the air chamber installed. Also, always de-adjust/adjust the brake by hand and never exceed a maximum torque of 40 Nm in either direction and never use power tools.

Remove the adjuster cover.

Use a 10 mm wrench to rotate the manual adjuster stem clockwise to bring the pads into the rotor so that the brake pad-to-rotor clearance is zero.

De-adjust the manual adjuster stem one half turn counter-clockwise to set the initial running clearance.

There should be a nominal pad-to-rotor clearance of 0.030-inch (0.75 mm).

Reinstall the adjuster cover.

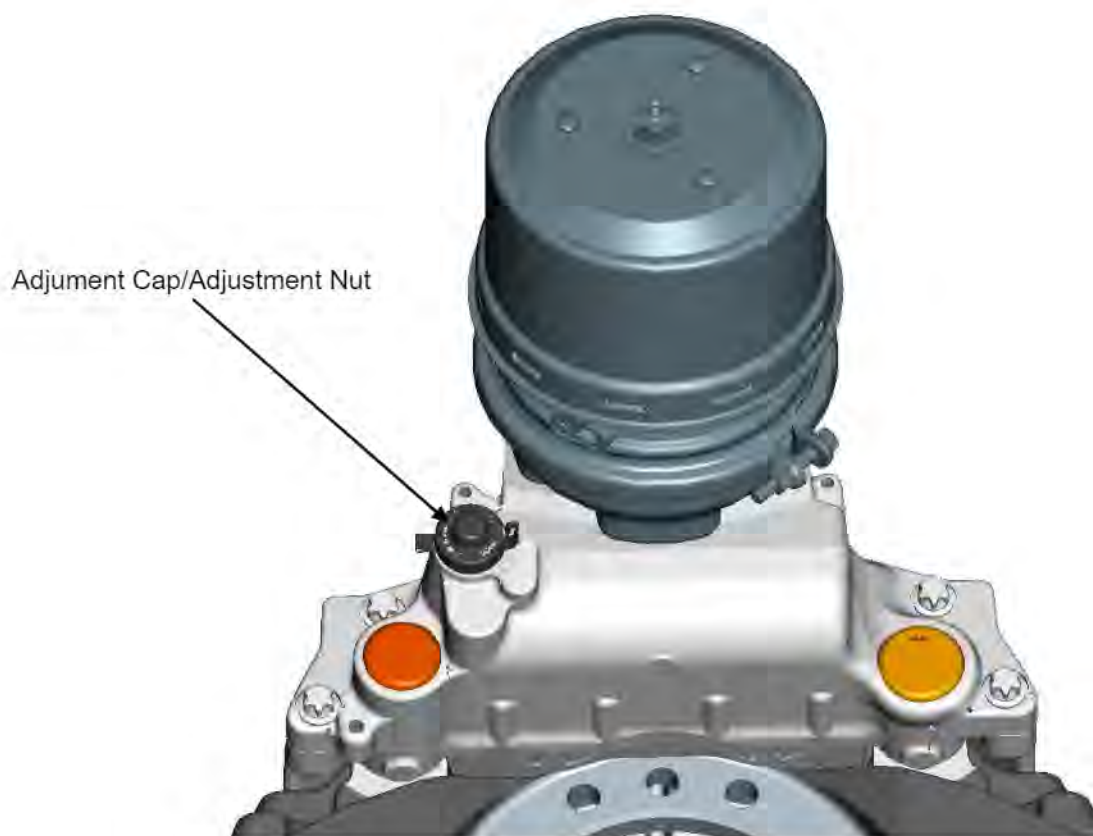


Figure 15: Meritor Disc Brake Adjustment Location

3.6 Brake Pad Removal and Installation

3.6.1 The brake pads can easily be removed and installed with little effort.

Removal:

First, locate the caging bolt on the air chamber and turn counter-clockwise to stroke the bolt out. By caging the air chamber the pistons in the brake are retracted, causing the brake pads to withdraw from the rotor.

Use a 17 mm wrench to remove the pad retainer bolt.

Remove the pad retainer.

Remove the pad springs.

Remove the outboard brake pad from the caliper assembly; it is good measure to mark the brake pad as "outboard" to ease in re-assembly.

Remove the inboard brake pad from the caliper assembly; again, it is good practice to mark the brake pad, marking the brake pad "inboard".

Use a brush or damp cloth, remove the dirt and dust from the carrier brake pad contact surfaces.

Inspect the carrier for signs of damage or wear, the pad abutments and the brake pads themselves for excessive grooving or cracked friction material.

Installation:

If necessary, de-adjust the brakes by turning the adjuster nut counter-clockwise.

Slide the caliper outward and install the outboard pad and spring into the outboard side of the caliper.

Slide the caliper inward and install the inboard pad and spring into the inboard side of the caliper.

Install the pad retainer.

By hand, manually thread in the retainer strap bolt to prevent cross threading.

Tighten the bolt to 25-30 lb-ft (34-40 N m).

Note: If you are replacing the pad retainer: Do not use the original pad retainer bolt.

Use the pad retainer bolt supplied with the kit.

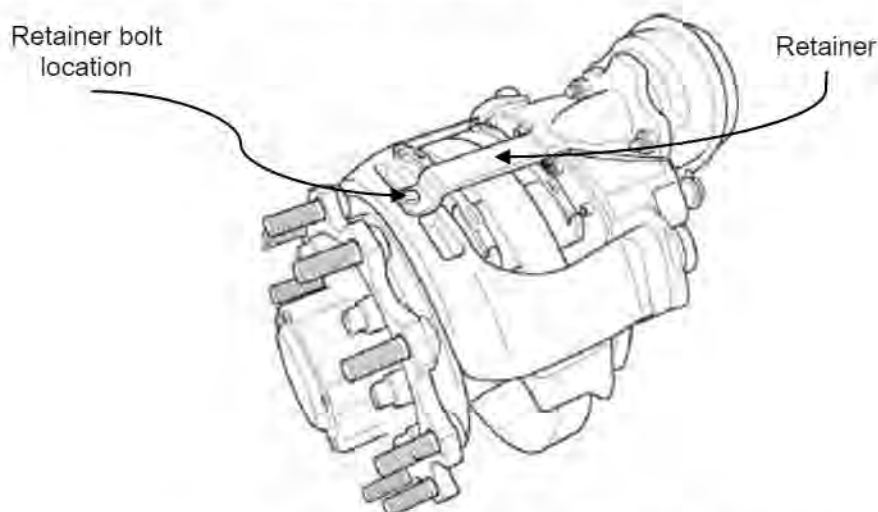


Figure 16: Caliper Pad Retainer and Retainer Bolt

3.7 Pad Shield Installation and Removal

3.7.1 To install the pad shield, follow the steps in section 3.6.1 for removing and installing the retaining strap. After removal of the retaining strap, thread the retainer strap through the slot on the pad shield. The two cut outs on the shield should be facing towards the wheel/tire and so that they accommodate the tabs on the brake pad backing plate.

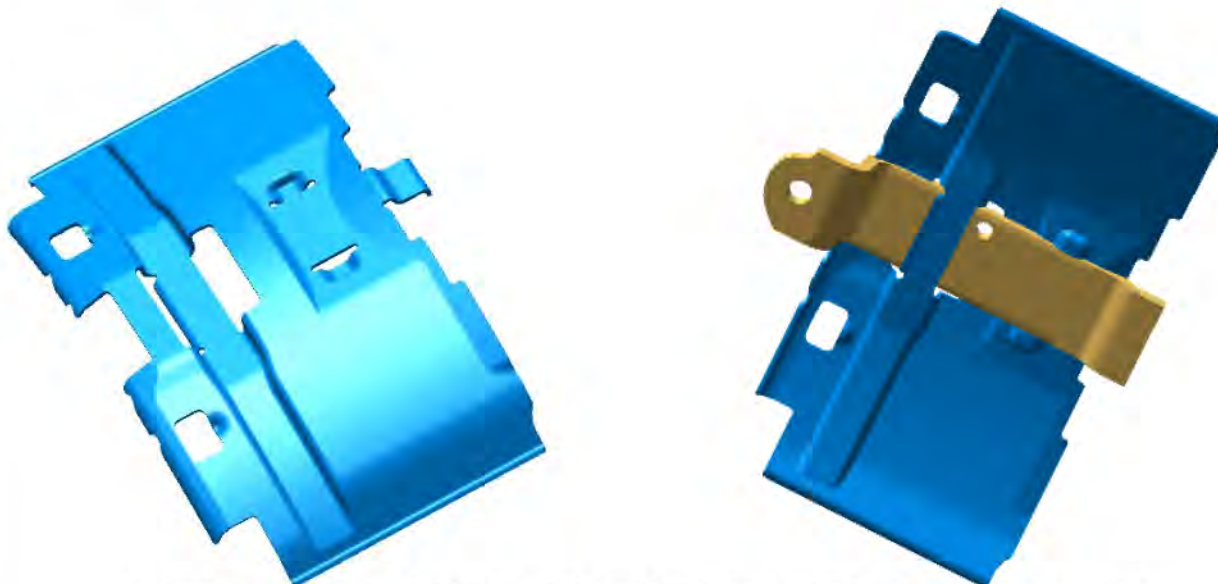


Figure 17: (Left) Pad Shield, (Right) Pad Shield with the Retainer Strap Installed

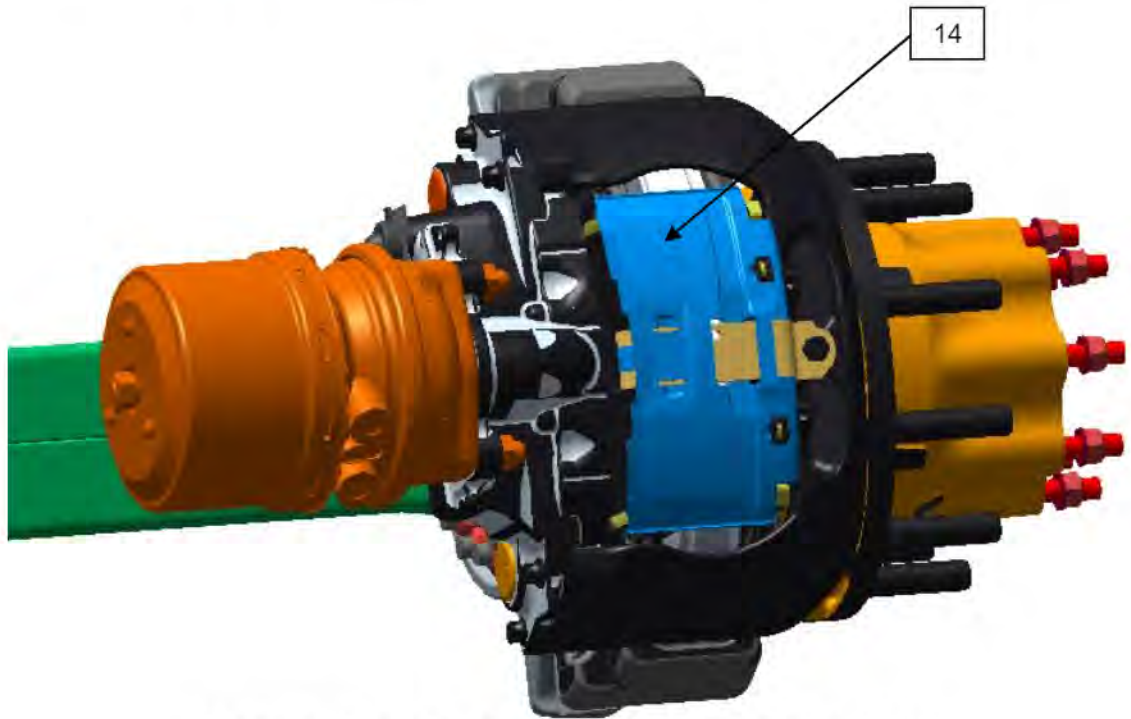


Figure 18: Brake Caliper Showing the Installed Pad Shield

3.8 ABS Wire Routing and Clipping

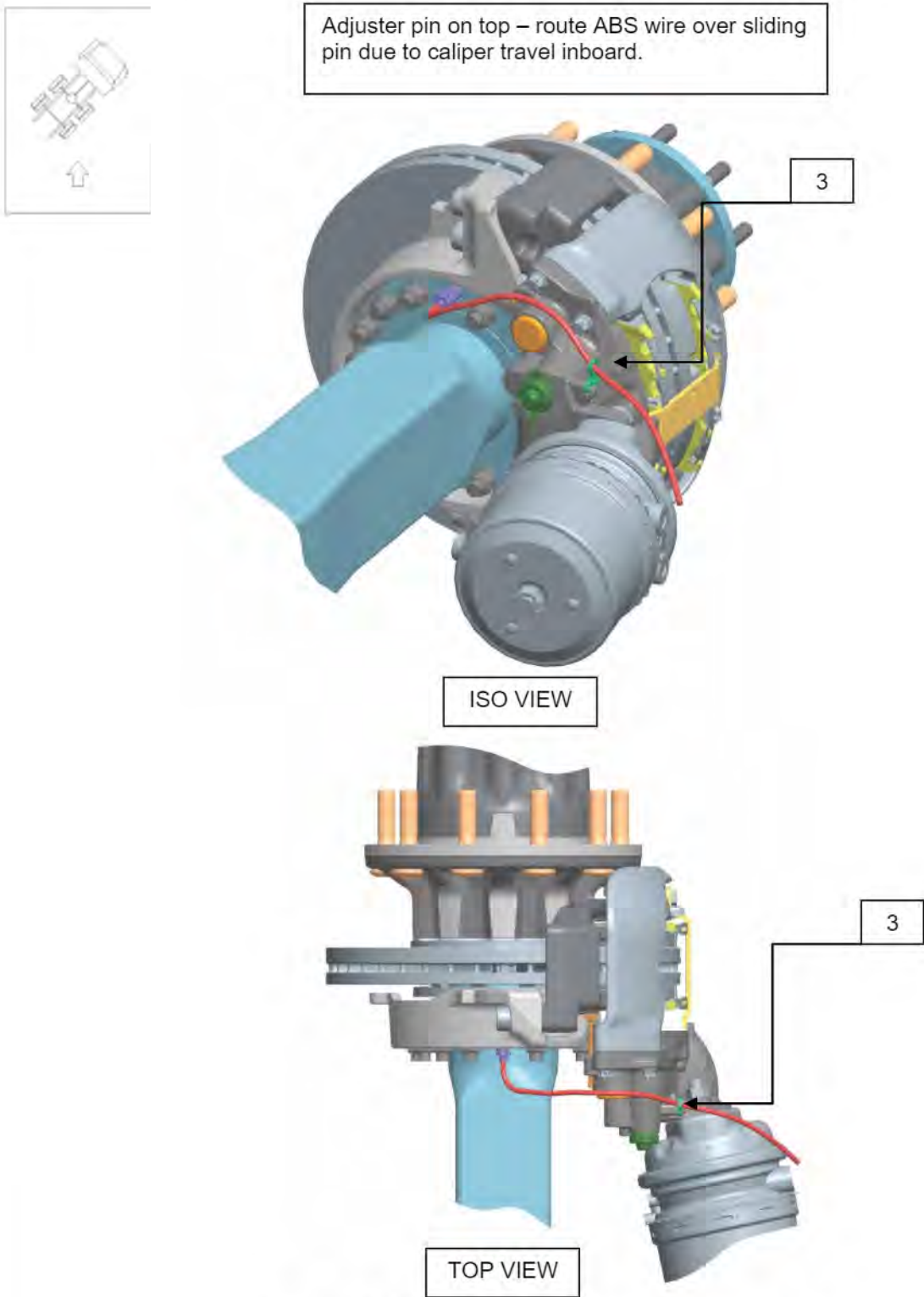
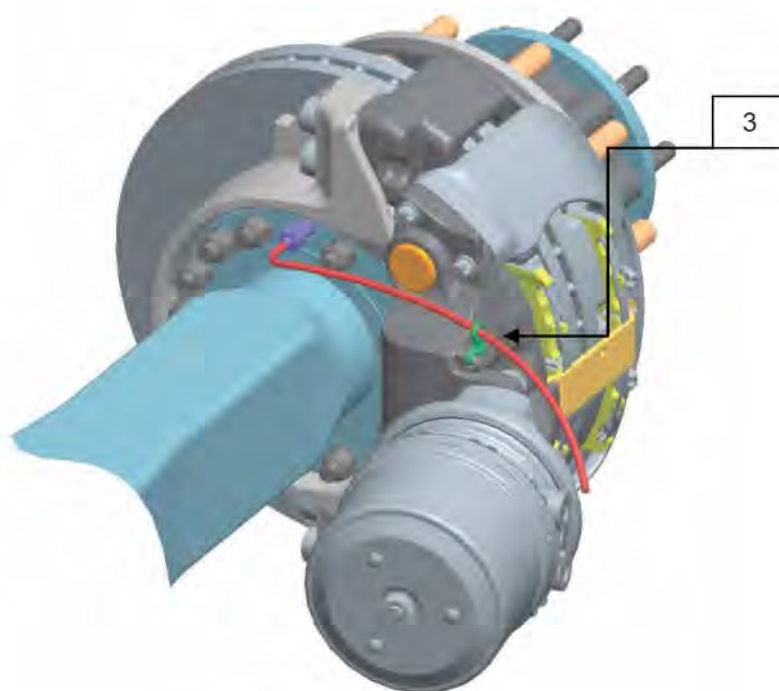
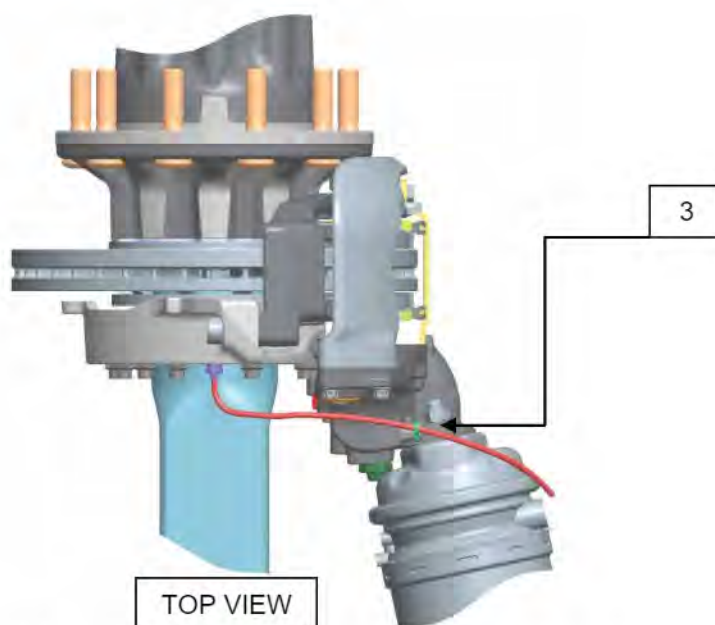


Figure 19 ABS wire routing adjuster Pin located on top

Adjuster pin on bottom – route ABS wire behind sliding pin.



ISO VIEW



TOP VIEW

Figure 20 ABS wire routing adjuster Pin located on bottom

4 Suspension Packaging and Brake Layout

4.1 Adapter Plate and Caliper Callout when Assembling

4.1.1 For the proper adapter plate and caliper location/ callout when assembling. One can reference the figure below. When viewing the build sheet, it will note the position of the specific part. The position will read a 1, 2, 3 or 4. 1 denoting the driver's side first drive axle, 2 the passenger side first drive axle, 3 the driver's side second drive axle and 4 the passenger side second drive axle.

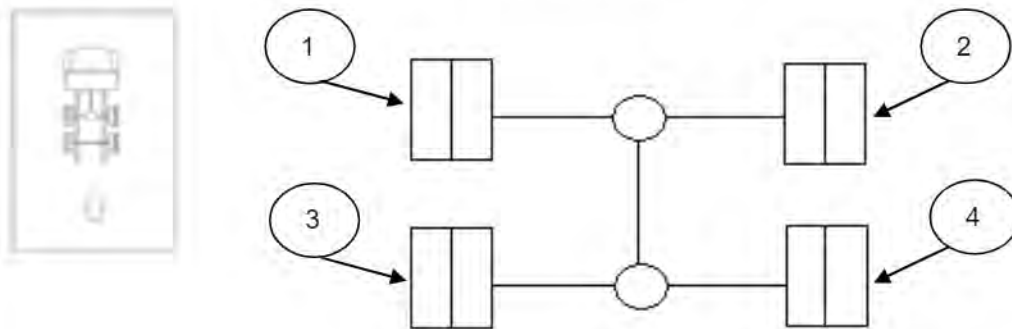
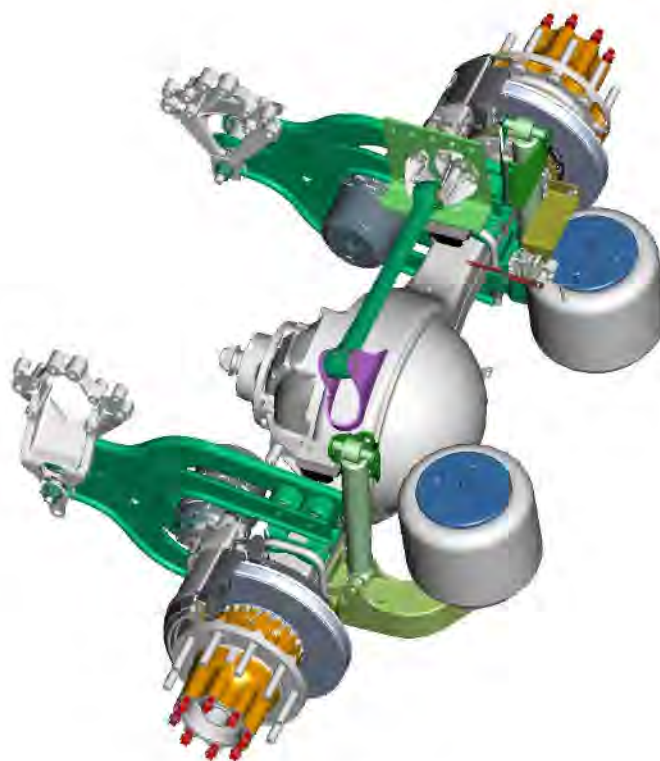


Figure 21 Adapter Plate/Caliper Position Call out



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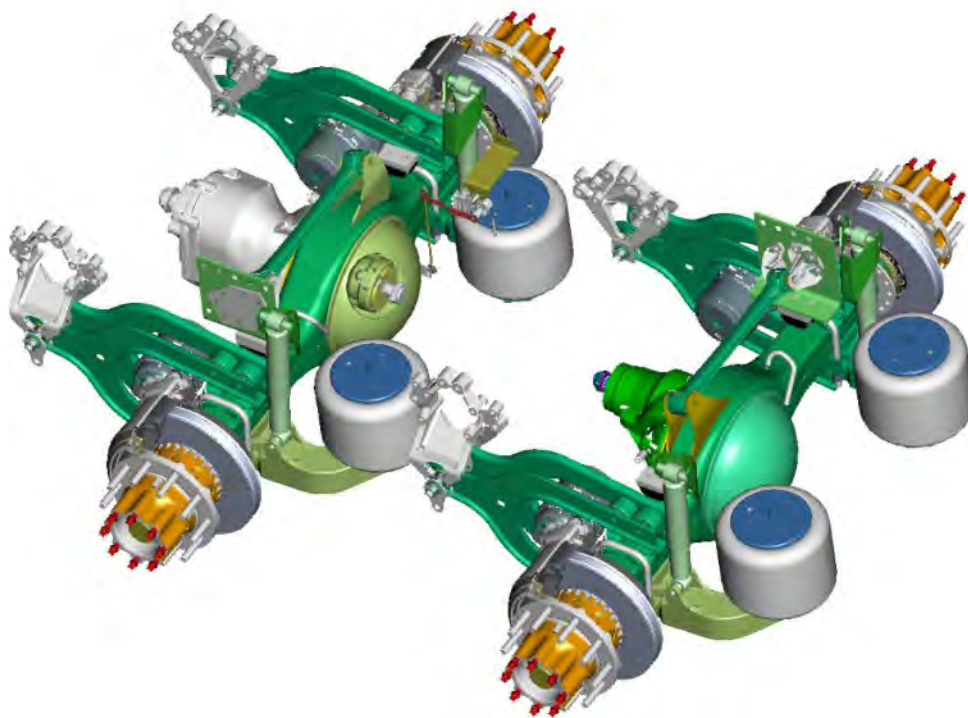
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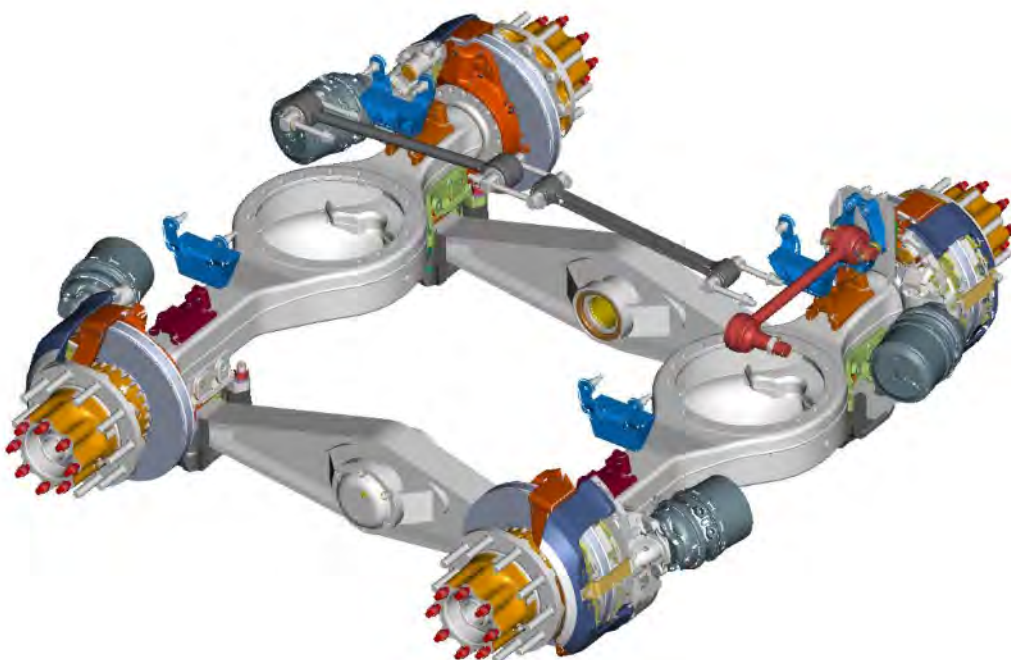
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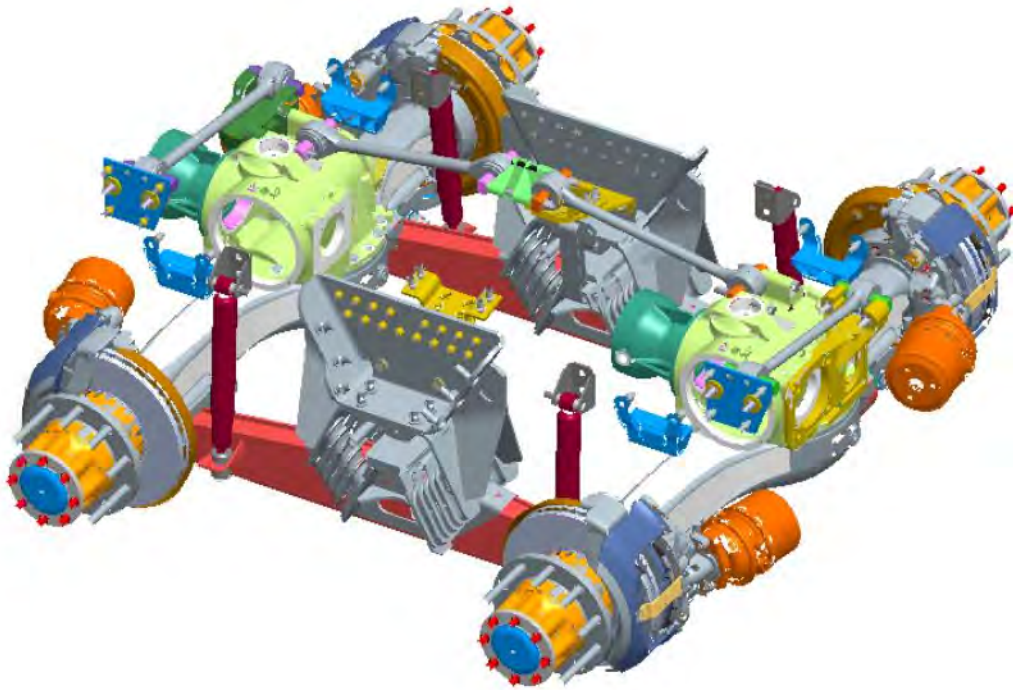
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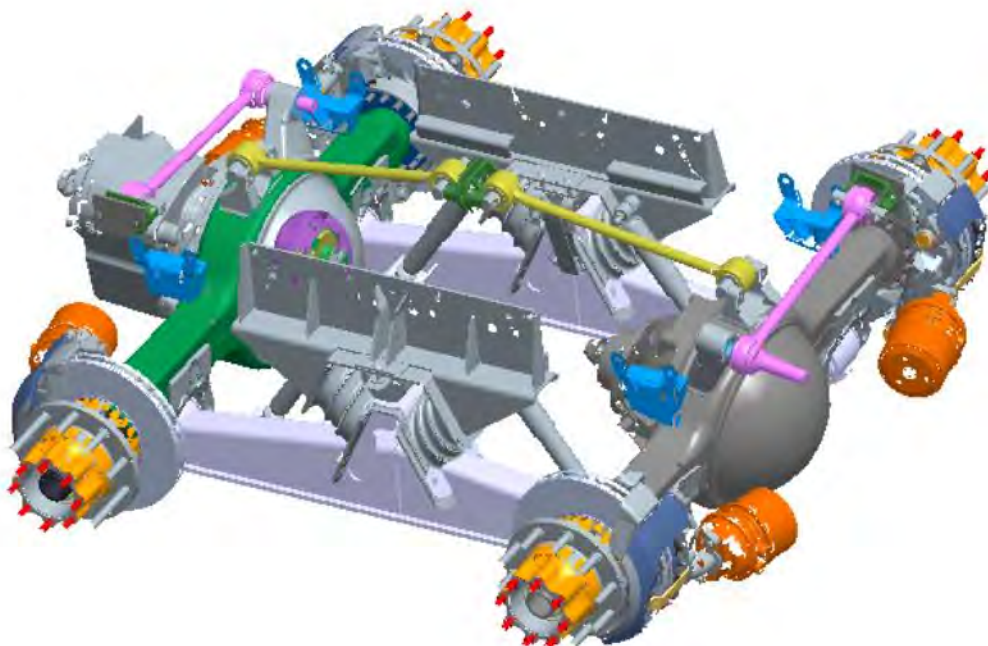
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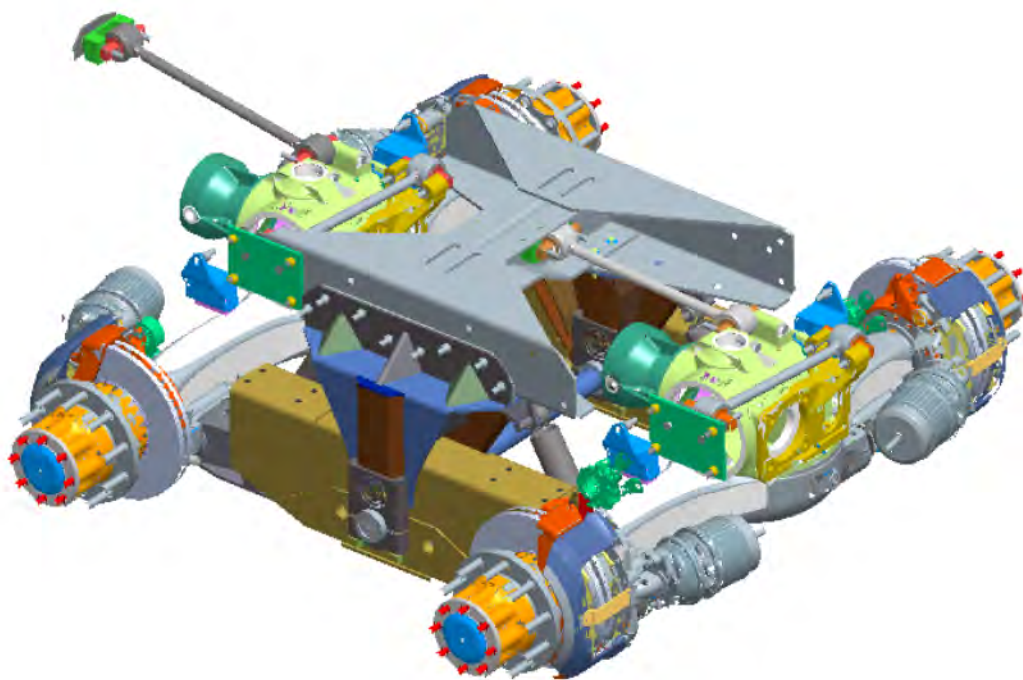
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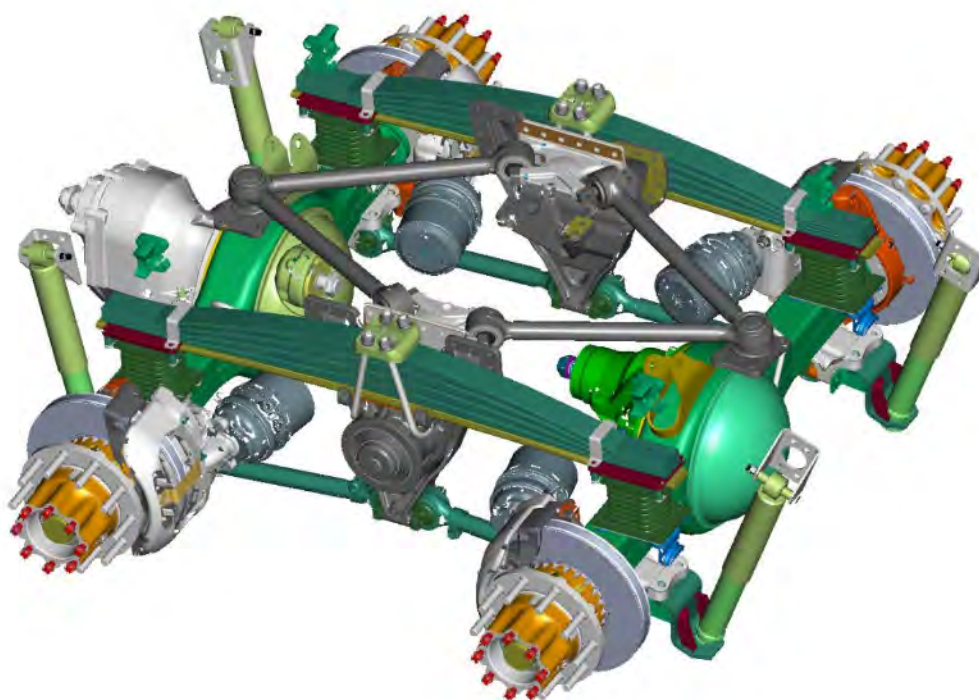
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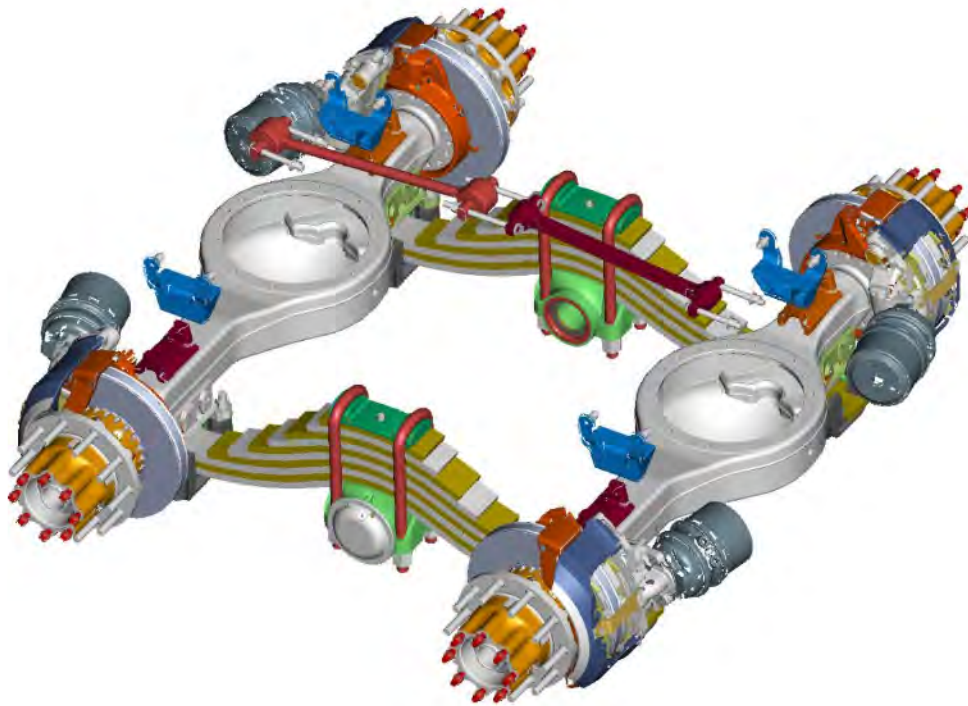
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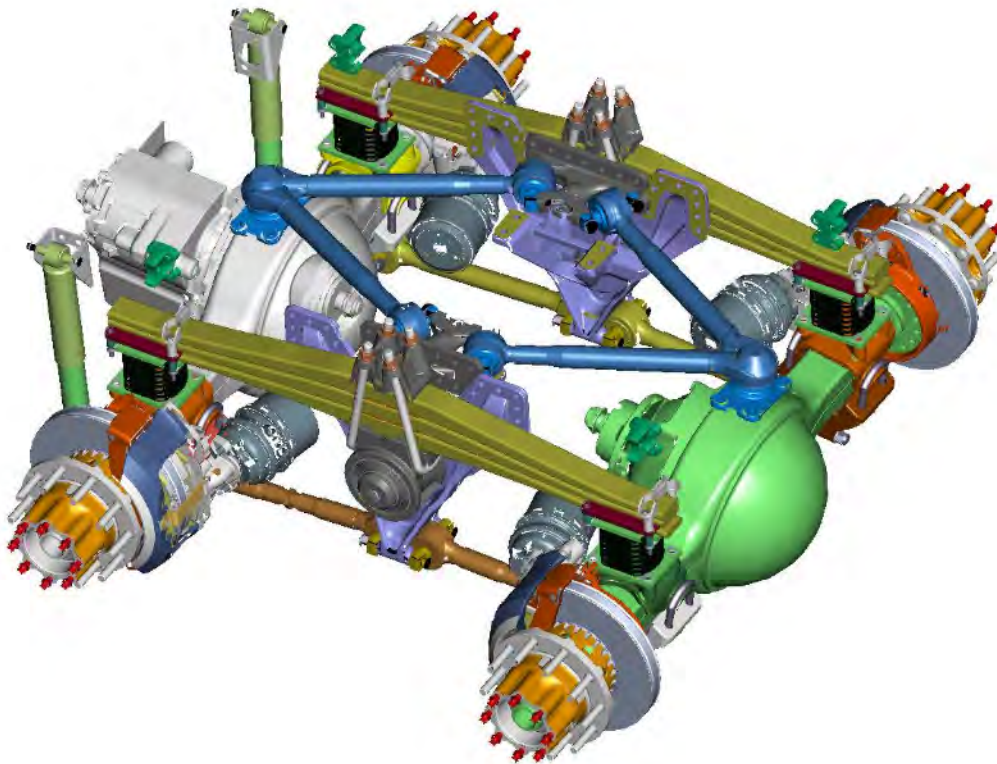
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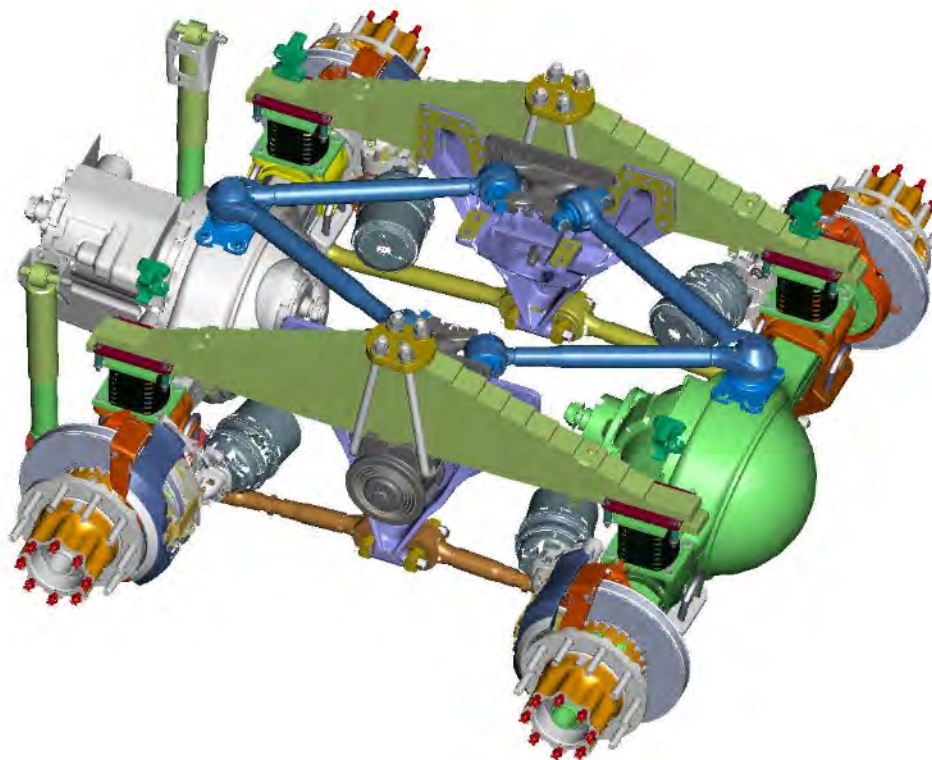
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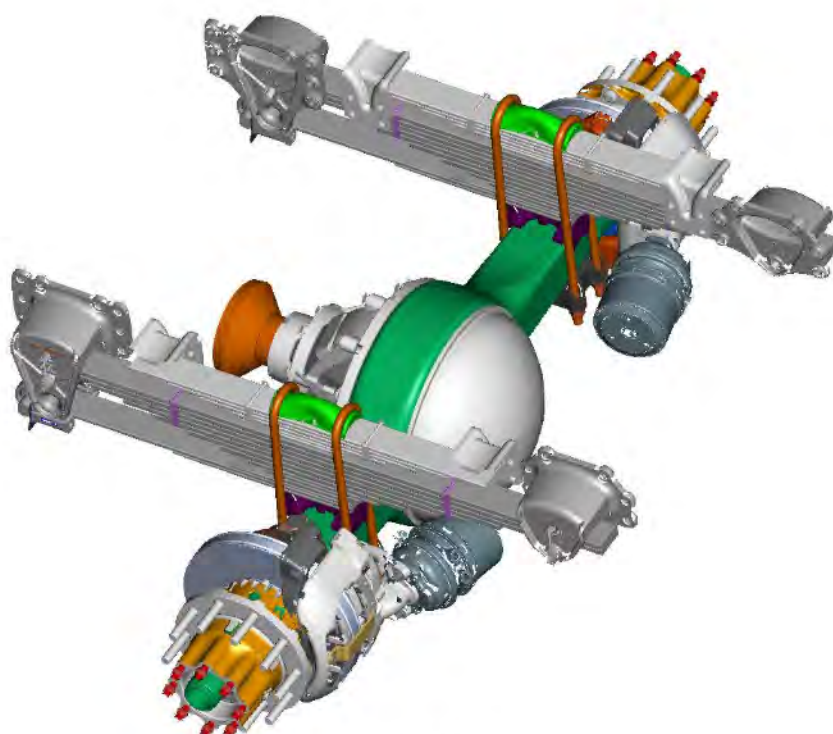
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Figure 22 Suspension and Brake Packaging

Table 1: CHART FOR REFERENCE ONLY

ITEM	QTY (Per wheelend)	Part Description	Remarks
1	1	RETAINER, ADB BUSHING	
2	1	RETAINER	
3	2	Cable Tie	
4	11	HEXAGON SCREW, BOLT 8PHS 9/16-18 X 2.00	For use with 410 Adapter Plate and L Brake
5	22	WASHER, 15*26*2	For use with 410 Adapter Plate and L Brake
6	11	LOCK NUT, 9/16" UNF*22 STEEL	For use with 410 Adapter Plate and L Brake Torque: (50 Ft-Lbs + 60 Degrees) **
7	13	HEXAGON SCREW, 5/8 UNF*63	For use with 434 Adapter Plate and L/H Brake
8	26	WASHER, 17,5*27*2,5	For use with 434 Adapter Plate and L/H Brake
9	13	LOCK NUT, 5/8 UNF*13,9	For use with 434 Adapter Plate and L/H Brake Torque: (70 Ft-Lbs + 60 Degrees) **
10	4	HEX. SOCKET SCREW, M20*1.5*60	For use with both 410/434 Adapter Plate and L/H Brake Torque: (100 Ft-Lbs + 90 Degrees) **
11	1	HUB	
12	1	ROTOR SHIELD, RADIAL MOUNT	
13	3	FLANGE SCREW, M8*16	15-20 Ft-Lbs
14	1	PAD SHIELD	

Notes: All Torque Specification Tolerances are +/- 10%. All Angle Specification Tolerances are – 0, + 4 degrees.

**These values are being classified as a Critical Characteristic of 2.