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Coding Information

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Title: Hydraulic Brake System Park Brake Inspection and Adjustment Procedures

Applies To: Hydraulic Brake system equipped with 04GBJ Park Brake

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

*09/05/2017 - Initial Article Release *09/13/2017 - Added damper removal procedure before park brake cable adjustment *09/21/2017 - Added Bracket, Clamps, and Spring Assembly Alignment plus Pedal adhesive. *10/10/2017 - Added cushioned clamp part number and clean date for correct 5/8" clamp used with intermediate cable

DESCRIPTION

This document will guide the user through 04GBJ Park Brake Inspection and adjustment procedures.

SYMPTOM(s)

Diagnostic Trouble Code(s) & Dashboard Indicator Light(s):

DTC/Light	Description
N/A	

Customer Observations or Concerns

Unit will not operate in reverse due to parking brake lock-up. Tech/Driver may find heat indications on park brake drum. Driver may experience "shuttering" from rear of vehicle while driving.

SPECIAL TOOL(s) / SOFTWARE

Tool Description	Tool Number	Comments	Instructions
Vernier Caliper	N/A	Obtain Locally	

SERVICE PARTS INFORMATION

Kit Description	Part Number	Quantity Required	Notes
KIT SHOE AND LINING VERSION2	2605826C91	1	
KIT PARK BRAKE LEVER CAM PLATE SCREW	2605827C91	1	
KIT BRAKE SPRING	2605828C91	1	
CABLE, PARKING BRAKE ADJUSTER	2605829C91	1	
KIT ADJUSTER HARDWARE	2605830C91	1	
KIT SHOE HOLD DOWN BRACKET	2605831C91	1	
DRUM, BRAKE DLM	3543437C1	1	
CLAMP RUBBER CUSHIONED	3564290C1	1	

DIAGNOSTIC STEP(s)



To prevent unexpected movement of the vehicle and possible serious personal injury or death, park the vehicle on a flat, level surface, set the parking brake, turn the engine off and chock the wheels to prevent vehicle from moving in both directions.



To prevent property damage, personal injury and / or death, parking brake front cable must have 1.50 inches (38 mm) or more of thread engagement in the adjustment turnbuckle.

Step 1: Release park brake, remove drum and inspect for heat damage to drum or linings. Also inspect adjustment cable for damage See figures below:



Figure1



Figure2

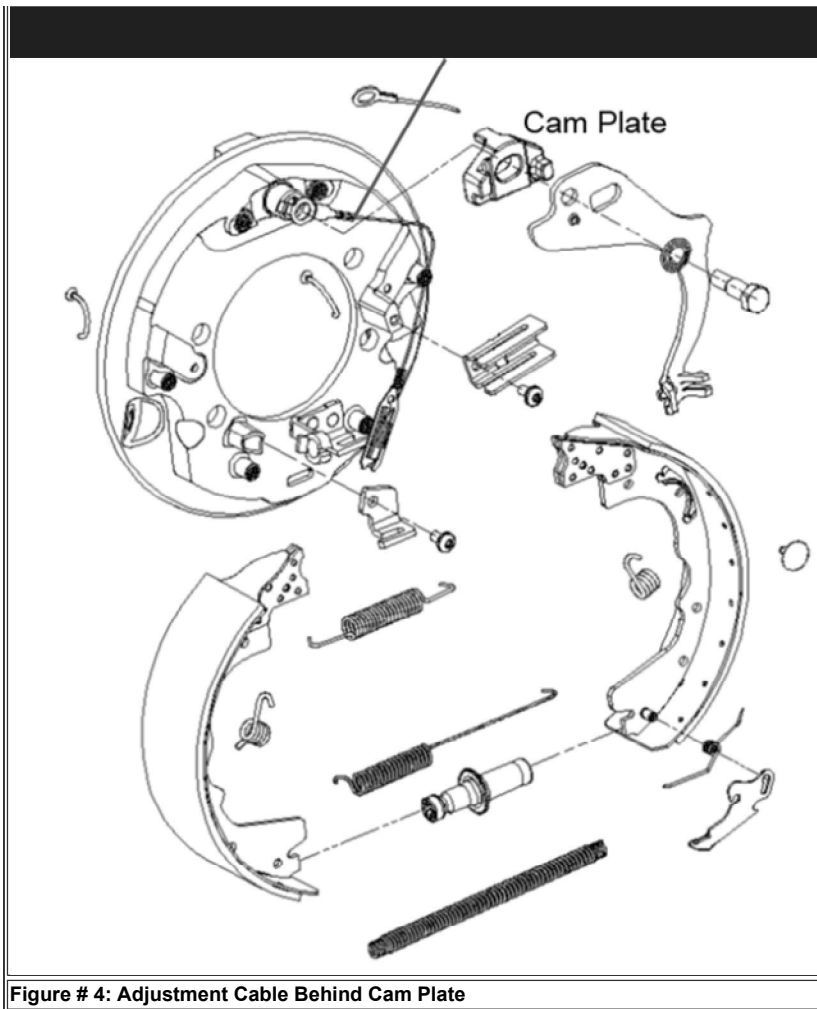


Figure #3: Damaged Cable

Step 2: If any damage is present, replace drum and shoes along with adjustment cable. Make certain Adjustment cable is installed behind the Cam Plate. See figure 4.

Note: If Starwheel free spins adjustment cable needs to be replaced.



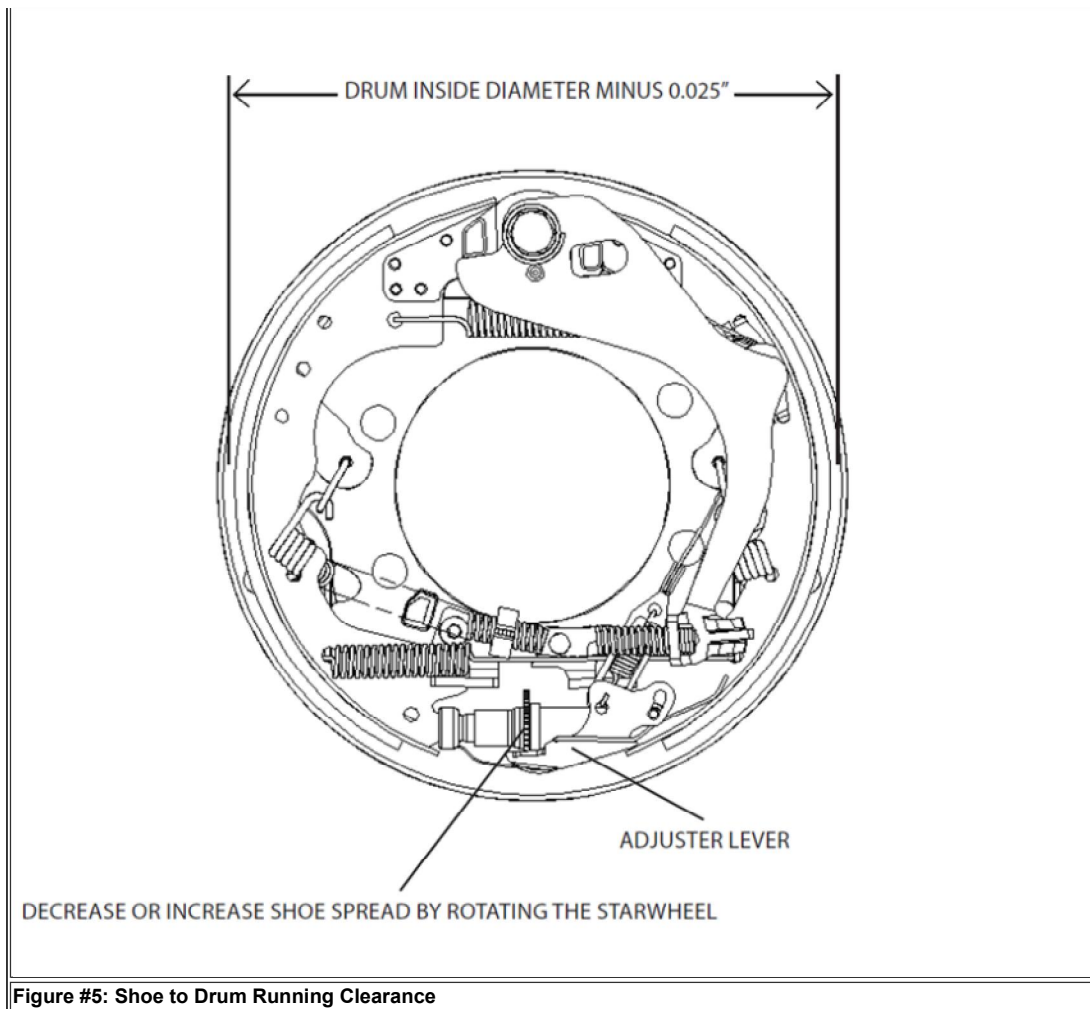


Service Procedure

Note: Follow all steps below to adjust driveline parking brake after inspection and replacement of parking brake components.

Adjustment With Drum OFF- Primary Procedure

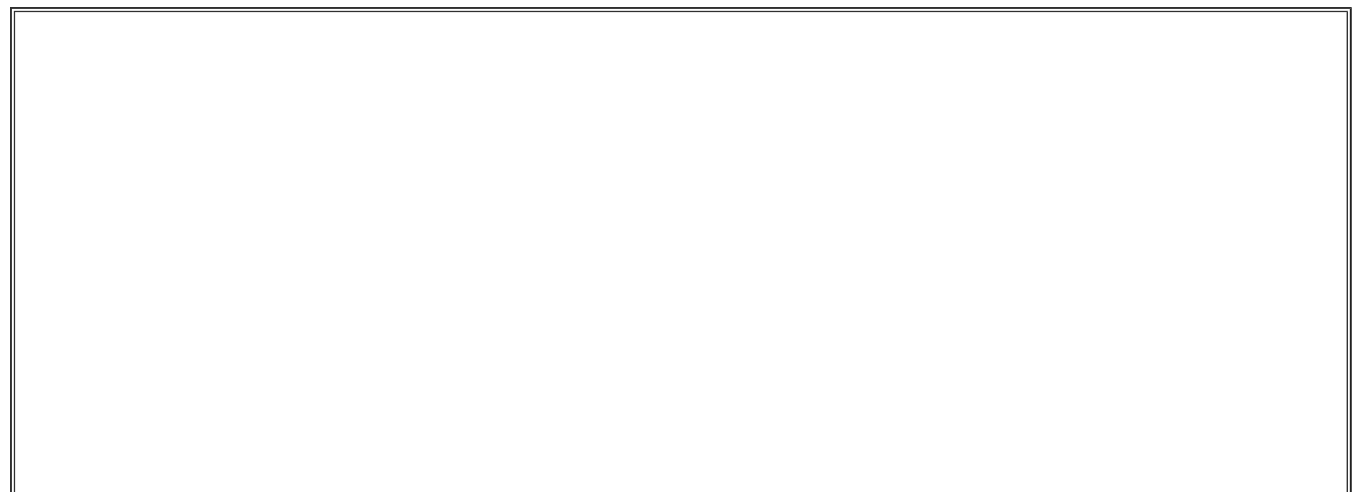
1. Use a 12inch caliper, or inside micrometer, to measure the inside diameter of the drum. Subtract 0.025 inches from the drum inside diameter measurement. Set the measurement caliper to this value, and lock the set screw.
2. Rotate the axle input flange yoke as necessary to provide clearance for the measurement caliper.
3. Place the pre-adjusted caliper over the shoes at the center of the shoes.
4. To adjust brake, rotate the starwheel until the shoes touch the measurement caliper jaws. It is necessary to disengage the adjuster lever away from the starwheel.



Adjustment with Drum Installed - Alternate Procedure

1. With the engine off, the battery disconnected, and the tires blocked to prevent vehicle movement, place transmission in neutral and fully release the parking brake. It will be necessary to raise the rear wheels off the ground, in order to allow rotation of the drum. Support the vehicle with suitable floor stands
2. Insert the adjuster lever tool or a thin flat bladed screw driver through the adjusting slot in the backplate and push on the adjuster lever to disengage it from the adjuster starwheel. Insert a brake adjusting tool (or flathead screwdriver) through the adjusting slot and move the starwheel teeth downward to expand the brake shoes outward. Continue expanding the shoes until the drum can not be rotated by hand.
3. Now adjust the starwheel teeth upward to retract the shoes until the drum just begins to rotate freely by hand (without drag from the shoes).

Parking Brake Cable Overview



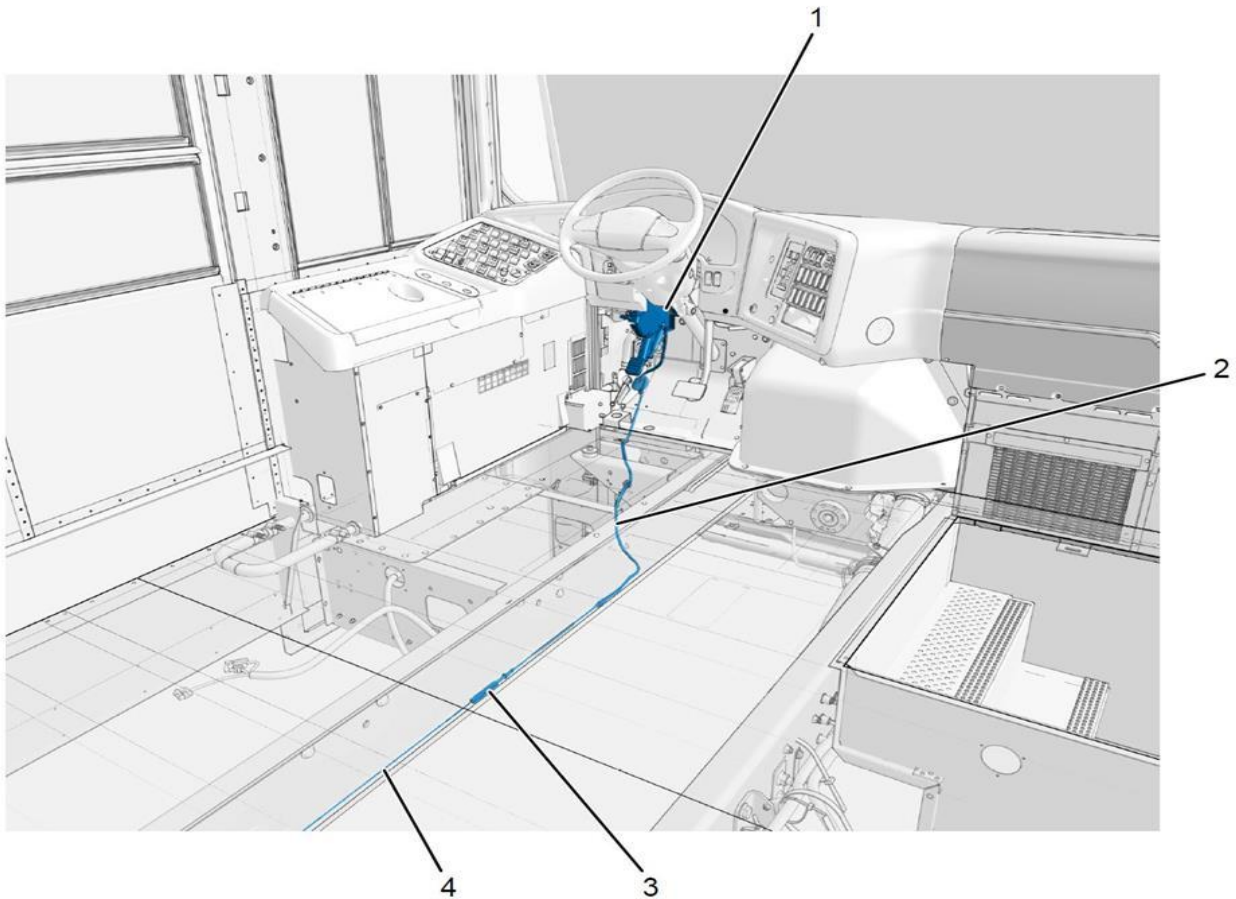


Figure # 6: Parking Brake Assembly, Front Cable and Turnbuckle

- | | |
|---------------------------|--------------------------|
| 1. Parking brake assembly | 3. Adjustment turnbuckle |
| 2. Front Cable | 4. Intermediate cable |

When the parking brake assembly pedal is depressed tension is applied thru the front cable, adjustment turnbuckle, intermediate cable and rear cable. Cable tension is transferred forcing the brake shoes against the parking brake drum to prevent vehicle movement.

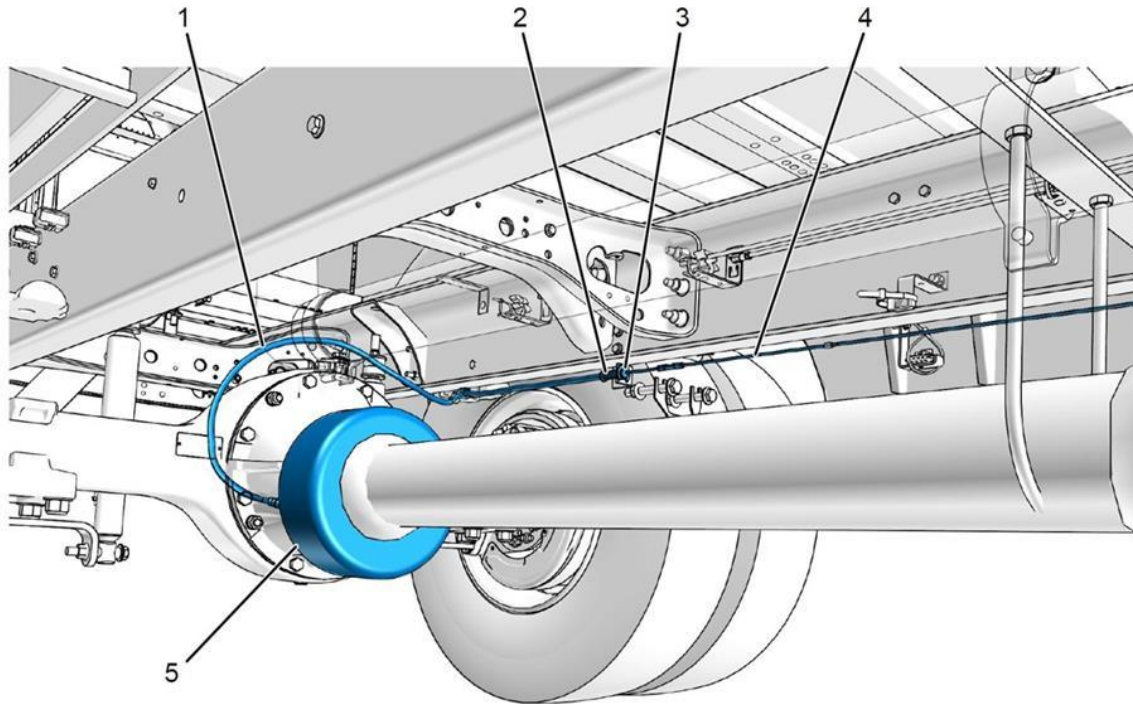


Figure #7: Parking Brake Drum, Rear Cable, Spring, Support Bracket and Intermediate Cable

1. Rear cable	4. Intermediate cable
2. Cable spring assembly	5. Parking brake drum
3. Rear cable mounting support bracket	

Remove Park Brake Pedal Spring Damper

1. Before cable adjustment park brake pedal damper will need to be removed and discarded. Refer to figure 8.



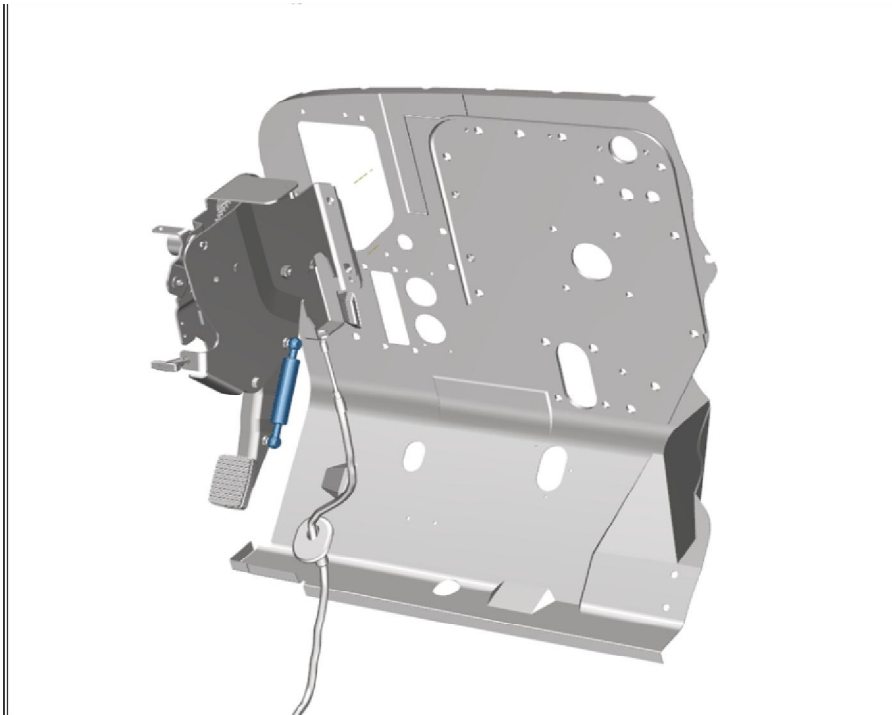


Figure #8: Park Brake Pedal Spring Damper

2. Using a small screw driver with a flat blade lift the retaining clip slightly on the top of the ball socket and then pull the gas spring off the ball stud. Refer to figure 9.

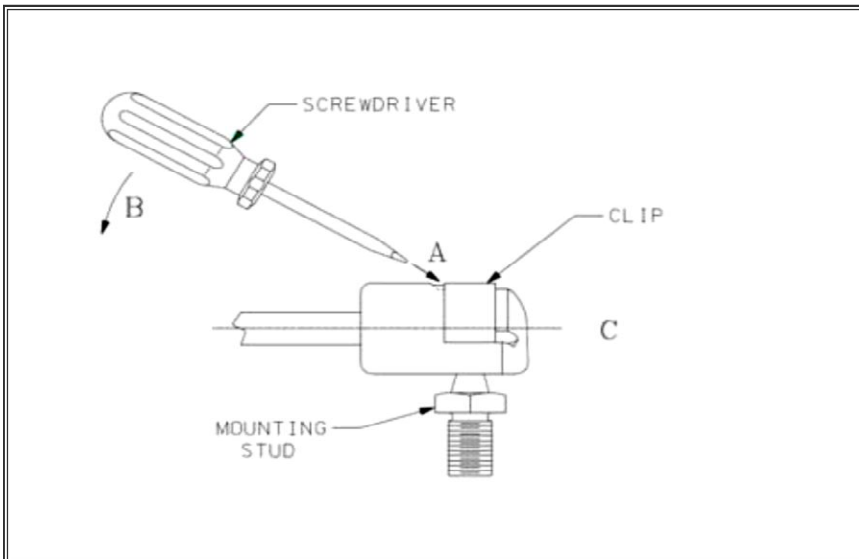


Figure #9: Park Brake Dampener

3. Discard damper.

4. Once damper is removed, rubber pad on park brake pedal will need to be adhered to the pedal using LOCTITE 430 obtained locally. Add 5 dots about 1/4" in diameter, one in each corner and one in the middle of the pedal.

Note: after removal pedal will fully return at a faster rate.

Park Brake Cable Alignment

1. If vehicle was built before 10/12/2017, replace cushioned clamps with the larger 5/8" clamp specified in the parts section of this document. Make certain extensions and clamps on intermediate cable are aligned and not touching park brake cable. This will ensure that park brake cable has no restrictions to fully release and apply. Refer to figure 10.

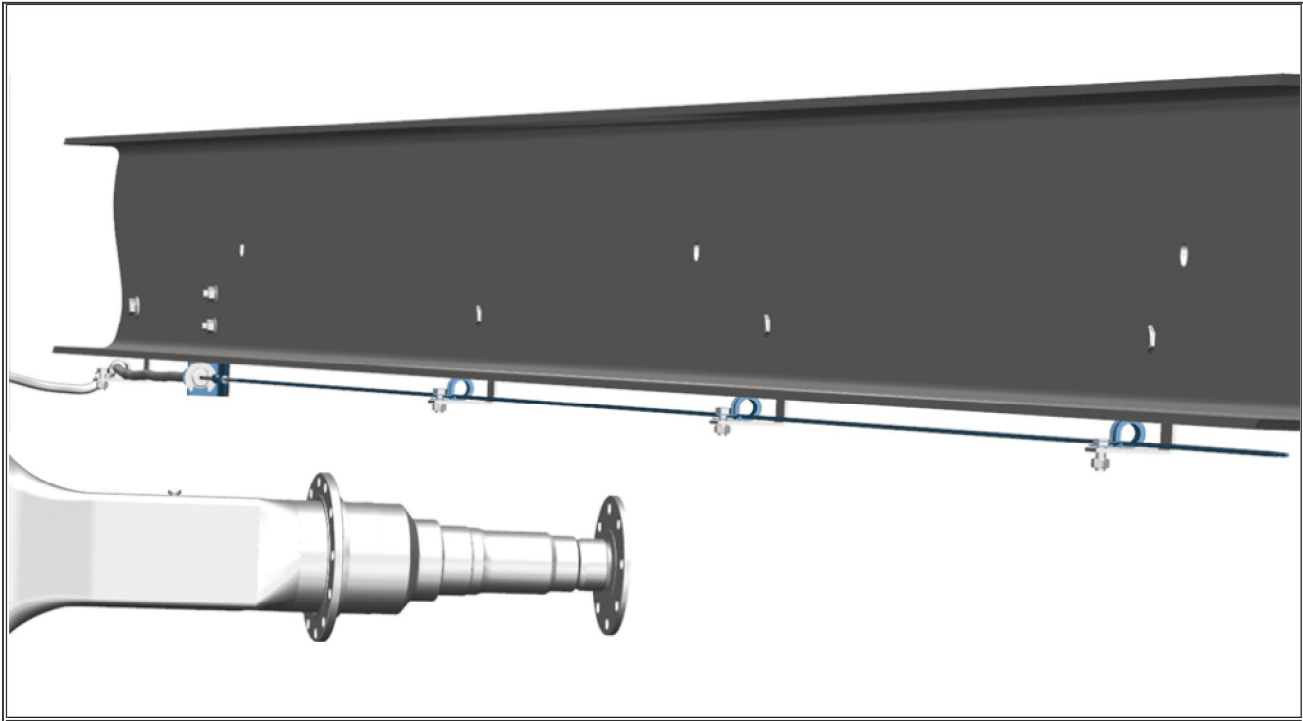
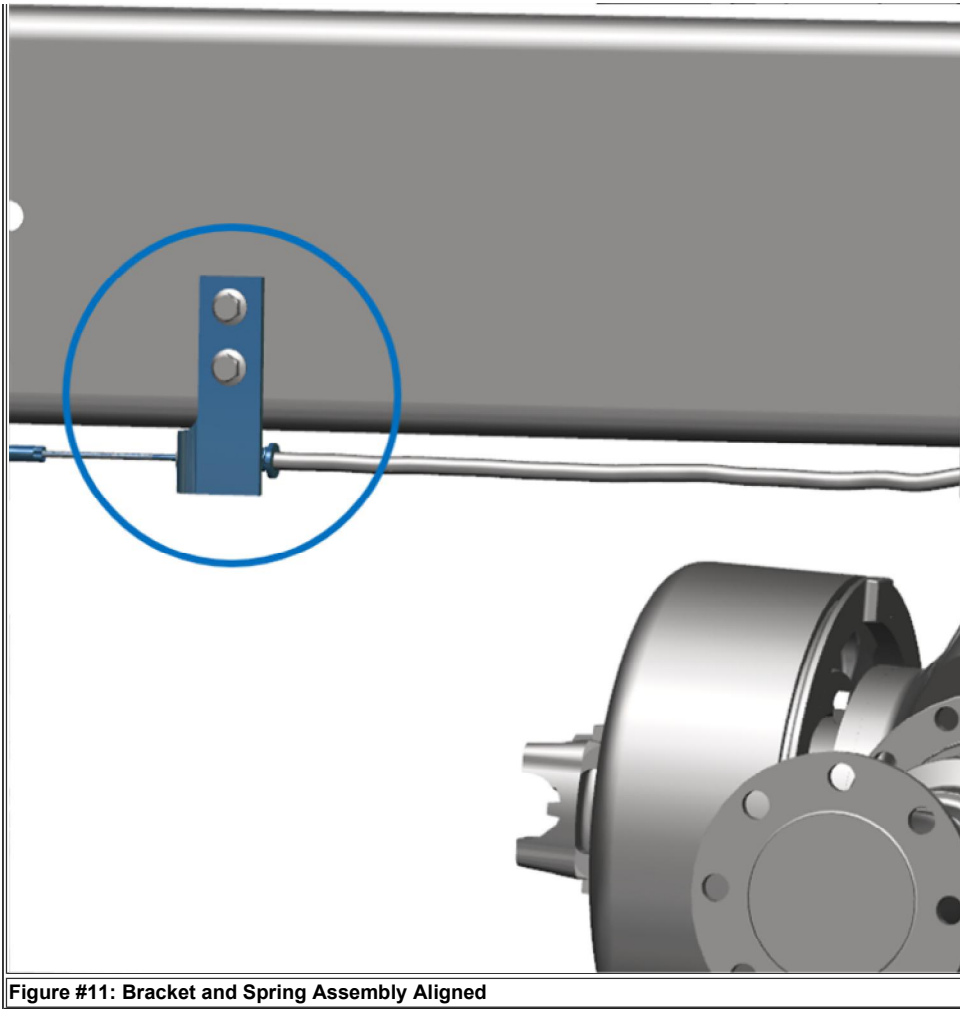


Figure #10: Clamps Aligned and Not Touching Park Brake Cable

Rear Cable Support Bracket/ Cable Spring Assembly Alignment.

1. Make certain bracket and cable spring assembly are at a 90 degree (straight up and down). This will ensure spring assembly does not come in contact with frame upon park brake release or apply. Please refer to figure 11.
2. If not aligned please loosen two bolts, adjust and re-torque bolts to 41- 50 ft lbs (56-68 nm)



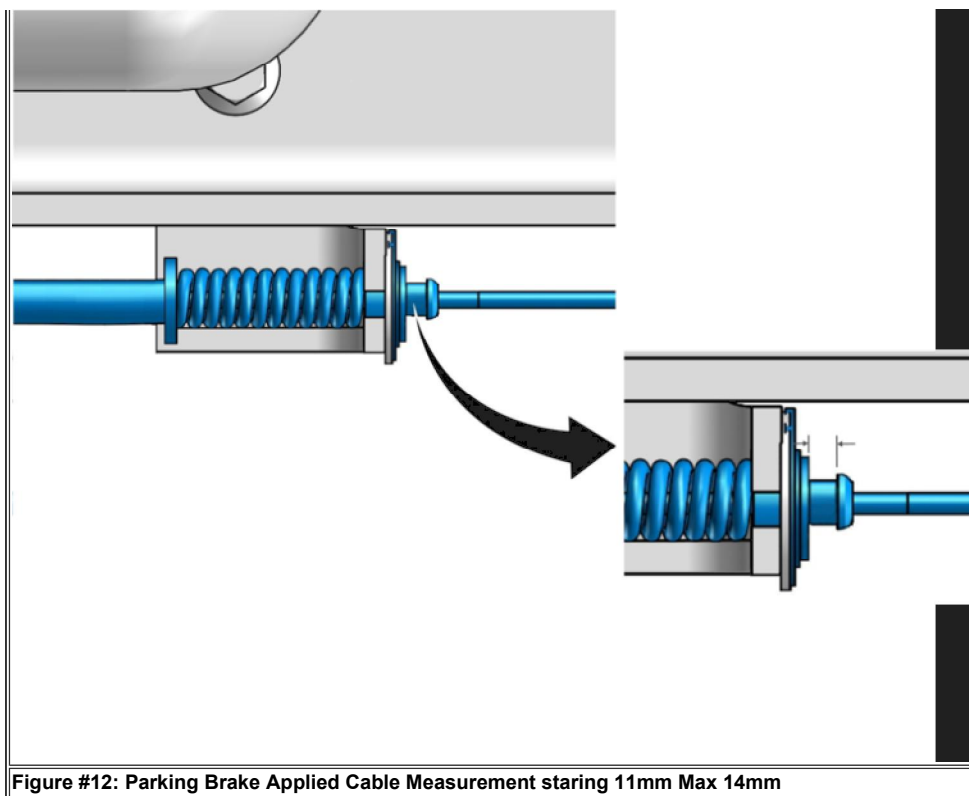


Parking Brake Cable Adjustment

NOTE: NEW SPEC FOR MEASUREMENT STARTS AT 11mm MAX 14mm

1. Release parking brake loosen jam nut to adjust turnbuckle item number 3 in figure 6.
2. Apply and release parking brake all the way to the floor (bottomed out) Perform this step 3 times before continuing to step 3.
3. Fully apply park brake, using Vernier calipers measure critical distance in figure 12. Spec is 11mm -14mm
4. After correct cable tension adjustment, lock jam nut and proceed to Park Brake Operation section of this document





Parking Brake Operation

1. Upon parking brake release make certain pedal is fully releasing
2. With Parking brake applied Place Vehicle into Drive and Reverse rev engine to 1500 RPM and make certain vehicle does not pull away. If vehicle pulls away the parking brake cable adjustment will need to be set at the higher end of the spec.
3. Release parking brake and drive forward and reverse making sure no brake drag is present.
4. If any concerns arise while performing operational checks run through brake adjustment steps again and make certain no steps were missed.
5. After all checks are complete return vehicle into service.

WARRANTY INFORMATION

Warranty Claim Coding:

Refer to the [Warranty Coding Manual](#) for Group and Noun Codes.

Standard Repair Time(s):

Refer to the [SRT Manual](#) for Repair Times

OTHER RESOURCES

[Master Service Information Site](#)

[Bosch Park Brake Manual](#)

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