

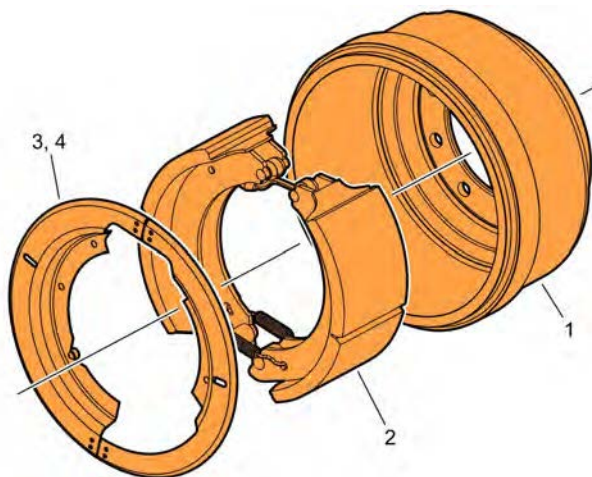
SB-10056581-3868

Brake Drum, Replacement
Steer Axle
VN, VHD, VAH

FSB 511-007, Brake Drum, Replacement (Steer Axle)

(August 2014)

Some VOLVO VN, VHD, and VAH trucks built between 08/29/2011 and 06/30/2014, equipped with a VOLVO 14.6k steer axle, tapered hub, and 152 mm (6.0 in) wide Meritor brake shoes can show signs of brake shoe protrusion beyond the brake drum. This condition is resolved by installing new 152 mm (6.0 in) brake shoes, new dust shields, and new 178 mm (7.0 in) wide brake drums (20536276).



W5092666

Required Parts (Brake Drum Replacement)

Item	Description	Part Number	Qty
1	Brake Drum, 178 mm (7.0 in) wide	20536276	2
2	Brake Shoe Kit, 152 mm (6.0 in), Meritor	TDAKSMA15014715QP	2
3	Brake Dust Shield, Left, Meritor	22375171	2
4	Brake Dust Shield, Right, Meritor	22375304	2
5	Gasket, Hub Cap	20353636	2
6	Seal, Hub	85103823	2

Service personnel: Please circulate, read and initial

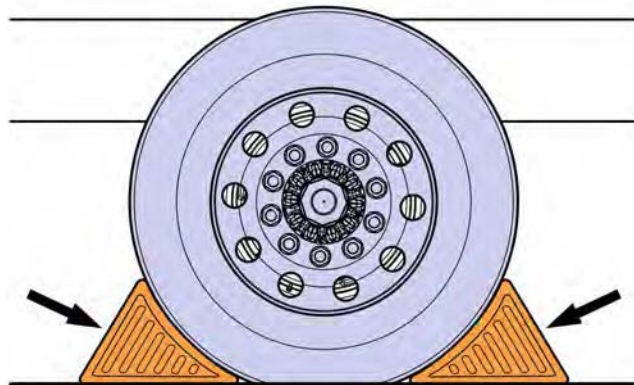
Service Manager	Warranty Administrator	Workshop Foreman	Service Technicians						

Decommissioning the Truck for Repair

You must read and understand the precautions and guidelines in Service Information, group 50, "General Safety Practices, Brakes" before performing this procedure. If you are not properly trained and certified in this procedure, ask your supervisor for training before you perform it.

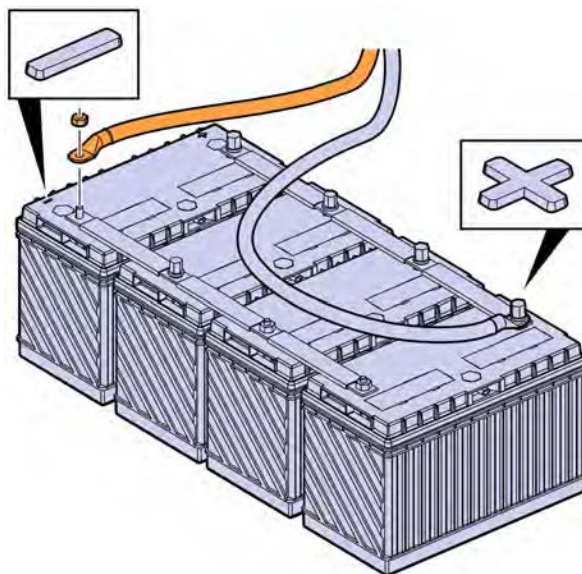
NOTE: Information is subject to change without notice. Illustrations are used for reference only and can differ slightly from the actual vehicle being serviced. However, key components addressed in this information are represented as accurately as possible.

- 1 Park the vehicle on a flat and level surface.
- 2 Apply the parking brake.
- 3 Place the transmission in neutral or park.
- 4 Install the wheel chocks.



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- 5 Disconnect the cable from the battery's negative terminal.

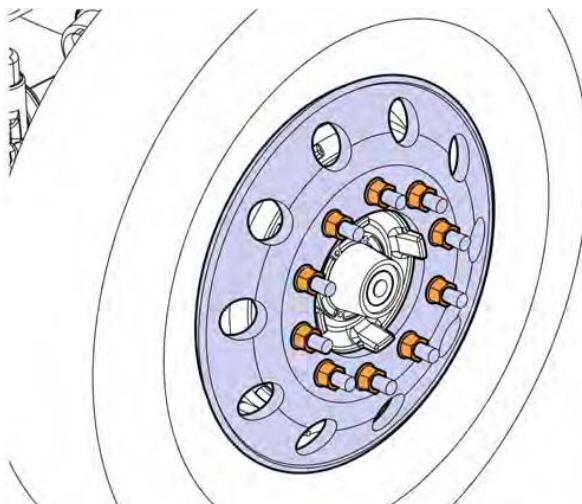


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Brake Drum, Replacement, Meritor (1.9 hrs)

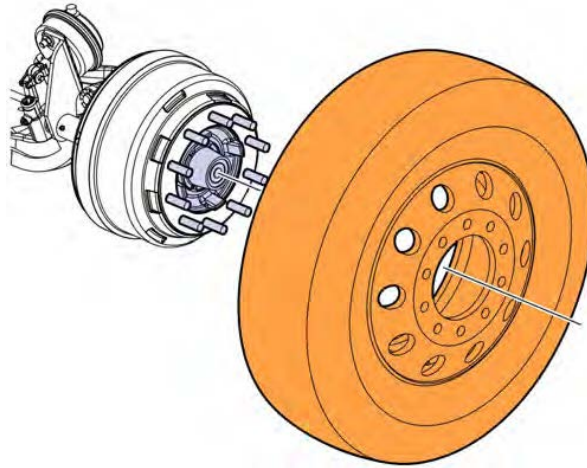
Note: The left side is shown for instructional purposes.

- 1 Lift the steer axle with a jack, place the truck on jack stands, and remove the jack.
- 2 Remove the wheel nuts.



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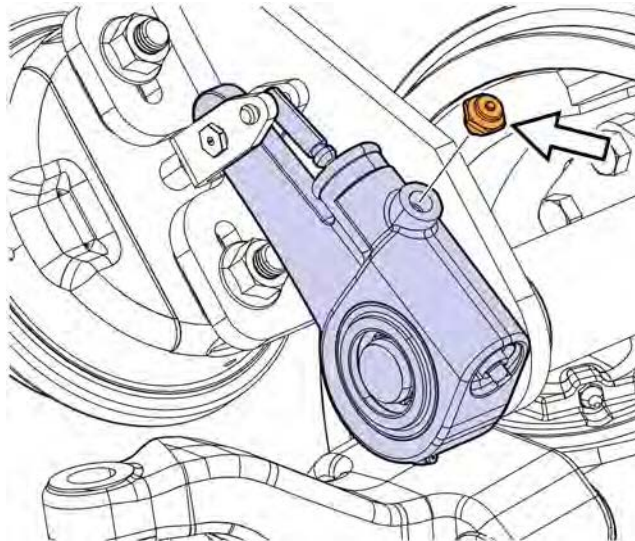
- 3 Remove the wheel.



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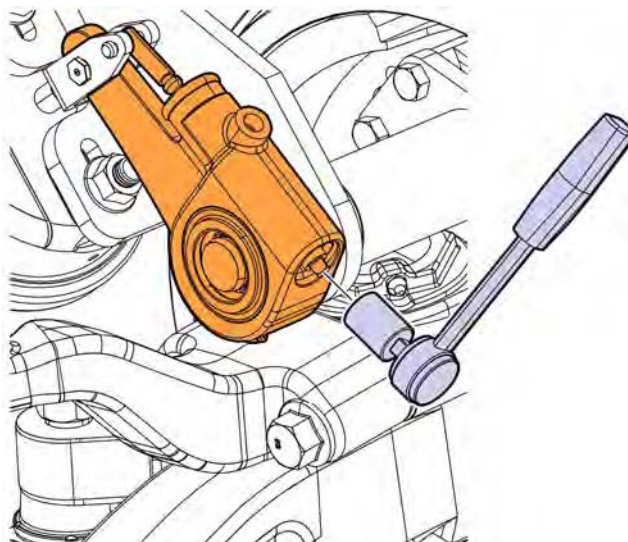
- 4 Remove the slack adjuster pawl.

Note: The Meritor slack adjuster is shown in this procedure for backing off the brakes. However, this procedure is similar for other brands.



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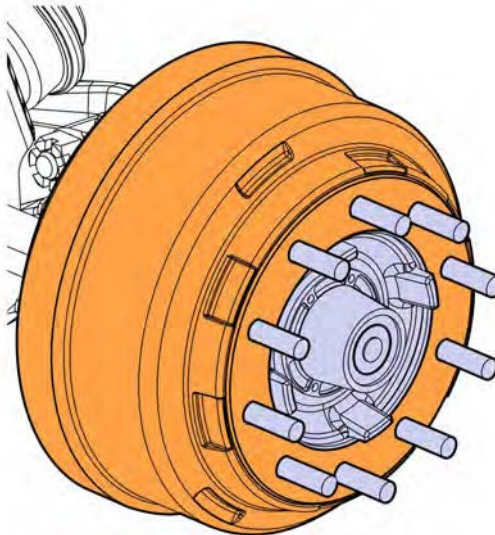
- 5 Back off of the brake (slack adjuster).



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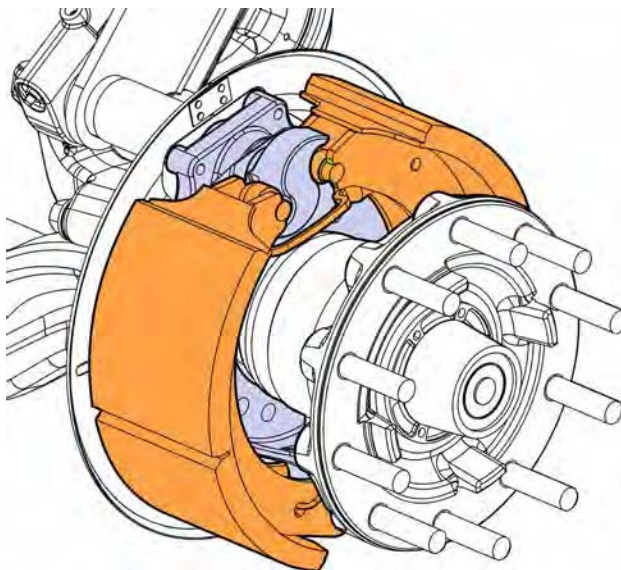
- 6 Remove the brake drum.

Note: Discard the brake drum.



W5092271

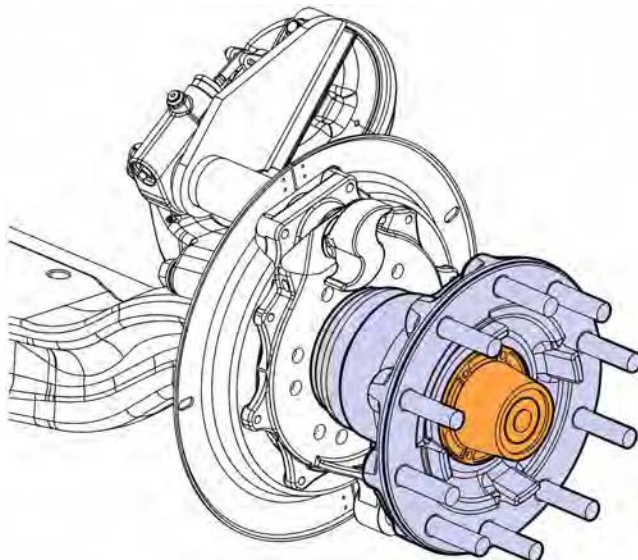
- 7 Remove the brake shoes, brake springs, and rollers.



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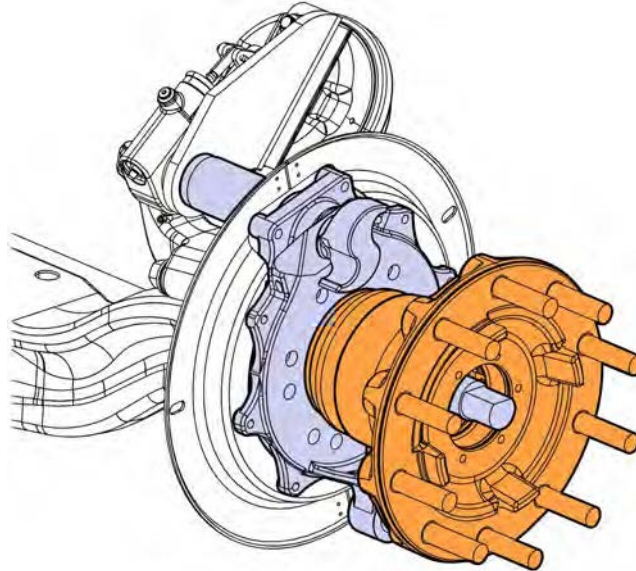
- 8 Remove the hub cap.

Note: Using a suitable drain pan, catch any excess oil from the hub cap.



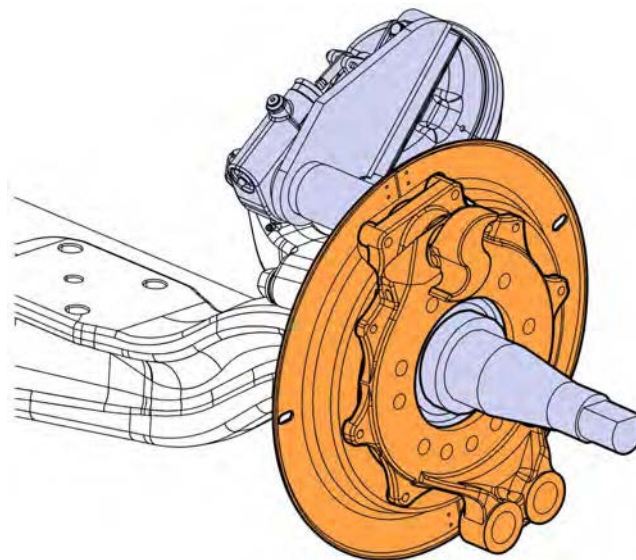
W5092707

- 9 Remove the snap ring and hub nut.
- 10 Remove the hub.



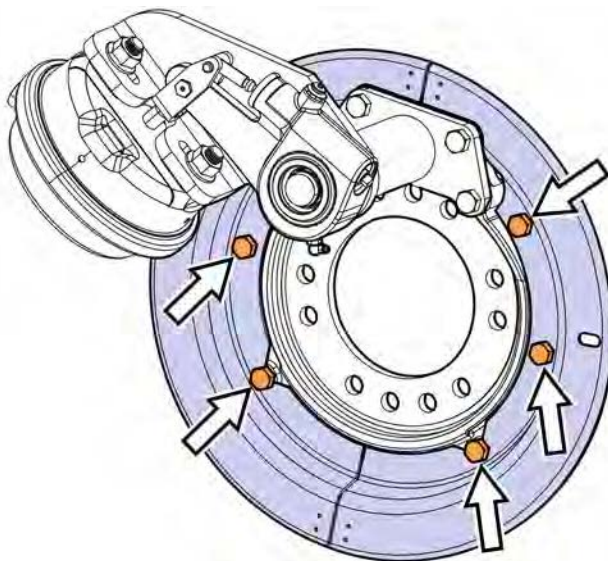
W5092708

- 11 Remove the brake spider and dust shield from the steering knuckle.
- Note:** Disconnect the brake chamber hose.



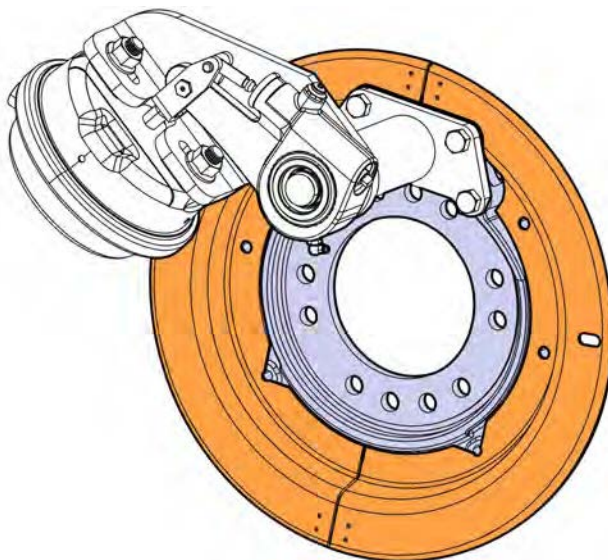
W5092710

12 Remove the six fasteners securing the existing dust shields.



W5092682

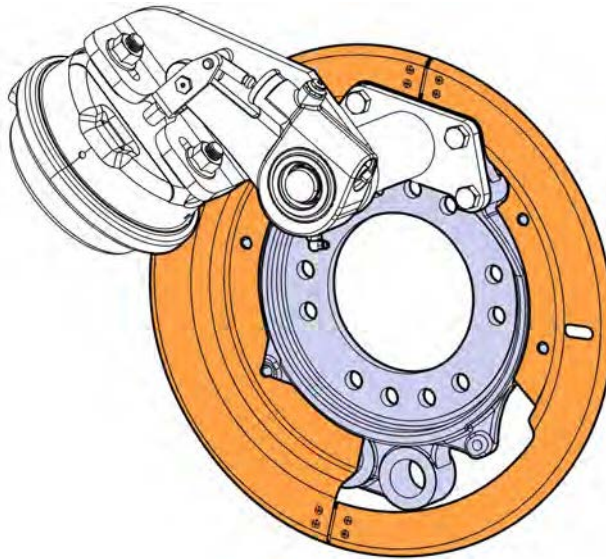
13 Remove the dust shield sections and discard.



W5092683

14 Assemble the new dust shield and brake spider.

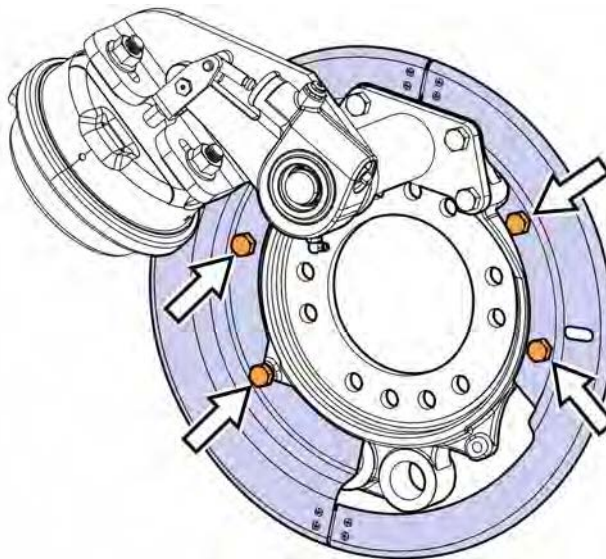
Note: See the table on page 1 for the correct dust shield part number.



W5092684

15 install the fasteners securing the new dust shield and brake spider.

16 Tighten the fasteners to 40 ± 5 Nm (29 ± 3 ft-lb).

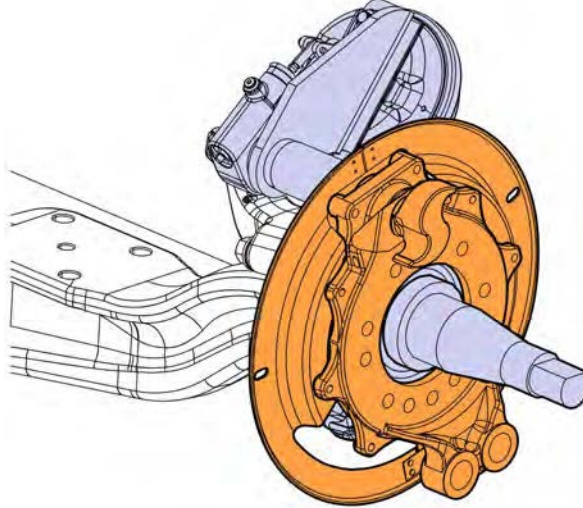


W5092685

17 Install the brake spider assembly.

Note: Connect the brake chamber hose.

18 Tighten the fasteners to 230 ± 23 Nm (170 ± 17 ft-lb).

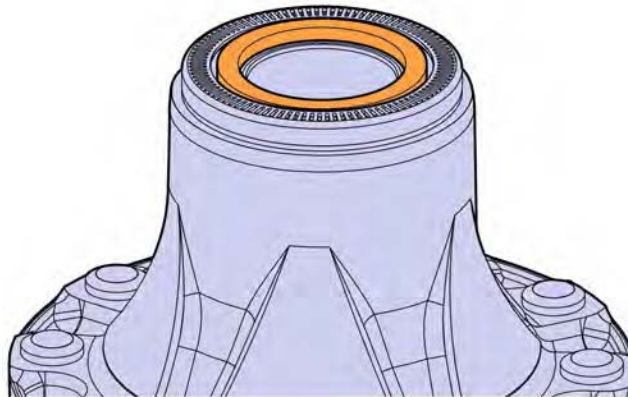


W5092709

19 Assemble the wheel bearings into the hub.

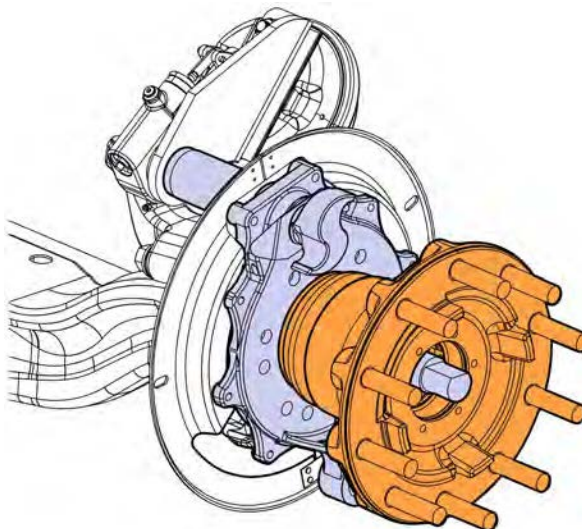
Note: Ensure wheel bearings and hub are lubricated with the proper lubricant before installation.

20 Install the hub seal (part number 85103823) onto the hub.



W5093131

21 Install the hub assembly onto the spindle.



W5092711

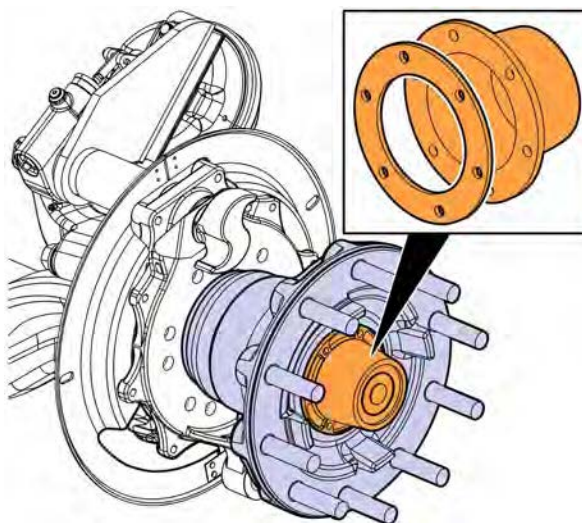
22 Secure the hub assembly to the spindle.

Note: Refer to appendix A through D for Hub Nut Configurations and Installation Procedures.

23 Check hub for proper end play.

Note: See appendix E for Measuring Hub End Play.

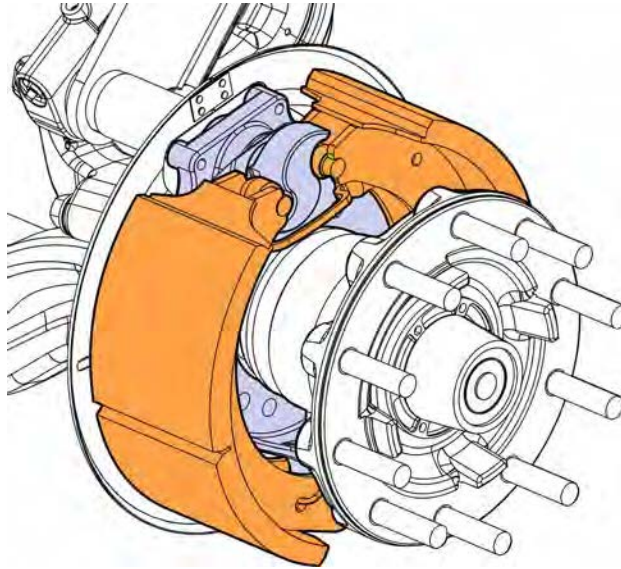
24 Install the hub cap and hub cap gasket (part number 20353636).



W5093118

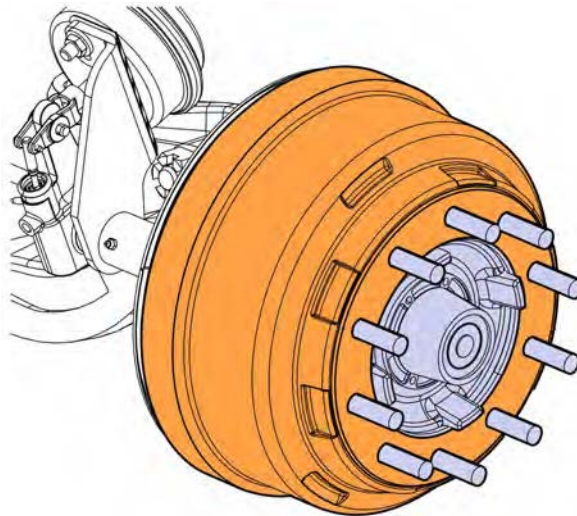
- 25 Fill the front axle hub with required lubricant.
26 Install the replacement brake shoes, springs and rollers.

Note: The brake springs and rollers are included in the brake shoe kit.



W5092706

- 27 Install the replacement brake drum (178 mm (7.0 in) wide). See the table on page 1 for the correct part number.



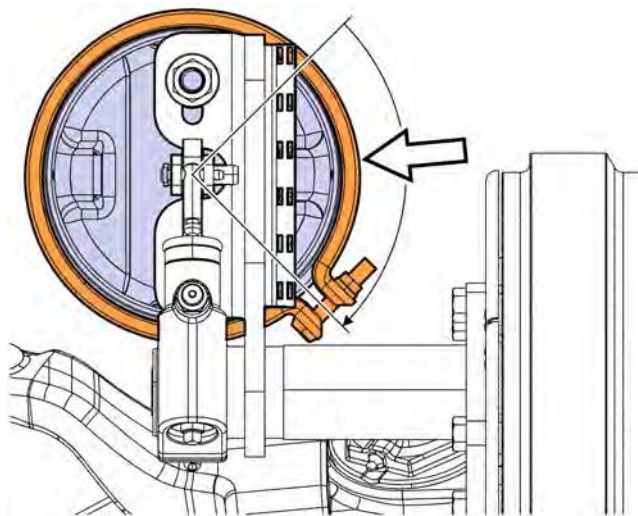
W5092276

28 If applicable, loosen the brake chamber clamp and re-position the clamp at a 45° angle or until proper clearance of the wheel is obtained. See figure below.

Note: Do not rotate the brake chamber. Rotate the clamp only.

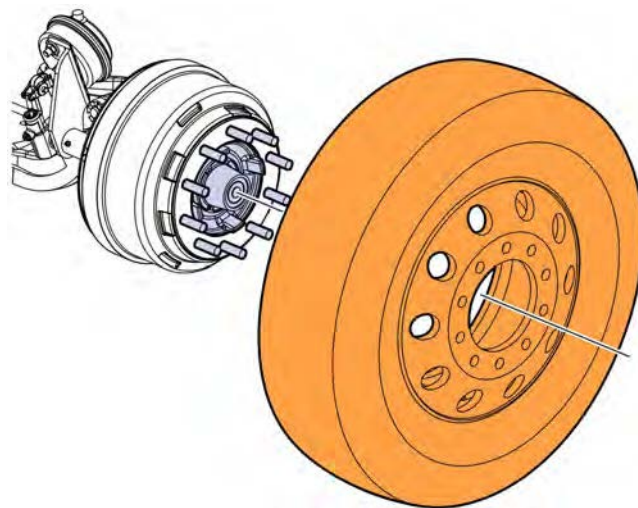
Note: Ensure the brake chamber clamp does not interfere with the wheel.

29 If applicable, tighten the brake chamber clamp fastener to 44 ± 4 Nm (32 ± 3 ft-lb).



W5092675

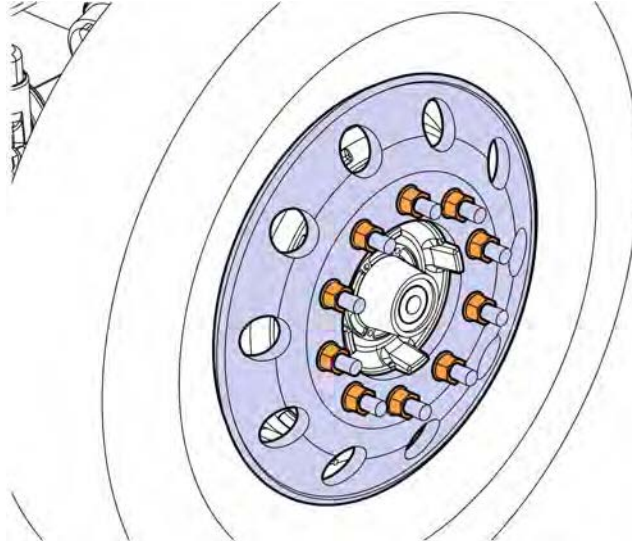
30 Install the wheel.



W5092266

31 Install the wheel nuts.

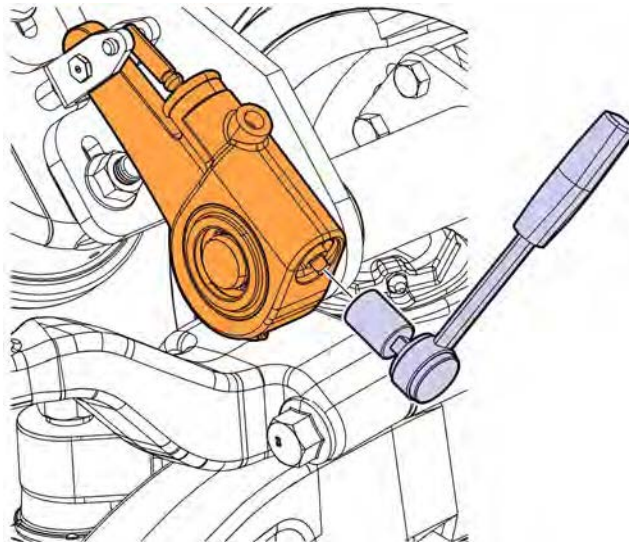
32 Tighten the wheel nuts to 610 Nm (450 ft-lb).



W5092265

33 Adjust the brake as recommended per (slack adjuster) manufacturer.

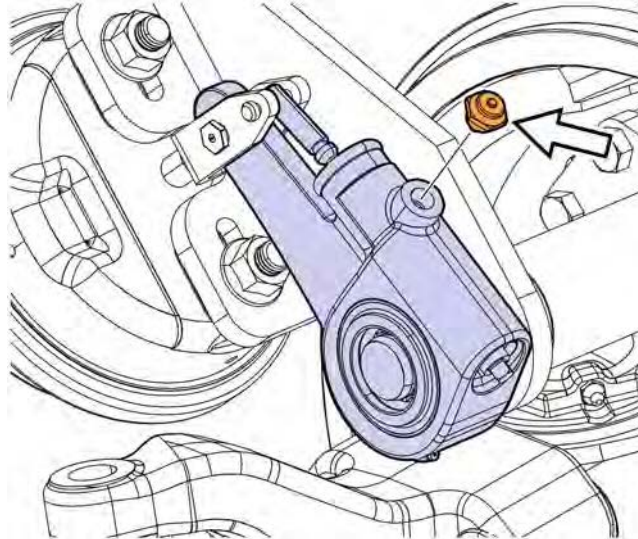
Note: The Meritor slack adjuster is shown in this procedure for adjusting the brake. However, this procedure is similar for other brands.



W5092670

34 Install the slack adjuster pawl.

35 Tighten the slack adjuster pawl to specification 21 ± 3 Nm (186 ± 30 in-lb).



W5092669

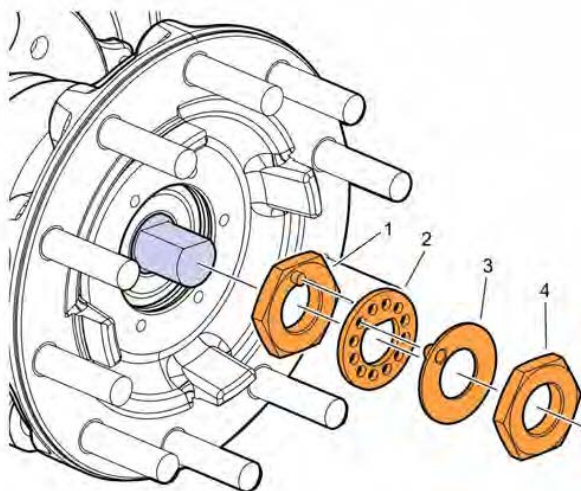
36 Repeat steps 1 through 35 for the right side of the truck.

37 Lift the steer axle with a jack, remove the jack stands, and lower the axle.

38 Go to Commissioning the Truck for Operation.

Appendix, Hub Nut Configurations and Installation Procedures (Steer Axle Only)

Appendix A (4–Piece Nut, Non Preset Hubs)



W5093119

4–Piece Nut, Non Preset Hubs		
Item	Description	Qty
1	Dowel Pin Nut	1
2	Lock Washer	1
3	Dimple Washer	1
4	Outer Nut	1

- 1

Install the nut onto the spindle.
- 2

Torque the nut to 271 ± 6 Nm (200 ± 4 ft-lb).

Note:

: If using the Double Nut Design, install the adjusting (dowel pin) nut (1) at this time.
- 3

Rotate the hub assembly while tightening the nut.
- 4

Back off the nut 1 full turn.
- 5

While rotating the hub, tighten the nut again to 68 ± 2 Nm (50 ± 1 ft-lb).
- 6

Back off the nut 1/8 of a turn.

Note:

Rotate the hub at least one full revolution to ensure there is no binding or excessive drag.
- 7

Install the locking components as necessary.

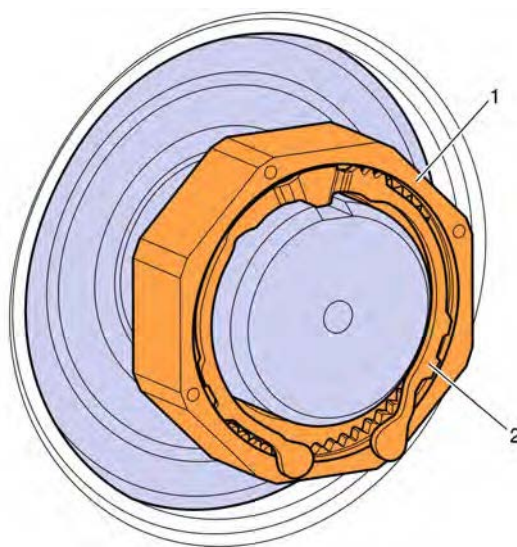
Note: See the table on page 23 for the correct locking components.

- 8 After installing the dowel pin nut (1), install the lock washer (2), dimple washer (3), and outer nut (4).

Note: If the dowel pin nut (1), and lock washer (2) are not aligned, loosen dowel pin nut (1) until the dowel pin aligns with one of the holes in the lock washer, install the dimple washer (3), outer nut (4) and tighten the outer nut to 339 ± 67 Nm (250 ± 50 ft-lb)

- 9 Go to Appendix E for "Measuring Hub End Play".

Appendix B (PRO-TORQ®, Single Nut with Internal Lock Clip)



W5093120

PRO-TORQ®, Single Nut with Internal Lock Clip		
Item	Description	Qty
1	Nut	1
2	Internal Lock Clip	1

- 1 Install the nut.

Note: If a new nut is required, remove the internal lock clip (1) before installing the new nut.

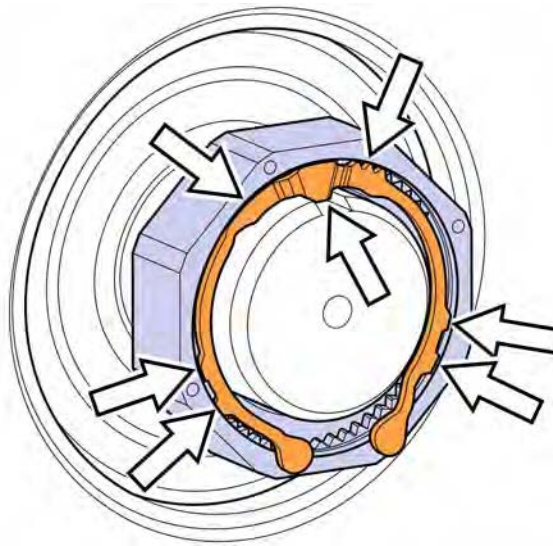
- 2 Tighten the nut 271 ± 6 Nm (200 ± 4 ft-lb).
- 3 Back off nut 1/8 of a turn.
- 4 Install the internal lock clip (2) with the orange colored side facing out.

Note: Install the internal lock clip tab into the tang in the spindle keyway.

Note: Engage and align the mating teeth on the internal lock clip.

Note: One at a time, compress and insert the internal lock clip arms into the undercut groove with a small screwdriver.

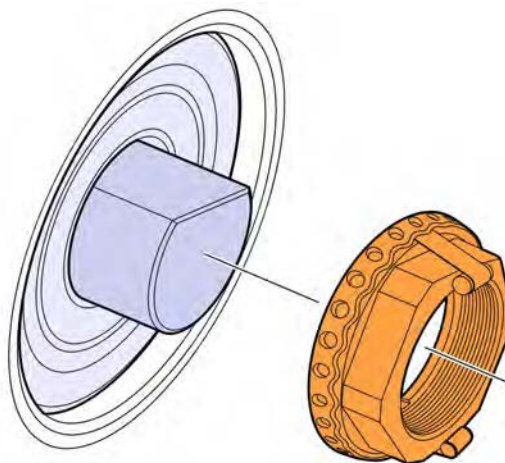
Note: The early and later versions of the internal lock clip are dimensionally the same. Additionally, the paddles of the later version assist during the installation of internal lock clip.



W5093121

5 Go to Appendix E for "Measuring Hub End Play".

Appendix C (TANG, Single Nut with External Lock Tabs)



W5093122

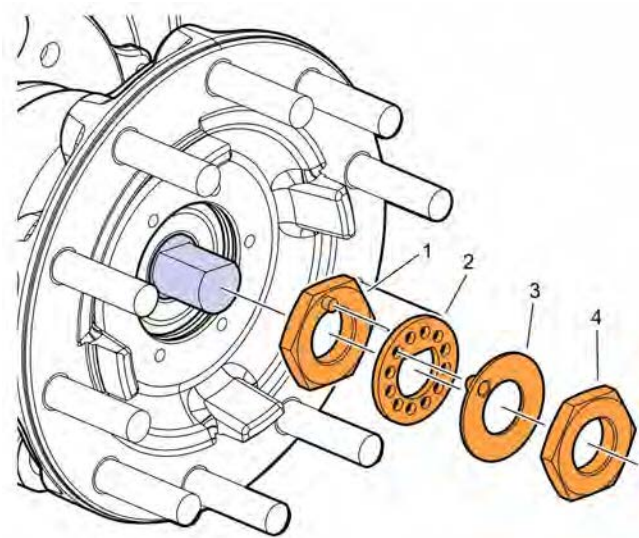
TANG, Single Nut with External Lock Tabs		
Item	Description	Qty
1	Nut	1

- 1 Install the nut (1) onto the spindle and line up the lock tabs with the holes in the integral lock washer.

Note: Locking occurs when the socket is removed, provided the tabs and holes are in alignment.

- 2 Go to Appendix E for "Measuring Hub End Play".

Appendix D (Preset, Hub with Spacer-Set Bearings)



W5093119

Preset, Hub with Spacer-Set Bearings		
Item	Description	Qty
1	Dowel Pin Nut	1
2	Lock Washer	1
3	Dimple Washer	1
4	Outer Nut	1

- 1 Install the nut onto the spindle.
- 2 Torque the nut to 406 ± 8 Nm (300 ± 6 ft-lb).
- Note: Do not back off nut. The back off nut procedures do not apply to hubs with spacer-set bearings.

Note: : If using the Double Nut Design, install the adjusting (dowel pin) nut (1) at this time.
- 3 Install the locking components as necessary.
- Note: See the table above for the correct locking components.
- 4 After installing the dowel pin nut (1), install the lock washer (2), dimple washer (3), and outer nut (4).
- Note: If the dowel pin nut (1), and lock washer (2) are not aligned, loosen dowel pin nut (1) until the dowel pin aligns with one of the holes in the lock washer, install the dimple washer (3), outer nut (4) and tighten the outer nut to 406 ± 8 Nm (300 ± 6 ft-lb).
- 5 Go to Appendix E for “Measuring Hub End Play”.

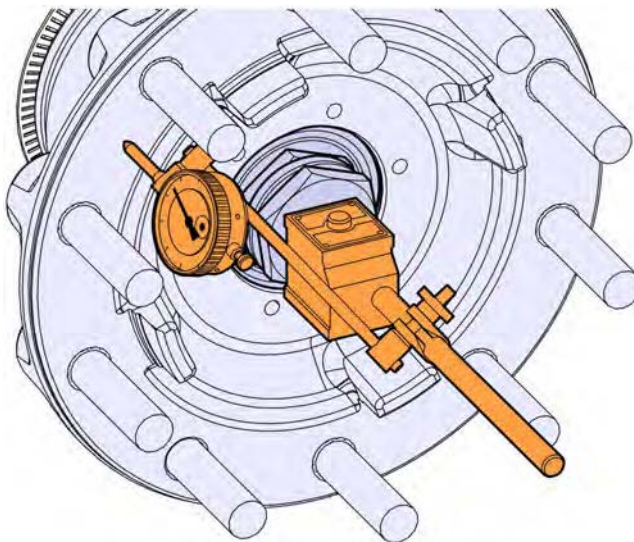
Appendix E (Measuring Hub End Play)



WARNING

Failure to follow these instructions could cause the wheel to fall off and cause bodily injury.

- 1 Setup dial indicator as shown in figure below.



W5093123

- 2 Push and pull the hub assembly in and out while rotating the hub in an approximate 45 degree arc back and forth.
- 3 Measure the end play by reading off the measurement as the total indicator movement.
- 4 If the end play is not acceptable, readjust the nut and measure until an acceptable amount of end play achieved.

Note: 0.0254 - 0.127 mm (0.001 - 0.005 in) is acceptable end play.

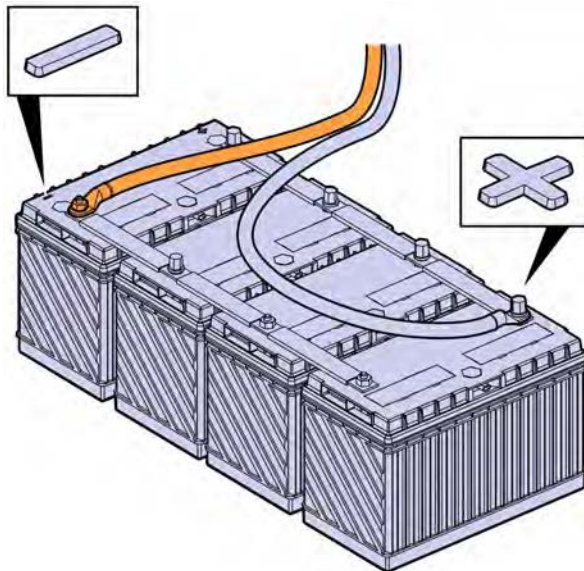
Note: For PRO-TORQ® only, the recommended practice is to replace the internal lock clip each time the PRO-TORQ® nut assembly is removed for maintenance and services.

Note: For PRO-TORQ® only, inspect keyway tang of the internal locking clip to ensure it does not contact the bottom of the keyway in the spindle. If contact does exist, immediately notify your PRO-TORQ® representative at 1-800-527-8492.

Note: For single nut with external lock tabs, if the nut has to be turned in order to lock the tabs, turn nut counterclockwise until lock tabs can be bent over the hex nut.

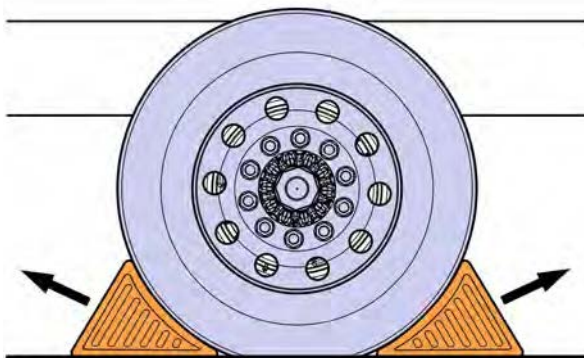
Commissioning the Truck for Operation

- 1 Connect the battery cable to the negative (ground) terminal.



W3086758

- 2 Remove the wheel chocks.



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Reimbursement

This repair may be eligible for reimbursement if a product failure was experienced within time and mileage limits of the applicable Warranty coverage. Reimbursement is obtained via the normal claim handling process.	UCHP Reimbursement	eWarranty Reimbursement
Claim Type (used only when uploading from the Dealer Bus. Sys.)	W	W
Labor Code		
Primary Labor Code (Brake Drum, Replacement)	5112-03-09-06 1.9 hrs.	51102-0-05 1.9 hrs.
Causal Part	25017906	25017906

VOLVO Trucks North America reserves the right to make any changes in design or to make additions to or upon its products without incurring any obligations to install the same on vehicles previously built.