

FLA COE
FLB COE
FLD Conventional
Business Class

FLC 112 Conventional
> Century Class Conventional
Argosy COE
Cargo

> Columbia
Coronado
Business Class M2
> Cascadia

**Freightliner
Service Bulletin**

General Information

When replacing an input shaft seal on a rack and pinion steering gear, it is preferable to use replacement seal kit THY 607157A. If a kit is unavailable, follow the procedure below to replace an input shaft seal, part number PH MSD8234, without the kit.

Input Shaft Seal Replacement

1. Place the front tires in the straight-ahead position. If possible, drive the vehicle in a straight line for a short distance, stopping at the spot where the work is to be done.
2. Turn off the engine, apply the parking brakes, chock the tires, and open the hood.
3. Clean all fittings and connections until they are free of dirt and debris.
4. While holding the fittings in place with a backup wrench, disconnect the power steering fluid lines from the steering gear. Plug the lines and the fittings to keep out dirt and prevent fluid leakage.
5. Remove and discard the pinch bolt and nut from the I-shaft end yoke, and disconnect the end yoke from the input shaft.
6. Clean the valve and input shaft seal cover until they are free of dirt and debris. See [Fig. 1](#).

IMPORTANT: Do not damage the input shaft seal cover, dust cover, or retaining ring during removal. Save all three parts for reuse.

7. Work the input shaft seal cover off with a screwdriver.
8. Remove the dust cover.
9. Remove the retaining ring with retaining ring pliers.
10. Clean the area thoroughly to prevent any contaminants from entering the gear after the seal is removed.

WARNING

Wear safety goggles when using compressed air to clean parts, as permanent harm to eyes could result from flying debris.

11. Wrap the input shaft and seal area with a clean cloth to prevent fluid spray when removing the seal, then remove the input shaft seal by blowing compressed air into the outlet port. See [Fig. 2](#).

NOTICE

Cover the input shaft with the tip of a glove finger or tape (similar to the protective cap shown in [Fig. 3](#)) in order to protect the new input shaft seal during installation. Failure to cover the input shaft during installation of the input shaft seal could cause damage to the seal.

12. Install the new input shaft seal over the input shaft.

NOTE: If a depth installation tool from a previously used input shaft seal replacement kit is not available, a similarly shaped object (such as a tool socket) may be used. If necessary, fabricate a depth tool as shown in [Fig. 4](#).

- 12.1 Using a depth tool, position the tool over the input shaft and press the seal into the housing by lightly tapping on the tool with a rubber mallet until the tool hits the upper edge of the housing.
- 12.2 Check the position of the seal after each tap to make sure it stays level. The seal is correctly installed when it is fully under the retaining ring groove.

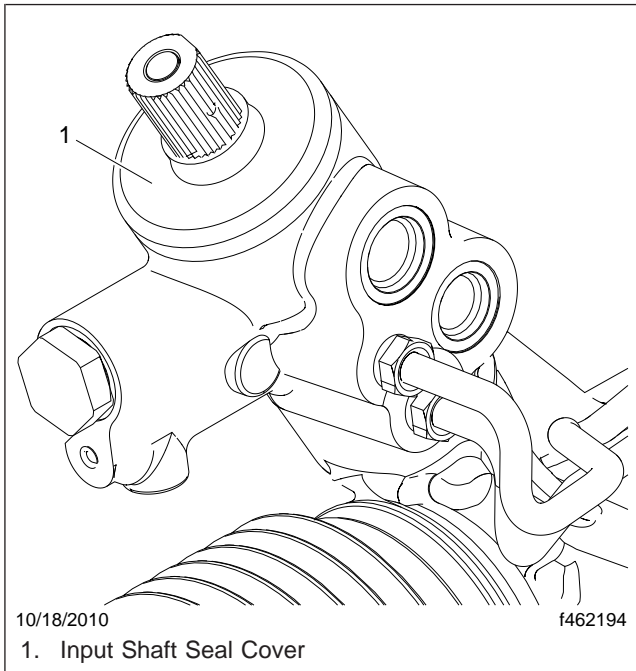
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Fig. 1, Input Shaft

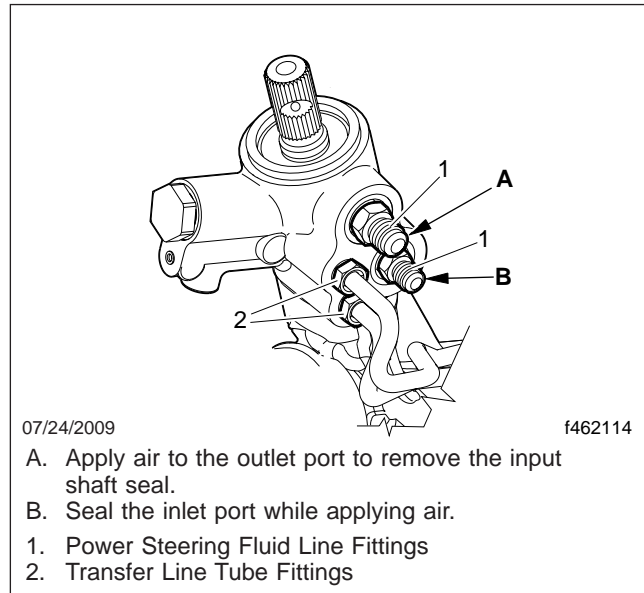


Fig. 2, Removal of the Input Shaft Seal

13. Install the retaining ring with retaining ring pliers. The ring must be seated fully in the retaining ring groove.

14. Apply grease to the top of the seal, completely covering the seal.

IMPORTANT: The dust cover must be installed with the outer lip upward to properly protect the shaft components.

15. Install the dust cover, making sure the outer lip of the cover curves upward. See Fig. 3.

16. Install the input shaft seal cover on the input shaft.

17. Using a new pinch bolt and nut, attach the steering I-shaft to the steering gear input shaft. Tighten the nut 30 to 35 lbf-ft (41 to 47 N·m).

18. Apply torque seal, OGP F900WHITE, to the exposed pinch bolt threads and nut.

19. Check the power steering fluid line fittings for a torque value of 30 to 35 lbf-ft (41 to 47 N·m). Tighten them if needed.

20. Connect the power steering fluid lines to the fittings, ensuring that the hoses do not touch the axle or each other. While holding the fittings in place with a backup wrench, tighten the pressure hose 43 to 47 lbf-ft (58 to 64 N·m) and the return hose 55 to 61 lbf-ft (75 to 83 N·m).

NOTICE

Do not loosen or tighten the hard transfer line tube fittings (Fig. 2, Item 2). Tightening the tube fittings can cause the O-ring seal to leak.

21. Fill and bleed the power steering system.

21.1 Raise the front wheels off the ground and support the vehicle with jack stands.

Input Shaft Seal Replacement, Rack and Pinion Steering Gear

46-52

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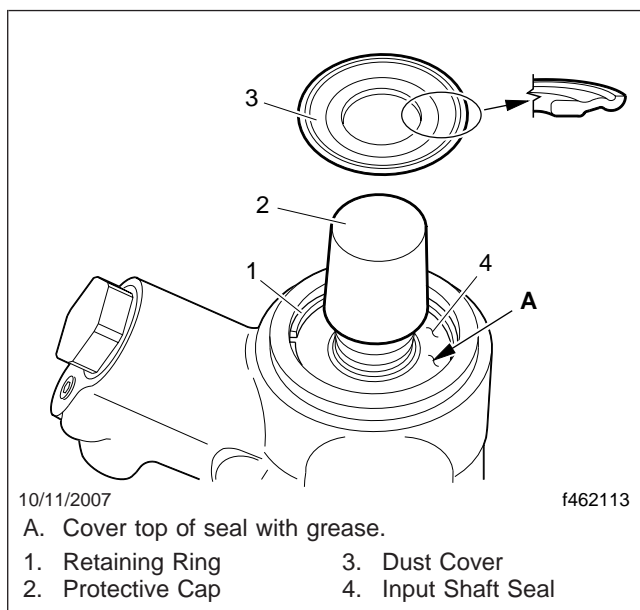


Fig. 3, Dust Cover Installation

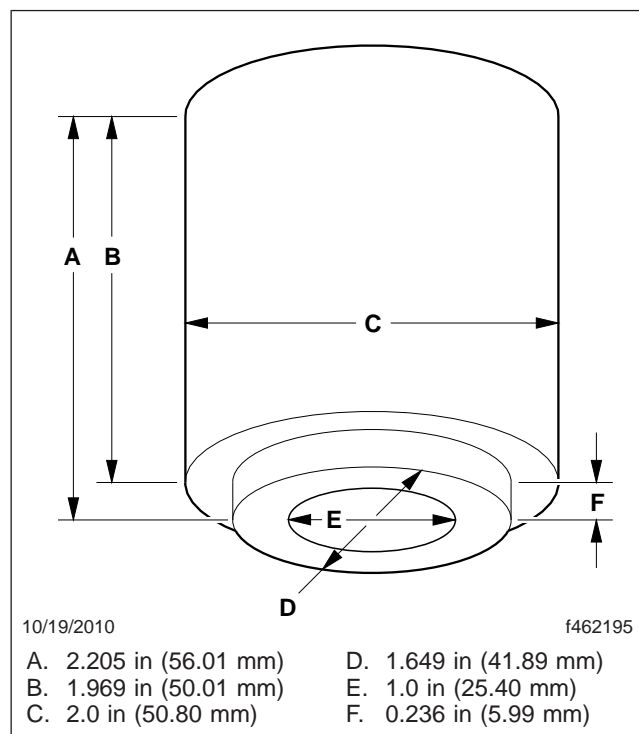


Fig. 4, Depth Tool

- 21.2 Fill the power steering reservoir with automatic transmission fluid that meets Dexron III or TES-389 specifications.
- 21.3 With the engine off, turn the wheel fully left and right five times to bleed the air from the rack.
- 21.4 Start the engine and turn the steering wheel fully left and right several times to bleed the remaining air from the system.
- 21.5 If the steering system needs additional bleeding, repeat the previous substep after the fluid in the reservoir has had time to release any air.
- 21.6 Remove the jack stands and lower the vehicle.

Warranty

This procedure is warrantable only if the described condition exists and the repair is performed within the applicable base or extended coverage warranty period. If a failure is not found, this procedure is considered preventive and warranty does not apply.

See [Table 1](#) for QuickClaim damage code and labor allowance information. Refer to this service bulletin by number at the beginning of the claim comments.

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

QuickClaim Damage Code and Labor Allowance			
Damage Code	SRT Code	Description	Time: Hours
536-001551609	536-5025A	Seal, Input Shaft, Rack and Pinion, R/R	0.8

Table 1, QuickClaim Damage Code and Labor Allowance

OWL VMRS Codes and Labor Allowance				
Component Code	Cause Code	SRT Code	Description	Time: Hours
015-013-003	56	536-5025A	Seal, Input Shaft, Rack and Pinion, R/R	0.8

Table 2, OWL VMRS Codes and Labor Allowance