Bleeding Dual Gear System

Bleeding the dual steering gear system is necessary whenever the system has been repaired. Different gear sizes may be used together but the bleeding procedure is the same.

TOOLS REQUIRED:
Hammer
1/8" Allen wrench
Ball stud removal tool
Hydraulic jack - appropriate size
0-200 ft./lb. Torque wrench (l/2" drive)
Socket and ratchet for drag link nut (l/2" drive)

WARNING **FOR OTHER EQUIPMENT, TOOLS OR SAFETY PROCEDURES ALWAYS FOLLOW THE VEHICLE MANUFACTURER'S PROCEDURES FOR LIFTING AND BLOCKING.**

PARTS REQUIRED:
Cotter pins
Specified fluid

WARNING **NEVER USE OLD OR USED SEALS, COTTER PINS, RETAINERS OR CRITICAL FASTENERS. ALWAYS BUY A NEW SEAL KIT. USE ONLY MANUFACTURER APPROVED REPLACEMENT PARTS.**

ADDITIONAL REFERENCES:

Vehicle Manufacturer's Service Manual
R. H. Sheppard Co. - Maintenance & Troubleshooting Video (Optional)

PROCEDURE:

1. Park the vehicle on a clean, dry, solid surface-preferably concrete. Set the parking brake and block the wheels. Place the transmission in neutral.
2. Jack the vehicle up until the front wheels have cleared the surface.

3. Tilt the hood or cab using the procedure in the Vehicle Manufacturer's Service Manual.
4. Make sure the fluid level in the reservoir is at the full mark on the dipstick.

IMPORTANT: Do not allow the reservoir to empty during this procedure. pump damage or further aeration can result.

5. Remove the drag links from the pitman arms of the master and slave gears using the procedure in the Vehicle Manufacturer's Service Manual.
6. Start the vehicle and allow the engine to idle.

7. Turn the steering wheel to a full left turn and hold until the slave gear moves its full travel. Then turn the steering wheel to a full right turn and hold until the slave moves its full travel. Repeat this procedure three or more times.

8. Connect the drag link to the master gear. Torque the attaching nut following the procedures in the Vehicle Manufacturer's Service Manual

CAUTION **Do not back off the nut when locating the cotter pin hole.**

9. Install a new cotter pin through the ball stud nut, then lock in place.

DANGER **FAILURE TO INSTALL A NEW COTTER PIN IN THE BALL STUD AFTER PROPER TORQUE COULD RESULT IN LOSS OF STEERING CONTROL.**

10. With the master gear drag link connected, turn the steering wheel to a full left turn and hold until the slave gear pitman arm moves its full travel. Then turn the steering wheel to a full right turn and hold until the slave gear pitman arm moves its full travel. Repeat this procedure three or more times.

11. Connect the drag link to the slave gear by turning the steering wheel until the pitman arm lines up with the drag link.

IMPORTANT:
Do not move the pitman arm by hand during this operation. Air may get in the system.

12. Torque the attaching nut following the procedures in the Vehicle Manufacturer's Service Manual.

13. Install a new cotter pin through the ball stud nut, then lock in place.

14. Steer the vehicle full left to full right several more times.

15. Locate the bleeder screw in the master gear located in the plug on the sector shaft bore

16. Using the allen wrench open the bleeder screw until non-aerated fluid flows from the bleed screw.

NOTE: Do not turn the steering wheel with the bleeder open.

17. Repeat the procedure on the slave gear if an M-Series slave is used.

18. Check and correct fluid level.

19. Shut the vehicle off.

20. Lower the the hood or cab following the procedure in the Vehicle Manufacturer's Service Manual.

21. Lower the vehicle until the tires contact the surface and remove the jack.

Axle Stop Adjustment

Axle stop adjustment should be checked during pre-delivery. Axle stop positioning will determine the maximum wheel cut available for your truck and can be adjusted using the adjustable bolt and lock nut on each spindle. The following procedure is a guide. Refer to the OEM specifications for specific wheel cuts for your vehicle.

TOOLS REQUIRED:
Hydraulic Jack
Wrenches to fit Stop Bolts

PROCEDURE:

1. Park the vehicle on a solid surface. Set the parking brake, chock the wheels and tilt the hood or cab to access the front tires.

2. Raise the front of the vehicle until the tires clear the surface.

3. Turn the wheels to a full right turn. Note the position of the tire relative to the steering gear or drag link. Adjust the stop bolt on the right spindle until a minimum clearance of 1" is maintained between the tire and any part of the chassis. This is the maximum wheel cut available.

WARNING **DO NOT EXCEED THE MINIMUM CLEARANCE OF 1", NEVER ALLOW THE TIRE TO CONTACT ANY PART OF THE CHASSIS. CONTACT OF THE TIRE WITH ANY PART OF THE CHASSIS WILL RESULT IN TIRE OR STEERING COMPONENT DAMAGE.**

4. Turn the wheels to a full left turn. Note the position of the tire relative to contact with any part of the chassis or component. Adjust the stop bolt on the left spindle until a minimum clearance of 1" is maintained between the tire and any part of the chassis or component. This is the maximum wheel cut available.

WARNING **DO NOT EXCEED THE MINIMUM CLEARANCE OF 1", NEVER ALLOW THE TIRE TO CONTACT ANY PART OF THE CHASSIS. CONTACT OF THE TIRE WITH ANY PART OF THE CHASSIS WILL RESULT IN TIRE OR STEERING COMPONENT DAMAGE.**

5. Make sure the jam nuts are tight on both axle stop bolts. Lower the vehicle, lower the hood or cab and remove the chocks.