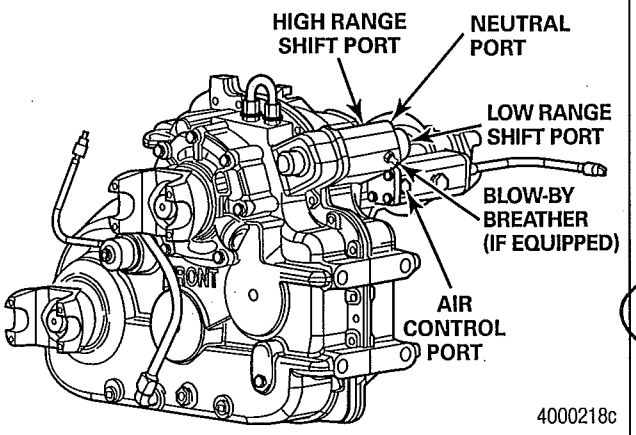
- **MTC-4213X, MTC-4208X/XP and MTC-4210X/XP, PTO Ready:** Reconnect the loop line. Tighten the fittings to 20 lb-ft (27 N•m).
- **MTC-4208XL/XLEV and MTC-4210XL/XLEV with Rear-Mounted Pump:** Reconnect the tube between the pump outlet and front idler bearing orificed elbow.

Transfer Case Shifting Check

1. Apply 60 psi (4.14 bar) or greater of air pressure to the front axle declutch. Figure 6.49.
2. Turn the input shaft by hand to verify that the front output turns at same rate as the rear output.
3. Remove the air pressure.
4. Apply 60 psi (4.14 bar) or greater of air pressure to the high-range shaft air port. Figure 6.50.



MTC-4208XP AND MTC-4210XP SHOWN

Figure 6.50

5. Turn the input shaft by hand to verify that the rear output turns at same rate as the input.
6. Remove the air pressure.
7. Apply 60 psi (4.14 bar) or greater of air pressure to the low-range shaft cylinder air port. Figure 6.50.
8. Turn the input shaft by hand to verify that the rear output turns at approximately half the rate as the input.
9. Remove the air pressure.
10. For PTO-equipped cases, apply 60 psi (4.14 bar) or greater of air pressure to the neutral shift location. Figure 6.50.
11. Turn the input shaft by hand to verify that the rear output does not turn at all. Have someone hold the output shafts to prevent them from turning while spinning the input.
12. Remove the air pressure.
13. Remove the transfer case from the stand.

Transfer Case Assembly Test

⚠ CAUTION

The air pressure must not exceed 10 psi (0.69 bar). Damage to components can result.

1. Pressure test the transfer case assembly for air leakage.
2. Check that the fittings are installed correctly.
3. Remove the breather assembly. Figure 6.47.
4. With the correct fitting installed into the breather port, apply a pressure of 8-10 psi (0.55-0.69 bar).
5. Shut the air supply off.
   - **If the pressure decreases by more than 2 psi (0.14 bar) in 10 minutes:** Check for external leaks at the fittings.
6. Correct the leakage problem and retest.
7. Reinstall the breather assembly.

External Oil Pump Pump Priming Procedure (MTC-4208XL/XLEV and MTC-4210XL/XLEV)

Prior to the pump priming procedure, check the oil fill level in the transfer case. The level should be the bottom of the fill hole.

⚠ CAUTION

Prior to performing a pump pressure test or operating the vehicle, verify that the oil pump is primed. If the pump is not primed, damage to components can result.

1. Prior to connecting the oil cooler line to the tee fitting, remove the tee fitting upper cap and add SAE Grade 50W full-synthetic oil, Meritor specification O-81, to the tee fitting until the tee fitting cavity is completely filled. Figure 6.51.

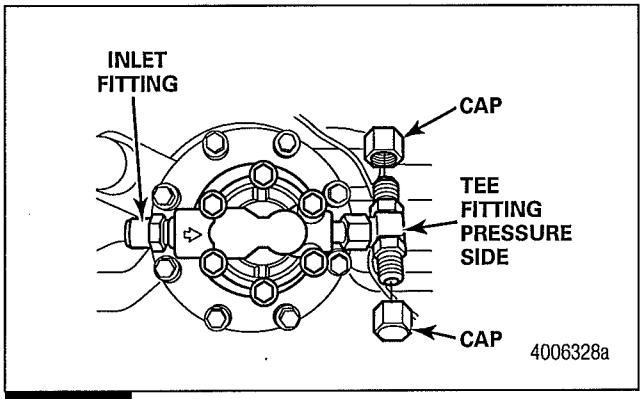


Figure 6.51

2. Reinstall the cap on the upper tee fitting.

Pump Pressure Test and Oil Fill Check

1. The transfer case and oil lines may be hot. With the vehicle on a level surface, fill the transfer case to the bottom of the fill hole with SAE Grade 50W full-synthetic oil, Meritor specification O-81.
2. Install the 3/8-inch female JIC fitting onto one end of the 10-foot (3.05 meter) pressure hose and the pressure gauge onto the other end.
3. Connect the female fitting to the unused port of the diagnostic tee fitting. Figure 6.51.
4. Route the gauge to a position where it can be viewed in the cab of the vehicle.

⚠ CAUTION

When performing an oil pump pressure diagnostic check, road test the system for one mile (1.6 km). If the oil pressure is not at least 3 psi (0.21 bar) after one mile, turn the vehicle OFF. Do not repeat the road test. Damage to components can result. Call the Meritor OnTrac™ Customer Call Center at 866-668-7221 for assistance.

5. Perform an oil pump pressure diagnostic check. Road test the system for one mile (1.6 km) above 30 mph (48 kph) or until the oil pressure reaches 10 psi (0.69 bar), whichever comes first.
   - A positive pressure greater than 3 psi (0.21 bar) indicates that the pump and oil cooler system are primed.
   - **If oil pressure is not at least 3 psi (0.21 bar) after one mile:** Turn the vehicle off. Do not repeat the test or damage to components can result. Call the Meritor OnTrac™ Customer Call Center at 866-668-7221 for further assistance.
6. Remove the diagnostic equipment and plug the diagnostic port.
7. Reinstall the diagnostic port cap. Tighten to 35-40 lb-ft (47-54 N•m). T
8. Check the system for leaks at all fitting connections and transfer case oil ports.
9. Check the oil fill level in the transfer case. The level should be below the fill hole following the priming run.
10. Refill the transfer case to the bottom of the fill hole.

Optional Oil Pressure Test and Oil Fill Check

1. Park the vehicle on a level surface and set the parking brake.
2. The transfer case and oil lines may be hot. With the vehicle on a level surface, fill the transfer case to the bottom of the fill hole with SAE Grade 50W full-synthetic oil, Meritor specification O-81.
3. Install the 3/8-inch female JIC fitting onto one end of the 10-foot (3.05 meter) pressure hose and the pressure gauge onto the other end.
4. Connect the female fitting to the unused port of the diagnostic tee fitting. Figure 6.51.
5. Route the gauge to a position where it can be viewed in the cab of the vehicle.
6. Verify the parking brake is set.
7. Start and idle the vehicle for one minute with the pressure gauge connected. If necessary, refer to the original equipment manufacturer (OEM) instructions to start the vehicle.
8. Verify that the vehicle primary and secondary air pressures are at least 90 psi (6.2 bar).
9. Move the transfer case toggle switch to the Neutral (middle) position. The transfer case will not shift into Neutral if the air pressure is below 90 psi (6.2 bar). If necessary, refer to the original equipment manufacturer (OEM) instructions to start the vehicle.
10. Place the transmission into drive.

11. Verify that the transmission is in the highest range possible. If not, refer to the vehicle operator's manual for shifting instructions.

⚠ WARNING

Keep clear from under the vehicle when you check the input shaft to prevent serious personal injury.

12. With the transmission in High, have an assistant outside the vehicle verify the input shaft to the transfer case is turning. Keep clear from under the vehicle when you check the input shaft. If the input shaft is not turning, the transfer case is not in Neutral. If the transfer case is not in Neutral, perform the following procedure.
    A. Shift the transmission back into Neutral.
    B. Shift the transfer case to high and low range and back to Neutral.
    C. Attempt to place the vehicle back into drive and repeat the procedure until the transfer case goes into Neutral.

⚠ CAUTION

Run the engine for no longer than one minute. Do not repeat the test or damage to components can result.

When performing the optional oil pump pressure diagnostic check, test the system for no longer than one minute. If the oil pressure is not at least 3 psi (0.21 bar) after one minute, turn the vehicle OFF. Do not repeat the test. Damage to components can result. Call the Meritor OnTrac™ Customer Call Center at 866-668-7221 for assistance.

13. Once the transfer case is in Neutral and the transmission is in High, press the accelerator and run the engine at 1800-2200 rpm for no longer than one minute or until oil pressure reaches 10 psi (0.69 bar), whichever occurs first. With the transmission in High, observe the reading on the pressure gauge. The reading should be 5-20 psi (0.34-1.38 bar).
    - **If oil pressure is not at least 3 psi (0.21 bar) after one minute:** Turn the vehicle off. Do not repeat the test or damage to components can result. Call the Meritor OnTrac™ Customer Call Center at 866-668-7221 for further assistance.
14. Once the test is complete, allow the engine to idle back down. Shift the transmission back to Low.
15. Shift the transmission back to Neutral.

⚠ WARNING

Shift the transfer case into high range for this procedure. Refer to the vehicle operator's manual instructions. If you do not shift into high range, serious personal injury and damage to components can result.

16. Shift the transfer case back into high range. If necessary, refer to the vehicle operator's manual instructions.
17. Turn the vehicle off. If necessary, refer to the original equipment manufacturer (OEM) instructions.
18. Remove the diagnostic equipment.
19. Reinstall the diagnostic port cap. Tighten to 35-40 lb-ft (47-54 N•m). T
20. Check the system for leaks at all fitting connections and transfer case oil ports.
21. Check the oil fill level in the transfer case. The level should be below the fill hole following the priming run.
22. Refill the transfer case to the bottom of the fill hole.