



TECHNICAL BULLETIN

Installing the Meritor Driver Controlled Main Differential Lock (DCDL)

All Single and Tandem Drive Axles

The driver controlled differential lock is operated by an air actuated shift assembly that is mounted on the carrier. **Figure 1.** When the differential lock is engaged, the shift collar is moved along the splines of the axle shaft toward the differential case. When the splines on the shift collar are engaged with the splines on the differential case, the axle shafts and differential assembly are locked together.

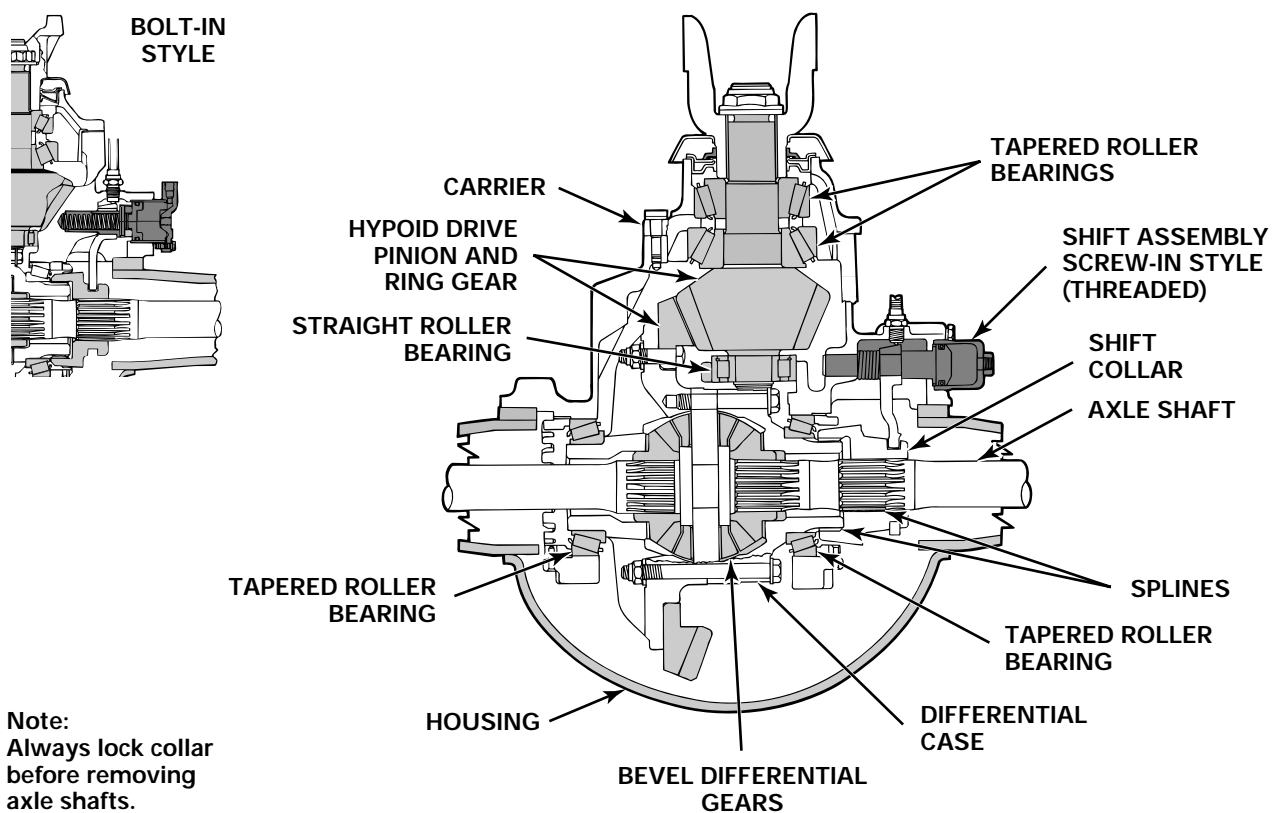
- When the carrier is operated with the differential lock **DISENGAGED**, there is normal differential action between the wheels of the axle at all times.

The differential lock is available on many Meritor single axles and on one or both axles of certain tandem drive axles.

- When the carrier operates with the differential lock **ENGAGED**, there is no differential action between the wheels of the axle.

Figure 1

STANDARD CARRIER WITH DIFFERENTIAL LOCK (DCDL)



Installation in Vehicle

The differential lock shift unit **MUST** be connected correctly to the other vehicle components to ensure that the axle and the main differential lock system operate properly. Meritor recommends connecting the air line from the shift unit **through the low speed range of the air shifted transmission. Figure 2.**

1. Connect a fused wire from the power supply (ignition/battery) to the differential lock indicator light in the vehicle cab. We recommend a separate indicator light for each differential lock-equipped axle of a tandem.
2. Connect the indicator light to one wire of the sensor/switch in each of the axle carriers with the differential lock.
3. Ground the indicator light circuit(s) by connecting the second wire of the sensor/switch to the chassis.
4. Connect an air line from the control side of the transmission low range control valve to the supply side of the driver control plunger. The plunger must be the type that is held in by air pressure and automatically releases when the air pressure is discontinued. Use a Midland valve KNZ 0031, KNZ 0033 or equivalent.
5. Connect an air line from the delivery side of the plunger to the control side of the axle air control valve.
6. Connect an air line from the delivery side of the axle air control valve to the differential lock actuator on each of the axles with the differential lock.
7. Connect an air line from the air supply tank to the supply side of the air control valve.
8. Connect an air line from the air supply tank to the supply side of the transmission low range control valve.



WARNING

To prevent serious eye injury, always wear safe eye protection when you perform vehicle maintenance or service.

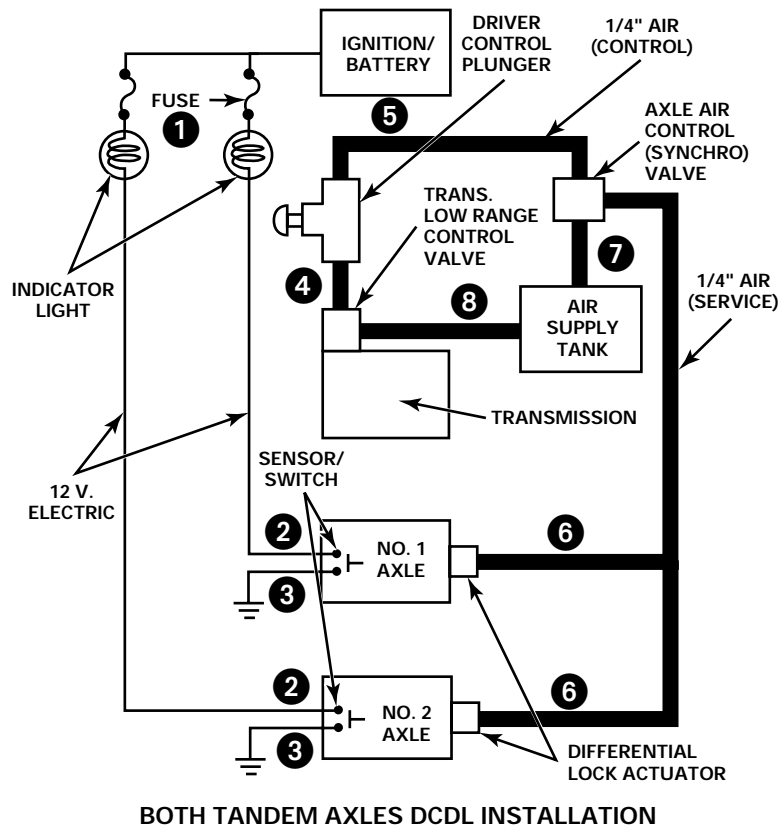
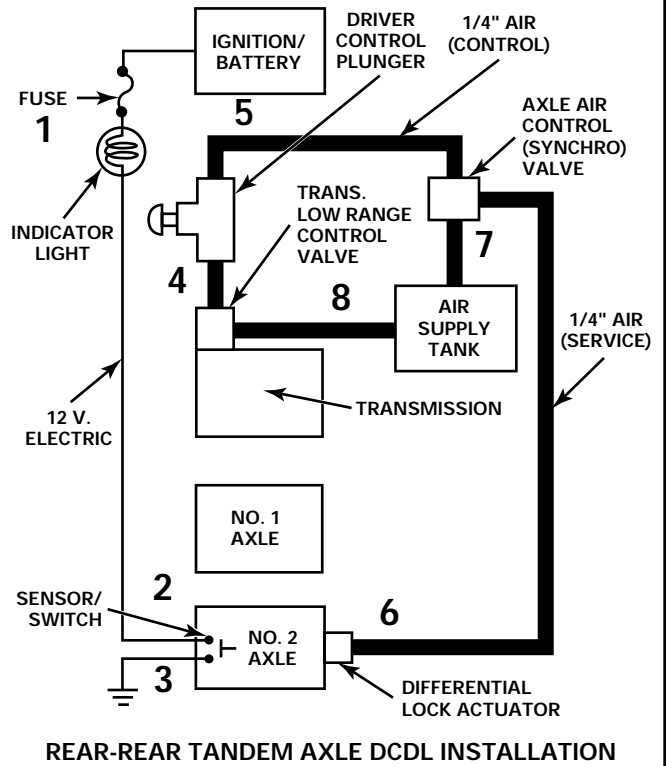
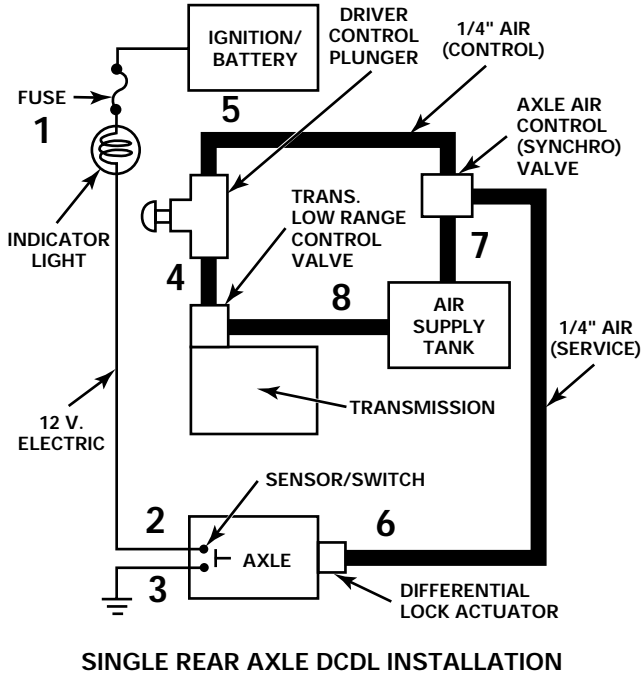


WARNING

*Do not connect together or combine the control systems on tandem axles that have both inter-axle differential locks and main differential locks. Each locking system **MUST** be capable of being operated independently of each other. Damage to components and serious personal injury can result.*

NOTE: Any other main differential lock installation procedures **MUST** be approved by Meritor Heavy Vehicle Systems, LLC, Axle Engineering, Troy, Michigan.

Figure 2





Meritor Heavy Vehicle Systems, LLC
2135 West Maple Road
Troy, MI 48084 U.S.A.
800-535-5560
www.meritorauto.com

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