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Application:

Transfer Case Motor Typical Failures and Prevention

Problem:

Chevy/GMC, Ford, Mazda and Isuzu 4-wheel drive vehicles equipped with Transfer Case Motors.

Cause:

Unable to change to 4-wheel drive mode.

Solution:

Possible Transfer Case Motor failure.

Installation Tips:

Replace defective original motor with a CARDONE remanufactured unit.

Most units fail because of water or mud intrusion. Carefully inspect motor boot or protective coverings. Be sure connector seals can keep water and debris out. Check wiring harness and connector. Replace or repair wiring as necessary. After installation, periodically select 4-wheel drive mode to ensure operation when needed.

Replacement motors for GM vehicles are supplied in 2-wheel drive position. If necessary, select or move transfer case into 2-wheel drive before installation of replacement motor. GM applications will require a scan tool to clear the codes from the transmission control module (refer to the vehicle service manual for correct tool and procedures).

Ford applications require transfer of wire connector pins. Be sure to record pin location before removing the original unit.



Typical Ford Motor



Typical GM Motor

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Transfer Case Motor Connector Missing Pins

Application:

Ford Transfer Case Motors (TCM).

Problem:

The number of connector pins on the replacement TCM does not match the number of pins in the vehicle harness.

Cause:

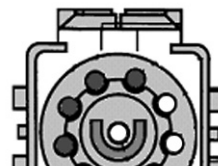
Ford routed the speed sensor wiring running from the transfer case to the controller through the TCM connector. This requires the transfer of the speed sensor pins/wires from the original motor to the replacement motor.

Solution:

The steps below explain how to do the transfer.

- Remove bolts securing motor to transfer case. Remove motor. The motor will still be tethered to the vehicle by speed sensor wires. These wires must be carefully transferred to the replacement motor connector as described in the next step.
- First remove red locking tab. Carefully record wire pin positions. Using a suitable tool, release each sensor wire pin. **NOTE:** Some harnesses may have a center pin as shown in the sample graphic. If there is a center pin, it must also be transferred. Install wire pins in the replacement motor connector in the same position as in the original motor connector until they snap in place. Note that the sensor and harness wire colors must match. Verify pin placement, then replace red locking tab. This completes wire pin transfer.

The white pins are the ones for the speed sensor that need to be transferred.



**TCM
CONNECTOR**
(typical)

Note:

Refer to instructions supplied with the unit to complete the installation. Refer to the vehicle service manual for detailed installation procedures.

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48-113: Faulty Ground Affects Transfer Case Motor Operation

Application:

Chevrolet and GMC Trucks, Dodge Trucks that use 48-113.

Problem:

Transfer Case Motor not functioning, or intermittent operation. Engine rough idle, drivability issues related to PCM operation.

Cause:

Possible faulty common chassis ground.

Solution:

The ground wire for the Transfer Case Motor control module is mounted to the frame rail just in back of the driver's side front wheel well. Especially in salt and corrosive areas of the country, this ground wire becomes corroded resulting in a faulty ground causing intermittent operation. For many applications the PCM ground is also connected to this common ground. Verifying the integrity of this ground point may solve PCM related problems too.

We recommend inspection of the ground distribution wires and bolts securing them. Clean the ground surface, bolts and wires as needed. Repairing this ground will ensure reliable operation of the Transfer Case Motor.

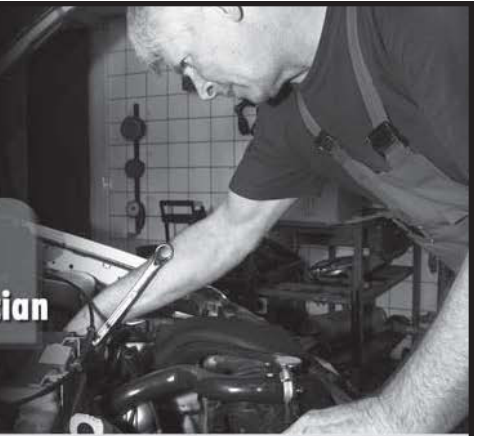


Note:

Please refer to your vehicle's service manual for specific diagnostic instructions. This ProTech bulletin is supplied as technical information only and is not an authorization for repair.

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ProTech Bulletin Summary: Motors

Before replacing any motor, the cause of original unit failure must be determined and corrected. Installing a replacement unit without correcting the problem will lead to early failure. Always refer to the vehicle service manual for specific installation procedures and specifications. The ProTech bulletins listed below cover topics that should be done BEFORE, DURING or AFTER installation of the replacement unit. They assist with part selection, describe typical problems and solutions, and provide installation help and service advice.

WIPER MOTORS

Before Installation:

PT 40-0002 Do not run motor before installed
PT 40-0005 40-158 park problem caused by defective pulseboard

During Installation:

PT 40-0001 Faulty ground causes park problems
PT 40-0008 Replacement unit solves water intrusion problem; vehicle checks

After Installation:

PT 40-0003 Bench Test for 40-169: test motor operation off vehicle
PT 40-0004 Bench Test for 40-158, 159, 192, 1003, 1004
PT 40-0007 Bench Test for 40-190, 191
PT 40-0009 Bench Test 40-267, 297, 299

WINDOW LIFT MOTORS

Before Installation:

PT 42-0002 Ford picture guide

After Installation:

PT 42-0001 Bench Test for 2-wire window lift motors
PT 42-0003 Window Lift switch test
PT 42-0004 Weatherstripping and regulator binding cause poor performance
PT 42-0005 Noisy operation on cable-type regulators may not be caused by motor

TRANSFER CASE MOTORS

Before Installation:

PT 48-0001 Protect replacement unit from water intrusion

After Installation:

PT 48-0002 Ford units require transfer of sensor wiring and pins

CARDONE Technical Service develops ProTech bulletins that are intended to help the installer avoid common installation and service errors. The information presented is derived from our own experience and product knowledge gained from component analysis and research. Following these tips will ensure the best possible performance and service life of the replacement unit.

Please note that these bulletins are provided for your technical information only and are not authorization for repair.