



# Service Bulletin

## PRELIMINARY INFORMATION

**Subject:** Service 4 Wheel Drive Message With DTCs C0398 Setting When Vehicle Operated Below 32 Degrees (0 C)

**Models:** 2014 Chevrolet Silverado 1500  
2015 Chevrolet Silverado 1500, Suburban Tahoe  
2014 GMC Sierra 1500  
2015 GMC Sierra 1500 Yukon Yukon XL  
2015 Cadillac Escalade  
2015 GMC Canyon  
4 Wheel drive equipped with RPO NQH or NQ6  
4 Wheel drive equipped with RPO NP0

*This PI was superseded to update Recommendation/Instructions and Part Restriction. Please discard PIP5250A.*

The following diagnosis might be helpful if the vehicle exhibits the symptom(s) described in this PI.

### Condition/Concern

Some customers may comment on a Service 4WD message in the DIC. Technicians may find that the vehicle has a C0398 or C0326 stored in the Transfer Case Control Module.

### Recommendation/Instructions

Starting with 14192 a calibration change was made to the TCCM for 2014, 2015 Pick-Up and 2015 utilities. With this new calibration the TCCM records the RPS value after vehicle shutdown and compares that value on vehicle start up. If the stored value for shut down and value on startup disagree the C0398 sets as a hard fault and will not clear without a scan tool. In auto 4wd when the vehicle is shifted to park the TCCM commands the actuator motor to the 4WD HI position. After the key is turned to the off position the TCCM performs a kiss point test during which the following actions take place. The actuator brake is released (allowing movement of the shift shaft) the actuator is driven to 2wd then driven back to the 4wd position, the brake is applied (holding the shift shaft) RPS position recorded to memory in the TCCM then power turned off to the actuator motor. If the brake allows the shift shaft to rotate more than 5.0 degrees after the position was written to memory then on the subsequent start up the vehicle will set a C0398 and default to 4wd hi to prevent an unwanted or unintended shift to neutral. In some instances in extreme cold conditions the actuator brake does not reapply fast enough allowing the shift shaft to rotate outside the 5 degree window.

### FOR VEHICLES WITH NP0

If the vehicle has ONLY a C0398 stored in the TCCM, Verify TCCM calibrations are up to date then perform published diagnostics as the conditions in this pi will not set a C0398 in NP0 equipped vehicles after the calibration update. If the vehicle continues to set a C0398 then published diagnostics should lead to a repair.

FOR CUSTOMER OWNED VEHICLES WITH NQH and NQ6 setting C0398 and operated in areas where the ambient temperature is below 32 \* F (0\*C.) Review the freeze frame failure records, record (write down) all dtcs, and clear the code(s). Operate the vehicle in all ranges and ensure that no DTCs reset.

If the vehicle had a C0398 in the TCCM stored with any other codes such as C0392, C0396, C0306 or other codes related to rotational position sensor or actuator position sensor it is likely that is causing a C0398 to set and replacement of the actuator will likely not repair the vehicle.

If no DTCs reset and C0398 was set without other rotational position sensor, or actuator position sensor DTCs then replace the actuator motor with part number 23355888. Currently this part number is on part restriction through PQC due to limited quantities. Please contact the PQC at 866-654-7654 to request a part. PQC will only release these parts by vehicle identification number FOR CUSTOMER OWNED VEHICLES ONLY and on a case by case basis. Along with the standard information VIN, BAC, MILEAGE, RO Please have the following information available for the PQC agent when calling:

Transfer case RPO,

List of ALL DTCs that were stored in the TCCM.

Freeze frame data for transfer case DTCs.

1. Transfer Case Control Module DTC \_\_\_\_\_
2. Transfer Case Range Selection Switch State \_\_\_\_\_
3. Engine run time \_\_\_\_\_

Please repeat questions 1-3 for all codes in the TCCM

FOR VEHICLES WITH NQH and NQ6 operated in areas where ambient temperatures are NOT BELOW 32 \* F (0°C) requiring actuator motor replacement for whatever reason please use standard part number from parts catalog.

Part number 23355888 was released to correct the specific extreme cold operation condition described above but will become the standard service part as quantities become available, DO NOT CONTACT PQC TO ORDER PARTS FOR STOCK VEHICLES OR FOR PARTS SERVICE STOCK. This restriction will be lifted as soon as these parts are fully stocked in the supply chain and should be used as a standard replacement part at that time.

## Warranty Information

For vehicles repaired under warranty use:

Labor Operation	Description	Labor Time
2810135	Transfer Case Shift Control Module Reprogramming with SPS	0.4 Hours
8420110	Transfer Case Two/Four Wheel Drive Actuator Replacement	0.3

Please follow this diagnostic or repair process thoroughly and complete each step. If the condition exhibited is resolved without completing every step, the remaining steps do not need to be performed.

GM bulletins are intended for use by professional technicians, NOT a "do-it-yourselfer". They are written to inform these technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, DO NOT assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See your GM dealer for information on whether your vehicle may benefit from the information.



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