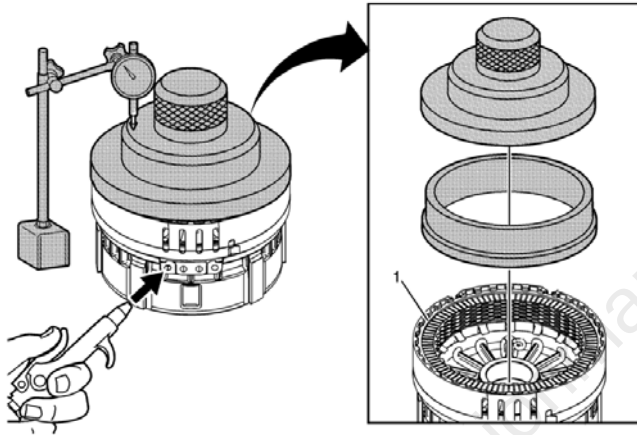


2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



2-6 Clutch Backing Plate Retaining Ring Measurement

Callout

Component Name

Preliminary Procedures

1. Install *DT 47868-1* clutch pack travel weight and *DT-47868-4* travel weight adapter onto the 2-6 clutch backing plate.
2. Attach the *J 8001* dial indicator set to the *J 26900-13* magnetic base and zero out the dial indicator on the *DT 47868-1* clutch pack travel weight.

Special Tools

- *DT 47868-1* Clutch Pack Travel Weight
- *DT-47868-4* Clutch Travel Weight Adapter
- *GE 8001* Dial Indicator Set
- *GE 26900-13* Magnetic Base

For equivalent regional tools, refer to Special Tools.

2-6 Clutch Apply Passage

1

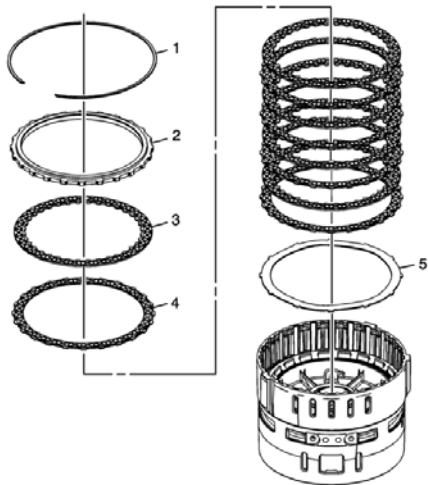
Note: Apply compressed air to the apply passage hole, at least 3 times and observe the dial indicator measurement each time. This action "fluffs" the clutch plates to ensure an accurate measurement. Refer to Clutch Backing Plate Retaining Ring Specifications.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

- Table 1: [2-6 Clutch Plates Removal](#)
Table 2: [2-6 Clutch Piston Replacement](#)
Table 3: [2-6 Clutch Plates Installation](#)

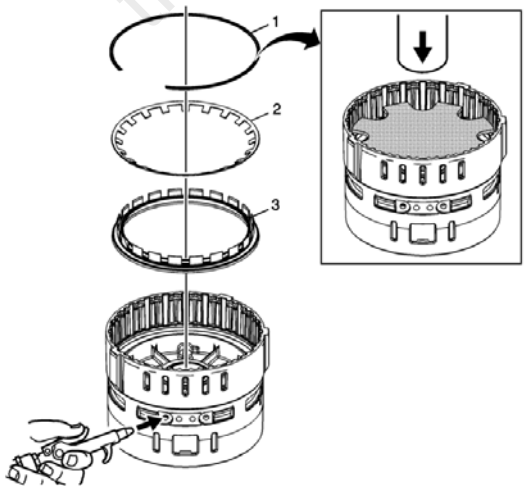
2-6 Clutch Plates Removal



2-6 Clutch Plates Removal

Callout	Component Name
1	2-6 Clutch Backing Plate Retaining Ring
2	2-6 Clutch Backing Plate
3	2-6 Clutch Plate Assembly (Qty: 5)
4	2-6 Clutch Plate (Qty: 5)
5	2-6 Clutch (Waved) Plate

2-6 Clutch Piston Replacement

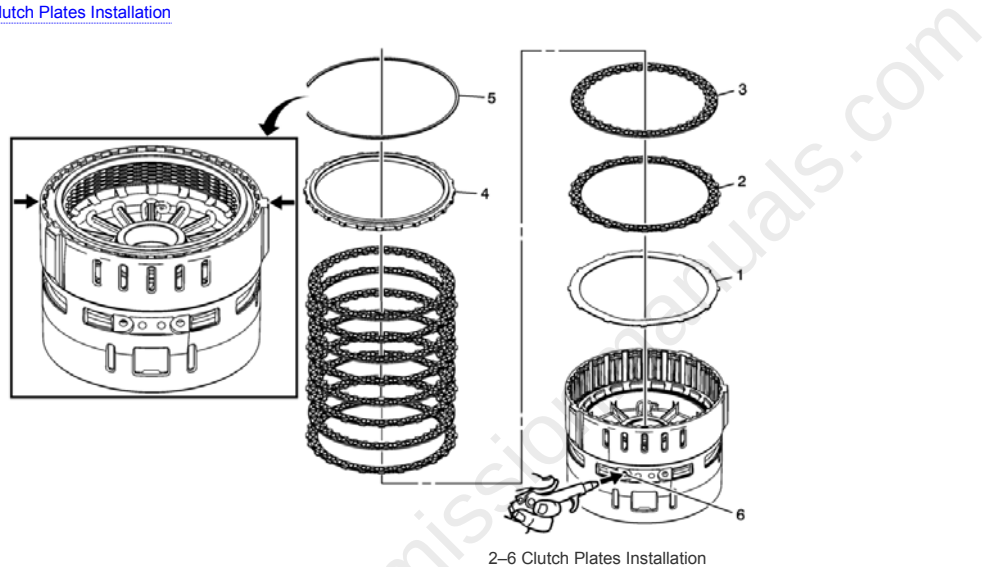


2-6 Clutch Piston Replacement

Callout	Component Name
---------	----------------

Callout	Component Name
	2-6 Clutch Spring Retaining Ring
	Note: Ensure the DT-48065 spring compressor is centered over the clutch spring.
1	Special Tool DT-48065 Clutch Spring Compressor For equivalent regional tools, refer to Special Tools.
	2-6 Clutch Spring
2	Caution: Ensure the spring tabs are facing down during installation and that the tabs fit between the teeth on the piston. Failure to do so may cause damage to the clutch assembly.
	2-6 Clutch Piston Assembly
3	Note: It may be necessary to apply air to the apply passage in order to unseat the piston.

2-6 Clutch Plates Installation

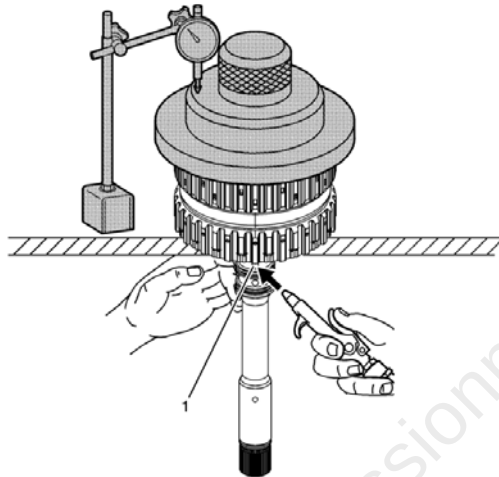


Callout	Component Name
1	2-6 Clutch (Waved) Plate
	2-6 Clutch Plates (Qty: 5)
2	Note: Alternate between steel and fiber clutch plates.
	2-6 Clutch Plate Assembly (Qty: 5)
3	Note: Alternate between steel and fiber clutch plates.
	2-6 Clutch Backing Plate
	2-6 Clutch Backing Plate Retaining Ring
	Caution: When installed, the open end of the snap ring must orient away from the slotted and scalloped areas of the center support assembly. Ideal orientation location should be at the 3 o'clock or 9 o'clock position of the center support, when facing the pan side of the case. Orienting the snap ring opening with either the scalloped or slotted areas of the center support may cause transmission damage.
5	Procedure Be sure to install the retaining ring gap at the 9 o'clock or 3 o'clock position, as indicated by the arrows.
	2-6 Clutch Apply Passage
6	Note: Apply air to verify proper installation of all 2-6 clutch components.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



4-5-6 Clutch Backing Plate Retaining Ring Measurement

Callout

Component Name

Preliminary Procedures

1. Install the clutch assembly into a hole in the workbench
2. Zero out the dial indicator on the *DT 47868-1* pack travel weight.

Special Tools

- *DT 47868-1* Pack Travel Weight
- *GE 8001* Dial Indicator Set
- *GE 26900-13* Magnetic Base

For equivalent regional tools, refer to Special Tools.

4-5-6 Clutch Apply Passage

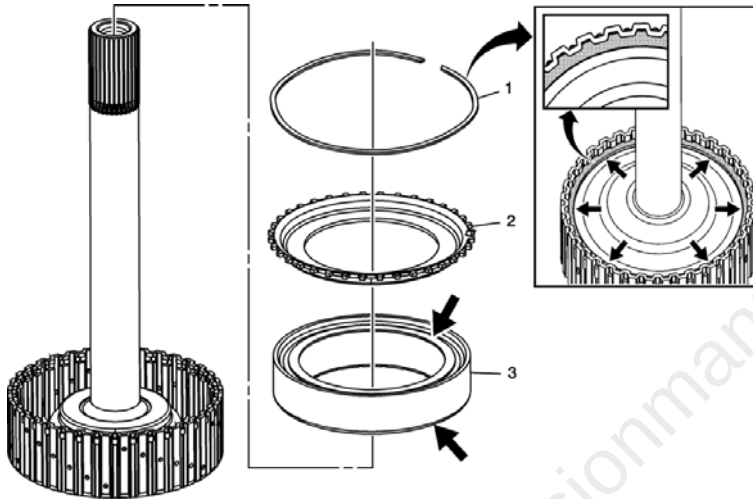
1

Note: While using one finger to block the top passage hole on the turbine shaft, apply compressed air to the opposite top passage hole, and observe the dial indicator measurement. Refer to Clutch Backing Plate Retaining Ring Specifications to determine the correct retainer.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



4-5-6 Clutch Dampener Overhaul

Callout

Component Name

- | | |
|---|---|
| 1 | 4-5-6 Clutch Dampener Retaining Ring
Caution: Ensure the retaining ring is fully seated when installed. Using a screwdriver, fully seat the retaining ring into the groove by pushing on the inside diameter around the whole circumference. If the retaining ring is not fully seated, transmission damage will result. |
| 2 | 4-5-6 Clutch Dampener Apply Plate
4-5-6 Clutch Dampener
Note: Dry and inspect the clutch dampener for the following conditions: |
| 3 | <ul style="list-style-type: none">• Pitting• Flaking• Delamination• Wear• Glazing• Cracking |

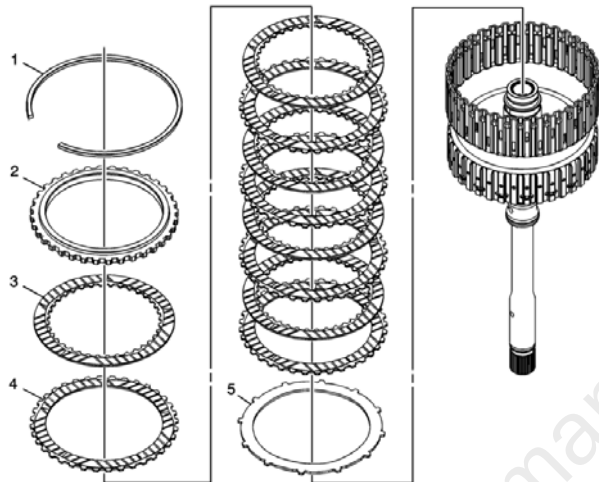
If any of these conditions are found, replace the dampener.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

- Table 1: [4-5-6 Clutch Plates Removal](#)
- Table 2: [4-5-6 Clutch Piston Removal](#)
- Table 3: [Turbine Shaft Fluid Seal Ring Replacement](#)
- Table 4: [4-5-6 Clutch Piston Installation](#)
- Table 5: [4-5-6 Clutch Plates Installation](#)

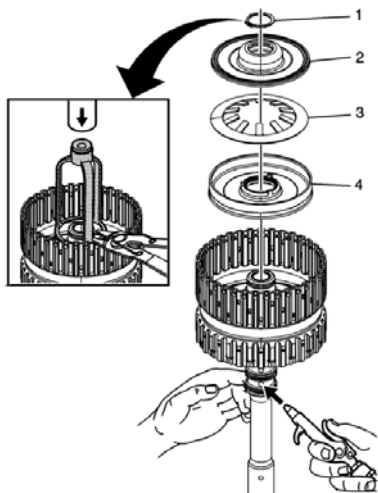
4-5-6 Clutch Plates Removal



4-5-6 Clutch Plates Removal

Callout	Component Name
1	4-5-6 Clutch Backing Plate Retaining Ring
2	4-5-6 Clutch Backing Plate
3	4-5-6 Clutch Plate Assembly (Qty: 5)
4	4-5-6 Clutch Plate (Qty: 5)
5	4-5-6 Clutch (Waved) Plate

4-5-6 Clutch Piston Removal



4-5-6 Clutch Piston Removal

Callout

Component Name

4-5-6 Clutch Piston Dam Retaining Ring

Caution: Use care when compressing the 4-5-6 clutch piston assembly, spring and dam assembly. Compressing the dam assembly too much may damage it.

1

Caution: Refer to Retaining Ring Reuse Caution.

Special Tool

DT 43074 Clutch Spring Compressor

For equivalent regional tools, refer to Special Tools.

2

4-5-6 Clutch Piston Dam Assembly

Note: It may be necessary to apply air pressure to remove the dam and piston.

3

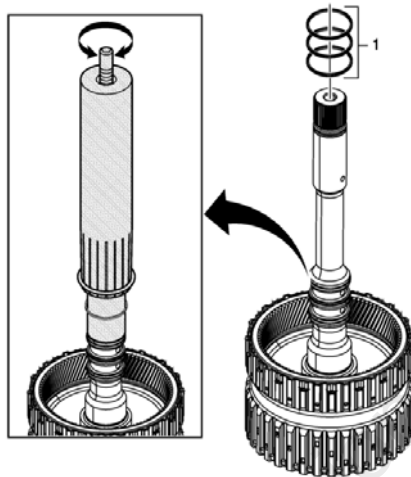
4-5-6 Clutch Spring

4

4-5-6 Clutch Piston Assembly

Note: It may be necessary to apply air pressure to remove the piston.

[Turbine Shaft Fluid Seal Ring Replacement](#)



Turbine Shaft Fluid Seal Ring Replacement

Callout

Component Name

Preliminary Procedures

1. Inspect the turbine shaft fluid passages and splines.
2. Clean any plugged passages.

Turbine Shaft Fluid Seal Ring (Qty: 3)

Caution: Do not use old seal rings. Install NEW seal rings. Reusing old seal rings may cause internal transmission leaks and transmission damage.

Procedure

1. Apply DT 36850 transjel lubricant to the seals.
2. Adjust the turn screw on DT-48066-3 seal protector and install the bottom seal ring first using DT-48066-2 seal pusher to push into place.
3. Seals must be sized before torque converter housing and fluid pump assembly installation, refer to 1-2-3-4 and 3-5 Reverse Clutch Assembly and 4-5-6 Clutch Assembly Installation (6L45/6L50).

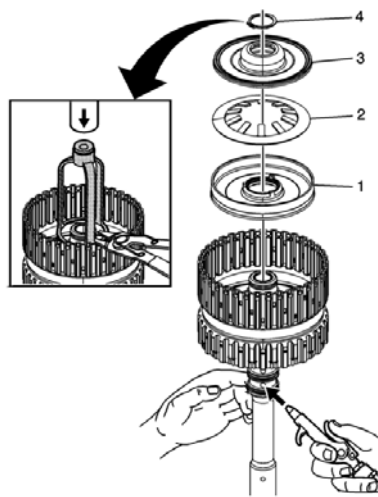
Note: Place your thumb at the bottom of each groove during seal installation to protect the seal from over-travel.

Special Tools

- DT 36850 Transjel Lubricant
- DT-48066-2 Seal Pusher
- DT-48066-3 Seal Protector

For equivalent regional tools, refer to Special Tools.

[4-5-6 Clutch Piston Installation](#)



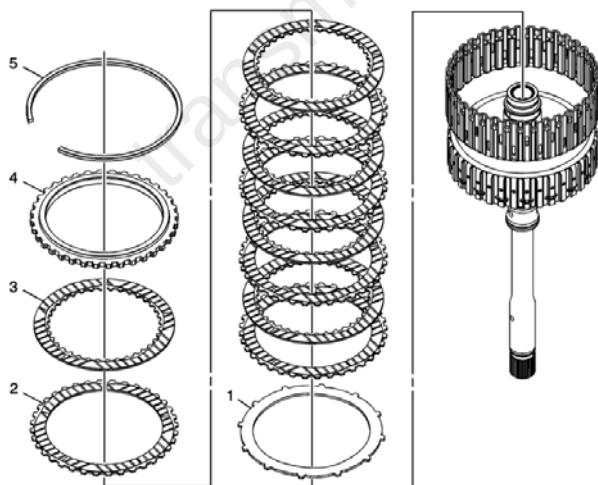
4-5-6 Clutch Piston Installation

Callout

Component Name

- | | |
|---|---|
| 1 | 4-5-6 Clutch Piston Assembly |
| 2 | 4-5-6 Clutch Spring
Caution: Ensure the spring tabs are facing up during installation. Failure to do so may cause damage to the clutch assembly. |
| 3 | 4-5-6 Clutch Piston Dam Assembly
Note: Lubricate the inner and outer sealing surfaces of the dam assembly with automatic transmission fluid (ATF) in order to ease installation into the piston. |
| 4 | 4-5-6 Clutch Piston Dam Retaining Ring
Caution: Use care when compressing the 4-5-6 clutch piston assembly, spring and dam assembly. Compressing the dam assembly too much may damage it.
Caution: Refer to Retaining Ring Reuse Caution.
Note: Apply air to verify proper installation of all 4-5-6 clutch components. Piston should apply and release smoothly.
Special Tool
DT 43074 Clutch Spring Compressor
For equivalent regional tools, refer to Special Tools. |

4-5-6 Clutch Plates Installation



4-5-6 Clutch Plates Installation

Callout

Component Name

- | | |
|---|--------------------------------------|
| 1 | 4-5-6 Clutch (Waved) Plate |
| 2 | 4-5-6 Clutch Plate (Qty: 5) |
| 3 | 4-5-6 Clutch Plate Assembly (Qty: 5) |

Callout

Component Name

4

4–5–6 Clutch Backing Plate

4–5–6 Clutch Backing Plate Retaining Ring

5

Note: After the retaining ring is installed, determine clutch piston travel in order to verify if the correct selective retaining ring is being used. Refer to 4-5-6 Clutch Backing Plate Retaining Ring Measurement.

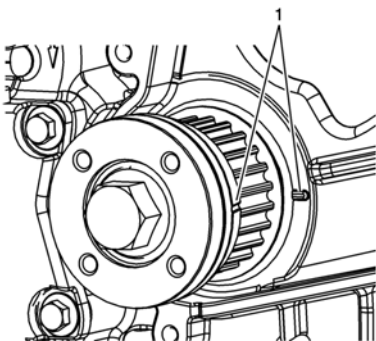
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

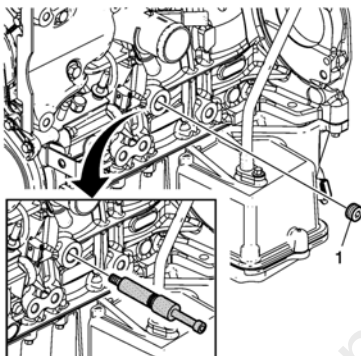
Special Tools

EN-50030 Crankshaft Locking Tool

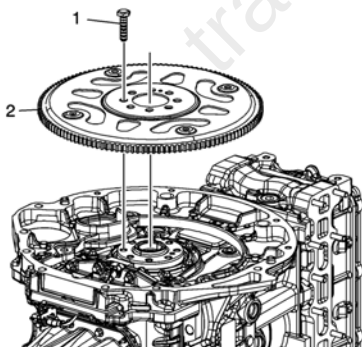
For equivalent regional tools, refer to Special Tools



1. Ensure that the timing mark on the crankshaft timing pulley (1) is aligned at 90 degrees ATDC with the mark on the front cover (1).



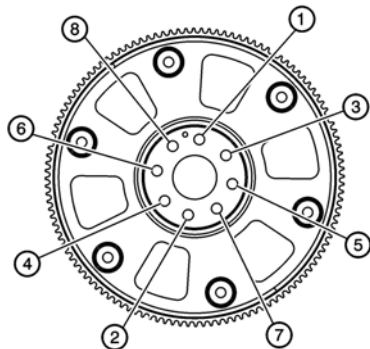
2. Remove the plug (1) and install the EN-50030 locking tool.



3. Install the flexplate (2).

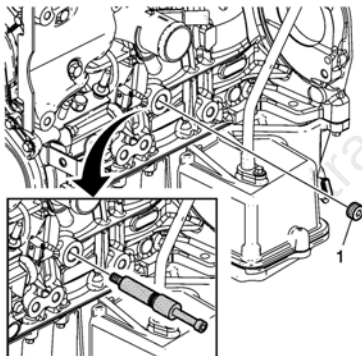
Caution: This vehicle is equipped with torque-to-yield or single use fasteners. Install a NEW torque-to-yield or single use fastener when installing this component. Failure to replace the torque-to-yield or single use fastener could cause damage to the vehicle or component.

4. Install the NEW flexplate bolts (1) and hand tighten.



Caution: Refer to Fastener Caution.

5. Tighten the NEW bolts in sequence to **50 Y (37 lb ft)**.
6. Loosen the flywheel bolts 90 degrees.
7. Tighten the NEW flywheel bolts in sequence to **25 Y (18 lb ft)**.
8. Tighten additional 60 degrees.
9. After each bolt is tightened, mark the head with a dot of brown paint as evidence of correct tightening.



10. Remove the *EN-50030* locking tool.
11. Install the block plug (1) and tighten to **79 Y (58 lb ft)**.

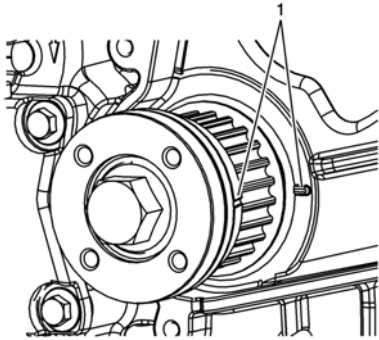
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

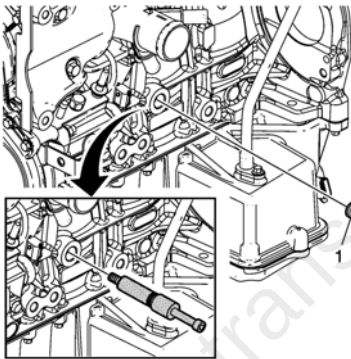
Special Tools

EN-50030 Crankshaft Locking Tool

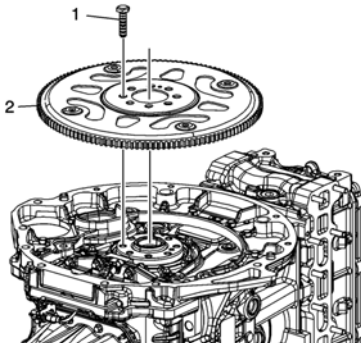
For equivalent regional tools, refer to Special Tools



1. Ensure that the timing mark on the crankshaft timing pulley (1) is aligned at 90 degrees ATDC with the mark on the front cover (1).



2. Remove the plug (1) and install the *EN-50030* locking tool .

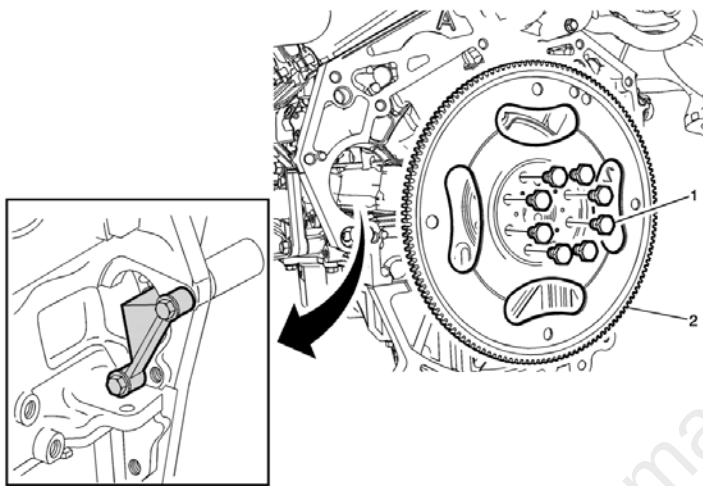


3. Remove the flexplate bolts (1) and flexplate (2).

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Automatic Transmission Flex Plate Replacement

Callout

Component Name

Procedure

Remove the transmission. Refer to Transmission Replacement.

Flexplate Fastener (Qty, 8)

Caution: Refer to Fastener Caution.

Procedure

1. Install the *EN 46106* tool through the starter mounting hole to secure crankshaft.
2. Remove the engine flexplate bolts and discard.
3. New bolts must be used whenever removing the flexplate.

Tighten

1

- 30 Y (22 lb ft)
- Tighten an additional 45 degrees using the *EN 45059* meter

Special Tools

- *EN 46106* Flywheel Holding Tool
- *EN 45059* Torque Angle Sensor Kit

For equivalent regional tools. refer to Special Tools

2

Flexplate

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

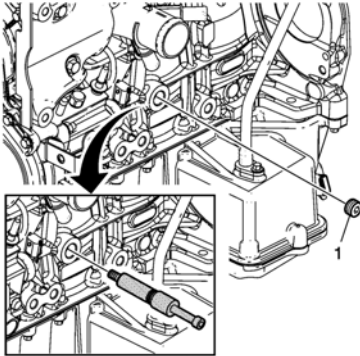
Special Tools

EN-50030 Crankshaft Locking Tool

For equivalent regional tools, refer to Special Tools.

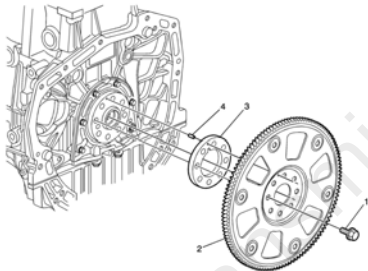
[Removal Procedure](#)

1. Remove the transmission. Refer to Transmission Replacement.



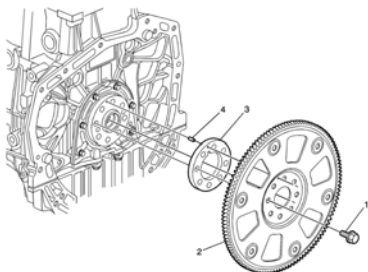
Note: Ensure the engine is at 90 degrees ATDC before installing the tool.

2. Remove the plug (1) and rotate the aligned tool EN-50030. Ensure the crankshaft is at 90 degrees ATDC before trying to install the crank locking tool.

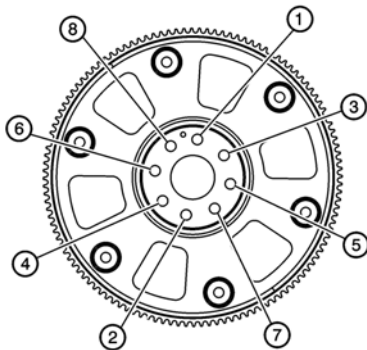


3. Remove the automatic transmission flex plate bolts (1).
4. Remove the flex plate (2), locating pin (4), and adapter plates (3).
5. For engine flywheel / automatic transmission flex plate cleaning and inspection. Refer to Engine Flywheel Cleaning and Inspection.

[Installation Procedure](#)

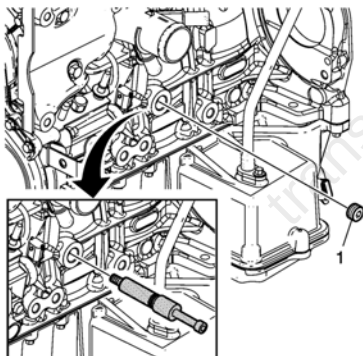


1. Install the automatic transmission flex plate (2) and bolts (1).



Caution: Refer to Fastener Caution.

2. Tighten the flex plate bolts in sequence to **50 Y (37 lb ft)**.
3. Loosen the flex plate bolts one at a time and then retighten in sequence to **25 Y (18 lb ft)** plus 60, 75, and 90 degrees respectively for bolts of 40, 50, 60 mm.
4. After each bolt is tightened, mark the head with a dot of brown paint as evidence of correct tightening.



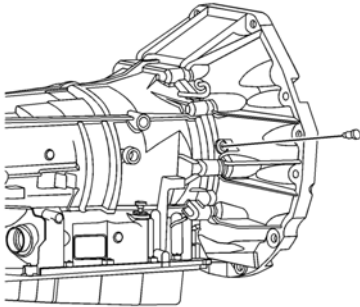
5. Remove the *EN-50030* Crank locking tool .
6. Install the block plug (1) and tighten to **79 Y (58 lb ft)**.
7. Install the transmission. Refer to Transmission Replacement.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

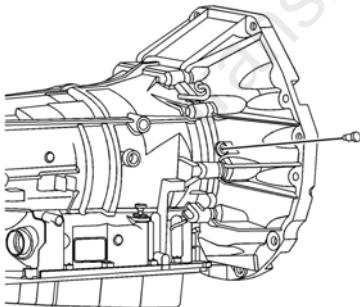
Removal Procedure

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



2. Clean the surrounding area of the oil pressure test plug.
3. Remove the oil pressure test plug.

Installation Procedure

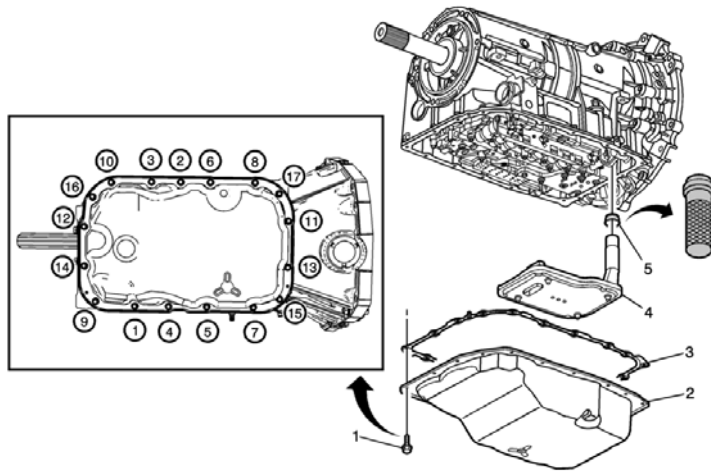


Caution: Refer to Fastener Caution.

1. Install the oil pressure test plug and tighten to **11 Y (97 lb in)**.
2. Check the transmission fluid level (fill if necessary). Refer to Transmission Fluid Level and Condition Check.
3. Lower the vehicle.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



Automatic Transmission Fluid, Fluid Pan and/or Filter Replacement

Callout

Component Name

Caution: Use Dexron VI transmission fluid only. Failure to use the proper fluid may result in transmission internal damage.

Preliminary Procedures

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Place a suitable drain pan under the transmission.

Transmission Fluid Pan Bolt (Qty: 17)

Caution: Refer to Fastener Caution.

- 1 **Note:** Tighten the bolts in the sequence shown.

Tighten

9 Y (80 lb in)

Transmission Fluid Pan Assembly

Procedure

- 2
 1. Check the condition of the draining fluid. Refer to Transmission Fluid Level and Condition Check.
 2. Fill the transmission with the proper fluid. Refer to Transmission General Specifications.
 3. Fill the transmission with the proper amount of transmission fluid. Refer to Fluid Capacity Specifications and Transmission Fluid Level and Condition Check.

Transmission Fluid Pan Gasket

- 3 **Note:** The fluid pan gasket is reusable. Inspect the gasket to determine if it may be reused.

NEW Fluid Filter Assembly

- 4 **Note:** Pull the fluid filter assembly straight out. Do not bend or twist the filter neck.

NEW Fluid Filter Seal Assembly

Caution: Do not damage the case sealing surface when removing the filter seal assembly.

Procedure

- 5
 1. Use a screwdriver or snap ring pliers to remove the filter seal.
 2. Use the DT-47848 installer and the J-42183 handle to install the filter seal.
 3. Lubricate the filter seal with transmission fluid before installing the filter.

Special Tools

- DT-47848 Seal Installer

Callout

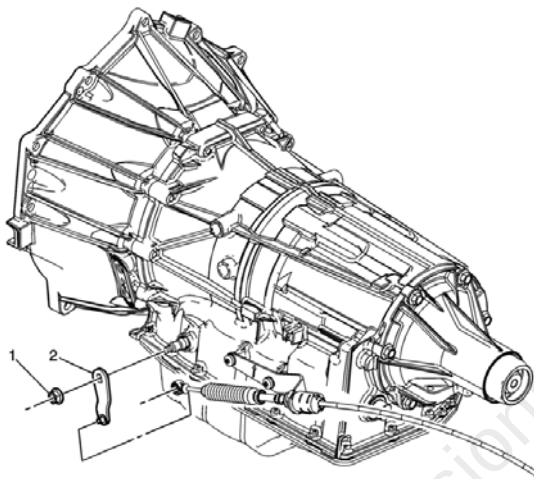
- *J-42183* Driver Handle

For equivalent regional tools, refer to Special Tools.

Component Name

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



Automatic Transmission Range Selector Lever Replacement

Callout	Component Name
Preliminary Procedures	

1. Apply the park brake.
2. Shift the transmission into neutral.
3. Raise the vehicle. Refer to Lifting and Jacking the Vehicle.
4. Disconnect the transmission range selector cable from the range selector cable lever ball stud.

Transmission Range Selector Cable Lever Nut

Warning: Hold the transmission range selector lever while removing or installing the lever retaining nut. Failure to hold the lever can cause damage to the transmission internal park system components which could allow the vehicle to roll when placed in the park position.

1

Caution: Refer to Fastener Caution.

Tighten

25 Y (18 lb ft)

2

Transmission Range Selector Cable Lever

2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**
Fuel Delivery: | **Fuel:**

The automatic transmission park lock control system is a safety device that prevents an inadvertent shift out of PARK. The driver must press the brake pedal before moving the park lever out of the PARK position. The system consists of the following components:

- The automatic transmission park lock solenoid (serviced as the automatic transmission shift lock actuator), is located within the floor shift control assembly.
- The body control module, which controls the voltage supply circuit of the park lock control solenoid.
- The engine control module.

The body control module controls the voltage to the park lock control solenoid through the park lock control solenoid controlled voltage circuit. The following conditions must be met before the body control module will supply voltage to the park lock solenoid:

- The ignition is in the ON position.
- The engine control module sends an input via GMLAN serial data to the body control module indicating the transmission is in the PARK position.
- The body control module determines the brake pedal is applied according the brake pedal position.

Since the park lock control solenoid is permanently grounded, the body control module supplies voltage to the automatic transmission park lock control solenoid, unlocking the park lever allowing the driver to move the park lever out of the PARK position as the solenoid energizes. When the brake pedal is not applied, the body control module turns the control voltage output of the park lock control solenoid OFF, de-energizing the park lock control solenoid. The de-energized solenoid mechanically locks the park lever in the PARK position.

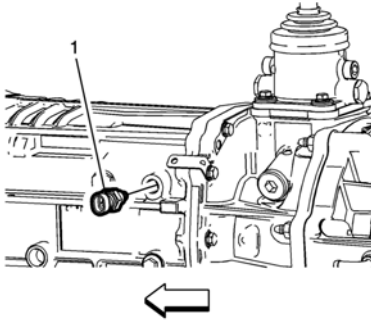
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

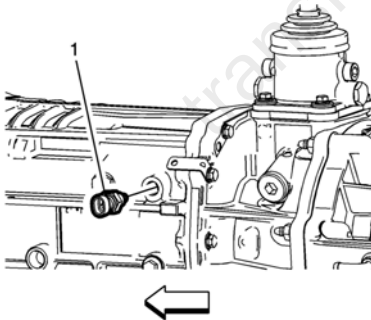
[Removal Procedure](#)

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the electrical connector from the backup switch.



3. Remove the backup switch (1) from the transmission.

[Installation Procedure](#)



Caution: Refer to Component Fastener Tightening Caution.

1. Install the backup switch (1) to the transmission.
2. Install the electrical connector to the speed sensor.
3. Lower the vehicle. Refer to Lifting and Jacking the Vehicle.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Note: Proper bushing and corresponding mating shaft inspection should be performed before replacing the bushing, shaft, and in some cases, the component which houses the bushing. Thoroughly clean and dry the bushing and shaft surfaces before inspecting for damage.

Any of the following bushing conditions require replacement of the bushing and/or housing:

- Discoloration due to heat distress
- Misalignment or displacement of bushing as a result of spinning in housing
- Medium to heavy scoring that can be easily detected with fingernail. Light scoring is a normal condition.
- Debris embedded into the bushing lining material
- Obvious damage, including excessive and uneven wear
- Excessive polishing. Minor polishing of the bushing is an indication of normal wear and does not require replacement.

Any of the following conditions require replacement of the bushing's mating shaft:

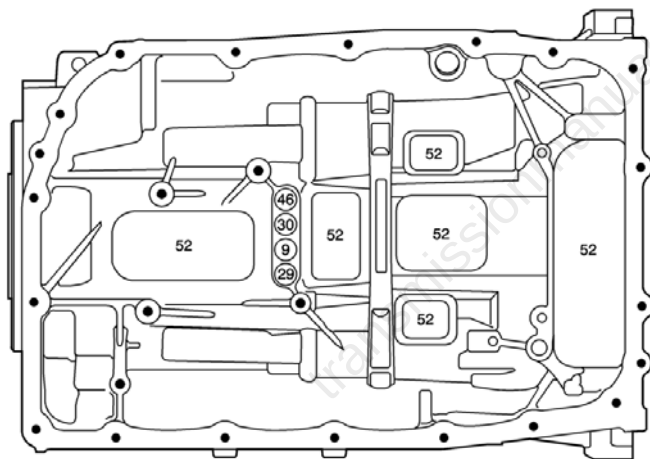
- Discoloration due to heat distress
- Rough surface finish that can be easily detected with finger
- Obvious shaft abnormalities, including warping or uneven surfaces
- Obvious damage or cracking

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

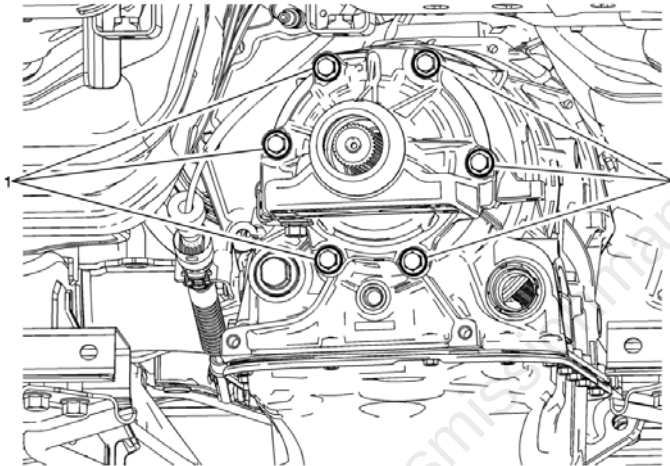
[Case- Top Channel Plate Side](#)



- (9) Center Lube
- (29) CBR1 (Manual 1st)
- (30) CBR (Reverse)
- (46) 26 Clutch
- (52) Void

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



Case Extension and Gasket Replacement

Callout

Component Name

Preliminary Procedures

1. Remove the transmission mount. Refer to Transmission Mount Replacement.
2. Remove the propeller shaft.

Extension Case Fastener (Qty: 6)

Caution: Refer to Fastener Caution.

1

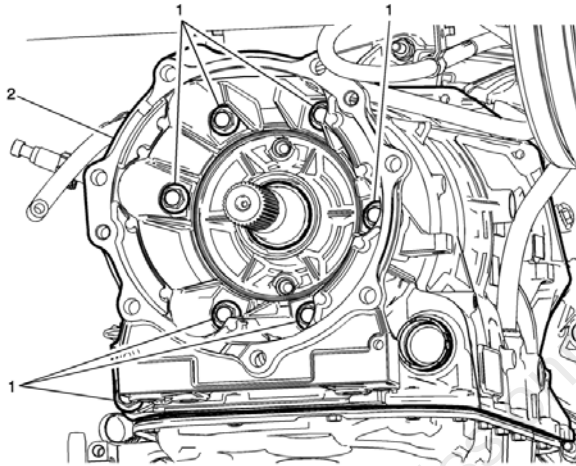
Tighten

55 Y (41 lb ft)

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Case Extension and Gasket Replacement

Callout

Component Name

Preliminary Procedures

1. Remove the transfer case. Refer to Transfer Case Replacement.
2. Remove the transmission mount. Refer to Transmission Mount Replacement.
3. Disconnect the vent hose from the extension case.
4. Use a suitable transmission jack to support the transmission.
5. Use a flat adaptor on the transmission jack to support the transmission resting on the fluid pan.

Extension Case Fasteners (Qty: 7)

Caution: Refer to Fastener Caution.

1

Tighten

55 Y (41 lb ft)

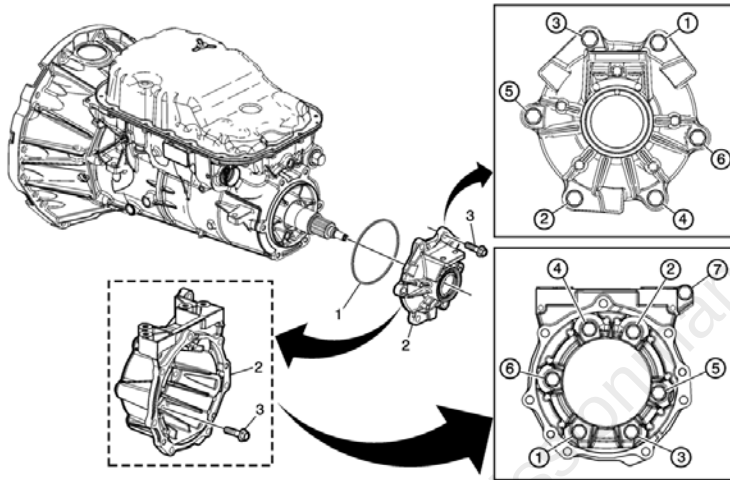
2

Extension Case

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Case Extension Assembly Installation

Callout

Component Name

- 1 NEW Case Extension Seal
- 2 Case Extension 2WD or Transfer Case Adapter 4WD
- Tip:** Optional AWD version uses same bolts and torque sequence.

Bolts M10 x 40

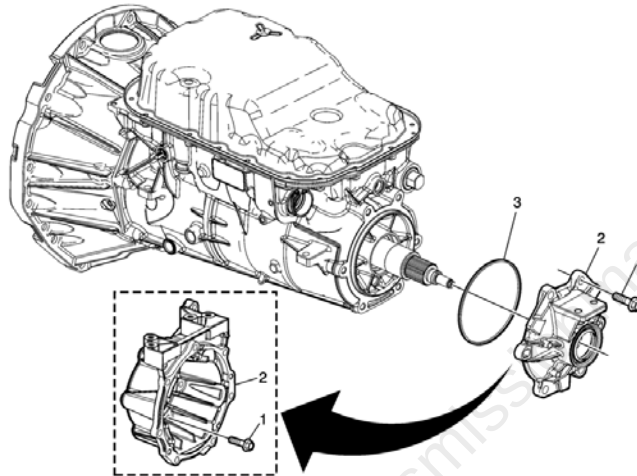
Caution: Refer to Fastener Caution.

Procedure

- 3
- Install Case Extension 2WD – Qty: 6 Bolts
 - Install Transfer Case Adapter 4WD – Qty: 7 Bolts
 - Tighten in sequence shown.
- Tighten**
55 Y (41 lb ft)

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



Case Extension Assembly Removal

Callout

Component Name

Bolt M10 x 40

1

- Case Extension 2WD – Qty: 6 Bolts
- Transfer Case Adapter 4WD – Qty: 7 Bolts

2

Case Extension 2WD or Transfer Case Adapter 4WD

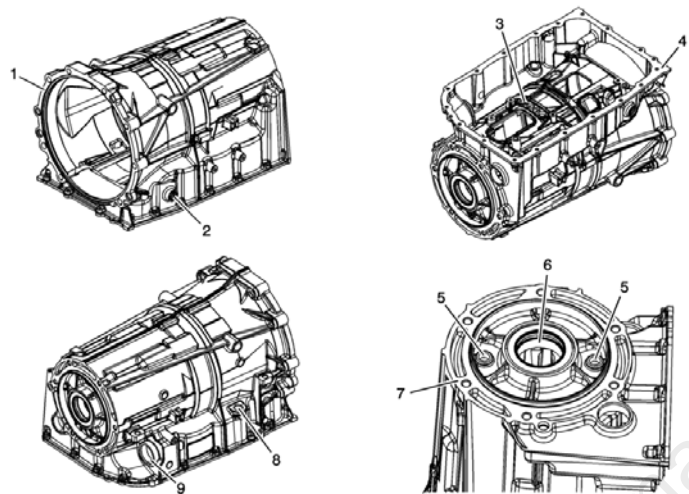
Tip: Also available as AWD option.

3

Case Extension Seal

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



Case Inspection

Callout

Component Name

Caution: After cleaning the transmission components, allow to air dry. Do not use cloth or paper towels in order to dry any transmission components. Lint from the towels can cause component failure.

Caution: Do not reuse cleaning solvents. Previously used solvents may deposit sediment which may damage the component.

Preliminary Procedures

- 1. Thoroughly clean the transmission case assembly, including case threads, with clean solvent.
- 2. Clean gasket sealing surfaces. Remove all residual gasket material.
- 3. Inspect all threaded holes. If necessary, repair any thread damage.

- | | |
|---|--|
| 1 | Front Case Sealing Surface |
| 2 | Manual Shift Shaft Seal |
| | Note: Refer to Manual Shift Shaft Seal Replacement. |
| 3 | Center Support Fluid Passage Seal Bores |
| 4 | Fluid Pan Sealing Surface |
| 5 | Case Plugs |
| 6 | Output Shaft Bushing or Bearing (model specific) |
| 7 | Rear Case Sealing Surface |
| 8 | Fill Tube Bore |
| 9 | Electrical Connector Passage Sleeve Bore |

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

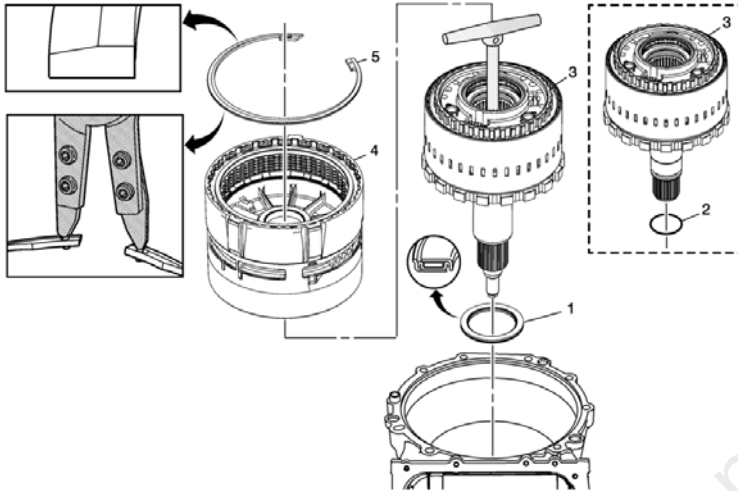
Some external leaks are caused by case porosity in non-pressurized areas. You can usually repair these leaks with the transmission in the vehicle.

1. Thoroughly clean the area to be repaired with a cleaning solvent. Air dry the area.

Warning: Epoxy adhesive may cause skin irritations and eye damage. Read and follow all information on the container label as provided by the manufacturer.

2. Using instructions from the manufacturer, mix a sufficient amount of an epoxy to make the repair.
3. While the transmission case is still hot, apply the epoxy. You can use a clean, dry soldering acid brush to clean the area and also to apply the epoxy cement. Make certain that the area to be repaired is fully covered.
4. Allow the epoxy cement to cure for three hours before starting the engine.
5. Repeat the fluid leak diagnosis procedures.

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

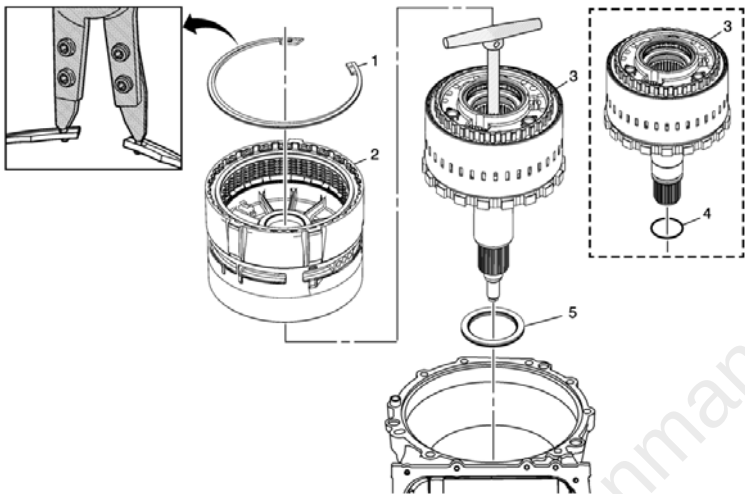


Center Support, Output Carrier and Output Shaft Installation

Callout	Component Name
1	Output Shaft Thrust Bearing Assembly
2	A/Trans Case O-Ring Seal – AWD Models if equipped Output Carrier Assembly and Output Shaft Assembly Caution: Apply automatic transmission fluid (ATF) to the inside diameter of the output shaft seal before installing the output shaft assembly into the case. Failure to lube the seal may cause the seal to roll during output shaft installation, which will result in transmission damage.
3	Caution: Ensure the DT 47786 is completely threaded into the output shaft assembly. Due to the weight of the assembly, incomplete threading may cause the assembly to break free from the DT 47786, causing component damage. Special Tool DT 47786 Output Carrier/Shaft Lifting Tool For equivalent regional tools, refer to Special Tools. Center Support Assembly Tip:
4	- When the center support assembly is properly installed, the fluid passages should align with the fluid passage seal bores in the case assembly. - It may be necessary to rotate the output shaft by hand in order to fully install the center support assembly. Center Support Retaining Ring Warning: Use care when removing or installing the retaining ring. Ensure the J 45126 is installed properly onto the retaining ring or bodily injury may occur.
5	Caution: Ensure the retaining ring is installed with the tapered side up, and in the 9 o'clock position from the pan side of the case. Failure to properly install the retaining ring will cause transmission damage. Special Tool DT 45126 Snap Ring Pliers For equivalent regional tools, refer to Special Tools.

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Center Support, Output Carrier and Output Shaft Removal

Callout

Component Name

Center Support Retaining Ring

Warning: Use care when removing or installing the retaining ring. Ensure the J 45126 is installed properly onto the retaining ring or bodily injury may occur.

1 **Tip:** To release tension on the retaining ring, place the retaining ring flat on the floor and step on it, then remove the tool.

Special Tool

DT 45126 Snap Ring Pliers

For equivalent regional tools, refer to Special Tools.

2 Center (with 2–6 Low and Reverse Clutch) Support Assembly

Output Carrier Assembly and Output Shaft Assembly

Caution: Ensure the DT 47786 is completely threaded into the output shaft assembly. Due to the weight of the assembly, incomplete threading may cause the assembly to break free from the DT 47786, causing component damage.

3 **Special Tool**

DT 47786 Output Carrier/Shaft Lifting Tool

For equivalent regional tools, refer to Special Tools.

4 A/Trans Case O-Ring Seal – AWD Models if equipped

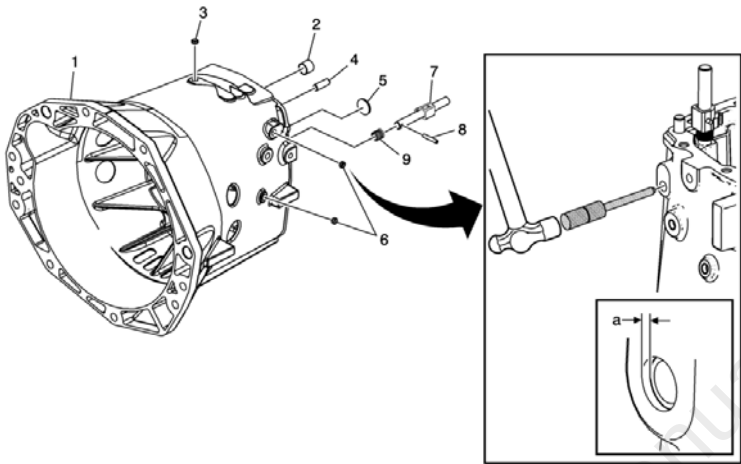
5 Output Shaft Thrust Bearing Assembly

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

- Table 1: [Clutch Housing](#)
Table 2: [Shift Shaft Interlocking Balls and Pin Cleaning and Inspection](#)

Clutch Housing



Clutch Housing

Callout

Component Name

Preliminary Procedure

Warning: Wear safety glasses to avoid injury when using compressed air or any cleaning solvent. Bodily injury may occur if fumes are inhaled or if skin is exposed to chemicals.

Clean the clutch housing (1) parts with a suitable solvent. Air dry all the parts.

Clutch Housing

Procedure

1. Inspect the clutch housing for the following conditions:

- Cracks
- Scratches
- Burrs
- Nicked mounting surfaces
- Damaged sealing surfaces
- Damaged bearing bores
- Inspect the machined mating surfaces for flatness. Check the mating surfaces with a straight edge.
- Use a fine mill file to dress minor scratches or burrs.
- If scratches, or grooves, or scoring, cannot be removed by hand with a soft stone or crocus cloth, replace the component.

Transmission Bushing – Shift Shaft

Procedure

Inspect the bushing for excessive wear. Replace worn bushings.

Clutch Housing Hole Plug

Transmission Locating Pin

Clutch Housing Hole Plug

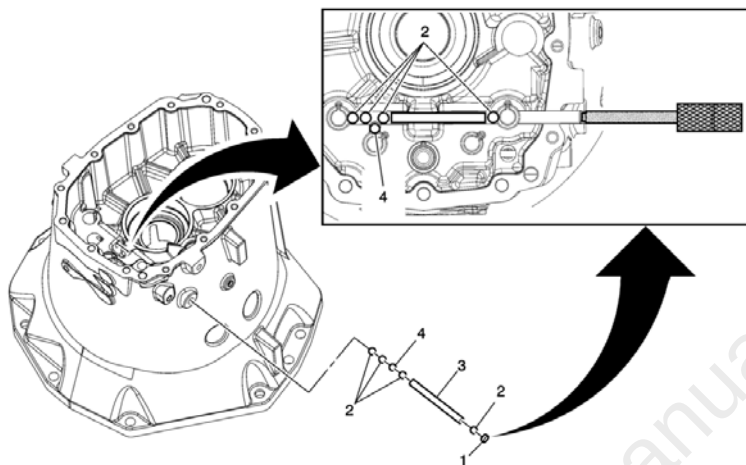
Clutch Housing Hole Plug

Special Tools

DT 50851 Front Housing Expansion Plug Installer

Callout	Component Name
	For equivalent regional tools, refer to Special Tools.
7	Reverse Interlock Shaft
8	Reverse Interlock Shaft Detent Pin
9	Reverse Interlock Shaft Detent Spring

[Shift Shaft Interlocking Balls and Pin Cleaning and Inspection](#)



Shift Shaft Interlocking Balls and Pin Cleaning and Inspection

Callout	Component Name
	Clutch Housing Hole Plug
	Note: When installing use a NEW plug.
1	Special Tools DT 50851 Front Housing Expansion Plug Installer For equivalent regional tools, refer to Special Tools. Shift Shaft Interlock Ball – 9.5 mm (Qty: 4) Note:
2	- Three balls – 9.5 mm align with the 3rd/4th yoke bar bore, and one 9.5 mm ball is located on the 5th/reverse yoke bar bore. - Be careful when removing the yoke bars. Interlock balls may drop into the bar bores. Keep a close watch on the interlock balls and their locations when disassembling and assembling. - Use the appropriate lubricant to hold balls in their bores in the proper location.
	Shift Shaft Interlock Pin
3	Procedure 1. Push the interlock pin to the opposite side in order the interlock balls drop from their bores. 2. Displace the interlock pin towards the removed plug hole and remove the pin through the housing hole.
	Shift Shaft Interlock Ball – 8.0 mm (Qty: 1)
	Note:
4	- This ball is located on the 1st/2nd yoke bar bore. The larger balls will not install into the smallest interlock bore. - Be careful when removing the yoke bars. Interlock balls may drop into the bar bores. Keep a close watch on the interlock balls and their locations when disassembling and assembling. - Use the appropriate lubricant to hold balls in their bores in the proper location.

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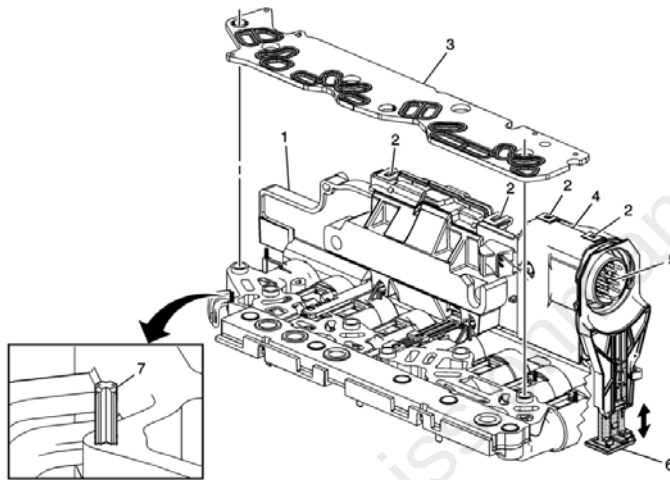
Fuel Delivery: | Fuel:

During transmission manufacturing and assembly, small pieces of material may become dislodged. This may also happen after the transmission has been in operation for a period of time. Because the transmission control solenoid valve assembly is continually immersed in transmission oil, material particles or slivers of metallic debris may become deposited on the control solenoid valve assembly. Often this material is very small and can be hard to see. For this reason, it is important that the control solenoid valve assembly be thoroughly inspected.

A thorough inspection of the control solenoid valve assembly should include the following:

- Clean inspection area – Like all transmission service work, cleanliness is very important. Be sure the area where you are inspecting is free of dust and dirt. Have non-glossy white or lightly colored paper down on the inspection surface. This will enhance the lighting and help to see particles that have come from the control solenoid valve assembly.
- Lighting – Good lighting is necessary for a thorough inspection. If shop lighting is limited, use natural light. A second source of lighting, such as a penlight, is helpful for close examination. A magnifying glass can also be helpful to see into difficult places.
- Cleaning – Clean shop air may be used for spot cleaning as long as the debris can be removed without it becoming lodged somewhere else. It is best to rinse or flush particles away with GM Brake Parts Cleaner. Do not use a cloth rag to wipe the control solenoid valve assembly, as it could leave lint behind.

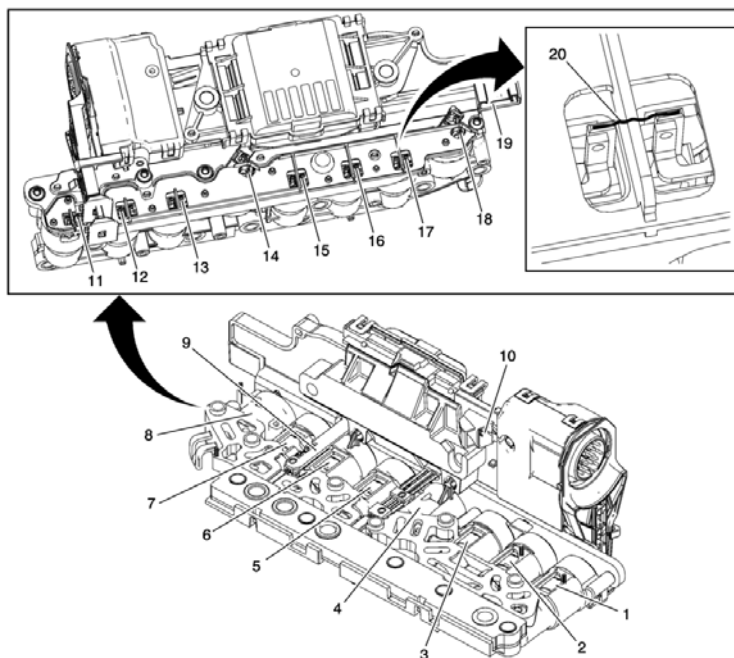
[Control Solenoid Valve Assembly Housing and Filter Plate](#)



Note: At the end of the inspection process where debris is found, it is required the transmission fluid and filter be replaced. Any time the control solenoid valve assembly has been removed, it is mandatory the filter plate assembly (3) be replaced.

1. Inspect the control solenoid valve assembly housing (1) for damage, cracks, or parting seam (4) separation. Inspect all housing lock tabs (2). Any defect will need to be evaluated for critical operation. Ensure all screws along the control solenoid valve assembly housing are present. Remove and closely examine the filter plate assembly (3) for sediment or debris attached to the screen. If sediment or debris is found on the filter screen, be sure to inspect the solenoid supply or control ports that correspond to location of the debris on the filter plate screen. Inspect the filter plate gasket for proper sealing. If poor sealing is found, be sure to inspect the affected solenoid fluid port entrance and exit for sediment or debris deposits. Thoroughly flush the solenoid cavity with GM Brake Parts Cleaner and replace the filter plate assembly (3). It is not necessary to remove all clutch plate soot from the entire surface of the control solenoid valve assembly housing. Inspect the control solenoid valve assembly filter plate retaining tabs (7). Broken or missing tabs do not require the control solenoid valve assembly be replaced. The filter plate can still be adequately aligned using the bolt hole sleeves. Early design control solenoid valve assembly use four filter plate retaining tabs (7).
2. Examine the 16-way connector (5) cavity for material that could make contact between the electrical pins. Also, look for bent or loose connector pins and ensure the connector lock (6) is functioning and is in good condition.

[Control Solenoid Valve Assembly Inspection — Solenoids, Sensors, and Contacts](#)

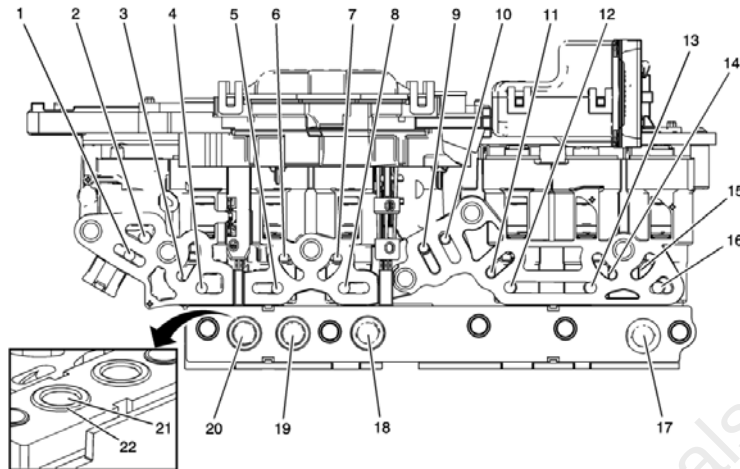


- (1) Pressure Control Solenoid 3 (PCS3)
- (2) Pressure Control Solenoid 4 (PCS4)
- (3) Pressure Control Solenoid 2 (PCS2)
- (4) Shift Solenoid 2 (SS2)
- (5) Torque Converter Clutch (TCC) Solenoid
- (6) Pressure Control Solenoid 5 (PCS5)
- (7) Pressure Control Solenoid 1 (PCS1)
- (8) Shift Solenoid 1 (SS1)
- (9) Transmission Fluid Temperature (TFT) Sensor
- (10) Input Speed Sensor/Output Speed Sensor (ISS/OSS) Connector
- (11) Pressure Control Solenoid 3 (PCS3) Contact Lead
- (12) Pressure Control Solenoid 4 (PCS4) Contact Lead
- (13) Pressure Control Solenoid 2 (PCS2) Contact Lead
- (14) Shift Solenoid 2 (SS2) Contact Lead
- (15) Torque Converter Clutch (TCC) Solenoid Contact Lead
- (16) Pressure Control Solenoid 5 (PCS5) Contact Lead
- (17) Pressure Control Solenoid 1 (PCS1) Contact Lead
- (18) Shift Solenoid 1 (SS1) Contact Lead
- (19) Internal Mode Switch (IMS) Connector
- (20) Metallic Slivers, Debris or Sediment

1. With the filter plate removed, the control solenoid valve assemblies (1–8) can be inspected. Closely examine the solenoid electrical contact lead solder connections (11–18). Look for material that could make contact between the electrical leads. This is where material particles, metallic slivers, debris or sediment (20) can collect. Carefully inspect all sixteen solenoid electrical contact leads (11–18) for build up of material that could form an electrical short. Inspect the solenoid contact leads (11–18) for terminal separation or weak solder joints. Thoroughly flush away all debris with GM Brake Parts Cleaner.
2. Inspect the transmission fluid temperature (TFT) sensor (9), the input speed sensor/output speed sensor (ISS/OSS) connector (10), and the internal mode switch (IMS) connector (19). Look inside the connector cavities for material that could make contact between the electrical pins. Also look for bent or loose electrical pins. If the TFT sensor (9) is heavily coated with clutch soot, rinse with GM Brake Parts Cleaner.
3. Check the resistance of the solenoids at room temperature and verify with the following table. If the resistance is not within the expected range, carefully inspect the solenoid contact leads.

Solenoid Resistance

Solenoid Name	Illustration Number of Solenoid Lead	Expected Resistance (Ohms)
Pressure Control Solenoid 3 (PCS3)	11	4.5–5.5 Ω
Pressure Control Solenoid 4 (PCS4)	12	4.5–5.5 Ω
Pressure Control Solenoid 2 (PCS2)	13	4.5–5.5 Ω
Shift Solenoid 2 (SS2)	14	23.5–24.5 Ω
Torque Converter Clutch (TCC) Solenoid	15	4.5–5.5 Ω
Pressure Control Solenoid 5 (PCS5)	16	4.5–5.5 Ω
Pressure Control Solenoid 1 (PCS1)	17	4.5–5.5 Ω
Shift Solenoid 1 (SS1)	18	23.5–24.5 Ω



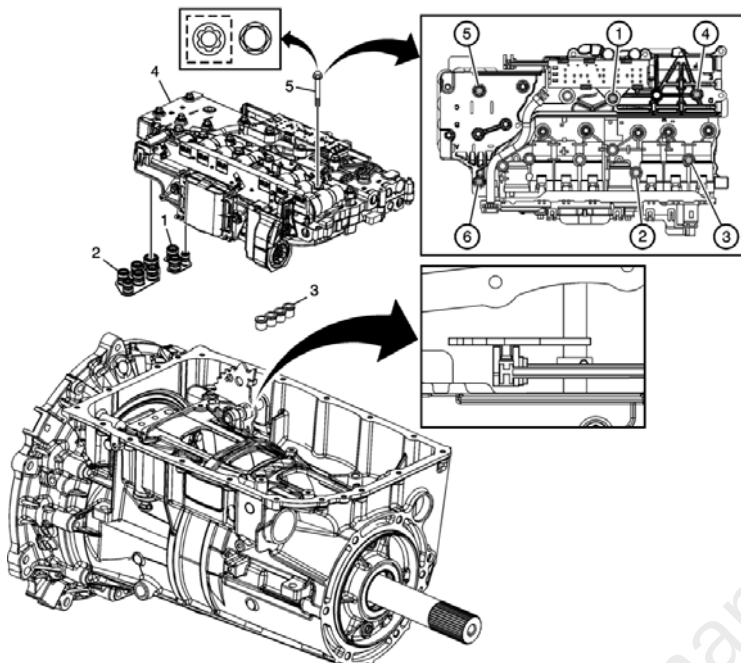
- (1) Shift Solenoid 1 Supply Port
- (2) Shift Solenoid 1 Control Port
- (3) Line Pressure Control Solenoid 1 Control Port
- (4) Line Pressure Control Solenoid 1 Supply Port
- (5) Pressure Control Solenoid 5 Supply Port
- (6) Pressure Control Solenoid 5 Control Port
- (7) TCC Pressure Control Solenoid Control Port
- (8) TCC Pressure Control Solenoid Supply Port
- (9) Shift Solenoid 2 Supply Port
- (10) Shift Solenoid 2 Control Port
- (11) Pressure Control Solenoid 2 Control Port
- (12) Pressure Control Solenoid 2 Supply Port
- (13) Pressure Control Solenoid 4 Supply Port
- (14) Pressure Control Solenoid 4 Control Port
- (15) Pressure Control Solenoid 3 Control Port
- (16) Pressure Control Solenoid 3 Supply Port
- (17) Transmission Fluid Pressure (TFP) Switch 5
- (18) Transmission Fluid Pressure (TFP) Switch 3
- (19) Transmission Fluid Pressure (TFP) Switch 1
- (20) Transmission Fluid Pressure (TFP) Switch 4
- (21) TFP Switch Membrane
- (22) TFP Switch Gasket

1. With the filter plate removed, the control solenoid valve fluid supply and control ports (1–16) can be inspected. Solenoid openings are identified in the illustration. Inspect the following supply and control opening for material particles, metallic slivers, debris, or sediment. Look into solenoid fluid supply openings 1, 4, 5, 8, 9, 12, 13, and 16. Look inside the solenoid fluid control ports 2, 3, 6, 7, 10, 11, 14 and 15. If sediment or debris is found in any one of these port openings, look for holes or tears in the filter plate screen. The filter plate gasket may be leaking caused by a torn gasket, poor sealing, or a deformed plate. As necessary, thoroughly flush away all debris in the supply and control fluid ports with GM Brake Parts Cleaner.
2. Inspect the four transmission fluid pressure (TFP) switches (17–20) for trapped debris or sediment. Any sediment or debris found under a switch membrane requires the control solenoid valve assembly to be replaced. Check all TFP switch membranes (21) for cracks, cuts or pin holes. Ensure all TFP switch gaskets (22) are secure and are not deformed, torn, or improperly seated. As necessary, thoroughly rinse debris and sediment from the top of the switches. It is not necessary to remove the clutch plate soot from the entire surface of the control solenoid valve assembly housing.

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Control Solenoid Valve and Transmission Control Module Assembly Replacement

Callout

Component Name

Preliminary Procedure

Remove the control valve body assembly. Refer to Control Valve Lower Body and Upper Body Replacement.

- 1 NEW Fluid Pump Seal Assembly
- 2 NEW Fluid Pump Seal Assembly
- 3 NEW Center Support Fluid Passage Seal Assembly

Control Valve Body Assembly

Caution: The control valve body assembly needs to be lowered into place vertically, with no lateral movement. Lateral movement can damage the pass through connector pins and/or the oil transfer seals.

Note:

- Note the lengths of the bolts when removed for correct positioning during installation.
- Align the manual shift shaft position switch activator slide with the detent lever guide pin.

Bolt M5 x 73 (Qty: 6)

Caution: Refer to Fastener Caution.

Procedure

1. Tighten in the sequence shown.
2. If a NEW TCM has been installed into the vehicle, the NEW module needs to be reprogrammed. Refer to Control Solenoid Valve and Transmission Control Module Assembly Programming and Setup.
3. Perform the Reset Transmission Adapts. Refer to Reset Transmission Adapts.

Note: The Service Fast Learn Adapts procedure must be performed when one of the following repairs have been made to the vehicle. Failure to perform the procedure after one of the following repairs may result in poor transmission performance, as well as transmission DTCs being set:

- Transmission internal service/overhaul
- Valve body repair or replacement
- Control solenoid valve assembly replacement

Callout

- TCM software/calibration update
- Any service in response to a shift quality concern

Tighten

8 Y (71 lb in)

Special Tools

DT-48285 Valve Body TORX Plus Socket (if applicable)

For equivalent regional tools, refer to Special Tools.

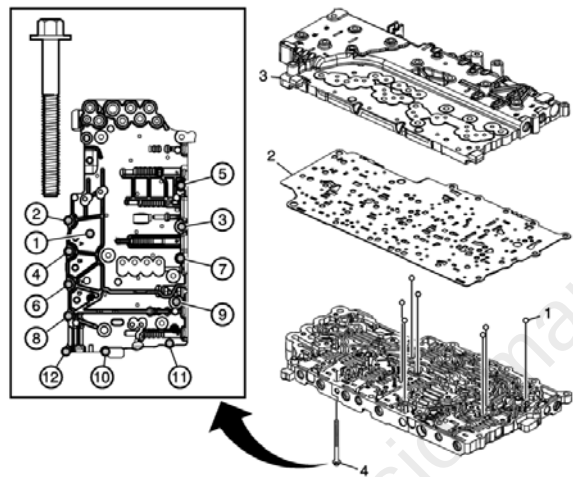
Component Name

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Table 1:	Upper to Lower Control Valve Body Assembly Assemble
Table 2:	Filter Plate Installation
Table 3:	Control Solenoid Valve Assembly Installation
Table 4:	Manual Shift Shaft Position Switch Installation
Table 5:	Valve Body, Control Solenoid Torque Sequence
Table 6:	Control Solenoid Valve Assembly Contact Gap Inspection
Table 7:	Input and Output Speed Sensor Assembly Installation

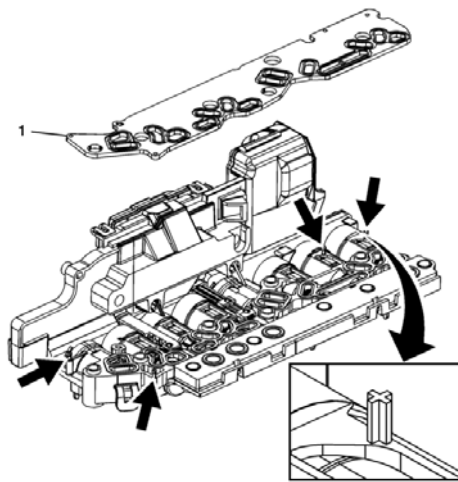
[Upper to Lower Control Valve Body Assembly Assemble](#)



Upper to Lower Control Valve Body Assembly Assemble

Callout	Component Name
	Control Valve Body Ball Check Valve (Qty: 7)
1	Caution: Do not use any type of grease or other material to hold the check ball valves in place during assembly. Grease will cause the valves to not operate properly, resulting in damage to the transmission. Note: Refer to Ball Check Valve Locations.
	Control Valve Body Spacer (w/Gasket) Plate Assembly
2	Caution: Do not use the old spacer plate. Install a NEW spacer plate. Reusing an old spacer plate may cause internal transmission leaks and transmission damage.
	Control Valve Lower Body Assembly
3	Note: Turn the valve body assembly over after installing to upper body.
	Bolt M5 x 36 (Qty: 12)
	Caution: Refer to Fastener Caution.
4	Procedure Tighten the bolts in the sequence shown. Tighten 8 Y (71 lb in).

[Filter Plate Installation](#)



Filter Plate Installation

Callout

Component Name

Filter Plate Assembly

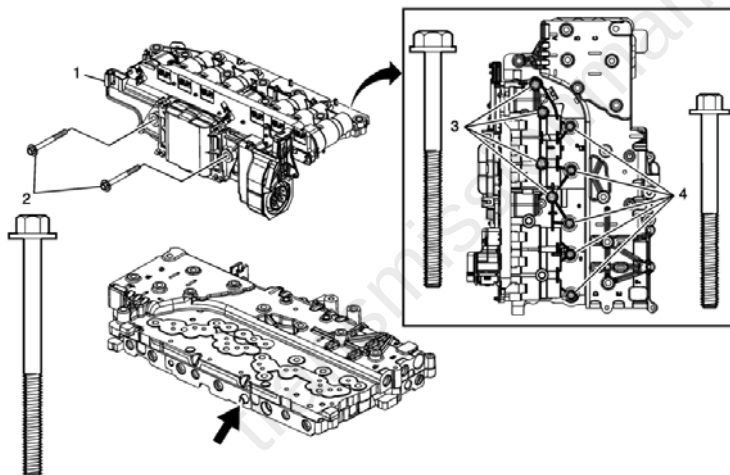
Caution: Use care when handling the control valve body assembly. If dropped, damage to the control solenoid valve body assembly internal components, including the transmission control module (TCM), may result.

1

Caution: Discard the filter plate. Replace with a NEW filter plate. Reusing an old filter plate may cause damage to the control solenoid valve assembly.

Note: Use care when removing or installing the filter plate assembly. However, if a retaining tab is broken or missing, do not replace the control solenoid valve assembly. The filter plate assembly can still be adequately aligned.

[Control Solenoid Valve Assembly Installation](#)



Control Solenoid Valve Assembly Installation

Callout

Component Name

1 Control Solenoid (w/Body and TCM) Valve Assembly

Note: Note the locator pin on the control valve lower body assembly while aligning the control solenoid valve assembly.

2 Bolt M5 x 53 (Qty: 2)

Note: Hand tighten only.

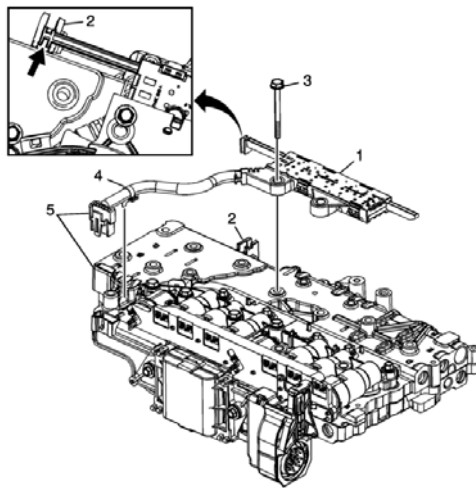
3 Bolt M5 x 55 (Qty: 4)

Note: Hand tighten only.

4 Bolt M5 x 45 (Qty: 5)

Note: Hand tighten only.

[Manual Shift Shaft Position Switch Installation](#)



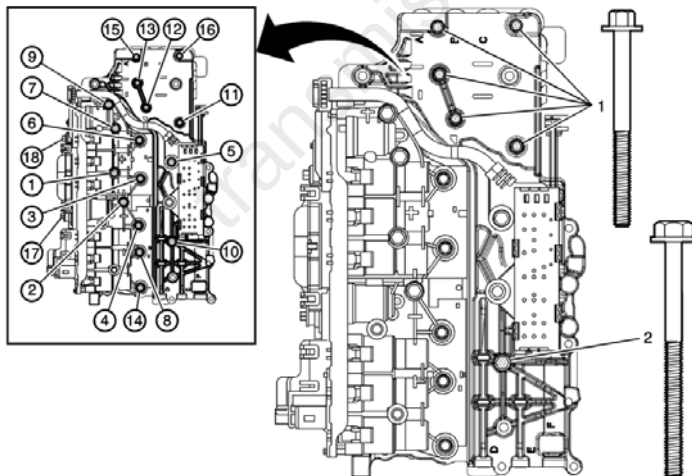
Manual Shift Shaft Position Switch Installation

Callout

Component Name

- 1 A/Trans Manual Shift Shaft Position Switch Assembly
- 2 Manual Valve Link
Note: Align the switch activator slide with the manual valve link.
- 3 Bolt M5 x 55
Note: Hand tighten only.
- 4 A/Trans Manual Shift Shaft Position Switch Harness Clip
Note: The wiring harness clip on the manual shift shaft position switch does not need to be replaced if damaged or missing. The clip functions only as a manufacturing assembly aid to keep the harness clear during an automated bolt installation process. If the clip is damaged, simply remove and discard.
- 5 A/Trans Manual Shift Shaft Position Switch Electrical Connector
Note: Connect and lock the manual shift shaft position switch electrical connector to the control solenoid valve assembly.

[Valve Body, Control Solenoid Torque Sequence](#)



Valve Body, Control Solenoid Torque Sequence

Callout

Component Name

Caution: Bolt torque sequencing is critical to the proper function of the control solenoid valve assembly. Failure to follow the required sequencing may result in transmission malfunction.

Preliminary Procedure

1. Hand tighten the last 6 bolts before final torque sequence.
2. The 2 "heat sink" bolts must be tightened last.

- 1 Bolts M5 x 45 (Qty: 5)

Callout

Component Name

Bolt M5 x 55

Caution: Refer to Fastener Caution.

Procedure

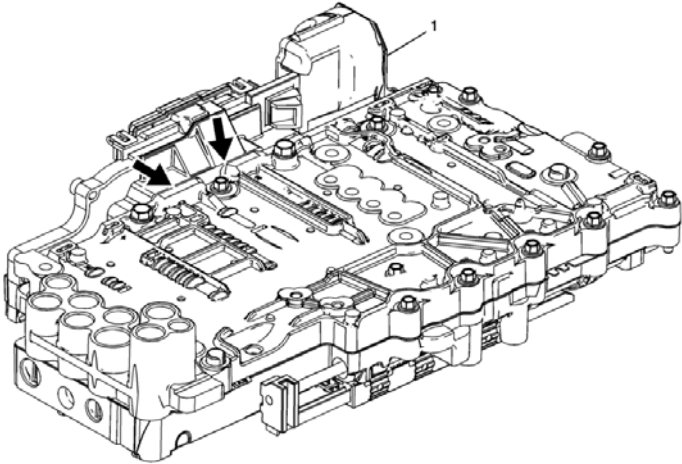
2

Tighten all 18 bolts in the sequence shown.

Tighten

8 Y (71 lb in).

[Control Solenoid Valve Assembly Contact Gap Inspection](#)



Control Solenoid Valve Assembly Contact Gap Inspection

Callout

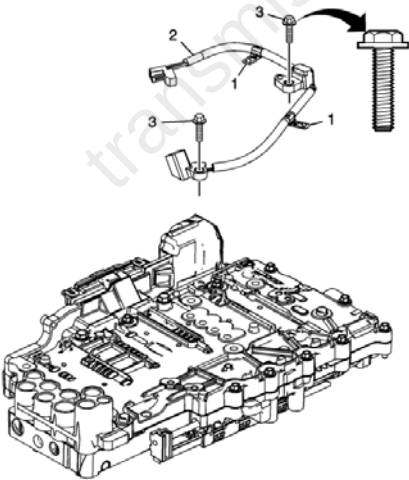
Component Name

Control Solenoid (w/Body and TCM) Valve Assembly

1

Note: Inspect the contact area between the "heat sink" area of the control solenoid valve assembly and the valve body. There should be no visible gap. If a gap exists, loosen all 18 bolts and retighten in the required sequence.

[Input and Output Speed Sensor Assembly Installation](#)



Input and Output Speed Sensor Assembly Installation

Callout

Component Name

A/Trans Input and Output Speed Sensor Wiring Harness Clip (Qty: 2)

1

Note: Inspect the 2 wiring harness clips for damage. Replace if damaged.

A/Trans Input and Output Speed Sensor Assembly

2

Bolt M6 x 20 (Qty: 2)

3

Caution: Refer to Fastener Caution.

Control Valve Body Assembly Assemble

Callout

Tighten

12 Y (106 lb in)

Component Name

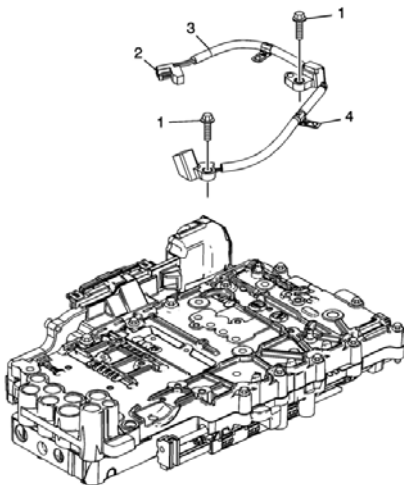
transmissionmanuals.com

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Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

- Table 1: [Input and Output Speed Sensor Assembly Removal](#)
Table 2: [Manual Shaft Detent Assembly and Manual Shift Shaft Position Switch Removal](#)
Table 3: [Control Solenoid Valve Assembly Removal](#)
Table 4: [Upper and Lower Valve Bodies Disassemble](#)

[Input and Output Speed Sensor Assembly Removal](#)



Input and Output Speed Sensor Assembly Removal

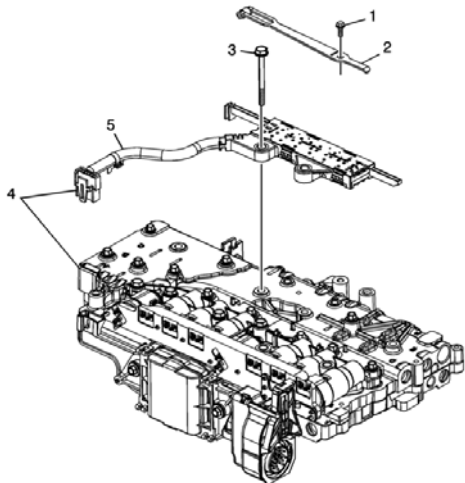
Callout

- | | Component Name |
|---|--|
| 1 | Bolt M6 x 20 (Qty: 2) |
| 2 | Speed Sensor Electrical Connector |
| 3 | A/Trans Input and Output Speed Sensor Assembly |
| 4 | A/Trans Input and Output Speed Sensor Wiring Harness Clip (Qty: 2) |

Note: Release the connector lock before disconnecting.

Note: Inspect the clips and replace if damaged.

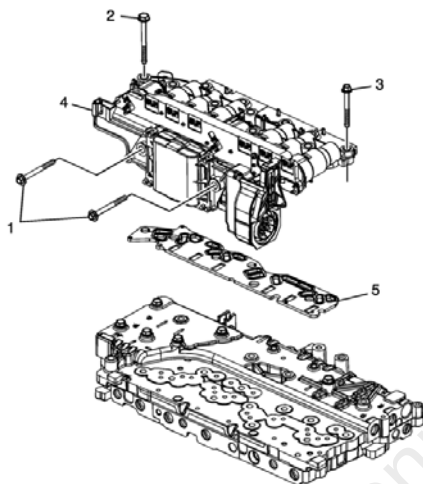
[Manual Shaft Detent Assembly and Manual Shift Shaft Position Switch Removal](#)



Manual Shaft Detent Assembly and Manual Shift Shaft Position Switch Removal

Callout	Component Name
1	Bolt M6 x 14.5
2	Manual Shaft Detent Assembly
3	Bolt M5 x 55
4	A/Trans Manual Shift Shaft Position Switch Assembly Electrical Connector
	Note: Release the connector lock before disconnecting.
5	A/Trans Manual Shift Shaft Position Switch Assembly

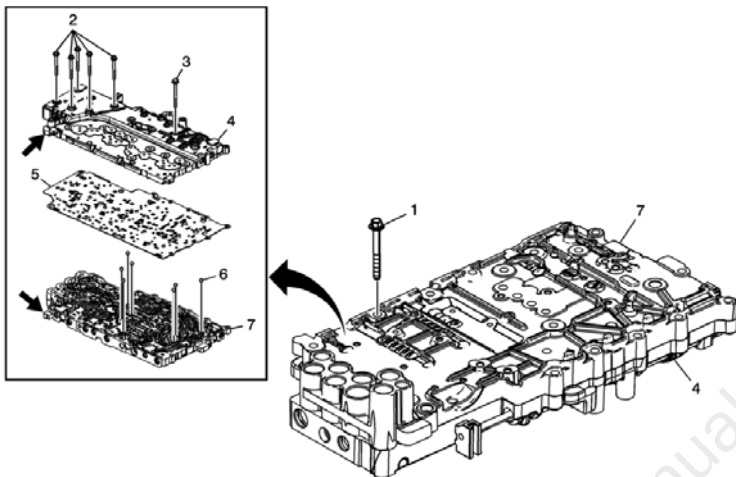
[Control Solenoid Valve Assembly Removal](#)



Control Solenoid Valve Assembly Removal

Callout	Component Name
1	Bolt M5 x 53 (Qty: 2)
2	Bolt M5 x 55 (Qty: 4)
3	Bolt M5 x 45 (Qty: 5)
	Control Solenoid (w/Body and TCM) Valve Assembly
4	Caution: Use care when handling the control valve body assembly. If dropped, damage to the control solenoid valve body assembly internal components, including the transmission control module (TCM), may result.
	Filter Plate Assembly
5	Caution: Use care when removing or installing the filter plate assembly. A broken or missing retaining tab may not adequately secure the filter plate to the control solenoid valve assembly, resulting in possible damage or contamination. Caution: Discard the filter plate. Replace with a NEW filter plate. Reusing an old filter plate may cause damage to the control solenoid valve assembly.

[Upper and Lower Valve Bodies Disassemble](#)



Upper and Lower Valve Bodies Disassemble

Callout

Component Name

1 Bolt M5 x 36 (Qty: 12)

2 Bolt M5 x 45 (Qty: 5)

3 Bolt M5 x 55

Control Valve Lower Body Assembly

Note:

4

- Separate the upper and lower valve bodies by carefully prying at the point indicated.
- Refer to Control Valve Lower Body Assembly Cleaning and Inspection.

Control Valve Body Spacer (w/Gasket) Plate Assembly

5

Caution: Do not use the old spacer plate. Install a NEW spacer plate. Reusing an old spacer plate may cause internal transmission leaks and transmission damage.

Control Valve Body Ball Check Valve (Qty: 7)

6

Note: Note the position of the ball check valves.

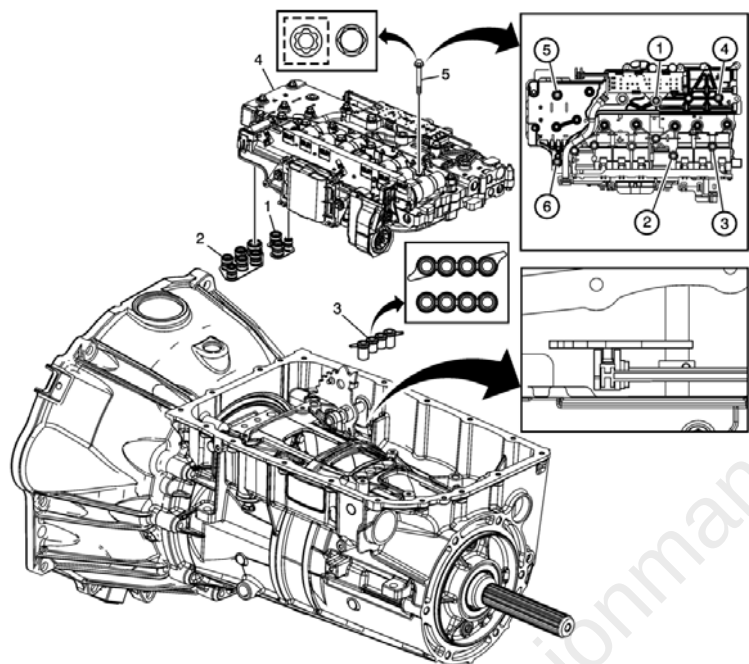
Control Valve Upper Body Assembly

7

Note: Refer to Control Valve Upper Body Assembly Cleaning and Inspection.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

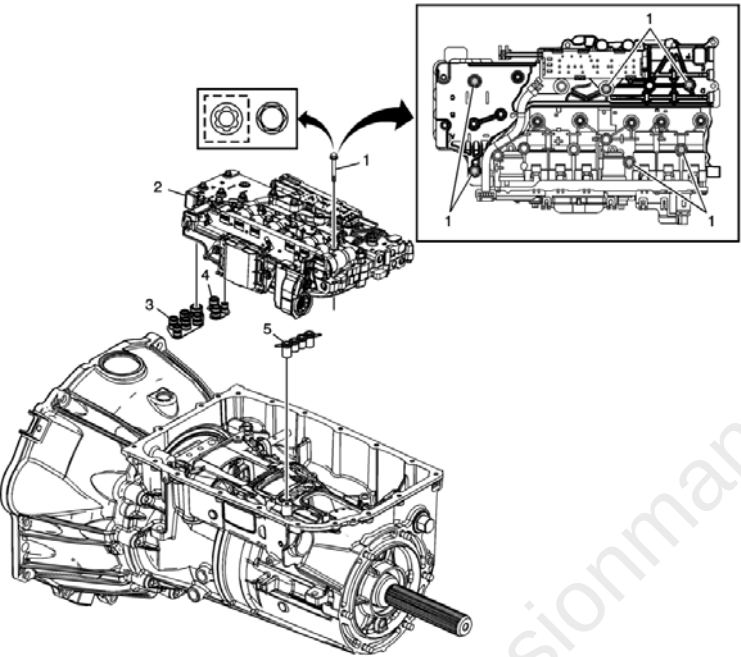


Control Valve Body Assembly Installation

Callout	Component Name
1	NEW Fluid Pump Seal Assembly
2	NEW Fluid Pump Seal Assembly
3	NEW Center Support Fluid Passage Seal Assembly
4	Note: There are two different designs for the Center Support Fluid Passage Seal. The design for 6L45/50 (MYA/MYB) models utilizes tabs. The design for 6L80/90 (MYC/MYD) models does not have tabs. Control Valve Body Assembly Caution: The control valve body assembly needs to be lowered into place vertically, with no lateral movement. Lateral movement can damage the pass through connector pins and/or the oil transfer seals. Note: Align the manual shift shaft position switch activator slide with the detent lever guide pin. Bolts M5 x 73 (Qty: 6) Caution: Refer to Fastener Caution. Procedure Tighten in the sequence shown.
5	Tighten 8 Y (71 lb in). Special Tool DT-48285 Valve Body Torx Plus Socket (if applicable) For equivalent regional tools, refer to Special Tools.

2013 Chevrolet Colorado

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Control Valve Body Assembly Removal

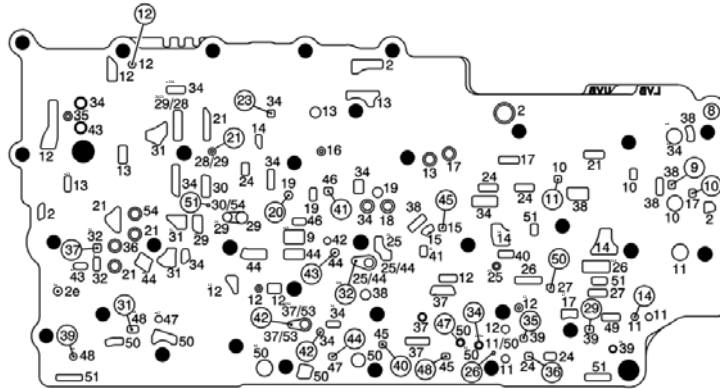
Callout	Component Name
	Bolt M5 x 73 (Qty: 6)
	Note: Do not remove all the bolts in the control valve body assembly. Remove only the bolts indicated.
1	Special Tool DT-48285 Valve Body Torx Plus Socket (if applicable) For equivalent regional tools, refer to Special Tools.
	Control Valve Body Assembly
2	Caution: Use care when handling the control valve body assembly. If dropped, damage to the internal components of the control solenoid valve assembly, including the transmission control module (TCM), may result.
	Fluid Pump Seal Assembly
3	Caution: Use care when removing the seal assemblies to avoid damaging the valve body seal bores. Caution: Refer to Seal Reuse Caution.
	Fluid Pump Seal Assembly
4	Caution: Use care when removing the seal assemblies to avoid damaging the valve body seal bores. Caution: Refer to Seal Reuse Caution.
	Center Support Fluid Passage Seal Assembly
5	Caution: Use care when removing the seal assemblies to avoid damaging the case seal bores. Caution: Refer to Seal Reuse Caution.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

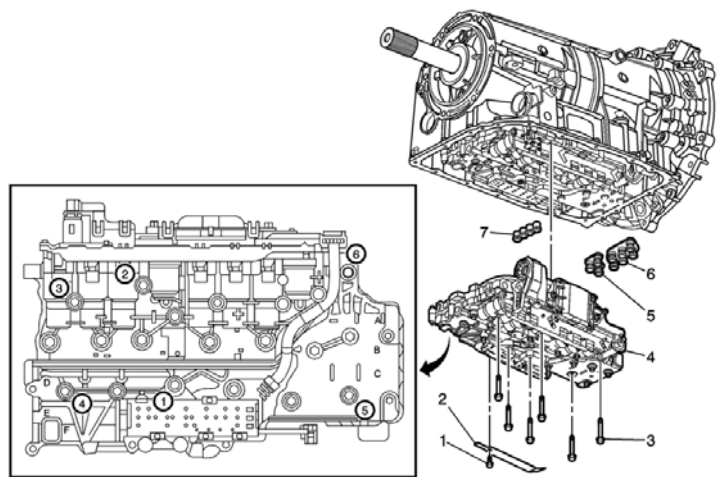
Control Valve Body Spacer Plate Assembly – Bottom Channel Plate Side



- (2) Line
- (8) Cooler Feed
- (9) Center Lube
- (10) Regulator Apply
- (11) Compensator Feed
- (12) Actuator Feed Limit
- (13) Reverse
- (14) 3-5 Reverse Clutch
- (15) 3-5 Reverse Clutch Feedback
- (16) CSV2 Enable
- (17) Solenoid 1
- (18) Solenoid 2
- (19) CSV3 Enable
- (21) Drive 1-6
- (24) 1-2-3-4 Clutch DFLT
- (25) 1-2-3-4 Clutch Feed
- (26) 1-2-3-4 Clutch
- (27) 1-2-3-4 Clutch Feedback
- (28) CBR1/CBR Feed
- (29) CBR1
- (30) CBR
- (31) CBR1/4-5-6 Clutch Feed
- (32) CBR1 Feedback
- (34) 4-5-6 Clutch
- (35) CSV2 Latch
- (36) Drive Brake
- (37) 3-5 Reverse Feed
- (38) PCS TCC
- (39) PCS 1-2-3-4 Clutch
- (40) PS4
- (41) PS1
- (42) PS3
- (43) PS5
- (44) 2-6 Clutch/1-2-3-4 CL Feed
- (45) PCS 3-5 Rev Clutch
- (46) 2-6 Clutch
- (47) PCS 2-6 Clutch
- (48) PCS CBR1/4-5-6 Clutch
- (49) PCS Line
- (50) Exhaust BF
- (51) Exhaust
- (53) 3-5 Rear Feed
- (54) 3-5 Clutch Reverse Feed

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



Control Valve Lower Body and Upper Body Replacement

Callout

Component Name

Preliminary Procedures

Remove the transmission electrical connector. Refer to Automatic Transmission Electrical Connector Passage Sleeve Replacement.

- 1

Manual Shaft Detent Bolt

Caution: Refer to Fastener Caution.

Tighten

12 Y (106 lb in)
- 2

Manual Shaft Detent Assembly

Control Valve Assembly Bolt (Qty: 6)

Procedure
- 3

- Do not remove all the bolts in the control valve body assembly. Remove only the bolts indicated.
 - Tighten in specified sequence.

Tighten

8 Y (71 lb in)
- 4

Control Valve Assembly

Fluid Pump Seal
- 5

Procedure

Discard seal and replace with new.

Fluid Pump Seal
- 6

Procedure

Discard seal and replace with new.

Center Support Fluid Passage Seal

Procedure
- 7

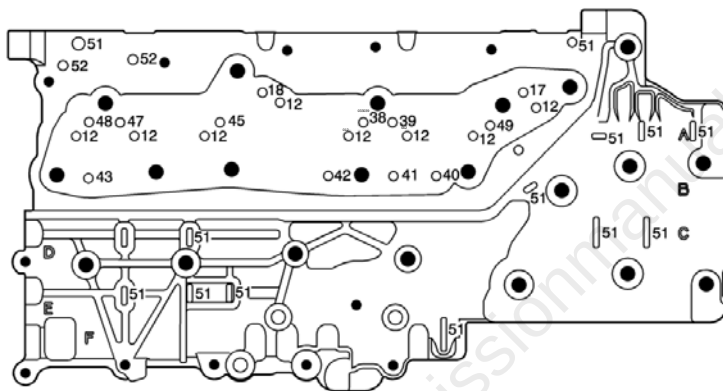
- Discard seal and replace with new.
 - It is recommended that transmission adaptive pressure (TAP) information be reset. Transmission performance may be affected as new TAP values are learned. Refer to Reset Transmission Adapts.
 - If replacing the control valve body assembly, remove the Control Solenoid Valve and Transmission Control Module Assembly Replacement and the Manual Shift Shaft Position Switch Replacement.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

[Control Valve Upper Body Assembly – Control Solenoid Valve Assembly Side](#)

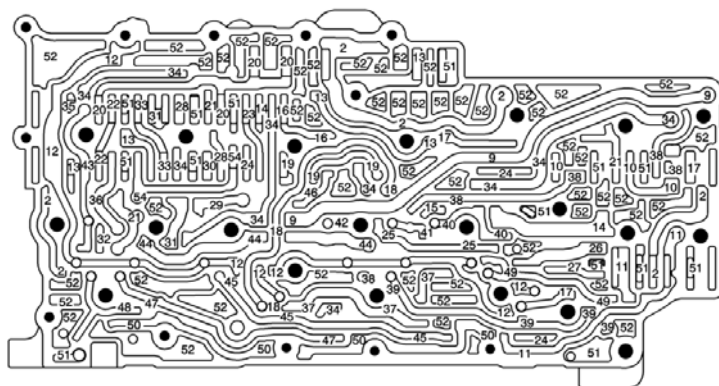


- (12) Actuator Feed Limit
- (17) Solenoid 1
- (18) Solenoid 2
- (38) PCS TCC
- (39) PCS 1-2-3-4 Clutch
- (40) PS4
- (41) PS1
- (42) PS3
- (43) PS5
- (45) PCS 3-5 Rev Clutch
- (47) PCS 2-6 Clutch
- (48) PCS CBR1/4-5-6 Clutch
- (49) PCS Line
- (51) Exhaust
- (52) Empty

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

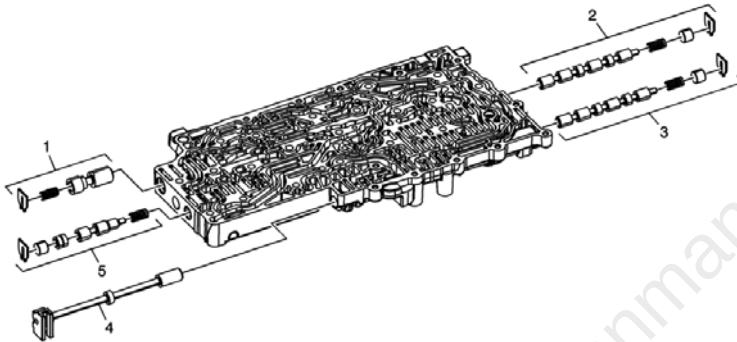
transmissionmanuals.com



- (2) Line
- (9) Center Lube
- (10) Regulator Apply
- (11) Compensator Feed
- (12) Actuator Feed Limit
- (13) Reverse
- (14) 3-5 Reverse Clutch
- (15) 3-5 Reverse Clutch Feedback
- (16) CSV2 Enable
- (17) Solenoid 1
- (18) Solenoid 2
- (19) CSV3 Enable
- (20) Drive
- (21) Drive 1–6
- (22) Drive Brake
- (23) 1-2-3-4 Clutch DFLT Feed
- (24) 1-2-3-4 Clutch DFLT
- (25) 1-2-3-4 Clutch Feed
- (26) 1-2-3-4 Clutch
- (27) 1-2-3-4 Clutch Feedback
- (28) CBR1/CBR Feed
- (29) CBR1
- (30) CBR
- (31) CBR1/4-5-6 Clutch Feed
- (32) CBR1 Feedback
- (33) 4-5-6 Clutch Feed
- (34) 4-5-6 Clutch
- (35) CSV2 Latch
- (36) Drive Brake
- (37) 3-5 Reverse Feed
- (38) PCS TCC
- (39) PCS 1-2-3-4 Clutch
- (40) PS4
- (41) PS1
- (42) PS3
- (43) PS5
- (44) 2-6 Clutch/1-2-3-4 CL Feed
- (45) PCS 3-5 Rev Clutch
- (46) 2-6 Clutch
- (47) PCS 2-6 Clutch
- (48) PCS CBR1/4-5-6 Clutch
- (49) PSC Line
- (50) Exhaust BF
- (51) Exhaust
- (52) Empty
- (54) 3-5 Clutch Reverse Feed

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



Control Valve Lower Body Assembly Cleaning and Inspection

Callout

Component Name

Warning: Valve springs can be tightly compressed. Use care when removing retainers and plugs. Personal injury could result.

Caution: After cleaning the transmission components, allow to air dry. Do not use cloth or paper towels in order to dry any transmission components. Lint from the towels can cause component failure.

Caution: Do not reuse cleaning solvents. Previously used solvents may deposit sediment which may damage the component.

Preliminary Procedure

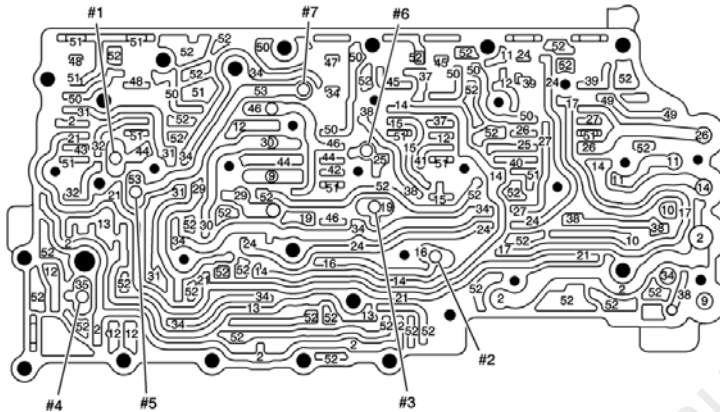
Clean and inspect all valve components and the valve body. The control valve lower body is replaceable only as an assembly.

- | | |
|---|--|
| 1 | Clutch Piston Dam Feed Regulator Valve Train |
| 2 | Clutch Select Solenoid Valve 3 Train |
| 3 | Clutch Select Solenoid Valve 2 Train |
| 4 | Manual Valve |
| 5 | TCC Regulator Apply Valve Train |

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

[Control Valve Upper Body Assembly – Bottom Channel Plate Side](#)



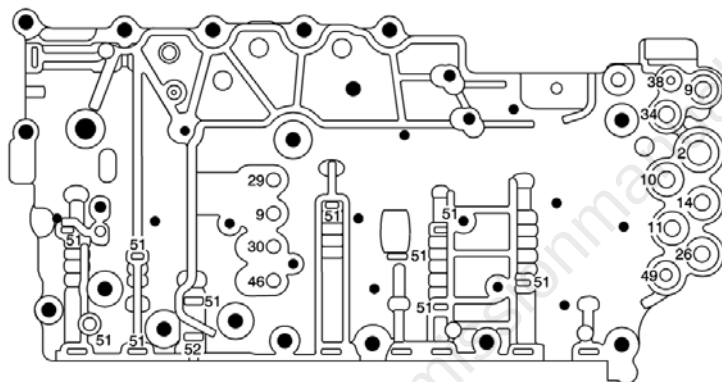
- (2) Line
- (9) Center Lube
- (10) Regulator Apply
- (11) Compensator Feed
- (12) Actuator Feed Limit
- (13) Reverse
- (14) 3-5 Reverse Clutch
- (15) 3-5 Reverse Clutch Feedback
- (16) CSV2 Enable
- (17) Solenoid 1
- (19) CSV3 Enable
- (21) Drive 1-6
- (24) 1-2-3-4 Clutch DFLT
- (25) 1-2-3-4 Clutch Feed
- (26) 1-2-3-4 Clutch
- (27) 1-2-3-4 Clutch Feedback
- (29) CBR1
- (30) CBR
- (31) CBR1/4-5-6 Clutch Feed
- (32) CBR1 Feedback
- (34) 4-5-6 Clutch
- (35) CSV2 Latch
- (37) 3-5 Reverse Feed
- (38) PCS TCC
- (39) PCS 1-2-3-4 Clutch
- (40) PS4
- (41) PS1
- (42) PS3
- (43) PS5
- (44) 2-6 Clutch/1-2-3-4CL Feed
- (45) PCS 3-5 Rev Clutch
- (46) 2-6 Clutch
- (47) PCS 2-6 Clutch
- (48) PCS CBR1/4-5-6 Clutch
- (49) PCS Line
- (50) Exhaust BF
- (51) Exhaust
- (52) Empty
- (53) 3-5 Rear Feed

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

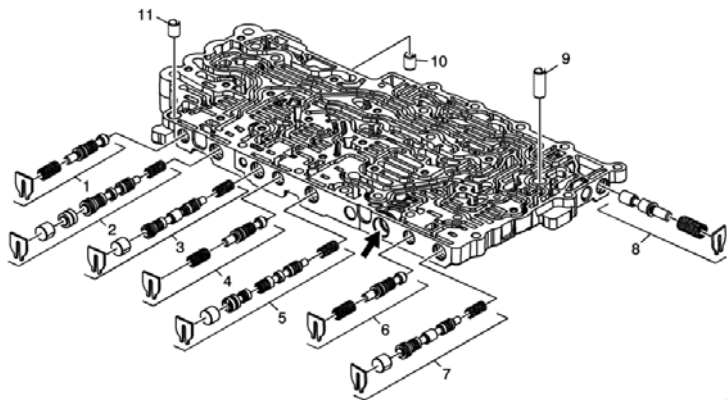
[Control Valve Upper Body Assembly – Case Side](#)



- (2) Line
- (9) Center Lube
- (10) Regulator Apply
- (11) Compensator Feed
- (14) 3-5 Reverse Clutch
- (26) 1-2-3-4 Clutch
- (29) CBR1
- (30) CBR
- (34) 4-5-6 Clutch
- (38) PCS TCC
- (46) 2-6 Clutch
- (49) PCS Line
- (51) Exhaust
- (52) Empty

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



Control Valve Upper Body Assembly Cleaning and Inspection

Callout	Component Name
---------	----------------

Warning: Valve springs can be tightly compressed. Use care when removing retainers and plugs. Personal injury could result.

Caution: Do not remove the exhaust backfill pressure relief retainer, spring, or ball valve (refer to arrow in above illustration for location). The retainer is set to a precise depth. Replacement of this retainer could cause internal transmission damage.

Caution: After cleaning the transmission components, allow to air dry. Do not use cloth or paper towels in order to dry any transmission components. Lint from the towels can cause component failure.

Caution: Do not reuse cleaning solvents. Previously used solvents may deposit sediment which may damage the component.

Preliminary Procedure

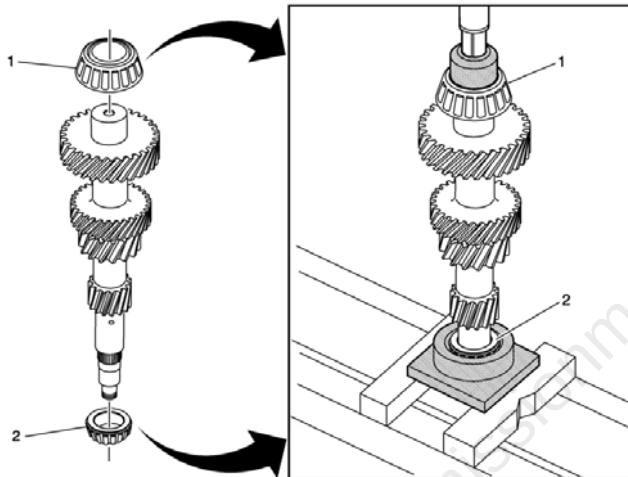
Clean and inspect all valve components, locating pins, and the valve body. The control valve upper body is replaceable only as an assembly.

- | | |
|----|--|
| 1 | Clutch Boost Valve Train |
| 2 | 1–2–3–4 Clutch Regulator Valve Train |
| 3 | 3–5 Reverse Clutch Regulator Valve Train |
| 4 | Clutch Boost Valve Train |
| 5 | 2–6 Clutch Regulator Valve Train |
| 6 | Clutch Boost Valve Train |
| 7 | CBR1/4–5–6 Clutch Regulator Valve Train |
| 8 | Actuator Feed Limit Valve Train |
| 9 | Control Valve Body Locator Pin |
| 10 | Control Valve Body Locator Pin |
| 11 | Control Valve Body Locator Pin |

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Counter Gear Shaft Assembly

Callout

Component Name

Counter Gear Bearing Cone Assembly

Procedure

1. Using DT 50857 countershaft bearing cone installer, place the countershaft in the press, using the inner races of those two bearings as a base.
2. Press both bearings until they rest against the shaft stops.

Special Tools

DT 50857 Countershaft Bearing Cone Installer

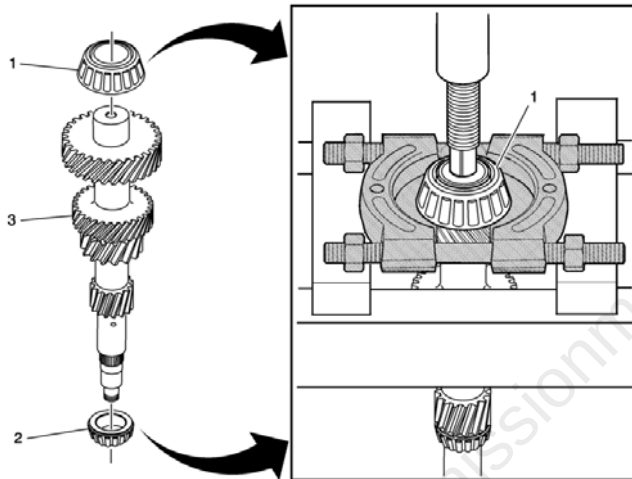
For equivalent regional tools, refer to Special Tools.

2. Counter Gear Rear Bearing Cone Assembly

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Counter Gear Shaft Disassemble

Callout

Component Name

Counter Gear Bearing Cone Assembly

Special Tools

1

DT 22912-B Split Plate Bearing Puller

For equivalent regional tools, refer to Special Tools.

Counter Gear Rear Bearing Cone Assembly

Special Tools

2

DT 22912-B Split Plate Bearing Puller

For equivalent regional tools, refer to Special Tools.

3

Counter Gear Shaft

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Throttle Positions

Engine Braking

A condition where the engine is used to slow the vehicle by manually downshifting during a zero throttle coastdown.

Full Throttle Detent Downshift

A quick apply of the accelerator pedal to its full travel, forcing a downshift.

Heavy Throttle

Approximately 3/4 of accelerator pedal travel, 75 percent throttle position.

Light Throttle

Approximately 1/4 of accelerator pedal travel, 25 percent throttle position.

Medium Throttle

Approximately 1/2 of accelerator pedal travel, 50 percent throttle position.

Minimum Throttle

The least amount of throttle opening required for an upshift.

Wide Open Throttle (WOT)

Full travel of the accelerator pedal, 100 percent throttle position.

Zero Throttle Coastdown

A full release of the accelerator pedal while the vehicle is in motion and in drive range.

Shift Condition Definitions

Bump

A sudden and forceful apply of a clutch or a band.

Chuggle

A bucking or jerking. This condition may be most noticeable when the converter clutch is engaged. It is similar to the feel of towing a trailer.

Delayed

A condition where a shift is expected but does not occur for a period of time. This could be described as a clutch or band engagement that does not occur as quickly as expected during a part throttle or wide open throttle apply of the accelerator, or during manual downshifting to a lower range. This term is also defined as LATE or EXTENDED.

Double Bump – Double Feel

Two sudden and forceful applies of a clutch or a band.

Early

A condition where the shift occurs before the car has reached proper speed. This condition tends to labor the engine after the upshift.

End Bump

A firmer feel at the end of a shift than at the start of the shift. This is also defined as END FEEL or SLIP BUMP.

Firm

A noticeably quick apply of a clutch or band that is considered normal with a medium to heavy throttle. This apply should not be confused with HARSH or ROUGH.

Flare

A quick increase in engine RPM along with a momentary loss of torque. This most generally occurs during a shift. This condition is also defined as SLIPPING.

Harsh – Rough

A more noticeable apply of a clutch or band than FIRM. This condition is considered undesirable at any throttle position.

Hunting

A repeating quick series of upshifts and downshifts that causes a noticeable change in engine RPM, such as a 4–3–4 shift pattern. This condition is also defined as BUSYNESS.

Initial Feel

A distinctly firmer feel at the start of a shift than at the finish of the shift.

Late

A shift that occurs when the engine RPM is higher than normal for a given amount of throttle.

Shudder

A repeating jerking condition similar to CHUGGLE but more severe and rapid. This condition may be most noticeable during certain ranges of vehicle speed.

Slipping

A noticeable increase in engine RPM without a vehicle speed increase. A slip usually occurs during or after initial clutch or band apply.

Soft

A slow, almost unnoticeable clutch or band apply with very little shift feel.

Surge

A repeating engine related condition of acceleration and deceleration that is less intense than CHUGGLE.

Tie-Up

A condition where two opposing clutch and/or bands are attempting to apply at the same time causing the engine to labor with a noticeable loss of engine RPM.

[Noise Conditions](#)

Drive Link Noise

A whine or growl that increases or fades with vehicle speed, and is most noticeable under a light throttle acceleration. It may also be noticeable in PARK or NEUTRAL operating ranges with the vehicle stationary.

Final Drive Noise

A hum related to vehicle speed which is most noticeable under a light throttle acceleration.

Planetary Gear Noise

A whine related to vehicle speed, which is most noticeable in FIRST gear, SECOND gear, FOURTH gear or REVERSE. The condition may become less noticeable, or go away, after an upshift.

Pump Noise

A high pitched whine that increases in intensity with engine RPM. This condition may also be noticeable in all operating ranges with the vehicle stationary or moving.

Torque Converter Noise

A whine usually noticed when a vehicle is stopped, and the transmission is in DRIVE or REVERSE. The noise will increase with engine RPM.

[Driver Shift Control](#)

Driver shift control (DSC) allows the driver to change gears similar to a manual transmission.

[Transmission Abbreviations](#)

A/C

Air Conditioning

AC

Alternating Current

AT

Automatic Transmission

CCDIC

Climate Control Driver Information Center

DC

Direct Current

DIC

Driver Information Center

DLC

Diagnostic Link Connector

DMM

Digital Multimeter

DSC:

Driver Shift Control

DTC

Diagnostic Trouble Code

EBTCM

Electronic Brake/Traction Control Module

ECCC

Electronically-Controlled Capacity Clutch

ECT

Engine Coolant Temperature

EMI

Electromagnetic Interference

IAT

Intake Air Temperature

IGN

Ignition

IMS

Internal Mode Switch

ISS

Input Speed Sensor

MAP

Manifold Absolute Pressure

MIL

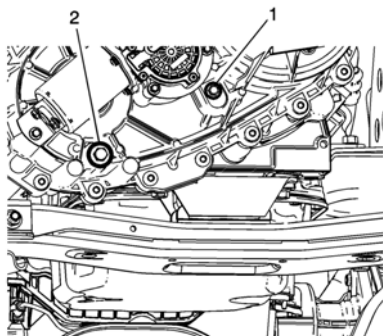
	Malfunction Indicator Lamp
NC	
	Normally Closed
NO	
	Normally Open
OBD	
	On Board Diagnostic
OSS	
	Output Speed Sensor
PC	
	Pressure Control
PCM	
	Powertrain Control Module
PCS	
	Pressure Control Solenoid
PS	
	Pressure Switch
PWM	
	Pulse Width Modulation
RPM	
	Revolutions Per Minute
SS	
	Shift Solenoid
STL	
	Service Transmission Lamp
TAP	
	Transmission Adaptive Pressure
TCC	
	Torque Converter Clutch
TFP	
	Transmission Fluid Pressure
TFT	
	Transmission Fluid Temperature
TP	
	Throttle Position
VSS	
	Vehicle Speed Sensor
WOT	
	Wide Open Throttle

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

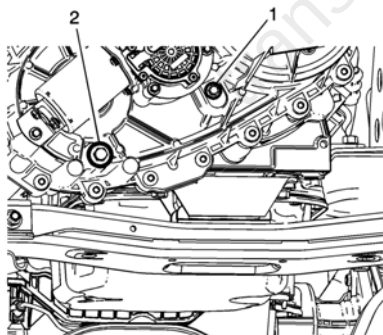
[Removal Procedure](#)

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



2. Remove the drain plug (2).

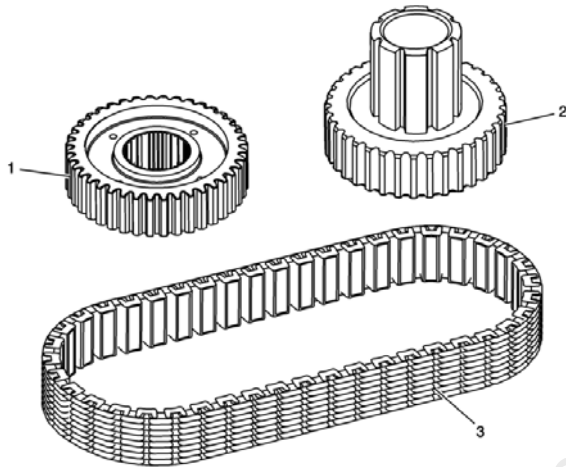
[Installation Procedure](#)



1. Install the drain plug (2).
2. Lower the vehicle.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



Drive Chain, Drive Sprocket, and Driven Sprocket Cleaning and Inspection

Callout

Preliminary Procedure

- Inspect all components or sub-components and perform any repair procedure necessary to fix the damage. If the damage cannot be repaired, replace the component or sub-component as indicated.
- Replace any components if damage is found in this procedure. The sprockets must be replaced as a pair.
- Clean all components in cleaning solvent and air dry.

Component Name

Transfer Case Front Output Shaft Driven Sprocket

Note:

1

- Inspect for chipped teeth, excessively worn gear surfaces, and debris embedded in the root of the teeth.
- Witness marks at the location of the chain are to be considered normal.

Transfer Case Front Output Shaft Drive Sprocket

Note:

2

- Inspect for chipped teeth, excessively worn gear surfaces, and debris embedded in the root of the teeth.
- Witness marks at the location of the chain are to be considered normal.
- Inspect for wear to the drive sprocket bushings.

Transfer Case Front Output Shaft Drive Chain Assembly

3

Note: Inspect for loose link pins, binding or stiff links, debris embedded in the links, or worn teeth surfaces.

2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**

Fuel Delivery: | **Fuel:**

As the vehicle speed increases, the transmission control module (TCM) receives input signals from the automatic transmission input and output speed sensors, the throttle position sensor and other vehicle sensors to determine the precise moment to command OFF the normally-high C35R pressure control solenoid 2. At the same time the normally-low CBR1/C456 pressure control solenoid 3 is commanded ON to regulate 4-5-6 clutch apply.

[4-5-6 Clutch Applies](#)

CBR1/C456 Pressure Control Solenoid 3

The CBR1/C456 pressure control solenoid 3 (PCS) is commanded ON allowing actuator feed fluid to enter the PCS CBR1/456 clutch fluid circuit. PCS CBR1/456 clutch fluid is routed through orifice #39 to the CBR1/C456 clutch regulator valve and, through orifice #31 to the CBR1/C456 clutch boost valve.

CBR1/C456 Clutch Regulator Valve

PCS CBR1/456 clutch fluid moves the CBR1/C456 clutch regulator valve against CBR1/C456 clutch regulator valve spring force to allow line fluid to pass through the valve and enter the CBR1/456 clutch feed circuit. CBR1/456 clutch feed is then routed to the 4-5-6 clutch boost valve and clutch select valve 2.

4-5-6 Clutch Boost Valve

PCS CBR1/456 clutch fluid pressure acts on a differential area moving the CBR1/456 clutch boost valve against the CBR1/456 clutch boost valve spring. CBR1/456 clutch fluid passes through the valve and enters the CBR1/456 clutch feedback circuit. As PCS CBR1/456 clutch fluid pressure is increased to a given value, the CBR1/456 clutch boost valve opens the CBR1/456 clutch feedback circuit to exhaust. This results in the CBR1/456 clutch regulator valve moving to the full feed position, sending full line pressure to the clutch.

Clutch Select Valve 2

CBR1/456 clutch feed fluid passes through the clutch select valve 2 and enters the 456 clutch feed circuit. The 456 clutch feed fluid is routed to the clutch select valve 3 where it passes through the valve and enters the 456 clutch fluid circuit. The 456 clutch fluid is routed to the 4-5-6 clutch, the 2-6 clutch regulator gain valve and to the #3 ball check valve. The 456 clutch fluid seats the #3 ball check valve against solenoid 2 fluid passage and directed into the CSV3 enable fluid circuit where it is routed through orifice #20 and to clutch select valve 3.

4-5-6 Clutch

The 456 clutch fluid enters the 4-5-6 clutch housing to move the piston against spring force, combined with force from the compensator to apply the 4-5-6 clutch plates.

[3-5 Reverse Clutch Releases](#)

C35R Pressure Control Solenoid 2

The C35R pressure control solenoid 2 is commanded OFF, allowing PCS 35 reverse clutch fluid from the 3-5 reverse clutch boost valve and the 3-5 reverse clutch regulator valve to exhaust through the solenoid.

3-5 Reverse Clutch Boost Valve

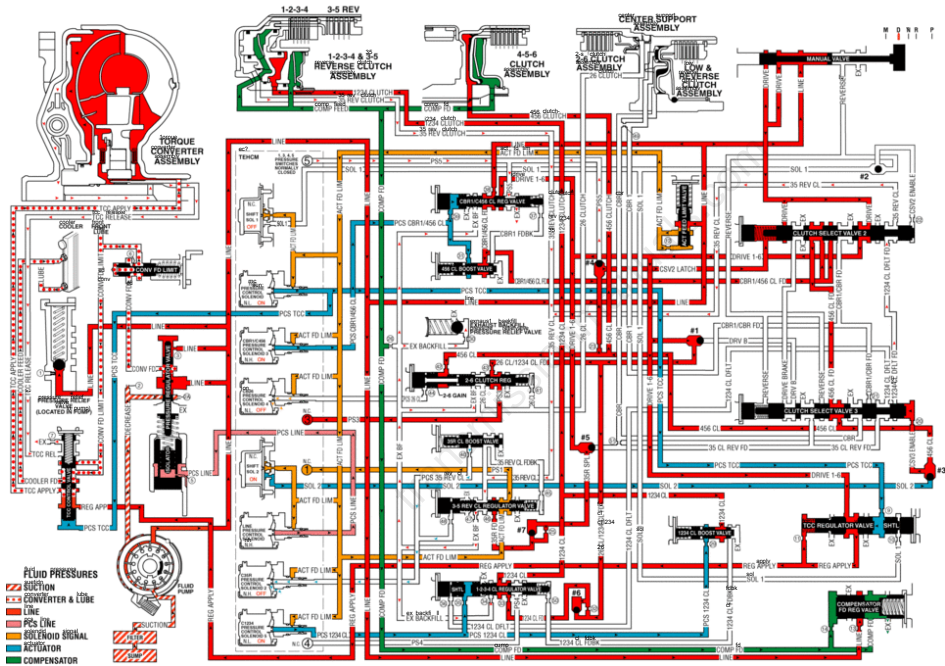
The 3-5 reverse boost valve spring force moves the valve to allow 35 reverse clutch feedback fluid from the 3-5 reverse clutch regulator valve to enter the 35 reverse clutch fluid circuit and exhaust.

3-5 Reverse Clutch Regulator Valve

The 3-5 reverse clutch regulator valve spring force moves the valve to allow 35 reverse clutch fluid from the 3-5 reverse clutch to pass through the valve and enter the exhaust backfill fluid circuit. The 35 reverse clutch fluid then enters the exhaust backfill fluid circuit and is routed through orifice #30 to the exhaust backfill pressure relief valve where excess pressure is exhausted.

3-5 Reverse Clutch

The 3-5 reverse clutch spring force combined with force from the compensator move the 3-5 reverse clutch piston to release the 3-5 clutch plates and forces 35 reverse clutch fluid to exhaust from 1- 2-3-4 and 3-5 reverse clutch housing. The 35 reverse clutch fluid is then routed to the 3-5 reverse clutch regulator valve and exhausted.



2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

If the transmission is in 4th, 5th or 6th gear during a transmission electrical component failure, the transmission will default to 5th gear. All solenoids will default to their normal state. If the torque converter clutch was applied, it will release. The transmission will stay in 5th gear default range until the ignition has been turned off or transmission shifted to reverse. When the vehicle is restarted, and shifted back into drive, the transmission will then operate in the 3rd gear default range. This default action will enable the vehicle to be safely driven to a service center.

[3-5 Reverse Clutch Applies](#)

C35R Pressure Control Solenoid 2

The C35R pressure control solenoid 2 defaults to ON, allowing actuator feed fluid to enter the pressure control solenoid (PCS) 35 reverse clutch fluid circuit. PCS 35 reverse clutch fluid is routed through orifice #48 and then to the 3-5 reverse clutch regulator valve. PCS 35 reverse clutch fluid is also routed through orifice #40 and then to the 3-5 reverse clutch boost valve.

3-5 Reverse Clutch Boost Valve

PCS 3-5 reverse clutch fluid pressure acts on a differential area moving the PCS 3-5 reverse clutch boost valve against the 3-5 reverse clutch boost valve spring. The 3-5 reverse clutch fluid passes through the valve and enters the 3-5 reverse clutch feedback circuit. As PCS 3-5 reverse clutch fluid pressure is increased to a given value, the 3-5 reverse clutch boost valve opens the 3-5 reverse clutch feedback circuit to exhaust. This results in the 3-5 reverse clutch regulator valve moving to the full feed position sending full 3-5 reverse clutch feed pressure (full line pressure) to the clutch.

3-5 Reverse Clutch Regulator Valve

PCS 3-5 reverse clutch fluid moves the 3-5 reverse clutch regulator valve against 3-5 reverse clutch regulator valve spring force and 3-5 reverse clutch feedback fluid. This allows 3-5 reverse feed to pass through the valve and enter the 3-5 reverse clutch circuit. The 3-5 reverse clutch fluid is then routed to the 3-5 reverse clutch, the 3-5 reverse boost valve and the clutch select valve 2. When the 3-5 reverse clutch regulator valve is in this position, PS1 fluid from the pressure switch 1 exhausts through the valve, allowing the switch to close.

3-5 Reverse Clutch

The 3-5 reverse clutch fluid enters the 1-2-3-4 and 3-5 reverse clutch housing to move the piston against spring force combined with force from the compensator to apply the 3-5 reverse clutch plates.

Clutch Select Valve 3

Once the clutch select valve 3 is moved to the ON position in 4th gear, it will remain in this position throughout the 5th gear default range, until the ignition has been turned OFF. When the ignition is OFF, fluid will exhaust from the valve, thus when the vehicle is restarted, the transmission will then be in the 3rd gear default range.

[1-2-3-4 Clutch Releases or 2-6 Clutch Releases](#)

C1234 Pressure Control Solenoid 5

If the transmission was in 4th gear when an electrical condition commands a protection mode, the C1234 pressure control solenoid 5 defaults to the OFF position, allowing PCS 1234 clutch fluid from the 1-2-3-4 clutch, the 1-2-3-4 clutch regulator valve and 1- 2-3-4 clutch boost valve to exhaust.

2-6 CB26 Pressure Control Solenoid 4

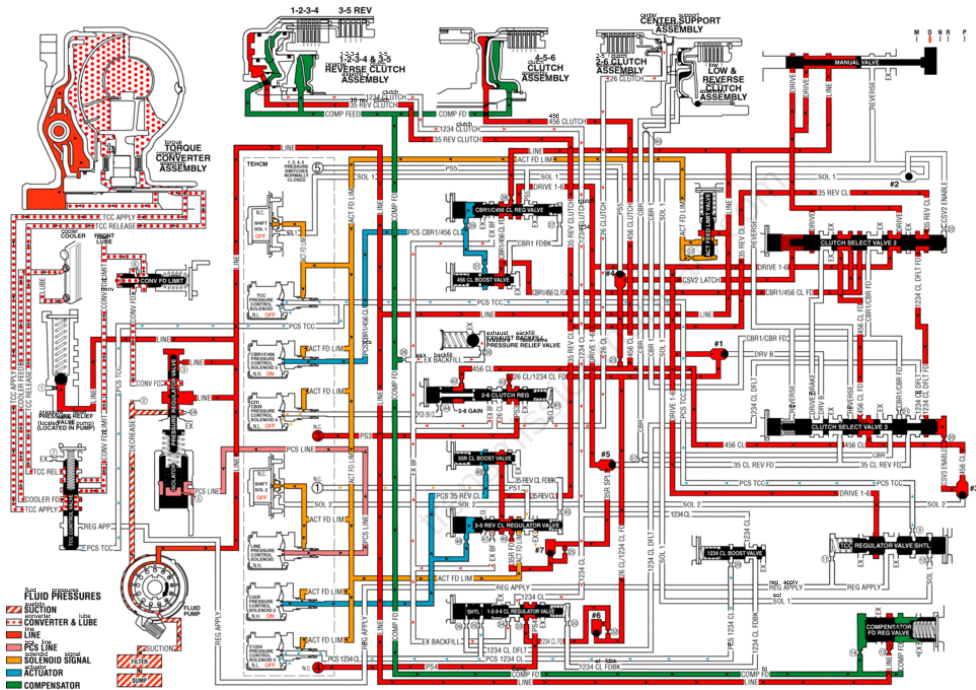
If the transmission was in 6th gear when an electrical condition commands a protection mode, the CB26 pressure control solenoid 4 defaults to the OFF position, allowing PCS 26 clutch fluid from the 2-6 clutch regulator valve, and the 2-6 clutch to exhaust.

[Torque Converter Clutch Releases](#)

TCC Pressure Control Solenoid

The torque converter clutch (TCC) pressure control solenoid will default to it's normal state, OFF. PCS TCC fluid will exhaust from the TCC control valve, and spring force will shuttle the valve to the off position. TCC apply fluid will then be routed to the cooler, and TCC release fluid will be routed to the torque converter for complete TCC release.

[Drive Range, Fifth Gear Default](#)



2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

As the vehicle speed increases, the transmission control module (TCM) receives input signals from the automatic transmission input and output speed sensors, the throttle position sensor and other vehicle sensors to determine the precise moment to command ON the normally-high C35R pressure control solenoid 2. At the same time the normally-low C1234 pressure control solenoid 5 is commanded OFF.

[3-5 Reverse Clutch Applies](#)

C35R Pressure Control Solenoid 2

The C35R pressure control solenoid 2 is commanded ON, allowing actuator feed fluid to enter the PCS 35 reverse clutch fluid circuit. PCS 35 reverse clutch fluid is routed through orifice #48 and then to the 3-5 reverse clutch regulator valve. PCS 35 reverse clutch fluid is also routed through orifice #40 and then to the 3-5 reverse clutch boost valve.

3-5 Reverse Clutch Boost Valve

PCS 35 reverse clutch fluid pressure acts on a differential area moving the PCS 3-5 reverse clutch boost valve against the 3-5 reverse clutch boost valve spring. The 35 reverse clutch fluid passes through the valve and enters the 35 reverse clutch feedback circuit. As PCS 35 reverse clutch fluid pressure is increased to a given value, the 3-5 reverse clutch boost valve opens the 35 reverse clutch feedback circuit to exhaust. This results in the 3-5 reverse clutch regulator valve moving to the full feed position sending full 35 reverse clutch feed pressure (full line pressure) to the clutch.

3-5 Reverse Clutch Regulator Valve

PCS 35 reverse clutch fluid moves the 3-5 reverse clutch regulator valve against 3-5 reverse clutch regulator valve spring force and 35 reverse clutch feedback fluid. This allows 35 reverse feed to pass through the valve and enter the 35 reverse clutch circuit. The 35 reverse clutch fluid is then routed to the 3-5 reverse clutch, the 3-5 reverse boost valve and the clutch select valve 2. When the 3-5 reverse clutch regulator valve is in this position, PS1 fluid from the pressure switch 1 exhausts through the valve allowing the switch to close.

Clutch Select Valve 2

The 35 reverse clutch fluid passes through the clutch select valve 2 and enters the 1234 clutch default feed fluid circuit. The 1234 clutch default feed fluid is then routed to the clutch select valve 3.

3-5 Reverse Clutch

The 35 reverse clutch fluid enters the 1-2-3-4 and 3-5 reverse clutch housing to move the piston against spring force combined with force from the compensator to apply the 3-5 reverse clutch plates.

[1-2-3-4 Clutch Releases](#)

C1234 Pressure Control Solenoid 5

The C1234 pressure control solenoid 5 is commanded OFF, allowing PCS 1234 clutch fluid from the 1-2-3-4 clutch regulator valve and 1-2-3-4 clutch boost valve to exhaust.

1-2-3-4 Clutch Regulator Valve

The 1-2-3-4 clutch regulator valve spring force moves the valve to allow 1234 clutch feed fluid from the 1-2-3-4 clutch to pass through the valve and enter the exhaust backfill fluid circuit. The 1234 clutch fluid enters the exhaust backfill fluid circuit and is routed through orifice #30 to the exhaust backfill pressure relief valve where excess pressure is exhausted. Also, 1234 clutch regulator valve spring force moves the valve to allow 1234 clutch feed fluid to pass through the valve and enter the PS4 fluid circuit. PS4 fluid is then routed to pressure switch 4 and opens the normally-closed switch.

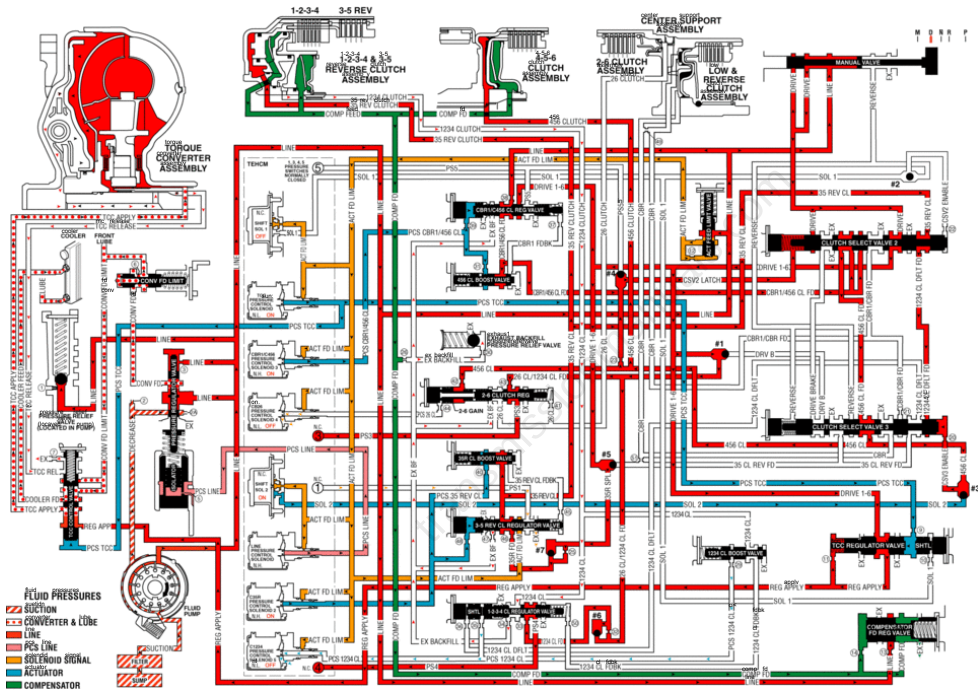
1-2-3-4 Clutch Boost Valve

The 1-2-3-4 clutch boost valve spring force moves the valve to allow 1234 clutch feedback fluid from the 1-2-3-4 clutch regulator valve to enter the 1234 clutch circuit and exhaust.

1-2-3-4 Clutch

The 1-2-3-4 clutch spring force combined with force from the compensator moves the 1-2-3-4 clutch piston to release the clutch plates and force 1234 clutch fluid from the 1-2-3-4 and 3-5 reverse clutch housing. The 1234 clutch fluid is routed through the 1-2-3-4 clutch regulator valve where it enters the exhaust backfill fluid circuit.

[Drive Range, Fifth Gear](#)



2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

transmissionmanuals.com



2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

As the vehicle speed increases, the transmission control module (TCM) receives input signals from the automatic transmission input and output speed sensors, throttle position sensor and other vehicle sensors to determine the precise moment to deenergize or "turn off" shift solenoid 1 and command OFF the normally-high CBR1/C456 pressure control solenoid 3.

Low & Reverse Clutch Releases

Shift Solenoid 1

When shift solenoid 1 is "turned OFF", CSV2 enable fluid from the clutch select valve 2 passes by the #2 ball check valve and enters the solenoid 1 fluid circuit. Solenoid 1 fluid from the #2 ball check valve and TCC regulator valve is then routed to the solenoid where it exhausts.

Clutch Select Valve 2

Clutch select valve 2 (CSV2) enable fluid is exhausted from the clutch select valve 2 and clutch select valve 2 spring force moves the valve to the released position. With clutch select valve 2 in the released position, drive fluid from the manual valve passes through the valve and enters the drive 1-6 fluid circuit. Drive 1-6 fluid then feeds all clutch regulator valves and the TCC regulator valve.

CBR1/C456 Pressure Control Solenoid 3

The CBR1/C456 pressure control solenoid 3 is commanded OFF allowing PCS CBR1/C456 fluid from the CBR1/C456 clutch regulator valve and 456 clutch boost valve to exhaust.

CBR1/C456 Clutch Regulator Valve

CBR1/C456 clutch regulator valve spring force moves the valve to exhaust the CBR1/456 clutch feed circuit and allow drive 1-6 fluid to enter the PS5 fluid circuit. PS5 fluid is then routed to the normally-closed pressure switch 5 and opens the switch. PS5 fluid is also routed to the #4 ball check valve and flows into the CSV2 latch fluid circuit.

#4 Ball Check Valve

PS5 fluid pressure seats the #4 ball check valve against the 456 clutch fluid circuit. PS5 fluid is then directed into the CSV2 latch fluid circuit and routed to the clutch select valve 2. CSV2 latch fluid combines with clutch select valve 2 spring force and holds the valve in this position during all 6 forward gear ranges.

#5 Ball Check Valve

Drive 1-6 fluid pressure seats the #5 ball check valve against the 35R clutch reverse feed fluid passage. Drive 1-6 fluid is then directed into the 35R supply fluid circuit which is routed to the #7 ball check valve and orifice #25.

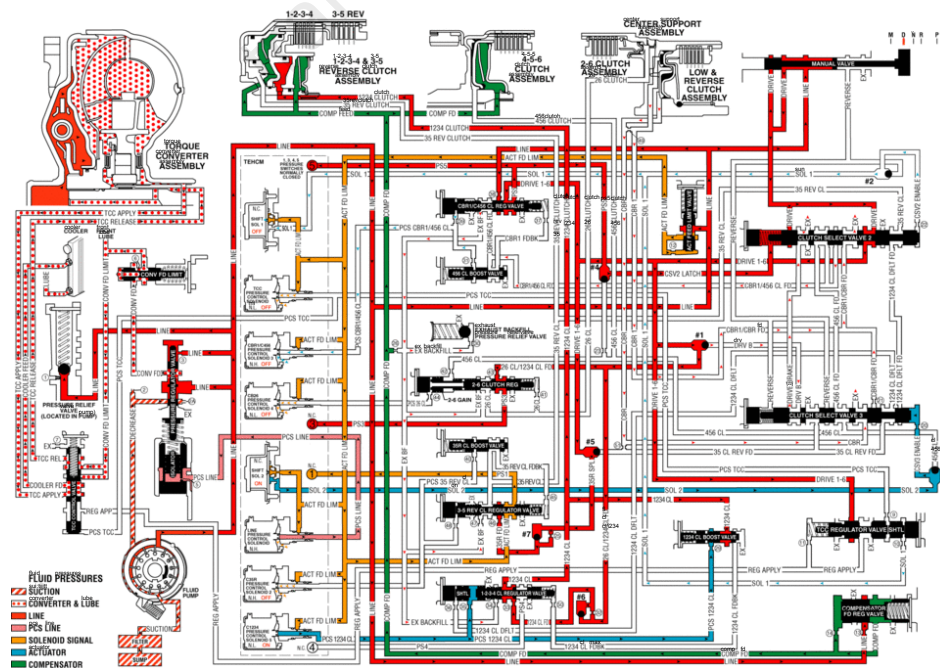
#7 Ball Check Valve

The 35R supply fluid seats the #7 ball check valve against the 35R feed fluid passage to force 35R supply fluid through orifice #25 before entering the 35R feed circuit. The 35R feed fluid is then routed to the 3-5 reverse clutch regulator valve.

Low and Reverse Clutch

Low and reverse clutch spring force moves the low and reverse clutch piston which forces clutch braking (CBR) and CBR1 fluid out of the center support. CBR fluid is routed to the clutch select valve 3 where it exhausts. CBR1 fluid is routed to the clutch select valve 2 where it exhausts. The low and reverse clutch is in the released position.

Drive Range, First Gear



2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

As the vehicle speed increases, the transmission control module (TCM) receives input signals from the automatic transmission input and output speed sensors, the throttle position sensor and other vehicle sensors to determine the precise moment to command ON the normally-low pressure control solenoid 4.

Second Clutch Applies

CB26 Pressure Control Solenoid 4

The CB26 pressure control solenoid 4 is commanded ON, allowing actuator feed limit fluid to enter the pressure control solenoid (PCS) 26 clutch fluid circuit. PCS 26 clutch fluid is then routed through orifice #44 to the 2-6 clutch regulator gain valve.

2-6 Clutch Regulator Gain Valve

The 2-6 clutch regulator gain valve allows the gain (valve input to output pressure magnification factor) of the 2-6 clutch regulator valve to be different for a 1-2 shift verses a 5-6 shift. For a 1-2 shift, PCS 26 clutch fluid pressure acts on a differential area resulting in the "high gain" pressure output.

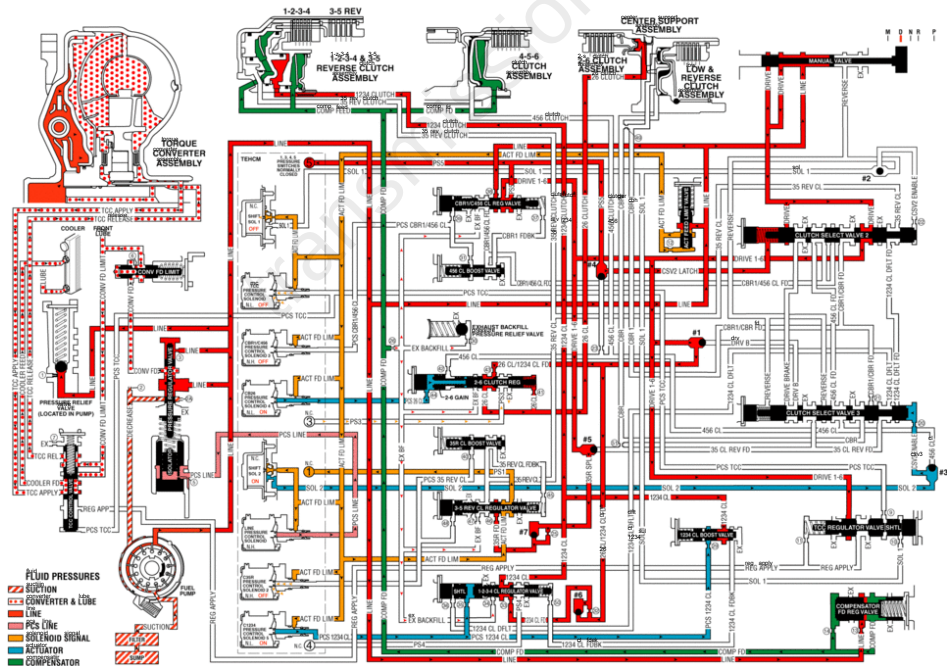
2-6 Clutch Regulator Valve

PCS 26 clutch fluid moves the 2-6 clutch regulator / gain valve assembly against the 2-6 clutch regulator valve spring force to allow 26 clutch/1234 clutch feed fluid to pass through the valve. The 26 clutch/1234 clutch feed fluid is routed into the 26 clutch fluid circuit where it passes through orifice #41 and then to the spring end of the 2-6 clutch regulator valve, and to the 2-6 clutch within the center support.

2-6 Clutch

The 26 clutch fluid from the 2-6 clutch regulator valve is routed through the center support and to the 2-6 clutch piston assembly. The 26 clutch fluid pressure moves the piston against 2-6 clutch spring force to apply the 2-6 clutch plates.

Drive Range, Second Gear



2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**

Fuel Delivery: | **Fuel:**

As the vehicle speed increases, the transmission control module (TCM) receives input signals from the automatic transmission input and output speed sensors, the throttle position sensor and other vehicle sensors to determine the precise moment to command ON the normally-low CB26 pressure control solenoid 4 (PCS). At the same time the normally-high C35R pressure control solenoid 2 is commanded OFF.

2-6 Clutch Applies

CB26 Pressure Control Solenoid 4

The CB26 pressure control solenoid 4 is commanded ON, allowing actuator feed fluid to enter the PCS 26 clutch fluid circuit. PCS 26 fluid is routed through orifice #44 and then to the 2-6 clutch regulator gain valve.

2-6 Clutch Regulator Gain Valve

The 2-6 clutch regulator gain valve allows the gain (valve input to output pressure magnification factor) of the 2-6 clutch regulator valve to be different for a 1-2 shift verses a 5-6 shift. For a 5-6 shift PCS 26 clutch fluid pressure passes through the hollow valve and only acts on the 26 regulator valve area, resulting in the "low gain" pressure output.

2-6 Clutch Regulator Valve

PCS 26 clutch fluid moves the 2-6 clutch regulator/gain valve assembly against the 2-6 clutch regulator valve spring force to allow 26 clutch/1234 clutch feed fluid to pass through the valve. The 26 clutch/1234 clutch feed fluid is routed into the 26 clutch fluid circuit where it passes through orifice #41 and then to the spring end of the 2-6 clutch regulator valve, and to the 2-6 clutch within the center support.

2-6 Clutch

The 26 clutch fluid from the 2-6 clutch regulator valve is routed through the center support and to the 2-6 clutch piston assembly. The 26 clutch fluid pressure moves the piston against 2-6 clutch spring force to apply the 2-6 clutch plates.

3-5 Clutch Releases

C35R Pressure Control Solenoid 2

The C35R pressure control solenoid 2 is commanded OFF, allowing PCS 35 reverse clutch fluid from the 3-5 reverse clutch boost valve and the 3-5 reverse clutch regulator valve to exhaust through the solenoid.

3-5 Reverse Clutch Boost Valve

The 3-5 reverse boost valve spring force moves the valve to allow 35 reverse clutch feedback fluid from the 3-5 reverse clutch regulator valve to enter the 35 reverse clutch circuit and exhaust.

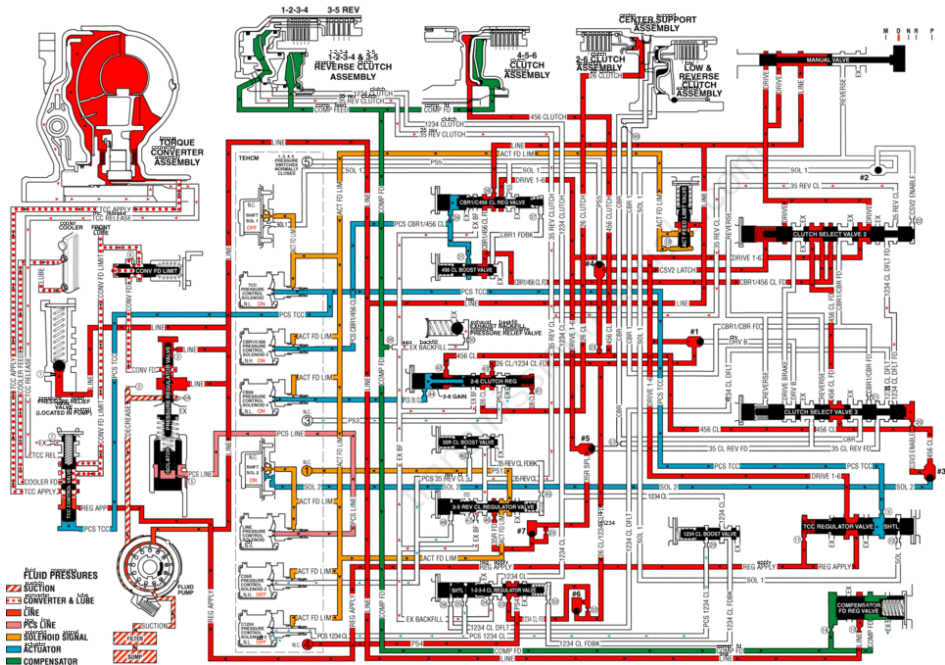
3-5 Reverse Clutch Regulator Valve

The 3-5 reverse clutch regulator valve spring force moves the valve to allow 35 reverse clutch fluid from the 3-5 reverse clutch to pass through the valve and enter the exhaust backfill fluid circuit. The 35 reverse clutch fluid then enters the exhaust backfill fluid circuit and is routed through orifice #30 to the exhaust backfill pressure relief valve where excess pressure is exhausted.

3-5 Reverse Clutch

The 3-5 reverse clutch spring force combined with force from the compensator move the 3-5 reverse clutch piston to release the 3-5 clutch plates and forces 35 reverse clutch fluid to exhaust from 1-2-3-4 and 3-5 reverse clutch housing. The 35 reverse clutch fluid is then routed to the 3-5 reverse clutch regulator valve where it enters the exhaust backfill circuit.

Drive Range, Sixth Gear



2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

If the transmission is in 1st, 2nd or 3rd gear during a transmission electrical component failure, the transmission will default to 3rd gear. All solenoids will default to their normal state. If the torque converter clutch was applied, it will release. This default action will enable the vehicle to be safely driven to a service center.

[1-2-3-4 Clutch Stays Applied](#)

Shift Solenoid 2

Shift solenoid 2 defaults to its normally-closed state (OFF), and SOL 2 fluid exhausts through the solenoid.

Clutch Select Valve 3

Solenoid 2 fluid pressure no longer holds the clutch select valve 3 open. When the valve moves back to the closed position, it opens the 1234 clutch default fluid circuit, and 1234 default fluid is routed to the 1-2-3-4 clutch regulator valve.

1-2-3-4 Clutch Regulator Valve

With the absence of PCS 1234 clutch fluid, due to the default state of the C1234 pressure control solenoid 5, the 1-2-3-4 regulator valve would close from spring force. However, the 1234 clutch default fluid enters behind the 1-2-3-4 regulator shuttle valve and keeps the valve in the open position.

1-2-3-4 Clutch

With the 1-2-3-4 clutch regulator valve still held in the open position, the 1-2-3-4 clutch will stay applied.

[3-5 Reverse Clutch Applied or Applies](#)

C35R Pressure Control Solenoid 2

The normal state for the C35R pressure control solenoid 2 is ON, therefore PCS 35 reverse clutch fluid will still be routed to the 3-5 reverse clutch regulator valve and the 3-5 reverse clutch boost valve.

3-5 Reverse Clutch Regulator Valve

PCS 3-5 reverse clutch fluid moves the 3-5 reverse clutch regulator valve against 3-5 reverse clutch regulator valve spring force and 3-5 reverse clutch feedback fluid. This allows 3-5 reverse feed to pass through the valve and enter the 3-5 reverse clutch circuit. 3-5 reverse clutch fluid is then routed to the 3-5 reverse clutch, the 3-5 reverse boost valve and the clutch select valve 2. When the 3-5 reverse clutch regulator valve is in this position, PS1 fluid from the pressure switch 1 exhausts through the valve, allowing the switch to close.

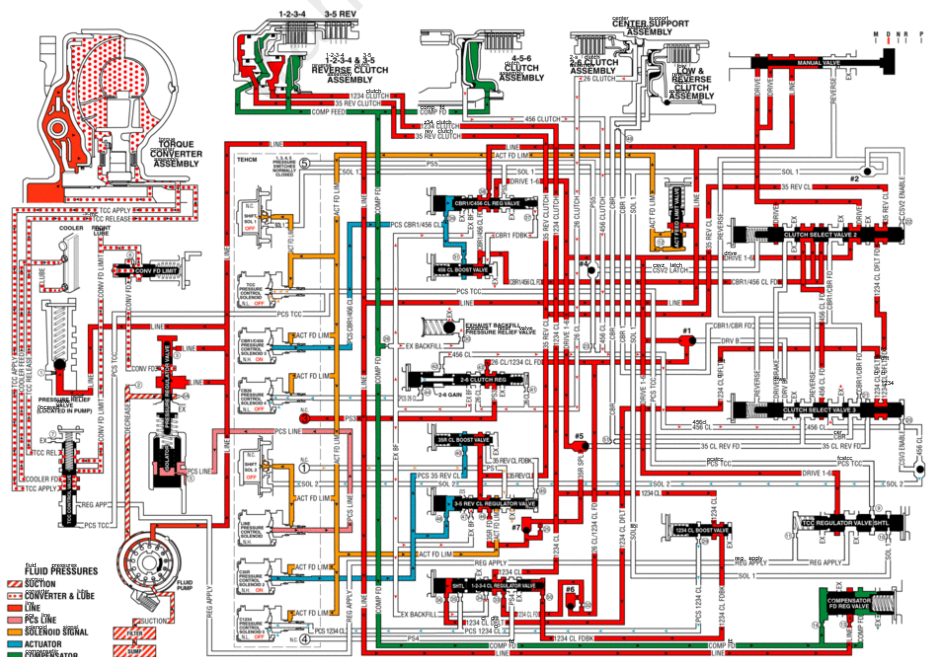
3-5 Reverse Clutch Boost Valve

PCS 3-5 reverse clutch fluid pressure acts on a differential area moving the 3-5 reverse clutch boost valve against the 3-5 reverse clutch boost valve spring. The 3-5 reverse clutch fluid passes through the valve and enters the 3-5 reverse clutch feedback circuit. As PCS 3-5 reverse clutch fluid pressure is increased to a given value, the 3-5 reverse clutch boost valve opens the 3-5 reverse clutch feedback circuit to exhaust. This results in the 3-5 reverse clutch regulator valve moving to the full feed position sending full 3-5 reverse clutch feed pressure (full line pressure) to the clutch.

3-5 Reverse Clutch

The 3-5 reverse clutch fluid enters the 1-2-3-4 and 3-5 reverse clutch housing to move the piston against spring force combined with force from the compensator to apply the 3-5 reverse clutch plates.

[Drive Range, Third Gear Default](#)



As the vehicle speed increases, the transmission control module (TCM) receives input signals from the automatic transmission input and output speed sensors, the throttle position sensor and other vehicle sensors to determine the precise moment to command OFF the normally-low CB26 pressure control solenoid 4. At the same time the C35R pressure control solenoid 2 is also commanded ON to regulate 3-5 clutch apply.

3-5 Reverse Clutch Applies

C35R Pressure Control Solenoid 2

The C35R pressure control solenoid 2 is commanded ON allowing actuator feed fluid to enter the pressure control solenoid (PCS) 35 reverse clutch fluid circuit. PCS 35 reverse clutch fluid is routed through orifice #48 and then to the 3-5 reverse clutch regulator valve. PCS 35 reverse clutch fluid is also routed through orifice #40 and then to the 3-5 reverse clutch boost valve.

3-5 Reverse Clutch Boost Valve

PCS 35 reverse clutch fluid pressure acts on a differential area moving the 3-5 reverse clutch boost valve against the 3-5 reverse clutch boost valve spring. The 35 reverse clutch fluid passes through the valve and enters the 35 reverse clutch feedback circuit. As PCS 35 reverse clutch fluid pressure is increased to a given value, the 3-5 reverse clutch boost valve opens the 35 reverse clutch feedback circuit to exhaust. This results in the 3-5 reverse clutch regulator valve moving to the full feed position sending full 35 reverse clutch feed pressure (full line pressure) to the clutch.

3-5 Reverse Clutch Regulator Valve

PCS 35 reverse clutch fluid moves the 3-5 reverse clutch regulator valve against 3-5 reverse clutch regulator valve spring force and 35 reverse clutch feedback fluid. This allows 35 reverse feed to pass through the valve and enter the 35 reverse clutch circuit. The 35 reverse clutch fluid is then routed to the 3-5 reverse clutch, the 3-5 reverse boost valve and the clutch select valve 2. When the 3-5 reverse clutch regulator valve is in this position, PS1 fluid from the pressure switch 1 exhausts through the valve allowing the switch to close.

3-5 Reverse Clutch

The 35 reverse clutch fluid enters the 1-2-3-4 and 3-5 reverse clutch housing to move the piston against spring force combined with force from the compensator to apply the 3-5 reverse clutch plates.

2-6 Clutch Releases

CB26 Pressure Control Solenoid 4

The CB26 pressure control solenoid 4 is commanded OFF allowing PCS 26 clutch fluid from the 2-6 clutch regulator valve to exhaust. The 26 clutch/1234 clutch feed fluid at the 2-6 clutch regulator valve passes through the valve and enters the PS3 fluid circuit. PS3 fluid is then routed to pressure switch 3 and opens the normally-closed switch.

2-6 Clutch Regulator Valve

The 2-6 clutch regulator valve spring force moves the valve to allow 26 clutch fluid from the 2-6 clutch to pass through the valve and enter the exhaust backfill fluid circuit.

2-6 Clutch

The 2-6 clutch spring force moves the 2-6 clutch piston to release the 2-6 clutch plates and forces 26 clutch fluid to exhaust from the center support. The 26 clutch fluid is routed through the 2-6 clutch regulator valve where it enters the exhaust backfill fluid circuit and is routed through orifice #30 to the exhaust backfill pressure relief valve where excess pressure is exhausted.

Drive Range, Third Gear

