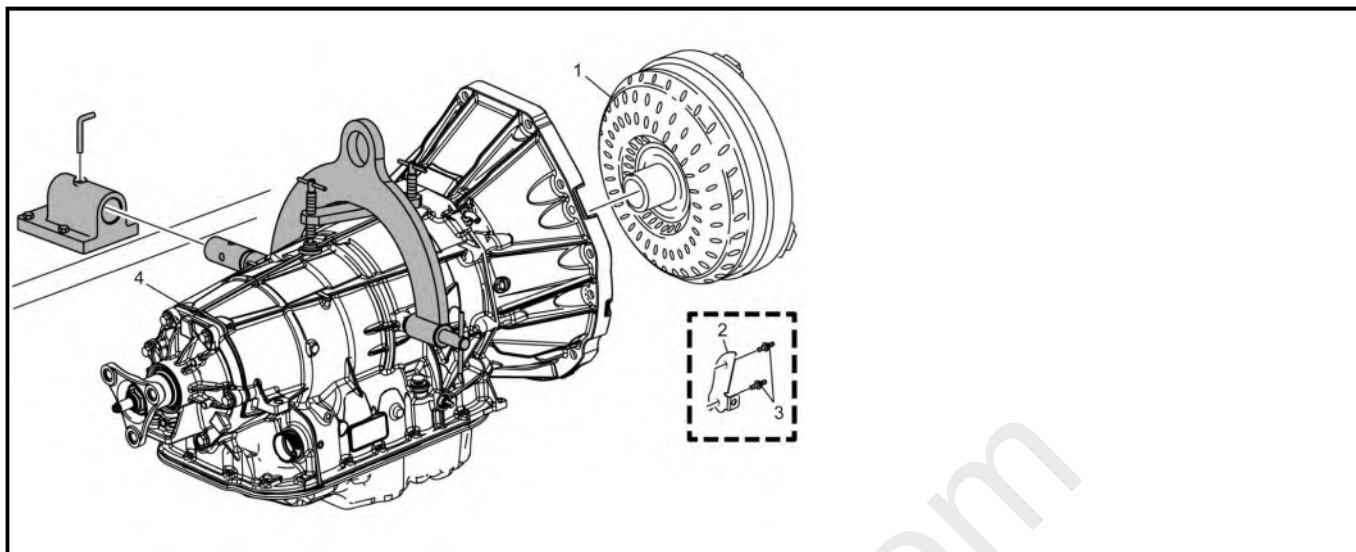


2021 TRANSMISSION

Automatic Transmission - 6L50 (MYB) - Repair Instructions - Off Vehicle - Canyon, Colorado

REPAIR INSTRUCTIONS - OFF VEHICLE

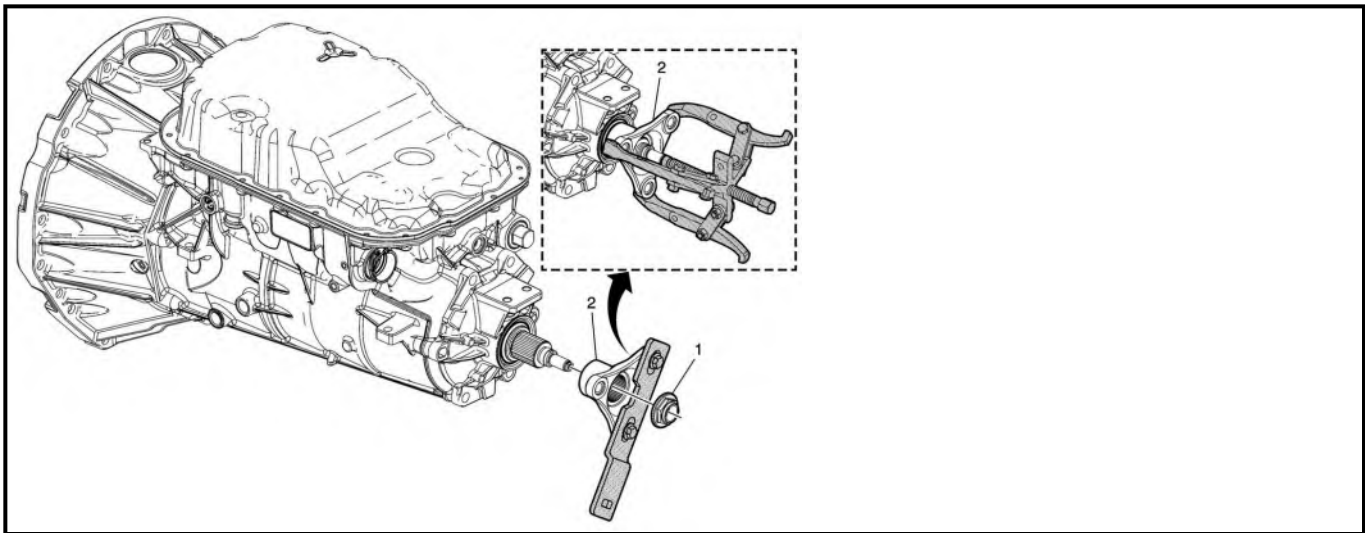
TORQUE CONVERTER REMOVAL AND HOLDING FIXTURE INSTALLATION (6L50)



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Torque Converter Assembly
2	Transmission Converter Cover
3	Transmission Cover Bolt Tighten 12 N.m (106 lb in)
4	Transmission Case Assembly Procedure 1. Rotate the transmission so that the converter housing is up and secure with locking pin. 2. Allow any remaining transmission fluid to drain from the case extension. Special Tools • DT-48989 Holding Fixture • DT-3289-20 Holding Fixture Base Assembly For equivalent regional tools, refer to Special Tools .

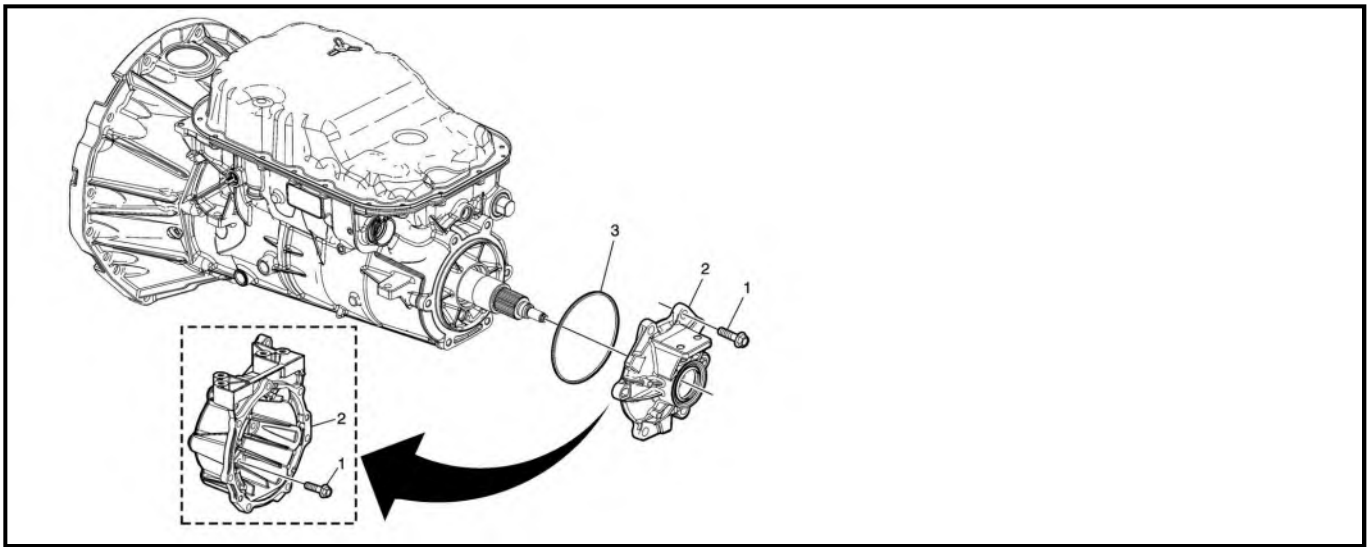
PROPELLER SHAFT TRANSMISSION FLANGE REMOVAL



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Front Prop Shaft Flange Nut CAUTION: Do not reuse the flange nut. Reusing the flange nut may cause damage to the transmission. TIP: If the prop shaft transmission flange is not easily removed with J 45012 holding fixture use DT 38416-B harmonic balancer remover to remove the flange. Special Tool • DT 38416-B Harmonic Balancer Remover • J 45012 Holding Fixture For equivalent regional tools, refer to Special Tools .
2	Prop Shaft Trans Flange

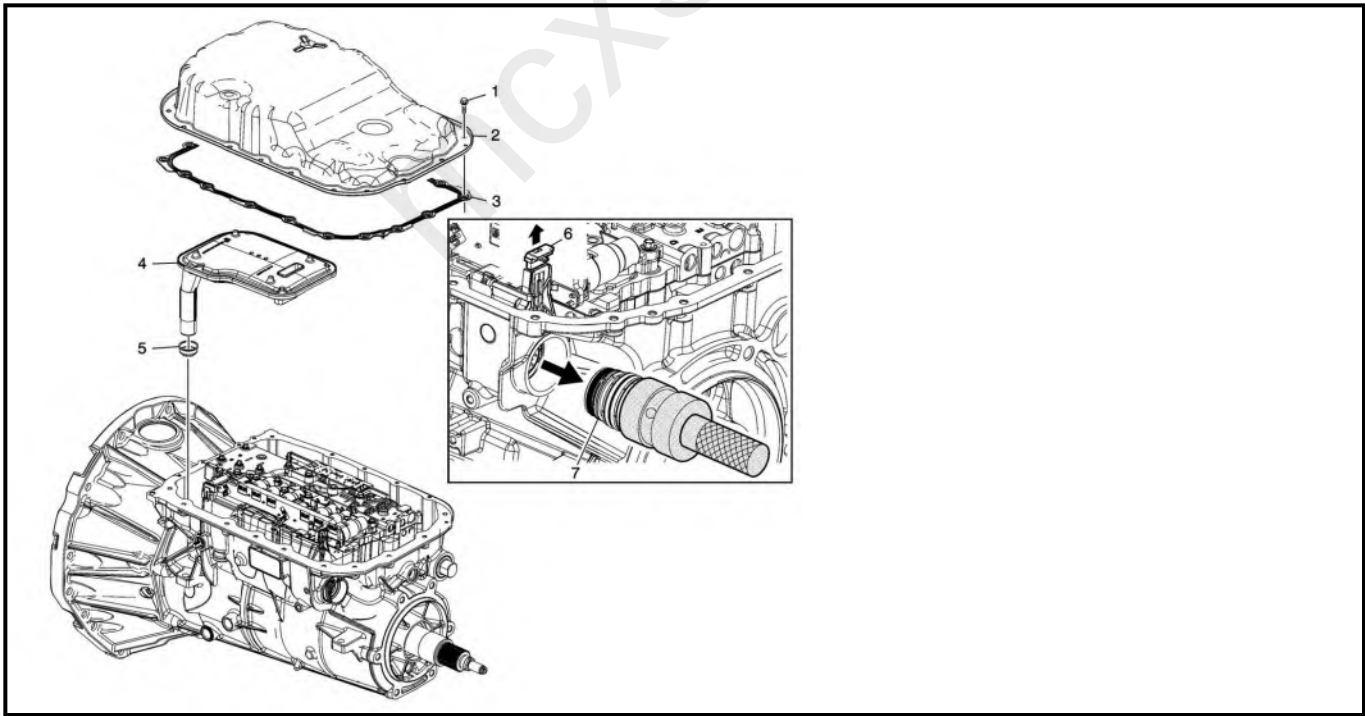
CASE EXTENSION ASSEMBLY REMOVAL (6L50)



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Bolt M10 x 40 • 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

TRANSMISSION FLUID PAN, FILTER AND ELECTRICAL CONNECTOR PASSAGE SLEEVE REMOVAL

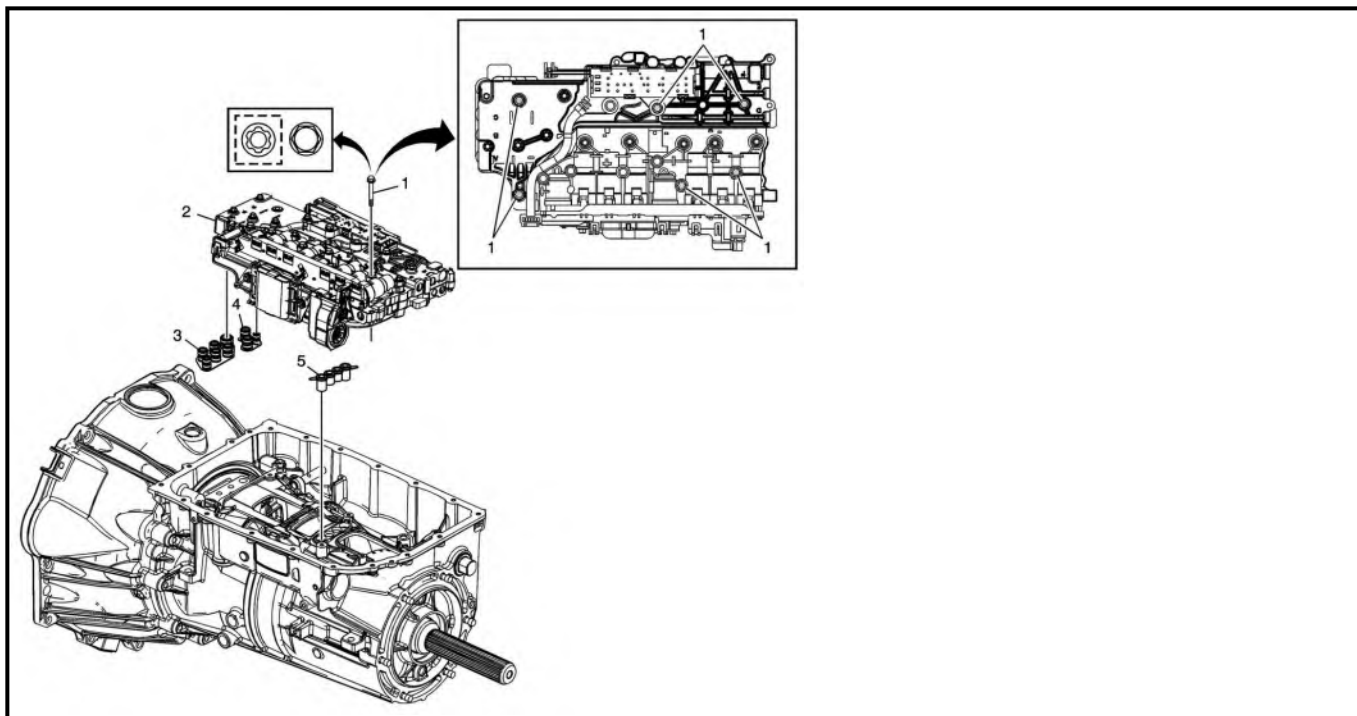


NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Bolt M6 x 20 (Qty: 17)

Callout	Component Name
2	Fluid Pan Assembly
3	Fluid Pan Gasket TIP: The fluid pan gasket is reusable. Inspect the gasket to determine if it may be reused. If the gasket is stuck to the case or pan, it should be replaced.
4	Fluid Filter Assembly CAUTION: Pull the fluid filter assembly straight out to avoid damage. Do not bend or twist the filter neck.
5	Fluid Filter Seal Assembly CAUTION: Do not damage the case sealing surface when removing the filter seal assembly. TIP: Use a screwdriver or snap ring pliers.
6	Electrical Connector Slide Lock CAUTION: Pull up on the electrical connector slide lock to avoid damage to the connector.
7	Electrical Connector Passage Sleeve TIP: Engage DT 47715 connector passage sleeve remover/installer on sleeve and pull straight out. Special Tools • DT 47715 Electrical Connector Passage Sleeve Remover/Installer • EN 42183 Driver Handle For equivalent regional tools, refer to Special Tools .

CONTROL VALVE BODY ASSEMBLY REMOVAL



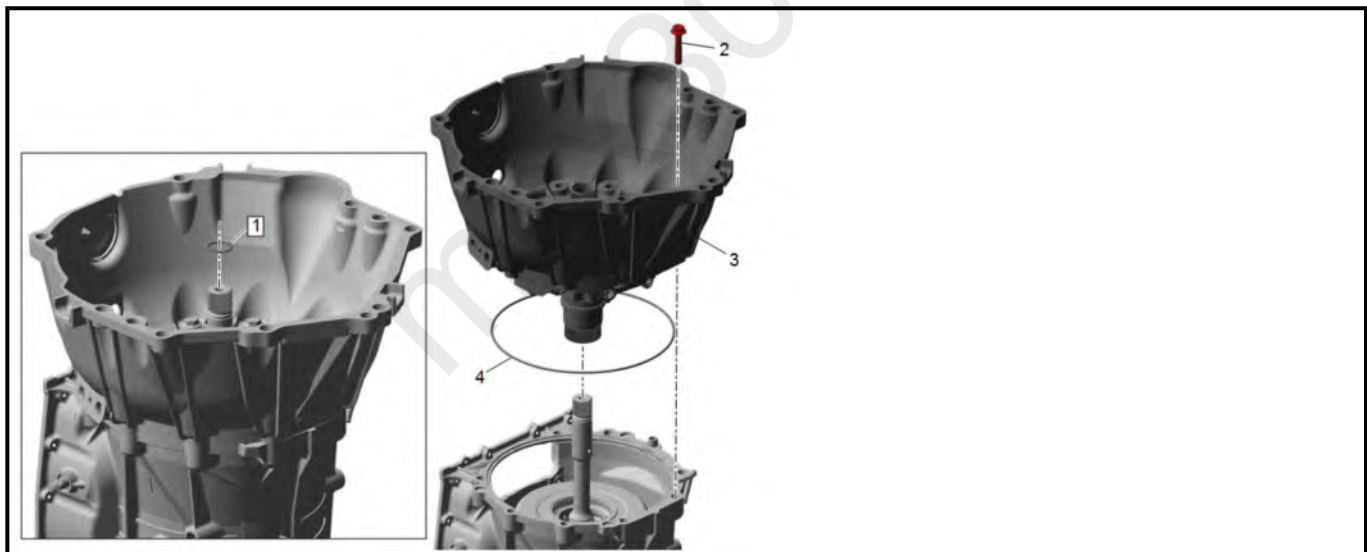
NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Valve Body Bolt [6x] NOTE: Do not remove all the bolts in the control valve body assembly. Remove only the bolts indicated. Special Tools DT-48285 Valve Body Torx Plus Socket (if applicable) Equivalent regional tools: Special Tools
2	Control Valve Assembly CAUTION: Use care when handling the control valve body assembly. If dropped, damage to the internal components of the control solenoid

Callout	Component Name
	valve assembly, including the transmission control module (TCM), may result.
3	Automatic Transmission Fluid Pump Seal CAUTION: Use care when removing the seal assemblies to avoid damaging the valve body seal bores. CAUTION: Refer to Seal Reuse Caution . NOTE: Remove and DISCARD the seal.
4	Automatic Transmission Fluid Pump Seal CAUTION: Use care when removing the seal assemblies to avoid damaging the valve body seal bores. CAUTION: Refer to Seal Reuse Caution . NOTE: Remove and DISCARD

Callout	Component Name
	the seal.
5	Center Support Fluid Passage Seal CAUTION: Use care when removing the seal assemblies to avoid damaging the case seal bores. CAUTION: Refer to Seal Reuse Caution . NOTE: Remove and DISCARD the seal.

TORQUE CONVERTER HOUSING WITH FLUID PUMP REMOVAL

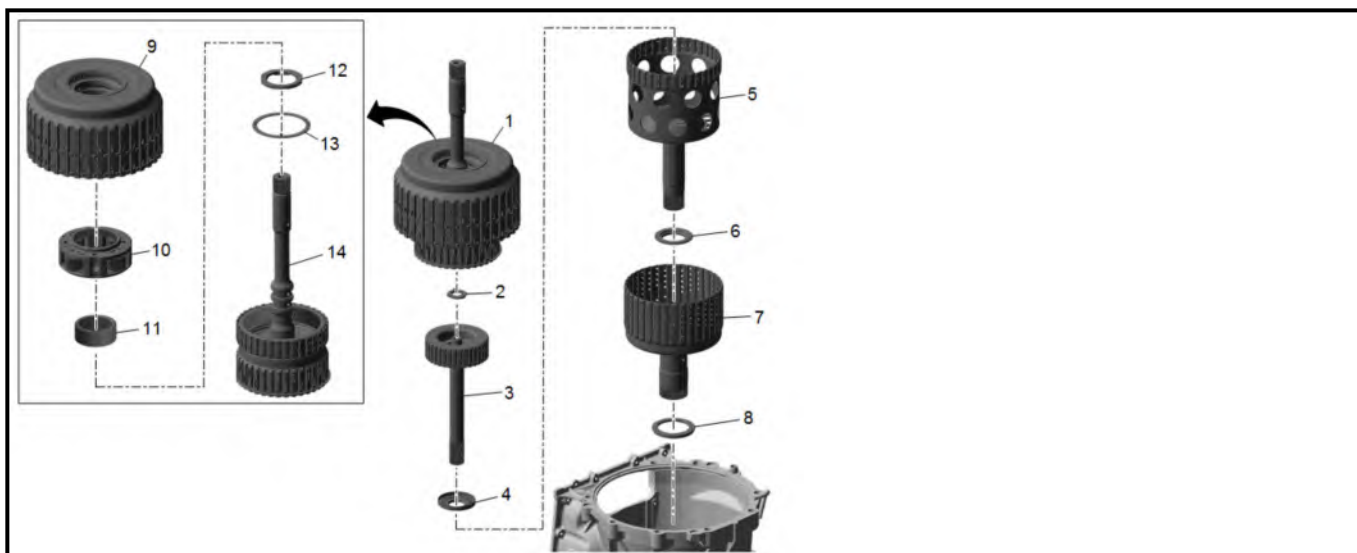


NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
CAUTION: The valve body assembly must be removed prior to removing the torque	

Callout	Component Name
converter (with fluid pump) housing assembly. Failure to ensure this will cause severe damage to both fluid pump seal assemblies. Also, the load of the valve body pushing on the seals, which in turn push on the pump, may prevent proper pump installation into the case. Refer to control valve body assembly removal.	
1	Turbine Shaft (O-ring) Seal
2	Bolt NOTE: • 6L50 Bolt M8 x 1.25 x 50 (Qty: 8) • 6L80 Bolt M10 x 1.5 x 50 (Qty: 9)
3	Torque Converter (With Fluid Pump) Housing Assembly
4	Fluid Pump Seal

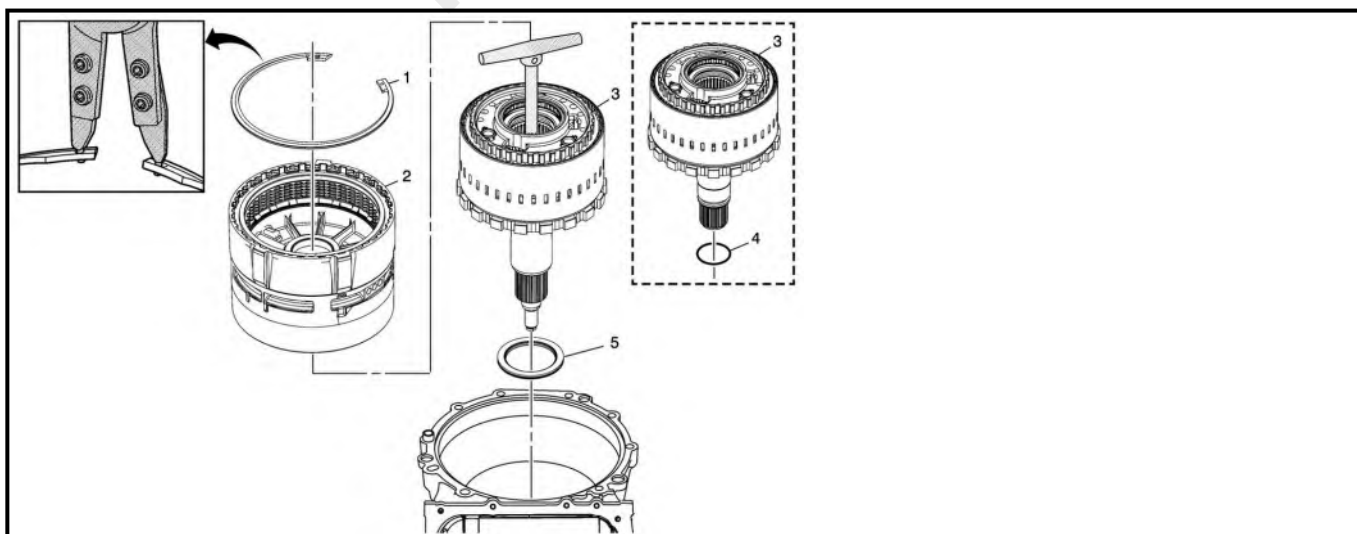
1-2-3-4 AND 3-5 REVERSE CLUTCH ASSEMBLY AND 4-5-6 CLUTCH ASSEMBLY REMOVAL (6L50/80/90)



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	1-2-3-4 and 3-5-Reverse Clutch & 4-5-6 Clutch
2	Turbine Shaft Thrust Bearing Assembly
3	4-5-6 Clutch Hub
4	4-5-6 Clutch Hub Thrust Bearing
5	1-2-3-4 Clutch Hub
6	1-2-3-4 Clutch Hub Thrust Bearing
7	2-6 and 3-5-Reverse Clutch Hub
8	2-6 and 3-5-Reverse Clutch Hub Thrust Bearing
9	1-2-3-4 and 3-5-Reverse Clutch
10	Input Carrier
11	Input Sun Gear
12	Input Sun Gear Thrust Bearing
13	Input Sun Gear Thrust Washer
14	4-5-6 Clutch

CENTER SUPPORT, OUTPUT CARRIER AND OUTPUT SHAFT REMOVAL (6L50)



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	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. 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
3	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. 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

Callout	Component Name
5	Output Shaft Thrust Bearing Assembly

MANUAL SHIFT SHAFT AND PARKING SYSTEM COMPONENTS OVERHAUL (6L45/6L50)

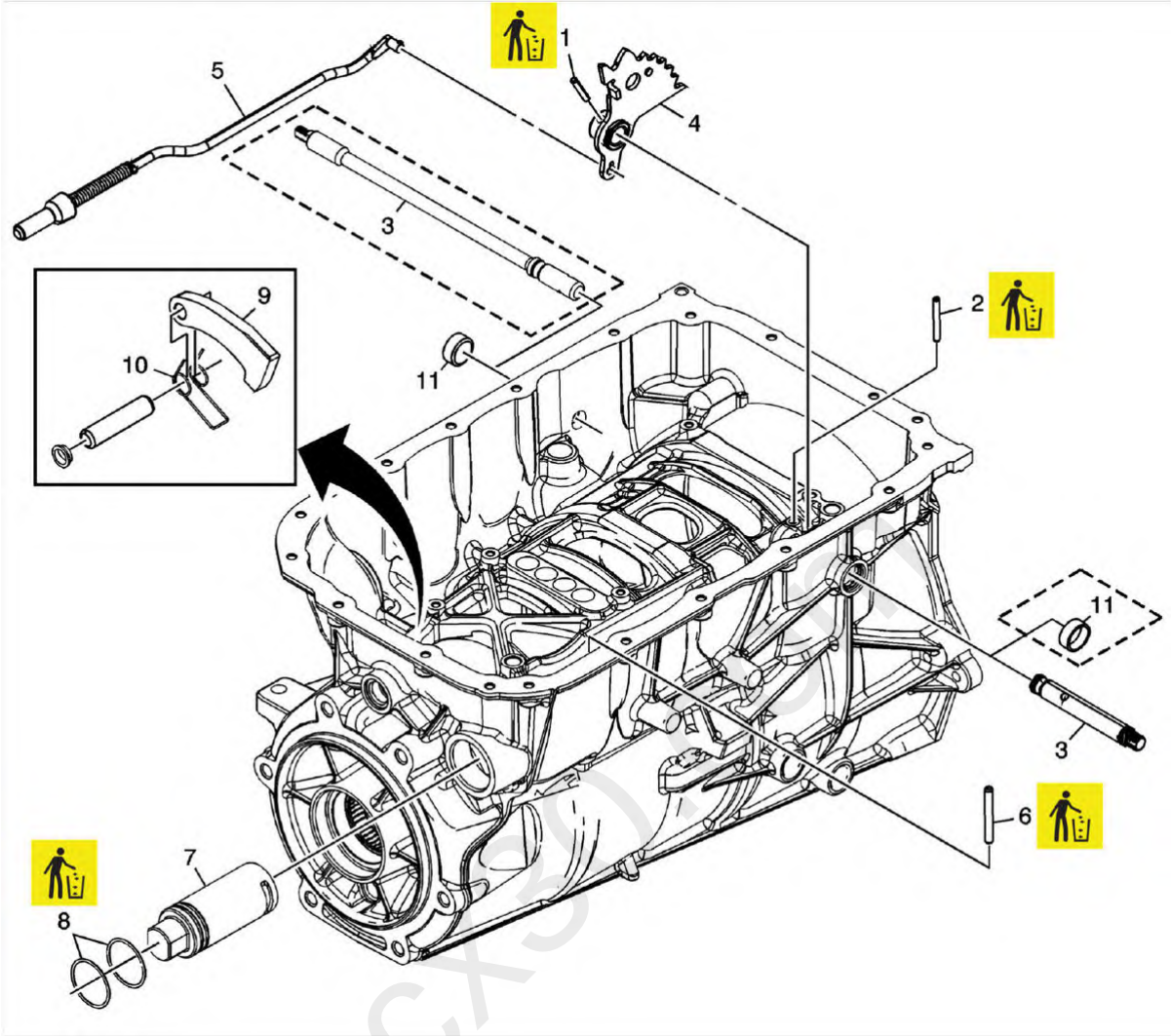


Fig. 1: Exploded View Of Manual Shift Shaft And Parking System Components (6L45/6L50)
Courtesy of GENERAL MOTORS COMPANY

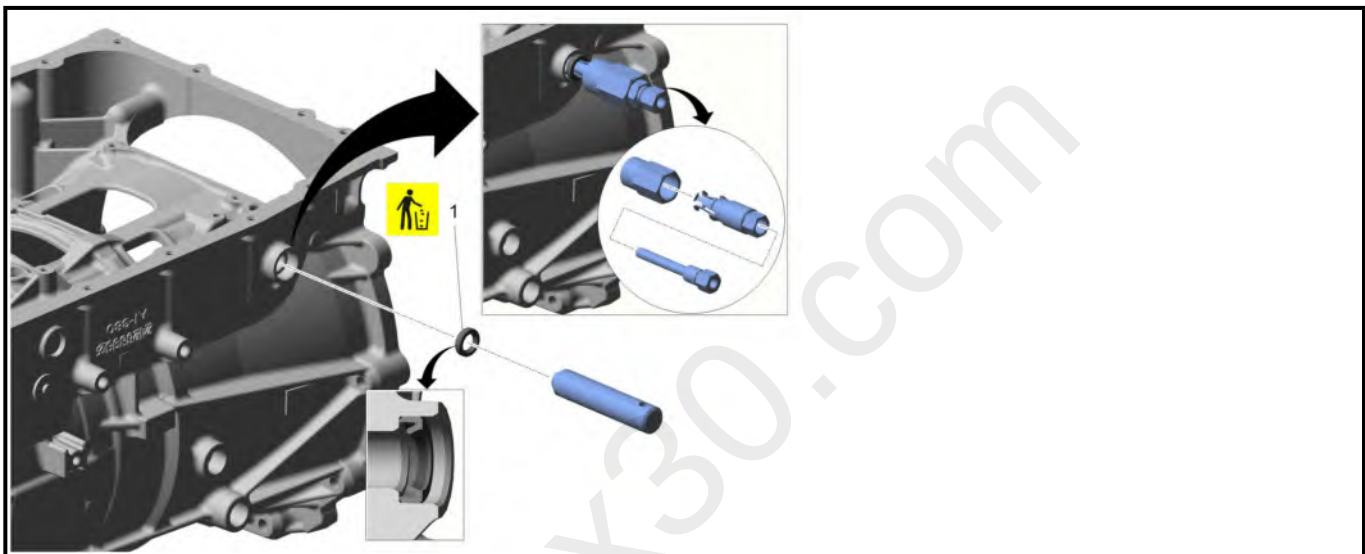
NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Manual Shaft Detent Lever Hub Pin CAUTION: Refer to <u>Pin</u> <u>Reuse</u> <u>Caution</u> . Procedure Remove and DISCARD
2	Manual Shift Shaft Pin CAUTION: Refer to <u>Pin</u> <u>Reuse</u>

Callout	Component Name
	Caution . Procedure Remove and DISCARD
3	Manual Shift Shaft CAUTION: Ensure the manual shift shaft seal is replaced before installing the shaft. Installing the seal after the shaft may cause damage to the seal, resulting in fluid leaks and transmission damage. NOTE: Refer to Manual Shift Shaft Seal Replacement.
4	Manual Shaft Detent Lever Assembly
5	Park Pawl Actuator Assembly
6	Park Pawl Actuator Guide Pin CAUTION: Refer to Pin Reuse Caution . Procedure 1. Use a large pair of side cutters to "walk" the pin out. 2. Remove and DISCARD
7	Park Pawl Actuator Guide
8	Park Pawl Actuator Guide (O-ring) Seals CAUTION: Refer to Seal Reuse Caution .

Callout	Component Name
	Procedure Remove and DISCARD
9	Park Pawl Procedure Inspect for damage only. Do not remove. The park pawl is not a serviceable component.
10	Park Pawl Spring Procedure Inspect for damage only. Do not remove. The park pawl spring is not a serviceable component.
11	Manual Shift Shaft Hole Plug Procedure Press plug to seat. Ensure plug is installed evenly.

MANUAL SHIFT SHAFT SEAL REPLACEMENT

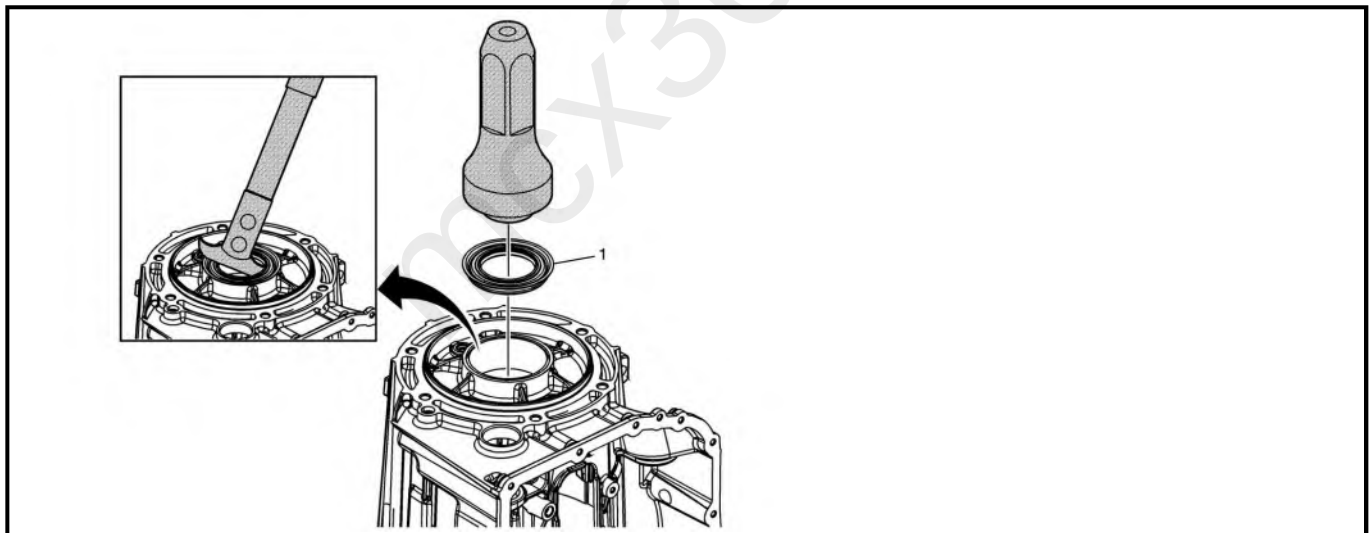


NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Manual Shift Shaft Seal CAUTION: Do not damage the case bore during removal of the manual shift shaft seal. CAUTION: When installing the seal, ensure the seal lip is firmly seated against the

Callout	Component Name
	case bore surface. Do not allow the seal lip to be crushed, or a leak may result. CAUTION: Refer to Seal Reuse Caution . Procedure 1. Using DT-45201 Cooler Line Seal Remover, Remove and DISCARD the seal. 2. Using DT-47770 Seal Installer, Install a NEW seal. Special Tools • DT-47770 Seal Installer • DT-45201 Cooler Line Seal Remover Equivalent regional tools: Special Tools

OUTPUT SHAFT SEAL REPLACEMENT (AWD MODELS ONLY)

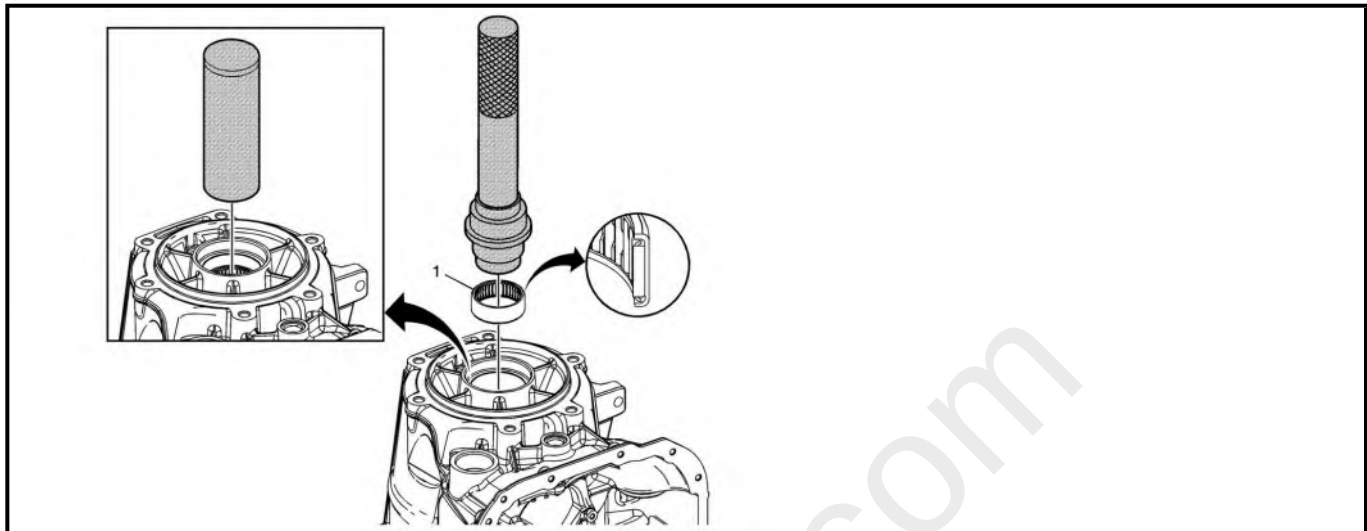


NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Output Shaft Seal Assembly CAUTION: Refer to Seal Reuse Caution . Special Tool

Callout	Component Name
	• EN 37212 Front Output Shaft Seal Installer (6L50) • DT 38693 Seal Installer (6L80) • EN 45000 Seal Remover For equivalent regional tools, refer to Special Tools .

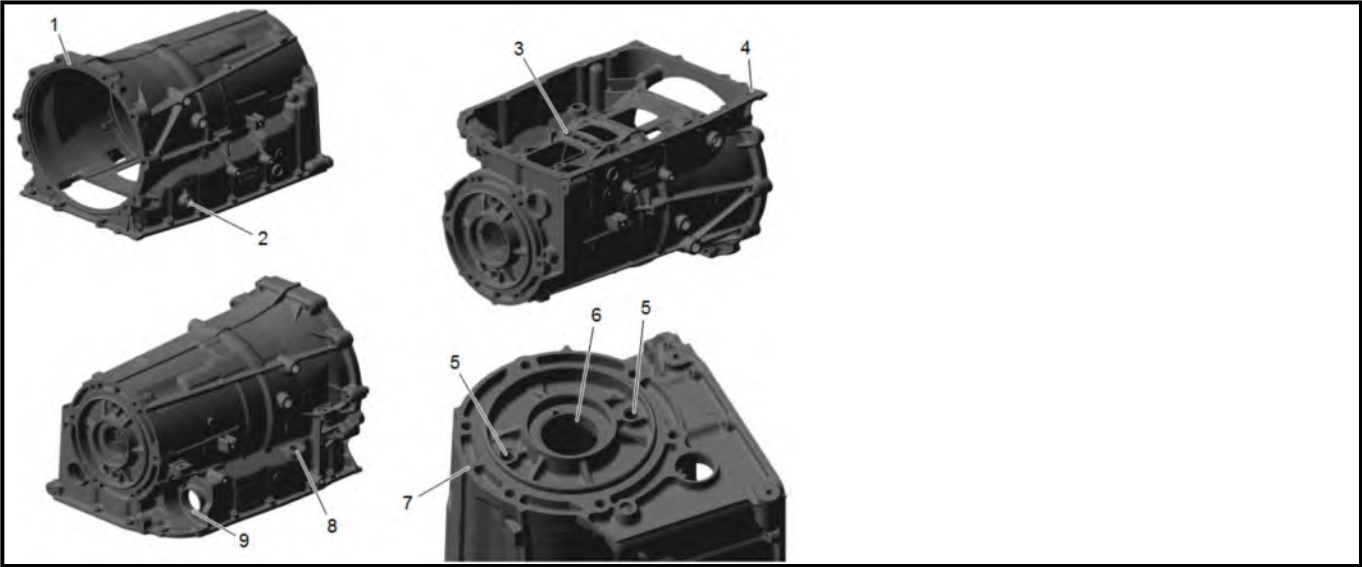
OUTPUT SHAFT BEARING REPLACEMENT - CASE (6L50)



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Output Shaft Bearing Assembly NOTE: Use DT 35512 bearing installer to remove the bearing and DT 48222 bearing installer and GE 8092 driver handle to install the bearing. Special Tools • DT 48222 Bearing Installer • GE 8092 Driver Handle • DT 35512 Inner Pinion Bearing Installer For equivalent regional tools, refer to Special Tools .

CASE INSPECTION

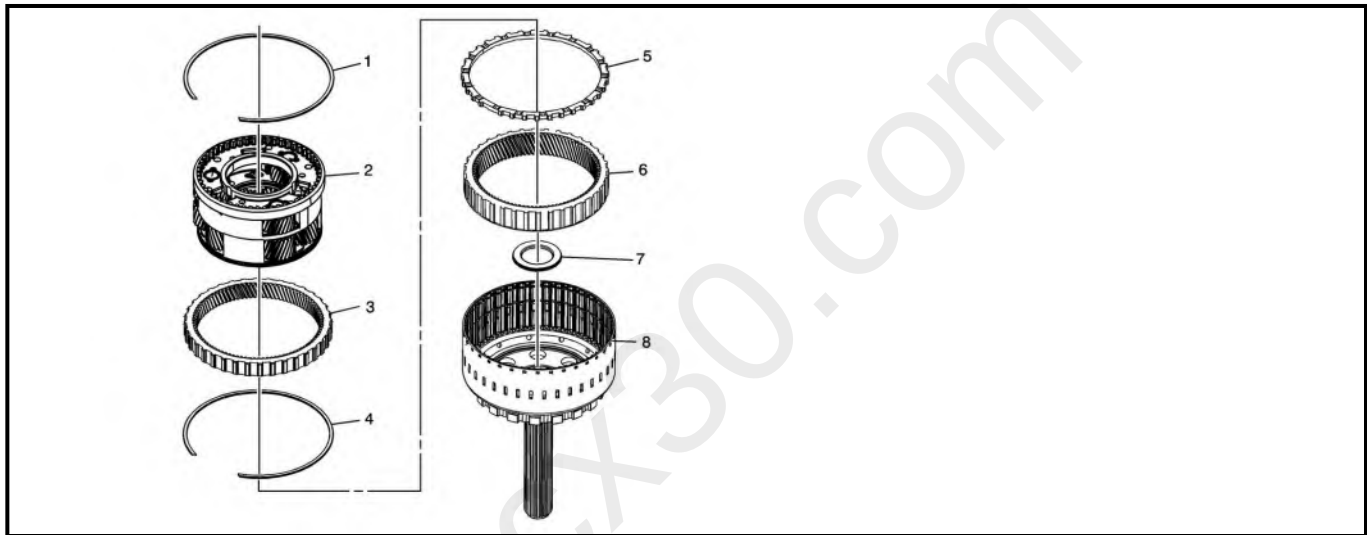


NOTE: Callouts in the following chart represent components shown in graphic above.

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.	

Callout	Component Name
	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 Procedure 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

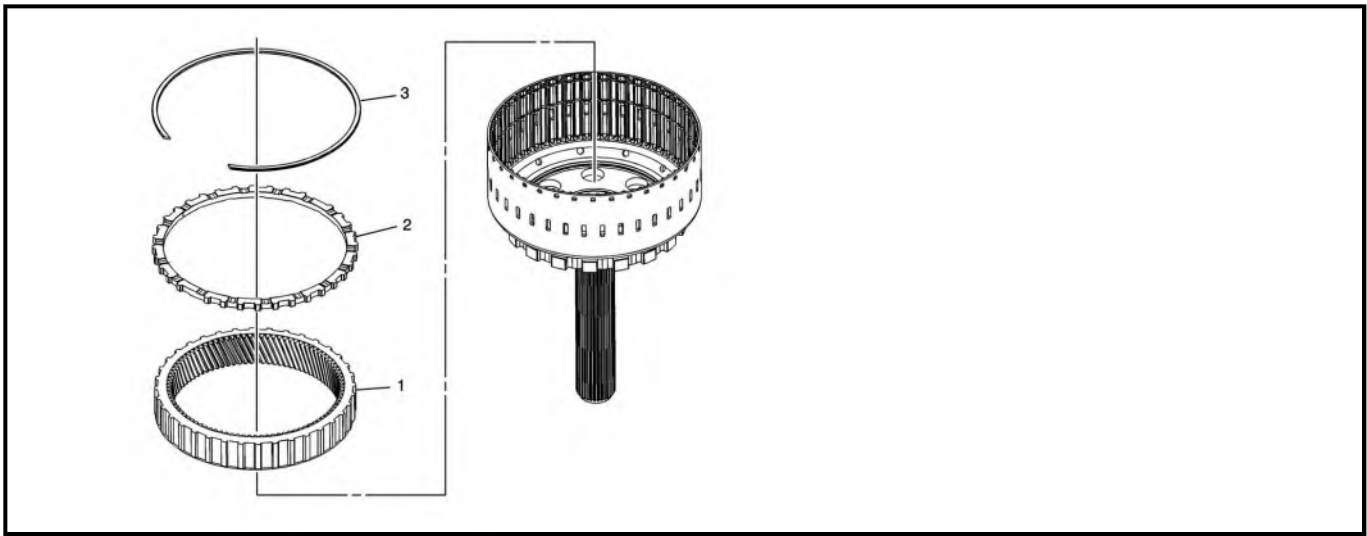
OUTPUT SHAFT DISASSEMBLE (6L80)



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
TIP: Inspect each component and replace as necessary.	
1	Output Carrier Internal Gear Retaining Ring
2	Output Carrier Assembly
3	Output Carrier Internal Front Gear
4	Output Carrier Internal Gear Retaining Ring
5	Output Carrier Internal Gear Spacer
6	Output Carrier Internal Rear Gear
7	Output Carrier Thrust Bearing Assembly
8	Output Shaft Assembly

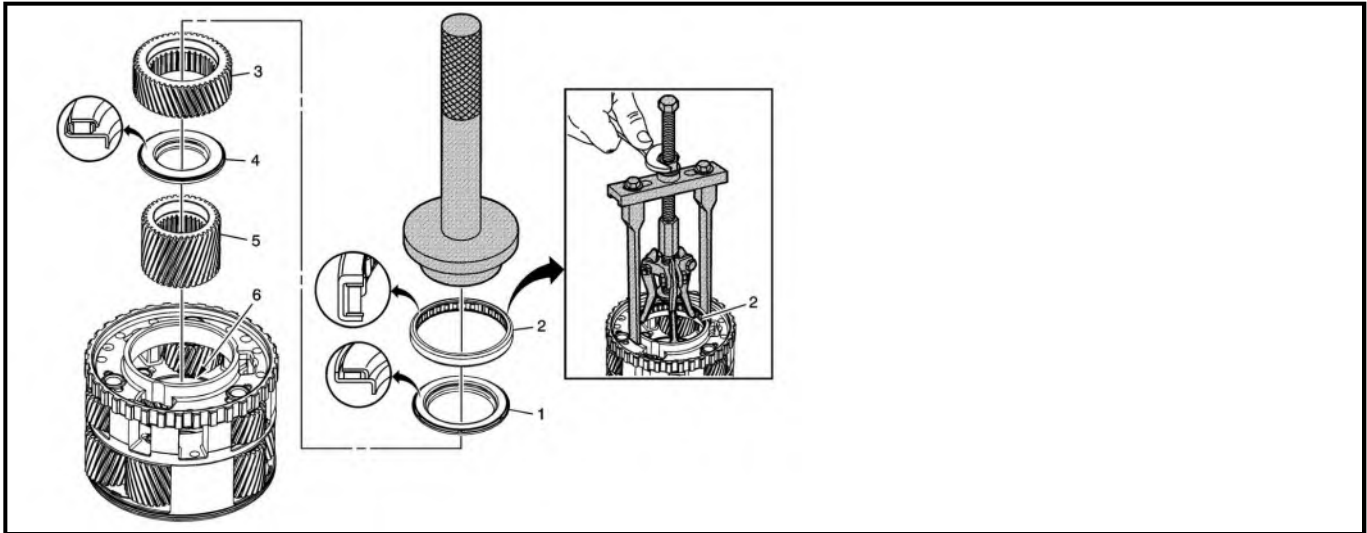
OUTPUT SHAFT ASSEMBLE (6L50/80/90)



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Output Carrier Internal Rear Gear CAUTION: Install the gear chamfer side down. Failure to install the gear chamfer side down may result in transmission damage.
2	Output Gear Internal Gear Spacer
3	Output Carrier Internal Gear Retaining Ring TIP: Do not install the output carrier internal front gear and retaining ring yet. These components will be installed during assembly of the output carrier to the output shaft.

OUTPUT CARRIER ASSEMBLY OVERHAUL (6L50)



NOTE:

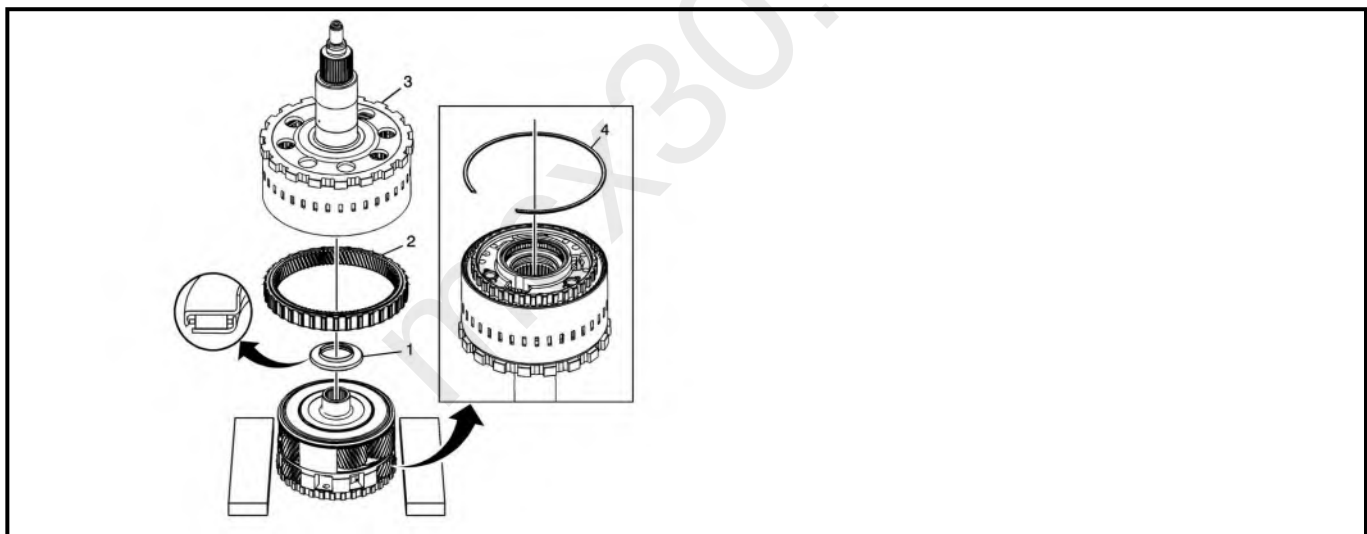
Callouts in the following chart represent components shown in graphic above.

mcx30.com

Callout	Component Name
1	Output Carrier Front Sun Gear Thrust Bearing Assembly
2	Center Support Roller Bearing CAUTION: Do not reuse the center support roller bearing. Install a NEW center support roller bearing. Reusing an old bearing may result in damage to the output carrier. NOTE: The thick side of the bearing shell faces up. Special Tools • DT 47857 Bearing Installer • DT 47865 Bearing Remover • GE 8092 Driver Handle • DT 45124 Removal Bridge For equivalent regional tools, refer to Special Tools.
3	Output Carrier Front Sun Gear CAUTION: Install the gear chamfer side up. Failure to install the gear chamfer side up may result in transmission damage.
4	Output Carrier Front Sun Gear Rear Thrust Bearing Assembly
5	Output Carrier Rear Sun Gear CAUTION:

Callout	Component Name
	Install the gear chamfer side up. Failure to install the gear chamfer side up may result in transmission damage.
6	Output Carrier Rear Sun Gear Bearing Assembly NOTE: Inspect for damage only. Do not remove. The bearing assembly is not a serviceable component.

OUTPUT CARRIER TO OUTPUT SHAFT ASSEMBLE (6L50)



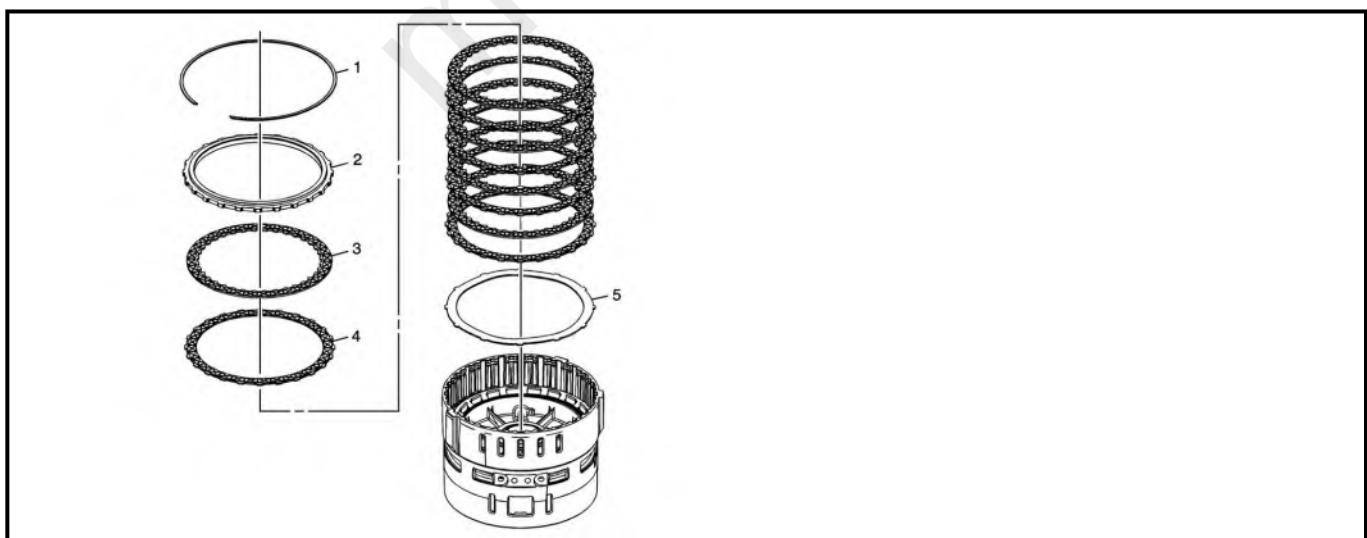
NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Output Carrier Thrust Bearing Assembly
2	Output Carrier Internal Front Gear CAUTION: Install the gear flat side down. Failure to install the gear flat side

Callout	Component Name
	down may result in transmission damage. NOTE: Use 2 small blocks next to the output carrier assembly in order to keep the internal front gear engaged with the front pinion gears.
3	Output Shaft Assembly
4	Output Carrier Internal Gear Retaining Ring NOTE: Grasp the output shaft and carrier with both hands to turn over.

2-6 CLUTCH OVERHAUL (6L50)

2 - 6 Clutch Plates Removal



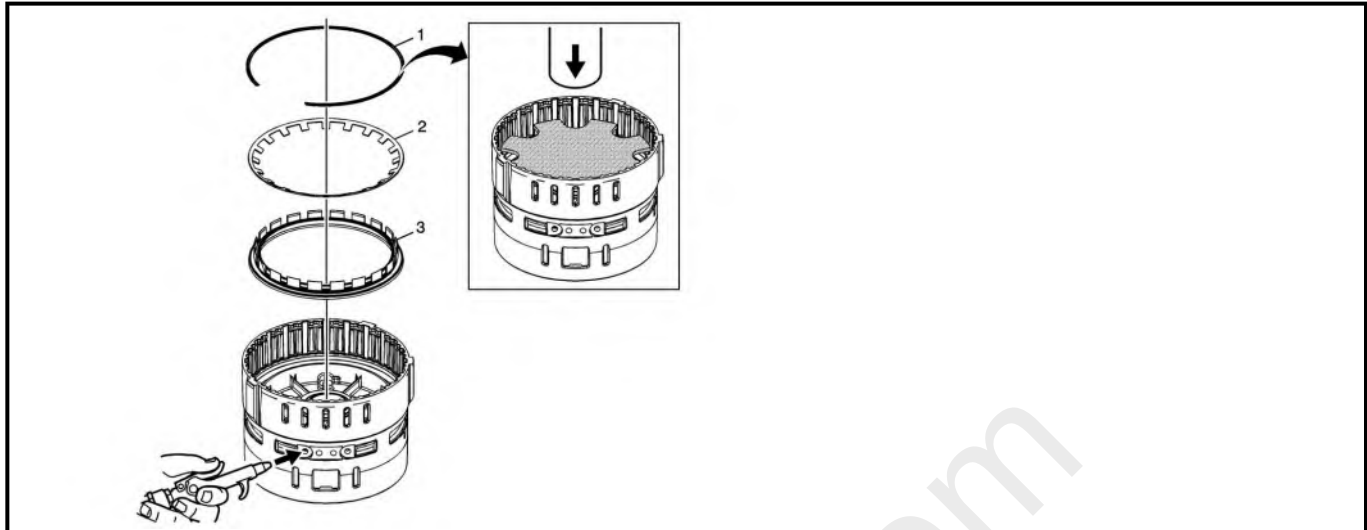
NOTE: Callouts in the following chart represent components shown in graphic above.

2 - 6 Clutch Plates Removal

Callout	Component Name
1	2 - 6 Clutch Backing Plate Retaining Ring

Callout	Component Name
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



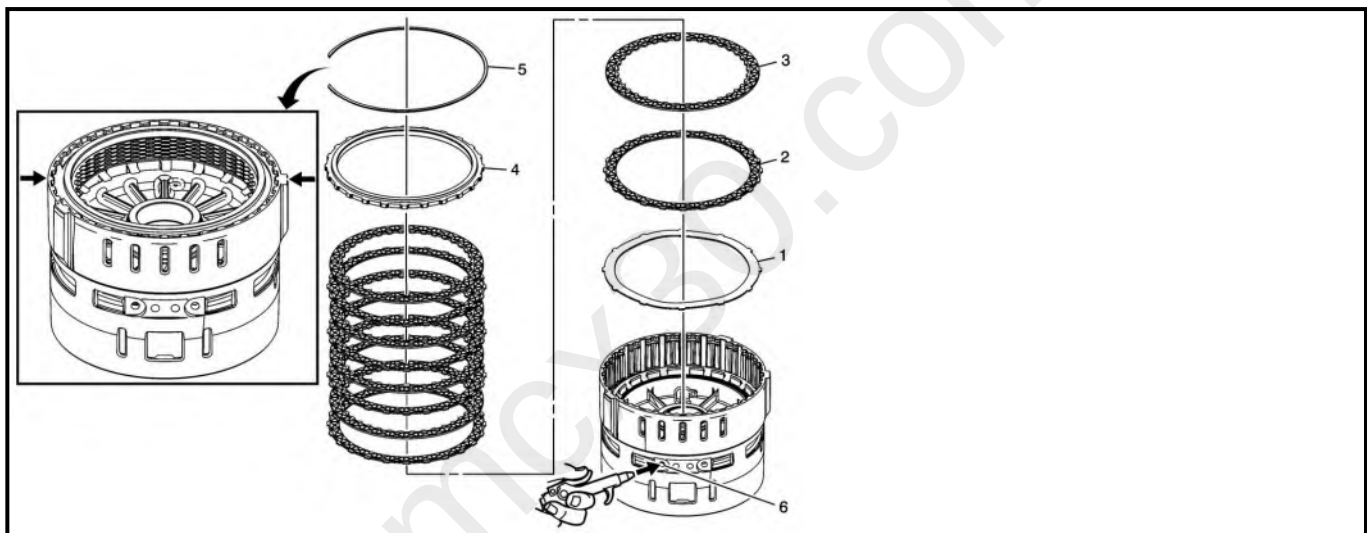
NOTE: Callouts in the following chart represent components shown in graphic above.

2 - 6 Clutch Piston Replacement

Callout	Component Name
1	2 - 6 Clutch Spring Retaining Ring NOTE: Ensure the DT-48065 spring compressor is centered over the clutch spring. Special Tool DT-48065 Clutch Spring Compressor For equivalent regional tools, refer to Special Tools.
2	2 - 6 Clutch Spring CAUTION: Ensure the spring tabs are facing down during installation and that the tabs fit between the teeth on the

Callout	Component Name
	piston. Failure to do so may cause damage to the clutch assembly.
3	2 - 6 Clutch Piston Assembly NOTE: It may be necessary to apply air to the apply passage in order to unseat the piston.

2 - 6 Clutch Plates Installation



NOTE: Callouts in the following chart represent components shown in graphic above.

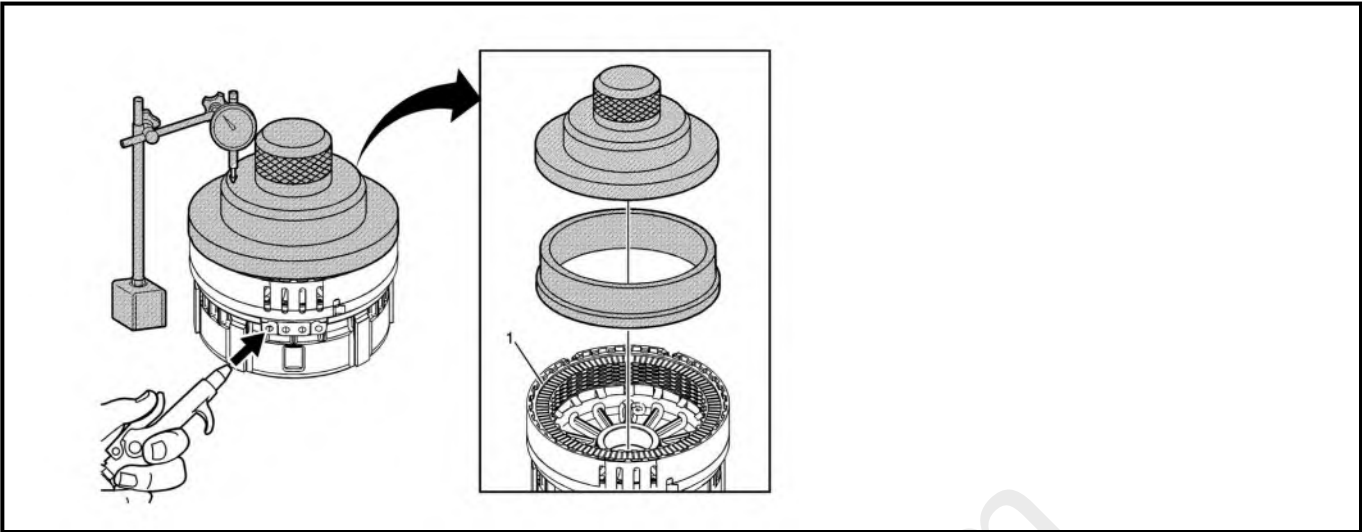
2 - 6 Clutch Plates Installation

Callout	Component Name
1	2 - 6 Clutch (Waved) Plate
2	2 - 6 Clutch Plates (Qty: 5) NOTE: Alternate between steel and fiber clutch plates.
3	2 - 6 Clutch Plate Assembly (Qty: 5) NOTE: Alternate between

Callout	Component Name
	steel and fiber clutch plates.
4	2 - 6 Clutch Backing Plate
5	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. Procedure Be sure to install the retaining ring gap at the 9 o'clock or 3 o'clock position, as indicated by the arrows.
6	2 - 6 Clutch Apply Passage NOTE: Apply air to verify proper installation of all 2 - 6

Callout	Component Name
	clutch components.

2-6 CLUTCH BACKING PLATE RETAINING RING MEASUREMENT (6L50)



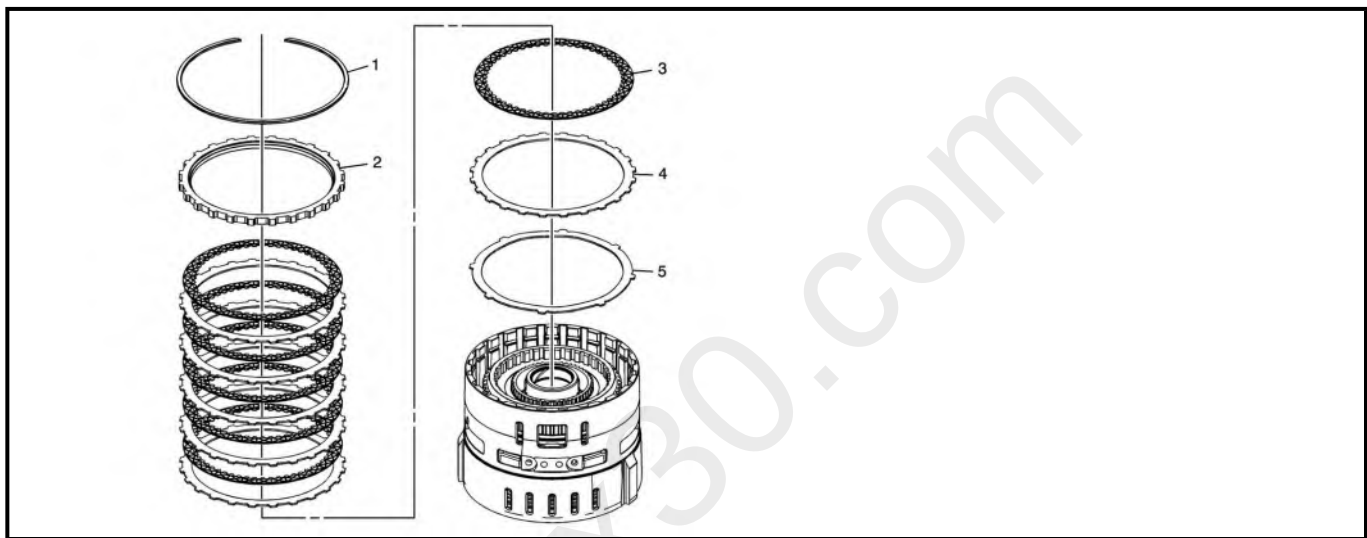
NOTE: Callouts in the following chart represent components shown in graphic above.

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 .	
1	2-6 Clutch Apply Passage NOTE: Apply compressed air to the apply passage hole, at least 3 times and observe the dial indicator measurement each time. This action "fluffs"

Callout	Component Name
	the clutch plates to ensure an accurate measurement. Refer to Clutch Backing Plate Retaining Ring Specifications (6L50) .

LOW AND REVERSE CLUTCH OVERHAUL (6L50)

Low and Reverse Clutch Plate Removal

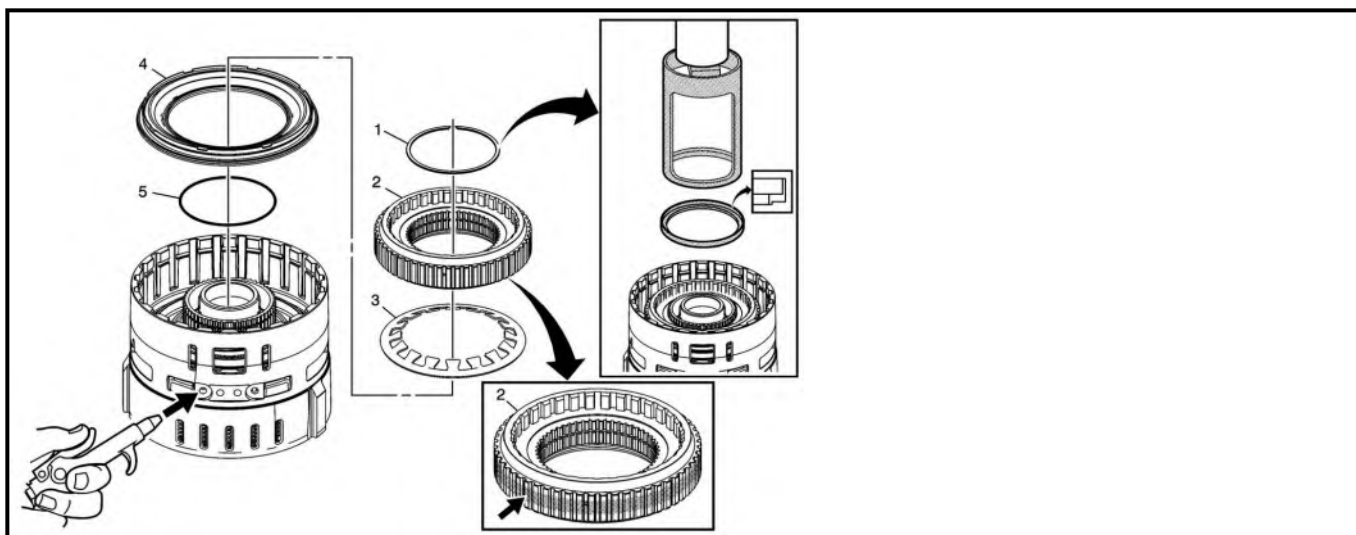


NOTE: Callouts in the following chart represent components shown in graphic above.

Low and Reverse Clutch Plate Removal

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

Low and Reverse Clutch Piston Removal



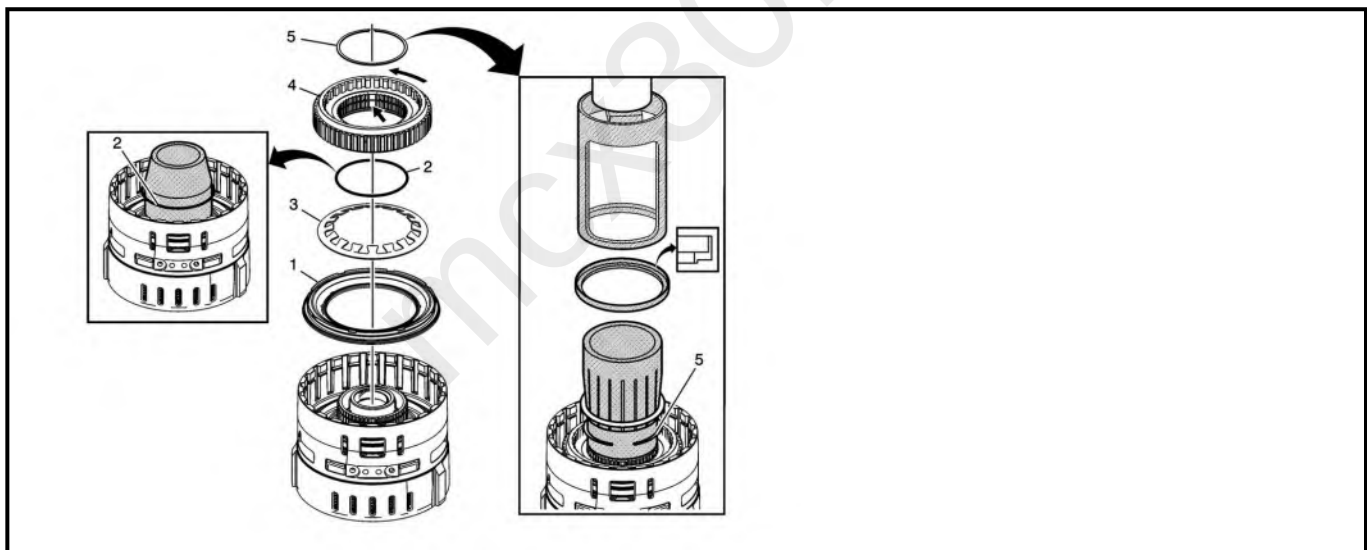
NOTE: Callouts in the following chart represent components shown in graphic above.

Low and Reverse Clutch Piston Removal

Callout	Component Name
1	Low and Reverse Clutch Spring Retaining Ring CAUTION: DT-49122 must be used with the DT-48069 in order to prevent damage to the low clutch sprag retainer. Special Tool • DT-48069 Low Clutch Spring Compressor • DT-49122 Low Clutch Spring Compressor Adapter For equivalent regional tools, refer to Special Tools .
2	Low Clutch Sprag Assembly NOTE: A blue colored ring may be present on the outer splines of the low clutch sprag assembly. This is a normal condition caused by heat treating during

Callout	Component Name
	manufacturing and does not indicate need for replacement.
3	Low and Reverse Clutch Spring
4	Low and Reverse Clutch Piston Assembly NOTE: It may be necessary to apply air to the apply passage in order to unseat the piston.
5	Low Clutch Sprag Seal CAUTION: Refer to <u>Seal Reuse Caution</u> .

Low and Reverse Clutch Piston Installation



NOTE: Callouts in the following chart represent components shown in graphic above.

Low and Reverse Clutch Piston Installation

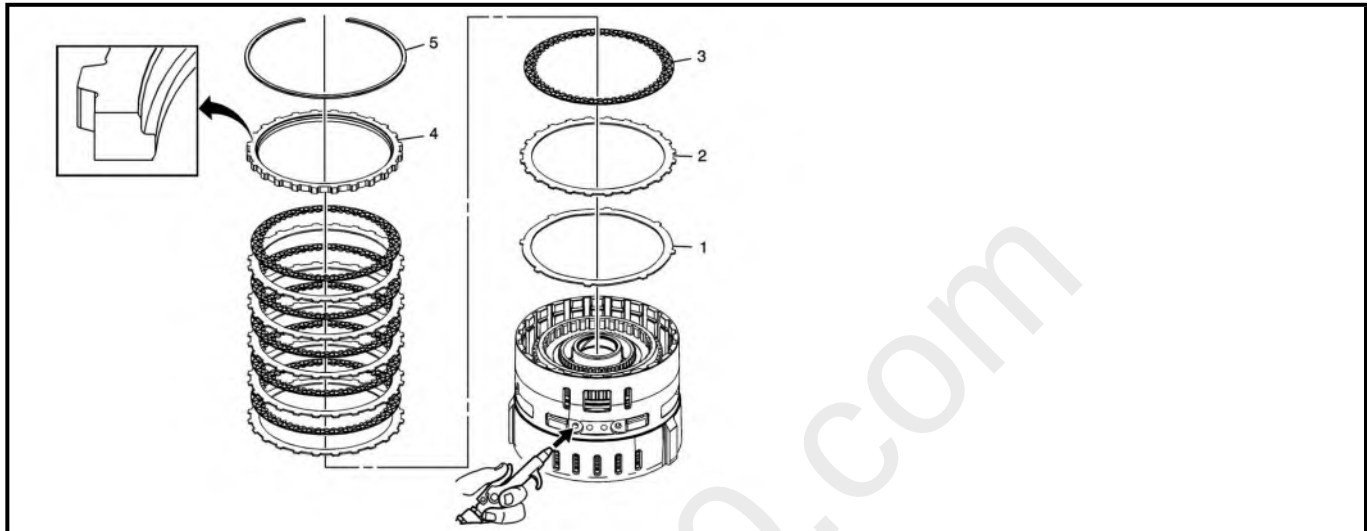
Callout	Component Name
1	Low and Reverse Clutch Piston Assembly NOTE: Lubricate the inner and outer sealing surfaces of

Callout	Component Name
	the piston assembly with automatic transmission fluid (ATF) in order to ease installation into the center support assembly.
2	Low Clutch Sprag Seal CAUTION: Refer to Seal Reuse Caution . NOTE: Apply ATF to the DT-48070 low clutch sprag seal cone to ease seal installation. Special Tool DT-48070 Low Clutch Sprag Seal Cone For equivalent regional tools, refer to Special Tools .
3	Low and Reverse Clutch Spring CAUTION: Ensure the spring tabs are facing up during installation. Failure to do so may cause damage to the clutch assembly.
4	Low Clutch Sprag Assembly NOTE: • Verify that the low clutch sprag is

Callout	Component Name
	operating correctly. Refer to the illustration for proper freewheel direction. • Ensure the missing splines on the sprag assembly are aligned with the missing splines on the center support hub.
5	Low and Reverse Clutch Spring Retaining Ring CAUTION: DT-49122 must be used with the DT-48069 in order to prevent damage to the low clutch sprag retainer. CAUTION: The retaining ring gap must be aligned with the 3 missing splines on the center support hub. Failure to do so may cause damage to the clutch assembly.

Callout	Component Name
	Special Tools • DT-48068-1 Low Clutch Sprag Retaining Ring Cone • DT-48068-2 Low Clutch Sprag Retaining Ring Pusher • DT-48069 Low Clutch Spring Compressor • DT-49122 Low Clutch Spring Compressor Adapter For equivalent regional tools, refer to Special Tools.

Low and Reverse Clutch Plate Installation

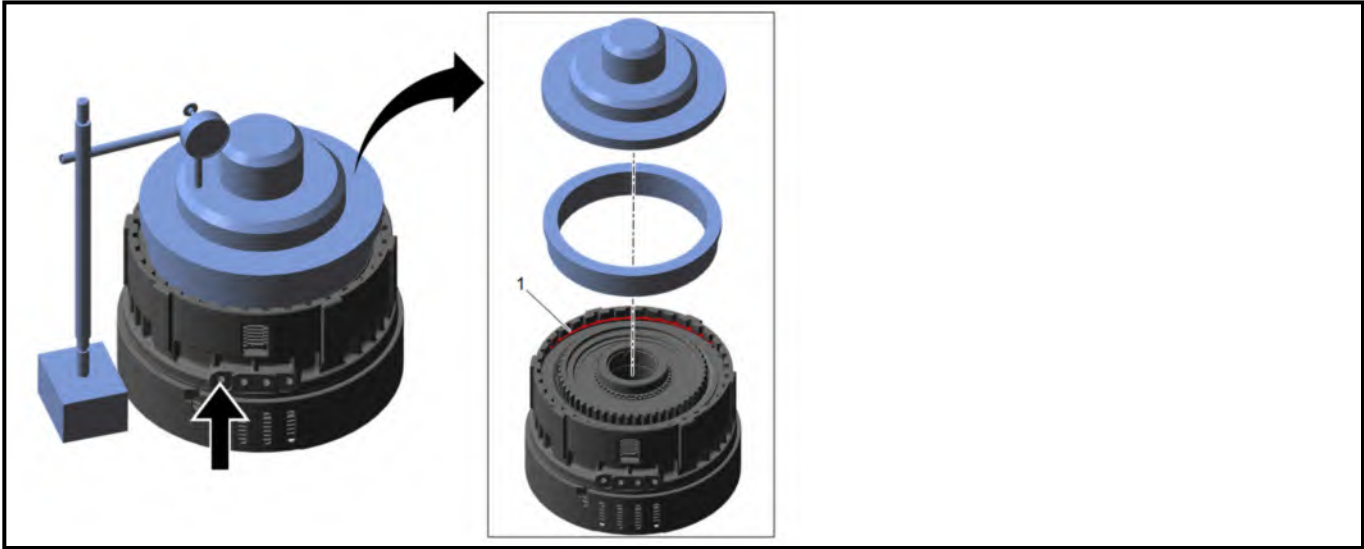


NOTE: Callouts in the following chart represent components shown in graphic above.

Low and Reverse Clutch Plate Installation

Callout	Component Name
1	Low and Reverse Clutch (Waved) Plate
2	Low and Reverse Clutch Plate (Qty: 6)
3	Low and Reverse Clutch Plate Assembly (Qty: 6)
4	Low and Reverse Clutch Backing Plate NOTE: Install the backing plate with the inner step side up.
5	Low and Reverse Clutch Backing Plate Retaining Ring NOTE: Apply air to verify proper installation of all low and reverse clutch components.

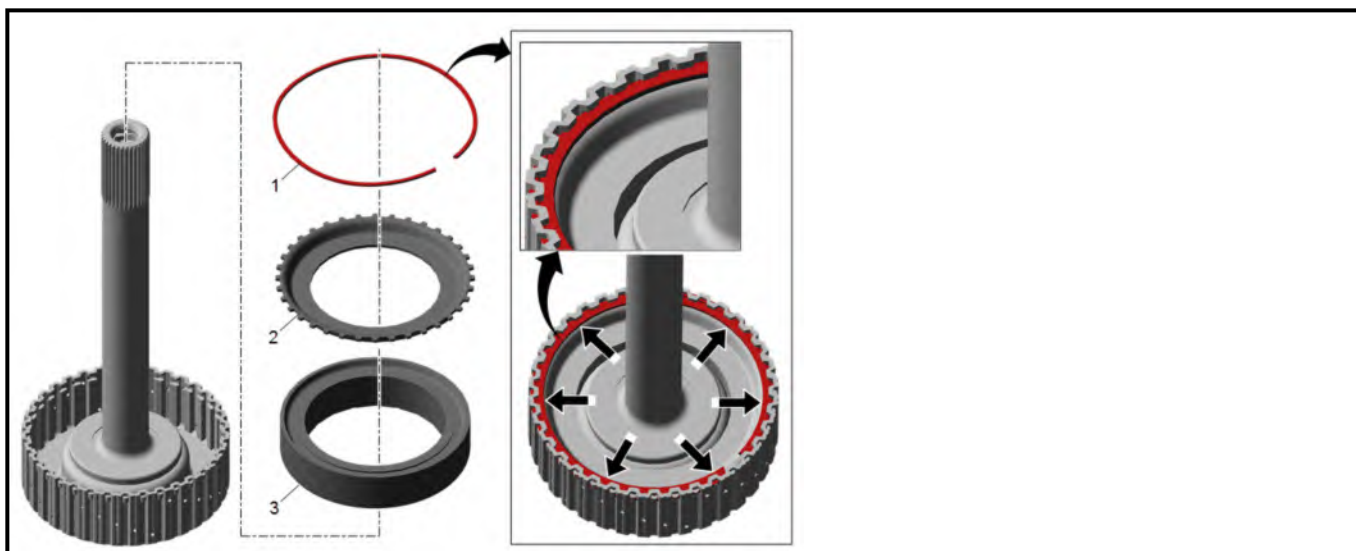
LOW AND REVERSE CLUTCH BACKING PLATE RETAINING RING MEASUREMENT



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
Preliminary Procedures	
1. Install DT-47868-1 pack travel weight and DT-47868-4 travel weight adapter onto the low and reverse clutch backing plate. 2. Attach the GE-8001 dial indicator set to the GE-26900-13 magnetic base and zero out the dial indicator on the DT-47868-1 pack travel weight.	
Special Tools	
• DT-47868-1 Pack Travel Weight • DT-47868-4 Clutch Travel Weight Adapter • GE-8001 Dial Indicator Set • GE-26900-13 Magnetic Base	
Equivalent regional tools: Special Tools	
1	Low and Reverse Backing Plate Retaining Ring Procedure 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. Clutch Backing Plate Retaining Ring Specifications (6L50).

4-5-6 CLUTCH DAMPENER OVERHAUL (6L50/80/90)



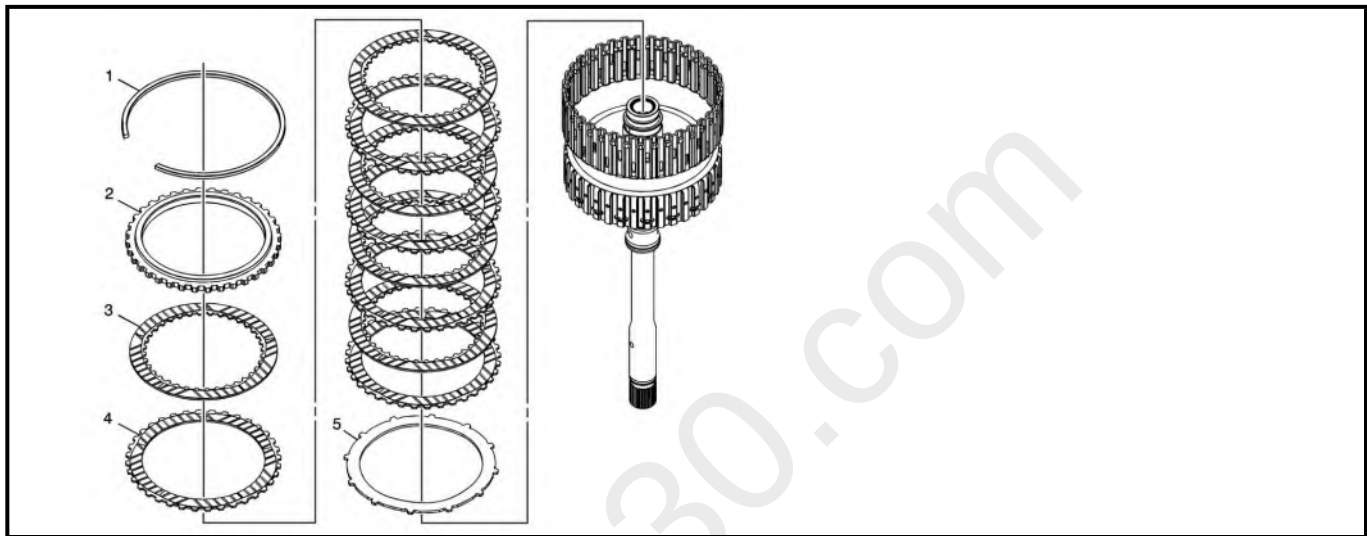
NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
NOTE: 6L45 models DO NOT include a 4- 5-6 clutch dampener.	
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
3	4-5-6 Clutch Dampener Procedure Dry and inspect the clutch dampener for the following conditions:

Callout	Component Name
	• Pitting • Flaking • Delamination • Wear • Glazing • Cracking If any of these conditions are found, replace the dampener.

4-5-6 CLUTCH OVERHAUL (6L45/6L50)

4 - 5 - 6 Clutch Plates Removal

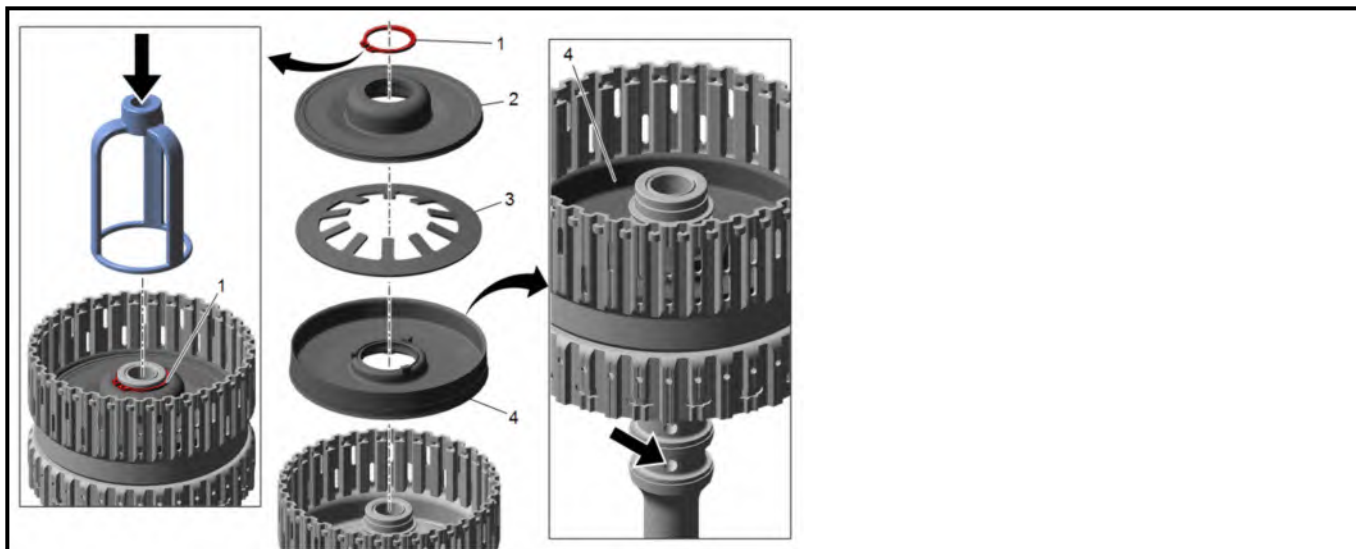


NOTE: Callouts in the following chart represent components shown in graphic above.

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



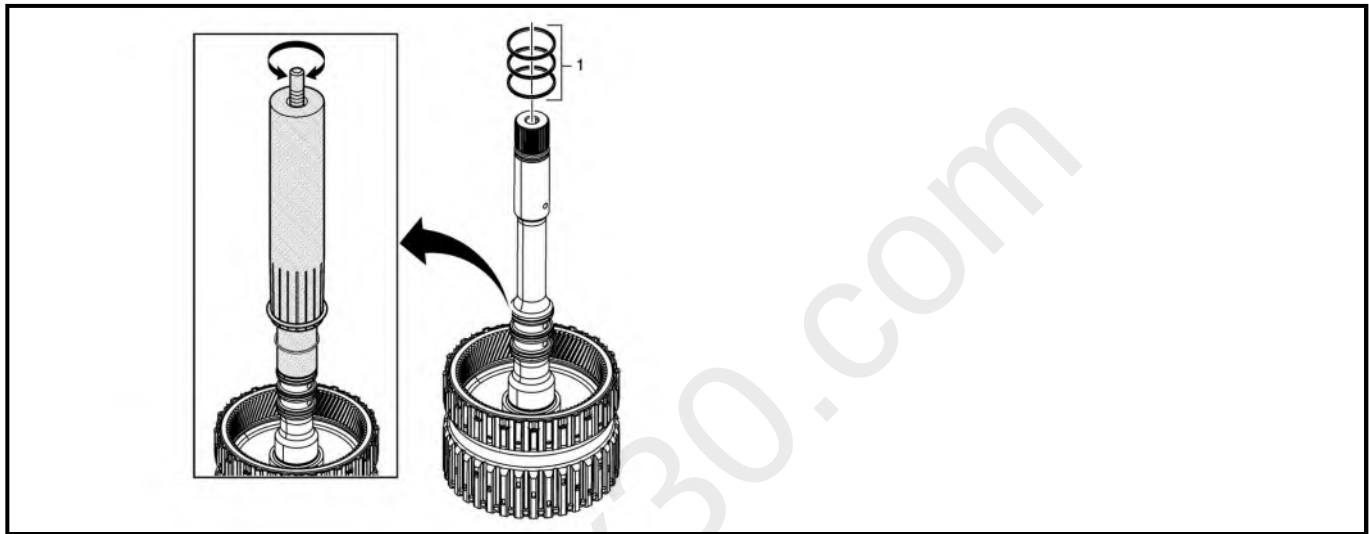
NOTE: Callouts in the following chart represent components shown in graphic above.

4 - 5 - 6 Clutch Piston Removal

Callout	Component Name
1	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 . 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

Callout	Component Name
	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



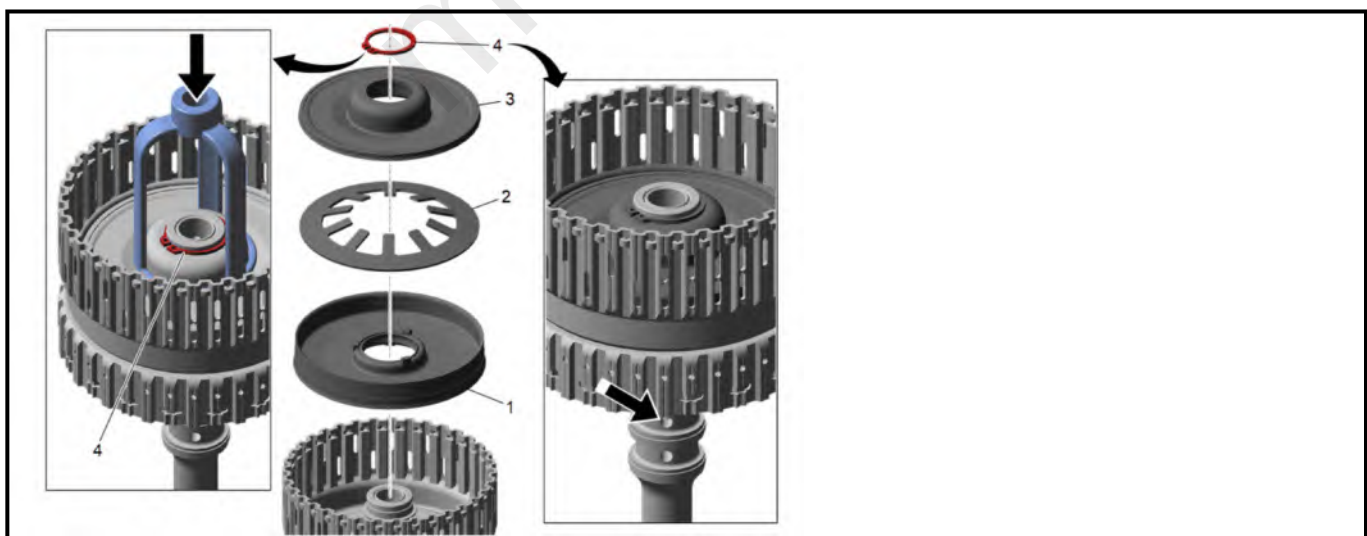
NOTE: Callouts in the following chart represent components shown in graphic above.

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.	
1	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

Callout	Component Name
	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) (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



NOTE: Callouts in the following chart represent components shown in graphic above.

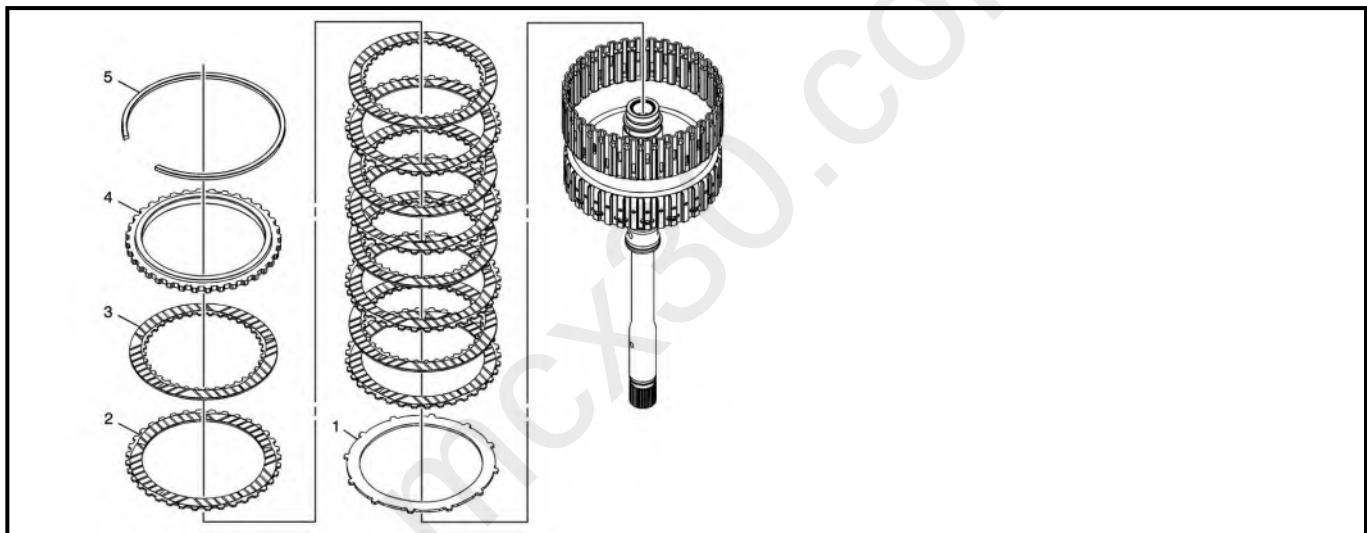
4 - 5 - 6 Clutch Piston Installation

Callout	Component Name
1	4 - 5 - 6 Clutch Piston Assembly

Callout	Component Name
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

Callout	Component Name
	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



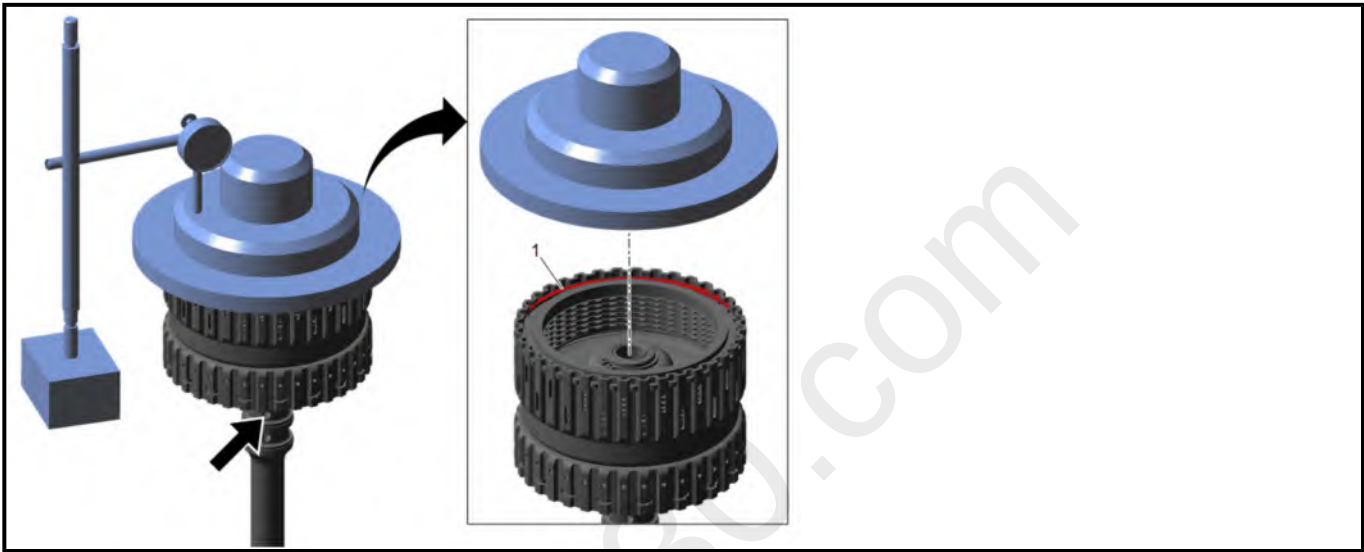
NOTE: Callouts in the following chart represent components shown in graphic above.

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)
4	4 - 5 - 6 Clutch Backing Plate
5	4 - 5 - 6 Clutch Backing Plate Retaining Ring
	NOTE: After the retaining ring is installed, determine clutch piston travel in order

Callout	Component Name
	to verify if the correct selective retaining ring is being used. Refer to 4-5-6 Clutch Backing Plate Retaining Ring Measurement .

4-5-6 CLUTCH BACKING PLATE RETAINING RING MEASUREMENT

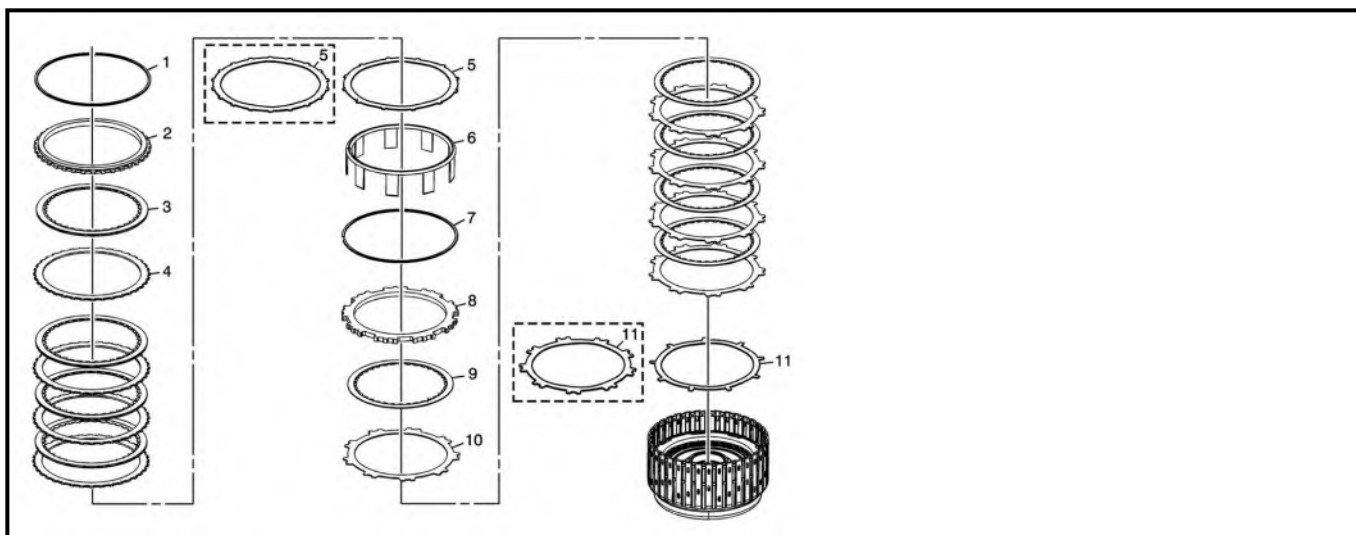


NOTE: Callouts in the following chart represent components shown in graphic above.

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	
Equivalent regional tools: Special Tools	
1	4-5-6 Clutch Backing Plate Retaining Ring Procedure 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 (6L50) to determine the correct retainer.

1-2-3-4 AND 3-5 REVERSE CLUTCH OVERHAUL (6L45/6L50/6L80/6L90)

1 - 2 - 3 - 4 and 3 - 5 Reverse Clutch Plates Removal

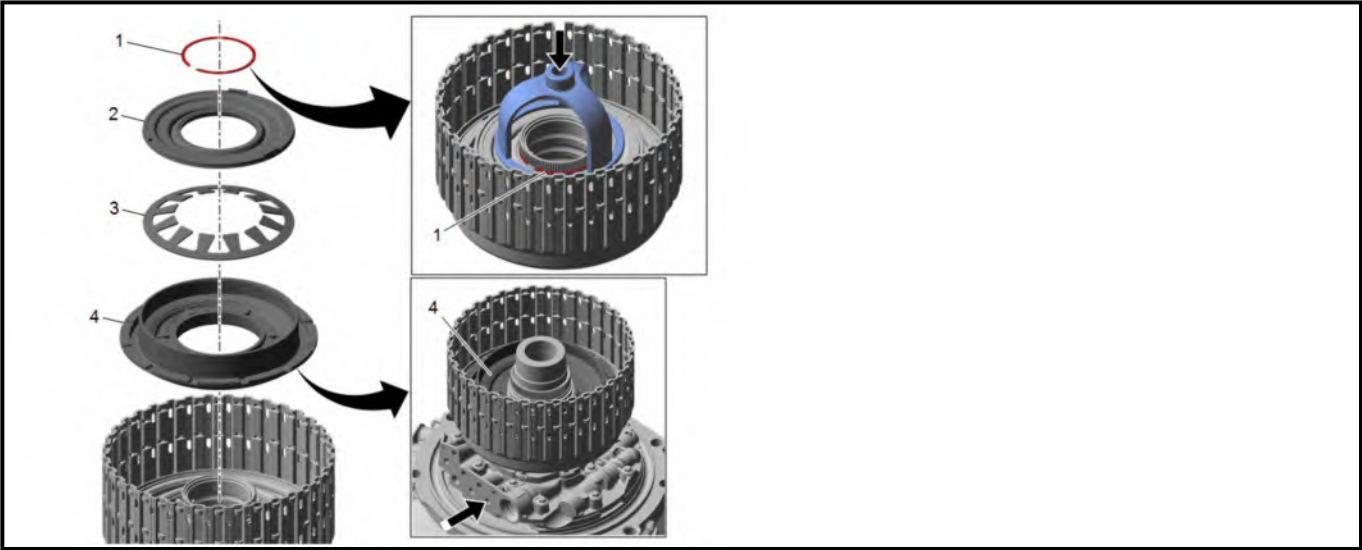


NOTE: Callouts in the following chart represent components shown in graphic above.

1 - 2 - 3 - 4 and 3 - 5 Reverse Clutch Plates Removal

Callout	Component Name
1	3 - 5 Reverse Clutch Backing Plate Retaining Ring
2	3 - 5 Reverse Clutch Backing Plate
3	3 - 5 Reverse Clutch Plate Assembly Procedure - Remove Qty: 4 plates - 6L45/6L50/6L80 - Remove Qty: 4 or 5 plates - Model Dependent - 6L90
4	3 - 5 Reverse Clutch Plate Procedure - Remove Qty: 4 plates - 6L45/6L50/6L80 - Remove Qty: 4 or 5 plates - Model Dependent - 6L90
5	3 - 5 Reverse Clutch (Waved) Plate
6	3 - 5 Reverse Clutch Apply Ring
7	1 - 2 - 3 - 4 Clutch Backing Plate Retaining Ring
8	1 - 2 - 3 - 4 Clutch Backing Plate
9	1 - 2 - 3 - 4 Clutch Plate Assembly Procedure - Remove Qty: 5 plates - 6L45/6L50/6L80 - Remove Qty: 5 or 6 plates - Model Dependent - 6L90
10	1 - 2 - 3 - 4 Clutch Plate Procedure - Remove Qty: 5 plates - 6L45/6L50/6L80 - Remove Qty: 5 or 6 plates - Model Dependent - 6L90
11	1 - 2 - 3 - 4 Clutch (Waved) Plate

1 - 2 - 3 - 4 Clutch Piston Removal



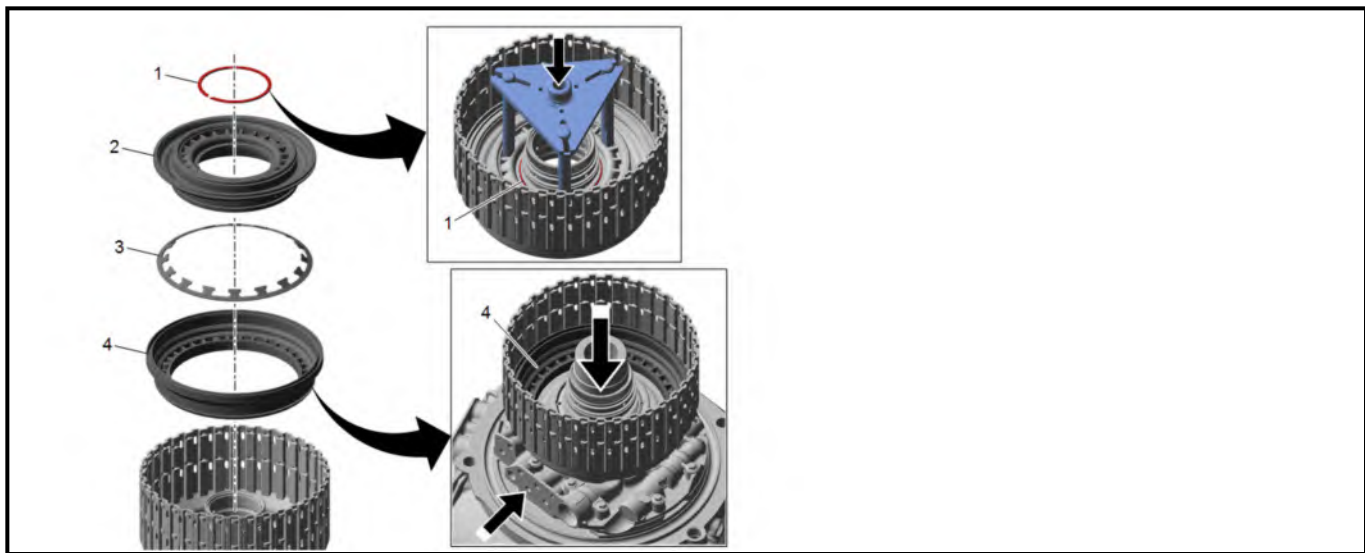
NOTE: Callouts in the following chart represent components shown in graphic above.

1 - 2 - 3 - 4 Clutch Piston Removal

Callout	Component Name
1	1 - 2 - 3 - 4 Clutch Piston Dam Retaining Ring CAUTION: Use care when compressing the 1 - 2 - 3 - 4 clutch spring and dam assembly. Compressing the dam assembly too much may damage it. CAUTION: Refer to Retaining Ring Reuse Caution . Special Tool DT 38734 Intermediate Spring Compressor Adapter For equivalent regional tools, refer to Special Tools .
2	1 - 2 - 3 - 4 Clutch Piston Dam Assembly
3	1 - 2 - 3 - 4 Clutch Spring
4	1 - 2 - 3 - 4 Clutch Piston Procedure Inspect the 1 - 2 - 3 - 4 clutch piston for cracking and replace if damaged. NOTE:

Callout	Component Name
	• It may be necessary to apply air to the apply passage in order to remove the piston. Install the 1 - 2 - 3 - 4 clutch housing onto the torque converter (with fluid pump) housing assembly in order to apply air. • After air is applied, it may be necessary to turn the housing assembly upside down and carefully tap the housing against a flat surface in order to release the piston.

3 - 5 Reverse Clutch Piston Removal



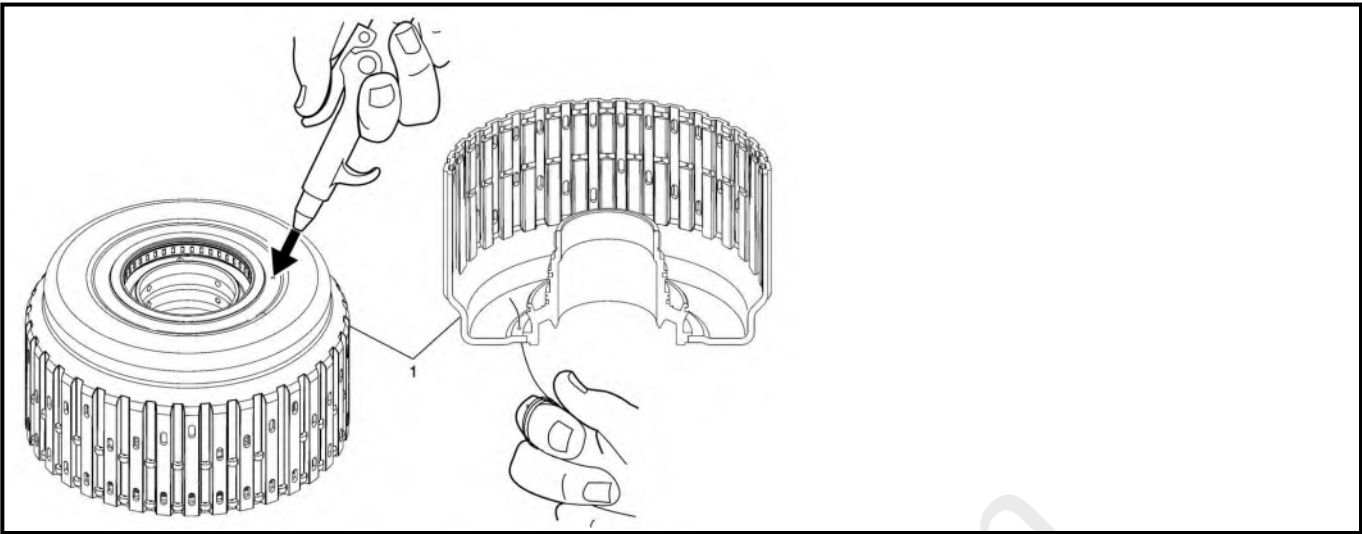
NOTE: Callouts in the following chart represent components shown in graphic above.

3 - 5 Reverse Clutch Piston Removal

Callout	Component Name
Preliminary Procedures 1. Install the 1 - 2 - 3 - 4 and 3 - 5 reverse clutch housing assembly onto the torque converter (with fluid pump) housing assembly. 2. Apply hand pressure on the 1 - 2 - 3 - 4 clutch piston housing while applying compressed air to the apply passage in order to unseat the 3 - 5 reverse clutch piston.	
1	1 - 2 - 3 - 4 Clutch Piston Housing Retaining Ring CAUTION: Refer to Retaining Ring Reuse Caution . Special Tool DT 47867 Adjustable Clutch Spring Compressor For equivalent regional tools, refer to Special Tools .
2	1 - 2 - 3 - 4 Clutch Piston Housing
3	3 - 5 Reverse Clutch Spring
4	3 - 5 Reverse Clutch Piston NOTE: It may be necessary to turn the housing assembly upside down and carefully tap the housing against a flat surface in order to

Callout	Component Name
	release the piston.

3 - 5 Reverse Clutch Air Bleed Inspection (6L80/6L90)

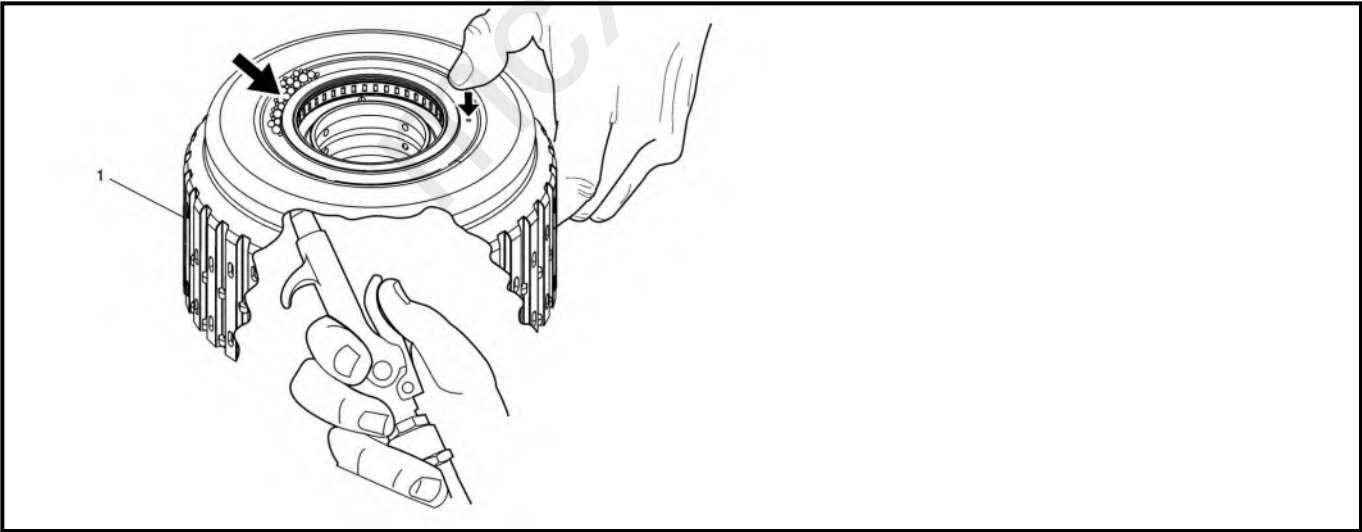


NOTE: Callouts in the following chart represent components shown in graphic above.

3 - 5 Reverse Clutch Air Bleed Inspection (6L80/6L90)

Callout	Component Name
1	1 - 2 - 3 - 4 and 3 - 5 Reverse Clutch Housing Assembly Procedure Ensure the air bleed passage is clear and free from obstructions by using a fine wire and also compressed air.

3 - 5 Reverse Clutch Housing Inspection Disassembled



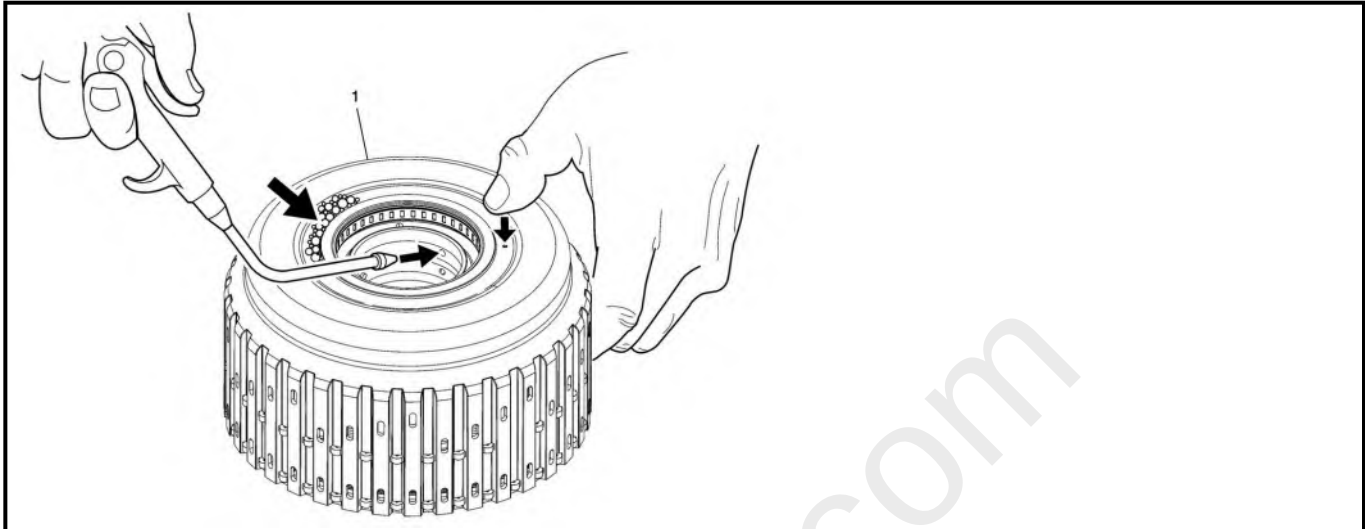
NOTE: Callouts in the following chart represent components shown in graphic above.

3 - 5 Reverse Clutch Housing Inspection Disassembled

Callout	Component Name
1	1-2-3-4 and 3-5 Reverse Clutch Housing Assembly Procedure

Callout	Component Name
	1. Apply soap compound to weld area of housing. 2. Hold thumb over the air bleed passage. 3. For disassembled 1-2-3-4 and 3-5 reverse clutch housing spray compressed air onto the housing / hub joint and inspect weld area for bubbles. 4. If bubbles are detected a new housing is required.

3 - 5 Reverse Clutch Housing Inspection Assembled

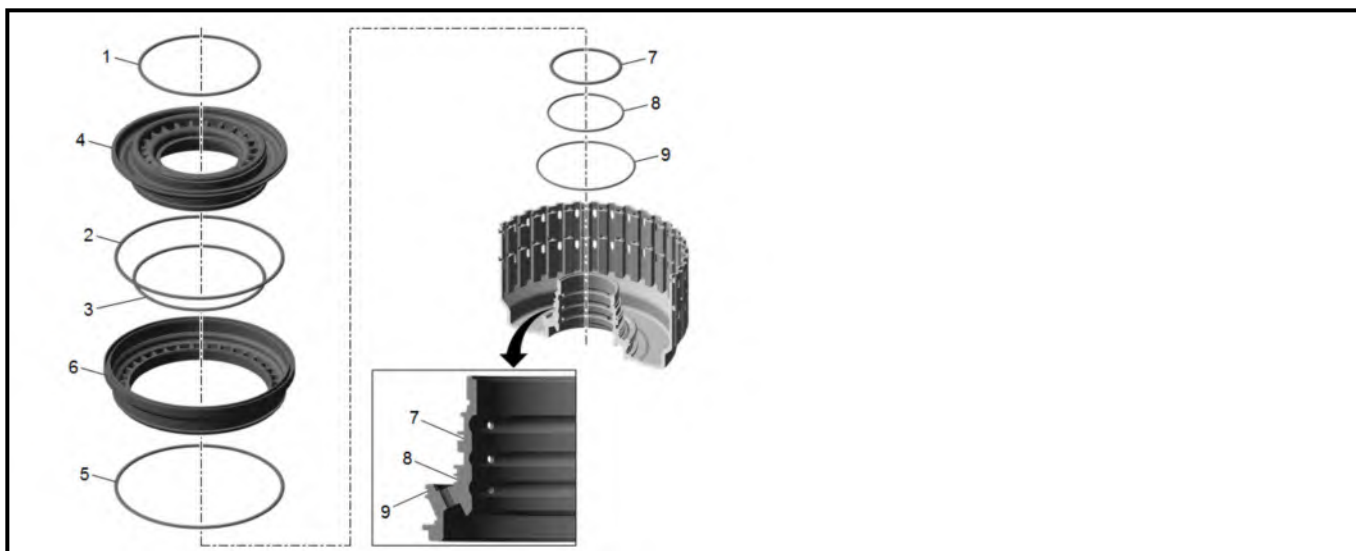


NOTE: Callouts in the following chart represent components shown in graphic above.

3 - 5 Reverse Clutch Housing Inspection Assembled

Callout	Component Name
1	1-2-3-4 and 3-5 Reverse Clutch Housing Assembly Procedure 1. Apply soap compound to weld area of housing. 2. Hold thumb over the air bleed passage. 3. For fully assembled 1-2-3-4 and 3-5 reverse clutch housing spray compressed air into the 3-5R clutch feed hole and inspect weld area for bubbles. 4. If bubbles are detected a new housing is required.

1 - 2 - 3 - 4 and 3 - 5 Reverse Clutch Piston Seals Replacement



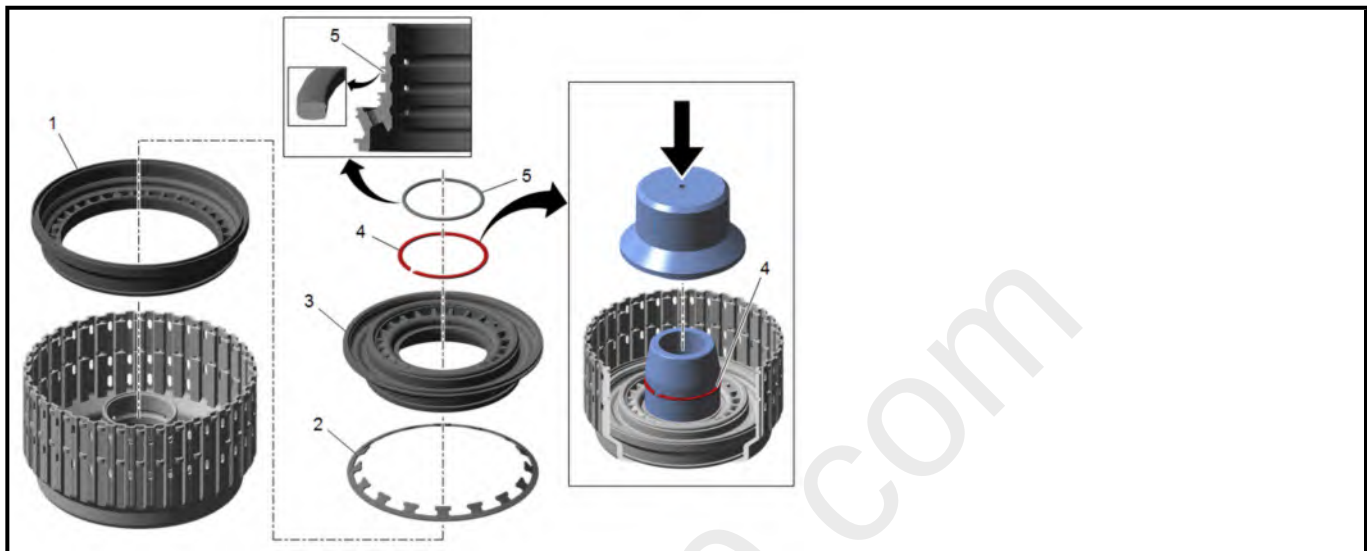
NOTE: Callouts in the following chart represent components shown in graphic above.

1 - 2 - 3 - 4 and 3 - 5 Reverse Clutch Piston Seals Replacement

Callout	Component Name
CAUTION: Refer to Seal Reuse Caution .	
Preliminary Procedure Lubricate all seals with automatic transmission fluid (ATF) prior to installation.	
1	1 - 2 - 3 - 4 Clutch Piston Seal
2	3 - 5 Reverse Clutch Piston Dam (O-Ring) Seal
3	3 - 5 Reverse Clutch Piston Inner Seal
4	1 - 2 - 3 - 4 Clutch Piston Housing
5	3 - 5 Reverse Clutch Piston Outer Seal
6	3 - 5 Reverse Clutch Piston
7	1 - 2 - 3 - 4 Clutch Piston Inner Seal CAUTION: Do not install a NEW 1 - 2 - 3 - 4 clutch piston inner seal yet. A special tool used to install the 1 - 2 - 3 - 4 clutch piston housing retaining ring may damage the seal if the seal is installed prior to installing the

Callout	Component Name
	retaining ring. Refer to 3 - 5 Reverse Clutch Piston Installation .
8	1 - 2 - 3 - 4 Clutch Piston Housing Seal
9	1 - 2 - 3 - 4 Clutch Piston Housing Seal

3 - 5 Reverse Clutch Piston Installation



NOTE: Callouts in the following chart represent components shown in graphic above.

3 - 5 Reverse Clutch Piston Installation

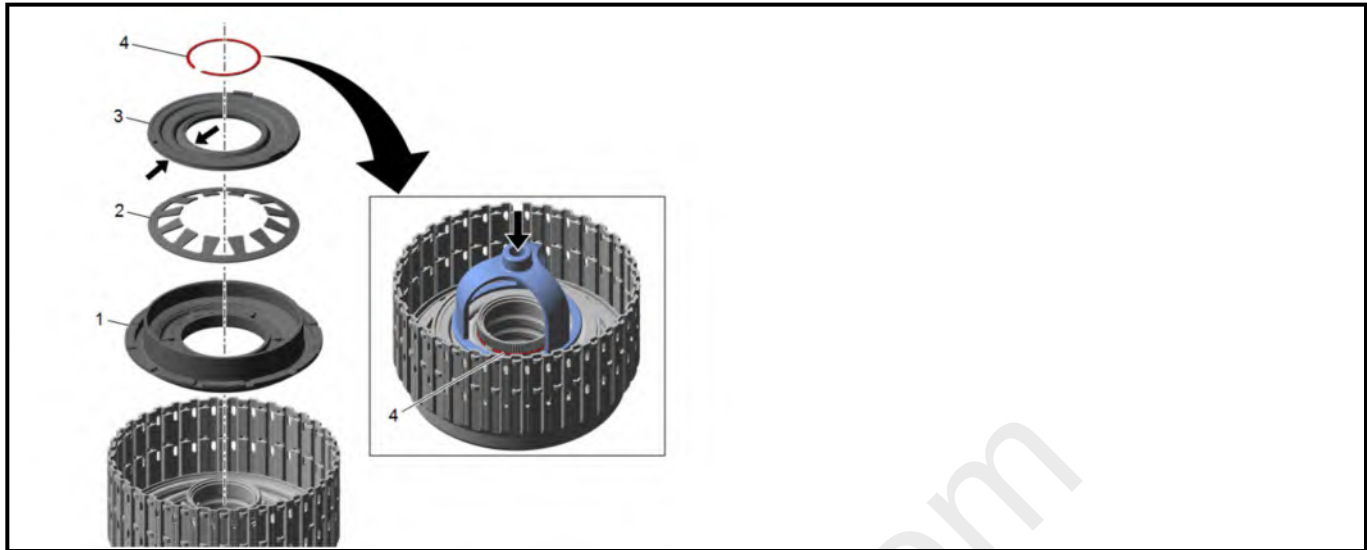
Callout	Component Name
1	3 - 5 Reverse Clutch Piston
2	3 - 5 Reverse Clutch Spring CAUTION: Ensure the clutch spring is centered on the piston with the tabs facing up. Failure to do so may cause damage to the clutch assembly.
3	1 - 2 - 3 - 4 Clutch Piston Housing
4	1 - 2 - 3 - 4 Clutch Piston Housing Retaining Ring CAUTION: Before using the DT-47782

Callout	Component Name
	- 2, push the retaining ring over the DT-47782 - 1 by hand so that the ring is positioned below the tapered area of the DT-47782 - 1. If the ring is positioned above the tapered area when it is being installed, the ring will become lodged between both tools causing damage to the tools, retaining ring, and piston housing. CAUTION: Refer to Retaining Ring Reuse Caution . CAUTION: Push the retaining ring down over the cone until the ring seats firmly in the retaining ring groove. The retaining ring will make a distinctive click sound when it seats.

Callout	Component Name
	Failure to properly seat the retaining ring may cause damage to the 3-5 reverse clutch assembly. NOTE: Use a screwdriver in order to verify the retaining ring is fully seated into the groove. It may appear as though the retaining ring is not fully seated, since the groove is shallow by design. However, this shallow interface is normal. Special Tools • DT 47782-1 Retaining Ring Cone • DT 47782-2 Retaining Ring Installer For equivalent regional tools, refer to Special Tools.
5	1 - 2 - 3 - 4 Clutch Piston Inner Seal CAUTION: Install a NEW seal and orientate as shown. Failure to do so may cause internal transmission

Callout	Component Name
	leaks and damage to the transmission.

1 - 2 - 3 - 4 Clutch Piston Installation



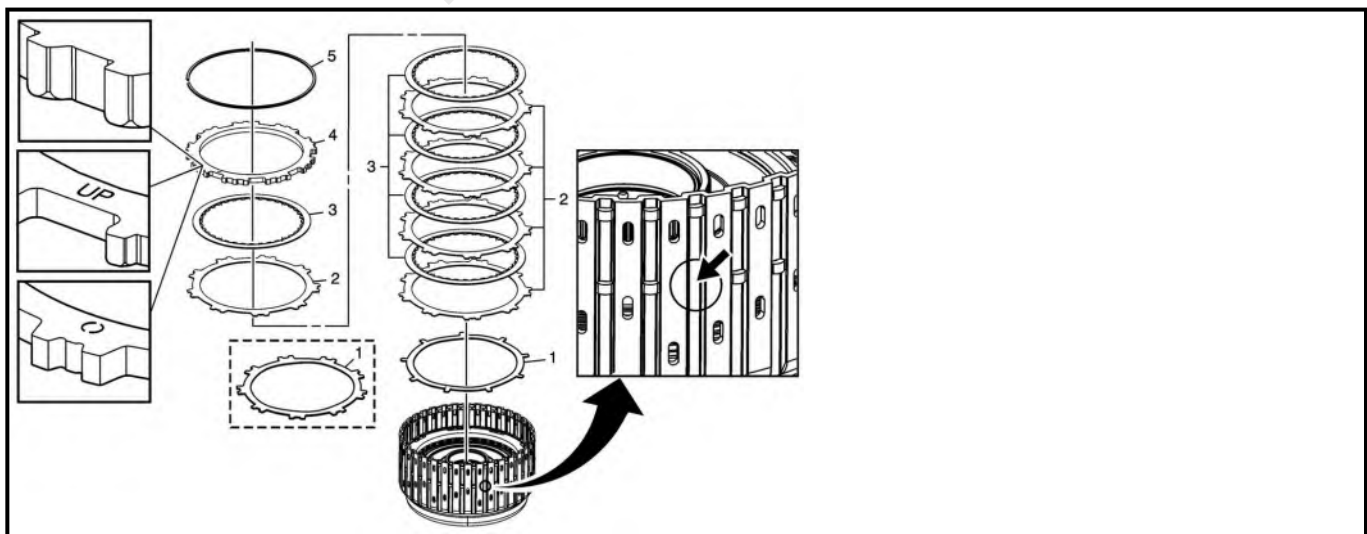
NOTE: Callouts in the following chart represent components shown in graphic above.

1 - 2 - 3 - 4 Clutch Piston Installation

Callout	Component Name
1	1 - 2 - 3 - 4 Clutch Piston
2	1 - 2 - 3 - 4 Clutch Spring CAUTION: Ensure the clutch spring is centered on the piston with the tabs facing up. Failure to do so may cause damage to the clutch assembly.
3	1 - 2 - 3 - 4 Clutch Piston Dam Assembly NOTE: Lubricate the inner and outer surfaces of the dam assembly with ATF in order to

Callout	Component Name
	ease installation into the piston. Install the tabs facing up.
4	1 - 2 - 3 - 4 Clutch Piston Dam Retaining Ring CAUTION: Use care when compressing the 1 - 2 - 3 - 4 clutch spring and dam assembly. Compressing the dam assembly too much may damage it. CAUTION: Refer to Retaining Ring Reuse Caution . Special Tool DT 38734 Intermediate Spring Compressor Adapter For equivalent regional tools, refer to Special Tools .

1 - 2 - 3 - 4 Clutch Plate Installation



NOTE: Callouts in the following chart represent components shown in graphic above.

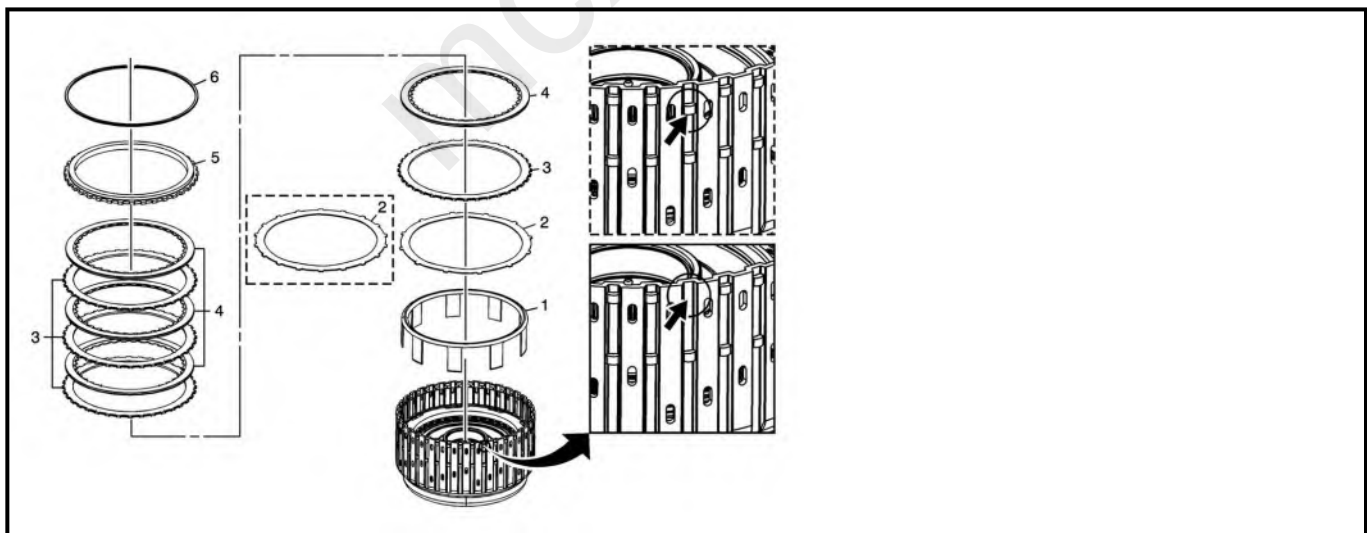
1 - 2 - 3 - 4 Clutch Plate Installation

Callout	Component Name
1	1 - 2 - 3 - 4 Clutch (Waved) Plate CAUTION: Ensure an opening between the external splines of the waved plate is centered over the missing snap ring groove punch in the housing. Failure to do so may cause damage to the clutch assembly.
2	1 - 2 - 3 - 4 Clutch Plate CAUTION: Ensure all clutch plates are centered in the housing. When installing the first steel clutch plate, ensure an opening between the external splines is centered over the missing snap ring groove punch in the housing. Align the external splines of each remaining steel clutch plate with

Callout	Component Name
	the first steel clutch plate. Failure to do so may cause damage to the clutch assembly. Procedure • Install Qty: 5 plates - 6L45/6L50/6L80 • Install Qty: 5 or 6 plates - Model Dependent - 6L90
3	1 - 2 - 3 - 4 Clutch Plate Assembly Procedure • Install Qty: 5 plates - 6L45/6L50/6L80 • Install Qty: 5 or 6 plates - Model Dependent - 6L90
4	1 - 2 - 3 - 4 Clutch Backing Plate CAUTION: Align the external splines of the backing plate with the external splines of the steel clutch plates. Failure to do so may cause damage to the clutch assembly. CAUTION: Ensure the 1-2-3-4 Clutch Backing Plate is installed correctly to prevent mechanical damage. Procedure

Callout	Component Name
	If the plate has UP stamped on it, install that side up. If the plate has 3 circle marks spaced 120 degrees apart stamped on it, install that side up. If no identification marks are present, install sharp edge up, chamfer side down.
5	1 - 2 - 3 - 4 Clutch Backing Plate Retaining Ring CAUTION: Depending on the housing configuration, align the retaining ring gap with the missing snap ring groove punch in the housing or the offset punch in the housing. Failure to do so may cause damage to the clutch assembly. Procedure 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 1-2-3-4 Clutch Backing Plate Retaining Ring Measurement.

3 - 5 and Reverse Clutch Plate Installation



NOTE: Callouts in the following chart represent components shown in graphic above.

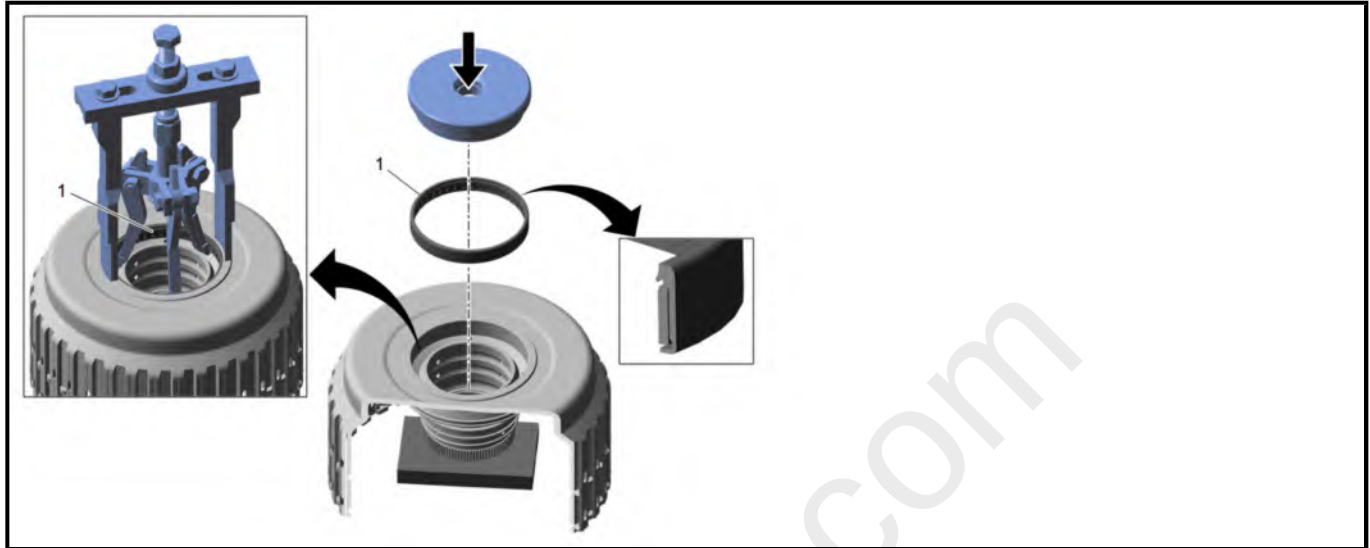
3 - 5 and Reverse Clutch Plate Installation

Callout	Component Name
1	3 - 5 Reverse Clutch Apply Ring
	CAUTION:

Callout	Component Name
	Ensure apply ring legs are positioned into the 3-5 reverse clutch piston. Failure to do so may cause damage to the 3-5 reverse clutch assembly.
2	3 - 5 Reverse Clutch (Waved) Plate
3	3 - 5 Reverse Clutch Plate Procedure • Install Qty: 4 plates - 6L45/6L50/6L80 • Install Qty: 4 or 5 plates - Model Dependent - 6L90
4	3 - 5 Reverse Clutch Plate Assembly Procedure • Install Qty: 4 plates - 6L45/6L50/6L80 • Install Qty: 4 or 5 plates - Model Dependent - 6L90
5	3 - 5 Reverse Clutch Backing Plate
6	3 - 5 Reverse Clutch Backing Plate Retaining Ring CAUTION: Depending on the housing configuration, align the retaining ring gap with the missing snap ring groove punch in the housing or the offset punch in the housing. Failure to do so may cause damage to the clutch assembly. Procedure

Callout	Component Name
	1. After retaining ring is installed check 1-2-3-4 and 3-5 reverse clutch housing for weld leak. Refer to 3-5 Reverse Clutch Housing Inspection Assembled earlier in this procedure. 2. 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 3-5 Reverse Clutch Backing Plate Retaining Ring Measurement (6L50).

1 - 2 - 3 - 4 and 3 - 5 Reverse Clutch Bearing Assembly Replacement



NOTE: Callouts in the following chart represent components shown in graphic above.

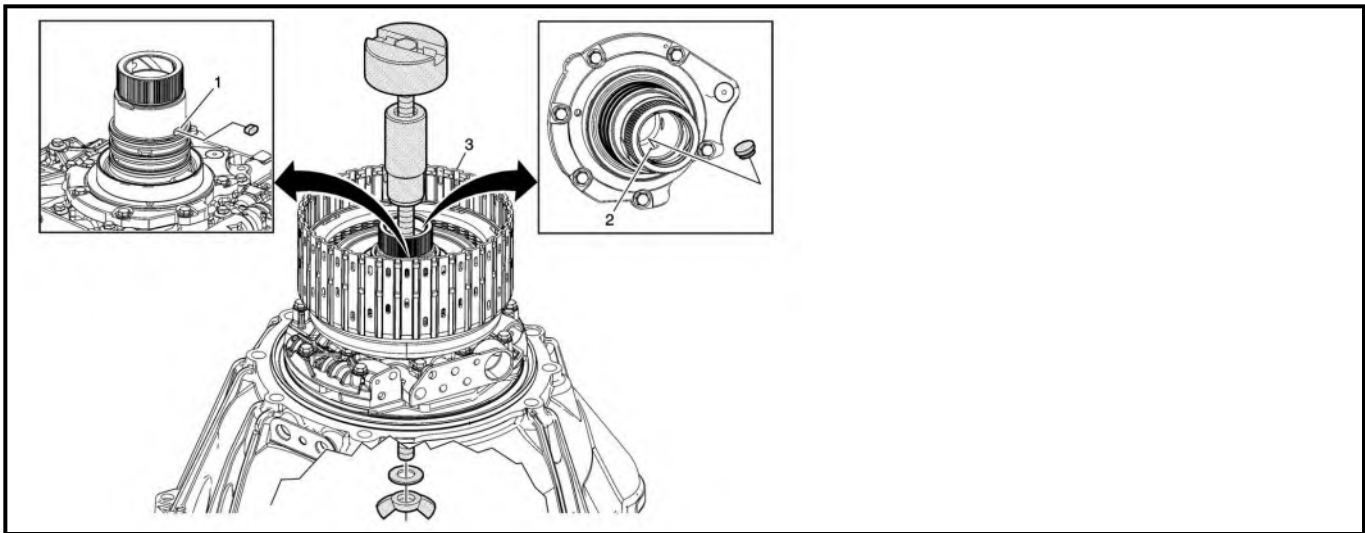
1 - 2 - 3 - 4 and 3 - 5 Reverse Clutch Bearing Assembly Replacement

Callout	Component Name
1	3 - 5 Reverse Clutch Bearing CAUTION: Install the NEW bearing assembly with the seal side up. Improper installation of the bearing may cause damage to the transmission. CAUTION: Do not use a hammer or other striking tool that may cause damage to the bearing

Callout	Component Name
	and housing. Use care to ensure the bearing is installed slowly and evenly using an arbor press supporting the inner hub. Do not support by the housing or fracture will result. CAUTION: Do not reuse the bearing. Install a NEW bearing. Reusing an old bearing may cause damage to the transmission. Procedure Install the bearing flush to 0.3 mm (0.012 in) below the thrust surface. Special Tools • DT 47865 Bearing Remover • DT 47866 Bearing Installer • DT 45124 Removal Bridge For equivalent regional tools, refer to Special Tools.

1-2-3-4 CLUTCH BACKING PLATE RETAINING RING MEASUREMENT

Fluid Passage Plug Kit Installation



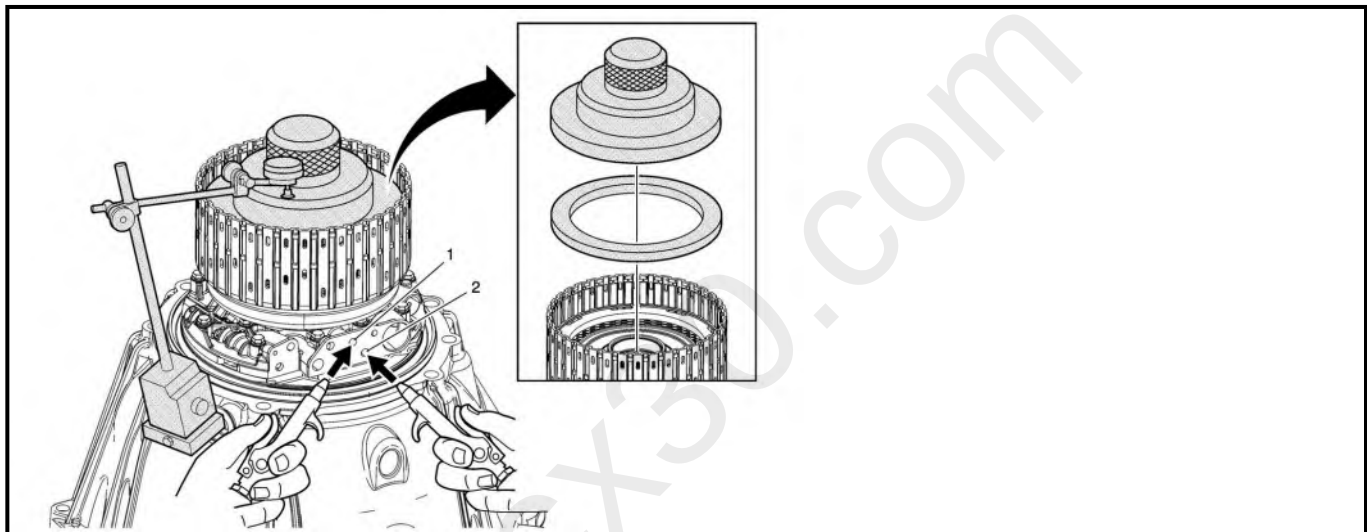
NOTE: Callouts in the following chart represent components shown in graphic above.

Fluid Passage Plug Kit Installation

Callout	Component Name
Special Tool DT-49291 Clutch Travel Air Passage Plug Kit	
1	Compensator Feed Fluid Passage - Outer Procedure Install the tapered oval fluid passage plug DT-49291-4 which is part of DT-49291 clutch travel air passage plug kit, into the compensator feed fluid passage hole on the 1-2-3-4 and 3-5 reverse clutch support assembly. NOTE: The compensator feed fluid passage hole is the top outer hole on the 1-2-3-4 and 3-5 reverse clutch support assembly.
2	Compensator Feed Fluid Passage - Inner Procedure Install the round fluid passage plug DT-49291-5 which is part of DT-49291 clutch travel air passage plug kit, into the compensator feed fluid passage hole inside the 1-2-3-4 and 3-5 reverse clutch support assembly. NOTE: The compensator feed fluid passage hole is the middle inner hole in the 1-2-3-4 and 3-5

Callout	Component Name
	reverse clutch support assembly.
3	1-2-3-4 and 3-5 Reverse Clutch Housing Assembly Procedure 1. Ensure that the 1-2-3-4 clutch plates, backing plate and retaining ring are installed. 2. Install the 1-2-3-4 and 3-5 reverse clutch housing onto the torque converter (with fluid pump) housing assembly. 3. Install the applicable plug kit sleeve DT-49291-2 (6L80/6L90) or DT-49291-3 (6L45/6L50), cap DT-49291-1, bolt, washer and nut which are all part of DT-49291 clutch travel air passage plug kit.

Apply Compressed Air and Measurement



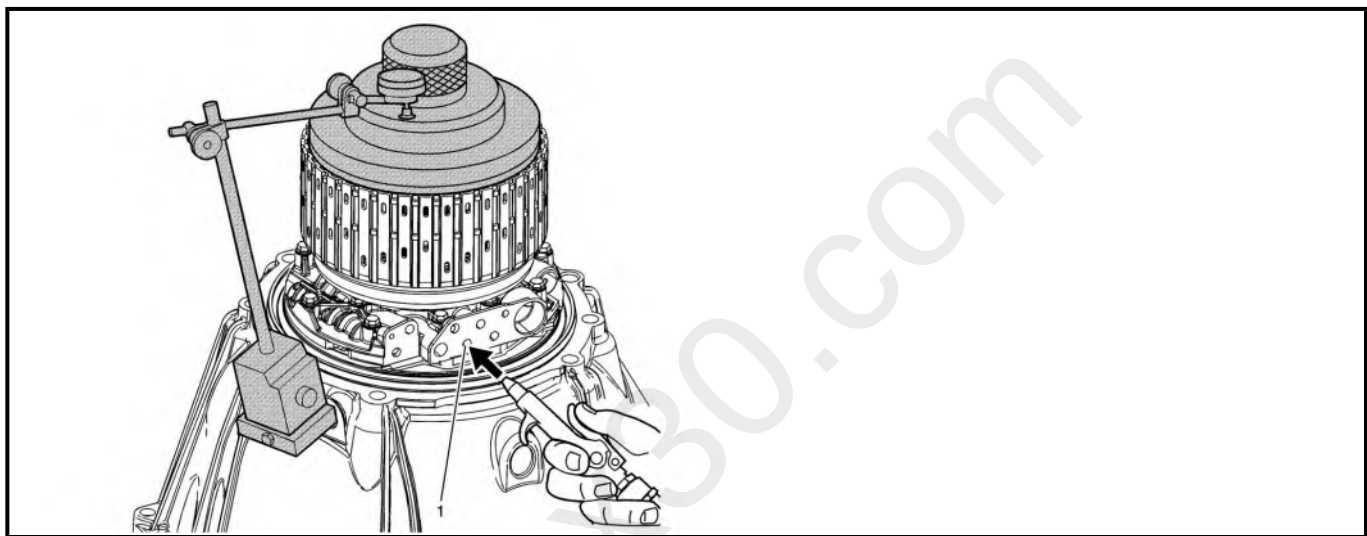
NOTE: Callouts in the following chart represent components shown in graphic above.

Apply Compressed Air and Measurement

Callout	Component Name
Preliminary Procedures	
1. Install the DT-47868-2 base adapter onto the torque converter housing. 2. Install DT-47868-1 travel weight and DT-47868-3 travel weight adapter onto the 1 - 2 - 3 - 4 clutch backing plate. 3. Install the GE-26900-13 magnetic base onto DT-47868-2 base adapter. 4. Attach the GE-8001 dial indicator set to the GE-26900-13 magnetic base.	
Special Tools	
• DT-47868-1 Clutch Pack Travel Weight • DT-47868-2 Magnetic Base Adapter • DT-47868-3 Clutch Travel Weight Adapter • GE-8001 Dial Indicator Set • GE-26900-13 Magnetic Base	

Callout	Component Name
For equivalent regional tools, refer to Special Tools .	
1	Compensator Feed Fluid Passage Procedure 1. Apply compressed air to the compensator feed fluid passage. 2. Zero out the dial indicator GE-8001 dial indicator set.
2	1-2-3-4 Clutch Apply Passage Procedure While Applying compressed air to the compensator feed fluid passage, simultaneously apply compressed air to the 1-2-3-4 clutch apply passage. Do this at least 3 times and observe the dial indicator measurement each time. Refer to Clutch Backing Plate Retaining Ring Specifications (6L50) .

3-5 REVERSE CLUTCH BACKING PLATE RETAINING RING MEASUREMENT (6L50)



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
Preliminary Procedures	
1. Install the 1 - 2 - 3 - 4 and 3 - 5 reverse clutch housing with the 1 - 2 - 3 - 4 and 3 - 5 reverse clutch plates installed, onto the torque converter housing. 2. Install the DT 47868-2 magnetic base adapter onto the torque converter housing. 3. Install DT 47868-1 clutch pack travel weight and DT 47868-3 clutch travel weight adapter (6L50 applications only) onto the 3 - 5 reverse clutch backing plate. 4. Install the GE 26900-13 magnetic base onto DT 47868-2 magnetic base adapter. 5. Attach the GE 8001 dial indicator set to the GE 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 47868-2 Magnetic Base Adapter • DT 47868-3 Clutch Travel Weight Adapter (6L50 applications only) • GE 8001 Dial Indicator Set • GE 26900-13 Magnetic Base	

Callout	Component Name
For equivalent regional tools, refer to Special Tools .	
1	3 - 5 Reverse Clutch Apply Passage NOTE: Apply compressed air to the apply passage hole, and observe the dial indicator measurement. Refer to Clutch Backing Plate Retaining Ring Specifications (6L50) .

TORQUE CONVERTER HOUSING WITH FLUID PUMP DISASSEMBLE

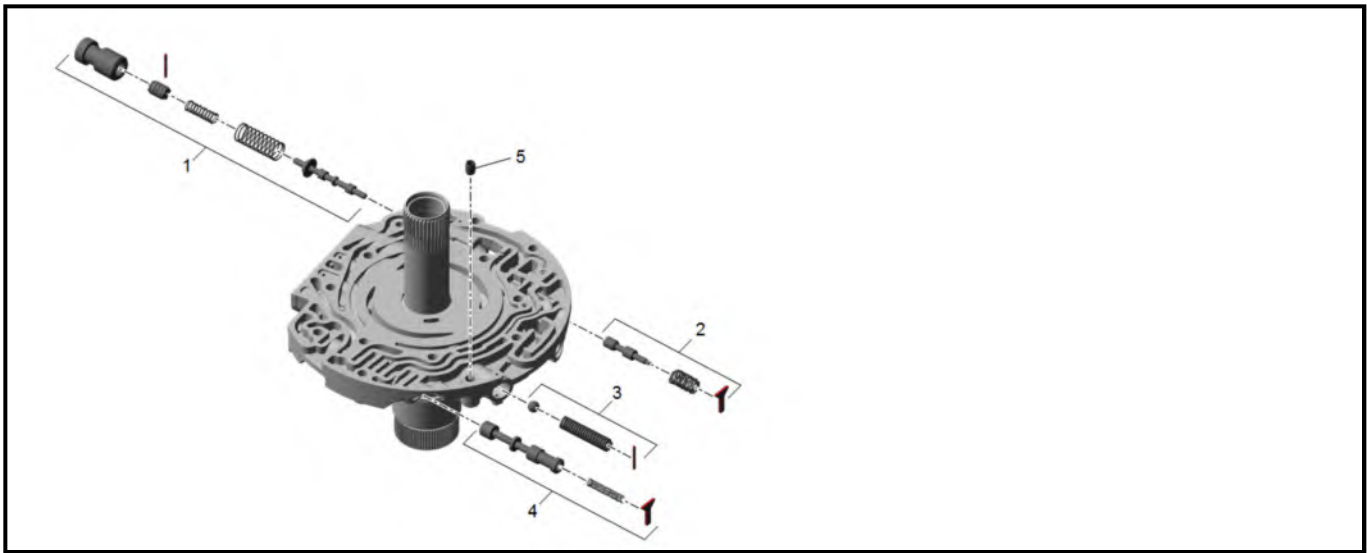


NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
CAUTION: Do not loosen or remove the 6 bolts securing the clutch support to the pump cover assembly. These bolts	

Callout	Component Name
have been installed and torqued only after specific clutch support rotational requirements have been met. If the clutch support is not installed properly, damage to the transmission will occur.	
1	1-2-3-4 and 3-5-Reverse Clutch Housing Thrust Washer
2	Automatic Transmission Fluid Pump Cover Bolt [13x] NOTE: Ensure the bolts are for the fluid pump cover. DO NOT loosen the clutch support to pump cover assembly bolts, as indicated by the arrows.
3	Automatic Transmission Fluid Pump Cover
4	Automatic Transmission Fluid Pump Vane Ring
5	Automatic Transmission Fluid Pump Rotor
6	Automatic Transmission Fluid Pump Vane [13x]
7	Automatic Transmission Fluid Pump Rotor Guide
8	Automatic Transmission Fluid Pump Vane Ring
9	Automatic Transmission Fluid Pump Slide Outer Spring
10	Automatic Transmission Fluid Pump Slide
11	Automatic Transmission Fluid Pump Slide Seal
12	Automatic Transmission Fluid Pump Slide Fluid Seal Ring
13	Automatic Transmission Fluid Pump Slide Seal
14	Automatic Transmission Fluid Pump Slide Seal Support
15	Automatic Transmission Fluid Pump Slide Pivot Pin

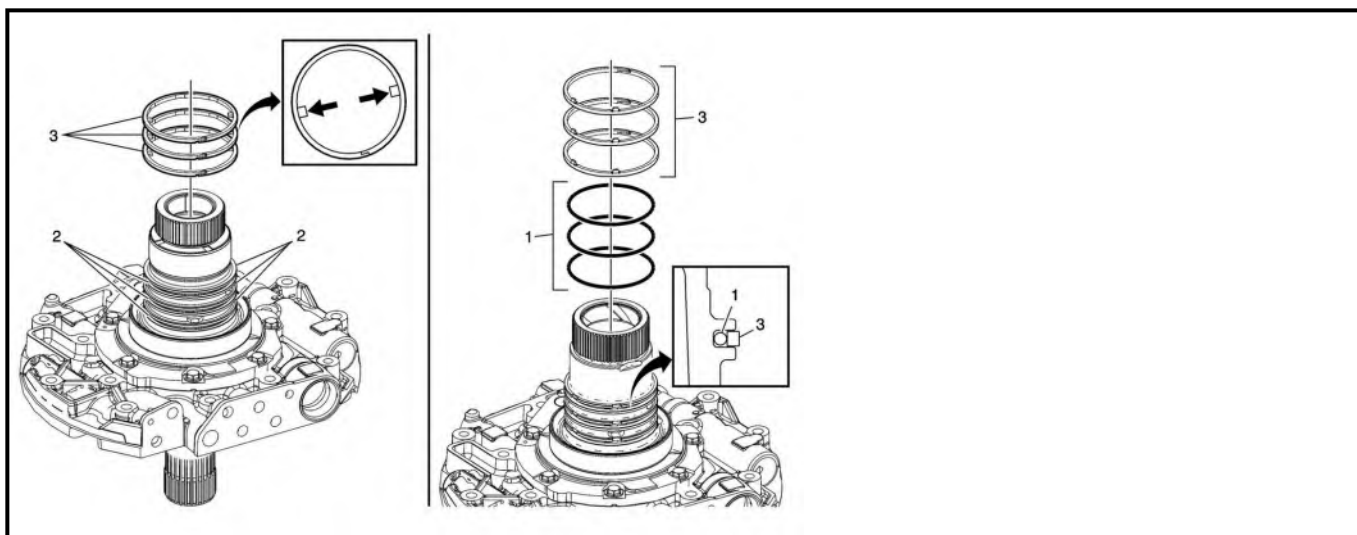
FLUID PUMP COVER CLEANING AND INSPECTION



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
WARNING: Valve springs can be tightly compressed. Use care when removing retainers and plugs. Personal injury could result.	
Preliminary Procedure Clean and inspect all components and machined surfaces.	
1	Pressure Regulator Valve Train
2	Converter Feed Limit Valve Train
3	Pressure Relief Ball Valve Train
4	Torque Converter Clutch Control Valve Train
5	Automatic Transmission Fluid Pump Locating Pin

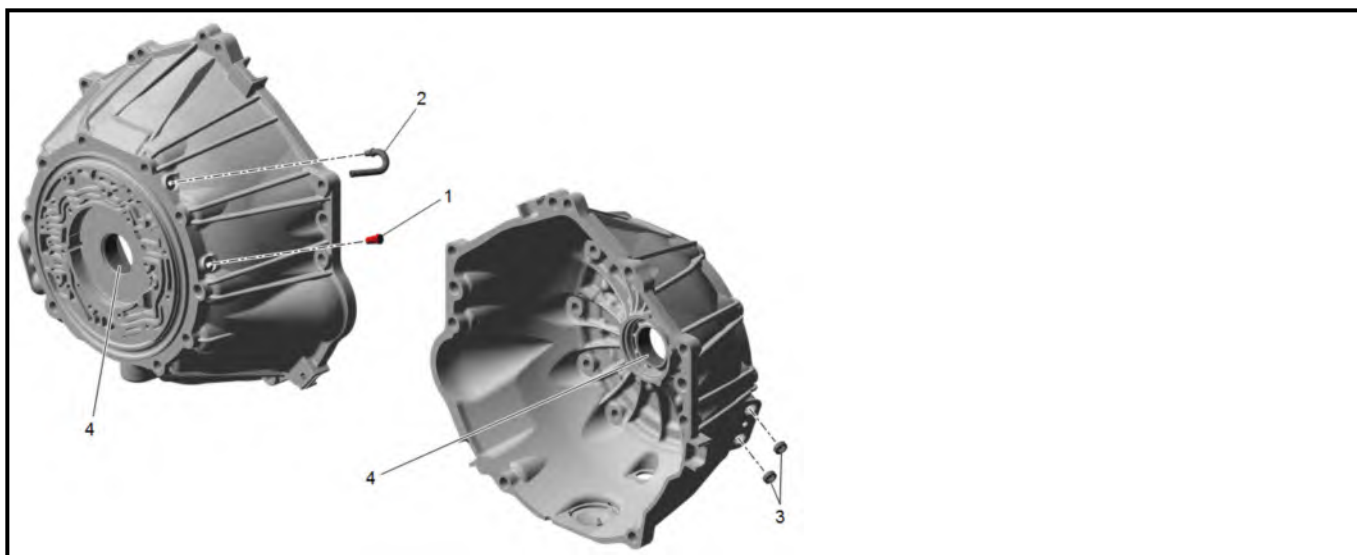
1-2-3-4 AND 3-5 REVERSE CLUTCH FLUID SEAL RING INSTALLATION (6L45/6L50)



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
CAUTION: Do not use old seal rings. Install NEW seal rings. Reusing old seal rings may cause internal transmission leaks and transmission damage.	
1	1-2-3-4 and 3-5 Reverse Clutch Fluid Seal Rings - Inner O-ring (Qty: 3) - Model Dependent
2	1-2-3-4 and 3-5 Reverse Clutch Fluid Seal Rings Anti-rotation Slots
3	1-2-3-4 and 3-5 Reverse Clutch Fluid Seal Rings (Qty: 3) NOTE: Ensure anti-rotation tabs on seal rings align with anti-rotation slots.

TORQUE CONVERTER HOUSING CLEANING AND INSPECTION

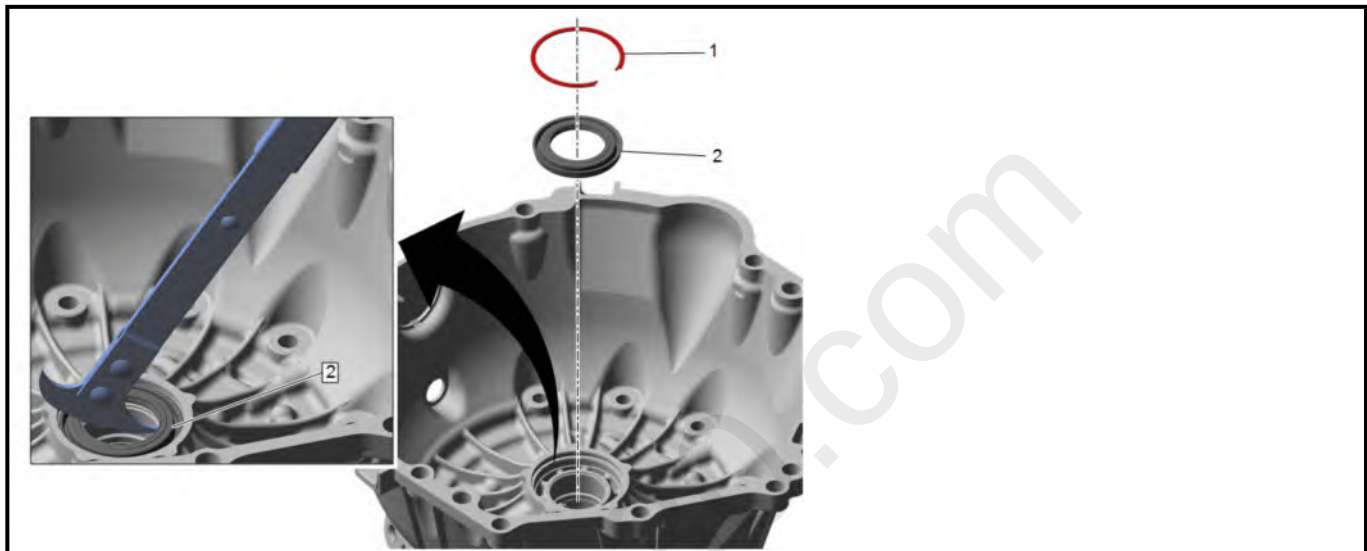


NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
Preliminary Procedures 1. Thoroughly clean the torque converter housing assembly, including threads, with clean solvent. 2. Clean sealing surfaces. 3. Inspect all threaded holes. If necessary, repair any thread damage.	
1	Line Pressure Test Hole Plug CAUTION: Use care when tightening the line pressure test hole plug. Do not use a socket extension, which could cause side-loading and potentially crack the transmission case assembly. CAUTION: Refer to Fastener Caution . Tighten 11 N.m (97 lb in)
2	Automatic Transmission Vent Pipe

Callout	Component Name
3	Transmission Fluid Cooler Pipe Fitting Seal CAUTION: Refer to Seal Reuse Caution . Procedure Transmission Fluid Cooler Pipe Seal Replacement
4	Torque Converter Bushing

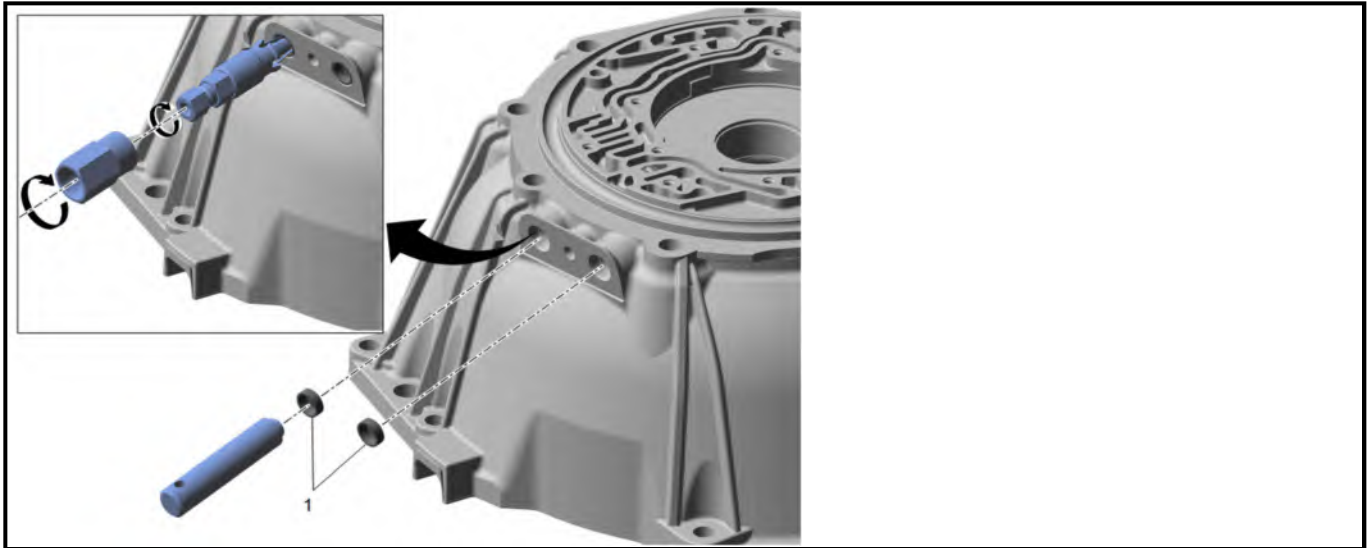
TORQUE CONVERTER FLUID SEAL REPLACEMENT



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Torque Converter Fluid Seal Retaining Ring
2	Torque Converter Fluid Seal NOTE: The seal can be installed by hand. Special Tool EN-45000 Seal Remover Equivalent regional tools: Special Tools

TRANSMISSION FLUID COOLER PIPE SEAL REPLACEMENT



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Transmission Fluid Cooler Pipe Fitting Seal [2x] Special Tools • DT-47770 Seal Installer • DT-45201 Cooler Line Seal Remover Equivalent regional tools: Special Tools

FLUID PUMP SELECTIVE MEASUREMENT

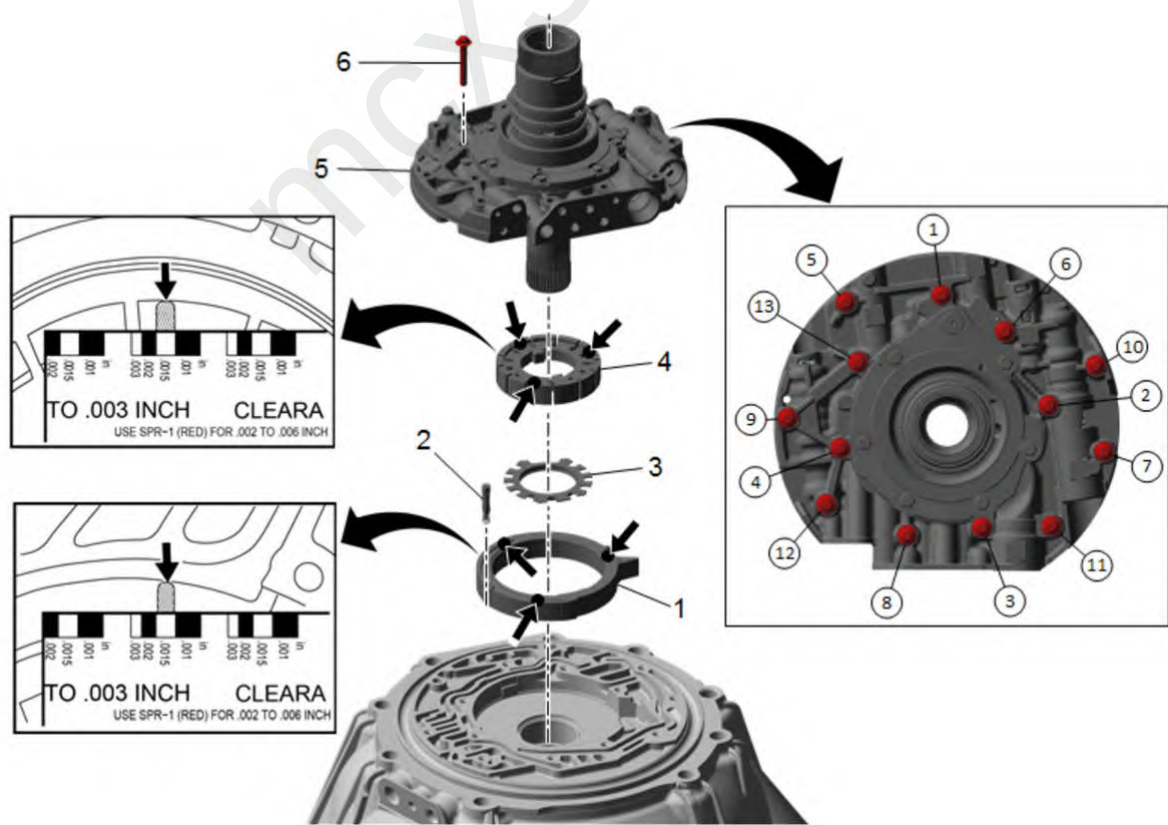


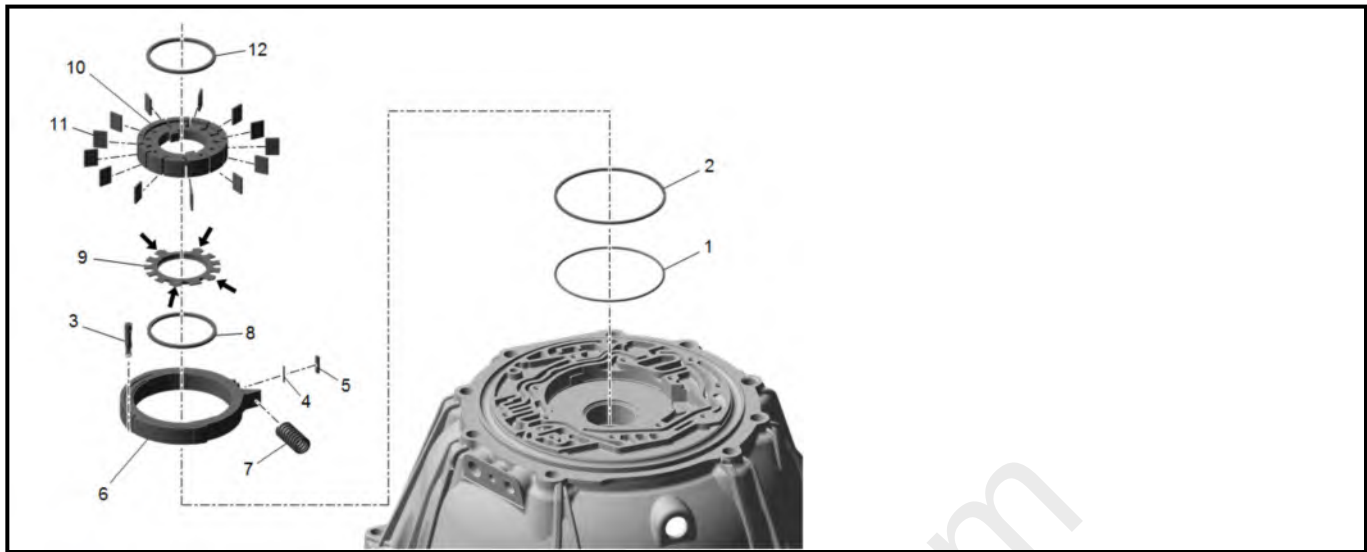
Fig. 2: Fluid Pump Bolts Tightening Sequence
 Courtesy of GENERAL MOTORS COMPANY

NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
Preliminary Procedures 1. Clean and inspect all components and machined surfaces. 2. After cleaning the transmission components, allow to air dry. Do not use cloth or paper towels in order to dry any transmission components.	
1	Automatic Transmission Fluid Pump Slide Procedure 1. Install an existing and/or undamaged pump slide. 2. Place gauging plastic in three locations on the pump slide surface facing the pump cover, up.
2	Automatic Transmission Fluid Pump Slide Pivot Pin
3	Automatic Transmission Fluid Pump Rotor Guide NOTE: Align the rotor guide tabs to the notches on the bottom of the rotor.
4	Automatic Transmission Fluid Pump Rotor Procedure 1. Install an existing and/or undamaged pump rotor. 2. Place gauging plastic in three locations on the pump rotor surface facing the pump cover, up.
5	Automatic Transmission Fluid Pump Cover
6	Automatic Transmission Fluid Pump Cover Bolt [13x] CAUTION: Refer to Fastener Caution . Procedure 1. Hand tighten the bolts. 2. Tighten the bolts in the sequence shown. 3. Remove the pump cover bolts and the pump cover. 4. Using the measuring device provided with the gauging plastic kit, measure the gauging plastic on the rotor and the slide, see inset drawings. Choose the correct selective rotor and or slide, based on the slide and rotor to fluid pump body end play specifications. Fluid Pump Selective Specifications 5. Remove the gauging plastic and clean the rotor and slide surfaces.

Callout	Component Name
	Tighten 11 N.m (97 lb in)

TORQUE CONVERTER HOUSING WITH FLUID PUMP ASSEMBLE



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Automatic Transmission Fluid Pump Slide Fluid Seal Ring
2	Automatic Transmission Fluid Pump Slide Seal
3	Automatic Transmission Fluid Pump Slide Pivot Pin
4	Automatic Transmission Fluid Pump Slide Seal Support NOTE: The seal support is circular. The seal is rectangular.
5	Automatic Transmission Fluid Pump Slide Seal
6	Automatic Transmission Fluid Pump Slide Procedure If installing a NEW pump slide into the torque converter housing, ensure to properly select the correct rotor and slide before performing this procedure. Fluid Pump Selective Measurement , or Fluid Pump Selective Specifications
7	Automatic Transmission Fluid Pump Slide Outer Spring
8	Automatic Transmission Fluid Pump Vane Ring
9	Automatic Transmission Fluid Pump Rotor Guide CAUTION: Align the rotor guide tabs to the notches on the bottom of the rotor. Failure to do

Callout	Component Name
	so may cause transmission damage.
10	Automatic Transmission Fluid Pump Rotor Procedure If installing a NEW pump rotor into the torque converter housing, ensure to properly select the correct rotor and slide before performing this procedure. Fluid Pump Selective Measurement , or Fluid Pump Selective Specifications
11	Automatic Transmission Fluid Pump Vane [13x]
12	Automatic Transmission Fluid Pump Vane Ring

FLUID PUMP COVER INSTALLATION

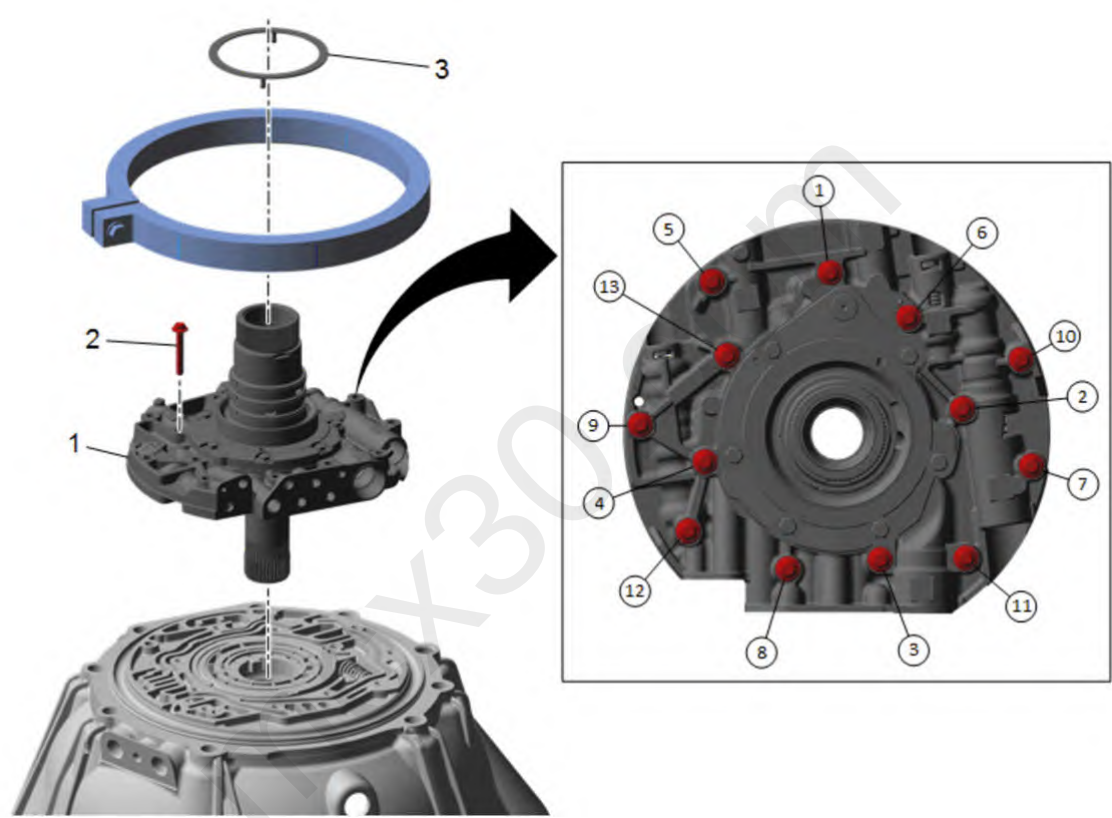


Fig. 3: Fluid Pump Cover Bolts Tightening Sequence
Courtesy of GENERAL MOTORS COMPANY

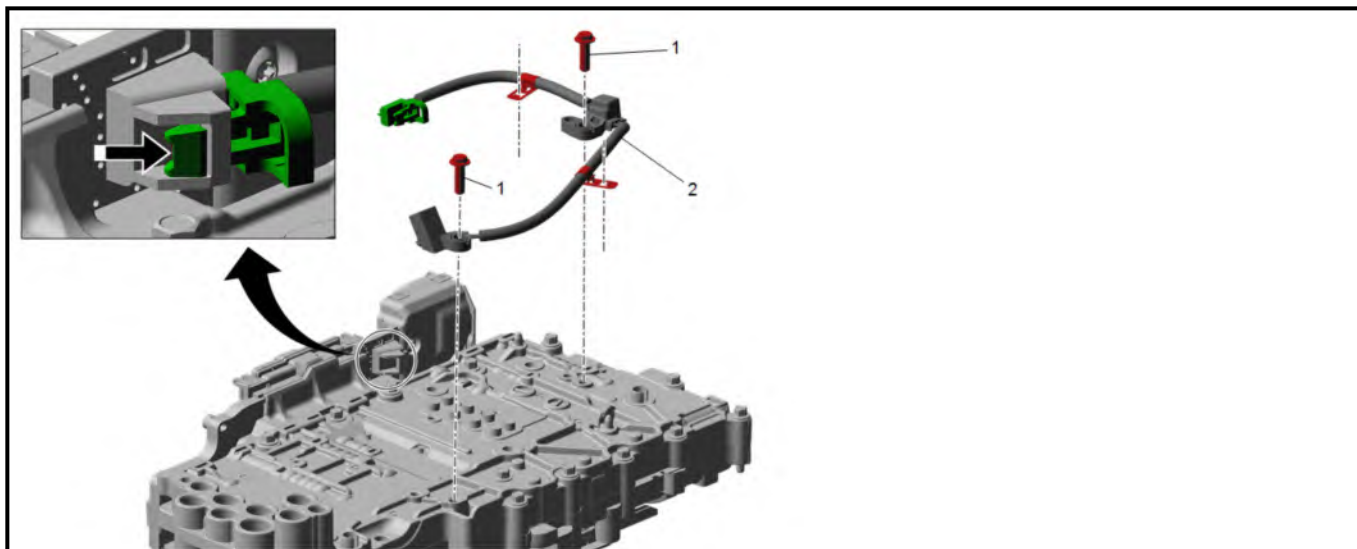
NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
Preliminary Procedure	
NOTE: Do not use abrasive cleaning pads that can remove material or leave abrasive	

Callout	Component Name
residue in the parts.	
NOTE: Do not immerse the pump cover in a parts cleaner with used solvent that can leave dirt / grit / residue in the parts.	
Inspect the service pump cover and pressure regulator valve for signs of rust inhibitor (RI) that may prevent the pressure regulator from operating properly before installing the pump cover. Excessive RI can be removed with solvent, light penetrating oil or carburetor cleaner.	
1	Automatic Transmission Fluid Pump Cover
2	Automatic Transmission Fluid Pump Cover Bolt [13x] CAUTION: Refer to Fastener Caution . Procedure 1. Install the bolts hand-tight only. 2. Center the DT-46664 pump cover alignment tool around the fluid pump cover assembly in the 9 o'clock position and tighten the alignment bolt. 3. Tighten the fluid pump cover bolts in the sequence shown. Tighten 11 N.m (97 lb in) Special Tools DT-46664 Pump Cover Alignment Tool Equivalent regional tools: Special Tools
3	1-2-3-4 and 3-5-Reverse Clutch Housing Thrust Washer NOTE: Install a NEW washer. Do NOT reuse the old washer.

CONTROL VALVE BODY ASSEMBLY DISASSEMBLE

Input and Output Speed Sensor Assembly Removal

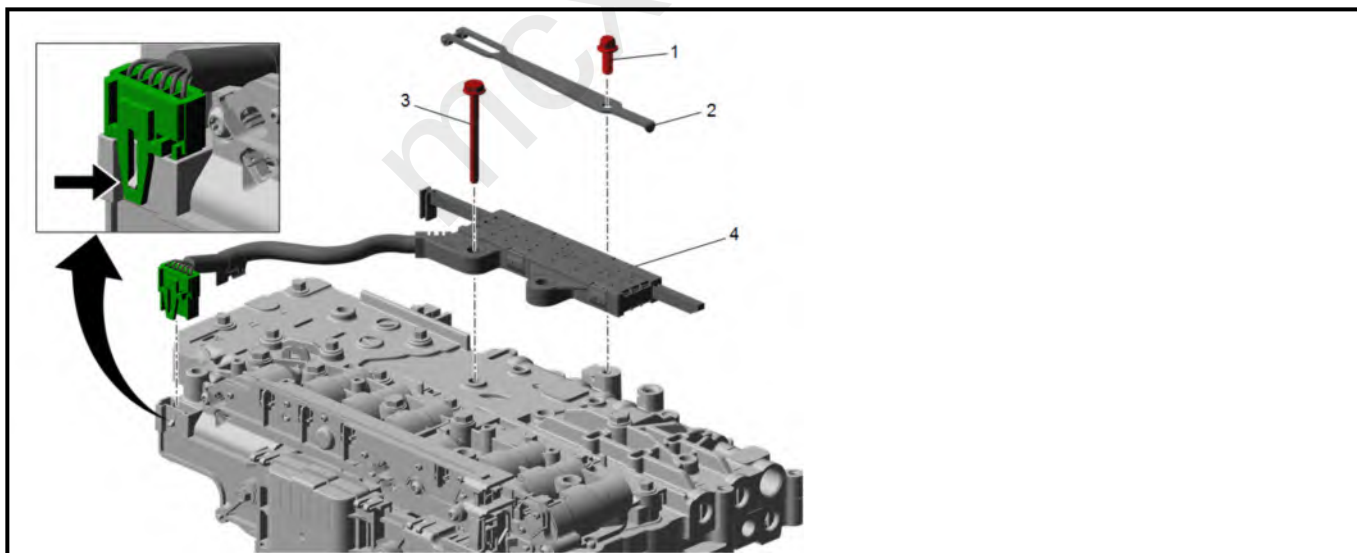


NOTE: Callouts in the following chart represent components shown in graphic above.

Input and Output Speed Sensor Assembly Removal

Callout	Component Name
1	Automatic Transmission Input and Output Speed Sensor Bolt [2x]
2	Automatic Transmission Input and Output Speed Sensor
	Procedure
	1. Release the connector lock, indicated by the arrow, then disconnect the connector. 2. Remove the sensor assembly. 3. Inspect the wiring harness clips and replace if damaged.

Manual Shift Detent and Manual Shift Shaft Position Switch Removal



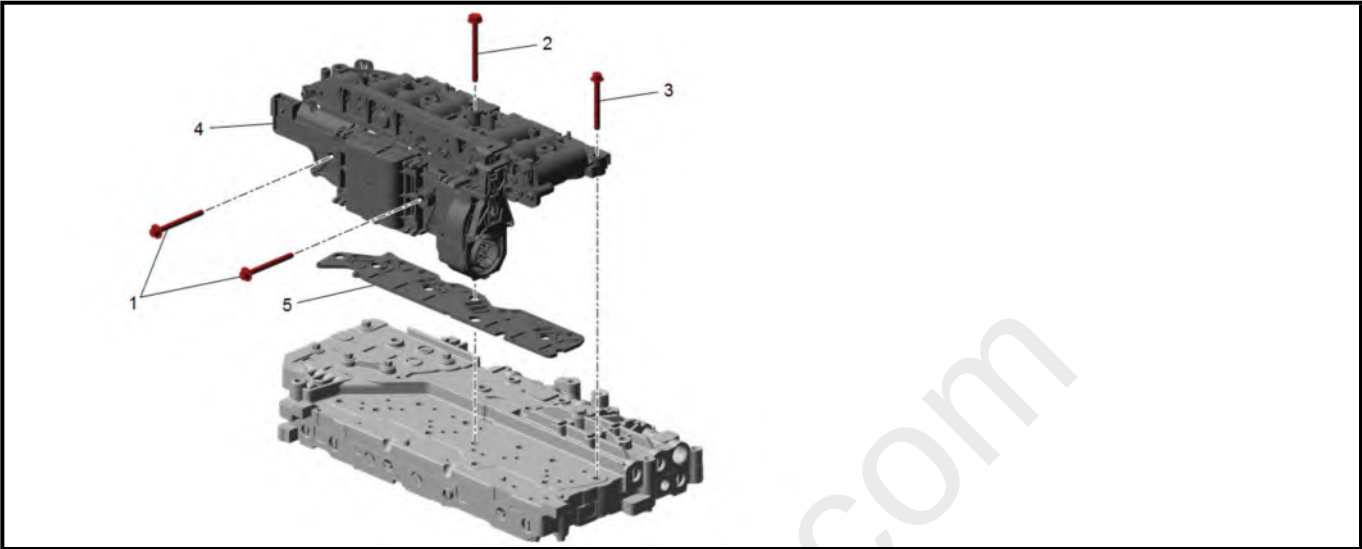
NOTE: Callouts in the following chart represent components shown in graphic above.

Manual Shift Detent and Manual Shift Shaft Position Switch Removal

Callout	Component Name
1	Manual Shift Detent Bolt
2	Manual Shift Detent
3	Control Valve Lower Body Bolt

Callout	Component Name
4	Automatic Transmission Manual Shift Shaft Position Switch Procedure 1. Release the connector lock, indicated by the arrow, then disconnect the connector. 2. Remove the switch assembly.

Control Solenoid Valve Assembly Removal



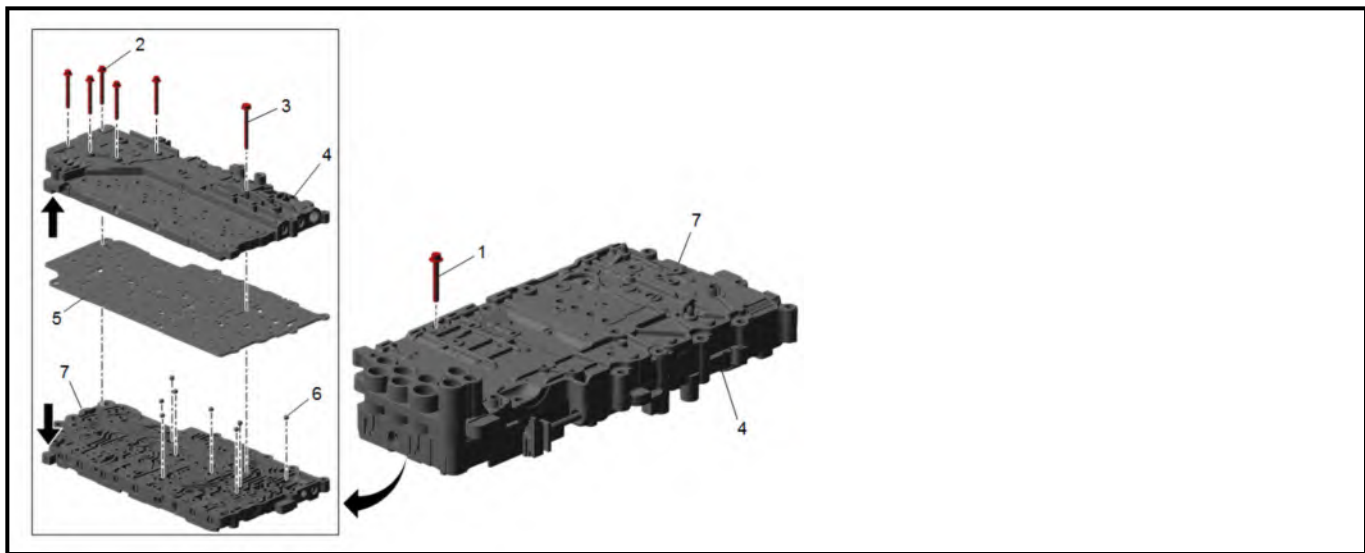
NOTE: Callouts in the following chart represent components shown in graphic above.

Control Solenoid Valve Assembly Removal

Callout	Component Name
1	Control Solenoid Valve Heat Sink Bolt [2x]
2	Control Valve Lower Body Bolt [4x]
3	Control Valve Lower Body Bolt [5x]
4	Control Solenoid Valve 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

Callout	Component Name
	(TCM), may result.
5	Control Solenoid Valve Filter Plate 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



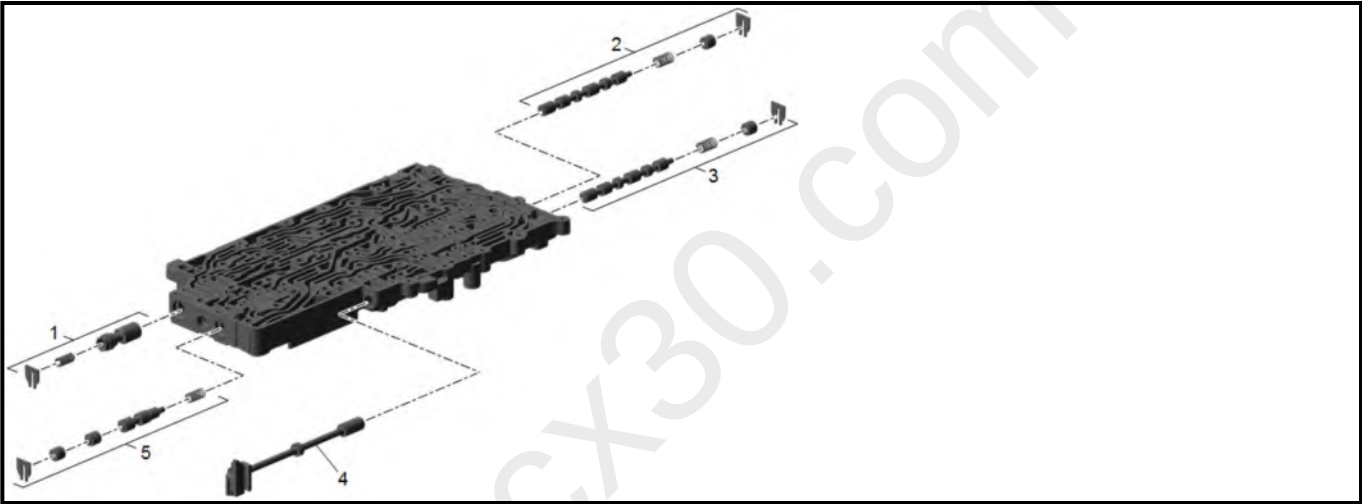
NOTE: Callouts in the following chart represent components shown in graphic above.

Upper and Lower Valve Bodies Disassemble

Callout	Component Name
1	Control Valve Upper Body Bolt [12x]
2	Control Valve Lower Body Bolt [5x]
3	Control Valve Lower Body Bolt
4	Control Valve Lower Body Procedure Separate the upper and lower valve bodies by carefully prying at the point indicated by the arrows. <u>Control Valve Lower Body Assembly Cleaning and Inspection</u>
5	Control Valve Body Spacer Plate 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.
6	Control Valve Body Ball Check Valve [8x] NOTE: Note the position of the ball check valves.
7	Control Valve Upper Body

Callout	Component Name
	NOTE: For additional information regarding the control valve upper body assembly. <u>Control Valve Upper Body Assembly Cleaning and Inspection</u>

CONTROL VALVE LOWER BODY ASSEMBLY CLEANING AND INSPECTION

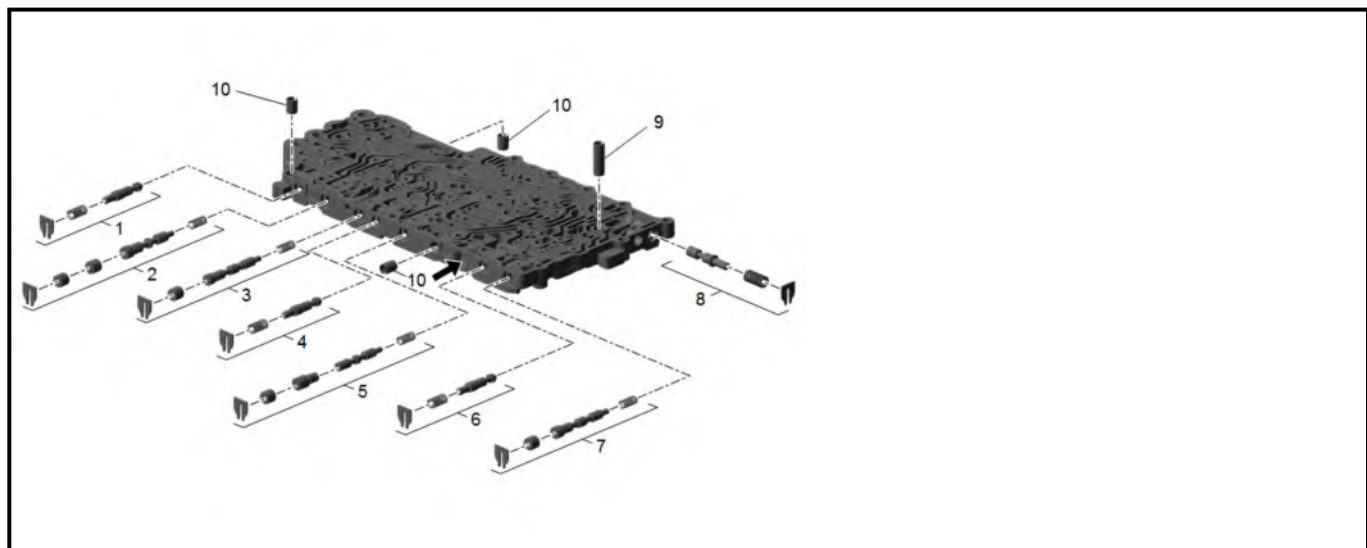


NOTE: Callouts in the following chart represent components shown in graphic above.

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	

Callout	Component Name
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 Selector Solenoid Number 3 Valve Train
3	Clutch Selector Solenoid Number 2 Valve Train
4	Manual Valve
5	Torque Converter Clutch Regulator Apply Valve Train

CONTROL VALVE UPPER BODY ASSEMBLY CLEANING AND INSPECTION



NOTE: Callouts in the following chart represent components shown in graphic above.

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	

Callout	Component Name
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	1-Reverse Band and 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 [3x]

CONTROL VALVE BODY ASSEMBLY ASSEMBLE

Upper to Lower Control Valve Body Assembly Assemble

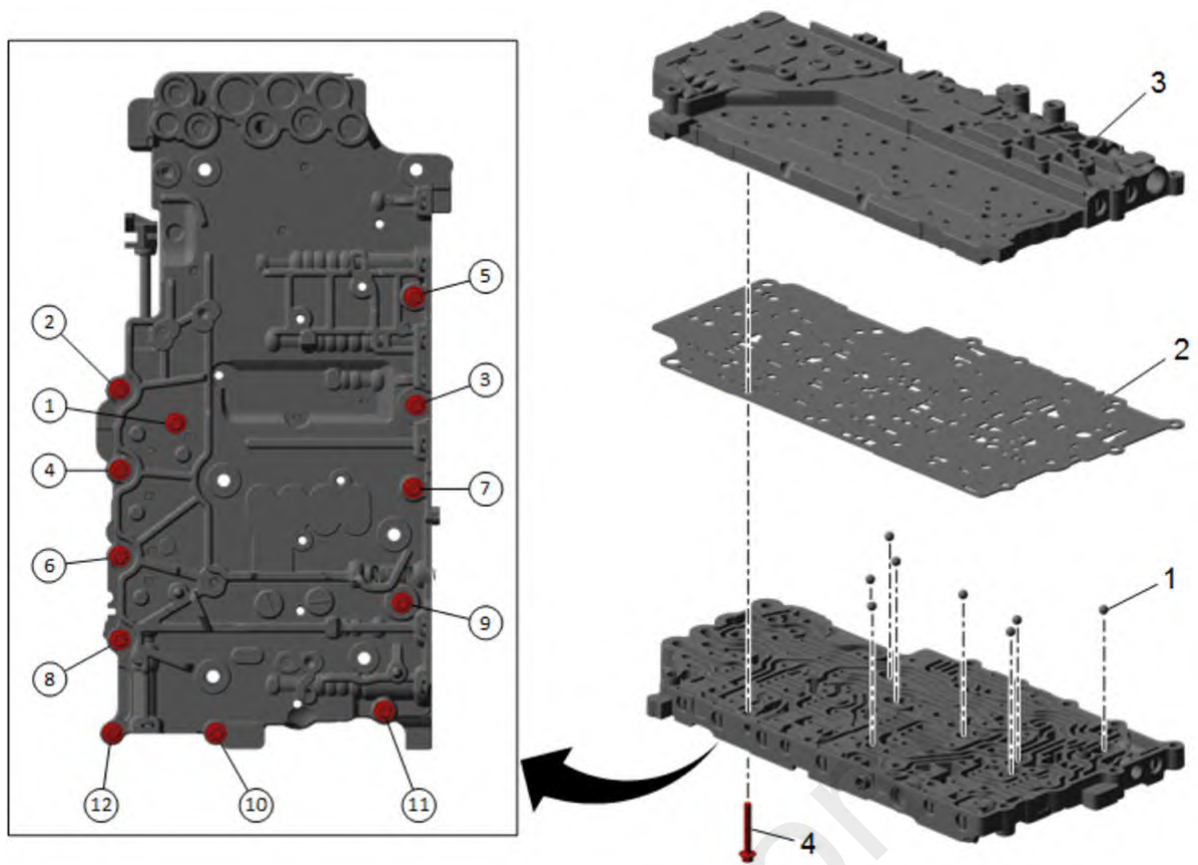


Fig. 4: Upper To Lower Control Valve Body Assembly Bolts Tightening Sequence

Courtesy of GENERAL MOTORS COMPANY

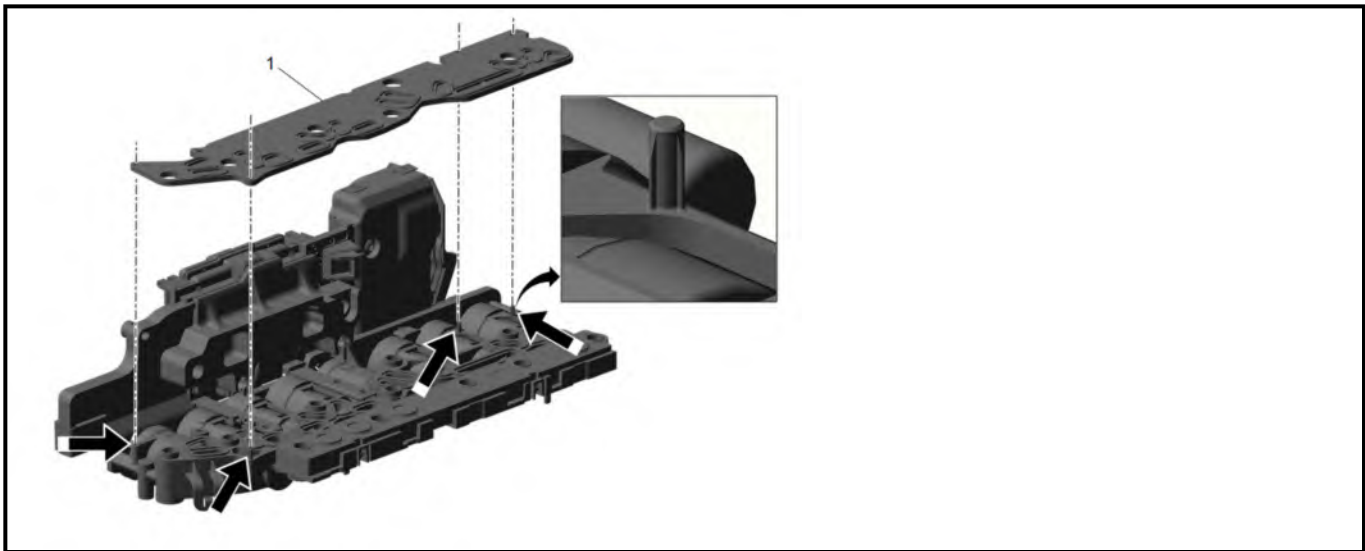
NOTE: Callouts in the following chart represent components shown in graphic above.

Upper to Lower Control Valve Body Assembly Assemble

Callout	Component Name
1	Control Valve Body Ball Check Valve [8x] 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:

Callout	Component Name
	For additional information regarding ball check valve location. Ball Check Valve Locations
2	Control Valve Body Spacer Plate 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.
3	Control Valve Lower Body NOTE: Turn the valve body assembly over after installing to upper body.
4	Control Valve Upper Body Bolt M5 x 36 [12x] CAUTION: Refer to Fastener Caution . Tighten in sequence 8 N.m (71 lb in).

Filter Plate Installation



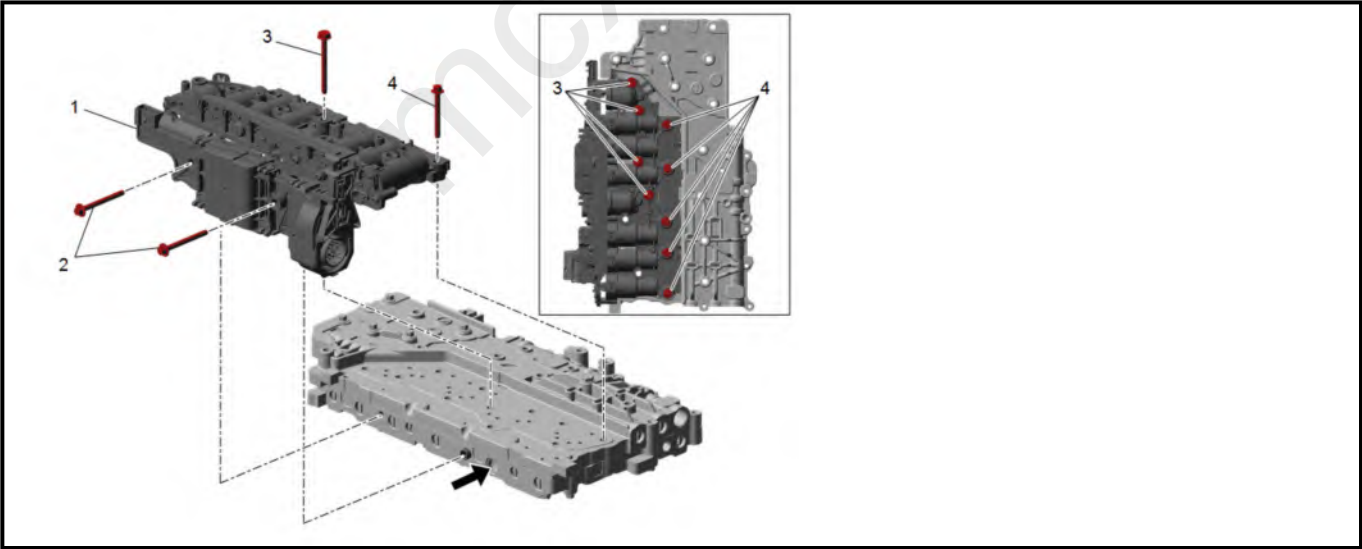
NOTE: Callouts in the following chart represent components shown in graphic above.

Filter Plate Installation

Callout	Component Name
1	Control Solenoid Valve Filter Plate 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. CAUTION: Discard the filter plate. Replace with a NEW filter plate. Reusing an old filter plate may cause damage to the control

Callout	Component Name
	solenoid valve assembly. NOTE: Use care when removing or installing the filter plate assembly. However, if a retaining tab, indicated by the arrows, 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



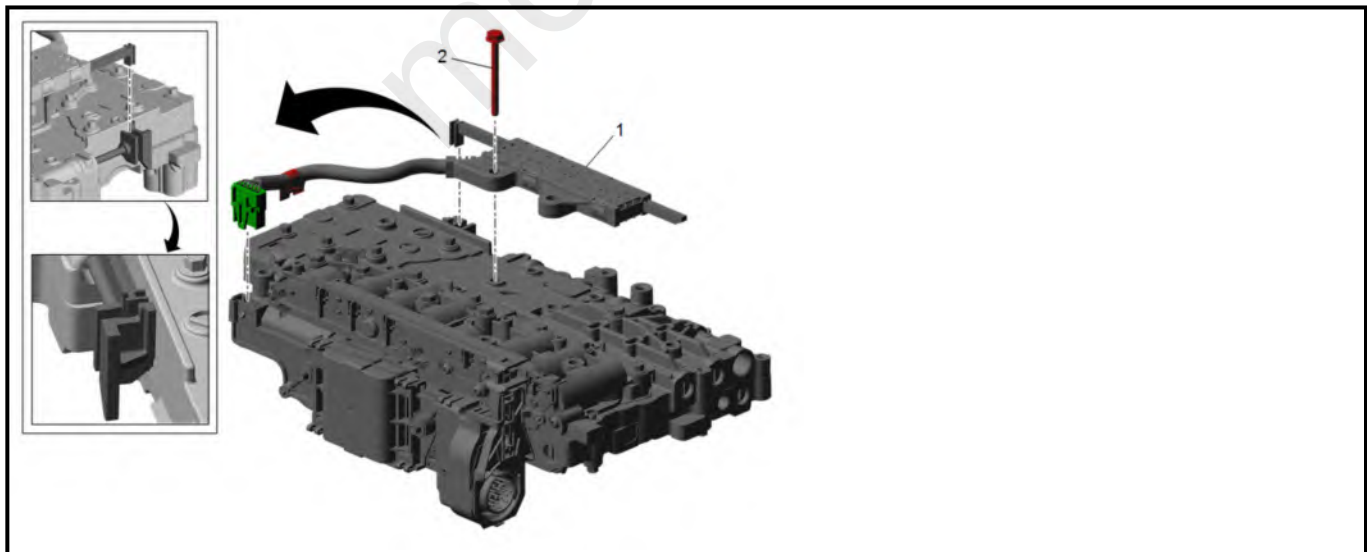
NOTE: Callouts in the following chart represent components shown in graphic above.

Control Solenoid Valve Assembly Installation

Callout	Component Name
1	Control Solenoid Valve
	NOTE:

Callout	Component Name
	Note the locator pin on the control valve lower body assembly while aligning the control solenoid valve assembly, indicated by the arrow.
2	Control Solenoid Valve Heat Sink Bolt M5 x 53 [2x] NOTE: Hand tighten only.
3	Control Valve Lower Body Bolt M5 x 55 [4x] NOTE: Hand tighten only.
4	Control Valve Lower Body Bolt M5 x 45 [5x] NOTE: Hand tighten only.

Manual Shift Shaft Position Switch Installation



NOTE: Callouts in the following chart represent components shown in graphic above.

Manual Shift Shaft Position Switch Installation

Callout	Component Name
1	Automatic Transmission Input and Output Speed Sensor

Callout	Component Name
	Procedure 1. Align the switch activator slide with the manual valve link. 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. 2. Inspect the clip. If the clip is damaged, simply remove and discard. 3. Connect and lock the manual shift shaft position switch electrical connector to the control solenoid valve assembly.
2	Transmission Cover Bolt M5 x 55 NOTE: Hand tighten only.

Valve Body, Control Solenoid Torque Sequence

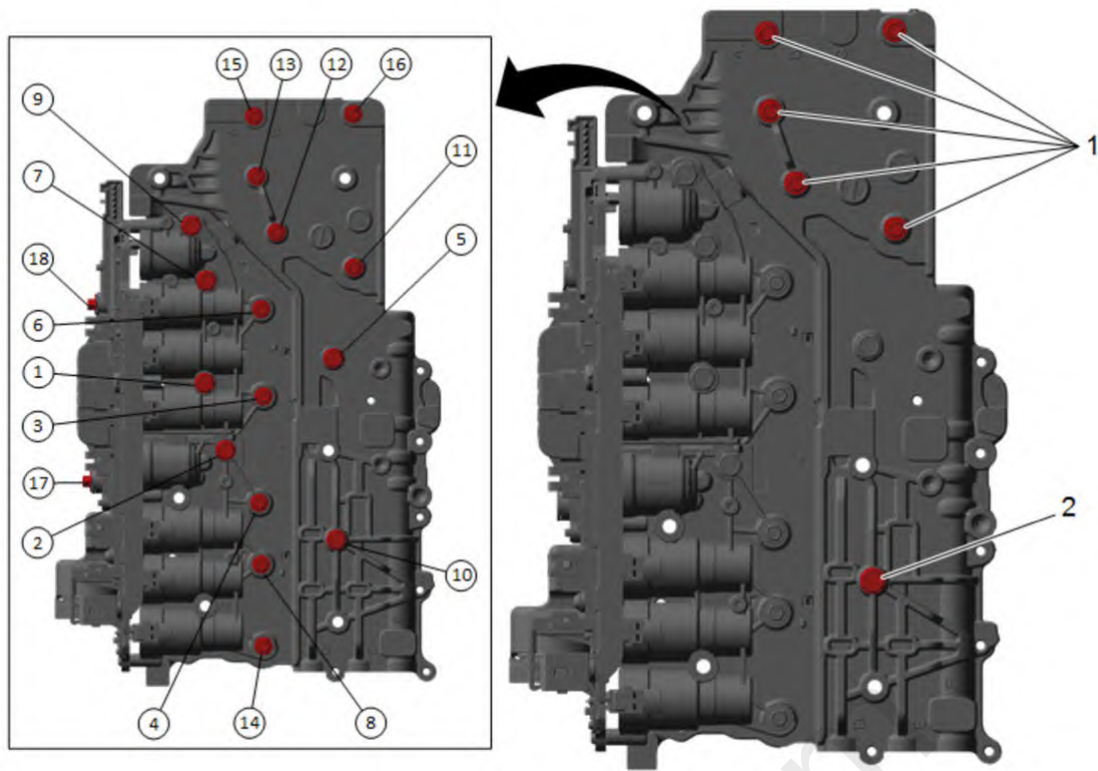


Fig. 5: Valve Body, Control Solenoid Bolts Tightening Sequence

Courtesy of GENERAL MOTORS COMPANY

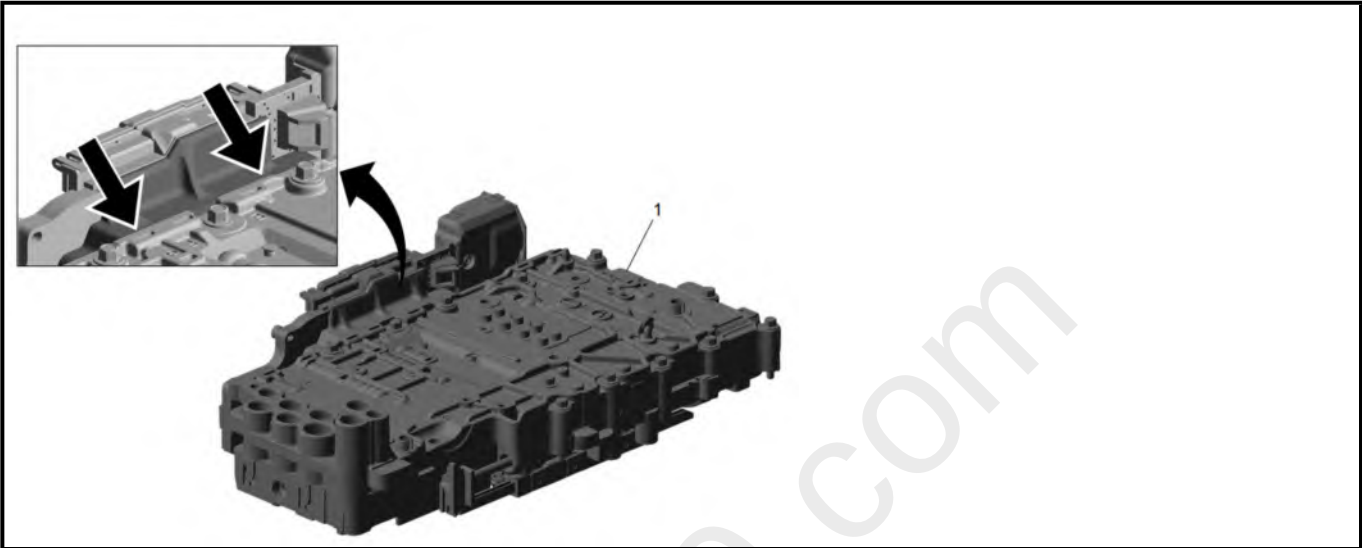
NOTE: Callouts in the following chart represent components shown in graphic above.

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 Procedures 1. Hand tighten the last 6 bolts before final torque sequence. 2. The 2 "heat sink" bolts must be tightened last.	
1	Control Valve Lower Body Bolt M5 x 45 [5x]
2	Control Valve Lower Body Bolt M5 x 55

Callout	Component Name
	CAUTION: Refer to Fastener Caution . Tighten in sequence 8 N.m (71 lb in).

Control Solenoid Valve Assembly Contact Gap Inspection

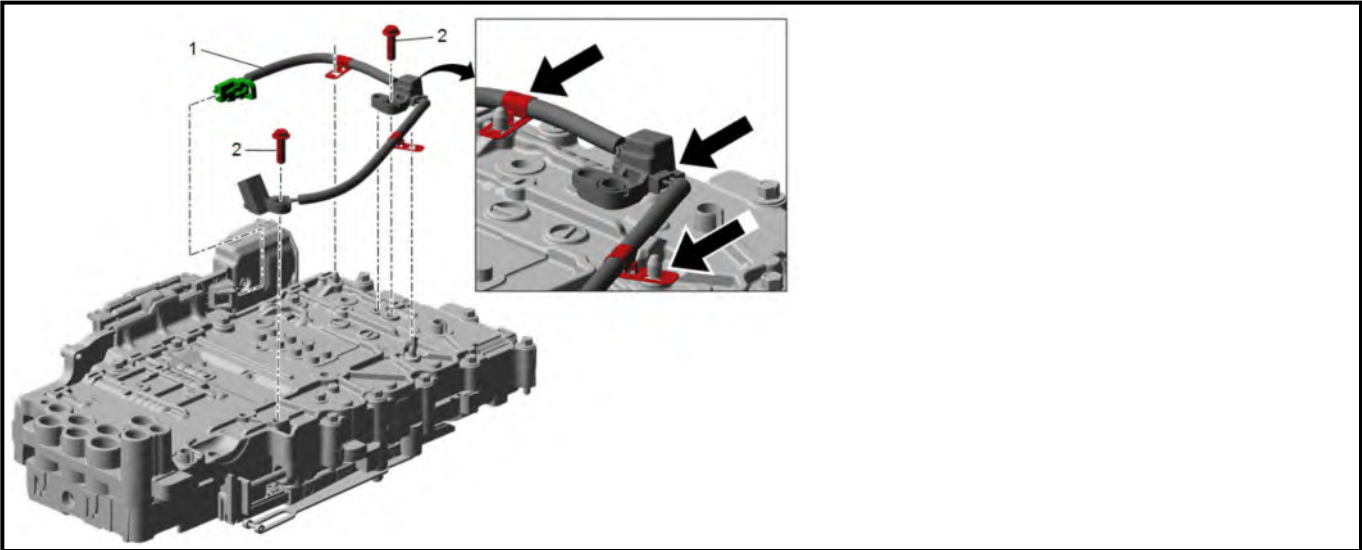


NOTE: Callouts in the following chart represent components shown in graphic above.

Control Solenoid Valve Assembly Contact Gap Inspection

Callout	Component Name
1	Control Solenoid Valve Procedure Inspect the contact area between the "heat sink" area of the control solenoid valve assembly and the valve body, indicated by the arrows. 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

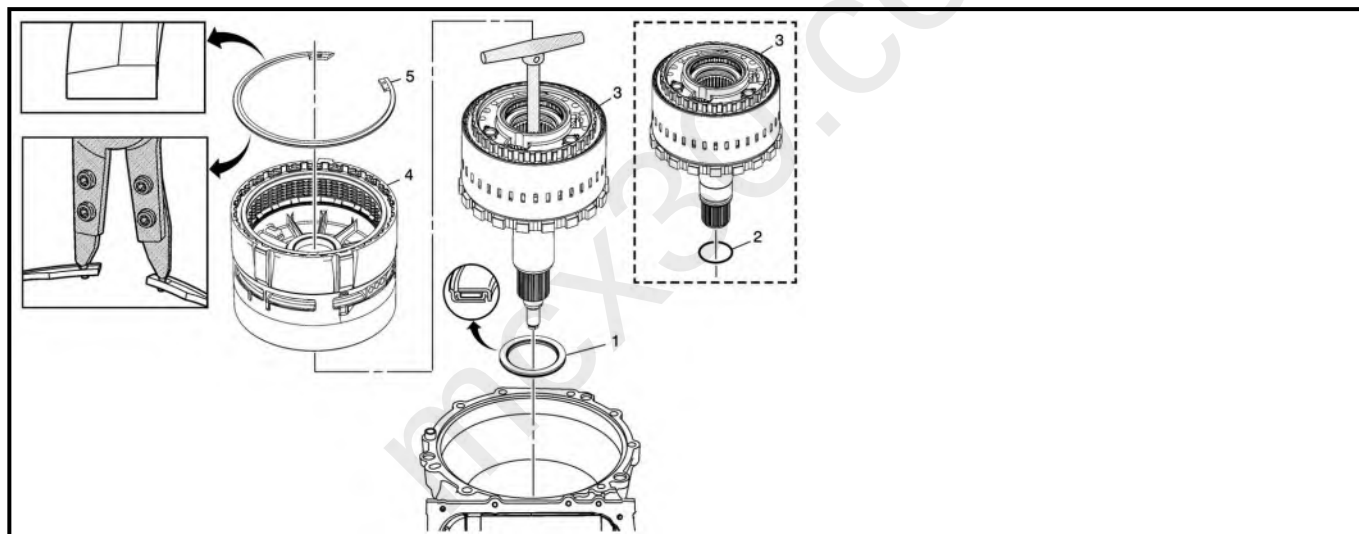


NOTE: Callouts in the following chart represent components shown in graphic above.

Input and Output Speed Sensor Assembly Installation

Callout	Component Name
1	Automatic Transmission Input and Output Speed Sensor Procedure 1. Install the wiring harness clips and sensor mount as indicated by the arrows. 2. Connect the wiring harness connector.
2	Automatic Transmission Input and Output Speed Sensor Bolt M6 x 20 [2x] CAUTION: Refer to Fastener Caution . Tighten 12 N.m (106 lb in)

CENTER SUPPORT, OUTPUT CARRIER AND OUTPUT SHAFT INSTALLATION (6L50)



NOTE: Callouts in the following chart represent components shown in graphic above.

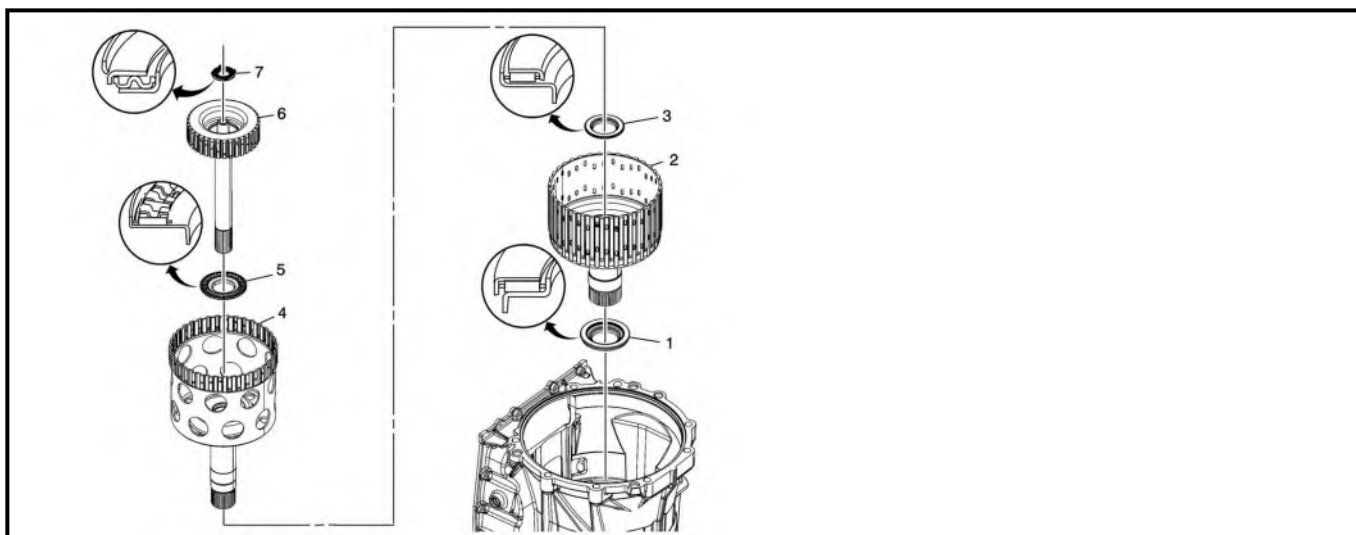
Callout	Component Name
1	Output Shaft Thrust Bearing Assembly
2	A/Trans Case O-Ring Seal - AWD Models if equipped
3	Output Carrier Assembly and Output Shaft Assembly CAUTION: Apply automatic transmission fluid (ATF) to the inside diameter of the output shaft seal

Callout	Component Name
	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. 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.
4	Center Support Assembly • 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.
5	Center Support Retaining Ring WARNING:

Callout	Component Name
	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. 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 .

1-2-3-4 AND 3-5 REVERSE CLUTCH ASSEMBLY AND 4-5-6 CLUTCH ASSEMBLY INSTALLATION (6L45/6L50)

2-6 and 3-5 Reverse Clutch Hub, 1-2-3-4 Clutch Hub and 4-5-6 Clutch Hub Installation

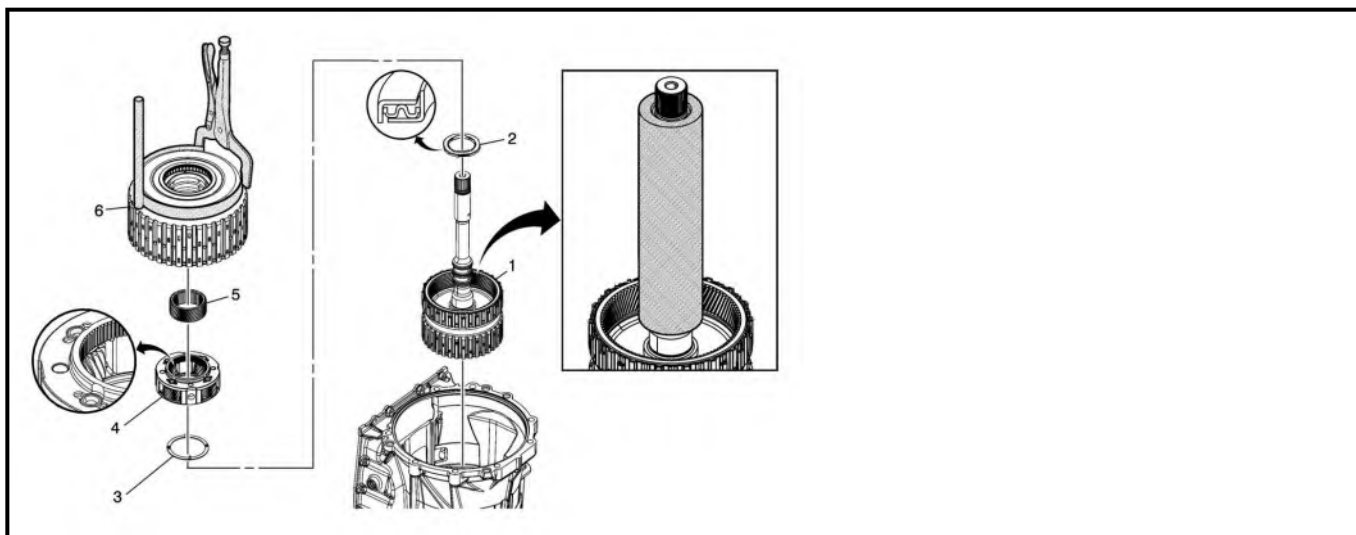


NOTE: Callouts in the following chart represent components shown in graphic above.

2-6 and 3-5 Reverse Clutch Hub, 1-2-3-4 Clutch Hub and 4-5-6 Clutch Hub Installation

Callout	Component Name
1	2 - 6 and 3 - 5 Reverse Clutch Hub Thrust Bearing Assembly
2	2 - 6 and 3 - 5 Reverse Clutch (with Output Carrier Outer Sun Gear Shaft) Hub Assembly
3	1 - 2 - 3 - 4 Clutch Hub Thrust Bearing Assembly
4	1 - 2 - 3 - 4 Clutch (with Output Carrier Inner Sun Gear Shaft) Hub Assembly
5	4 - 5 - 6 Clutch Hub Thrust Bearing Assembly
6	4 - 5 - 6 Clutch (with Output Carrier Shaft) Hub Assembly NOTE: Refer to 4-5-6 Clutch Dampener Overhaul (6L50/80/90) for complete inspection - (6L50 Only).
7	Turbine Shaft Thrust Bearing Assembly

4-5-6 Clutch Assembly, Input Carrier and Input Sun Gear and 1-2-3-4 and 3-5 Reverse Clutch Installation



NOTE: Callouts in the following chart represent components shown in graphic above.

4-5-6 Clutch Assembly, Input Carrier and Input Sun Gear and 1-2-3-4 and 3-5 Reverse Clutch Installation

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Callout	Component Name
1	4 - 5 - 6 (with Turbine Shaft) Clutch Assembly CAUTION: The new turbine shaft fluid seal rings must be sized prior to torque converter housing assembly, or damage to the seals will result. Procedure Apply DT 36850 Transjel Lubricant to inner bore of DT 48066-1A Seal Sizer and install the sizer over the turbine shaft fluid seals. Size the seals for 5 minutes before installing the Torque Converter (with Fluid Pump) Housing Assembly. Special Tools • DT 36850 Transjel Lubricant • DT 48066-1A Seal Sizer For equivalent regional tools, refer to Special Tools.
2	Input Sun Gear Thrust Bearing NOTE: Thrust bearing snaps onto input carrier assembly.
3	Input Sun Gear Thrust Washer
4	Input Carrier Assembly NOTE: The spline on the input carrier installs up into the 1 - 2 - 3 - 4 and 3 - 5 reverse clutch housing.
5	Input Sun Gear
6	1 - 2 - 3 - 4 and 3 - 5 Reverse Clutch Assembly

Callout	Component Name
	NOTE: Wiggle the DT 47781 clutch assembly installer in order to align the 1 - 2 - 3 - 4 and 3 - 5 reverse clutch plates with the external splines of the 4 - 5 - 6 clutch assembly. To verify that the 1 - 2 - 3 - 4 and 3 - 5 reverse clutch assembly is fully installed, lift up on the turbine shaft. There should not be any noticeable slack. Special Tool DT 47781 C1234 35R Clutch Assembly Installer For equivalent regional tools, refer to Special Tools .

TORQUE CONVERTER HOUSING WITH FLUID PUMP INSTALLATION (6L45/6L50)

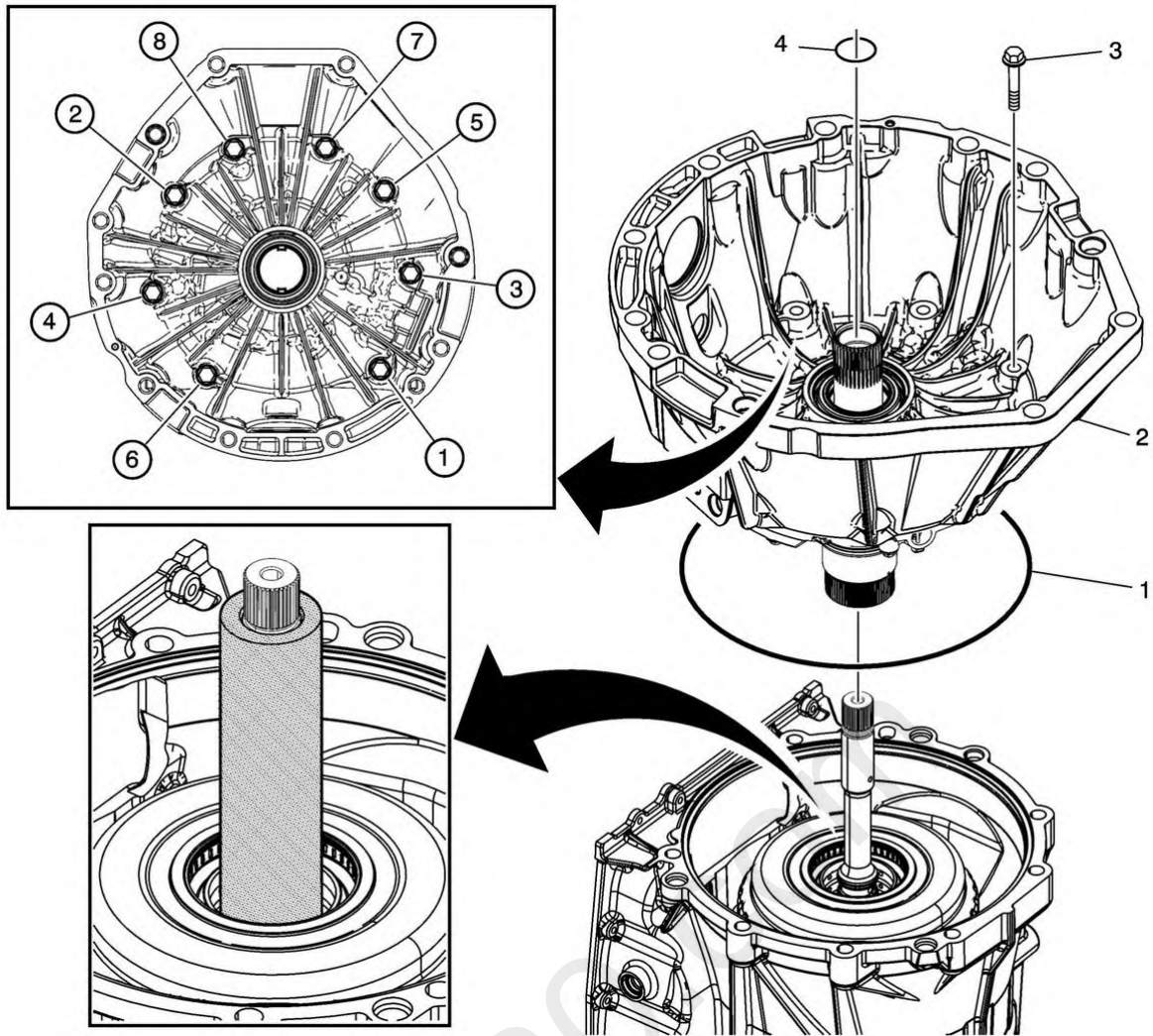


Fig. 6: Torque Converter Housing With Fluid Pump Bolts Tightening Sequence (6L45/6L50)

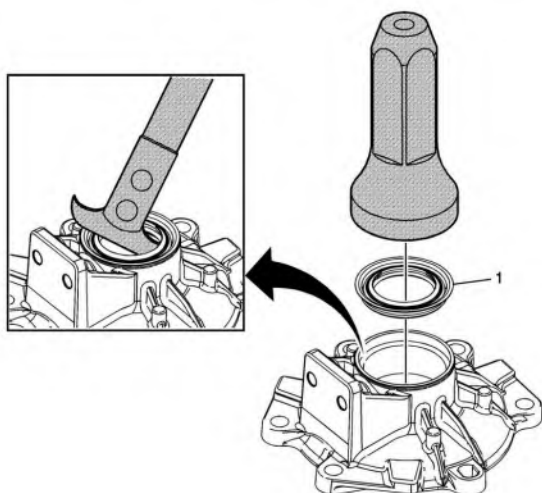
Courtesy of GENERAL MOTORS COMPANY

NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
CAUTION: The new turbine shaft fluid seal rings must be sized prior to torque converter housing assembly, or damage to the seals will result. Procedure If the turbine shaft fluid seals have not been sized prior to torque converter housing installation refer to 1-2-3-4 and 3-5 Reverse Clutch Assembly and 4-5-6 Clutch Assembly Installation (6L45/6L50) .	
1	Fluid Pump Seal

Callout	Component Name
	NOTE: Install a NEW seal.
2	Torque Converter (with Fluid Pump) Housing - Model Dependent CAUTION: Ensure the turbine shaft (O-ring) seal is not installed prior to installing the torque converter housing assembly. The seal may become cut or damaged during installation of the torque converter housing assembly. Procedure Remove the DT 48066-1A seal sizer prior to torque converter housing installation. Special Tools DT 48066-1A Seal Sizer For equivalent regional tools, refer to Special Tools .
3	Torque Converter Housing Bolts M8 x 1.25 x 50 (Qty: 8) CAUTION: Refer to Fastener Caution . Procedure Tighten in sequence shown. Tighten 31 N.m (23 lb ft)
4	Turbine Shaft (O-Ring) Seal NOTE: Install a NEW O-ring seal.

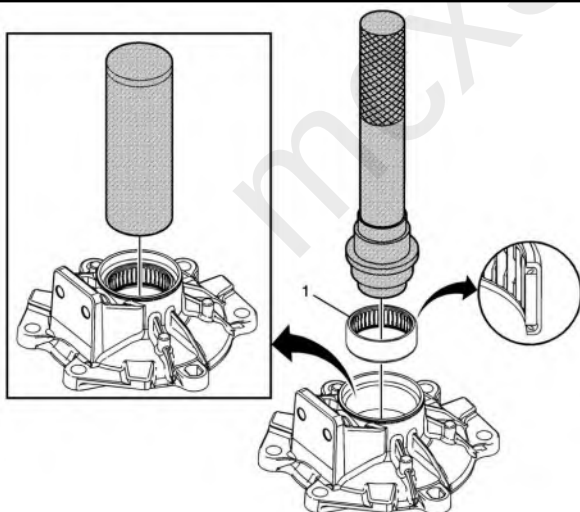
OUTPUT SHAFT SEAL REPLACEMENT (6L50)



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Output Shaft Seal Assembly Special Tools • EN 37212 Front Output Shaft Seal Installer • EN 45000 Seal Remover For equivalent regional tools, refer to Special Tools .

OUTPUT SHAFT BEARING REPLACEMENT - CASE EXTENSION (6L50)



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Output Shaft Bearing Assembly NOTE: Use J 35512 bearing installer to

Callout	Component Name
	remove the bearing and DT 48222 bearing installer and J 8092 driver handle to install the bearing. Special Tools • DT 48222 Bearing Installer • J 8092 Driver Handle • J 35512 Inner Pinion Bearing Installer For equivalent regional tools, refer to Special Tools .

CONTROL VALVE BODY ASSEMBLY INSTALLATION

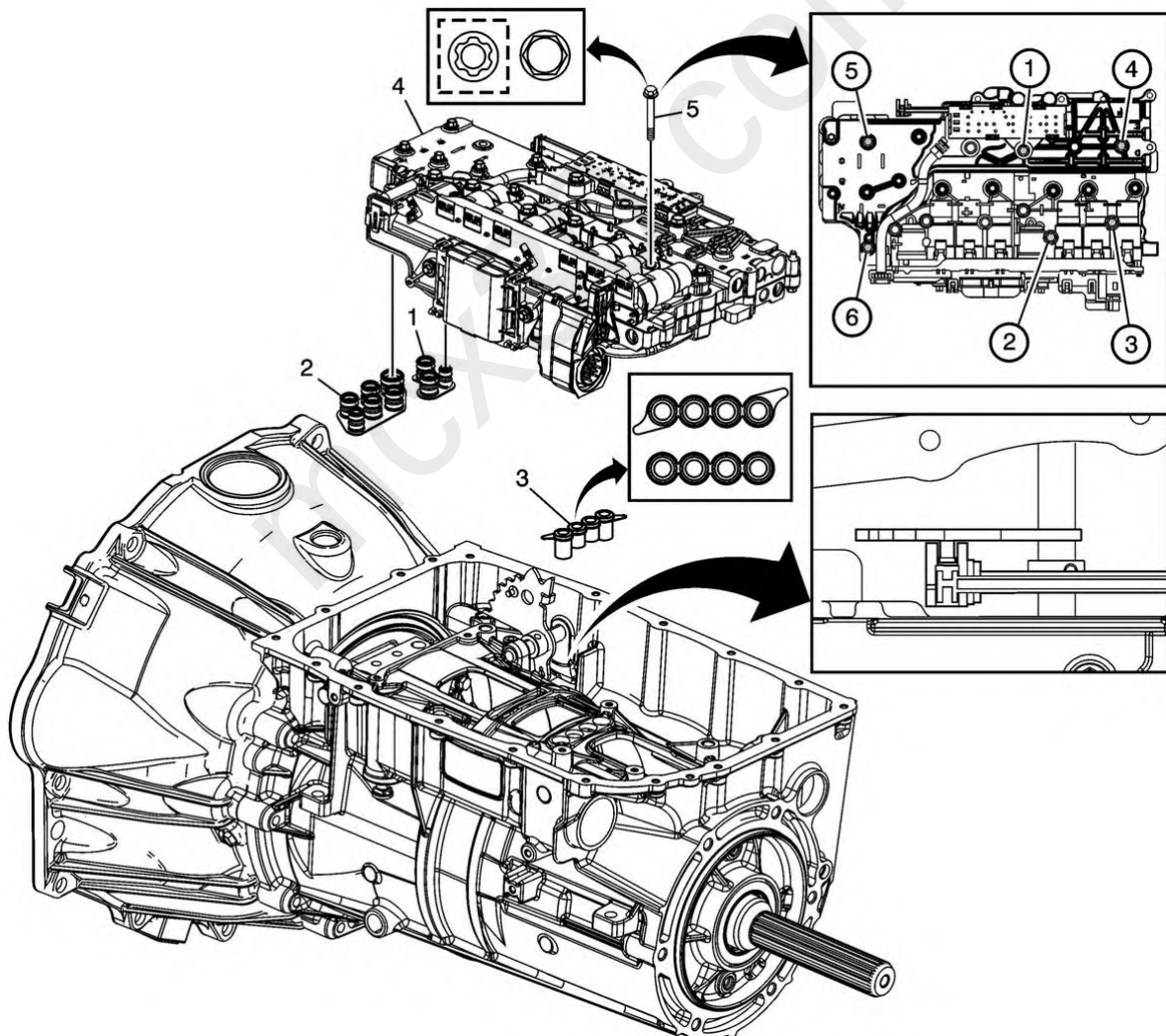


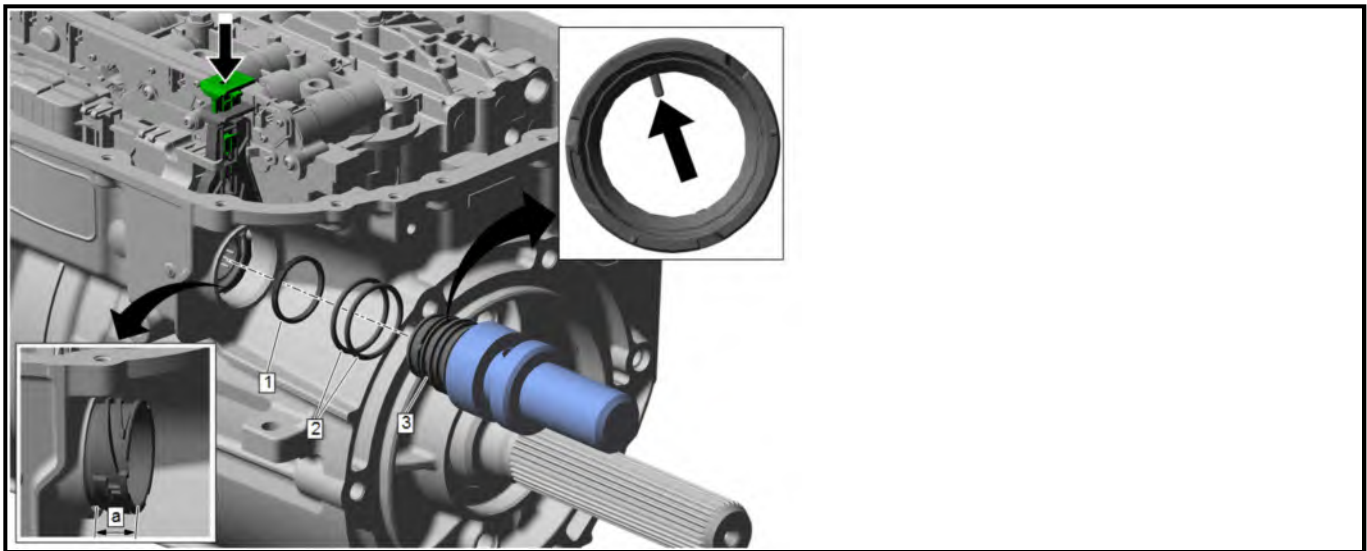
Fig. 7: Control Valve Body Assembly Bolts Tightening Sequence
 Courtesy of GENERAL MOTORS COMPANY

NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Automatic Transmission Fluid Pump Seal NOTE: Install a NEW seal. Do NOT reuse the old seal.
2	Automatic Transmission Fluid Pump Seal NOTE: Install a NEW seal. Do NOT reuse the old seal.
3	Center Support Fluid Passage Seal 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. • Install a NEW seal. Do NOT reuse the old seal.
4	Control Valve Assembly CAUTION: The control valve body assembly needs to be lowered into

Callout	Component Name
	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.
5	Valve Body Bolt [6x] CAUTION: Refer to <u>Fastener Caution</u> . Tighten in sequence 8 N.m (71 lb in). Special Tools DT-48285 Valve Body Torx Plus Socket (if applicable) Equivalent regional tools: <u>Special Tools</u>

AUTOMATIC TRANSMISSION ELECTRICAL CONNECTOR PASSAGE SLEEVE INSTALLATION

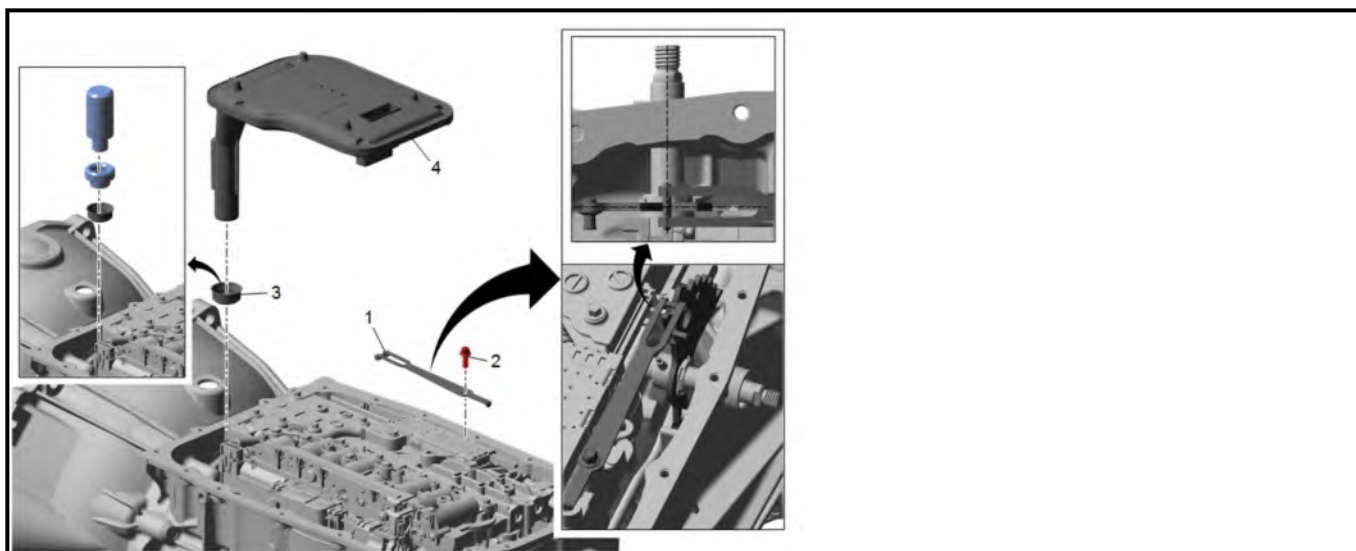


NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Automatic Transmission Electrical Connector Passage Sleeve Seal Procedure Install a NEW seal. Do NOT reuse the old seal.
2	Automatic Transmission Wiring Connector Seal [2x] Procedure Install a NEW seal. Do NOT reuse the old seal.
3	Automatic Transmission Electrical Connector Passage Sleeve CAUTION: Orientate the alignment tab inside the passage sleeve with the slot in the electrical connector of the control solenoid valve assembly. Push the sleeve straight into the case bore and connector. Do NOT rotate the sleeve at any time. Ensure the sleeve is fully seated into the case. When the sleeve is properly

Callout	Component Name
	installed, the distance from the case surface to the end of the sleeve should be 14 - 16 mm. Even though the correct electrical connections may still be maintained, failure to ensure proper installation of the sleeve may result in a fluid leak around the sleeve lip seal and into the sleeve cavity. Procedure 1. Align the tab inside the passage sleeve with the slot in the electrical connector. 2. Using DT-47715 and EN-42183 , install the sleeve to 14 - 16 mm (0.5512 - 0.6299 in) (a). 3. Push down on the connector position assurance (CPA) tab to ensure proper installation. Special Tools • DT-47715 Electrical Connector Passage Sleeve Remover/Installer • EN-42183 Driver Handle Equivalent regional tools: Special Tools

FLUID FILTER AND MANUAL SHIFT DETENT ASSEMBLY INSTALLATION



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Manual Shift Detent CAUTION: Ensure the manual shaft detent assembly roller is centered over the manual shaft detent lever assembly. Failure to center the roller may cause hard or no shift lever operation.
2	Manual Shift Detent Bolt CAUTION: Refer to Fastener Caution . Tighten 12 N.m (106 lb in).
3	Automatic Transmission Fluid Filter Seal Procedure Install a NEW seal. Special Tools • DT-47848 Seal Installer

Callout	Component Name
	• EN-42183 Driver Handle
	Equivalent regional tools: Special Tools
4	Automatic Transmission Fluid Filter Procedure Install a NEW filter. DO NOT reuse old filter.

AUTOMATIC TRANSMISSION FLUID PAN INSTALLATION

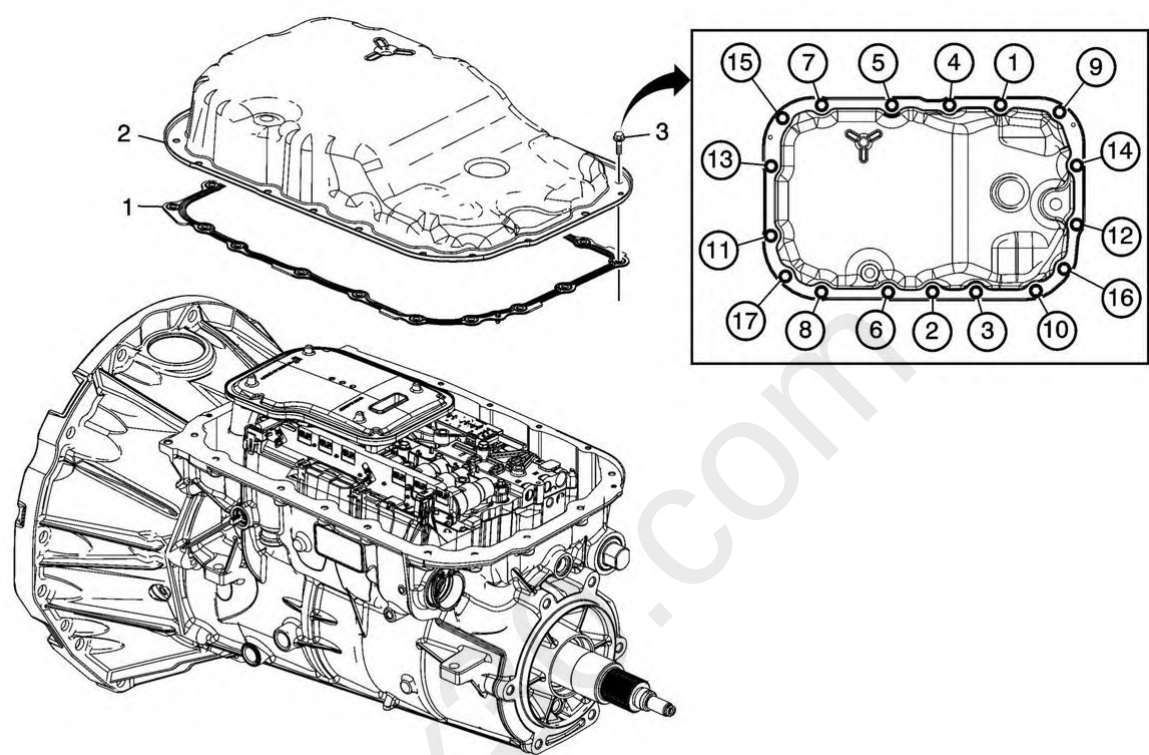


Fig. 8: Automatic Transmission Fluid Pan Bolts Tightening Sequence
 Courtesy of GENERAL MOTORS COMPANY

NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Fluid Pan Gasket TIP: The fluid pan gasket is reusable. Inspect the gasket to determine if it may be reused. If the gasket is stuck to the case or pan, it should be replaced.
2	Fluid Pan Assembly
3	Fluid Pan Bolts M6 x 20 (Qty: 17) CAUTION: Refer to Fastener Caution . Procedure: Tighten in sequence shown. Tighten 9 N.m (80 lb in)

CASE EXTENSION ASSEMBLY INSTALLATION (6L50)

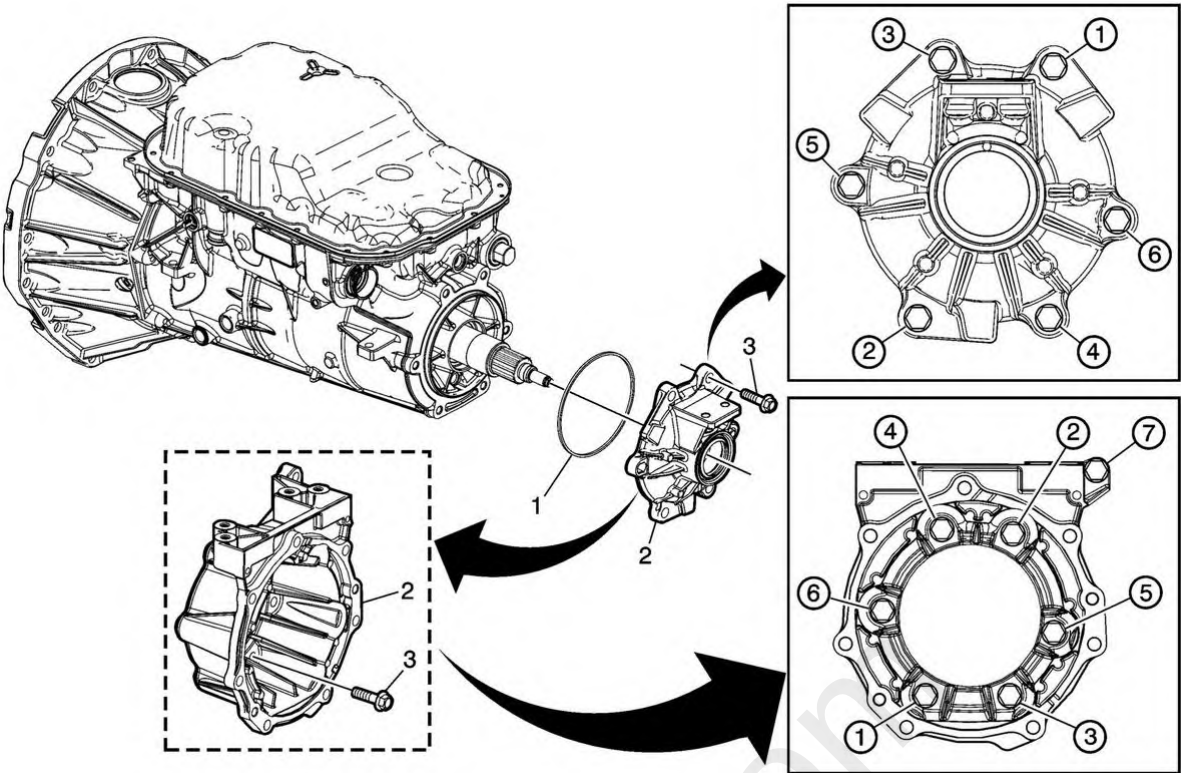


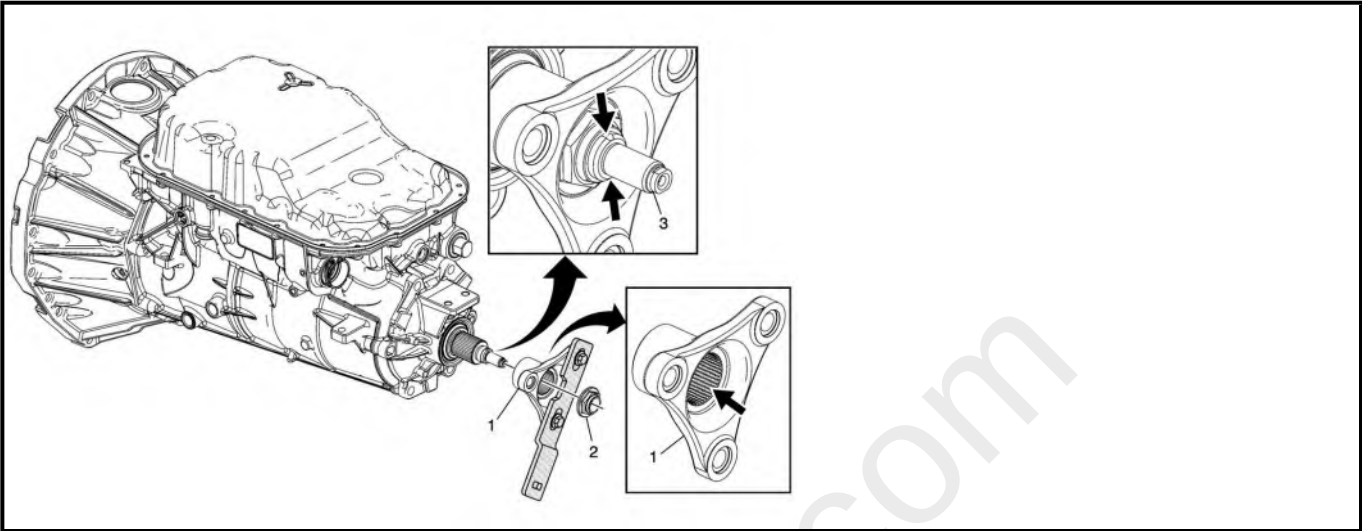
Fig. 9: Case Extension Assembly Bolts Tightening Sequence (6L50).
Courtesy of GENERAL MOTORS COMPANY

NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Case Extension Seal NOTE: Install a NEW seal.
2	Case Extension 2WD or Transfer Case Adapter 4WD NOTE: Optional AWD version uses same bolts and torque sequence.
3	Case Extension Bolts M10 x 40 CAUTION: Refer to Fastener Caution . Procedure • Install Case Extension 2WD - Qty: 6 Bolts

Callout	Component Name
	• Install Transfer Case Adapter 4WD - Qty: 7 Bolts • Tighten in sequence shown. Tighten 55 N.m (41 lb ft)

PROPELLER SHAFT TRANSMISSION FLANGE INSTALLATION



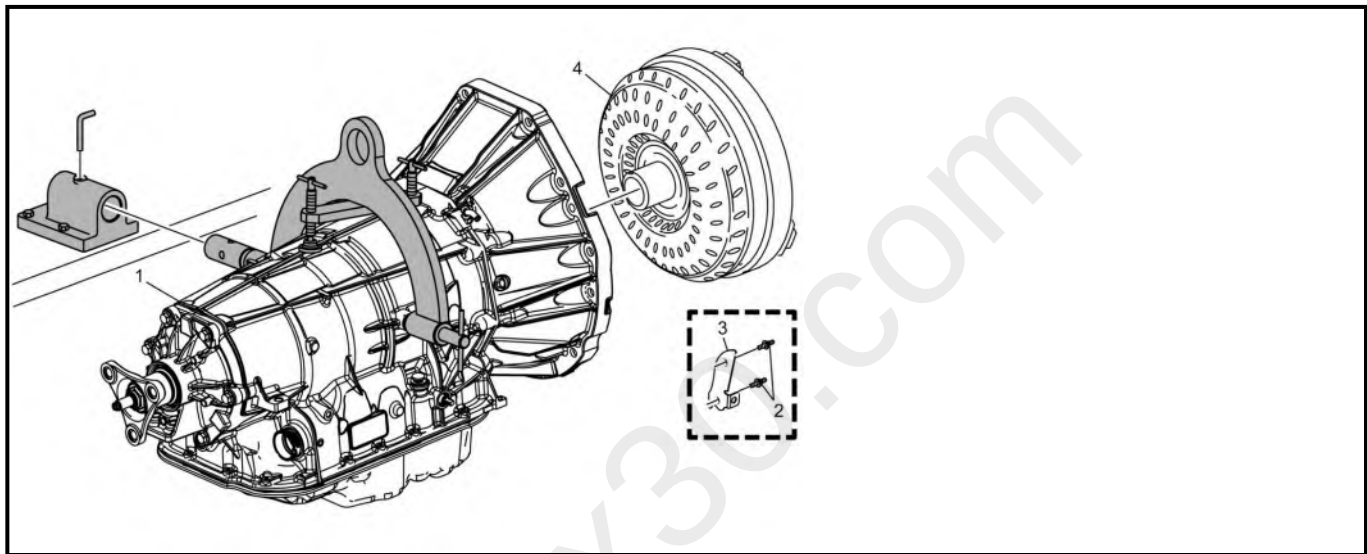
NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Component Name
1	Prop Shaft Trans Flange Procedure 1. The output shaft splines must be thoroughly clean and dry before installing the flange. NOTE: • When repairing low speed and garage shift clunk - except for moving the vehicle from the hoist, do not operate the vehicle above 5 mph at light throttle for 24 hours to allow the adhesive to cure.

Callout	Component Name
	• If the replacement flange contains a pre-applied adhesive patch, then liquid adhesive is not required and the 24 hour cure time is not necessary. 2. Apply GM P/N 89021297 (Canadian P/N 10953488) across the width of the flange splines, install. However, if the replacement flange contains a pre-applied adhesive patch, then liquid adhesive is not required and the 24 hour cure time is not necessary. 3. Sufficient application of adhesive to every tooth on the flange will leave excess adhesive on the output shaft after installation. If no excess is observed, reapply adhesive.
2	Front Prop Shaft Flange Nut CAUTION: Refer to Fastener Caution . Procedure 1. The output shaft threads must be thoroughly clean and dry before installing the nut. 2. Apply liquid adhesive across the width of the nut threads, prior to tightening and staking. Refer to Adhesives, Fluids, Lubricants, and Sealers . However, if the replacement nut contains a pre-applied adhesive patch, then liquid adhesive is not required. NOTE: Install a NEW nut. Tighten 55 N.m (41 lb ft) Special Tools DT-45012 Holding Fixture For equivalent regional tools, refer to Special Tools .
3	Output Shaft CAUTION: Stake the flange nut onto the output shaft. Use the two

Callout	Component Name
	staking grooves on the shaft to locate the staking points. Failure to stake the flange nut may result in damage to the transmission.

TORQUE CONVERTER INSTALLATION AND HOLDING FIXTURE REMOVAL (6L50)



NOTE: Callouts in the following chart represent components shown in graphic above.

Callout	Procedure
Preliminary Procedure Rotate the transmission so that the fluid pan is facing down.	
1	Transmission Assembly Special Tools • DT-48989 Holding Fixture • DT-3289-20 Holding Fixture Base Assembly Equivalent regional tools: Special Tools
2	Transmission Cover Stud - Model Dependent [2x] Tighten 12 N.m (106 lb in)
3	Transmission Converter Cover - Model Dependent
4	Torque Converter WARNING: The torque converter

Callout	Procedure
	must be held to the torque converter housing by a retaining device such as shipping brackets. Without the retaining device, the torque converter may slide forward, disengaging the oil pump, or may fall completely out of the transmission causing personal injury and/or property damage. NOTE: Use care not to damage the torque converter seal during installation. Procedure 1. Lubricate the torque converter pump hub outer diameter and the torque converter seal with clean transmission fluid. Adhesives, Fluids, Lubricants, and Sealers 2. To install, slowly turn and apply light pressure to the torque converter to engage the turbine shaft splines, the stator shaft splines and the engagement area on the converter hub with the oil pump drive. 3. Install the DT-21366 Converter Holding Strap to the transmission. Special Tools DT-21366 Converter Holding Strap Equivalent regional tools: Special Tools