

6T70 (Gen. 1), 6T75 (Gen. 1) Remanufactured Valve Body

Fits '07-'08 Gen. 1 Units with 1.35 Ratio 3-5-R.
Sold without transmission control module.

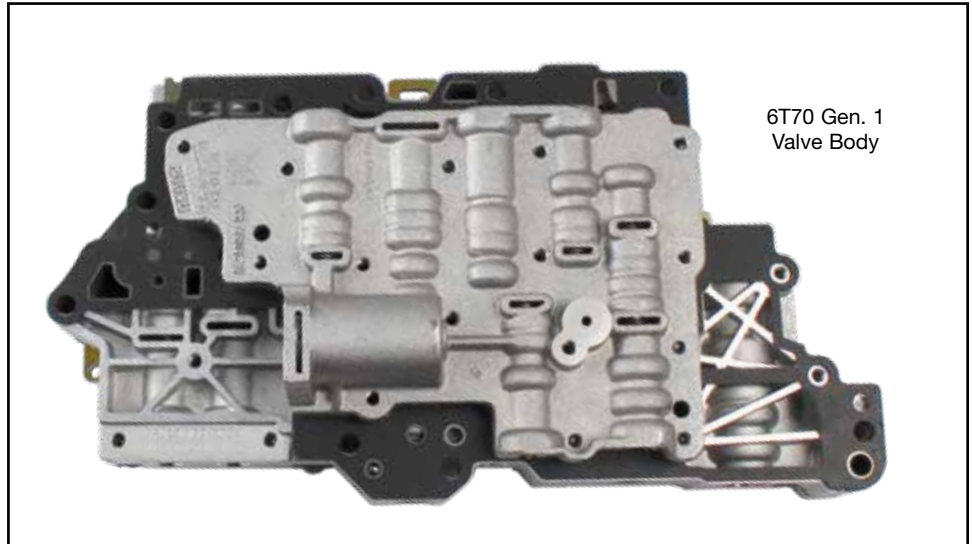
Part No.

GM6T70-1E

Fits '09-'13 Gen. 1 units with 1.83 Ratio 3-5-R.
Sold without transmission control module.

Part No.

GM6T70-1L



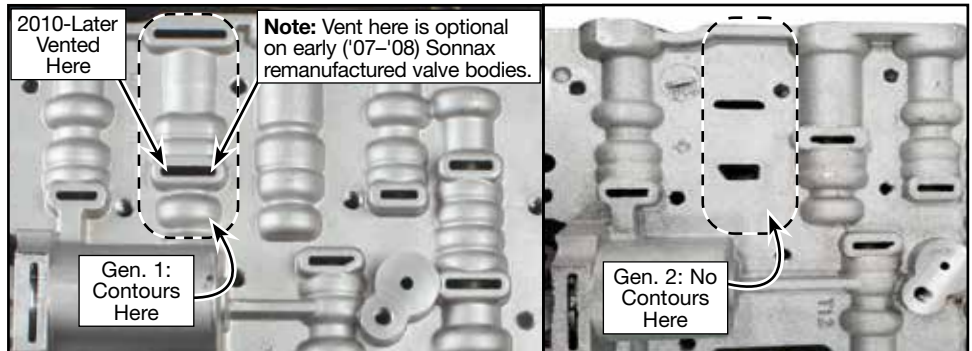
6T70 Gen. 1
Valve Body

WARNING: Reference Figures 1 & 2, or go to www.sonnax.com for identification guide to verify the correct valve body is being installed as these different types look very similar.

NOTE: Save your existing manual valve for reuse with our remanufactured valve body.

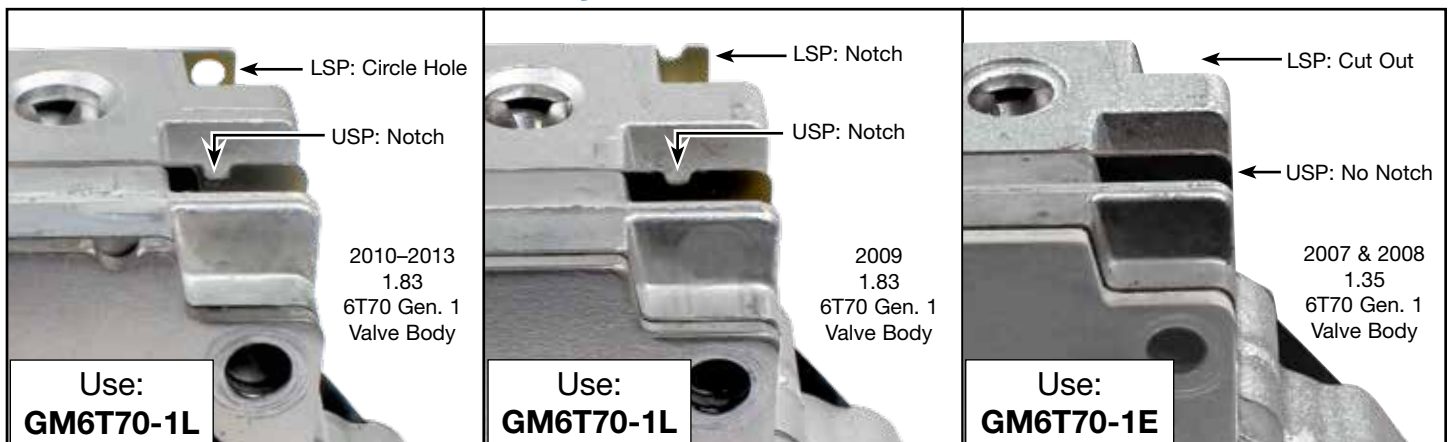
GM 6T70 & 6T75 Gen. 1/Gen. 2 Valve Body Identification

Figure 1



GM 6T70 & 6T75 Generation 1 Valve Body Identification

Figure 2



Valve Body Installation Tips

1. Air Check

While valve body is out, air-check indicated circuits (**Figure 3**) using low, regulated air pressure. This will help you discover any issues prior to installing the remanufactured valve body.

2. Install remanufactured valve body & TEHCM into transmission



CAUTION: Verify 1-2-3-4 clutch seal is in place before installing Sonnax replacement valve body. Ensure to correctly align manual valve with detent lever assembly while installing valve body.

- Install valve body into transmission using 10 bolts (**Figure 4**). Hand tighten first, then tighten in indicated sequence to 106 in-lb. Align detent spring into detent lever.
- Install a new solenoid filter plate to the solenoid body (**Figure 5**).
- Install TEHCM and TCU spring retainer onto valve body and secure with 11 bolts. Hand tighten, then tighten in the sequence shown to 106 in-lb (**Figure 6**).
- Reconnect shift position switch.
- Reconnect output speed sensor (OSS).
- Reconnect turbine shaft speed sensor (TSS).

3. Install Main Control Cover onto Transmission Case

- Install transmission oil pan gasket and main control cover onto case.
- Inspect the 20-pin TEHCM connector seal and make sure that the 6T70 seal is on the inside of the main control cover to prevent fluid leaks.
- Install bolts and studbolts (**Figure 7**). Torque in sequence noted to 106 in-lb.

4. Fluid Fill



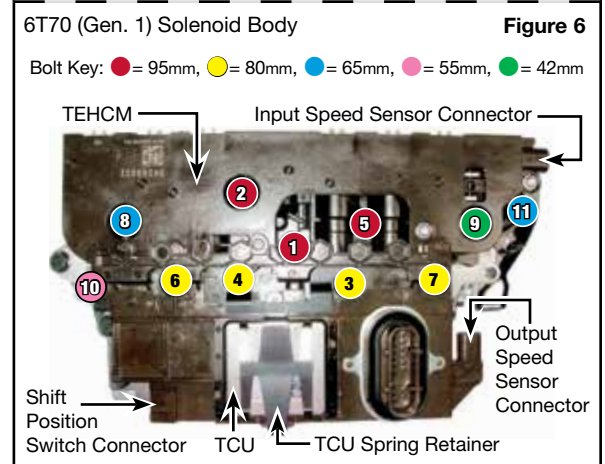
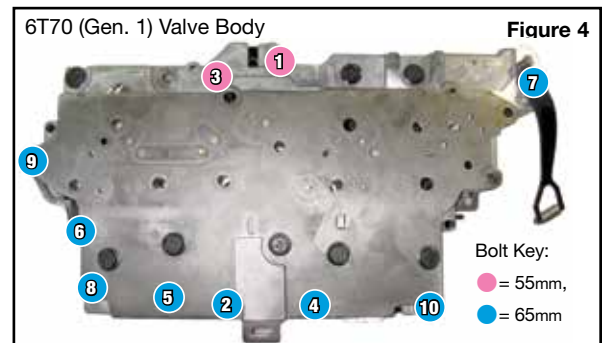
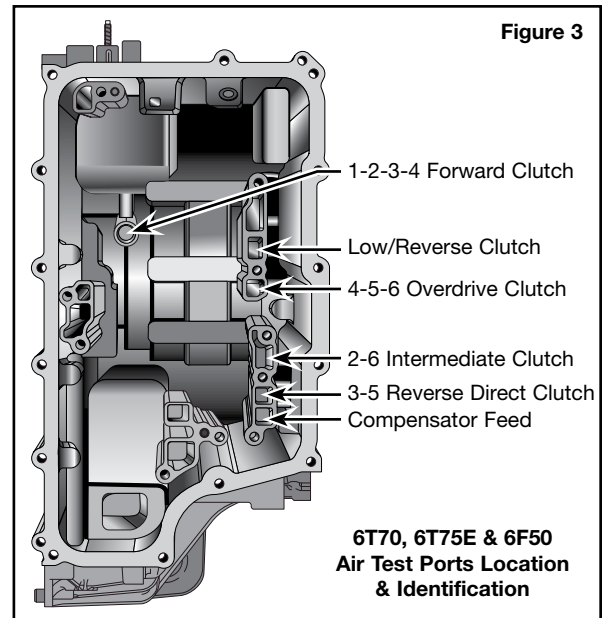
NOTE: Use Dexron VI transmission fluid only. Ensure the transmission has enough fluid to safely start vehicle without damaging transmission.

- Park vehicle on level surface and start engine.
- Press brake pedal and move shift lever through each gear range, pausing for approximately 3 seconds in each range. Move shift lever back to Park.
- Allow engine to idle 500–800 RPM for at least 1 minute. Release brake pedal.
- Keep engine running and check fluid temperature (TFT) using the Driver Information Center or appropriate scan tool. Temperature must be between 180–200 F°.
- Remove dipstick and wipe clean with rag.
- Install dipstick and tighten. Wait 3 seconds and remove again.
- Check both sides of dipstick and read lower level.
- Install and remove dipstick again to verify reading.
- Adjust fluid level accordingly. Do not add more than one pint at a time without rechecking level.

TEHCM Replacement

The original vehicle TEHCM or replacement TEHCM must be programmed with the proper and latest software/calibrations. Reference OE instructions for proper procedures on updating, replacing and installing.

If reusing the original vehicle TEHCM it is highly recommended to replace all fluid pressure switch seals and laminated discs. These are prone to contamination and failure, resulting in pressure switch codes and a multitude of shift complaints.



Transmission Diagnostic Tips

This remanufactured valve body has been through a rigorous inspection and rebuild process, then a comprehensive, functional hydraulic and electronic test to ensure it meets OE performance and quality. It is designed to eliminate many pressure-, shift- and converter-related complaints, but will not correct complaints that stem from other areas of the transmission.

The following are common areas of failure or root causes for symptoms that could be attributed to valve body issues that should also be examined or addressed during your transmission build. clutch apply chart (Figure 8) and solenoid apply chart (Figure 9) are provided for additional aid in diagnosing problems.

- Codes P0716, P0717, P0722, P0723, P0751, P0756, P0776, P0796, P2714, P2723: ISS or OSS faulty
- P0218 code transmission fluid over temperature: Overfilling of transmission
- TCC slip, Shudder, No apply, Engine stalls after service: Damaged or incorrectly installed sprocket support seal, and/or converter turbine hub seal damage during installation.
- Repeat 3-5-R clutch failure; Harsh 2-3, 4-5; Reverse engagement harsh: Damaged 3-5-R clutch piston dam seal. This will not be detected in air check of 3-5-R clutch.
- Lack of power; Shift concerns; DTC codes: ECM harness shorted to ground on ECM bracket.
- Binding on 3-4, 4-3; Possible P0797: Worn ring groove on case cover hub sleeve.
- P0752, P0872, P0877, P0989: Failed fluid pressure switches
- No Reverse; DTC P0776, P0842: Broken 3-5-R clutch wave plate

5. Service Fast Learn Adapts

- The fast learn adapt procedure must be performed after installation of this remanufactured valve body. Reference OE information for specific processes and procedures for particular vehicle serviced.
- Service Fast Learn Adapts is a procedure in which a series of tests are run to all the TCM to learn individual clutch characteristics. The TCM uses this data for clutch control during shifts. An appropriate scan tool provides initiation of the procedure.

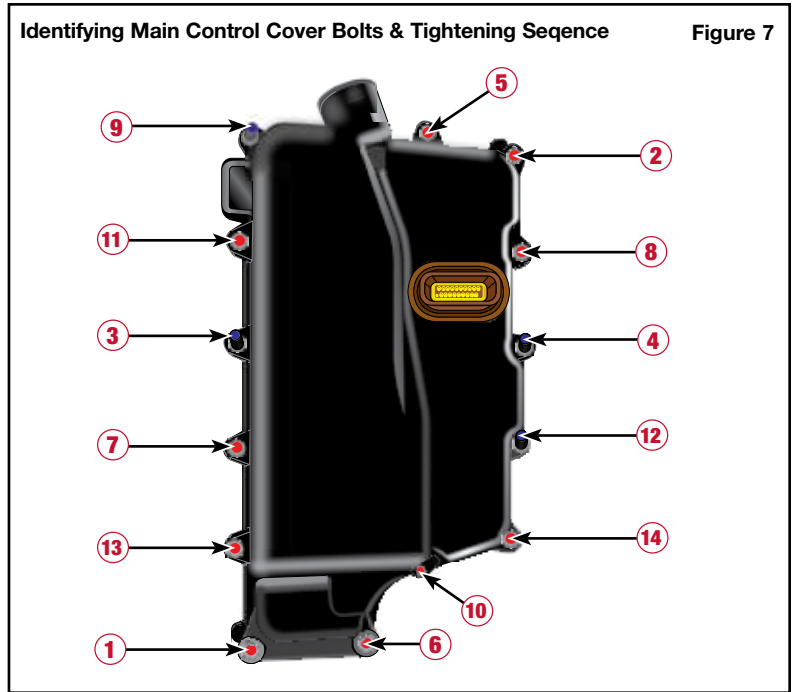


Figure 7

Clutch Apply Chart

Figure 8

Gear	1-2-3-4 Clutch	3-5 Clutch	4-5-6 Clutch	2-6 Clutch	Low & Reverse Clutch	Low & Reverse One-Way Clutch
Park					X	
Reverse		X			X	
Neutral					X	
1st Breaking	X				X	Holding
Drive	1st	X				Holding
	2nd	X			X	
	3rd	X	X			
	4th	X		X		
	5th		X	X		
	6th			X	X	

Solenoid Apply Chart

Figure 9

Gear	Solenoid					
	Shift Solenoid 1	Shift Solenoid 2	1-2-3-4 PC Solenoid 5 NL	2-6 PC Solenoid 4 NL	3-5 Rev. PC Solenoid 2 NH	4-5-6 PC Solenoid 3 NH
Park	X	X			X*	
Reverse	X					
Neutral	X	X			X*	
Drive	1st	X	X*		X*	X*
	2nd		X	X*	X*	X*
	3rd		X	X*		X*
	4th		X	X*		X*
	5th		X			
	6th		X		X*	X*

KEY: X = Solenoid Electrically Energized, * = Modulating