

SECTION 307-01: Automatic Transaxle/Transmission — 6R80
DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES

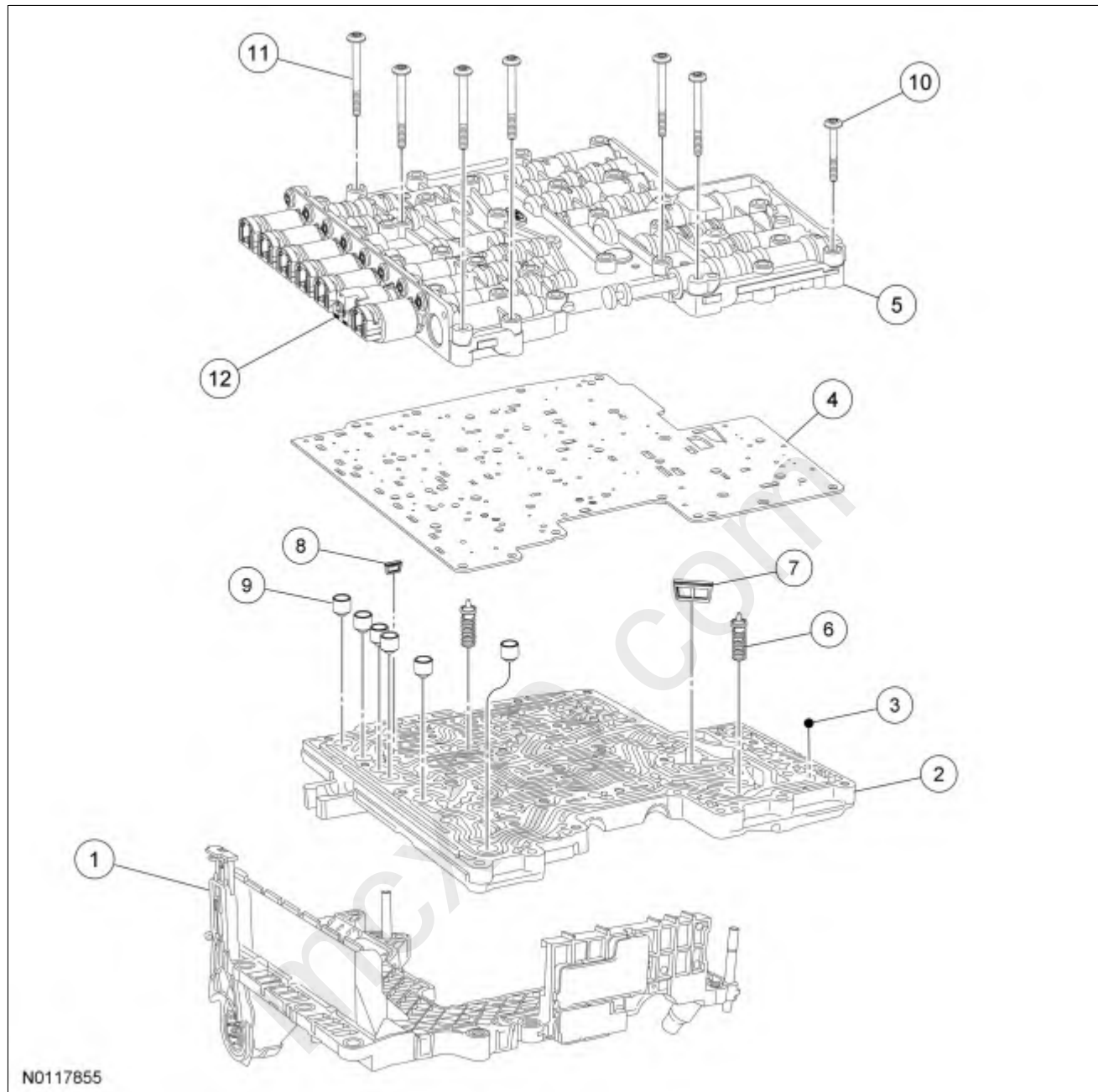
2014 F-150 Workshop Manual
Procedure revision date: 10/25/2013

Main Control

Material

Item	Specification
Motorcraft® MERCON® LV Automatic Transmission Fluid XT-10-QLVC (US); CXT-10-LV12 (Canada)	MERCON® LV

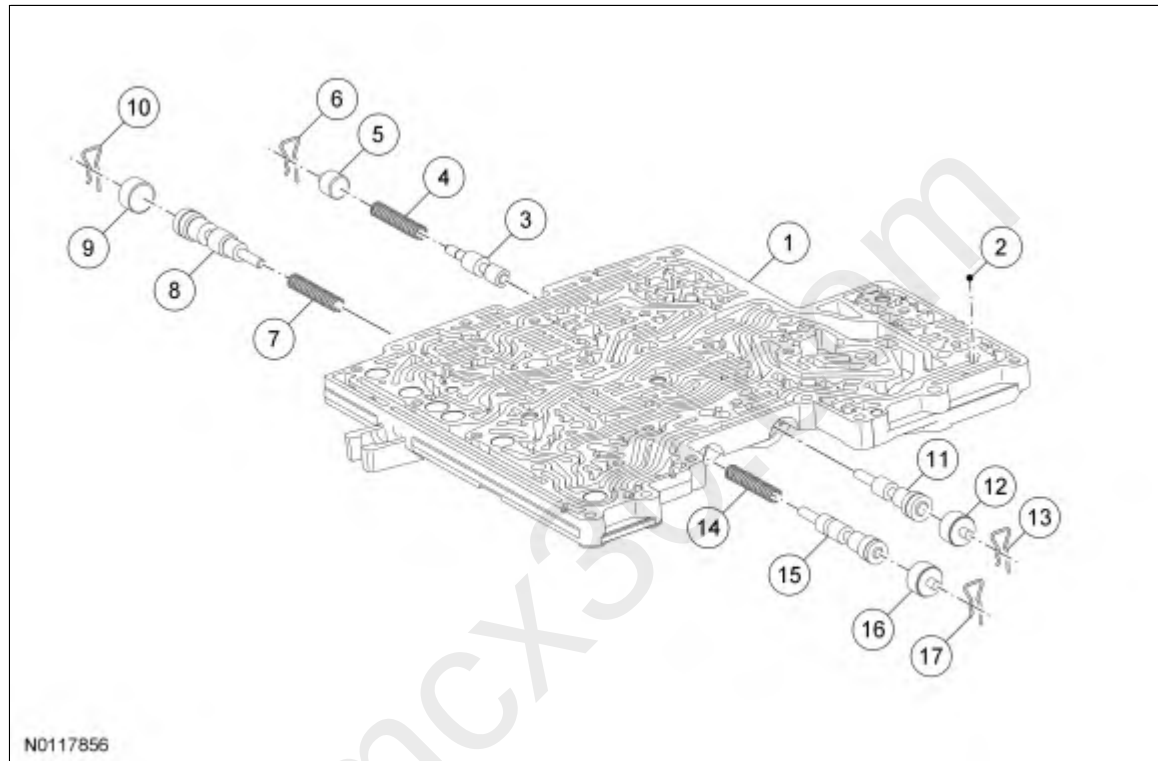
Main Control Assembly



Item	Part Number	Description
1	7G276	Molded leadframe
2	—	Main control valve body (upper)
3	7E195	Main control valve check ball (8 required)
4	7Z490	Main control valve body separator plate
5	—	Main control valve body (lower)
6	—	Main control valve
7	7H187	Main control filter
8	7B155	Transmission fluid filter

9	7J191	Transmission solenoid damper valve assembly
10	W707886	Main control assembly short bolt — connects upper and lower half together (19 required)
11	W707884	Main control assembly long bolt — connects molded leadframe to main control valve assembly (6 required)
12	—	Transmission shift control solenoids

Main Control Upper Half

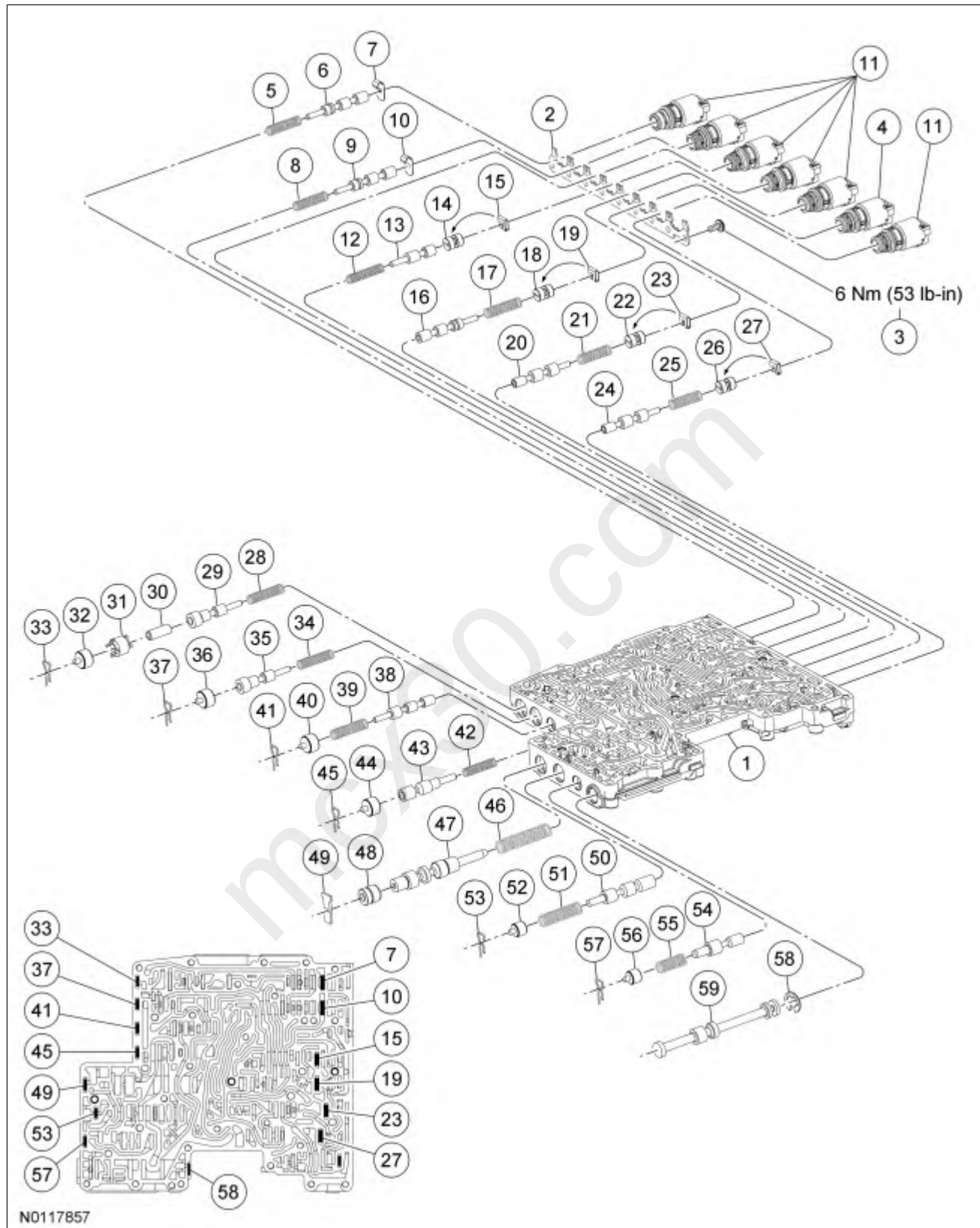


Item	Part Number	Description
1	7A092	Main control valve assembly (ditch plate) (upper half)
2	7E195	Main control valve check ball (8 required)
3	—	Transmission clutch D2 latch valve
4	—	Transmission clutch valve spring
5	—	Transmission clutch valve spring plug
6	7G007	Transmission clutch valve spring plug retaining clip
7	—	Transmission clutch valve spring
8	—	Transmission clutch B regulator valve
9	—	Transmission clutch valve spring plug
10	7G007	Transmission clutch valve spring plug retaining clip
11	—	Transmission clutch valve
12	—	Transmission clutch valve spring plug

13	7G007	Transmission clutch valve spring plug retaining clip
14	—	Transmission clutch valve spring
15	—	Transmission clutch valve
16	—	Transmission clutch valve spring plug
17	7G007	Transmission clutch valve spring plug retaining clip

Main Control Lower Half

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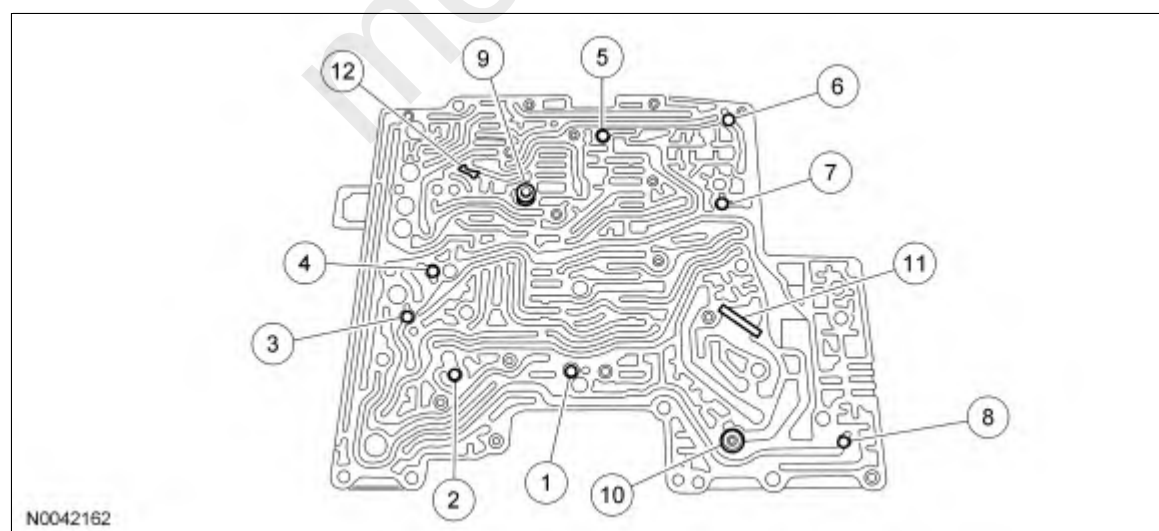


Item	Part Number	Description
1	—	Main control valve assembly (lower half)

2	—	Transmission shift control solenoid hold-down bracket
3	—	Transmission shift control solenoid hold-down bracket bolt M5 x 0.80 x 12 (8 required)
4	7G484	Transmission ON/OFF shift solenoid
5	—	Transmission clutch valve spring
6	—	Transmission clutch A latch valve
7	—	Transmission spring retainer plate
8	—	Transmission clutch valve spring
9	—	Transmission clutch B latch valve
10	7F194	Transmission spring retainer plate
11	7G383	Transmission <u>VFS</u> (6 required)
12	—	Transmission solenoid regulator valve spring
13	—	Transmission solenoid pressure regulator valve
14	—	Transmission solenoid plug
15	7G007	Transmission valve plug retainer
16	—	Transmission clutch D1 latch valve
17	—	Transmission clutch valve spring
18	—	Transmission solenoid plug
19	7G007	Transmission valve plug retainer
20	—	Transmission drive enable valve
21	—	Transmission solenoid valve spring
22	—	Transmission solenoid plug
23	7G007	Transmission valve plug retainer
24	—	Transmission solenoid multiplex valve
25	—	Transmission solenoid valve spring
26	—	Transmission solenoid plug
27	7G007	Transmission valve plug retainer
28	—	Transmission clutch valve spring
29	—	Transmission clutch A pressure regulator valve
30	—	Transmission clutch regulator valve sleeve
31	—	Transmission valve return plug
32	—	Transmission valve return plug
33	7G077	Transmission valve plug return clip
34	—	Transmission clutch valve spring
35	—	Transmission clutch E pressure regulator valve
36	—	Transmission valve return plug
37	7G007	Transmission valve plug return clip
38	—	Transmission clutch E latch valve
39	—	Transmission clutch control valve spring

40	—	Transmission valve return plug
41	7G007	Transmission valve plug return clip
42	—	Transmission bypass clutch control valve spring
43	—	Transmission bypass clutch control valve
44	—	Transmission valve return plug
45	7G007	Transmission valve plug return clip
46	—	Transmission manual oil pressure regulator valve spring
47	—	Transmission main oil pressure regulator valve
48	—	Transmission manual oil pressure regulator valve sleeve
49	7G007	Transmission valve plug return clip
50	—	Transmission converter regulator valve
51	—	Transmission converter regulator valve spring
52	—	Transmission valve return plug
53	7G007	Transmission valve plug return clip
54	—	Transmission lube control valve
55	—	Transmission lube control valve spring
56	—	Transmission valve return plug
57	7G007	Transmission valve plug return clip
58	W527007-S	Retaining ring
59	—	Transmission control manual valve

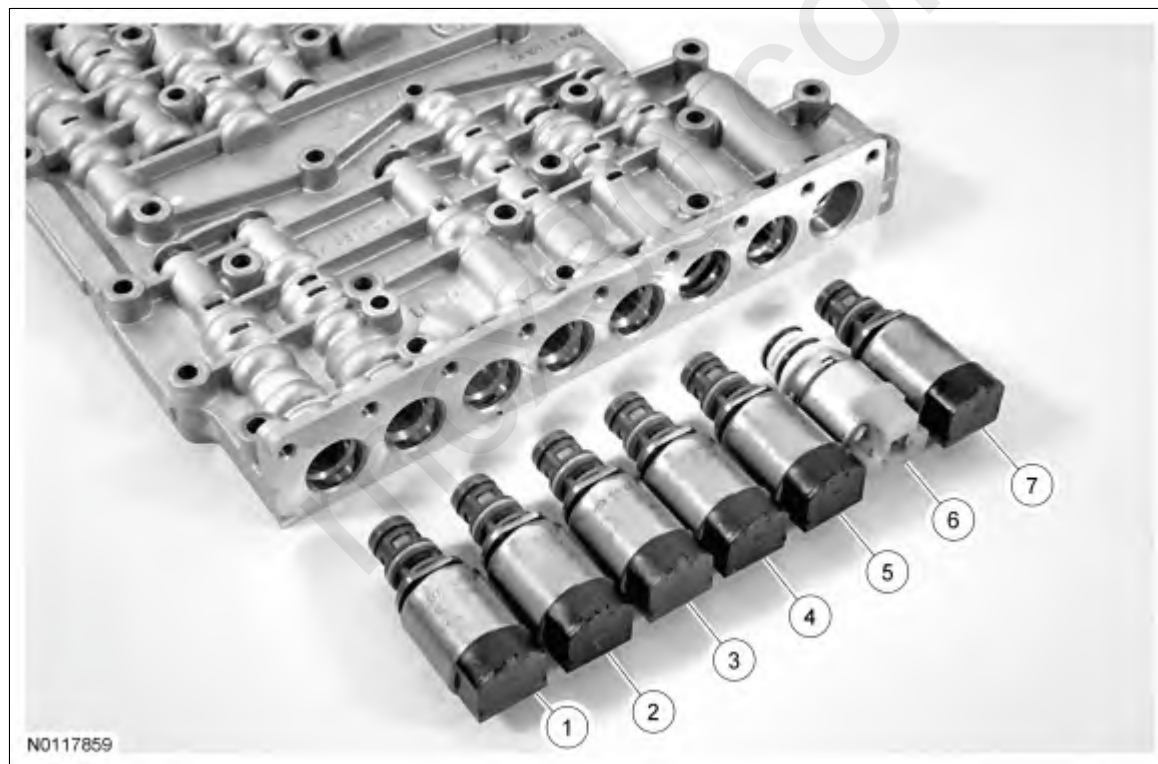
Check Ball Location



Item	Description
1	Reverse/drive control check ball

2	Shift solenoid control check ball
3	Intermediate clutch exhaust control check ball
4	Direct clutch exhaust control check ball
5	Low/reverse clutch exhaust control check ball
6	Forward clutch exhaust control check ball
7	Overdrive clutch exhaust control check ball
8	Reverse exhaust control check ball
9	Clutch exhaust valve
10	Converter drain back valve
11	Large filter screen
12	Small filter screen

Shift Solenoid Location



Item	Part Number	Description
1	7G383	<u>SSA</u> , Forward (1,2,3,4) clutch, normally low <u>VFS</u> (brown nozzle).
2	7G383	<u>SSB</u> , Direct (3,5,R) clutch, normally high <u>VFS</u> (black nozzle).
3	7G383	<u>SSC</u> , Intermediate (2,6) clutch, normally low <u>VFS</u> (brown nozzle).

4	7G383	<u>LPC</u> solenoid, normally high <u>VFS</u> (black nozzle).
5	7G383	<u>SSD</u> , low/reverse/overdrive clutch, normally high <u>VFS</u> (black nozzle).
6	7G484	<u>SSE</u> , normally off ON/OFF solenoid.
7	7G383	<u>TCC</u> solenoid, normally low <u>VFS</u> (brown nozzle).

Disassembly

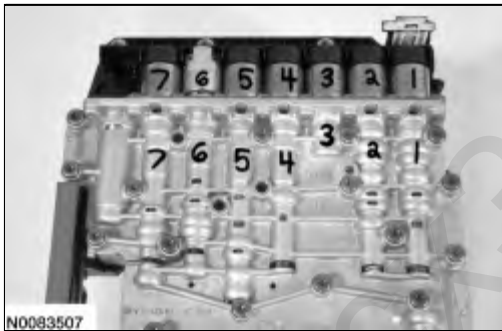
NOTE: Make an identifying mark on each solenoid and the corresponding bore for correct assembly.

NOTE: Solenoids may visually appear the same but their designs/functions are different. Use care not to assemble the main control assembly incorrectly. Incorrect solenoid installation results in poor transmission shift quality.

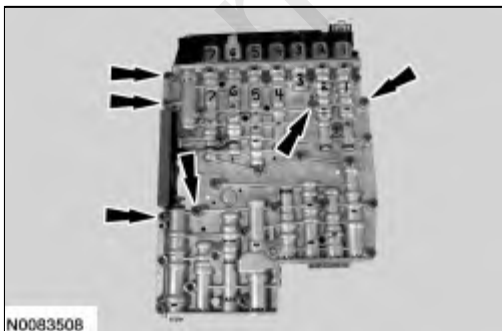
NOTE: Note the location of the 8 check balls, 6 solenoid dampers, 2 internal valves and springs and 2 filter screens for reassembly.

Main Control Upper Half

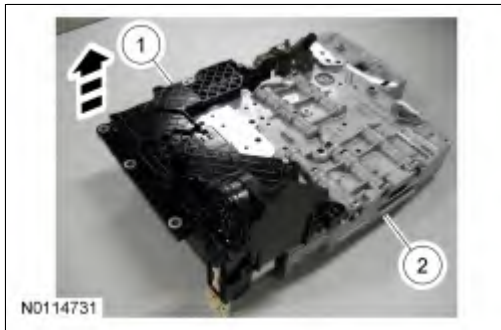
1. Make an identifying mark on each solenoid and the corresponding bore for correct assembly.



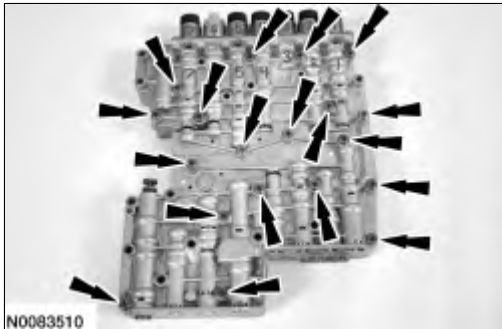
2. Remove the 6 long molded leadframe-to-valve body bolts from the molded leadframe.



3. Carefully separate the molded leadframe from the main control assembly.
 1. Molded leadframe
 2. Main control assembly



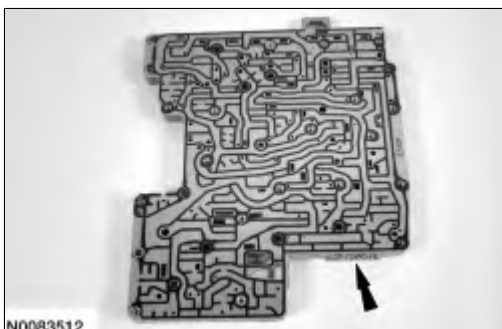
4. Remove 19 short molded leadframe-to-valve body bolts from the main control assembly.



5. Separate the lower half of the main control assembly from the upper half of the main control assembly.



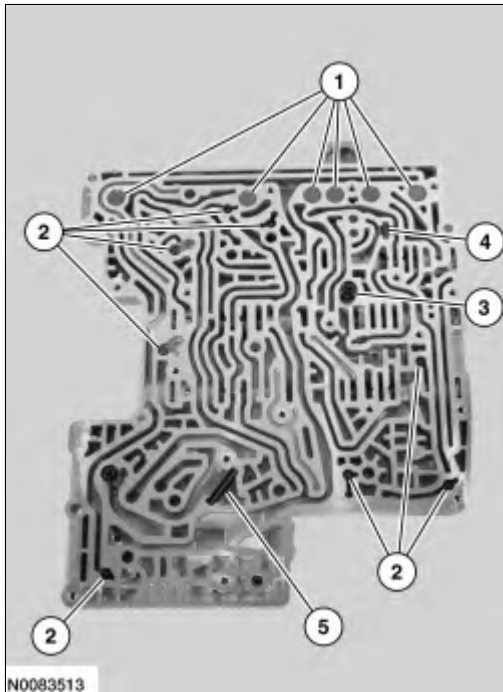
6. Remove and discard the main control valve body separator plate.



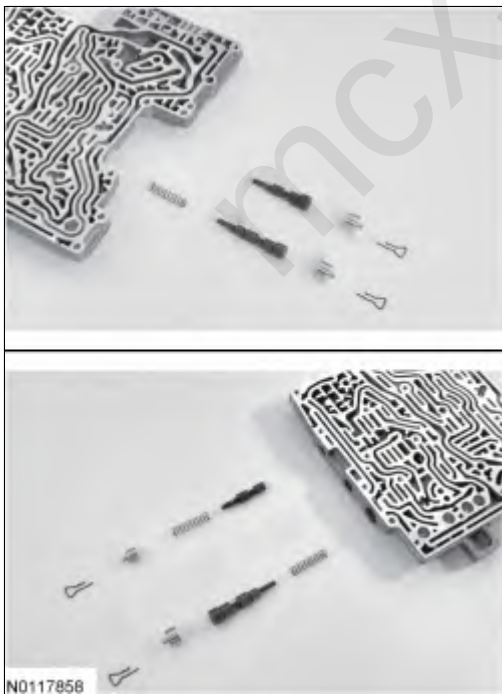
7. Remove the solenoid dampers, check balls, converter drain back valve and filter screens from the main control assembly. Note the location for assembly.

1. Solenoid dampers

2. Check balls
3. Converter drain back valve
4. Small filter screen
5. Large filter screen



8. Remove the retaining clips, caps, valves and valve springs from each bore of the main control assembly. Note the location and order for assembly.



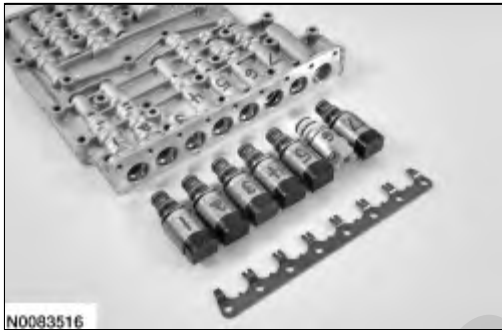
9. Using clean mineral spirits, clean the upper half of the main control assembly.

Main Control Lower Half

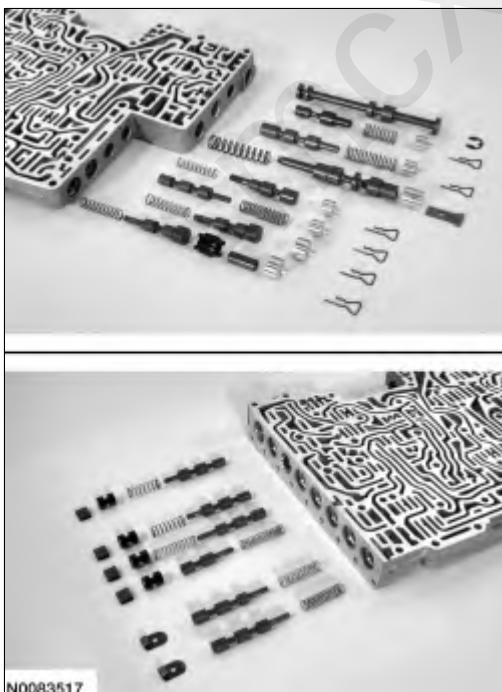
10. Remove the 8 solenoid hold down bracket bolts and the solenoid hold down bracket.



11. Remove the solenoids.



12. Remove the retaining clips, caps, valves and valve springs from each bore of the main control assembly. Note the location and order for assembly.



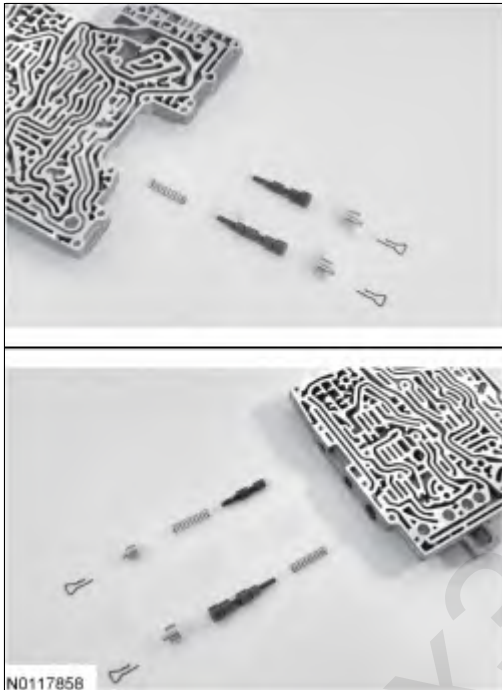
13. Using clean mineral spirits, clean the lower half of the main control assembly.

Assembly

Main Control Upper Half

1. **NOTE:** Many components and surfaces in the main control valve body are precision machined. Careful handling during disassembly, cleaning, inspection and assembly prevents unnecessary damage to machined surfaces.

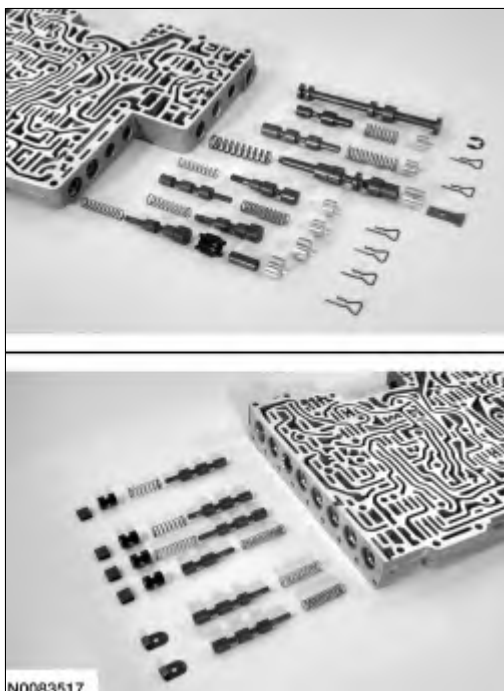
Install the retaining clips, caps, valves and valve spring into each bore.



Main Control Lower Half

2. **NOTE:** Many components and surfaces in the main control valve body are precision machined. Careful handling during disassembly, cleaning, inspection and assembly prevents unnecessary damage to machined surfaces.

Install the retaining clips, caps, valves and valve spring into each bore.



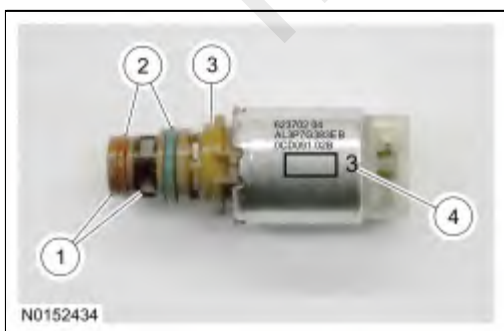
3. **NOTICE: A VFS is calibrated from the factory and are not all the same. To replace a VFS, match the replacement solenoid nozzle color and the band number with the original solenoid or harsh/erratic shifts, harsh/soft engagement or damage to the transmission can occur.**

Inspect the solenoid screens for contamination and install new solenoids if needed. Lubricate the solenoid O-rings with clean transmission fluid.

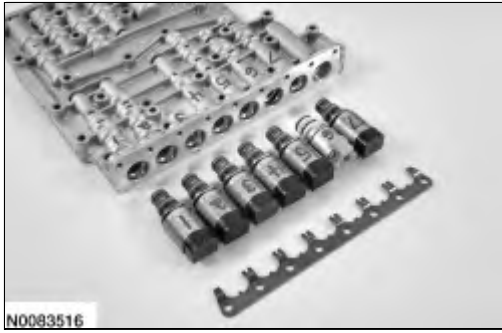
If replacing a solenoid, use the solenoid exploded view at the beginning of this procedure to identify what type of solenoid is being replaced. The solenoid can be a normally high VFS with a black nozzle, normally low VFS with a brown nozzle or an ON/OFF solenoid.

If replacing a VFS, record the band number and the solenoid nozzle color to get the correct part number for the solenoid.

1. Screens
2. O-rings
3. Solenoid nozzle
4. Solenoid band number



4. Install the solenoids into their correct bores as indicated during disassembly.



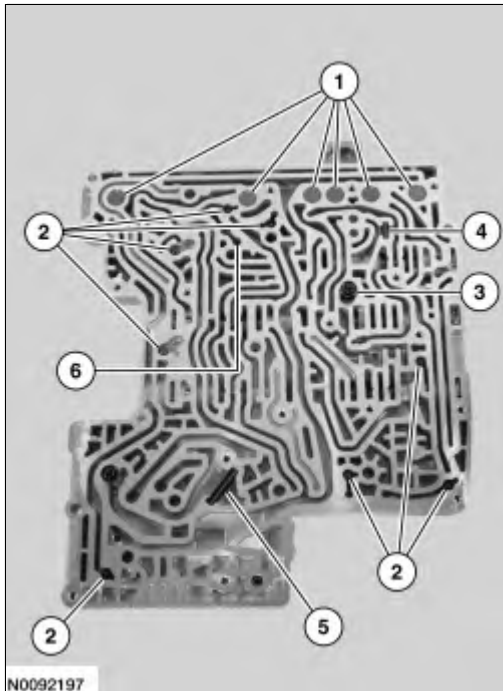
5. Install the shift control solenoid hold down bracket and the 8 hold down bracket bolts.
 - Tighten to 6 Nm (53 lb-in).



6. **NOTICE:** Toward the back of the upper valve body there is a hydraulic passage that is shaped as though it receives a check ball. This passage does not require a check ball. Be sure not to mistake this hydraulic passage for a passage that does require a check ball or damage to the transmission can occur.

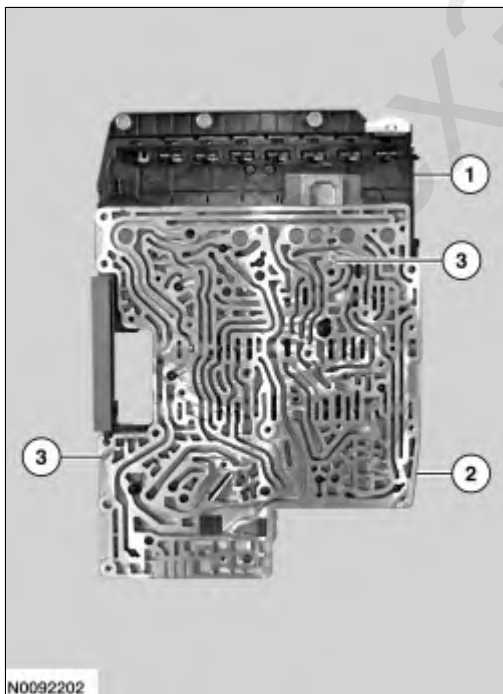
Install the solenoid dampers, check balls, converter drain back valve and filter screens.

1. Solenoid dampers
2. Check balls
3. Converter drain back valve
4. Small filter screen
5. Large filter screen
6. Empty hydraulic passage (no check ball)



7. Align the guide pins on the molded leadframe with the holes in the main control upper valve body and install the valve body onto the molded leadframe.

1. Molded leadframe
2. Main control upper valve body
3. Guide pins

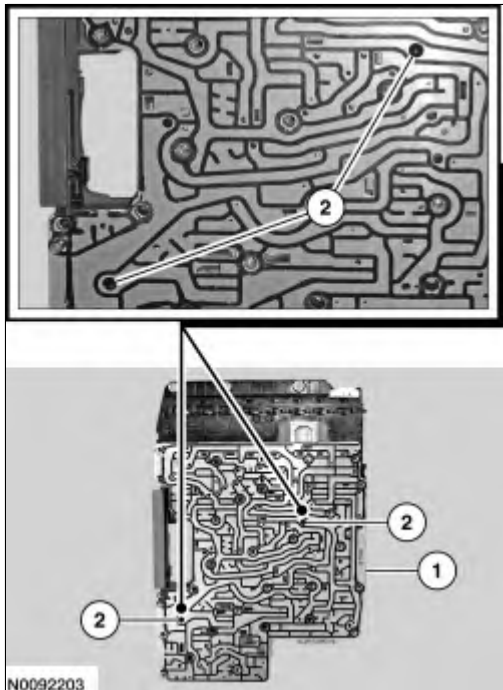


8. **NOTICE:** If the drain back valves are not installed correctly in the separator plate, damage to the transmission can occur.

Position the new main control separator plate on the main control upper valve body.

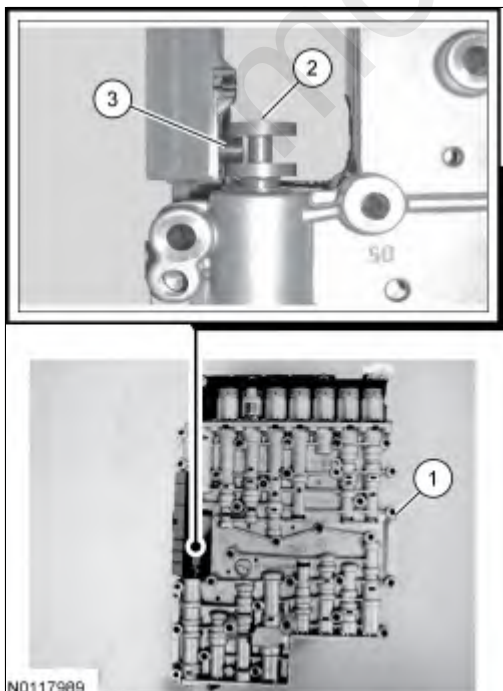
Check the 2 drain back valves to be sure they are correctly positioned in the separator plate when the separator plate is pressed flush against the main control upper valve body.

1. Main control separator plate
2. Drain back valves

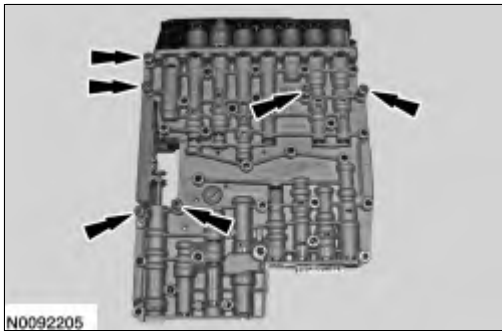


9. Position the main control lower valve body on the 2 molded leadframe alignment studs, align the manual valve with the TR sensor on the molded leadframe and install the main control lower valve body.

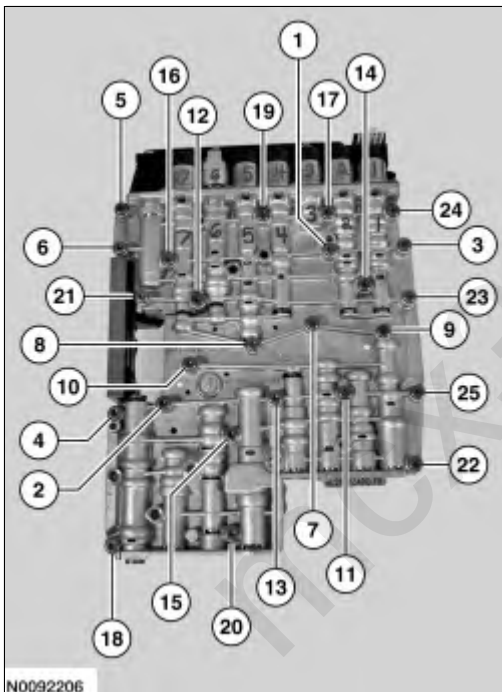
1. Main control lower valve body
2. Manual valve
3. TR sensor



10. Install the 6 long molded leadframe-to-valve body bolts hand-tight.



11. Install the 19 short main control assembly lower-to-upper valve body bolts. Tighten the bolts in the sequence shown.
- Tighten bolts 1 through 6 to 6 Nm (53 lb-in).
 - Tighten bolts 7 through 25 to 7 Nm (62 lb-in).



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