ZF6HP-E SHIFT

TRANSITIONAL VALVE BODY

COMPLAINT: A 2007 BMW 7 series vehicle using a ZF6HP-E Shift type transmission comes into the shop for repairs or a rebuild. During the process, the valve body is disassembled for inspection, cleaning, and possible repairs. None of the bulletins, seminar manuals or rebuild manuals show the type of valve body that is in this vehicle. Solenoids and valves cannot be properly identified and valve body small parts locations become questionable.

CAUSE: It appears that ZF had made only a few transitional valve bodies when they went from generation one to generation two. Generation one transmissions are called the ZF6HP19, 26 and 32. Generation two transmissions are called the ZF6HP21, 28 and 34. The change took place in 2006. The MV1 solenoid was eliminated and an EDS-7 solenoid was added. The valve body that seems to be a transitional version retains generation one solenoid arrangement and functions, but small parts locations does not match with generation one or two. Nine valves also changed locations and the bore plugs in the lower valve body uses generation two type.

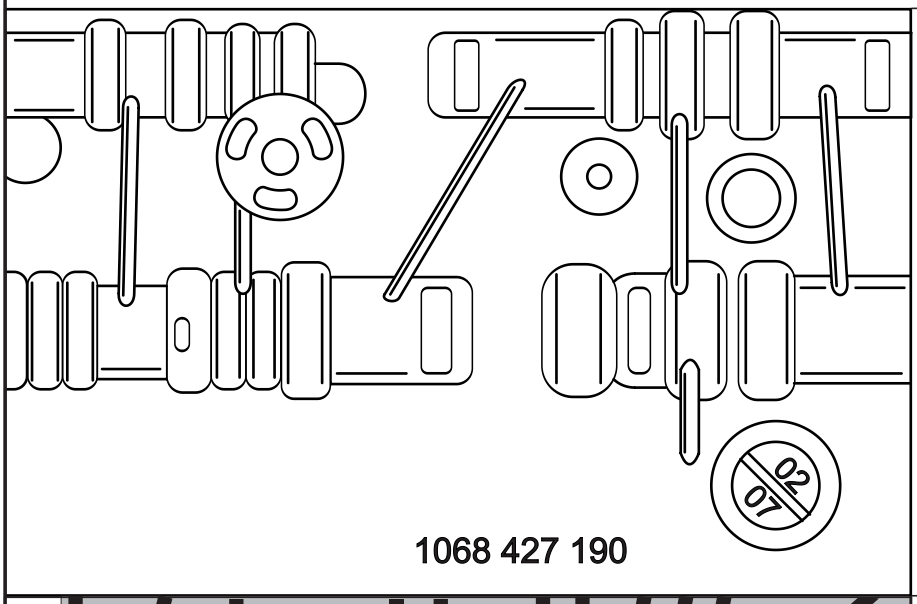
CORRECTION: Use figure 1 for upper and lower valve body casting numbers and spacer plate number ID for quick identification.

Figure 2 provides solenoid and tension clip location.
Figure 3 provides valve body small parts location.
Figures 4 through 6 provide valve and spring identification and spring specifications.

We thank Sonnax for making this information available to ATSG

ZF6HP-E SHIFT
TRANSITIONAL VALVE BODY

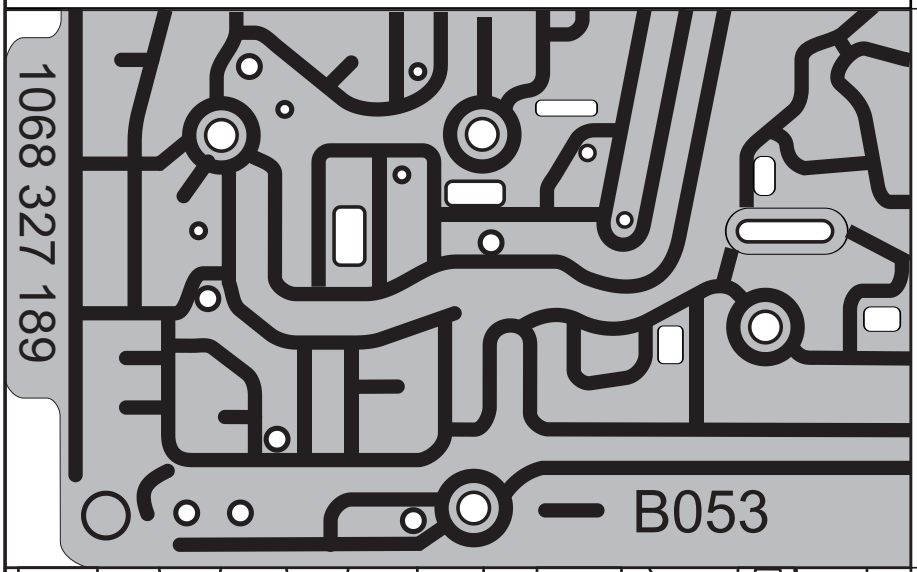
VB CASTING NUMBERS AND SPACER PLATE NUMBERS FOR QUICK IDENTIFICATION



Upper VB ID

1068 427 190

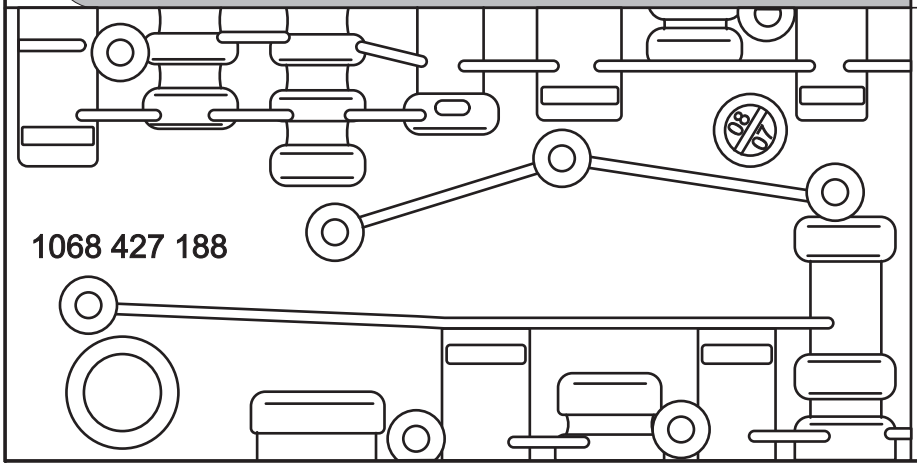
02/07



Spacer Plate ID

A/B 053 Plate Number

Part Number
1068 327 189



Lower VB ID

1068 427 188

08/07

Copyright © 2019 ATSG

Figure 1

ZF6HP-E SHIFT
TRANSITIONAL VALVE BODY

SOLENOID AND TENSION RETAINER LOCATION

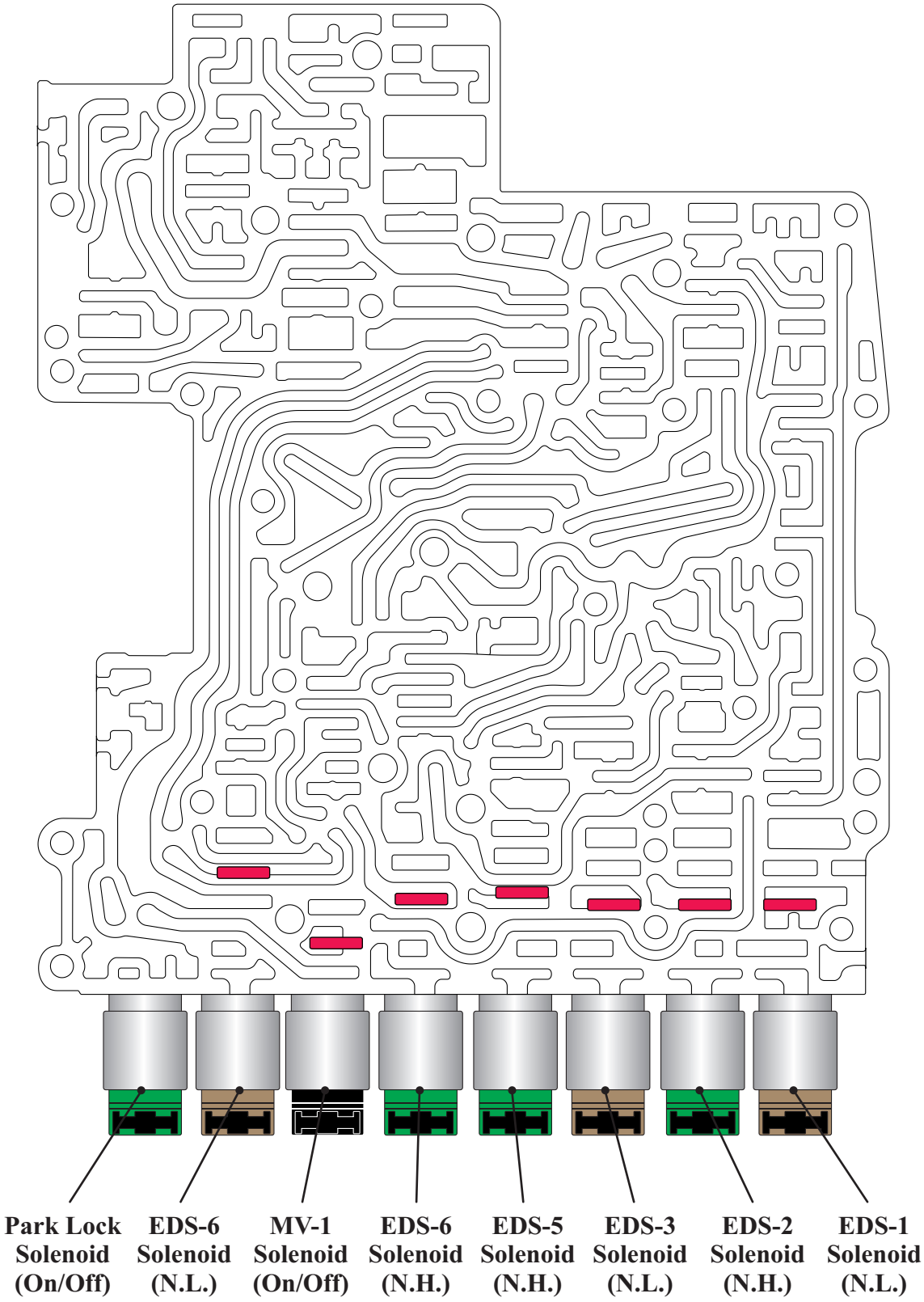
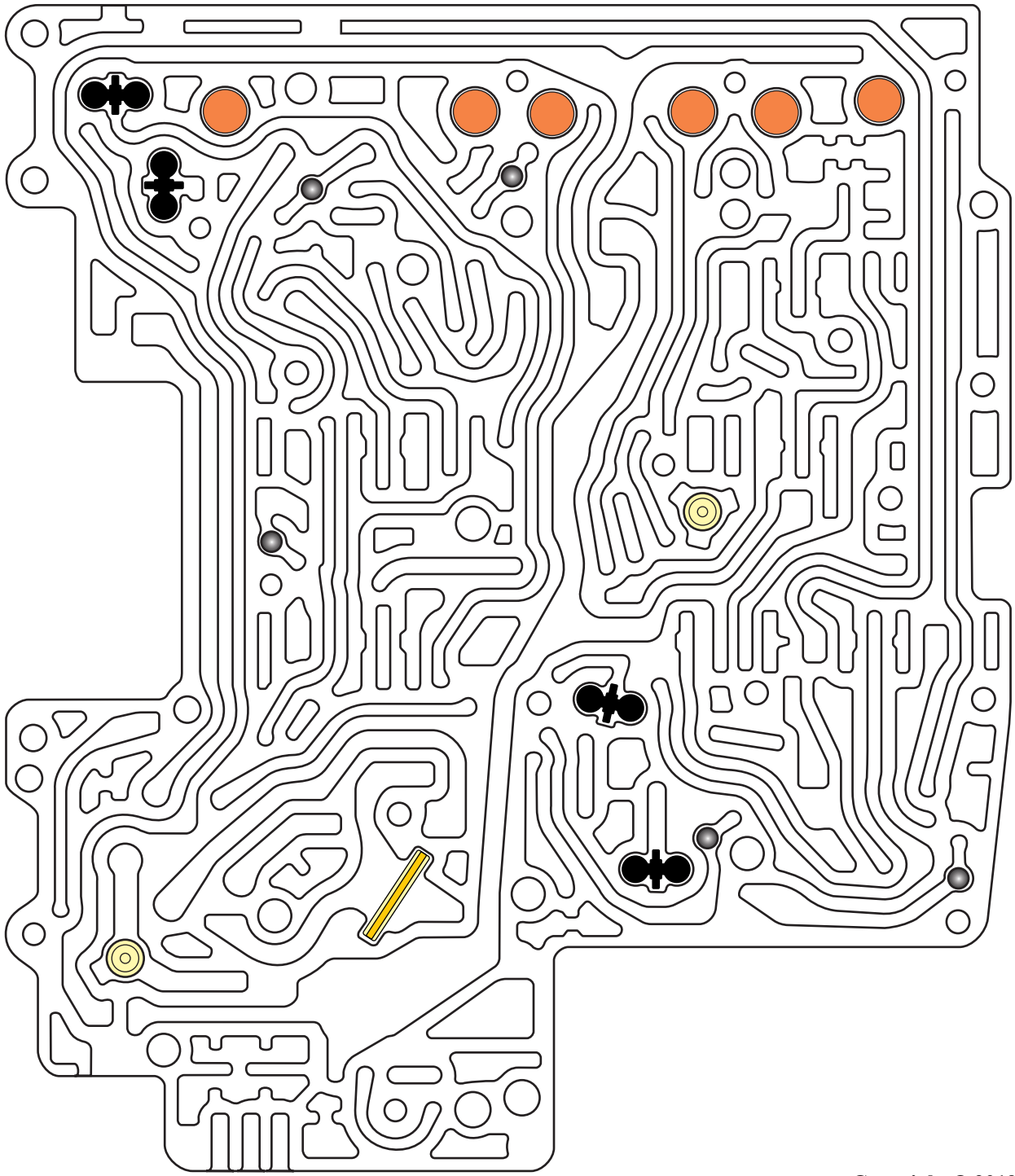


Figure 2

Copyright © 2019 ATSG

ZF6HP-E SHIFT
TRANSITIONAL VALVE BODY

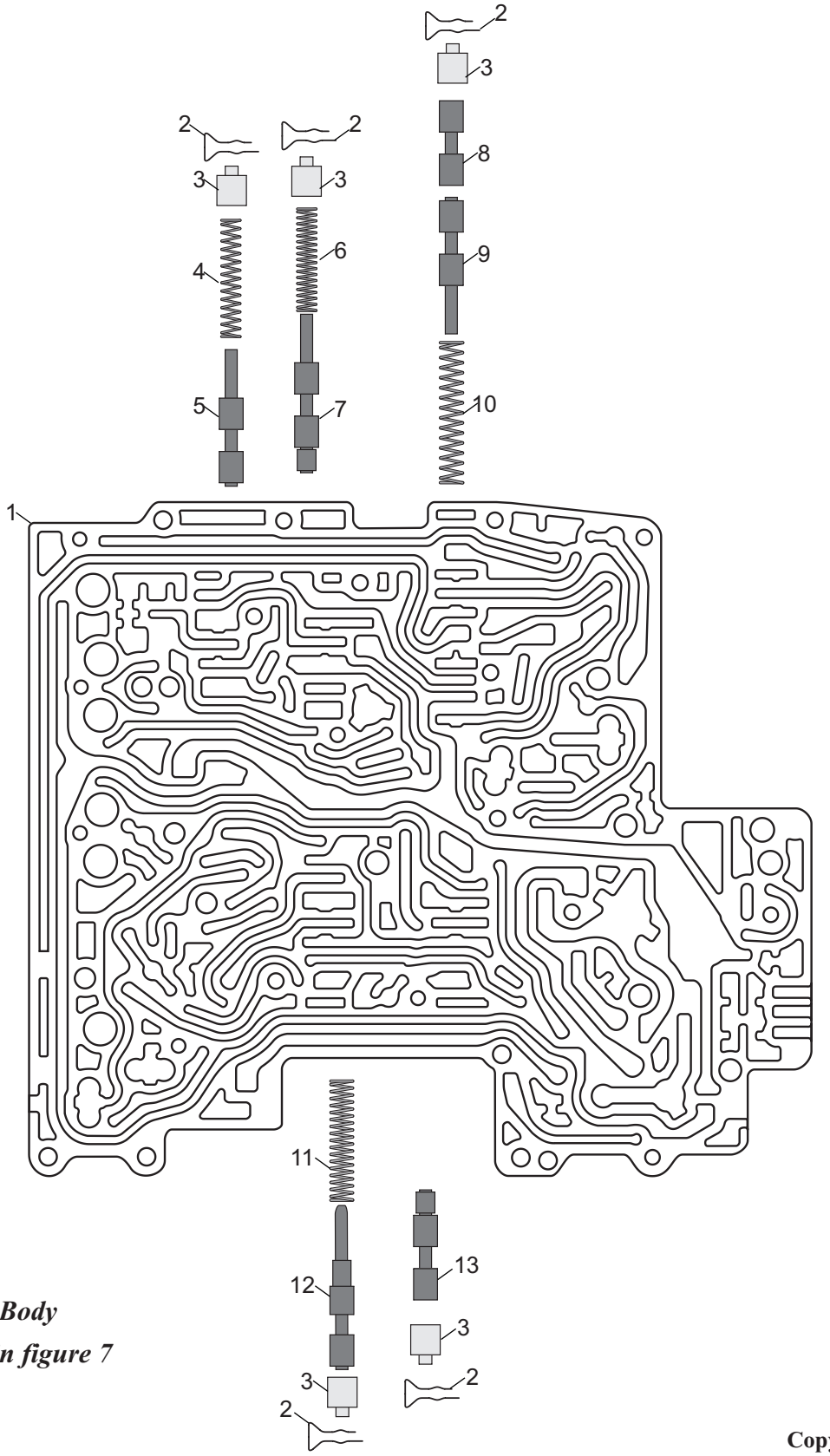
SMALL PARTS LOCATION



Copyright © 2019 ATSG

Figure 3

ZF6HP-E SHIFT
TRANSITIONAL VALVE BODY



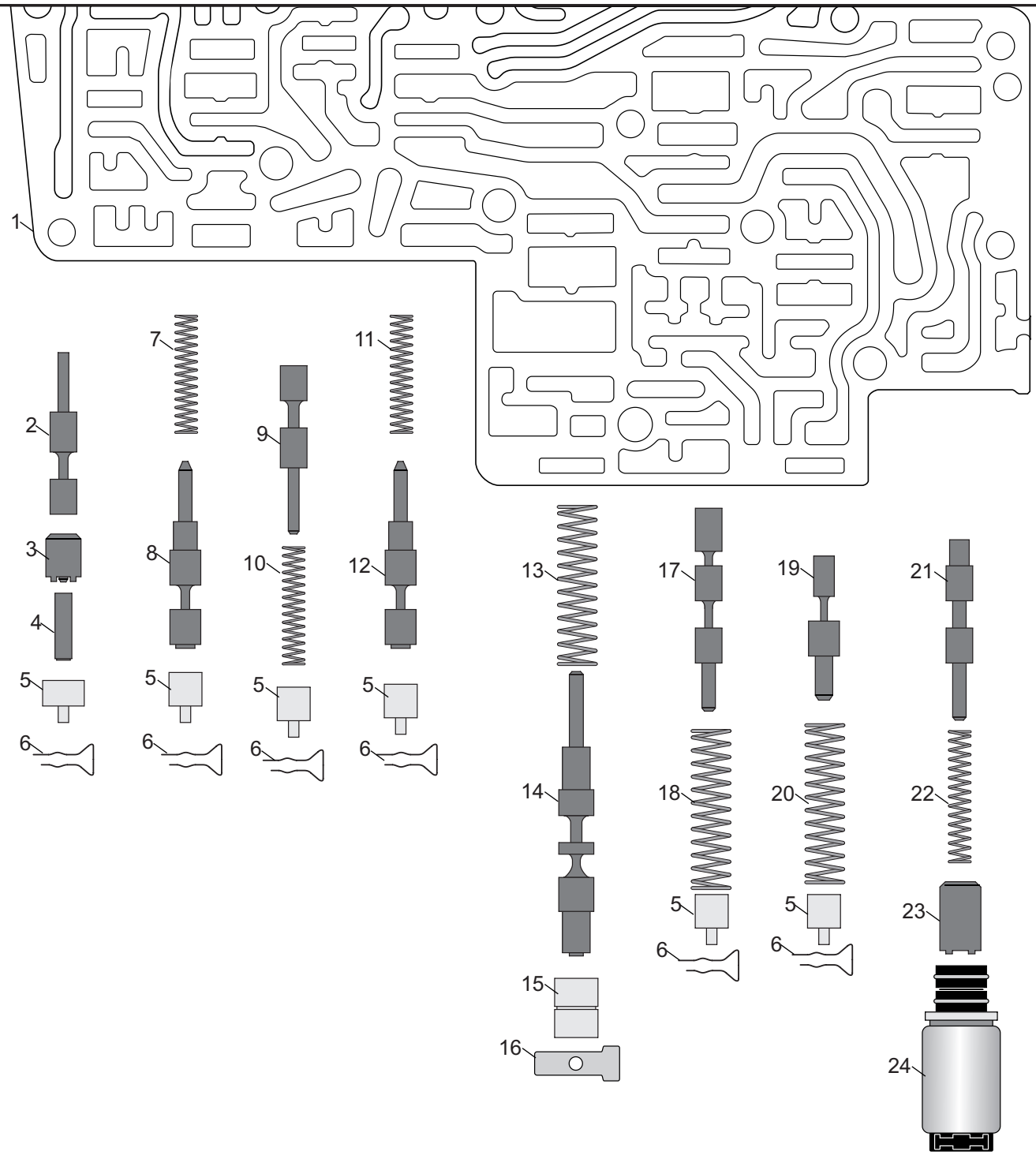
Upper Valve Body

See Legend in figure 7

Copyright © 2019 ATSG

Figure 4

ZF6HP-E SHIFT
TRANSITIONAL VALVE BODY



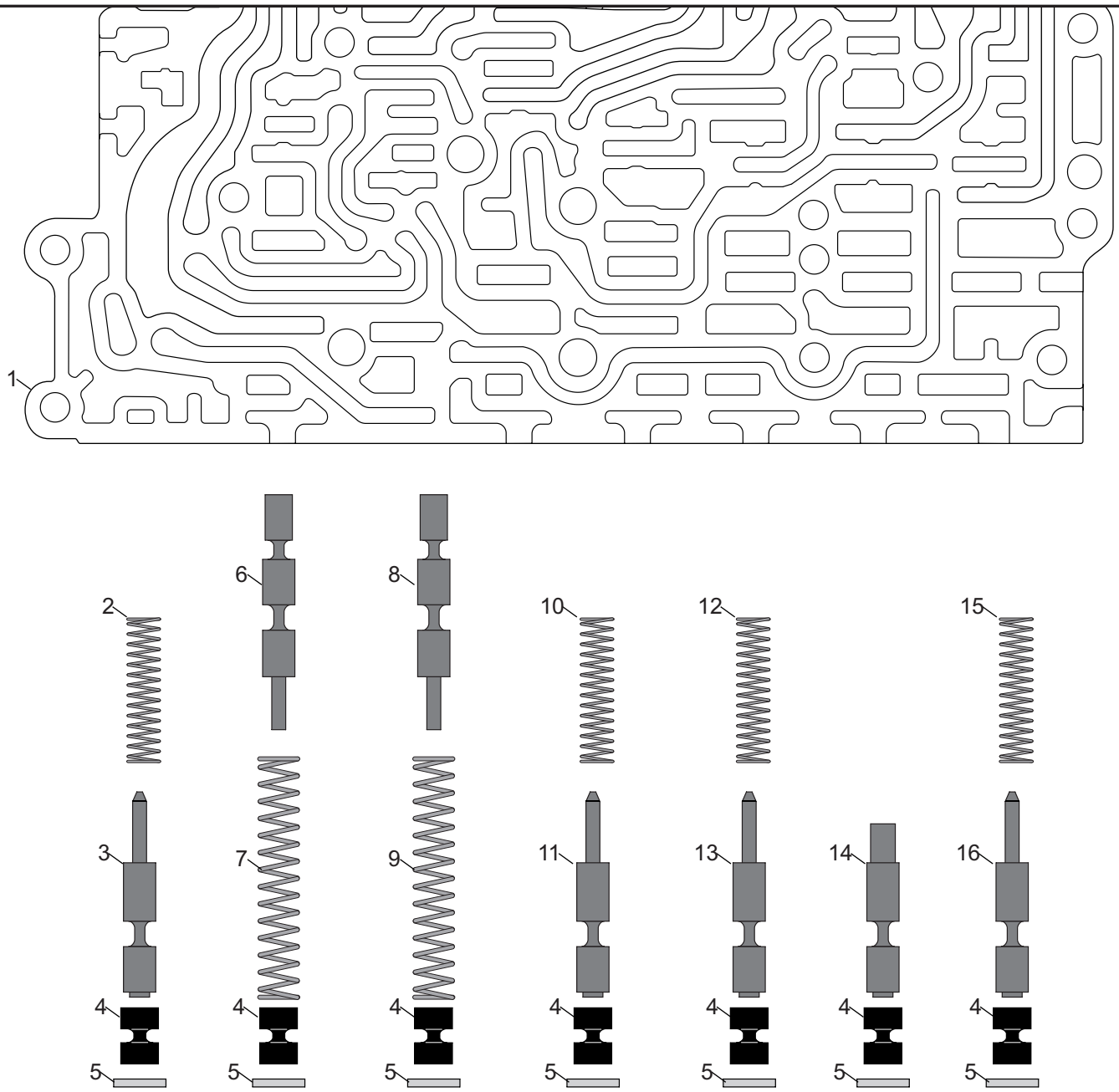
Lower Valve Body Rear Side

See Legend in figure 7

Copyright © 2019 ATSG

Figure 5

ZF6HP-E SHIFT
TRANSITIONAL VALVE BODY



Lower Valve Body Front Side

See Legend in figure 7

Copyright © 2019 ATSG

Figure 6

ZF6HP-E SHIFT
TRANSITIONAL VALVE BODY

UPPER VALVE BODY (Figure 4)

1. Upper Valve Body
2. Wire Retainer
3. Aluminum Bore Plug
4. D2 Clutch Control Valve Spring:
   1.840” x 0.350” x 0.023” x 12.5c
5. D2 Clutch Control Valve (HV-D2)
6. D2 Clutch Reg. Valve Spring:
   1.576” x 0.402” x 0.043” x 14.5c
7. D2 Clutch Reg. Valve (KV-D2)
8. Pos. V Position D Outer Valve
9. Pos. V Position D Inner Valve
10. Pos. V Position D Spring:
    2.088” x 0.355” x 0.027” x 16.5c
11. D1 Clutch Reg. Valve Spring:
    1.735” x 0.340” x 0.026” x 14.5c
12. D1 Clutch Reg. Valve (KV-D1)
13. C Clutch Valve (KV-C)

LOWER VALVE BODY REAR SIDE (Figure 5)

1. Lower Valve Body
2. A Clutch Reg. Valve (KV-A)
3. Sleeve
4. Spool Valve
5. Aluminum Bore Plug
6. Wire Retainer
7. E Clutch Reg. Valve Spring:
   1.766” x 0.347” x 0.025” x 14.5c
8. E Clutch Reg. Valve (KV-E)
9. E Clutch Control Valve (HV-E)
10. E Clutch Control Valve Spring:
    1.483” x 0.380” x 0.043” x 13.5c
11. Conv. Reg. Bypass Cl. Valve Spring:
    1.353” x 0.337” x 0.033” x 12.5c
12. Conv. Reg. Bypass Cl. Valve (WK-V)
13. Pressure Regulator Valve Spring:
    2.230” x 0.518” x 0.054” x 11.8c
14. Pressure Regulator Valve (Sys. Dr.-V)
15. Aluminum Bore Plug
16. Flat Retainer
17. Converter Release Reg. Valve (WD-V)
18. Converter Release Reg. Valve Spring:
    1.668” x 0.452” x 0.035” x 15.6c
19. Lubrication Valve (Schm.V)
20. Lubrication Valve Spring:
    1.726” x 0.487” x 0.043” x 12.5c
21. Park-Lock Valve (Ps.-V)
22. Park-Lock Valve Spring:
    1.836” x 0.363” x 0.032” x 17.5c
23. Sleeve
24. MV-2 Solenoid

LOWER VALVE BODY FRONT SIDE (Figure 6)

1. Lower Valve Body
2. D1 Clutch Control Valve Spring:
   1.482” x 0.378” x 0.043” x 13.5c
3. D1 Clutch Control Valve (HV-D1)
4. Bore Plug
5. Tension Clip Retainer
6. Shift Valve 2 (SV-2)
7. Shift Valve 2 Spring:
   1.720” x 0340” x 0.026 x 14.5c
8. Shift Valve 1 (SV-1)
9. Shift Valve 1 Spring:
   1.720” x 0340” x 0.026 x 14.5c
10. Solenoid Modulator Valve Spring:
    1.1800” x 0.355” x 0.043” x 14.5c
11. Solenoid Modulator Valve (Dr. Red. Sol. Mod.)
12. B Clutch Control Valve Spring:
    1.470” x 0.380” x 0.043” x 13.5c
13. B Clutch Control Valve (HV-B)
14. B Clutch Valve (KV-B)
15. A Clutch Control Valve Spring:
    1.470” x 0.380” x 0.043” x 13.5c
16. A Clutch Control Valve (HV-A)

Copyright © 2019 ATSG

Figure 7