

## ZF5HP24 NEUTRALIZATION WHEN HOT FORWARD CHATTER ON TAKE OFF

**COMPLAINT:** A BMW or Jaguar may come into the shop with a complaint of a neutral condition coming to a stop when hot or a chatter forward on take off. Codes P0731 or Jaguar code P1722 may be stored for a “Gear Ratio Error In First”.

**CAUSE:** A crack develops in the upper valve body (Refer to figure 1) in the “F” clutch circuit as seen in figure 2 which results in a loss of “F” clutch oil. The “F” clutch is on in park, reverse and neutral as well as manual low as shown in the clutch application chart in figure 3. Since the complaint of neutral at a stop affects forward movement, yet it does not affect reverse is due to the “F” clutch being fed in park and neutral by the “F” clutch valve but in reverse it is fed line pressure through the reverse valve as shown in Figure 2. The reason first gear is affected is because oil pressure is being supplied to the closed “F” clutch valve through the hydraulic circuit that is affected by the crack from shift valve 1 as seen in figure 2. This circuit is connected to the “A” clutch in first gear only. So the loss of pressure going to the “F” clutch valve is enough to cause the “A” clutch to release at engine idle RPMS when hot and slip the clutch on initial take-off, hence the first gear ratio codes and the remaining forward gears will not be affected.

**CORRECTION:** Replace the upper valve body or the complete valve body assembly.

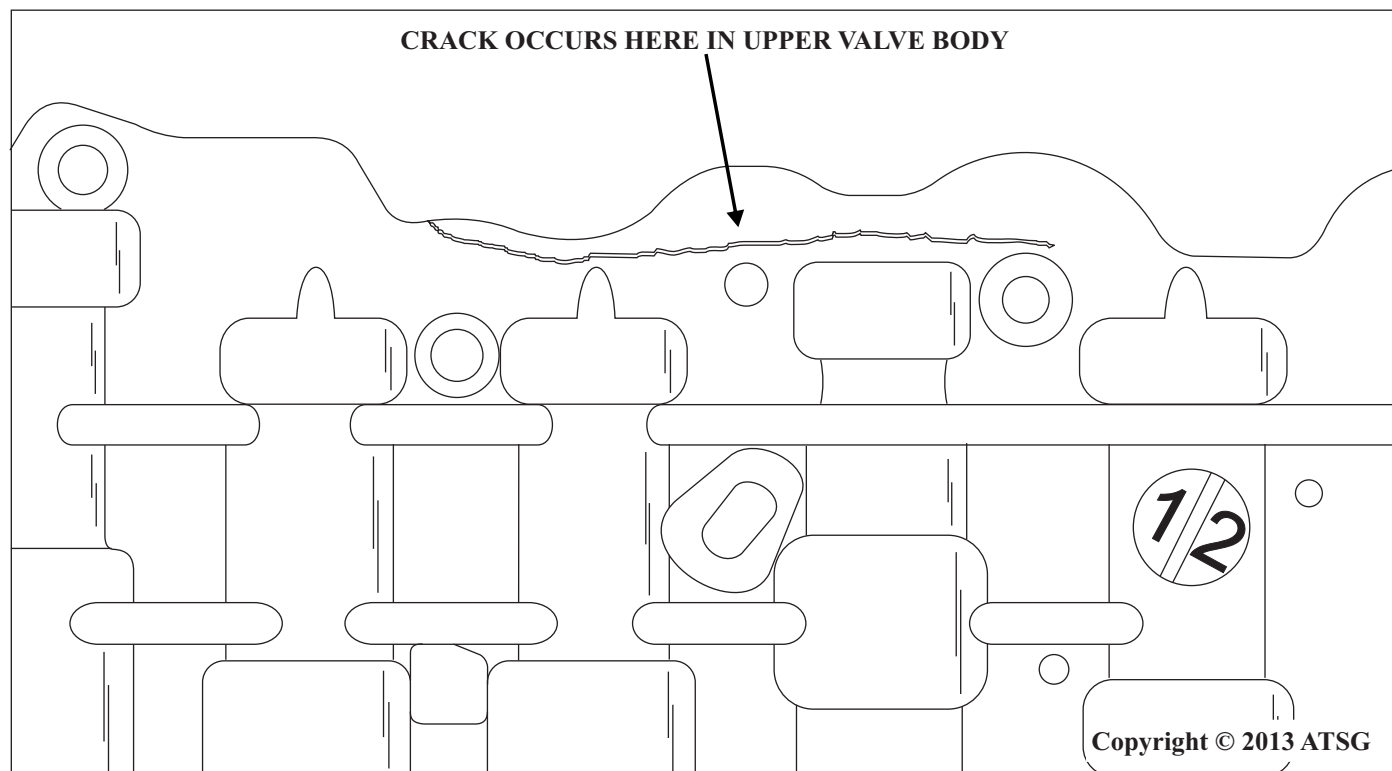


Figure 1

## ZF5HP24

### NEUTRALIZATION WHEN HOT

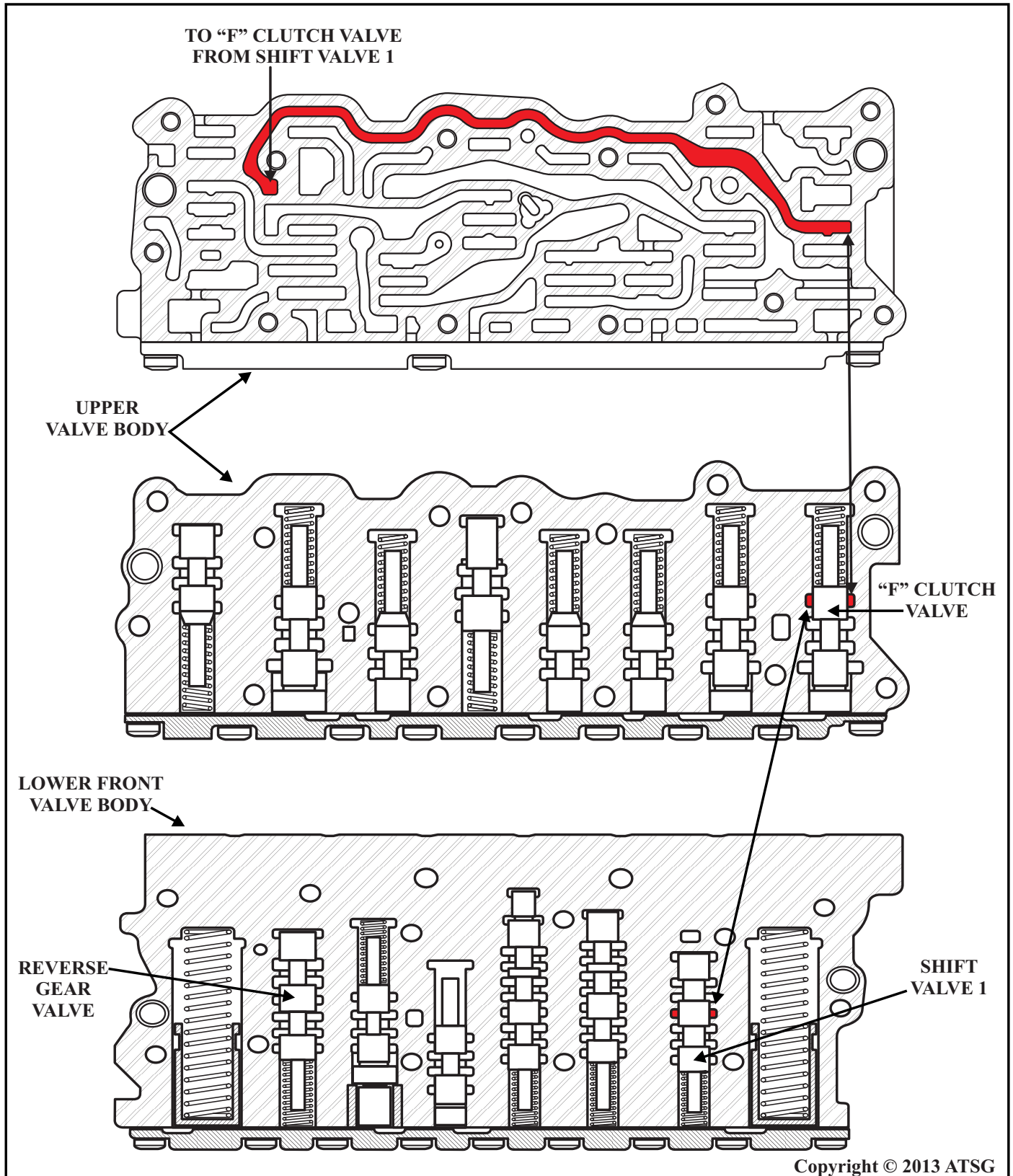
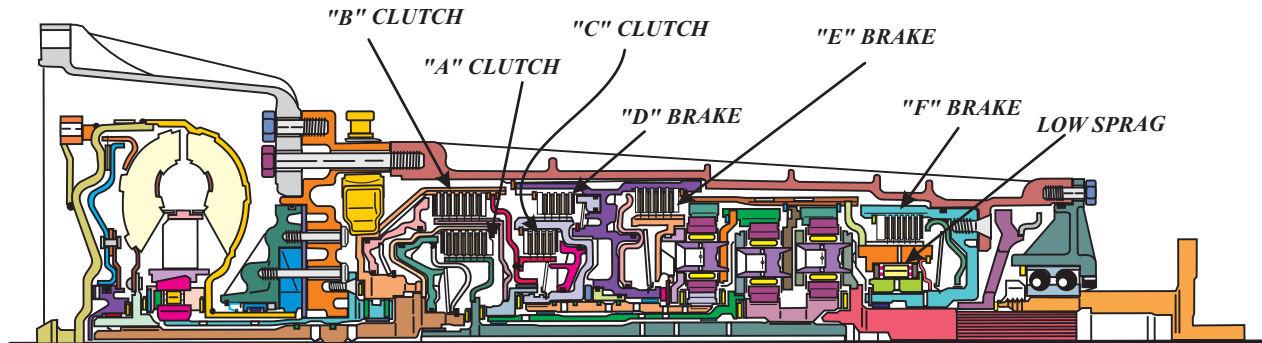


Figure 2

## ZF5HP24

### NEUTRALIZATION WHEN HOT



### APPLICATION CHART

GEAR	"A" CLUT	"B" CLUT	"C" CLUT	"D" BRAK	"E" BRAK	"F" BRAK	LOW SPRAG	GEAR RATIO
PARK						ON		
REV			ON			ON		4.10:1
NEUT						ON		
D-1ST	ON						HOLD	3.57:1
D-2ND	ON				ON			2.20:1
D-3RD	ON			ON				1.51:1
D-4TH	ON	ON						1.00:1
D-5TH		ON		ON				0.80:1
M-1	ON					ON	HOLD	3.57:1

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Figure 3