



Technical Service Information

FORD/MAZDA

FNR5/5NR5 SECONDARY VALVE BODY VARIATIONS

COMPLAINT: When it becomes necessary to replace the secondary valve body in an FNR5/5NR5 transmission (figure 1), the replacement valve body appears differently than the original causing the tech to be hesitant with using it.

CAUSE: There are presently three different secondary valve bodies in circulation for the FNR5/5NR5 transmission which can be quickly identified by the casting configuration around the accumulator piston area as seen in figure 2. Design A has a webbed type casting without any identification codes. Design B has a smooth casting with an identification code of FS50, while Design C is ribbed with a casting ID of 3V1Y.

Not knowing the reason for these differences causes the apprehension in swapping them out.

CHANGES: From a close examination of the hydraulic circuitry of these three assemblies *it appears* that Design A was a first design production while Design B was a transitional change in preparation for the current Design C body.

The hydraulic passage to the accumulator piston in design A provided only a small entrance for clutch pressure to stroke the piston while in design B & C this passage was enlarged (figure 3).

The spacer plates between the design A & B remained relatively the same while in design C a 0.031" orifice was eliminated (figure 4).

This orifice is in the reverse clutch pressure circuit and is used to stroke the Reduction/5th Clutch Shift Valve to make certain that the Reduction Clutch applied regardless of Shift Solenoid F's operation (off in failsafe or stuck closed) providing a reverse engagement at all times (figure 5). This orifice is now eliminated in design C allowing un-metered pressure to stroke the valve when reverse is selected.

CORRECTION: As complete matched assemblies these secondary valve bodies can be interchanged without incident.

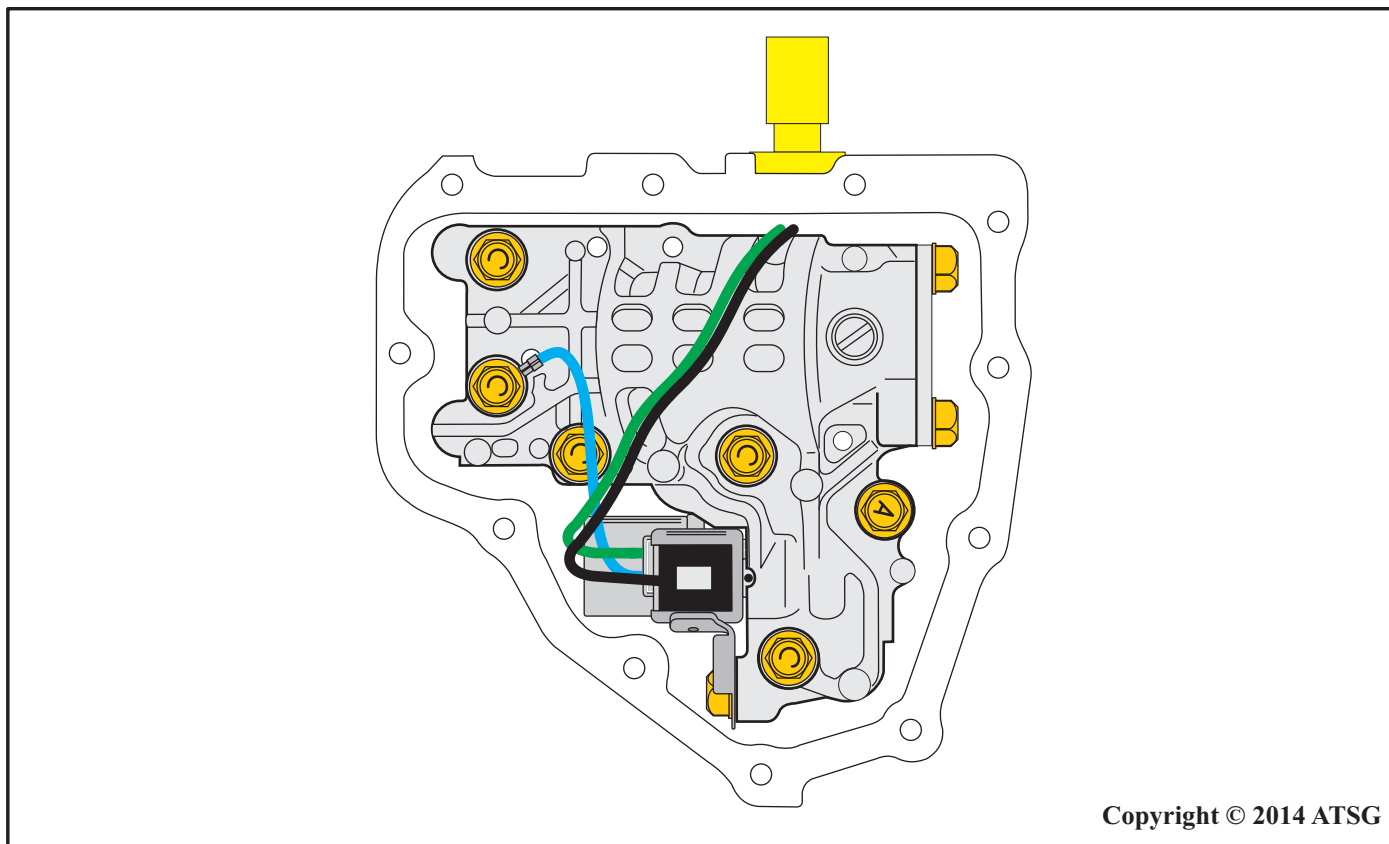
INTERCHANGEABILITY:

Individual parts (*outer body, inner body and spacer plate*) for A and B design assemblies can be interchanged within themselves. The slight changes made to the accumulator side of design body B allows for the same style spacer plate to be used in both assemblies. The valve body side of design A and B are the same even though the solenoid connector may be black with A and green with B (the solenoid is still the same).

None of the individual parts with design body assembly C can be interchanged with design bodies A and B. There are enough significant changes made between the two valve body halves and the spacer plate to make these parts non-interchangeable individually with parts used in A and B designed assemblies (See figures 7, 8 and 9).

Special thanks to the good folks at VBX for supplying the 3 different Secondary Valve bodies so that ATSG could determine the differences making this information available.

FORD/MAZDA FNR5/5NR5 SECONDARY VALVE BODY VARIATIONS



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Figure 1

FORD/MAZDA FNR5/5NR5 SECONDARY VALVE BODY VARIATIONS

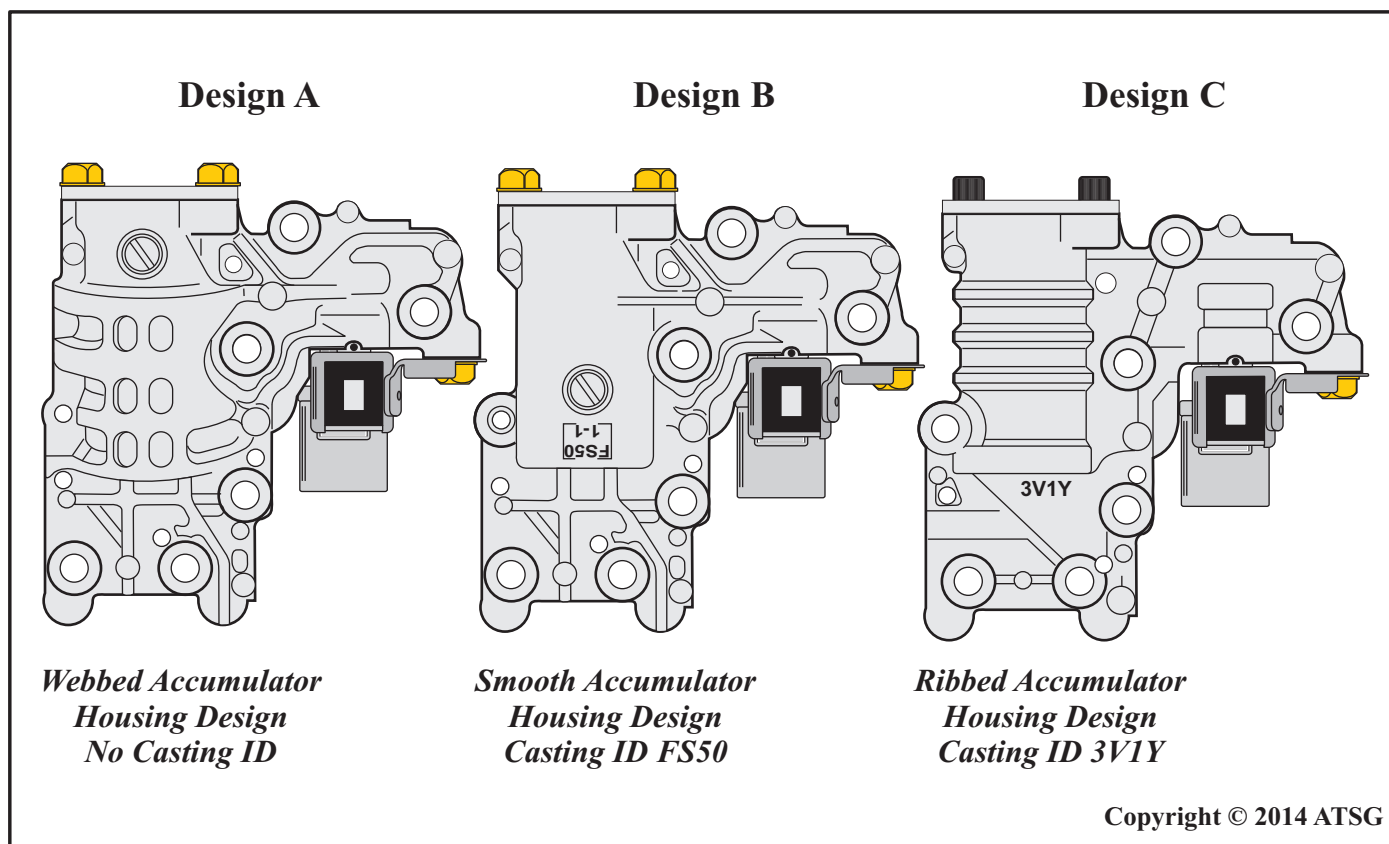
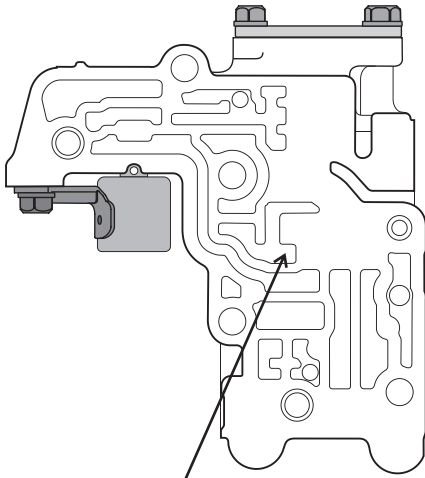


Figure 2

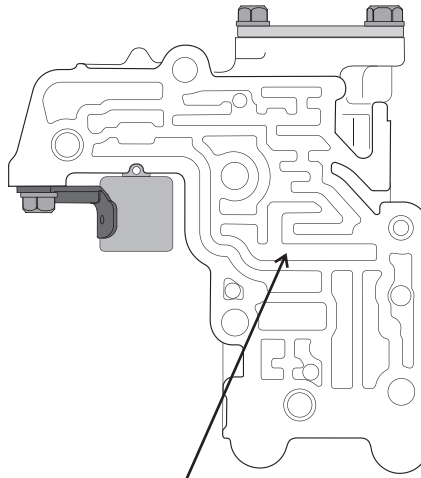
SECONDARY VALVE BODY ACCUMULATOR SIDE

Design A



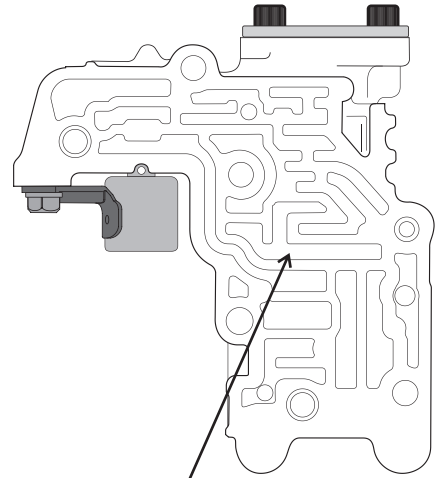
*Passage to the
accumulator piston*

Design B



*Passage to the
accumulator piston*

Design C



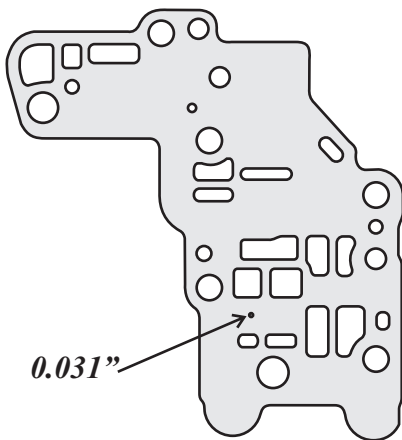
*Passage to the
accumulator piston*

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Figure 3

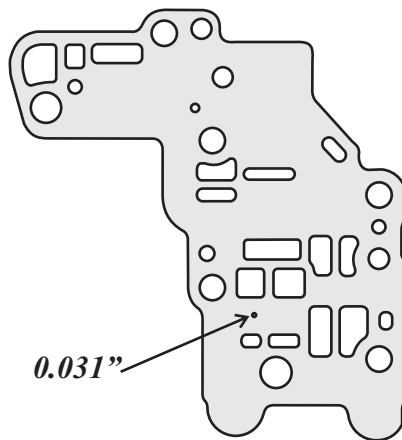
SPACER PLATES

Design A



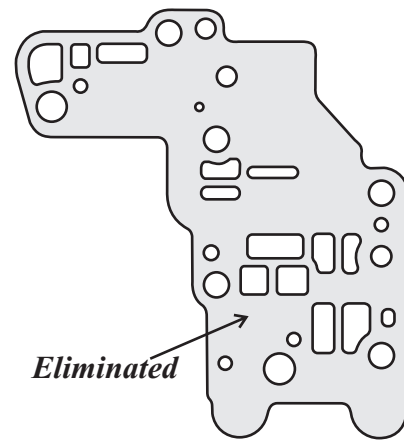
0.031"

Design B



0.031"

Design C



Eliminated

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Figure 4

REVERSE RANGE DESIGN A & B ASSEMBLIES

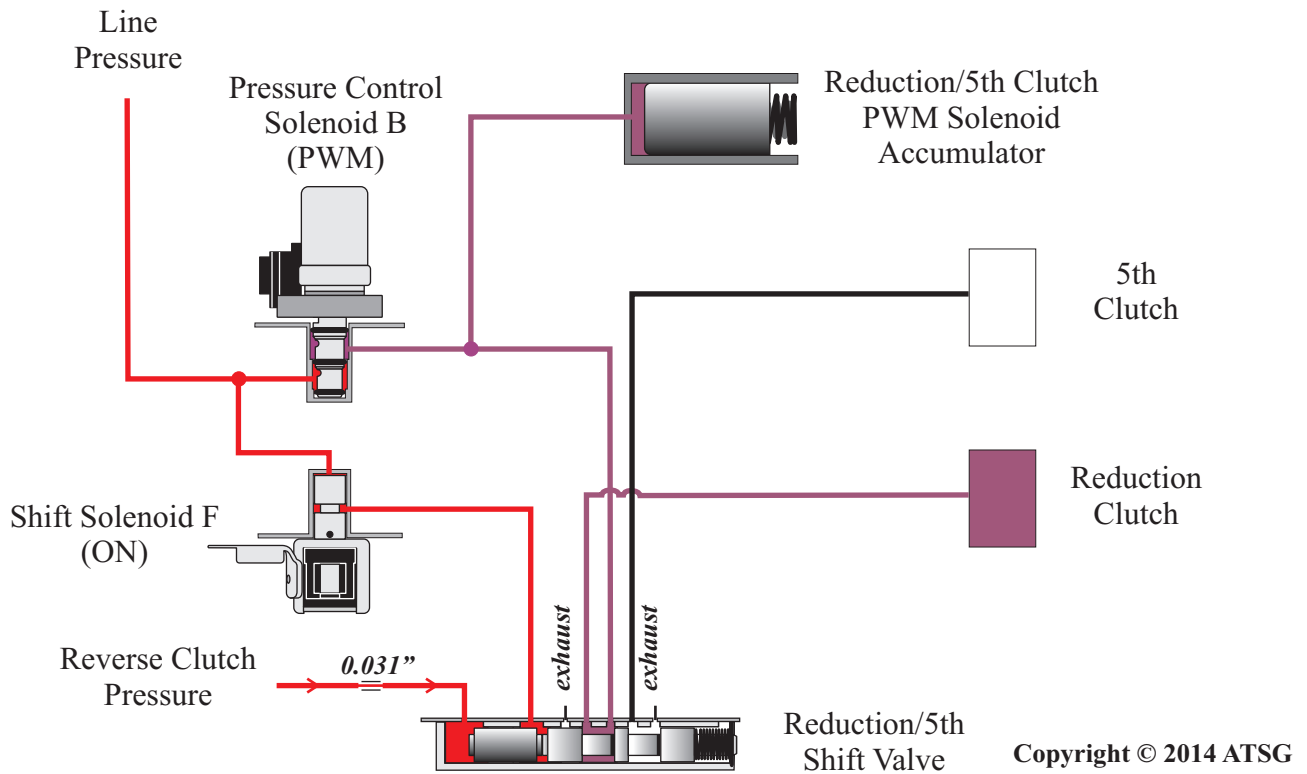


Figure 5

REVERSE RANGE DESIGN C

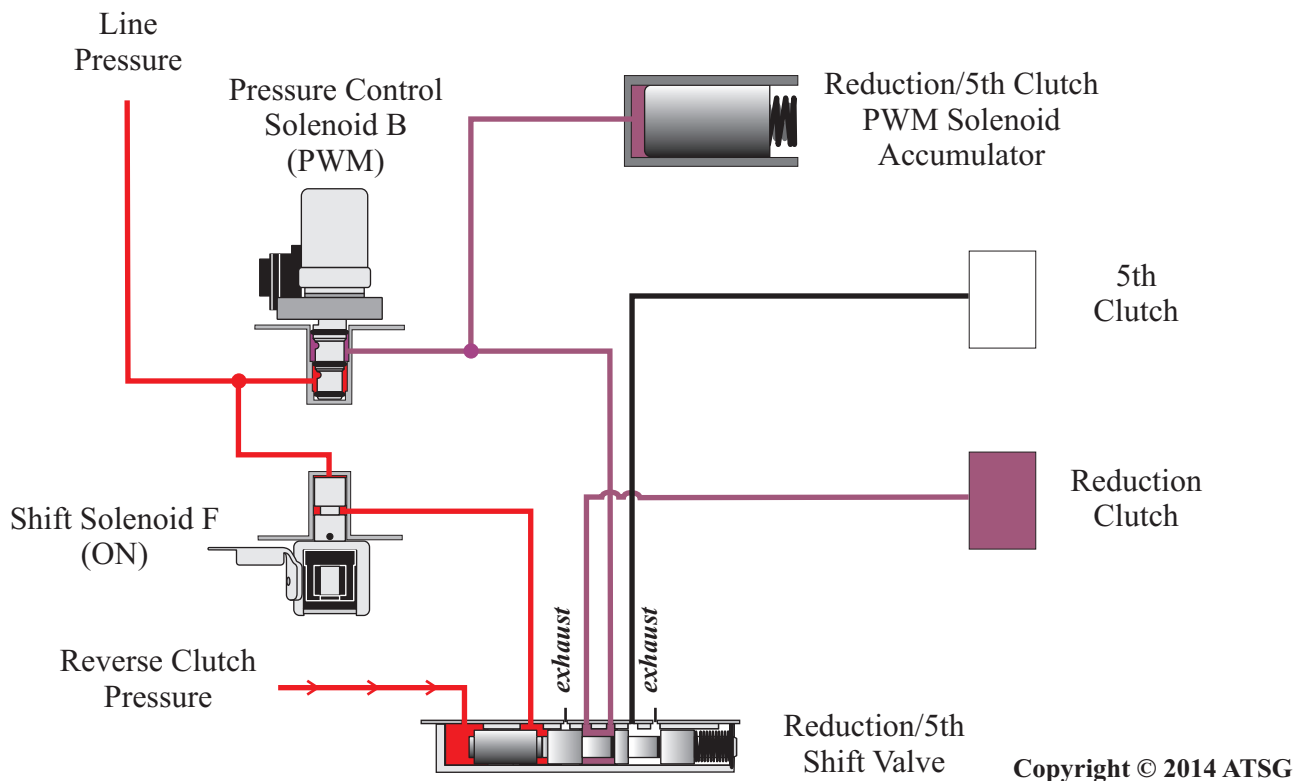
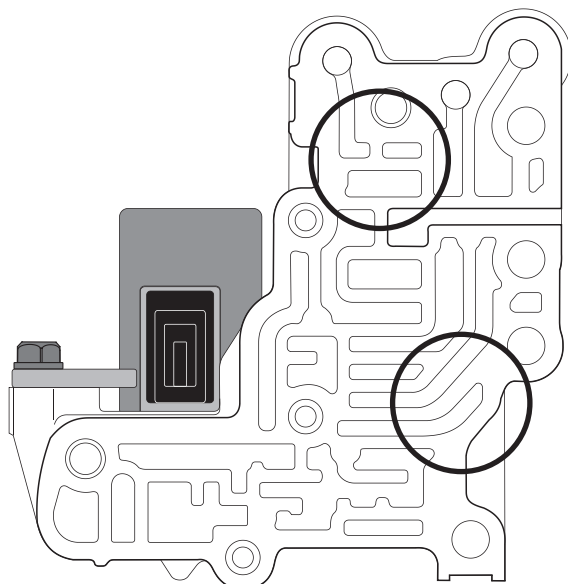


Figure 6

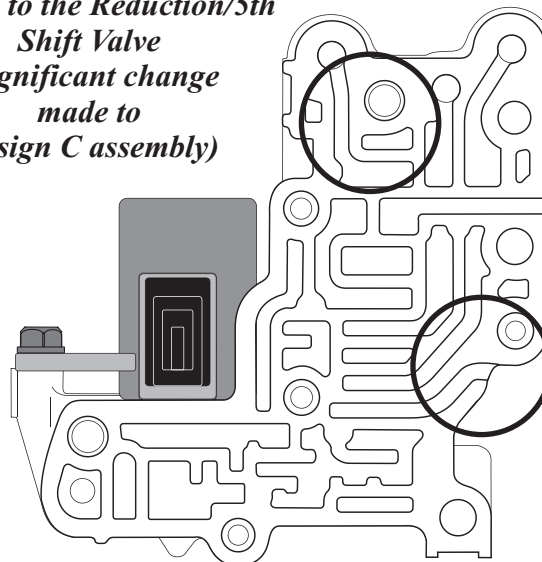
SECONDARY VALVE BODY VALVE SIDE

Designs A & B



Design C

*Reverse pressure routed
directly to the Reduction/5th
Shift Valve
(Significant change
made to
Design C assembly)*

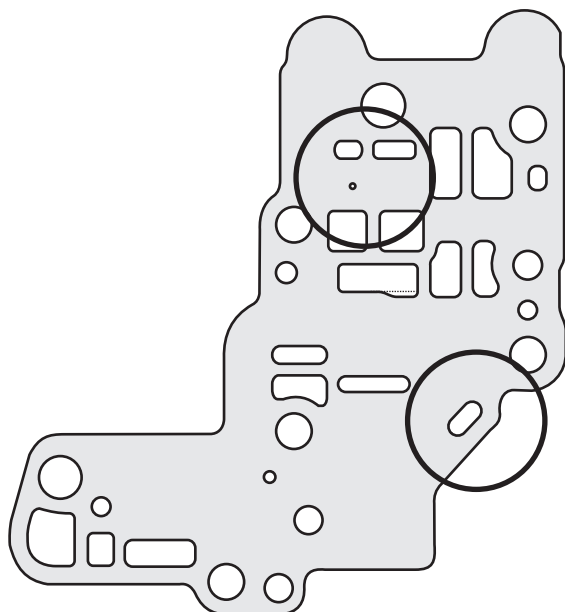


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Figure 7

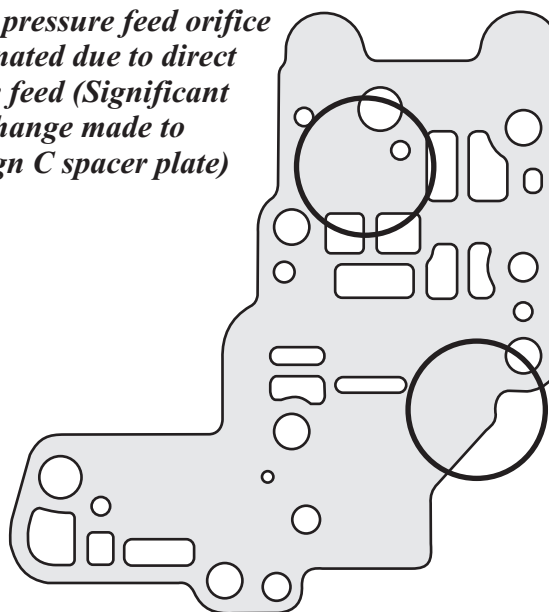
SPACER PLATES

Designs A & B



Design C

*Reverse pressure feed orifice
eliminated due to direct
valve feed (Significant
change made to
Design C spacer plate)*



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Figure 8

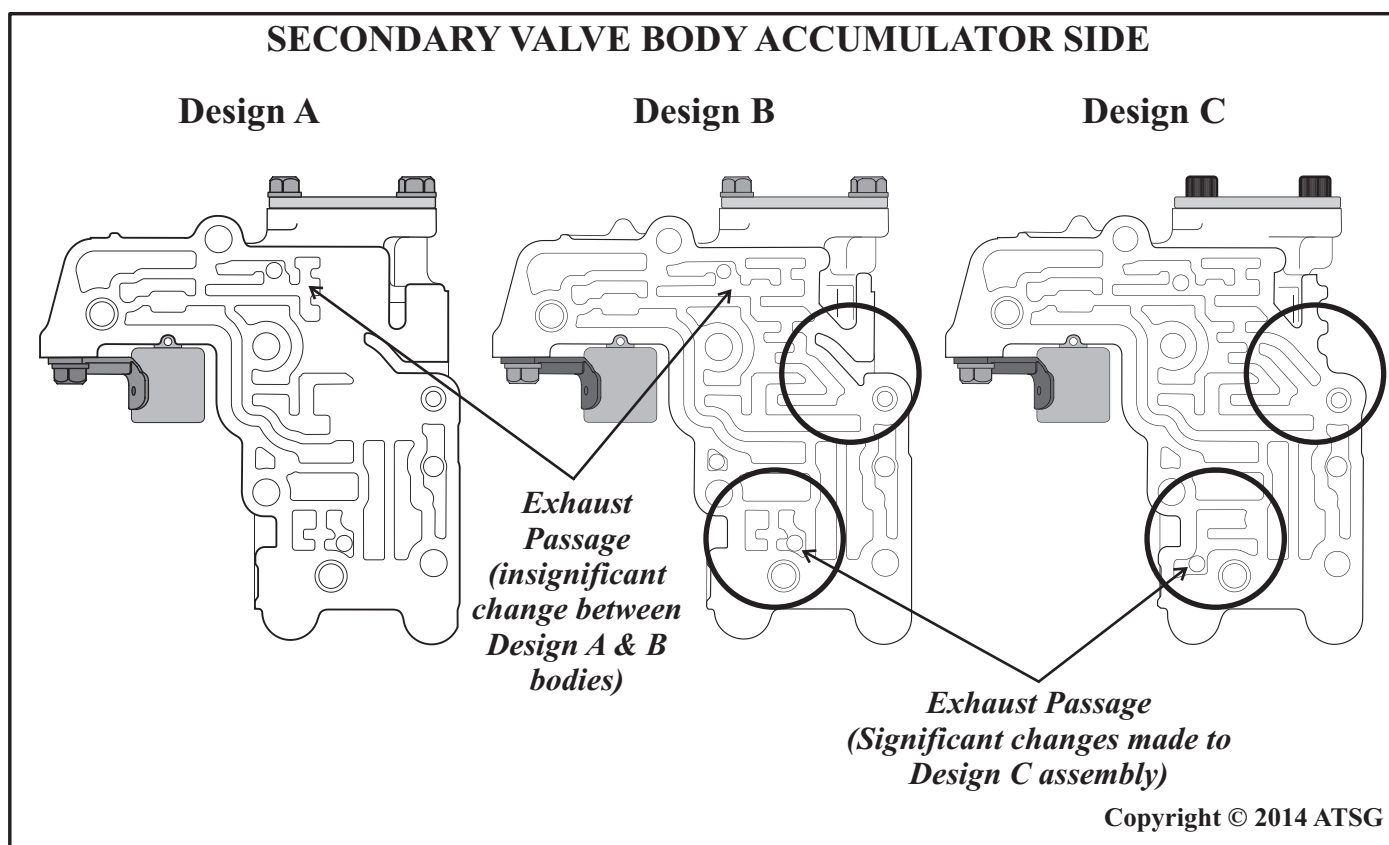


Figure 9