Checkball Locations and Functions

#1 3-4 ACCUMULATOR: Located in the transmission case, the 3-4 accumulator checkball helps control the flow of accumulator fluid to the 3-4 accumulator. When the ball is seated, accumulator fluid is forced through the #18 orifice. This action helps control the 2-4 band release during a 4-3 downshift.

#2 3rd ACCUMULATOR: Located in the valve body, the 3rd accumulator checkball directs exhausting 3rd accumulator fluid through orifice #12 and to the 3-4 control valve. This helps control the 2-4 band apply during a 3-2 downshift. During a 3-4 upshift, 3-4 upshift, 3-4 clutch fluid unseats the ball for a quick feed into the 3rd accumulator fluid circuit.

#3 REVERSE INPUT: Located in the valve body, the reverse input checkball controls the reverse input clutch apply when engine speed is at idle. During these conditions, all reverse fluid feeding the reverse input fluid circuit is routed to the ball, seats the ball, and is forced through orifice #17. This slows the flow of reverse fluid to cushion the reverse input clutch apply. When the reverse input clutch releases, exhausting reverse input fluid unseats the ball for a quick exhaust of fluid.

#4 3-4 CLUTCH EXHAUST: Located in the valve body, this checkball helps control the 3-2 downshift. Exhausting 3-4 clutch and 3rd accumulator fluids seat the ball and are forced through orifice #13. This helps control the 3-4 clutch release rate and 2-4 band apply. During a 3-4 upshift, 3-4 signal fluid unseats the ball for a quick feed into the 3-4 clutch fluid circuit.

#5 OVERRUN CLUTCH FEED: Located in the valve body, it routes either overrun fluid or D2 fluid into the overrun clutch fluid circuit while blocking the other fluid circuit. OVERRUN clutch feed fluid feeds the overrun clutch fluid circuit in the Manual gear ranges to apply the overrun clutch.

#6 OVERRUN CLUTCH CONTROL: Located in the valve body, the #6 checkball helps controls the overrun clutch apply rate. OVERRUN clutch feed fluid pressure seats the ball and is forced through orifice #20. This orifice slows the flow of overrun fluid to cushion the overrun clutch apply. When the overrun clutch releases, overrun clutch feed fluid unseats the ball for a quick exhaust.

#7 3rd ACCUMULATOR EXHAUST: Located in the transmission case, it unseats when 3rd accumulator fluid exhausts from the 2-4 servo to prevent residual fluid pressure from accumulating. Also, before 3rd accumulator fluid pressure seats the ball during a 2-3 upshift, any air in the circuit exhausts past the ball.

#8 1-2 UPSHIFT: Located in the valve body, the 1-2 upshift checkball helps control the 2-4 band apply during a 1-2 upshift. During the upshift, 2nd fluid pressure seats the ball and is forced through the #16 orifice. This orifice slows the flow of 2nd fluid to help cushion the band apply. When the band releases during a 1-2 downshift, exhausting 2nd clutch fluid unseats, and exhausts past, the 1-2 upshift checkball.

#9 TCC APPLY: Located in the end of the turbine shaft, the #9 checkball is a retainer and ball assembly that helps control the converter clutch apply feel. As the converter clutch applies, exhausting release fluid seats, and is orificed around the checkball. This checkball action slows the exhaust of release fluid to control the converter clutch apply feel. When the converter clutch is released, release fluid pressure unseats the checkball and flows freely past the ball to keep the pressure plate disconnected from the converter cover.

#10 LO/REVERSE CLUTCH APPLY: Located in the transmission case, the #10 checkball is a retainer and ball assembly that helps control the lo and reverse clutch apply feel. During the clutch apply, PR fluid pressure seats, and is orificed around the checkball. This orifice slows the increase of PR fluid pressure at the clutch piston to cushion the apply feel. When the clutch releases. Exhausting PR fluid unseats the checkball for a quick exhaust.

#11 FORWARD CLUTCH ACCUMULATOR: Located in the valve body, it helps controls the forward clutch apply when engine speed is at idle. During these conditions, all D4 feeding the forward clutch feed fluid circuit is routed to the ball, seats the ball, and is forced through orifice #22. This slows the increase of forward clutch feed fluid pressure to cushion the forward clutch apply. When the forward clutch releases, exhausting forward clutch feed fluid unseats the ball for a quick exhaust of fluid.