AS68RC

DODGE AS68RC VALVE BODY DIFFERENCES

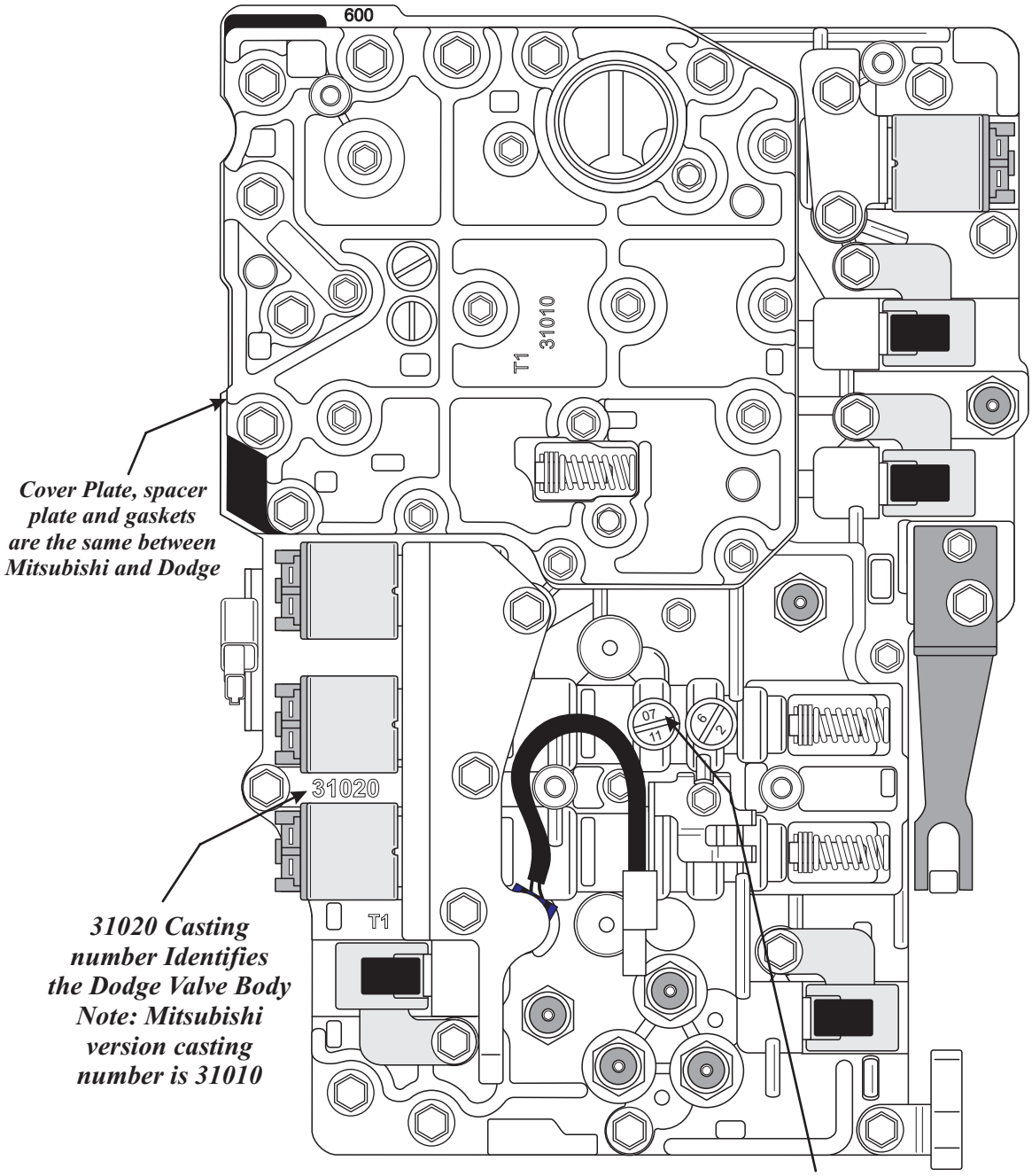
Refer to the following figures to see the differences between the Mitsubishi and Dodge Valve Body components:

- ***Refer to Figure 1 for Lower Valve Body external Identification.***
- ***Refer to Figure 2 for Upper Valve Body external Identification.***
- ***Refer to Figure 3 for Dodge Lower Valve Body exploded view.***
- ***Refer to Figure 4 for Dodge Lower Valve Body small parts locations.***
- ***Refer to Figure 5 for a Lower Valve Body worm track comparison between Mitsubishi and Dodge.***
- ***Refer to Figure 6 for a Main Spacer Plate comparison between Mitsubishi and Dodge.***
- ***Refer to Figure 7 and 8 for Dodge Upper Valve Body exploded view.***
- ***Refer to Figure 9 for Dodge Upper Valve Body small parts locations.***
- ***Refer to Figure 10 for a Upper Valve Body worm track comparison between Mitsubishi and Dodge.***
- ***Refer to Figure 11-13 for a description of Gain Change Valve Function for Mitsubishi.***
- ***Refer to Figure 14-15 for a description of Gain Change Valve Function for Dodge.***

AS68RC

DODGE AS68RC VALVE BODY DIFFERENCES

Dodge Lower Valve Body Casting Identification



Cover Plate, spacer plate and gaskets are the same between Mitsubishi and Dodge

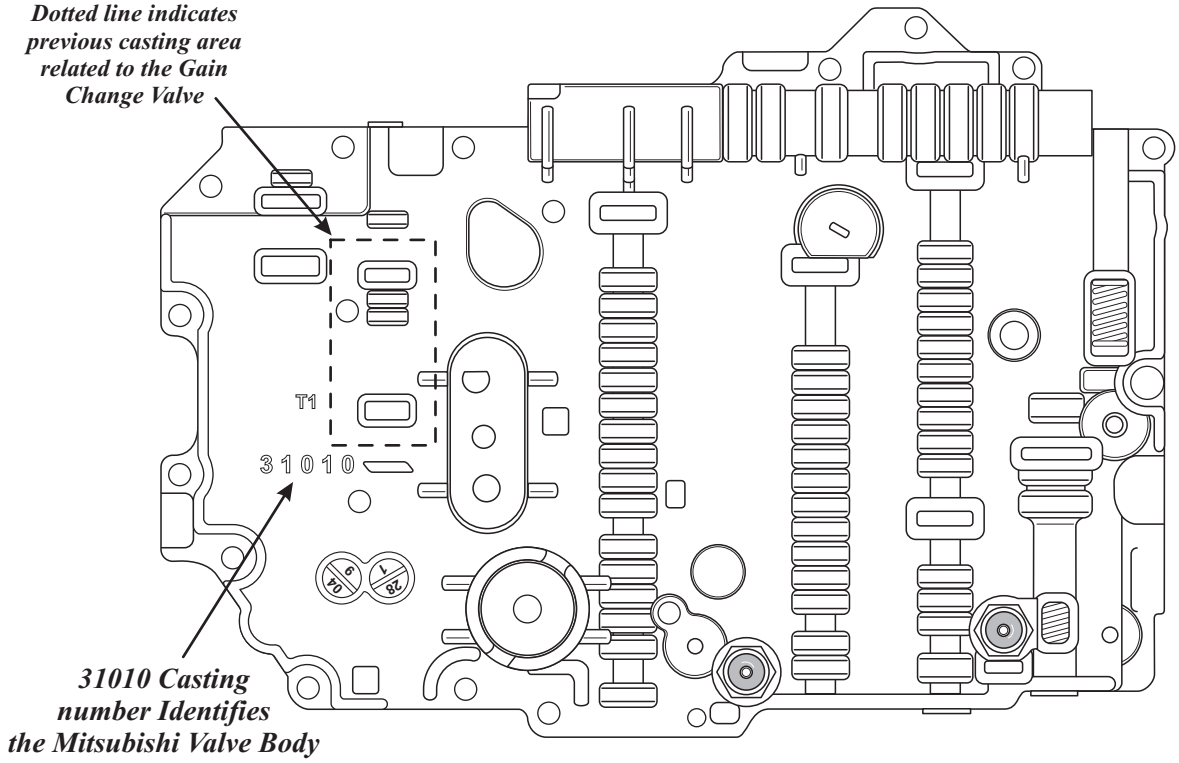
31020 Casting number Identifies the Dodge Valve Body Note: Mitsubishi version casting number is 31010

Date coding on Casting number 07/2007 Identifies the year the Dodge AS68RC went into production

Mitsubishi and Dodge nomenclature for the Linear Solenoids, Pressure Switches and temperature sensor are the same.

Figure 1

Mitsubishi Upper Valve Body Casting Identification



Dodge Upper Valve Body Casting Identification

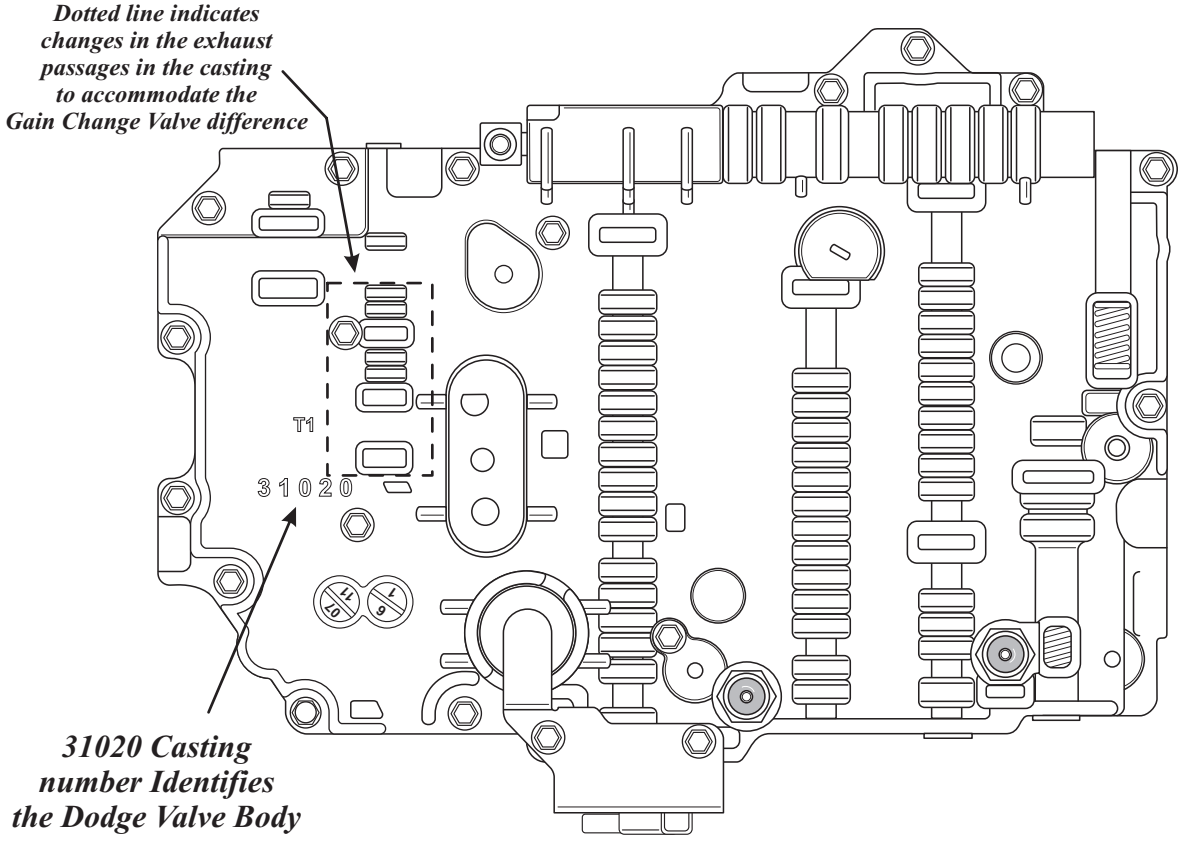
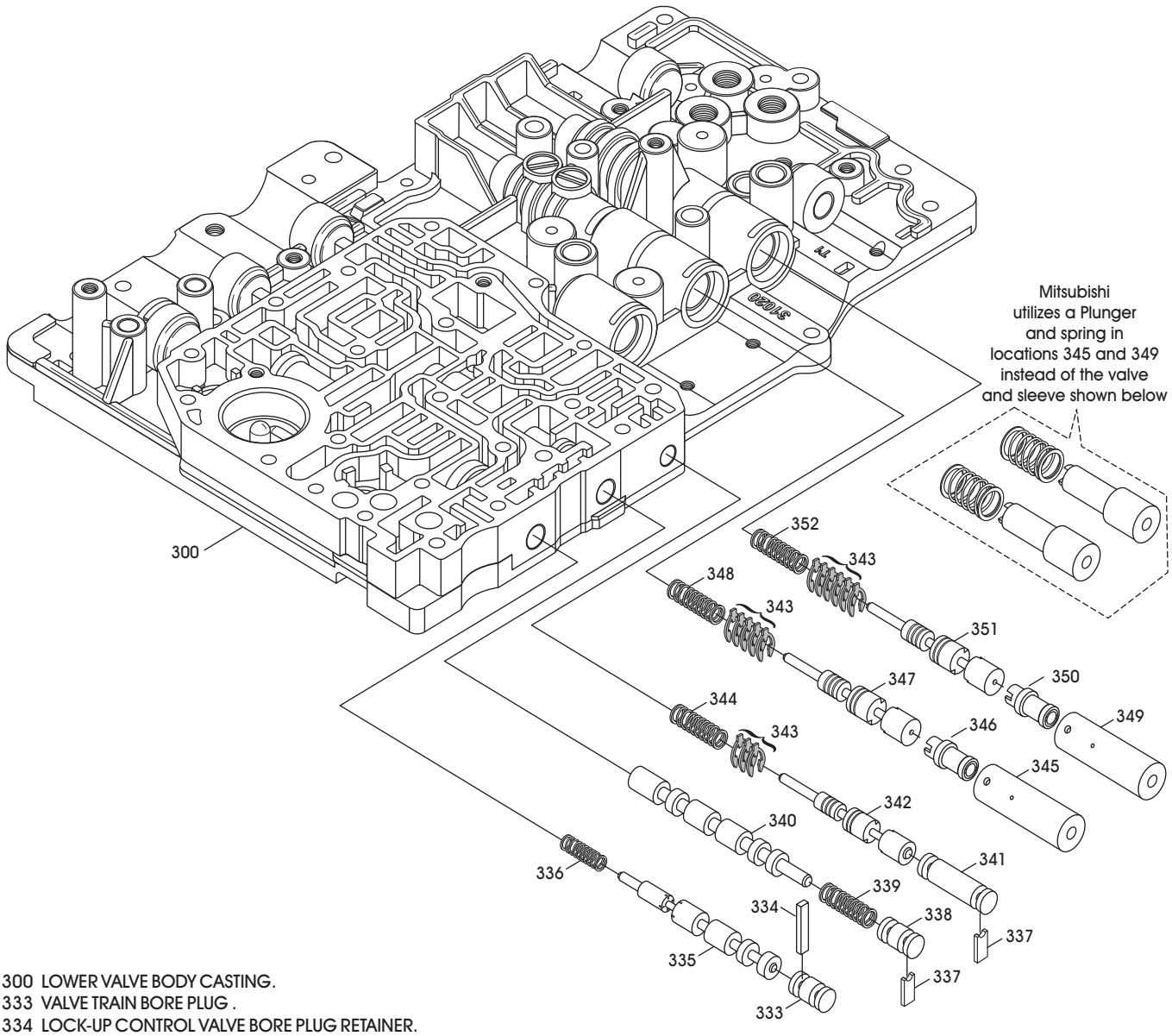


Figure 2

Dodge Lower Valve Body Exploded View



300 LOWER VALVE BODY CASTING.
333 VALVE TRAIN BORE PLUG .
334 LOCK-UP CONTROL VALVE BORE PLUG RETAINER.
335 LOCK-UP CONTROL VALVE.
336 LOCK-UP CONTROL VALVE SPRING (PINK).
337 BORE PLUG RETAINERS (2 REQUIRED).
338 VALVE TRAIN BORE PLUG
339 SHIFT VALVE NUMBER 4 SPRING (BLUE).
340 SHIFT VALVE NUMBER 4.
341 CONTROL VALVE NUMBER 3 BORE PLUG.
342 CONTROL VALVE NUMBER 3, K1 AND K3, (LARGE DIA. = .440").
343 CONTROL VALVE CLIPS (CALIBRATES SPRING PRESSURE .031" THICK).
344 CONTROL VALVE SPRING (YELLOW).
345 CONTROL VALVE NUMBER 1 SLEEVE.
346 CONTROL VALVE NUMBER 1 SLEEVE INNER VALVE.
347 CONTROL VALVE NUMBER 1, K1, K2 AND B3, (LARGE DIA. = .471").
348 CONTROL VALVE 1 SPRING (NO COLOR)
349 CONTROL VALVE NUMBER 2 SLEEVE.
350 CONTROL VALVE NUMBER 2 SLEEVE INNER VALVE.
351 CONTROL VALVE NUMBER 2, K3 AND B2, (LARGE DIA. = .431")
352 CONTROL VALVE 1 SPRING (NO COLOR)

LOWER VALVE BODY SPRING SPECIFICATIONS

SPRING NUMBER 336
Free Length = 1.230"
Spring Diameter = .319"
Wire Diameter = .030"
Approx Coils = 12 (PINK)

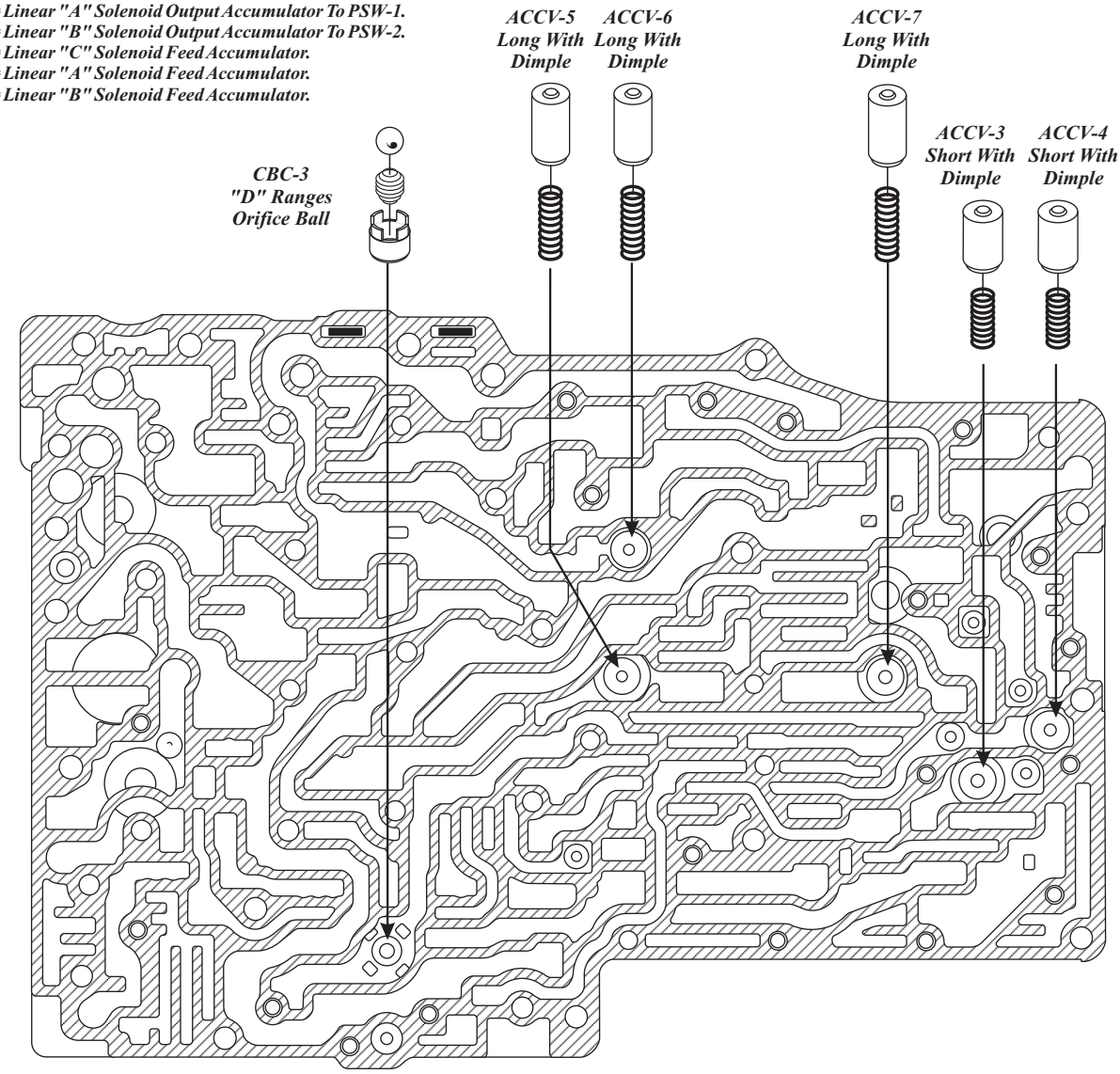
SPRING NUMBER 344
Free Length = 1.334"
Spring Diameter = .361"
Wire Diameter = .033"
Approx Coils = 11 (YELLOW)

SPRING NUMBER 339
Free Length = 1.555"
Spring Diameter = .435"
Wire Diameter = .035"
Approx Coils = 9 (BLUE)

SPRING NUMBER 348-352
Free Length = 1.334"
Spring Diameter = .361"
Wire Diameter = .033"
Approx Coils = 11 (NO COLOR)

Dodge Lower Valve Body Spacer Plate Side

ACCV-3 = Linear "A" Solenoid Output Accumulator To PSW-1.
ACCV-4 = Linear "B" Solenoid Output Accumulator To PSW-2.
ACCV-5 = Linear "C" Solenoid Feed Accumulator.
ACCV-6 = Linear "A" Solenoid Feed Accumulator.
ACCV-7 = Linear "B" Solenoid Feed Accumulator.



"Long" Accumulator Piston (With Dimple)
PISTON DIAMETER = .471"
PISTON OVERALL LENGTH = .996"
SPRING FREE LENGTH = 1.140" (RED PAINT)
SPRING WIRE DIAMETER = .049" (RED PAINT)
SPRING APPROX. COILS = 10 (RED PAINT)

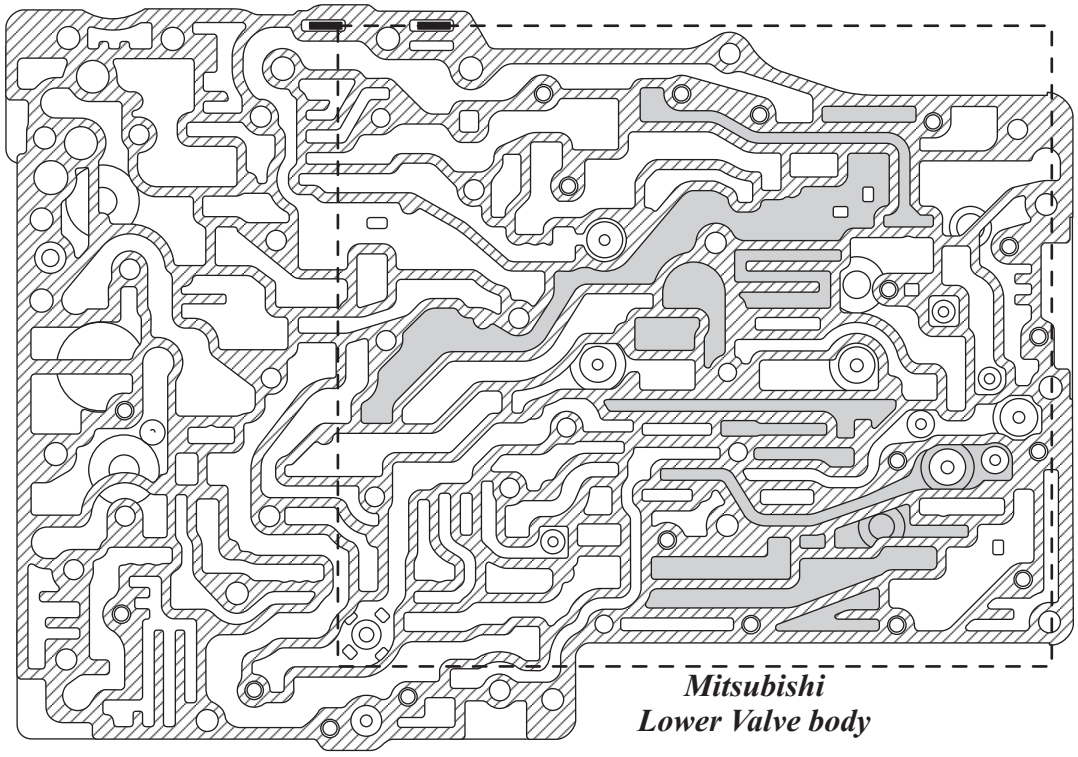
"Short" Accumulator Piston (With Dimple)
PISTON DIAMETER = .491"
PISTON OVERALL LENGTH = .785"
SPRING FREE LENGTH = .895" (LT GREEN PAINT)
SPRING WIRE DIAMETER = .063" (LT GREEN PAINT)
SPRING APPROX. COILS = 9 (LT GREEN PAINT)

Check Ball And Capsule
CHECK BALL DIAMETER = .393"
CAPSULE DIAMETER = .526"
SPRING FREE LENGTH = .502" (ORANGE PAINT)
SPRING WIRE DIAMETER = .014" (ORANGE PAINT)
SPRING APPROX. COILS = 7 (ORANGE PAINT)

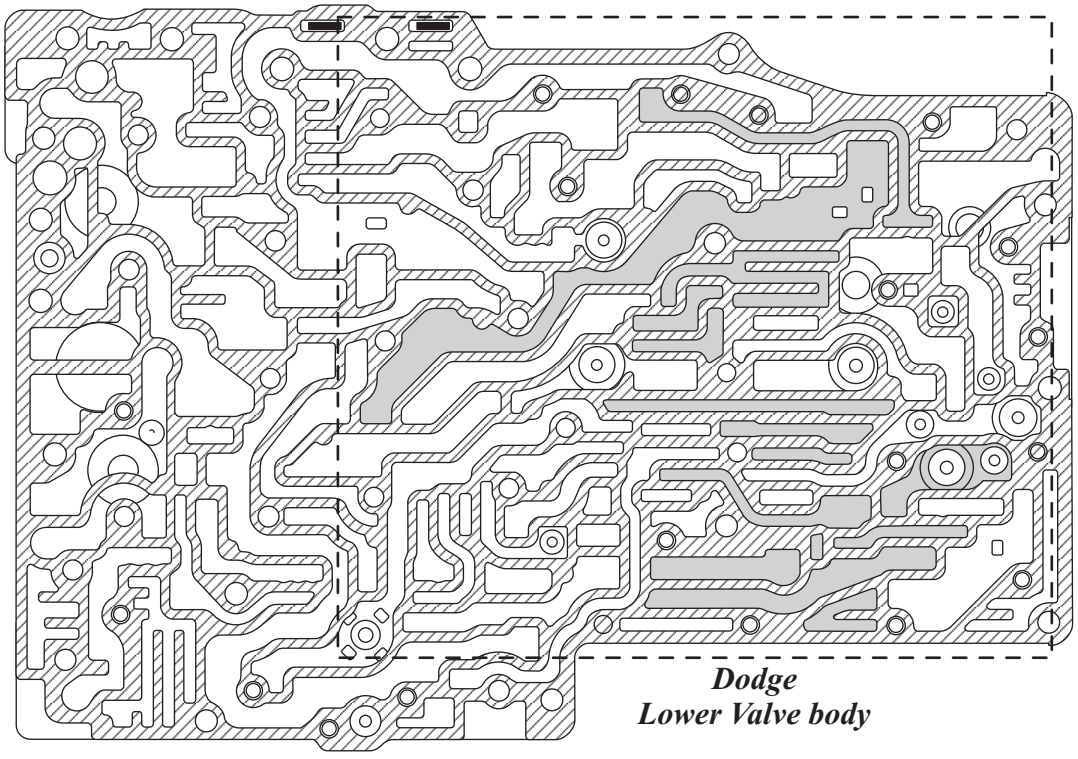
Note: Mitsubishi and Dodge accumulator pistons, springs, and check ball capsule are the same.

Figure 4

Lower Valve Body Comparison



Mitsubishi
Lower Valve body

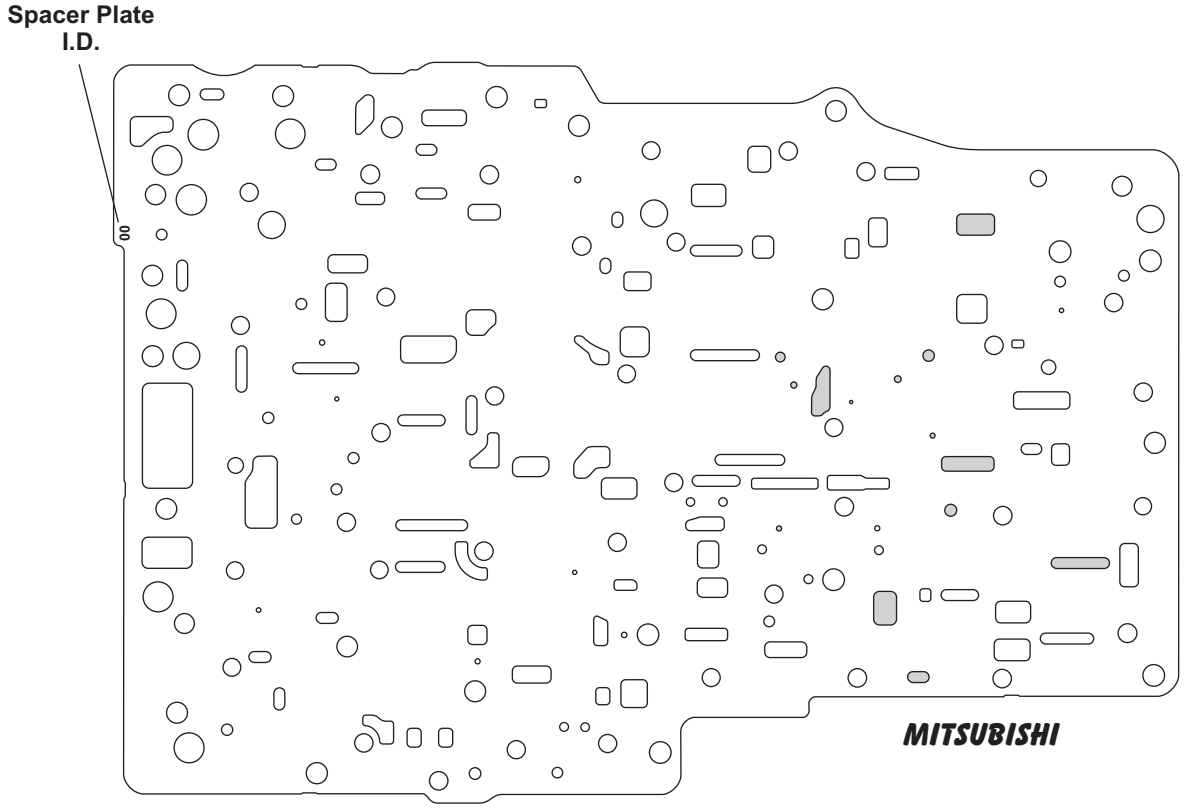


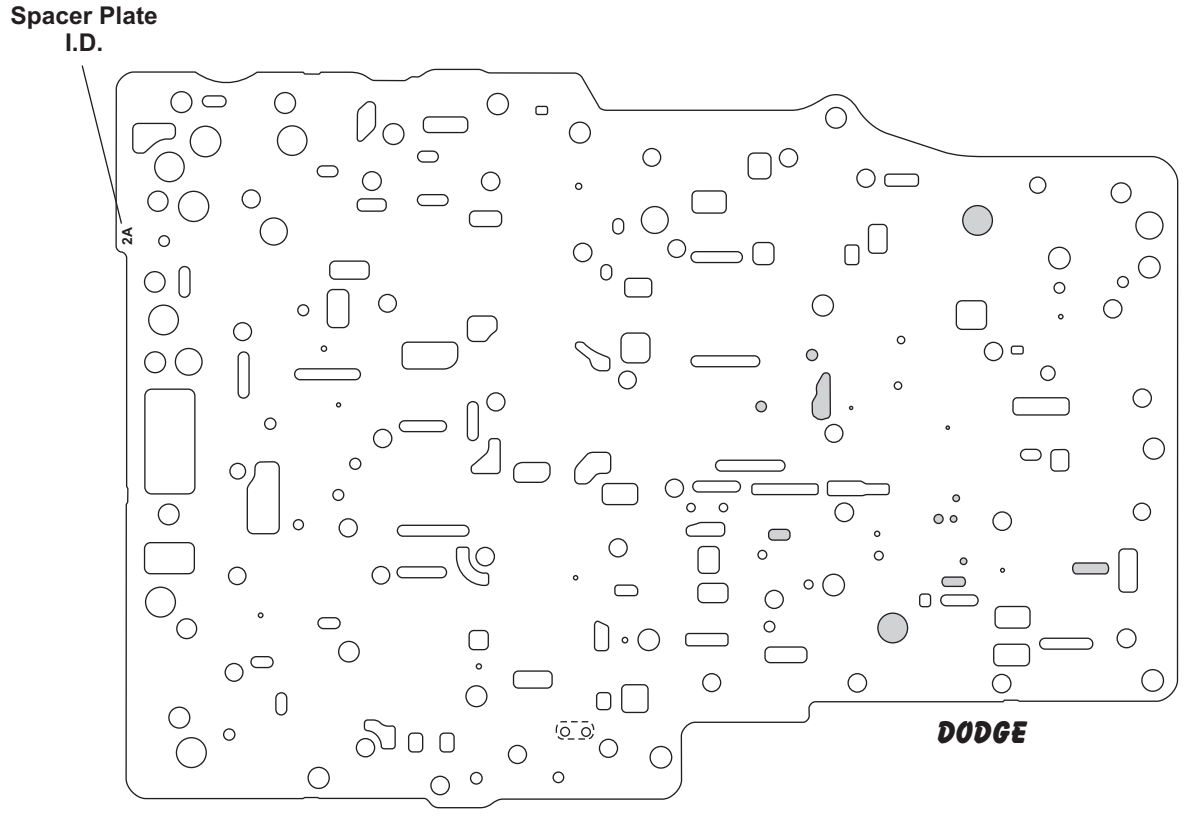
Dodge
Lower Valve body

Worm track area highlighted in grey show the differences between Mitsubishi and Dodge

Figure 5

Main Spacer Plate Comparison

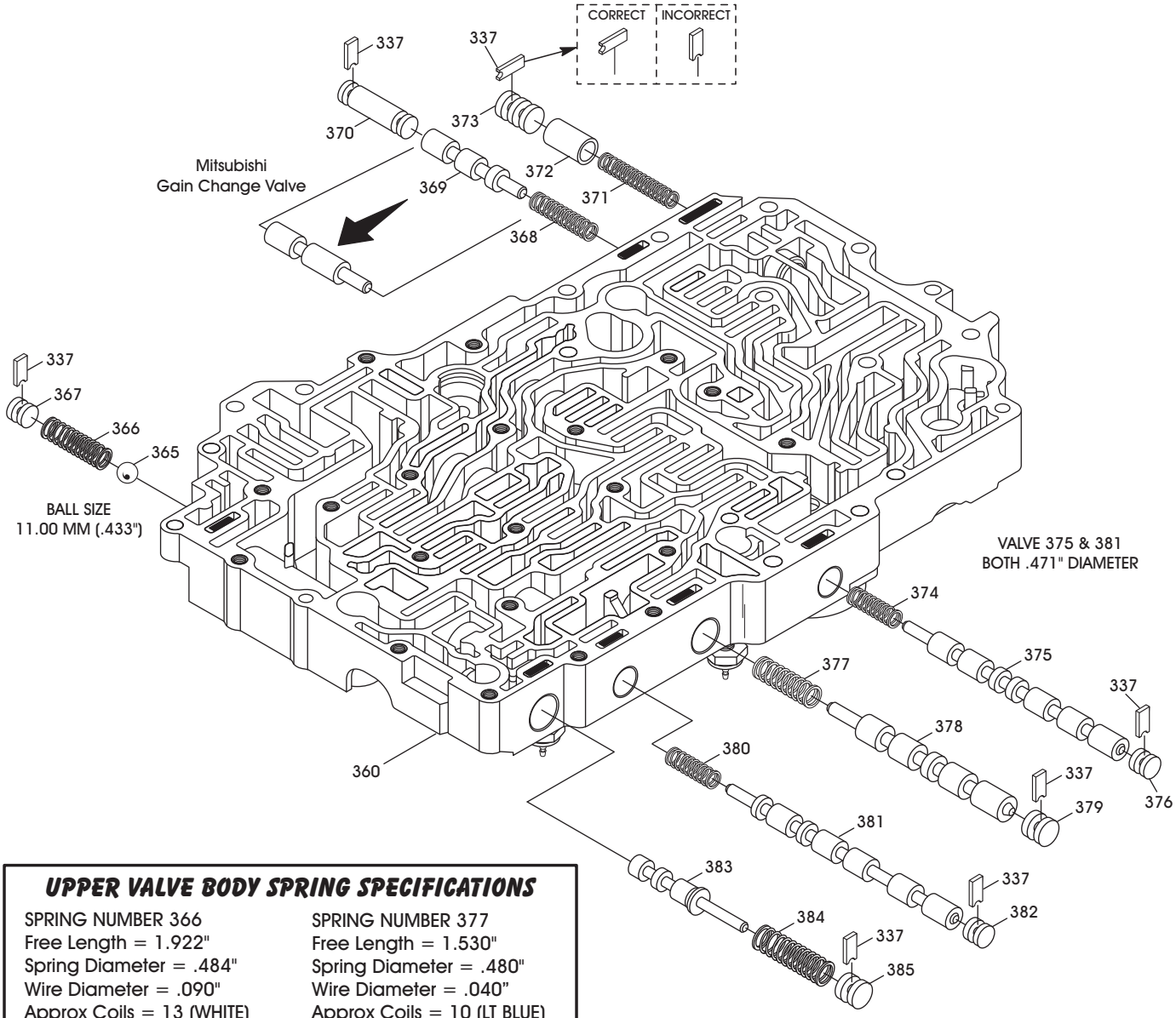




Areas highlighted in grey show the differences between Mitsubishi and Dodge

Figure 6

Dodge Upper Valve Body Exploded View



UPPER VALVE BODY SPRING SPECIFICATIONS

SPRING NUMBER 366
Free Length = 1.922"
Spring Diameter = .484"
Wire Diameter = .090"
Approx Coils = 13 (WHITE)

SPRING NUMBER 368
Free Length = 1.594"
Spring Diameter = .394"
Wire Diameter = .034"
Approx Coils = 11.5 (RED)

SPRING NUMBER 371
Free Length = 1.495"
Spring Diameter = .350"
Wire Diameter = .023"
Approx Coils = 17.5 (Plain)

SPRING NUMBER 374
Free Length = 1.540"
Spring Diameter = .430"
Wire Diameter = .039"
Approx Coils = 10 (PURPLE)

SPRING NUMBER 377
Free Length = 1.530"
Spring Diameter = .480"
Wire Diameter = .040"
Approx Coils = 10 (LT BLUE)

SPRING NUMBER 380
Free Length = 1.560"
Spring Diameter = .434"
Wire Diameter = .036"
Approx Coils = 9.5 (BLUE)

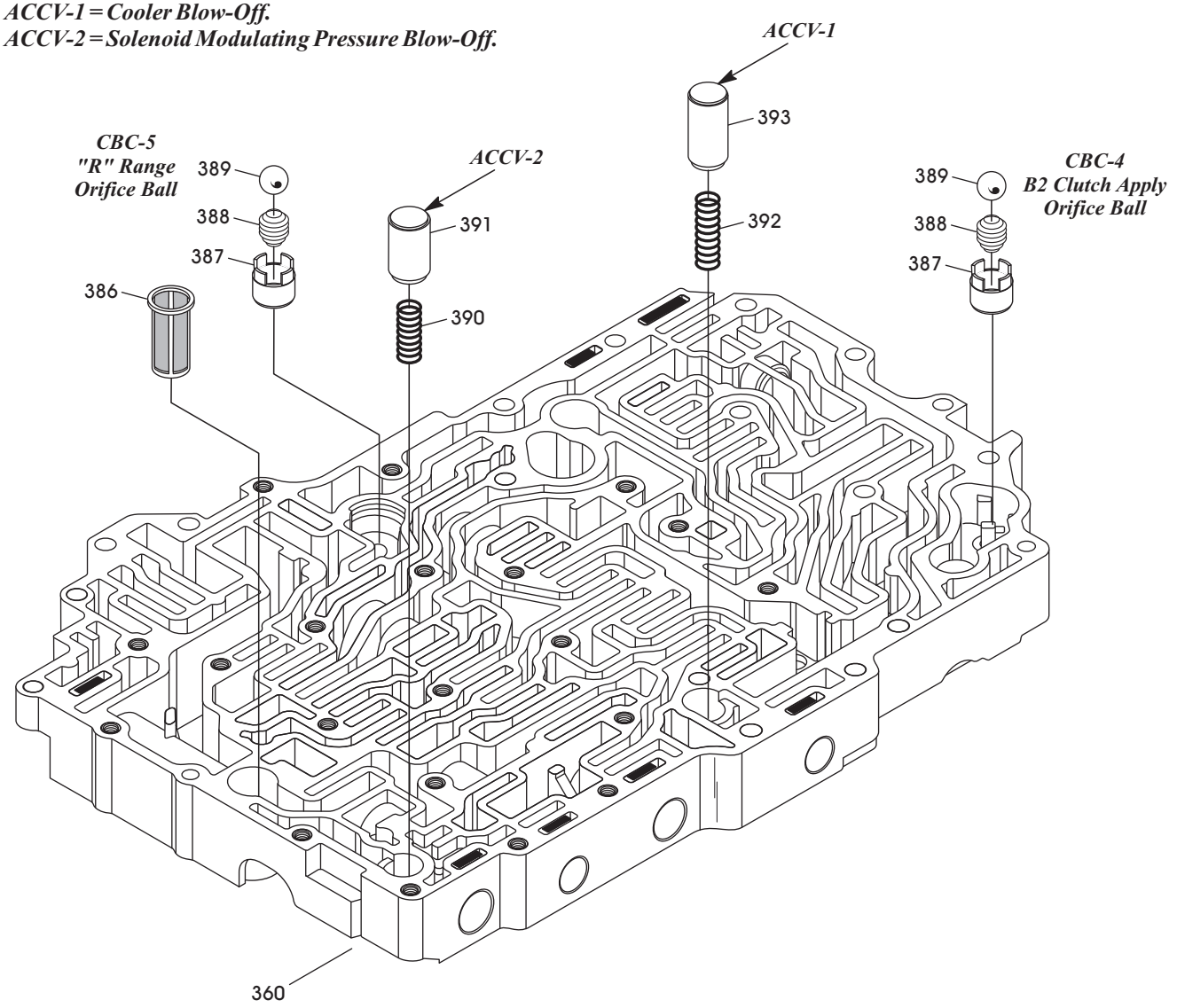
SPRING NUMBER 384
Free Length = 2.216"
Spring Diameter = .524"
Wire Diameter = .055"
Approx Coils = 12 (PINK)

Refer to Figure 8 for Legend

Figure 7

Dodge Upper Valve Body Exploded View

ACCV-1 = Cooler Blow-Off.
ACCV-2 = Solenoid Modulating Pressure Blow-Off.

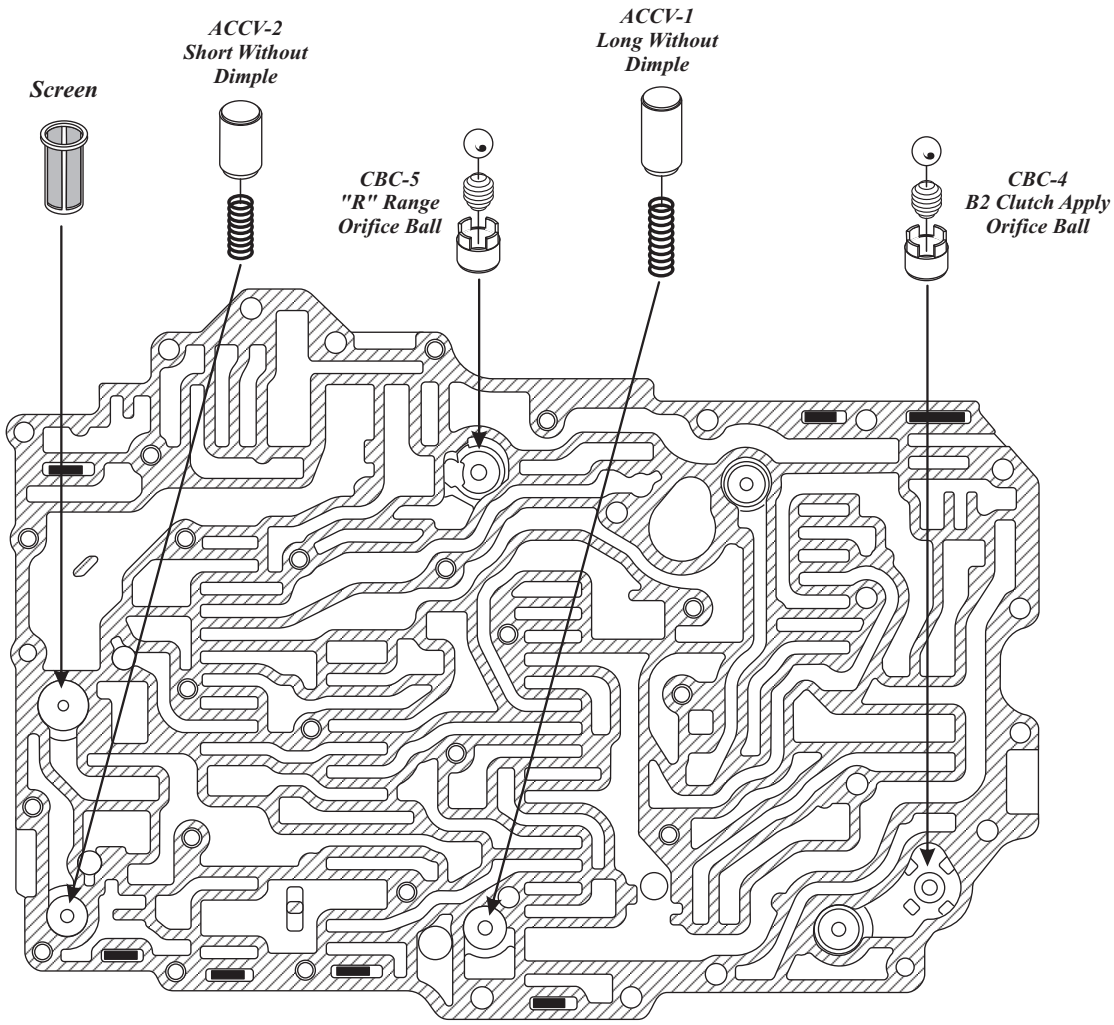


337 BORE PLUG RETAINERS (7 REQUIRED).
360 UPPER VALVE BODY CASTING.
365 LINE PRESSURE BLOW-OFF BALL, 11 MM (.433") DIAMETER.
366 LINE PRESSURE BLOW-OFF BALL SPRING (WHITE).
367 LINE PRESSURE BLOW-OFF BORE PLUG.
368 GAIN CHANGE VALVE SPRING (RED).
369 GAIN CHANGE VALVE.
370 GAIN CHANGE VALVE BORE PLUG.
371 COMBINED DRAIN VALVE SPRING (DK BLUE).
372 COMBINED DRAIN VALVE.
373 COMBINED DRAIN VALVE BORE PLUG *(NOTE RETAINER DIRECTION).*
374 SHIFT VALVE NUMBER 1 SPRING (LT GREEN).
375 SHIFT VALVE NUMBER 1.
376 SHIFT VALVE NUMBER 1 BORE PLUG.
377 SHIFT VALVE NUMBER 2 SPRING (LT BLUE).
378 SHIFT VALVE NUMBER 2.
379 SHIFT VALVE NUMBER 2 BORE PLUG.
380 SHIFT VALVE NUMBER 3 SPRING (BLUE).
381 SHIFT VALVE NUMBER 3.
382 SHIFT VALVE NUMBER 3 BORE PLUG.
383 MODULATOR VALVE.
384 MODULATOR VALVE SPRING (PINK).
385 MODULATOR VALVE BORE PLUG.
386 PLASTIC SCREEN.
387 SMALL CHECK BALL CAPSULE (2 REQUIRED).
388 SMALL CHECK BALL SPRING, 2 REQUIRED, (ORANGE).
389 SMALL CHECK BALL, 10 MM (.393") DIAMETER (2 REQUIRED).
390 ACCUMULATOR VALVE SPRING (WHITE).
391 ACCUMULATOR VALVE, SHORT W/O DIMPLE, .470" DIAMETER.
392 ACCUMULATOR VALVE SPRING (LT BLUE).
393 ACCUMULATOR VALVE, LONG W/O DIMPLE, .510" DIAMETER.

Figure 8

Dodge Upper Valve Body Spacer Plate Side

ACCV-1 = Cooler Blow-Off.
ACCV-2 = Solenoid Modulating Pressure Blow-Off.



"Long" Accumulator Piston (Without Dimple)
PISTON DIAMETER = .510"
PISTON OVERALL LENGTH = .913"
SPRING FREE LENGTH = 1.325" (LT BLUE PAINT)
SPRING WIRE DIAMETER = .054" (LT BLUE PAINT)
SPRING APPROX. COILS = 13 (LT BLUE PAINT)

"Short" Accumulator Piston (Without Dimple)
PISTON DIAMETER = .470"
PISTON OVERALL LENGTH = .650"
SPRING FREE LENGTH = .932" (WHITE PAINT)
SPRING WIRE DIAMETER = .047" (WHITE PAINT)
SPRING APPROX. COILS = 11 (WHITE PAINT)

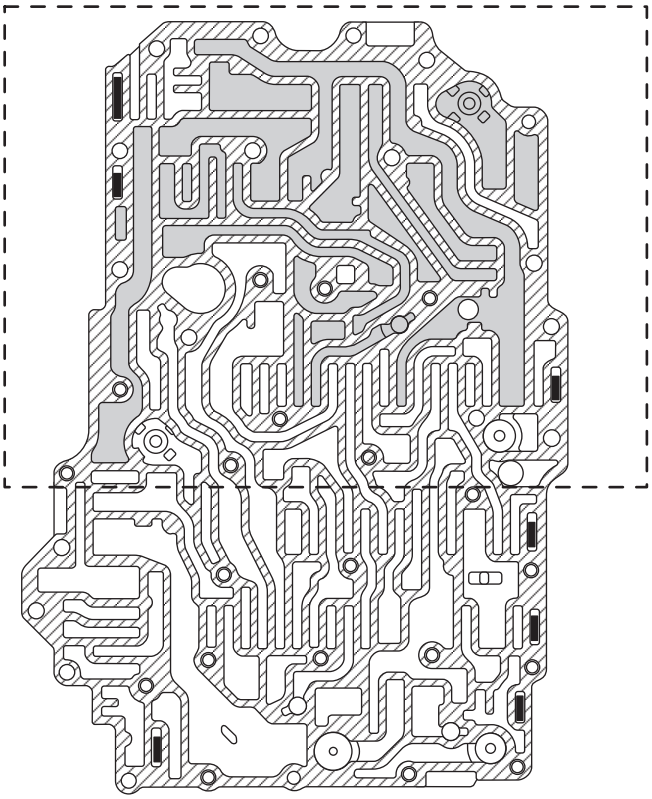
Check Ball And Capsule
CHECK BALL DIAMETER = .393"
CAPSULE DIAMETER = .526"
SPRING FREE LENGTH = .502" (ORANGE PAINT)
SPRING WIRE DIAMETER = .014" (ORANGE PAINT)
SPRING APPROX. COILS = 7 (ORANGE PAINT)

Note: Mitsubishi and Dodge accumulator pistons, springs, and check ball capsule are the same.

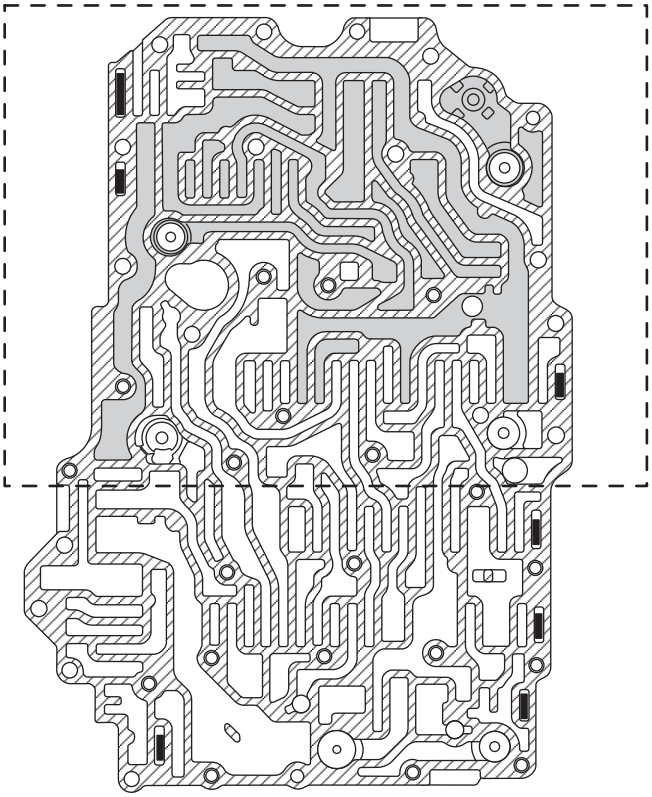
Figure 9

Upper Valve Body Comparison

Mitsubishi
Upper Valve body



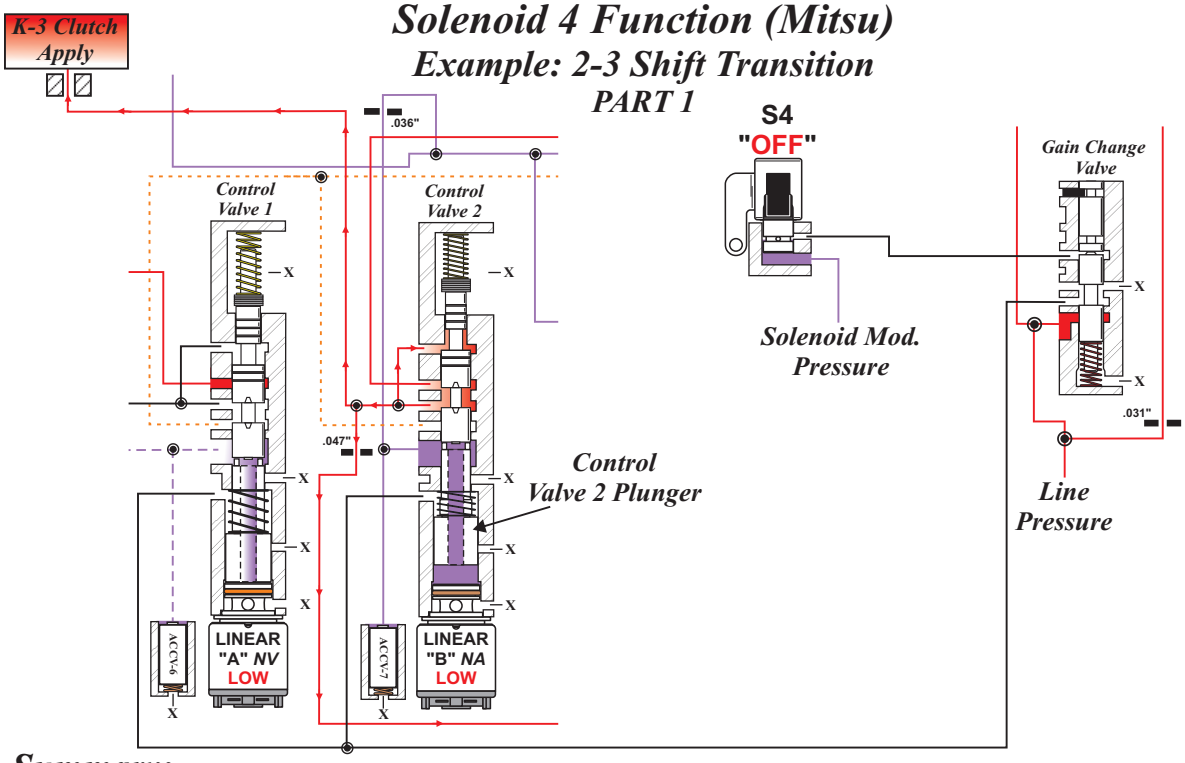
Dodge
Upper Valve body



Worm track area highlighted in grey show differences between Mitsubishi and Dodge

Figure 10

Solenoid 4 Function (Mitsu)
Example: 2-3 Shift Transition
PART 1

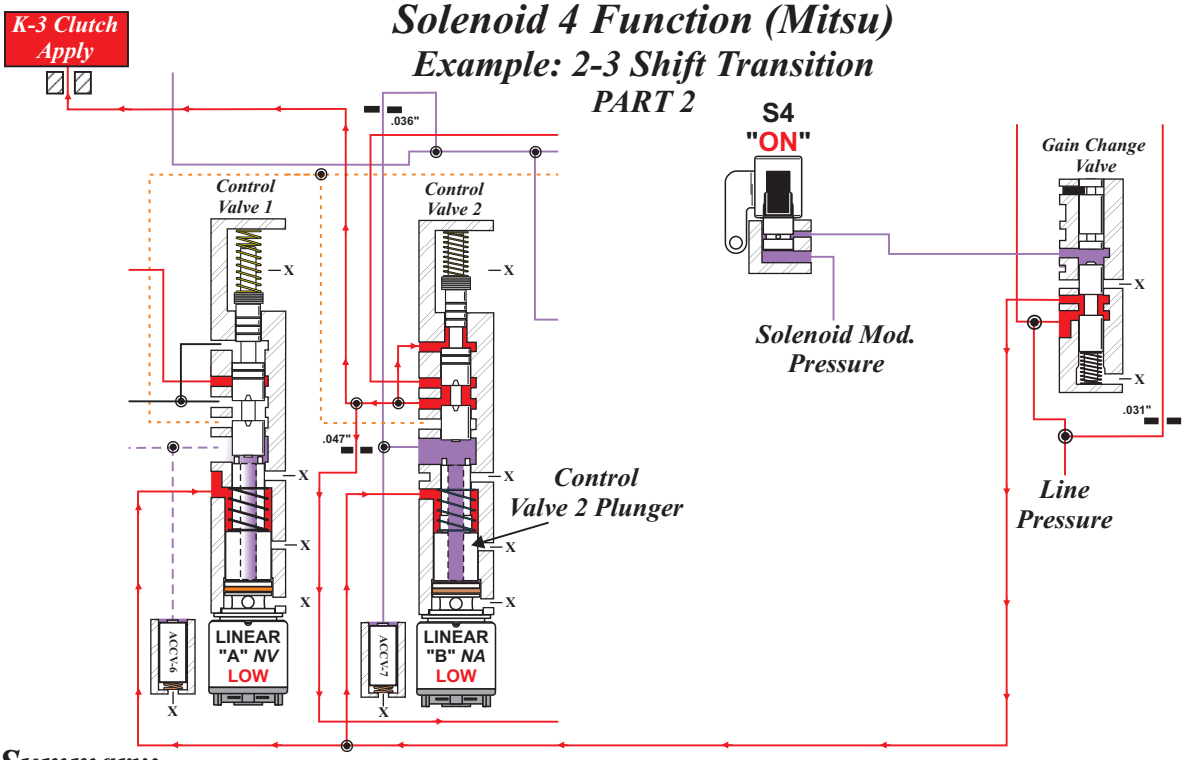


Summary:

Linear "B" Solenoid duty cycle is commanded Low by the TCM, which is controlling the apply of the K-3 Clutch thru Control Valve 2, during the 2-3 shift transition. The Large Spool of Control Valve 2 Plunger allows better control of K-3 Apply pressure, by Linear "B". S4 is OFF at this time.

Figure 11

Solenoid 4 Function (Mitsu)
Example: 2-3 Shift Transition
PART 2

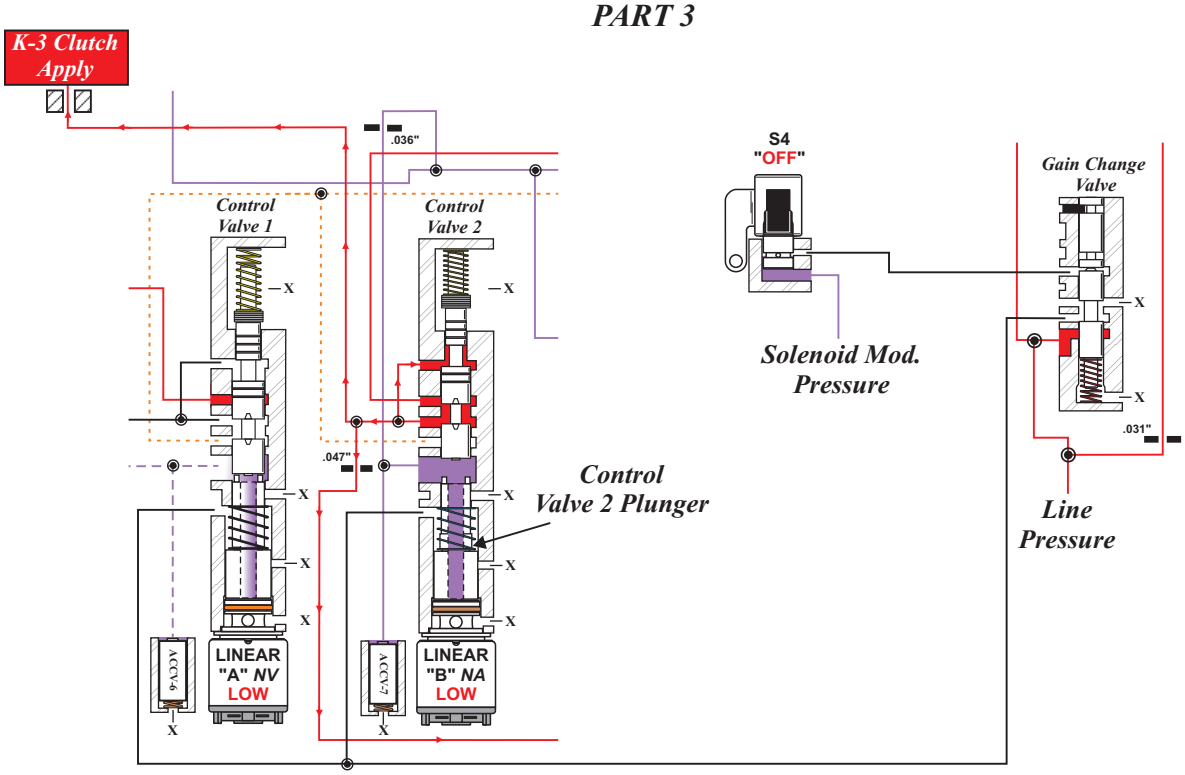


Summary:

S4 is turned ON, which strokes the Gain Change Valve, connecting Line pressure to the spring side of the Plunger for Control Valves 1 and 2, pushing the Plungers toward their Linear solenoids, switching K-3 Apply pressure to Line.

Figure 12

Solenoid 4 Function (Mitsu)
Example: 2-3 Shift Complete
PART 3



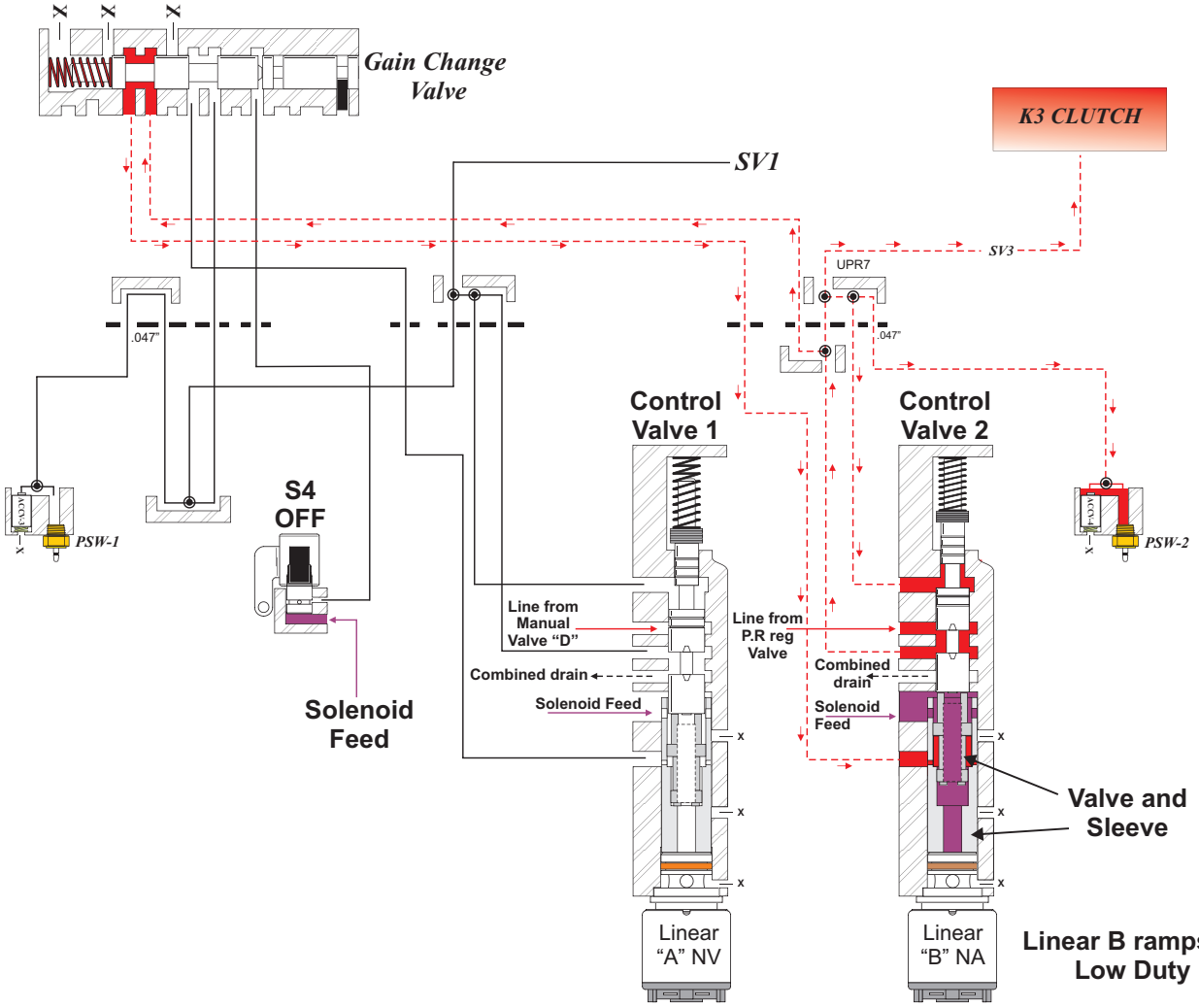
Summary:

S4 is Turned OFF, Control Valve 2 Plunger is held against Linear "B" Solenoid by it's return spring, and the K-3 Clutch is filled with Line pressure and the 2-3 shift is complete. Note:Part 1-3 of the 2-3 transition occurs in milliseconds.

Note: S4 is ON in Reverse, 1st 5th and 6th gears. S4 is also toggled ON during the 2-3 and 3-4 up-shifts.

Figure 13

Dodge Gain Change Valve Function
Example: K3 Clutch application

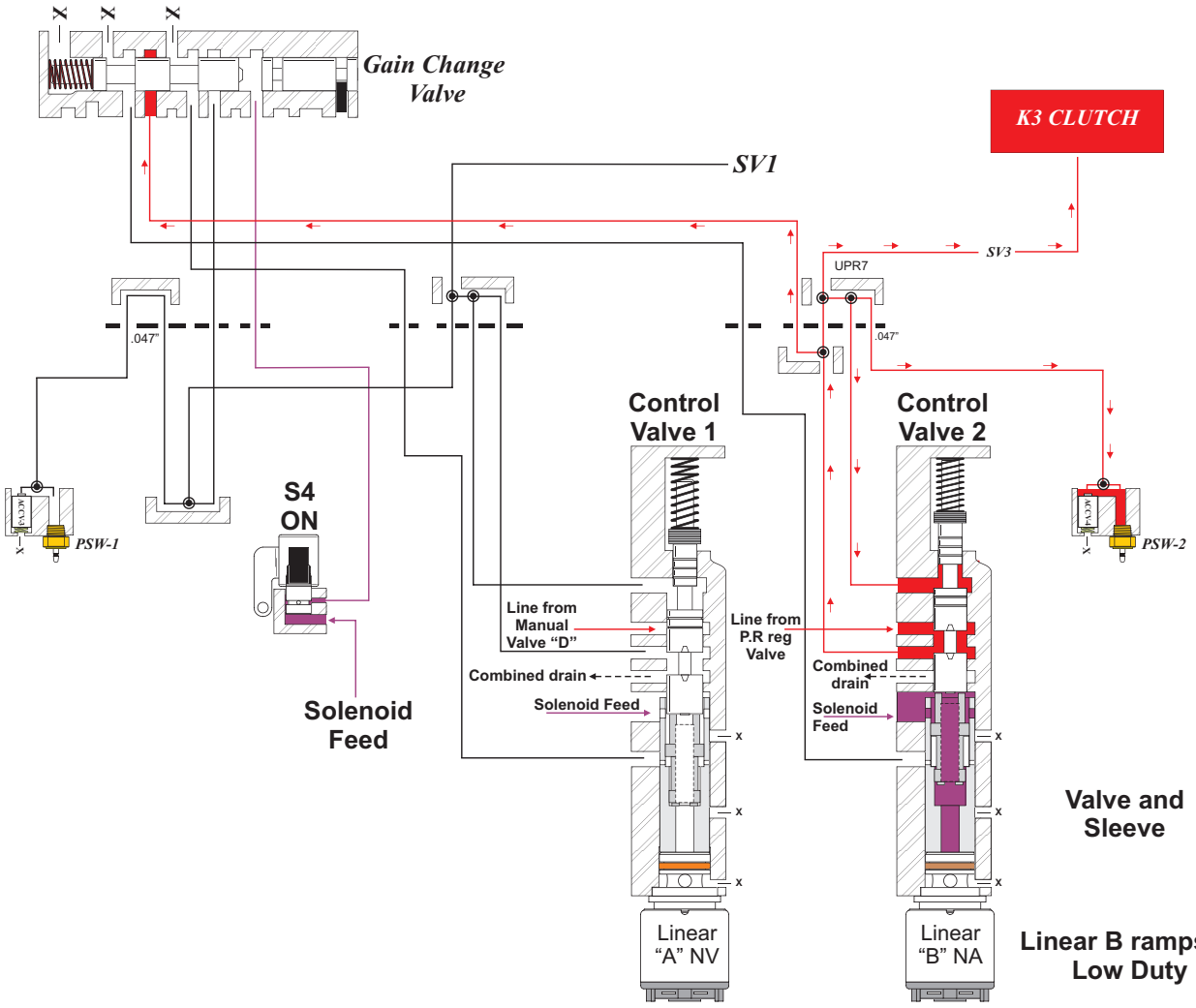


S4 is OFF at the beginning of the K3 Clutch application. This allows K3 apply pressure to be connected to the valve and sleeve behind Linear B to help control the application of the K3 Clutch.

Note: There is activity thru control valve 1 that is not illustrated.

Figure 14

Dodge Gain Change Valve Function
Example: K3 Clutch application



S4 ON during the transition into 3rd K3 Clutch ON
The Gain Change Valve exhausts the connection
to the valve and sleeve behind Linear B

Figure 15