NISSAN/INFINITI RE5R05A

VALVE BODY IDENTIFICATION

The RE5R05A is the Nissan/Infiniti five speed rear drive transmission used in the InfinitiCX35, FX35, FX45, G35, M35, M35x, M45, Q45, and QX56. It is also used in Nissan 350Z, Frontier, Pathfinder, Armada, Titan and Xterra XE models. This transmission has been on the road in North America since the 2002 model year.

As a result this transmission is a common sight in many shops, however the information that is available from the O.E.M. is mostly incomplete, especially when it comes to valve body information such as small parts and checkball locations as well as valve nomenclature.

There is also confusion in checkball location and valve lineup because there is a difference between the 1st and 2nd Design valve bodies. 1st design includes models from 2002 - early 2004 and 2nd design includes from Mid 2004 to the present. Note: there is a 3rd design valve body that has a difference in the Neutral Reverse Accumulator that is unclear when it was introduced at the time of this printing.

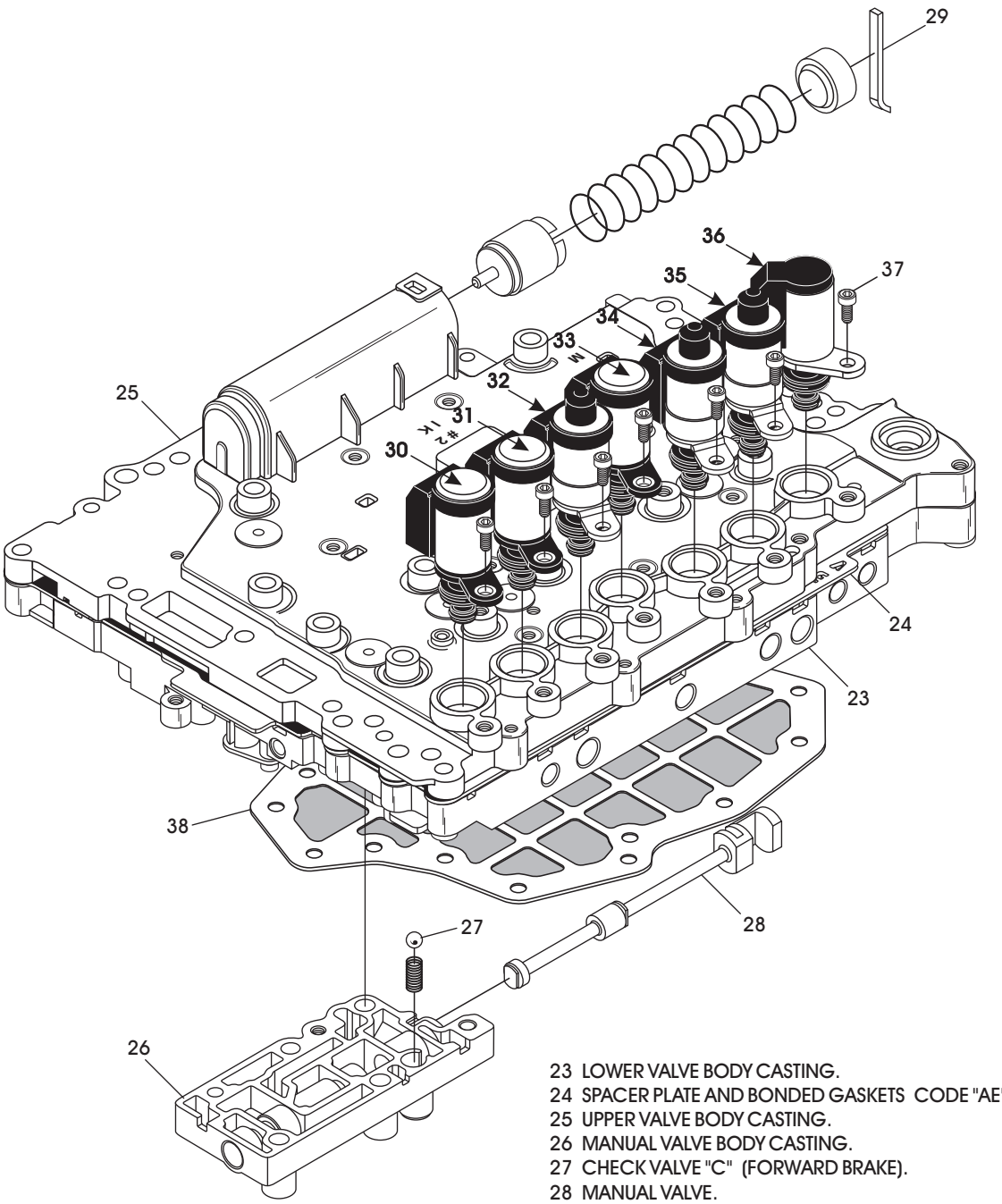
The following information will illustrate both the late and early valve body information so badly needed in our industry.

Refer to Figure 1 for 1st Design Upper Valve Body and Solenoid Identification.
Refer to Figure 2 for 1st Design Upper Valve Body Valve Identification.
Refer to Figure 3 for 1st Design Upper Valve Body Small Parts Locations.
Refer to Figure 4 for 1st Design Lower Valve Body Checkball Locations.
Refer to Figure 5 for 1st Design Manual Valve Body Identification.

Refer to Figure 6 for 2nd Design Upper Valve Body and Solenoid Identification.
Refer to Figure 7 for 2nd Design Upper Valve Body Valve Identification.
Refer to Figure 8 for 2nd Design Upper Valve Body Small Parts Locations.
Refer to Figure 9 for 2nd Design Lower Valve Body Checkball Locations.
Refer to Figure 10 for 2nd Design Manual Valve Body Identification.

Refer to Figure 11 for "Normally Applied" Solenoid Operation.
Refer to Figure 12 for "Normally Vented" Solenoid Operation.
Refer to Figure 13 for "Normally Closed" Solenoid Operation.

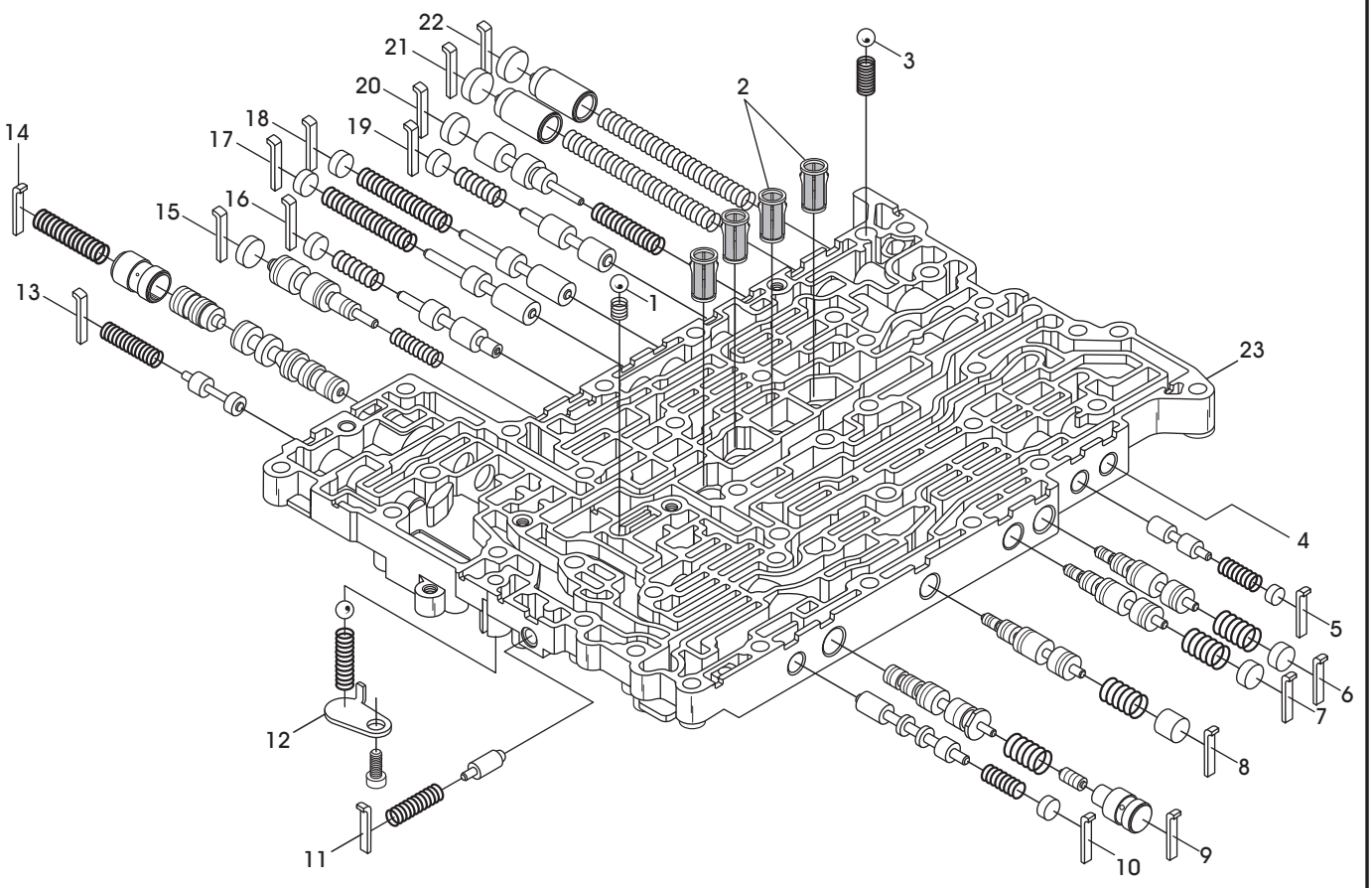
1ST DESIGN RE5R05A, VALVE BODY EXPLODED VIEW



23 LOWER VALVE BODY CASTING.
24 SPACER PLATE AND BONDED GASKETS CODE "AE".
25 UPPER VALVE BODY CASTING.
26 MANUAL VALVE BODY CASTING.
27 CHECK VALVE "C" (FORWARD BRAKE).
28 MANUAL VALVE.
29 FORWARD ENGAGEMENT ACCUMMULATOR.
30 LINE PRESSURE SOLENOID.
31 TORQUE CONVERTER CLUTCH SOLENOID.
32 DIRECT CLUTCH SOLENOID.
33 FRONT BRAKE BAND SOLENOID.
34 INPUT CLUTCH SOLENOID.
35 HIGH & LOW REVERSE CLUTCH SOLENOID.
36 LOW COAST BRAKE CLUTCH SOLENOID.
37 SOLENOID RETAINING BOLT (7 REQUIRED).
38 OIL PUMP SCREEN.

Figure 1

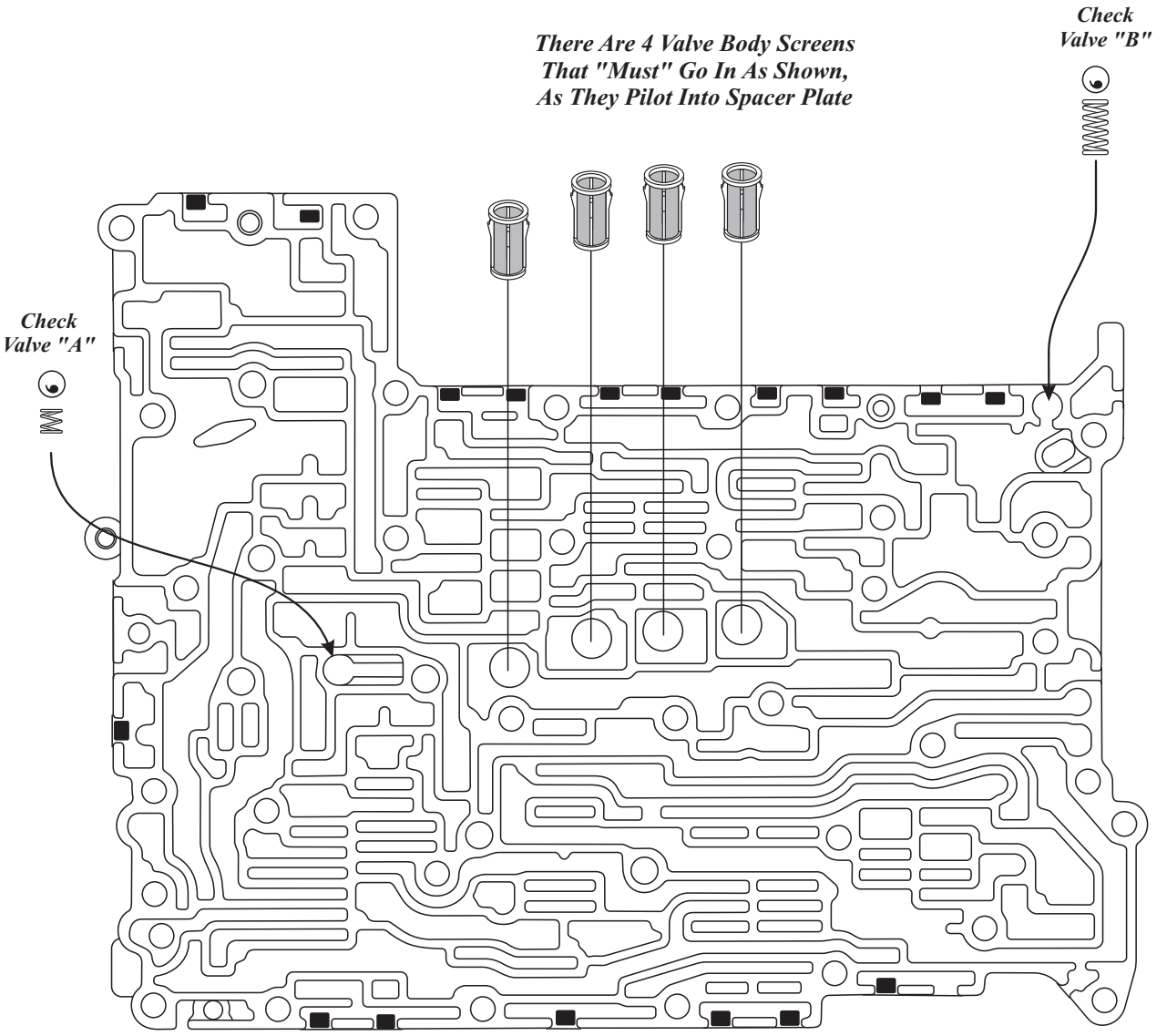
1ST DESIGN RE5R05A, LOWER VALVE BODY EXPLODED VIEW



1 CHECK VALVE "A" (DRAINBACK).
2 VALVE BODY SCREENS (4 REQUIRED).
3 CHECK VALVE "B" (REVERSE BRAKE).
4 BLANK HOLE BORED WITH NO VALVE TRAIN.
5 DIRECT CLUTCH SWITCH VALVE.
6 DIRECT CLUTCH PRESSURE CONTROL VALVE.
7 INPUT CLUTCH PRESSURE CONTROL VALVE.
8 HIGH AND LOW REVERSE CLUTCH PRESSURE CONTROL VALVE.
9 TORQUE CONVERTER CLUTCH CONTROL VALVE.
10 TORQUE CONVERTER LUBRICATION SWITCH VALVE.
11 COOLER BYPASS VALVE.
12 LINE PRESSURE RELIEF VALVE.
13 TORQUE CONVERTER REGULATOR VALVE.
14 LINE PRESSURE REGULATOR VALVE.
15 FRONT BRAKE BAND PRESSURE CONTROL VALVE.
16 ACCUMMULATOR PRESSURE CONTROL VALVE.
17 PILOT VALVE "A".
18 PILOT VALVE "B".
19 LOW COAST BRAKE SWITCH VALVE.
20 LOW COAST BRAKE REDUCING VALVE.
21 NEUTRAL TO REVERSE ACCUMMULATOR.
22 NEUTRAL TO REVERSE ACCUMMULATOR.
23 LOWER VALVE BODY CASTING.

Figure 2

1ST DESIGN RE5R05A, LOWER VALVE BODY SMALL PARTS



Check Valve "A" (Drainback)	
BALL DIAMETER	.312"
SPRING FREE LENGTH	.350"
SPRING DIAMETER	.285"
WIRE DIAMETER	.016"
APPROX COILS	5

Check Valve "B" (Reverse Brake)	
BALL DIAMETER	.312"
SPRING FREE LENGTH	.705"
SPRING DIAMETER	.316"
WIRE DIAMETER	.039"
APPROX COILS	11

Figure 3

1ST DESIGN RE5R05A, UPPER VALVE BODY CHECK BALLS

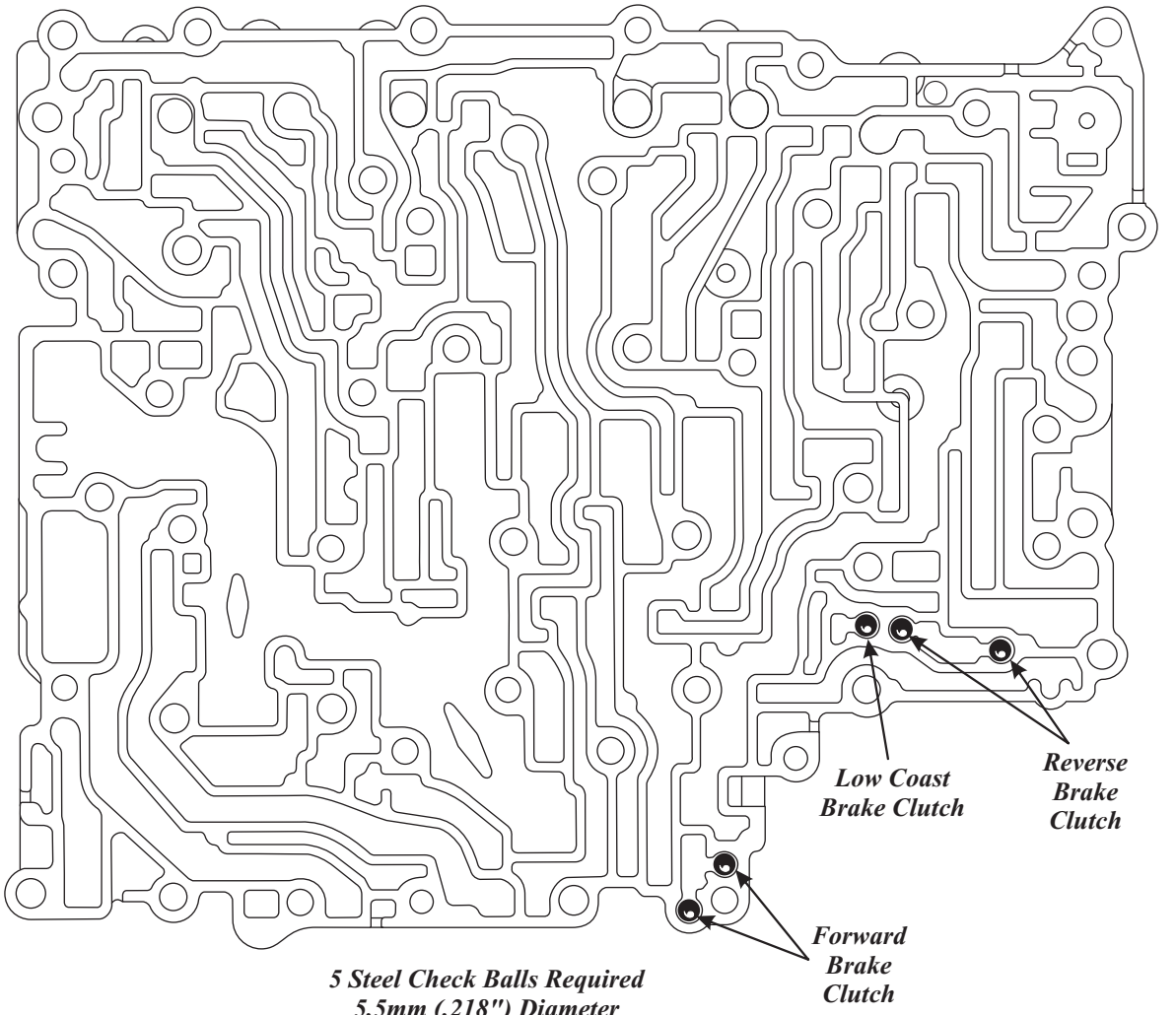
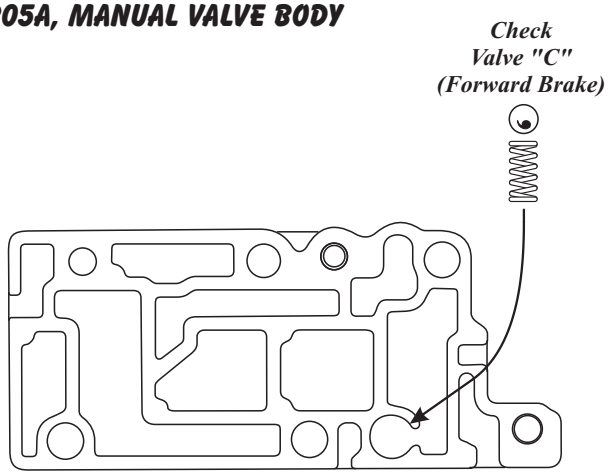


Figure 4

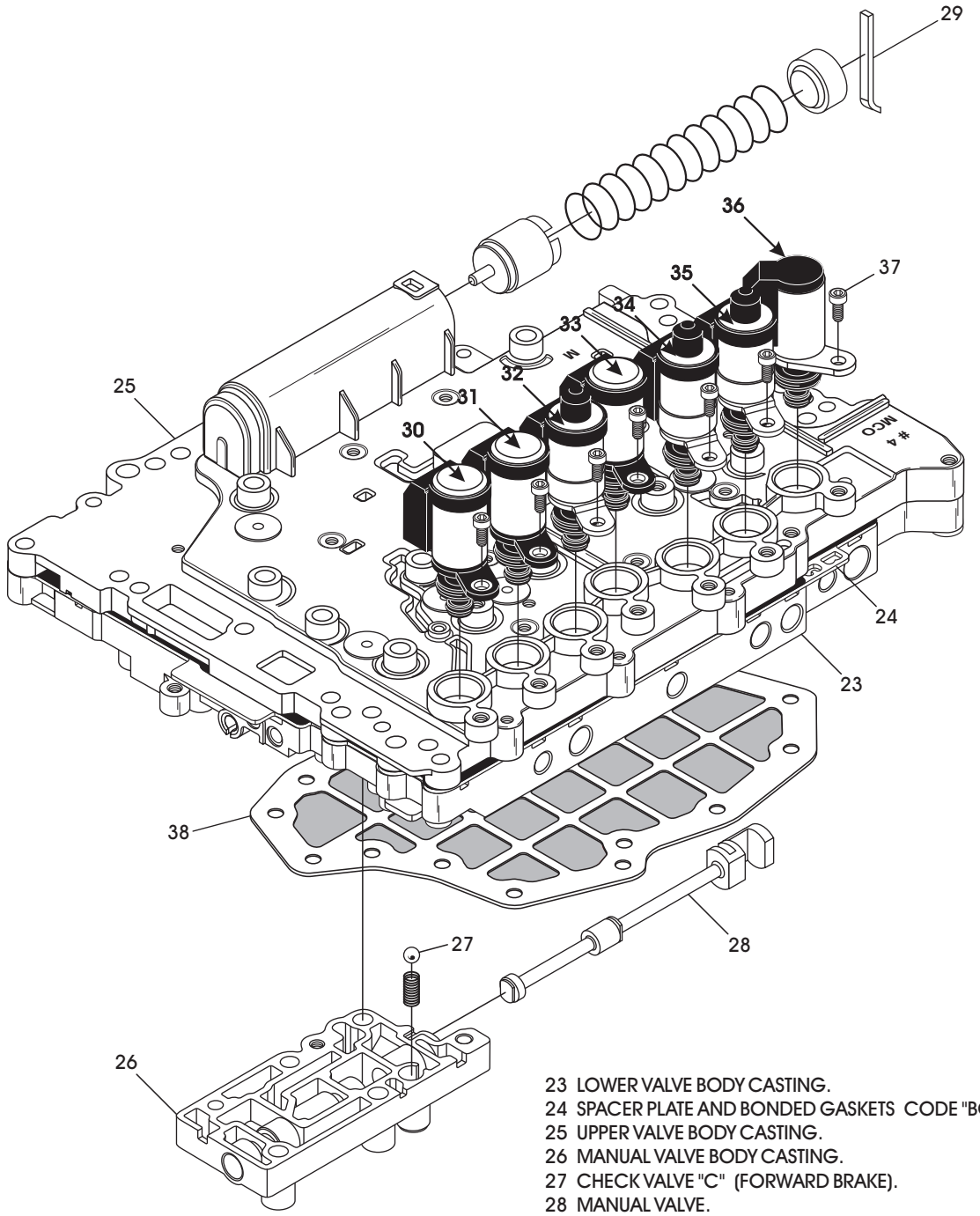
1ST DESIGN RE5R05A, MANUAL VALVE BODY



Check Valve "C" (Forward Brake)	
BALL DIAMETER	.312"
SPRING FREE LENGTH	.705"
SPRING DIAMETER	.316"
WIRE DIAMETER	.039"
APPROX COILS	11

Figure 5

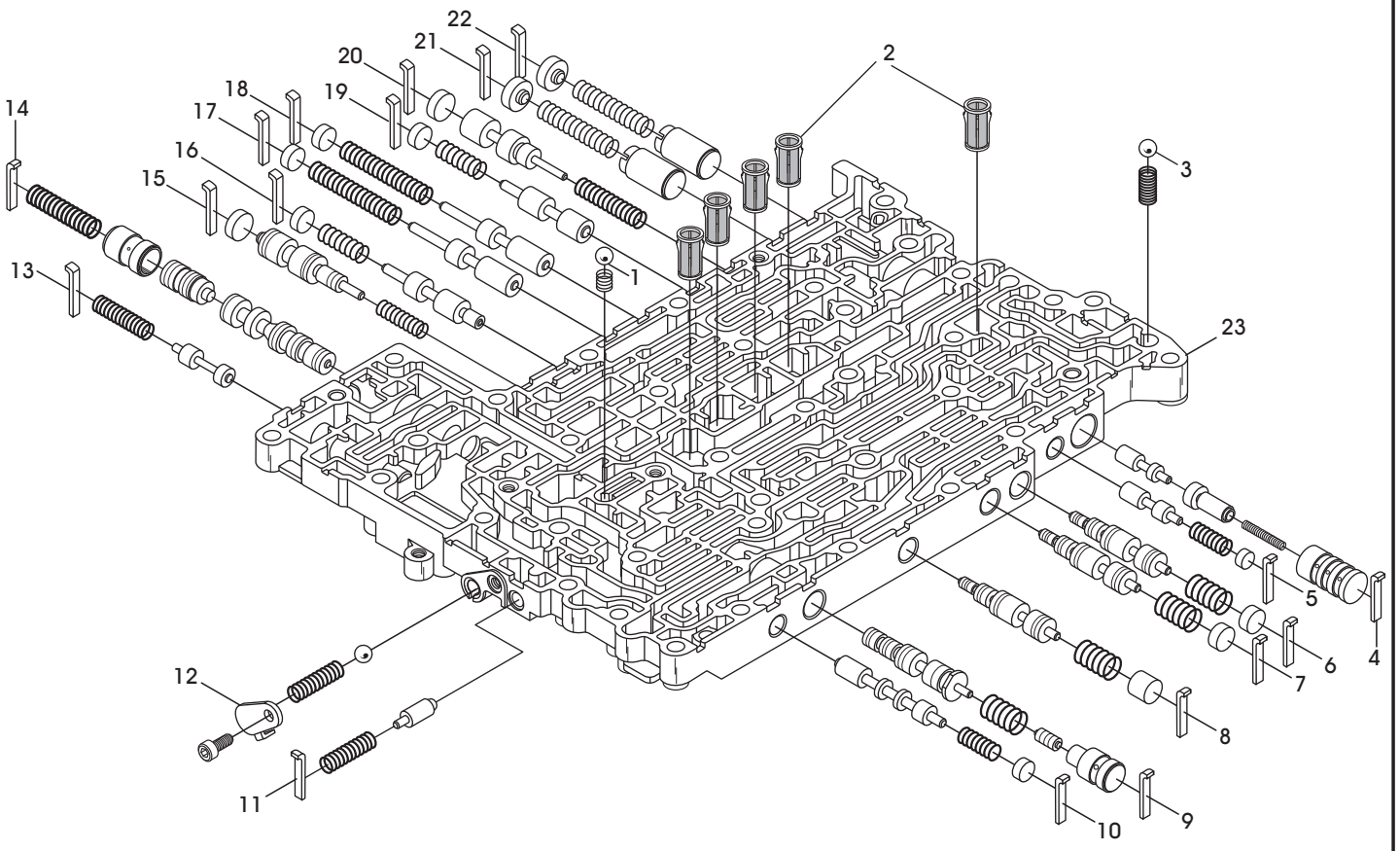
2ND DESIGN RE5R05A, VALVE BODY EXPLODED VIEW



23 LOWER VALVE BODY CASTING.
24 SPACER PLATE AND BONDED GASKETS CODE "BC".
25 UPPER VALVE BODY CASTING.
26 MANUAL VALVE BODY CASTING.
27 CHECK VALVE "C" (FORWARD BRAKE).
28 MANUAL VALVE.
29 FORWARD ENGAGEMENT ACCUMMULATOR.
30 LINE PRESSURE SOLENOID.
31 TORQUE CONVERTER CLUTCH SOLENOID.
32 DIRECT CLUTCH SOLENOID.
33 FRONT BRAKE BAND SOLENOID.
34 INPUT CLUTCH SOLENOID.
35 HIGH & LOW REVERSE CLUTCH SOLENOID.
36 LOW COAST BRAKE CLUTCH SOLENOID.
37 SOLENOID RETAINING BOLT (7 REQUIRED).
38 OIL PUMP SCREEN.

Figure 6

2ND DESIGN RE5R05A, LOWER VALVE BODY EXPLODED VIEW

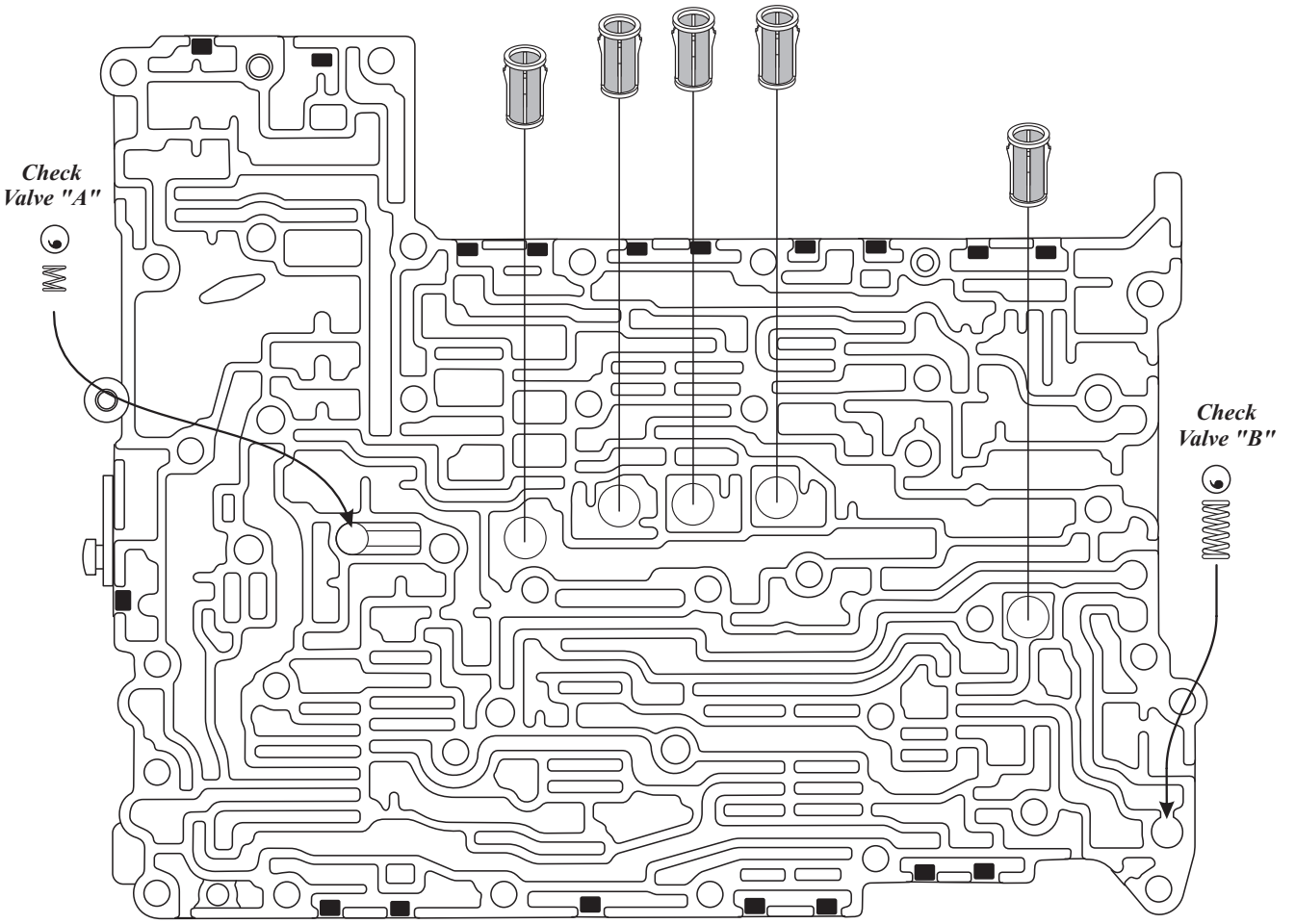


1 CHECK VALVE "A" (DRAINBACK).
2 VALVE BODY SCREENS (5 REQUIRED).
3 CHECK VALVE "B" (REVERSE BRAKE).
4 REVERSE BRAKE CLUTCH PRESSURE CONTROL VALVE.
5 DIRECT CLUTCH SWITCH VALVE.
6 DIRECT CLUTCH PRESSURE CONTROL VALVE.
7 INPUT CLUTCH PRESSURE CONTROL VALVE.
8 HIGH AND LOW REVERSE CLUTCH PRESSURE CONTROL VALVE.
9 TORQUE CONVERTER CLUTCH CONTROL VALVE.
10 TORQUE CONVERTER LUBRICATION SWITCH VALVE.
11 COOLER BYPASS VALVE.
12 LINE PRESSURE RELIEF VALVE.
13 TORQUE CONVERTER REGULATOR VALVE.
14 LINE PRESSURE REGULATOR VALVE.
15 FRONT BRAKE BAND PRESSURE CONTROL VALVE.
16 ACCUMMULATOR PRESSURE CONTROL VALVE.
17 PILOT VALVE "A".
18 PILOT VALVE "B".
19 LOW COAST BRAKE SWITCH VALVE.
20 LOW COAST BRAKE REDUCING VALVE.
21 NEUTRAL TO REVERSE ACCUMMULATOR.
22 NEUTRAL TO REVERSE ACCUMMULATOR.
23 LOWER VALVE BODY CASTING.

Figure 7

2ND DESIGN RE5R05A, LOWER VALVE BODY SMALL PARTS

There Are 5 Valve Body Screens That "Must" Go In As Shown, As They Pilot Into Spacer Plate

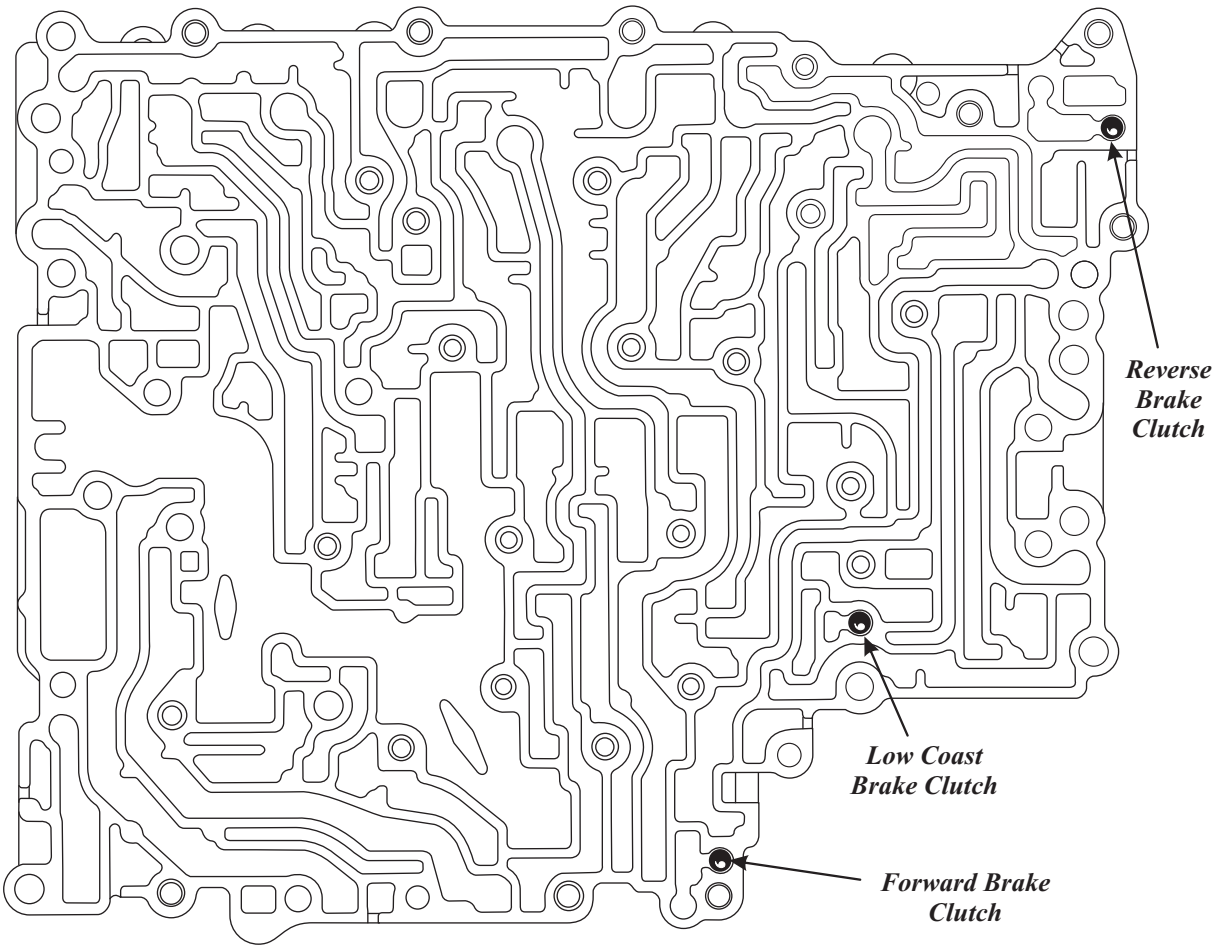


Check Valve "A" Drainback	
BALL DIAMETER	.312"
SPRING FREE LENGTH	.350"
SPRING DIAMETER	.285"
WIRE DIAMETER	.016"
APPROX COILS	5

Check Valve "B" Reverse Brake	
BALL DIAMETER	.312"
SPRING FREE LENGTH	.705"
SPRING DIAMETER	.316"
WIRE DIAMETER	.039"
APPROX COILS	11

Figure 8

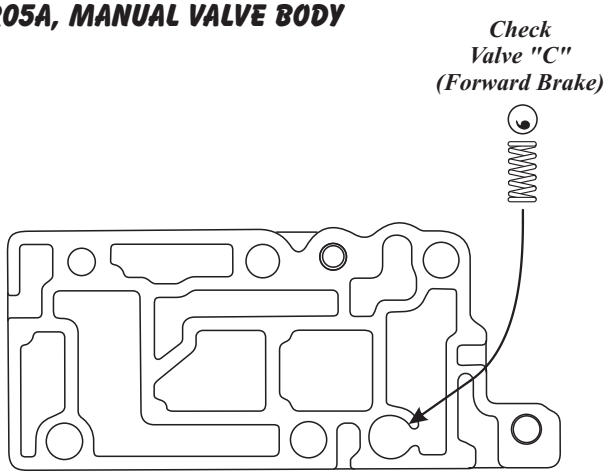
2ND DESIGN RE5R05A, UPPER VALVE BODY CHECK BALLS



All 3 Steel Check Balls are 5.5mm (.218") in Diameter

Figure 9

2ND DESIGN RE5R05A, MANUAL VALVE BODY



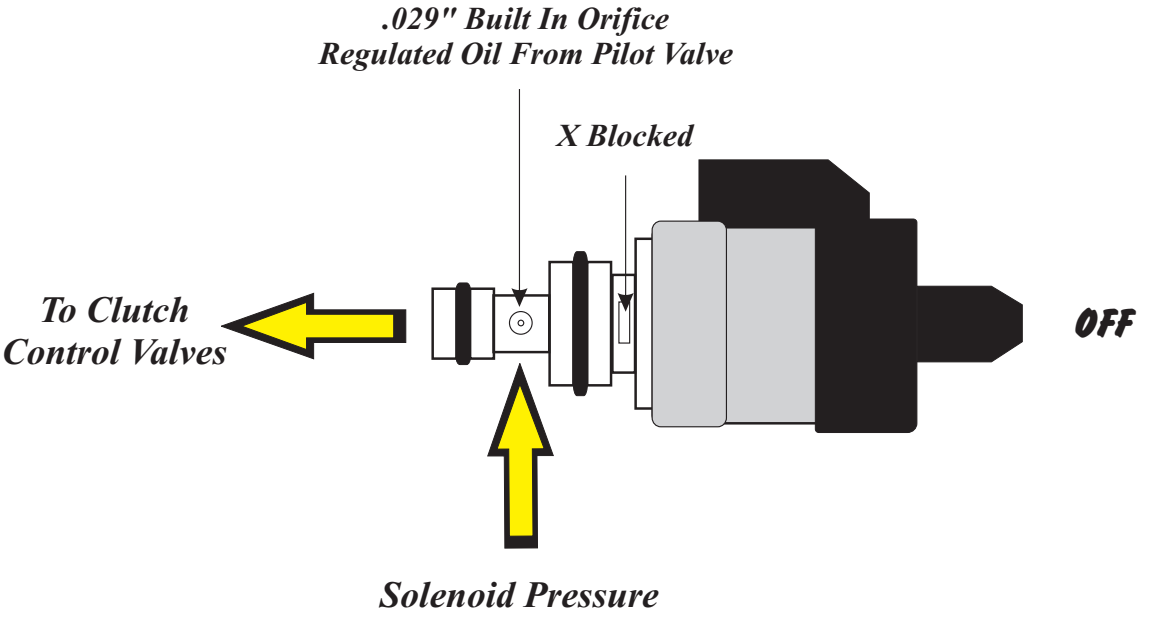
Check Valve "C" (Forward Brake)	
BALL DIAMETER	.312"
SPRING FREE LENGTH	.705"
SPRING DIAMETER	.316"
WIRE DIAMETER	.039"
APPROX COILS	11

Figure 10

3 Normally Applied Solenoids

HIGH/LOW, INPUT & DIRECT CLUTCH SOLENOIDS

Solenoid Resistance is approximately 6-7 ohms across the 2 solenoid terminals



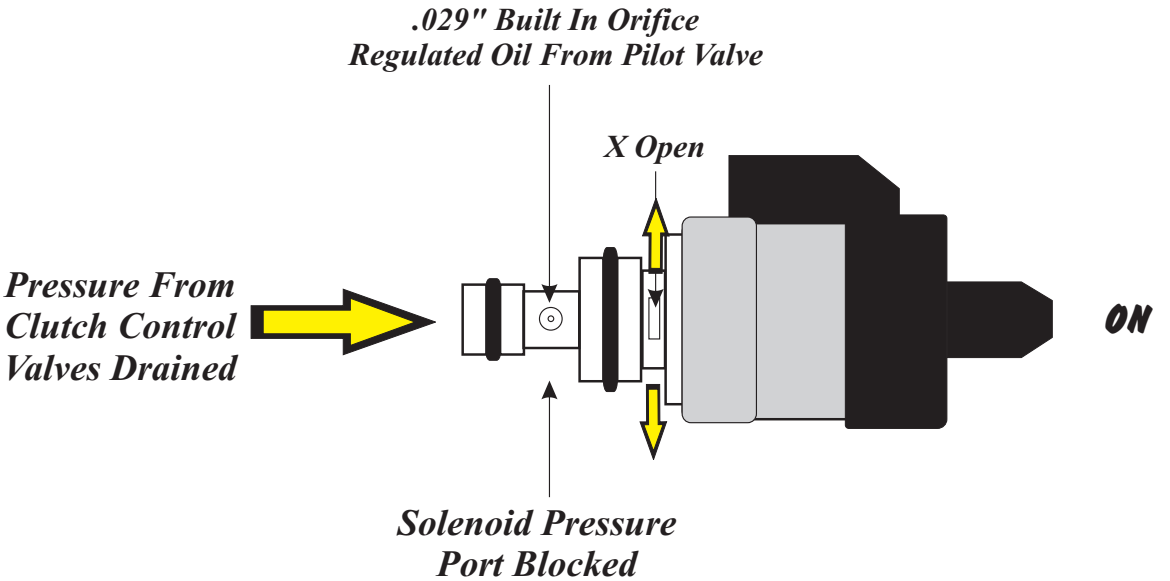
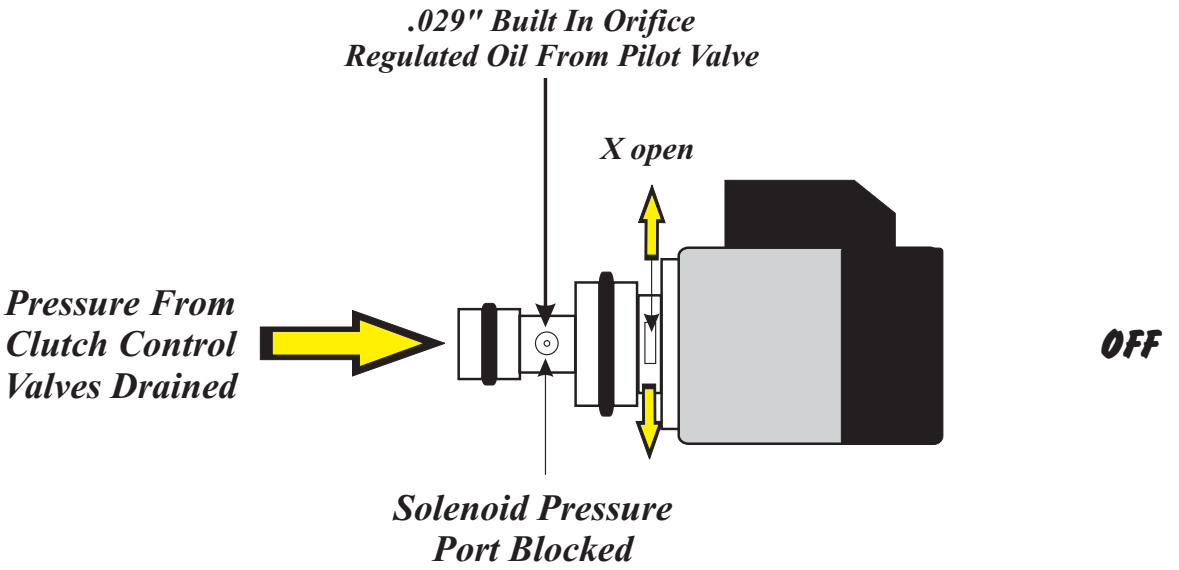


Figure 11

3 Normally Vented Solenoids

LINE PRESSURE, TCC & FRONT BRAKE CONTROL SOLENOIDS

Solenoid Resistance is approximately 6-7 ohms across the 2 solenoid terminals



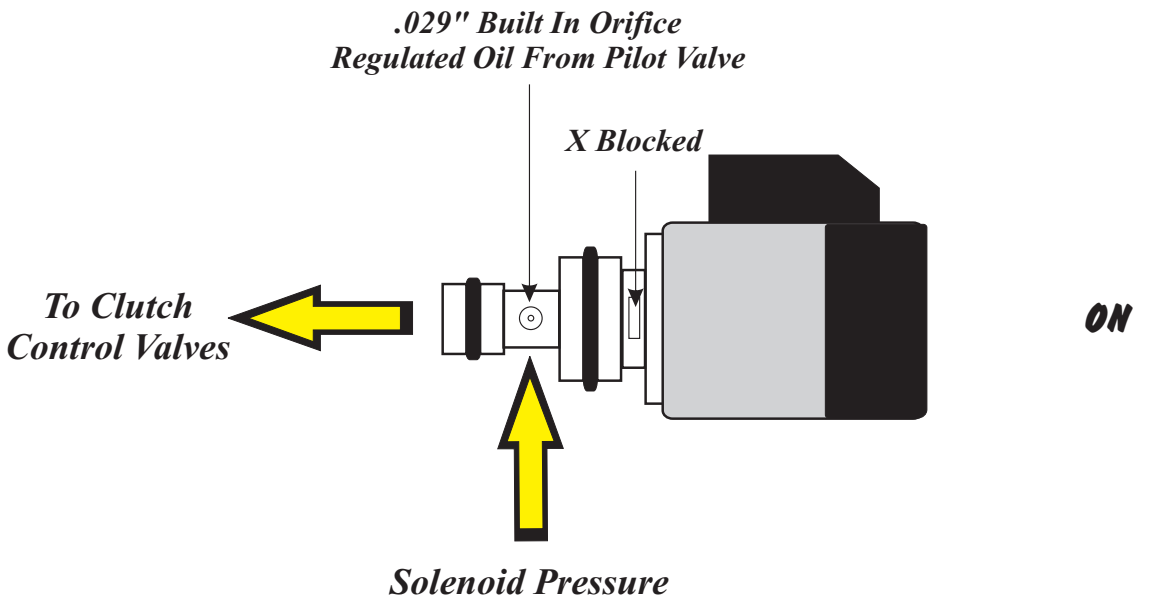
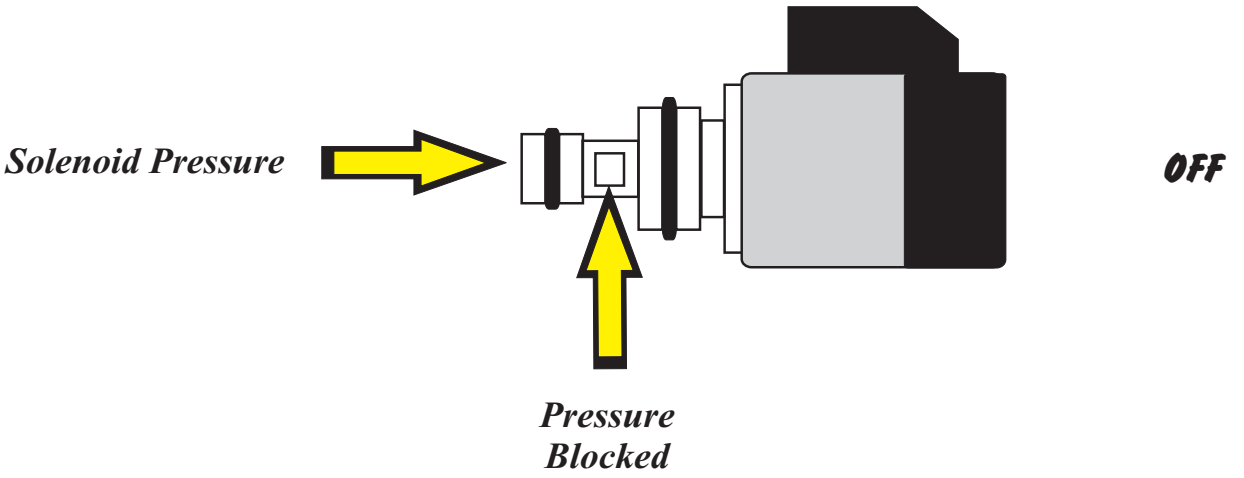


Figure 12

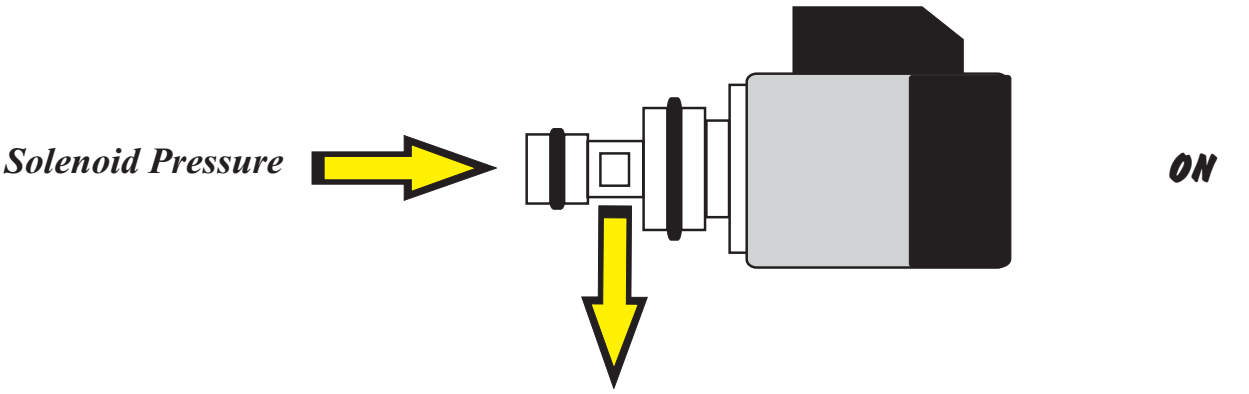
1 Normally Closed Solenoid

LOW COAST BRAKE SOLENOID

Solenoid Resistance is approximately 11-15 or 20-40 ohms across the 2 solenoid terminals



Pressure Blocked



Pressure Connected To Low Coast Brake Valve

Figure 13