

**2018 TRANSMISSION****Automatic Transmission - 9T45 (M3U) Or 9T50 (M3D M3H) - Specifications - Equinox & Terrain****SPECIFICATIONS****TEMPERATURE VERSUS RESISTANCE (B13 TRANSMISSION FLUID TEMPERATURE SENSOR)**

| Temperature     | Resistance               |
|-----------------|--------------------------|
| 170Â°C (338Â°F) | 45.43 to 49.43 ohms      |
| 150Â°C (302Â°F) | 67.68 to 71.68 ohms      |
| 140Â°C (284Â°F) | 83.57 to 87.57           |
| 130Â°C (266Â°F) | 104.1 to 108.1 ohms      |
| 120Â°C (248Â°F) | 130.9 to 134.9 ohms      |
| 110Â°C (230Â°F) | 166.3 to 170.3 ohms      |
| 100Â°C (212Â°F) | 213.5 to 217.5 ohms      |
| 90Â°C (194Â°F)  | 277.5 to 281.5 ohms      |
| 80Â°C (176Â°F)  | 365.2 to 369.2 ohms      |
| 70Â°C (158Â°F)  | 487.3 to 491.3 ohms      |
| 60Â°C (140Â°F)  | 660 to 664 ohms          |
| 50Â°C (122Â°F)  | 908 to 912 ohms          |
| 40Â°C (104Â°F)  | 1.272 k to 1.276 kohms   |
| 30Â°C (86Â°F)   | 1.814 k to 1.818 kohms   |
| 25Â°C (77Â°F)   | 2.183 k to 2.187 kohms   |
| 20Â°C (68Â°F)   | 2.641 k to 2.645 kohms   |
| 15Â°C (59Â°F)   | 3.213 k to 3.217 kohms   |
| 10Â°C (50Â°F)   | 3.932 k to 3.936 kohms   |
| 0Â°C (32Â°F)    | 5.995 k to 5.999 kohms   |
| -5Â°C (23Â°F)   | 7.476 k to 7.480 kohms   |
| -10Â°C (14Â°F)  | 9.386 k to 9.390 kohms   |
| -15Â°C (5Â°F)   | 11.869 k to 11.872 kohms |
| -20Â°C (-4Â°F)  | 15.124 k to 15.128 kohms |
| -25Â°C (-13Â°F) | 19.473 k to 19.477 kohms |
| -30Â°C (-22Â°F) | 25.153 k to 25.157 kohms |
| -35Â°C (-31Â°F) | 32.858 k to 32.862 kohms |
| -40Â°C (-40Â°F) | 43.319 k to 43.322 kohms |

**FASTENER SPECIFICATIONS (ON-VEHICLE)****Single Use Non-Threaded Fasteners/Components****NOTE:**

***All fasteners/components listed in this table MUST BE DISCARDED and replaced with NEW after removal.***

| Application                              |
|------------------------------------------|
| Automatic Transmission Fluid Filter Seal |
| Front Wheel Drive Shaft Oil Seal         |
| Input Shaft Speed Sensor Seal            |
| Manual Shaft Detent Lever Hub Pin        |
| Manual Shift Shaft Seal                  |

**NOTE:**

***All fasteners/components listed in this table MUST BE DISCARDED and replaced with NEW after removal.***

| Application                  |
|------------------------------|
| Park Pawl Actuator Guide Pin |
| Torque Converter Fluid Seal  |

### Single Use Threaded Fastener/Component Tightening Specifications

**NOTE:**

***All fasteners/components listed in this table MUST BE DISCARDED and replaced with NEW after removal.***

| Application                                          | Specification      |
|------------------------------------------------------|--------------------|
|                                                      | Metric (English)   |
| Transmission Rear Strut Bolt to Strut Bracket        |                    |
| • First Pass:                                        | 70 N.m (52 lb ft)  |
| • Final Pass:                                        | 90-105 Degrees     |
| Transmission Rear Strut Bolt to Cradle Through Bolt  |                    |
| • First Pass:                                        | 100 N.m (74 lb ft) |
| • Final Pass:                                        | 120-135 Degrees    |
| Transmission Rear Mount Bracket to Transmission Bolt |                    |
| • First Pass:                                        | 100 N.m (74 lb ft) |
| • Final Pass:                                        | 60-75 Degrees      |
| Transmission Mount to Body Bolt - Left Mount         |                    |
| • First Pass:                                        | 100 N.m (74 lb ft) |
| • Final Pass:                                        | 60 - 75 Degrees    |

### Reusable Threaded Fastener Tightening Specifications

**NOTE:**

***All fasteners listed in this table can be reused after removal.***

| Application                                                       | Specification      |
|-------------------------------------------------------------------|--------------------|
|                                                                   | Metric (English)   |
| Automatic Transmission Case Hole Plug - Auxiliary Fluid Fill Plug | 40 N.m (30 lb ft)  |
| Automatic Transmission Case Hole Plug                             | 12 N.m (106 lb in) |
| Automatic Transmission Control Nut                                | 9 N.m (80 lb in)   |
| Automatic Transmission Fluid Level Hole Plug                      | 40 N.m (30 lb ft)  |
| Automatic Transmission Fluid Pressure Test Hole Plug              | 12 N.m (106 lb in) |
| Automatic Transmission Fluid Pan Drain Plug                       | 12 N.m (106 lb in) |

**NOTE:**

***All fasteners listed in this table can be reused after removal.***

| Application                                                            | Specification                           |
|------------------------------------------------------------------------|-----------------------------------------|
|                                                                        | Metric (English)                        |
| Automatic Transmission Input Speed Sensor Bolt                         | 9 N.m (80 lb in)                        |
| Automatic Transmission Output Speed Sensor Bolt                        | 9 N.m (80 lb in)                        |
| Automatic Transmission Range Selector Lever Cable Bracket Bolt         | 22 N.m (16 lb ft)                       |
| Automatic Transmission Range Selector Lever Cable Bolt                 | 9 N.m (80 lb in)                        |
| Automatic Transmission Range Selector Lever Cable Grommet Retainer Nut | 6.5 N.m (58 lb in)                      |
| Automatic Transmission Range Selector Lever Nut                        | 30 N.m (22 lb ft)                       |
| Control Valve Body Cover Bolt                                          | 9 N.m (80 lb in)                        |
| Front Ground Cable Bolt                                                | 22 N.m (16 lb ft)                       |
| Left Instrument Panel Center Support Bracket Bolt                      | 22 N.m (16 lb ft)                       |
| Left Transmission Mount to Transmission Bolts                          | 100 N.m (74 lb ft) plus 60 - 75 degrees |
| Manual Shift Detent Lever Spring Bolt                                  | 9 N.m (80 lb in)                        |
| Rear Ground Cable Bolt                                                 | 45 N.m (33 lb ft)                       |
| Right Instrument Panel Center Support Bracket Bolt                     | 22 N.m (16 lb ft)                       |
| Torque Converter Bolt @ Flywheel                                       | 60 N.m (44 lb ft)                       |
| Transmission Bolt @ Engine                                             | 58 N.m (43 lb ft)                       |
| Transmission Control Module Bracket Nut                                | 9 N.m (80 lb in)                        |
| Transmission Fluid Cooler inlet Pipe Nut                               | 9 N.m (80 lb in)                        |
| Transmission Rear Mount Strut Bracket @ Transmission (AWD)             | 100 N.m (74 lb ft) plus 60 - 75 degrees |

## **FASTENER SPECIFICATIONS (OFF-VEHICLE)**

### **Single Use Non-Threaded Fasteners/Components**

**NOTE:**

***All fasteners/components listed in this table MUST BE DISCARDED and replaced with NEW after removal.***

| Application                                       |
|---------------------------------------------------|
| 1-2-3-4 Low and Reverse Clutch Fluid Passage Seal |
| 1-2-3-4-5-6 Clutch Piston Seal                    |
| 1-2-3-4-5-6 Clutch Piston Inner Seal              |
| 3-5-Reverse Clutch Piston Dam Seal                |
| 3-5-Reverse Clutch Piston Inner Seal              |
| 3-5-Reverse and 4-5-6 Clutch Fluid Seal Ring      |
| 4-5-6 Clutch Piston Dam Seal                      |
| 4-5-6 Clutch Piston Inner Seal                    |
| 4th Clutch Piston Inner Seal                      |
| 4th Clutch Piston Outer Seal                      |
| Accumulator Bypass Valve Seal                     |
| Automatic Transmission Case Seal                  |
| Automatic Transmission Fluid Filter               |
| Automatic Transmission Fluid Filter Seal          |
| Automatic Transmission Fluid Pump Gasket          |
| Automatic Transmission Fluid Pump Seal            |
| Automatic Transmission Fluid Pump Shaft Seal      |
| Body Side Wiring Harness Opening Seal             |

**NOTE:**

**All fasteners/components listed in this table MUST BE DISCARDED and replaced with NEW after removal.**

| Application                              |
|------------------------------------------|
| Control Valve Body Gasket                |
| Control Valve Body Spacer Plate Retainer |
| Drive Link Lubricant Fluid Seal          |
| Fluid Transfer Pipe Seal                 |
| Front Wheel Drive Shaft Oil Seal         |
| Manual Shaft Detent Lever Hub Pin        |
| Manual Shift Shaft Seal                  |
| Park Pawl Actuator Guide Pin             |
| Torque Converter Fluid Seal              |
| Torque Converter Housing Gasket          |
| Turbine Shaft Seal                       |

### Single Use Threaded Fastener/Component Tightening Specifications

**NOTE:**

**All fasteners/components listed in this table MUST BE DISCARDED and replaced with NEW after removal.**

| Application                                                                                                   | Ref No.* | Quantity | Size    | Specification                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------|----------|----------|---------|------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                               |          |          |         | Metric (English)                                                                                                                   |
| Automatic Transmission Fluid Pump Cover Bolt<br>Refer to procedure for tightening sequence and torque values. | 211      | 19       | M6 x 25 | Refer to <a href="#">Transmission Fluid Pump, Front Differential Carrier Baffle, and Front Differential Ring Gear Installation</a> |
| * Reference number refers to the component callout number in Disassembled Views                               |          |          |         |                                                                                                                                    |

### Reusable Threaded Fastener Tightening Specifications

**NOTE:**

**All fasteners listed in this table can be reused after removal.**

| Application                                             | Ref No.* | Quantity | Size           | Specification       |
|---------------------------------------------------------|----------|----------|----------------|---------------------|
|                                                         |          |          |                | Metric (English)    |
| Accumulator Valve Body Bolt                             | 33       | 2        | M4 x.7         | 2.75 N.m (24 lb in) |
| Automatic Transmission Auxiliary Fluid Accumulator Bolt | 9        | 3        | M8 x 30        | 8 N.m (71 lb in)    |
| Automatic Transmission Case Hole Plug                   | 68       | 1        | 1/8" - 27 NPTF | 12 N.m (106 lb in)  |
| Automatic Transmission Fluid Level Hole Plug            | 65       | 1        | 1/8" - 27 NPTF | 12 N.m (106 lb in)  |
| Automatic Transmission Fluid Pan Drain Plug             | 66       | 1        | 1/8" - 27 NPTF | 12 N.m (106 lb in)  |
| Automatic Transmission Fluid Filter Cover Bolt          | 58       | 3        | M6 x 20        | 9 N.m (80 lb in)    |

**NOTE:**

*All fasteners listed in this table can be reused after removal.*

| Application                                                                                                   | Ref No.* | Quantity | Size    | Specification                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------|----------|----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                               |          |          |         | Metric (English)                                                                                                                                         |
| Automatic Transmission Fluid Pump Cover Bolt<br>Refer to procedure for tightening sequence and torque values. | 200      | 22       | M6 x 30 | Refer to <a href="#">Transmission Fluid Pump, Front Differential Carrier Baffle, and Front Differential Ring Gear Installation</a>                       |
| Automatic Transmission Fluid Pump Cover Bolt                                                                  | 312      | 5        | M6 x 25 | 9 N.m (80 lb in)                                                                                                                                         |
| Automatic Transmission Input Speed Sensor Bolt                                                                | 69       | 1        | M6 x 25 | 9 N.m (80 lb in)                                                                                                                                         |
| Automatic Transmission Output Speed Sensor Bolt                                                               | 711      | 1        | M6 x 25 | 9 N.m (80 lb in)                                                                                                                                         |
| Control Valve Body Bolt<br>Refer to procedure for tightening sequence and torque values.                      | 24       | 4        | M5 x 55 | Refer to <a href="#">Control Valve Body Assembly Installation (without ETRS)</a><br><a href="#">Control Valve Body Assembly Installation (with ETRS)</a> |
| Control Valve Body Bolt<br>Refer to procedure for tightening sequence and torque values.                      | 25       | 1        | M5 x 37 | Refer to <a href="#">Control Valve Body Assembly Installation (without ETRS)</a><br><a href="#">Control Valve Body Assembly Installation (with ETRS)</a> |
| Control Valve Body Bolt<br>Refer to procedure for tightening sequence and torque values.                      | 5        | 3        | M5 x 65 | Refer to <a href="#">Control Valve Body Assembly Installation (without ETRS)</a><br><a href="#">Control Valve Body Assembly Installation (with ETRS)</a> |
| Control Valve Body Bolt<br>Refer to procedure for tightening sequence and torque values.                      | 6        | 9        | M5 x 85 | Refer to <a href="#">Control Valve Body Assembly Installation (without ETRS)</a><br><a href="#">Control Valve Body Assembly Installation (with ETRS)</a> |

**NOTE:**

*All fasteners listed in this table can be reused after removal.*

| Application                                                                                                     | Ref No.* | Quantity | Size           | Specification                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------|----------|----------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                 |          |          |                | Metric (English)                                                                                                                                             |
| Control Valve Body Bolt<br>Refer to procedure for tightening sequence and torque values.                        | 7        | 8        | M5 x 94        | Refer to <a href="#">Control Valve Body Assembly Installation (without ETRS)</a> .<br><a href="#">Control Valve Body Assembly Installation (with ETRS)</a> . |
| Control Valve Body Cover Bolt<br>Refer to procedure for tightening sequence and torque values.                  | 1        | 6        | M6 x 30        | Refer to <a href="#">Control Valve Body Cover Installation</a> .                                                                                             |
| Control Valve Body Cover Stud<br>Refer to procedure for tightening sequence and torque values.                  | 2        | 6        | M6 x 30        | Refer to <a href="#">Control Valve Body Cover Installation</a> .                                                                                             |
| Control Valve Solenoid Body Bolt                                                                                | 30       | 1        | -              | 9 N.m (80 lb in)                                                                                                                                             |
| Control Valve Solenoid Body Bolt                                                                                | 433      | 4        | M5 x 55        | 8 N.m (71 lb in)                                                                                                                                             |
| Control Valve Solenoid Body Bolt                                                                                | 472      | 1        | M5 x 20        | 8 N.m (71 lb in)                                                                                                                                             |
| Control Valve Solenoid Body Bolt                                                                                | 483      | 1        | M5 x 20        | 8 N.m (71 lb in)                                                                                                                                             |
| Control Valve Solenoid Body Bolt                                                                                | 499      | 2        | M5 x 21        | 8 N.m (71 lb in)                                                                                                                                             |
| Fluid Transfer Pipe Bolt                                                                                        | 21       | 1        | M6 x 25        | 8 N.m (71 lb in)                                                                                                                                             |
| Front Differential Carrier Baffle Bolt                                                                          | 204      | 2        | M6 x 18.5      | 9 N.m (80 lb in)                                                                                                                                             |
| Front Differential Carrier Baffle Bolt<br>- Case                                                                | 62       | 2        | M6 x 18.5      | 9 N.m (80 lb in)                                                                                                                                             |
| Input Shaft Support Bolt                                                                                        | 55       | 3        | M6 x 50        | 12 N.m (106 lb in)                                                                                                                                           |
| Manual Shift Detent Lever Spring Bolt                                                                           | 20       | 1        | M6 x 25        | 9 N.m (80 lb in)                                                                                                                                             |
| Overdrive and Reaction Carrier Bolt                                                                             | 535      | 3        | M6 x 35        | 9 N.m (80 lb in)                                                                                                                                             |
| Automatic Transmission Case Hole Plug                                                                           | 76       | 1        | M8 x 16.25     | 40 N.m (30 lb ft)                                                                                                                                            |
| Automatic Transmission Fluid Pressure Test Hole Plug                                                            | 53       | 1        | 1/8" - 27 NPTF | 12 N.m (106 lb in)                                                                                                                                           |
| Torque Converter and Differential Housing Bolt<br>Refer to procedure for tightening sequence and torque values. | 16       | 14       | M8 x 30        | Refer to <a href="#">Torque Converter Housing with Fluid Pump Assembly Installation</a> .                                                                    |

\* Reference number refers to the component callout number in Disassembled Views

## APPROXIMATE FLUID CAPACITIES

| Application                                        | Specification    |                  |
|----------------------------------------------------|------------------|------------------|
|                                                    | Metric           | English          |
| 9T45/50/60/65                                      |                  |                  |
| • Valve Body Cover Removal - Approximate Capacity  | 2.0 - 3.0 liters | 2.1 - 3.2 quarts |
| • Fluid Change - Drain Plug - Approximate Capacity | 5.0 - 6.0 liters | 5.3 - 6.3 quarts |
| • Overhaul - Approximate Capacity                  | 8.5 - 9.5 liters | 9.0 - 10 quarts  |

## TRANSMISSION GENERAL SPECIFICATIONS

| Name                                                         | 9T45/9T50/9T60/9T65                                                                                              |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| RPO Codes                                                    | M3D, M3E, M3F, M3G, M3H, M3T, M3V, M3U, M3W                                                                      |
| Production Location                                          | Mexico                                                                                                           |
| Transmission Drive                                           | Front Wheel Drive                                                                                                |
| Reverse Gear Ratio                                           | 2.96                                                                                                             |
| 1st Gear Ratio                                               | 4.689                                                                                                            |
| 2nd Gear Ratio                                               | 3.306                                                                                                            |
| 3rd Gear Ratio                                               | 3.012                                                                                                            |
| 4th Gear Ratio                                               | 2.446                                                                                                            |
| 5th Gear Ratio                                               | 1.923                                                                                                            |
| 6th Gear Ratio                                               | 1.446                                                                                                            |
| 7th Gear Ratio                                               | 1.000                                                                                                            |
| 8th Gear Ratio                                               | 0.747                                                                                                            |
| 9th Gear Ratio                                               | 0.617                                                                                                            |
| Effective Final Drive Gear Ratio                             | 2.89/3.17/3.32/3.47/3.63/3.80                                                                                    |
| Torque Converter Size - Diameter of Torque Converter Turbine | 228 mm                                                                                                           |
| Pressure Taps Line                                           | Pressure                                                                                                         |
| Transmission Fluid Type                                      | DEXRON VIA®                                                                                                      |
| Transmission Fluid Capacity                                  | 8.82 L (9 qt)                                                                                                    |
| Transmission Type: 9                                         | 9-speed FWD Transaxle                                                                                            |
| Transmission Type: T                                         | Transverse Mount                                                                                                 |
| Transmission Type: 45/50/60/65                               | Product Series                                                                                                   |
| Position Quadrant                                            | P, R, N, D, * * (Refer to the applicable owner's manual)                                                         |
| Case Material                                                | Die Cast Aluminum                                                                                                |
| Transmission Net Weight                                      | 95.9 kg (211 lbs)                                                                                                |
| Maximum Trailer Towing Capacity                              | 9T45 - 1743 kg (3842 lbs)<br>9T50 - 2598 kg (5727 lbs)<br>9T60 - 3080 kg (6790 lbs)<br>9T65 - 2473 kg (5452 lbs) |
| Maximum Gross Vehicle Weight (GVW)                           | 9T45 - 2400 kg (5291 lbs)<br>9T50 - 2730 kg (6019 lbs)<br>9T60 - 2730 kg (6019 lbs)<br>9T65 - 2930 kg (6460 lbs) |

## ADHESIVES, FLUIDS, LUBRICANTS, AND SEALERS

| Application | Type of Material | GM Part Number |
|-------------|------------------|----------------|
|             |                  |                |

| Application                  | Type of Material | United States | Canada   |
|------------------------------|------------------|---------------|----------|
|                              |                  | United States | Canada   |
| Automatic Transmission Fluid | DEXRON®VI        | 88865601      | 19367328 |
| Torque Converter Bolt        | Threadlocker     | 19333511      | 10953489 |

## RANGE REFERENCE

| Range                                                                            | Gear | 1-2-3-4-5-6 Clutch | 2-9 Clutch | 3-8 Clutch | 4th Clutch | 5-7-Reverse Clutch | 6-7-8-9 Clutch | Single One Way Clutch (SOWC) |
|----------------------------------------------------------------------------------|------|--------------------|------------|------------|------------|--------------------|----------------|------------------------------|
| Park                                                                             | P    | -                  | -          | -          | -          | -                  | -              | -                            |
| Reverse                                                                          | R    | -                  | -          | -          | -          | G                  | -              | Holding                      |
| Neutral                                                                          | N    | -                  | -          | -          | -          | -                  | -              | O                            |
| Drive                                                                            | 1st  | G                  | -          | -          | -          | -                  | -              | -                            |
|                                                                                  | 2nd  | Applied            | Applied    | -          | -          | -                  | -              | -                            |
|                                                                                  | 3rd  | Applied            | -          | Applied    | -          | -                  | -              | -                            |
|                                                                                  | 4th  | Applied            | -          | -          | Applied    | -                  | -              | -                            |
|                                                                                  | 5th  | Applied            | -          | -          | -          | Applied            | -              | -                            |
|                                                                                  | 6th  | Applied            | -          | -          | -          | -                  | Applied        | -                            |
|                                                                                  | 7th  | -                  | -          | -          | -          | Applied            | Applied        | -                            |
|                                                                                  | 8th  | -                  | -          | Applied    | -          | -                  | Applied        | -                            |
|                                                                                  | 9th  | -                  | Applied    | -          | -          | -                  | Applied        | -                            |
| O = On but not carrying a load<br>G = Garage-shift element, on and carrying load |      |                    |            |            |            |                    |                |                              |

## TRANSMISSION RANGE SENSOR DUTY CYCLES

### Transmission Range Sensor Duty Cycle

**NOTE:** Verify the values with a scan tool.

| Transmission Range | Transmission Range Sensor 1 | Transmission Range Sensor 2 |
|--------------------|-----------------------------|-----------------------------|
| Park               | 12 to 18%                   | 82 to 88%                   |
| Reverse            | 41 to 47%                   | 53 to 59%                   |
| Neutral            | 55 to 61%                   | 39 to 45%                   |
| Drive              | 69 to 75%                   | 24 to 30%                   |
| Manual / Low       | 82 to 88%                   | 12 to 18%                   |

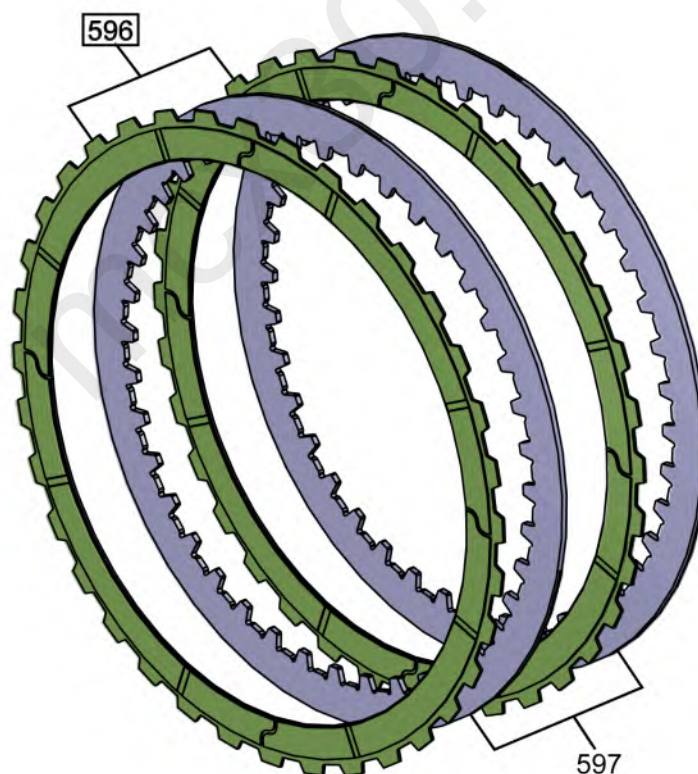
## SHIFT SOLENOID VALVE STATE AND GEAR RATIO

| Range                                      | Park | Reverse | Neutral | Drive |     |     |     |     |     |     |     |     |
|--------------------------------------------|------|---------|---------|-------|-----|-----|-----|-----|-----|-----|-----|-----|
|                                            |      |         |         | 1st   | 2nd | 3rd | 4th | 5th | 6th | 7th | 8th | 9th |
| 1-2-3-4-5-6 Shift Solenoid Valve A Command | On   | On      | On      | Off   | Off | Off | Off | Off | Off | On  | On  | On  |
| 2-9 Shift Solenoid Valve B Command         | Off  | Off     | Off     | Off   | On  | Off | Off | Off | Off | Off | Off | On  |
| 3-8 Shift Solenoid Valve C Command         | Off  | Off     | Off     | Off   | Off | On  | Off | Off | Off | Off | On  | Off |

| Range                                                                                                     | Park   | Reverse | Neutral | Drive |       |       |       |       |       |       |       |       |
|-----------------------------------------------------------------------------------------------------------|--------|---------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                                                                                                           |        |         |         | 1st   | 2nd   | 3rd   | 4th   | 5th   | 6th   | 7th   | 8th   | 9th   |
| 4TH Shift Solenoid Valve D Command                                                                        | Off    | Off     | Off     | Off   | Off   | Off   | On    | Off   | Off   | Off   | Off   | Off   |
| 5-7 Rev Shift Solenoid Valve E Command                                                                    | Off    | On      | Off     | Off   | Off   | Off   | Off   | On    | Off   | On    | Off   | Off   |
| 1-Reverse and 6-7-8-9 Shift Solenoid Valve F Command                                                      | Off    | Off     | Off     | Off   | On    | On    | On    | On    | Off   | Off   | Off   | Off   |
| Clutch Select Solenoid                                                                                    | On/Off | On      | On/Off  | Off   | Off   | Off   | Off   | Off   | Off   | Off   | Off   | Off   |
| Gear Ratio 9T50                                                                                           | Â      | 2.96    | Â       | 4.689 | 3.306 | 3.012 | 2.446 | 1.923 | 1.446 | 1.000 | 0.747 | 0.617 |
| For shift solenoids, "ON" = Solenoid Energized (Pressurized) "OFF" = Solenoid De-energized (No Pressure). |        |         |         |       |       |       |       |       |       |       |       |       |

## TRANSMISSION PARTS KIT SPECIFICATIONS

### 1-2-3-4-5-6 Clutch Plate Assembly



**Fig. 1: 1-2-3-4-5-6 Clutch Plate Assembly Components**

Courtesy of GENERAL MOTORS COMPANY

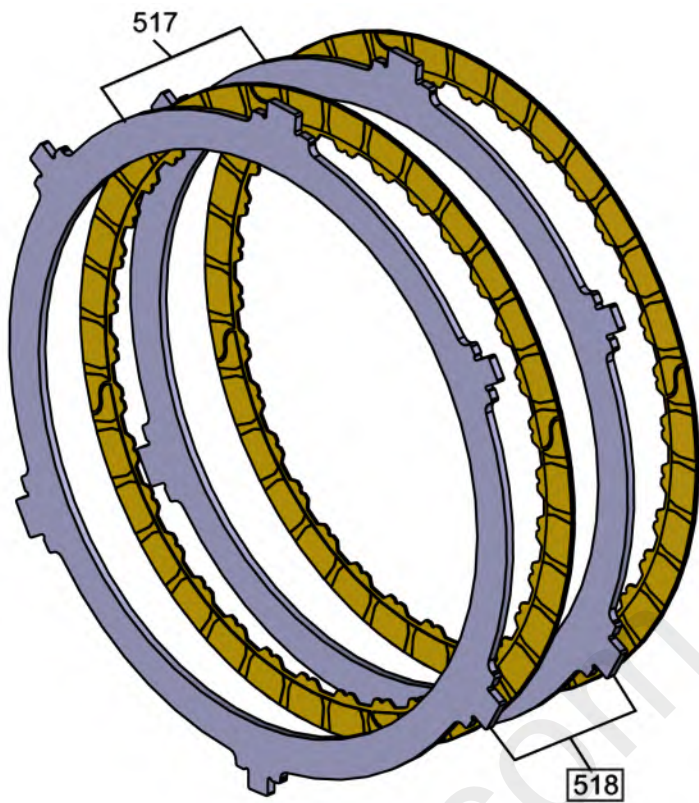
**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

### 1-2-3-4-5-6 Clutch Plate Assembly

| Callout | Quantity | Component Name |
|---------|----------|----------------|
|         |          |                |

| Callout | Quantity | Component Name                            |
|---------|----------|-------------------------------------------|
| 596     | 2        | 1-2-3-4-5-6 Clutch Plate - Friction Plate |

2-9 Clutch Plate Assembly



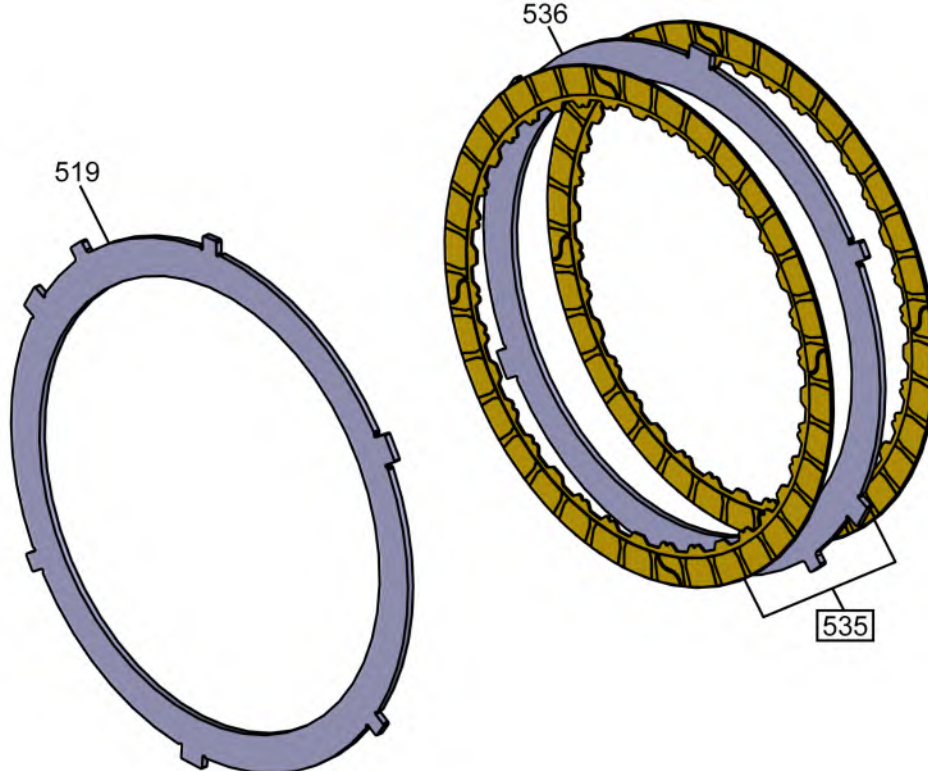
**Fig. 2: 2-9 Clutch Plate Assembly Components**  
 Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

2-9 Clutch Plate Assembly

| Callout | Quantity | Component Name                    |
|---------|----------|-----------------------------------|
| 518     | 2        | 2-9 Clutch Plate - Friction Plate |

3-8 Clutch Plate Assembly



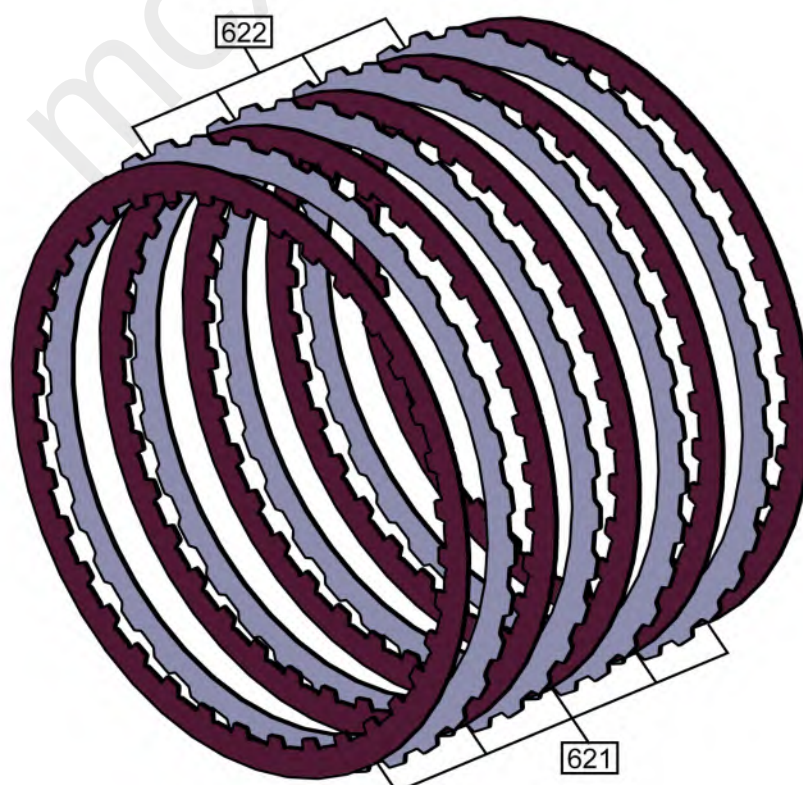
**Fig. 3: 3-8 Clutch Plate Assembly Components**  
 Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

#### 3-8 Clutch Plate Assembly

| Callout | Quantity | Component Name                    |
|---------|----------|-----------------------------------|
| 535     | 2        | 3-8 Clutch Plate - Friction Plate |

#### 4th Clutch Plate Assembly



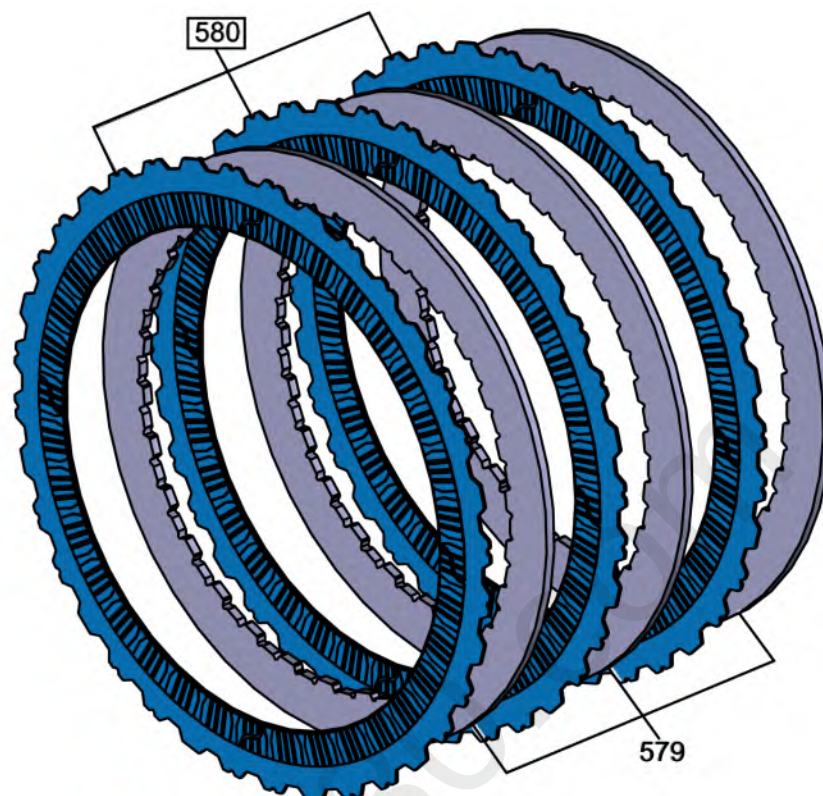
**Fig. 4: 4th Clutch Plate Assembly Components**  
 Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

#### 4th Clutch Plate Assembly

| Callout | Quantity | Component Name                     |
|---------|----------|------------------------------------|
| 621     | 5        | 4th Clutch Plate - Internal Spline |
| 622     | 4        | 4th Clutch Plate - External Spline |

#### 5-7-Reverse Clutch Plate Assembly



**Fig. 5: 5-7-Reverse Clutch Plate Assembly Components**

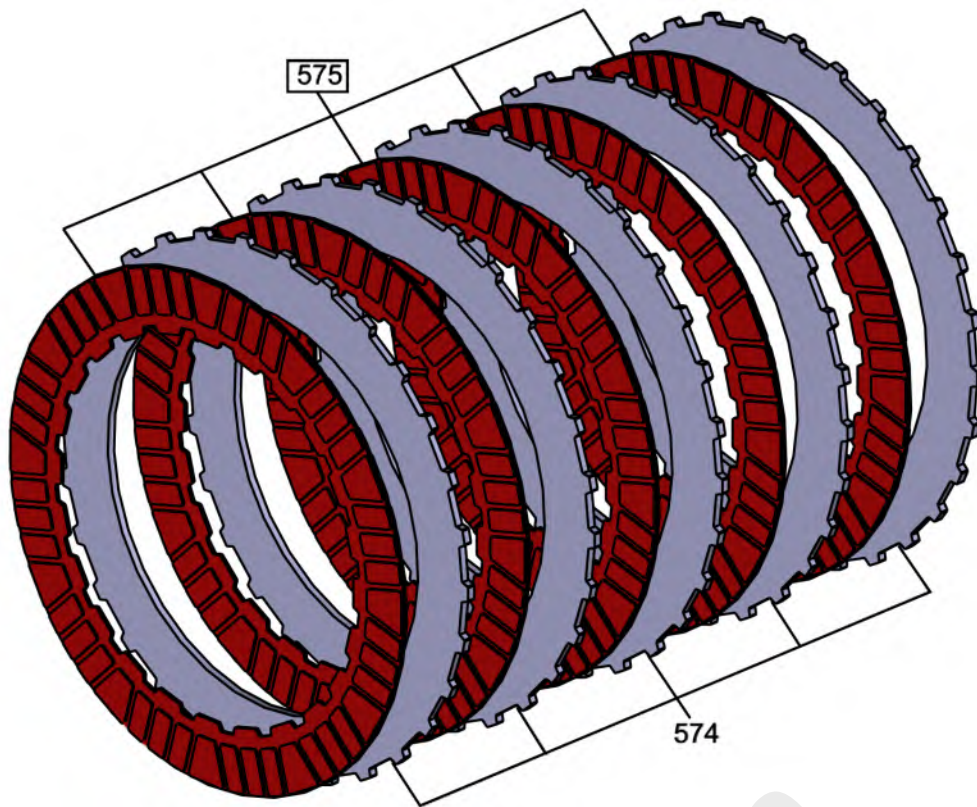
Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

#### 5-7-Reverse Clutch Plate Assembly

| Callout | Quantity | Component Name                            |
|---------|----------|-------------------------------------------|
| 580     | 3        | 5-7-Reverse Clutch Plate - Friction Plate |

#### 6-7-8-9 Clutch Plate Assembly



**Fig. 6: 6-7-8-9 Clutch Plate Assembly Components**

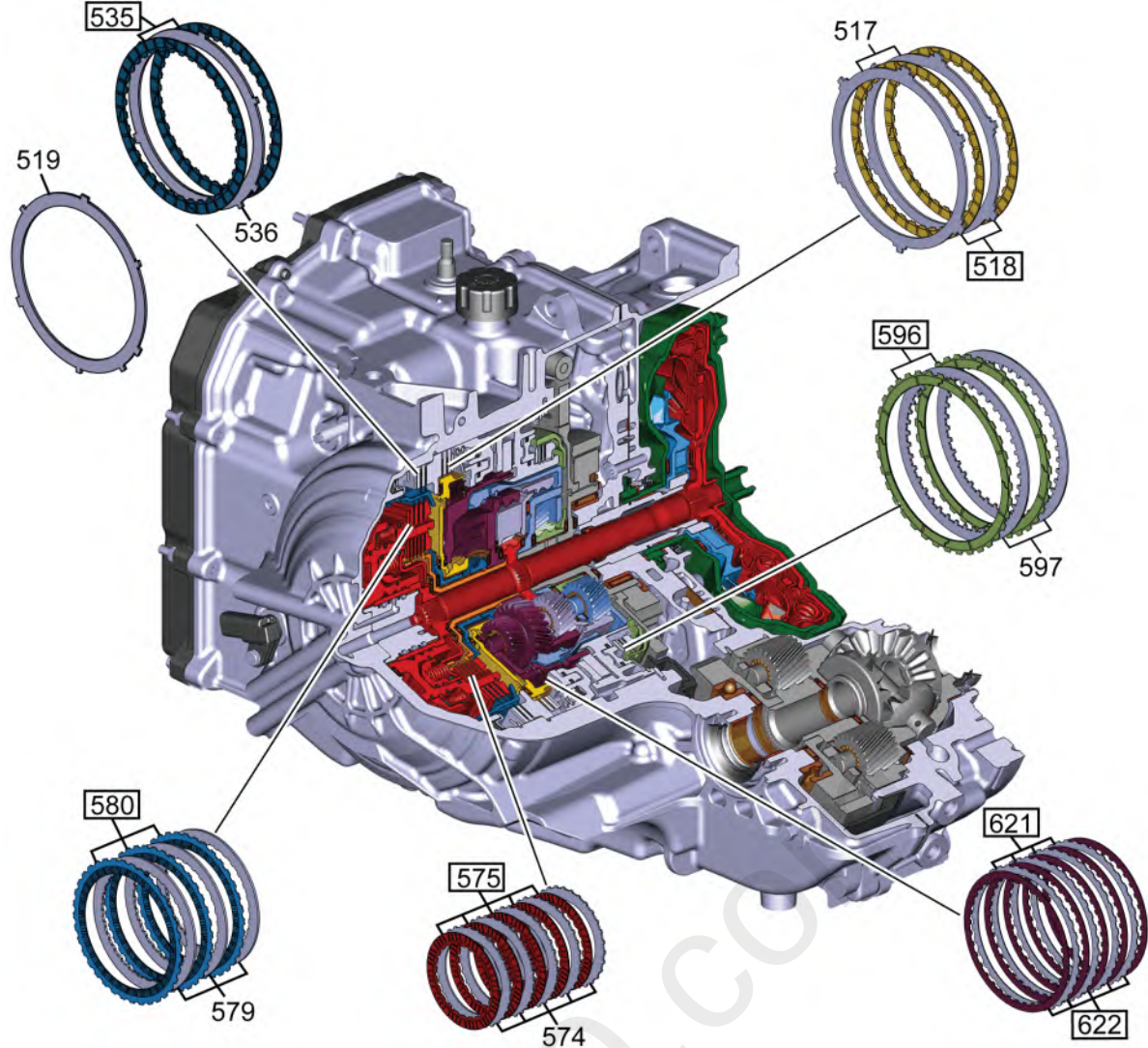
Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

**6-7-8-9 Clutch Plate Assembly**

| Callout | Quantity | Component Name                        |
|---------|----------|---------------------------------------|
| 575     | 5        | 6-7-8-9 Clutch Plate - Friction Plate |

**Clutch Plate Package**



**Fig. 7: Clutch Plate Package Components**

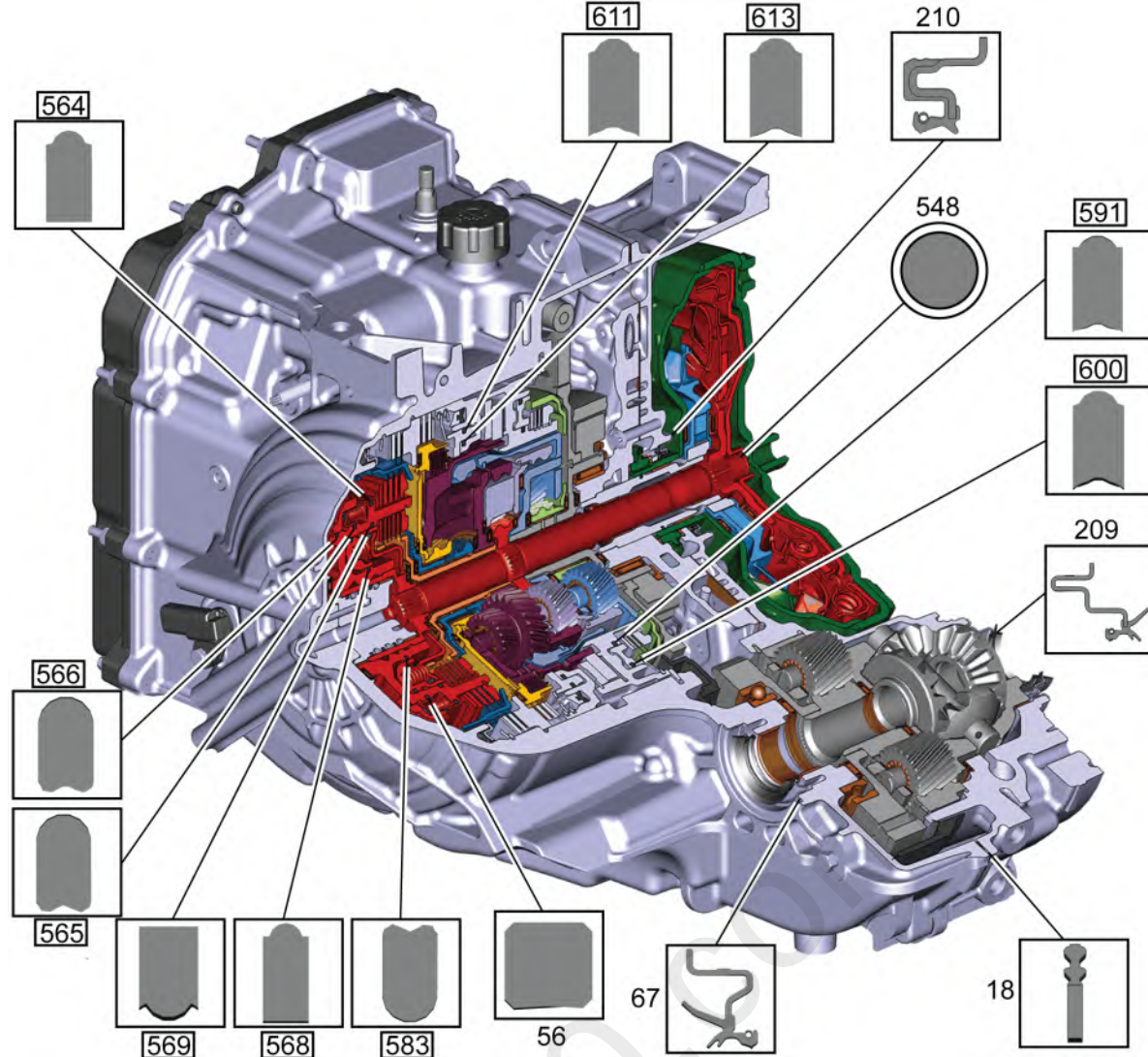
Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

#### Clutch Plate Package

| Callout | Quantity | Component Name                            |
|---------|----------|-------------------------------------------|
| 518     | 2        | 2-9 Clutch Plate - Friction Plate         |
| 535     | 2        | 3-8 Clutch Plate - Friction Plate         |
| 575     | 5        | 6-7-8-9 Clutch Plate - Friction Plate     |
| 580     | 3        | 5-7-Reverse Clutch Plate - Friction Plate |
| 596     | 2        | 1-2-3-4-5-6 Clutch Plate - Friction Plate |
| 621     | 5        | 4th Clutch Plate - Internal Spline        |
| 622     | 4        | 4th Clutch Plate - External Spline        |

#### Automatic Transmission Seal Kit



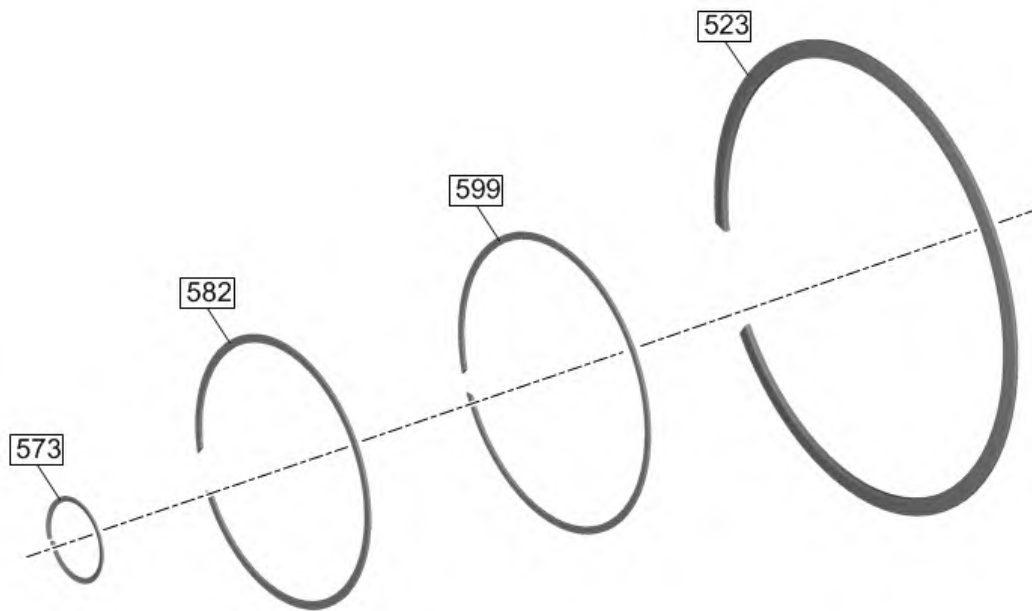
**Fig. 8: Automatic Transmission Seal Kit Components**  
Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

#### Automatic Transmission Seal Kit

| Callout | Quantity | Component Name                       |
|---------|----------|--------------------------------------|
| 564     | 1        | 3-5-Reverse Clutch Piston Dam Seal   |
| 565     | 1        | 3-5-Reverse Clutch Piston Inner Seal |
| 566     | 1        | 3-5-Reverse Clutch Piston Inner Seal |
| 568     | 1        | 4-5-6 Clutch Piston Inner Seal       |
| 569     | 1        | 4-5-6 Clutch Piston Dam Seal         |
| 583     | 1        | 4-5-6 Clutch Piston Outer Seal       |
| 591     | 1        | 1-2-3-4-5-6 Clutch Piston Inner Seal |
| 600     | 1        | 1-2-3-4-5-6 Clutch Piston Seal       |
| 611     | 1        | 4th Clutch Piston Outer Seal         |
| 613     | 1        | 4th Clutch Piston Inner Seal         |

#### Automatic Transmission Retaining Ring Package



**Fig. 9: Automatic Transmission Retaining Ring Package Components**

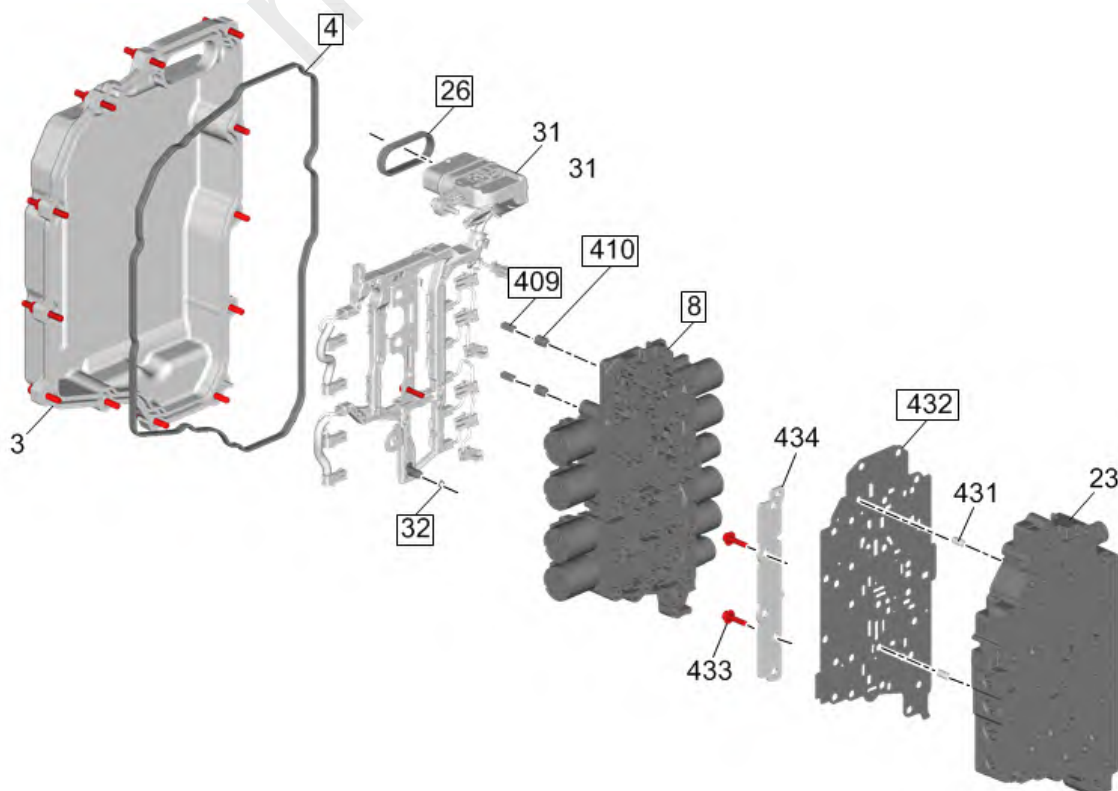
Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

#### Automatic Transmission Retaining Ring Package

| Callout | Quantity | Component Name                                  |
|---------|----------|-------------------------------------------------|
| 523     | 1        | 1-2-3-4-5-6 Clutch Piston Housing Return Ring   |
| 573     | 1        | 4-5-6 Clutch Dam Retaining Ring                 |
| 582     | 1        | 5-7-Reverse Clutch Backing Plate Retaining Ring |
| 599     | 1        | 1-2-3-4-5-6 Clutch Backing Plate Retaining Ring |

#### Control Valve Body Solenoid Kit



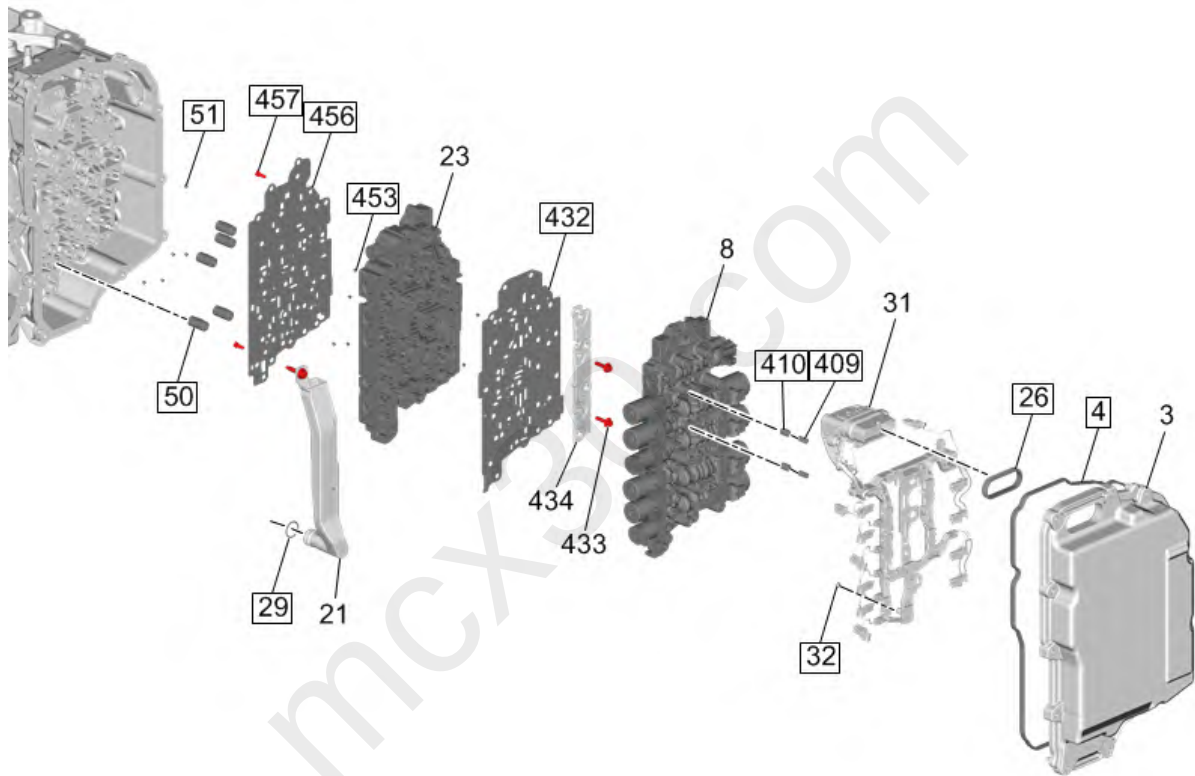
**Fig. 10: Control Valve Body Solenoid Kit Components**  
 Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

**Control Valve Body Solenoid Kit**

| Callout | Quantity | Component Name                                          |
|---------|----------|---------------------------------------------------------|
| 4       | 1        | Control Valve Body Cover Gasket                         |
| 8       | 1        | Control Valve Solenoid Body                             |
| 26      | 1        | Body Side Wiring Harness Opening Seal                   |
| 32      | 1        | Automatic Transmission Fluid Temperature Sensor Seal    |
| 409     | 2        | Variable Feed Solenoid Clutch Accumulator Piston Spring |
| 410     | 2        | Variable Feed Solenoid Clutch Accumulator Piston        |
| 432     | 1        | Control Valve Body Spacer Plate                         |

**Control Valve Body Kit**



**Fig. 11: Control Valve Body Kit Components**  
 Courtesy of GENERAL MOTORS COMPANY

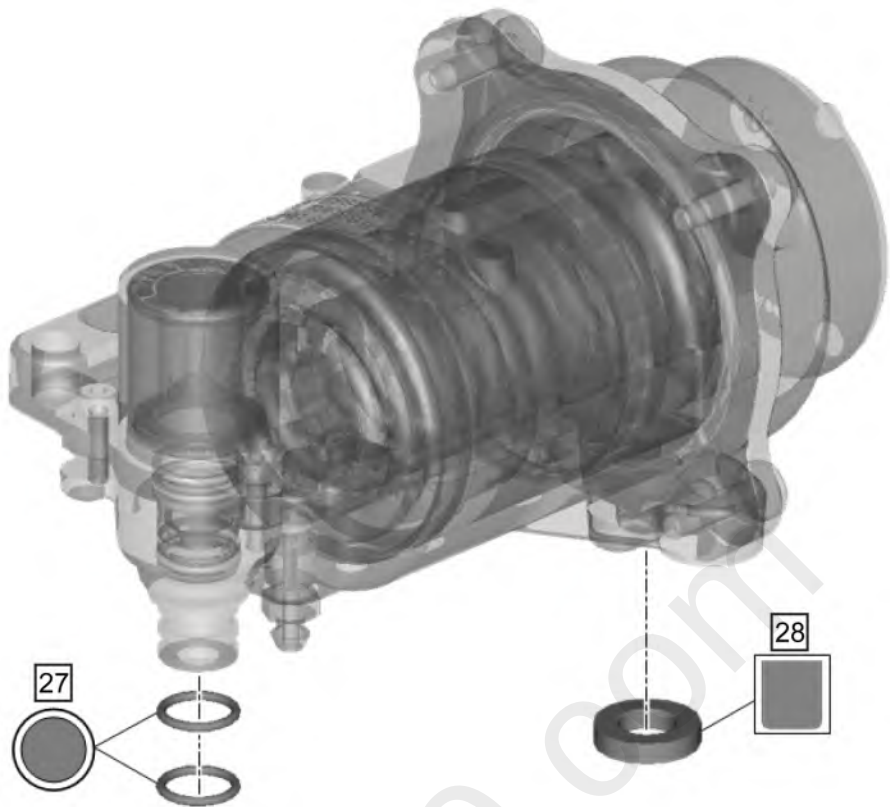
**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

**Control Valve Body Kit**

| Callout | Quantity | Component Name                                          |
|---------|----------|---------------------------------------------------------|
| 4       | 1        | Control Valve Body Cover Gasket                         |
| 26      | 1        | Body Side Wiring Harness Opening Seal                   |
| 29      | 1        | Fluid Transfer Pipe Seal                                |
| 32      | 1        | Automatic Transmission Fluid Temperature Sensor Seal    |
| 50      | 5        | 1-2-3-4 Low and Reverse Clutch Fluid Passage Seal       |
| 51      | QTY      | Control Valve Body Ball Check Valve - Model Dependent   |
| 409     | 2        | Variable Feed Solenoid Clutch Accumulator Piston Spring |
| 410     | 2        | Variable Feed Solenoid Clutch Accumulator Piston        |
| 432     | 1        | Control Valve Body Spacer Plate                         |

| Callout | Quantity | Component Name                                        |
|---------|----------|-------------------------------------------------------|
| 453     | QTY      | Control Valve Body Ball Check Valve - Model Dependent |
| 456     | 1        | Control Valve Body Spacer Plate                       |
| 457     | 2        | Control Valve Body Spacer Plate Retainer              |

Automatic Transmission Seal Kit



**Fig. 12: Automatic Transmission Seal Kit Components**

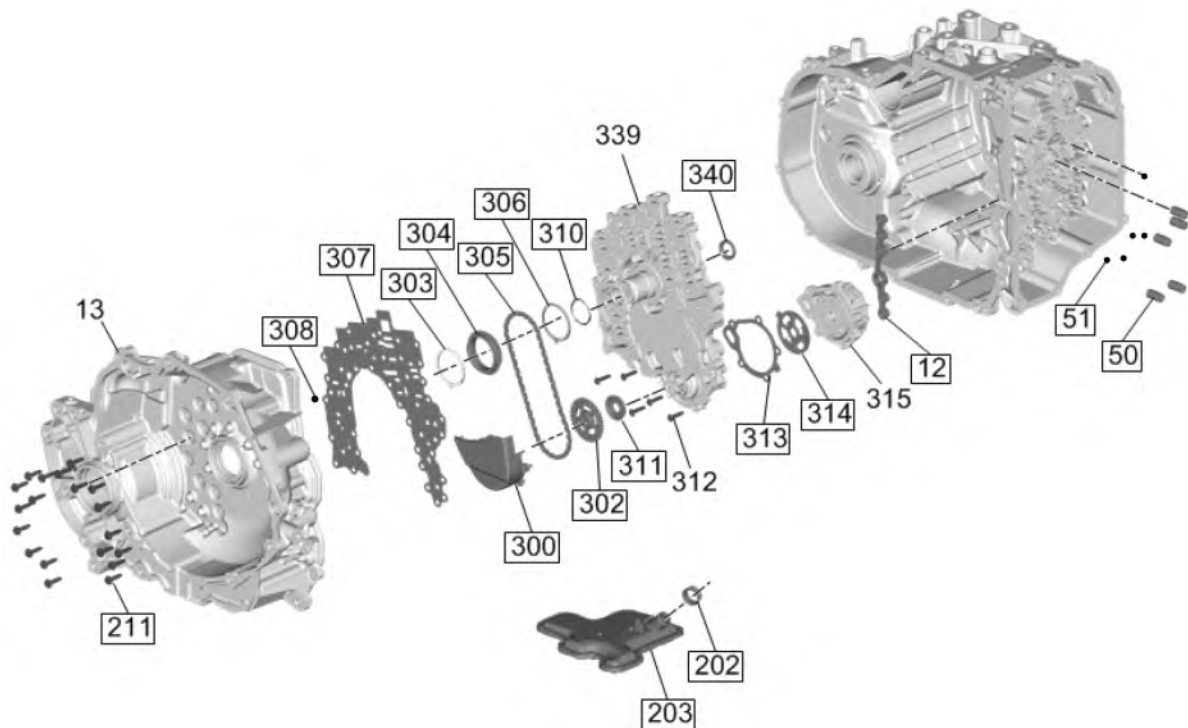
Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

Automatic Transmission Seal Kit

| Callout | Quantity | Component Name                   |
|---------|----------|----------------------------------|
| 27      | 2        | Automatic Transmission Case Seal |
| 28      | 1        | Accumulator Bypass Valve Seal    |

Drive & Driven Sprocket (W/LINK) Package



**Fig. 13: Drive & Driven Sprocket (W/LINK) Package Components**

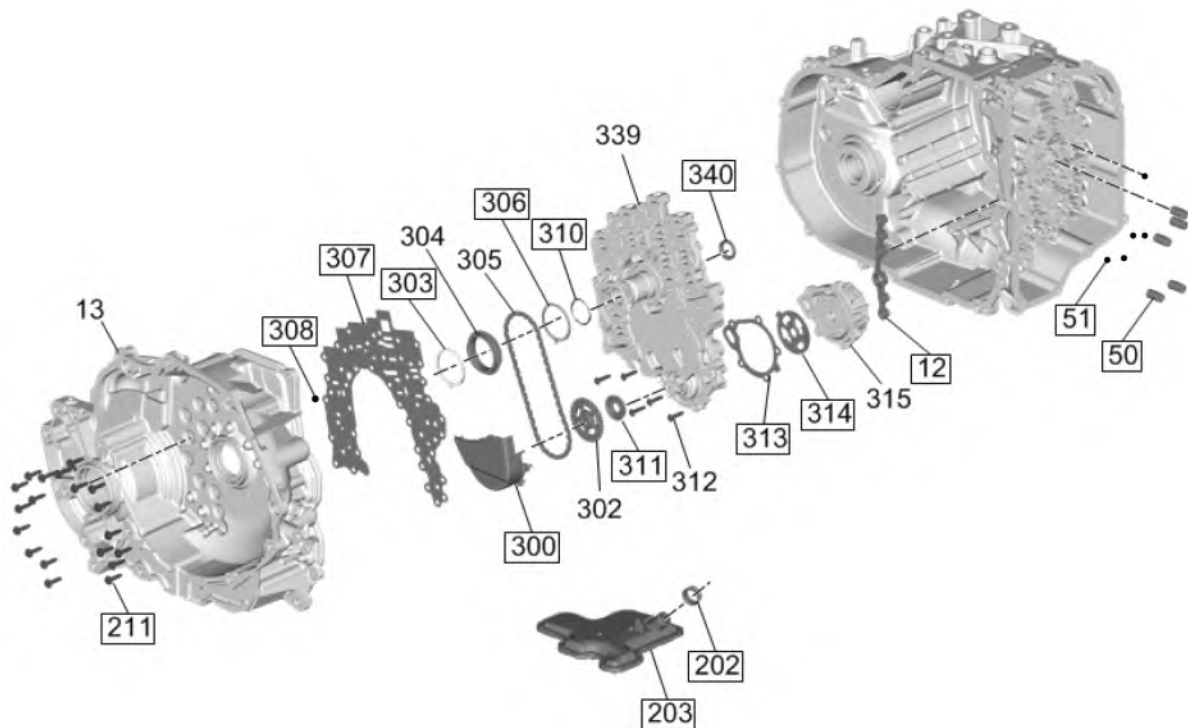
Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

**Drive & Driven Sprocket (W/LINK) Package**

| Callout | Quantity | Component Name                                        |
|---------|----------|-------------------------------------------------------|
| 12      | 1        | Automatic Transmission Fluid Pump Seal                |
| 50      | 5        | 1-2-3-4 Low and Reverse Clutch Fluid Passage Seal     |
| 51      | QTY      | Control Valve Body Ball Check Valve - Model Dependent |
| 202     | 1        | Automatic Transmission Fluid Filter Seal              |
| 203     | 1        | Automatic Transmission Fluid Filter                   |
| 211     | 19       | Automatic Transmission Fluid Pump Cover Bolt          |
| 300     | 2        | Automatic Transmission Fluid Baffle Bolt              |
| 302     | 1        | Driven Sprocket                                       |
| 303     | 1        | Drive Sprocket Thrust Washer - Rear                   |
| 304     | 1        | Drive Sprocket                                        |
| 305     | 1        | Drive Link                                            |
| 306     | 1        | Drive Sprocket Thrust Washer - Front                  |
| 307     | 1        | Auxiliary Control Valve Body Spacer Plate             |
| 308     | 1        | Automatic Transmission Fluid Pump Ball Check Valve    |
| 310     | 1        | Torque Converter Fluid Seal Ring                      |
| 311     | 1        | Automatic Transmission Fluid Pump Shaft Seal          |
| 313     | 1        | Automatic Transmission Fluid Pump Gasket              |
| 314     | 1        | Automatic Transmission Fluid Pump Pressure Plate Seal |
| 340     | 1        | Stator Shaft Seal                                     |

**Automatic Transmission Fluid Pump Seal Kit**



**Fig. 14: Automatic Transmission Fluid Pump Seal Kit Components**

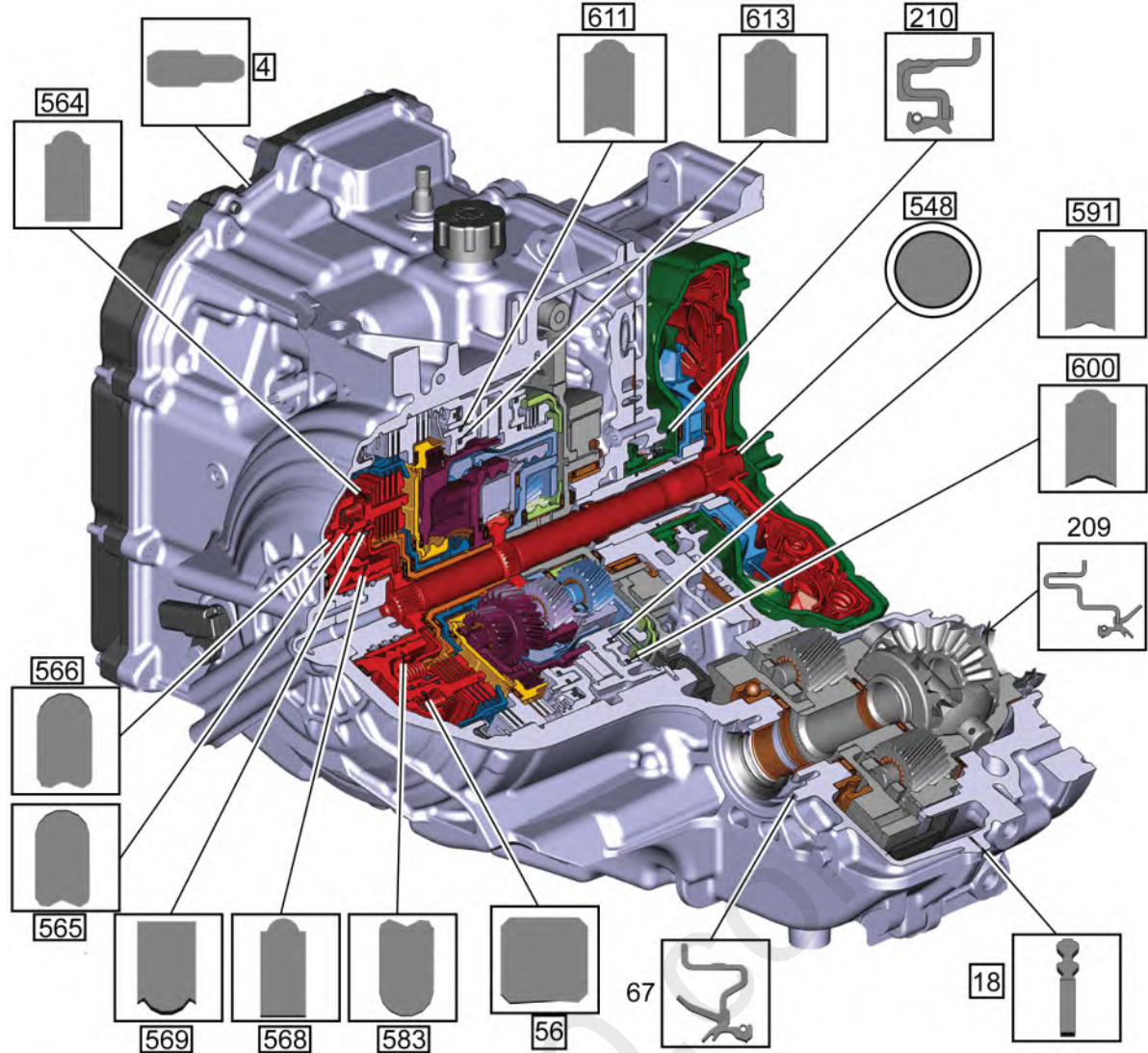
Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

#### Automatic Transmission Fluid Pump Seal Kit

| Callout | Quantity | Component Name                                        |
|---------|----------|-------------------------------------------------------|
| 12      | 1        | Automatic Transmission Fluid Pump Seal                |
| 50      | 5        | 1-2-3-4 Low and Reverse Clutch Fluid Passage Seal     |
| 51      | QTY      | Control Valve Body Ball Check Valve - Model Dependent |
| 202     | 1        | Automatic Transmission Fluid Filter Seal              |
| 203     | 1        | Automatic Transmission Fluid Filter                   |
| 211     | 19       | Automatic Transmission Fluid Pump Cover Bolt          |
| 300     | 2        | Automatic Transmission Fluid Baffle Bolt              |
| 303     | 1        | Drive Sprocket Thrust Washer - Rear                   |
| 306     | 1        | Drive Sprocket Thrust Washer - Front                  |
| 307     | 1        | Auxiliary Control Valve Body Spacer Plate             |
| 308     | 1        | Automatic Transmission Fluid Pump Ball Check Valve    |
| 310     | 1        | Torque Converter Fluid Seal Ring                      |
| 311     | 1        | Automatic Transmission Fluid Pump Shaft Seal          |
| 313     | 1        | Automatic Transmission Fluid Pump Gasket              |
| 314     | 1        | Automatic Transmission Fluid Pump Pressure Plate Seal |
| 340     | 1        | Stator Shaft Seal                                     |

Automatic Transmission Seal Kit (1 of 6)



**Fig. 15: Automatic Transmission Seal Kit Components (1 of 6)**

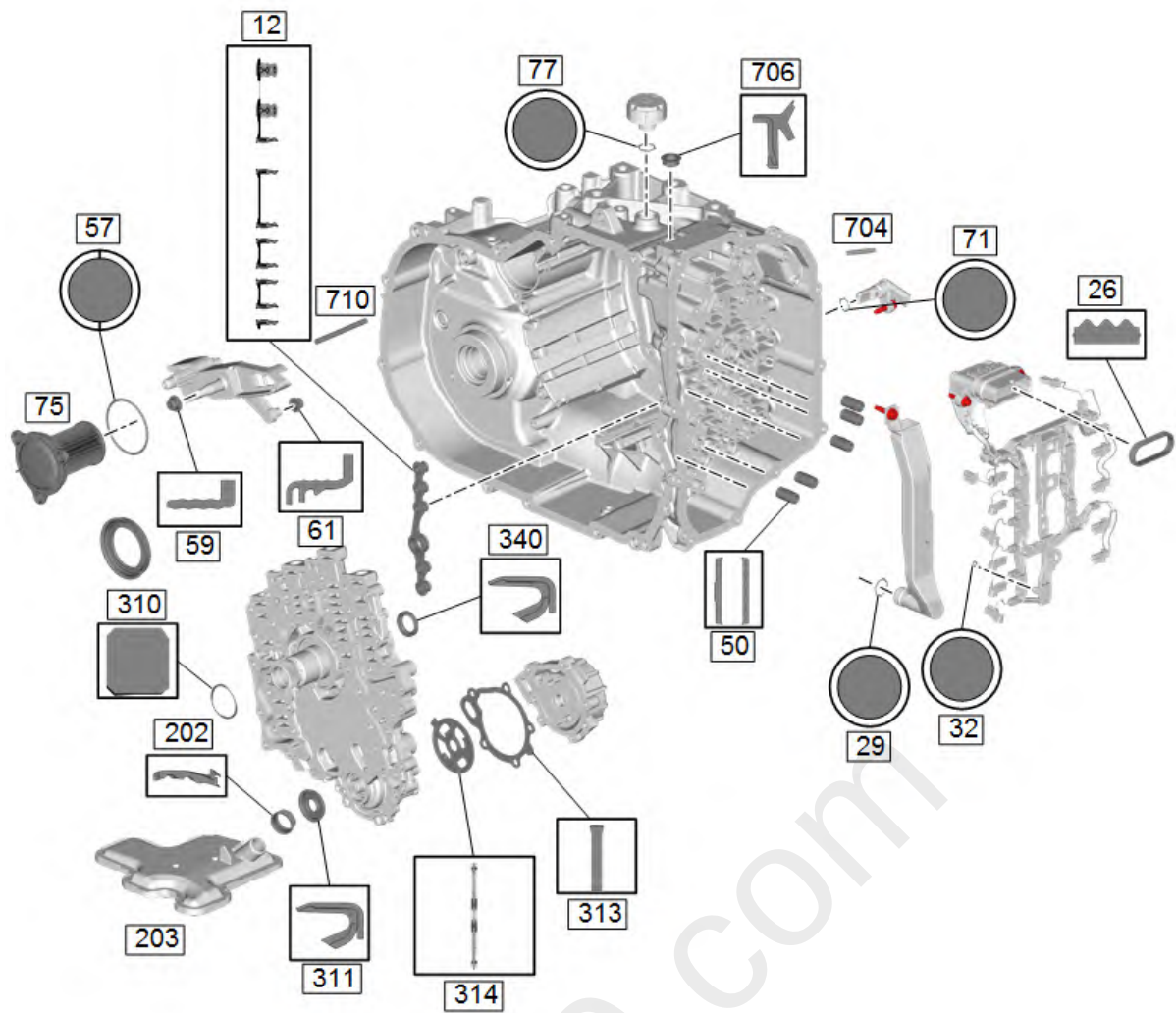
Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

#### Automatic Transmission Seal Kit (1 of 6)

| Callout | Quantity | Component Name                               |
|---------|----------|----------------------------------------------|
| 4       | 1        | Control Valve Body Cover Gasket              |
| 18      | 1        | Torque Converter Housing Gasket              |
| 56      | 1        | 3-5-Reverse and 4-5-6 Clutch Fluid Seal Ring |
| 210     | 1        | Torque Converter Fluid Seal                  |
| 548     | 1        | Turbine Shaft Seal                           |
| 564     | 1        | 3-5-Reverse Clutch Piston Dam Seal           |
| 565     | 1        | 3-5-Reverse Clutch Piston Inner Seal         |
| 566     | 1        | 3-5-Reverse Clutch Piston Inner Seal         |
| 568     | 1        | 4-5-6 Clutch Piston Inner Seal               |
| 569     | 1        | 4-5-6 Clutch Piston Dam Seal                 |
| 583     | 1        | 4-5-6 Clutch Piston Outer Seal               |
| 591     | 1        | 1-2-3-4-5-6 Clutch Piston Inner Seal         |
| 600     | 1        | 1-2-3-4-5-6 Clutch Piston Seal               |
| 611     | 1        | 4th Clutch Piston Outer Seal                 |
| 613     | 1        | 4th Clutch Piston Inner Seal                 |

#### Automatic Transmission Seal Kit (2 of 6)



**Fig. 16: Automatic Transmission Seal Kit Components (2 Of 6)**

Courtesy of GENERAL MOTORS COMPANY

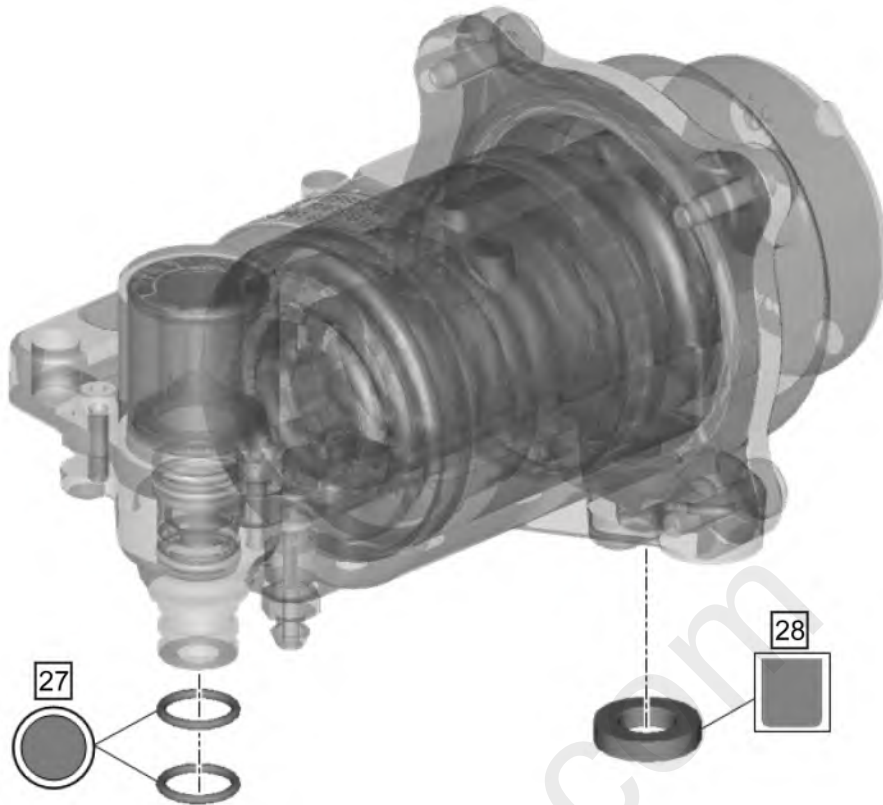
**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

**Automatic Transmission Seal Kit (2 of 6)**

| Callout | Quantity | Component Name                                          |
|---------|----------|---------------------------------------------------------|
| 12      | 1        | Automatic Transmission Fluid Pump Seal                  |
| 26      | 1        | Body Side Wiring Harness Opening Seal                   |
| 29      | 1        | Fluid Transfer Pipe Seal                                |
| 32      | 1        | Automatic Transmission Fluid Temperature Sensor Seal    |
| 50      | 5        | 1-2-3-4 Low and Reverse Clutch Fluid Passage Seal       |
| 57      | 1        | Automatic Transmission Fluid Filter Cap Seal            |
| 59      | 1        | Drive Link Lubricant Fluid Seal                         |
| 61      | 1        | Drive Link Lubricant Fluid Seal                         |
| 71      | 1        | Automatic Transmission Input Speed Sensor Seal - O-Ring |
| 75      | 1        | Automatic Transmission Fluid Filter                     |
| 77      | 1        | Automatic Transmission Fluid Filter Cap Seal            |
| 202     | 1        | Automatic Transmission Fluid Filter Seal                |
| 203     | 1        | Automatic Transmission Fluid Filter                     |
| 310     | 1        | Torque Converter Fluid Seal Ring                        |
| 311     | 1        | Automatic Transmission Fluid Pump Shaft Seal            |
| 313     | 1        | Automatic Transmission Fluid Pump Gasket                |
| 314     | 1        | Automatic Transmission Fluid Pump Pressure Plate Seal   |
| 340     | 1        | Stator Shaft Seal                                       |
| 704     | 1        | Park Pawl Actuator Guide Pin                            |

| Callout | Quantity | Component Name                |
|---------|----------|-------------------------------|
| 706     | 1        | Manual Shift Shaft Seal       |
| 710     | 1        | Manual Shift Detent Lever Pin |

#### Automatic Transmission Seal Kit (3 of 6)



**Fig. 17: Automatic Transmission Seal Kit Components (3 Of 6)**

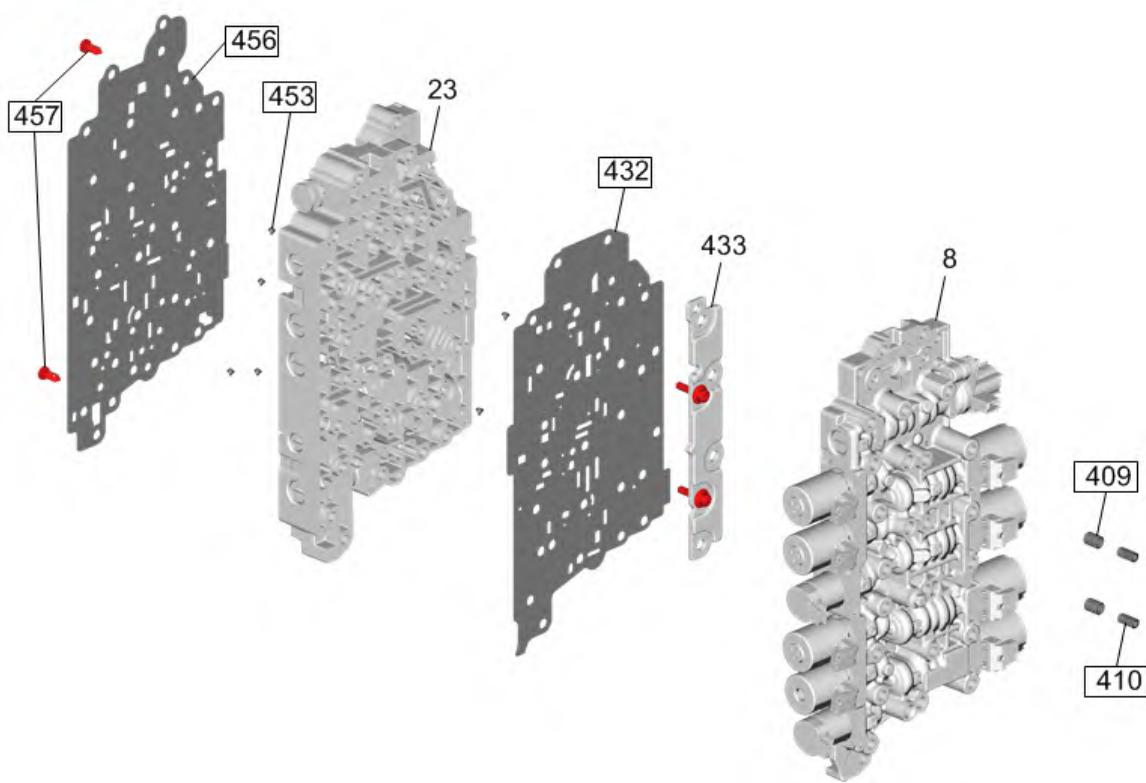
Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

#### Automatic Transmission Seal Kit (3 of 6)

| Callout | Quantity | Component Name                   |
|---------|----------|----------------------------------|
| 27      | 2        | Automatic Transmission Case Seal |
| 28      | 1        | Accumulator Bypass Valve Seal    |

#### Automatic Transmission Seal Kit (4 of 6)



**Fig. 18: Automatic Transmission Seal Kit Components (4 Of 6)**

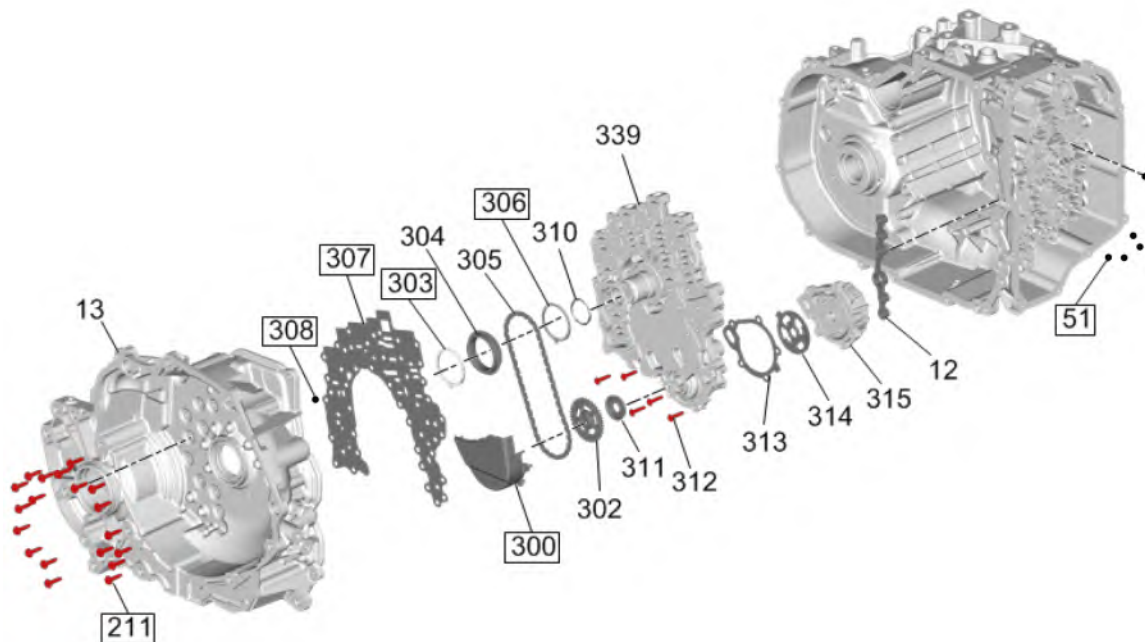
Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

**Automatic Transmission Seal Kit (4 of 6)**

| Callout | Quantity | Component Name                                          |
|---------|----------|---------------------------------------------------------|
| 409     | 2        | Variable Feed Solenoid Clutch Accumulator Piston Spring |
| 410     | 2        | Variable Feed Solenoid Clutch Accumulator Piston        |
| 432     | 1        | Control Valve Body Spacer Plate                         |
| 453     | QTY      | Control Valve Body Ball Check Valve - Model Dependent   |
| 456     | 1        | Control Valve Body Spacer Plate                         |
| 457     | 2        | Control Valve Body Spacer Plate Retainer                |

**Automatic Transmission Seal Kit (5 of 6)**



**Fig. 19: Automatic Transmission Seal Kit Components (5 Of 6)**

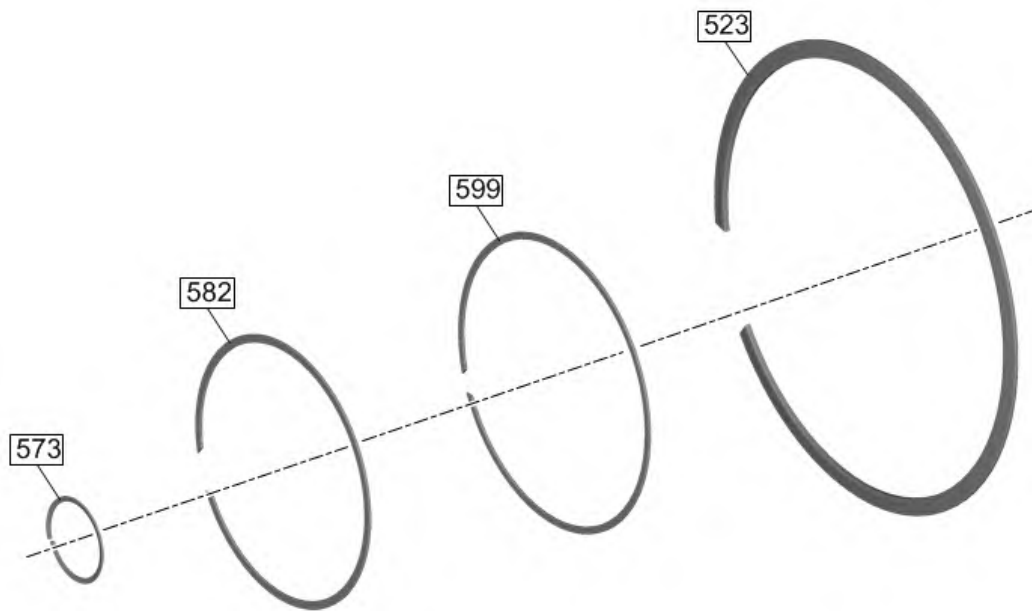
Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

**Automatic Transmission Seal Kit (5 of 6)**

| Callout | Quantity | Component Name                                        |
|---------|----------|-------------------------------------------------------|
| 51      | QTY      | Control Valve Body Ball Check Valve - Model Dependent |
| 211     | 19       | Automatic Transmission Fluid Pump Cover Bolt          |
| 300     | 1        | Automatic Transmission Fluid Baffle                   |
| 303     | 1        | Driven Sprocket Thrust Washer                         |
| 306     | 1        | Driven Sprocket Thrust Washer                         |
| 307     | 1        | Auxiliary Control Valve Body Spacer Plate             |
| 308     | 1        | Automatic Transmission Fluid Pump Ball Check Valve    |

**Automatic Transmission Seal Kit (6 of 6)**



**Fig. 20: Automatic Transmission Seal Kit Components (6 Of 6)**

Courtesy of GENERAL MOTORS COMPANY

**NOTE:** Callouts with boxes around them indicate part is included in the service kit. Callouts without boxes are shown for relationship purposes only.

**Automatic Transmission Seal Kit (6 of 6)**

| Callout | Quantity | Component Name                                  |
|---------|----------|-------------------------------------------------|
| 523     | 1        | 1-2-3-4-5-6 Clutch Piston Housing Return Ring   |
| 573     | 1        | 4-5-6 Clutch Dam Retaining Ring                 |
| 582     | 1        | 5-7-Reverse Clutch Backing Plate Retaining Ring |
| 599     | 1        | 1-2-3-4-5-6 Clutch Backing Plate Retaining Ring |