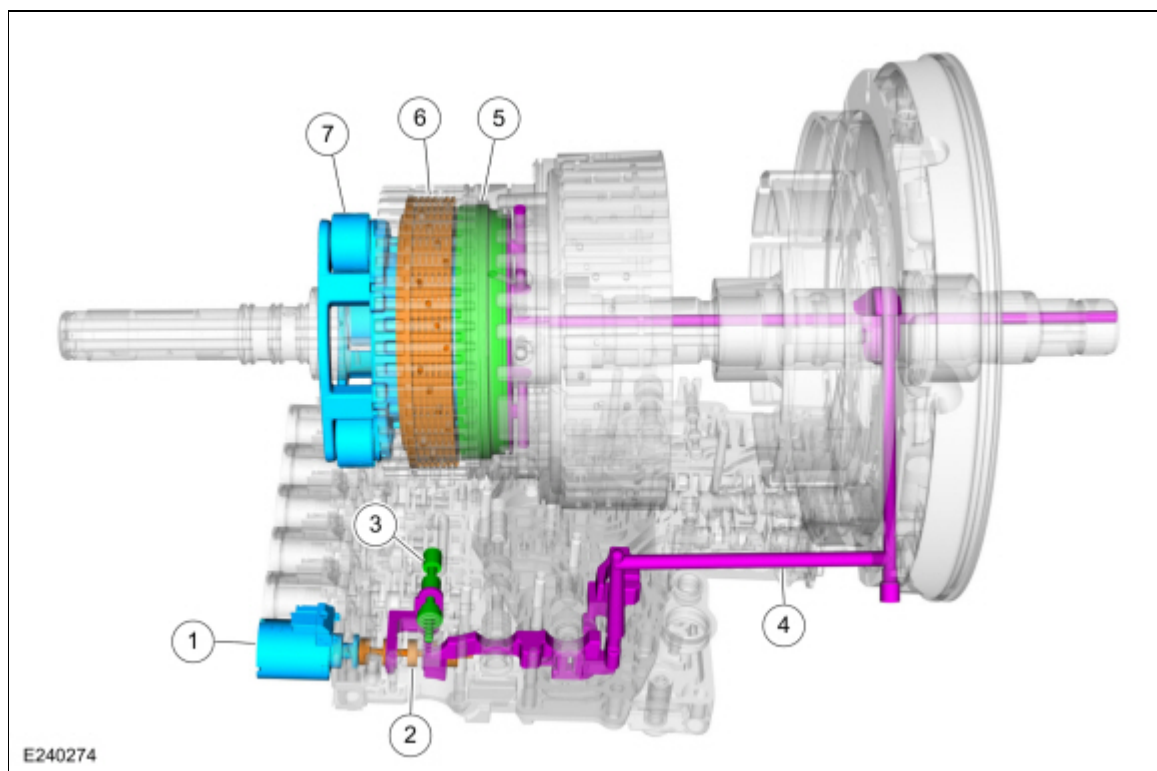


307-01 Automatic Transmission - 10-Speed Automatic Transmission - 10R80  
Description and Operation

2019 Ranger  
Procedure revision date: 08/18/2016

## D Clutch

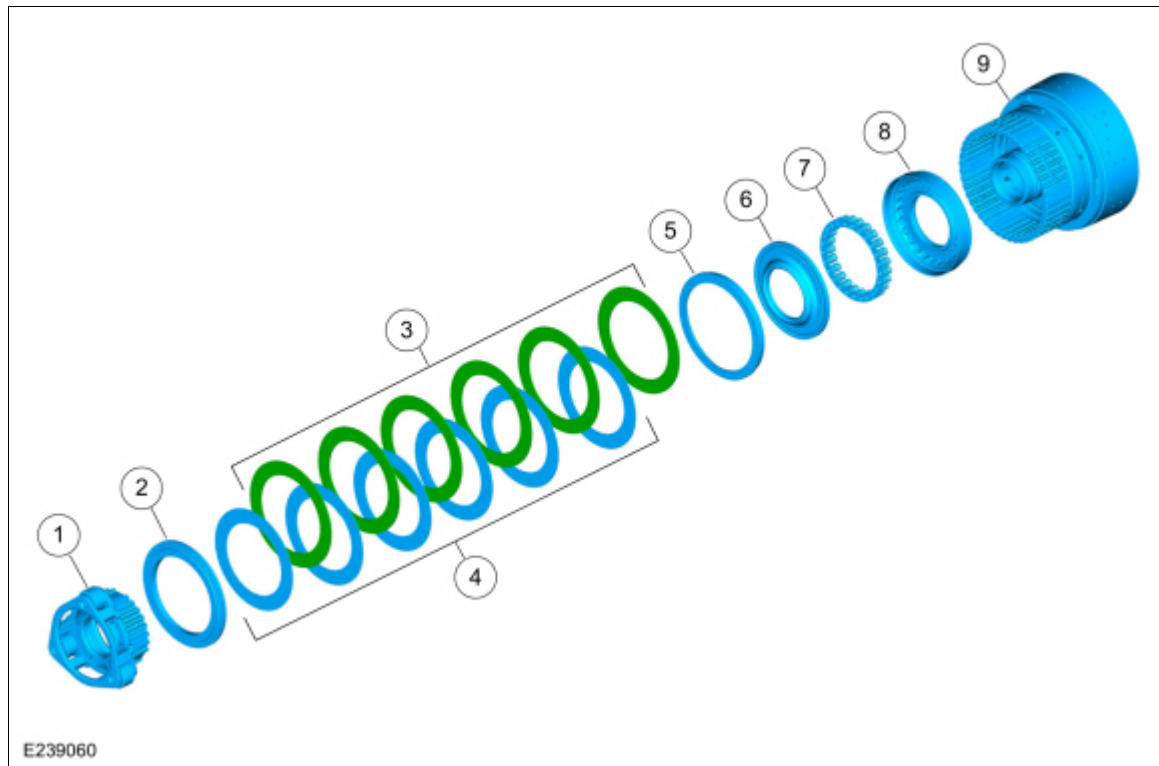
### Overview



Item	Description
1	<u>SSD</u>
2	D clutch control valve
3	Clutch gain control valve
4	D clutch apply circuit
5	D clutch piston
6	D clutch assembly
7	Planetary carrier No. 3

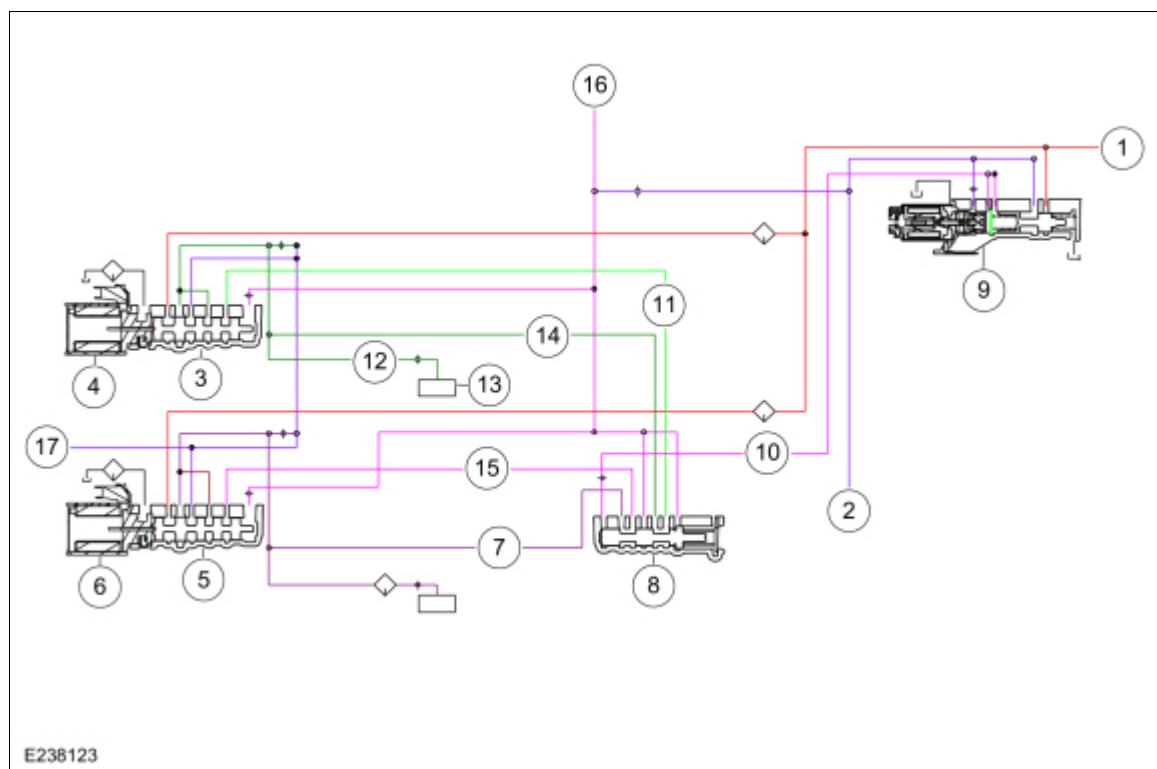
Planetary carrier No. 3 is located in the CDF clutch and planetary carrier assembly. Planetary carrier No. 3 is connected to the D clutch. When the D clutch applies, the planetary carrier No. 3 may be connected to ring gear No. 2.

### D Clutch Exploded View



Item	Description
1	Planetary carrier No. 3
2	D clutch pressure plate
3	D clutch steel plates
4	D clutch friction plates
5	D clutch apply ring
6	D clutch balance dam
7	D clutch piston return spring
8	D clutch piston
9	CDF clutch cylinder

### D Clutch Hydraulic Circuits



Item	Description
1	Line pressure
2	Pump output
3	D clutch control valve
4	<u>SSD</u>
5	E clutch control valve
6	<u>SSE</u>
7	E clutch apply pressure to clutch gain control valve
8	Clutch gain control valve
9	<u>LPC</u> solenoid
10	<u>LPC</u> pressure
11	D clutch feedback pressure
12	Apply pressure to mechanical D clutch
13	Mechanical D clutch
14	D clutch apply pressure to clutch gain control valve
15	E clutch feedback pressure
16	Elevated exhaust pressure
17	Clutch exhaust

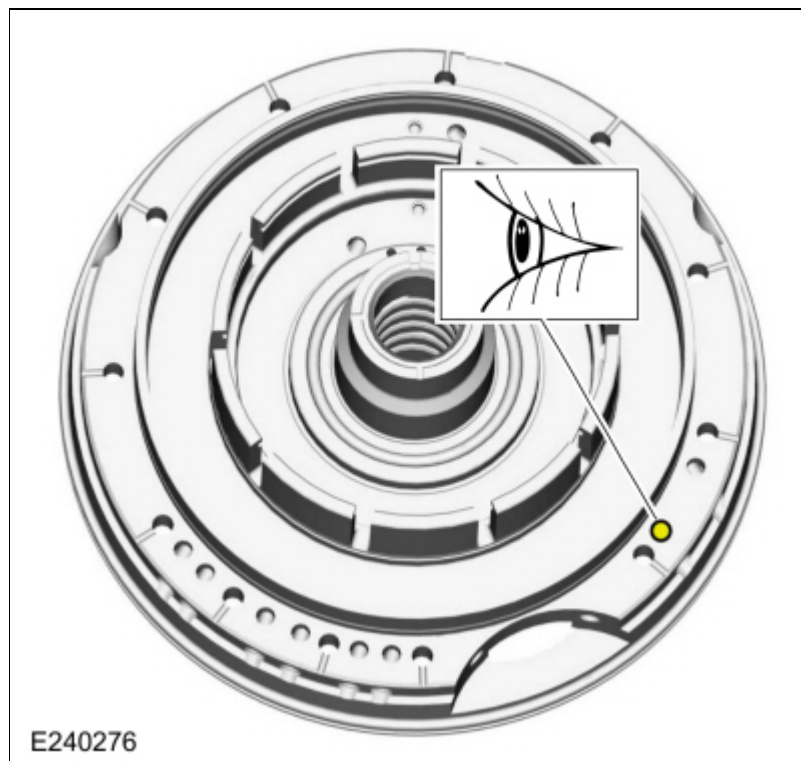
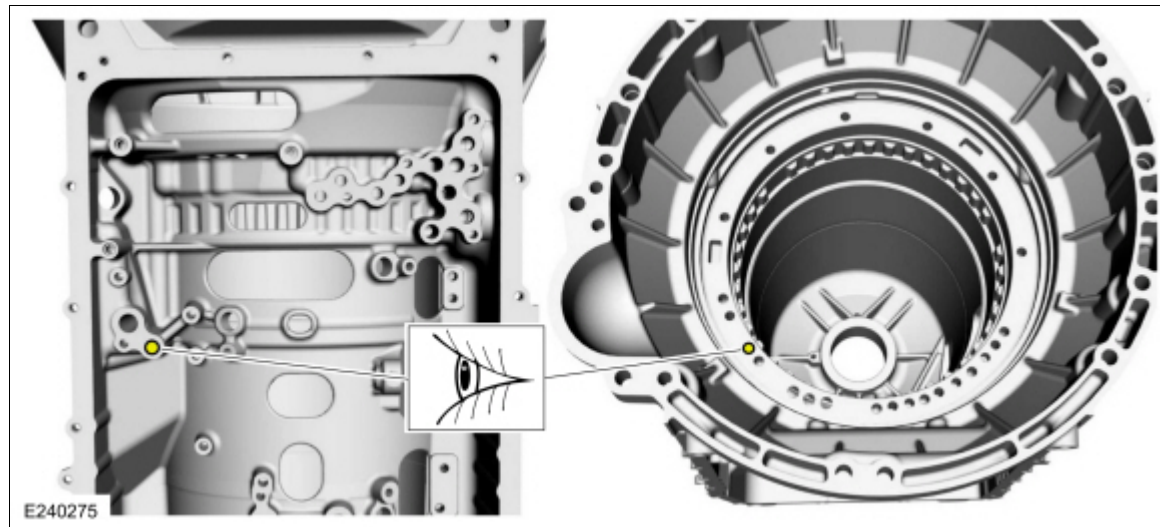
#### D Clutch Hydraulic Operation 5th-6th Shift

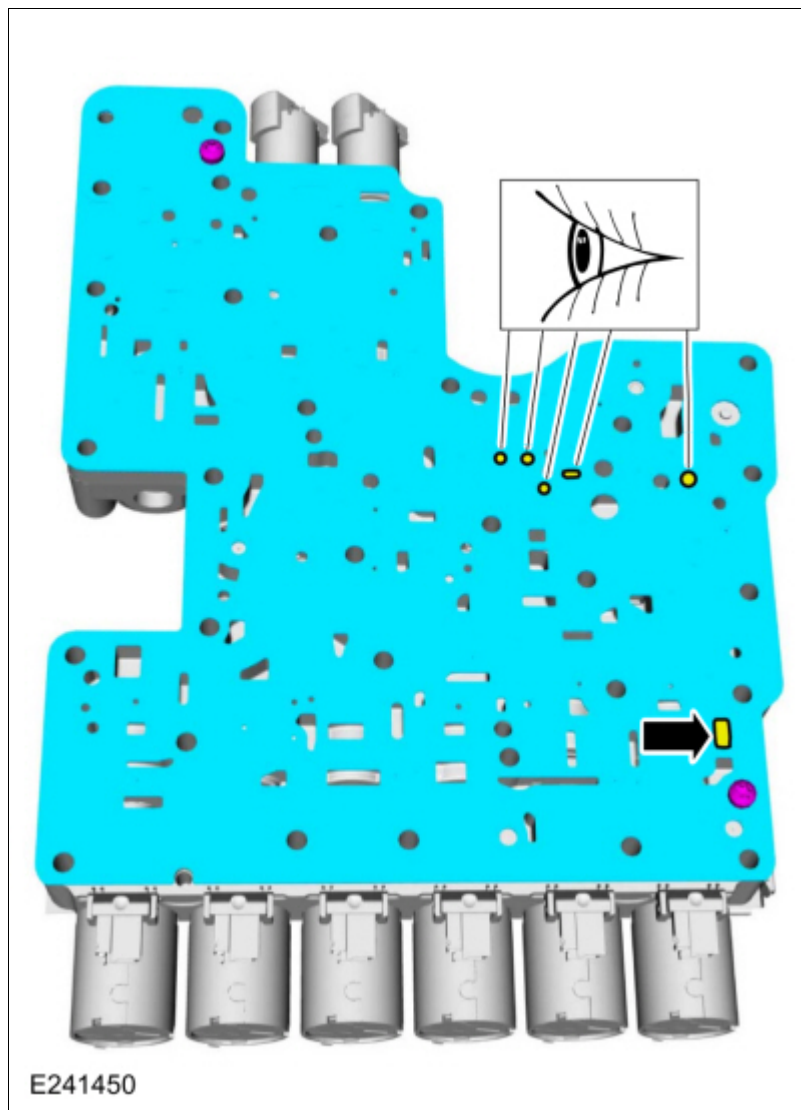
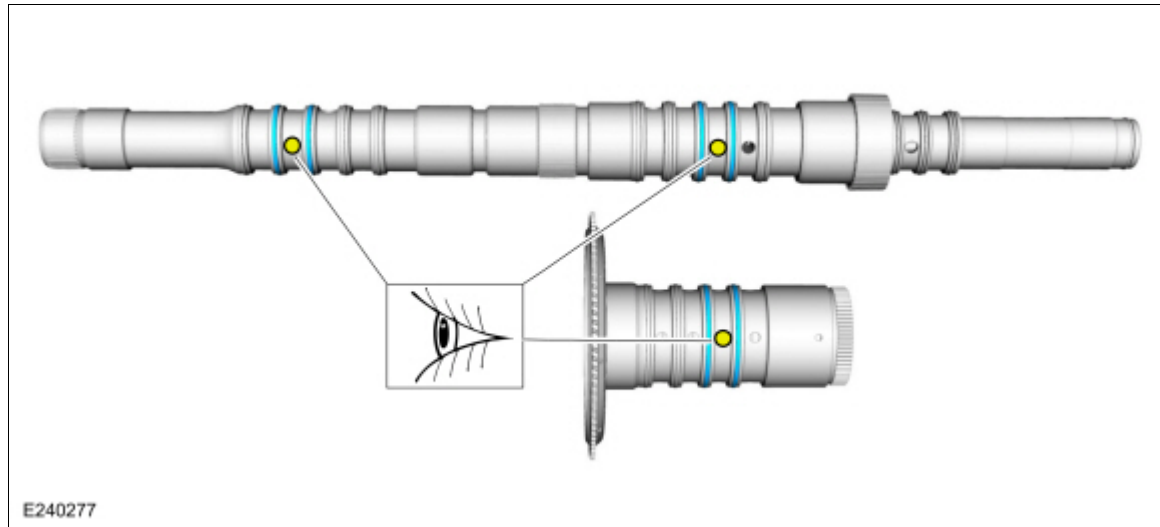
Line pressure is supplied to the D clutch control valve. LPC pressure is supplied to the gain control valve. LPC pressure positions the gain control valve to the right end of the valve bore. As SSD turns on, it moves the D clutch control valve allowing regulated line pressure to flow to the mechanical D clutch.

### D Clutch Hydraulic Operation 2nd-3rd, 4th-5th, and 9th-10th Shifts

Line pressure is supplied to the D clutch control valve. LPC pressure is supplied to the gain control valve. The LPC pressure is low and the gain control valve stays in the default position at the left end of the valve bore. As SSD turns on, it moves the D clutch control valve allowing regulated line pressure to flow to the mechanical D clutch.

### D Clutch Hydraulic Passages





Copyright © 2019 Ford Motor Company

