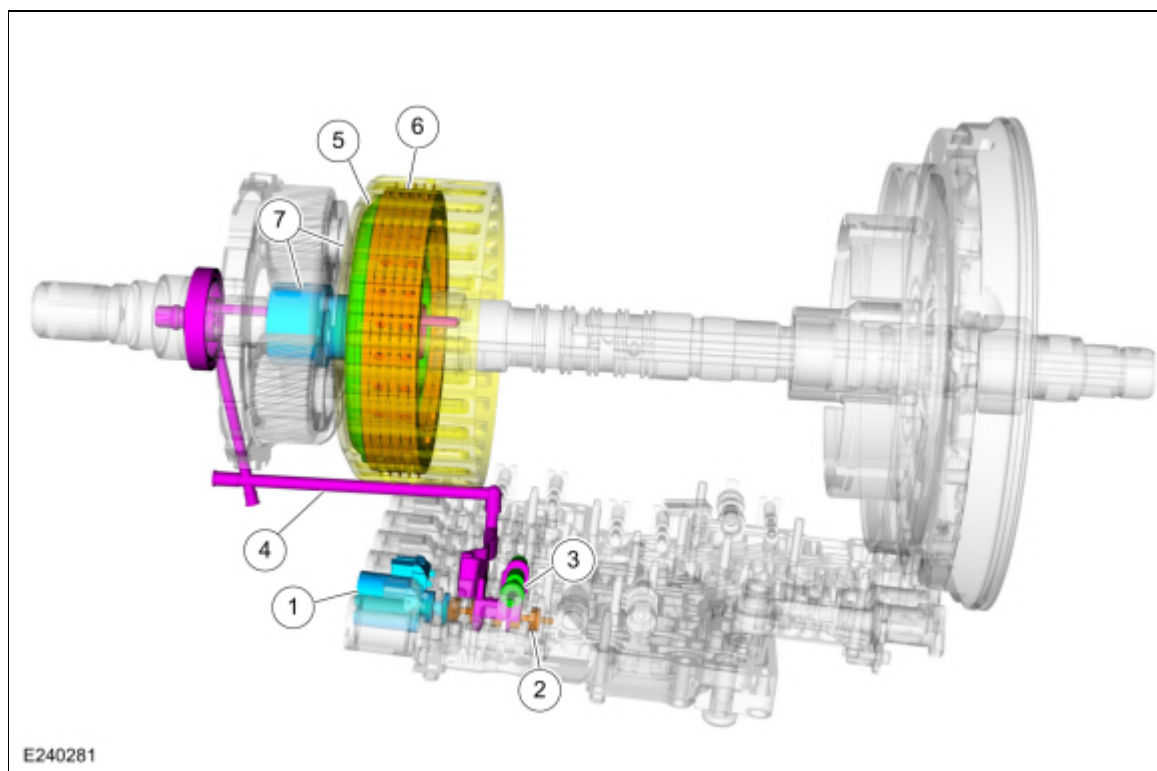


307-01 Automatic Transmission - 10-Speed Automatic Transmission - 10R80
Description and Operation

2019 Ranger
Procedure revision date: 09/25/2018

E Clutch

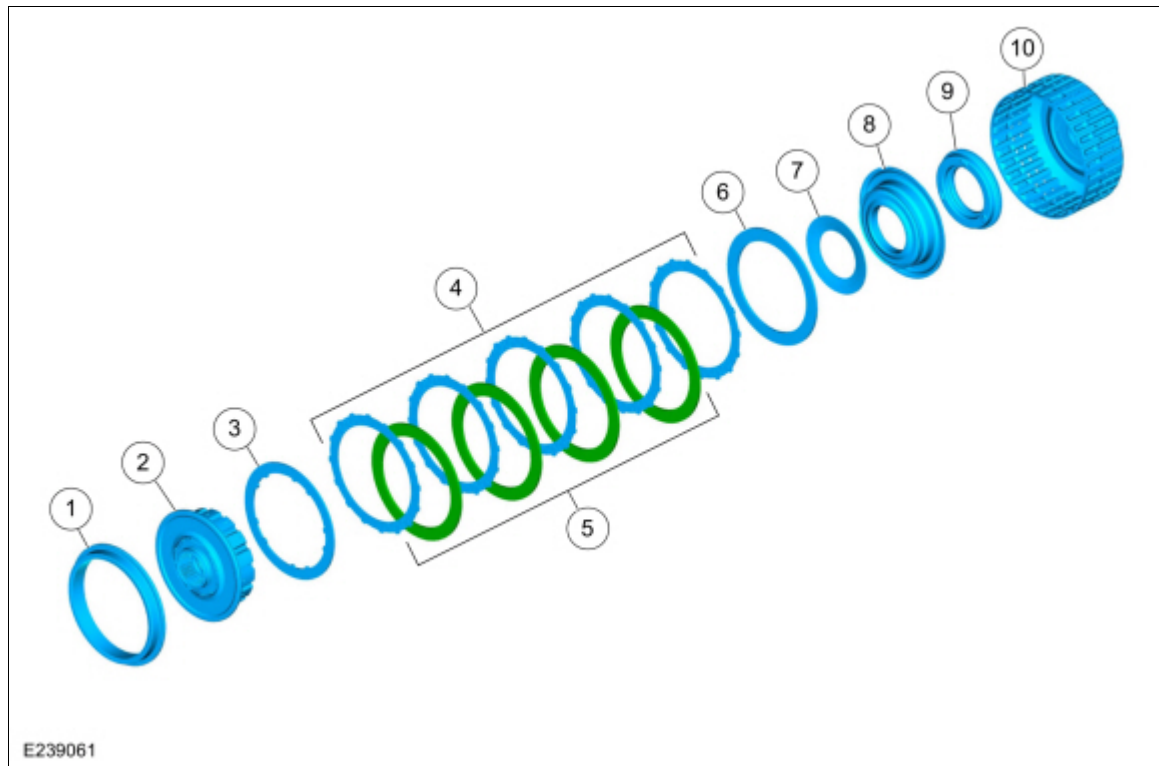
Overview



Item	Description
1	<u>SSE</u>
2	E clutch control valve
3	Clutch gain control valve
4	E clutch apply circuit
5	E clutch piston
6	E clutch assembly
7	Shell and sun gear No. 4

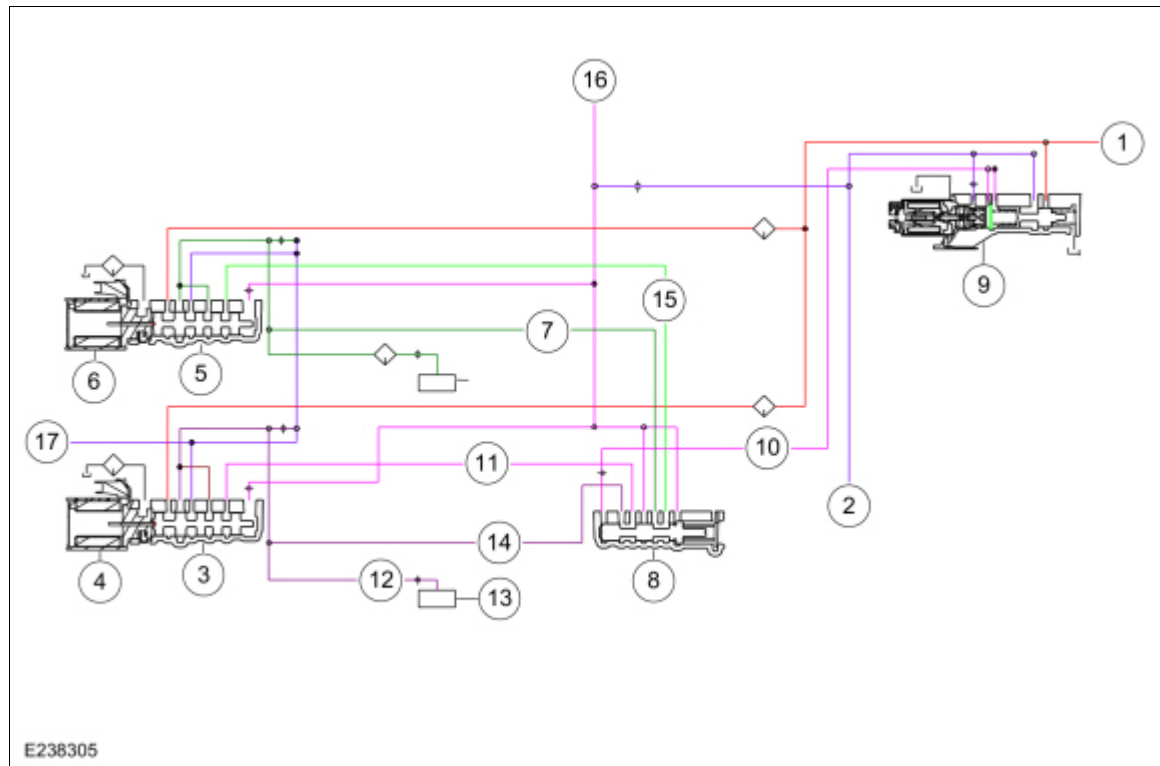
Ring gear No. 3 is mechanically connected to sun gear No. 4 and is connected to the E clutch. When the E clutch applies, torque from the input shaft is transferred to ring gear No. 3 and sun gear No. 4.

E Clutch Exploded View



Item	Description
1	Ring gear No. 3
2	E clutch hub
3	E clutch pressure plate (select fit)
4	E clutch friction plates (quantity model dependent)
5	E clutch steel plates (quantity model dependent)
6	E clutch apply plate (2.9-3.0 mm)
7	E clutch piston return spring
8	E clutch piston
9	E clutch balance dam
10	Shell and sun gear No. 4

E Clutch Hydraulic Circuits



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

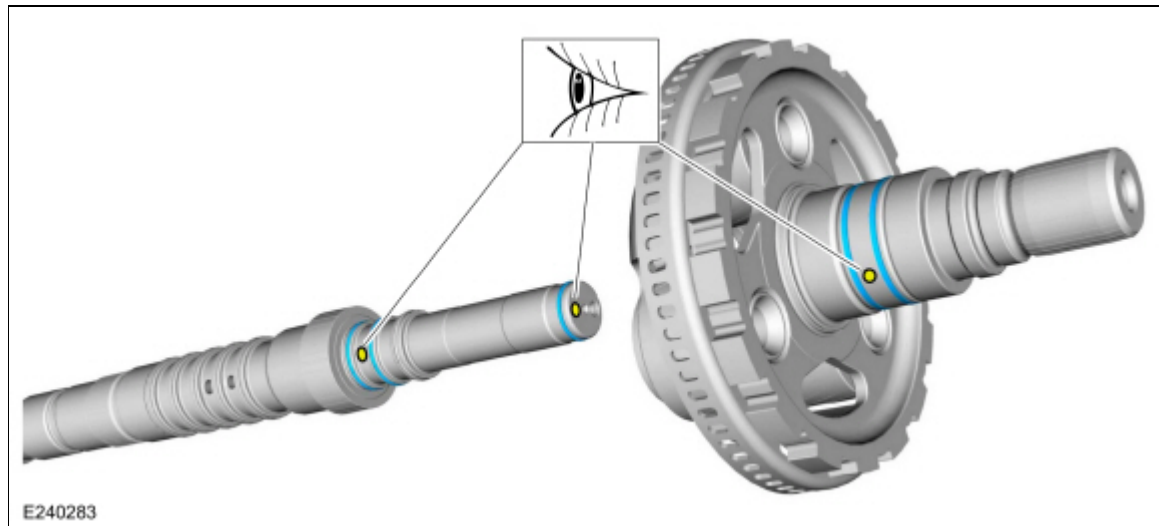
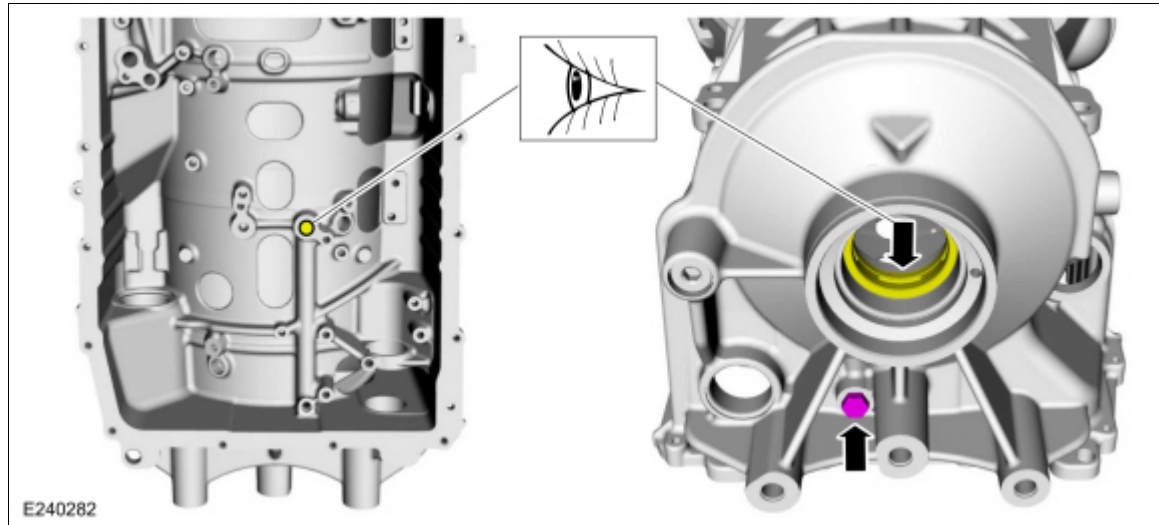
E Clutch Hydraulic Operation 5th-6th Shift

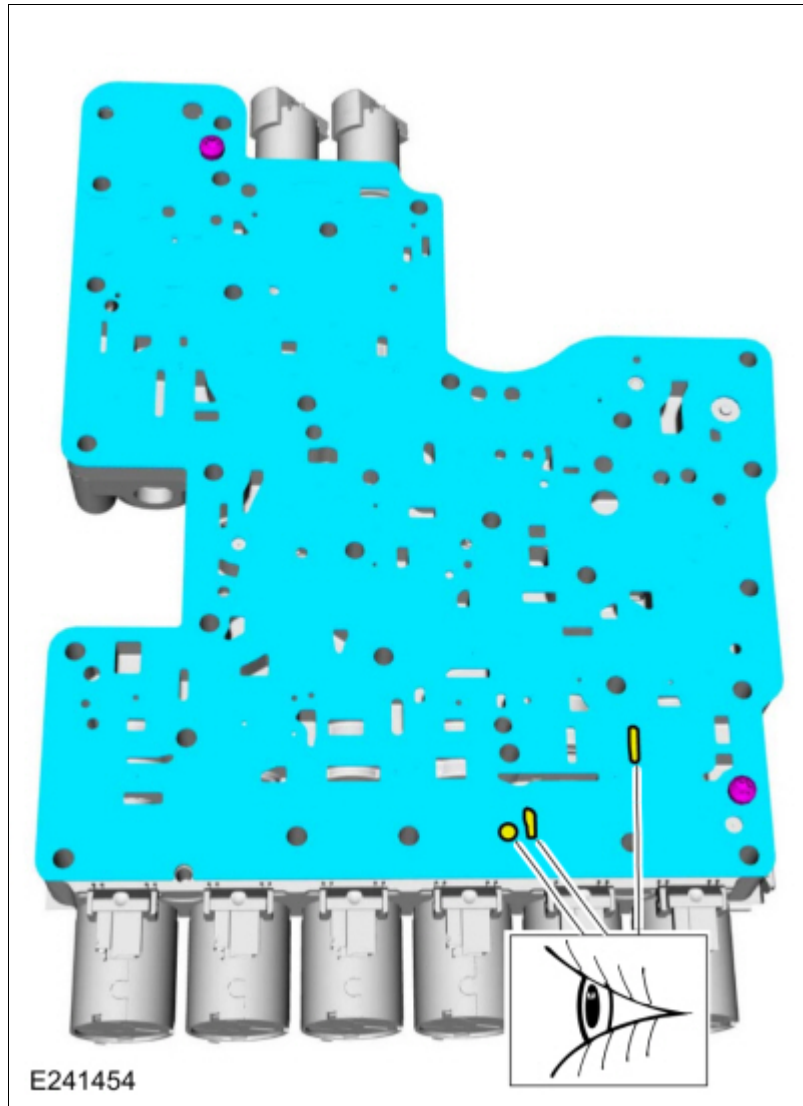
Line pressure is supplied to the E clutch control valve. LPC pressure is supplied to the gain control valve. LPC pressure positions the gain control valve to the right end of the valve bore. As SSE turns on, it moves the E clutch control valve allowing regulated line pressure to flow to the mechanical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

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

Line pressure is supplied to the E 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 SSE turns on, it moves the D clutch control valve allowing regulated line pressure to flow to the mechanical E clutch.

E Clutch Hydraulic Passages





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