

SECTION 307-01: Automatic Transaxle/Transmission — 6R80
SPECIFICATIONS

2014 F-150 Workshop Manual
Procedure revision date: 10/25/2013

Material

Item	Specification	Fill Capacity
Motorcraft® MERCON® LV Automatic Transmission Fluid XT-10-QLVC (US); CXT-10-LV12 (Canada)	MERCON® LV	12.30L (13.0 qt)

General Specifications

Item	Specification
Fluid	
NOTICE: Transmission fluids are not interchangeable. The use of any other fluid or cleaning agents will cause internal transmission damage.	
- Normal maintenance: - Transmission fluid change not necessary, filled for life. - Severe duty maintenance: - Change the transmission fluid at 240,000 km (150,000 mi) intervals.	
Fluid Filter	
Internal to the transmission	—

Assembly Weight

Description	Specification
Transmission	84.24 kg (215 lb)

Clutch Application Chart

Gear	Forward A (1,2,3,4)	Direct B (3,5,R)	Inter-mediate C (2,6)	Low/Reverse D (1,R)	Overdrive E (4,5,6)	Low-OWC
Park				H		
Reverse		D		H		
Neutral				H		
1st Gear D	D			H ^a		H
2nd Gear D	D		H			O/R
3rd Gear D	D	D				O/R
4th Gear D	D				D	O/R
5th Gear D		D			D	O/R

6th Gear D			H		D	O/R
3rd Gear Manual	D	D				O/R
2nd Gear Manual	D		H			O/R
1st Gear Manual	D			H		H
Planetary Components	Front planetary carrier-to-No. 3 sun gear	Front carrier-to-No. 2 sun gear	No. 2 sun gear	Rear planetary carrier	Input shaft-to-rear planetary carrier	Rear planetary carrier

^a Clutch released when vehicle speed is above 3 mph.

- D = Drive Clutch
- H = Hold Clutch
- O/R = Overrunning

Solenoid Operation Chart

Selector Lever Position	PCM Commanded Gear	Shift Solenoid					TCC NL
		SSA NL (1,2,3,4)	SSB NH (3,5,R)	SSC NL (CB 2,6)	SSD NH (CB L,R/C 4,5,6)	SSE NC	
P	P	Off	On	Off	Off	Off	Off
R	R	Off	Off	Off	Off	Off	Off
N	N	Off	On	Off	Off ^a	Off	Off
D	1	On	On	Off	Off ^b	Off	Off
	2	On	On	On	On	Off	Off
	3	On	Off	Off	On	On	On/Off
	4	On	On	Off	Off	On	On/Off
	5	Off	Off	Off	Off	On	On/Off
	6	Off	On	On	Off	On	On/Off
M ^c	—	—	—	—	—	—	—
2	2	On	On	On	On	Off	Off
1	1	On	On	Off	Off	On	Off

^a Solenoid state will change if vehicle is moving forward with the selector lever in the NEUTRAL position.

^b Solenoid is On when vehicle is above 3 mph.

^c All gears available upon driver request.

CB = Clutch brake

NC = Normally closed

NH = Normally high

NL = Normally low

Gear Ratio	
1st	4.17 to 1
2nd	2.34 to 1
3rd	1.52 to 1
4th	1.14 to 1
5th	0.87 to 1
6th	0.69 to 1
Reverse	3.40 to 1

Stall Speed

Engine	Min	Max
3.7L	2300	2580
5.0L	2400	2700
3.5L GTDI	2300	2580
6.2L	2,000	2,250

End Play

NOTE: All friction and steel plates use a wave design plate.

Item	Specifications
Forward Clutch (A)	0.71-1.10 mm (0.027-0.043 in)
Direct Clutch (B)	0.50-1.30 mm (0.019-0.051 in)
Intermediate Clutch (C)	0.71-1.10 mm (0.028-0.043 in)
Low/Reverse Clutch (D)	1.0-1.6 mm (0.039-0.063 in)
Overdrive (O/D) Clutch (E)	0.50-0.90 mm (0.019-0.035 in)

Forward Clutch, Direct Clutch and Intermediate Clutch Selective Snap Rings

Part Number	Snap Ring Thickness
6L2Z-7D483-BA	3.0 mm (0.118 in)
6L2Z-7D483-CA	3.2 mm (0.125 in)
6L2Z-7D483-DA	3.4 mm (0.133 in)
6L2Z-7D483-EA	3.6 mm (0.141 in)
6L2Z-7D483-FA	3.8 mm (0.149 in)
6L2Z-7D483-GA	4.0 mm (0.157 in)
6L2Z-7D483-HA	4.2 mm (0.165 in)

Overdrive Clutch Selective Snap Rings

Part Number	Snap Ring Thickness
6L2Z-7D483-M	1.7 mm (0.066 in)
6L2Z-7D483-N	1.9 mm (0.074 in)
6L2Z-7D483-P	2.1 mm (0.082 in)
6L2Z-7D483-Q	2.3 mm (0.09 in)
6L2Z-7D483-R	2.5 mm (0.098 in)
6L2Z-7D483-S	2.7 mm (0.106 in)

Low/Reverse Clutch Selective Pressure Plates

Part Number	Pressure Plate Thickness
6L2Z-7B066-HA	5.1 mm (0.2 in)
6L2Z-7B066-M	5.3 mm (0.208 in)
6L2Z-7B066-JA	5.4 mm (0.212 in)
6L2Z-7B066-N	5.6 mm (0.22 in)
6L2Z-7B066-KA	5.7 mm (0.224 in)
6L2Z-7B066-P	5.9 mm (0.232 in)
6L2Z-7B066-LA	6.0 mm (0.236 in)

Clutch Plate Quantity 3.5L GTDI, 5.0L and 6.2L Engines

Component	Number of Frictions	Number of Separator Plates	Separator Plate Thickness	Number of Pressure Plates	Pressure Plate Thickness
Forward Clutch (A)	5	5	3.0 mm (0.118 in)	1	3.0 mm (0.118 in)
Direct Clutch (B)	5	5	1.75 mm	1	3.9 mm

			(0.068 in)		(0.153 in)
Intermediate Clutch (C)	5	5	3.0 mm (0.118 in)	1	3.9 mm (0.153 in)
Low/Reverse (D)	5	5	1.75 mm (0.068 in)	Select	5.4 mm (0.212 in)
			1.75 mm (0.068 in)	Select Select	5.7 mm (0.224 in) 6.0 mm (0.236 in)
Overdrive (O/D) Clutch (E)	6	6	3.0 mm (0.118 in)	1	6.15 mm (0.242 in)

Clutch Plate Quantity 3.7L Engine

Component	Number of Frictions	Number of Separator Plates	Separator Plate Thickness	Number of Pressure Plates	Pressure Plate Thickness
Forward Clutch (A)	4	4	3.0 mm (0.118 in)	1	3.0 mm (0.118 in)
Direct Clutch (B)	4	4	1.75 mm (0.068 in)	1	3.9 mm (0.153 in)
Intermediate Clutch (C)	4	4	3.0 mm (0.118 in)	1	3.9 mm (0.153 in)
Low/Reverse (D)	5	5	1.75 mm (0.068 in)	Select	5.4 mm (0.212 in)
			1.75 mm (0.068 in)	Select Select	5.7 mm (0.224 in) 6.0 mm (0.236 in)
Overdrive (O/D) Clutch (E)	6	6	3.0 mm (0.118 in)	1	6.15 mm (0.242 in)

Shift Speeds

Throttle Position	Shift	Km/H	MPH

Light Throttle	1-2	13-21	8-13
TP Voltage	2-3	26-34	16-21
1.25 Volts	3-4	35-43	22-27
	4-5	56-64	35-40
	5-6	71-79	44-49
	5-6 ^a	100-105	62-65
Closed Throttle	6-5	56-64	35-40
	5-4	40-48	25-30
	4-3	13-21	8-13
	3-2	3-11	2-7
	2-1	2-6	1-4
Wide Open Throttle	1-2	45-53	28-33
	2-3	87-95	54-59
	3-4	140-148	87-92

^a Vehicles equipped with a 4.10:1 FDR

Torque Specifications

Description	Nm	lb-ft	lb-in
Detent spring bolts	12	—	106
<u>EVAP</u> canister bolt	20	—	177
Exhaust heat shield bolts	15	—	133
Flexplate inspection cover bolts	48	35	—
Flexplate-to-torque converter nuts	40	30	—
Front pump bolts ^a	—	—	—
Fuel line bracket bolt	25	18	—
Isolator cap bolt	35	26	—
Main control bolts ^a	—	—	—
Manual control lever nut	15	—	133
Molded leadframe bolts ^a	—	—	—
Output shaft flange nut ^a	—	—	—
Park pawl pin bolt	23	17	—
Park rod actuating plate	12	—	106
Pump plate assembly-to-pump body bolts	15	—	133
Selector lever cable bracket bolts	48	35	—
Skid plate bolts	40	30	—
Solenoid bracket bolts	6	—	53
Transmission fluid cooler tube-to-transmission bolt ^a	—	—	—
Transmission fluid cooler tube bracket nut	12	—	106
Transmission fluid fill plug	35	26	—

Transmission fluid pan bolts ^a	—	—	—
Transmission insulator and retainer bolts	90	66	—
Transmission insulator and retainer nuts	103	76	—
Transmission-to-engine bolts	48	35	—

^a Refer to the procedure in this section.

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