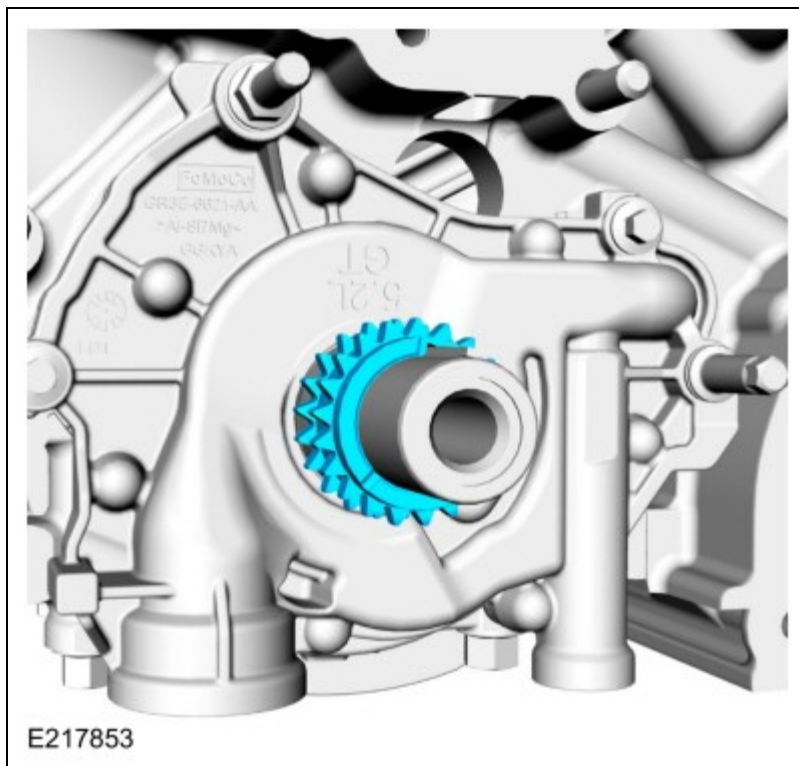


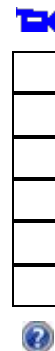
Oil Pump

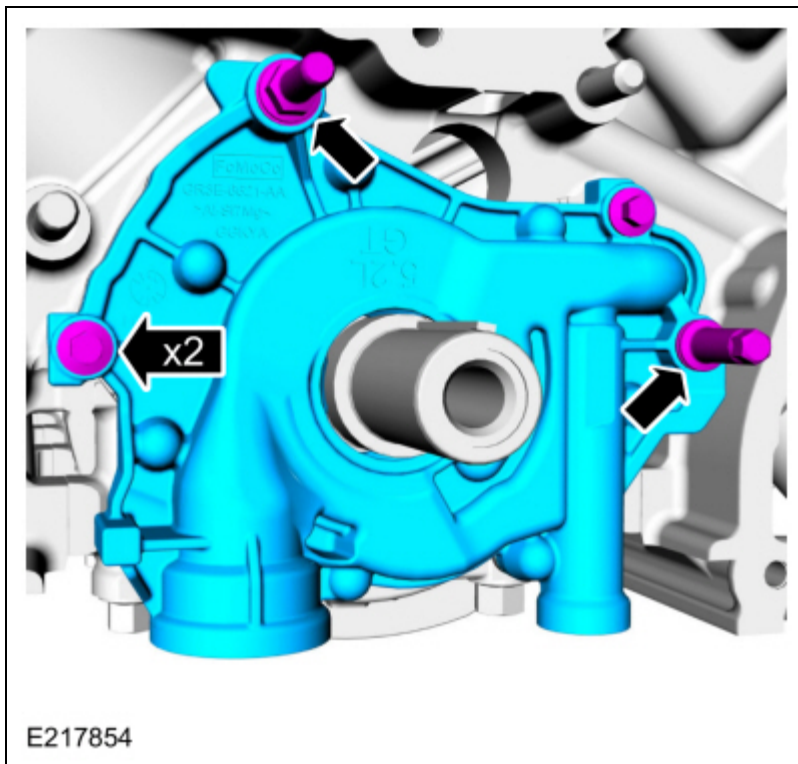
Removal

1. With the vehicle in NEUTRAL, position it on a hoist.
Refer to: [Jacking and Lifting - Overview](#) (100-02 Jacking and Lifting, Description and Operation).
2. Remove the following items:
 1. Refer to: [Timing Chain](#) (303-01D Engine - 5.2L 32V Ti-VCT, Removal and Installation).
 2. Refer to: [Oil Pan](#) (303-01D Engine - 5.2L 32V Ti-VCT, Removal and Installation).
3. Remove the crankshaft sprocket.



4. Remove the bolts, stud bolts and the oil pump.



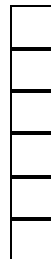


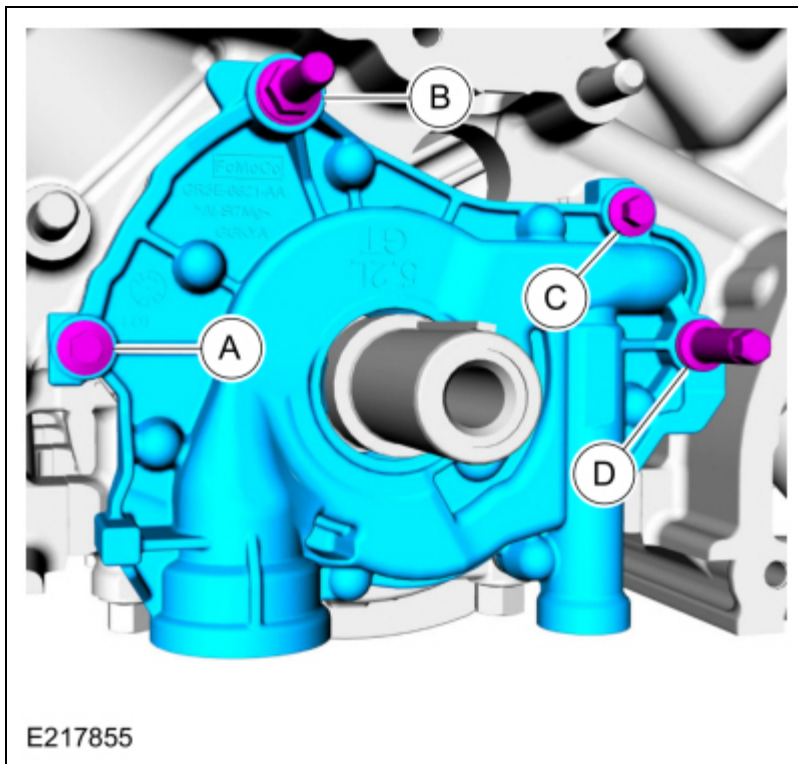
Installation

1. Prime the oil pump. Add 2 tablespoons of clean engine oil to the oil pump and rotate the oil pump by hand.
2. **NOTE:** *Oil pump must be held against the cylinder block until all bolts are tightened.*
 - Rotate the inner rotor of the oil pump assembly to align the flats on the crankshaft and slip the oil pump over the crankshaft until seated against the block.
 - Rotate the oil pump until the bolt holes are aligned to the block and install the fasteners hand tight.

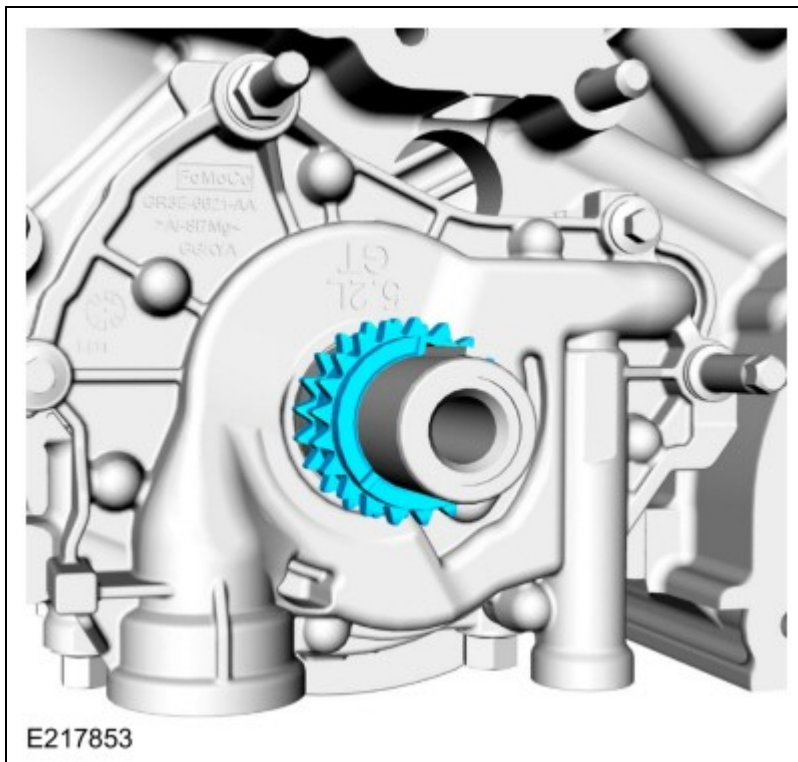
Torque:

 - Stage 1: A: 89 lb.in (10 Nm)
 - Stage 2: B: 18 lb.ft (25 Nm)
 - Stage 3: C: 89 lb.in (10 Nm)
 - Stage 4: D: 177 lb.in (20 Nm)
 - Stage 5: A: 45°
 - Stage 6: B: 75°
 - Stage 7: C: 45°
 - Stage 8: D: 60°





3. Install the crankshaft sprocket.



4. Install the following items:

1. Refer to: [Oil Pan](#) (303-01D Engine - 5.2L 32V Ti-VCT, Removal and Installation).
2. Refer to: [Timing Chain](#) (303-01D Engine - 5.2L 32V Ti-VCT, Removal and Installation).

