

TORQUE SPECIFICATIONS

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Application	Ft. Lbs. (N.m)
Air Conditioning Compressor Bolts	18 (25)
A/C Manifold Bolt	15 (21)
Alternator Mounting Bracket Bolts (Dual Alternators)	35 (47)
Banjo Fitting Bolt	28 (38)
Battery Cable Nut	9 (12)
Battery Crossover Cable Nut	9 (12)
Battery Ground Cable-To-Engine Block Bolts	35 (47)
Belt Idler Pulley Bolts	35 (47)
Belt Tensioner Bolts	18 (25)
Cam Follower Mounting Bolt	10 (13)
Camshaft Thrust Plate Mounting Bolts	23 (31)
Connecting Rod Bearing Bolts	
Step 1	33 (45)
Step 2	50 (68)
Coolant Heater	30 (40)
Coolant Pump Mounting Bolt	17 (23)
Coolant Pump Pulley Bolts	23 (31)
Cooling Fan Stator Bolts	30 (40)
Crankshaft Pulley Bolts (Dual Alternators)	35 (47)
Cylinder Head Bolt ⁽²⁾	
Step 1: Bolts 1-10	65 (88)
Step 2: Bolts 1, 3, 5, 7 & 9	85 (115)
Step 3: Bolts 1-10	Additional 90 Degrees
Step 4: Bolts 1-10	Another 90 Degrees
Step 5: Bolts 1-10	Another 90 Degrees
Step 6: Bolts 11-15	18 (25)
Step 7: Bolts 11-15	23 (31)
EGR Cooler Bolts (M8 x 16)	23 (31)
EGR Cooler Stud Bolts (M6 x 55 x 20)	10 (13)
EGR Valve Mounting Bolts	10 (13)
Engine Coolant Temperature Sensor	9 (12)
Exhaust Back Pressure Sensor	9 (12)
Exhaust Back Pressure Sensor Bracket	9 (12)
Exhaust Back Pressure Tube Assembly	22 (30)
Exhaust Manifold Flange Bolts ⁽¹⁾	28 (38)
Exhaust Tube-To-Exhaust Manifold Flange Bolts ⁽¹⁾	20 (27)
Fan Clutch Hub-To-Coolant Pump	98 (133)
Flywheel/Flexplate Mounting Bolts	69 (94)
Front Cover Module Bolts	18 (25)

Front & Rear Lifting Eye	30 (40)
Fuel Filter Plug Assembly (Back Of Head)	20 (27)
Fuel Injector Hold-Down Bolt	24 (33)
Fuel Supply & Return Tubes At Filter	32 (43)
Glow Plug	14 (19)
Head Supply Tubes At Filter	19 (26)
High Pressure Oil Pump Mounting Bolts	18 (24)
High Pressure Tube (Case-To-Head)	33 (45)
ICP Sensor	9 (12)
Injection Control Pressure Sensor	9 (12)
Injection Pressure Regulator Valve	37 (50)
Lower Crankcase Main Bearing Cap Bolts ⁽⁴⁾	
Step 1	110 (149)
Step 2	130 (176)
Step 3	170 (231)
Lower Crankcase Outer Bolts (M8 x 30) ⁽⁵⁾	18 (25)
Lower Oil Pan Bolt	10 (13)
Manifold Air Temperature Sensor	13 (17)
Motor Mount Nuts	83 (112)
Oil Cooler Mounting Bolts	
6 mm	(6)
8 mm	16 (22)
Oil Drain Pan Plug	18 (25)
Oil Filter Housing Bolts (Torx)	11 (15)
Oil Pickup Tube Flange Bolts	10 (13)
Oil Rail Check Valve	25 (34)
Piston Cooling Jet Mounting Bolt ⁽⁷⁾	10 (13)
Power Steering Pump Bolt	18 (25)
Rear Heat Shield	
M6 x 1.0 x 12	(8)
M10 x 1.5 x 16	36 (49)
Rocker Arm Fulcrum Plate	23 (31)
Starter Mounting Bolts	18 (25)
Starter Positive Cable Nut	9 (12)
Thermostat Housing Retaining Bolts	17 (23)
Torque Converter Nut	26 (35)
Transmission-To-Engine Bolts	35 (47)
Turbocharger Exhaust Adapter V-Clamp	9 (12)
Turbocharger Flange-To-Exhaust/EGR Tube Bolts ⁽¹⁾	20 (27)
Turbocharger Mounting Bolts	28 (38)
Turbocharger Oil Supply Tube Bolts	18 (25)
Turbocharger Pedestal Bolts	23 (31)
Turbo Down Pipe Bolts	30 (40)

Upper Oil Pan Bolts (M6)	10 (13)
Upper Oil Pan Bolts (M8)	23 (31)
Vibration Damper Mounting Bolts ⁽³⁾	
Step 1	50 (68)
Step 2	Additional 90 Degrees
INCH Lbs. (N.m)	
Air Inlet Duct Clamp	44 (5)
Automatic Transmission Tube Nut	71 (8)
Camshaft Position Sensor	96 (11)
Crankcase Breather Nuts	62 (7)
Crankshaft Position Sensor	96 (11)
EGR Clamp (V-Band)	53 (6)
EGR Cooler Coolant Supply Port Cover	89 (10)
Engine Ground Strap Bolt	89 (10)
Glow Plug Relay	96 (11)
High Pressure Oil Pump Cover Bolts	96 (11)
High Pressure Oil Pump Discharge Tube Mounting Bolts (Top Of Pipe)	71 (8)
Intake Manifold Flange Bolts	96 (11)
Intake Manifold Heat Shield	96 (11)
Oil Filter Return Tube Bolt (New Base)	44 (5)
Oil Filter Return Tube Bolt (Reinstallation)	27 (3)
Oil Pump Housing Retaining Bolts	71 (8)
Oil Rail Assembly ⁽⁹⁾	96 (11)
Oil Rail Vent Plugs	96 (11)
Power Steering Cooler Bolts	96 (11)
Solenoid Wire Nut	53 (6)
Starter Control Wire Nut	53 (6)
Transmission Tubes Mounting Bracket Bolts	89 (10)
Transmission Cooler Bolts	71 (8)
Valve Cover Bolts & Studs	71 (8)

(1) Apply high temperature Nickel anti-seize lubricant to the threads prior to assembly.

(2) Tighten bolts in sequence. See **Fig. 1**.

(3) Tighten bolts in sequence. See **Fig. 2**.

(4) Tighten bolts in sequence. See **Fig. 3**.

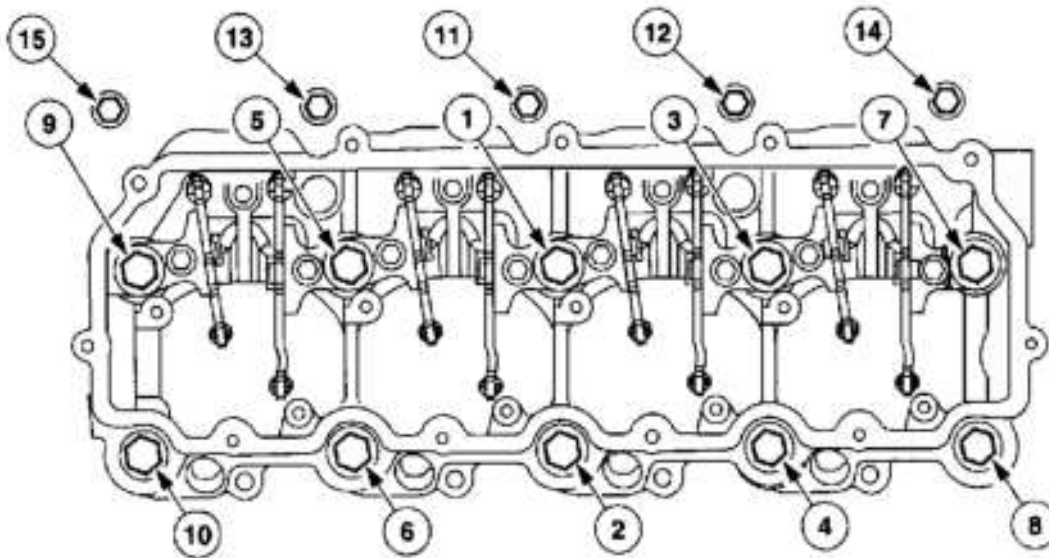
(5) Tighten bolts in sequence. See **Fig. 4**.

(6) Tighten to 89 INCH lbs. (10 N.m).

(7) Apply Threadlock 262 to bolt threads prior to assembly.

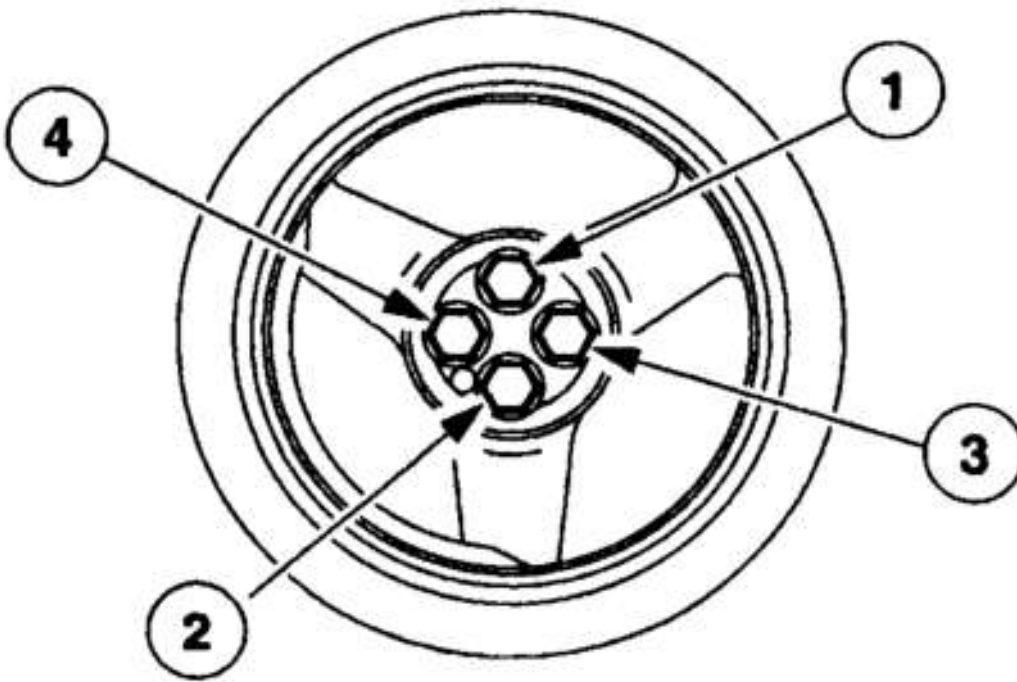
(8) Tighten to 96 INCH lbs. (11 N.m).

(9) Tighten bolts in sequence. See **Fig. 5**.



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Fig. 1: Cylinder Head Bolt Tightening Sequence
Courtesy of FORD MOTOR CO.



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Fig. 2: Crankshaft Vibration Damper Bolt Tightening Sequence
Courtesy of FORD MOTOR CO.

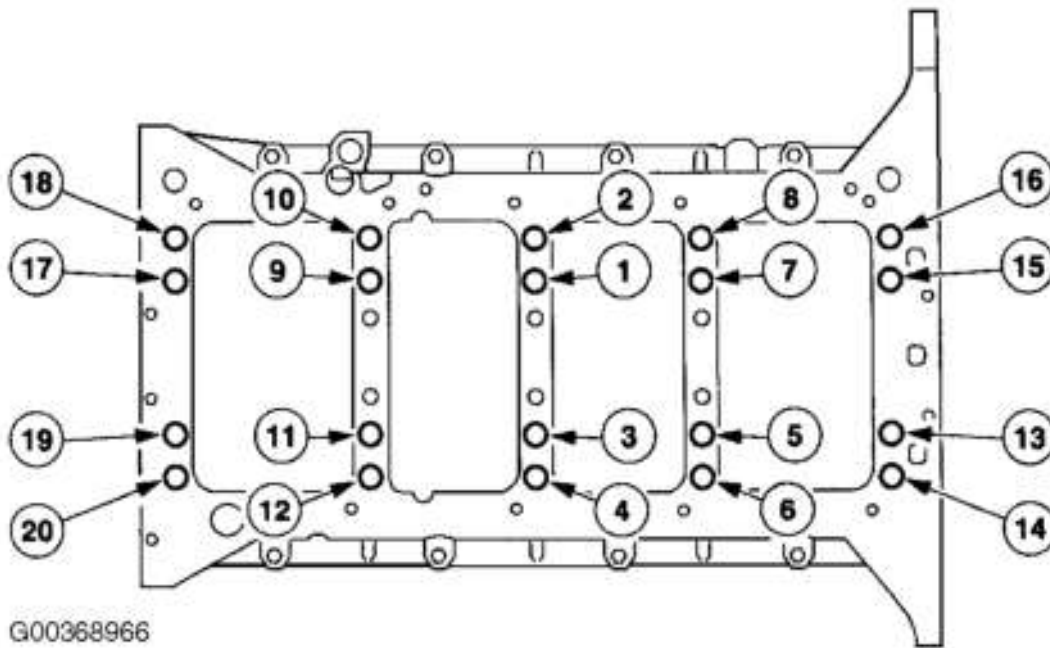
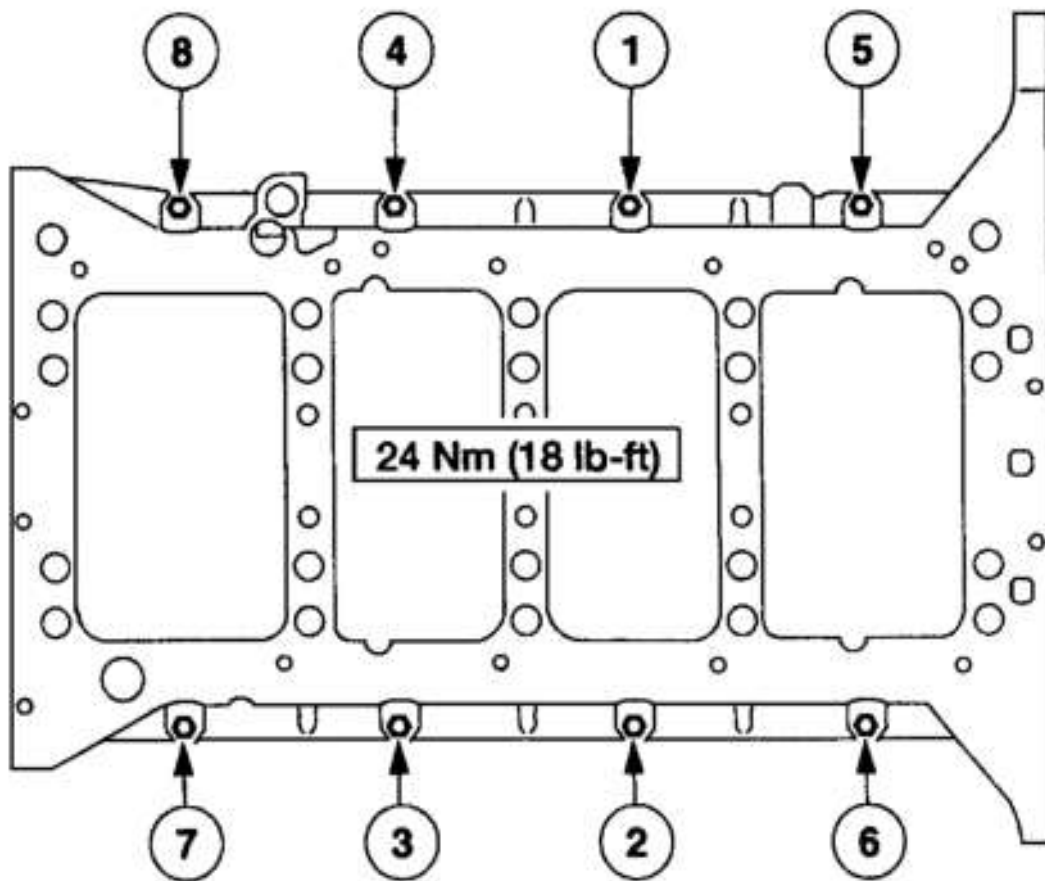
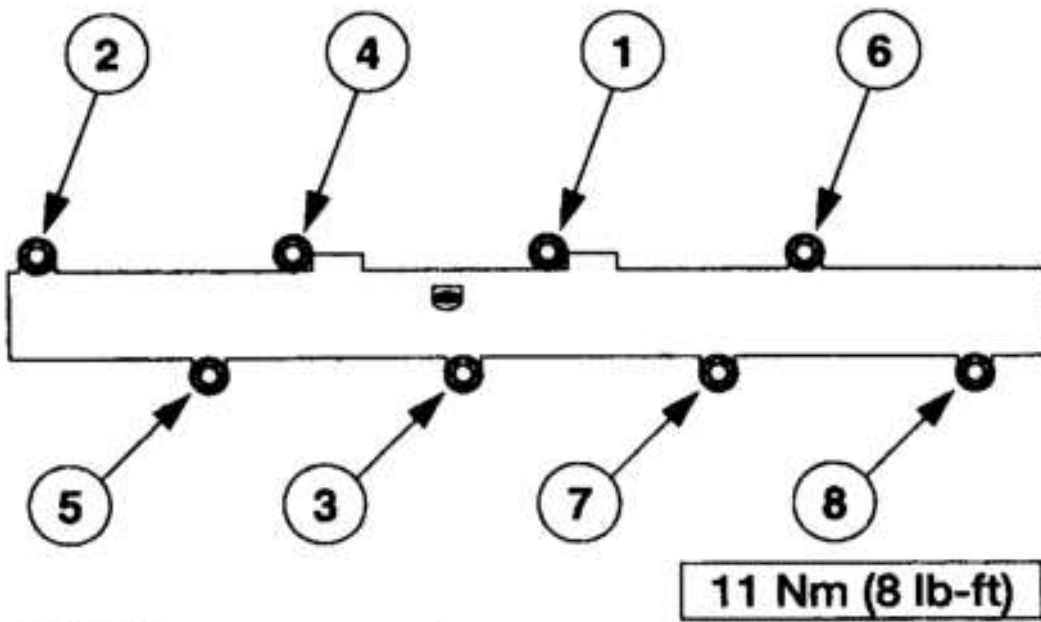


Fig. 3: Lower Crankcase Main Bearing Mounting Bolt Tightening Sequence
Courtesy of FORD MOTOR CO.



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Fig. 4: Lower Crankcase Outer Bolt Tightening Sequence
Courtesy of FORD MOTOR CO.



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Fig. 5: Oil Rail Bolt Tightening Sequence
Courtesy of FORD MOTOR CO.