

Engine Data (289 ci)

Compression Ratio	9.3:1
Bore	4.00 inches
Stroke	2.870 inches
Firing Order	1, 5, 4, 2, 6, 3, 7, 8
Oil Pressure (hot)	35 to 60 lbf/in ²

Pistons

Diameter:	
Color coded red	3.9984 to 3.9990 inches
Color coded blue	3.9996 to 4.0002 inches
Piston-to-cylinder bore clearance	.0018 to .0026 inch

Piston Rings

Ring side clearance:	
Top ring	.0019 to .0036 inch
Second ring	.002 to .020 inch
Oil ring	Snug fit
Ring gap:	
Top ring	.010 to .020 inch
Second ring	.010 to .020 inch
Oil ring	.015 to .055 inch

Crankshaft

Main bearing journal diameter	2.2482 to 2.2490 inches
Connecting rod journal diameter	2.1228 to 2.1236 inches

Engine Data (302 ci)

Compression Ratio	8.0:1 (10.5:1 Boss)
Bore	4.0 inches
Stroke	3.0 inches
Firing Order	1, 5, 4, 2, 6, 3, 7, 8
Oil Pressure (hot)	40 to 60 lbf/in ²

Pistons (standard 302 engine)

Diameter:	
Color coded red	4.0004 to 4.0052 inches
Color coded blue	3.9996 to 4.0002 inches
Piston-to-cylinder bore clearance	.0018 to .0026 inch

Pistons (Boss 302 engine)

Diameter:	
Color coded red	3.9968 to 3.9974 inch
Color coded blue	3.9980 to 3.9986 inch
Piston-to-cylinder bore clearance	.0034 to .0042 inch

Piston Rings (all 302 engines)

Ring side clearance:	
Top ring	.002 to .004 inch
Second ring	.002 to .004 inch
Oil ring	Snug fit
Ring gap:	
Top ring	.010 to .020 inch
Second ring	.010 to .020 inch
Oil ring	.015 to .069 inch

Crankshaft

Main bearing journal diameter	2.2482 to 2.2490 inches
Connecting rod journal diameter	2.1228 to 2.1236 inches
Connecting rod journal diameter (Boss engine)	2.1222 to 2.1230 inches

Engine Data (351 ci)

Compression Ratio	9.5:1
Bore	4.0 inches
Stroke	3.5 inches
Firing Order	1, 3, 7, 2, 6, 5, 4, 8
Oil Pressure (hot)	45 to 75 lbf/in ²

Pistons

Diameter:	
Color coded red	3.9978 to 3.9948 inches
Color coded blue	3.9990 to 3.9960 inches
Piston-to-cylinder bore clearance	.0018 to .026 inch

Piston Rings

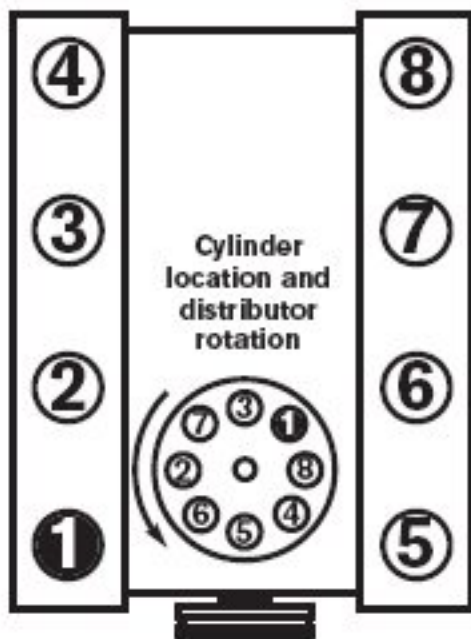
Ring side clearance:	
Top ring	.002 to .004 inch
Second ring	.002 to .004 inch
Oil ring	Snug fit
Ring gap:	
Top ring	.010 to .020 inch
Second ring	.010 to .020 inch
Oil ring	.015 to .069 inch

Crankshaft

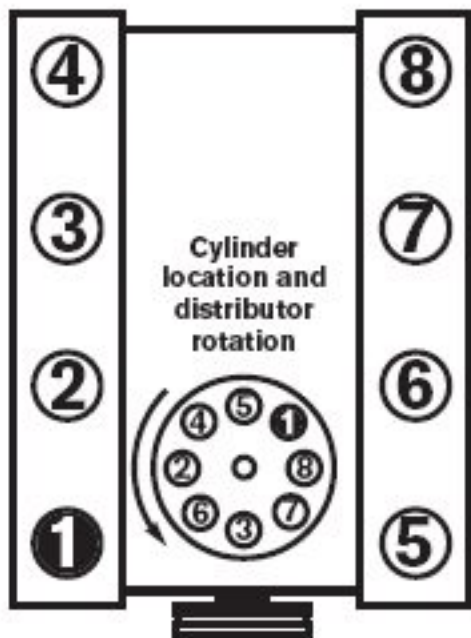
Main bearing journal diameter (351 W)	2.2994 to 3.0002 inches
Main bearing journal diameter (351 C)	2.7484 to 2.7492 inches
Connecting rod journal diameter	2.3103 to 2.3111 inches

Cylinder Numbers and Firing Order

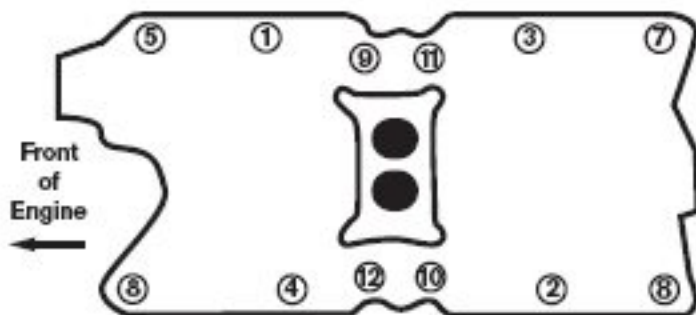
351W, 351C, and 302 HO
Firing Order 1-3-7-2-6-5-4-8



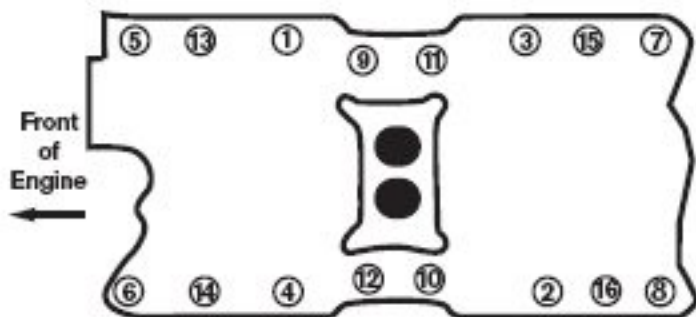
All others
Firing Order 1-5-4-2-6-3-7-8



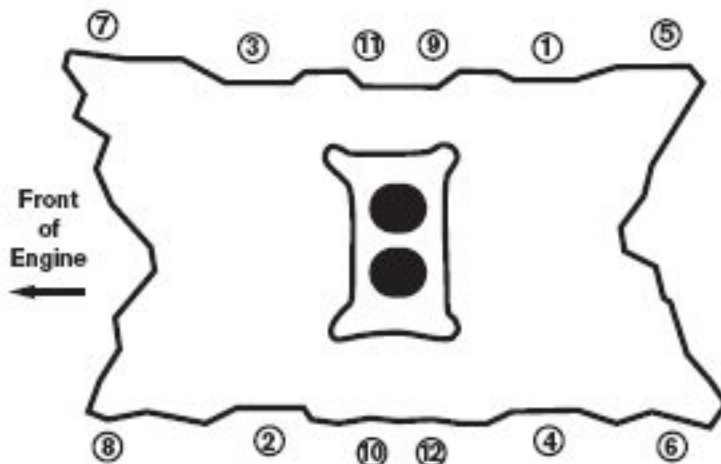
Torque Sequences



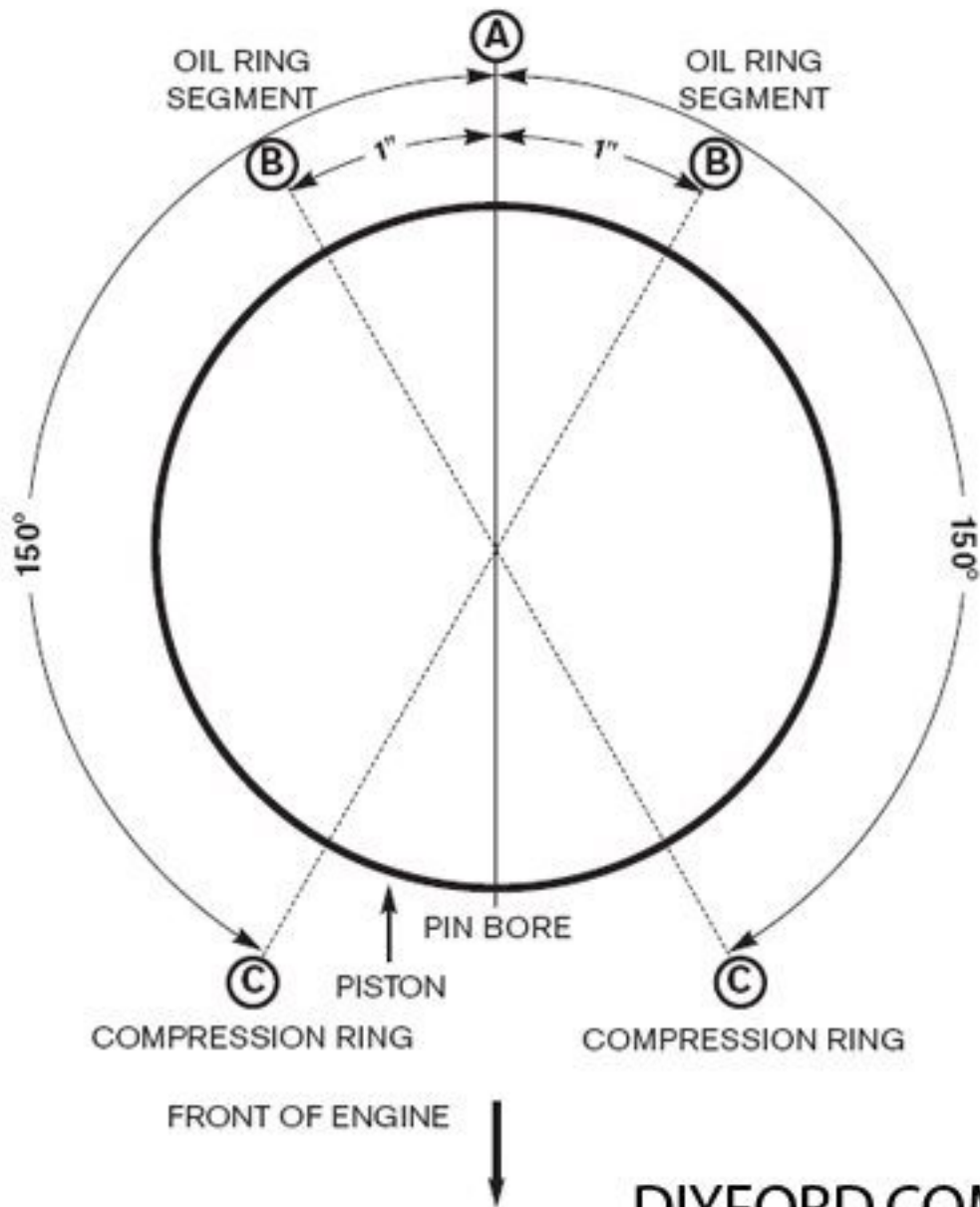
Correct slacking and tightening sequence of intake manifold bolts—260, 289, 302 engines



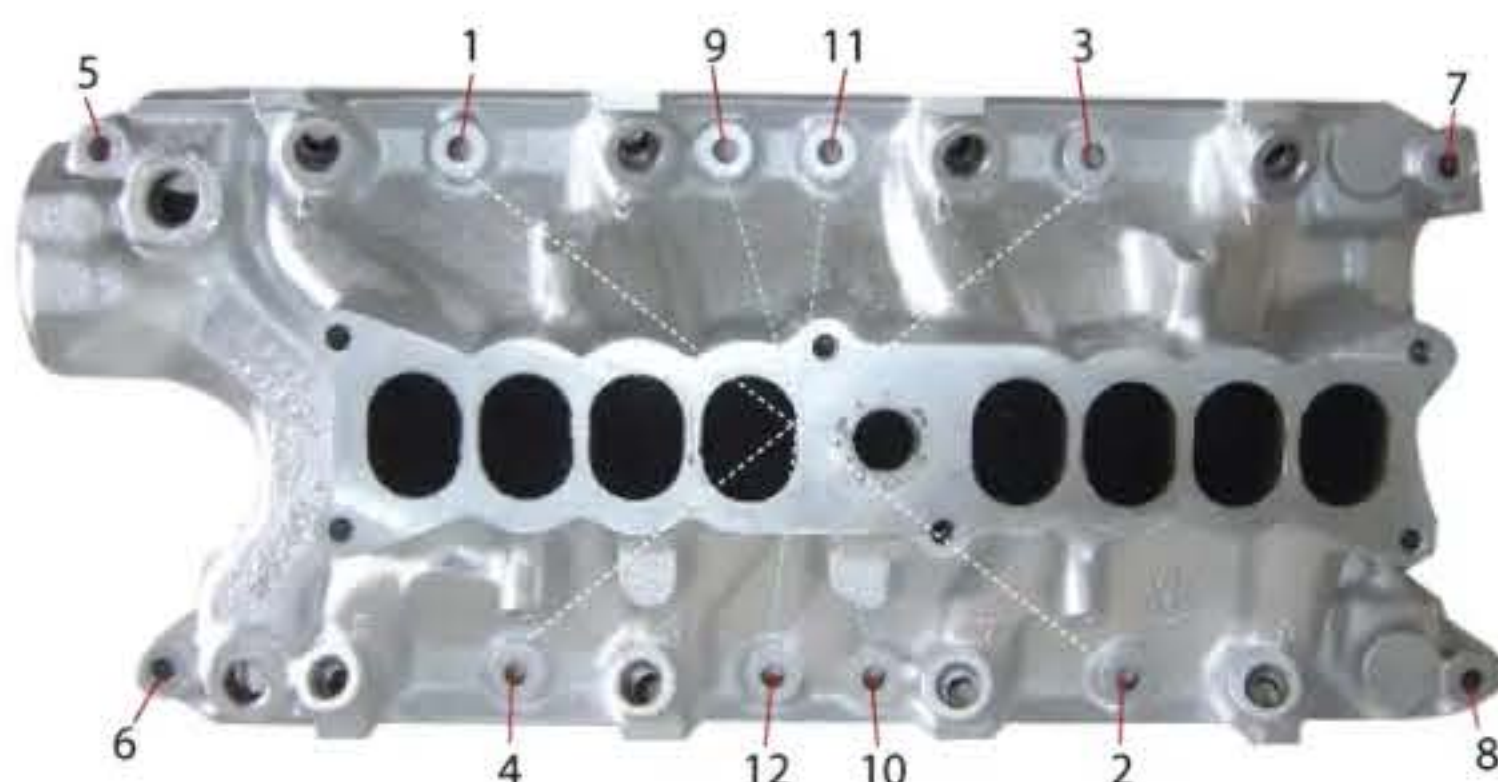
Correct slacking and tightening sequence of intake manifold bolts—351W engine



Correct slacking and tightening sequence of intake manifold bolts—351 Cleveland Engine



5.0HO (302) Intake Manifold Torque Specs



Lower Intake Manifold to Head Bolts

- Step 1: 15-20 FT/LBS
- Step 2: 23-25 FT/LBS
- Use tightening sequence as illustrated above

Upper Intake Manifold to Lower Bolts

- 12-18 FT/LBS

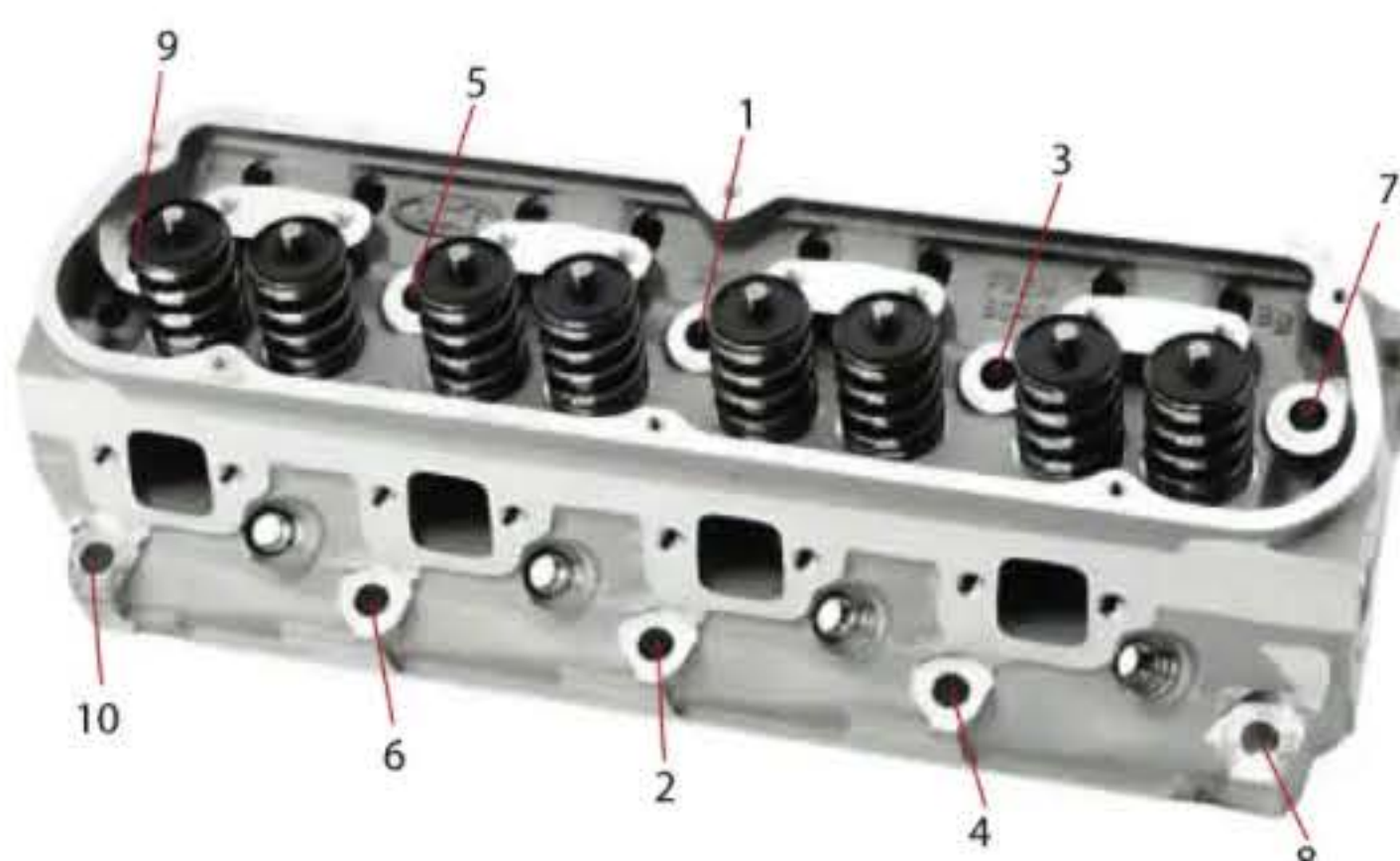
Other Related Torque Specs

Throttle body to EGR spacer	12-18 FT/LBS
EGR Valve to intake manifold spacer	12-18 FT/LBS
Fuel rail bolts	70-105 in/lbs

[Want to learn everything about the GT40 intakes? >>](#)

5.0 HO (302) Head Torque Specs

Note: Be sure to lightly oil the bolt threads for proper torquing specs for bolts not in the water jackets, otherwise use liquid thread sealer for the bolts that are in the water jackets (bottom ones).



Cylinder Head to Engine Block (Standard Bolts 1972-1992)

- Step 1: 55-65 FT/LBS
- Step 2: 65-72 FT/LBS
- Use tightening sequence as illustrated above

Cylinder Head to Engine Block (Flanged Bolts 1993+)

- Step 1: 23-35 FT/LBS
- Step 2: 45-55 FT/LBS
- Step 3: Additional 90 degrees (or 75-85 FT/LBS)
- Use tightening sequence as illustrated above
- The 93+ use "Torque to yield" bolts, you cannot re-use these bolts

Other Related Torque Specs

Exhaust manifold bolts	18-24 FT/LBS (Cobra: 26-32 FT/LBS)
Rocker arm fulcrum bolts	18-25 FT/LBS
Spark plugs	7-14 FT/LBS
Valve cover bolts	12-15 FT/LBS

[Learn everything you need to know about the GT40 heads >>](#)

5.0 HO (302) Internal Components Torque Specs

Camshaft sprocket bolt	40-45 FT/LBS
Camshaft thrust plate to engine block bolts	108-144 in/lbs
Oil pump mounting bolts	22-32 FT/LBS
Main bearing cap bolt	60-70 FT/LBS
Oil pickup tube to bearing cap nut	22-32 FT/LBS
Oil pickup tube to oil pump bolts (1979-1987)	10-15 FT/LBS
Oil pickup tube to oil pump bolts (1988-1993)	12-18 FT/LBS
Connecting Rod Bolts	22-25 FT/LBS

Other Torque Specs

Front engine mount nuts	72-98 FT/LBS
Timing chain cover bolts	12-18 FT/LBS
Oil pan mounting bolts 1979 (small bolts)	Step 1: 7-9 FT/LBS Step 2: 10-15 FT/LBS
Oil pan mounting bolts 1979 (large bolts)	Step 1: 11-13 FT/LBS Step 2: 10-15 FT/LBS
Oil pan mounting bolts 1980-1987	9-11 FT/LBS
Oil pan mounting bolts 1988-1993	6-9 FT/LBS
Water pump bolts	12-18 FT/LBS
Bell-housing to engine bolts	28-38 FT/LBS
Pressure plate to flywheel bolts	12-24 FT/LBS
Flywheel mounting bolts	75-85 FT/LBS
Vibration damper to crankshaft bolt	110-130 FT/LBS