



FORD PERFORMANCE

M-6007-SCJ18 5.2L SC - 50th Anniversary Cobra Jet Engine

Engine Information

Item	Specification
Displacement	317 CID (5.2 L)
Bore	3.70 in (94 mm)
Stroke	3.666 in (93 mm)
Firing order	1-5-4-8-6-3-7-2
Spark plug	CYFS-092-YPT (SP542)
Spark plug gap	0.028-0.035 in (0.7-0.9 mm)
Compression ratio	9.7:1

Engine Tolerances and Clearances

Item	Specification
Main Bearing Clearance	0.0011 – 0.0025 in (0.027 – 0.063 mm)
Crankshaft End Play	0.0043 – 0.0110 in (0.110 – 0.280 mm)
Connecting Rod Bearing Clearance	0.0011 – 0.0027 in (0.029 – 0.069 mm)
Connecting Rod Side Clearance	0.0059 – 0.0197 in (0.150 – 0.500 mm)
Piston Pin to Connecting Rod Clearance	0.0003 – 0.0008 in (0.008 – 0.021 mm)
Piston Pin to Piston Bore Clearance	0.0003 – 0.0009 in (0.008 – 0.024 mm)
Piston to Bore Clearance	0.0016 – 0.0024 in (0.041 – 0.061 mm)
Piston Ring Gap – Top	0.0180 – 0.0020 in (0.457 – 0.508 mm)
Piston Ring Gap – 2 nd	0.0180 – 0.0020 in (0.457 – 0.508 mm)
Piston Ring Gap – Oil Control Segment	0.0059 – 0.0177 in (0.15 – 0.45 mm)
Valve Spring Installed Height (Intake and Exhaust)	1.8061 – 1.8159 in (45.875 – 46.125 mm)
Valve Stem to Guide Clearance – Intake	0.0007 – 0.0027 in (0.019 – 0.069 mm)
Valve Stem to Guide Clearance – Exhaust	0.0017 – 0.0037 in (0.044 – 0.094 mm)



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Item	Specification
Valve diameter - Intake	1.51 in (38.3mm)
Valve diameter – Exhaust	1.28 in (32.5mm)
Valve lift	Int - .551 in (14mm) Exh - .551 in (14mm)
Camshaft duration	Int – 270deg Exh – 270deg
Chamber volume	55cc



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Torque Specifications

Item	Specification
Camshaft bearing cap bolts	53 lb-in + 45° (6 Nm + 45°)
Camshaft position sensor bolt	89 lb-in (10 Nm)
Connection rod cap	65 lb-ft (88Nm)
Coolant outlet bolts	89 lb-in (10 Nm)
Coolant outlet pipe bolt	89 lb-in (10 Nm)
Coolant pump bolts	18 lb-ft (25 Nm)
Coolant pump pulley bolts	18 lb-ft (25 Nm)
Crankshaft position sensor bolts	89 lb-in (10 Nm)
Crankshaft damper bolt	Stage 1: 66 lb-ft (90 Nm) Stage 2: Back out to a minimum of 4 lb-ft (5 Nm) Stage 3: Torque 129 lb-ft +90° (175 Nm +90°)
Crankshaft rear seal retainer bolts	89 lb-in (10 Nm)
Cylinder head pipe plugs	124 lb-in + 180° (14 Nm + 180°)
Cylinder head temperature sensor	97 lb-in (11 Nm)
Front cover bolts	18 lb-ft (25 Nm)
Oil filter	¾ to 1 turn after contact
Engine mount bracket bolts	41 lb-ft (55 Nm)
Alternator bolts	35 lb-ft (48 Nm)
Ignition coil on plug bolts	53 lb-in + 45° (7 Nm + 45°)
Intake manifold bolts	106 lb-in (12 Nm)
Knock sensors	15 lb-ft (20 Nm)
Oil filter adapter bolts	18 lb-ft (25 Nm)
Oil pan bolts	89 lb-in + 45° (10 Nm + 45°)
Oil pressure sensor	10 lb-ft + 180° (14 Nm + 180°)
Primary timing chain tensioner bolts	89 lb-in (10 Nm)
Spark plugs	133 lb-in (15 Nm)
Supercharger cover	106 lb-in (12 Nm)
Supercharger pulley	130 lb-in (14Nm)
Thermostat housing bolts	89 lb-in (10 Nm)



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Item	Specification
Timing chain guide	89 lb-in (10 Nm)
Throttle body	88 lb-in (10 Nm)
Cam cover bolts	89 lb-in (10 Nm)
VCT phaser assembly bolts	133 lb-in + 90° (15 Nm + 90°)
VCT solenoid bolts	70 lb-in + 30° (8 Nm + 30°)



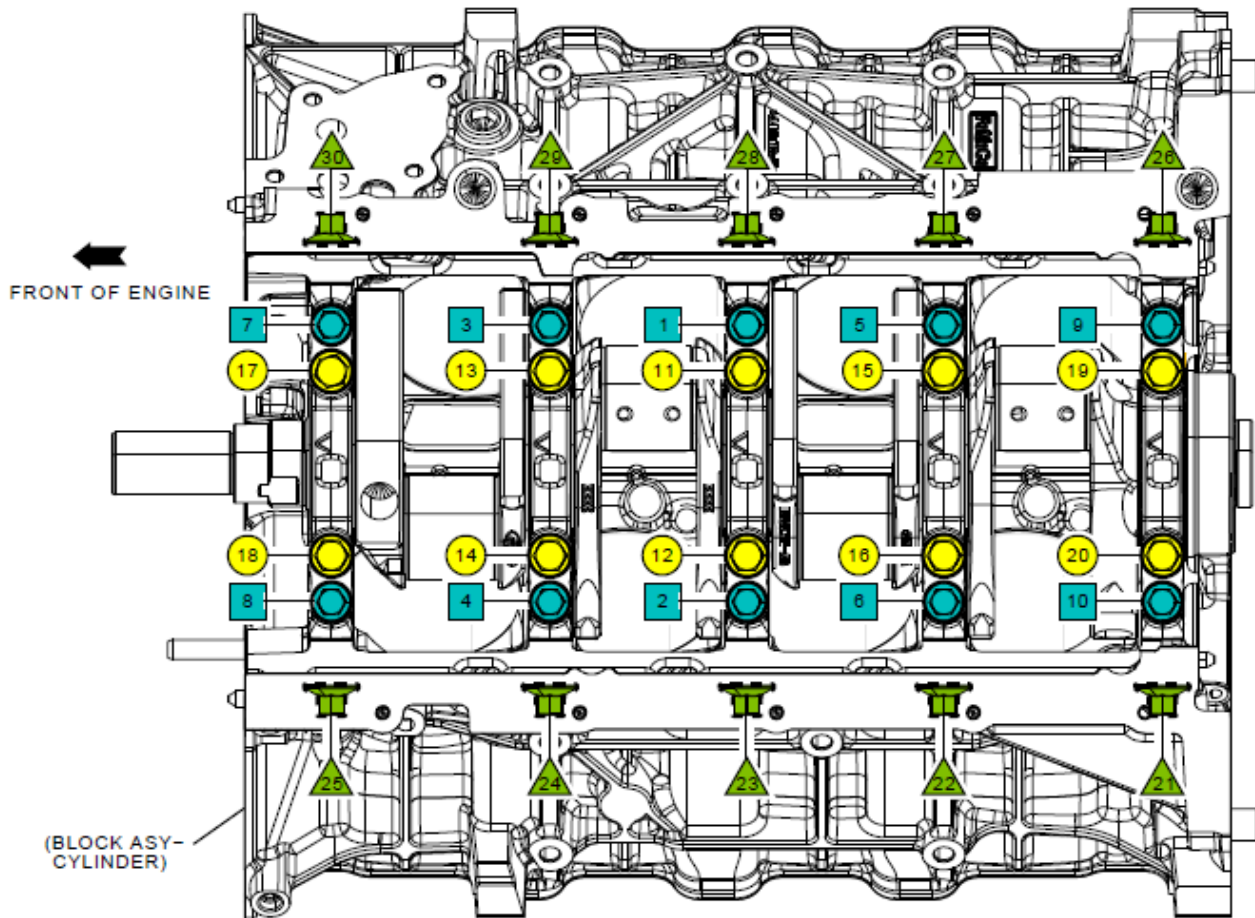
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Crankshaft Main Bearing Caps and Fasteners Final Torque Procedure

1. Torque fasteners 1-20 in sequence 15 lb-ft (20 Nm)
2. Torque outer fasteners 1-10 in sequence 30 lb-ft (40 Nm)
3. Torque inner fasteners 11-20 in sequence 48 lb-ft (65 Nm)
4. Rotate fasteners 1-20 in sequence clockwise 90°
5. Torque side bolts 21-30 in sequence 22 lb-ft (30 Nm)
6. Torque side bolts 21-30 in sequence clockwise 60°



 = -8345-G (15mm HEX)
BOLT- MAIN BEARING

 = -8C358- (13mm HEX)
SIDE BOLT- MAIN BEARING

 = -8345-H (13mm HEX)
BOLT- MAIN BEARING

NOTE:
CRANKSHAFT MAIN BEARING CAP BOLTS
CAN BE RE-USED A MAXIMUM OF (5) TIMES.



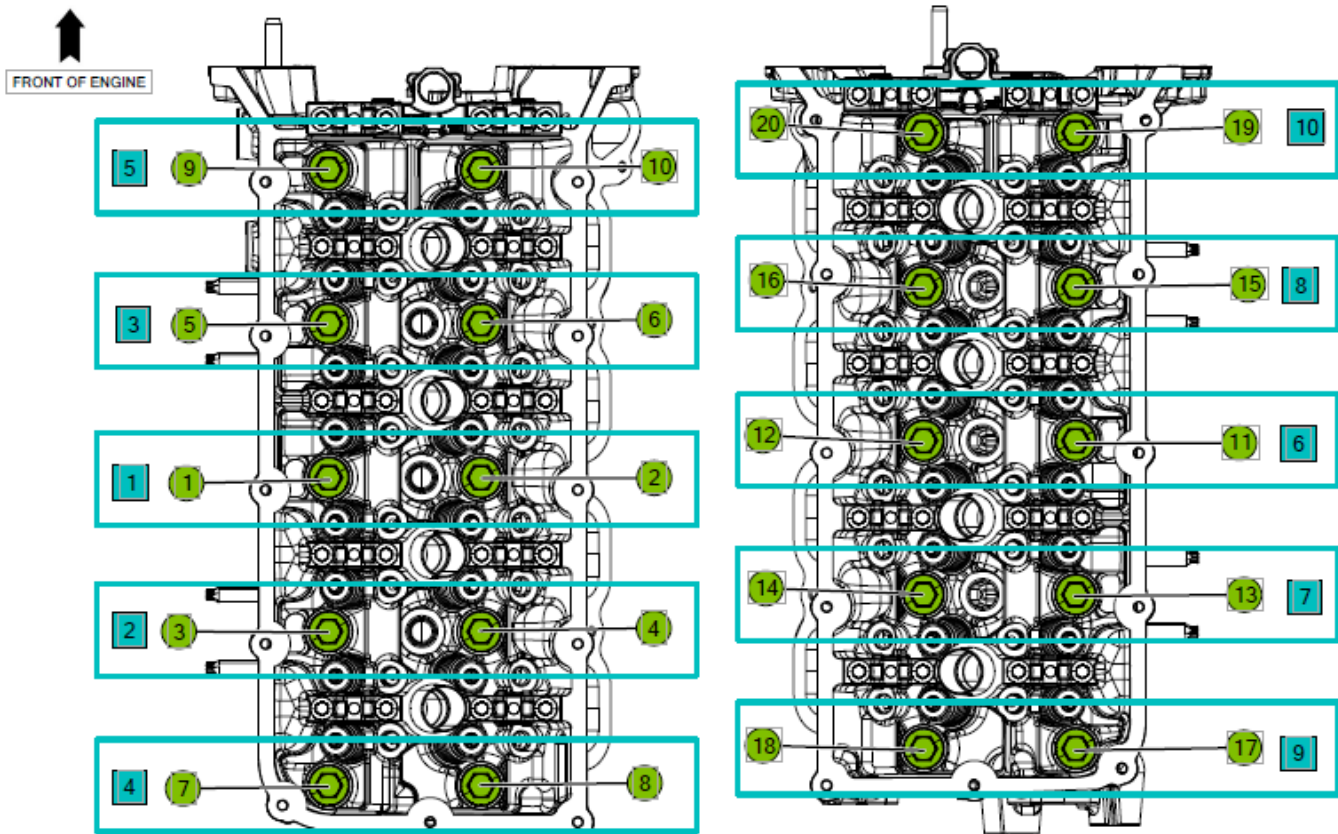
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SINGLE WRENCH METHOD (SERVICE)

1. INSTALL CYLINDER HEAD ASSEMBLIES (-6049-/6050-) OVER DOWELS.
2. INSTALL (10) M12 HEAD BOLTS INTO EACH CYLINDER HEAD.
3. TORQUE HEAD BOLTS 1 THRU 20 IN SEQUENCE TO 30 +/- 5 Nm.
4. TORQUE HEAD BOLTS 1 THRU 20 IN SEQUENCE TO 50 +/- 5 Nm.
5. ROTATE HEAD BOLTS 1 THRU 20 IN SEQUENCE 90 DEG. +/- 5 DEG. CLOCKWISE (TIGHTENING).
6. ROTATE HEAD BOLTS 1 THRU 20 IN SEQUENCE AN ADDITIONAL 90 DEG. +/- 5 DEG. CLOCKWISE (TIGHTENING).
7. ROTATE HEAD BOLTS 1 THRU 20 IN SEQUENCE AN ADDITIONAL 90 DEG. +/- 5 DEG. CLOCKWISE (TIGHTENING).





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Oil Pump Assembly Torque Procedure

1. Rotate inner rotor of oil pump asy to align with flats on crankshaft post and slip oil pump over until seated against block. *Note: Pump must be held against block until bolts are torqued*
2. Rotate oil pump, align bolt holes and install fasteners
3. Torque fasteners 0 lb-ft (0 Nm)
4. Torque fastener #1 to (25Nm), Fastener #2 to (20 Nm) and Fasteners #3 to (10 Nm)
5. Rotate fastener #1 75°, Fastener #2 60°, and fasteners #3 45°

NOTE:
BACKGROUND DETAIL NOT PICTORIALLY
ACCURATE FOR ALL APPLICATIONS

