6.7L 2011-2019 Rebuild and Assembly Guide

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Ford 6.7L Power Stroke Engine – Assembly Torque & Bearing Clearance Specs

Applies to 2011–2019 6.7L Power Stroke Diesel Engines. All torque-to-yield fasteners must be replaced. Bearing clearances must be MEASURED during assembly and verified against OEM limits.

Cylinder Head Bolts (TTY – Replace)

Step	Specification
1	15 lb-ft (20 Nm)
2	36 lb-ft (49 Nm)
3	90° turn
4	90° turn
5	90° turn

Main Bearing Cap Bolts

Stage	Torque
1	59 lb-ft (80 Nm)
2	118 lb-ft (160 Nm)
3	90° turn
Side Bolts	30 lb-ft (40 Nm) + 90°

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Connecting Rod Bolts

Step	Torque
Initial	33 lb-ft (45 Nm)
Final	50 lb-ft (68 Nm)

Bearing Clearances (Critical Measurements)

Component	Standard Clearance
Main bearing oil clearance	0.0015–0.0030 in (0.038–0.076 mm)
Rod bearing oil clearance	0.0013–0.0028 in (0.033–0.071 mm)
Crankshaft end play	0.004–0.010 in (0.10–0.25 mm)
Camshaft journal clearance	0.0015–0.0045 in (0.038–0.114 mm)

Camshaft end play	0.002–0.008 in (0.05–0.20 mm)

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Valvetrain & Camshaft Torque

Component	Torque
Camshaft thrust plate bolts	18 lb-ft (24 Nm)
Rocker arm pedestal bolts	20 lb-ft (27 Nm)
Valve cover bolts	8 lb-ft (11 Nm)

Common Engine Accessories

Component	Torque
Intake manifold bolts	16–18 lb-ft (22–25 Nm)
Glow plugs	11–14 lb-ft (15–19 Nm)
Turbo oil feed fitting	35 lb-ft (47 Nm)
Flexplate/Flywheel bolts	69 lb-ft (94 Nm) – Replace

IMPORTANT: Bearing clearances are provided as assembly targets. Always verify with micrometers and bore gauges. Adjust using proper bearing grades if out of spec.

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6.7L POWER STROKE PISTON BORE SPECIFICATIONS

Section	Item	Specification
Standard Bore	Standard Bore Size	3.897" – 3.900" (MAX)
Oversize	.010" Over	3.907"
Oversize	.020" Over	3.917"
Oversize	.030" Over	3.927"
Oversize	.040" Over	3.937"
High Output Note	Additional Clearance	Add +0.001" clearance for applications exceeding 800 HP
Cylinder Finish	Crosshatch Angle	32°
Cylinder Finish	Final Hone	280-grit stone
Cylinder Finish	Final Finish	Plateau brush

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Engine Break-In Guidance – 6.7L Power Stroke

Oil Type Recommendations
Use standard engine oil only during the break-in period.

- 5W-40/10W-40 for bearing clearances under 0.0035"
- 20W-50 for bearing clearances 0.0040" and greater

(race or loose-clearance engines)
Special break-in oils or additives are not required. Modern diesel engine oils already contain sufficient anti-wear additives to protect bearings and piston rings during break-in.

Running Guidelines – First 1,000 Miles

- Do not allow the engine to idle for more than 10 minutes at a time
- Operate the engine at moderate RPM
- Avoid heavy load, towing, or sustained high RPM
- Change the engine oil at 1,000 miles to remove break-in debris and metal particles

Camshaft Note:
The 6.7L Power Stroke uses a hydraulic roller camshaft, which does not require a camshaft break-in procedure. No special cam break-in oil or process is necessary.

Oil Filter & Debris Inspection
Inspect the oil filter periodically during the first 1,000 miles.

- A small amount of fine metal particles in the filter is normal during break-in
- Excessive metal debris is a serious warning sign

If excessive metal is found:

- Stop running the engine immediately