

popular HOT RODDING QUICK REFERENCE CHART

CHEVROLET 427 cubic-inch 'Rat Motor'

Bore: 4.25

Stroke: 3.76

Compression Ratio: 11.0-to-1 stock

Maximum BHP: 435 at 5800 rpm - Three two-barrels

Maximum Torque: 460 at 4000 rpm - Three two-barrels

Firing Order: 1-8-4-3-6-5-7-2 Rotation: clockwise

Cyl. numbered: 1-3-5-7 left bank; 2-4-6-8 right bank

Valve clearance: stock - .024 Intake .028 Exhaust

Compression pressure: 150 psi

Idle manifold vacuum: 18 inches

Plug gap: .028

Point gap: .019

Oil pressure: 45 psi

Fuel pressure: seven psi

Total timing at 4000 rpm - 38 degrees

Torque Specifications

Cylinder head: 80 ft-lbs

Rod bolts: 55 ft-lbs for 3/8-inch bolts 70 ft-lbs for 7/16-inch bolts

Main bolts: 95 ft-lbs for two-bolt caps 115 ft-lbs for four-bolt caps

Flywheel bolts: 65 ft-lbs

Manifolds

Intake: 30 ft-lbs

Exhaust: 20 ft-lbs

Rocker studs: 50 ft-lbs

Crankshaft & bearing specifications:

Rod journal diameter: 2.200

Clearance: .0018

Rod side clearance per pair: .020

Main journal diameter: 2.7505

Clearance: .0018

Valve specifications:

Intake diameter: 2.19

Seat angle: 45 degrees

Spring pressure: 100 lbs @ 1.88 inches
installed height - 1.875

Exhaust diameter: 1.88

Seat angle: 45 degrees

Spring pressure: 100 lbs @ 1.88 inches
installed height - 1.875

Piston specifications - stock

Weight: 767 grams

Skirt to cylinder wall clearance: .005

Valve to piston clearance: .125

Minimum deck height: .008

Rod specifications

Length: 6.135

Pins - can be pressed in rod or floating in rod

Diameter: .990

Hi-Performance Chevrolet Engine Parts

Listed for L-88

Crankshaft Part number 3879621

Rod Part number 3942406 7/16-inch bolts

Piston 12.5-to-1 compression Part number 3909857 floating pin

Piston 12.5-to-1 compression Part number 3893262 pressed pin

Head-cast iron Part number 3904386

Head-aluminum Part number 3919838

Manifold intake Part number 3919847

Oil pan Part number 3872429 Five quart

Windage tray Part number 3873878 for five quart pan

Oil pan Part number 3879633 Six quart

Windage tray Part number 3879640 for six quart

Oil Pump Part number 3946023 high cap

Valve Springs Part number 3916164

Fuel pump Part number 6440718

Piston ring set Part number 3879912

Pushrod 7/16-inch Part number 3942416 intake

Pushrod 7/16-inch Part number 3942415 exhaust

Pushrod guide plate Part number 3879620

Rocker stud Part number 3921912

Valve 2.19 inches Part number 3864808 intake

Valve 1.84 inches Part number 3879619 exhaust

Rocker ball Part number 3899622

Heat shield Part number 3931093 keeps oil off bottom of intake

Flywheel Part number 3866735 15 3/4 lbs.

Cam Part number 3925535

Head gasket Part number 3935458

Rod Part number 3959187 floating pin

Rod bolt Part number 3959186

Pin retainer Part number 3942423

Rocker arm Part number 3959182 long slot

Oil pump Part number 3963594

Manifold intake Part number 3947083

Valve lifter Part number 5232695

Fuel pump Part number 6440718

427 Chevy engine tips

When removing oil pan, rotate crankshaft until timing mark is at 6 o'clock position. Raise engine four inches for big block engines, two inches for small block engines.

Always remove distributor cap when raising or lowering engine.

Braze oil pickup to oil pump.

Beware of a half engine speed noise that sounds like bad lifter noise. It might be the fuel pump. Use hollow pushrod or fuel pump with rubber bumper.

When ordering intake gaskets specify high performance or special high performance gaskets. They will not interchange.

When 7/16-inch rod bolt is torqued to 55 ft-lbs., it stretches .007-inch.

When 3/8-inch rod bolt is torqued to 55 ft-lbs., it stretches .008-inch.

Use 2½-inch O.D. diameter headers.

Try for 107 "cc" per combustion chamber.

Chevy/Holly carb tips

External float adjustment—½ turn = 1/8-inch float level change.

Accelerator pump cam—#1 hole in throttle lever is minimum pump stroke; #2 hole is maximum pump stroke.

Street L88 carburetor vetting—#78 LF—#74 RF—#76 LR—#78 RR. R.3418—1 AAS—850 cfm.

More Engine Tips

Early 396/427 engines did not have dowel pins for timing chain cover. Use balancer to guide and center front seal when installing cover.

Beware when notching pistons for valve clearance. You can go too far.

Mr. gasket has head bolts 1/8-inch longer than stock. This allows the use of flat washers on head bolts.

If you plan to use a stroker kit, use the 366/396/427 truck block.