

Block Prep

Block line-honed [Y / N]
Amount block decked: drvr _____; pssgr _____
Edges filed off of sharp edges [Y / N]
All boltholes thread chased [Y / N]
Oil passages rifle-brushed [Y / N]
Block washed ___ times with _____ (cleaner)
Oil galley plugs installed [Y / N]

NOTE! *Double check to make sure passenger side, rear-most lifter supply galley plug was installed. This is NOT the plug at the back of the block, rather accessed BY the plug at the back of the block.*

Cam bearings installed [Y / N]
Brand _____ Part # _____
Freeze Plugs: Brass ___ Steel ___ Sealant (if any) _____
Install dipstick tube (middle piece, in block) [Y / N]
Deck Plate used for bore/hone [Y / N]

Date section completed: _____

Notes: _____

Crank Prep

Oil holes chamfered [Y / N]
Cross-drilled [Y / N]
Journals turned: main _____; rod _____
Bearing part #'s: main _____; rod _____
Journals and oil holes cleaned [Y / N]
Turned _____" on main, and _____" on rod journals
***Offset ground [Y / N] by _____"

Crank Prep cont.

Rear seal type/part #, sealant(s) used, installation notes:

Bearing prep (if any) _____

Assembly lube used on crank/bearings _____

Rear seal lubricated [Y / N] with _____

Lube used on main cap bolts (or studs) _____

Main [bolts/studs], brand/part # _____/_____

Main caps [2 / 4]-bolt brand/part# _____/_____

Main bearing clearances:

1_____; 2_____; 3_____; 4_____; 5_____

Main cap torque steps ____, ____, ____, ____, ____, ____.

NOTE: rotate crank at end of each step to verify that there is no binding.

Main cap final torques: 1-4 _____; rear _____

Source(s) for torque specs _____

Final torque double check:

	Front	2	thrust	4	Rear
pass. side	___	___	___	___	___
drvr. side	___	___	___	___	___

Crankshaft endplay measurement: _____ "

Test fit windage tray, and turn crank one full turn to assure there is no interference [Y / N]

Date section completed: _____

Notes: _____

Pistons and Rods

Pistons: brand/part # _____

Piston pins: brand/part #/weight _____

***Piston valve relief/dish/dome volume _____ cc's

Piston prep (pins fitted, polishing, coatings, etc.): _____

Diameters: piston/*bore* (enter "N/C" if not checked)

1 - ____/____ 3 - ____/____ 5 - ____/____ 7 - ____/____

2 - ____/____ 4 - ____/____ 6 - ____/____ 8 - ____/____

***Average amount bored over _____"

Rods: brand/type _____

Shot peened [Y / N] ; Polished [Y / N]

Rod bolts: brand/part # _____/_____

Bolts [torqued / stretched] to _____ for rod
resizing. If torqued, bolts lubricated with

_____.

(check here if rods NOT resized _____)

Rings: brand/part # _____

Ring gap (check here ____ if rings installed w/o measure):

Top 1 ____ 3 ____ 5 ____ 7 ____

2 ____ 4 ____ 6 ____ 8 ____

2nd 1 ____ 3 ____ 5 ____ 7 ____

2 ____ 4 ____ 6 ____ 8 ____

Ring clock position:

Driver's side - top ____ o'clock; 2nd ____ o'clock

Passenger - top ____ o'clock; 2nd ____ o'clock

Type of lube used on pistons skirts/rings: _____

Pistons and Rods, cont.

Rod bearing prep: _____

Lube used on rod bearings: _____

NOTE: *remember protective caps for rod bolts during piston/rod installation.*

Rod bolts tightened to:

a final stretch of _____"; or

a final torque of _____, using _____ as lube.

Rod bearing final clearances:

1 _____ 3 _____ 5 _____ 7 _____

2 _____ 4 _____ 6 _____ 8 _____

Rotate crankshaft after each journal pair of rods/pistons are completed to verify nothing is binding, and measure side clearance.

1/2 _____, 3/4 _____, 5/6 _____, 7/8 _____

***Final deck heights:

1 _____ 3 _____ 5 _____ 7 _____

2 _____ 4 _____ 6 _____ 8 _____

Test fit windage tray, turn crank one full revolution to verify there is no interference - [Y / N]

Oil pump: brand/part # _____/_____

Oil pump driveshaft: [new / re-used old]

tabs left on _____, or ground off _____

NOTE: *remember to install driveshaft with pump if tabs are not ground off.*

Pistons and Rods, cont.

Any oil pump prep (blueprinting, etc.) _____

Pick up screen: pressed on ____, [welded / brazed] on ____
clearance to oil pan _____.

Oil pump bolts torqued to _____.

Install windage tray, and lower dipstick tube. Test fit
dipstick to assure proper installation.

Locking compound used on windage tray bolts - [Y / N]

Piston to valve clearances [____ not checked]

1 - ____/____

3 - ____/____

5 - ____/____

7 - ____/____

2 - ____/____

4 - ____/____

6 - ____/____

8 - ____/____

Date section completed: _____

Notes: _____

Camshaft

Brand _____ Grind # _____

Specs: Duration (gross)_____/____ (0.050")_____/____

Lift ____/____ Lobe separation angle _____

Advance/Retard (circle one) ground into cam ____°

Advance/Retard (circle one) as installed ____°

Lifters: brand _____ part # _____

Timing chain: brand _____ part # _____

Type of lube applied to cam lobes _____

Camshaft retaining plate bolts torqued to _____

Locking compound used? [Y / N]

Install timing gears/chain, and degree cam now

Degreeing info:

____° at 0.050" before max intake lift+

____° at 0.050" after max intake lift= _____

÷ 2 = _____ = intake centerline

Fuel pump eccentric: new _____ or used _____

Cam bolt torqued to _____. Type of locking compound used _____

Date section completed: _____

Notes: _____

Heads & Valvetrain

Casting # _____ Date codes drvr/pssgr _____/_____

Ported by _____ to flow
_____ cfm at _____" valve lift at _____" of water (intake)
_____ cfm at _____" valve lift at _____" of water (exhaust)

Surfaced/milled _____" Intake face milled _____"

***Chamber volumes:

1 _____	3 _____	5 _____	7 _____
2 _____	4 _____	6 _____	8 _____

Pushrod holes enlarged for 1.65 rocker arms: [Y / N]

Exhaust crossover filled [Y / N] with _____.

Valve job angles (int) valve _____ seat _____
(exh) valve _____ seat _____

Valve guides [iron / bronze] [new / old] [honed / knurled]

Valve seals: intake _____; exhaust _____

Valve springs, brand/part #: int _____/exh _____

installed height (int/exh) _____/_____

Pressures: seat _____/_____ open _____/_____

Max safe valve lift _____/_____

Coil bind at _____/_____ ; Retainer to seal _____/_____

Heads & Valvetrain cont.

Retainers: brand/part # _____/_____; material _____

Locks: brand/part # _____/_____ [7° / 10°]

Rocker arms: brand _____; part # _____; ratio _____

Rocker studs: brand _____; part # _____; size _____
torqued to _____ with locking compound [Y / N]

Adjusting nuts: brand _____; part # _____

Pushrods: brand _____; part # _____; length _____

Head fasteners [bolts/studs]: brand _____; part # _____
if studs used, installed with locking compound [Y / N]

Head gasket: brand _____; part # _____
check for imperfections - drvr [Y / N]; pssgr [Y / N]

*** Head gasket compressed thickness 0.0”

Block deck cleaned with solvent [Y / N]

Cylinder deck cleaned with solvent [Y / N]

Lube used on head fastener threads _____

Head bolts torqued in steps of ____, ____, ____, ____, ____,
____ to a final torque of _____. Reference for torque
sequence is _____

Date section completed: _____

Notes: _____

Buttoning it up

Install new seal on timing cover. Seal part # _____

Seal lubricated with _____

____ Timing cover installed. Anti-seize on bolts [Y / N]

____ Inspect harmonic damper for damage (i.e. cracks
around keyway, rubber deterioration, etc.)

Damper (brand/part# _____ / _____)torqued to _____

SFI approved [Y / N]

____ Test fit oil pan

____ Install oil pan & gaskets. Sealant used _____

(Flywheel / flexplate) brand/part # _____ / _____

SFI approved [Y / N]

bolts torqued to _____

Locking compound used [Y / N]

NOTE: *installation with motor on engine stand may
not be possible with all stands.*

____ Install lifters, pre-lubed [Y / N] with _____

____ Install pushrods & rocker arm assemblies

Rocker arm (lash / preload) adjusted to _____

____ Install valley pan. New PCV grommet used [Y / N]

Date section completed: _____

Notes: _____

At this point, I consider the engine "built". Intake, distributor, exhaust manifold and the remaining installations are rather straight forward, and do not fall in the scope of this procedure.

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