



INFORMATION SHEET

340 / 410 / 440 Crate Engines

PART NUMBER P5153526 – 340 Six Pack Crate Engine
P5153527 – 410 Six Pack Crate Engine
P5153523 – 440 Super Commando Crate Engine

Crate Engine Assembly

This package includes (1) crate engine assembly. This engine assembly does not come with the carburetor(s), fuel pump, or other accessory component parts.

Read all instructions before beginning installation.

Part			C.I.		
Number	Bore	Stroke	Disp.	Type	Balance
P5153526	4.040"	3.310"	340	LA	Internal
P5153527	4.040"	4.000"	410	LA	Internal
P5153523	4.185"	4.000"	440	LA	Internal

Please check your crate engine part number and compare to the features shown above to confirm that you have the proper assembly prior to performing installation.

Internal Engine Balance

The 340 / 410 / 440 crate engines are internally balanced and must be used with a neutral balance damper (included w/ engine), flywheel, or flex-plate & torque converter. The recommended components are shown below:

- Flywheel – P4529110 or stock w/ neutral balance
- Flexplate – P4876821 (w/ 5/16" bolts), or P4529751 (w/ 7/16" bolts)
- Converter – any stock style w/ neutral balance

Technical Information

Listed below are some books that may be helpful for installation and maintenance of your crate engine:

- P4876826 – Small Block "A" Engines
- P5007521 – Mopar Crate Motor Installation Manual
- P5153775 – How to Build Big-Inch Mopar Small Blocks
- P5007160 – Mopar Chassis Manual

Oil Pan and Oil Pump

These crate engines use 340 & R3 engine blocks that are machined for use with 1967-1991 318/340 style oil pans (large hoop on the rear of the oil pan).

Most Plymouth and Dodge rear wheel drive passenger cars from 1966 to 1983 used a center sump oil pan (P5249061 –

included with 340 crate engine). A rear sump oil pan (P5249062) is normally used in most Dodge truck applications. You can use the production Magnum oil pan or one of the oil pans listed above. Each of these two oil pan packages includes the proper oil pickup tube for use with the oil pan.

A deep center sump oil pan is included on the 410 and 440 crate engine. These engines make more power with the deep sump since it reduces windage with the longer stroke.

In some cases, it may be necessary to change the oil pan to fit your vehicle. Be sure to change the oil pickup and dipstick assembly at the same time to the proper components for your new oil pan. Failure to use an oil pickup or dipstick assembly designed for the new oil pan can result in severe engine damage.

Camshaft

Mechanical roller camshafts conversions are not recommended with these crate engines. In most cases, the tie bar of the tappet interferes with the block, and it is difficult to get enough clearance without grinding into the water jacket on the block (destroying the block).

Engine Mounting

These blocks include dual engine mounts (both the standard "LA" 318 mounting ears and late model Magnum 5.2L / 5.9L Dakota mounts on the side of the block). If your vehicle was originally equipped with a 340 or 360 "LA" engine you will need to use a 318 motor mount (late 1970's 318) on the left hand side. The right side "LA" 340/360 motor mounts are the same on the right hand side. Obtain the proper motor mounts for your model vehicle, if it was available with one of these engines. If your vehicle did not come with a 318, 5.2L, or 5.9L it may be necessary to change the K-Frame in your vehicle. It is strongly recommended that new engine mounts be installed along with your engine. For other applications please consult the Mopar Performance Chassis Modifications Manual (P5007160) for full details on K-Frame change requirements and interchangeability, or call the Direct Connection Hotline at (888) 528- HEMI (4364).

Transmission / Torque Converter

All 1967 & up small block V-8's have the same bell-housing bolt pattern. Use a transmission from a 340/360 or 5.9L



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transmission since these are designed to handle more torque. 273 and 318 transmissions will fit, but may fail since they are not made to handle high torque.

Engine Oil

Do not use synthetic engine oil for the first 4,000 miles on any new or rebuilt engine. The piston rings may **not** seat properly when synthetic motor oil is used.

Camshaft Lube

Flat tappet camshafts require a special additive to provide proper lubrication to the lobes and tappets. Add Comp Cams additive (# 159) to the engine oil before initial start up and at each oil change.

Carburetion

The 340 and 410 engines come with a six pack intake manifold. This manifold is setup for the use of (3) 2-barrel carburetors. The recommended carburetors and installation parts are shown below (not included with crate engine):

	<u>340</u>	<u>410</u>
Center Carb	P4349241	P4349235
End Carb (2)	P4349239	P4349236
Installation Kit	P4529058	P4529058
Air Cleaner Kit	P4529057AB	P4529057AB

The 440 engine comes with a single plane intake that is designed for use with a Holley 4150 style carburetor (not included w/ crate engine). It is recommended that an 830-850 CFM carburetor is used with this engine. In most cases, a carburetor adapter plate will be needed – use P5007869 or a suitable substitute adapter.

Using different carburetors may affect the engine power output. However, owners may use any brand carburetor they are most familiar with. Care should be exercised not to run the engine in a lean fuel/air condition as engine damage may result. Signs of a lean fuel/air mixture are spark detonation, rough idle, low power at lower RPM levels, and/or severe drop in idle RPM when the transmission is placed in gear, or a high RPM miss-fire.

Fuel System

Install new fuel filters when installing the new engine. The fuel cap should be removed and the fuel lines blown out with low

pressure (under 5 PSI) air prior to initial fire up. Either a mechanical or electric fuel pump can be used. If a mechanical fuel pump is preferred, a new fuel pump should be used. To install a new fuel pump, remove the block off plate from the timing cover. The recommended fuel pressure is 5 - 6.5 PSI.

Fuel Requirements

These engines are designed for use with Premium unleaded fuel rated at not lower than 93 octane (R+M/2) scale. Premium!

Exhaust System

The choice and installation of an exhaust system is left to each purchaser. Almost all Chrysler rear wheel drive vehicles were built with a small block engine as either original equipment or as an option. Consequently, production cast iron exhaust manifolds were produced and can usually be located through salvage yards, swap meets or new from Chrysler. If headers are preferred, Mopar Performance as well as many aftermarket suppliers have headers for popular Chrysler vehicles.

When installing or fabricating an exhaust system, the exhaust system must not contact any part of the vehicle while the engine is running or at rest. A clearance of at least 1.00" must be allowed in all directions from the entire exhaust system. For safety reasons, special care must be taken to ensure the steering linkage, electrical wires, and fuel lines cannot come in contact with any component of the exhaust system.

Engine Breathing

A breather or PCV valve must be added to the engine. The valve covers have knockouts that can be removed for installation of a breather. These knockouts have not been removed from the valve covers when the engine is shipped, and this allows the customer to choose where they want the breather added. Grommet package P5007921 can be used with the valve covers on this engine. Remove the valve cover from the engine and remove the knockout from the inside with punch. File the knockout hole to clean it up to an approximate diameter of .950" - .980". Be sure to clean the valve covers to remove any metal particles before re-installing them on the engine. The breather or PCV valve must have a diameter of approximately .750" for use with this grommet set.

Cooling System



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These crate engines come with the water pump but do not come with pulleys. The pump is designed for a standard V-Belt operation. Use pulleys from any 1964-1991 LA small block engine or aftermarket pulleys that fit these applications. Changes to the pulley ratio (slowing down the water pump) is not recommended on the 410 and 440 engine since slowing it down may cause it to run hotter than normal. Do not mix and match pulleys if you have a choice. The alternator and its brackets bolt to the head in the same location as all "LA" engines. Check for pulley alignment on the water pump, alternator, damper, and power steering.

Fill the cooling system with a 50/50 mix of high quality antifreeze and distilled water.

Starter

The production starter will fit fine. If you don't have a starter or need a new one, use P5249644AB.

Prime

The last thing to do, once everything else is ready, is to prime the engine. Remove the distributor and intermediate shaft, (noting the position of the rotor), and use priming tool (P4286800) with an electric drill operated in clockwise direction to prime the engine. Once primed, re-install the intermediate shaft and distributor with the rotor pointing in exactly the same direction as before.

After Initial Start Up

Oil Pressure – IMMEDIATELY upon start up, check to ensure that engine is developing oil pressure. If NO OIL PRESSURE IS INDICATED, TURN THE ENGINE OFF. Double check the oil level and repeat the procedure to prime the engine. If no oil pressure can be detected, call (888) 528-Hemi (4364) for technical assistance and instructions. Continue only when oil pressure is established.

Check for Leaks – Look under the car for fluid leaks – coolant, oil, transmission or power steering. Check all hose connections for coolant leaks. Check the exhaust system for exhaust leaks. If leaks of any kind are detected, turn off the engine and correct the leaks before proceeding.

Check Engine Temperature – Check the engine Temperature. The engine Temperature should not rise above 180 degrees

while performing the steps listed above. If the engine temperature rises above 200 degrees, then turn off the engine and correct any cooling problems. Problems could be caused by a collapsed radiator hose, low coolant level, blocked airflow to radiator, fan problem, or a bad radiator. Also check to make sure that the radiator is of adequate size for this engine.

Initial "Break-In" Procedure:

Follow the schedule listed below to perform the Initial "Break-In" on the engine:

For the first 30 minutes of operation (engine under load): Do not subject the engine to full throttle, limit engine speed to 3000 RPM and vary the engine speed (do not cruise at a steady RPM) as you drive, keeping the new engine's RPM above 2000 RPM. Keep a close watch on the engine oil pressure and coolant temperature. Discontinue operation if the oil pressure drops below 10 PSI while idling or 30 PSI while driving or if the coolant temperature rises above 200 degrees. Turn the engine off and re-inspect for leaks. Inspect for loose mounting bolts and / or linkage.

For the next 30 minutes of operation: Limit engine speed to 4500 RPM. Give the engine five or six full throttle applications, separated by light throttle applications of 4 to 5 minutes each.

For the next 30 minutes of operation: Limit engine speed to 5500 RPM. Alternate light, medium and full throttle application with part throttle cruising.

After 1.5 to 4 hours of normal operation: Change the engine oil and filter. Mopar recommends the use of 10W-30 or 20W-50 high quality motor oil. Do not use synthetic motor oil until the vehicle has been driven at least 4000 miles and is fully 'broken-in'. Be sure to add the Comp Cams oil additive (#159) when you change the oil (and at each future oil change).

For technical assistance, please contact the Direct Connection Tech Hotline - Monday-Friday, 7:00am - 3:00pm EST at 1(888) 528-HEMI or 1(888) 528-4364.

**MOPAR PERFORMANCE CRATE ENGINE ASSEMBLY
90-DAY LIMITED WARRANTY**



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MOPAR PERFORMANCE CRATE ENGINE ASSEMBLIES –

Crate engine assemblies not used in competition are warranted for “parts only,” AS DELIVERED against defects in materials or workmanship for 90 days from the date of purchase. The following covered components for Performance Engine Assemblies, which prove to be defective in materials or workmanship, will be replaced on an exchange basis for 90 days: cylinder block and all internal parts; cylinder head assemblies; intake manifold; core plugs; valve covers; oil pan; timing gear and / or chain and cover; water pump; gaskets and seals.

Chrysler, Plymouth, Dodge, and Jeep vehicle and parts warranties are voided if the vehicle or parts are used for competition or if they fail as a result of modification.