

350 HO Engine (12486041) Specifications

This publication provides general information on components and procedures which may be useful when installing or servicing a 350 HO engine. Please read this entire publication before starting work.

The information below is divided into the following sections: Package contents, Component information, 350 HO engine specifications, Additional parts that you may need to purchase, Torque specifications, and a Service Parts List.

The 350 HO engine incorporates modern technology in a package that can be installed in applications where 265-400ci small block Chevrolet V-8's were originally used. This complete engine is assembled using brand new, premium quality components. Due to the wide variety of vehicles in which a 350 HO engine can be installed, some procedures and recommendations may not apply to specific applications.

The 350 HO engine is manufactured on current production tooling; consequently you may encounter dissimilarities between the 350 HO engine assembly and previous versions of the small block V-8. In general, items such as motor mounts, accessory drives, exhaust manifolds, etc. can be transferred to a 350 HO when it is installed in a vehicle originally equipped with a small block V-8 engine. However, as noted in the following sections, there may be minor differences between a 350 HO engine and an older small block

V-8 engine. These differences may require modifications or additional components not included with the 350 HO engine. When installing a 350 HO engine in a vehicle not originally equipped with a small block V-8 it may be necessary to adapt or fabricate various components for the cooling, fuel, electrical, and exhaust systems.

It is not the intent of these specifications to replace the comprehensive and detailed service practices explained in the GM service manuals. GM service manuals are available from:

*Helm Incorporated
PO Box 07130
Detroit, MI 48207*

Observe all safety precautions and warnings in the service manuals when installing a 350 HO engine in any vehicle. Wear eye protection and appropriate protective clothing. When working under or around the vehicle support it securely with jackstands. Use only the proper tools. Exercise extreme caution when working with flammable, corrosive, and hazardous liquids and materials. Some procedures require special equipment and skills. If you do not have the appropriate training, expertise, and tools to perform any part of this conversion safely, this work should be done by a professional.

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| | 30NO99 | Initial Release | |
| | 28AU00 | Revision to Accessory Drive Brackets section | |

Legal and Emissions Information

This publication is intended to provide information about the 350 HO engine and related components. This manual also describes procedures and modifications that may be useful during the installation of a 350 HO engine. It is not intended to replace the comprehensive service manuals and parts catalogs which cover General Motors engines and components. Rather, it is designed to provide supplemental information in areas of interest to "do-it-yourself" enthusiasts and mechanics.

This publication pertains to engines and vehicles which are used off the public highways except where specifically noted otherwise. Federal law restricts the removal of any part of a federally required emission control system on motor vehicles. Further, many states have enacted laws which prohibit tampering with or modifying any required emission or noise control system. Vehicles which are not operated on public highways are generally exempt from most regulations, as are some special interest and pre-emission vehicles. The reader is strongly urged to check all applicable local and state laws.

Many of the parts described or listed in this manual are merchandised for off-highway application only, and are tagged with the "Special Parts Notice" reproduced here:

Special Parts Notice

This part has been specifically designed for Off-Highway application only. Since the installation of this part may either impair your vehicle's emission control performance or be uncertified under current Motor Vehicle Safety Standards, it should not be installed in a vehicle used on any street or highway. Additionally, any such application could adversely affect the warranty coverage of such an on-street or highway vehicle.

The information contained in this publication is presented without any warranty. All the risk for its use is entirely assumed by the user. Specific component design, mechanical procedures, and the qualifications of individual readers are beyond the control of the publisher, and therefore the publisher disclaims all liability incurred in connection with the use of the information provided in this publication.

Chevrolet, the Chevrolet Bow Tie Emblem, General Motors, and GM are all registered trademarks of the General Motors Corporation. Chevy is a trademark of the General Motors Corporation.

Package contents:

| <u>Item</u> | <u>Description</u> | <u>Quantity</u> | <u>GM Part Number</u> |
|-------------|--------------------|-----------------|-----------------------|
| 1 | Engine Assembly | 1 | 12486041 |
| 2 | Specifications | 1 | 12366576 |

Component Information:

The 350 HO engine has production Vortec cast iron cylinder heads. These cylinder heads were first used on 1996 trucks with fuel injection, RPO L31. The intake and exhaust ports are very similar to the 1992-1995 Corvette 350 LT1 heads. The heads include 1.94" intake valves and 1.50" exhaust valves with pressed-in 3/8" studs. The water passages are the same as the original 1955 small block design. These cylinder heads have the 1996-1998 Vortec style 8 bolt intake manifold mounting pattern.

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| | 20JN02 | Revision | |
| | 31JA 10 | Revision - Rob Smith | |

350 HO Engine Specifications:

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| Displacement: | 350 cubic inches |
| Bore x Stroke: | 4.00 inch x 3.48 inch |
| Compression | 9.1:1 |
| Block: | Cast iron, four-bolt intermediate mains |
| Cylinder Head: | Cast iron, 23° valve angle |
| Valve Diameter (Intake/Exhaust): | 1.94"/1.50" |
| Chamber Volume: | 64cc |
| Crankshaft: | Nodular iron, 1 piece rear seal |
| Connecting Rods: | Forged, powdered metal, 3/8" bolts |
| Pistons: | Cast aluminum |
| Camshaft: | Hydraulic flat tappet |
| Lift: | .435" intake, .460" exhaust |
| Duration: | 212° intake, 222° exhaust @ .050" tappet lift |
| Centerline: | 109° ATDC intake, 116° BTDC exhaust |
| Rocker Arm Ratio: | 1.5:1 (flat tappet) |
| Timing Chain: | Link Type Chain 0.762" wide |
| Oil Pan: | 4-quart |
| Oil Pressure (Normal): | 40 psi @ 2000 RPM |
| Oil Filter: | AC Delco part # - PF 25 |
| Fuel: | Premium unleaded - 92 (R+M/2) |
| Maximum Engine Speed: | 5700 RPM |
| Spark Plugs: | AC Delco part # R43LTS |
| Spark Timing: | 10° BTDC @ 700 RPM |
| Firing Order: | 1-8-4-3-6-5-7-2 |

Note: Information may vary with application. All specifications listed are based on the latest production information available at the time of printing.

Additional parts that may be needed:

Intake Manifold:

A GM Performance Parts dual plane intake manifold Part number 12366573 is available for use on this engine. The intake manifold was designed for use with raised intake ports and a standard flange Holley carburetor. This intake manifold does not have provisions for an exhaust gas recirculation (EGR) valve or a hot air choke. This manifold has the 1996-1998 Vortec style 8 bolt mounting pattern.

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Water Pump:

Several different water pumps are available for the 350 HO engine:

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| 12496652 | Long style aluminum |
| 9440982 | Bolt, Long style aluminum |
| 14011012 | Short style aluminum |
| 454467 | Bolt, Short style aluminum |
| 12529305 | Long style cast iron |
| 9442012 | Bolt, Long style cast iron |
| 12532528 | Long style cast iron reverse turning 1996-1998 L31 |
| 12552096 | Bolt, Long style cast iron reverse turning 1996-1998 L31 |

Any small block engine, regardless of year, that uses Vortec heads, will require an external coolant bypass line from the intake manifold to the 5/8" hose nipple on the water pump (passenger's side). Suggested routing is from the 3/8 NPSF boss on intake manifold to the water pump.

Ignition System:

An HEI (High Energy Ignition) Part number 1104067 can be used with the 350 HO engine. It is a self-contained ignition system that includes a magnetic pickup, a module, a coil, a rotor, and a cap. The HEI's large diameter cap minimizes arcing and cross-firing between adjacent spark plug terminals. The cap's male terminals provide a reliable, positive connection for the spark plug leads. However, the HEI's large diameter cap may interfere with other underhood components in vehicles not originally equipped with HEI ignition systems. Check for adequate clearance before installation. The HEI distributor supplied by GM has a hardened (melonized) drive gear that is compatible with a steel camshaft. Use of a non-hardened distributor gear will result in excessive wear.

The HEI system requires a 12 volt power supply for proper operation. The HEI ignition system should be connected directly to the battery with 10 or 12 gauge wire through a high quality ignition switch. If you are installing an HEI ignition in an early-model vehicle originally equipped with a point-type ignition, be sure to remove or bypass the resistor in the wiring harness to ensure the HEI receives 12 volts continuously. Use distributor connector package Part number 12167658, which includes connectors and wires for the HEI's tachometer and 12 volt terminals.

Set spark timing at 10° Before Top Dead Center (BTDC) at 700 RPM with the vacuum advance line to the distributor disconnected and plugged. This setting will produce 32° of total advance at Wide Open Throttle (WOT). The HEI vacuum advance canister should be connected to a ported vacuum source (no vacuum at idle). The HEI distributor supplied with the 350 HO engine has mechanical centrifugal and vacuum spark advance with the following curves:

| <u>Mechanical Advance:</u> | | <u>Vacuum Advance:</u> | |
|----------------------------|----------------|------------------------|----------------|
| <u>RPM</u> | <u>Advance</u> | <u>Vacuum (in. Hg)</u> | <u>Advance</u> |
| 1100 | 0.0° | 3.00" | 0.0° |
| 1600 | 12.0° | 7.50" | 20.0° |
| 2400 | 16.0° | | |
| 4600 | 22.0° | | |

Flywheel / Flexplate:

Like all small block V-8 engines produced since 1986, the 350 HO engine has a 3.00" diameter flywheel flange bolt pattern. Small block V-8 engines produced from 1958 through 1985 had a 3.58" diameter flywheel flange bolt pattern. This change in bolt circle diameter was made to accommodate a leak-resistant one-piece rear main seal. Due to revisions in the crankshaft design, a 350 HO engine must have a counterweighted flywheel (or flexplate) for proper balance. Additional flywheels and flexplates are available from the chart below.

350 HO Engine - Manual Transmission Flywheels

| <u>Part</u> | <u>Outside</u> | <u>Clutch</u> | <u>Starter Ring</u> | |
|---------------|-----------------|-----------------|---------------------|---|
| <u>Number</u> | <u>Diameter</u> | <u>Diameter</u> | <u>Gear Teeth</u> | <u>Notes</u> |
| 10105832 | 14" | 11.0,11.58" | 168 | For one-piece crank seal |
| 14088646 | 12 3/4" | 10.4,11.0" | 153 | Lightweight nodular iron flywheel, weighs approximately 15 lbs.; for one-piece crank seal |
| 14088650 | 12 3/4" | 10.4" | 153 | Standard weight flywheel; for one-piece crank seal |

350 HO Engine - Automatic Transmission Flexplates

| <u>Part</u> | <u>Outside</u> | <u>Clutch</u> | <u>Starter Ring</u> | |
|---------------|-----------------|-----------------|---------------------|--|
| <u>Number</u> | <u>Diameter</u> | <u>Diameter</u> | <u>Gear Teeth</u> | <u>Notes</u> |
| 14088765 | 12 3/4" | 10.75" | 153 | For one-piece crank seal |
| 12554824 | 14" | 11.50" | 168 | Heavy-duty flexplate with increased thickness for one-piece crank seal |
| 14088761 | 14" | 10.75,11.50" | 168 | For one-piece crank seal |

Starter:

The starter must be matched to flywheel (or flexplate) diameter when installing a 350 HO engine assembly. Small diameter flywheels are 12 3/4" diameter, and have starter ring gears with 153 teeth. Large diameter flywheels are 14" in diameter, and have 168 teeth on the starter ring gear. This difference in flywheel diameters requires two different starter housings. Starter noses used with 14" diameter flywheels have two offset bolt holes; starters used with 12 3/4 " diameter flywheels have bolt holes that are straight across from each other.

Note: Chevrolet starter motors use special shouldered mounting bolts, which register the starter on the block.

The following starters and hardware can be used with the 350 HO engine assembly:

- 10496870 Heavy-duty, remanufactured starter for 12 3/4 diameter flywheel/flexplate
- 1876552 Heavy-duty starter for 14" diameter flywheel/flexplate
- 14097278 Bolt, starter mounting, long, for heavy-duty starter
- 14097279 Bolt, starter mounting, short, for heavy-duty starter
- 10455709 Remanufactured permanent magnet gear reduction (PMGR) starter for 12 3/4 diameter flywheel/flexplate (10lb.)
- 9000852 Permanent magnet gear reduction (PMGR) starter for 14" diameter flywheel/flexplate (10 lb.)
- 14037733 Bolt, starter mounting, inner for 12 3/4 PMGR starter
- 12338064 Bolt, starter mounting, outer for 12 3/4 PMGR starter; also for 14" PMGR starter (2 required.)

Oil Pan / Filter / Adapter / Dipstick:

The 350 HO engine includes an oil pan Part number 12528916. This is a four quart, right-hand dipstick oil pan and gasket. An offset oil filter adapter may be installed to provide additional clearance for headers, clutch linkage, and suspension components. This offset oil filter adapter uses a small diameter spin-on filter element.

- 12556204 Offset oil filter adapter
- 12551589 Gasket, oil filter adapter
- 10244495 Seal, oil filter adapter
- 120392 Washer, oil filter adapter (2 required.)
- 14092398 Bolt, oil filter adapter (2 required.)

AC PF52 Filter to fit adapter, spin-on

The oil dipstick for the 350 HO engine is on the right-hand (passenger) side of the block. A dipstick for the left-hand (driver) side of the block is available. Check for clearance when replacing the dipstick of an early-model block with a left-hand dipstick. The recommended left-hand oil dipstick and oil dipstick tube are Part number 12551144 and Part number 12551154 respectively. This oil dipstick tube bolts to the engine block below the deck surface, and can be used with header-type exhaust systems.

Carburetor / Air Cleaner:

A 600 cfm four-barrel carburetor with either mechanical or vacuum operated secondaries and electric choke is recommended for the 350 HO engine. GM Performance Parts has a 600 cfm Holley four-barrel carburetor GM Part Number 12497147. This carburetor has vacuum secondaries and comes with #65 primary jets, and #39 secondary metering plate. You may need to change jets and or adjust your carburetor to suit your environment (i.e. altitude and ambient temperatures) and driving style.

A foam or paper element, low restriction air cleaner should be used to protect the engine from excessive wear and diffuse the air entering the carburetor. The fuel mixture distribution can be upset if no diffuser is used, causing poor power and misfiring at high engine speeds. Always check for adequate hood clearance when installing a new air cleaner. GM Performance Parts has two chromed, 14" diameter, open element air cleaner assemblies for single four barrel carburetors. Part number 12342079 has a plain top, and Part number 12342071 has a Chevrolet logo. Both of these air cleaner assemblies are supplied with a 3" tall filter element Part number 6421746 (AC # A212CW). A taller 4" element is available as Part number 8997189 (AC # A698C).

Fuel Pump:

The 350 HO engine does not include a fuel pump. However, it does have a mechanical fuel pump boss. The fuel system must be capable of supplying adequate fuel volume at a minimum of 6 psi pressure when the engine is operating at Wide Open Throttle (WOT). The following fuel pumps are available from GM Performance Parts. High volume, in-line, electric fuel pump Part number 25115899. This heavy-duty pump flows 72 gallons per hour at 6-8 psi outlet pressure. Street performance pump Part number 12355612. This pump can be used on all Chevrolet 283-400ci V-8 engines. The pump has a 7 psi shut off pressure, 3/8"-18 inlet and outlet ports and has a free flow rating of 110 gallons per hour. Competition pump Part number 12355613. This pump can be used on all Chevrolet 283-400ci V-8 engines. The pump has a 9 psi shut off pressure, 1/2"-14 inlet and outlet ports and has a free flow rating of 115 gallons per hour. Chrome street pump Part number 12355617. This pump can be used on all Chevrolet 283-400ci V-8 engines. The pump has 8.5 psi shut off pressure and has a free flow rating of 70 gallons per hour.

Headers:

A 350 HO engine can be equipped with a header exhaust system for maximum performance in applications where a nonproduction exhaust system is legal. For street performance and limited competition applications, the recommended header configuration is 1 3/4 diameter primary pipes, 32 to 36 inches long, with 3" diameter collectors. Use 2 1/2" diameter tailpipes with a balance tube ("H" pipe) and low restriction mufflers.

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Accessory Drive Brackets:

GM Performance Parts sells two different accessory drive kits for small block engines. One is intended for applications with air conditioning, GM Part Number 12497697 and the other is intended for applications without air conditioning, GM Part Number 12497698. Both packages contain the generator, water pump, power steering pump, belt and all the brackets and hardware. Depending on which package is purchased, either an air conditioning compressor, or an idler pulley is included as well.

If you do not need the entire package, components from a 1996-1998 truck will bolt directly to this engine. Consult a GM dealer or the appropriate GM Service Manual and Parts catalog if further information is required.

Spark Plugs / Spark Plug Wires:

The 350 HO engine does not come with spark plugs or spark plug wires. AC # R43LTS spark plugs are recommended for this engine.

If you are installing the engine in a vehicle originally equipped with a small block V8 with HEI ignition, standard replacement spark plug wires can be used. High performance 8mm diameter wire sets with the Chevrolet Bow Tie logo or with the GM Performance Parts logo are available from GM Performance Parts for custom installations. The GM Performance Parts logo wire sets are available as Part number 12361056 (135° spark plug boots) and Part number 12361057 (90° spark plug boots). The Chevrolet logo wire sets are Part number 12361050 (135° spark plug boots) and 12361051 (90° spark plug boots). The 135° spark plug boot sets are recommended for routing the spark plug wires over the valve covers, 90° spark plug boot sets are recommended for routing the spark plug wires under the exhaust headers.

Rocker Covers:

The 350 HO comes equipped with chromed center hold-down bolt rocker covers with the Chevrolet Bow Tie logo. A black plastic center hold-down bolt LT4 type rocker cover is available (Part number 12552321 LH and 12552322 RH). Also a black stamped steel center hold-down bolt is available (Part number 12555269 LH and RH). If you want the appearance of an early-model engine, pre-1987 flange mount rocker covers can be installed on the 350 HO engine using adapter Part number 24502540. This adapter is machined from billet aluminum, and uses an O-ring seal between the adapter and cylinder head rocker cover rail.

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350 HO Engine Torque Specifications:

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| Camshaft retainer bolt/screw | 106 in.-lbs. / 12 N·m |
| Camshaft sprocket bolt/screw | 18 ft.-lbs. / 25 N·m |
| Connecting rod nut | .006" bolt stretch preferred 20 ft.-lbs. + additional 55° (45 ft.-lbs. if no angle gauge is available) / 27 N·m + additional 55° (61 N·m if no angle gauge is available) |
| Crankshaft balancer bolt/screw | 63 ft.-lbs. / 85 N·m |
| Crankshaft balancer pulley | 35 ft.-lbs. / 47 N·m |
| Crankshaft bearing cap bolt/screw and stud Inner: | 70 ft.-lbs. Outer: 65 ft.-lbs. / Inner: 95 N·m Outer: 88 N·m |
| Crankshaft rear oil seal housing nut/bolt/screw | 11 ft.-lbs. / 15 N·m |
| Cylinder head bolt /screw | 65 ft.-lbs. / 88 N·m |
| Distributor bolt/screw | 25 ft.-lbs. / 34 N·m |
| Drain plug | 15 ft.-lbs. / 20 N·m |
| Engine block oil gallery plug | 15 ft.-lbs. / 20 N·m |
| Engine front cover bolt screw | 97 in.-lbs. / 11 N·m |
| Flywheel bolt/screw | 65-70 ft.-lbs. / 88-95 N·m |
| Intake manifold bolt/screw and stud | |
| First pass | 9 ft.-lbs. / 12 N·m |
| Final Pass | 11 ft.-lbs. / 15 N·m |
| Oil filter adapter bolt/screw | 18 ft.-lbs. / 24 N·m |
| Oil level indicator tube bolt/screw | 106 in.-lbs. / 12 N·m |
| Oil pan assembly | |
| Corner nut/bolt/screw | 15 ft.-lbs. / 20 N·m |
| Side rail bolt/screw | 97 in.-lbs. / 11 N·m |
| Oil baffle nut | 30 ft.-lbs. / 40 N·m |
| Oil pan drain plug | 15 ft.-lbs. / 20 N·m |
| Oil pump bolt/screw to rear crankshaft bearing cap | 66 ft.-lbs. / 90 N·m |
| Oil pump cover bolt/screw | 80 in.-lbs. / 9 N·m |
| Spark plug | 15 ft.-lbs. / 20 N·m (tapered seat) |
| Starter motor bolt/screw | 35 ft.-lbs. / 48 N·m |
| Valve lifter guide retainer bolt/screw | 18 ft.-lbs. / 24 N·m |
| Water pump bolt/screw | 30 ft.-lbs. / 40 N·m |

Service Parts

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| Block assembly, 4 bolt with Caps | Not Serviced Separately | Nut, Rear Seal | 9439915 |
| Welch Plug 1 5/8" diameter | 3826504 | Gasket, Rear Seal Housing | 12555771 |
| Pin, Cylinder Head Locator | 585927 | Bolt, Rear Seal | 14088561 |
| Bearing, Clutch Pilot | 14061685 | Bolt, Rear Seal | 14088562 |
| Bearing, Cam #1 | 12453170 | Tray, Windage | 12554816 |
| Bearing, Cam #2&5 | 12453171 | Nut, Windage Tray | 9422297 |
| Bearing, Cam #3&4 | 12453172 | Key, Balancer | 106751 |
| Cap, Main Bearing #1-4 | Not Serviced | Connecting Rod (PM) | 10108688 |
| Cap, Main Bearing #5 | Not Serviced | Bolt, Connecting Rod | 461372 |
| Bolt, Main Bearing Inner | 12561388 | Nut, Connecting Rod | 225854 |
| Bolt, Main Bearing Outer | 3877669 | Piston, Standard with Pin and Rings | 12514101 |
| Stud, Main Bearing Inner | 12561389 | Piston, 0.001 Over Size with Pin and Rings | 12514102 |
| Plug, Block Drain | 14084945 | Piston, 0.030 Over Size with Pin and Rings | 12514103 |
| Bearing, Crankshaft 1 | 12523950 | Ring Kit, Standard | 14089025 |
| Bearing, Crankshaft 2-3-4 | 10120990 | Ring Kit, 0.030 Over Size | 14089026 |
| Bearing, Crankshaft 5 | 12528826 | Bearing, Connecting Rod, Standard | 12523924 |
| Head, Cylinder (Complete) | 12558060 | Bearing, Connecting Rod, 0.001 Under Side | 12523925 |
| Head, Cylinder (Bare with studs) | 12529093 | Bearing, Connecting Rod, 0.010 Under Size | 12523926 |
| Valve, Inlet | 10241743 | Indicator, Oil Level | 10077153 |
| Valve, Exhaust | 12550909 | Tube, Oil Level | 10055724 |
| Spring, Valve | 10212811 | Bolt, Indicator Tube | 10077153 |
| Seal, Valve Stem (Inlet) | 10212810 | Pan, Oil | 12528916 |
| Seal, Valve Stem (Exhaust) | 12558674 | Plug, Oil Drain | 24100042 |
| Cap, Valve Spring | 10241744 | Gasket, Oil Pan | 10108676 |
| Key, Valve Stem | 24503856 | Bolt, Oil Pan (5/16-18 x 3/4) | 9424877 |
| Stud, Rocker Arm (0.003 Over Size) | 3814692 | Nut, Oil Pan | 12338130 |
| Stud, Rocker Arm (0.013 Over Size) | 3815892 | Bolt, Oil Pan (1/4-20 x 5/8) | 9440033 |
| Gasket, Cylinder Head | 10105117 | Reinforcement, Pan LH | 12553058 |
| Bolt, Cylinder Head, Long | 10168525 | Reinforcement, Pan RH | 12553059 |
| Bolt, Cylinder Head, Medium | 10168526 | Sealer, Oil Pan Corners | 12346141 |
| Bolt, Cylinder Head, Short | 10168527 | Screen, Oil Pump (0.742" diameter. Tube) | 12550042 |
| Crankshaft | 14088527 | Pump, Oil (0.742" diameter. Tube) | 12555283 |
| Pin, Rear Crankshaft | 3701679 | Cover, Oil Pump | 10168528 |
| Pin, Rear Seal Locator | 9441003 | Valve, Pressure Relief | 3702366 |
| Housing, Rear Seal (Include Studs and Seal) | 14088556 | Plug, Oil Pressure Relief | 3704871 |
| Stud, Rear Seal Housing | 14101058 | Spring, Oil Pressure Relief | 10044435 |

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| <i>Pin, Oil Relief</i> | <i>12551790</i> |
| <i>Bolt, Oil Pump Cover</i> | <i>11517518</i> |
| <i>Shaft and Retainer, Oil Pump Drive</i> | <i>3998287</i> |
| <i>Bolt, Oil Pump to Main Cap</i> | <i>10046007</i> |
| <i>Pin, Oil Pump Locator</i> | <i>12554553</i> |
| <i>Plug and Pin kit, Engine Block</i> | <i>12495500</i> |
| <i>Cover, Front Engine</i> | <i>12342088</i> |
| <i>Bolt, Engine Front Cover</i> | <i>9439930</i> |
| <i>Gasket, Engine Front Cover</i> | <i>10108435</i> |
| <i>Seal, Crank Front Oil</i> | <i>10243247</i> |
| <i>Cover, Fuel Pump Opening</i> | <i>14094069</i> |
| <i>Gasket, Fuel Pump Plate</i> | <i>12560223</i> |
| <i>Bolt, Fuel Pump Plate-Upper</i> | <i>9442963</i> |
| <i>Bolt, Fuel Pump Plate-Lower</i> | <i>9440033</i> |
| <i>Sprocket, Cam</i> | <i>340235</i> |
| <i>Sprocket, Crank</i> | <i>10128346</i> |
| <i>Bolt, Cam Sprocket</i> | <i>9424877</i> |
| <i>Chain, Timing (roller)</i> | <i>14087014</i> |
| <i>Plug, Rear Cam bearing</i> | <i>10241154</i> |
| <i>Push rod</i> | <i>14095256</i> |
| <i>Lifter</i> | <i>5232720</i> |
| <i>Rocker Arm</i> | <i>10066063</i> |
| <i>Ball, Rocker Arm</i> | <i>10089648</i> |
| <i>Nut, Rocker Arm</i> | <i>12557390</i> |
| <i>Camshaft</i> | <i>24502476</i> |
| <i>Valve Cover Assembly LH and RH</i> | <i>12355350</i> |
| <i>Gasket, Valve Cover</i> | <i>10046089</i> |
| <i>Bolt, Valve Cover</i> | <i>12356818</i> |
| <i>Spark Plug (AC R43LTS)</i> | <i>5613717</i> |
| <i>Pin, Bell Housing</i> | <i>12338119</i> |

All components may vary due to running changes.

| ALL INFORMATION WITHIN ABOVE BORDER TO BE PRINTED EXACTLY AS SHOWN ON 8 1/2 x 11 WHITE 16 POUND BOND PAPER. PRINT ON BOTH SIDES, EXCLUDING TEMPLATES. TO BE UNITIZED IN ACCORDANCE WITH GMSPO SPECIFICATIONS. | <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:20%;">DATE</th> <th style="width:60%;">REVISION</th> <th style="width:20%;">AUTH</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table> | DATE | REVISION | AUTH | | | | |
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| DATE | REVISION | AUTH | | | | | | |
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