# 350/290 HP Engine (12499529 Base) Long Block Specifications

**Specifications Part Number 19172591**

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This publication provides general information on components and procedures which may be useful when installing or servicing a 350/290 HP engine. Please read this entire publication before starting work. Also, please verify that all of the components listed in the Package Contents section below were shipped in the kit.

The information below is divided into the following sections: package contents, component information, 350/290 HP engine specifications, additional parts that you may need to purchase, torque specifications, and a service parts list.

The 350/290 HP engine incorporates modern technology in a package that can be installed in most 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 350/290 HP engine can be installed, some procedures and recommendations may not apply to specific applications.

The 350/290 HP engine is internally balanced and requires no balance weights on either the flywheel/flexplate or the harmonic balancer. A non-Vortech design intake manifold must also be used. When using the 350/290 HP engine as a replacement for an original equipment engine, the performance intent of this engine should be considered. The torque curve is higher and consequently may require a torque converter with a higher stall speed on automatic transmission equipped vehicles. Consult with a reputable torque converter manufacturer for assistance in selecting the correct torque converter for your application.

The 350/290 HP engine is manufactured on current production tooling; consequently you may encounter dissimilarities between the 350/290 HP 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 350/290 HP 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 350/290 HP engine and an older small block V-8 engine. These differences may require modifications or additional components not included with the 350/290 HP engine. When installing a 350/290 HP 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.

For information about warranty coverage, please contact your local GM Performance Parts dealer.

Observe all safety precautions and warnings in the service manuals when installing a 350/290 HP 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.





| DATE | REVISION | AUTH |
|---|---|---|
| 06AU07 | Initial Release - Rusty Sampsel | |
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**Legal and Emissions Information**

This publication is intended to provide information about the 350/290 HP engine and related components. This manual also describes procedures and modifications that may be useful during the installation of a 350/290 HP 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.



**Package contents:**

| Item | Description | Quantity | GM Part Number |
|---|---|---|---|
| 1 | Engine Assembly | 1 | 12499529 |
| 2 | Long Block Instructions | 1 | 19172591 |

**350/290 HP Engine Torque Specifications:**

Bolt/screw, Camshaft sprocket ..... 18 ft.-lbs. / 25 N·m

Nut, connecting rod ..... .006" bolt stretch preferred 20 ft.-lbs. + additional 55º
..... (45 ft.-lbs. if no angle gauge is available)/ 27 N·m +
..... additional 55º (61 N·m if no angle gauge is available)

Bolt/screw, crankshaft balancer ..... 63 ft.-lbs. / 85 N·m

Pulley, crankshaft balancer ..... 35 ft.-lbs. / 47 N·m

Bolt/screw and stud, crankshaft bearing cap ..... Inner: 70 ft.-lbs. Outer: 65 ft.-lbs. /
..... Inner: 95 N·m Outer: 88 N·m

Bolt /screw, cylinder head ..... 65 ft.-lbs. / 88 N·m

Bolt/screw, distributor ..... 25 ft.-lbs. / 34 N·m

Plug, engine block oil gallery ..... 15 ft.-lbs. / 20 N·m

Bolt/screw, engine front cover ..... 97 in.-lbs. / 11 N·m

Bolt/screw, flywheel ..... 65-70 ft.-lbs. / 88-95 N·m
Bolt/screw and stud, intake manifold
Final pass ..... 11 ft.-lbs. / 15 N·m
Bolt/screw, oil filter adapter ..... 18 ft.-lbs. / 24 N·m
Oil pan assembly
Nut/bolt/screw corner ..... 15 ft.-lbs. / 20 N·m
Bolt/screw, side rail ..... 97 in.-lbs. / 11 N·m
Nut, oil baffle ..... 30 ft.-lbs. / 40 N·m
Plug, oil pan drain ..... 15 ft.-lbs. / 20 N·m
Bolt/screw, oil pump to rear crankshaft bearing cap ..... 66 ft.-lbs. / 90 N·m
Bolt/screw, oil pump cover ..... 80 in.-lbs. / 9 N·m
Plug, spark ..... 15 ft.-lbs. / 20 N·m (tapered seat)
Bolt/screw, starter motor ..... 35 ft.-lbs. / 48 N·m
Bolt/screw, water pump ..... 30 ft.-lbs. / 40 N·m

**Component Information:**

**Cylinder Heads:**

The 350/290 HP engine has cast iron cylinder heads. The heads have 1.94" intake valves and 1.50" exhaust valves with pressed-in 3/8" studs and 76 cc combustion chambers. The water passages are the same as the original 1955 small block Chevy design. These cylinder heads have a twelve (12) bolt intake manifold mounting pattern, six (6) bolts per cylinder head.

**Oil Pan / Filter / Adapter / Dipstick:**

The 350/290 HP engine block has provisions for both right-hand and left-hand dipsticks. The 350/290 HP engine includes a 4-quart oil pan Part number 10066039 which has the “double bump out” for both dipstick designs.

The oil dipstick for the 350/290 HP engine for the right-hand (passenger) side of the block is 10190942 (indicator) and 12552920 (tube). If not using right-hand dipstick, use plug 09421743.

The oil dipstick for the 350/290 HP engine for the left-hand (driver) side of the block is 03951576 (indicator), and 03876870 (upper tube). P/N 03951600 (lower tube) is installed at the factory. If not using left-hand dipstick, use plug 93415510 to prevent an oil leak. The 350/290 HP engine assembly includes an oil filter adapter but no oil filter element. The 350/290 HP uses an AC # PF 454 or PF1218 oil filter

**Camshaft:**

The 350/290 HP engine uses an aggressive flat tappet camshaft to achieve the level of performance for its intended usage. Camshaft lift is .450” intake / .460” exhaust. Camshaft duration (@.050”) is 222 degrees intake and exhaust. Lobe centerline is 114 degrees. Normal engine manifold vacuum for the 350/290 HP engine is 10-12” Hg at idle (650-750 rpm).

**Caution**

This engine assembly needs to be filled with oil and primed. You should add the specified oil (see start-up instructions) to your new engine. Check the engine oil level on the dipstick and add accordingly.

**Start-up and Break-in Procedures**

1. After installing the engine, ensure the crankcase has been filled with 10w30 motor oil (non-synthetic) to the recommended oil fill level on the dipstick. Also check and fill as required any other necessary fluids such as coolant, power steering fluid, etc.
2. The engine should be primed with oil prior to starting. Follow the instructions enclosed with the tool. To prime the engine, first remove the distributor to allow access to the oil pump drive shaft. Note the position of the distributor before removal. Install the oil priming tool, GM part number 12368084. Using a 1/2" dill motor, rotate the engine oil priming tool clockwise for three minutes. While you are priming the engine, have someone else rotate the crankshaft clockwise to supply oil throughout the engine and to all the bearing surfaces before the engine is initially started. This is the sure way to get oil to the bearings before you start the engine for the first time. Also, prime the engine if it sits for extended periods of time. Reinstall the distributor in the same orientation as it was removed.

   After the engine has been installed in the vehicle, recheck the oil level and add oil as required. It is also good practice to always recheck the ignition timing after removal and reinstallation of the distributor. See step 4 or engine specifications for the proper timing information.
3. Safety first. If the vehicle is on the ground, be sure the emergency brake is set, the wheels are chocked and the car cannot fall into gear. Verify everything is installed properly and nothing was missed.
4. Set initial spark timing at 10º before top dead center (BTDC) at 650 rpm with the vacuum advance line to the distributor disconnected and plugged. This setting will produce 32º of total advance at wide-open throttle (WOT). The HEI vacuum advance canister should remain disconnected. This engine is designed to operate using only the internal centrifugal advance to achieve the correct timing curve. Rotate the distributor counterclockwise to advance the timing. Rotate the distributor clockwise to retard the timing.
5. When possible, you should always allow the engine to warm up prior to driving. It is a good practice to allow the oil sump and water temperature to reach 180°F before towing heavy loads or performing hard acceleration runs.
6. Once the engine is warm, set the total advance timing to 32° at 3000 RPM.
7. The engine should be driven at varying loads and conditions for the first 30 miles or one hour without wide open throttle (WOT) or sustained high RPM accelerations.
8. Run five or six medium throttle (50%) accelerations to about 3000 RPM and back to idle (0% throttle) in gear.
9. Run two or three hard throttle (WOT 100%) accelerations to about 3000 RPM and back to idle (0% throttle) in gear.
10. Change the oil and filter. Replace with 10w30 motor oil (non synthetic) and a PF454 or PF1218 AC Delco oil filter. Inspect the oil and the oil filter for any foreign particles to ensure that the engine is functioning properly.
11. Drive the next 500 miles under normal conditions or 12 to 15 engine hours. Do not run the engine at its maximum rated engine speed. Also, do not expose the engine to extended periods of high load.
12. Change the oil and filter. Again, inspect the oil and oil filter for any foreign particles to ensure that the engine is functioning properly.
13. Do not use synthetic oil for break-in. It would be suitable to use synthetic motor oil after the second recommended oil change and mileage accumulation. In colder regions, a lower viscosity oil may be required for better flow characteristics.

**350/290 HP Engine Specifications:**

Displacement: ..... 350 cubic inches
Bore x Stroke: ..... 4.00 inch x 3.48 inch
Compression ..... 8.5:1
Block: ..... Cast iron, four-bolt intermediate mains
Cylinder Head: ..... Cast iron
Valve Diameter (Intake/Exhaust): ..... 1.94"/1.50"
Chamber Volume: ..... 76cc
Crankshaft: ..... Nodular iron, 2 piece rear seal
Connecting Rods: ..... Forged, powdered metal, 3/8" bolts
Pistons: ..... Cast aluminum
Rings: ..... Cast iron
Camshaft: ..... Hydraulic flat tappet
Lift: ..... .450" intake, .460" exhaust
Duration: ..... 222° intake, 222° exhaust @ .050" tappet lift
Centerline: ..... 114° ATDC intake, 114° BTDC exhaust
Rocker Arm Ratio: ..... 1.5:1
Timing Chain: ..... 8 mm single roller design
Oil Pan: ..... 4-quart
Oil Pressure (Normal): ..... 20 psi @ 2000 RPM
Recommended Oil: ..... 10w30 synthetic motor oil (after break in)
Oil Filter: ..... AC Delco part # PF454 or PF1218
Valve Lash: ..... 1/8 turn down from zero lash
Fuel: ..... Regular unleaded - 87 (R+M/2)
Maximum Engine Speed: ..... 5100 RPM
Spark Plugs: ..... AC Delco part # R45TS
Spark Plug Gap ..... .045"
Spark Timing: ..... 32° maximum @ 3000 RPM
Firing Order: ..... 1-8-4-3-6-5-7-2

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:**

**Harmonic Damper:**
The 350/290 HP engine does not include a harmonic damper. It does include two timing tabs to use either a 6 3/4" or 8" damper. Part number for the 6 3/4" damper is 12551537 and for the 8" is 88960604. Use damper retaining bolt P/N 09440024 and washer P/N 14001829.

**Intake Manifold:**
The 350/290 HP Base engine does not come with an intake manifold. Recommended intake manifolds are P/Ns 14037617, 14057062, or 10182063.

**Water Pump:**
The 350/290 HP Base engine does not come with a water pump. Recommended water pump P/N is 12458924

**Ignition System:**

Recommended distributor is the HEI (High Energy Ignition) distributor Part number 93440806. This distributor 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 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 32º before top dead center (BTDC) at 3000 RPM with the vacuum advance line to the distributor disconnected and plugged. This setting will produce 32º of total advance at wide open throttle (WOT). The HEI vacuum advance canister should remain disconnected. This engine is designed to operate using only the internal centrifugal advance to achieve the correct timing curve.

**Flywheel / Flexplate:**

Like all small block V-8 engines produced before 1986, the 350/290 HP engine has a 3.58" diameter flywheel flange bolt pattern and uses a 2 piece rear main oil seal design. Small block V-8 engines produced from 1958 through 1985 had a 3.58" diameter flywheel flange bolt pattern. The 350/290 HP engine must use a zero balance flywheel/flexplate (no additional weight) for proper balance. The 350/290 HP engine does not include a flywheel or flexplate. Flywheels and flexplates are available from the chart below.

**350/290 HP Engine - Automatic Transmission Flexplates**

| Part Number | Outside Diameter | Converter Bolt Pattern | Starter Ring Gear Teeth | Notes |
|---|---|---|---|---|
| 00471529 | 12 3/4" | 9.75",10.75" | 153 | For two-piece crank seal |
| 00471598 | 14" | 10.75,11.50" | 168 | For two-piece crank seal |

**350/290 HP Engine - Manual Transmission Flywheels**

| Part Number | Outside Diameter | Clutch Diameter | Starter Ring Gear Teeth | Notes |
|---|---|---|---|---|
| 14085720 | 12 3/4" | 10.4" | 153 | For two-piece crank seal |
| 03991469 | 14" | 10.4,11.00" | 168 | For two-piece crank seal |

**Pilot Bearing:**

You must install a pilot bearing in the rear of the crankshaft if the engine will be used with a manual transmission. The pilot bearing aligns the transmission input shaft with the crankshaft centerline. A worn or misaligned pilot bearing can cause shifting problems and rapid clutch wear. A roller pilot bearing Part number 03752487 is recommended for this engine. This heavy-duty bearing adds an extra margin of reliability to a high performance drivetrain.

**Starter:**

The 350/290 HP does not include a starter. The starter must be matched to flywheel (or flexplate) diameter when installing a 350/290 HP engine. Small diameter flywheels are 12 3/4" in 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 350/290 HP engine:

| | |
|---|---|
| 10496870 | Starter, heavy-duty, remanufactured for 12 3/4" diameter flywheel/flexplate |
| 1876552 | Starter, heavy-duty for 14" diameter flywheel/flexplate |
| 14097278 | Bolt, starter mounting, long, for heavy-duty starter |

| | |
|---|---|
| 14097279 | Bolt, starter mounting, short, for heavy-duty starter |
| 10455709 | Starter, remanufactured permanent magnet gear reduction (PMGR) for 12 3/4" diameter flywheel/ flexplate (10 lb.) |
| 12606096 | Starter, permanent magnet gear reduction (PMGR) 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) |

**Carburetor / Air Cleaner:**

A 670 cfm Holley four-barrel carburetor with either mechanical or vacuum operated secondaries and electric choke is recommended for the 350/290 HP engine. GM Performance Parts has a 670 cfm Holley four-barrel carburetor Part number 19170092 with vacuum secondaries available.

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 chrome 14" air cleaner assemblies for single 4 barrel engines. 12342071 is the Classic design and 123420280 is the high performance design.

**Fuel Pump:**

The 350/290 HP engine does not include a fuel pump. However, it does have a mechanical fuel pump boss and is fully machined to accept a mechanical fuel pump. 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). Mechanical fuel pump P/N 06415325 can be used with P/N 03704817 fuel pump pushrod. Other fuel pump options are available at our website www.gmperformanceparts.com.

**Headers:**

A 350/290 HP 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.

**Accessory Drive Brackets:**

Two Accessory Drive Kits are available from GM Performance Parts to fit the 350/290 HP engine. P/N 12497698 is used for vehicles with air conditioning and P/N 12497697 is used for vehicles without air conditioning. Please see your GM Performance Parts dealer or visit us on the web at www.gmperformanceparts.com.

**Spark Plugs / Spark Plug Wires:**

The 350/290 HP engine does not come with spark plugs. P/N 19157995 (AC R45TS) is recommended for HEI ignition applications.

When installing the engine in a vehicle originally equipped with a small block V-8 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 350/290 HP engine comes equipped with stamped steel, flange mount rocker covers. A wide variety of valve cover choices are available at your GM Performance Parts dealer or visit us on the web at www.gmperformanceparts.com

**Crankcase Ventilation (PCV)**

Crankcase ventilation is necessary to prevent oil leaks. If a PCV system is used, it must have a one way check (PCV) valve and also a source of fresh air. P/N 06487779 (AC Delco CV774C) PCV valve is recommended and a filtered fresh air breather in the opposite valve cover should be used.

**Offset Oil Filter Adapter**

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 | Adapter , offset oil filter |
| 88893990 | Gasket and seal, oil filter adapter |
| 11610405 | Washer, oil filter adapter (2 required) |
| 14092398 | Bolt, oil filter adapter (2 required) |
| AC PF52 | Filter to fit adapter, spin-on |

**350/290 HP Service Parts List:**

| Part # | Quantity | Name |
|---|---|---|
| 12453170 | 1 | Bearing, Cm/Shf #1 |
| 12453171 | 2 | Bearing, Cm/Shf #2 And #5 |
| 12453172 | 2 | Bearing, Cm/Shf #3 And #4 |
| 3877669 | 6 | Bolt/Screw, Cr/Shf Brg C |
| 12561388 | 10 | Bolt/Screw, Cr/Shf Brg C |
| 12531215 | 4 | Bearing, Cr/Shf Upr/Lwr (.001) |
| 12528826 | 1 | Bearing, Cr/Shf Upr/Lwr Thrust (.001) |
| 10120990 | 3 | Bearing, Cr/Shf Upr/Lwr (Std) |
| 93438649 | 2 | Head Asm, Cyl (W/ Vlv) |
| 93438648 | AR | Head, Cyl (Mchg) |
| 10241743 | 8 | Valve, Int |
| 12564852 | 8 | Seal, Exh Vlv Stem Oil |
| 94666580 | 16 | Spring, Vlv |
| 3814692 | AR | Stud, Vlv Rkr Arm Ball (.003" O.S) |
| 3815892 | AR | Stud, Vlv Rkr Arm Ball (.013" O.S) |
| 24503856 | 32 | Key, Vlv Stem |
| 10212810 | 8 | Seal, Int Vlv Stem Oil |
| 14003974 | 16 | Cap, Vlv Spr |
| 12550909 | 8 | Valve Asm, Exh |
| 10105117 | 2 | Gasket, Cyl Hd |
| 10168525 | 14 | Bolt/Screw, Cyl Hd (Long) |
| 10168526 | 4 | Bolt/Screw, Cyl Hd (Medium) |
| 10168527 | 16 | Bolt/Screw, Cyl Hd (Short) |
| 93426651 | 1 | Crankshaft |
| 10121044 | 2 | Seal Asm, Cr/Shf Rr Oil |
| 106751 | 2 | Key, Cr/Shf Balr |
| 10108688 | 1 | Rod Asm, Conn |
| 461372 | 2 | Bolt/Screw, Conn Rod |
| 3866766 | 2 | Nut, Conn Rod |
| 93422884 | 8 | Piston Asm, (W/ Pin) |

| Part # | Quantity | Name |
|---|---|---|
| 12493713 | 16 | Bearing, Conn Rod (Std) |
| 10066039 | 1 | Pan Asm, Oil |
| 14082340 | 1 | Reinforcement, Oil Pan |
| 10066041 | 1 | Reinforcement, Oil Pan |
| 10089606 | 1 | Gasket, Oil Pan |
| 12550042 | 1 | Shaft, O/Pmp Drv |
| 93442037 | 1 | Pump Asm, Oil |
| 3998287 | 1 | Shaft, O/Pmp Drv |
| 3764554 | 1 | Retainer, O/Pmp Drv Shf |
| 10046007 | 1 | Bolt/Screw, O/Pmp |
| 12554553 | 2 | Pin, O/Pmp Loc |
| 3951600 | 1 | Tube Asm, Oil Lvl Ind |
| 10046160 | 1 | Cover, Eng Frt |
| 10243247 | 1 | Seal Asm, Cr/Shf Frt Oil |
| 10108435 | 1 | Gasket, Eng Frt Cvr |
| 3896962 | 1 | Camshaft Asm |
| 14088784 | 1 | Sprocket, Cr/Shf |
| 14088785 | 1 | Sprocket, Cm/Shf |
| 14088783 | 1 | Chain Asm, Tmg |
| 9424877 | 3 | Bolt/Screw, Cm/Shf Spkt |
| 14095256 | 16 | Rod Asm, Vlv Push |
| 5234200 | 16 | Lifter Asm, Vlv |
| 12557390 | 16 | Nut, Vlv Rkr Arm |
| 10089648 | 16 | Ball, Vlv Rkr Arm |
| 93438953 | 1 | Cover Asm, Vlv Rkr Arm |
| 93438952 | 1 | Cover Asm, Vlv Rkr Arm |
| 3877670 | 8 | Reinforcement, Vlv Rkr A |
| 3933964 | 2 | Gasket, Vlv Rkr Arm Cvr |
| 10066063 | 16 | Arm, Vlv Rkr |