BLOCKS & HEADS

PONTIAC SUPER DUTY FOUR

Pontiac's Super Duty four-cylinder engine is building major league excitement in all forms of motorsports. The Super Duty engine is designed to meet the severe demands of championship drag racing, road racing, and oval track competition.

With proper preparation, the Pontiac Super Duty four-cylinder engine will produce outstanding performance with rocksolid reliability. GM Performance Parts offers a complete line of Super Duty components for off-highway applications, including blocks, high-flow cylinder heads, forged crankshafts, and heavy-duty accessories.

ENGINE HARDWARE PACKAGE

10031328 — Engine Hardware Package

This package includes all of the small parts which are required to assemble a Super Duty four-cylinder engine. It contains a front engine cover, thermostat housing, water pump, water inlet, pushrod guideplates, timing pointer, and a complete selection of plugs, bolts, clamps, pins, and fasteners.

10093306 — Block, Super Duty Four Cylinder

General Motors Service Parts no longer offers this super duty block, but Kansas Racing has been licensed to manufacture and sell this style four-cylinder block. Contact: Kansas Racing Products at 785-922-6644.

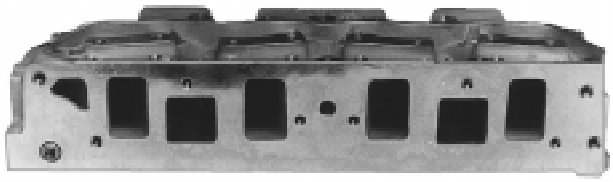
Technical Note: *GM is not responsible for sale, workmanship, or warranty on this block.*

GROUPS 0.269 - .289 CYLINDER HEADS AND GASKETS

10049801 — Super Duty Four High Port Special Aluminum Cylinder Head

This version of Pontiac's Super Duty four-cylinder aluminum cylinder head's are designed for maximum-effort competition engines. The intake runners and water jackets are raised .670" to improve flow. In the Special High Port casting, the two center intake ports are moved .800" closer together to straighten the path to the valves. Both heads' rocker cover rails are raised .300", and the exhaust ports are raised .600". The valve centerlines are relocated to unshroud the valves, and the rocker stud holes are moved to match the new valve locations. The valve seats will accept 1.94–2.08" intake valves and 1.60–1.625" exhausts. The combustion chamber volume is 67cc.

Technical Notes: *Valve guides are supplied but not installed. A template is provided for redrilling headers to fit the revised exhaust flange bolt pattern. An intake manifold must be fabricated to fit the High Port Special's port spacing.*

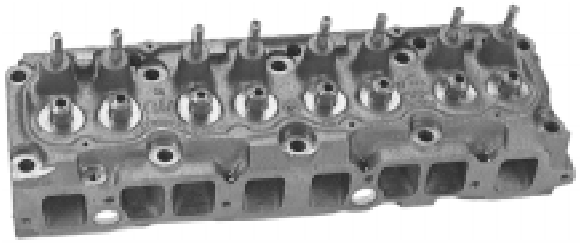


10045437 — Cylinder Head

This 2.5 special aluminum cylinder head is a race winning design for the four-cylinder Pontiac aluminum "Super Duty" that's proven itself in IMSA road racing and Competition Eliminator Series. This rugged, lightweight head gives you Pontiac and NASCAR quality with plenty of extra metal, and proven performance with totally redesigned, super free-flowing ports. Oversize ductile iron seats and phosphorus bronze guides are standard. Intake volume is 178cc. This head accepts standard four-cylinder intake port centerline manifolds.

347056 — Four Cylinder Performance Head

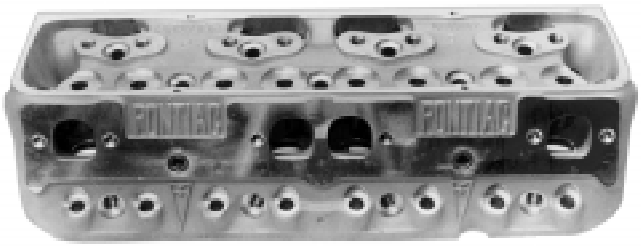
This cast-iron performance head is designed to be used on 151ci or 153ci four-cylinder engines.



10033867 — Pontiac Motorsports Head

This aluminum head for small-block V8s offers a substantial increase in both airflow and horsepower with minimal preparation. It has a standard intake port location, and is compatible with most small-block V8 components. Ductile iron seats for standard length 2.100" intake valves and 1.625" exhausts are installed. Phosphorous bronze guides are included with this head but are not installed. It has conventional 62cc combustion chambers, and uses 3/4" reach gasketed 14mm spark plugs.

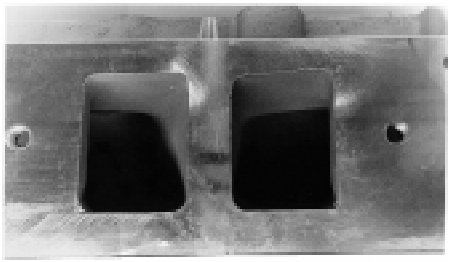
Technical Note: *For gaskets and component refer to Chevrolet V8 section.*



10045427 — Pontiac Super Duty Cylinder Head (Large Port) 1965-90

Pontiac Motorsports' aluminum cylinder heads for big-block V8s have high-flow 460cc intake runners which are raised and relocated to enhance airflow. This head is designed for Pro Stock and similar all-out racing engines which range in displacement from 450 to 600 cubic inches. Its advanced runner design eliminates the need for extensive porting to achieve maximum performance. The "long" and "short" intake ports are relocated to equalize runner volumes to within one percent. The minimum wall thickness of .450" allows major modifications without welding. The D-shaped exhaust runners have a port volume of 145cc's. The Super Duty head's intake valve angle is 18° , and the exhaust valve angle is 9°. This represents an 8° "roll" compared to a production big-block V8 head. The ductile iron seats installed in the 91cc combustion chambers will accept 2.40" diameter intake valves and 1.90" exhaust valves. The Pontiac Super Duty head uses 3/4" reach gasketed plugs. It is cast iron from A-356.2 alloy aluminum.

Important Technical Note: Use of the adjustable Mark IV cylinder head is not recommended with the new Gen V engine". *Changes in the configuration of the "Gen V's" coolant transfer passages allows coolant to seep into the lifter valley when the Mark IV head is used. Mark IV camshafts, water pumps, intake manifold, distributor and clutch housings can be used with the new "Gen V" engines. A water manifold should be fabricated by the customer from braided steel hose to equalize the cylinder head temperatures and eliminate water flow through the intake manifold. Phosphorous bronze valve guides are supplied but not installed. This head requires extra-long valves and special aftermarket valvetrain components. Intake runners in production-type manifolds will not align with the relocated ports in this cylinder head casting. Use Pontiac cast aluminum valve covers #12341643 (two per set).*

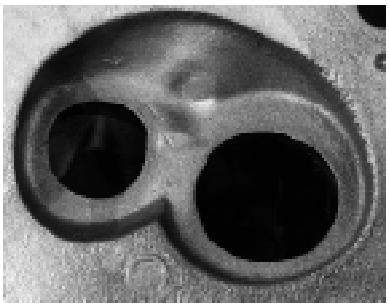


10093386 — Cylinder Head 1965-90

This big block aluminum cylinder head developed by Pontiac is fully machined and has 15° valve angles with spread port intake runners. It is for use with all Chevrolet Big-Block engines. Use on Mark IV blocks only.

10093385 — Cylinder Head 1965-90

This aluminum cylinder head is designed for the Chevrolet Big-Block engine and bears a Pontiac logo. It is a "raw" (unmachined) head with 15° valve angles with spread intake runners. Use on Mark IV blocks only.



10031324 — Super Duty Four Head Gasket (Iron Heads)

This tough Teflon-coated composition head gasket is recommended for Super Duty engines equipped with cast iron cylinder heads. It has solid wire O-rings around each cylinder bore. The compressed thickness of .038".

Technical Notes: *Install dry with part number facing up. Torque 1/2" head bolts to 105 ft./lbs. This gasket does not require retorquing.*

10038952 — Super Duty Four Head Gasket (Aluminum Heads)

This composition head gasket was specifically engineered for aluminum Super Duty cylinder heads. The wide portion of its stainless steel fire rings faces the cylinder head to increase the sealing area and prevent brinneling of the aluminum head's deck surface.

10051127 — Head Gasket

This special head gasket was created for off-road usage on 2.0L four-cylinder cars.

VALVES & DISTRIBUTORS

GROUPS 0.296 - .297 VALVES

10031326 — Intake Valve (Super Duty Four)
1.94" diameter for Super Duty cylinder heads.

10031339 — Intake Valve (Super Duty Four)
2.02" diameter for Super Duty cylinder heads.

10031325 — Exhaust Valve (Super Duty Four)
1.60" diameter stainless steel exhaust valve for Super Duty cylinder heads.

10031338 — Exhaust Valve (Super Duty Four)
1.625" diameter stainless steel exhaust valve for Super Duty cylinder heads.

GROUP 0.386 ROCKER COVERS

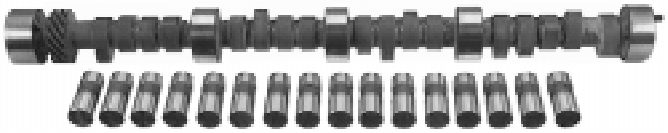
10031327 — Rocker Cover
This handsome aluminum valve cover is a functional and stylish addition to any Super Duty engine. The die cast aluminum is brightly polished. The top half of the cover can be removed in seconds for quick valve adjustments; and O-ring seal prevents oil leaks.

10093393 — Aluminum Small Block V8
This cast aluminum competition valve cover was designed for the 18° racing cylinder head but can be used on any small block Chevrolet design engines. The attached flange mount is early Chevrolet small block; and the body of the cover is wider to give room for after-market roller rocker arm and support systems. The Pontiac nameplate is machined in the top of the cover. There are no holes for oil fill or PCV in this cover.
Technical Note: *There are two covers per package.*

12480012 — Valve Cover SB2.2 "Pontiac "
This valve cover is used on SB2.2 racing head only. This cover has a Pontiac logo on the top.
Technical Note: Use RTV sealant to seal cover to head.

12341643 — Aluminum Pontiac Big Block V8 Cover
This cast aluminum competition valve cover was designed for the Pontiac racing cylinder head that bolts onto a Chevrolet Big Block engine. It "cannot" be used on any Big Block Chevrolet design cylinder. This cover is designed to accept most roller rocker arms and supports systems. The Pontiac name plate is on the top of the cover. There are no holes for oil fill or PCV in this cover.
Technical Note: *There are two covers per package.*

GROUP 0.519A CAMSHAFT KITS



Typical Camshaft Kit

12364043 — Camshaft Kit
Applicable to all 1955-81 Pontiac V8 engines, this camshaft kit includes the factory blueprinted replacement Ram Air/H.O. 400ci "S" cam. The duration at .050" lift (intake/exhaust) is 215°/225°; while the valve lift is .408"/.407". This basic RPM range is 1800-4000 with 6000 RPM attainable using proper valve springs. Cruise RPM is 1800-2200, and a compression ratio of 8.5-10.0 to 1 is recommended. This kit is 50-state emission legal for original applications.
Technical Note: *There are 16 hydraulic flat tappets included in a camshaft kit.*

12364044 — Camshaft Kit
Applicable to all 1955-81 Pontiac V8 engines, this camshaft kit includes the factory blueprinted replacement Ram air IV "T" cam. The duration at .050" lift (intake/exhaust) is 230°/240°; while the valve lift is .469"/,469". The Basic RPM range is 2600-5800 with over 6500 RPM attainable using proper valve springs. Cruise RPM is 2800-3200, and a compression ration of 9.5-11.0 to 1 is recommended. This kit is 50-state emission legal for original applications.
Technical Note: *There are 16 hydraulic flat tappets included in a camshaft kit.*

12364045 — Camshaft Kit
Applicable to all 1955-81 Pontiac V8 engines, this single pattern camshaft kit is designed to improve mid-range torque and performance without sacrificing idle quality. The duration at .50" lift (intake/exhaust) is 216°/216°; while the valve lift is .454"/.454". The basic RPM range is 2000-5000 with 6500 RPM attainable using proper valve springs. Cruise RPM is 2500-3000, and a compression ration of 8.75-10.5 to 1 is recommended. This kit is not legal for pollution-controlled vehicles.'
Technical Note: *There are 16 hydraulic flat tappets included in a camshaft kit.*

12364046 — Camshaft Kit
Applicable to all 1955-81 Pontiac V8 engines, this camshaft kit is designed to improve mid-range torque during daily performance usage without sacrificing idle quality. The duration at .050" lift (intake/exhaust) is 216°/228°; while the valve lift is .454"/.480". The basic RPM range is 2000-5000 with 6500 RPM attainable using proper valve springs. Cruise RPM is 2600-3000, and a compression ration of 8.75-10.5 to 1 is recommended. This kit is not legal for pollution-controlled vehicles.
Technical Note: *There are 16 hydraulic flat tappets included in a camshaft kit.*

12364047— Camshaft Kit

Applicable to all 1955-81 Pontiac V8 engines, this camshaft kit is designed to improve mid-range to upper RPM performance with characteristics associated with a mild-bracket racing cam including fair idle quality. The duration at .050" lift (intake/exhaust) is a healthy 222°/234°; while the valve lift is .467"/.494". The basic RPM range is 2200-5200 with over 6500 RPM attainable using proper valve springs. Cruise RPM is 3000-3400, and a compression ration of 9.5-10.75 to 1 is recommended. This kit is not legal for pollution-controlled vehicles.

Technical Note: *There are 16 hydraulic flat tappets included in a camshaft kit.*

GROUP 0.616 BEARING KITS, ENGINE CONNECTING RODS

NOTE: *#1 when installing bearing marked upper, it must go on upper half of rod.*

10031583 — Connecting Rod Bearing

".001 U.S." (2.5 or 2.7 liter S.D.) L4 engine use with connecting rod P/N 14011090 or 91 only. Note #1.

10031584 — Connecting Rod Bearing

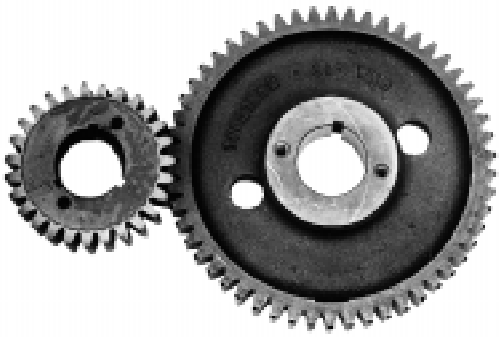
".010 U.S." (2.5 or 2.7 liter S.D.) L4 engine, use with connecting rod P/N 14011090 or 91 only. Note #1.

GROUP 0.736 TIMING GEAR ASSEMBLIES

10037684 — Super Duty Camshaft and Crankshaft Gear

This cam and crank gear assembly is highly recommended for high-performance and competition Super Duty engines. The heavy-duty spur-cut gears are designed to withstand the four-cylinder engine's crankshaft harmonics.

Technical Note: *This matched gear set is sold only as a complete unit.*



GROUP 1.652 OIL PUMPS

10031329 — High Volume Oil Pump

This high-volume cast iron oil pump has more capacity than a production pump to ensure adequate lubrication for Super Duty engines. A screen and pickup is included.

GROUP 2.240 SPARK PLUG WIRES

10037375 — 4-Cylinder Ignition Wire Set

This premium quality wire set will deliver maximum voltage to the spark plugs. The solid Monel conductor minimizes current loss; this wire has less than 150 ohms resistance per foot. The 8mm insulation prevents cross-firing and arcing. The extra-long plug leads can be cut to size for custom installations. Distributor terminals are supplied separately.

GROUP 2.361 DISTRIBUTORS

10037373 — Electronic Distributor

This distributor represents the state-of-the-art in competition ignition systems for Super Duty engines. It has a lightweight machined aluminum housing, a hardened shaft, and a ground and hardened centrifugal advance cam. Its high output magnetic pickup will trigger GM Performance Parts heavy-duty ignition amplifier P/N 10037378. This distributor uses a small diameter cap and rotor, and it will clear most competition induction systems. A selection of advance springs and bushings are included to allow you to tailor the spark curve.

Technical Notes: *This distributor does not have a mechanical tach drive; use electronic tachometer P/N 10038474. It is not equipped with a vacuum advance mechanism. Use distributor cap P/N 10042755 and rotor P/N 10042757 for service. See the general parts section of this catalog for related heavy-duty ignition components.*

INDUCTION

GROUP 3.265 INTAKE MANIFOLDS

10038470 — Intake Manifold (4V)

Your Super Duty engine will breathe deeply with this single-plane aluminum intake manifold. It mounts a single standard flange Holley four-barrel carburetor. Special runner cross-sections optimize flow to the end cylinders. Its tuned runners are engineered to work with the ports in Pontiac Super Duty cylinder heads.

Technical Notes: *Does not fit High Port Special head P/N 10049801. Racing only — **do not** use on production cylinder heads.*

10093374 — Intake Manifold

This aluminum intake manifold is designed for the Chevrolet small-block V8 when using a Pontiac cylinder head (P/N 10033867) and a Holley carburetor.

Note: *This manifold is single plane 4 BBL for competition only. Extra material was added to intake face for angle milled heads, also other modifications must be made for proper fit.*

10093389 — Intake Manifold

This aluminum intake manifold is designed for use on a Chevrolet small-block V8 with a Pontiac cylinder head (P/N 10093328: A roll-over V8 type head). It has standard Holley carburetor flanges.

GROUP 3.270 MANIFOLD GASKETS

12371032 — Intake Manifold Gasket

For all Super Duty engines.

Technical Note: *Does not fit High Port Special head P/N 10049801.*

NOTE: For body panels, refer to Chassis, Suspension & Body Components Section of this catalog.