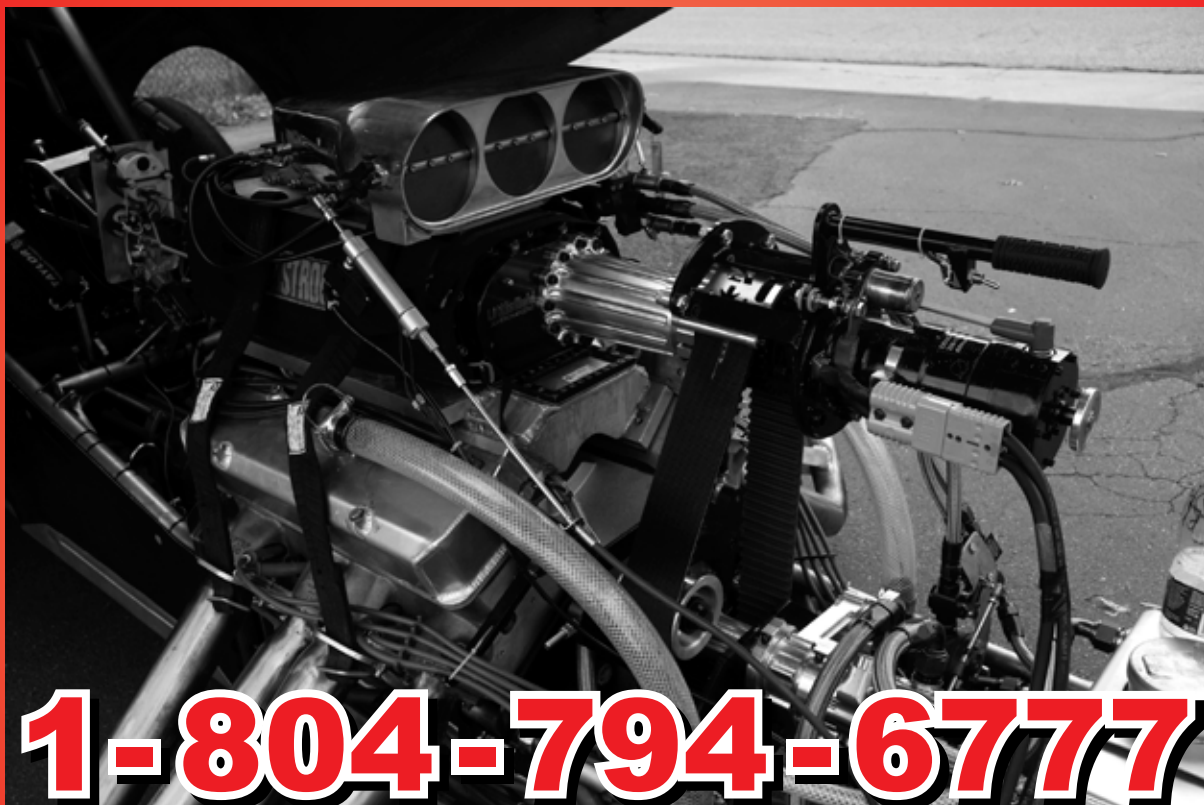




CUSTOM HIGH PERFORMANCE

PARTS

2010 CATALOG



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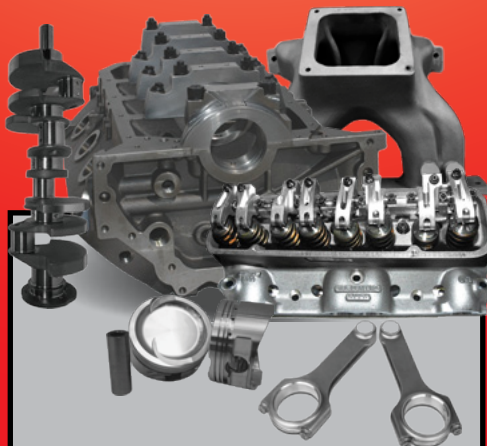
STRONGEST

FASTEST

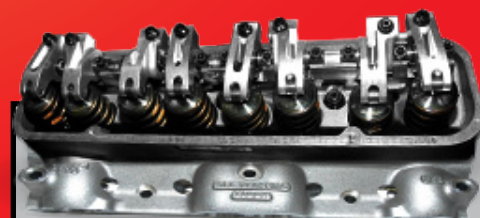
POWERFUL



IA II STANDARD DECK BLOCK



POWER KIT



**TIGER HEAD RACE READY
ASSEMBLY**



Welcome to the 2010 AllPontiac Custom High Performance Pontiac Parts Catalog



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POWER KIT

from AllPontiac Custom High Performance Pontiac Parts



**RACE
READY!**

ENGINE KITS INCLUDE:

- IA II Steel Standard Deck Block (any bore size)
- High Performance Forged Crank
- J-E® Pistons*
- Scat® H-Beam Rods with Bolt Upgrade
- Race or Street Ready Tiger Heads and Jesel Shaft System
- AllPontiac Tiger Intake Manifold

*Pump Gas – Stainless Intake Valves and Dish Pistons

Note:

Not legal for sale or use on pollution controlled motor vehicles.



Special Pricing

Race - \$10,945.00

Pump Gas - \$10,645.00



The "HO-Series" was designed with the Pro-Street and bracket racer in mind featuring clean idle, crisp throttle response, and killer acceleration.

A. AED-750HPHO NEW

**Air & Fuel Delivery, AED 750 HP
"HO-Series" Carburetor**

- All new fully CNC machined castings
- Milled choke tower for balanced air flow
- All main body surfaces machined for sealing
- Special hi-flow metering blocks & boosters
- All fuel circuits balanced & calibrated
- Power valve anti-backfire check valve kit
- Four corner idle circuitry for drivability
- Special non-stick gaskets for maintenance
- Clear view sight plugs for safe float setting
- Dyno tested & race track proven performance

B. AED-750HO

**Air & Fuel Delivery, AED 750
"HO-Series" Carburetor**

- All new fully CNC machined castings
- Milled choke tower for balanced air flow
- All main body surfaces machined for sealing
- Special hi-flow metering blocks & boosters
- All fuel circuits balanced & calibrated
- Power valve anti-backfire check valve kit
- Four corner idle circuitry for drivability
- Special non-stick gaskets for maintenance
- Clear view sight plugs for safe float setting
- Dyno tested & race track proven performance

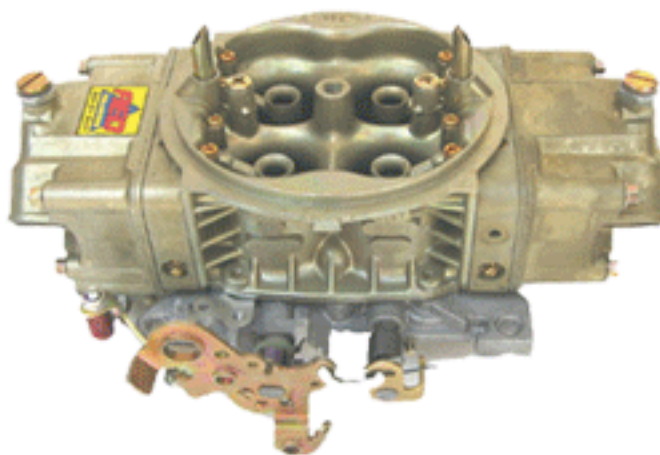
The "HO-Modified" carburetors are identical to the "HO-Series" except they offer the benefits of CNC porting to increase airflow. They also come with special machined boosters for increased response & acceleration for additional performance.

C. AED-750HOM

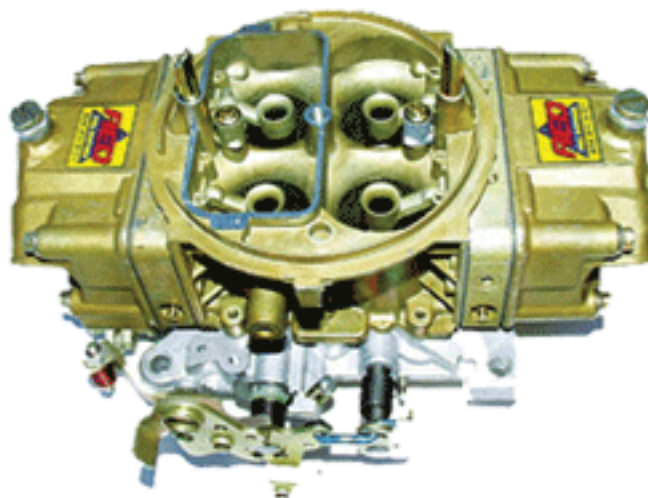
**Air & Fuel Delivery, AED 750
"HO-Modified" Carburetor**

- Fully CNC ported and polished
- Fully machined and deburred
- New hi-torque boosters and metering blocks
- All Fuel circuits balanced & calibrated
- Dual accelerator pumps
- Four corner idle circuitry for drivability
- Special non-stick gaskets for maintenance
- Clear view sight plugs for safe float setting
- Dyno tested & race track proven performance
- Actual airflow is considerably higher than unported carburetors

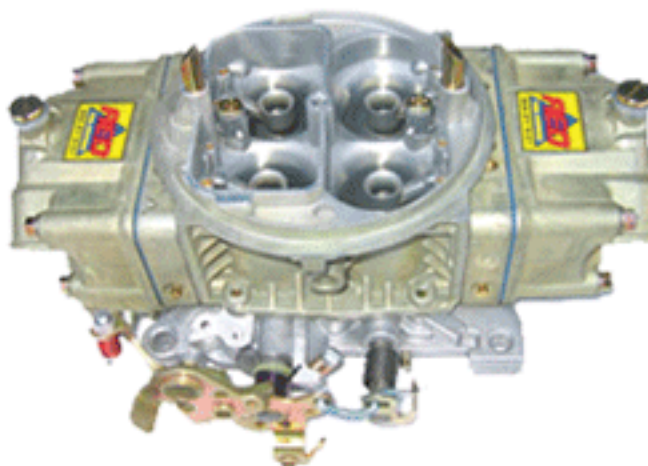
Carburetors



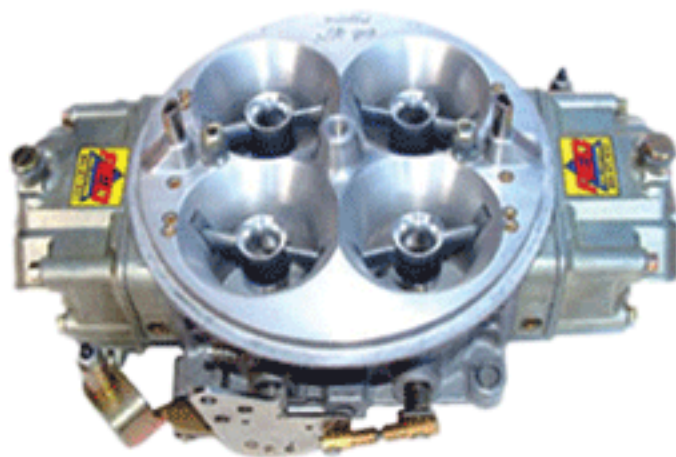
A AED 750 HP "HO-Series" NEW



B AED 750 "HO-Series"



C AED 750 "HO-Modified"



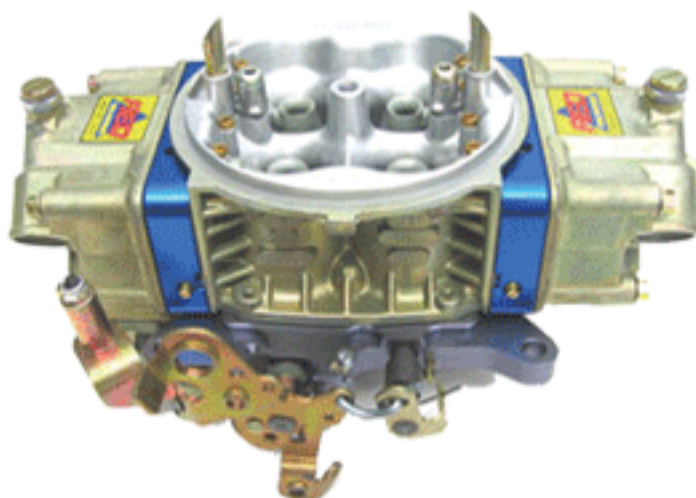
AED 1050 "Pro-Street" Dominator NEW **D**

Our new "Pro-Street CNC Dominator" is designed for 400ci & up engines that see some street duty but don't want to sacrifice true performance.

D. AED-1050-PS

Air & Fuel Delivery, AED 1050 NEW
"Pro-Street" Dominator Carburetor

- Total CNC porting
- Hi-Flow boosters
- External stainless 4 position adjustable linkage
- Adjustable air correctors
- Custom calibrated metering blocks
- Reusable gaskets
- Clear view sight plugs
- Completely "wet-flowed"
- Calibrated for flat fuel curve



AED 950 "Sup-Mod" Race **E**

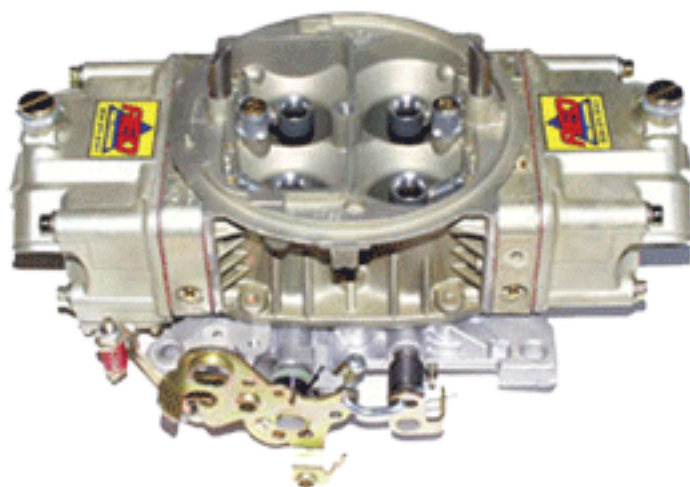
The "Super-Modified" series feature the same modifications as the "HO-Mod" but are blueprinted & sized for your specific needs & application.

E. AED-950M2

Air Fuel & Delivery, AED 950
"Sup-Mod" Race Carburetor

- Venturi & metering sizing is calibrated for engine size, RPM range, & power level
- CNC porting and machining
- All corners are balanced
- "Wet Flow" completed

Available options include billet baseplate, billet metering block, & our special corrosion resistant performance coating



AED Special 650-850 "The Eliminator" Race **F**

Our new "Eliminator" carburetor is designed for 302-360ci engines in heavier cars or with tight converter.

F. AED-ELIMIN

Air & Fuel Delivery, AED Special 650-850
"The Eliminator" Race Carburetor

- CNC ported
- 650 main body mated to an 850 baseplate
- Good airflow for power
- Smaller venturi sizing



Carburetors

Our "Pro-Series" carburetors are the ultimate in current fuel system technology. They are custom built per application & fully CNC'd, all custom fuel circuitry, all machined baseplate assemblies, & numerous other features and options are available.

G. AED-1050M3

Air & Fuel Delivery, AED 1050
"Pro-Series" Race Dominator

- New HP castings for 4150 style carburetors
- Achieved well over 950cfm flow rates
- Available in a variety of sizes & flow rates
- Smaller venturi sizing
- All "Pro-Series" carburetors can be calibrated for "Blow-Thru", Tunnel-Ram, Road Race, Marine, Blower, and special situations



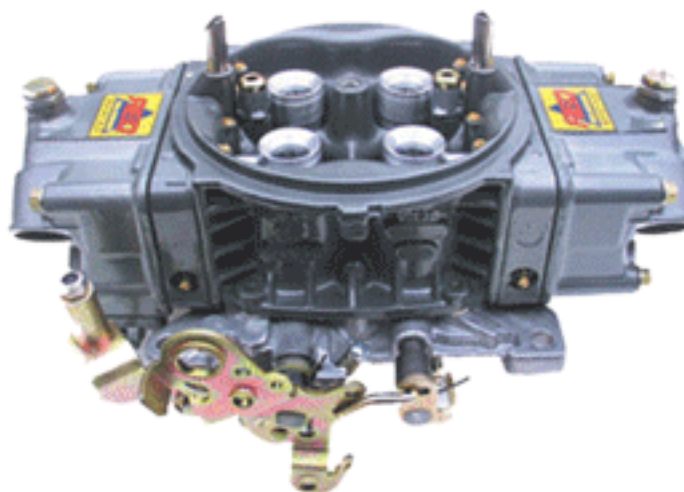
G AED 1050 "Pro-Series" Race Dominator

"Max-Pro HP" is absolutely the quickest and fastest 4150 style carburetor we have ever produced for drag or circle track.

H. AED-MPHP

Air & Fuel Delivery, AED New Max-Pro
Billet 3-Circuit 4150

- Includes special Billet Annular Boosters
- Redesigned 3-Circuit metering
- Special "Performance Coating"
- 1:1 linkage



H AED New Max-Pro Billet 3-Circuit 4150

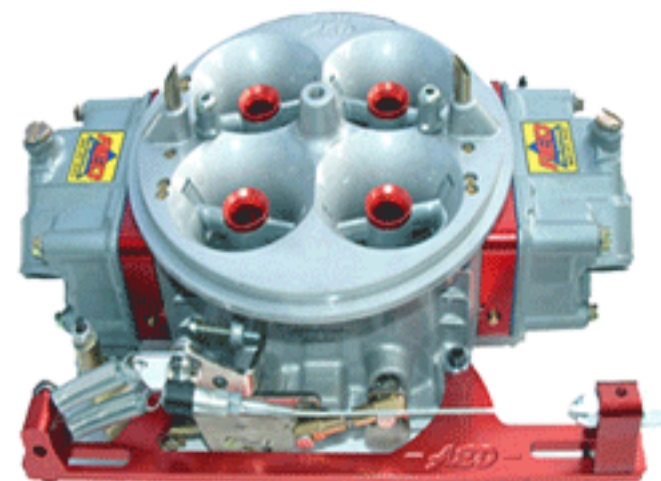
Our "Max-Pro" Dominator is designed for large cubic inch applications. This is state of the art in race carburetion and custom built per application.

I. AED-MAXPRO

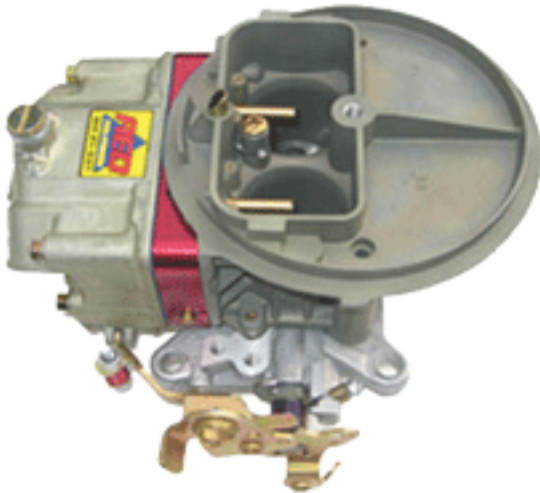
Air & Fuel Delivery, AED MAXPRO
Special Large Bore Billet Booster
HP Dominator Carburetor

- Up to 2.190" CNC throttle bores
- Venturi sizes to 1.925"
- Billet boosters
- Machined booster holders
- Optional performance coating
- Flow rates over 1300 cfm

"Pro-Series" Dominators also include all other mods such as screw in air correctors, total signal balancing & flow matching,



I AED MAXPRO Bore Billet Booster HP Dominator



AED 500 "Max-Pro" 2-bl Race Carburetor **J**

"Pro-Series 500 & Max-Pro 500"

For limited induction oval track engines requiring 2-barrels, where rules don't restrict modifications, we offer the same features found in our other "Pro-Series" carburetors.

J. AED-500MP

Air & Fuel Delivery, AED 500

"Max-Pro" 2-bl Race Carburetor

- Full porting
- Flow, balance, special boosters, & calibration
- Machined throttle bores to accept large 1.75"
- Machined throttle plates & shafts
- Fuel circuits are totally reworked
- Larger CNC ported venturi with special custom delivery tubes

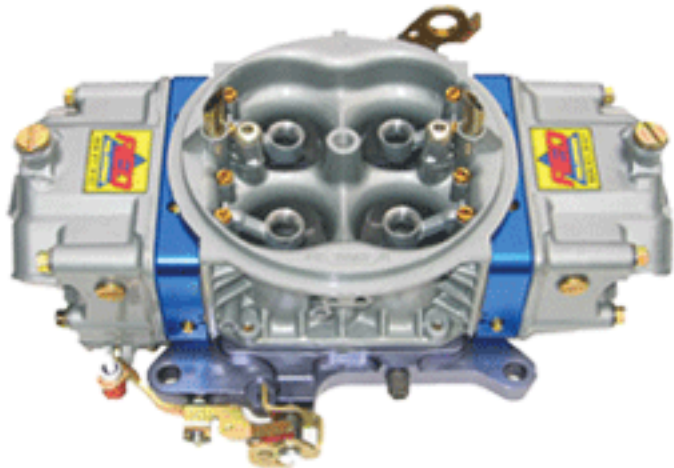


Carburetors

We manufacture a complete line of alcohol carburetors based on our current series of selections, from "HO-Series" to "Pro-Series". They feature all the technology & modifications of those models but are calibrated for alcohol & include Billet Metering.

M. AED-950M2A
Air & Fuel Delivery, AED 950
"Sup-Mod" HP Alky Race Carburetor

- Wet flowed on each throttle bore
- Computerized Wet Flowbench
- Increased ring & bearing life
- Alky stays in the cylinders not the oil pan
- Alcohol carburetors are offered in several stages of modification



M AED 950 "Sup-Mod" HP Alky Race Carburetor

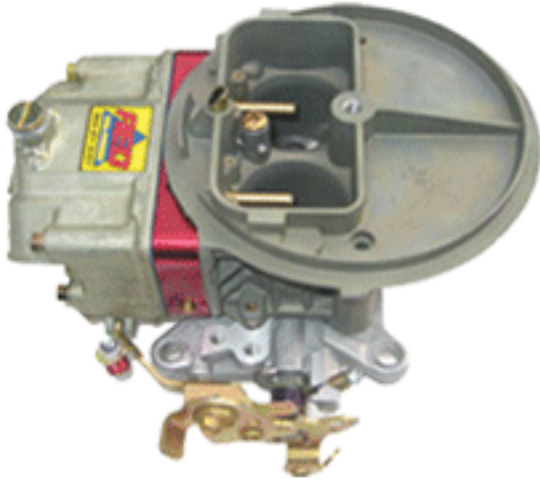
Part No.	Product Line	Section	Price
AED-500M3A	AED 500 "Pro-Series" Alky 2-bl Race Carburetor	Alcohol	\$749.95
AED-750H0A	AED 750 "HO-Series" Alky Race Carburetor	Alcohol	\$709.95
AED-750M2A	AED 750 "Sup-Mod" Alky Race Carb	Alcohol	\$759.95
AED-750M3A	AED 750 "Pro-Series" HP Alky Race Carb (to 1.50" Venturi)	Alcohol	\$949.95
AED-850H0A	AED 850 "HO-Series" Alky Race Carburetor	Alcohol	\$769.95
AED-850M2A	AED 850 "Sup-Mod" Alky Race Carb	Alcohol	\$799.95
AED-850M3A	AED 850 "Pro-Series" HP Alky Race Carb (over 1.50" Venturi)	Alcohol	\$969.95
AED-950H0A	AED 950 "HO-Series" Alky Race Carburetor	Alcohol	\$799.95
AED-950M2A	AED 950 "Sup-Mod" HP Alky Race Carburetor	Alcohol	\$859.95
AED-1050M2A	AED 1050 "Sup-Mod" Alky Race Dominator	Alcohol	\$1129.95
AED-1050M3A	AED 1050 "Pro-Series" Alky Race Dominator	Alcohol	\$1299.95

*** Billet Baseplate options from \$79
 *** Billet Metering Block included in all Alky models
 *** Performance Coating \$189

"Alky-Series" Components

We offer a wide selection of alcohol fuel system accessories to compliment our carburetors, from fuel pumps to line kits, fuel logs, & mechanical bypass kits. Our special belt driven fuel pumps have several great features. They have an internal bypass which requires no return line to the fuel tank saving lots of plumbing. They are extremely lightweight weighing only about 3 lbs., can be mounted about anywhere on the front of the engine, & are totally externally adjustable for fuel pressure.

Our new truly incredible pumps are bolt on mechanical pumps that are only one third the weight & size of a stock factory fuel pump but flows enough fuel for over an 1100 hp on alcohol at 60 psi! This revolutionary pump only requires 35 lbs. load on the camshaft as opposed to 125 lbs. from a stock pump. In turn it costs no power to drive & eliminates camshaft lobe wear. It doesn't get any better than this. We also have a billet bypass that can be used with our manual bolt on pumps to reduce fuel volume & pressure at idle & part throttle where fuel demands are low. We also carry custom line kits, gauges, fuel logs, & about anything you could need to complete any fuel system.



AED 500 "Max-Pro" Unrestricted 2-bl **N**



AED HP Body Annular 3-Circuit Race Carburetor **O**

We offer a complete line of Oval Track carburetors from limited induction 2-bls to Dominators in both gas & alcohol. We can custom build for virtually any application or class rules. We also provide carburetors to fit all budgets & claimer classes.

N. AED-500MP

Air & Fuel Delivery, AED 500 "Max-Pro" Unrestricted 2-bl Carburetor

- Features 1.750" throttle plates
- Fully CNC machined 1.535" venturi
- Custom machined delivery tube
- All fuel circuits are extensively modified

For the Ultimate in 4150 style carburetors is our "Max-Pro" that includes an additional fuel circuit, annular boosters, custom metering, full CNC porting, & our special performance coating.

O. AED-MPHP

Air & Fuel Delivery, AED HP Body Annular 3-Circuit Race Carburetor

- Additional fuel circuit
- Annular boosters
- Custom metering
- Full CNC porting
- Special "Performance Coating"

Available options include billet baseplate, billet metering block, & our special corrosion resistant performance coating.



*** Billet Baseplate options from \$79
*** Billet Metering Block options from \$89
*** Performance Coating \$189

Part No.	Product Line	Section	Price
AED-350N2	AED 350 Nascar Blueprint 2-bl Race Carburetor	Oval Track	\$599.95
AED-350N2S	AED 350 Nascar "Special" 2-bl Race Carburetor	Oval Track	\$849.95
AED-500N2	AED 500 Nascar Blueprint 2-bl Race Carburetor	Oval Track	\$629.95
AED-500MP	AED 500 "Max-Pro" Unrestricted 2-bl	Oval Track	\$799.95
AED-390N2	AED 390 "Nascar" Blueprint Custom Race Carb	Oval Track	\$999.95
AED-390N2S	AED 390 "Nascar" Busch Series Carburetor	Oval Track	\$1399.95
AED-750N2	AED 750 "Nascar" Blueprint Race Carburetor	Oval Track	\$649.95
AED-830N2	AED 830 "Nascar" Cup Series Race Carburetor	Oval Track	\$1399.95
AED-950N2	AED Custom HP 4150 "Pro-Series" Any Base & Vent.	Oval Track	\$899.95
AED-MPHP	AED HP Body Annular 3-Circuit Race Carburetor	Oval Track	\$1099.95



Part No.	Product Line	Section	Part Type	Price
AED-650HO	AED 650 "HO" Performance Carburetor	HO-Series	Carburetor	\$549.95
AED-750HO	AED 750 "HO" Performance Carburetor	HO-Series	Carburetor	\$559.95
AED-750HPHO	AED <i>New</i> 750 HP "HO-Series" Carburetor	HO-Series	Carburetor	\$599.95
AED-750HM	AED 750 "HO" Marine Carburetor	HO-Series	Carburetor	\$579.95
AED-750HB	AED 750 "HO" Blower Carburetor	HO-Series	Carburetor	\$619.95
AED-850HO	AED 850 "HO" Performance Carburetor	HO-Series	Carburetor	\$619.95
AED-850HM	AED 850 "HO" Marine Carburetor	HO-Series	Carburetor	\$649.95
AED-850HB	AED 850 "HO" Blower Carburetor	HO-Series	Carburetor	\$679.95
AED-950HO	AED 950 "HO" Performance Carburetor (HP body)	HO-Series	Carburetor	\$699.95
AED-1000HO	AED 1000 "HO" Performance Carburetor (HP body)	HO-Series	Carburetor	\$719.95
AED-750HOM	AED 750 "HO-Mod" Performance Carburetor (std. body)	HO-Mod	Carburetor	\$679.95
AED-850HOM	AED 850 "HO-Mod" Performance Carburetor (std. body)	HO-Mod	Carburetor	\$739.95
AED-950HOM	AED 950 "HO-Mod" Performance Carburetor (HP body)	HO-Mod	Carburetor	\$829.95
AED-1050HOM	AED 1050 "HO-Mod" Dominator Race Carburetor	HO-Mod	Carburetor	\$999.95
AED-1050-PS	AED 1050 "Pro-Street" Dominator Carburetor	HO-Mod	Carburetor	\$999.95
AED-1050PS	AED 1050 "Pro-Street" CNC Dominator	Sub-Mod	Carburetor	\$999.95
AED-750M2	AED 750 "Sup-Mod" Race Carburetor (std. Main body)	Sub-Mod	Carburetor	\$699.95
AED-850M2	AED 850 "Sup-Mod" Race Carburetor (std. Main body)	Sub-Mod	Carburetor	\$749.95
AED-950M2	AED 950 "Sup-Mod" Race Carburetor	Sub-Mod	Carburetor	\$799.95
AED-1050M2	AED 1050 "Sup-Mod" Race Dominator	Sub-Mod	Carburetor	\$999.95
AED-1150M2	AED 1150 "Sup-Mod" Race Dominator	Sub-Mod	Carburetor	\$999.95
AED-500M3	AED 500 "Pro-Series" 2-bl Race Carburetor	Pro-Series	Carburetor	\$699.95
AED-500MP	AED 500 "Max-Pro" 2-bl Race Carburetor	Pro-Series	Carburetor	\$799.95
AED-750M3	AED 750 "Pro-Series" Race Carburetor (to 1.50" Venturi)	Pro-Series	Carburetor	\$899.95
AED-850M3	AED 850 "Pro-Series" Race Carburetor (to 1.50" Venturi)	Pro-Series	Carburetor	\$899.95
AED-MPHP	AED New Max-Pro Billet 3-Circuit 4150	Pro-Series	Carburetor	\$1099.95
AED-1050M3	AED 1050 "Pro-Series" Race Dominator	Pro-Series	Carburetor	\$1099.95
AED-1150M3	AED 1150 "Pro-Series" Race Dominator	Pro-Series	Carburetor	\$1099.95
AED-MAXPRO	AED Special Large Bore Billet Booster HP Dominator	Pro-Series	Carburetor	\$1299.95



Intake Manifold

Designed specifically for the AllPontiac-DCI Motorsports Tiger Heads. This intake distributes the fuel more evenly than other intakes.

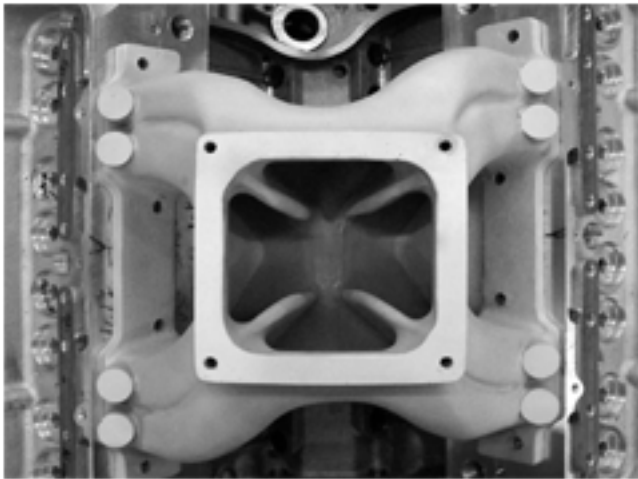
Intake Manifold

A. AP-TIM
Air & Fuel Delivery, AllPontiac
Tiger Intake Manifold

- Requires a 1250 CFM min. carburetor
- Strongly recommend the LS-1 Firing order
- Port matching necessary



A AllPontiac Tiger Intake Manifold (pic 1)



A AllPontiac Tiger Intake Manifold (pic 2)

Part No.	Part Type	Engine Block Style	Intake Style	Carburetor Quantity	Intake Finish	Intake Material	Quantity	Price
AP-TIM	Intake Manifold	Stock/OEM standard deck	Single plane	1	Cast	Aluminum	Sold individually	\$599.00

Block-Off Plate



These steel block-off plates cover the unsightly hole left over after you've replaced your mechanical fuel pump with an electric pump.

Block-Off Plate

- A. AP-FPBOP
Air & Fuel Delivery, AllPontiac
Fuel Pump Block-Off Plate

- Steel

AllPontiac Fuel Pump Block-Off Plate **A**

Part No.	Part Type	Material	Quantity	Price
AP-FPBOP	Block-Off Plate	Steel	Sold individually	\$5.00



AllPontiac front motor plate provides a connection between your motor and chassis. Great for engine swaps or for setting the motor back in the chassis.

Motor Plate

A. AP-FMP100

Chassis & Suspension, AllPontiac Front Motor Plate

- Made of steel
- Mounts using the 4 lower timing cover bolts
- Frees up alot of space
- You can mount an alternator to it and more
- Adds more clearance around the lower radiator hose
- Includes angles & bolts

B. AP-FMP101

Chassis & Suspension, Front Motor Plate A-Body Kit

- Made of steel
- Mounts using the 4 lower timing cover bolts
- Frees up alot of space
- You can mount an alternator to it and more
- Adds more clearance around the lower radiator hose
- Includes angles & bolts

C. AP-FMP102

Chassis & Suspension, Front Motor Plate F-Body Kit

- Made of steel
- Mounts using the 4 lower timing cover bolts
- Frees up alot of space
- You can mount an alternator to it and more
- Adds more clearance around the lower radiator hose
- Includes angles & bolts

Mounts

New Design! *Adds more clearance!*



A Front Motor Plate

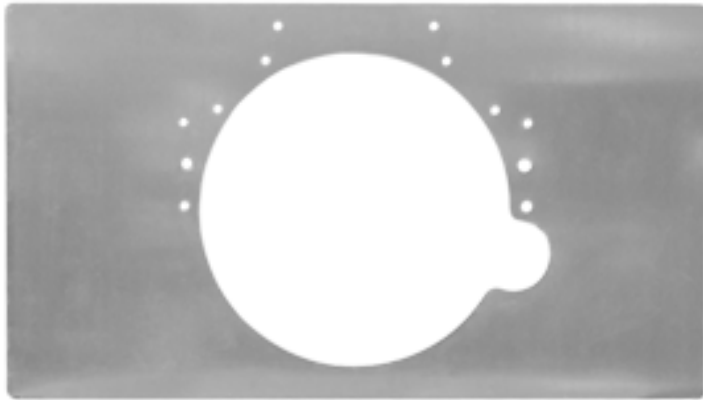


B Front Motor Plate A-Body Kit



C Front Motor Plate F-Body Kit

Part No.	Part Type	Motor Plate Position	Motor Plate Material	Motor Plate Length	Note	Quantity	Price
AP-FMP100	Motor Plate	Front-mount	Steel	30 in.	Any type chassis	Sold individually	\$100.00
AP-FMP101	Motor Plate	Front-mount	Steel	36 in.	68 to 72 A-Body	Sold individually	\$180.00
AP-FMP102	Motor Plate	Front-mount	Steel	24 in.	70 to 81 F-Body	Sold individually	\$180.00



AllPontiac Mid Plate **D**

AllPontiac mid motor plate will mount to your Pontiac motor and transmission. You can remove the transmission and have the motor supported by the plate or remove the motor and the transmission will be supported.

Motor Plate

D. AP-MP101

Chassis & Suspension, AllPontiac Mid Motor Plate

- Mid Plate for Pontiac motors
- .187" thick aluminum 5052
- BOP and Chevy bolt patterns
- Great for an engine swap or custom installation

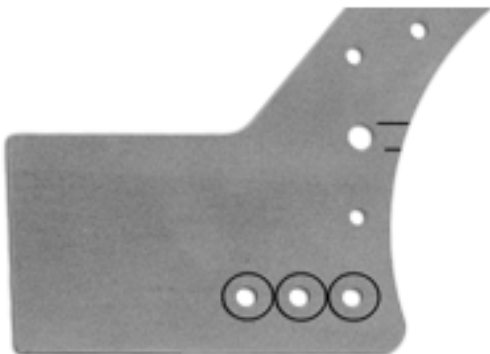
E. AP-MP100

Chassis & Suspension, AllPontiac Mid Motor Plate

- Mid Plate for Pontiac motors
- .187" thick steel laser cut
- BOP and Chevy bolt patterns
- Great for an engine swap or custom installation



AllPontiac Mid Plate **E**



Mid Plate (closeup) **E**

Part No.	Part Type	Motor Plate Position	Motor Plate Material	Motor Plate Length	Motor Plate Thickness	Quantity	Price
AP-MP100	Motor Plate	Mid-mount	Steel	32 1/8 in.	.187 in.	Sold individually	\$100.00
AP-MP101	Motor Plate	Mid-mount	Aluminum	32 in.	.187 in.	Sold individually	\$120.00



Our IA II blocks are machined by one of the best aftermarket engine machine shops in the country. All blocks are checked on a CNC coordinate measuring machine with-in process probing during manufacturing. Every block is pressure tested and comes with a sonic test sheet. IA II Blocks come with a full warranty for material and workmanship.

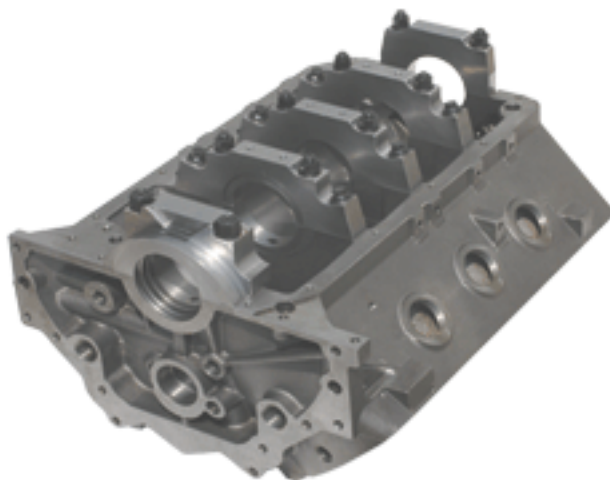
Engine, Bare Block

A. APSJB

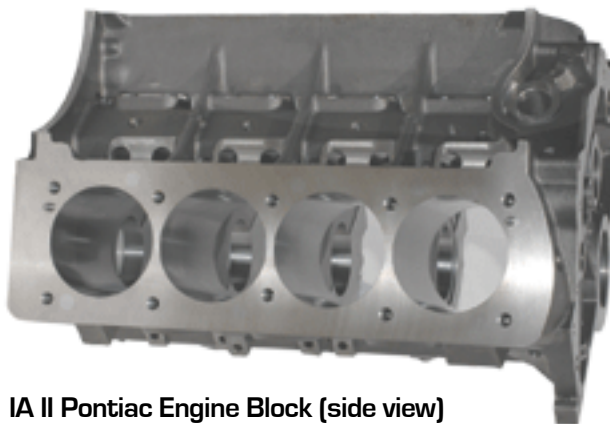
Engine & Components, IA II Pontiac Engine Block

- High Alloy Modified
- ASTM class cast iron block
- Siamese Cylinder bores
- Four-bolt steel main caps
- Main webs thickened to the maximum for added strength
- Wider pain rails
- Thicker deck surfaces
- Improved Oiling
- Solid Lifter gallery with drilled oil returns
- Lifter feed oil holes tapped ¼ - 20 for oil restrictors
- Bronze lifter bushings optional
- Redesigned cooling with added water holes in the back for better water flow
- All blocks are dry decked
- Threaded freeze plugs
- Dual bell housing bolt patterns for both Pontiac and "corporate" transmissions
- Bottom of cylinders are notched to clear strokes up to 4.75", 5.0 stroke possible with some grinding
- Motor mounts for the standard Pontiac 5-bolt motor mount pattern
- Accepts all OEM Pontiac parts plus many other improvements

Engine Blocks



A IA II Pontiac Engine Block (rear)



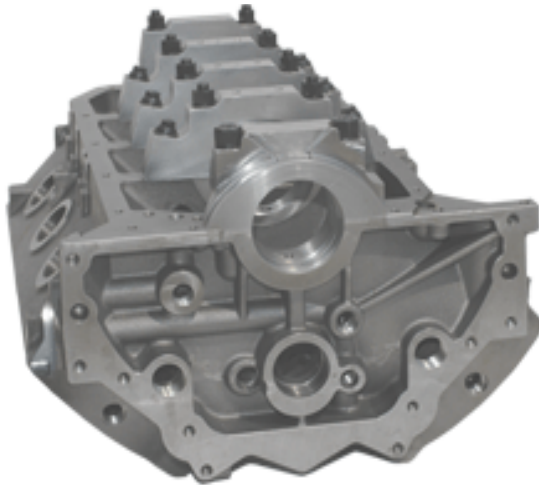
A IA II Pontiac Engine Block (side view)



A Four-Bolt Splayed Main Caps



A Two-Piece Rear Main Seal Cap



IA II Pontiac Engine Block (bottom) **A**

IA II Pontiac Engine Block

Part Number	APSJB
Block Material	ASTM Class 35 Cast Iron Tensile Strength 35,000 psi Copper, Chrome , Molybdenum, Vanadium, Nickel, Titanium ⁽¹⁾ Brinell Hardness Testing
Cylinder Wall Type	Siamese
Cylinder Wall Thickness	.200 ⁽²⁾
Deck Height	10.240"
Cylinder Bore Range	4.120 to 4.400"
Number Main Cap Bolts	4
Main Cap Bolts	Dowel pinned and splayed
Main Cap Type	Billet Steel
Cam Tunnel Options	50 mm or 55 mm
Crank Journal	3"
Crankshaft Seal	2 pc
Max Cylinder Stroke	4.75"

⁽¹⁾ A brinell hardness and tensile strength is check on every pour.

⁽²⁾ 200 thick is a target thickness estimated only

A sonic sheet is given with all blocks shipped.

We reserve the right to change the dimensions of the block and materials without notice.

Part No.	Product Line	Part Type	Engine Block Style	Engine Block Material	Siamese Cylinder Bores	Deck Height	Quantity	Price
APSJB	IA II Pontiac Engine Block	Engine Block, Bare	Standard Deck	Cast Iron	4.400	10.240	Sold individually	\$3,195.00

Options:

- Custom Bore Size - N/C
- 3.250 Crank Journal - N/C
- Bronze Lifter Bushings \$250.00
- Roller Cam Bearings \$375.00

Finishing Kit:

Includes all pipe plugs, 5/16 dowel pins and Standard screw in Freeze Plugs. \$45.00

Oil Pump Drive Shaft included in price.



Engine Blocks

No more leaking freeze plugs!

AllPontiac freeze plugs are designed to keep the fluid inside your engine block. This can also eliminate the cost of a machine shop installation. All freeze plug holes are threaded for screw in freeze plugs to protect you in case of a head gasket blowing and pushing out a pressed in freeze plug.

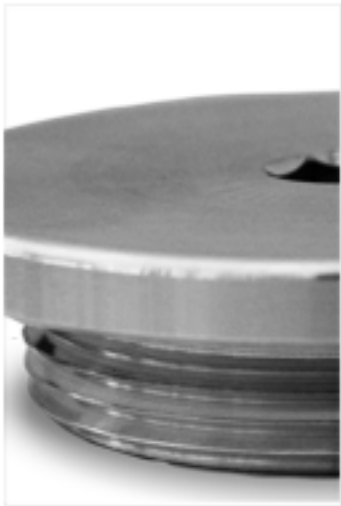
Expansion Plugs

B. AP-FP
Engine & Components,
AllPontiac Freeze Plug Set

- With “O” ring insert
- Must use a 10mm Hex Allen Wrench
- Will work on aluminum or cast iron blocks



B AllPontiac Freeze Plug Set

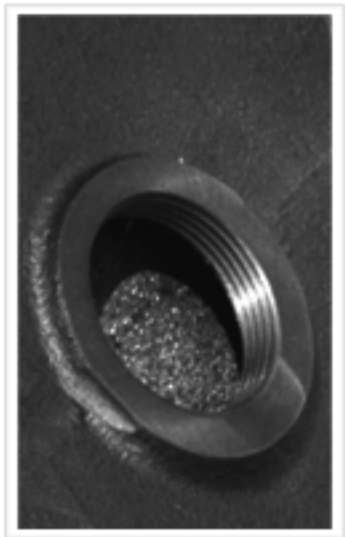


B AllPontiac Freeze Plug (closeup)



B AllPontiac Freeze Plug (front)

Part No.	Product Line	Part Type	Expansion Plug Style	Expansion Plug Material	Quantity	Price
AP-FP	AllPontiac Freeze Plug Set	Engine Block Expansion Plug	Threaded with “O” ring insert	Aluminum	Sold as a set of 6	\$85.00



B Freeze Plug Hole Closeup



IA II Standard Freeze Plug Kit **C**

Expansion Plugs

C. AP-FPK

Engine & Components,
IA II Standard Freeze Plug Kit

- With "O" ring insert
- Will work on aluminum or cast iron blocks

Oil Pump Driveshaft

D. AP-OPS

Engine & Components,
IA II Standard Oil Pump Driveshaft

- Designed specifically for the latest production version of the IA II Standard Deck Pontiac Engine Block.



IA II Standard Oil Pump Driveshaft **D**

IA II Standard Freeze Plug Kit Consists of:

- (5) - 2 - 3/8" STD NPT black plugs for front oil gallery flush fit
- 2 - 3/8" STD NPT thread for rear gallery
- 1 - 3/8" STD NPT for oil pressure (top of block)
- (4) - 2 - 1/2" STD NPT for oil (rear of block)
- 2 - 1/2" STD NPT for cooling (rear, near deck)
- (3) - 2 - 1/8" STD NPT for cooling drain (lowest side of block)
- 1 - 1/8" STD NPT oil pressure at front
- (2) - 1" Short NPT for cooling at rear of block
- (6) - 1 1/2" STD NPT brass freeze plugs (sides of block)
- (1) - 15/16" STD Expansion plug for oil gallery plug location
- (1) - 2 1/6" STD Expansion plug for camshaft tunnel
- (4) - 5/16 Head dowel pins

Part No.	Product Line	Part Type	Expansion Plug Style	Expansion Plug Material	Quantity	Price
AP-FPK	IA II Standard Freeze Plug Set	Engine Block Expansion Plug	Threaded with "O" ring insert	Brass	Sold as a set of kit	\$45.00

Part No.	Product Line	Part Type	Quantity	Price
AP-OPS	IA II Standard Oil Pump Driveshaft	Engine Block Oil Pump Driveshaft	Sold individually	\$19.00



AllPontiac billet cranks are designed with the latest in oiling technology.

Billet Crankshaft

A. AP-BC1
Engine & Components,
Billet Crankshaft

- 4340 Billet Steel
- Main 3.00"
- Available strokes 4.250 and 4.500*
- Custom billet cranks are also available

Part No.	Stroke	Main	Rod Journal	Price
AP-BC1	4.250	3.00		\$2,170.00
AP-BC2	4.500*	3.00		\$2,170.00

NOTE: All 4.500 stroke crankshafts have center counter weights.

High quality Scat Forged Crankshafts available in 3" inch mains

Forged Crankshaft

A. AP-FC1
Engine & Components,
Forged Crankshaft

- 4340 material
- Main journal size 2.200
- Available Strokes: 4.25" - 4.50"
- Ohio 4.750 stroke available
- All have latest oiling design
- Please call for 3.250" main pricing and availability

Part No.	Stroke	Main	Rod Journal	Wgt.	Price
AP-FC425	4.250	3.00	2.200		\$699.00
AP-FC450	4.500	3.00	2.200		\$699.00
AP-FC Lighten Package	4.750	3.00	2.200	67	\$700.00

Crankshafts



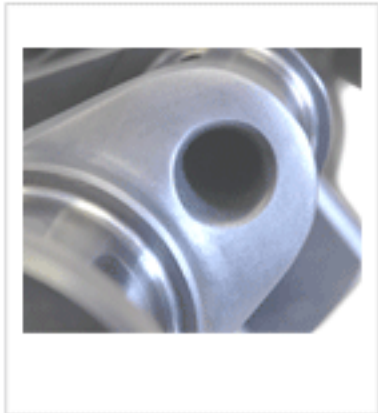
A Billet Crankshaft



B Forged Crankshaft



Tear drop oil hole



Straight shot oiling

On most crankshafts the rod feed hole is only drilled to the centerline of the main. This method of drilling doesn't deliver enough oil to the rod. This creates a high centrifuge, high pressure zone at the main, restricting critical oil flow intended for your rods. As engine rpm increases this centrifuge effect gets worse, which can result in unnecessary crankshaft damage or even total engine failure.

This is why we incorporated Straight Shot Oiling which virtually eliminates this problem by utilizing off-center drilling and a teardrop design oil hole, which scoops oil at the main and forces it into the rod feed hole. In addition the entry holes for the rod feed are located near the O.D of the main allowing unrestricted and equalized flow to the rod bearings.



AllPontiac Crankshaft Front Bearing Support **C**

It is made to fit only on a IA II Block. We have casted mounts in the front of our blocks to support this device.

When you buy any IA II and want to upgrade to this support you will get a drill fixture that will locate the holes in the correct place

Crankshaft Support

C. AP-CFBS

Engine & Components, AllPontiac Crankshaft Front Bearing Support

- First Ever For A Blower Motor!!!

Part No.	Product Line	Part Type	Price
AP-CFBS	AllPontiac Crankshaft Front Bearing Support	Crankshaft Support	\$649.00



We've got the Tiger!



Congratulations to Scott Roberts for setting a new Pontiac ET Record

Testing conducted 11-22-2008 by Scott Roberts (car owner) and crew with David Wilcox driving at a very cold Virginia Motorsports Park in Petersburg, VA.

The AllPontiac IA-2/Tiger powered blown alky funny car, on its third pass ever, recorded the quickest E.T. ever in the standing 1/4 mile by a traditional Pontiac powered vehicle.

AllPontiac IA II Scott Roberts Car Record Run 6.599 @ 184.85 MPH

The run breaks down as follows:

60' = .996

330' = 2.741

660' = 4.182 @ 170.36 MPH

1000' = 5.451

1320' = 6.599 @ 184.85 MPH

14 March 2007 - Work continues behind the scenes, on the Grocery Getter. The team has received a pair of the new "Tiger" heads from AllPontiac.com.

These heads will have a dramatic jump in flow capability and should open the door for new records to be set with the Grocery Getter.

As with most all hardcore race parts, some custom fitting to our engine is required (o-ring grooves, intake manifold fitting, etc.).

Crew Chief, Mike Garblik, is striving to have this engine operational this spring.





Tiger Head Flow Numbers

TIGER HEAD FLOW SPECIFICATIONS Race Ready Fully Ported Flow numbers (corrected) @ 28" using Superflow 600*

Lift	100	.200	.300	.400	.500	.600	.700	.800	.950
Intake	71	139	202	274	339	385	421	439	450.2
Exhaust**	61	108	146	186	220	252	273	285	290

TIGER HEAD FLOW SPECIFICATIONS Race Ready Fully Ported CNC Chamber/Bowl Flow numbers (corrected) @ 28" using Superflow 600*

Lift	100	.200	.300	.400	.500	.600	.700	.800	.900
Intake	75	138	212	282	341	384	402	414	422
Exhaust**	45	86	124	166	204	233	251	253	267



The AllPontiac Tiger Heads are available in standard or raised exhaust ports. These heads were designed primarily for use on the IA II cast iron block and the IA II-Butler Performance aluminum blocks. Available bare with guides and seats or fully assembled and ready to bolt on with Manley components and a Jesel shaft rocker system.

Cylinder Head Bare

A. APTH-B Engine & Components, AllPontiac Tiger Head Bare Cast

- Bare 356-T6 Aluminum
- 400+ cfm flow out of the box
- 50cc combustion chamber
- 310cc intake port
- Will accept up to 2.300 intakes & 1.800 exhaust valves
- Guides & seats included

Cylinder Head Pump Gas

A. APTH-PG Engine & Components, AllPontiac Tiger Head Pump Gas Assembly

- 356-T6 Aluminum
- 310cc intake port
- Will accept up to 2.300 intakes & 1.800 exhaust valves
- Uses bare head part# APTH-B

Pump Gas Package includes the following components:

MAN-IV	Intake Valves	MAN-VSC	Valve Spring Cups
MAN-VSD	Valve Springs	MAN-DVSR	Valve Spring Retainers
JES-RACS	Rocker Arms		

CNC chambers and bowls (64 cc)
Multi angle valve job
Cleaned and assembled, ready to bolt on

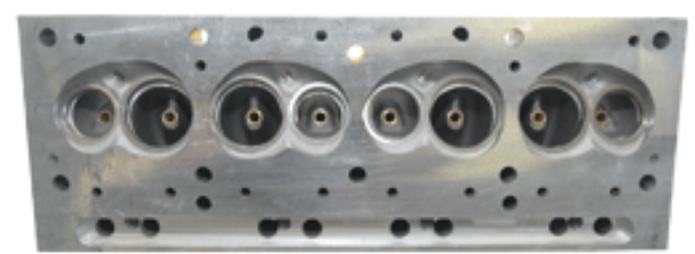
Cylinder Heads



A AllPontiac Tiger Head - Bare Cast
(standard exhaust)



A AllPontiac Tiger Head - Bare Cast
(intake)



A AllPontiac Tiger Head - Bare Cast
(combustion chamber)

Tiger Head uses CFM modified port design.

Note: Not legal for sale or use on pollution controlled motor vehicles.



AllPontiac Tiger Head A
(exhaust ports)



AllPontiac Tiger Head A
(combustion chamber closeup)

The Tiger's chamber is a true heart shape to promote swirl. The spark plug is angled to get as close to the center of the cylinder as possible for better flame propagation. High swirl heads require less timing so more torque can be made.

Cylinder Head Race Ready

A. APTH-RR

Engine & Components,
AllPontiac Tiger Head
Race Ready Assembly

- 356-T6 Aluminum
- 310cc intake port
- Will work on IA II cast iron block or IA II-Butler Performance aluminum blocks
- As cast ports
- Uses bare head part# APTH-B
- CNC Port by Checker Flag Machine (CFM)

Race Ready Package includes the following components:

MAN-IVT	Intake Valves	MAN-TVSR	Valve Spring Retainers
MAN-EV	Exhaust Valves	MAN-VSC	Valve Spring Cups
MAN-VST	Valve Springs	JES-RACS	Rocker Arms

CNC chambers and bowls (64 cc)

Multi angle valve job

Cleaned and assembled, ready to bolt on

Options:

- Manley® "HT" Titanium exhaust valves \$690.00
- Jesel® "Mohawk" shaft system \$190.00
- Metal Copper Beryllium Valve Seats \$380.00
- Manley® Triple NexTek® springs \$390.00
- CNC Full Port Job Raised Ex. Port \$840.00
- CNC Full Port Job STD Ex. Port \$1,200.00

Part No.	Product Line	Section	Part Type	Cylinder Head Style	Cylinder Head Material	Quantity	Price
APTH-B	AllPontiac Tiger Head	Cylinder Heads	Cylinder Heads	Bare	Aluminum	Sold as a Set	\$2,495.00
APTH-PG	AllPontiac Tiger Head	Cylinder Heads	Cylinder Heads	Pump Gas	Aluminum	Sold as a Set	\$5,295.00
APTH-RR	AllPontiac Tiger Head	Cylinder Heads	Cylinder Heads	Race Ready	Aluminum	Sold as a Set	\$6,250.00



Cylinder Head Components

Manley Severe Duty Series® performance valves are a great choice for your high-performance or race engine.

Severe Duty Series® valves are made of superior materials, are fully machined and swirl polished, and are available with either undercut "Pro Flo" stems or straight stems.



Valves - Severe Duty Series®

Part No.	Valve Material	Valve Length	Valve Diameter	Stem Size	Description	Price
<i>Intake Valve</i>						
MAN-IV	NK- 844 S/S	6.500"	2.25"	11/32"	Fully machined, swirl polished, and are available with either undercut "Pro Flo" stems or straight stems.	\$29.00 ea.
<i>Exhaust Valve</i>						
MAN-EV	XH-428	6.500"	1.80"	11/32"	Fully machined, swirl polished, and are available with either undercut "Pro Flo" stems or straight stems.	\$33.00 ea.

Manley titanium valves are micro polished, rendering a jewel-like surface finish. This process eliminates potential stress risers and increases fatigue strength.

All Manley valves must pass our rigorous final inspection strict quality control enables us to maintain critical tolerances.



Valves - "HT" Titanium Valves

Part No.	Valve Material	Valve Length	Valve Diameter	Stem Size	Description	Price
<i>Intake Valve</i>						
MAN-IVT	Titanium	6.500"	2.25"	11/32"	"HT" alloy is a great solution for applications where valve seat recession exists. The elevated hardness of the "HT" alloy, combined with its terrific mechanical properties, make it the ultimate intake valve.	\$108.00 ea.
<i>Exhaust Valve</i>						
MAN-EVT	Titanium	6.500"	1.80"	11/32"	"HT" exhaust valves can be used in high compression drag race applications and high compression oval track motors running alcohol.	\$108.00 ea.

DRAG RACE VALVE SPRINGS

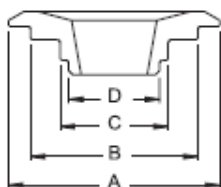


You can't beat Manley's NexTek® valve springs for winning performance, long-term reliability, and ultimate value! Knowledgeable engine builders will tell you that valve springs are among the most critically important components of any engine.

Valve Springs - NexTek® Series

Part No.	O.D.	L.D.	Spring Rate (lbs. / in.)	Coil Bind Height (in)	Description	Damper Spring Included	Valve Spring Style	Coated	Quantity	Price
<i>Double</i>										
MAN-VSD	1.640	.860	647	1.070	Super Gas, Super Comp., Big Block Bracket	no	Standard	no	Sold as a set of 16	\$335.00
<i>Triple</i>										
MAN-VST447	1.677	.635	746	1.160	Super Stock, Pro Mod., Competition Eliminator	no	Standard	no	Sold as a set of 16	\$485.00
MAN-VST449	1.677	.632	720	1.142	Pro Stock, Fuel & Alcohol	no	Standard	no	Sold as a set of 16	\$608.00

LIGHTEN YOUR VALVETRAIN



Manley titanium valve spring retainers are a great way to lighten your valvetrain, in order to rev higher and make more power. These retainers are excellent for all types of racing, and are designed for valve stem locks with a 10 degree taper.

Valve Spring Retainers - Titanium

Part No.	Spring	Spring O.D.	Height	Keeper Degree	Locks Included	Dimensions				Quantity	Price
						A	B	C	D		
<i>Double</i>											
MAN-DVSR	MAN-VSD	1.625"	Standard	10°	no	1.500"	1.175"	.850"		Sold as a set of 16	\$148.00
<i>Triple</i>											
MAN-TVSR447	MAN-VST447 MAN-VST449	1.660"	Standard	10°	no	1.500"	1.185"	.860"	.620"	Sold as a set of 16	\$148.00
MAN-TVSR449	MAN-VST447 MAN-VST449	1.660"	+.100"	10°	no	1.500"	1.185"	.860"	.620"	Sold as a set of 16	\$148.00

DESIGNED TO KEEP OIL
OUT OF THE COMBUSTION CHAMBER

Valve Stem Seals - Viton®



Part No.	Valve Stem (Dia)	Valve Seal Type	Valve Stem Material	Guide O.D.	Installed Seal O.D.	Use Cutter No.	Quantity	Price
MAN-VSS1	11/32"	Postive Stop	Viton®	0.500"	0.620"	41611	8 pcs.	\$32.75
MAN-VSS2	11/32"	Postive Stop	Viton®	0.530"	0.674"	41711	8 pcs.	\$32.75



Cylinder Head Components

Manley 10 degree machined valve locks are precision-crafted and machined from the highest quality steel alloy and titanium to suit your needs. The steel valve locks are heat-treated and feature a black oxide finish. The titanium valve locks are durable and lightweight.



10 Degree Machined Valve Locks

Part No.	Valve Stem Diameter	Lock Style	Installed Height	Groove Type	Lock Material	Recessed to accept a wear cap	Wgt. / Pr.	Quantity	Price
MAN-VL68	.3415"	10°	Standard	Conventional	Steel alloy	no	6.8 gms	Sold as a set of 16	\$62.50
MAN-VL61	.3415"	10°	Standard	Conventional	Steel alloy	yes	6.1 gms	Sold as a set of 16	\$62.50
MAN-VL56	.3415"	10°	.050" more	Conventional	Steel alloy	yes	5.6 gms	Sold as a set of 16	\$62.50

Manley valve spring cups protect your expensive aluminum heads from being galled by your high-pressure valve springs. They're quality-machined to a .062 in. or .035 in. thickness, from heat-treated steel that's finished with a corrosion-resistant black oxide finish. Manley valve spring cups are available in outside diameter spring cup styles.



O.D. Valve Spring Cups

Part No.	Locating Shoulder Type	Locator Material	Fits Spring O.D.	Cup O.D.	Cup I.D.	Wall Shoulder Height	Spring	Use Cutter Number	Quantity	Price
MAN-VSC121	Outside	Steel	1.625"	1.740"	.635"	.150"	MAN-VSD	141851	Sold as a set of 16	\$81.00
MAN-VSC128	Outside	Steel	1.625"	1.740"	.635"	.250"	MAN-VSD	141851	Sold as a set of 16	\$81.00
MAN-VSC371	Outside	Steel	1.660"	1.740"	.635"	.140"	MAN-VST447 MAN-VST449	141851	Sold as a set of 16	\$81.00



JESEL Comp Series Shaft Rockers are made out of strong 7000 series alloy aluminum to retain toughness at high engine temperatures, the Comp Series has no limitations as to spring rates and rpm. Each rocker assembly is built to order with a wide range of pivot points, ratios and offsets available. Even the new lightweight MoHawk rocker style is now available as an option in the Comp Series.

Shaft Rocker System - Competition Series

Competition Series Options

MoHawk Lightening Beam: • Stiffest, lightest rocker JESEL has ever produced • Increases spring life

Rocker Tail Profile: • Increases valve cover clearance • Decreases rocker weight

Needle Bearing Nose Roller: • Intended for use with high lift/high spring pressure applications • Prevents the roller from skidding and stalling across the valve tip • Decreases valve guide wear

Spring Clearance: • Increases retainer-to-rocker clearance • Ball mill machining leaves no sharp edges • Available for 1.515-1.650 pivot length rockers

Tool Steel Adjusters: • Direct replacement for our standard adjusters • Better impact and wear characteristics

Ball Adjusters: • Increases rocker arm strength by removing the adjuster cup counterbore in the rocker tail • Increases adjuster strength by moving cup end the pushrod • Operates with less friction than cup style adjusters

ARP Shaft Bolts: • Manufactured from ARP 2000 material • Recommended for high spring pressure applications • Bolt can be torqued to 35 ft/lbs

Shaft Rocker System - Pro Series



MoHawk
1.650 Pivot BB Rocker
Weight: 195g

JESEL's MoHawk rigid center beam rocker is the ultimate design incorporating stiffness, strength and lightweight into a single package.

Standard Shotpeen Finish

Benefits: Induces an even, compressive stress layer in the surface of the rocker body. Increases the resistance to fatigue failures. Adds compression strength and stress relieves rocker body.

Additional Option - Needle Roller

Benefits: Intended for use with high lift, high spring pressure applications. Prevents the roller from stalling and skidding across the valve tip.

Additional Option - Ball Adjuster

Benefits: Has less friction than cup type adjusters. Makes rocker arm stronger by increasing the adjuster thread area and eliminates counterbore area.

Jesel® Competition Series
Jesel® Pro Series - MoHawk

\$1,325.00
\$1,740.00

Note: Not legal for sale or use on pollution controlled motor vehicles.



AllPontiac v-belt alternator pulleys are manufactured from quality materials to ensure strength and durability. These pulleys are deep-grooved to ensure belt retention at high rpm. They include a pulley spacer and mounting hardware. Design for use with Allpontiac air pump mount.

Alternator Pulleys

A. AP-AVP2
Engine & Components,
AllPontiac Alternator V-belt
Pulley

- Mounts to stock Harmonic Damper or BHJ Type Balancer
- Precision cut from 6061 aluminum
- Two Groove
- Reduces alternator speed by 25%
- Deep grooves keep your belts on

B. AP-AVP1
Engine & Components,
AllPontiac Alternator V-belt
Pulley

- Mounts to stock Harmonic Damper or BHJ Type Balancer
- Precision cut from 6061 aluminum
- One Groove
- Reduces alternator speed by 25%
- Deep grooves keep your belts on

Pulleys



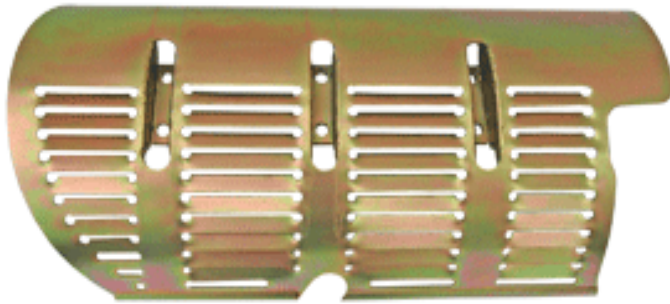
A AllPontiac Alternator V-belt Pulley (two groove)



B AllPontiac Alternator V-belt Pulley (one groove)

Part No.	Pulley Style	Groove Quantity	Pulley Spacer	Pulley Spacer Bolt Pattern	Mounting Hardware Included	Alternator Pulley Attachment Style	Pulley Material	Pulley Finish	Quantity	Price
AP-AVP2	V-belt	Two	Included	4-bolt	Yes	Bolt-on	6061 T6 billet aluminum	Polished	Sold individually	\$125.00
AP-AVP1	V-belt	One	Included	4-bolt	Yes	Bolt-on	6061 T6 billet aluminum	Polished	Sold individually	\$95.00

Highly recommended for use with the IA II Crank Scraper



IA II Windage Tray **A**

The Windage tray is designed for the IA II block but works on all Pontiac V-8's with splayed or regular main caps - both 2 bolt and 4 bolt.

Windage Tray

A. IAII-WT

Engine & Components

IAII Windage Tray without dipstick tube hole*

- High quality steel
- Superior oil control
- Will not crack or break like factory style trays with redirect curve
- Quick Install and removal
- Out performs glue on trays
- All fasteners included
- Weight 3.8 lbs.

This new crank scraper is designed for the IA II block or race applications with 4 bolt or splayed caps.

Highly recommended for use with the IA II Windage Tray



IA II Crank Scraper **B**

Crankshaft Scraper

B. IAII-CS

Engine & Components,

IAII Crank Scraper without dipstick tube hole*

- Laser cut NON - BENDABLE 18 gauge steel
- Keeps oil down in the pan with better sealing
- Increases power on all high performance Pontiac V-8's
- Will clear IA II splayed caps or regular blocks using aftermarket main caps without modifications
- Easy Installation
- Elongated holes to adjust distance from scraper to crank for custom fit

Part No.	Product Line	Section	Part Type	Crank Scraper Material	Quantity	Price
IAII-CS	IA II Crank Scraper	Oiling Systems	Crank Scrapers	Steel	Sold individually	\$35.00

Part No.	Product Line	Section	Part Type	Windage Tray Style	Windage Tray Material	Quantity	Price
IAII-WT	IA II Windage Tray	Oiling Systems	Windage Tray	Screened	Steel	Sold individually	\$159.00

Note* Dipstick tube applications must be welded or staked to external tube or a bracket must be welded and bolted to tray.



Oiling Systems

This pan fits all popular chassis including GTO'S 67'- 69' F Bodies, cannot be used with some stock exhaust systems (measure for clearance).

Oil Pans

A. CAN-15452
Engine & Components,
Canton Pontiac Road Race Pan for GTO'S

- Triple door baffles
- Runners for oil control
- Great for drag race & road race applications
- Includes removeable slosh baffle, temperature fitting, & magnetic drain plug
- Provision for optional pan mounted dipstick



A Canton Pontiac Road Race Pan for GTO'S

Part No.	Oil Pan Capacity	Oil Pan Depth	Oil Pan Length	Price
CAN-15452	6 quarts	8.000 in.	8.000 in.	\$284.95 ea.

Requires #CAN-15401 pickup (3/4" O.D.) for High Pressure Pump #M54DS

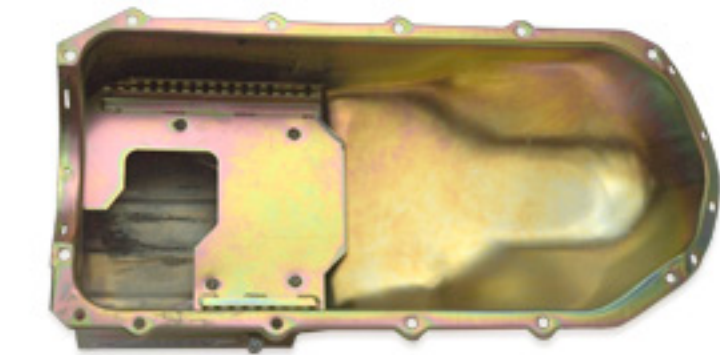
Part No.	Price
CAN-15401	\$34.95 ea.



This pan fits all popular chassis except GTO'S 67'- 69' F Bodies, cannot be used with some stock exhaust systems (measure for clearance).

B. CAN-15450
Engine & Components,
Canton Pontiac Road Race Pan

- Triple door baffles
- Runners for oil control
- Great for drag race & road race applications
- Includes removeable slosh baffle, temperature fitting, & magnetic drain plug



A Canton Pontiac Road Race Pan for GTO'S (inside)

Part No.	Oil Pan Capacity	Oil Pan Depth	Oil Pan Length	Price
CAN-15450	6 quarts	7.000 in.	10 1/2 in.	\$284.95 ea.

Requires #CAN-15451 pickup (3/4" O.D.) for High Pressure Pump #M54DS



B Canton Pontiac Road Race Pan



AllPontiac Oil Pan Spacer **A**

Oil Pan Spacer

A. AP-OPS

Engine & Components,
AllPontiac Oil Pan Spacer

- Used on a IA II for the timing cover to oil pan

Part No.	Product Line	Quantity	Price
AP-OPS	AllPontiac Oil Pan Spacer	Sold individually	\$8.00



Melling High Performance Oil Pump **A**

Oil Pump

A. AP-10541

Engine & Components,
Melling High Performance Oil Pump

- Wet sump
- Standard-volume
- High pressure
- Includes oil pump spring
- Includes pickup

Part No.	Product Line	Quantity	Price
AP-10541	Melling High Performance Oil Pump	Sold individually	Call for pricing



Headers

These AllPontiac Header flanges feature durable 5/16 in. thick steel and will provide an unparalleled quality and fit for the exhaust ports on your AllPontiac-DCI Motorsports Tiger cylinder heads.



AllPontiac Header Flanges

Part No.	Header Flange Thickness (inches)	Header Flange Port Shape	Primary Tube Size (inches)	Quantity	Price
AP-EHF	5/16"	Round	2"	Sold as a pair	\$79.95
AP-EHF	5/16"	Round	2 1/8"	Sold as a pair	\$79.95

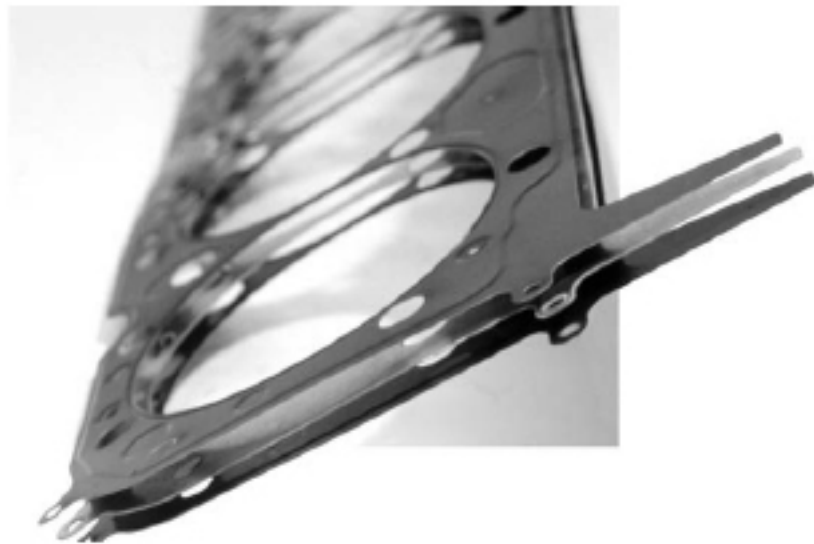
Custom size upon request





The Cometic MLS gasket is comprised of three layers of Stainless Steel. Cometic uses Stainless steel for increased strength, it's ability to rebound and corrosion resistance. The outer layers of the gasket are embossed and coated on both sides with a fluoroelastomer rubber based material (Viton) designed to meet the demands of a variety of harsh sealing environments, load conditions and surface finishes. The Viton coating is heat resistant to 2500C or 4820F.

The center or shim layer of the gasket is comprised of an uncoated Stainless Steel layer, which can be varied to accommodate multiple thickness requirements. The MLS gasket is ideal for both aluminum heads to cast iron blocks and aluminum heads to aluminum blocks.



Cometic Head Gaskets

Part No.	Head Gasket Bore	Head Gasket Material	Description	Quantity	Price
COM-HG4150	4.150"	MLS/C.O.T. - .040"	Pontiac V8 400,428 & 455ci	Sold as a set	\$186.00
COM-HG4160	4.160"	MLS/C.O.T. - .040"	Pontiac V8 400,428 & 455ci	Sold as a set	\$186.00
COM-HG4200	4.200"	MLS/C.O.T. - .040"	Pontiac V8 400,428 & 455ci	Sold as a set	\$186.00
COM-HG4300	4.300"	MLS/C.O.T. - .040"	Pontiac V8 400,428 & 455ci	Sold as a set	\$186.00
COM-HG4380	4.380"	MLS/C.O.T. - .040"	Pontiac V8 428 & 455ci	Sold as a set	\$186.00
COM-HG4410	4.410"	MLS/C.O.T. - .040"	Pontiac V8 428 & 455ci	Sold as a set	\$186.00

CUSTOM ORDER WORKSHEET

Please have this basic information ready and any other modifications that have been done to your specific application to ensure quick and accurate delivery.

- "Actual" bore size of block: _____
- Desired thickness you will need to achieve proper deck clearance. _____
- What type of block are you using CAST IRON or ALUMINUM?
- What type environment will the gasket be subject to?
- What is your planned compression ratio? ____:____
- Is your application naturally aspirated or forced induction?
- If force inducted how much boost do you plan on running? _____
- Do you have heads that require valve pockets in the gasket or round bore? If pocketed you must provide dimensions.
- Is the chamber O.D. in the head larger than the bore? _____
- If so, dimensions must be supplied: _____
- Who is the manufacturer of the head: _____
- What is the part # and or model: _____
- Who is the manufacturer of the block: _____
- What is part # and or model: _____

HEAD GASKET VOLUME CALCULATOR (Round Bore Only)

Change Bore Dia. from in. to mm

Bore Area

Gasket Volume in cc's

Bore (inches) =
.03937

Bore Dia. (mm) x Bore Dia. (mm) x .7854 =

Gasket Thickness (in) x Bore Area x 25.4 =cc's
1000



SCE Gaskets Inc. legendary Pro Copper Head Gaskets, used and recommended by top professional teams to seal 7,000 horsepower Top Fuel motors. These fine gaskets are equally potent in 500 horsepower street strip motors. They are made from C11000 ASTM B-152-92 copper sheets, annealed to Rockwell F-32 after manufacturing, Skin sealed in engine sets.

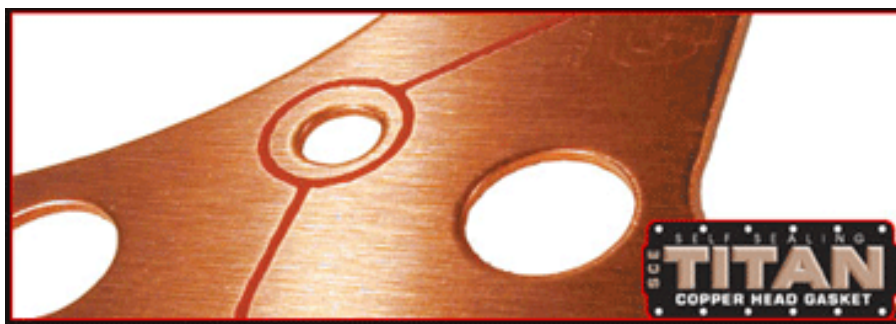
SCE Pro Copper Head Gaskets

Part No.	Head Gaske Bore	Head Gasket Thickness	Head Gasket Material	Head Gasket Style	Quantity	Price
SCE-028202	4.200"	.021"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028252	4.250"	.021"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028322	4.320"	.021"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028382	4.380"	.021"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028203	4.200"	.032"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028253	4.250"	.032"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028323	4.320"	.032"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028383	4.380"	.032"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028204	4.200"	.043"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028254	4.250"	.043"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028324	4.320"	.043"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028384	4.380"	.043"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028205	4.200"	.050"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028255	4.250"	.050"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028325	4.320"	.050"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028385	4.380"	.050"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028206	4.200"	.062"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028256	4.250"	.062"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028326	4.320"	.062"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028386	4.380"	.062"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028207	4.200"	.072"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028257	4.250"	.072"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028327	4.320"	.072"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028387	4.380"	.072"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028208	4.200"	.080"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028258	4.250"	.080"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028328	4.320"	.080"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028388	4.380"	.080"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028209	4.200"	.093"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028259	4.250"	.093"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028329	4.320"	.093"	Copper	requires o-rings & sealant	Sold as a pair	Call
SCE-028389	4.380"	.093"	Copper	requires o-rings & sealant	Sold as a pair	Call



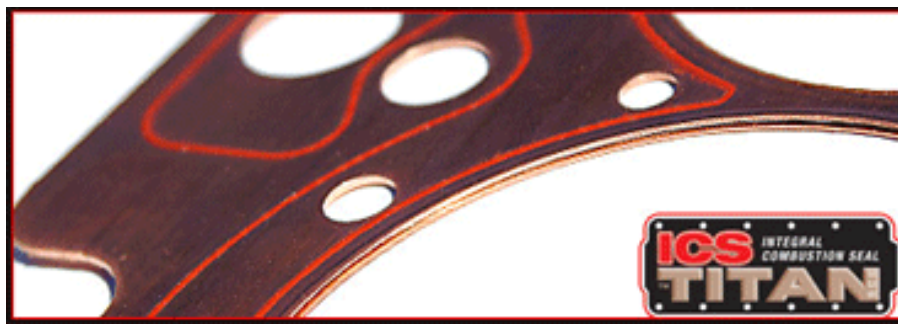
The New SCE TITAN self sealing copper head gasket needs no sealant; it provides unbeatable strength and user friendly installation. This patented product gives you the best of both worlds, the combustion sealing strength of an SCE copper head gasket and the confidence of built-in coolant and oil seals! The perfect racing and performance head gasket!

Engine Gaskets & Seals



SCE Titan Copper Self Sealing Head Gaskets

Part No.	Head Gasket Bore	Head Gasket Thickness	Head Gasket Material	Head Gasket Style	Quantity	Price
SCE-T28203	4.200"	.032"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28253	4.250"	.032"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28323	4.320"	.032"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28383	4.380"	.032"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28204	4.200"	.043"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28254	4.250"	.043"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28324	4.320"	.043"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28384	4.380"	.043"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28205	4.200"	.050"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28255	4.250"	.050"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28325	4.320"	.050"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28385	4.380"	.050"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28206	4.200"	.062"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28256	4.250"	.062"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28326	4.320"	.062"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28386	4.380"	.062"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28207	4.200"	.072"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28257	4.250"	.072"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28327	4.320"	.072"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28387	4.380"	.072"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28208	4.200"	.080"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28258	4.250"	.080"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28328	4.320"	.080"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28388	4.380"	.080"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28209	4.200"	.093"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28259	4.250"	.093"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28329	4.320"	.093"	Copper	requires o-rings	Sold as a pair	Call
SCE-T28389	4.380"	.093"	Copper	requires o-rings	Sold as a pair	Call



The ICS Titan racing head gasket eliminates the need for o-rings and sealant, featuring Integral Combustion Seals and built in coolant seals. These ready to use gaskets save time, hassle and the cost of machining. Capable of sealing extreme boost or nitrous, the ICS Titan head gaskets are strong enough for real racing engines.

SCE ICS Titan Copper Seal Sealing Head Gaskets

Part No.	Head Gaske Bore	Head Gasket Thickness	Head Gasket Material	Head Gasket Style	Quantity	Price
SCE-S28204	4.200"	.043"	Copper	ready to use	Sold as a pair	Call
SCE-S28254	4.250"	.043"	Copper	ready to use	Sold as a pair	Call
SCE-S28324	4.320"	.043"	Copper	ready to use	Sold as a pair	Call
SCE-S28384	4.380"	.043"	Copper	ready to use	Sold as a pair	Call
SCE-S28205	4.200"	.050"	Copper	ready to use	Sold as a pair	Call
SCE-S28255	4.250"	.050"	Copper	ready to use	Sold as a pair	Call
SCE-S28325	4.320"	.050"	Copper	ready to use	Sold as a pair	Call
SCE-S28385	4.380"	.050"	Copper	ready to use	Sold as a pair	Call
SCE-S28206	4.200"	.062"	Copper	ready to use	Sold as a pair	Call
SCE-S28256	4.250"	.062"	Copper	ready to use	Sold as a pair	Call
SCE-S28326	4.320"	.062"	Copper	ready to use	Sold as a pair	Call
SCE-S28386	4.380"	.062"	Copper	ready to use	Sold as a pair	Call
SCE-S28207	4.200"	.072"	Copper	ready to use	Sold as a pair	Call
SCE-S28257	4.250"	.072"	Copper	ready to use	Sold as a pair	Call
SCE-S28327	4.320"	.072"	Copper	ready to use	Sold as a pair	Call
SCE-S28387	4.380"	.072"	Copper	ready to use	Sold as a pair	Call
SCE-S28208	4.200"	.080"	Copper	ready to use	Sold as a pair	Call
SCE-S28258	4.250"	.080"	Copper	ready to use	Sold as a pair	Call
SCE-S28328	4.320"	.080"	Copper	ready to use	Sold as a pair	Call
SCE-S28388	4.380"	.080"	Copper	ready to use	Sold as a pair	Call
SCE-S28209	4.200"	.093"	Copper	ready to use	Sold as a pair	Call
SCE-S28259	4.250"	.093"	Copper	ready to use	Sold as a pair	Call
SCE-S28329	4.320"	.093"	Copper	ready to use	Sold as a pair	Call
SCE-S28389	4.380"	.093"	Copper	ready to use	Sold as a pair	Call



The New ICS TITAN with built in combustion seal blocks lateral flow of combustion pressure.



These AccuSeal Pro exhaust gaskets are ideal for racing or street performance engines, feature quality throughout. They are wire reinforced and graphite coated exhaust gaskets with a superior fit and finish designed to deliver trouble free performance for the specific application.



SCE AccuSeal Pro Exhaust Gaskets
Exhaust Header/Manifold Gaskets

Part No.	Port Style	Exhaust Gasket Material	Quantity	Price	Notes
SCE-228180	D	reinforced graphite coated	Sold as a pair	Call	Gasket matches 455 iron cylinder heads.
SCE-228181	Round	reinforced graphite coated	Sold as a pair	Call	Fits 2"od. Ram Air style headers, also fits Performer RPM Pontiac.

Notes: _____



These Accuseal Pro intake gaskets feature silicone beading around ports and water passages. Ideal for racing or street performance engines. When you buy SCE Gasket you get high quality materials, superior fit and finish in a product intentionally designed to deliver trouble free performance for the specific application.

SCE AccuSeal Pro Intake Gaskets

Intake Manifold Gaskets

Part No.	Port Style	Port Height	Port Width	Port Thickness	Gasket Material	Quantity	Price	Notes
SCE-228101 *	Stock	2.025"	1.075"	.062"	Composite	Sold as a set	Call	*Beaded ports
SCE-228102	Modified	2.100"	1.060"	.062"	Composite	Sold as a set	Call	
SCE-228103 *	Modified	2.275"	1.125"	.062"	Composite	Sold as a set	Call	*Beaded ports
SCE-228104	Modified	2.200"	1.075"	.062"	Composite	Sold as a set	Call	Gasket outline provides extra material at top of porting.
SCE-228105	Modified	2.300"	1.175"	.062"	Composite	Sold as a set	Call	
SCE-228106	Modified	2.350"	1.135"	.062"	Composite	Sold as a set	Call	
SCE-228107 *	Ram Air Super Duty	2.200"	1.075"	.062"	Composite	Sold as a set	Call	*Beaded Ports Also fits Performer RPM Pontiac aluminum heads.



These AccuSeal Pro valve cover gaskets use a two-layer composite of super-strong cellulose and high-density cork. The end result gives you a gasket with superior sealing ability and 1,250 lb. tensile strength for reliability.

SCE AccuSeal Pro Valve Cover Gaskets

Valve Cover Gaskets

Part No.	Valve Cover Gasket Style	Thickness	Valve Cover Gasket Material	Quantity	Price	Notes
SCE-128076	2 over 2 bolt pattern	5/16"	Cork/Hi Density	Sold as a pair	Call	Street/Strip
SCE-228175	2 over 2 bolt pattern	1/8"	Laminated Silicone Cork	Sold as a pair	Call	Racing/Hi Vacuum
SCE-228176	2 over 2 bolt pattern	1/4"	Laminated Silicone Cork	Sold as a pair	Call	Racing/Hi Vacuum

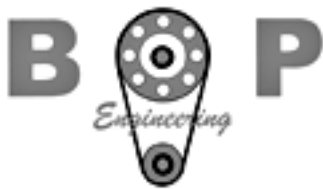


Engine Gaskets & Seals



Water Crossover Gaskets

Part No.	Quantity	Price	Notes
AP-WCG01	Sold as a pair	\$3.50	421, 428, 455 CID Pontiac V-8 400, 430, 455 CID Buick V-8
AP-WCG02	Sold as a pair	\$3.50	301, 326, 350, 389, 400 CID Pontiac V-8 & all aftermarket 3 inch main blocks



Viton Main Seals - With the mandated removal of asbestos from the factory type rope seals, increased leakage has become commonplace. To address this problem BOP Engineering has designed a new rear main seal for the traditional Pontiac V-8's.



These seals are not a retrofit from some other engine, but designed from a clean slate using state of the art technology and the best materials. Testing has shown a significant reduction in drag over the factory rope seal, and no leaks!

Available in both 3" for 301- 400 engines and small journal IA blocks and for 3 1/4" for 421 - 455 engines and large journal IA blocks.

Rear Main Seals

Part No.	Rear Main Seal	Gasket Style	Rear Main Seal Material	Quantity	Price	Notes
AP-RMS01	3.00"	2-piece	Viton®	Sold individually	\$39.99	301, 326, 350, 389, 400 CID Pontiac V-8 & all aftermarket 3 inch main blocks
AP-RMS02	3.25"	2-piece	Viton®	Sold individually	\$39.99	421, 428, 455 CID Pontiac V-8 400, 430, 455 CID Buick V-8



The valley pan keeps the hot oil where it belongs.

Valley Pan

A. AP-CAVP Gaskets & Seals, AllPontiac Cast Aluminum Valley Pan

- reinforced ribbing
- Fits all Pontiac V-8 applications
- Will not bend like the sheet metal Valley Pans
- We recommend you use the Permatex® The Right Stuff® sealant



AllPontiac Cast Aluminum Valley Pan **A**
(outside)



AllPontiac Cast Aluminum Valley Pan **A**
(inside)

Part No.	Valley Pan Material	Valley Pan Fasteners	Valley Pan Gasket	Quantity	Price	Notes
AP-CAVP	Cast Aluminum	Included	None	Sold individually	\$109.00	No provision for a PCV valve



This is the first lightweight gear drive starter for traditional Pontiacs.

Our nose support is made of 6061 billet aluminum, thickest for support, smallest in diameter for close fits in bell housing.

The multiposition version has a total of 40 positions. Locations are made by use of external bolts, no taking the starter motor apart as the pinion gear is also movable fore & aft .120 by internal shims already in the starter, also by way of the external bolts. The gear is made of 9310 aircraft quality steel billet, center ground and heat treated.

Starter

A. AP-HTMS100

Ignitions, AllPontiac High-Torque Mini Starter

- Lightweight
- Supported nose drive
- Sealed roller bearings
- It doesn't break
- Increases reliability
- Increases gear and flywheel life
- Can be indexed to fit your application

Starters

Why do Starters Fail?

Our experience with the normal mini starters has forced us to replace two SFI flywheels along with 3 starters. (Starters were set up correctly and still failed.)



A Worn & Broken Gear Teeth (front)



A Worn & Broken Gear Teeth (side)

*New Starter with supported nose drive!
Racer Net Pricing!*



A AllPontiac High-Torque Mini Starter



1. Sealed roller bearings
2. Supported nose drive with needle bearings

Part No.	Starter Style	Starter Finish	Quantity	Price	Notes
AP-HTMS100	Mini	Natural	Sold individually	\$375.00	Can be indexed to fit your application





Torque Plate

When rebuilding your Pontiac engine a torque plate is a very important factor in ensuring your block's integrity. Boring and honing with a torque plate ensures that you achieve a perfect cylinder.

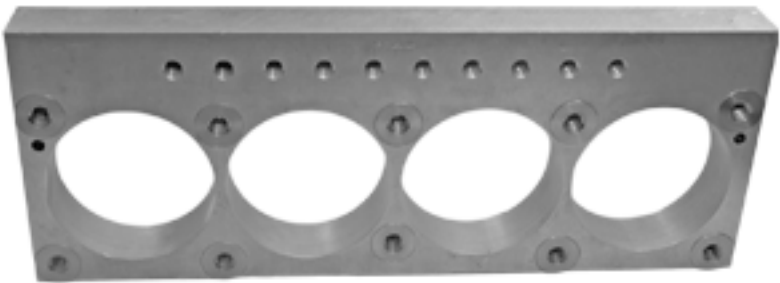
This can be achieved if the proper torque specifications and the correct length bolts are used.

Torque Plate

A. AP-TP4400

Tools, AllPontiac Torque Plate

- Precision cut from 6061 T-6 aluminum
- Stainless Steel inserts
- Finishing Bores up to 4.400"



A AllPontiac Torque Plate

Part No.	Product Line	Torque Plate Bore (inches)	Torque Plate Material	Quantity	Price
AP-TP4400	AllPontiac Torque Plate	Finishing Bores up to 4.400 in.	6061 T-6 Aluminum	Sold individually	\$450.00

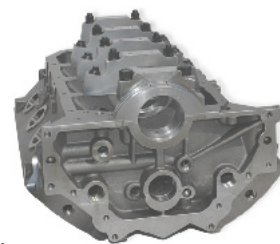




Engine Blocks

IIA II Pre Assembly Tip Sheet

By AllPontiac.com



The pre-assembly mock-up of an engine to assure its proper fit, clearance, and alignment is essential to any correctly built engine.

*****THE ENGINE BUILDER must check for any defects in material or manufacturing PRIOR TO INSTALLATION/ASSEMBLY.**

It is the responsibility of the engine builder to do these tests and inspections. If a defect is found, AllPontiac.com must be notified immediately***

1. Pressure wash the block from all sides to remove all sand and metal shavings from the manufacturing process. You may have to do this several times.
2. Pressure test the cooling jackets and the oil system before starting any machine work.
3. Decks are CNC machined to Standard deck heights. **If you need a particular deck height always measure before machining and ordering your pistons.**
4. Deburr the block all over. Also check all threads. Chase if needed. It is new and just off of the machine. CHECK ALL OIL PASSAGES AND DEBURR IF NEEDED.
5. You will need to use a ball hone in the lifter bore to deburr the lifter bores. Check them for the proper clearance to your lifter. Some need more clearance than others, so check this out. A stock lifter will go in this block. When using high performance roller lifters, the spreader bar may hit the lifter top surface. This surface was raised to add meat to the lifter area so BBC lifters can be used. If using a .200 offset lifter you will need to have the bar raised .300 higher or mill the top of the lifter bores.
6. Check the main bearing clearance with the bearings that you plan to use. Again, different bearing manufacturers have different clearances. **Mains are finished to low/mid spec. Line hone if needed.**
7. Check the clearances on the crank radius to the caps/bearings to make sure that the bearings are not riding on the radius. Torque the caps the same as a stock block.
8. The crank clearance to the block will need to be checked. Have at least .060" of clearance to all surfaces on the block. Check all counterweights and rods. The front dowel pin corner may need to be ground and the block near the rear crank balance weight may need to be ground.
9. The rear crank bearing oil hole may need to be slotted .030 back to make sure that the oil has a clear path to the bearing. Again, the bearing that you use may have a different oil hole location.
10. Cam clearance is set to be stock. Check this out also.
11. Install oil restrictors in the lifter bores for your own specs. Most people are using .030 restrictors.
12. Plate hone your block. AllPontiac.com has a free loaner. You will have to pay UPS shipping from and to AllPontiac.com.
13. Check the 1 1/4" NPT tap holes in the rear of your block to make sure that the plugs will go flush. Or you may need to grind them flush. The machine cannot tap them to full depth.
14. Use your head to determine which water holes that may need to be drilled in the block for water passages to the head. Drill the same amount of holes as your heads. We are dry decking the block to be drilled by you to your particular head water jacket pattern.
15. The distributor hole has the stock clearance. In some cases you may need to hone out with a brake hone to deburr the hole so the distributor will go in. Also check the distribution shaft length.
16. The registered main blocks have the pan rail lowered 1/8". You will need to have a longer oil pump drive shaft. The oil pan front lip will need 2 cork gaskets or just tap the pan lip back to the timing cover to change the clearance by 1/8".
17. The oil pump housing on some pumps may hit the rear bearing cap by 1/16". Just grind the pump housing back.

Washing

You must thoroughly clean your block including bores, oil galleys and water jackets.

To reduce rust and corrosion, wash with hot water and soap. Rinse with hot water first, then rinse again with cold water.

this block should be assembled only by experienced, professional engine builders. If you have any questions please feel free to call anytime 804-794-6777.

Have fun with your new IA II Block and remember safety first.

All aftermarket/race blocks may require this type of special attention regardless of make or manufacturer.



Installation Instructions for Starter

1. First ensure that the threads in the block are clean and deep enough to tighten the starter nose without the thick washers or shims. The threads on the bolts may be shortened, but there must be $\frac{3}{4}$ " thread engagement left and 1" in Aluminum Block.
2. If the nose of the starter is not attached to the starter yet, bolt the nose on the block without shims. Then place the drive gear assembly in the nose. By pressing the end of the shaft and depressing the spring, you will engage the pinion gear. Backlash should be .015" to 0.30", with .025" optimum. It will feel like an intake rocker arm (if that helps) .015" shims are provided. If more than .060 is needed, call us. The gear must engage $\frac{2}{3}$ of the ring gear (front to back) fully.
3. The flywheel or flex plate must be checked at four places. The ring gear runout should be .030 max which is easy on a flywheel but sometimes hard on a flex plate. If more than this, the starter will need more clearance for the tight spots. Otherwise the starter will never sound good, and more importantly, will never work well and last.
4. It goes without saying the ring gear should have all its teeth and should not be burred or chipped. Chipping will occur on four spots on a V8, 3 cylinder, 2 on a 4 cylinder, so rotate the ring gear at least one turn to check the teeth.
5. At rest, the ring gear should be minimum of .050 (a dime) for a flywheel. The flywheel must be pushed forward for correct measurements (stepping on the clutch is fine). It should be a minimum of .075 (a nickel) for a flex plate.
6. The torque converter must be bolted to the flex plate for proper measurement. If the torque converter bottoms out in the crank and the flex plate is pulled to the back of the car while tightening the clearance, measurement can be a little tighter. If the converter does not bottom out in the crank, the clearance must be opened up .020" to .040". The flex plate will be pushed forward under load, especially with a transbrake. Check for rubbing of the pinion after a couple of runs.

Shims are available to move the pinion forward .060 and .120. More than that, contact us and we can relocate the mounting bolts to correct this.

A Complete Starter

The procedures are the same. However, to engage the pinion, grab the pinion shaft, which sticks out of the nose with a vice grip (the shaft is hard and doesn't even ride in the bearing) and pull it out. After all clearances are checked and corrected, bolt the starter to the block and torque to 45 ft lbs.

Wiring

Do not use a jumper on the starter solenoid. Wire the starter just like a Pontiac car.

The starter wire should be 14 gage minimum, 12 gauge if over 10 feet total.

Total wiring, is starter to key starter or starter button to battery, not just to the starter button.

A starter delay may be used. VW sells a small Bosch unit which works well.

The starter cable should be #2 wire for very short lengths; #1 is used for average, #0 for cars with trunk mounted batteries.

Make sure the ground side is the same with engines with rubber motor mounts.

Solid mounted engines, #1 should be fine. With the starter cables or with any wiring, bigger is better.

Following these instructions you should see an improvement in starter performance, life, and reliability.

How to install the Front Motor Plate

First, make sure the motor is in the center of the frame rails. Measure from one side of the balancer to the frame right side and then to the left side.

Cut the Front Plate so it has 1/4 inch of clearance from the frame on each side.

Put the motor in with the transmission and mid plate where you want it to be.



Check the drive shaft angle to make sure it is straight at the u joint. When you have it set as to where the motor will be, take small blocks of steel and place one under each end of the plate as a stop to rest the motor mount on. Angle iron will also work. Weld this in place. Take the chain hoist off the motor and check the alignment again.

Cut two 1/4 X 1 1/4 X 1 1/4 X 4 inches long angle iron pieces. Clamp them to the frame and plate and mark where you want to have the two mounting holes drilled. Should be about 5/8" over and 3 inches apart.

Drill the angle iron pieces on a drill press with a .343 drill bit for a 5/16 x 18 bolts. Next, clamp the angle iron and weld them to the frame rails. Now transfer the holes to the motor plate and you're done.

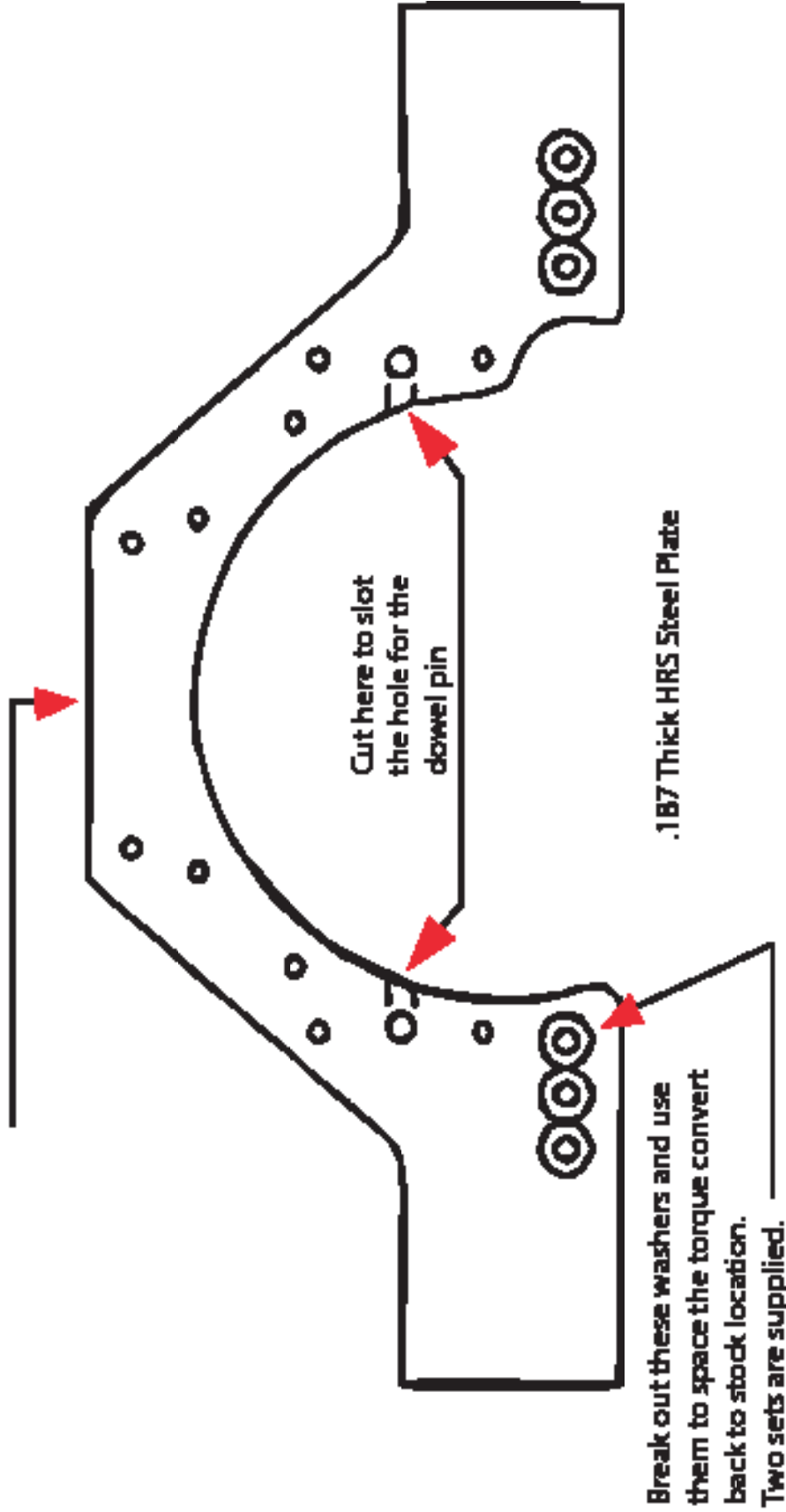
Mount the plate to the four housing bolts before you put on the balancer and rest the motor on the stops. No more plates to the heads. It is hidden so well you hardly notice the mount.

This is a great mount for dropping a motor and will be easy to do from now on.

This plate may be used as a solid or a two piece mid plate

For Installation without removing the transmission

Cut the plate in half at the marking. Separate the transmission by 1/4 of an inch.
 Cut the slot to the dowel pin hole. Rotate the plate 90 deg. and slide it on the dowel pin.
 Cut the mounting plate so it will turn and pass by the frame rail and headers.
 Use angle iron to mount the plate to the frame as needed.





“Tune-Up” Tips

Your first step is to make sure you have all the proper pieces to do the job. A jet assortment, (AED has jet boxes, jet plates w/ jets, and specific tune-up kits) gaskets, power valves, squirter and pump cams. AED kits 6055 & 6056 should do. Most Holley's out of the box should have a fairly close fuel curve for street cars w/ closed exhaust if you selected the correct carburetor for your application. We have covered the idle & transition circuits now we can move to the main. The main jet controls most cruise & W.O.T. fuel metering. The main jet under cruise conditions supplies most of the fuel and this circuit is easiest to tune. If @ steady speeds (2200-4000 rpm) the engine surges it is too lean. You can usually lean the main jets down till you get this surge & then richen up the mains by 2 jets #'s to be safe. Once you have this worked out it's time for full throttle tuning. When you accelerate from cruise to W.O.T. manifold vacuum drops to almost 0" and the power valve opens increasing fuel flow to the main well and boosters. This additional fuel is needed for high demand situations (full throttle) and the power valve restriction channels are the way to tune it (2 channels that are visible when you remove the power valve). If the engine doesn't respond correctly or surges you're restriction channels may be too small. Enlarge these a couple of thousands @ a time till you have adequate fuel and proper acceleration. If this procedure is more than you want to do you can just add more main jet for best acceleration. For all out drag cars this is the easiest way since part throttle operation means nothing. For race cars I would start w/ jetting about 2 to 3 #'s richer than factory settings to be safe & learn how to read spark plugs to make sure you're not hurting anything! Jet the carb. up for best MPH until it slows up then reduce jetting to your last setup.

Always choose a power valve that is below your lowest manifold vacuum attained while idling in gear, but not so low that you might build enough manifold vacuum in high gear to close it leaning the carb. Your AED kit should contain the correct power valve except in an unusual situation. Thanks for purchasing the best!

Notes: _____

“Troubleshooting” Tips

Off Idle Hesitation: Is one the most common problems w/carbs especially when used on modified engines. If you experience an off idle stumble as soon as you accelerate from part throttle or idle check the distributor first for correct initial timing & a proper mechanical advance curve. (inadequate timing will also cause a backfire through the carb under acceleration). First check the pump circuit to make sure that the squirter produces fuel as soon as you move the throttle. If not make sure your linkage is set properly (there should be no play between pump arm and pump linkage at idle), then if you have no pump shot trace the pump circuit back to locate the problem. Then check front & rear float levels for proper setting (too low of a fuel level in bowl will delay main circuit startup). Next move to the carb idle circuit. Most of these type stumbles occur because of a lean idle & transition circuit especially w/ large manifolds, lots of cam timing, and little or no manifold vacuum. First check to make sure the primary throttle plates @ curb idle aren't too far up into the transition slot reducing fuel enrichment when you fan the throttle. If the throttle blades are more than about .04" into the transition slot either open the secondary throttles to put more air in the motor or drill a hole in each primary throttle plate on the bowl side to increase idle air. Start w/ about .09" holes in the plates. If you still have a stumble adjust the idle mixture screws about 1 turn richer from best idle & see if this cures the problem. If this helps you can bet the idle circuit is too lean. A good indication of a lean idle is if your idle mixture screws are out @ best idle over 2 turns, or you can just bump the accelerator pump arm @ idle & the idle smoothes out. In some cases richening the main jets by a couple of #'s will richen the idle enough since the idle circuit pulls fuel from the main circuit. If your main circuit is already tuned this can be a mistake. If you need to richen the idle circuit the best method is to increase the idle feed restriction about .002" @ a time. This should remedy the situation or reduce the idle air bleeds by about .005" at a time.

Full Throttle Hesitation: You should now have your idle & transition circuits tuned up and should proceed with the pump circuit if under hard launches you get a stumble. In most cases your not supplying enough fuel when you whack the throttle & manifold vacuum drops before you can start the main circuit. This causes a lean spot you need to cover up w/ the pump circuit. Usually going up on squirter size a few thousands will cure the problem. When you go above .035" squirter size you should install high flow pump screws so you don't limit fuel flow (AED #5550) If you fix the initial stumble and then after the car moves alittle, it becomes lazy you are running out of pump shot too early. You can change pump cams to a higher lift cam (AED #5560) or you'll have to add a 50cc pump kit (AED #5565). This is especially helpful when you are using a large carb that has a slow starting main circuit, or have a heavy car, or a tight converter. One thing to remember is that you only want enough pump shot to cover the lean hole in the fuel delivery curve, any more can make the car lazy. Another major problem on hard accelerating drag cars is when the car gets out almost through low gear & then noses over. This is caused by fuel rushing to the back of the rear bowl under high G forces uncovering the rear jets. The purchase of our #5895 stainless jet extension kit will solve this problem. We also offer special machined and weighted floats for additional protection with our custom brass jet extensions included. (AED #5896).

Flooding & Hard Starting Hot: When you have fuel dripping out of the boosters or a very rich condition @ idle, first check front & rear float levels. Remove both sight plugs (AED #5170) clear sight plugs are safer,easier, & inexpensive w/ motor off & make sure fuel in the bowls is even with or 1/3 up from the bottom of sight hole. If too high adjust down (clockwise) w/ needle & seat nut and recheck. If you still can't get the float level down check for heavy float or trash in needle & seat. Holley carbs hate trash & water! With floats set if you still experience flooding tighten fuel bowls (incorrect seal between metering block and main body can cause booster pull-over) or check for mainbody and metering block flatness. We are assuming you have checked fuel pressure (AED gauge #6100) and it's less than 8 psi running. If you still have a problem a blown power valve will cause an excessively rich idle, vacuum check it or replace. Always use a carb heat shield or insulated carburetor spacer if you have an aluminum intake because of the excessive heat bled off to the float bowls. This will cause fuel bowl over, percolation, & vapor lock resulting in hard starting & spongy throttle response. We manufacture a complete line of heat insulating Birchwood Spacers in 1/2" and 1" (#'s 6150 thru 6173) for all applications.

*** Special note about metering block gaskets since about midway 2004. The gasket material has been changed from the original Holley material used for decades! Some are harder & some are softer. Always re-tighten bowl screws after initial use as the mating surface between the metering block & main body surface is critical in proper carburetor operation! I would not reuse metering block gaskets, they are inexpensive so just replace them. If you have a strange problem with idle or cruise your first step should be to replace the metering gaskets. We have seen allot of this in the past year with virtually everyone's gaskets. Are latest gaskets (as of March 2005) are the best out there, but I would still replace them on any carburetor disassembly.



FAQ'S:

1) How to pick the right Carburetor size for your car & engine combination?

This is paramount in being successful whether you're a professional racer or just want the right carburetor for you're street machine. There are 3 main parameters that correctly determine your baseline selection. From there you need additional information to fine tune that selection. Let's start with the big 3.

A) Cubic Inches:

Simple parameter for total cubic inches including any additional bore & stroke

B) Total RPM Range:

This is both **minimum** & **maximum** rpm. Minimum rpm is just as critical or even more so than maximum rpm. You need to be concerned with the minimum rpm that you need to accelerate from. Several additional pieces of information come into play here such as transmission type, converter flash rpm etc. For example the exact same engine in a car with a 3500 converter will need less carburetor than one with a 5500 converter. Remember it's all about acceleration. A larger carburetor that might make more torque & power on the dyno will usually run slower ET's or lap times if the engine can't accelerate properly from that minimum rpm. Remember engines are not too happy running below max torque rpm! Ideally the correct converter should flash to roughly 200 rpm above max torque rpm. Gear ratio also plays a role in this calculation as does car weight. The heavier the car or higher the gear will affect time spent in different rpm bands & in this case would require a carburetor sized smaller than a lighter car with more rear end gear (numerically higher). Camshaft & cylinder head (intake port volume) also play a key role in rpm range. In most cases the camshaft & cylinder head dictates rpm range. Here's where you can get thrown a curve. In many cases the bigger the cylinder head is the less carburetor the engine wants. We are assuming 2 similar engines with the same rpm range. A good example is a standard small block Ford & small block Chevrolet. The Ford factory head volume being smaller usually requires more carburetor than a typical Chevy. We have proven this over & over through dyno (engine & chassis dyno as we have both in house) & racetrack testing. It gets down to port velocity & choke points which is a topic for another discussion. As you can see this isn't easy determining correct carburetor selection. It's really part science, part knowledge, & part experience. There is no real formula for absolute carburetor size. I've worked on a spreadsheet for years that won't always work. The proliferation of all the new cylinder heads & manifolds makes selection even tougher. Bottom line is always get good knowledgeable help when selecting carburetion, just like a good camshaft they can tie you're whole program together properly & make a big difference in performance. It's always less expensive to do it right the first time.

C) Power Level:

The third major consideration is Horsepower. A lot of the previous questions go into trying to figure out how much power an engine makes & at what rpm. Your engine needs X amount of airflow to reach a certain power level efficiently. The formula for CFM consumed is $(CFM = CID \times RPM \times VE \div 3456)$. Here CID = Cubic Inches; & VE = Volumetric Efficiency. This is just a rough estimate as VE number is the basic efficiency or cylinder filling of the engine. Let's take a typical small block chevy 383ci stroker engine at 6500 rpm assuming 100% VE. Plug in the numbers & you get a CFM requirement of 720. Street motors might be 90% & a good race engine might be 125%. This can be figured out simply but it's just a piece of the puzzle & all of the previous observations are equally as important. I will explain the CFM myths in more depth in the next topic. I hope this helps in getting a better handle on the important things to consider when choosing the right carburetor.

2) Real Carburetor Airflow Numbers:

Years ago the Society of Automotive Engineers provided a standard for Airflow that's still used today. For 4-barrel carburetors that number is measured airflow at 1.5" pressure drop, or used on a flowbench is 20.4" water. For example a 750cfm carburetor should flow 750 (cubic feet per minute) at this pressure drop. A carburetor has fuel flowing through it which actually displaces some airflow (usually around 8%), so this should actually be flowed with fuel or wetflowed. When we first started we built our own custom "Wetflow-Bench" to properly measure carburetor airflow & fuel flow. We couldn't understand how you could be in the carburetor business & not be able to properly measure these parameters. We can measure CFM, pressure drop, Air/Fuel Ratio, pounds of air, pounds of fuel, & correct for weather conditions. We can also wetflow the carburetor through the entire rpm range. The big advantage is we can actually measure A/F ratio throughout the rpm range to set the fuel curve properly.

The problem comes when some carburetor folks do not use SAE numbers. We've had many carburetors through the years claiming to be one number & some would be well over 100cfm less. Some carb folks would use 28" of water to flow carburetors & hence the totally unrealistic claims. We decided not to play the airflow games as we feel it's a real disservice.

Now as far as airflow goes we've found that it takes roughly 1 cfm to make between .7 & .8 horsepower. If you take the SAE numbers of 1.5" of depression to get you're cfm then on our previous example with the 383 Chevy then you need a 720cfm carburetor roughly without considering the other factors. We have found that you actually would be better off using a carburetor that flows this amount of air at a lower pressure drop (less restriction) like 1.2" to 1.3" as this usually makes more power. For example in our theoretical 383 engine if we used 1.2"-1.3" it would require a carburetor close to 800cfm for best power. Don't forget all the other factors that go into carburetor selection mentioned above. If we can be of any help we have a great tech department that can supply the correct AED Performance carburetor for your specific application.

VALVE TRAIN GUIDE

VALVE TRAIN
TROUBLE SHOOTING GUIDE

"You gotta be there at the end to win." Nothing could be more obvious; yet nothing could be more true. At Manley Performance we have made an unlimited commitment to ensure that our customers will be there at the end when they see our products.

The Manley commitment to product excellence is two phased. First, we continue to research, test and introduce improved materials, designs, heat treatment and finishes that result in superior products. Our HT titanium material, our implanted retainers, our Bead-Loc® keepers and our oversized and pushrods are all examples of new and improved commodities for the racing fraternity.

Second, we have extensively tested to determine exactly what is happening in the valve train in a running engine. Our goal is to fully comprehend the problems each product faces in order to build the best piece possible. Our valve operating temperature data, our unbelievably vast valve fatigue testing (which we are convinced no other competitor has ever undertaken), and our comprehensive finite element analysis (FEA) of retainers are all illustrative of the depths to which we have probed to find real answers that result in real improvements.

There is another - absolutely crucial - ingredient in the success of a race engine, and that is the engine builder. The selection of related items such as camshaft and springs, and the preparation of the fuel system and the general state of the engine turn-up, all carry extremely heavy, often critical, responsibility for the success of the valve train components.

It is for the concerned engine builder that these remarks are targeted, so that hopefully with our test results and experience we can point out problem areas in the valve train and offer suggestions to keep everyone running at the end.

Valves don't just break. They are affected by temperatures and dynamic stress. Too much of either - or almost too much of both in combination - will result in valve failure. Valves MUST be kept within the temperature parameters of the material. Even the high temperature materials such as XH - 428 and XH - 430 stainless and HT titanium have finite limits. Items 6 and 7 expand on the subject of temperature. First, let's discuss dynamic stress.

In a smooth running Winston Cup engine with no valve float the valves are experiencing 20,000 psi of stress. If valve float occurs, the stress can reach 50,000 psi and this will reduce the life expectancy of the part by over 90%. And this happens if the valve temperature does not increase, which is an unrealistic expectation. Elevated temperatures will quickly reduce the life of the valve even more. From these facts - derived from our exhaustive rotating beam fatigue test - it is obvious that CONTROLLING THE VALVE TRAIN can not be emphasized too strongly.

1. VALVE LOCK SCRUBBING

This is the first place to look for valve float. If the lockers are leaving scuff marks on the valve stem above and below the keeper groove, the valve is bouncing on the seat and the valve gear (lock, retainer, spring) is separating. Nothing but trouble is on the horizon.

SUGGESTIONS: Lighten the valve train. If using stainless valves, move to titanium. If using titanium, move to thinner stems to reduce weight. Change to a lighter retainer. Buy better valve springs, which can be found on pages 53 - 56 of this catalog. Go to a stiffer (3/8" diameter) pushrod. Really, work with your camshaft grinder to develop a profile that won't lose the valve gear until eventual destruction.



2. MULTIPLE ROCKER PATTERN

The photo is fully illustrative of the multiple rocker contact areas on the valve tip. Since this type valve train is non-rotating by design, the only way the valve can rotate is if it experiences float. Again, disaster lurks around the corner when valve train instability is present.

SUGGESTION: See suggestions under #1.





VALVE TRAIN GUIDE

3. RETAINER FIT

Retainer fit is an often over-looked issue. The steps on the retainer must match the I.D.'s of the spring package. Mismatch can cause the retainer to be overstressed and fail. Our FEA (finite element analysis) highlights the most highly stressed areas of the retainer, and our discovery of these potential trouble spots is evident in the design of our pieces.

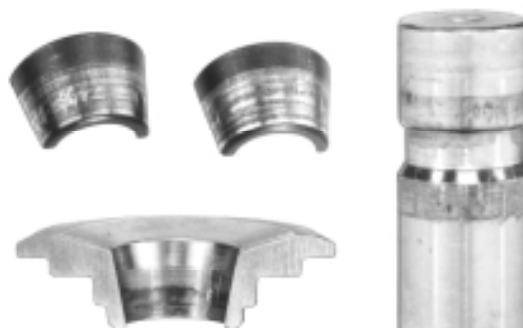
SUGGESTIONS: Use Manley titanium Super 7[™] ICD retainers with our exclusive Impingement process that offers better abrasion resistance, improved impingement fatigue strength and an improved surface condition. Also, chamfer the I.D.'s of your spring to allow clearance between the spring and the corner radius of the retainer. If using springs with dampers, be certain to flush the ends of the dampers with a large radius and a smooth polish.



4. VALVE LOCK FIT

Do not underestimate the importance of proper fitting valve locks. The valve lock is designed to clamp on the stem of the valve - not in the root of the groove. The tongue of the lock is for locating purposes only. **THERE ARE POORLY MACHINED LOCKS ON THE MARKET.** Also, be certain the lock angle is compatible with the retainer angle. This is often not the case.

SUGGESTIONS: Use Manley Super 7[™] - either regular design or the safer Bead-Loc[®] style - along with Manley Super 7[™] retainers. These are made in our own double spindle CNC lathes to exacting tolerances to assure proper fit.



5. VALVE SPRING "LIFT-OFF"

Check the wear pattern in the photo. The coils are touching each other. Is this coil bind? No. The spring is actually lifting off the spring seat pad of the cylinder head causing the coils to touch each other. Springs have certain "tune" points where in distinct rpm ranges they are in a harmonic state of discord and not under control. It is possible for a spring to control the valve train at 8500 rpm but be unable to do so at 8100 rpm.

SUGGESTIONS: Attempt to tune the "tune point" out of the operating range of the engine with a different design valve spring. The best springs in the industry are found on pages 63 - 66. Also, stiffer pushrods and lighter valves and retainers will be beneficial.



VALVE TRAIN GUIDE

6. STEADY STATE RPM ENGINES

Assembling a steady state r.p.m. marine engine or a narrow range oval track engine is perhaps the greatest challenge a builder can face today. This statement in no way denigrates the efforts of the drag race community. Success in the straight line arena depends on producing peak horsepower at a very high rpm level, with a large premium on the flatness of the power curve. No easy assignment! The added wrinkle in constructing an oval or marine engine, not of immediate concern in a drag race powerplant, is the existence of dangerous "luse points" that will inject instability into the valve train. An unstable valve train drastically decreases the life of the components, inevitably leading to failure.

It is the responsibility of the builder to determine where the "luse points" reside in the engine and be absolutely certain that none appear in the operating range of the engine. Determining the location of an engine's "luse points" requires a Spintron machine to detect where the springs drift into a harmonic state of discord that allows the valve train to become disassembled and the valves to bounce on the seats.

Building an engine to run in a narrow rpm range for extended periods of time without knowing positively if that range contains any "luse points" is strongly discouraged. But if access to a Spintron is not possible, hopefully a few "bon mats" will benefit the engine builder.

1. The best marine engine builders change blankum valves after every race. Winston Cup valves only run one race. If the valves in your engine are experiencing bounce where the stresses are elevated to 40,000 psi from the normal 20,000 they may last 800,000 cycles or one five hundred mile race. But the fatigue life may be seriously compromised, and adding those valves to complete two or three more races may simply be beyond their fatigue life capabilities.

2. A valve spring cannot be judged solely on its ability to resist pressure loss. It is possible for a spring to control the valve train at 8400 rpm, and a race with minimal open load loss, yet be experiencing a "luse point" at 8100 rpm that allows serious valve bounce.

3. Moving an engine's rpm range up only 200 or 300 can have a major effect on the valve train. If a builder has researched (or stumbled upon) a combination that works in a certain range, broaching that range should not be undertaken without thoroughly revisiting the choice of valve springs and the weight of the reciprocating components.

CONCLUSIONS: In general, valve springs are NOT the place to effect economies. Purchase the best springs that have been proven to work with similar components both on Spintrons and in race engines. Lighten the valves and change them often, being sympathetic to the notion that they have a fatigue life that is seriously shortened by being bounced on the seats. Related components such as spring retainers and lockes should be lightened, and pushrods should be stiff as well as light. Give us a call at Manley Performance; we are always happy to share our testing results to keep racers running at the end.



BOP Rear Main Seal Instructions

BOP Engineering Viton® Rear Main Crankshaft Seal Instructions for RMS01 (3"main) & RMS02 (3.25"main) with Crankshaft Removed

Thank you for choosing the BOP Engineering Viton® Rear Main Seal, which is a direct replacement for the stock rope seal. The seal may ride on the serrated area of the stock crankshaft. We have not found this to cause any problems. The serrations on some non-GM cranks may be more aggressive than the stock crank. If the seal rides on an area of aggressive serrations, we recommend polishing this area prior to installation. Remove no more than .003" during polishing. If you have questions during installation please call, or contact us through our website.

For longevity of the seal please follow these instructions carefully.

1. Prior to final installation of the crankshaft in the block, make sure the block and main cap seal cavities are clean and free of obstructions.
2. Place one half of the seal in the block seal cavity noting correct orientation of seal (Figure 1). With the seal fully seated in cavity, square up one end of the seal with the block/cap parting line and measure the amount of the seal that is protruding on the opposite end using a caliper or feeler gauge. The amount protruding should be $0.020 \pm 0.005"$. This equates to 0.0075 to $0.0125"$ per side. If it is more, remove material from the end of the seal with a file while keeping the ends square, until it measures the correct amount. Repeat for the main cap assembly.



3. Remove seal from block and main cap. Fill only the bottom of the four anti-rotation holes with a high temperature silicone sealer or equivalent (Figure 2). This will help prevent any unwanted movement of the seal during operation. Do not coat the back of the seal, the groove area or the seal cavities! This will cause excessive compression and wear on the lip, causing premature failure of the seal.



4. Reinstall the seal halves ensuring correct orientation on seal (Figure 1). Position with an equal amount of protrusion on each end. Place a thin film of high temperature red silicone sealer only on the ends of the seal halves (Figure 2). We have not found it necessary to offset the parting line but it can be done if desired.
5. Lightly coat the crankshaft mating surfaces of the seals with oil or equivalent. Install crankshaft and torque all main cap bolts to manufacturer specifications.
6. Allow assembly to sit overnight to permit undisturbed curing of sealer.

Revision: 1/1/2007

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BOP Rear Main Seal Instructions

BOP Engineering Viton® Rear Main Crankshaft Seal Instructions for RMS01 (3" main) without Crankshaft Removed

Attention! DO NOT install RMS02 (3.25" main) using this Procedure. When using the RMS01, the crankshaft must be removed to fill the anti-rotation holes in both block and main cap with RTV to prevent oil seepage behind the seal at those locations. They do not need to be filled in the block when using the RMS01.

1. Remove oil pan, oil pump and windage tray per factory service manual.
2. Remove rear main cap. Loosen, but do not remove the other main caps. Pull the rear of the crankshaft slightly away from the block to remove pressure on the rope seal.
3. Remove the stock rope seal from the main cap. The block-mounted rope seal may be removed by grasping one end firmly with needle-nose pliers and pulling it out.
4. Make sure seal cavities are clean and free of obstructions. Place the BOP Engineering seal in the block noting correct orientation of seal (Figure 1).
5. With the seal fully seated in cavity, square up one end of the seal with the block/cap parting line and measure the amount of the seal that is protruding on the opposite end using a caliper or feeler gauge. The amount protruding should be $0.030 \pm 0.005"$. This equates to 0.0075 to 0.0125" per side. If it is more, remove material from the end of the seal with a file while keeping the ends square, until it measures the correct amount. Repeat for the main cap assembly.
6. Remove seal only from the main cap. Fill only the bottom of the two anti-rotation holes in the cap with a high temperature red silicone sealer (Figure 2). This will help prevent any unwanted movement of the seal during operation. It is not necessary to fill the two anti-rotation holes in the block. Do not coat the back of the seal, the groove area, or the seal cavities! This will cause excessive compression and wear on the lip, causing premature failure of the seal.
7. Reinstall the seal in the main cap, noting correct orientation of seal (Figure 1). Position with an equal amount of protrusion on each end. Place a thin film of high temperature red silicone sealer only on the ends of the seal halves (Figure 2).
8. Lightly coat the crankshaft mating surfaces of the seals with oil or lithium grease. Install crankshaft and rear main cap. Torque all main cap bolts to manufacturer specifications.
9. Allow assembly to sit overnight to permit undisturbed curing of sealer.
10. Install oil pump, windage tray, and oil pan.

Installation Notes:

These instructions are written for part numbers RMS01 & RMS02 for Pontiac. Part numbers RMS03 for Buick, RMS03, and RMS04 use as reference only.

Specifications:

RMS01 Sealing Diameter 3.188" $\pm .005"$ Groove Diameter 3.612" $\pm .005"$

RMS02 Sealing Diameter 3.437" $\pm .003"$ Groove Diameter 4.012" $\pm .005"$

Call for further instruction if your groove of crankshaft does not meet specifications or if an excessive ($> .050"$) amount of seal trimming is required.

Phone: 920-674-6058
www.bopengineering.com

Revision: 1/1/2007



N3651 Schmidt Rd.
Jefferson, WI 53549

Page 2 of 2



Instructions For Calculating Compression Ratio

Compression Ratio (CR) is defined as the ratio between the total volume above the piston at BDC, and the clearance volume above the piston at TDC.

To Determine Compression Ratio You Need To Know:

1. Cylinder volume (V) or cylinder displacement, determined by cylinder bore and stroke (indicated by movement of piston from BDC to TDC).

The formula for cylinder volume in cu. in. is:

Bore x Bore x Stroke x .7854

2. Clearance Volume (VCL) is the volume above the piston (actually above the top piston ring) at TDC. It consists of several small volumes which are measured in cubic centimeters or C.C.'s. as follows.

The formula for Deck Clearance Volume is:

Bore x Bore x Depth of Piston @ TDC x 12.87

The formula for Gasket Volume is: *refer to chart

Bore of Gasket x Bore of Gasket x Thickness x 12.87

Valve Notch Volume:

Available from your piston MFG, or must be C.C.'d using a burette. This figure must be added to clearance volume.

Piston Dome Volume:

Available from your piston MFG, or must be C.C.'d using a burette. This figure must be subtracted from clearance volume.

Combustion Chamber Volume:

Available from your Cyl, Head MFG, or must be C.C.'d using a burette.

3. To Convert Total Clearance Volume in C.C.'s to cu. inches multiply by .06102.
4. Add the two volumes together, (V + VCL) then divide by VCL.

The formula is:

$CR = \frac{V + VCL}{VCL}$

-----VCL



Engine Preparation

- A. Clean flat surfaces are essential to seal any performance engine. A solvent such as brake cleaner should be used on the block and head prior to assembly.
- B. The new SCE TITAN self sealing copper head gasket requires no sealant, however if you are using a conventional copper head gasket we recommend an anaerobic sealer such as Hylomar or copper coat. Always allow the sealant to tack up for 15 to 20 minutes before assembly.
- C. O-rings are generally required to make a copper gasket system work to potential. SCE sells stainless steel O-ring wire in a kit to do one V-8 engine or spools for the engine builder. SCE stainless steel O-ring wire is preferred over copper wire that can flatten or dent to form a leak path.
- D. O-ring grooves may be cut in either the block or cylinder head. When using copper head gaskets thinner than .050, O-ring height should be no more than 25% of gasket thickness. For instance, the proper dimensions for an .043 thick gasket using .041 wire would be; a .038 to .040 groove width (provides a .001 interference fit), and a .032 groove depth (leaves .008-.010 of the wire protruding above the deck). This machining can be done at most high performance machine shops
- E. When receiver grooves are necessary, alignment of O-ring and receiver groove is critical, as is the depth and width of the receiver groove. Generally receiver groove depth should be 75% of the O-ring protrusion and the receiver groove should be 1.5 times the wire width. Example: If the O-ring is .041 wide and .015 above the deck; receiver groove should be .012 deep and .060 wide.
- F. While the machining of O-ring and receiver grooves must be done by a machinist, the installation of the O-ring wire can be done by anyone, using common hand tools. When tapping O-ring wire into the groove, use care to avoid denting the wire. SCE provides an O-ring installation kit, (SCE PART #31542) which includes instructions, an installation tool and O-ring wire. When cutting stainless O-ring wire, file the ends square to provide the tightest possible seal.
- G. Head gaskets should be re-torqued after initial run-in regardless of type, solid copper or composition. SCE recommends using factory torque specs. Do not over torque. Allow the heads and block to cool for accurate torque readings. Always use a torque wrench and have it calibrated often. Premium grade head bolts or studs, with hardened washers are recommended.
- H. SCE copper gaskets can be reused 4 to 5 times simply by cleaning in common solvent. DO NOT use a torch or household oven to re-anneal copper gaskets. The annealing process requires special vacuum ovens to achieve satisfactory results. These installation tips may seem like a lot of information for head gaskets, however, installing a copper head gasket and O-ring system is really easier than degreasing a cam, and just as important.



To Order: AllPontiac.com/ Indian Adventures LLC., **To Order:** You may call 804-794-6777 or write or E-mail AllPontiac.com Frank Gostyla or Robert Cacciotti at sales-techsupport@allpontiac.com

If you wish to prepay your order, please contact us with your needs prior to placing any orders. You must include your name, address, parts ordered, and correct shipping address on each prepaid order.

Special Orders: All special orders are non-returnable and non-refundable. Special orders may also include prepayment. Special orders include, but are not limited to the following: any CNC package, assemblies, valve train components, engine blocks, special machining and/or labor operations.

Warranty Returns: All merchandise returned for warranty consideration, inspection, repair, etc. must be sent prepaid and insured. Included with this return must be the sender's name, address, phone number, and explanation of the problem and work to be done. A return authorization number must also accompany the return: this can be obtained by contacting AllPontiac.com/ Indian Adventures LLC., at 804-794-6777. AllPontiac.com/ Indian Adventures LLC., will ship warranties back in the most cost effective way. Any additional cost for freight upgrade will be at the customer's expense. This warranty covers replacement or repair of the product only and does not cover the cost of removal and/or installation.

There is absolutely no warranty on the following:

- A) Any products used in racing applications.
- B) Any product that has been physically altered, or improperly installed or maintained.
- C) Any product used in improper applications, abused or not used in conjunction with the proper parts.

Returned Merchandise: All merchandise being returned for credit must have prior approval from AllPontiac.com/ Indian Adventures LLC., All merchandise being returned for credit must be in original condition and will be inspected at time of receipt. It should be returned prepaid and insured and will be subject to a minimum 10% handling charge. Credit to any warehouse will be issued at the purchase price. No returns will be accepted after 90 days from invoice date.

Refused Shipments: All expenses resulting from a refused shipment will be the responsibility of the customer. A credit will be issued for the cost of product less freight and any other cost incurred from the refusal.

Drop Ship Policy: A drop-ship fee of \$65.00 for each pair of cylinder heads or each intake manifold will apply. A drop-ship fee of \$145.00 will apply for all engine blocks.

Prices and Payment: Prices are subject to change without notice. AllPontiac.com/ Indian Adventures LLC. cannot accept responsibility for printing errors in price sheets. All payments are C.O.D. unless otherwise noted. Customers receiving product are responsible for all taxes, (excluding AllPontiac.com/ Indian Adventures LLC. income tax) duties, tariffs, fees, assessments, freight, and delivery charges associated with customer's order. Customer shall be responsible for actual costs of collect incurred by AllPontiac.com/ Indian Adventures LLC. (including reasonable attorney's fees) for any invoices which are not timely paid, plus interest on the unpaid balance at 1 1/2% per month of the highest rate permitted by applicable law, whichever is less.

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Indian Adventures, LLC., Is trading as and or doing business as AllPontiac.com and or as RacingGirlApparell.com

SUBTOTAL	
SALES TAX	
HANDLING FEE	
SHIPPING/FREIGHT	
TOTAL	



DEALER APPLICATION

Please fill out the application below and return to:

AllPontiac.com / Indian Adventures, LLC

11010 Trade Rd. Richmond, Va. 23236

Phone: (804) 794-6777 Fax: (804) 379-7490

Email Us: Frank Gostyla or Robert Cacciotti at sales-techsupport@allpontiac.com Website: <http://allpontiac.com>

All applications must be signed by the Owner, Partner or Corporate officer to be considered.

**AllPontiac.com/ Indian Adventures, LLC has an initial purchase buy in to become a dealer.
This cost may vary applicant.**

Legal Company name _____

Address _____

City _____ **State** _____ **Zip** _____

Telephone _____ **Fax** _____

Tax Id number _____ **Resale number** _____

Type of business _____ **Year Established** _____

Persons authorized to make Purchases/orders _____

Principal or Owners

Name: _____ **Title** _____

Street Address _____ **Phone** _____

Trade References: Please list up to 3 that you are currently doing business with (if applicable):

Name _____ **Phone** _____ **Contact** _____

Name _____ **Phone** _____ **Contact** _____

Name _____ **Phone** _____ **Contact** _____

Method of payment:

Cashiers Check _____ **Wire Transfer** _____ **Company Check*** _____

Signed _____ **Title** _____

Date _____ **Print Name** _____

* All Company Checks must be cleared through AllPontiac.com/ Indian Adventures, LLC's bank before items are shipped or ordered.