



Designed to blow away the competition™



THE MOST POWERFUL, RELIABLE AND ADVANCED POWER ADDER

CHEVROLET PRODUCTS
Carbureted & Aftermarket EFI Applications

Procharger

ProCharger Way

At ATI ProCharger, we believe nothing is ever good enough. It is this mentality that has made ATI the premier provider of centrifugal superchargers, winning more races and setting more records than any competitor in the last five years. ATI's engineering team has been awarded more patents than any other aftermarket supercharger manufacturer, and has introduced many innovations to the world of supercharging. It's our goal to offer unparalleled technology, performance and reliability to our customers. Centrally located in Kansas City, Accessible Technologies, Inc. is well suited to serve customers both domestic and worldwide, and our staff is composed of automotive enthusiasts who are dedicated to producing the finest supercharger systems available. Our technical service and sales representatives are available to serve you Monday through Friday from 9:00 AM to 5:00 PM Central Standard Time.

1685 Horsepower with 93 Octane

The ProCharger Advantage



Super Chevy Project Nova,
1500 HP on Pump Gas, 8.18 ET@ 170 mph

- The next generation of supercharging, offering up to twice the gains provided by other power adders
- Industry-leading increases in power running pump gas or racing fuel
- Simple underhood installation
- Exclusive self-contained SC and F-Series superchargers
- Industry-best supercharger warranty coverage
- Most complete lineup of superchargers and kits, with intercooled and non-intercooled SB and BB Chevy systems for 400-2800+ hp
(Higher horsepower gains are attainable through the use of exotic racing fuels like nitro-methane, methanol, etc.)
- More experience with today's carbureted and fuel injected Chevy engines than any other centrifugal supercharger manufacturer



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ProCharger Racing Facts

- More than 30 National racing championships in the last 5 years – 11 in 2007 alone!
- The 60 quickest racers with centrifugal superchargers are all powered by ProCharger
- ProCharger-equipped car wins Hot Rod's Drag Week and "Fastest Street Car in America" title in 2007.

Superchargers

Revolutionary Self-Contained ProChargers

You spoke and we listened. ATI is proud to be the first manufacturer to offer a self-contained, gear driven centrifugal blower. Offering the industry's best, strongest and most powerful centrifugal blowers (our oil fed D-series) wasn't enough—we went back to the drawing board to raise the bar even higher! This effort produced a completely new breed of centrifugal superchargers; the most powerful blowers on the street, the P-1SC and D-1SC; the industry-standard F-1 and F-2; and the record crushing F-3 superchargers.

Freeing the supercharger of the engine's oil supply provided ATI's engineers more latitude in design, allowing them to build a supercharger without

compromise. By utilizing a proprietary synthetic lubricant (free of engine oil contaminants), higher bearing speeds, decreased bearing temperatures and increased bearing life are realized. This oil system independence means you are no longer required to punch a hole in your oil pan to enjoy the benefits of centrifugal supercharging. Custom applications benefit too, as a self-contained blower need not be positioned to accommodate an oil drain.

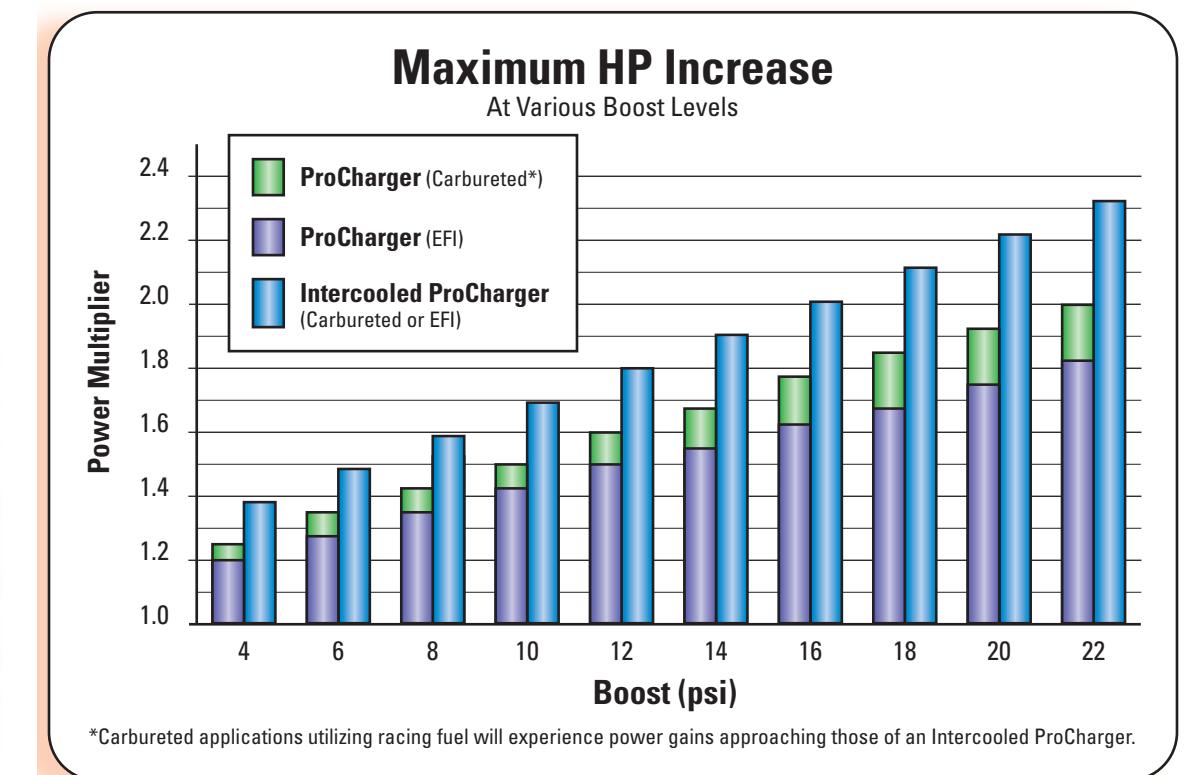
These robust blowers utilize higher internal step up ratios, which allow the use of larger pulleys that provide more belt contact and increased drive belt longevity. You can use a serpentine belt to make power in excess of 1000 hp, a level once only available to cog belt users.

Buy a ProCharger, get peace of mind. We make the industry's finest superchargers and stand behind our products by providing the industry's best warranty. If you purchase a serpentine belt driven ProCharger, we warranty it for a full 12 months from the date of purchase.



To use this chart, find your desired boost level and follow the bar upward to its end. Multiplying your engine's base horsepower by the corresponding value at the left of the chart will provide you with an estimate of your new ProCharged power level. The multiplier value assumes the use of 91 octane pump gas and an appropriate compression ratio.

How Much Power Can a ProCharger Supercharger Add to Your Engine?



Performance Racing Industry

Made with Pride

Reliable Performance

Well suited for both street and racing use, ProCharger kits are available for a broad range of applications. **Running 91 octane pump gas, a highly efficient ProCharger can deliver gains of up to 70%** when used on a typical small or big block Chevy. If you choose to add an intercooler or use racing fuel, gains well in excess of 100% are readily achievable. Here's why: **at given boost levels, ProCharger superchargers produce far lower intake manifold temperatures than others.** This cooler air charge offers a three-fold benefit: cooler air is more dense and provides the engine with more oxygen than a highly heated air charge. Greater efficiency and cooler air allow you to safely run higher boost and power levels. Your engine is also able to make more power in the absence of this excessive heat due to the fact that you can run more ignition timing without fear of detonation (detonation is the primary limiting factor with any power adder running pump gas). In addition to providing cooler air charges, the centrifugal supercharger provides the engine with a mixture that develops power at crank angles farther past top dead center, thereby avoiding the undue engine strain generated by other power adders. **A centrifugal blower also develops boost and power relative to engine speed, giving you a smoother, more usable power curve.** Finally, not only is the ProCharger easier on your engine and drivetrain, it's easier on your car as well, requiring little if any modification to your vehicle when compared to other systems. In fact, our basic system can be installed in just a matter of hours without the use of any special tools. **Once you get the system dialed in, you're done!** You have a car with its original drivability, no bottles to refill and no need for special trips to pick up expensive racing fuel. Simply fill the tank with premium unleaded and let the fun begin!

“...A centrifugal supercharger is the easiest big horsepower gainer that can be added to an automotive engine. Whether it’s a blow-through carb system or on an EFI-controlled engine, bolting on a ProCharger results in instant performance.”

— Terry Cole, Former Editor, Super Chevy Magazine

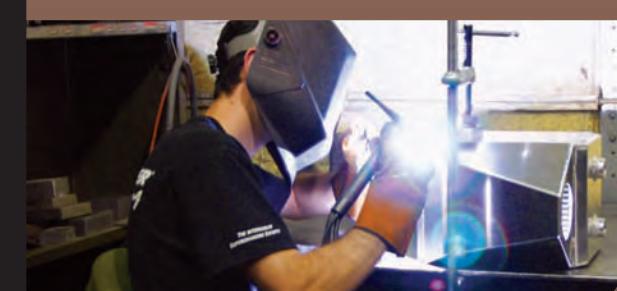
Real-World Power

ATI strongly believes that performance claims should be representative of the performance gains that customers can reproduce in real world use. During testing on an engine dyno, peak power output can easily be overstated when obtained from a brief pull, which avoids the effects of heat buildup seen in an extended run. Similarly unrealistic results may also be obtained with the use of higher octane fuels, which are great for making power, but impractical for street use. This catalog provides reliable, reproducible power figures obtained with pump gas and a tune that doesn't compromise an engine's integrity.



ProCharged '67 Small Block Camaro, 700 HP with Pump Gas

In the U.S.A.



ATI: Quality From Start to Finish

The product of much hard work and a commitment to quality, ATI ProCharger superchargers have proven to be the finest in the industry. Our engineering staff makes use of state of the art design programs to bring their concepts to reality. Our machinists then work with our engineers to faithfully reproduce these designs at the highest quality using our vast array of CNC machinery. Upon completion, precision machined supercharger parts are inspected for quality and distributed to our supercharger assembly department where skilled technicians hand build and test run each unit prior to shipment. All ProCharger intercoolers are designed and assembled in-house to provide superior quality control and availability. Prior to shipment, the contents of each assembly and supercharger system are thoroughly double checked for completeness to ensure our customers a swift, hassle free installation.



P-1SC

CUSTOMER PROFILE:

Equipped with a hydraulic cammed small block, this Chevelle sees frequent street duty without skipping a beat. Even with a conservative tune this 3500 lb car is capable of dipping into the 10's in the quarter.

Vehicle: 1968 Chevelle
ProCharger Kit: P-1SC
Intercooler: 3 Core, Race 3"
Bypass Valve: Pro-Flo
Boost: 10 psi
Engine: 383 Small Block
Pistons: Pro-Tru Forged
Crank: CAT 5140 Steel
Rods: CAT 4340 Steel
Heads: Dart Iron Eagle
Intake: Victor Jr.
Carb: Holley 750
Fuel Pump: Mechanical
Block: factory 4-Bolt GM
Cam: Hydraulic Flat Tappet
Options: ATI A/C Bracket
Max RWHP: 572 @ 6200

58% INCREASE

Naturally Aspirated HP*	ProCharged HP*	PC Max*
425	673	825

*Flywheel HP: accounts for 15% drivetrain loss w/ manual transmission

Rugged CNC Machined Aluminum Housings Ensure Precise Shaft Alignment

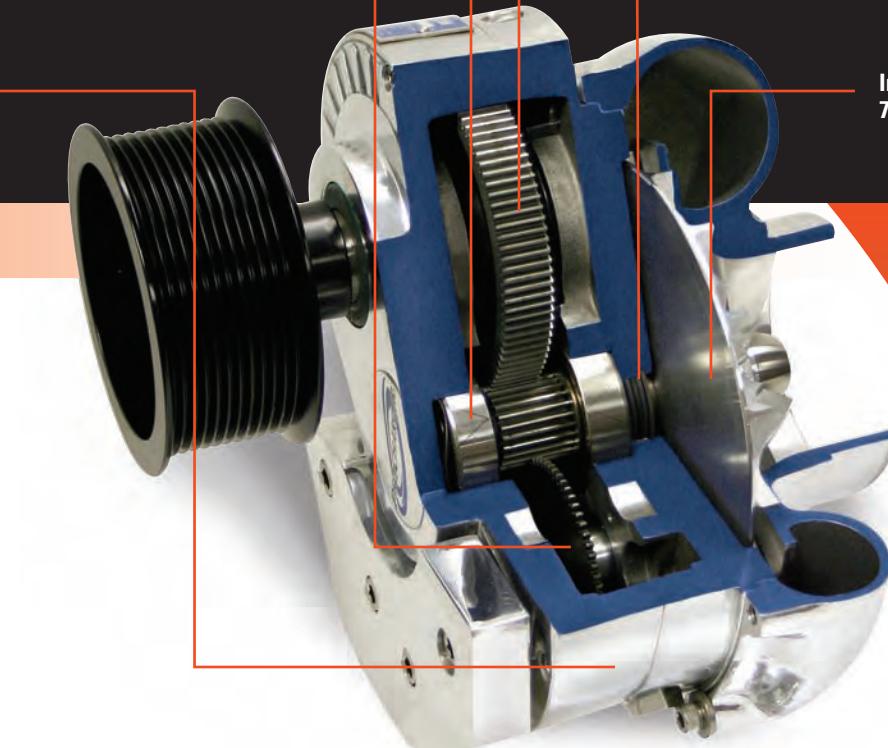
Patented Aeration Pump Provides Bearing Lubrication

Super Precision High Speed Rated Aerospace Spec Support Bearing

Precision Ground Gears Engineered for Quiet Operation Provide 4.10:1 Step Up Ratio

Custom Teflon Composite High Pressure Dual Lipped Seal

Industry Exclusive 7075 T-6 Billet Impeller



Available for small block and big block Chevy engines, the intercooled and non-intercooled ProCharger P-1SC and D-1SC kits are ATI's entry level self-contained superchargers. Built more ruggedly than the high-end "race" models offered by others, these superchargers utilize a transmission case constructed from 6061 aluminum billet. Lubricated with ProCharger's own proprietary synthetic oil blend, the ultra rigid precision ground shafts and gears (mounted on super-precision, high speed bearings) transfer power from the engine to a CNC machined 7075 aluminum billet impeller, spinning it at an overdrive ratio of 4.10:1. Equipped with a 9" volute and gears designed for quiet operation, these units pack a lot of power while keeping a low profile. Utilizing a 6061 billet serpentine drive pulley, these blowers are custom configured for your application at no extra cost. Want to turn it up on the weekends? No problem. With a wide range of pulley sizes available you can quickly change boost levels to suit your needs. The mounting brackets, like the transmission case, are constructed from 6061 billet, providing a solid foundation for your ProCharger. The drive system utilizes an 8- or 12-rib belt with a rugged spring loaded belt tensioner and oversized pulleys that provide optimal belt contact, providing maximum belt life. These kits also include a low profile carb bonnet and the tubing required to boost your Holley 4150-style carburetor, while providing maximum hood clearance. The P-1SC utilizes a radial impeller capable of accommodating a wide range of applications while providing a smooth boost curve. Capable of supporting 925 hp, the D-1SC utilizes a helixed impeller and upgraded bearings and can satisfy the appetite of most power hungry enthusiasts.

D-1SC

CUSTOMER PROFILE:

Equipped with a solid cammed 454, this truck is built to haul! Using mostly factory parts, this combination offers a lot of bang for your buck. With a little racing fuel or an intercooler, this combo could easily get you a reliable 900 hp.

Vehicle: 1965 Chevy Pickup
ProCharger Kit: D-1SC
Intercooler: N/A
Boost: 12 psi
Engine: 454 Big Block
Pistons: TRW Forged
Crank: GM 1053 Steel
Rods: GM Steel
Heads: GM
Intake: Victor Jr.
Carb: Holley 750
Fuel Pump: Aeromotive
Block: factory 4-Bolt GM
Cam: Solid Flat Tappet
Max RWHP: 648 @ 5800

62% INCREASE

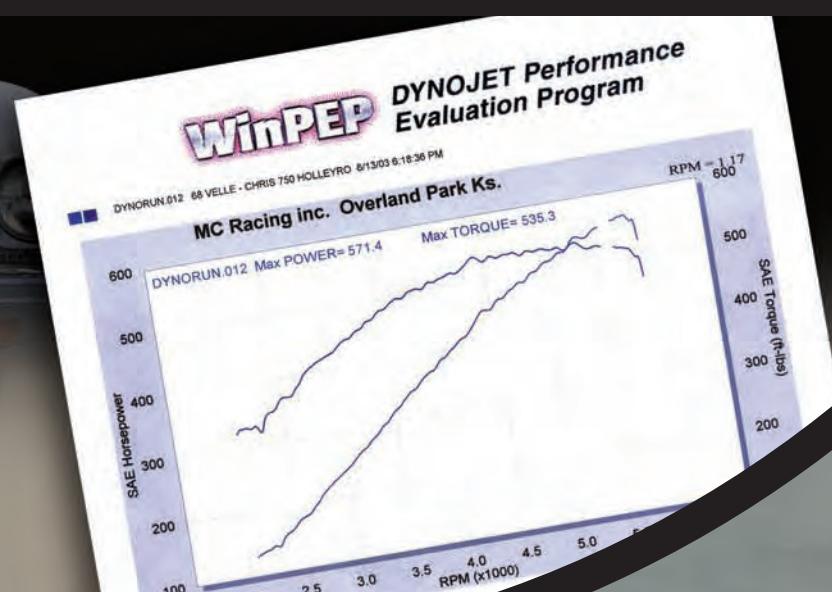
Naturally Aspirated HP*	ProCharged HP*	Max*
500	810	925

*Flywheel HP: accounts for 20% drivetrain loss w/ automatic transmission

System Description	Part Number	ProCharger Model	Tube Diameter	Carb Bonnet	Drive System
High Output with P-1SC	1CX100-P1SC	P-1SC	3"	low profile	8 rib
High Output with D-1	1CX100-D1	D-1	3"	low profile	12 rib
High Output with D-1SC	1CX100-D1SC	D-1SC	3"	low profile	12 rib
High Output Intercooled with P-1SC	1CX100-P1SCI	P-1SC	3"	low profile	8 rib
High Output Intercooled with D-1SC	1CX100-D1SCI	D-1SC	3"	low profile	12 rib

Optional Equipment					
Polished Finish for ProCharger	add "-P" to part #				
Polished Finish for Bracketry	add "-B" to part #				
Pro-Pump "inline HP" Fuel Pump	FP0011-001				
Boost Sensitive Fuel Pressure Regulator	FV0011-BST				
1000 HP Electric Fuel Pump	FP0011-006				
Air Conditioning Option, SB/BB	AB005A-000				
Air Conditioning Option, Big Block	AB006A-000				
Serpentine Accessory Drive, SB w/A/C	add "-SBA" to part #				requires Sanden AC compressor
Serpentine Accessory Drive, Small Block	add "-SB" to part #				
Power Steering Option (GM Type II), SB/BB	AB009A-000				
3 core Intercooler, Standard	AI003A-001		3"		
3 core Intercooler, Race	AI003A-002		3"		
ProFlo Surge System	AV005A-001				
Universal Tube Kit	AI004A-003		3"		

(Replace "X" in part number with "A" for small block applications and "B" for big block applications)





F-1/F-1A

CUSTOMER PROFILE:

The owner of this classic Vette chose an F-1 ProCharger to complement his 400 small block. Equipped with aftermarket electronic fuel injection, this car offers high HP with late model OEM drivability.

Vehicle: 1963 Corvette
ProCharger Kit: F-1
Intercooler: 3 Core, Race 3"
Bypass Valve: Pro-Flo
Boost: 11 psi
Engine: 400 Small Block
Pistons: Forged
Crank: 5140 Steel
Rods: 4340 Steel
Heads: Aluminum
EFI: Accel Gen VII DFI
Block: Factory 4-Bolt GM
Cam: Hydraulic Roller
Max RWHP: 644 @ 6600

75% INCREASE

Naturally Aspirated HP*	ProCharged HP*	PC Max HP*
460	805	1050

*Flywheel HP: accounts for 20% drivetrain loss w/ automatic transmission

CNC Machined
6061 Billet Housings Ensure
Precise Shaft Alignment

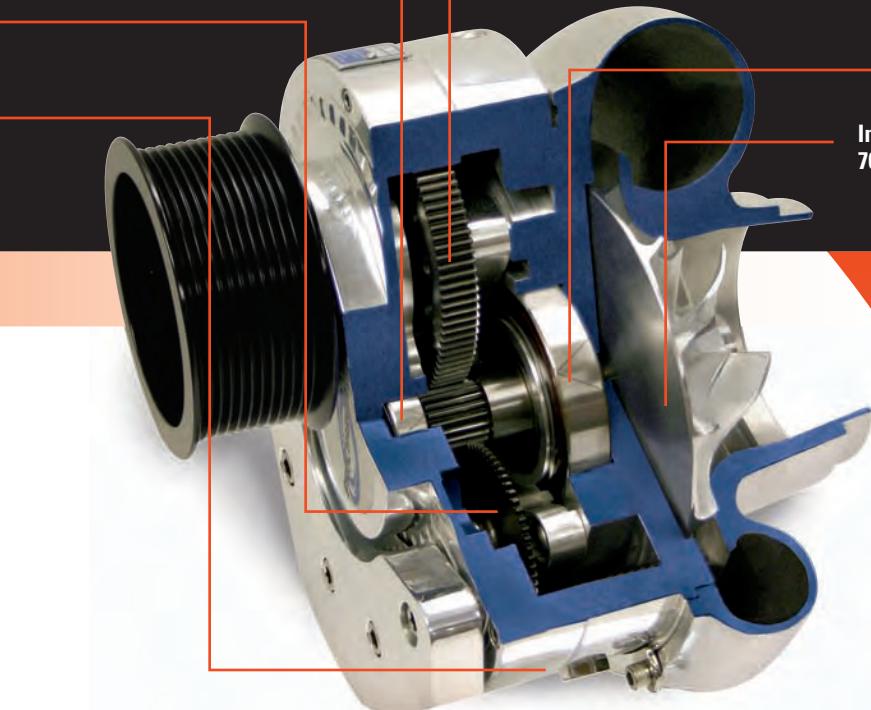
Patented Aeration
Pump Provides
Bearing Lubrication

Super Precision High
Speed Rated Aerospace
Spec Support Bearing

Precision Ground
9310 Steel Gears Provide
5.0:1 Step Up Ratio

Patented Ultra High Speed
Compound Bearing Assembly

Industry Exclusive
7075 T-6 Billet Impeller



F-1C/F-1R

CUSTOMER PROFILE:

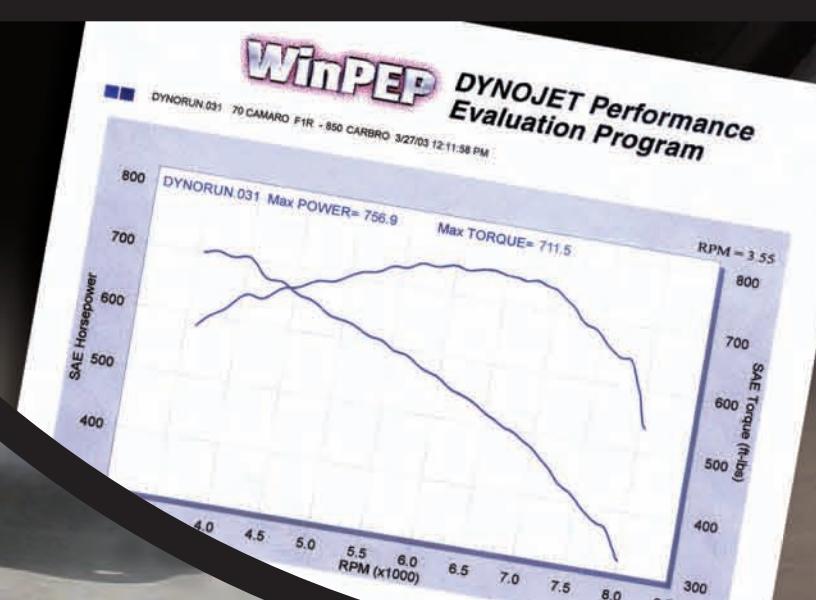
This Camaro can be found roaming about the city streets sporting a modified 850 Holley, an F-1R, a 3 core race intercooler and 502 cubic inches. At 3300 lbs, low nine second E.T.'s are easily within its grasp.

Vehicle: 1970-1/2 Camaro
ProCharger Kit: F-1R
Intercooler: 3 Core, Race 3"
Bypass Valve: ATI Race
Boost: 15 psi
Engine: 502 Big Block
Pistons: JE Forged
Crank: GM 1053 Steel
Rods: GM Steel
Heads: Brodix
Intake: Brodix
Carb: Holley 850
Fuel Pump: Aeromotive
Block: factory Gen VI 4-Bolt GM
Cam: Solid Roller
Max RWHP: 756 @ 6400

93% INCREASE

Naturally Aspirated HP*	ProCharged HP*	PC Max HP*
490	945	1300

*Flywheel HP: accounts for 20% drivetrain loss w/ automatic transmission





F-2

VEHICLE PROFILE:

Built for Super Chevy Magazine to demonstrate the potential of a carbureted, centrifugally blown engine using 91 Octane pump gas, this mildly built big block makes well over 3 hp/ci breathing through a pair of lightly modified 450 Holley carbs, and runs in the low 8's.

Vehicle: 1969 Nova
ProCharger Kit: F-2
Intercooler: 1800 hp A/W
Bypass Valve: ATI Race
Boost: 28 psi
Engine: 440 Big Block
Pistons: JE Forged
Crank: Eagle
Rods: 4340 H-beam Eagle
Heads: Brodix BB2 Xtra
Intake: Offenhauser
Carb: 2 x 450 Holley
Block: Merlin
Cam: Comp Solid Roller
ET: 8.18 @ 170
Max RWHP: 1196 @ 8100

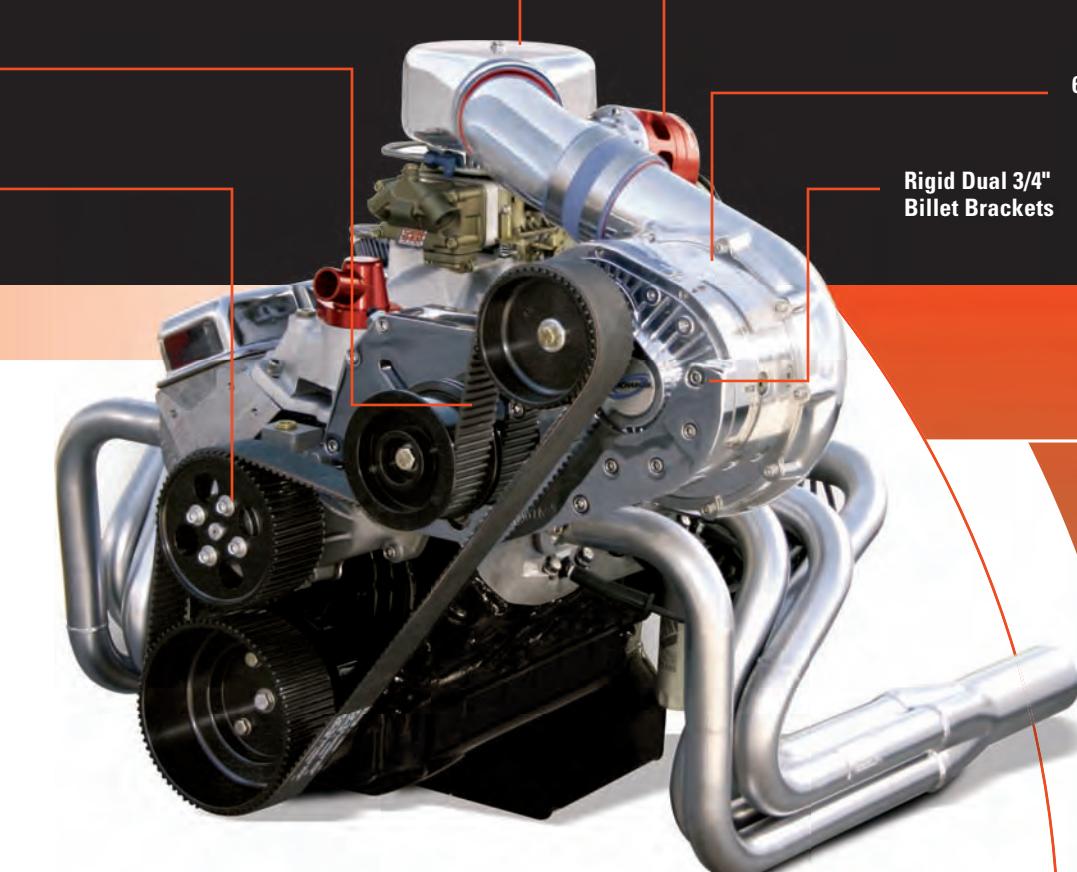
203% INCREASE

Nat. Asp. HP*	ProCharged HP*	
493	1495	1600

*Flywheel HP: accounts for 20% drivetrain loss w/ automatic transmission



Available for small block and big block Chevy engines, the intercooled and non-intercooled ProCharger F-2 kit is the next step up the ladder from the popular F-1R. Utilizing a patented high speed compound bearing design, this supercharger offers operating speeds unmatched by any other line of superchargers on the market. Lubricated with ProCharger's own proprietary synthetic oil blend, the ultra rigid precision ground 9310 steel shafts and gears (mounted on super-precision, high speed bearings) transfer power from the engine to a CNC machined 7075 aluminum billet impeller, spinning it at an overdrive ratio of 5.40:1. Equipped with our 10.5" volute, this unit packs a lot of power in a package that will fit under most hoods. Utilizing a 6061 billet serpentine drive pulley, these blowers are custom configured for your application at no extra cost. Want to turn it up on the weekends? No problem. With a wide range of pulley sizes available you can quickly change boost levels to suit your needs. The mounting brackets, like the transmission case, are constructed from 6061 billet, providing a solid foundation for your ProCharger. The drive system utilizes a 12-rib belt (Cog option available) with a rugged manual belt tensioner and oversized pulleys that provide maximum belt contact for peak power output. These kits also include a competition carb bonnet and the tubing required to boost your Holley 4150-style carburetor. The F-2 utilizes an advanced helixed impeller capable of accommodating a broad range of applications. The F-2 is capable of supporting up to 1600 hp on properly prepared small and big block engines.



F-2

CUSTOMER PROFILE:

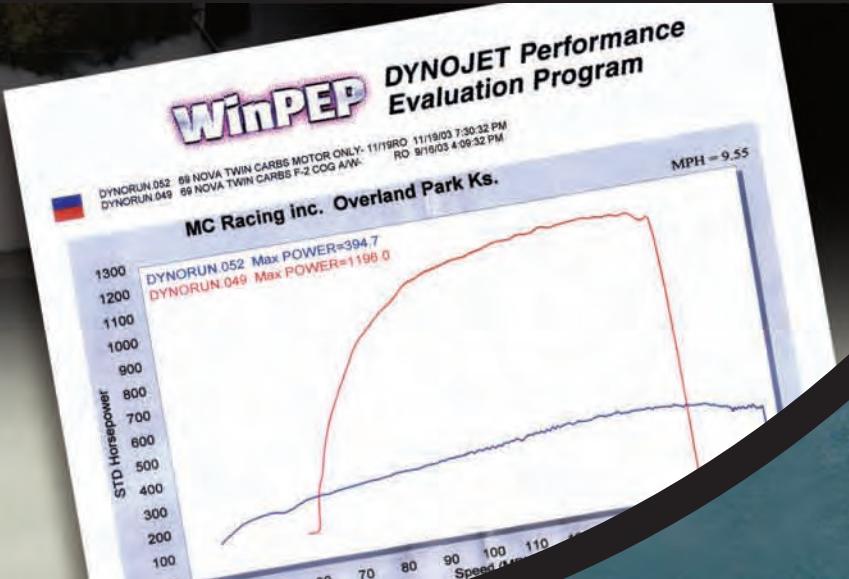
Squeezing 20+ pounds of boost through Brodix aluminum heads, this ride boasts nearly 900 hp at the rear wheels with plenty more available with a simple swap of a pulley.

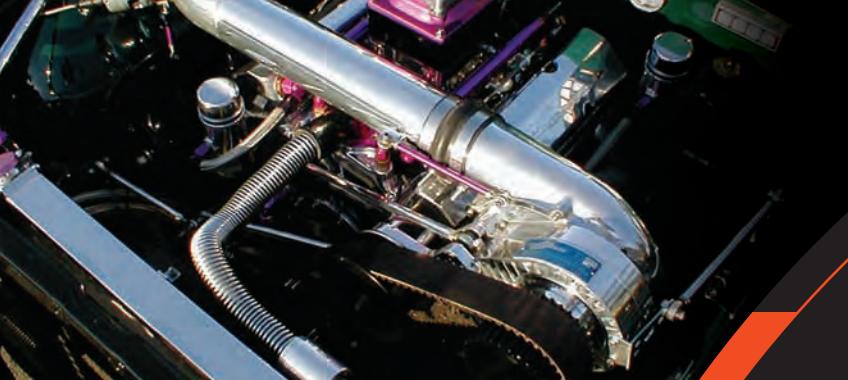
Vehicle: 1948 Club Coupe
ProCharger Kit: F-2
Intercooler: 3 Core, Race 3.5"
Bypass Valve: ATI Race
Boost: 20 psi
Engine: 377 Small Block
Pistons: Wiseco Forged
Crank: 4340
Rods: 4340 Pro I-Beam
Heads: Brodix 18x
Intake: Brodix HVH
EFI: Accel Gen VII DFI
Block: Dart Little "M"
Cam: Solid Roller
Max RWHP: 864 @ 7400

114% INCREASE

Naturally Asp. HP*	ProCharged HP*	PC Max HP*
505	1080	1600

*Flywheel HP: accounts for 20% drivetrain loss w/ automatic transmission





F-3A

CUSTOMER PROFILE:

Though it may take an occasional trip to the local drive-in, make no mistake—this machine was made for racing. Sporting a big-inch small block and DOT tires, this clean ride has high 7 second potential at its 3400 lb race weight.

Vehicle: 1969 Camaro
ProCharger: F-3A
Intercooler: 1800 hp A/W
Bypass Valve: ATI Race bypass
Boost: 26 psi
Engine: 434 Small Block Chevy
Pistons: JE Forged
Crank: 4340
Rods: LAE
Heads: AFR
Intake: Edelbrock
Cam: Solid Roller
Max RWHP: 1220 @ 7600

172% INCREASE

Nat. Asp. HP*	ProCharged HP*	PC Max. HP*
560	1525	2000

*Flywheel HP: accounts for 20% drivetrain loss w/ automatic transmission

CNC Machined
6061 Billet Housings Ensure
Precise Shaft Alignment

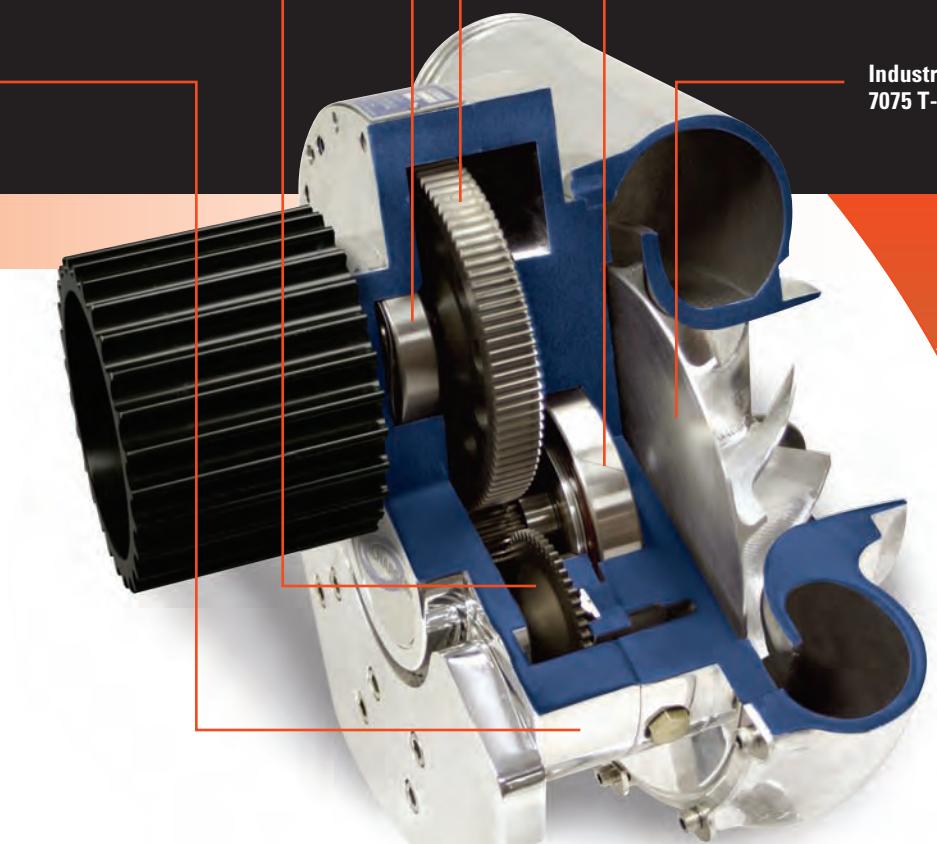
Patented Aeration
Pump Provides
Bearing Lubrication

Super Precision High
Speed Rated Aerospace
Spec Support Bearing

Precision Ground
9310 Steel Gears Provide
5.10:1 Step Up Ratio

Patented Ultra High Speed
Compound Bearing Assembly

Industry Exclusive
7075 T-6 Billet Impeller



The first centrifugal supercharger to power a doorslammer over 200 mph and into the sixes, F-3 ProChargers are the centrifugal superchargers of choice among heads-up racers across the continent. Available for small or big block Chevy engines, ProCharger F-3's are our largest supercharger models. Utilizing a patented high speed compound bearing design, these superchargers offer operating speeds unmatched by any other line of superchargers on the market. Lubricated with ProCharger's own proprietary synthetic oil blend, the ultra rigid precision ground 9310 steel shafts and gears (mounted on super-precision, high speed bearings) transfer power from the engine to a CNC machined 7075 aluminum billet impeller, spinning it at an overdrive ratio of 5.10:1–6.24:1. Equipped with our 12" volute, these units pack a lot of power in a package that can be fitted under most hoods with little or no modification. Utilizing 6061 billet serpentine drive pulleys, these blowers are custom configured for your application at no extra cost. The mounting brackets, like the transmission case, are constructed from 6061 billet, providing a solid foundation for your ProCharger. The drive systems utilize 8mm or 14mm cog belts along with a rugged manual belt tensioner and oversized pulleys that provide maximum belt contact for peak power output. This kit can be ordered with an intercooler, bypass valves and the tubing needed to boost your engine. F-3 ProChargers utilize advanced helixed impellers which accommodate a broad range of applications. With numerous trims available, our racer support staff can help you determine which F-3 model best suits your specific application.

F-3R

CUSTOMER PROFILE:

Crossing the scales at nearly 2800 lbs, this Outlaw Pro-Mod Camaro, is powered by a 526 cubic inch big block Chevy. Fitted with an F-3R-139 ProCharger, this car has blasted to a best time of 6.32 @ 228 mph.

Vehicle: 1968 Camaro
ProCharger Kit: F-3R-139
Non-Intercooler: Methanol
Bypass Valve: ATI Race
Boost: 41 psi
Engine: 565 Big Block
Pistons: Forged
Crank: Forged
Rods: Aluminum
Heads: Profiler
Intake: Hogans
EFI: F.A.S.T.
Block: Merlin
Cam: Solid Roller
ET: 6.32 @ 228 mph
Max HP: 2600 @ 8000

160% INCREASE

Naturally Asp. HP	ProCharged HP	Max
1000	2600	2800

System Description	Part Number	ProCharger Model	Tube Diameter	Carb Bonnet	Drive System
Cog Race Kit with F-3C	1CX200-F3C	F-3C	4.0"	optional	14mm cog
Reverse Rotation Cog Race Kit w/ F-3A or F-3R	1CX200-F3/A/R	F-3A, F-3R	4.0"	optional	8mm cog
Cog Race Kit with F-3A or F-3R	1CX200-F3/A/R	F-3A, F-3R	4.5"	optional	14mm cog
Optional Equipment					
Polished Finish for ProCharger	add "-P" to part #				
Polished Finish for Bracketry	add "-B" to part #				
Air/Air Intercooler, 1550 HP	A1006A-001		4.0"		
Air/Water Intercooler (1800 hp, race use only)	W11006A-001		4.0"		
Air/Water Intercooler (2400 hp, race use only)	W11005A-002		4.0"		
Race Surge/Bypass Valve	AV004A-002				

(Replace "X" in part number with "A" for small block applications and "B" for big block applications)





Editorial

SERPENTINE ACCESSORY DRIVE OPTION

OPTION FOR SMALL BLOCK AND AFTERMARKET EFI CHEVROLETS

Now you can get the ProCharger power gains you've been looking for and still drive all your accessories with a separate, dedicated serpentine belt. All brackets included are machined from the highest quality billet aluminum. This new accessory drive system utilizes an automatic tensioner similar to the tensioner incorporated in the supercharger serpentine drive system. If you're looking for the largest street-friendly power gains and want to use a serpentine belt for all your accessories, ProCharger has the solution.

BENEFITS:

- Drive all your accessories or any combination on a single 6 rib serpentine belt which provides longer belt life and less chance of belt slip
- Includes an automatic tensioner for your accessory drive designed to ensure consistent belt tension
- All bracketry machined from the highest quality billet aluminum
- Designed to operate with commonly used accessories (call for specific details)

"His 93 Chevy Caprice wagon with a 572 ci big block engine makes 1,740 hp [with 93 octane] and recently ran a 9.57 at 163 mph [weighing in at 4,850 pounds with Morris on board]. The magic, of course, comes from the ProCharger centrifugal supercharger."

Hot Rod

"They are relatively easy to install, affordable, and easily transform a mundane street engine into a stout powerplant with minimal effort. ...it's good to point out that the potential to achieve power levels of this magnitude is real and it doesn't have to break the bank."

Chevy High Performance

"The coolest vehicle on the ground has been turning heads like no other car we've seen. The 1969 Nova utilizing a 427 Chevy crate motor and carburetors with a ProCharger centrifugal supercharger astonished everyone with 8 second runs on 91 octane pump gasoline. This is an astonishing achievement!"

Bret Kepner, ESPN2

"Our 355 ci mouse makes 765 hp on 91-octane... well over 2 hp/ci with a street engine that could conceivably fit into almost any rear-drive Chevy ever built."

Chevy High Performance

"Bolting on the ProCharger also increased our gas mileage."

Sport Truck

"The motor alone puts out 400 hp to the tires, and will pilot the Nova down the quarter at 12.29 seconds elapsed time at 111 mph. When the F-2 ProCharger is bolted on with 26-27 psi of boost, this 91 octane (with no additives) bad boy puts out 1,160 hp to the tires! Then it sent the Nova down the quarter at 8.24 at 163.5 mph. Stop and think about it, ProCharger bolted on 4 seconds and 50 plus mph!"

Super Chevy

"If you want to go heads up racing with the big boys, then here's a power adder that can help put you in the winner's circle."

Horsepower TV

"With plenty of visceral grunt, an aspect of civility, and practicality thrown in for good measure, centrifugal blowers are perhaps one of the best investments you can make when purchasing a power adder."

GM High-Tech Performance

"...a "bolt-on" increase of over 50 mph in the quarter-mile, and over 3.5 seconds drop in elapsed time!"

Super Chevy

"My favorite things to work on are these pump gas ProCharger motors. I love these things. They're a very practical application for some serious horsepower with a lot less maintenance. [ProChargers] are very good on not beating up the engine."

Steve Morris, ESPN2

"Bringing a smile to every gearhead's face who sees the motor, this blown big-block pumps out 1,000 hp."
"Traction is a small problem with 1,000 hp and 780 lb-ft of torque..."

Truckin'

"ProCharger is the world headquarters of supercharging."

Bret Kepner, ESPN2

"His best pass with 17 psi of ProCharger thrust was a 10.51 at 131 ['59 Impala, 509 cid, F-1R]. Not bad for a car that's all steel except for the bumpers and weighs nearly 2.5 tons with driver."

Super Chevy

"It is no secret that intercoolers are the most effective and safe way of resisting detonation in blown motors, plus they offer the opportunity to increase boost - and horsepower."

GM High-Tech Performance

"Terzich's Camaro is a perfect example of astounding performance coupled with rock-solid reliability."

"Undisputed: the fastest street car in America."

Hot Rod

Denny Terzich
2007 Hot Rod Drag Week Champion
ProCharger F-3R-139



High-Tech Engineering

Utilizing the industry's most advanced technology, our engineers have developed the most powerful, most reliable centrifugal superchargers on the market. From the custom designed 7075 billet aluminum impeller to the CNC machined transmission case, each ProCharger is designed to deliver years of trouble free performance. Though they may appear similar to impellers used for turbocharger applications, each billet impeller and compressor housing has been designed and optimized by ATI engineers to offer superior boost and efficiency in gear driven centrifugal supercharger applications. To complement these specialized impellers, ProCharger SC units utilize precision ground gears and shaft assemblies designed to offer miles of quiet, trouble free street & strip operation. F-series models employ ultra strong heat treated, precision machined 9310 steel shafts and gears designed to operate at the high operating speeds (up to 70,000 impeller rpm with impeller tip speeds approaching Mach 2!) regularly experienced in extreme racing applications. These gearsets offer the industry's highest step up ratios (refer to enclosed Supercharger Models document), which allow the use of large pulleys that provide maximum belt contact and belt life. The gear and shaft assemblies, bathed in ATI's proprietary synthetic lubricant, ride on single super precision bearings (SC series) or ATI's patented compound bearing assembly (F-series), precisely stationed in a CNC machined, aerospace quality billet aluminum case. The combination of these elements provide you with superchargers that offer the industry's largest power gains on pump gas or racing fuel.

Billet Impeller Q & A

- Why has ATI developed impellers machined from Aerospace quality 7075 aluminum billet?**

To give you more boost, airflow and power! ATI has invested a great deal of time and money to develop these billet impellers which offer strength unmatched by more commonly used cast impellers. The material strength for most aluminum castings is 32,000-36,000 psi tensile strength as compared to the 7075 T-6 alloy used in ProChargers which is 83,000 psi.

- Why is a stronger impeller better?**

The billet material results in an impeller design capable of withstanding loads (a product of RPM, boost and airflow) substantially greater than those experienced in less capable models.

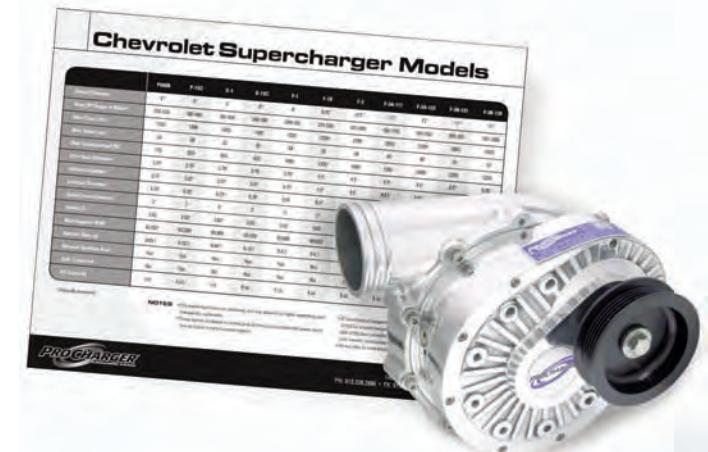
- What other benefits do billet impellers offer?**

By using billet, ATI is able to test and evaluate several alternatives prior to production and is not confined to a basic design that may only be "trimmed" in an attempt to meet the needs of a given application. Billet impellers don't suffer from the density variations generally present in cast impellers and as such are better naturally balanced and may be operated at higher speeds without generating additional load. Generally lighter than their cast counterparts, billet impellers also reduce blower transmission loads under acceleration and deceleration.



Supercharger Models

Available in many different configurations, there is a ProCharger for most every automotive application. The blower that started it all in 1994, the P600B, is the predecessor to our popular, self-contained P-1SC. Sharing a common compressor design and mated to a rugged, engine oil fed transmission with a heavy duty 3.05:1 gearset, this is an economical choice for those wanting to add a punch to their street machine. The D-Series, ATI's original line of race blowers introduced in 1998, also use engine oil lubrication and are equipped with an extreme duty 4.44:1 gearset and a twin duplex bearing system. Their durability and power output has allowed them to remain popular among those building high powered street/strip machines. Prior to the introduction of the F-series ProCharger, the D-series was the standard by which other race blowers were judged. Introduced in 2001, the F-series ProCharger has rewritten the record books and redefined centrifugal supercharging, with its patented ultra-high speed compound bearing assembly and industry high step-up ratios. The F-series is the ultimate centrifugal supercharger, offering the consistency, power output and reliability demanded by today's street/strip & extreme racing applications. To learn more about specific ProCharger models, refer to the enclosed Supercharger Models document or visit our website at <http://www.procharger.com/models.shtml>.



Simple Underhood Installation

ProCharger kits are long on performance, but short on complexity. Equipped with one of our basic kits (standard P-1SC kit shown at left) you can bolt on an easy 300+ hp in an evening.

Installation is simple and requires no frequent maintenance, fabrication or special tools. No other power adder on the market can match these claims.

Why Centrifugal?

When compared to other power adders, the choice is simple. No other form of power adder can provide the maintenance free power and cool operation of a ProCharger. Detonation (the result of excessive heat and pressure) is an engine's worst enemy. Among the many benefits of the centrifugal blower is that it develops boost and power relative to engine speed, giving you a smoother, more usable power curve than offered by other power adders. This curve puts more power to the ground, keeping you ahead of the competition.

• Nitrous Oxide

You can't judge a book by its cover, especially not this one! Though nitrous looks like a bargain, carefully reviewing the facts will reveal otherwise. Though they require a small initial investment, the cost of nitrous systems can exceed the cost of a blower system in less than a year as frequent bottle refills nibble away at your wallet and your engine. Nitrous oxide often adds a big seat of the pants kick with its low RPM torque increase but generally fails to deliver that same power increase at higher engine speeds. Increased peak cylinder pressures, which result from nitrous oxide's accelerated combustion rate, greatly increase the probability of piston melting detonation. The only way to avoid detonation is to keep peak cylinder pressures down. Rapid rises in cylinder pressure also increase loads placed on internal engine components and limit their ability to make horsepower reliably.

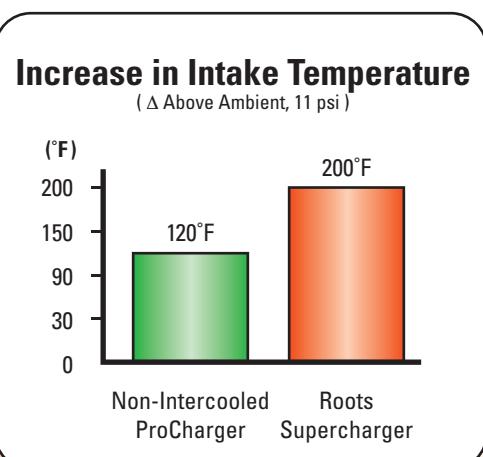
• Roots Type Blowers

Though a roots blower avoids some of the headaches of nitrous oxide, it falls short of the centrifugal supercharger in many ways. A centrifugal supercharger can often deliver up to twice the gain of a roots blower, thanks to several advantages. Centrifugal superchargers offer substantially higher adiabatic efficiencies than their roots counterparts. Not being positioned directly on top of the engine, the ProCharger is easily intercooled and provides no additional opportunity for extra heat to enter the airstream, as is the case with a roots blower. Not only does a centrifugal supercharger put less detonation-inducing heat into your engine, it takes less power to turn it as well. This frees up lost horsepower, and allows you to safely run more total boost, similar to the benefit derived from intercooling.

If you intercool your ProCharger, the benefit is even greater. With the roots' poor adiabatic efficiency, the roots blower engine must be operated with an exceptionally "rich" air-to-fuel ratio to combat the excessive heat output. This overly rich mixture is poorly combusted and robs power from the engine. Most roots blower equipped engines also require multiple and/or specialty carburetors and throttle linkages, which add additional cost and complexity to an already cumbersome system. A centrifugal supercharger offers a broad flow range and a single ProCharger can accommodate a wide range of applications, whereas a roots blower has a more limited operating range. In addition to power and drivability advantages, a ProCharger offers a potent power package that adds very little weight to your car when compared to a roots blower and fits discretely under your hood, requiring no special bodywork.

• Turbochargers

Though they employ the same advanced compressor technology as centrifugal superchargers, aftermarket turbo systems' cost and complexity make them impractical for street use. Some advertising claims would have you believe you are getting something for nothing by using exhaust to drive the compressor, but that's simply not the case. While a turbocharger may convert some exhaust heat energy into mechanical work, a large part of the turbine input energy is derived from air forced through by the piston. In pumping this



air through the turbine exhaust, backpressure can exceed 60 psi! This pressure opposes the flow of exhaust exiting the cylinder and results in diminished cylinder scavenging and filling ability. Generating this backpressure at high power levels also requires the use of spark timing values, camshaft profiles, and header tube sizes that adversely affect the engine's ability to produce power. In addition to the pressure buildup, excessive exhaust tract temperatures seen in turbocharger applications introduce additional heat into the water jackets surrounding the combustion chamber and reduce the engine's ability to resist detonation. A supercharged engine suffers none of these affects, as the exhaust system and camshaft profile may be fully optimized for efficient cylinder scavenging and power production. Aside from power production issues, packaging a turbo can be difficult as well, as expensive custom headers must generally be fabricated to feed the turbocharger and fit it to a particular vehicle. Even when optimally configured, a turbocharged engine is subject to turbo lag as exhaust gases are only able to slowly overcome the inertia of the turbocharger's rotating assembly. With a ProCharger, boost response is consistent and instantaneous.

• Large Displacement Engines

There's no substitute for cubic inches—except a ProCharger! The expense of building an engine large enough to produce the power of a smaller ProCharged engine simply doesn't make sense. Most naturally aspirated engines struggle to make much over 1 hp/ci with pump gas friendly compression ratios and good street manners. A ProCharger equipped engine running 91 octane can readily exceed 1.5 hp/ci in non-intercooled trim and over 2.5 hp/ci when used in conjunction with an intercooler, without the negative impact on fuel economy typically experienced by a high-horsepower, naturally aspirated engine. A ProCharger can get you the power in a matter of hours, while putting together a new engine package can take days or even weeks costing you more time and money than a ProCharger. A ProCharger will allow you to make your power with off-the-shelf parts in a conventional displacement engine, while large displacement "stroker" engines generally require custom crankshafts, rods and pistons, and extensive block modification or the use of an expensive aftermarket block.

Other Power Adders Don't Add Up...

Comparison for 700 hp Engine Using 91 Octane Pump Gas

Power Adder	Initial Cost	5 year Cost	Base HP Required	Drivability	Typical Install	Notes
Nitrous Oxide	\$	\$\$\$\$	525	fair	3-5 hours	high long term cost due to bottle refills
Roots	\$\$\$	\$\$\$	550	poor	8-12 hours	requires custom carburetion, hood modification, etc.
Naturally Aspirated	\$\$\$\$\$	\$\$\$\$\$	—	fair	20+ hours	450+ ci, requires complete engine assembly & installation
ProCharger	\$\$	\$\$	440	good	3-5 hours	underhood installation, no fabrication required
Turbocharger	\$\$\$\$	\$\$\$\$	480	good	20+ hours	requires custom exhaust fabrication
Intercooled ProCharger	\$\$\$	\$\$\$	350	good	8-12 hours	requires intercooler tubing fabrication
Intercooled Turbocharger	\$\$\$\$\$	\$\$\$\$\$	375	good	20+ hours	requires custom exhaust & intercooler tube fabrication

\$ = under \$1000, \$\$ = \$1000-2500, \$\$\$ = \$2500-4000, \$\$\$\$ = \$4000-5500, \$\$\$\$\$ = \$5500+

Note: These cost figures do not account for the time or expense of engine modifications required to achieve required base hp levels

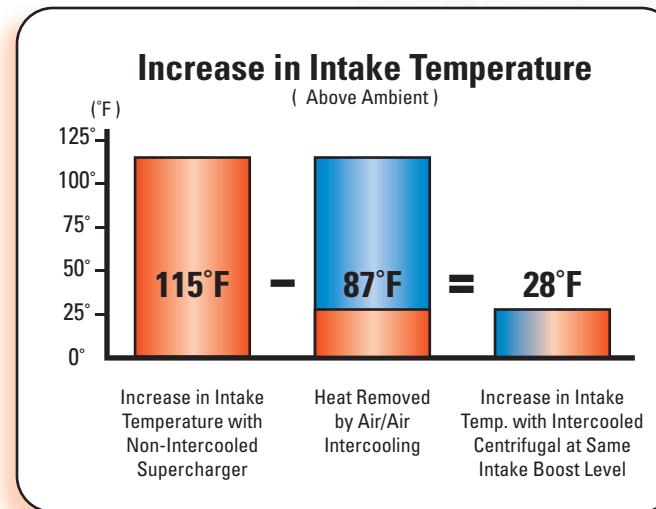
Intercooling

Intercooled Supercharger Kits

Supercharge your supercharger—add an intercooler! A centrifugal supercharger used alone is a potent power adder. When coupled with an intercooler it becomes a power multiplier! Among the many benefits of an intercooler is its ability to be purchased upfront or added to your ProCharger in the future. Using an intercooler allows you to generate even greater power gains without increasing octane levels. While a centrifugal supercharger's reduced discharge temperatures allow it to outperform a roots super-charger, coupling it with an intercooler makes the effect even more pronounced. Anytime a gas (air in this case) is compressed, its temperature will rise (Boyle's gas law). Remember, a high performance engine's greatest enemy is detonation, a byproduct of excessive combustion temperatures. Adding an intercooler to your engine removes detonation inducing heat from the combustion air charge and further increases its density, thereby allowing you to get more air into the cylinder. Adding an intercooler alone will reduce boost levels (as will increasing displacement or improving the engine's ability to flow air) while increasing hp. Boost is simply a measure of the engine's inability to accept the air being forced into it: more pressure = more resistance. Looking at boost levels alone won't tell the whole story. While boost usually gets all of the credit, it is actually the resultant increase in air density that is responsible for the increase in power. Yet another benefit of intercooling is that the reduced air temperatures allow the use of more spark advance, allowing you to extract more power from your engine. With a blower alone, a 350 hp, 9:1 compression ratio engine can be quickly turned into a 540 hp engine running 10 psi of non-intercooled boost on pump gas with a ProCharger. Add an intercooler to that same engine, turn the boost up to 14-16 psi and you'll make 700 hp without sacrificing reliability, while still running 91-93 octane pump gas!

Selecting An Intercooler

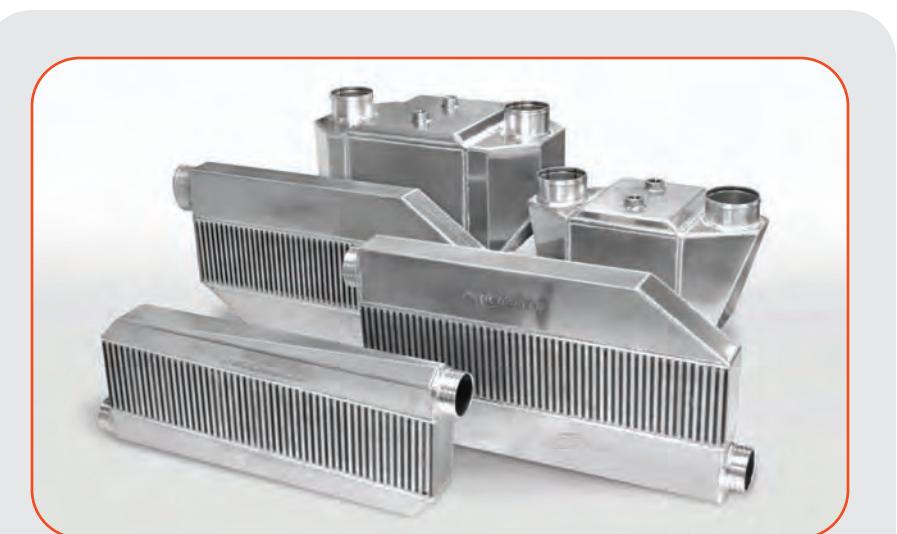
There are a few factors that must be taken into consideration when evaluating your intercooling needs. Though all applications can benefit from the use of an intercooler, carbureted or throttle body injected (TBI) applications running low boost levels on pump gas or high boost levels with racing fuel will make similar peak power numbers, but will not pick up as much power as their port fuel injected counterparts when intercooled. This is due to the fact that the charge air is cooled and its density is increased when mixed with the fuel at the carburetor venturi/throttle body injector. The upstream fuel has already done part of the intercooler's job. Often times, a non-intercooled carbureted or TBI engine will show a slight edge when compared to its port fuel injected counterpart. For street applications, including those that will see occasional duty at the track, air-to-air intercoolers deliver consistent, trouble free performance. For race only applications, air-to-water intercoolers offer the ultimate in charge air temperature reduction when used in conjunction with a mixture of ice and water, but are a poor choice for street use. In order to deliver the full benefit, an intercooler must also be appropriately sized. Use of an intercooler that is too small for your application will result in inferior performance as it will restrict airflow and/or fail to remove a sufficient amount of heat from the air charge. Though there is no harm in doing so, little



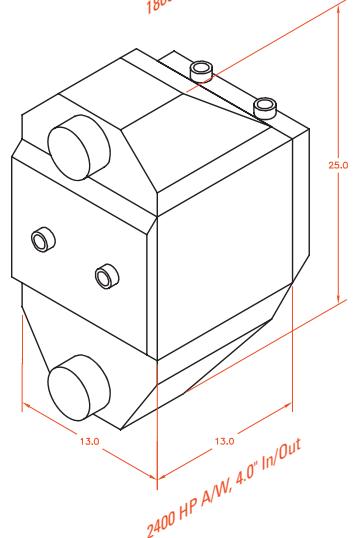
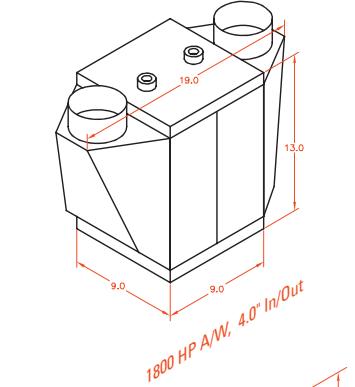
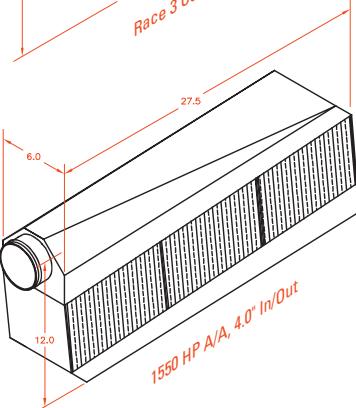
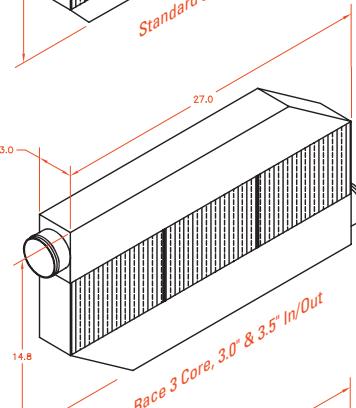
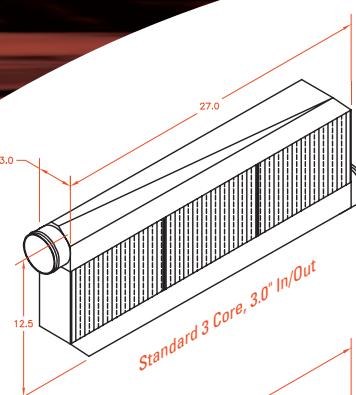
Intercooler Dimensions

Item Description	Part Number	Tube Diameter	Recommended Maximum HP	Approx. Dimensions (Width x Height x Depth)
3 Core Intercooler, Standard	AI003A-001	3"	825	27 x 12.5 x 3
3 Core Intercooler (950 HP)	AI003A-002	3"	950	27 x 15 x 3
3 Core Intercooler (1050 HP)	AI003A-005	3.5"	1050	27 x 15 x 3
Air/Air Intercooler (1300 HP)	AI045A-001	3.5"	1300	27 x 12 x 4.5
Air/Air Intercooler (1550 HP)	AI006A-001	4.0"	1550	27 x 12 x 6
Air/Water Intercooler	WI1005A-001	4.0"	1800	9 x 19 x 13
Air/Water Intercooler	WI1005A-002	4.0"	2400	13 x 23 x 13
Universal Tube Kit	AI004A-003	3"	950	
Universal Tube Kit	AI004A-035	3.5"	1400	

Note: Intercoolers must be used with Surge/Bypass valves (included in kits). Refer to page 32 for appropriate Surge/Bypass valve models, and pages 8-17 for intercooler kit part numbers.



benefit will be observed when using a larger than recommended intercooler. ATI has a full line of intercoolers engineered for use in centrifugally supercharged applications. Please refer to the chart above to determine which intercooler best meets your needs. When using an intercooler system, a surge/bypass valve should be incorporated into the system. The use of this valve allows excess charge air to be vented to atmosphere under high rpm/low airflow situations, thereby preventing harmful compressor surge.



Optimize Your Engine

Preparing Your Engine For A ProCharger

Though a ProCharger can be made to provide sizable power gains with most any application, those building a new engine will find that adhering to the following guidelines should provide an engine that allows you to get the most from your ProCharger.

• Engine Blocks

Most ProCharged engines are built using production engine blocks. Though they offer many benefits, an aftermarket block isn't a necessity in a small block producing less than 900 ProCharged hp or a big block making under 1300 ProCharged hp. As with any high performance engine build, it is wise to use a block that shows minimal signs of core shift and does not require an excessively large over bore that may weaken the cylinder walls.

• Crankshaft & Rods

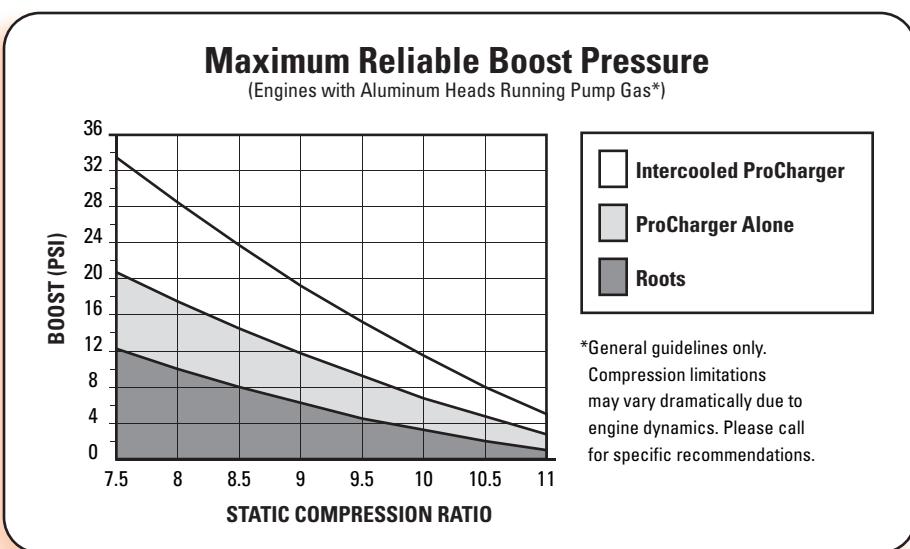
When selecting your crankshaft, our experience has shown that cast crankshafts are sufficient for small blocks making 500 hp or less and big blocks producing less than 700 hp with a ProCharger. Given the difficulty of finding a quality core and the availability of low priced forgings, 5140 steel crankshafts often prove to be a more cost effective option than a reconditioned factory casting, while offering substantially greater peak power capability. A 5140 steel crank will usually get the job done in a 900 hp small block and a big block making 1300 hp (on engines operated below 7000 rpm). Engines operating at higher RPM's or power levels will benefit from the use of 4340 steel crankshafts. High hp (900+) small blocks will also benefit from the additional rigidity of a crankshaft equipped with a big block diameter snout. When selecting connecting rods, a heavy duty factory connecting rod will often prove capable of supporting 800 hp in a small block and over 1000 hp in a big block (on engines operated below 6500 rpm). Stepping up to a set of aftermarket 4340 H-beam rods should get you safely up to 1000 hp from a small block and 1400 hp in a big block.

• Pistons

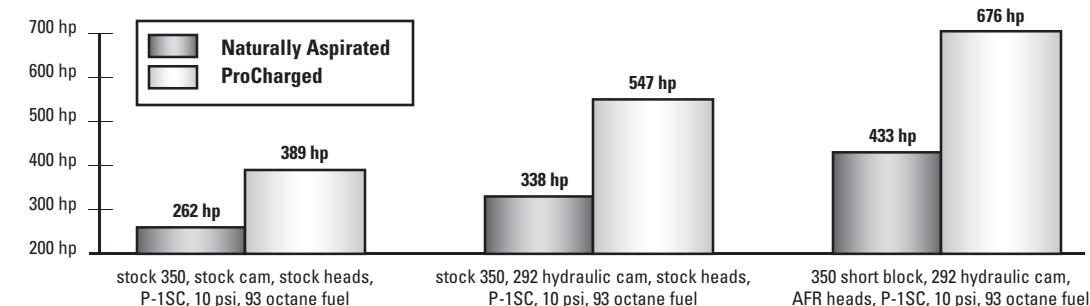
Though the price of cast and Hypereutectic pistons make them very attractive, they should be avoided in any small block producing more than 400-450 hp and any big block making more than 500-550hp. For most street/strip applications, high production forged pistons with "moly" rings are fine. High boost racing applications will offer the best power and reliability when coupled with premium pistons and rings.

• Compression Ratio

For pump gas (91-93 octane) applications, a compression ratio of 8.5:1 to 9.0:1 works best on engines running 8-10 psi of boost and using iron heads. Using higher octane fuel or an intercooler will allow these same engines to support higher boost levels. For every 2 points of increase in octane, you can generally support 1 additional psi of boost. Refer to the chart on the right to determine the most appropriate compression ratio for your application.



350 Small Block Tested with Various Cylinder Head and Cam Combinations, No Intercooler



• Cylinder Heads

A supercharged engine enjoys the same benefit as a naturally aspirated engine when breathing through higher flowing cylinder heads. Cylinder heads that offer a strong exhaust side performance (peak flow greater than 75% of intake flow) will further your supercharged engine's ability to produce power as they assist the engine in getting rid of the increased exhaust volume. Stepping up from iron to aluminum heads will also prove beneficial as the improved ability to rid the combustion chamber of excess heat will allow you to run higher boost levels or compression ratios with a given fuel.

• Camshaft

When selecting a camshaft, we have found that cams using 112-114 degree lobe separation and exhaust duration 10-12 degrees greater than intake duration offer the best supercharged performance. Adding a centrifugal supercharger will extend the operating range of most engines and will typically allow a camshaft rated to 5500 rpm to run strong beyond 6000 rpm. Keep this fact in mind when making your choice. Most street/strip engines operated below 6500 rpm will make excellent power with economical hydraulic flat tappet or hydraulic roller cams. Higher revving engines will benefit from the use of solid lifter, flat or roller tappet camshafts.

• Exhaust

Though a supercharged engine does not rely solely on atmospheric pressure to fill the cylinders (as a naturally aspirated engine does) and can provide power in excess of a system's rated performance, sizable gains will be seen when equipping your ProCharged engine with an appropriately sized, free flowing exhaust system.

• Intake Manifold

With the broad RPM range offered by modern intake designs, most engines will do best with an appropriately sized single plane manifold. Those operating strictly below 5500 RPM may benefit from the use of a dual plane manifold (which may require staggered jetting to provide proper fuel distribution) to enhance low end torque output.

• Ignition System

As cylinder pressure increases, ignition energy must be increased accordingly. Many aftermarket vendors provide ignition systems well-suited for use with your ProCharged vehicle. Though intercooled applications may retain an ignition curve very similar to that observed with a naturally aspirated application, non-intercooled applications may benefit from the use of a device which modifies ignition timing relative to boost levels, such as a MSD® Boost Timing Master.

• Selecting the Proper ProCharger for Your Application

The key to getting the most from your ProCharger is selecting a unit that is properly matched to your engine. Just as selecting the wrong carburetor for your engine will cause it to perform at less than its best, selecting the wrong supercharger can do the same. Please refer to the enclosed Supercharger Models document to determine which ProCharger best fits your needs.

Induction & Fuel Systems

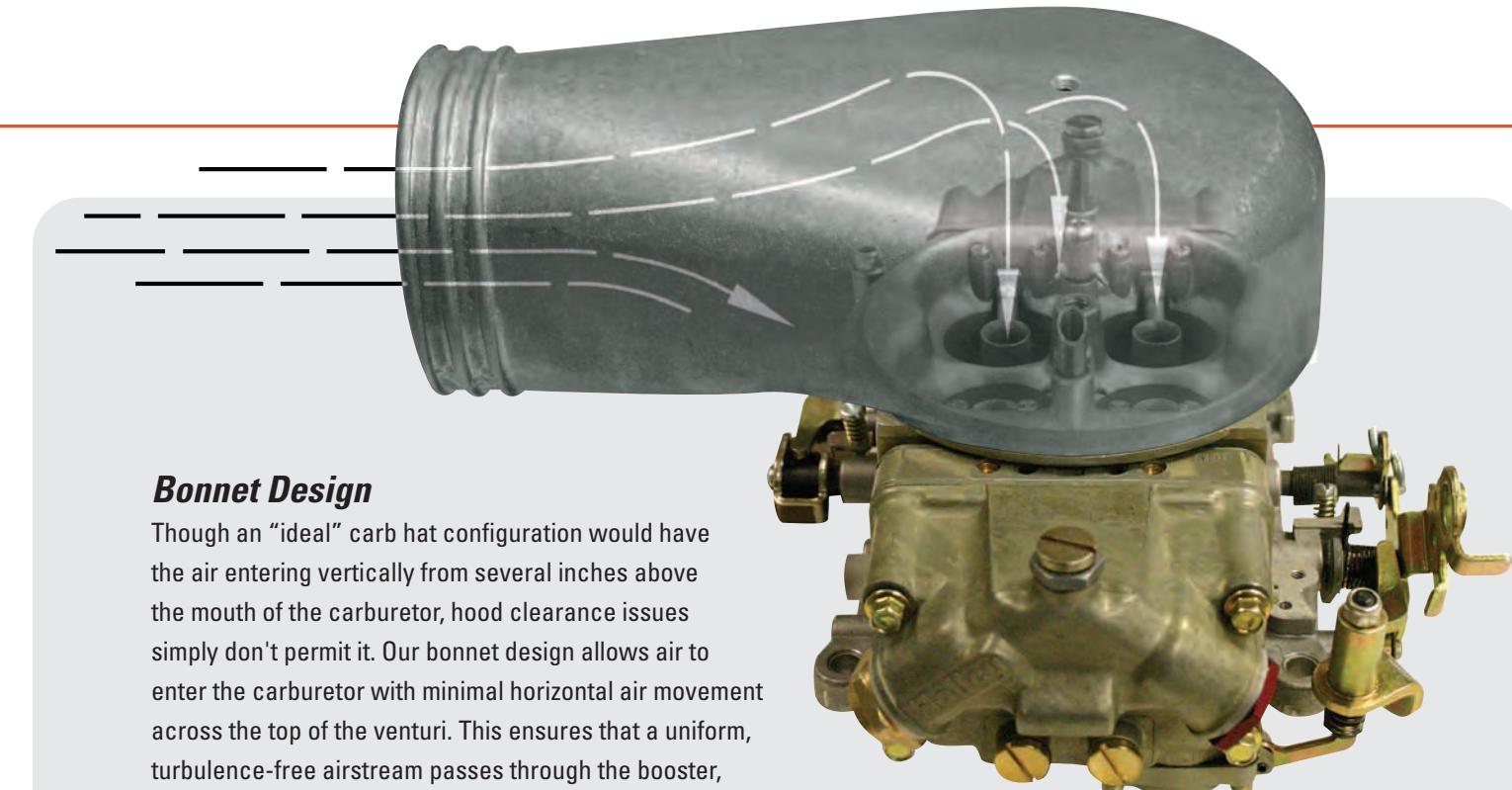
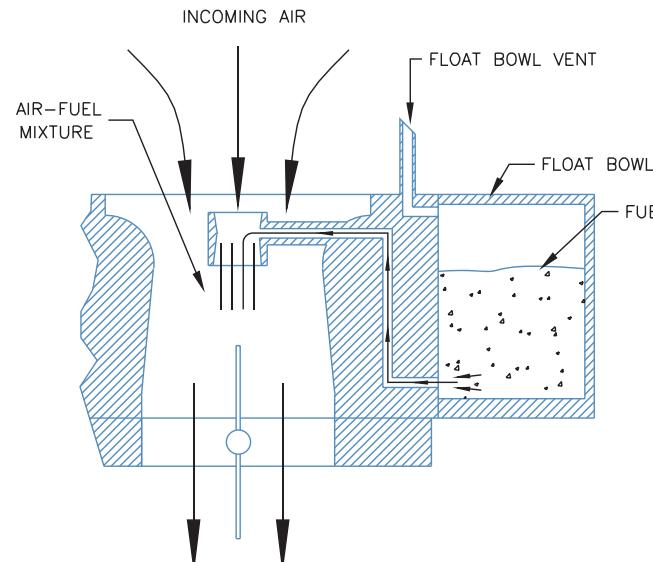
Blow-Through Carbureted Applications

• Carburetor Operation 101

Though some used to question the viability of “blowing through” a carburetor designed for use in atmospheric conditions, carburetors (with a few simple modifications) have been used successfully in blow-through applications for decades. This includes applications with boost levels in excess of 25 psi and power levels in excess of 1400 hp. The key benefit of using a carburetor as opposed to EFI is the charge cooling effect which is best summarized in this quote from Hot Rod magazine: “Working under the laws of latent heat of evaporation, an engine equipped with a carburetor will exhibit substantially cooler charge temperatures when it arrives at the intake port in the cylinder head. A temperature this cool means the cylinders are being fed a much denser oxygen charge and producing at least 5 percent more power.” A carburetor is a simple device that utilizes a siphon or “booster” placed within a venturi to mix fuel with the incoming air stream. As air moves through the carburetor it passes through the venturi which causes the air to rapidly contract and then gradually expand back to its original state. As the air accelerates through the venturi, its pressure decreases and causes fuel to be siphoned from the float bowl (which, by its connection to the bowl vent, is at the same pressure as the slower moving air at the top of the venturi). As airflow increases, the pull at the booster becomes even stronger, causing even more fuel to be drawn into the air stream. Through the selection of a specific booster design and the manipulation of fuel supply circuits, this system can be used to meet the fuel demands of most any engine. Proper operation of the venturi-booster requires three conditions: float bowl pressures must be equal to that of the incoming air, there must be a smooth delivery of air into the venturi, and a steady supply of fuel entering the float bowl. This is the case for any carbureted application, naturally aspirated or supercharged. Read below to see how the ProCharger system addresses each of these needs.

• The Carburetor Bonnet

While fully enclosing the carburetor in a “box” is necessary for marine applications (as required by U.S. Coast Guard regulations), automotive applications are able to benefit from the performance and serviceability offered by a properly configured carburetor “bonnet”. Pressurizing the bowls and guiding the air into the venturi are quite simple since they are addressed with the installation of the carburetor bonnet. The float bowls on a Holley “double pumper” are referenced to the carburetor air entry at the bowl vents. Once the carburetor hat is installed, these bowl vents will allow the float bowls to maintain proper pressure and operate just as in naturally aspirated form. By design, the ProCharger carburetor bonnet also controls the movement of incoming air and allows it to enter the venturi in a direct, controlled fashion. ATI offers two different bonnet designs to accommodate a wide variety of applications. Applications operating at higher air flow and boost levels will benefit from efforts to further control the movement of air entering the venturi. This is typically accomplished through the use of a spacer placed between the standard ProCharger carburetor bonnet and the carburetor, and in some cases supplementary float bowl vent installation. Applications allowing minimal hood clearance will benefit from the use of our low profile bonnet, which extends only 2" above the carburetor’s air filter mounting flange.



Bonnet Design

Though an “ideal” carb hat configuration would have the air entering vertically from several inches above the mouth of the carburetor, hood clearance issues simply don’t permit it. Our bonnet design allows air to enter the carburetor with minimal horizontal air movement across the top of the venturi. This ensures that a uniform, turbulence-free airstream passes through the booster, allowing it to function properly. Though some hat designs deliver inconsistent results when placed in various positions, our design assures that proper bowl pressures are maintained, providing consistent performance on ProCharged, carbureted applications.

ProCharger Bonnet Options



2.75"

Standard



2.0"

Low Profile



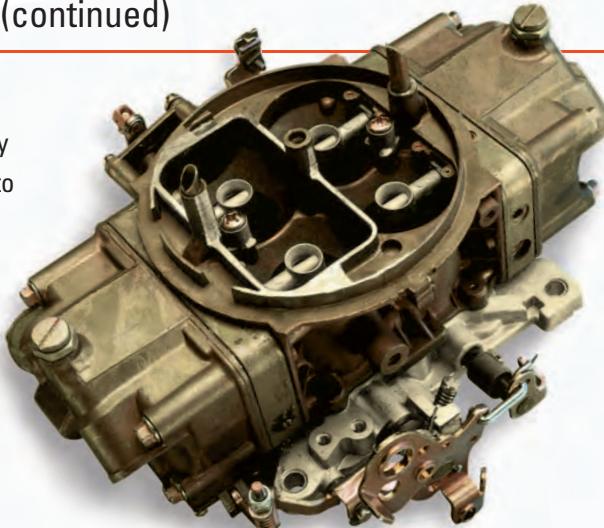
Induction & Fuel Systems

Blow-Through Carbureted Applications (continued)

• Carburetor Selection and Preparation

When selecting a carburetor for your blow-through application, as with naturally aspirated engines, less is generally more. A carburetor can be sized according to your engine's airflow and resultant power output. To determine what carburetor size best meets your needs, please refer to the chart at the right. Even though a larger than recommended carburetor may offer some increase in peak power, it will likely cause the engine to be less responsive at low RPM and result in drivability unacceptable for cars that will be street driven. Preparing a carburetor for use in a blow-through application typically involves few, if any modifications. Among those needing no modification are Holley's HP series carburetors which are designed with no choke assembly and generally equipped with Nitrophyl floats from the factory. For standard "double pumper" carburetors, the choke assembly should be removed to provide optimal airflow and performance when used with a carburetor bonnet. Additionally, the brass floats (which will collapse under boost) must be replaced with Nitrophyl floats (available from ATI, or Holley). With only the modifications listed above, Holley "double pumbers" (when properly jetted) will typically flow enough fuel to support roughly 1 hp per rated cfm of airflow.

Single carburetor applications exceeding 1 hp per rated cfm may require additional modifications such as resizing main wells and power valve restrictions, changing boosters and emulsion circuit recalibration. If you would prefer not to make these modifications yourself, they can be performed by an experienced carburetor shop. Please contact ATI's Technical Service Department for the phone number of a qualified carburetor builder. Knowing the fuel flow, the appropriate fuel pump size may be determined as well. Refer to the axis at the right of the chart on the opposite page to determine the minimum pump flow rating (in gallons per hour). Keep in mind that the pump you use must be able to support this flow rate at your peak operating pressure (base fuel pressure + max boost pressure) as the fuel pressure must remain at a fixed amount above manifold pressure for proper operation.



Recommended Carburetor CFM

(Engine Size x RPM) ÷ 3,456

ENGINE SIZE	MAXIMUM RPM							
	5000	5500	6000	6500	7000	7500	8000	8500
302	437	481	524	568	612	655	699	743
350	506	557	608	658	709	760	810	861
383	554	610	665	720	776	831	887	942
400	579	637	694	752	810	868	926	984
427	618	680	741	803	865	927	988	1050
454	657	723	788	854	920	985	1051	1117
502	726	799	872	944	1017	1089	1162	1235
540	781	859	938	1016	1094	1172	1250	1328
572	828	910	993	1076	1159	1241	1324	1407

Forced Induction & EFI Applications

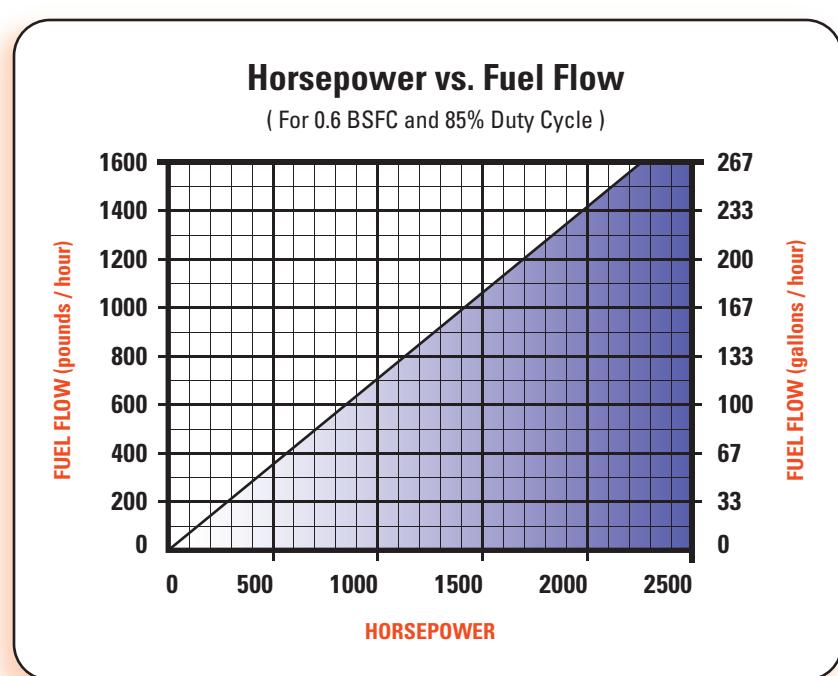
For many years now the method preferred by OEM's has been electronic fuel injection, as it offers the best drivability and fuel economy under varying conditions. Only relatively recently has this technology crossed into the automotive aftermarket. Though the technology may seem foreign to most, the systems available today are rarely any more difficult to configure than a carburetor. Not only do most systems available today offer precise open and closed loop fuel management, they also integrate data recording and ignition controls which allow you to get the most from your ProCharged engine. While most OEM fuel injection systems utilize mass airflow sensors to calculate fuel demand, the majority of aftermarket systems are of the Speed-density type, where the manifold pressure, temperature and a V.E. (volumetric efficiency) lookup table are used to calculate fuel flow. Though TBI (Throttle Body Injection) systems are readily available and work well at lower boost levels (typically under 12 psi), MPFI (Multi-Point Fuel Injection), speed-density type systems are most commonly found on forced induction applications. MPFI systems offer the most consistent fuel distribution and are easily configured to a broad range of applications.



• Electronic Fuel Injection Component Selection

When selecting an EFI system, it is necessary to ensure that the system being considered is capable of compensating for manifold pressures above ambient. This typically requires little more than installing a 2 or 3-bar GM MAP (Manifold Absolute Pressure) type sensor and configuring the software to accommodate this new bit hardware. Applications operating at 15 psi and below typically work best when used in conjunction with the 2-bar type sensors (boost levels up to 18 psi can be safely used), while applications operating at higher levels will benefit from the use of a 3-bar sensor. Using a 3 bar sensor at lower boost levels is acceptable, but is not recommended as it will decrease the resolution at which the system operates and can result in diminished overall performance.

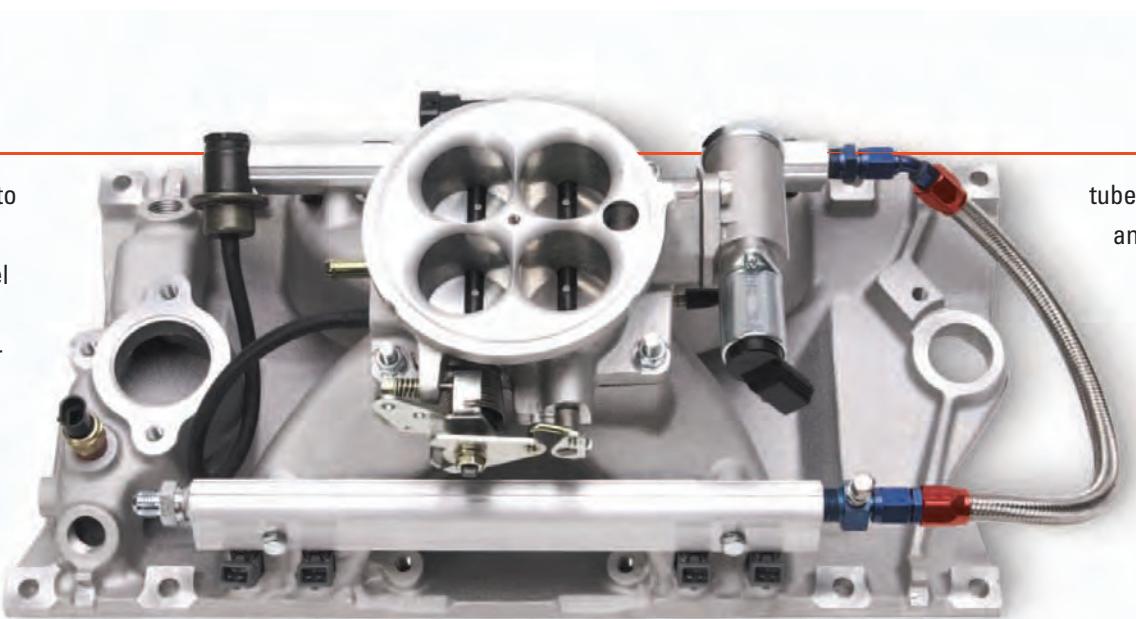
Not only must a MAP sensor be of the proper type, the fuel injectors must be sized to correspond with the power level at which the engine is to be operated. To determine the appropriate injector size, please use the chart to the right to determine the approximate fuel flow (in lbs/hr) for your application, and divide that figure by the number of injectors to be used (8 in the case of an MPFI system on a V-8, and 2 or 4 on TBI applications) to determine the injector size which best fits your application. These values assume a 0.6 BSFC (Brake Specific Fuel Consumption) and a maximum duty cycle of 85% which are typically observed on supercharged vehicles. Though a larger than recommended injector may be used, doing so will adversely affect fuel atomization and vehicle drivability, as the injector may not be pulsed long



Induction & Fuel Systems

Forced Induction & EFI Applications (continued)

enough to develop an ideal spray pattern at low engine RPM's. Another consideration is the decision as to which type of O2 sensor will be used. Though popular for use on OEM applications, standard oxygen sensors fail to provide the resolution needed to properly tune a supercharged engine operating at air-fuel ratios numerically lower than 14.7:1. The best choice for a forced induction setup is typically a linear O2 sensor which offers a high level of accuracy at a broad range of air-fuel ratios. In the absence of a linear "wideband" O2 sensor option, initial tuning can be performed with an external sensor (often available at chassis dyno shops, or available as a stand-alone unit). With injector, fuel pump and MAP sensor determination complete, the software provided with your EFI system can be configured to accommodate your particular engine combination. Once the EFI system is configured, an ATI carburetor bonnet can be fitted to applications utilizing a 4-bbl type throttle body, while applications using a single butterfly type throttle body are easily adapted to ProCharger discharge



tubes using a short section of rubber hose. Though the initial configuration of an EFI system may prove a bit more involved than simply choosing a carburetor, when properly configured it can offer OEM-like drivability and optimal fuel economy.

• Boosting Your Fuel System

Both carbureted and EFI applications rely on a consistent delivery of fuel into the engine, as the fuel pressure must be controlled relative to the boost level. This is done through the use of a pressure reference line connected to a mechanical fuel pump (on carbureted applications making 600 hp or less) or to a bypass style fuel pressure

EFI Profile



"Perhaps the wildest car on the 2003 Power Tour, Mike Roy's ATI ProCharger-urged '71 Monte Carlo blew minds on the chassis dyno when it registered an awesome 708 rwhp and 902 lb-ft of torque (975 hp on engine dyno). But that's nothing compared to the fact this screamer was driven the entire 1,500 mile distance, gulping nothing other than 92-octane pump gas."

— Hot Rod Magazine



Vehicle: 1971 Monte Carlo
ProCharger Kit: F-2
Engine: 540 Big Block
Fuel Pumps: Walbro In-tank
Induction: FAST EFI w/ 65-lb/hr inj.

Carbureted Profile



"In the end, on the dyno with 10 pounds of boost and 36 degrees total timing, the engine produced 633 hp and 536 lbs-ft of torque on 92-octane pump fuel. The ProCharger added 229 hp and 156.5 lbs-ft of torque to the 404 hp naturally aspirated motor (that's a 57% hp gain with the non-intercooled, classic ProCharger P600B)."

— Chevy High Performance



Vehicle: 1956 Bel Air
ProCharger Kit: P600B
Engine: 355 Small Block
Fuel Pump: MagnaFuel
Induction: Holley 4150 4-Barrel

Forced Induction & EFI Applications (continued)

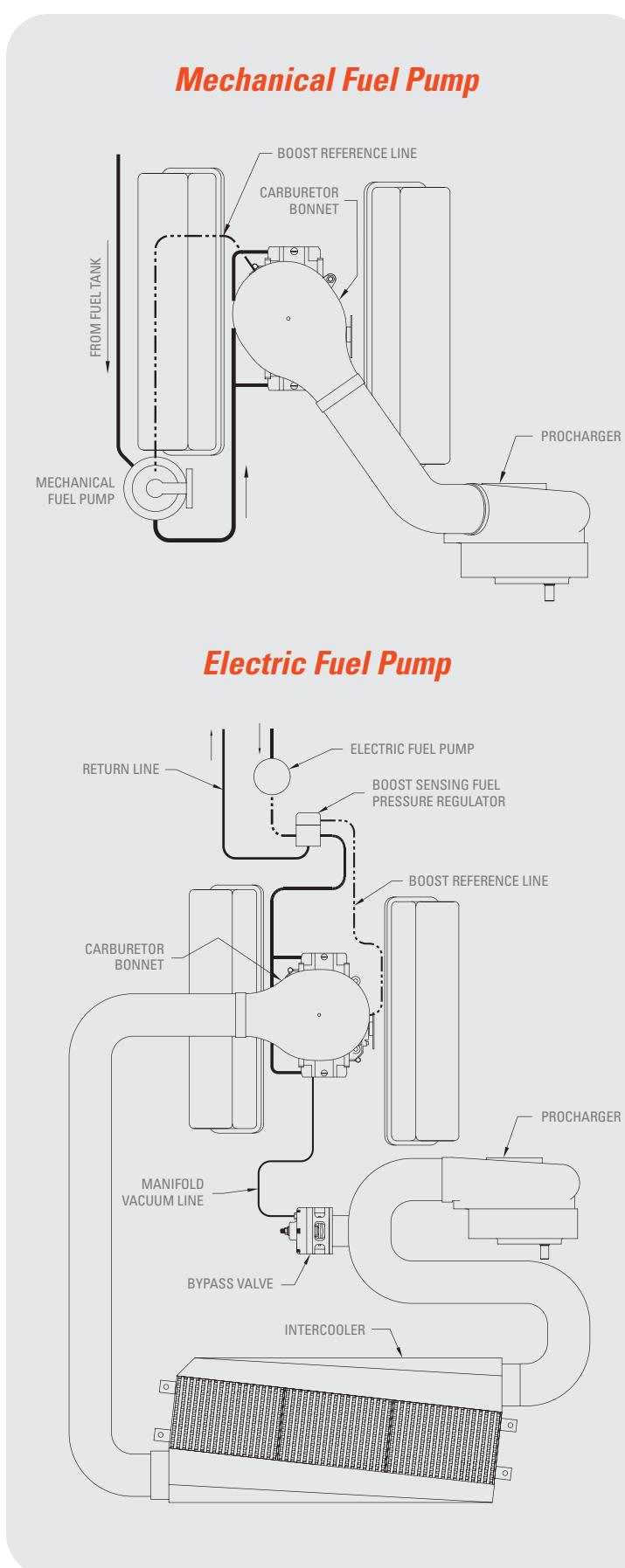
regulator used in conjunction with an electric fuel pump. Doing so will allow the fuel pressure to rise as the boost level rises. In a carbureted application with a typical base pressure of 8 psi to the carburetor and a boost level of 10 psi the system will cause the fuel pressure as read on a gauge to rise 8 psi higher than the boost level at any point in the RPM range and 18 psi at peak boost. EFI applications are also subject to the same conditions. With a typical base pressure of 40 psi and boost level of 15 psi your EFI fuel system would operate at a peak pressure of 55 psi. When selecting a fuel pump for your application, check with the manufacturer to confirm that it will support your desired power level at the needed fuel pressure. Though many pumps claim to be able to support a given power level, this is generally at fuel pressures utilized on naturally aspirated engines. Unlike those offered by ATI, most fuel pumps' performance will drop off significantly at higher pressures. Refer to the diagrams for fuel system layout details.

Importance of Bypass/Surge Valves

Applications utilizing intercooling and those operating at boost levels in excess of 8 psi will benefit from the use of a bypass valve (commonly referred to as a "surge" valve). In high RPM, low load conditions, the supercharger is still operating at full speed and attempting to deliver full flow. With the throttle blade(s) at or near the fully closed position, the engine is unable to accept the airflow from the supercharger. In this event the pressure builds until the flow attempts to reverse direction and exit through the compressor, resulting in a harmful condition known as compressor surge. Installing a bypass valve between the supercharger discharge and the carburetor/throttle body prevents damaging compressor surges by diverting the undemanding charge air to the atmosphere during manifold vacuum conditions. ATI's butterfly-type Pro-Flo is well suited for applications making 750 hp or less. Applications at higher power levels are best suited for use with our poppet-style race valve.

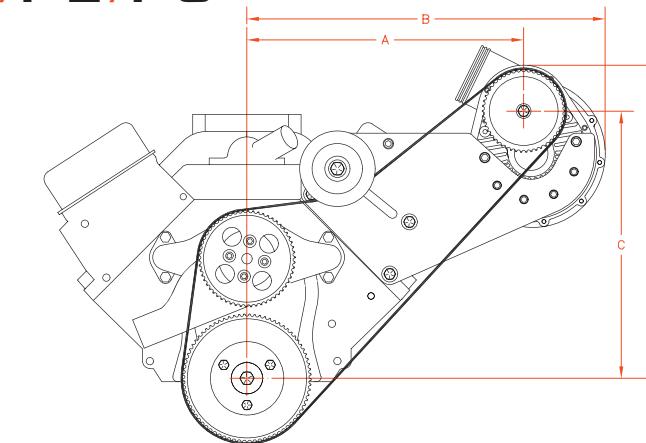


Item Description	Part Number	Recommended Maximum HP
Race Surge/Bypass Valve	AV004A-002	2000
Pro-Flo Surge Valve	AV005A-001	750



Small & Big Block F-1 / F-1R / F-2 / F-3

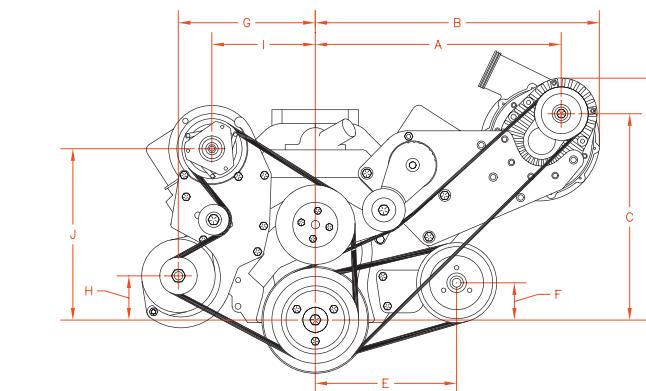
	A	B	C	D
Small Block F-1/F-1R Cog/Serp.	15.4	20.2	16.4	19.2
Small Block F-1/F-1R Cog w/ WP	13.9	20.2	15.6	18.4
Small Block F-2 Cog/Serp.	15.4	21.0	16.4	19.2
Small Block F-2 Cog w/ WP	13.9	21.0	15.6	19.2
Small Block F-3 Cog	16.4	21.6	16.3	20.3
Big Block F-1/F-1R Cog/Serp.	15.1	21.5	15.2	17.8
Big Block F-1/F-1R Cog w/ WP	16.6	21.5	16.0	18.8
Big Block F-2 Cog/Serp.	15.1	22.3	15.2	18.8
Big Block F-2 Cog w/ WP	16.6	22.2	16.0	18.7
Big Block F-3 Cog	20.7	24.7	16.2	20.9



Small & Big Block P-1SC / D-1SC

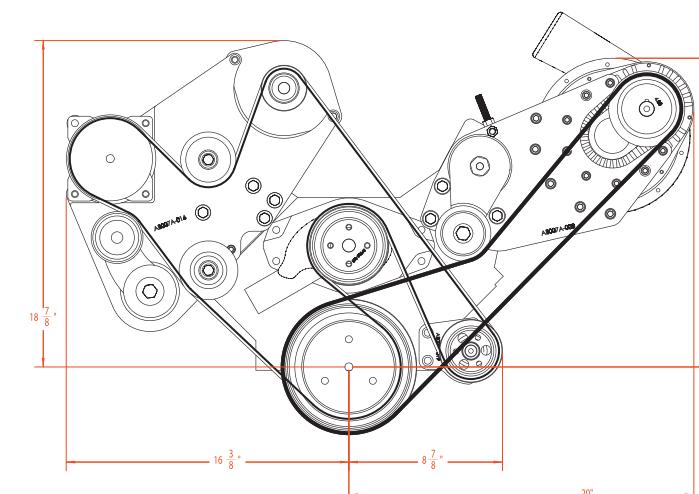
Small Block P-1SC/D-1SC	Big Block P-1SC/D-1SC
A	17.7
B	20.4
C	14.5
D	17.2
E	8.6
F	1.9
G	10.0
H	3.7
I	5.8
J	12.1
	18.5
	21.4
	15.5
	18.2
	10.7
	2.9
	10.3
	3.4
	7.8
	12.9

Shown with optional Air Conditioning (I, J) and Power Steering (E, F) brackets.



NOTE: Cog applications utilize a short water pump, while serpentine applications utilize a long water pump when using a V-belt accessory drive

Serpentine Accessory Drive



Notes

- Vehicle space limitations may necessitate the use of a repositioning kit which allows the supercharger and bracket assembly to be raised, lowered or shifted outward relative to the engine.
- Requires Sanden 508 a/c compressor (Manufacturer part # 4514) or similar
- Requires reverse rotation water pump (NAPA part # 555016) or similar
- Utilizes GM Type II power steering pump (NAPA part # 20704) or similar (optional)
- Serpentine Accessory Drive uses '84-'91 Corvette short water pump
- Please contact our Technical Service Department 9:00 AM to 5:00 PM Central Standard Time for details.

Optional Components

ATI offers a variety of accessories to enhance your ProCharger installation such as gauges, carburetors and modification kits, mechanical and electric fuel pumps, fuel pressure regulators, and also bracket kits that allow the use of late model GM power steering pumps and air conditioning compressors.



Optional Components	Part Number
Boost Gauge, Autometer 2 1/16 Mechanical, 20 psi	MG001I-005
Modified Mechanical Fuel Pump, Small Block	FP002I-001
Modified Mechanical Fuel Pump, Big Block	FP003I-002
1000 HP Electric Fuel Pump	FP001I-006
Boost Sensitive Fuel Pressure Regulator	FV001I-BST
Holley Carb Modification Kit	FV004A-007
Modified Holley 450 CFM "Tunnel Ram"	FV004A-000
Modified Holley 600 CFM "Double Pumper"	FV004A-001
Modified Holley 650 CFM "Double Pumper"	FV004A-002
Modified Holley 750 CFM "Double Pumper"	FV004A-004
Modified Holley 850 CFM "Double Pumper"	FV004A-055
Air Conditioning Option, Small Block	AB005A-000
Air Conditioning Option, Big Block	AB006A-000
Power Steering Option (GM Type II), Small Block	AB009A-000
Power Steering Option (GM Type II), Big Block	AB011A-000
Cog Drive Mechanical Water Pump Pulley	DP010I-001
3" Universal Tube Kit	AI004A-003
3.5" Universal Tube Kit	AI004A-035
Race Surge/Bypass Valve	AV004A-002
ProFlo Surge Valve	AV005A-001

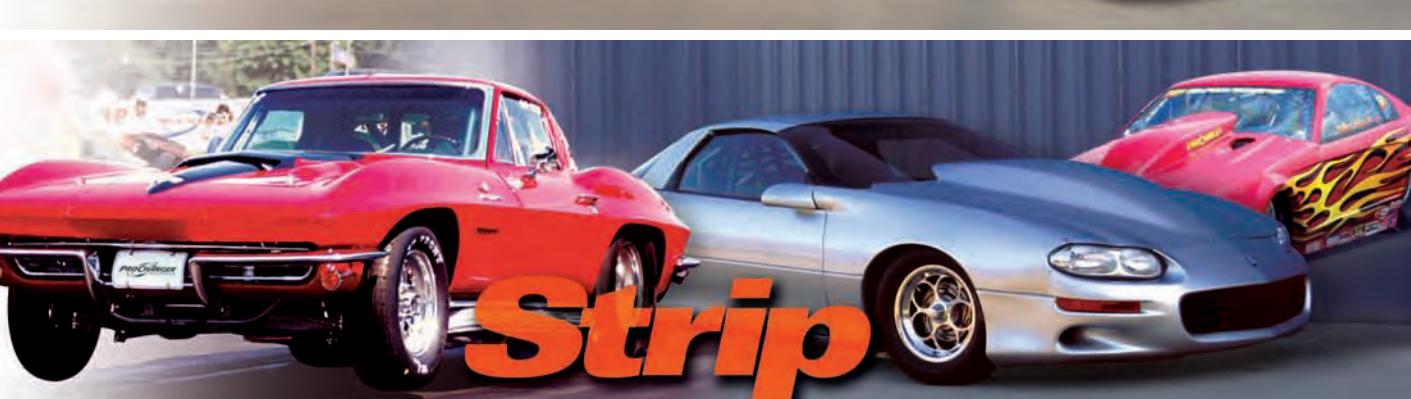
Apparel & Accessories

ProCharger has a number of licensed apparel items like t-shirts, caps, and polos, as well as other accessories such as clocks, barstools, license plate frames, key chains, ProCharger badges and banners, and much more. Give us a call today for more information and availability.



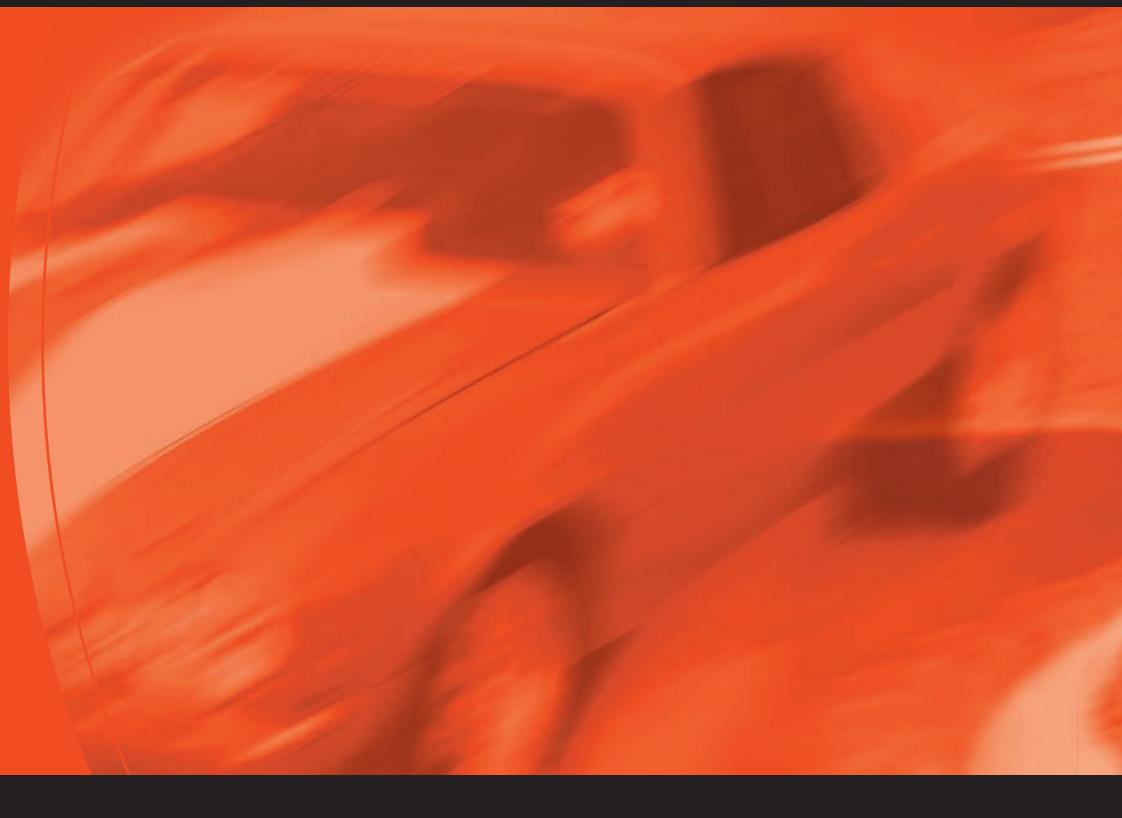
Apparel & Accessories	Part Number
Black T-Shirt, Yellow "ProCharger Racing" (M-3XL)	MASBYW-L
Black T-Shirt, Silver "ProCharger Racing" (M-3XL)	MASBSW-L
Black Long-Sleeve Shirt, Yellow "Circle Design" (M-3XL)	MALB02-L
Black Flexfit Hat, Silver "ProCharger Racing" (S/M)	MAHBSW-S/M
Black Flexfit Hat, Silver "ProCharger Racing" (L/XL)	MAHBSW-L/XL
Grey Sportsman Adjustable Hat, Black "ProCharger Racing"	MAHGBW-L
License Plate Frame, "Warning: Contents Under Pressure"	PS002I-001
License Plate Frame, "Blown and Intercooled"	PS002I-002
License Plate Frame, "ProCharger.com"	PS002I-003
Flag, "ProCharger Racing"	PS012I-001
Shop/Event Banner, "ProCharger Racing"	PS011I-001
5" ProCharger Sticker, Black and Silver	PS001I-023

For towing or for fun, street or strip, we offer a variety of Intercooled ProCharger systems for Marine, Truck/SUV, Harley-Davidson and late-model Automotive applications. Whether you're on the pavement or on the water, ProCharger has an application for you.





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