YOUR ONE STOP SHOP FOR ALL YOUR SUPERCHARGING NEEDS™

BLOWERWORKS

CORVETTE C4 SUPERCHARGING SYSTEMS

BlowerWorks™ Professional Supercharging Systems

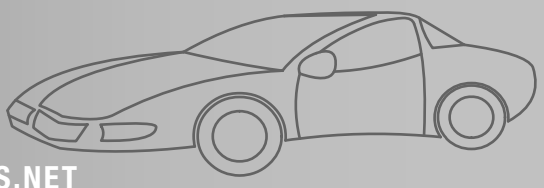
C4 SUPERCHARGING SYSTEM *1985-1996 L98/LT1/LT4 CORVETTE*

Sales Guide March 2005

Revision No. 61

BLOWERWORKS
WYCKOFF, NJ

TEL.201.891.4690
FAX.201.891.9295
GREG@BLOWERWORKS.NET



PLEASE VISIT US ONLINE AT WWW.BLOWERWORKS.NET

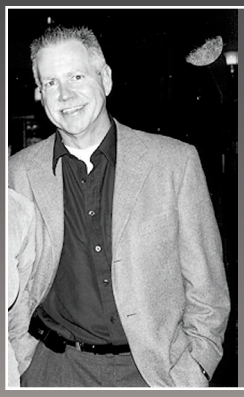
YOUR ONE STOP SHOP FOR ALL YOUR SUPERCHARGING NEEDS™

BLOWERWORKS

Table of Contents

ORIGINAL PRINTING: JANUARY 2005

Some parts may not be sold in U.S. EPA areas • All prices subject to change without notice • Not responsible for typographical errors or omissions.



LETTER FROM GREG CARROLL

FOUNDER OF BLOWERWORKS™

Dear C4 Corvette Owner/Enthusiast,

Thank you for requesting what we consider to be the single most comprehensive catalog for supercharging a C4. The fact that you have requested this catalog probably means you are either very serious about supercharging your Corvette or have already supercharged your Corvette and need some help. In either case we can help you attain your goal of a powerful reliable daily driver that still gets great gas mileage and will pass all emissions tests.

As the originator of the supercharged L98 (since 1987) and subsequently LT1/LT4 we hope you'll spend some serious time looking at this catalog before considering the competition. Rather than suffer through the "buyer's remorse syndrome" why not buy your supercharging system from the people who really know what they are doing when it comes to Corvettes?

The Carroll system is the most comprehensive approach to supercharging a Corvette available today. Our kits are complete, reliable, and perform as advertised. Our fit and finish is perfect. When you purchase a "Carroll" kit you do not have to buy another single item – period! All of our C4 supercharging kits utilize the Vortech SQ Quiet Trim V2 blower. It is a fine piece of hardware. It is so quiet you do not even know it is on your Vette! We are the Corvette specialists and probably know more about supercharging a C4 than anybody else on planet earth!

Both Vortech and ATI manufacture exceptionally fine and reliable superchargers. However, their expertise in building a blower does not make them a Corvette specialist. In our almost twenty years in this industry, we have installed, modified, and serviced virtually every kit on the market. We have the right parts and the right fixes to bring any kit up to spec, but we hope you'll purchase ours. With our guidance and parts you will achieve your goal of a fast and reliable daily driver…we guarantee it! If you have already purchased a supercharging kit from another vendor and are experiencing problems; we have solutions. We can help you 'discover' the promised power.

With the Carroll system, your quest for performance is over. Our kit is all-inclusive and most of our parts are Plug-N-Play; we challenge you to find a component not offered in this catalog. Most importantly, our horsepower claims are realistic. Your vehicle will obtain the stated horsepower or we will buy your kit back. Make the Carroll system your system and join the thousands of other satisfied Carroll customers. We will personally take care of you. Our satisfaction comes from a happy customer.

Sincerely,

Greg Carroll

SUPERCHARGING YOUR C4 CORVETTE: "A SEMI-WHITE PAPER"[1]

By GREG CARROLL of BLOWERWORKS AKA The CARROLL SUPERCHARGING Co.

OK... so you are ready to supercharge your Vette. It's no longer a to do or not to do decision. It's now down to whose supercharging kit you should use. You are no longer afraid to take this huge leap of faith and spend $6 to $8K. Why? Because so many other Corvette owners have done it and reported good results on the Corvette Forum as well as elsewhere. Also, many new vehicles direct from the manufacturer are now supercharged. If GM, Ford, and Chrysler approve of supercharging it must be ok to do the same to my vehicle – right ? So how do you choose from amongst the various supercharging systems that are available? What differentiates one kit from another? What differentiates one compressor style from another, i.e. Vortech versus ProCharger? Should the charger oiling system be self-contained or fed by engine oil? Do I intercool and if so what's the difference between a mechanical air to air intercooler, a mechanical air to water intercooler, and Gaseous Intercooling™ . Decisions, decisions …

In choosing a supercharging system for your Corvette you must first define your needs and usage. In supercharging any vehicle there are advantages and disadvantages to each type of system. A well-engineered system minimizes the trade offs between them and optimizes the choice for the particular application. The decision you have to make is an important one. You are going to live with your decision everytime you get into your Corvette and drive it. It is unlikely, if you make the wrong decision, that you will have sufficient funds to go back and re-do it. Nor will you psychologically want to admit to yourself let alone anyone else that you screwed up and chose poorly.

I am going to help you make that decision. Yes I am going to try and sell you my system (naturally I'm biased but I'll try to be fair), but not by trying to make the shoe fit when it does not. Instead I am going to detail/define my shoe and you decide if it fits your 'foot'. The following list is key components of supercharging a C4 Corvette and you should be aware of the difference approaches each manufacturer has taken including me, Carroll Supercharging.

- COMPRESSOR
- SUPERCHARGER LUBRICATION
- INTERCOOLERS
- SUPPLEMENTAL FUEL DELIVERY
- FUEL PUMP(s)
- IGNITION
- PISTONS
- ENGINE COOLANT
- HARMONIC BALANCER
- PCM PROGRAMMING
- APPEARANCE, FUNCTION & FORM
- UPGRADEABLE/EASE OF INSTALLATION
- "FINISHED PRODUCT" / EXPERIENCE

COMPRESSOR

There are currently two centrifugal style crank belt driven compressors (supercharger) to choose from that are part of complete bolt-on supercharging kits for your Corvette. The two major manufacturers of centrifugal compressors are Vortech and ATI (ProCharger). Both companies produce excellent products. A centrifugal compressor is a sophisticated fan. It is very efficient as compared to a Roots style compressor and has virtually no upper limits. However to maintain efficiency the compressor should be properly sized to the application. A turbocharger is a centrifugal compressor. The centrifugal supercharger is belt driven off the crank pulley. The turbocharger is exhaust gas driven by a turbine shaft coupled to the centrifugal fan. Turbochargers are very efficient because they utilize otherwise normally wasted exhaust gas heat. We will not compare turbochargers to centrifugal superchargers in this discussion. As always there are advantages and disadvantages to each.

Until recently one big disadvantage to the centrifugal supercharger was gear noise. However several years ago Vortech Superchargers introduced their SQ trim blower which is virtually noiseless. Centrifugal superchargers are fans and as such build boost with RPM. Centrifugal compressors are not "positive displacement" pumps (Roots style & rotary screw compressors are "positive displacement"). Centrifugals are very forgiving if ever your engine should hiccup and backfire. Centrifugals build boost as the square of RPM. This means the boost pressure rises rapidly as a function of engine RPM – a real advantage. Another advantage of centrifugals is the amount of power they draw from the engine as a function of engine RPM and the work done. No work done no power drawn, i.e., even at high RPM if the throttle is closed the compressor draws virtually no power (less than a fraction of 1 HP). And because the power drawn by the compressor increases as the cube of engine RPM a centrifugal draws virtually no power at low RPMs while cruising and is incredibly efficient for a daily driver..

There is somewhat of a battle between Vortech and ATI regarding stated efficiencies. Suffice it to say that the Vortech stated efficiencies are based upon SAE Standard J1723 in a supercharger test cell. As a side note here let me put in my 2 cents worth on the location of the supercharger air filter. At first glance you'd think what idiot located the air filter directly above the exhaust manifold! After extensive testing (temperature probe inside air filter) we found that the inlet air temperature to the supercharger only a few° F above ambient as long as the vehicle was moving! This is due to the way outside air flows thru the L98/LT1 engine compartment. The negative pressure under the vehicle draws fresh air down over the filter. In fact we found a power DROP by remoting the air filter to the battery box (of course after moving the battery). This is due to the fact that centrifugal compressors are very sensitive to ANY inlet restriction. Centrifugal compressors love to 'push' hate to 'pull'. Except at idle with a standing vehicle we found no advantage to remoting the filter and in fact a power loss. Those creative individuals who have designed air scoops and moved the filter up a pinch with a short BIG tube are on the money. However, once the vehicle is moving the air temperature difference is insignificant.

SUPERCHARGER LUBRICATION

The Vortech and the ATI compressors both contain gears and require lubrication. Both the Vortech and ATI compressors utilize step-up gears in the neighborhood of 3.6 to 4.4. This is required because the "fan blade" inside the blower must spin up to 50,000 or so RPM in order to produce the required boost levels. The optimum fan blade RPM is determined by blade size, desired boost level, and engine displacement. At these RPM's the lubrication requirement is quite important. Until recently these blowers all used engine oil and pressure to deliver a spray onto the gears thru a small (typically .030 to .040") nozzle. The oil then drains back by gravity to the engine oil pan – much the same as in a turbocharger. There are two drawbacks to using engine oil for lubrication: initial installation time and if you should be unlikely enough to loose a compressor and (like an idiot –LOL) continue to operate it after the bearings fail you may drop debri into the oil pan. As long as you drop the oil pan and clean it there will be no engine damage. Be fool enough not to do so and it could cost you an engine!

Recently, ATI introduced a line of compressors utilizing a self-contained oiling system. This enhancement greatly reduces the installation time of the supercharger system and hence the price you pay the installer. ATI recommends you change the oil every 6,000 miles – not bad. And of course with the self-contained lubrication system if the blower crashes there is no risk of engine damage from "debri" in the oil pan. Some ATI kits require removing the blower to change its' oil. Also note that the bigger step-up ratio of the ATI is a big advantage in that the corresponding blower pulley can be that much bigger greatly reducing belt slippage problems.

One major disadvantage to a compressor with a self-contained oiling system is its' inability to remove "unwanted heat". Vortech continues to use engine oil for the supercharger lubrication for good reason. There are two distinct advantages:

First and foremost the engine oil removes heat from the supercharger – the oil is a coolant removing heat the same way it removes heat from the engine. Please note that an efficient centrifugal compressor may typically require at least 20 HP to make 5 pounds of boost into a 350 cubic inch engine. At 15 pounds of boost pressure into a 350 cubic inch engine the same compressor may require 50 to 100 HP to drive it! Much of this power is converted into "unwanted heat" that the lubrication system must deal with: hence engine oil as a 'coolant' plays an important role.

Second there is no further maintenance other than perhaps changing an in-line oil filter. All Carroll C4 – L98 kits utilize an Earl's in-line supercharger oil filter. Although expensive and more time consuming to install this filter guarantees the blower an ultra clean supply of engine oil.

INTERCOOLERS

To intercool or not to intercool that is the question. Actually it is not a question when supercharging the C4 Corvette – you must intercool! The real question is which type of intercooler is best for my application. Here-in lies a significant difference between the approach ATI takes versus Carroll Supercharging. Please note Carroll utilizes the Vortech SQ Quiet Trim supercharger in their L98 kit. Vortech does not manufacture a kit specifically for the L98. Let's look at the differences.

Whether you call it an intercooler or aftercooler and no matter if it is an air to air or water to air intercooler, it is still a mechanical radiator designed to dissipate the heat of compressing air by flowing ambient air over some form of extra radiator (not to be confused with the vehicle's engine coolant radiator). No matter what style compressor you choose it will heat the air as it compresses it – fact of life. Ever touch a shop air compressor tank while it is running – warm right? So why would anyone design an automotive supercharger kit without one? Good question, but the answer may not be so obvious. The first parameter we must examine is the boost level and compressor efficiency. When dealing with a centrifugal blower making 5 to 7 pounds of boost the answer may not be so obvious. At 5 pounds of boost pressure a well designed centrifugal will raise the ambient air temperature about 50° F. In order to cool the compressed air the given heat exchanger using the same ambient air would have to be huge. Think about what I am saying. Let's say the ambient air is 85° F, a typical summer day. If the compressor adds 50 to this we are at a supercharger discharge temperature of 135° F. In order to cool the 135-degree air with 85 degree we'd require a big intercooler because the difference between the heated air and the outside air is not that great. Besides thermodynamics tells you the 135-degree air can only approach 85, never get there ! Additionally, if you put a big intercooler on you will have a pressure drop thru it and consequently have to spin the compressor faster to compensate for the pressure drop and therefore you heat the air some more. Remember that the increased power the blower draws comes right off the crank pulley and increases as the cube of the RPM^2. The law of diminishing returns kicks in and tells us that until you get up to at least 10 pounds of boost pressure an intercooler may actually penalize performance rather than increase it !!! There must be an alternative – no? Yes there is and it is called Gaseous Intercooling™, i.e., water injection. Carroll Supercharging pioneered water injection for the L98 Corvette in 1987. (In fact I started using water injection in 1970 on my supercharged Dodge Van with a '340' running 10.5:1 pistons.) We coined the term Gaseous Intercooling™. In 1987 the only available centrifugal supercharger was the planetary "ball drive" Paxton producing 5 to 7 psig. It was impractical to couple the Paxton to a mechanical intercooler at this boost pressure (the charge air was not that hot and the Paxton was incapable of dealing with the pressure drop thru an intercooler), however we still needed to suppress detonation[3] in order to produce maximum power. Recurving the spark curve and taking out 15 degrees of timing was not acceptable – too much power loss (typically each degree of timing equates to a 1% power loss or gain). Hence we applied water injection – the same solution the Allies used on the centrifugal supercharged fighter planes. At present Carroll is the only manufacturer that incorporates Gaseous Intercooling™ as standard on all its Vette supercharging kits. Many ATI and Vortech owners have purchased and installed the Carroll Gaseous Intercooling™ system on their mechanically intercooled Corvettes and found more power. The two types of intercooling are not mutually exclusive – rather they often compliment each other. More on Gaseous Intercooling™ later.

Least we forget there are several additional things you should know about mechanical style intercoolers. First and most important remember that the intercooler cannot reject any heat unless there is air movement thru it, i.e., where does the heat go, if it goes anywhere, when stopped at a traffic light? Second, if the "radiator" (intercooler) is placed in front of the engine radiator then the heat of rejection of the intercooler may affect the operation of the A/C on a hot summer day while in stop and go traffic. Also, depending on the size and placement of the intercooler, the heat rejection of the compressor may affect the engine radiator. Last consider their complexity when doing routine servicing of your Corvette. To the die-hard racing enthusiast the above is inconsequential. For the Corvette owner who does not do his own work and simply wants a fast and reliable daily driver the above should be taken into consideration.

Finally a mechanical intercooler is a hindrance when not in use, i.e., most of the time ! First and foremost is fuel efficiency. If you want to keep the awesome mileage your Vette gets on the highway under cruise control you do not want cooled air. Warm or hot air is better for fuel vaporization. If you have an air to air intercooler you are going to have to rig up some kind of by-pass valve while cruising (the normal surge valve does not bypass the intercooler). If you are running a Carroll kit with Gaseous Intercooling™ rest easy – it only operates while under boosted conditions, i.e., when the pedal is to the metal !

Is there an application where a mechanical intercooler should be used? Absolutely the answer is yes. If you plan to run boost levels in excess of 12 psig then by all means you should have one or the other of the two types of mechanical intercoolers and possibly our Gaseous Intercooling™ as well.

SUPPLEMENTAL FUEL DELIVERY

We have already addressed a major difference between 'us' & 'them', i.e., Gaseous Intercooling™ for 'us' versus mechanical intercooling for 'them'. Gaseous Intercooling™ or water injection contributes to the ideal air fuel ratio[4] under boost. Our supercharging kit utilizes a 15 GPH (gallons per hour) water injection nozzle. Water weighs 8.33 pounds per gallon at 60° F. A rule of thumb for calculating fuel injector size at WOT (wide-open throttle) is each horsepower requires 4/10's (.4) pound of fuel per hour[5]. Premium gasoline weighs 5.994 lbs./gal. Hence each gallon of gasoline can make 15 HP (5.994/. 4 = 15). Therefore our 15 gallon/hour water nozzle can contribute 225 HP (15 X 15 = 225) out of the total fuel requirement[5]. This is the reason we are able to utilize the stock fuel injectors on our Stage I kit and obtain such great fuel efficiency even under boost.

When supercharging a 1985 thru 1993 there is another fact you must be cognizant of: simultaneous or "batch" fired injection versus sequential injection. ALL 1985 thru 1993 Corvettes utilize simultaneous or "batch" fired injection, i.e., all 8 fuel injectors fire simultaneously every revolution (360 degrees[7]) of the engine. Newer engines (1994 & later) utilize sequential injection. At idle this means the typical injector on a sequential engine fires once every 720 degrees of crank rotation for about 20 milliseconds. Because the simultaneous injection or "batch fired" engine fires the injector twice for each power stroke, injector sizing is critical and limited. Putting 30 lb/hr injectors into an L98 is the equivalent of a 60 lb/hr injector in a sequential engine and can create havoc at idle because the PCM cannot limit the pulse width of the injector enough to maintain a 14.7:1 A/F ratio. If you want to make prodigious amounts of power on a 1985 thru 1993 Corvette you must consider the use of a modern aftermarket PCM.

If your engine is "batch fired" your choice of whose supercharging system you go with should be somewhat dictated by how the required extra fuel is delivered. Recall that a Carroll kit with Gaseous Intercooling™ requires less extra fuel per extra horsepower. Consequently you can make more power with a Carroll kit utilizing smaller injectors than our competitors. Ultimately more power means more fuel: sometimes a change of injectors and always a larger fuel pump(s). You should always use the smallest size injector that gets the job done – you'll get
better bottom end and mid range power with a smaller injector not to mention better gas mileage while cruising. Sizing an injector for peak power on a "batch" fired engine is a sure
formula for disaster! Our Stage I supercharging kit will deliver more average power under the power curve pound for pound of boost than any competitor. Our Stage I supercharging kit will deliver more miles per gallon while cruising (if this is important to you) than any competitor because we use the stock injector AND do NOT cool the intake charge until needed.

Now we need to address a very very important fact about injectors and FMU's. Most supercharging kits for 1985 thru 1996 Corvettes' utilize some sort of FMU or Fuel Mnagement Unit. The FMU increases fuel pressure with boost at a specified ratio, typically somewhere between 4:1 all the way up to 12:1 resulting in rail pressures from 70 to 100 psig !!! 1985 thru 1987 Corvettes utilize a Bosch or Rochester pintle style injector that can work with these elevated pressures. Beginning in 1988 and right thru 1996 Corvettes utilize the Delco Multech disc style injector and will not work reliably at elevated pressures. Much beyond 60 psig the injector may not open at all !!! So if you have added a FMU to a 1988 or newer Corvette you MUST change the injectors. The Ford Blue top 24 lb/hr saturated style injector is a good place to start keeping in mind the above caveat. If you choose the Ford Red top 30 lb/hr injector you should use an adjustable rail regulator and REDUCE the fuel pressure at idle on 1985 thru 1993 Corvettes. If you can't get the fuel pressure low enough at idle to keep the Block Learn at 112 or higher then machine a ring to fit under the regulator top raising the overall height and thus reducing spring pressure.

This brings us full circle to the in-tank fuel pump. Most kits include an extra in-line fuel pump. Without the booster pump the FMU will never see enough pressure to work. Even with the booster pump the in-tank Delco stock pump is marginal at best.

All of our C4 supercharging kits include a new powerful very quiet Bosch in-tank fuel pump that replaces the existing Delco. Installation on the C4 is simple and takes only minutes. External supplemental fuel pumps can produce an annoying "whine" that you must live with ALL the time while driving! We avoid the booster pump if we can, however eventually more power means more fuel. As you climb up the power ladder you will need larger injectors. These are included on Stages II thru IV. Notice we select 24 on Stage II and 27 lb/hr on Stage III thru IV for good reason!

FUEL PUMP(s)

A question that is often asked of me is, "don't I need to increase the size of the fuel line?" The answer is most often, "NO"! A 3/8"id fuel line (standard on all C4's) can easily support 1000 HP! The key to sufficient fuel supply is pumping power. As an example let's look at a flow of 1 gallon per minute at a required at the fuel rail pressure of 60 psig. That is enough fuel to support 720 HP. The pressure drop thru a 3/8"id line at 60 GPH is less than 1 psig[8]! Switching to a ½" id line would result in a pressure of about 1/10 of the 3/8" line. However, given sufficient pumping power, a 1 pound drop versus a .1 pound drop is insignificant. At 500 HP the pressure drop is even less.

Much more important is fuel pump selection. A C4 fuel pump can flow about 35 GPH at 55 psig. That's enough fuel to support about 420 HP. Note though that 55 psig is barely adequate at 5-7 psig of boost pressure. As boost pressure rises so must fuel pressure. If you are using a FMU a booster pump is mandatory.

All Carroll C4 kits include a new High Output Bosch in-tank fuel pump that can flow 60 gph @ 60 psig. That's enough fuel to support over 700 HP. When required we supply an additional Bosch fuel pump that mounts behind the license plate that can support 800 HP @ 90 psig or 600HP @ 120 psig!!! The reason we use the more expensive Bosch fuel pump(s) is that they are QUIET. I personally cannot live with fuel pump hum, whine and noise while cruising in an otherwise quiet Corvette.

IGNITION

Of extreme importance is spark plug selection. Stock heat range spark plugs can significantly contribute to detonation. Detonation (called 'ping' if slight or 'knock' if heavy) even for a second or two can 'crack' a cast piston at the higher engine RPM ranges and must be avoided at all costs! All Carroll kits include spark plugs.

The Corvette L98/LT1/LT4 eight cylinder engines with a distributor ABSOLUTELY require some sort of CDI (capacitor discharge ignition, e.g., Crane HI-6R or MSD 6A). The GM HEI and Opti-Spark systems simply cannot fire a supercharged engine[9]. The reason is simple. At a battery voltage of 13.6V past 5200 RPM there is insufficient time to saturate the ignition coil. Remember thru the distributor on an 8 cylinder engine the spark coil must charge and discharge every 90 degrees of crank rotation (720/8=90). At 6000 RPM this equates to 2.5 ms! A CDI ignition system overcomes the problem by raising the coil voltage from 13.6 to typically 400V. Power (watts) is equal to the voltage times the current. Hence you can see why a CDI system dramatically increases the available spark current in a much shorter time span. All Carroll kits (excepting Stage I - L98) include a Crane HI-6R and a Helicoil[10] wire set. Stock GM carbon core wires are not acceptable when using a CDI system.

PISTONS

All stock L98/LT1/LT4 Corvettes come equipped with "hyperutectic" pistons. Hyperutectic is a fancy way of saying cast. These cast pistons are extremely strong and light: maybe half the weight of a forged piston. Light pistons reduce the rotating mass which results in more useable power. The disadvantage to cast pistons is that they are fragile and subject to cracking. Forged pistons are denser (a result of forging as opposed to casting) and consequently less subject to cracking.

Engine detonation (ping or knock) results in a shock wave being sent down the cylinder while the piston is coming up the cylinder. The resulting noise you hear is the piston rattling in the cylinder. Detonation is extremely damaging. The piston rings collapse as the shock wave passes and the piston bangs against the cylinder wall creating the noise you hear. Not only is detonation damaging to the piston but it also results in pressurizing the crankcase and ultimately rod bearing and crank bearing damage.

Detonation at the higher engine RPM's can result in a cracked cast piston in less than a second. Once the piston cracks you are done. The engine will continue to run but there will be excessive blow-by even at idle. At higher power levels under boost you will typically push the oil dipstick right out of its' dipstick tube. Tying down the dipstick will not fix the problem. It is easy to tell if you have cracked a piston(s). At idle simply remove the engine oil fill cap. Any "puffing" (even w/o smoke) is a telltale sign of a cracked piston. More than one cracked piston will usually result in a rough idle as well.

Utilizing forged pistons may stop cracking them but it will not stop bearing damage and ultimately engine failure. Although the "hyperutectic" piston can handle the horsepower we recommend forged pistons above 425 crank HP because the detonation can come on so quickly and damage the cast piston.

ENGINE COOLANT

There are two things you should not do with a supercharged engine: use too much glycol and/or slow down the water pump.

NEVER use more than 40% glycol. Pound for pound water at its' higher specific gravity can carry away more heat (BTU's/LB) than a water-glycol mixture. At 50/50 water-glycol you have reduced the engines' cooling capacity 10%. A supercharged engine produces more power and hence more heat. In order to reject this heat a 60/40 mixture of water-glycol is more efficient. In fact, if you are having detonation or overheating problems try using 10% glycol (for corrosion protection). Naturally if the car is to see winter freezing weather you must use more. Also always use distilled water – never tap water full of minerals.

NEVER slow down the water pump with an under drive pulley set. This is a sure formula for increasing detonation. Without going into great detail you want what is called "turbulent" flow thru the heads and radiator. Turbulent flow picks up and rejects more heat than laminar flow. Turbulent flow results from high coolant flow velocity. It is critical to suppressing detonation that there be turbulent flow thru the heads. It is the turbulent flow around the combustion chamber coolant surface that quickly recondenses the tiny boiling bubbles resulting from the high combustion chamber temperatures. Do not believe the old "wife's tale" about the water going thru the engine or radiator too quickly and unable to transfer heat. This is a complete falsehood! The engine's water pump is another type of "centrifugal pump". Like the supercharger you do not want the water pump to cavitate. This is unlikely even at high engine RPM's unless there is a restriction on the suction side of the water pump. So make sure the hose to the water pump is 'big' and 'stiff'.

HARMONIC BALANCER

All L98's utilize a keyed crank and balancer and as such there are no "spun balancer" issues. Beginning with the LT1 (1992) GM in its' infinite wisdom decided to eliminate the keyway on the hub for the balancer/crank pulley. The keyway on the crank is still there! It is my belief GM did this to annoy us supercharging freaks and make our lives most difficult – just kidding! What this means to you is that the pressed on hub is at risk of coming loose when you add the additional load of a blower. Remember the blower can easily draw 50 HP – 100 HP off the crank! All Carroll LT1/LT4 supercharger systems include an ATI keyed SuperDamper™. There is a distinct advantage to using this damper besides it being keyed – it enhances HP and engine life. This damper is compatible with all Vortech and ProCharger supercharger kits. Note here ATI refers to ATI Performance Products Inc. out of MD and not ATI of Accessible Technologies Inc. the ProCharger people.

PCM PROGRAMMING

Regardless of whose supercharging system you purchase the ECM (Engine Management Computer) must be re-programmed. On newer Vettes beginning in 1994 the ECM became the PCM (Power Train Computer) because it controls more functions than just the lock-up torque converter on the automatic transmission. On the 1985 thru 1991 L98 and 1992/93 LT1 Corvettes every one of our kits includes a new Mem-Cal pack with a custom proprietary e-prom. You simply pop out the existing Mem-Cal pack (save it in case you ever sell your Vette) and pop in the new one – done ! On 1994 thru 1996 LT1/LT4 Corvettes we re-flash your PCM with our own custom program tailored for our system.

APPEARANCE FUNCTION & FORM

Our design philosophy is a little different than our competitors. We believe that most Corvette owners are very picky and do not wish to trade off beauty or amenities for more power. Hence many of our engineering decisions were based upon this philosophy. We think our professional C4 supercharging system has accomplished this goal. Our hardware is beautiful to look at as well as beautifully finished. Our hardware is quiet and very functional. Our supercharging system is easy to service.

UPGRADEABLE

Obviously anybody's kit can be upgraded with enough time and effort. However we are proud of the fact that we publish our formulas for more power. You are welcome to use them regardless of whose system you purchase.

EASE OF INSTALLATION

Manufacturers tend to drastically minimize their installation times in order to make the sale: we don't !!! Most stated installation hours are unreal for two reasons. First the hours are based upon repetitive installs where the installer has it down to a science after doing many installs. The installer has learned all of the appropriate shortcuts and may have special tools. Second the installer is being paid and must hustle in order to stay competitive and make money. Being profitable is an essential ingredient of staying in business. Being profitable is not necessarily equated to a quality installation. A clean professional install takes time. There is nothing difficult about installing one of our kits but it does take a lot of time (typically 40 hours) to do a quality and beautiful looking installation. You can purchase one of our Installation Guides for your C4 (costs may be applied to future kit purchase). It contains well over a 100 pages. It is full of detailed photos and descriptions. It contains wiring diagrams and some OEM pages. Some people may be overwhelmed by its' size, however it guarantees you a factory like install. Additionally we feel it is important to be honest about the install hours, particularly if you are paying for the install. If the installer quotes less hours than we state he may take short cuts when under the gun to be profitable.

WARRANTY

All of our parts are unconditionally guaranteed for one year less shipping. Our warranty does not include nor cover inconsequential damage to your vehicle. If you destroy your engine you are responsible !!! Stage I kits may have the supercharger warranty extended to 3 years thru Vortech Engineering.

"FINISHED PRODUCT"

A "Finished Product" is a piece of hardware that has gone thru many generations of development. Remember the old adage of not buying a new car when first introduced? No matter how good the engineering there will always be bugs. It is impossible to turn out a perfect product the first time, or even the second time, or even the Nth time? When you buy a new car at the end of its' life cycle (for instance the 1996 LT1) you are buying what GM would call a "Finished Product". Not perhaps the most technically advanced but refined and reliable. All of the bugs have been worked out.

So, does experience count? If it does Carroll has it!!! We have been building and selling these kits with the Vortech blower since 1990: longer than any other manufacturer. We first started building these kits with the Paxton ball drive blower in 1987. That is almost 17 years ! Do you think we've gotten it right?

DOES THE SHOE FIT THE FOOT ?

Your first question must be do I want a reliable daily street driver or an all out killer track vehicle. Your next choice is how much power (and be honest here) do you want to make. Next perhaps does fuel economy matter to you? Do you want the exterior of your Corvette to appear stock? Finally, is noise a deciding factor, i.e., do you want to be noticed or is it more important to you that your Corvette sound exactly like the original factory unit?

In my opinion if all you need or want is an extra 100 HP and want to maintain excellent fuel economy then by all means go with the Carroll Stage I utilizing a Vortech SQ quiet trim supercharger – you won't experience buyer's remorse! Also, it is upgradeable to any power level you may desire in the future. Other than occasionally filling the water bladder for the Gaseous Intercooling™ there are no trade offs in reliability, derivability, noise or fuel economy! After reviewing the above you decide which 'shoe' fits your 'foot'.

CONCLUSION

It is my belief that the Carroll system with its' Gaseous Intercooling™ technology is by far your best choice for a reliable daily driver. It is a beautiful piece of artwork. There is no bulky intercooler, no dangerous pinging off the line, and no compromising of your A/C on a hot summer day in stop and go traffic. It is extremely easy to service, offers awesome fuel economy, and is very stealth, i.e. no blower whine!

However, if you must have a supercharger with a self-contained lubrication system and an air to air intercooler than by all means purchase the ATI !!! Let me quote you a price – we do not have the "not invented here disease"; we simply want your money LOL !!!

FOOTNOTES:

1. A White Paper is supported throughout with technical engineering documentation used to prove the presented ideas and/or facts. My intent with this paper is to simplify the presentation for the average reader as well as promote my product(s) and hence I coin the term "Semi-White Paper".
2. Centrifugal Fan Laws: American Society Of Mechanical Engineers
3. The detonation was the result of the increased charge density and the then current combustion chamber design: not charge air heat.
4. Ideal A/F ratio under boost for max power should be between 12.5:1 and 13.0:1.
5. Carburetored engines require ½ pound of fuel per hour @ WOT.
6. The High-Speed Internal Combustion Engine by H. Ricardo
7. A 4-stroke engine rotates 720° For each power stroke. The intake valve at idle is only open for a few degrees out of the 720. Hence the fuel puddles at the intake valve on a simultaneously fired engine until the valve opens.
8. Cameron Hydraulic Data by Ingersoll-Rand
9. Excepting our Stage I L98 where the engine RPM does not exceed 5200.
10. Helicoil ignition wires incorporate a thin stainless steel wire spirally wound around the outside of the carbon core. The carbon core must be retained to suppress ignition noise. All major manufacturers of aftermarket performance wire sets utilize this technique.
11. 6000 revs/min x 1min/60sec x1sec/1000ms = 6revs/60ms or 60ms/6revs or 10ms/rev @ 6000 engine RPM
    HENCE @ 6000 RPM = 20ms MAX time to inject fuel
    5000 RPM = 24ms MAX time to inject fuel
    4000 RPM = 30ms MAX time to inject fuel
    3000 RPM = 40ms MAX time to inject fuel
    NOTE: 1985 THRU 1993 SCANNERS READ INJECTOR PULSEWIDTH PER REVOLUTION, i.e. ½ of above table. Example at 6000 RPM if your scanner reads 10ms PW you are at 100%. Beginning 1994 scanners read PW per 720 degrees. Example @ 6000 RPM if your scanner reads 20ms PW you are at 100%. Any PW number greater than that shown at the given RPM above is meaningless.

Corvette Time Slips

```
          WELCOME TO
   OLD BRIDGE TWP. RACEWAY PARK
        ENGLISHTOWN, NJ

3:06 PM
16/NOV/93

Temp F.                    .936
Relative Humidity          .936
Absolute Barometer         .936

----------    LEFT  .....  RIGHT

Car # ...
Class ...
Idx/Rec..
Ov/Un ...     11819          0

DIAL  ...
R/T   ...      .936
60'   ...     1.774
330   ...     5.046
660   ...     7.671
MPH   ...     93.31
1000  ...     9.933
1/4   ...    11.819
MPH   ...    119.95

..........  CompuLink System III
```

TIME SLIP #1

1992 LT1 CORVETTE • BLUEPRINTED "350" ENGINE • STOCK CAMSHAFT • STOCK FUEL INJECTORS • CARROLL SUPER-CHARGING SYSTEM

```
        WELCOME TO ATCO
     TONIGHT IS SPONSORED BY
       GAMBARDELLA RACING
          609-728-1869

6:06 PM
25/OCT/96

---------    LEFT  .....   RIGHT

Car # ...     14               8
Class ...

DIAL  ...
R/T   ...  1.208            .700
60'   ...  1.755           2.137
330   ...  5.058           6.331
660   ...  7.777           9.863
MPH   ...  89.97           68.80
990   ... 10.061          12.878
1/4   ... 12.090          15.591
MPH   ... 117.05           85.87

Left  1st  2.993
Rnd # T  199/200

........ CompuLink System IIIp
```

TIME SLIP #3

1996 LT1 CORVETTE • COMPLETELY STOCK ENGINE • 3:54 REAR • CARROLL SUPERCHARGING SYSTEM

```
SAT. OCT.5, VETTE DAY.  SUN. OCT. 6, PRO STICK, REG. RACE & PTS. OCT.
12-13, FORD DAY,  OCT. 20, TOP DOG MEET. SPO. DISALVATORE REALTY, MACH.
**********************************************************************
                 WELCOME TO 75&80 DRAG A WAY
                     MONROVIA, MARYLAND
                      (301) 865 - 5102
**********************************************************************
*  Class    TIME TRIALS             **                  Round : 001

*     Car No. 000062 Dial  0.000    **     Car No. 000062 Dial  0.000

*     ET 1/4 Mile      11.6601      **     ET 1/4 Mile      11.6727

*     Reaction Time     0.4012     A**A    Reaction Time     0.4576

*     Speed 1/4 Mile  120.9583     A**A    Speed 1/4 Mile  122.7519

*  60  ft.  1.7644 330 ft.         A**A  60  ft.  1.7548 330 ft.

* 1/8 Mile  7.5486 1000 ft.        R**G 1/8 Mile  7.5878 1000 ft.

*        First to Finish            **       First to Finish

                    5-Oct-96  1:40:31 pm

****************** COMPUDEX TIMING SYSTEM  (703) 788-3579 *********0201********
```

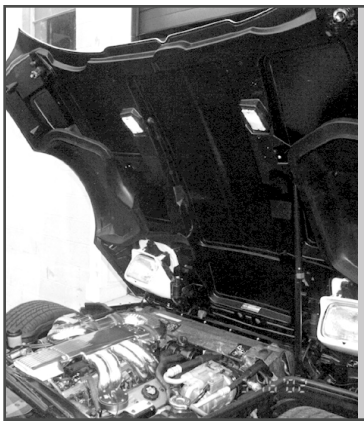
TIME SLIP #2

1992 LT1 CORVETTE • "383" ENGINE • 3.07:1 REAR END • STOCK TORQUE CONVERTER • CARROLL SUPERCHARGING SYSTEM

```
          ATCO RACEWAY
            *******
       NHRA NATIONAL OPEN
          presented by
     MEISSNER CHEVY * OLDS
         APRIL 11, 1999

10:02 PM
12/APR/99

   GOOD YEAR      BUDWEISER

Elwin      LEFT  .....  RIGHT

Car # ...     56            51
Class ...
Idx/Rec..
Ov/Un ...  11406         14879

DIAL  ...
R/T   ...    .788          .786
60'   ...   1.751         2.630
330   ...   4.810         6.537
1/8   ...   7.352         9.720
MPH   ...   96.49         76.83
990   ...   9.477        12.437
1/4   ...  11.406        14.879
MPH   ...  119.97         95.50

Left  1st  3.471
Compulink AUTOSTART OFF

Rnd # TO  560/561

.......... CompuLink StarTrak
```

TIME SLIP #4

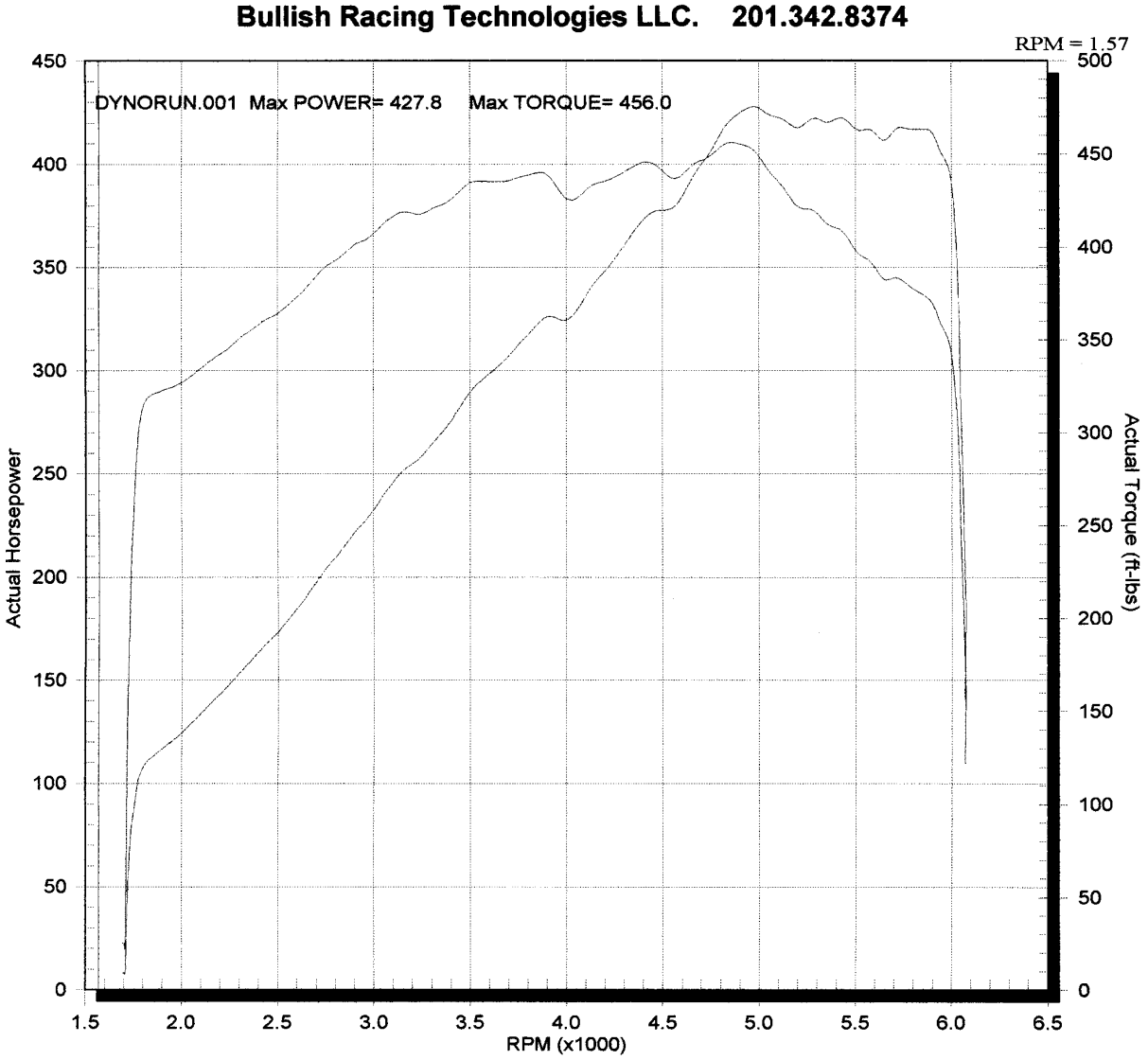
1987 L98 CORVETTE • "383" ENGINE • TPIS MINI-TUNNEL RAM • CARROLL SUPERCHARGING SYSTEM



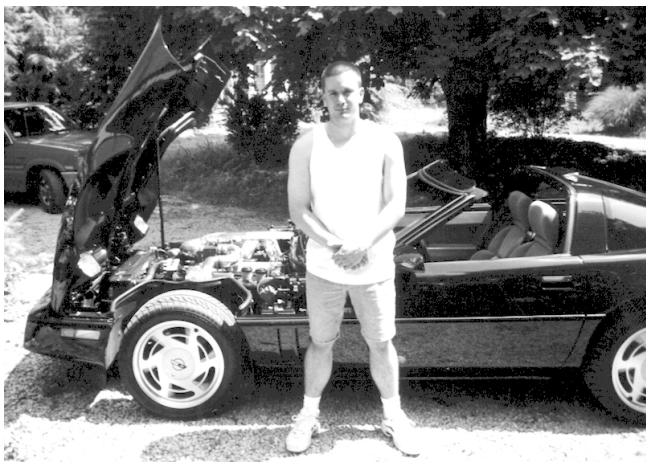
STAGE III REAR WHEEL HORSEPOWER FIGURES

FOR THE CARROLL SUPERCHARGED C4-L98 CORVETTE WITH GASEOUS INTERCOOLING™

DYNORUN.001 L98 3/9/02 1:59:30 PM



Customer Satisfaction Guaranteed



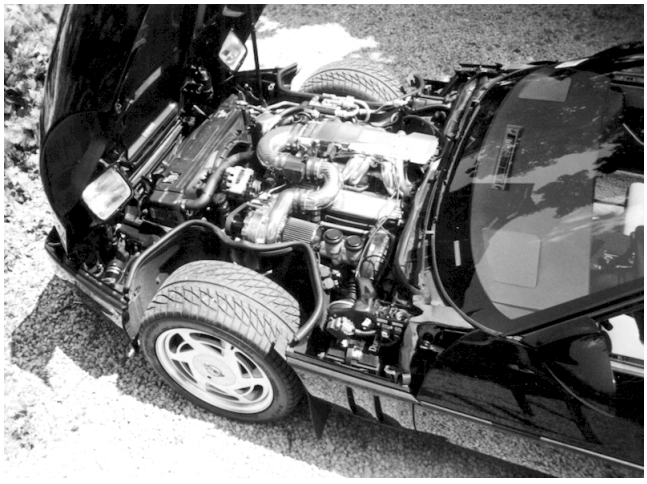
May 31, 2001

Greg,

Thank you for you follow-up call. I am enjoying my car very much. Not only is it faster, but it actually runs smoother. The work was done with exceptional attention to detail. I have now attempted to modify two tuned port engines by conventional means (heads, intake, computer, exhaust, etc.) with very little performance gains. The supercharger is just what I wanted. As you know I was unhappy with the delays that we had but I must say that it was worth the wait. I am looking forward to getting my car to the track to see the results. I am hopeful that I can get into the 12's. We will see.

Mark Wright
Wakefield, RI
1989 L98 Corvette

P.S. Extra thanks to Sheryl. Because she was able to meet with me on a Saturday night so I could get my car I had a full weekend to enjoy it!



Customer Satisfaction Guaranteed

Greg Carroll
August 31, 1992
Page 2

When I explained the modifications, including supercharging, TPIS modifications, exhaust system and ignition, and the difference in the overall performance of the car, the service manager said, "Who the Hell is this guy, the workmanship and detail is perfect." Next came the big test. The owner previously owned a ZR1 and was now driving a new convertible. I gave him the keys and we left for a trial run. He was just as excited as I was when I drove the car for the first time after the modifications were completed. He said my car was superior to anything he had ever driven including the ZR1. When we went back to the showroom, the owner rounded up his salesmen and exclaimed, "Your ought to drive that car; What a car!" Greg, I think you may have another customer.

In closing, there is not much more to be said, except a sincere thank you for a job well done. Maybe there's a 406 in my future; who needs GM. You'll just keep making it better.

Once again, thanks.

Good Luck in the Future,

Richard Trevethan

P.S. If you would like me to speak to anyone or use me for a reference, please feel free to do so.

Subject: Urgent Request..
Date: Mon, 16 Oct 2000 12:32:21 -0400
From: "Woodin, Scott" <SWoodin@kforce.com>
To: "'supercar@bellatlantic.net'" <supercar@bellatlantic.net>

To a technician..
I currently have a 61b. Vortech Supercharging Carroll kit on my 1987 Corvette.... The car has over 100,000 miles on it and the engine recently "let go"... I have to now either have the motor completely rebuilt or replace it with a new crate motor... It makes more sense to me to have it replaced with a crate motor and would like suggestions as to what you recommend..... I'm looking to spend no more than $5,000 on the motor but would like the most bang for the buck WITHOUT sacrificing reliability as this car is driven daily... Can you please tell me what would work best for my application ?? Any testing done, feedback from customers, etc...

I am extremely happy with the kit I have had on my Corvette for the past 2 years now... The engine had an intake manifold leak which ultimately destroyed the motor.....

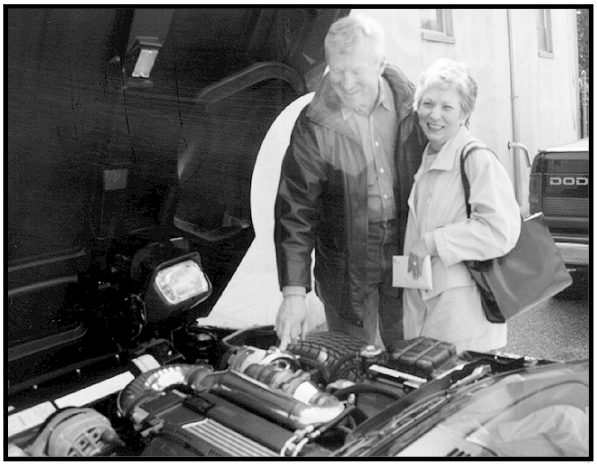
Thank you,

Scott Woodin
Associate Director
Romac International / KForce.com
Westboro, MA

email:swoodin@kforce.com

Customer Satisfaction Guaranteed

THOMAS FINN
1996 LT4 CORVETTE
Garden City, NY



Subject: Super Product!
Date: Fri, 14 May 1999 02:10:41 EDT
From: KM6ZS@aol.com
To: carroll@advanix.net

Three catalogs and almost two years later, you guys finally reeled me in. I just received the LT1 stage 1 kit I ordered 2 weeks ago, and I just wanted to tell you what a superb kit you guys have put together. All the parts and the instruction manuals are absolutely first class. I briefly looked over the manuals and have a couple of questions before I start on this project. In your catalog, you state that at WOT, each 12HP requires 1GPH of fuel supply. Assuming the stock OEM fuel pump is rated at 27GPH, does this mean that it can only supply enough fuel for 324HP? (27GPHX12HP=324HP) Should I uprade my fuel pump even for the stage 1 kit which is rated at 425HP? (450HP/12HP=37.5GPH) I am estimating a 25HP increase due to headers and Borla exhaust system. And finally, would not relocating the IAT sensor in the large U tube provide a more accurate tempature reading of the air going into the engine? Seems to me, that mounting the IAT sensor in the intake manifold would cause elevated air tempature readings due to engine heat. Similar problem that the L98 motors have. I realize there is no coolant running through this intake manifold, but it still gets hot.

Thanks, Wayland Lee

Subject: 96 LT-4
Date: Thu, 8 Apr 1999 09:06:41 -0400
From: "Finn, Thomas" <TFinn@nt.avis.com>
To: "'carroll@advanix.net'" <carroll@advanix.net>

Good morning from Phoenix. The car drove very well on the way home from Long Island. I drove it one time after that and it seems that all is in order. Your conversion is exactly what the Corvette needed. It now drives the way the designing engineers wish it drove.

Thanks for the excellent work.

Customer Satisfaction Guaranteed

Subject: Re: Stage V or VI LT1 kits
Date: Thu, 25 Feb 1999 09:50:08 -0600
From: Bryan Corbitt <marshall@macomb.com>
To: carroll@advanix.net

Mr. Carroll
Thank you for your response. My mailing address is:

RR 2 Box 50 Heyworth, IL 61745

I currently own a 1978 Silver Anniversary Corvette Coupe. However, I have recently installed a 1995 LT1 engine and 4L60E transmission in place of the original setup. I know much can be done with the LT1 and it is a strong base for a wicked street car. I have heard through the VetteNet that your supercharging systems are of the finest quality; a comment I have not heard about any other supercharger manufacturer. I look forward to receiving the information and thank you for your time.

Bryan Corbitt

Subject: Satisfied Customer
Date: Wed, 14 Oct 1998 13:27:05 -0700
From: "R.D. St.Pierre" <rene@esd.sgi.com>
To: carroll@intercall.com

Hi Greg,

It's been a long time since we talked. That's mostly because of the fact that the supercharging kit that I purchased from your company more than 8 years ago has been super reliable. I installed this kit myself into my 1986 Corvette and have been running it hard ever since. I've only had a very minor problem with a sticking checkvalve on the water injection system which was replaced free of charge by SmartPump. I just wanted to let you know of my complete satisfaction with your products and of the fact that I have put over 70K miles on my vehicle since installation and it runs as strong as the day I bought it. Being a quality/reliability engineer by profession, I tend to demand more out of products that I buy than what they are actually designed for. The robustness and performance of this product has impressed even me.

Thanks,
rene@esd.sgi.com

Customer Satisfaction Guaranteed

July 13, 1994

Mr. Geoff Skorupa
Performance Technical Center, Inc.
1510 Midway Court
Suite E-10
Elk Grove Village, IL 60007

Dear Geoff:

Just wanted to take a minute to bring you up to date on my 1993 Corvette. Since my walk down the line in Bolling Green, KY in March of 1993 and your installation of the Greg Carroll Vortech Supercharging Kit ---I'm now at 9,500 miles! I wanted you to know how satisfied I am with the great job your staff and you professionally performed. Most people can't believe that this wasn't a factory installed option. I have not been to the track yet to register a E.T., but on the street the supercharger has met all of my performance expectations. Best of all, even with my new Dana 44, 3:45 gear and shift kit in the transmission, I am averaging 20.6 miles per gallon.

Keep up the good work and add my name to your list of most satisfied customers.

Thanks for all your help.

Sincerely,

Clifford Grill
870 Belmar Lane
Buffalo Grove, IL 60089

cc: Mr. Gregg Carroll
Carroll Supercharging Co., Inc.
14 Doty Road
Haskell, NJ 07420

Customer Satisfaction Guaranteed

LOUIS ZONA
CERTIFIED PUBLIC ACCOUNTANT

TELEPHONE (412) 843-9380
FAX (412) 843-2857

2571 DARLINGTON ROAD
BEAVER FALLS, PENNSYLVANIA 15010

October 04, 1994

Mr. Greg Carroll
Carroll Supercharging Co.
14 Doty Road
Haskell, New Jersey 07420

Dear Greg,

As you know, I've just had my third Carroll Supercharger installed. My first was on my 1987 L98. Then I put a Paxton on my 1992 LT1 and then upgraded to a full H2O injection Vortech B with superfueler, Borla exhaust system, extrude honed exhausts and intakes.

As a CPA getting the best use of my dollar is second nature. I have read hundreds of magazine articles and talked to a similar number of people over the years on how to get cost effective performance. Having 5 years of Carroll Supercharging experience has me convinced that there is absolutely no more HP, reliability and performance for the dollar than your supercharging systems. Why anyone would spend tens of thousands more for lesser performance is probably due to the lack of knowledge and/or skepticism of people on how well your systems perform.

Greg, I would encourage any potential purchaser to do as I did: call a Carroll system owner. I would not recommend just putting an aftermarket supercharger on since things (that I have discovered) like spark retard, hot cylinders, lean mixtures, and fuel management are not adequately addressed by the manufacturers of superchargers. I have found that H2O injection is a must.

I really appreciate what your company has done for me. There is no way I could have afforded the "usual" cost to get a 500 HP monster that gets 30 mpg in highway driving and behaves like my 6-cylinder Acclaim.

Thanks again and should any future potential customer wish to talk to a triple satisfied user I would be glad to talk with them.

Very truly yours,

Louis Zona, CPA

Customer Satisfaction Guaranteed

August 31, 1992

Greg Carroll, President
Carroll Supercharging Co., Inc.
14 Doty Road
Haskell, New Jersey 07420

Dear Greg:

I have driven a Corvette for many years. In 1991, my 1988 roadster had 10,000 miles on it and guess what I got; ZR1 Fever. I wanted a faster car, but my wife didn't like the price or the car. She still wanted a convertible. I quickly said good-bye to the ZR1. So the next step was to get a new LT1. That made more sense to my wife. I would have a car that was faster and she would have the convertible. This would make us both happy; Right? Wrong? After looking at the LT1, I realized I was getting an air bag, a better stereo system, new interior and somewhat better performance, but the price-Well-OUCH! That much for so little performance.

We started thinking about the car I had. We both liked it and it only had 10,000 miles on it. I had attended many Corvette shows and had seen your products. I thought this would be the perfect solution for me because I was still happy with my car. So I went to your shop and met with you. I was very impressed with your straight forwardness, your immaculate shop, your staff, and your customers. Right there, I made the decision to proceed with supercharging my Corvette. In making this decision, I realized there would be many benefits; the dollar cost was less than the LT1, I could keep the car I had, and my wife would still have the convertible in her favorite color.

Needless to say, I am absolutely thrilled with the car. You've taken a good car and turned it into a great automobile. In performance terms, 0-60 times in the low fours and quarter mile times in the low to mid twelves. We also have a car that delivers total performance that is as much at home in everyday traffic as it is on a racetrack or when I feel like blowing some people's doors off. The car still delivers 22-23 mpg and is environmentally clean and trouble free.

Your greatest compliment came about a week ago when I went back to see the owner of my local Chevy dealer. He also drives a Corvette.

Customer Satisfaction Guaranteed

WIGGLESWORTH
SAAB

May 18, 1989

Greg Carroll
Carroll Supercharging Company
14 Doty Road
Haskell, New Jersey 07420

Dear Greg,

I have been driving Corvettes for the last 22 years. My current car is a 1989 Corvette convertible, with automatic transmission and a 2:73 rear end. Since installing your supercharger kit in mid March, this Corvette is without a doubt the fastest, most responsive and exciting car I have ever driven.

On a recent trip to Florida, I took the car to Miami-Hollywood Dragway on April 26th. On my first two runs, I pulled a 13.0 and 12.9 respectively.

Due to track conditions, I waited an hour before my third and final run, which allowed the engine to cool down and the outside temperature was about 65 degrees. When I pulled up to the staging lane I saw a 1989 Callaway twin turbo being staged next to me. I knew this guy was going to be my car's first real challenge! I was so pumped up to beat this guy, that when we took off down the strip, I thought I had redlighted, but not so. I ran a 12.7/112.5. The Callaway ran a very respectable 12.9

In the pit area, after the race, the Callaway driver and about 20 other people poked around under the hood of my car for at least an hour.

This was undoubtedly the most exciting evening of my life, and one I am sure the the Callaway driver and I will never forget.

Your supercharger kit is by far the best investment in horsepower, that I have ever made.

Thanks for all your help!

Charles Wigglesworth, President
Wigglesworth Imports, Inc.

CW/bl

Customer Satisfaction Guaranteed

July 27th, 1990

Greg,

It's not everyday that I encounter a product or service that delivers what it promises, but the Carroll Supercharging kit exceeded my expectations in the areas of performance and case of installation.

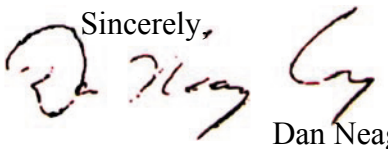
I spent a fair amount of time talking to and looking at literature from companies that offer performance modifications for the Corvette and frankly, some outfits act as if you're wasting their time when you call them. Such was not the case when I called you at your company. You took time to talk with me about my performance goals for my Corvette and then mailed me a very complete info package on the Carroll Supercharger. After that I was sold!

Installation of the supercharger was easy and straightforward thanks in part to the excellent installation manual and a VERY complete kit that you sent me. No chasing around on Sunday afternoon trying to find some weird bolt or connector that was not included in the supercharger kit.

The supercharger really enhances the appearance of the Corvette's engine bay and what it does for the performance of the car is well, Outstanding!

So, the next time the performance bug bites me, I will be in touch with your company. It only makes sense to patronize those companies that treat you right and deliver what they promise.

Sincerely,



Dan Neagley

Customer Satisfaction Guaranteed

George Findan
130 Cherry Hill Drive
Seekonk, Ma. 02771

June 22, 1990

The Carroll Superchanging Co., INc.
14 Doty Road
Haskell, NJ. 07420

Dear Greg:

Enclosed is our catalogue that I told you I would send. I thought you would find the miniature car replicas interesting.

I'm really enjoying the Vette with all the new power. The engine feels much smoother at all speeds including the idle. The word that comes to mind is Liquid Smooth. The car really jumps out. I find that when in second gear overdrive and you punch out of overdrive and the supercharger kicks in, the car flies.

I'd like to add that your people did a real professional job on the installation, it looks beautiful. In fact, a service manager at Sears wanted to know if the work was done by Chevrolet.

I can't say I've had any competition yet, but I did hassle a 944 Porsche Turbo but I think when he heard the supercharger whistle he backed off and refused to play.

Greg, it was a pleasure meeting you and your people and I was very impressed with your operation.

Best of Luck,

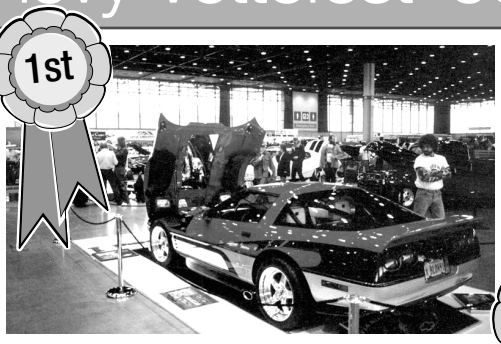
George Findan

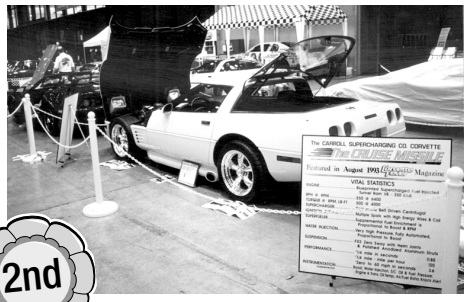
P.S. I find that because the engine red lines so fast in 1st gear that you have to keep an eye on the tach, so that the engine doesn't shut off, no more playing it by ear.

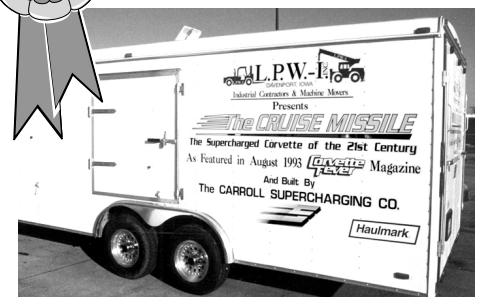
Chicago Chevy Vettefest '99

1ST & 2ND PLACE TROPHIES WENT TO CORVETTES SUPERCHARGED BY THE CARROLL SUPERCHARGING COMPANY!!!

WOW!







Satisfied Customers

Satisfied Customers

ABOVE RIGHT AND ABOVE FAR RIGHT
Tom DeBaugh's 1993 LT1 Corvette

RIGHT
Elwin Butcher's 1987 L98 Corvette

BOTTOM FAR RIGHT
Mats Hansson & friends visiting from TPIS in SWEDEN

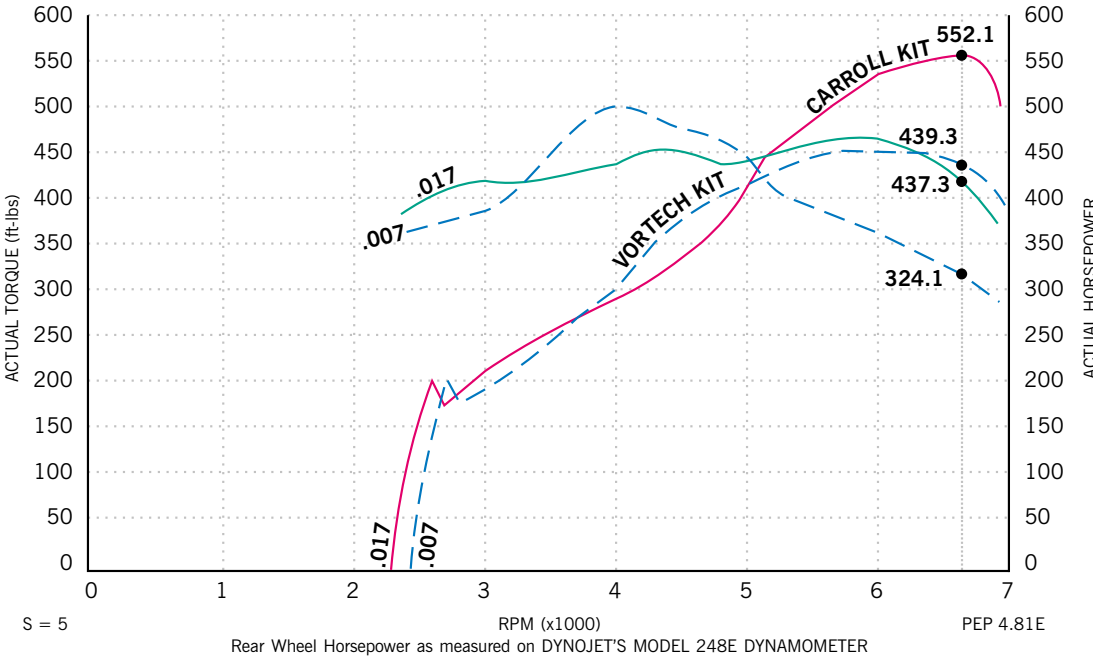
Carroll Forward Rotation LT1 Supercharger System vs. Vortech Reverse Rotation LT1 Supercharger System

FOR THE CARROLL SUPERCHARGED C4-L98 CORVETTE WITH GASEOUS INTERCOOLING™

DYNORUN.007 – 383 ENGINE USING VORTECH REVERSE ROTATION KIT
(Note: Could not prevent belt slippage at high engine RPM)
DYNORUN.017 – SAME 383 ENGINE USING CARROLL KIT

VORTECH DYNORUN.007 66.1°F 29.25–0.22 in.Hg. 600 ft.
Max TORQUE = 496.6 Max POWER = 450.0

CARROLL DYNORUN.017 65.9°F 29.30–0.35 in.Hg. 600 ft.
Max TORQUE = 464.6 Max POWER = 552.2



S = 5 PEP 4.81E

Rear Wheel Horsepower as measured on DYNOJET'S MODEL 248E DYNAMOMETER

VEHICLE & SPECIFICATIONS

- 1994 CORVETTE
- 383 CUBIC INCHES
- 9.0:1 COMPRESSION RATIO
- CNC MACHINED LT1 HEADS
- BOOST PRESSURE 10 P.S.I. PEAK
- SUPERFUELER™/MACROFUELER™
- 6:1 FMU
- 24 LB. INJECTORS
- CAM GM P/N 12370847
- VORTECH KIT REVERSE ROTATION "S" TRIM
- CARROLL KIT FORWARD ROTATION "S" TRIM

INSTALLATION & DYNO TEST INFORMATION

DYNO TESTED BY
LEE'S PERFORMANCE CENTER • 704–599–1507

OWNER:
MIKE COFFIN • 336–676–1789

INSTALLER:
ROCKY VIRACOLA
ROCKY'S PERFORMANCE MOTOR SPORTS
CHARLOTTE, NC • 704–596–0070

BlowerWorks™ Professional Supercharging Systems

FOR 1992 THRU 1996 LT1 & LT4 CORVETTES

BlowerWorks™ CORVETTE LT1 SUPERCHARGING SYSTEM FOR 1992–1996 MODELS PART NO. 300MXXV

All necessary hardware to effect a complete and operational supercharged vehicle including, but not limited to: recalibrated EPROM for 1992/93 vehicles or a PCM reflash for '94–'96 vehicles; 3-way engine coolant thermostat, capacitor discharge ignition system and custom wiring harness, spark plugs, a set of exact length 8mm stainless steel helicoil ignition wires, surge valve, high-output in-tank fuel pump, new fuel injectors, new 6 rib + 6 rib keyed harmonic balancer (ATI Super Damper), a forward rotation Vortech "Quiet Trim" polished supercharger, and a gray anodized aluminum supercharger bracket with auto belt tensioner. Our world renown fully illustrated INSTALLATION GUIDE is included to help you obtain the most performance from your supercharged Corvette. You do not have to buy or purchase a single extra item when you purchase our system! Best of all the entire system is guaranteed for 1 year.

50 STATE LEGAL CARB # D-281
450 H.P. @ 5750 RPM
$5495

BlowerWorks™ CORVETTE LT4 SUPERCHARGING SYSTEM FOR 1996 GRAND SPORT PART NO. 300MLT4V

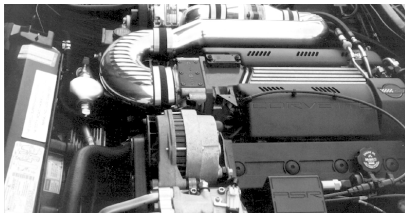
All necessary hardware to effect a complete and operational supercharged vehicle including, but not limited to: PCM reflash, 3-way engine coolant thermostat, capacitor discharge ignition system and custom wire harness, spark plugs, a set of exact length 8mm stainless steel helicoil ignition wires, surge valve, high-output in-tank fuel pump, 36 lb./hr. injectors, new 6 rib + 6 rib keyed harmonic balancer (ATI Super Damper), a forward rotation Vortech "Quiet Trim" polished supercharger, and a gray anodized aluminum supercharger bracket with auto belt tensioner. A GEN-IV Deluxe Gaseous Intercooling™ System completes this kit. Our world renown fully illustrated INSTALLATION GUIDE is included to help you obtain the most performance from your supercharged Corvette. You do not have to buy or purchase a single extra item when you purchase our system! Best of all the entire system is guaranteed for 1 year.

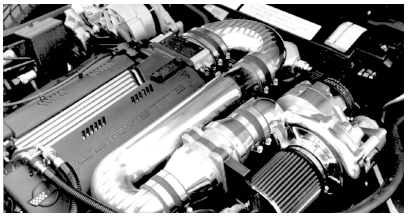
50 STATE LEGAL CARB # D-281
500 H.P. @ 6250 RPM
$6495

LT1 LT4

COMPLETE LT1 SUPERCHARGING SYSTEM

Installation Shots
Typical completed installions.





BlowerWorks™ *Recipes for Power*
FOR LT1/LT4 CORVETTES

LT1 STAGE I
405 H.P. @ 5750 RPM WITH 8 LBS. BOOST PRESSURE*
MSRP $5495

STAGE I REPRESENTS OUR BASE SUPERCHARGING SYSTEM FOR LT1 CORVETTES. THE KIT INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING MAJOR COMPONENTS:

- 3.75" SUPERCHARGER DRIVE PULLEY & BELT
- RACETRONIX F.P. WIRING HARNESS
- IN-TANK GSS-340M FUEL PUMP
- IN-LINE GSL-392 FUEL PUMP
- CRANE HI-6R IGNITION SYSTEM & CUSTOM HARNESS
- CHAMPION 7401 SPARK PLUGS
- TAYLOR 8mm CUSTOM LENGTH IGNITION WIRES
- CNC ANODIZED ALUMINUM BRACKETRY
- CUSTOM ATI SUPER DAMPER

FOR '92 – '93 LTIs
- 24 LB/HR. FUEL INJECTORS
- CUSTOM MADE SUPER DAMPER
- 4:1 FMU
- STAGE I MEM CAL PACK

FOR '94 – '96 LTIs
- STAGE I PCM REFLASH
- 36 LB/HR INJECTORS

LT1 STAGE II
450 H.P. @ 5750 RPM WITH 8 LBS. BOOST PRESSURE*
MSRP $1295 (IF DONE W/ STAGE I)

- GEN-IV DELUXE GASEOUS INTERCOOLING™ SYSTEM WITH 15 GPH WATER/ALKY NOZZLE

FOR '92 – '93 LTIs
- STAGE II EPROM

FOR '94 – '96 LTIs
- STAGE II PCM REFLASH

LT1 STAGE III
480 H.P. @ 6000 RPM WITH 10 LBS. BOOST PRESSURE*†‡
MSRP $595 (IF DONE W/ STAGES I & II)

- 3.50" SUPERCHARGER DRIVE PULLEY & BELT
- DUAL COIL CONCENTRIC VALVE SPRINGS
- 1.5 RATIO NEEDLE BEARING ROLLER ROCKERS WITH 7/16" STUDS
- 16 GPH WATER/ALKY NOZZLE

FOR '92 – '93 LTIs
- STAGE III EPROM 6250 RPM
- 6:1 FMU RECALIBRATION KIT

FOR '94 – '96 LTIs
- STAGE III PCM REFLASH 6250 RPM

MAY REQUIRE BORLA OR POWER EFFECTS, OR SIDE EFFECTS EXHAUST TO REACH QUOTED HORSEPOWER.

LT1 STAGE IV
525 H.P. @ 6000 RPM WITH 12 LBS. BOOST PRESSURE*†‡
MSRP $3495 (IF DONE W/ STAGES I, II & III)

- 3.25" SUPERCHARGER DRIVE PULLEY & BELT
- TPIS 4 INTO 1 FULL LENGTH HEADERS HPC COATED INSIDE & OUT
- 58mm THROTTLE BODY
- POWER EFFECTS CAT BACK EXHAUST SYSTEM
- RANDOM TECHNOLOGIES HIGH FLOW CAT
- 18 GPH WATER/ALKY NOZZLE

FOR '92 – '93 LTIs
- 30 LB/HR FUEL INJECTORS
- STAGE IV EPROM

FOR '94 – '96 LTIs
- 42 LB/HR FUEL INJECTORS
- STAGE IV PCM REFLASH

LT4 STAGE I
475 H.P. @ 6250 RPM WITH 8 LBS. BOOST PRESSURE 1*
MSRP $6495

STAGE I REPRESENTS OUR BASE SUPERCHARGING SYSTEM FOR LT4 CORVETTES.

- 4.00" SUPERCHARGER DRIVE PULLEY & BELT
- RACETRONIX F.P. WIRING HARNESS
- IN-TANK HIGH-OUTPUT GSS-340ME FUEL PUMP
- CRANE HI-6R IGNITION SYSTEM & CUSTOM HARNESS
- TAYLOR 8mm CUSTOM LENGTH IGNITION WIRES
- CNC ANODIZED ALUMINUM BRACKETRY
- 36 LB/HR. FUEL INJECTORS
- CUSTOM MADE ATI SUPER DAMPER
- REPROGRAMMED PCM
- GEN-IV DELUXE GASEOUS INTERCOOLING™ SYSTEM

NOTES

** At 60°F outdoor air temperature utilizing a V-2 SQ Trim Supercharger.*
† Requires forged pistons set to 9.1:1 compression ratio. A complete balanced piston set with rings is $850 plus 24 hours labor to install.
‡ Requires blueprinted automatic transmission or McLeod heavy duty clutch.

Estimated horsepower numbers based on % increase at rear wheels as done on a Dyno Jet Chassis Dynameter.
Prices exclude miscellaneous items such as oil, anti-freeze, gaskets, etc. and any applicable taxes.

Stage pricing is additive, i.e. LT1 Stage IV costs $10,880.00.

COMPLETE KIT PARTS LIST AVAILABLE UPON REQUEST.

BlowerWorks™ Professional Supercharging Systems & Accessories

FOR 1985 THRU 1991 L98 CORVETTES

BlowerWorks™ CORVETTE L98 SUPERCHARGING SYSTEM FOR 1985–1991 MODELS PART NO. 300DXXV

All necessary hardware to effect a complete and operational supercharged vehicle including, but not limited to: our very high pressure Gaseous Intercooling™ System (see page 86) with our own "TELLTALE PANEL", proprietary custom "EPROM", Champion 7401 spark plugs, high-output in-tank fuel pump, adjustable fuel pressure regulator, surge valve, a polished Vortech supercharger, polished chrome supercharger bracket and our world renown fully illustrated INSTALLATION GUIDE to help you obtain the most performance from your supercharged Corvette. You do not have to buy or purchase a single extra item when you purchase our System!!! Best of all the entire System is guaranteed for 1 year.

49 STATE LEGAL
350 H.P. @ 5000 RPM
$4995

L98

COMPLETE KIT PARTS LIST AVAILABLE UPON REQUEST.

BlowerWorks™ CORVETTE L98 SUPERSAVER SUPERCHARGER SYSTEM FOR 1985–1991 MODELS PART NO. 300SXXV

Our SUPERSAVER Kit is identical to our more expensive "sister" kit to the left, except:

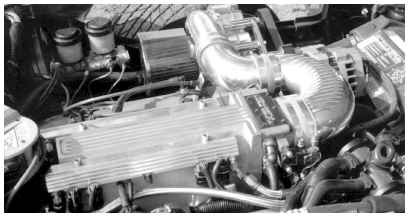
- Blower and air discharge tubes are satin finish
- We substitute our STANDARD™ Gaseous Intercooling for the more expensive GEN-IV™ System

49 STATE LEGAL
350 H.P. @ 5000 RPM
$4295

SAVE MONEY WITH OUR "SUPERSAVER" KIT!

L98

COMPLETE KIT PARTS LIST AVAILABLE UPON REQUEST.



BlowerWorks™ *Recipes for Power* FOR L98 CORVETTES

L98 STAGE I
350 H.P. @ 5000 RPM WITH 6 LBS. BOOST PRESSURE*
MSRP $4995

STAGE I REPRESENTS OUR BASE SUPERCHARGING SYSTEM FOR L98 CORVETTES. IF YOU PLAN TO PURSUE MORE HORSEPOWER USING OUR STAGE II AND/OR HIGHER UPGRADES, PLEASE REFER TO APPLICABLE FOOTNOTES.

- 3.50" SUPERCHARGER DRIVE PULLEY & BELT
- ADJUSTABLE FUEL PRESSURE REGULATOR
- IN-TANK HIGH-OUTPUT GSS-340M FUEL PUMP
- GEN-IV DELUXE GASEOUS INTERCOOLING™ SYSTEM
- STAGE I MEM CAL PACK

L98 STAGE I SUPERSAVER MSRP $4295
INCLUDES ALL OF THE ABOVE WITH THE SUBSTITUTION OF A 'STANDARD' GASEOUS INTERCOOLING™ SYSTEM & SATIN FINISH COMPONENTS

L98 STAGE III
450 H.P. @ 5000 RPM WITH 10 LBS. BOOST PRESSURE*†‡°•×
MSRP $3195 (IF DONE W/ STAGES I & II)

- 3.00" SUPERCHARGER DRIVE PULLEY & BELT
- TPIS 4 INTO 1 HPC COATED INSIDE & OUTSIDE HEADERS
- TPIS "BIG MOUTH" INTAKE MANIFOLD
- LARGE ID POLISHED RUNNERS
- PORTED & POLISHED PLENUM
- 58mm THROTTLE BODY (1000 CFM)
- 6:1 FMU w/STAINLESS STEEL BRAIDED FUEL LINES & GM QUICK CONNCT FITTINGS
- RACETRONIX F.P. WIRING HARNESS
- HIGH-OUTPUT GSL-392 IN-LINE FUEL PUMP
- HIGH-PERFORMANCE CRANKCASE BREATHING SYSTEM (Vents both valve covers)
- STAGE III EPROM

L98 STAGE II
400 H.P. @ 5000 RPM WITH 8 LBS. BOOST PRESSURE*
MSRP $1295 (IF DONE W/ STAGE I)

- 3.25" SUPERCHARGER DRIVE PULLEY & BELT
- STAGE II EPROM
- SET OF 8 – 24 LB/HR FUEL INJECTORS
- CRANE HI-6R CAPACITOR DISCHARGE IGNITION SYSTEM w/CUSTOM IGNITION HARNESS
- ACCEL 8mm HELI-COIL S/S IGNITION WIRE SET
- 1.6 RATIO NEEDLE BEARING ROLLER ROCKERS WITH 7/16" STUDS & REVISED GUIDE PLATES

L98 STAGE IV
475 H.P. @ 5500 RPM WITH 12 LBS. BOOST PRESSURE*†°•×§
MSRP *CALL FOR PRICING*

- 2.75" SUPERCHARGER DRIVE PULLEY & BELT
- ZZ9 CAMSHAFT
- STEWART HIGH-FLOW ENGINE COOLANT WATER PUMP
- DUAL COIL VALVE SPRINGS
- SET OF 8 MATCHED 30 LB. FUEL INJECTORS & FUEL PRESSURE REGULATOR SHIM PLATE
- STAGE IV EPROM

NOTES

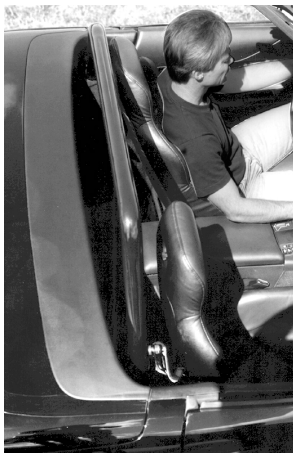
** Crank horsepower derived from RWHP on a 1991 L98 @ 60°F outdoor air temperature utilizing a V-2 SQ Trim Supercharger.*
† May require Borla or Power Effects, or Side Effects Exhaust to reach quoted horsepower.
‡ Recommend at this power level any detonation are 'crack' the cast forged pistons set to 9.7:1 compression ratio. A complete balanced piston set with rings is $850 plus 24 hours labor to install.
° Recommend blueprinted automatic transmission or McLeod heavy duty clutch.
• Price includes using your plenum.
× Past 5250 RPM you will need larger injectors.
§ Recommend "blue printed" engine

Prices exclude misc. items such as oil, anti-freeze, gaskets, etc. & any applicable taxes.

L98 Supercharging Systems
FAR LEFT *Complete L98 Supercharging System.*
LEFT *Basic L98 Supercharging System (most signifcant components).*

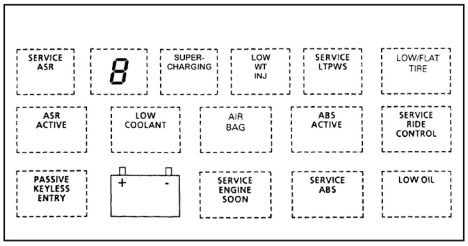
BlowerWorks™ Professional Supercharging Systems & Accessories

SELECT INTERIOR ACCESSORIES



Select Interior Accessories

FROM LEFT TO RIGHT, TOP TO BOTTOM *CHASSIS STIFFENER installed, CHASSIS STIFFENER, A-PILLAR MOUNT SINGLE GAUGE POD (Gauge Not Included), A-PILLAR MOUNT DUAL GAUGE POD (Gauges Not Included), TYPICAL FUNCTIONS FOUND ON TELLTALE PANEL OR D.I.C., CONSOLE INSTRUMENTATION PACKAGE.*



CHASSIS STIFFENER PART NO. B1561

Rollbar style chassis stiffener for all 1986 and newer convertibles. Bolts onto existing chassis. Requires no welding or modifications to vehicle. Steel bar comes unpainted. We will custom paint to your specifications for an additional fee (finish comes as a metal gray steel color).

Convertible top is operational w/chassis stiffener installed. Not compatible with removable hard top.

$495

A-PILLAR MOUNT GAUGE POD PART NO. 1514-S/1514-D

1984–1996 Corvette. Accepts standard 2-1/16" gauge digital or analog. Molded black ABS may be painted to match vehicle. Available as single or dual pod.

$20 FOR Single/$25 FOR Dual

TELLTALE PANEL (D.I.C.) PART NO. 1065

The Telltale Panel is that part of your Instrument Panel that lights up with items such as "Service Engine Soon". Our custom printed Telltale Panel is identical to the original GM panel except that it includes extra "windows" for features such as our boost gauge, illuminated word "SUPERCHARGING", etc.

$39

CONSOLE INSTRUMENTATION PACKAGE PART NO. 30099

1990 thru 1996 Corvettes. Requires removal of stock radio/tape player. Stalk type radio/tape player may be substituted. Includes three 2-1/16" gauges; boost 0–15 psi gauge, fuel pressure 0–80 psi, switch selected Gaseous Intercooling™ pressure or supercharger oil pressure, 0–100 psi, LED bargraph knock sensor, multi-display LED air/fuel indicator, 3 digit LCD RTD temperature gauge for automatic transmission oil & supercharger oil, switched.

$1995

ASHTRAY & CUPHOLDER SWITCH PLATE PART NO. 1097/1096

Customized back engraved & filled switch plate for ashtray & cupholder. Contains spots for new Whistler Remote Concealed Radar Model 2290, push buttons for water injection and oil cooler fans. We can design one to your specifications too.

$45 FOR 1990-'96 Corvettes/$45 FOR 1985-'89 Corvettes

Accessories
AUTOMETER GAUGES & ACCESSORIES

AUTOMETER ELECTRIC AIR CORE FUEL PRESSURE GAUGE PACKAGE

2-1/16" diameter, electrical, 0–100 PSI system includes 0–100 PSIG gauge, 0–100 PSIG sender, electric fuel pressure signal conditioner. Very fast and accurate w/270° full sweep.

PART NO. 2663-B Black Bezel, Black Face, Red Pointer, White Lettering (Z Series)
PART NO. 5763-W Black Bezel, White Face, Red Pointer, Black Lettering (Phantom Series)
$179.95/each

AUTOMETER BOOST GAUGE

2-1/16" diameter, mechanical, 35 PSI (incl. 6 ft. nylon tubing, 1/8" & 1/4" NPT fittings)
Requires Universal Vacuum/Boost Gauge Installation System listed on following page.

PART NO. 3304-B Black Bezel, Black Face, Red Pointer, White Lettering
$45.95

AUTOMETER VACUUM / BOOST GAUGE

All vacuum / boost gauges are 2-1/16" diameter, 0–30" Hg on the vacuum side.
Requires Universal Vacuum/Boost Gauge Installation System listed on following page.

PART NO. 2601-B 0–20 PSI, Black Bezel, Black Face, Red Pointer, White Lettering
Vacuum portion has Yellow Lettering (Z Series)
PART NO. 5701-W 0–20 PSI, Black Bezel, White Face, Red Pointer, Black Lettering
Vacuum portion has Yellow Lettering (Phantom Series)
PART NO. 2614-B 0–30 PSI, Black Bezel, Black Face, Red Pointer, White Lettering;
Vacuum portion has Yellow Lettering (Z Series)
PART NO. 5703-W 0–30 PSI, Black Bezel, White Face, Red Pointer, Black Lettering;
Vacuum portion has Black Lettering (Phantom Series)
$46.95/each

Select Interior Accessories

FROM LEFT TO RIGHT, TOP TO BOTTOM

AUTOMETER FUEL PRESSURE GAUGE • 0–100 PSIG
Black Bezel/Face, Red Pointer (Z Series)

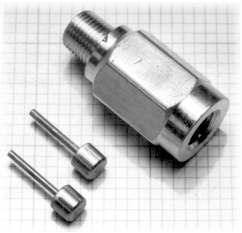
AUTOMETER FUEL PRESSURE GAUGE • 0–100 PSIG
Black Bezel, White Face, Red Pointer (Phantom Series)

AUTOMETER VACUUM/BOOST GAUGE • 0–20 PSI • 2601-B
Black Bezel/Face, Red Pointer (Z Series)

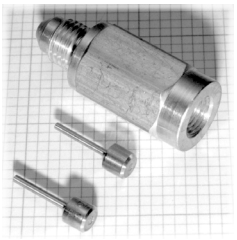
AUTOMETER BOOST GAUGE
0–35 PSI • 3304-B
Black Bezel, Black Face, Red Pointer

AUTOMETER VACUUM/BOOST GAUGE • 0–30 PSI • 2614-B
Black Bezel/Face, Red Pointer (Z Series)

AUTOMETER VACUUM/BOOST GAUGE • 0–30 PSI • 5703-W
Black Bezel, White Face, Red Pointer (Phantom Series)



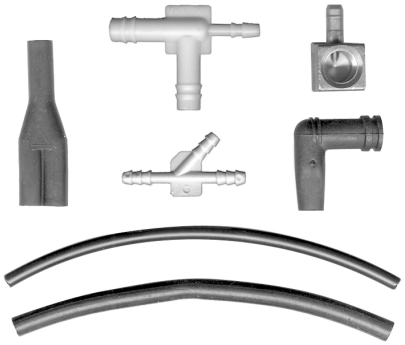
GAUGE SNUBBER • 1526-47



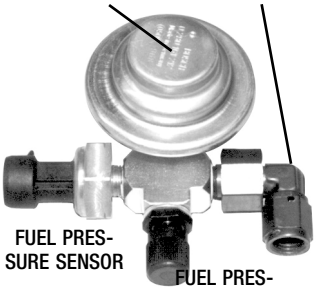
GAUGE SNUBBER • 1526

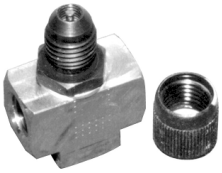
IN-LINE GAUGE ADAPTOR • A1396

FUEL PRESSURE TEST PORT & FUEL PRESSURE RAIL ADAPTOR FOR 1985–96 L98/LT1 • 1518



UNIVERSAL VACUUM/BOOST GAUGE INSTALLATION SYSTEM • A1564

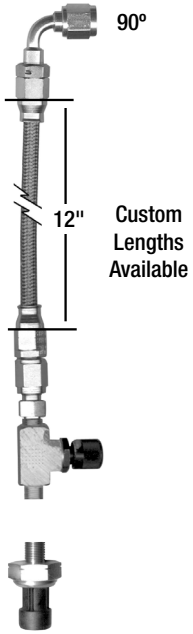




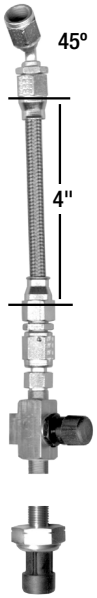
IN-LINE GM FUEL PRESSURE TEST PORT • 17110854

FUEL PRESSURE RAIL ADAPTOR • 923104

AUTOMETER FUEL PRESSURE SENDER • 2246



GM FUEL PRESSURE TEST PORT FOR 1985–91 L98 CORVETTES • 1516-L98-A
Sender Not Included.



GM FUEL PRESSURE TEST PORT FOR 1992/93 LT1 CORVETTES • 1516-LT1-A
Sender Not Included.

1518-LT1 AUTOMETER FUEL PRESSURE SENDER SHOWN WITH FUEL PRESSURE TEST PORT & FUEL PRESSURE RAIL ADAPTOR. THIS IS THE SET-UP YOU NEED FOR 1994–96 CORVETTES. Sender Not Included.

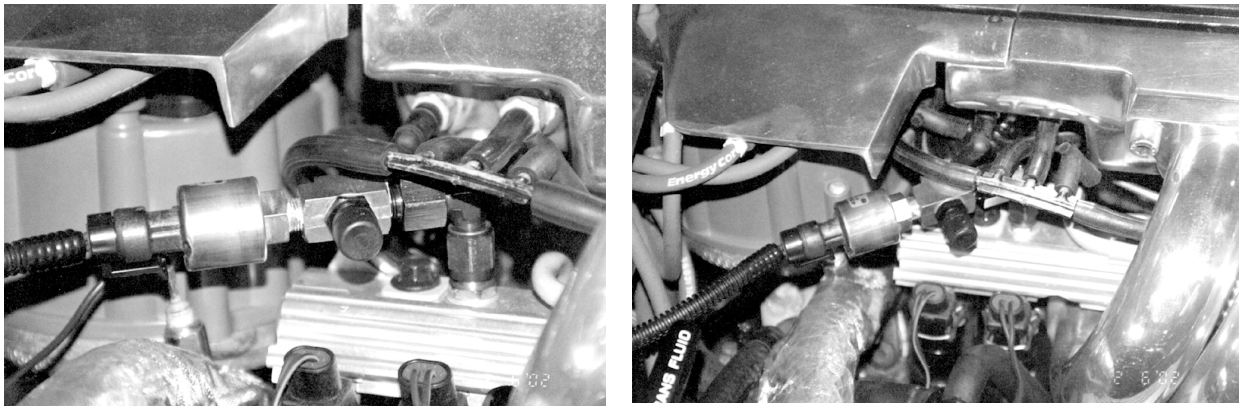
Autometer Gauges & Accessories

P/N	DESCRIPTION	PRICE
	UNIVERSAL VACUUM/BOOST GAUGE INSTALLATION SYSTEM: Includes 6 feet ridged plastic hose 1/8", 6 feet 1/8" rubber hose, "Y" connector, elbow connector, gauge adaptor 1/8" FPT x 1/8" barb hose, 1/8" plastic "Y", 3/16 x 3/16 x 1/8"	
A1564	plastic tie. Rubber hose can be used to join plastic hose and vice versa	$5.95
	AUTOMETER FUEL PRESSURE TRANSDUCER:	
2246	0–100 PSIG (5 VDC in – 1/2 to 4-1/2 VDC out)	$125.00
A1396	IN-LINE GAUGE TO HOSE ADAPTOR: 3/8 x 3/8" beaded hose to 1/8" FPT.	$10.00
	GAUGE SNUBBER: In-line mechanical gauge snubber dampens pulsations that make fuel pressure gauges "bounce" from injector pulses.	
1526	> In-line snubber: in #4 flair; out 1/8" female pipe thread (FPT)	$30.00
1526-47	> In-line snubber: in 1/8" male pipe thread (MPT); out 1/8" female pipe thread (FPT)	$30.00

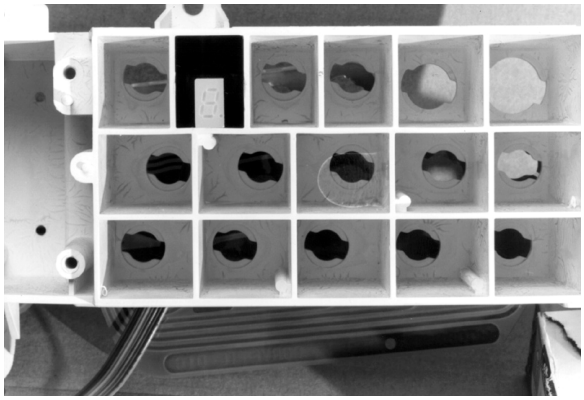
NOTE: ***THE FOLLOWING ADAPTORS ARE DESIGNED TO SCREW DIRECTLY TO THE GM FUEL PRESSURE TEST PORT (SCHRAEDER VALVE). IN ORDER TO WORK YOU MUST EITHER LOOSEN OR REMOVE THE NEEDLE VALVE. OUR ADAPTORS INCLUDE A NEW GM FPT SO YOU CAN STILL ATTACH A MECHANICAL GAUGE IN ORDER TO CHECK THE ELECTRIC GAUGE IF REQUIRED.***

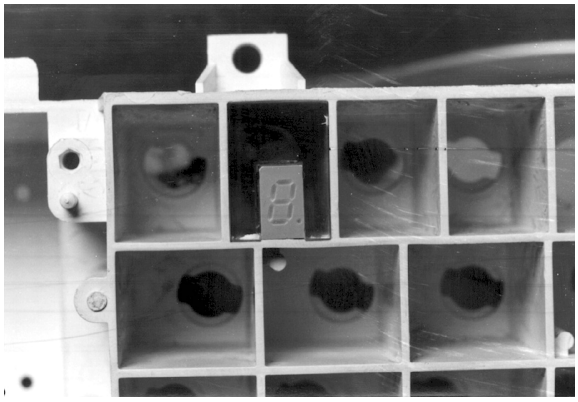
1516-L98-A	**'85–'91 L98 GM FUEL PRESSURE TEST PORT ON #4 SS HOSE** with 1/8" FPT brass adaptor ready to receive the Autometer Pressure Sensor. Std. Length 12" (Custom lengths add $.20/inch.) Does not include Autometer Sensor.	$95.00
1516-LT1-A	**'92/'93 LT1 GM FUEL PRESSURE TEST PORT ON #4 SS HOSE** with 1/8" FPT brass adaptor ready to receive the Autometer Pressure Sensor. Std. Length 4" (Custom lengths add $.20/inch.) Does not include Autometer Sensor.	$95.00
1518	**'85–'96 L98/LT1 FUEL PRESSURE TEST PORT & FUEL PRESSURE RAIL ADAPTOR**	$75.00
17110854	**IN-LINE GM FUEL PRESSURE TEST PORT:** GM Fuel Pressure Test Port affixed to brass adaptor, 1/8" FPT in and out. 1/8 x 1/8 FPT x GM test port.	$45.00
923104	**FUEL PRESSURE RAIL ADAPTOR:** 90° Female AN to Male Swivel 1/8" MPT	$19.95
CALL	**DAMPER:**	$85.00
CALL	**DAMPER MOUNTED w/BRASS TEE:**	$150.00

*2 gauges can be installed in about the same amount of time.

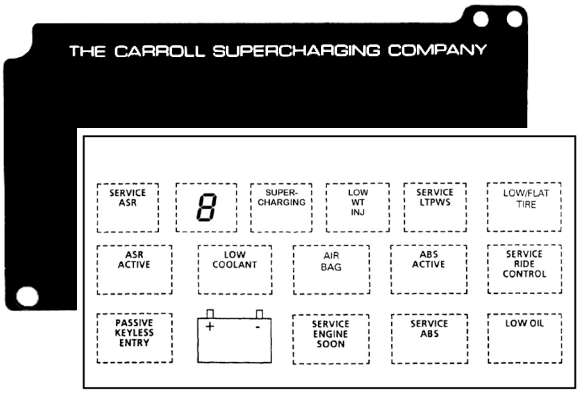


TYPICAL INSTALLATION OF FUEL PRESSURE SENSOR ON A C4–L98 CORVETTE

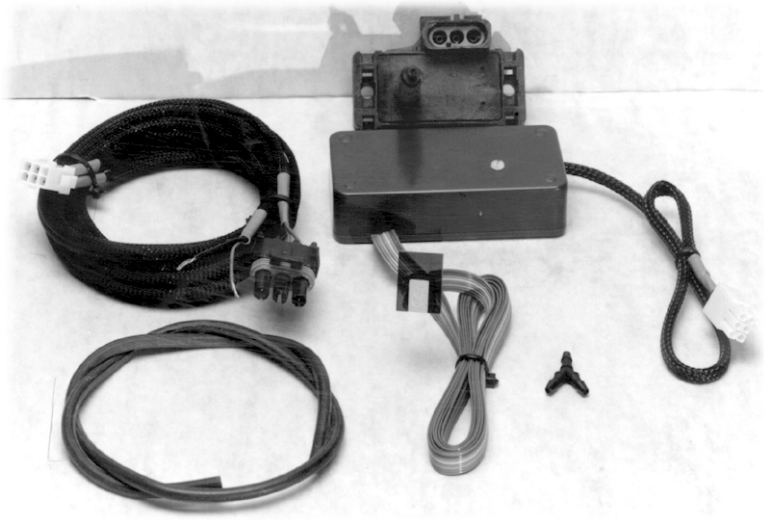




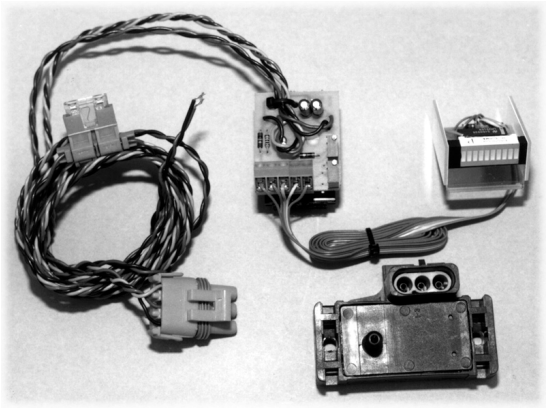
INSTALLATION OF DIGITAL BOOST GAUGE INTO LT1 D.I.C.

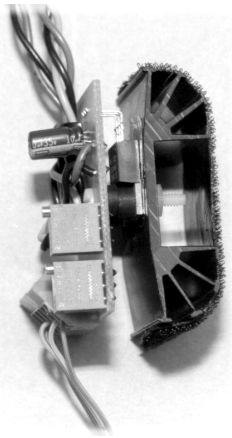


TELLTALE PANEL • 1065

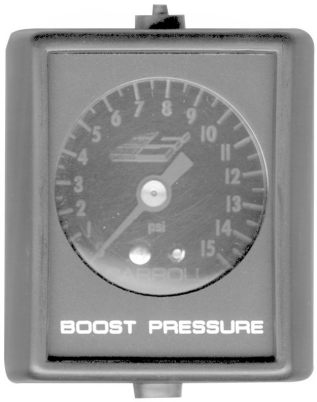


DIGITAL BOOST GAUGE SYSTEM • 1157





BARGRAPH BOOST GAUGE SYSTEM • 30018

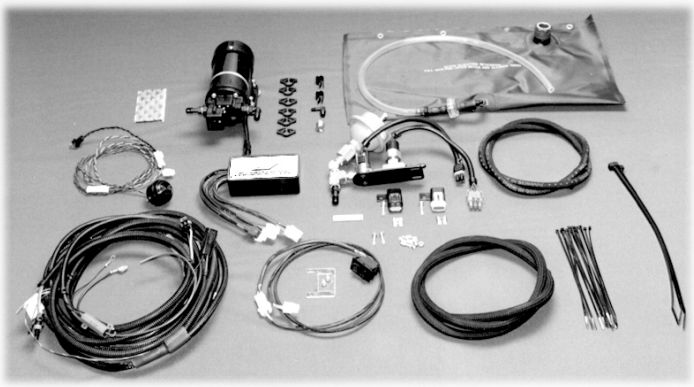


ANALOG BOOST GAUGE
30016

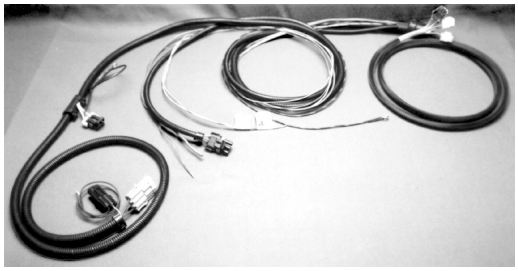
Select Interior Accessories

P/N	DESCRIPTION	PRICE
	7 SEGMENT LED DIGITAL BOOST GAUGE: 1985–1996 Corvettes. 7 segment LED (0-9 PSIG) fits neatly into DIC (Driver Information Center) behind a new Telltale Panel. Includes GM manifold pressure transducer. Specify year with order.	
1157	> Requires Telltale Panel which is standard with Deluxe Gaseous Intercooling™	$195.00
	10 SEGMENT BARGRAPH BOOST GAUGE: 1990/91 Corvettes ONLY. 10 Segment LED bargraph fits into DIC (Driver Information Center) just below the word "SUPERCHARGING", part of our new Telltale Panel. Includes GM manifold pressure transducer.	
30018	> Requires Telltale Panel which is standard with Deluxe Gaseous Intercooling™	$215.00
	ANALOG BOOST GAUGE: 1985–1989 Corvettes ONLY. This very beautiful custom silkscreened gauge is integrated into one of the air deflectors on the Center Instrument Panel Grill of your Corvette. You'd never know that GM didn't build the car with it there unless we told you. 1.5" Dialface, Illuminated.	
30016	> Range 0-15 psig	$109.00
30017	> Compound Gauge [vacuum & boost]	$109.00
	HAND-HELD DIGITAL BOOST GAUGE 0 – 15 PSIG: Perfect for testing supercharger output. Powered by a 9 volt battery this unit is easy	
30044	to use and very accurate.	$150.00
	TELLTALE PANEL • Available for 1985–93 only: The Telltale Panel is that part of your Instrument Panel that lights up with items such as "Service Engine Soon". Our custom printed Telltale Panel is identical to the original GM panel except that it includes extra "windows" for features such as our boost gauge, illuminated word "SUPERCHARGING", etc.	
1065	> Telltale Panel [specify year with your order]	$39.00

TYPICAL STANDARD GASEOUS INTERCOOLING™ SYSTEM • 30031S (PICTURED WITH P/N 1073, GASEOUS INTERCOOLING™ INSTALLATION SYSTEM)

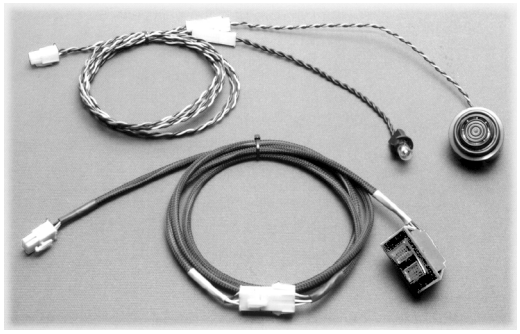


GEN-IV / DELUXE GASEOUS INTERCOOLING™ SYSTEM SHOWN COMPLETE WITH WATER BLADDER P/N's 30031 • B1091 • R100

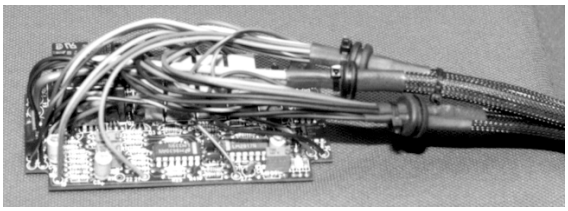


MAIN POWER WIRING HARNESS • A25020M

BLACK BOX A25019 GEN-IV CONTROLLER



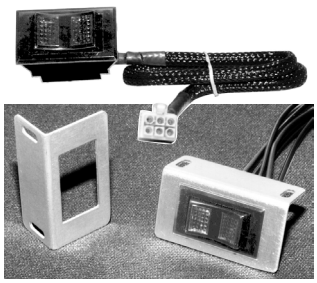
AUXILIARY WIRING HARNESS • A25020C



INSIDE OF GEN IV CONTROLLER

ROCKER SWITCH A25013

GEN-IV SOLENOID/ACCUMULATOR TANK & PRESSURE PROOF SWITCH ASSEMBLY • A25017



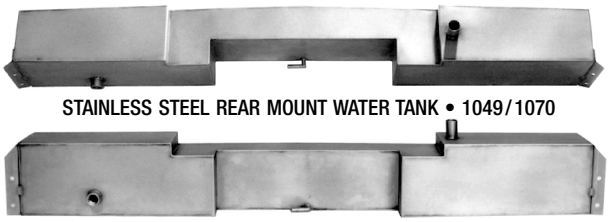
MOUNTING BRACKET • A1530 (SHOWN WITH ROCKER SWITCH)

DELUXE WATER PUMP & PROOF SWITCH A25018

Select Gasesous Intercooling™ Components

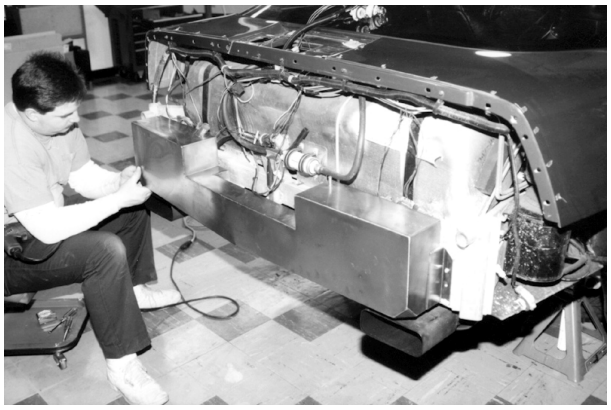
P/N	DESCRIPTION	PRICE
30031S	**STANDARD GASEOUS INTERCOOLING™ SYSTEM (Boost Activated):** System includes high-pressure Gaseous Intercooling™ pump, adjustable manifold pressure switch, heavy duty power relay, complete wiring harness with Weatherpack connectors, complete documentation and wiring diagrams. To this system you must add a water reservoir. You can tap water from the windshield washer tank for your initial system. The pump draws 7 to 8 amperes at full load. This is a single speed system that is boost activated and can deliver up to 20 gph at 100 psig. System includes assorted hoses, a 15 GPH nozzle and choice of nozzle holder (weld or grommet)	$395.00
30031SP	**STANDARD PLUS GASEOUS INTERCOOLING™ SYSTEM (Boost Activated):** System includes all of the components in our Standard Gaseous Intercooling™ System. Standard Plus™ System also includes a water pressure proof switch (incorporated into pump) and lighted rocker switch that allows the system to be turned ON/OFF from inside the vehicle as well as giving a visual indication of when water is actually being injected. System includes assorted hoses, a 15 GPH nozzle and choice of nozzle holder (weld or grommet). To this system you must add a water reservoir. You can tap water from the windshield washer tank for your initial system or choose one of our optional reservoirs.	$495.00
	GEN-IV GASEOUS INTERCOOLING™ SYSTEM (Boost & RPM Activated): System includes high-pressure Gaseous Intercooling™ pump, complete wiring harnesses and a smart "Black Box" Controller. The smart "Black Box" control module is housed in a plastic black box that measures 5-1/4" long x 2-5/8" wide x 1-5/8" deep. The module contains 2 adjustable setpoints that drive the Gaseous Intercooling™ pump from low speed (typically 1–5 psi) to high speed (typically 5–15 psi). The setpoints may be manifold pressure driven or engine RPM driven. There are also 3 configurations to choose from *(see next page)*. The module features an engine interlock to prevent Gaseous Intercooling™ unless the engine is running. The module also features automatic power up with engine operation, trouble alarm, manual override control, 'READY' indicator, 'SUPERCHARGING' indicator, unique optional interlock with engine that prevents going into boost if water injection is not working or engine oil is too cold and fail safe circuitry which prevents pump operation without water. Complete instructions and wiring diagrams are included. To this system you must add a water reservoir. You can tap water from the windshield washer tank for your initial system or choose one of our optional reservoirs *(see next page).* This system typically takes 4–5 hours to install.	
	GEN-IV GASEOUS INTERCOOLING™ SYSTEM BREAKDOWN w/INDIVIDUAL PRICING:	
A25018	> GASEOUS INTERCOOLING™ PUMP	$195.00
A25019-X	> CONTROLLER ("X" represents which configuration you are choosing)	$250.00
A25020M	> WIRING HARNESS, POWER	$75.00
A25020C	> WIRING HARNESS, CONTROL	$50.00
A25013	> ROCKER SWITCH ASSEMBLY w/HARNESS	$25.00
B1330	> LED INDICATOR w/HARNESS FOR SUPERCHARGING	$10.00
SPECIFY	> NOZZLE HOLDER (#1079 for Rubber Grommet or #1078 for Threaded Weld-O-Let)	$20.00
SPECIFY	> NOZZLE HOLDER GROMMET	$2.50
SPECIFY	> NOZZLE HOLDER WELD-O-LET	$10.00
1075	> NOZZLE, Assorted Starter System 5/10/15/20 gph, Stainless Steel	$15.00
AS4S	> MAP SENSOR – 2 Bar	$50.00
1531	>PROOF SWITCH	$40.00
HOSE	> HOSE SYSTEM (Incl. Discharge Hose, Suction Hose & Intermediate Hose when applicable)	$15.00
30030	> WHEN SOLD AS A COMPLETE SYSTEM (less reservoir)	$749.00
30031	**GEN-IV DELUXE GASEOUS INTERCOOLING™ SYSTEM (Boost & RPM Activated):** Contains all of the same components as our Gen-IV Gaseous Intercooling™ System as well as the solenoid/tank/proof switch assembly. When purchased as a complete system	$895.00
A25017	**GEN-IV SOLENOID/TANK/PROOF SWITCH:** When Sold Separately	$195.00
359115	**SOLENOID:** Sold Separately	$55.00
359115A	**SOLENOID ASSEMBLY:** (includes plate, screws, connector, harness, fittings & clamps)	$75.00
0269503	**ACCUMULATOR TANK:** When Sold Separately	$35.00
A1530	**MOUNTING BRACKET:** For use with Rocker Switch	$7.95
WW-01	**WINDSHIELD WASHER TANK ADAPTOR & GROMMET:**	$20.00

NOTE: Connecting any water injection system directly to an intake manifold or wherever engine vacuum is present requires the use of our shut off solenoid. Also, if connecting to a normally aspirated or turbocharged engine you must use our Gen-IV Controller.



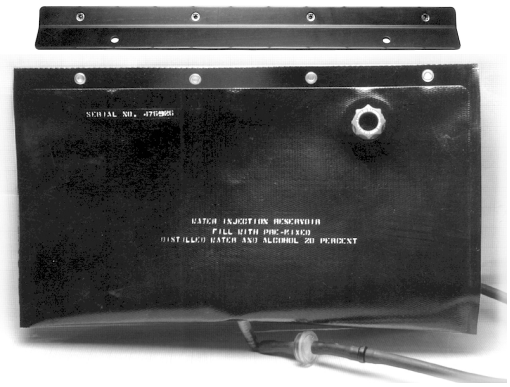
STAINLESS STEEL REAR MOUNT WATER TANK • 1049/1070

2 QT. RESERVOIR • 111



STAINLESS STEEL REAR MOUNT WATER TANK INSTALLATION

RAIL ADAPTOR FOR WATER BLADDER • R-100



BLADDER • B1091

MANIFOLD PRESSURE SWITCH WITH BRASS BASE & BARBED HOSE ADAPTOR
1331 • 1332

BRASS ADAPTOR • 1333
1/8" FPT TO 1/8" BARBED HOSE
(May be used in place of brass base adaptor on manifold pressure switch)

BACK ENGRAVED & FILLED SWITCHPLATE FOR ASHTRAY CUPHOLDER
1097 • 1096

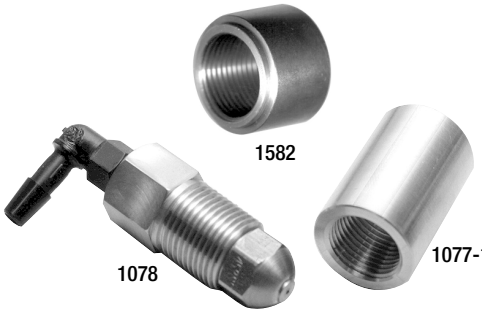
WATER TANK FILL

REMOTE ENGRAVED WATER FILL ADAPTOR • 1080/1081

Select Gasesous Intercooling™ Components

P/N	DESCRIPTION	PRICE
	GASEOUS INTERCOOLING™ INSTALLATION SYSTEM:	
	Includes discharge hose, plastic adaptors and clamps, nozzle holder, grommet,	
	4 assorted stainless steel atomizing nozzles for your application and a windshield	
1073	washer tank outlet adaptor.	$65.00
	RESERVOIR, WATER:	
111	2 qt. Plastic with Engraved Cap, Checkvalve, and Wire Basket for Mounting	$20.00
	BLADDER, WATER:	
	Unique cloth bladder designed specifically to fit L98 and LT1 Corvettes 1985–96.	
	Overall dimensions 22" x 12". Holds approximately 2 gallons.	
B1091	*(NOTE: 1990–96 Corvettes must order water bladder rail adaptor PN R-100)*	$295.00
	RAIL ADAPTOR FOR WATER BLADDER:	
R-100	Adapts bladder to 1990 through 1996 Corvettes.	$35.00
	STAINLESS STEEL REAR MOUNT WATER TANK:	
	Mounts inside rear bumper in place of plastic crush material. Capacity 6 gallons for 1985 thru 1990 Corvettes and 7 gallons for 1991-94 Corvettes. May be coupled with front bladder to obtain total capacity of approximately 9 gallons of water. Includes sufficient hose to reach front of car. *Requires Remote Engraved Water Fill Adaptor.*	
	NOTE: *This is a Special Order Item and must be pre-paid upon ordering. This item is NON-RETURNABLE and NON-REFUNDABLE.*	
1049	>1985 thru 1990	$795.00
1070	>1991 thru 1996	$795.00
	REMOTE ENGRAVED WATER FILL ADAPTOR:	
	Machine and engrave your gasoline filler door for remote Gaseous Intercooling™ fill for above tank. Not required if you maintain front bladder for filling and storage.	
1080	>Coupe [you must send in your gasoline fill door]	$150.00
1081	>Convertible [you must send in your gasoline fill door]	$150.00
	STANDARD GASEOUS INTERCOOLING™ MANIFOLD PRESSURE SWITCH:	
	25 ampere single stage switch for control of Gaseous Intercooling™ pump. Adjustable setting *(see ranges listed below).* May be used in conjunction with a relay when used with our high pressure water pump. Pressure port on switch is 1/8" NPT. Plastic Body.	
1331-1	>Manifold Pressure Switch, 1–5 psi	$20.00
1331-2	>Manifold Pressure Switch, 3–10 psi	$20.00
1331-3	>Manifold Pressure Switch, 8–15 psi	$20.00
1332	> 1/8" FPT Brass Adaptor to mount switch and convert to barbed hose connection	$4.50
1333	> 1/8" FPT Brass Adaptor to barbed hose connection	$3.50
	ASHTRAY & CUPHOLDER SWITCH PLATE (OPTIONAL):	
	Customized back engraved & filled switch plate for ashtray & cupholder. Contains spots for new Whistler Remote Concealed Radar Model 2290, pushbuttons for water injection and oil cooler fans. We can design one to your specifications too.	
1097	>1990–96 Corvettes [1990–94 has orange letters]; [1995–96 has white letters]	$45.00
1096	>1985–89 Corvettes [white letters]	$45.00
	OPTIONAL COMPONENTS FOR EITHER DELUXE OR GEN-IV SYSTEMS:	
1065	>ENGINE OIL THERMOSTAT	$35.00
B1329	>FUEL INJECTOR CUT OUT RELAY	$25.00
	> TACH CIRCUIT	

NOZZLE • 1075



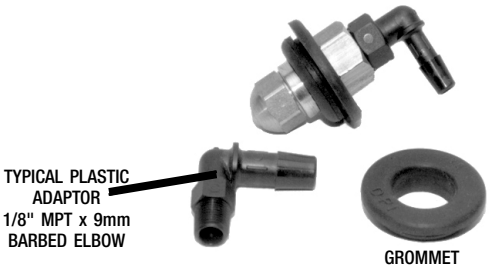
THREADED NOZZLE HOLDER & WELD-O-LETS

"U" TUBE FOR L98/LT1

WATER FILTER
(INLET STRAINER)
81-0240

HIGH-PRESSURE GASEOUS
INTERCOOLING™ PUMP • A25011

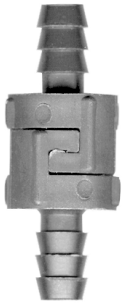
TYPICAL WELD-O-LET NOZZLE
ADAPTOR ON VORTECH LT1
AIR DISCHARGE TUBE
1077



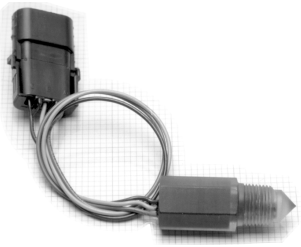
SERIES 495, GROMMET, NOZZLE HOLDER

BRASS NOZZLE HOLDERS • 1079
FOR USE WITH RUBBER GROM-
METS
(1" • 1-3/8" • 2" Total Length)

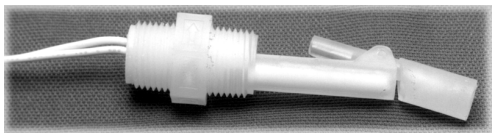
CHECKVALVE
A430 • A748



CHECKVALVE
A440



LOW WATER SENSOR • 30024



LOW WATER SENSOR • 30021

Select Gasesous Intercooling™ Components

P/N	DESCRIPTION	PRICE
	STANDARD GASEOUS INTERCOOLING™ HARNESS: For Standard Gaseous Intercooling™ only. Includes Power Relay, Main Power fuse,	
24029	Safety Interlock fuse, and Packard Connectors.	$75.00
	STANDARD PLUS GASEOUS INTERCOOLING™ HARNESS: For Standard Gaseous Intercooling™ only. Includes Power Relay, Main Power fuse,	
24030	Safety Interlock fuse, Packard Connectors, Proof Switch and Lighted Rocker Switch.	$150.00
	HIGH-PRESSURE GASEOUS INTERCOOLING™ PUMP: Pump is set up to produce 100 psig at up to 20 gph. Other pressures and volumes available upon request. The pump draws 7 to 10 amperes at full load. Inlet and outlet are 1/4" FPT. The pump comes complete with internal checkvalve and	
A25011	weatherproof electrical fittings.	$195.00
	STAINLESS STEEL GASEOUS INTERCOOLING™ NOZZLES:	
1075	Specify size from 5 to 28 gph in 1 gallon increments. (3/4-16 external thread size)	$5.95
	BRASS NOZZLE HOLDERS:	
1078	> 3/4-16 external thread for mating to 1077 series weld-o-lets	$24.00
1079	> Smooth external surface for use with rubber grommet (specify length 1", 1-3/8" or 2")	$10.00
	RUBBER GROMMET:	
495-002	> Grommet, Brass Nozzle Holder for 1/8" thick	$5.00
495-016	> Grommet, Brass Nozzle Holder for 1/4" thick	$5.00
	WELD-O-LET:	
1077-1	> Aluminum bushing designed for welding to aluminum air discharge tubes	$20.00
1077-2	> Brass bushing designed for silver solder or brazing	$22.00
1077-3	> Stainless Steel bushing designed for MIG or TIG welding (1-1/2" Long)	$45.00
1582	> Stainless Steel bushing designed for MIG or TIG welding (3/4–16 Straight Thread)	$15.00
	FILTER, WATER (INLET STRAINER): Replacement filter consisting of a stainless steel screen inside plastic holder.	
81-0240	5/16" x 5/16" barbed hose	$4.95
	LOW WATER SENSOR: Solid state sensor for remote tank. Light comes on in Telltale Panel when tank is down to 1/3 rd level. Installed price based upon installing at same time as S/S tank.	
30024	Requires Telltale Panel which is standard with DELUXE Gaseous Intercooling™	$195.00
	LOW WATER SENSOR: Lever-type float may be screwed into plastic tank and configured for N.O. or N.C. Usually	
30021	we tie into the windshield washer low water sensor so that LOW WATER can mean either/or	$25.00
	ADAPTORS: Black nylon hose barb to pipe fittings available in many sizes. Most will cost you about 50¢ ea	CALL
	CHECKVALVE: > Black 3/8" barbed checkvalve for use on crankcase ventilation system.	
A430	(Viton diaphragm – NOT for use on our Gaseous Intercooling™ system – very low cracking pressure)	$5.50
A748	>Black 3/8" barbed checkvalve for use on our Gaseous Intercooling™ system. Low Pressure – Use on suction side only. (Cs101 Fluorosilicone diaphragm – compatible with all alcohols including methanol)	$5.50
A440	> Red 5/16" or 3/8" barbed high pressure checkvalve for general purpose use including, but not limited to, our Gaseous Intercooling™ systems. These valves may be disassembled and are available with other inserts and cracking pressures. May be used on discharge side of water injection pump. (Nylon diaphragm – compatible with all alcohols including methanol)	$15.00

Select Hoses

P/N	DESCRIPTION	PRICE
	LOW-PRESSURE SUCTION HOSE:	
TRICO 91-515	> 1/8" i.d., General Purpose Hose	$0.27/Ft.
TRICO 91-546	> 3/16" i.d., General Purpose Hose	$0.33/Ft.
TRICO 91-548	> 1/4" i.d., General Purpose Hose	$0.35/Ft.
TRICO 91-543	> 5/16" i.d., General Purpose Hose	$0.60/Ft.
	CLOTH COVERED SINGLE LAYER HIGH-PRESSURE FUEL INJECTION HOSE: Good for fuel and water up to 100 PSI. (Imported from Germany)	
CRP N20-355-1	> 5mm i.d.	$1.07/Ft.
CRP N20-357-1	> 7mm i.d.	$1.38/Ft.
	CLOTH COVERED SINGLE LAYER HIGH-PRESSURE FUEL INJECTION HOSE: Good for fuel and water up to 100 PSI. We use this hose between the Gaseous Intercooling™ pump and the solenoid assembly in our Gaseous Intercooler™. (Imported from Germany)	
CRP N20-359-1	> 9mm i.d.	$1.88/Ft.
	RUBBER JACKET MULTI-LAYER HIGH-PRESSURE FUEL INJECTION HOSE:	
80089	> 5/16" i.d.	$3.00/Ft.
80090	> 3/8" i.d.	$3.00/Ft.
	CLOTH COVERED CRANKCASE BREATHER HOSE: (Imported from Germany)	
CRP N20-371-1	> 14mm i.d.	$2.00/Ft.
CRP N20-374-1	> 17mm i.d.	$2.13/Ft.

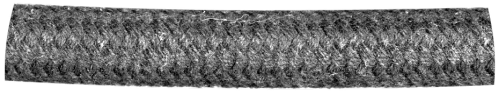
LOW-PRESSURE SUCTION HOSE
5/16" i.d. • 91-543
(1/8", 3/16" & 1/4" i.d. also available)

CLOTH COVERED SINGLE LAYER
HIGH-PRESSURE FUEL INJECTION HOSE
9mm i.d. • CRP N20-359-1

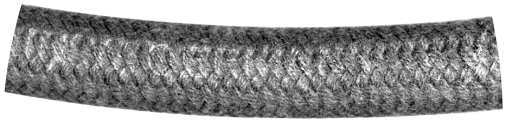
CLOTH COVERED SINGLE LAYER
HIGH-PRESSURE FUEL INJECTION
HOSE
5mm i.d. • CRP N20-355-1

RUBBER JACKET MULTI-LAYER
HIGH-PRESSURE FUEL INJECTION HOSE
3/8" i.d. • 80090
(5/16" i.d. also available)

CLOTH COVERED SINGLE LAYER
HIGH-PRESSURE FUEL INJECTION HOSE
7mm i.d. • CRP N20-357-1



CLOTH COVERED CRANKCASE BREATHER HOSE
14mm • CRP N20-371-1



CLOTH COVERED CRANKCASE BREATHER HOSE
17mm • CRP N20-374-1

Select Pressure Switches & Barbed Hose Fittings

P/N	DESCRIPTION	PRICE
	GASEOUS INTERCOOLING™ PROOF SWITCH:	
1531	3-way switch with fixed setpoint, set to close at 25 psi. Brass body. *(For use with water and alcohol).*	$55.00
	PRESSURE SWITCH:	
	Externally adjustable from 15 to 58 psig. Other ranges available. 3 wire pigtail NO/COM/NC	
1533	Switch rated at 5A @ 30VDC. Aluminum body. ***(NOT** for use with water).*	$95.00
	STANDARD GASEOUS INTERCOOLING™ MANIFOLD PRESSURE SWITCH:	
	25 ampere single stage switch for control of Gaseous Intercooling™ pump. Adjustable setting *(see ranges listed below).* May be used in conjunction with a relay when used with our high pressure water pump. Pressure port on switch is 1/8" NPT. Plastic Body.	
1331-1	> Manifold Pressure Switch, 1–5 psi	$20.00
1331-2	> Manifold Pressure Switch, 3–10 psi	$20.00
1331-3	> Manifold Pressure Switch, 8–15 psi	$20.00
1332	> 1/8" FPT Brass Adaptor to mount switch and convert to barbed hose connection	$4.50
1333	> 1/8" FPT Brass Adaptor to barbed hose connection	$3.50
	NYLON BARBED HOSE FITTINGS:	
	Pipe thread available in 1/8", 1/4", 3/8", 1/2", 3/4" and 1" MPT. The barbed hose end is available in straight or elbow from 1/4", 3/8" 1/2" and 1" barb.	
L4-4BN	> 1/4" MPT x 1/4" Barb Elbow	$.50
A4-4BN	> 1/4" MPT x 1/4" Barb	$.50
L4-6BN	> 1/4" MPT x 3/8" Barb Elbow	$.50
A4-6BN	> 1/4" MPT x 3/8" Barb	$.50
	BRASS BARBED HOSE FITTINGS:	
CALL	> Many sizes and shapes – please call us.	CALL

MANIFOLD PRESSURE SWITCH WITH BRASS BASE & BARBED HOSE ADAPTOR
1331 • 1332

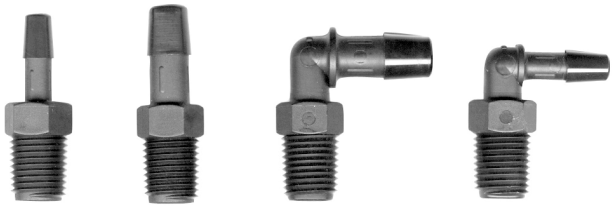
BRASS ADAPTOR • 1333
1/8" FPT TO 1/8" BARBED HOSE
(May be used in place of brass base adaptor on manifold pressure switch)

PRESSURE SWITCH
1533

GASEOUS INTERCOOLING™ PROOF SWITCH
1531

BRASS BARBED HOSE FITTINGS

NYLON BARBED HOSE FITTINGS



1/4" MPT x 1/4" BARB
A4-4BN

1/4" MPT x 3/8" BARB
A4-6BN

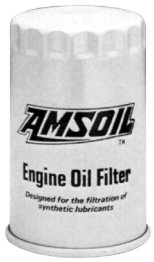
1/4" MPT x 3/8" BARB ELBOW
L4-6BN

1/4" MPT x 1/4" BARB ELBOW
L4-4BN

Filters: Oil & Air

P/N	DESCRIPTION	PRICE
	FILTER, ENGINE OIL TO SUPERCHARGER	
EAR-230204	> Earl's Filter used on all Carroll Supercharging Systems equipped with Vortech Blowers 1985–1996.	$40.00
	FILTER, ENGINE OIL TO SUPERCHARGER	
BE90	> Amsoil 1 Micron Spin-on Bypass Filter. Used to filter oil supply to Supercharger. Recommended optional replacement for Bosch filter where space permits.	$36.00
	FILTER, MOUNTING BRACKET ADAPTOR	
BP80	> Used to mount BE90 Bypass filters	$20.00
	FILTER, ENGINE OIL	
SDF32	> Amsoil Filter for Corvettes 1997 & Newer	$10.10
SDF23	> Amsoil Filter for Corvettes 1992–1996	$10.10
SDF25	> Amsoil Filter for Corvettes Pre-1992	$10.10
	FILTER, TRANSMISSION OIL	
	> In-line plastic body magnetic strainer may be used on automatic transmission or as an in-line strainer for supercharger oil in lieu of Bosch or Amsoil 1 Micron where space does not permit use of larger filter.	
ILF-2	> 5/16" Barbed	$36.00
ILF-3	> 3/8" Barbed	$36.00
GF481	**GM FUEL FILTER:** Replacement	$12.95
	FILTER, AIR:	
	Replacement K&N with chrome plated rear plate and 14mm crankcase ventilation hose adaptor. (Please note K&N filters are usually cleaned after 30,000 miles and re-oiled as opposed to being replaced).	
SP2581	> Universal replacement for Carroll Supercharging Systems equipped with (Paxton 1985–91) or (Vortech 1985–96). Round (5½" long × 4½" dia)	$40.00
RC3180	> LT1 1992–96 Carroll System equipped with Paxton. Oval (4" long × 7" wide × 4½" dia)	$50.00
RU2520	> LT1/L98 R-Trim Vortech Air Filter. Cone (6" long × 4½" top dia. × 5½" bottom dia. air inlet 4" dia.)	$60.00
	RECHARGER FILTER CARE SERVICE KIT:	
KNN 99-5050	Includes air filter clean, air filter oil. A six step maintenance system designed to recharge your K&NFilter charger Air Filter. Completely restores air flow efficiency so your Filtercharger performs like new!	$10.00
NPN	**VORTECH "R" TRIM ADAPTOR RING** for above. (3½" i.d. × 4" o.d.)	$20.00
	K&N AIR FILTER OIL:	
99-0504C	Oil 6 oz. aerosol can for re-oiling air filter after washing	$5.63

AMSOIL 1 MICRON OIL FILTER • BE90



AMSOIL ENGINE OIL FILTER SDF23 • SDF25


TRANSMISSION FILTER ILF-2 • ILF-3


RC3180

SP2581


RU2520

EARL'S OIL FILTER EAR-230204

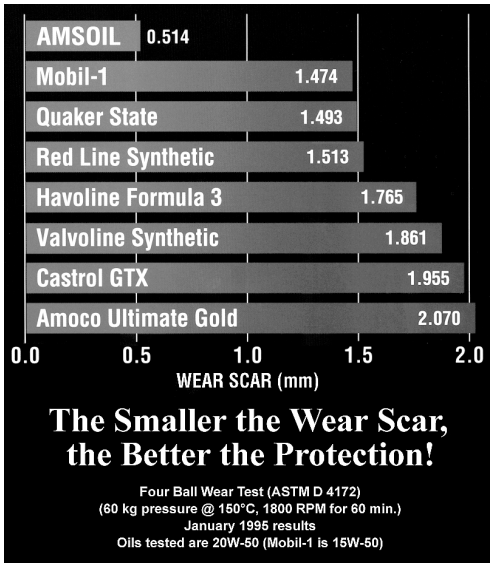

MOUNTING BRACKET ADAPTOR FOR AMSOIL 1 MICRON OIL FILTER • BP80


GM FUEL FILTER GF481

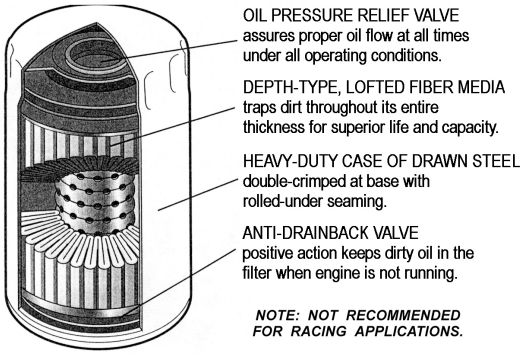
100% Synthetic Engine & Transmission Oil by Amsoil

P/N	DESCRIPTION	PRICE
	SERIES 2000 – SAE 20W-50 Synthetic Racing Oil, API SH, CD	
TRO-01	> 12 Quarts, 26 lbs. ($8.25 per quart)	$99.00
TRO-1G	> 1 Gallon	$31.55
	SERIES 2000 – SAE 0W-30 Synthetic Motor Oil, API SH, CD	
TSO-01	> 12 Quarts, 26 lbs. ($8.25 per quart)	$99.00
	SAE 10W-40 100% Synthetic Motor Oil, API SH, CD	
AMO-01	> 12 Quarts, 25 lbs. ($5.75 per quart)	$69.00
AMO-04	> 4 Gallons, 32 lbs. ($22.40 per gallon)	$89.60
AMO-05	> 2–2½ Gallon Containers, 39 lbs. ($54.45 per ea. 2½ Gallon Container)	$108.90
	SAE 10W-30 100% Synthetic Motor Oil, API SH, CD	
ATM-01	> 12 Quarts, 25 lbs. ($5.75 per quart)	$69.00
ATM-04	> 4 Gallons, 32 lbs. ($22.40 per gallon)	$89.60
ATM-05	> 2–2½ Gallon Containers, 39 lbs. ($54.45 per ea. 2½ Gallon Container)	$108.90
ATM-TP	> 1–2½ Gallon Container	$55.45
	SAE 5W-30 100% Synthetic Motor Oil, API SH, CD	
ASL-01	> 12 Quarts, 25 lbs. ($5.75 per quart)	$69.00
ASL-04	> 4 Gallons, 32 lbs. ($22.40 per gallon)	$89.60
	SAE 20W-50 Synthetic Motor Oil, API SH, CD	
ARO-01	> 12 Quarts, 26 lbs. ($6.45 per quart)	$77.40
ARO-04	> 4 Gallons, 33 lbs. ($25.00 per gallon)	$100.00
ARO-05	> 2–2½ Gallon Containers, 40 lbs. ($61.30 per ea. 2½ Gallon Container)	$122.60
	SERIES 2000 – 75W-90 Synthetic Gear Lube	
TGR-01	> 12 Quarts, 25 lbs. ($9.10 per quart)	$109.20
	Synthetic Universal Automatic Transmission Fluid	
ATF-01	> 12 Quarts, 25 lbs. ($7.70 per quart)	$92.40
ATF-05	> 2–2½ Gallon Containers, 38 lbs. ($73.25 per ea. 2½ Gallon Container)	$146.50
	Supershift Racing Transmission Fluid	
ART-01	> 12 Quarts, 25 lbs. ($7.20 per quart)	$86.40

NOTE: 12 Quarts = 1 Case.



Superior AMSOIL Design

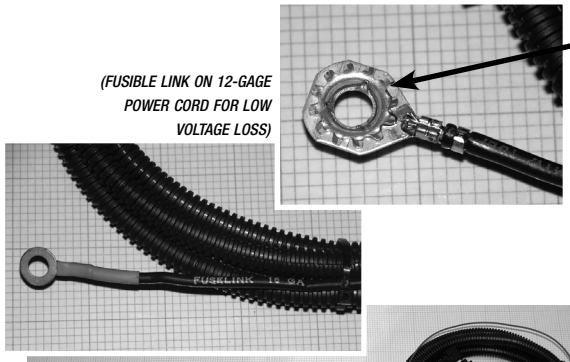


NOTE: NOT RECOMMENDED FOR RACING APPLICATIONS.

INDEPENDENT TEST FACILITY RESULTS OF FOUR BALL WEAR TEST

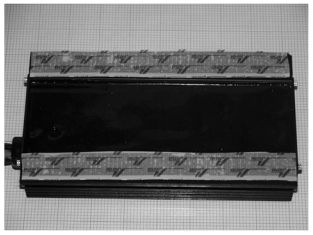
Select Ignition Components

P/N	DESCRIPTION	PRICE
	CARROLL CUSTOMIZED IGNITION SYSTEMS: We custom modify Crane's CDI (capacitor discharge ignition) systems for your vehicle. ***OUR UNITS ARE FULLY ENCAPSULATED!*** This is absolutely essential if the unit is to be located in a potentially wet area, or even if you powerwash your engine compartment. ***ALL CONNECTORS ARE WEATHERPROOF PACKARD TYPE!*** The module may be simply unplugged and by-passed with a supplied adaptor for testing or service. Each ignition system is burned in on our quality control bench with a real spark coil putting it under load for a minimum of 4 hours. Each unit must pass our rigorous burn-in test before it is ready for sale. This ensures you the utmost in reliability. You should use high energy stainless steel spiral wound 8mm ignition wires with these systems. The following systems also require an installation wiring harness that must be purchased separately. An installation blueprint is included. *(Please specify year)*	
CRN 6000-6400	> Crane HI-6R (Basic Capacitor Discharge Ignition System)	$325.00
CRN 6000-6466	> Crane HI-6R with TRC-2 Timing Retard	$400.00
TRC-2	> TRC-2 Timing Retard Control (sold separately)	$120.00
AS4S	> 2-Bar Map Sensor for Use with TRC-2	$45.00
	Filter Capacitor for Crane Ignition Systems:	
100 MMF	> 1,000,000 MFD @ 16 Volt with Weatherpack Connector	$79.00
100 KMF	> 100,000 MFD @ 16 Volt with Weatherpack Connector	$35.00
38 KMF	> 38,000 MFD @ 16 Volt with Weatherpack Connector	$30.00
	Crane recommends a Filter Capacitor for longer length lines. *20 Volt Capacitors Available Upon Request @ Higher Prices.*	
	CARROLL CUSTOM CDI SYSTEM INSTALLATION WIRING HARNESSES: We manufacture our own custom wiring harness for the Corvette for installing your CDI that uses all GM/Packard connectors. The harness includes a 12 gauge power wire with an integral fusible link. You do not cut or splice a single wire. Other manufacturers claim no splicing but they really use male and female "spade" connectors instead of the real McCoy. Even the Tach wire on our wiring harness has an authentic real GM mating connector!	
24035	> L98 WIRING HARNESS (mates above C.D.I. systems to HEI ignition) 1985–91	$100.00
24036	> LT1 WIRING HARNESS (mates above C.D.I. systems to LT1 ignition) 1992–96	$100.00
24037	> LT1/LT4 WIRING HARNESS (mates above C.D.I. systems to LT1/LT4 ignition) 1996	$100.00



CDI WIRING HARNESS FOR GM HEI SYSTEM WITH INTERNAL COIL – EXTERNAL COIL SIMILAR • 24035

TRC-2 TIMING RETARD CONTROL • TRC-2



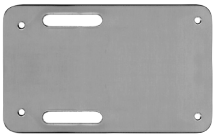
CRANE HI-6R • CRN 6000-6400
CRANE HI-6R w/TRC-2 • CRN 6000-6466

P/N	DESCRIPTION	PRICE
	DISTRIBUTOR CAP AND ROTOR:	
	Brass contacts and blue plastic color nicely matches High Energy Ignition Wires.	
30010	> Distributor Cap & Rotor 1985 thru 1991 Corvette	$39.00
	VARIABLE MAGNETIC CORE HIGH ENERGY IGNITION COILS:	
	Ideal coils for capacitor discharge systems such as the MSD or Crane Modules.	
1082	> Replacement Internal Coil for GM HEI coil inside distributor cap	$49.00
380672	> Universal External variable magnetic core coil with female tower [40,000 volts – 850 watts – .6 ohm primary, 23-G's]	$37.00
380876	> Ultra High Energy Variable magnetic core coil with male tower [65,000 volts – 1950 watts – .45 ohm primary, 82-G's]	$140.00
380876M	> Ultra Coil as above but modified for LT1 with adaptor plate, rubber feet, and mounting spot for LT1 ignition driver module. *(works with LT4 also)*	$199.00
	CHAMPION GOLD SPARK PLUGS:	
	Extended tip plugs for superior street performance.	
SP2095	> Corvette Aluminum Heads: 1986–1991, Compression ring matches original style plug	$3.95
SP2401	> Corvette Aluminum Heads: 1986–1996, Taper seat plug improves heat transfer over compression ring	$3.95
SP2406	> Corvette Cast Iron Heads: 1985, Taper seat plug only	$3.95
SP7401	> Double Tip Platinum Taper Seat Equivalent to SP2401 (1986–1996)	$5.95
SP7346	> Double Tip Platinum Compression Ring Equivalent to SP2095 (1986–1996)	$5.95
41-906	**OEM AC DELCO SPARK PLUGS:** 1992–1995 Corvettes	$10.00
41-943	**OEM AC DELCO SPARK PLUGS:** 1996 Corvettes	$10.00
	OXYGEN SENSOR:	
AFS-20	One wire exact GM replacement sensor for 1985–1991 Corvettes. *(call for other years)*	$29.00
EPROM	**CUSTOM EPROMS:**	
	We will tailor an EPROM for your off road engine. Not for sale to California residents.	
	> EPROM only with custom programming	$200.00
	> EPROM in MEM CAL PACK	$225.00
	> BLANK EPROM – No programming	$15.00
	8MM 100% SILICONE IGNITION WIRES:	
	Custom cut and fit 8mm 100% silicone ignition wires. These wires have stainless steel helical wound wire core for high energy use. These wires are superior to the stock carbon wires in all aspects including noise suppression. The wire lengths have been specially cut to our specifications for an exact fit. The wires are all individually marked with a plastic snap on number at the distributor end which makes installation simple and neat. May be used with stock HEI ignition or the high energy CDI systems listed above.	
30002	> Corvette 1984 thru 1991 with stock exhaust headers	$75.00
30003	> Corvette 1984 thru 1991 with aftermarket exhaust headers	$75.00
30032	> Corvette LT1/LT4 1992/96 with wire lengths custom cut for our supercharging system	$75.00

CHAMPION GOLD SPARK PLUG SP2095 .035" GAP

AC DELCO SPARK PLUG 41-943 DOUBLE TIP PLATINUM .050" GAP

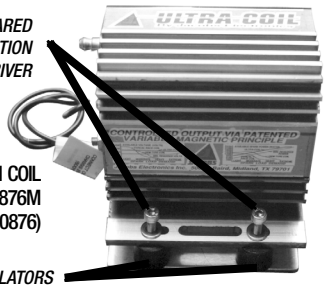
CHAMPION GOLD SPARK PLUG TRUCK SERIES .035" GAP



MOUNTING PLATE FOR ULTRA HIGH ENERGY IGNITION COIL • 380876M

GM IGNITION MODULE DRIVER (Not Included)

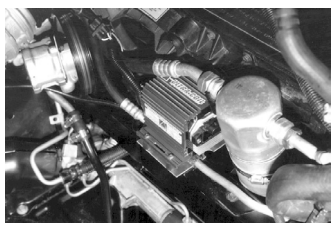
NOTE HOW COIL HAS BEEN PREPARED FOR MOUNTING OF IGNITION MODULE DRIVER



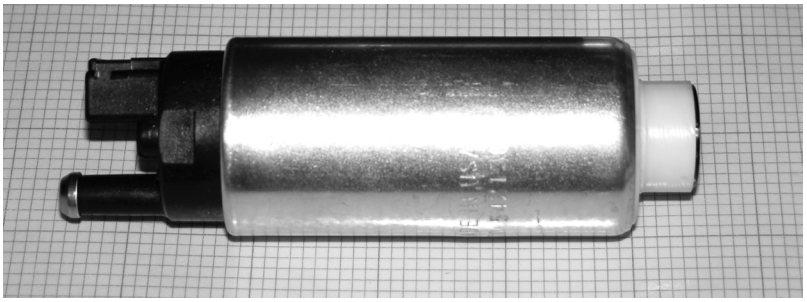
ULTRA HIGH ENERGY IGNITION COIL w/MOUNTING PLATE • 380876M (IGNITION COIL ONLY 380876)

NOTE RUBBER ISOLATORS

CUSTOM FIT 8mm SILICONE WIRES • 30045

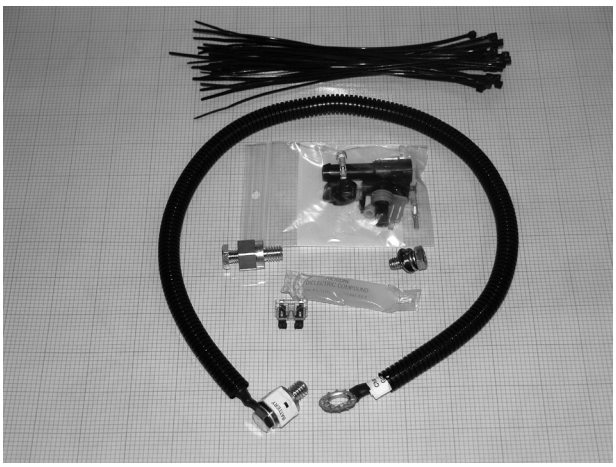


ULTRA HIGH ENERGY IGNITION COIL INSTALLATION ON AN LT1 VEHICLE



WALBRO GSS-340M IN-TANK FUEL PUMP

RACETRONIX C44-PIK 1989–1996 C4 CORVETTE FUEL PUMP INSTALLATION KIT



BATTERY GROUND KIT & AUXILIARY VOLTAGE BOOSTER CONNECTOR KIT

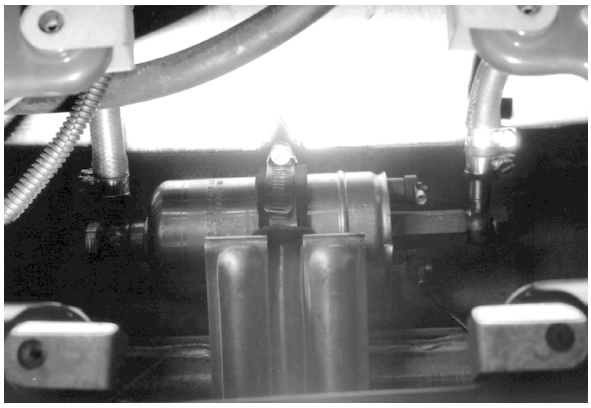
RACETRONIX RX-C44-FPWHG-2 1989–1996 L98/LT1/LT4 CORVETTE PLUG-N-PLAY FUEL PUMP POWER HARNESS

Select Fuel Components: Pumps

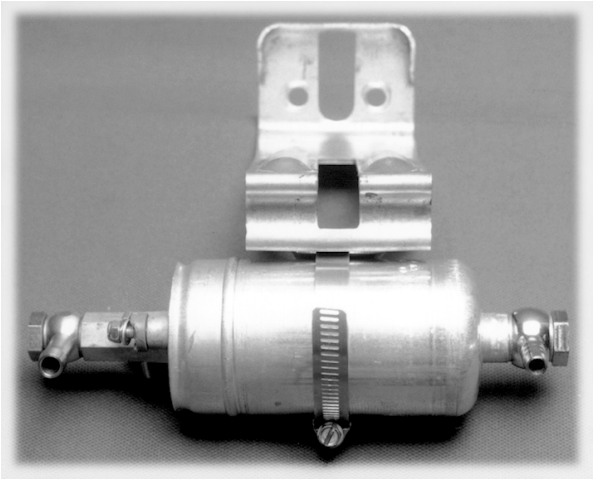
P/N	DESCRIPTION	PRICE
	HIGH OUTPUT IN-TANK FUEL PUMP FOR L98/LT1/LT4: Walbro GSS-340M is an exact replacement for the existing Delco fuel pump. Precision hermetic pump delivers 255 L/HR (67 GPH) @ 43.5 PSI @ 13.5 VDC. This is more than double the volume of the original Delco pump. This pump can easily support 600 plus HP @ 70 PSIG! See opposite page for parts included in the fuel pump.	
GSS-340M	> Pump Only	$119.00
RX-C43-FPAB	> 1984–1988 Racetronix Fuel Pump Kit	$139.00
RX-C44-FPAB	> 1989–1996 Racetronix Fuel Pump Kit	$139.00
GSS-SOCK	> Replacement 'Sock' for GSS-340	$5.95
	Kit by Racetronix. If you are replacing the original Delco pump we highly recommend the kit which includes crucial upgradedin-tank wiring harness as well as a new tank gasket with stainless steel screws.	
	FUEL PUMP POWER RELAY & WIRING KIT BY RACETRONIX: If you plan on making more than 500 RWHP we stongly recommend the new Racetronix fuel pump harness which can deliver a full one volt DC or more to the pumphead than the stock GM wiring. This extra volt can easily equate to an increase of 10% or more! Additionally this harness is pre-wired for both a secondary booster pump and/or a pump voltage booster. All parts are Plug-N-Play.	
RX-C43-FPWHG-2	> 1984–1988 (3 Cavity Connector)	$79.00
RX-C44-FPWHG-2	> 1989–1996 (4 Cavity Connector)	$79.00

WALBRO GSL-392 FUEL PUMP SHOWN WITH ACCESSORIES

WALBRO GSL-392 IN-LINE BOOSTER FUEL PUMP



ULTRA HIGH-OUTPUT FUEL PUMP INSTALLED BEHIND THE LICENSE PLATE
NOTE SPECIAL 3/8" O.D. BARBED HOSE BANJO ADAPTORS
BOTH IN & OUT.



PUMP STRAPPED TO MODIFIED BRACKET

OUTLET
LARGE 3/8" id
BANJO HOSE
ADAPTOR

BOSCH ULTRA HIGH-OUTPUT IN-LINE FUEL PUMP
GFP-214

INLET
LARGE 3/8" id
BANJO HOSE
ADAPTOR

Select Fuel Components: Pumps

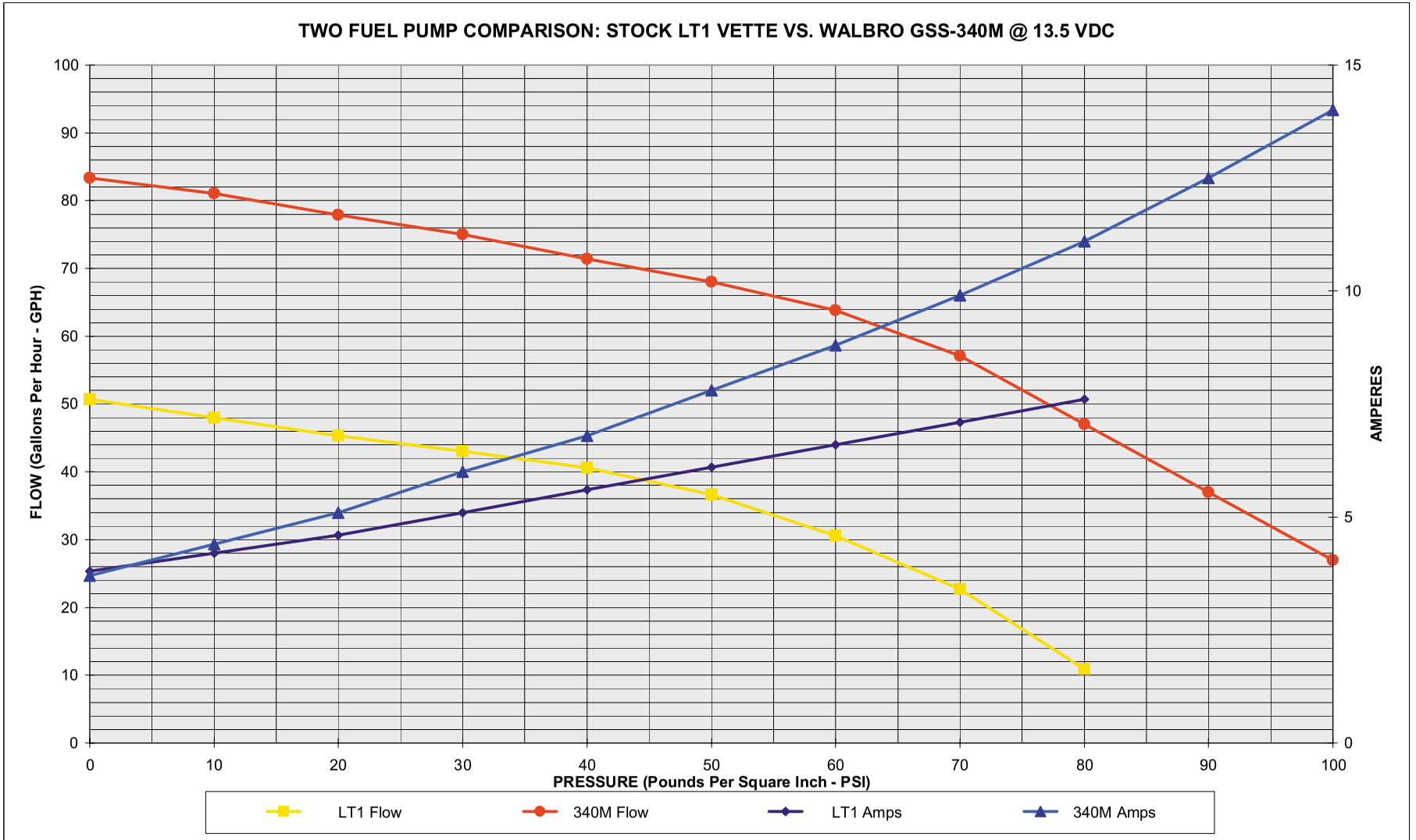
THE FOLLOWING FUEL PUMP SOLUTIONS ARE DESIGNED FOR CORVETTE OWNERS MAKING 600 PLUS REAR WHEEL HORSEPOWER.

There are several ways to easily support 600+ H.P.

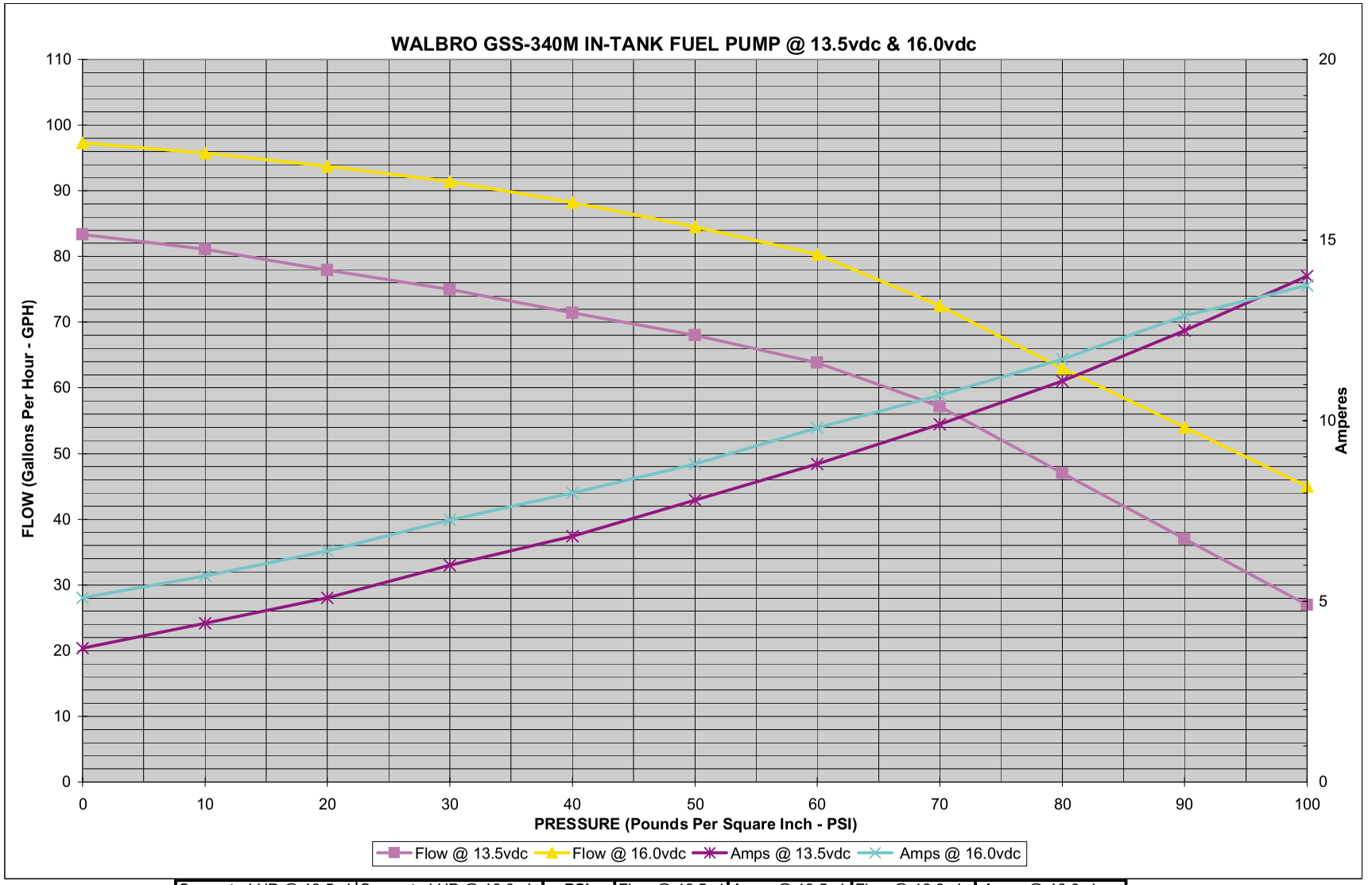
1. Add an in-line supplemental pump.
2. Add a second in-tank in parallel pump
3. Add a voltage pump booster to any and all pumps.

Perhaps the easiest and simplest way to support 600+ H.P. is to add an in-line booster pump. The Walbro GSL-392 in-line booster pump can support 800+ H.P. @ 70 PSI in conjunction with the GSS-340M. Note that this fuel pump solution requires our Racetronix Plug-N-Play wiring harness. Another way of supporting massive H.P. is to install a second in-tank GSS-340M in parallel. However, modifications must be made to the fuel tank electrical bulkhead fitting to support the additional amperage. Call us to discuss.

P/N	DESCRIPTION	PRICE
	WALBRO GSL-392 IN-LINE FUEL PUMP:	
GSL-392	> GSL-392 Fuel Pump	$139.00
400-939	> GSL-392 Pump Mount Kit	$15.00
GSL-HOSE	> GSL-392 In-line Hose Kit	$25.00
	BOSCH GFP-214 IN-LINE FUEL PUMP: If you plan on making more than 500 RWHP we stongly recommend the new Racetronix fuel pump harness which can deliver a full one volt DC or more to the pumphead than the stock GM wiring. This extra volt can easily equate to an increase of 10% or more! Additionally this harness is pre-wired for both a secondary booster pump and/or a pump voltage booster. All parts are Plug-N-Play.	
GFP-214	> GFP-214 Fuel Pump	$350.00
30019UH-IL	> GFP-214 In-Line Install Kit	$50.00
	WALBRO GSS-340M IN-TANK FUEL PUMP KIT:	
GSS-DUAL	> Kit includes 2 modified for ⅜″ discharge GSS-340 pumps, ⅜″ 'y' connector new dual support fuel pump support plate, additional bulkhead connector, new in-tank wiring kit, and detailed installation instructions	$139.00
	PUMP VOLTAGE BOOSTER	
	> Kenne Bell or MSD	Call us to Discuss.

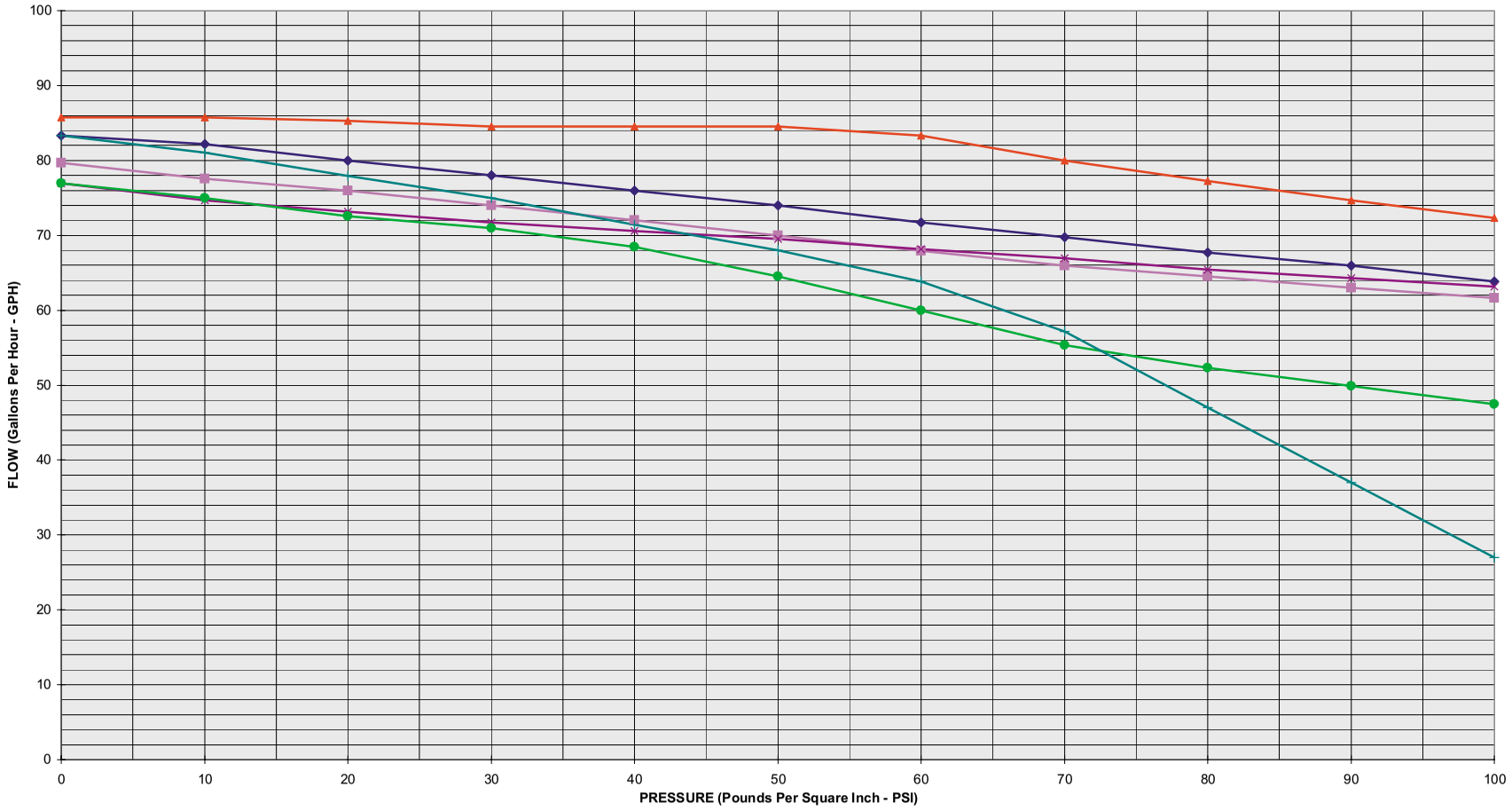


	STOCK LT1 IN-TANK FUEL PUMP		GSS-340M IN-TANK FUEL PUMP		Supported HP	Supported HP
PSI	LT1 Flow	LT1 Amps	340M Flow	340M Amps	LT 1	340M
0	50.7	3.8	83.33	3.7	608.4	999.96
10	48	4.2	81.08	4.4	576	972.96
20	45.34	4.6	77.92	5.1	544.08	935.04
30	43.06	5.1	75	6	516.72	900
40	40.63	5.6	71.43	6.8	487.56	857.16
50	36.66	6.1	68	7.8	439.92	816
60	30.61	6.6	63.83	8.8	367.32	765.96
70	22.7	7.1	57.14	9.9	272.4	685.68
80	10.88	7.6	47	11.1	130.56	564
90			37	12.5	0	444
100			26.99	14	0	323.88

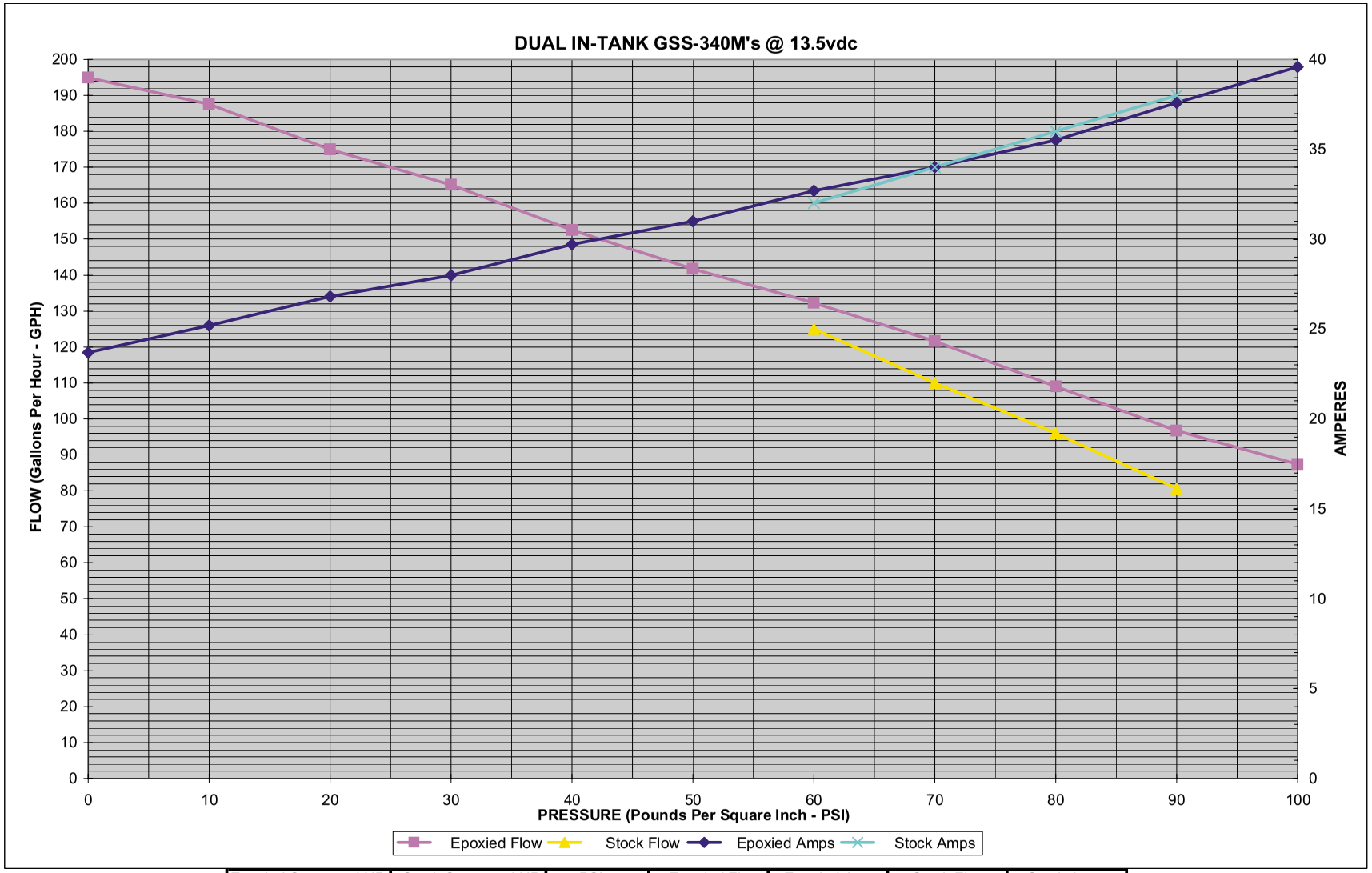


Supported HP @ 13.5vdc	Supported HP @ 16.0vdc	PSI	Flow @ 13.5vdc	Amps @ 13.5vdc	Flow @ 16.0vdc	Amps @ 16.0vdc
999.96	1167.6	**0**	83.33	3.7	97.3	5.1
972.96	1148.88	**10**	81.08	4.4	95.74	5.7
935.04	1125	**20**	77.92	5.1	93.75	6.4
900	1096.44	**30**	75	6	91.37	7.25
857.16	1058.88	**40**	71.43	6.8	88.24	8
816	1014.12	**50**	68	7.8	84.51	8.8
765.96	964.32	**60**	63.83	8.8	80.36	9.8
685.68	870	**70**	57.14	9.9	72.5	10.7
564	756	**80**	47	11.1	63	11.7
444	648	**90**	37	12.5	54	12.9
323.88	540	**100**	26.99	14	45	13.75

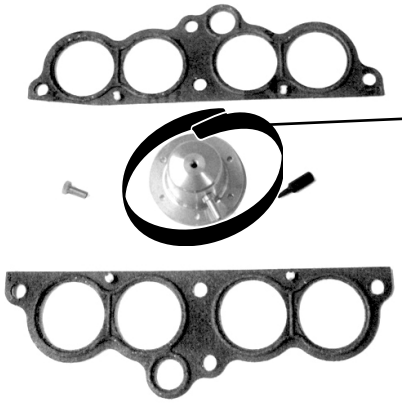
WALBRO IN-TANK GSS-340M @ 13.5vdc FEEDING ASSORTED IN-LINE PUMPS @ 13.5vdc



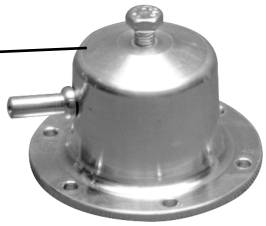
TREX Supported HP	GSL392 Supported HP	GFP214 Supported HP	PAX 1100 Support HP	VOR Univ Supported HP	PIERBURG Support HP	340 STANDALONE HP	PSI	T-REX Flow	GSL-392 Flow	GFP-214 Flow	PAXTON 1100 Flow	VOR Univ Flow	PIERBURG Flow	StandAlone 340M
956	1000	923	1029	923	0	1000	**0**	79.65	83.33	76.92	85.71	76.92		83.33
931	986	896	1029	900	0	973	**10**	77.59	82.19	74.69	85.71	75		81.08
911	960	878	1024	871	0	935	**20**	75.95	80	73.17	85.31	72.58		77.92
888	936	861	1014	852	0	900	**30**	74	78	71.71	84.51	71		75
864	911	847	1014	821	0	857	**40**	72	75.95	70.59	84.51	68.44		71.43
840	888	834	1014	774	0	816	**50**	70	74	69.5	84.51	64.52		68
815	861	818	1000	720	0	766	**60**	67.92	71.71	68.18	83.33	60		63.83
791	837	803	960	665	0	686	**70**	65.93	69.77	66.91	80	55.38		57.14
774	812	785	927	628	0	564	**80**	64.52	67.67	65.45	77.25	52.33		47
756	791	771	896	598	0	444	**90**	63	65.93	64.29	74.69	49.86		37
740	766	758	867	570	0	324	**100**	61.64	63.83	63.16	72.29	47.49		26.99



Epoxied Supported HP	Stock Supported HP	PSI	Epoxied Flow	Epoxied Amps	Stock Flow	Stock Amps
2340	0	**0**	195	23.7		
2250	0	**10**	187.5	25.2		
2100	0	**20**	175	26.8		
1981.68	0	**30**	165.14	28		
1830.48	0	**40**	152.54	29.7		
1700.76	0	**50**	141.73	31		
1588.2	1500	**60**	132.35	32.7	125	32
1459.44	1320	**70**	121.62	34	110	34
1309.08	1152	**80**	109.09	35.5	96	36
1161.24	968.64	**90**	96.77	37.6	80.72	38
1048.56	0	**100**	87.38	39.6		

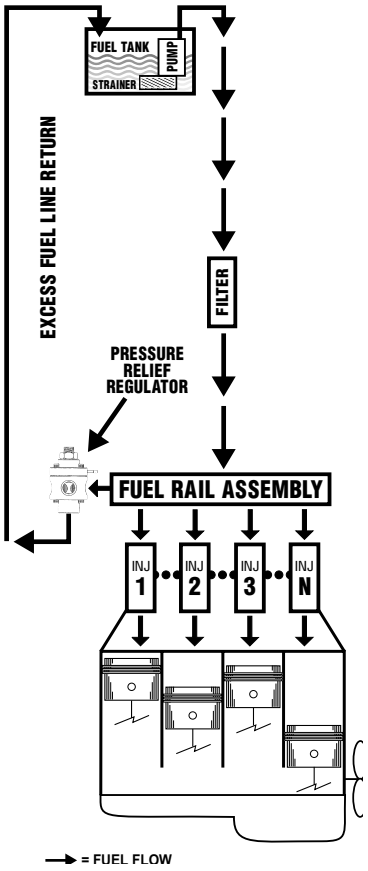


L98 BILLET ALUMINUM ADJUSTABLE FUEL PRESSURE REGULATOR WITH GASKET SET
100-002A

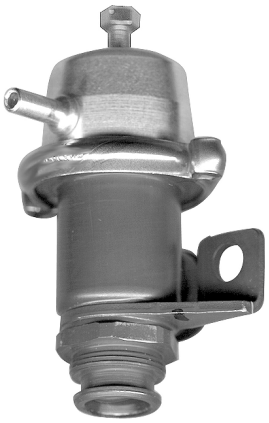


L98 BILLET ALUMINUM
ADJUSTABLE FUEL PRESSURE
REGULATOR

L98 ADJUSTABLE FUEL PRESSURE
REGULATOR
STEEL NICKEL PLATED • 100-002S

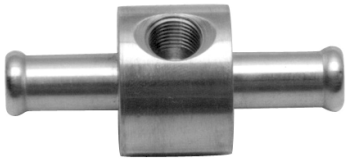


TYPICAL 2 PIPE FUEL INJECTION SYSTEM

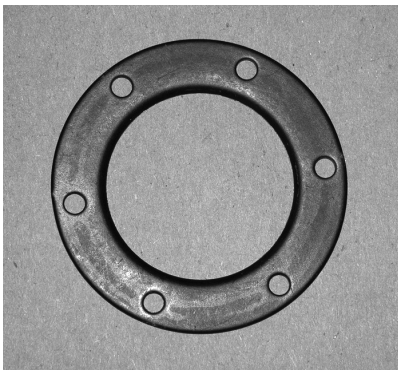


LT1 ADJUSTABLE FUEL PRESSURE
REGULATOR • 100-016

MODIFIED LT1 REGULATOR: SPRING & DIAPHRAGM REMOVED. REGULATOR BECOMES A PASS THROUGH SUCH THAT THE SUPER FMU (page 55) OR SUPERPUMPER-II™ (page 87) IS IN COMPLETE CONTROL. L98's is similar.



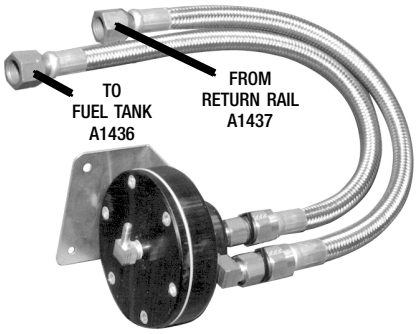
IN-LINE GAUGE ADAPTOR
A1396



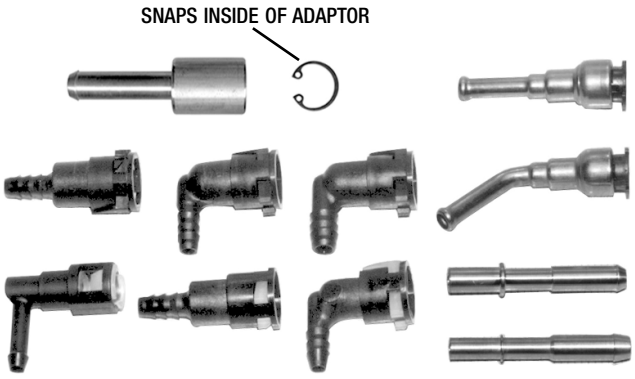
L98 FUEL PRESSURE REGULATOR
RING SPACER

Select Fuel Components: Regulators

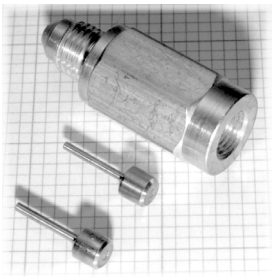
P/N	DESCRIPTION	PRICE
	ADJUSTABLE FUEL PRESSURE REGULATOR:	
100-002A	> L98 (1985-1991) Billet Aluminum	$89.00
100-002S	> L98 (1985-1991) Steel (Core Charge $25)	$30.00
100-016	> LT1 (1992-1996) *(Must specify year)*	$119.50
	HIGH-OUTPUT MATCHED FUEL INJECTORS:	
	We sell matched injectors of varying fuel flows. Please call for separate price sheets.	
	> Matched set of Multech 18 lb./16 ohm injectors	CALL
	> Matched set of Bosch 22 lb./16 ohm injectors	CALL
	> Matched set of Bosch 24 lb./16 ohm injectors	CALL
	> Matched set of Lucas 27 lb./16 ohm injectors	CALL
	> Matched set of Bosch 30 lb./16 ohm injectors	CALL
	> Matched set of Bosch 36 lb./16 ohm injectors	CALL
	> Matched set of Bosch 42 lb./16 ohm injectors	CALL
	IN-LINE GAUGE TO HOSE ADAPTOR:	
A1396	> 3/8" x 3/8" Beaded Hose to 1/8" FPT	$5.00
	L98 RING SPACER FOR L98 REGULATOR:	
	If you've got big injectors (greater than 27 lbs/hr) on a 'batch' fired L98 you may want to try a fuel pressure ring spacer. By lifting the hat of the regulator up an eight of an inch you can reduce the fuel pressure at idle from 5 to 10 psi thus getting the BLOCK LEARN back into control. This may help you pass an	
100-002SC	emissions test.	$10.00



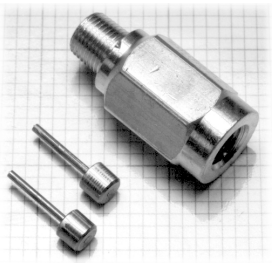
FMU – FUEL MANAGEMENT UNIT WITH
GM INSTALLATION SYSTEM • A1333 & B1334



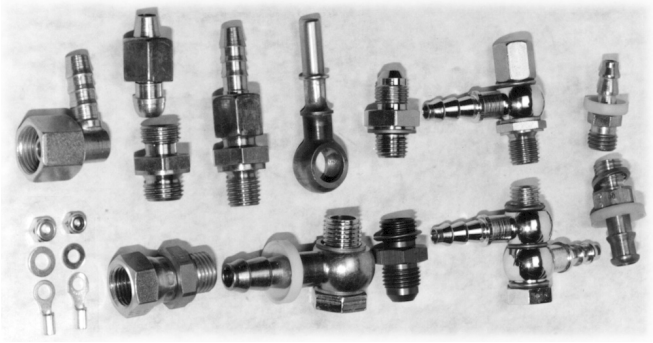
MISCELLANEOUS PUSH-TYPE FUEL ADAPTORS • 1/4" – 5/16" – 3/8"



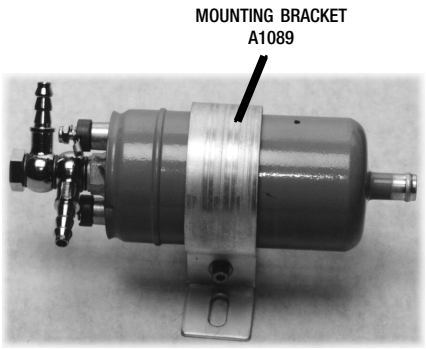
GAUGE SNUBBER • 1526



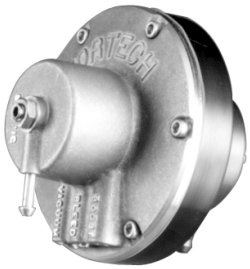
GAUGE SNUBBER • 1526-47



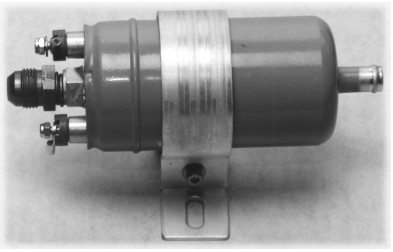
MISCELLANEOUS FUEL PUMP ADAPTORS
BANJO – FLAIR – PIPE – PUSH



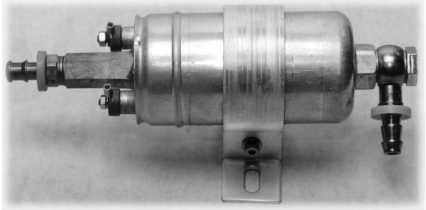
BARBED HOSE IN DOUBLE BANJO OUT



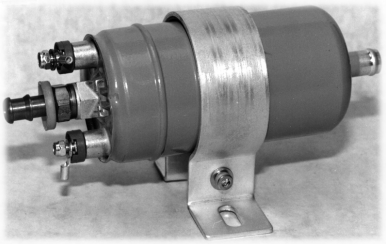
SUPER FMU
6X100-001



#8 FLAIR OUT – BARBED HOSE IN



BARBED HOSE OUT BANJO IN



BARBED HOSE OUT & IN

Select Fuel Components: FMU's & Parts

P/N	DESCRIPTION	PRICE
	FMU – FUEL MANAGEMENT UNIT: Our FMU is an on-line secondary fuel pressure regulator that will increase fuel pressure in proportion to boost pressure. Five different models are available that vary the rate of gain in proportion to boost. We find these regulators are useful on 383 and 406 style Tuned Ports or engines with intakes and cams that rev past 5000 RPM. These units are not compatible with Multech injectors. We do NOT recommend using one of these FMU's without first discussing your application	
A1333	with us. Ratios available: X4, X6, X8, X10, X12. (overall dimensions: 3-½" x 3-½")	$179.00
	FMU – INSTALLATION SYSTEM FOR CORVETTES: Our installation system consists of two S/S braided lines with hydraulically crimped fittings. The system allows you to tie the FMU into your Corvette without cutting or ruining any stock lines. The FMU can easily be removed and the car returned to stock within a few minutes.	
B1334	> 1985 Corvette	$225.00
B1335	> 1986 – 87 Corvette	$225.00
B1336	> 1988 – 96 Corvette	$225.00
	FMU RECALIBRATION KITS:	
6Z170-015	> 4:1 Recalibration System	$39.95
6Z170-010	> 6:1 Recalibration System	$39.95
6Z170-020	> 8:1 Recalibration System	$39.95
6Z170-025	> 10:1 Recalibration System	$39.95
6Z170-030	> 12:1 Recalibration System	$39.95
	SUPER FMU: The Super FMU is the industry's first fully tunable fuel regulation device, engineered for all of today's electronically fuel-injected engines. This device allows the fuel pressure curve of your EFI engine to be adjusted to accommodate multiple levels of demand. The fuel system can be programmed, as performance upgrades are added, to maximize performance throughout the engine's RPM range. It may be used in series or as a stand-alone, and has the capacity for ultra-high flow racing fuel system applications. Excellent choice for running large injectors on bank-fired engines such as the 1985 through 1993 Corvettes.	
6X100-001	> Super FMU	$299.95
	SUPER FMU – INSTALLATION SYSTEM FOR CORVETTES:	
6X100-001A	> 1985 – 1987 Corvette	$225.00
6X100-001B	> 1988 – 1989 Corvette (requires longer lines)	$275.00
6X100-001C	> 1990 – 1991 Corvette (requires longer lines)	$275.00
6X100-001D	> 1992 – 1996 Corvette (requires longer lines)	$275.00
	GAUGE SNUBBER: In-line mechanical gauge snubber dampens pulsations that make fuel pressure gauges "bounce" from injector pulses.	
1526	> In-line snubber: in #4 flair; out 1/8" female pipe thread (FPT)	$30.00
1526-47	> In-line snubber: in 1/8" male pipe thread (MPT); out 1/8" female pipe thread (FPT)	$30.00
A1089	**MOUNTING BRACKET, PUMP:**	$25.00
CALL	**MISCELLANEOUS PUSH-TYPE FUEL ADAPTORS:**	CALL
CALL	**MISCELLANEOUS FUEL PUMP FITTINGS & ADAPTORS:**	CALL

NOTE

FPT *Female Pipe Thread*
MPT *Male Pipe Thread*
NPT *National Pipe Thread (may denote either male or female)*

1992 LT1 CORVETTE WITH SIDE EFFECTS EXHAUST

1992 LT1 CORVETTE WITH SIDE EFFECTS EXHAUST AND CUSTOM PAINT SCHEME

Select Exhaust System Components

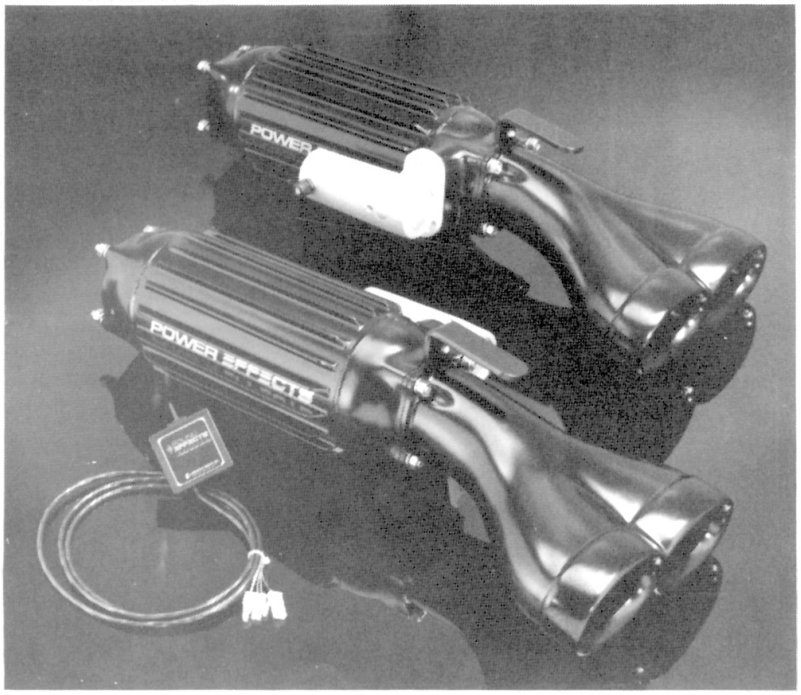
P/N	DESCRIPTION	PRICE
	LT1/LT4 "SHORTY" HEADERS:	
CALL	> HPC inside and outside headers for LT1 complete with installation system	$819.00
CALL	> HPC inside and outside headers for LT1 by Reeves Callaway	$950.00
	L98 HEADERS: Four into one headers with HPC silver ceramic coating inside and outside for maximum horsepower. Includes "Y" pipe and all necessary installation parts. These headers are properly constructed with a thick, flat (no weld bead) flange surface. You cannot use exhaust manifolds or headers that have weld bead protruding out at the gasket surface. They will always need tightening as they cut through the gasket and leak. Buyer beware of cheap headers – especially ones that aren't coated!	
200-004	> 1984–1985 Flanged Catalytic Converter (1-¾" primary w/3" collector)	$750.00
200-014	> 1986–1991 Slip-On Catalytic Converter (1-¾" primary w/3" collector)	$750.00
	LT1 EXTRUDE HONED EXHAUST MANIFOLD:	
30075	> GM exhaust manifolds are machined then Extrude Honed™ for 30% more flow	$495.00
	> Core charge for pair exhaust manifolds	$500.00
	SIDE EFFECTS™:	
SE100SR	> L98 Side Effects™ [side mounted exhaust system] 1985–1991 *(add $100 for convertible)*	$1655.00
SE120SR	> LT1 Side Effects™ [side mounted exhaust system] 1992–1996 *(add $100 for convertible)*	$1875.00
	> Paint your Side Effects™	$250.00
	> Polished Chrome Tips for Side Effects™ *(at time of order)*	$125.00
	POWER EFFECTS™: A tunable high-performance exhaust for your car/truck/street rod. Tune the power, play with the sound and enjoy owning the latest technology. *(See following page for more info).*	
PE 1000	> 1984–1985 L98 CORVETTE	$1089.00
PE 1010	> 1986–1991 L98 CORVETTE	$1089.00
PE 1020	> 1992–1996 LT1, LT4 CORVETTE	$1599.00
PE 1030	> 1990–1995 ZR1 CORVETTE	$1599.00
	NOTE: *Power Effects™ tips come standard matte black. For chrome tips add $250.*	
	BORLA EXHAUST SYSTEMS:	
30052S	> Borla LT1 exhaust system	$1175.00
	LT1 MUFFLERS: Left & right units, exact replacement for stock LT1 Corvette exhaust	
30052M	> LT1 Borla stainless steel mufflers. *Please specify year.*	$500/pr.
	L98 MUFFLERS: Left & right units, exact replacement for stock L98 Corvette exhaust	
30051	> L98 Borla stainless steel mufflers. *Please specify year.*	$495/pr.
	METAL EXHAUST MANIFOLD GASKETS:	
12552470	> Stock LT1/L98 Head w/Manifold (need 2)	$20.00/ea

METAL EXHAUST MANIFOLD GASKETS

POWER EFFECTS® TUNABLE HIGH PERFORMANCE EXHAUST

FOR YOUR CAR, SPORT TRUCK OR STREET ROD

Power Effects™ is a tunable high performance exhaust for your car, truck or street rod. Tune the power, play with the sound and enjoy owning the latest development in performance technology.



POWER CAPSULES PATENT PENDING
w/cast aluminum tips & optional electronic remote tuning

DESIGN

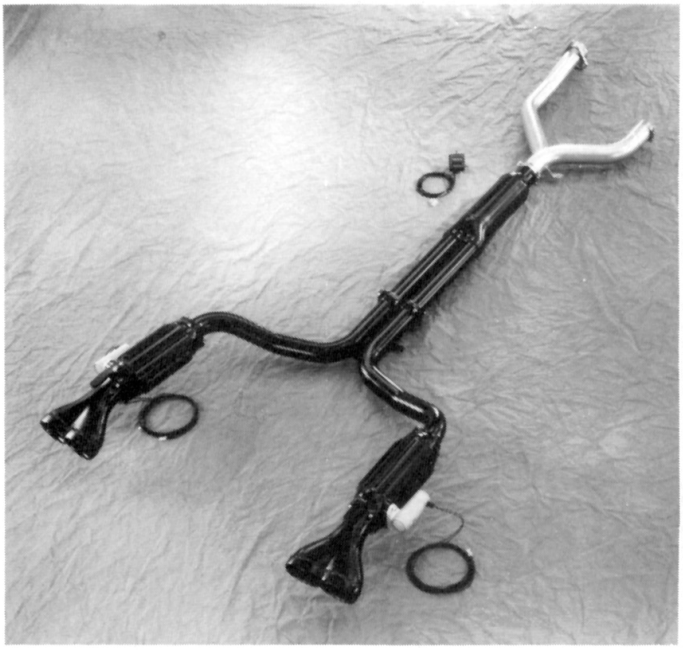
Power Effects™ was developed to be the ultimate choice in performance exhaust. Tuning of back pressure and air flow allows changes in torque and horsepower. Now, with Power Effects™, you can tune your exhaust for peak performance or subtle changes in sound. Tunability provides a new dimension in performance and enjoyment. Power Effects™ is emissions legal and attaches to the back of the factory catalytic converter.

TUNABILITY

Never before has there been the opportunity to change the characteristics and performance of your exhaust with the twist of a knob or flick of a switch. A six position manual tune feature is standard on each power capsule. Manual tunability is accomplished by turning a knob located on the power capsule. Reaching under the car is required for manual tuning. On the other hand, remote tunability from inside the vehicle is optional and consists of a hand held electronic control. Holding a switch for five seconds tunes the exhaust across the power band allowing precise control of back pressure and exhaust flow. The remote tuning option can be added at any time as an upgrade. Just replace the manual tuning knob with a motor drive and run the wiring harness.

SOUND

Sound is something personal and different to each of us. Power Effects™ is best described as having a deep, rich, robust sound throughout the entire power range. The overall sound is not factory quiet nor is it race track loud. Sound changes are subtle, but noticeable, as back pressure is adjusted for changes in performance. Changes in sound are not significant during idle or during cruising speeds. Sound levels are most noticeable when accelerating or revving the engine. Each vehicle will have its own sound and level of resonation at various engine RPMs. Sound levels inside the vehicle allow use of the radio and normal conversation in either the fully closed or opened position.



LT1/ZR1 PRODUCT LAYOUT SHOWN... (fits: 1975-1995 Corvettes)

COMPONENTS SHOWN:

- Cast/Extruded Aluminum Power Capsules
- Stainless Steel Inner Workings
- Cast Aluminum Exhaust Tips
- Powder Coated Aluminized Exhaust Tubing
- Mandrel Bent 2-3/4" dia. Exhaust Tubing
- Stainless Steel Resonator w/ Stainless Packing
- Optional Electronic Remote Tuning

CONSTRUCTION

Only the finest materials have been selected in the design and development of Power Effects™. Aluminum castings and extrusions, stainless steel, aluminized steel, and brass components are used where best suited. A satin black powder coat finish is used on components that are visible from the back of the car. The 2-3/4" dia. x 14 ga. mandrel bent aluminized tubing provides more than a 20% improvement in air flow when compared to conventional high performance exhaust systems. Where possible, flange mounted components are used for ease of assembly and accurate alignment.

PERFORMANCE

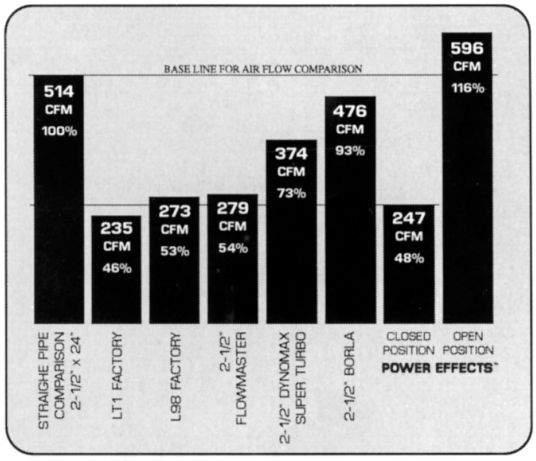
One of the objectives in performance modification is to not only increase horsepower, but also to increase and lengthen the peak of the torque curve as it relates to engine RPM. Torque is what we feel during acceleration. A primary factor affecting torque is the amount of back pressure that is present at different engine RPMs. Back pressure affects air flow which is directly related to torque and horsepower. This is where tunability of back pressure offers performance opportunities.

Flow bench testing of Power Effects™ reveals significant improvements in air flow when compared to factory and other popular, high performance exhausts. A substantial change in air flow exists between the closed and opened positions. In the closed position, Power Effects™ resembles the back pressure and air flow of factory mufflers. When opened, a 55% improvement in air flow is created allowing maximum scavenging of exhaust gases.

INSTALLATION

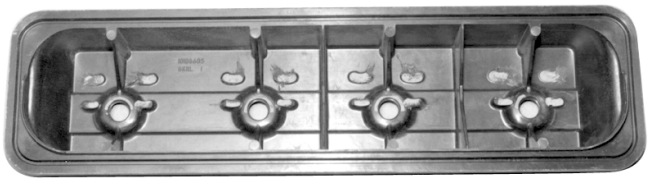
Power Effects™ is not a conventional exhaust system. No need for torches, pry bars or sweat labor to make things fit. Any mechanically inclined do-it-yourselfer can easily install Power Effects™ in his driveway or garage in just a couple of hours. The remote tuning option will take another couple of hours. Each system comes complete with everything necessary...just add tools.

AIR FLOW COMPARISON CHART

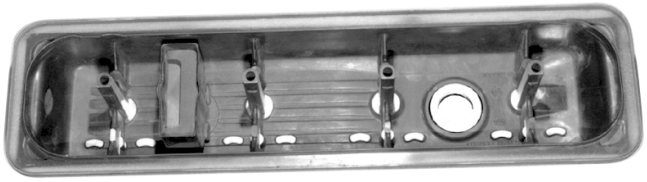


This Flow Test Comparison was performed using a SF600 CFM Super Flow test bench. Super Flow® is a registered trademark of Super Flow Corporation of Colorado Springs, Colorado. A 2-1/2" dia. straight piece of exhaust tubing, 24" long was used as the base line for this comparison. Calibrated corrected airflow was 634 CFM for these tests. CFM...cubic feet per minute.

ROLLER ROCKER



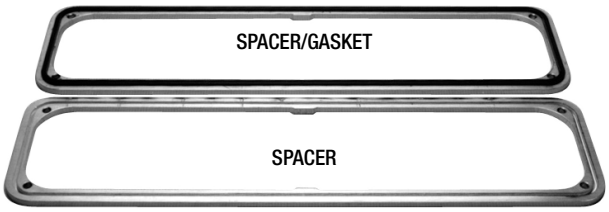
LT1 VALVE COVERS AFTER MACHINING TO ACCEPT ROLLER ROCKERS



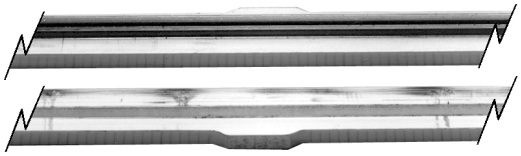
L98 VALVE COVERS AFTER MACHINING TO ACCEPT ROLLER ROCKERS

LT1 CHROME PLATED VALVE COVER BOLTS
10108675

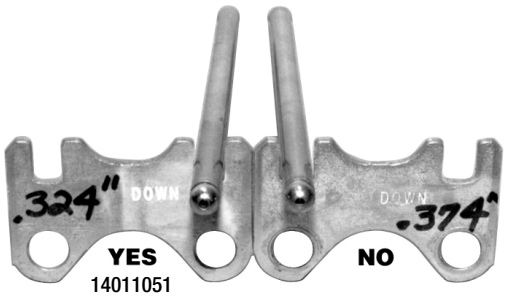
ENGRAVED LT1 VALVE COVER • 30076



LT1 VALVE COVER SPACERS • B1579



LT1 VALVE COVER SPACERS • CLOSE-UP VIEW



14011051

GM GUIDE PLATES – REQUIRED ON ALL GM ENGINES
1988 & NEWER WHEN INSTALLING ROLLER ROCKERS

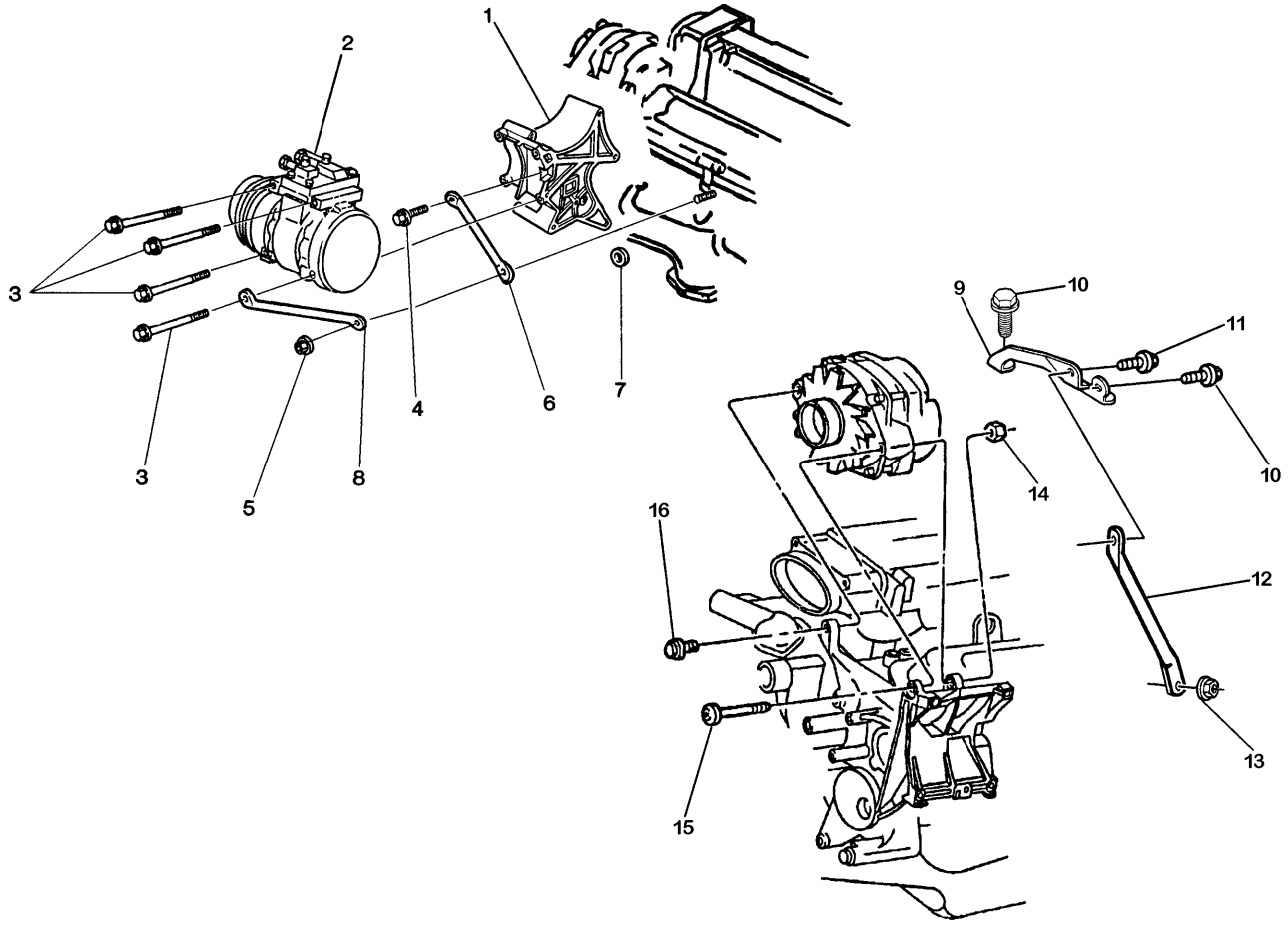
Select Valve Train Components & Valve Covers

P/N	DESCRIPTION	PRICE
	FORGED EXTRUDED MACHINE ALUMINUM NEEDLE BEARING ROLLER ROCKERS BY CARROLL: Do not be fooled by low priced cast imitations or roller tip only! For the L98, we recommend 1.6 ratio with 7/16" studs. For the LT1, we recommend 1.5 ratio. Our price includes 16 rockers, polynuts, and a set of ARP 7/16" studs.	
30011	>1.5 or 1.6 ratio with 7/16" screw in studs.	$360.00
14011051	> 1989 and newer Vettes require a set of GM guide plates No. 14011051	$20.00
30012	> 1.6 ratio for stock 3/8" studs [no studs included]	$325.00
30027	> Mixed set of 1.5 & 1.6 ratio with 7/16" studs	$360.00
30013	> 1.5 ratio for stock 3/8" studs [no studs included]	$300.00
	VALVE SPRINGS: You might want to consider changing your valve springs while you are doing your rockers, particularly if the engine has 20,000 or more miles. These springs are an exact replacement (no machining necessary) and very high quality; good through 6500 RPM at .6" lift. You can install these springs on the vehicle using compressed air to hold the valves in place.	
NPN	> Note installation time is in conjunction with installing roller rockers	$225.00
	L98 VALVE COVERS: A new pair of magnesium alloy GM CORVETTE covers are machined to accept our roller rockers. *Please specify year.*	
30014	> Iron Head [perimeter cover bolts]	$145.00
30015	> Aluminum Head [4 center bolts]	$200.00
	> Machine your valve covers to our specifications (1 pair)	$60.00
	> Paint your valve covers to match body color	$125.00
	LT1 VALVE COVERS: Plastic LT1 valve covers machined to accept our roller rockers then engraved "CARROLL CORVETTE" and painted to match your car.	
30076	> Engraved, machined, painted pair of new GM plastic valve covers* *(*deduct $150 if you supply covers)*	$350.00
30077	> Installation hardware to retrofit new LT1 plastic covers to L98 models from 1986 through 1992 aluminum heads. (Includes studs, chrome bolts, gaskets, grommets, and oil fill cap)	$195.00
10108675	> LT1 chrome plated valve cover bolts – set of 8	$35.00
B1579	> LT1 valve cover spacers – raises the height of LT1 valve cover by 1/4" allowing use of roller rockers with AFR heads or roller rockers on stock heads without machining valve covers. (can use with stock studs). *(Requires GM Valve Cover Gasket Set)*	$150.00/pr
10108625	> GM Valve Cover Gasket – 1992 and Newer *(2 Required)*	$11.25/ea
CALL	> Custom height spacers available upon request which also may require extended studs	CALL
10108626	> Grommets *(8 Required)*	$1.45/ea
	L98 / LT1 VALVE COVERS: A brand new pair of all aluminum aftermarket CNC machined valve covers are polished to a mirror finish. Stock Corvette valve covers can be polished but tarnish due to the magnesium alloy. *(Special Order Item – must be pre-paid).*	
30035C	> SB Chevy centerbolt (Aluminum head Corvettes)	CALL
30035P	> SB Chevy perimeter bolt (Iron head Corvettes)	CALL
21220	> Polished Billet Oil Breather with PCV	CALL
23120	> Polished Billet Oil Fill Cap	CALL

1992–96 A/C Compressor Chrome Hardware

P/N	DESCRIPTION	PRICE
	SELECT CHROME ACCESSORIES:	
	GM steel parts are stripped, polished and triple show chrome plated.	
	Aluminum parts are polished.	
10128419	(1) Bracket, gen and A/C compressor and P/S pump	CALL
10157926	(2) Compressor, A/C (w/o CLU) (Aluminum)	CALL
11514485	(3) Bolt-HFH, M8×1.25×85.22 THD, 17 OD, 10.9, PO (compressor to bracket)	$5.00
10105215	(3) Bolt, A/C compressor (Item #8 lower brace to compressor)	$5.00
9439870	(4) Bolt, HFH 3/8–16×1.00 280M PZOR	$4.00
14057004	(5) Nut, hex flange 3/8–116 PC 286M	$2.00
10128423	(6) Brace, A/C compressor	$20.00
10028767	(7) Spacer, gen (part of 1)	$5.00
10105400	(8) Brace, A/C compressor RR lower	$20.00
10105354	(9) Brace, gen RR INR	$30.00
9439870	(10) Bolt, eng lift front bracket (HFH 3/8–16×1.00 280M PZOR)	
	(HFH 3/8–16×100 280M PZOR) (8.900)	$5.00
14063755	(11) Bolt, HFH, M10×1.5×25, 9.8 PZOR, THIN HD, 21.5 OD	$5.00
10186188	(12) Brace, gen RR OTR	$20.00
14057004	(13) Nut, hex flange 3/8–16 PC 286M	$4.00
11503643	(14) Nut, HFH, M10×1.5×11.21 OD, M8, ZOR	$4.00
10105345	(15) Bolt, gen	$5.00
14056165	(16) Bolt, HWH M10×1.5×35 10.9 POR (6.008)	$5.00

NOTE: *Numbers in parenthesis correspond to illustrations on facing page.*



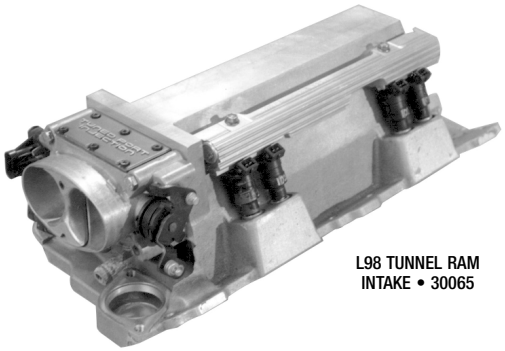
Select Throttle Bodies & Accessories

P/N	DESCRIPTION	PRICE
	THROTTLE BODY INSIGNIA PLATE:	
	The name "CARROLL SUPERCHARGING" is engraved onto the top (removable) plate of the throttle body. Letters are then filled typically with black paint, although you may match color of your car's paint.	
	> Throttle Body Placard: "CARROLL SUPERCHARGING" *(we engrave yours)*	$40.00
30080	Outright	$75.00
	Core Credit	$35.00
	THROTTLE BODY AIRFOIL:	
30081	Aerodynamic throttle body nosepiece reduces turbulence.	$59.00
	THROTTLE BODY:	
30084	58mm. Unit is blueprinted and polished. *Must specify year.*	$450.00

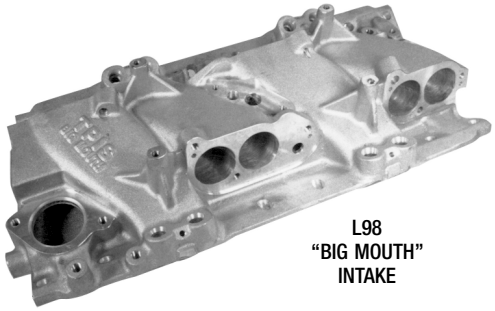
THROTTLE BODY INSIGNIA PLATE • 30080

THROTTLE BODY AIRFOIL
30081

58mm THROTTLE BODY • 30084



L98 TUNNEL RAM INTAKE • 30065



L98 "BIG MOUTH" INTAKE

ENGINE	TORQUE/RPM	HP/RPM
350 CID	575 ft/lbs @ 4750	606 HP @ 6500 w/Vortech S/C
383 CID	437 ft/lbs @ 4750	463 HP @ 6000
383 CID	644 ft/lbs @ 4250	530 HP @ 4750 w/Vortech S/C
400 CID	474 ft/lbs @ 5250	548 HP @ 6750
406 CID	460 ft/lbs @ 4750	476 HP @ 6000
406 CID	465 ft/lbs @ 5750	535 HP @ 6500
409 CID	528 ft/lbs @ 4750	516 HP @ 5500 LT1 w/Mini-Ram
420 CID	507 ft/lbs @ 5250	542 HP @ 6250
427 CID	647 ft/lbs @ 5750	763 HP @ 6500 w/Vortech S/C

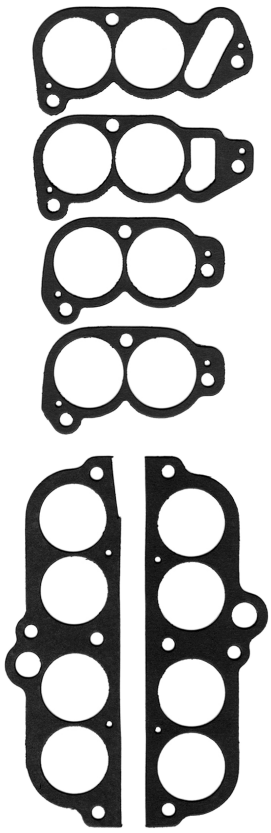
L98 TUNNEL RAM PERFORMANCE

L98 Rev Limit

I have enjoyed over 115,000 miles on my 1989 Corvette. It has a lot of rattles, but at least it "looks" like a Corvette (versus the 1997s). I recently replaced the stock L98 with a GM ZZ4 crate motor. The engine is capable of 355 hp and 405 lb.-ft. of torque. However, with the stock induction system, power is limited above 4500 rpm. What improvements to the induction systems would you recommend to maximize the ZZ4's performance up to 6000 rpm? Even without further improvements, I can't wait to take on one of the new Corvettes!

Phil Foote
Ellicott City, MD

If you stick with the Tuned Port, you'll be the torque of the town. But if you upgrade to a MiniRam, you'll be able to impress the girls with macho displays of horsepower. Assuming your ego won't be too seriously wounded if you can't brag about horsepower, the most cost efficient option is to install a Big Mouth manifold, large tube runners and ported plenum along with a 52mm throttle body. All these components are available from TPI Specialties, and I feel confident recommending them because I've used them successfully, as has Tech Team member Dale Ashley. He and I have both run 12.30s at over 110 miles per hour with similar engines. Following the "Tuned Port Experience," we both installed MiniRams and again, our individual results closely paralleled each other. However, be advised that a MiniRam dramatically changes an engine's personality. It's designed to operate in a much higher rpm range than a modified Tuned Port and the overall engine/driveline combination must be adjusted accordingly. As an example, when I first installed the MiniRam and made no other changes, the car actually slowed down because the torque converter and rear axle ratio, while ideal for a Tuned Port, were all wrong for a MiniRam. With a 2500 rpm converter stall speed and a 3.42 rear axle ratio, the engine was well below its torque peak as it attempted to blast the car off the starting line. Changing to a "looser" torque converter (3500 rpm stall speed) and a 4.10:1 rear axle ratio made a world of difference and the car ran about a tenth and a half quicker and a mile per hour faster than ever before. For a mild street engine, you're better off with the Big Mouth/runners/plenum combination. Even though peak horsepower is reached at 4750-4800 rpm, my best elapsed times were achieved with 5600 rpm shift points. Another option is the Lingenfelter "Box" manifold. Many people swear by it, but I don't have enough personal experience with it to make a recommendation one way or another. I do know it's a bear to install. Irrespective of your intake manifold selection, you should consider installing a ram air system. Cold air does wonderful things for the production of horsepower. Also, be sure you have an adequate exhaust system. It doesn't do any good to constipate your engine by not allowing out-flow to match in-flow.



PORTED GASKET SET FOR RUNNERS & PLENUM • 30064 (LARGE TUBE)

REPRINTED WITH PERMISSION FROM CORVETTE FEVER, FEBRUARY 1998

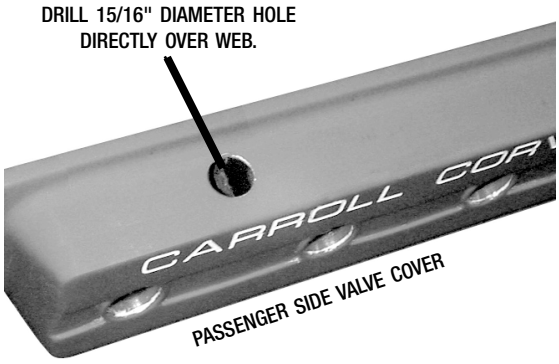
Select Air Intake Components

P/N	DESCRIPTION	PRICE
	L98 "BIG MOUTH" INTAKE SYSTEM: TPIS intake manifold and plenum are ported and polished to match a new set of polished aluminum runners whose i.d. is slightly larger than stock. Intake manifold exterior is painted gloss black which looks stunning with polished runners, plenum, and distributor cover. Price includes detailing the "U" grooves with black epoxy paint. This set-up will give you a 30 HP increase on a stock 350 CID TPI motor.	
30060	> TPIS intake manifold	$395.00
30061	> Ported & polished GM plenum	$295.00
30062	> Polished distributor cover	$95.00
30063	> Polished aluminum runners [i.d. slightly larger than stock]	$495.00
30064	> Ported Gasket set for runners & plenum	$35.00
MS93318	> Fel Pro MS93318 Intake Gasket Set	$35.00
	L98 TUNNEL RAM INTAKE SYSTEM: A beautiful cast-machined aluminum tunnel ram intake that will turn your L98 into an LT1! The installation system comes complete with fuel pressure regulator, injector rails, water neck, and S/S fuel lines. It's all there! You add your injectors and cam or pick from one of ours. ***NOTE:*** *This manifold is for OFF ROAD use only; it does not have EGR valve provisions.*	
30065	> Tunnel Ram Intake	$850.00
30066	> Tunnel Ram Installation System with Fuel Lines and Regulator	$350.00
30067	> Cam and Injectors: Good thru 6200 RPM	CALL

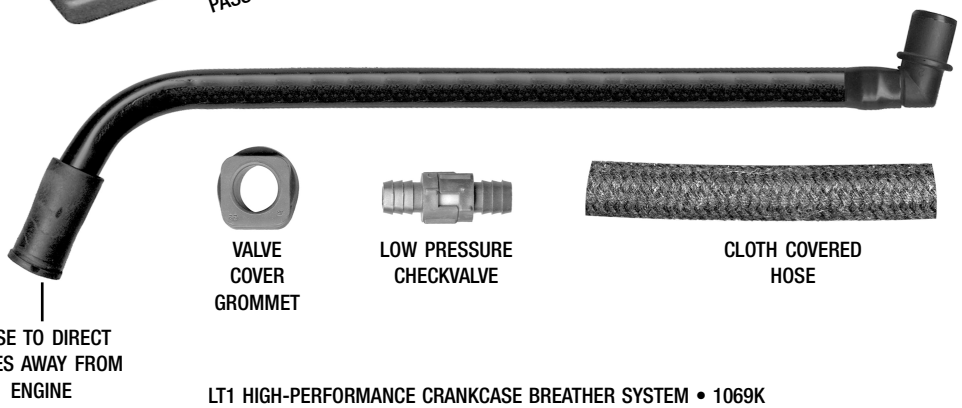
Select Air Intake Components & Heads

P/N	DESCRIPTION	PRICE
	L98 CRANKCASE BREATHER: Round, chrome, crankcase breather with a built in check valve allowing unit to be used on the driver's side valve cover without upsetting the PCV system. This unit should NOT be used on the passenger side valve cover. Since installation requires making a new hole in the valve cover [Chevy emblem must be removed] we suggest doing in conjunction with roller rockers. Extra breather assures less crankcase pressure, i.e. more horsepower.	
1069	> Breather & grommet	$25.00
	LT1 HIGH-PERFORMANCE CRANKCASE BREATHER SYSTEM: This system allows venting of crankcase under boost but prevents sucking in air under normal driving conditions thus maintaining integrity of PCV system and	
1069K	MAF calibration.	$40.00

L98 CRANKCASE BREATHER INSTALLATION • 1069



THIS SYSTEM ALLOWS VENTING OF CRANKCASE UNDER BOOST BUT PREVENTS SUCKING IN AIR UNDER NORMAL DRIVING CONDITIONS THUS MAINTAINING INTEGRITY OF PCV SYSTEM AND MAF CALIBRATION.

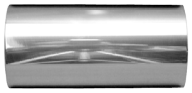


LT1 HIGH-PERFORMANCE CRANKCASE BREATHER SYSTEM • 1069K

Select Air Intake Components & Discharge Systems

P/N	DESCRIPTION	PRICE
	MAF ADAPTOR:	
B1367-1	> In, 1994 and up	$115.00
B1367-2	> Out, 1994 and up	$115.00
	SURGE VALVE:	
8D001-001	> Surge control, normally closed, vacuum to open. Its purpose in a centrifugal blower is to increase life of supercharger.	$49.95
	SURGE VALVE FLEX HOSE:	
V1	> 1" i.d.	$12.84/ft
	SURGE VALVE SYSTEM:	
SVK-xx	> 1985–1991	$76.00
SVK-xx	> 1992–1996	$76.00
	1990/91 L98 MAF SPOOL PIECE:	
A1173	> Aluminum tube, 3" o.d. × 5" long (polished)*	$30.00
	1992/93 LT1 MAF SPOOL PIECE:	
A1481	> Aluminum tube, 3" o.d. × 7½" long with 1" o.d. surge valve port (polished)*	$95.00
	SMALL "U" TUBE:	
B1206B	> 1992/93, 2¾" × 3", blower discharge to offset transition tube (polished)*	$225.00
	MEDIUM "U" TUBE:	
B1298A	> 2¾" × 3", blower discharge w/1" dia. A.I.R. hose nipple (polished)*	$225.00
	LARGE "U" TUBE:	
D1264B	> 1985 and up, 3" × 4" Oval (polished)*	$260.00
	LONG TRANSITION TUBE:	
A1372	> 1994 & up, long offset polished aluminum blower discharge to large "U" tube (polished)*	$465.00
	SHORT TRANSITION TUBE:	
A1117	> 1992/93, short offset aluminum, 3" o.d. × 6" long (polished)*	$135.00
	ALUMINUM ELBOW:	
CALL	> 90° elbow 3 x 3 or 3 x 2¾ with or without nipple and flange for Racing Surge Valve	CALL
	L98 MINI-RAM TRANSITION PIECE:	
CALL	> *Not shown – See Page 28 for Photo.*	$250.00

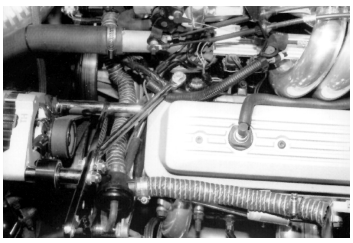
NOTE: If unpolished deduct $20 from price.



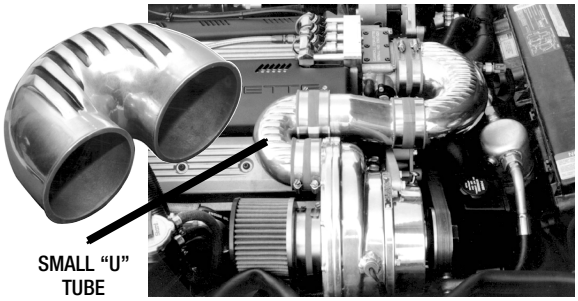
1990/91 SPOOL PIECE – USED TO OCCUPY MAF SENSOR SPOT ON 1990/91 VETTES • A1173

1992/93 SPOOL PIECE WITH 1" o.d. SURGE VALVE NIPPLE – USED TO OCCUPY MAF SENSOR SPOT ON 1992/93 VETTES • A1481

SURGE VALVE SYSTEM WITH HOSE SVK-xx

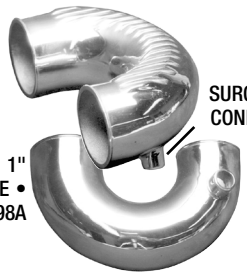


SURGE VALVE SYSTEM ON 1991 CORVETTE



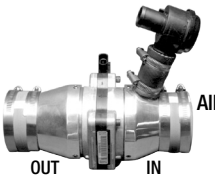
SMALL "U" TUBE B1206B

3" o.d. 90° ALUMINUM ELBOW



SURGE VALVE CONNECTION

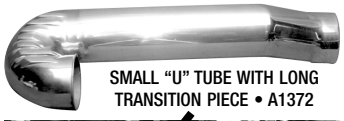
MEDIUM "U" TUBE WITH 1" o.d. SURGE VALVE NIPPLE • B1298A



AIR FLOW

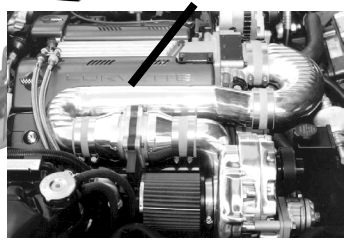
OUT IN

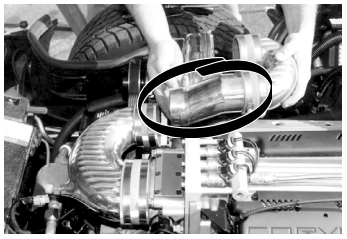
1994–96 MAF ADAPTOR WITH SURGE VALVE



SMALL "U" TUBE WITH LONG TRANSITION PIECE • A1372

SHORT TRANSITION PIECE • A1117





LARGE "U" TUBE FOR THROTTLE BODY WITH INTERNAL TURNING VANE & GASEOUS INTERCOOLING™ NOZZLE HOLDER • D1264B

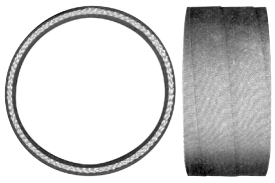
FITTINGS SHOWN NOT INCLUDED

Silicone Sleeves, Hose Clamps & Elbows

P/N	DESCRIPTION	PRICE
	SILICONE "TURBO" HOSE: Silicone supercharging hose available in blue or black. We stock the following sizes. Custom lengths and sizes are available upon request.	
70-400	> 4" i.d. x 3" long	$19.00
70-400	> 4" i.d. x 1.85" long	$18.00
70-400	> 4" i.d. x 1.75" long	$18.00
70-400	> 4" i.d. x 1.6" long	$18.00
70-350	> 3-½" i.d. x 3" long	$18.00
70-350	> 3-½" i.d. x 2" long	$17.50
70-300	> 3" i.d. x 6.50" long	$20.00
70-300	> 3" i.d. x 5" long	$18.50
70-300	> 3" i.d. x 3" long	$17.50
70-300	> 3" i.d. x 2" long	$17.00
70-300	> 3" i.d. x 1.75" long	$16.50
70-300	> 3" i.d. x 1.65" long	$16.50
70-300	> 3" i.d. x 1.625" long	$16.50
70-275	> 2.75" i.d. x 3" long	$17.00
70-275	> 2.75" i.d. x 1.75" long	$15.00
	FLEXIBLE CLOTH COVERED WIRE HOSE:	
LRI-400	> 4" i.d.	$12.86/Ft.
LRI-350	> 3.50" i.d.	$11.16/Ft.
LRI-300	> 3" i.d.	$8.80/Ft.
LRI-275	> 2.75" i.d.	$8.60/Ft.
	STAINLESS STEEL EXTENDED BAND ½" WIDE HOSE CLAMPS: 100% stainless steel including the slotted 5/16" hex head shoulder screw. The smooth, inner extended band allows for tight sealing and prevents extrusion of soft hose through the band slots.	
4844	> 2.31 to 3.25 diameter	$3.00
4848	> 2.56 to 3.50 diameter	$3.00
4852	> 2.81 to 3.75 diameter	$3.00
4856	> 3.06 to 4.00 diameter	$3.00
4864	> 3.25 to 4.50 diameter	$3.00
	90° INTAKE ELBOW:	
4FA012-012	> 3-1/2" o.d. plastic elbow without threaded boss	$17.95
4FA012-013	> 3-1/2" o.d. plastic elbow with 1" threaded boss	$24.95

90° INTAKE ELBOW 3-1/2" o.d. PLASTIC ELBOW WITHOUT THREADED BOSS 4FA012-012

90° INTAKE ELBOW 3-1/2" o.d. PLASTIC ELBOW WITH THREADED BOSS 4FA012-013



SILICONE SLEEVE

ASSORTED ELBOWS

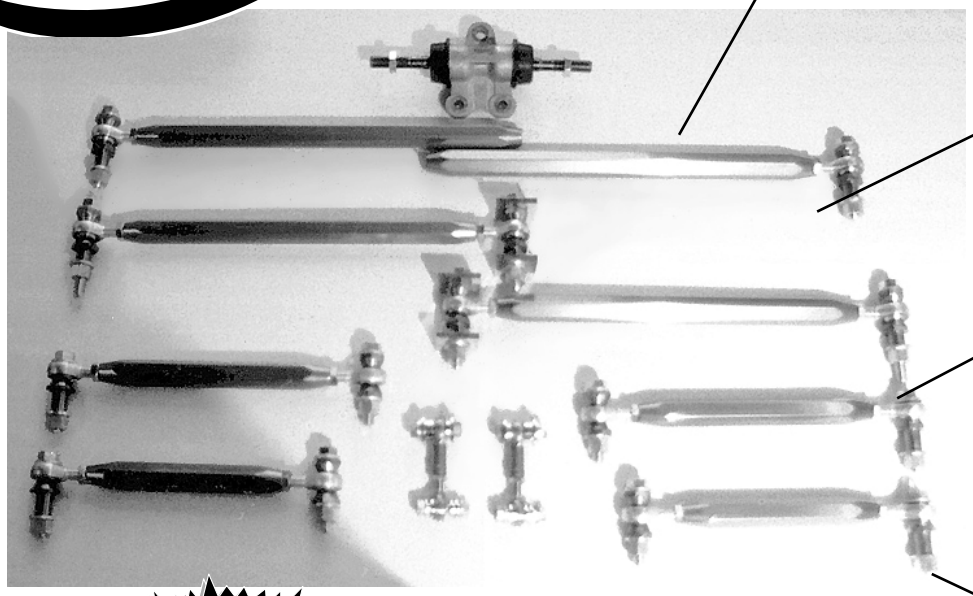
ASSORTED HOSES

STAINLESS STEEL EXTENDED BAND 1/2" WIDE HOSE CLAMPS

Select Drivetrain & Suspension Components

P/N	DESCRIPTION	PRICE
	ZERO SWAY SUSPENSION SYSTEM: Our system does not change the ride height or stiffness. The system is designed to eliminate any side to side movement that results from the rubber bushings in the SLA suspension components and in the sway bars. You supply the required 22 spherical rod ends — we supply the 8 mirror finished and blue anodized aluminum connecting arms, and 54 assorted chromed bushings. The finished suspension is stunning and beautiful to stare at: a real show stopper. Vehicle handling response is fast and true. This system is a must if you want to drive at speeds over 160 mph. The installation instructions are excellent and very well detailed. Everything fits just like it should, no fiddling or fudging or banging or bending.	
30030	> ..... SALE	**$895.00** ~~$1995.00~~

ORDER THE INSTALLATION GUIDE & SEE FOR YOURSELF WHAT A GREAT SYSTEM!



SALE

ZERO SWAY SUSPENSION SYSTEM • 30030

L98 AUXILIARY COOLANT FAN ELECTRIC THERMOSTAT • 1084

DELCO L98 ENGINE COOLANT THERMOSTAT • 30039

LT1 ENGINE COOLANT THERMOSTAT 30037A OR 30037B

ROBERTSHAW L98 ENGINE COOLANT THERMOSTAT 330-160/330-180

3-WAY THERMOSTAT 1¼ × 1¼ × ¾ 3344.80M

3-WAY THERMOSTAT 1¼ × 1¼ × 1¼ 3344.80

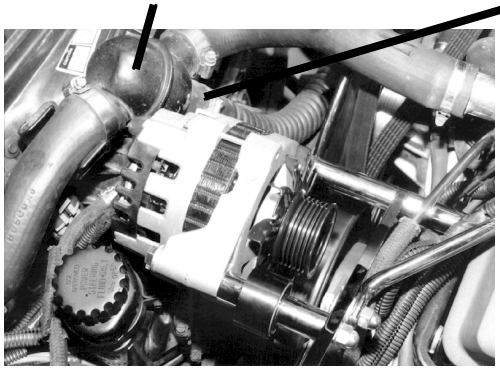
L98 HEAVY DUTY 3-WAY ENGINE COOLANT THERMOSTAT • 30023

ADAPTOR TEE 1¼ × 1¼ × ¾ B1238

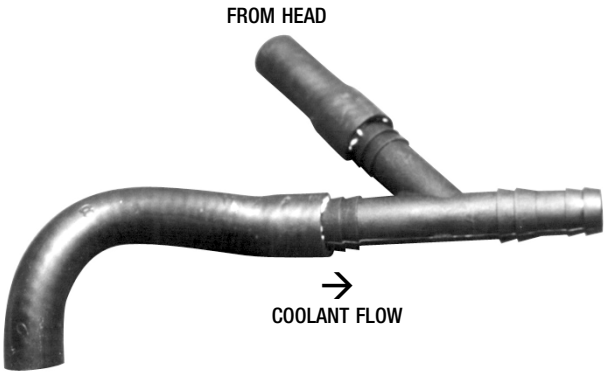
ADAPTOR TEE WITH EX-PANSION TANK OUTLET B1238WA

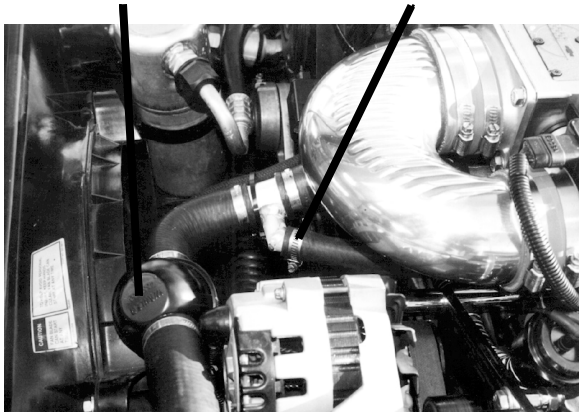
STEWART WATER PUMP FOR L98 13403P

RED LINE COOLANT WATER WETTER™ 1-WW-12Z



L98 HEAVY DUTY ENGINE COOLANT THERMOSTAT SYSTEM 30023





THIS 1987 CORVETTE WAS EQUIPPED WITH A MINI-TUNNEL RAM. AT THE REAR OF THE TUNNEL RAM WE TAPED TWO 3/8" FPT HOLES AND CONNECTED TO "Y" – THEN TO THERMOSTAT. EXTRA COOLANT FLOW THRU HEADS WITH THIS SYSTEM ALLOWED MORE BOOST WITHOUT DETONATION.

Select Engine Coolant/Cooling Accessories

P/N	DESCRIPTION	PRICE
	STEWART WATER PUMPS FOR L98: 5.795" Length, CCW OEM aluminum casting	
13403	> Standard Finish	$94.95
13403P	> Polished Finish	$174.95
	L98 AUXILIARY COOLANT FAN ELECTRIC THERMOSTAT: On 1985 thru 1989 Corvettes equipped with the GM Heavy Duty Cooling package, there is an auxiliary pusher fan in the front of the radiator. This fan is not cycled by the car's computer. It is controlled by a standard screw in (3/8" NPT) electrical thermostat. The stock thermostat turns the fan on @ 238°F. Our thermostat causes the fan to turn on @ 195°F. This complements the Carroll 'EPROM' setting of 180°F for the computer controlled main fan.	
1084	> Electric Thermostat – 3/8" NPT thread	$14.00
	L98 ENGINE COOLANT THERMOSTAT FOR 1985–1989 CARROLL SUPERCHARGED CORVETTES: Mechanical thermostat to replace stock 195°F.	
30039	> 170°F Delco	$3.50
330-160	> 160°F Robertshaw	$6.00
330-180	> 180°F Robertshaw	$6.00
	L98 3-WAY ENGINE COOLANT THERMOSTAT FOR 1990/91 CARROLL SUPERCHARGED CORVETTES:	
3344.80M	> Please specify 167°F or 176°F	$79.00
3344.80	> Unmodified thermostat available for general use	$35.00
	L98 HEAVY DUTY ENGINE COOLANT THERMOSTAT SYSTEM: 1985 thru 1989 Corvettes. Includes remote 3-way thermostat, 'T' adaptor for lower radiator hose, bypass hose, clamps, and instructions. By providing constant full coolant flow thru the cylinder heads more spark can be used for more power. Helps prevent detonation. You can also eliminate the heater core by-pass circuit should you so choose gaining more summer cooling and decreasing the A/C load as well.	
30023	> 180°F 3-Way	$190.00
	3-WAY ADAPTOR TEE:	
B1238	> Adaptor tee without 3/8" o.d. Expansion Tank Outlet	$20.00
B1238WA	> Adaptor tee with 3/8" o.d. Expansion Tank Outlet	$25.00
	LT1 ENGINE COOLING THERMOSTAT: Mechanical Thermostat 3-Way EXACT Replacement. Stock thermostat maintains engine @ 195°F.	
30037A	> Maintains 190°F	$29.00
30037B	> Maintains 160°F	$29.00
	LT1 MEM CAL PACK: Matching MEM CAL PACK for above stat. Stock EPROM turns first fan ON at 228°F and second fan ON at 238°F. Our EPROM turns them on at 197°F and 202°F.	
30038A	> EPROM in MEM CAL PACK	$225.00
30038B	> EPROM only	$200.00
	> BLANK EPROM – No programming	$15.00
	L98 MEM CAL PACK: Matching MEM CAL PACK for above stat. Stock fan turns ON at 228°F. Our EPROM turns the fan ON at 185°F. Our "EPROM" has been customized for our supercharging system, however, other modifications can be made upon request.	
30040A	> EPROM in MEM CAL PACK	$225.00
30040B	> EPROM only	$200.00
	> BLANK EPROM – No programming	$15.00
	RED LINE COOLANT WATER WETTER™: Recommended for all cooling systems. Improves heat transfer between heads and	
1-WW-12Z	engine coolant. Add one bottle each time you change engine coolant.	$7.00

Engine Cooling COOLING SYSTEM BASICS

TO INCREASE YOUR COOLING SYSTEM'S PERFORMANCE YOU MUST MAXIMIZE BOTH THE WATER FLOW AND THE AIR FLOW.

WATER PUMPS

Stewart Components is the only water pump manufacturer that specializes in the design and manufacturing of high-performance water pumps. Installing a Stewart water pump on your L98 is your best assurance that you have a pump designed for your application and manufactured to exacting tolerances for trouble-free performance.

Stewart high-flow pumps deliver as much as 180 GPM at 8,000 RPM yet consume only 2.26 horsepower at 4,000 RPM.

PULLEYS

Race applications require a maximum water pump speed between 6,000 and 7,000 RPM. Street applications require the water pump to be driven at least at crankshaft RPM to as much as 35% faster. NEVER use under drive pulleys on a street vehicle. Stewart high-flow water pumps consume only 2.26 horsepower at 4,000 RPM.

RADIATOR CAPS

The radiator cap needs to be the highest pressure the radiator will tolerate. All race radiators and most street radiators will accept a 22–24 PSI cap. Most race radiators will accept a 29–31 PSI cap.

High-pressure water transfers heat from the cylinder heads better due to its higher boiling point.

RADIATOR CAP LOCATION

The radiator cap should be located at the highest point of the system on the low-pressure side. Cross flow radiators mounted higher than the engine are ideal. The cap is on the tank connected to the water pump inlet. This offers two advantages: (1) the cap is at the highest point of the system so any air in the system will migrate to the area just below the cap. If the cap opens due to excessive pressure the air will escape first; (2) the cap is located at the lowest pressure point of the system so it is unaffected by the pressure generated by the water pump.

If you have any other configuration than a cross flow radiator mounted higher than the engine you must have a surge tank. A surge tank mounts the radaitor cap at the highest point of the system and is plumbed to the inlet side of the water pump with –10 line. A –6 bleed line is plumbed to the top of the inlet side of the radiator to allow some circulation in the tank so the air can migrate to the area under the cap.

Street cars with an upright radiator (cap on the top tank) are a compromise.

The thermostat housings that mount the radiator cap and the inline units that mount the cap in line with the top hose are a poor design that will not allow for an adequate cooling system.

THERMOSTATS / RESTRICTORS

NEVER use restrictors – they decrease flow and inhibit cooling. High-performance street vehicles should use the Stewart/Robertshaw high-flow thermostat. This unit is modified by Stewart for high-RPM/high-flow applications.

Older cars used low pressure radiator caps with upright radiators. At high RPM the water pump pressure would overcome the radiator cap and push water out, causing the car to overheat (most people thought the cars overheated and then pushed water out). Slowing the water pump down and/or installing a flow restrictor relieved the pressure on the radiator cap and fixed the problem. Cars built in the past 30 years have cross flow radiators that position the cap on the low pressure side of the system. This type system does not subject the radiator cap to the water pump pressure and therefore benefit from increased water flow.

COOLANT

Water cools best. Use a corrosion inhibitor if freezing is not a concern. Use a 60 / 40 water/anti-freeze mix if freezing is a concern. Stewart has thoroughly tested the "magic" additives in our cooling system lab and found no basis for the manufacturer's claims.

FANS

Electric fans are great for most applications but don't move as much air as a mechanical fan with a proper shroud. Flex fans don't work as well as standard fans. Clutch fans are inconsistent. Standard mechanical fans with a proper shroud move the most air.

HOSES

Use standard full-size hoses for maximum flow. Smaller braided AN hoses decrease flow and inhibit proper cooling.

RADIATORS

Aluminum radiators are great. Copper/brass has better heat transfer properties but must be assembled with solder. The solder acts as an insulator and prevents the copper/brass from transferring heat as well as an aluminum radiator.

Use the largest radiator you can fit into the vehicle. There is no substitute for surface area. The water must maintain a velocity high enough to cause turbulence within the radiator for effective heat transfer. Thicker copper/brass radiators sometimes don't work well as thinner radiators. This is due to inadequate water flow. A Stewart high-flow pump will correct this. The newer design aluminum radiators are not as velocity-sensitive as copper/brass radiators because the tubes have a very short cross section.

Double-pass or serpentine flow radiators have 8 times the flow restriction of a standard radiator and inhibit proper cooling. Thick copper/brass radiators used with standard water pumps sometimes respond favorably to double passing because it increases the velocity enough to cause the turbulence necessary for proper heat transfer. The proper fix is a Stewart high-flow water pump and leaving the radiator in a single pass configuration.

The air ***does not*** get heat saturated before it gets to the back of a thick radiator.

EXTERNAL PLUMBING

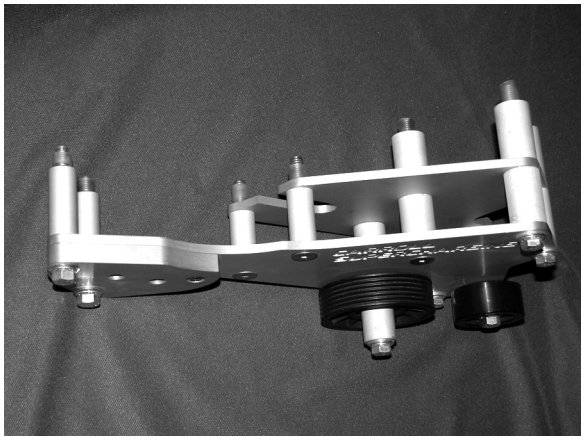
Small block Chevrolets with aluminum heads need a #8 or #10 line installed from the pressure side of the water pump to the center of the cylinder head, just under the exhaust ports, to prevent head gasket failure. The internal passages in aluminum small block Chevrolet cylinder heads are not large enough to allow all the water to exit from the front. A #10 or #12 line must be installed from the rear of the intake flange to the front crossover to allow adequate flow.

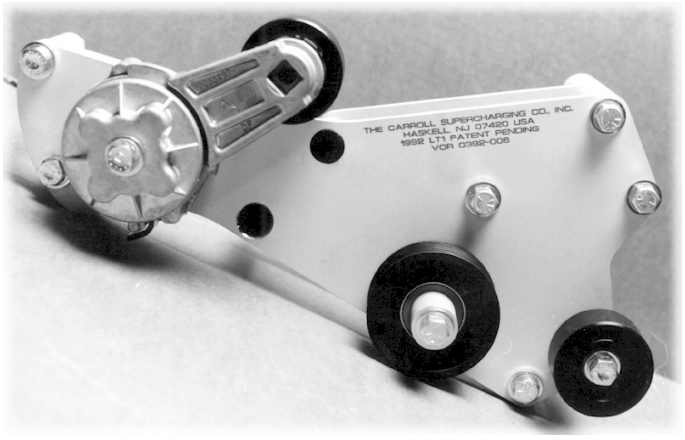
If your intake doesn't have a water outlet and you must tap directly into the cylinder head you must take water from all four corners at the highest point. A cooling system must be self-bleeding. If you choose to run lines from the center of the front face of the cylinder heads the lines must be #16 and four #6 lines must be plumbed to four corners at the highest point to allow the system to be self-bleeding. The ultimate configuration is four #12 lines, one from each corner of the intake flange, straight to the radiator.

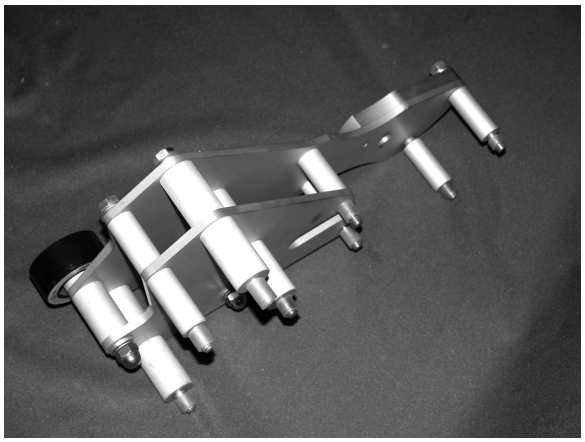
Reprinted with permission from Stewart Components.

Supercharger Mounting Brackets

P/N	DESCRIPTION	PRICE
C1130	> 1992–1996 Carroll LT1/LT4 Supercharging Bracket for Vortech Blower complete with idlers and automatic belt tensioner	$665.00

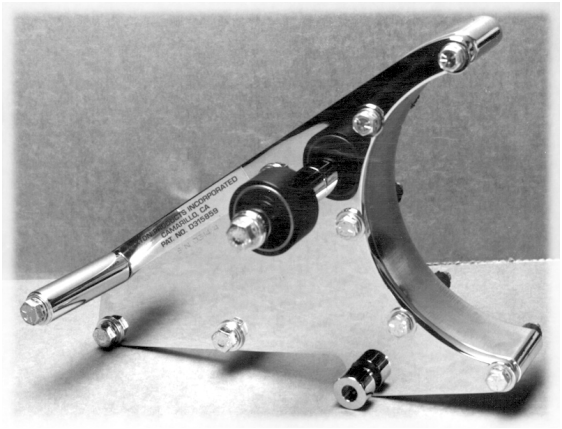




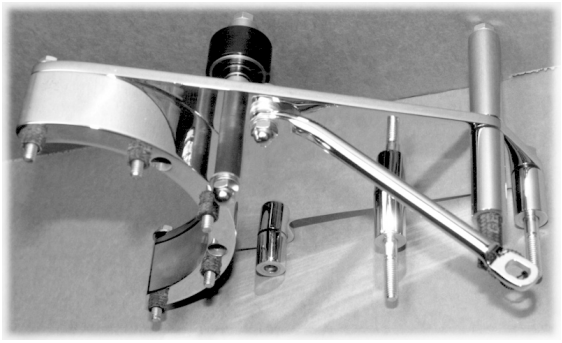


CARROLL/VORTECH LT1/LT4 BRACKET

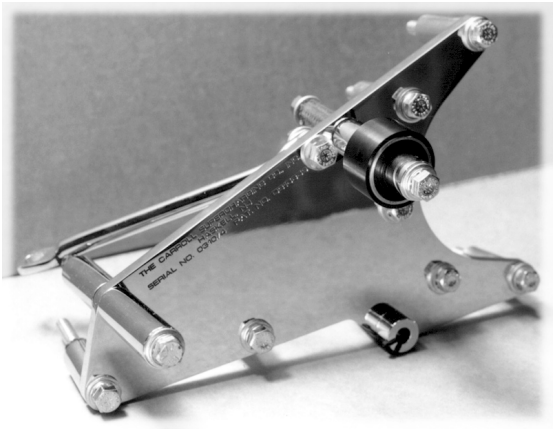
P/N	DESCRIPTION	PRICE
B1168	> 1985–1991 Carroll L98 Supercharging Bracket for Vortech Blower complete with idlers and alternator mount system	$595.00
B1094	> 1985–1991 Carroll L98 Supercharging Bracket for Paxton Blower complete with idlers and alternator mount system SALE	**$395.00** ~~$625.00~~



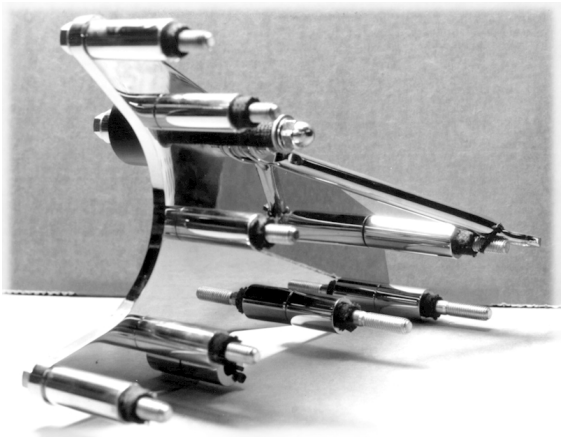
PAXTON L98 BRACKET – FRONT VIEW



PAXTON L98 BRACKET – REAR VIEW



VORTECH L98 BRACKET – FRONT VIEW



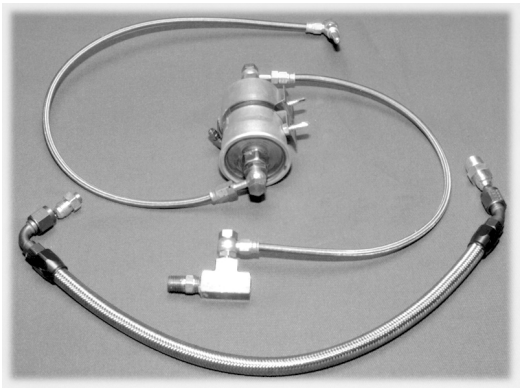
VORTECH L98 BRACKET – REAR VIEW

Select Components For Vortech Superchargers

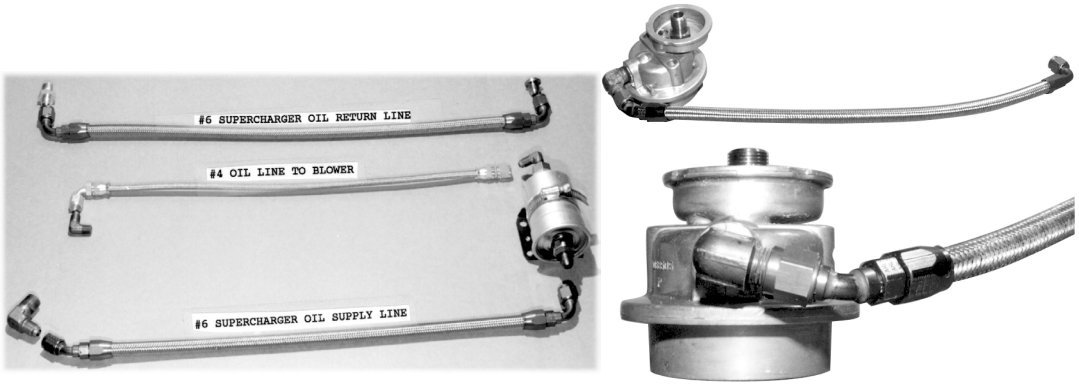
P/N	DESCRIPTION	PRICE
	VORTECH IN-LINE SUPERCHARGER OIL SUPPLY FILTER:	
EAR-230204	(Replacement unit for our system)	$40.00
	VORTECH SUPERCHARGER OIL LINE KITS:	
	All stainless steel hose and A/N fittings. Includes oil filter and mount system.	
B1473	> 1985–1991 Corvette	$275.00
B1474	> 1992–1996 Corvette	$275.00
	MAXFLOW RACING BYPASS VALVE:	
	Valve opens upon de-acceleration allowing air to bypass around the supercharger preventing destructive compressor "surge". This valve must be used with all "T" Trim superchargers.	
8D204-001	> Polished	$227.95

VORTECH IN-LINE SUPERCHARGING OIL SUPPLY FILTER
EAR-230204

MAXFLOW RACING BYPASS VALVE
8D204-001



TYPICAL L98 VORTECH OIL LINE ASSEMBLY



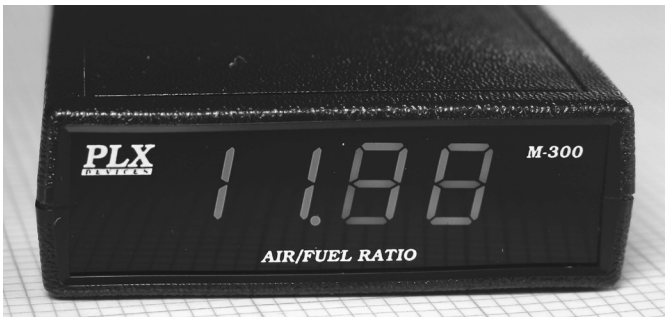
TYPICAL LT1 VORTECH OIL LINE ASSEMBLY

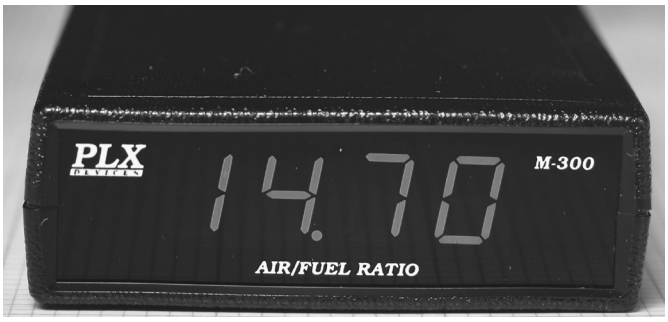
Select Testing & Diagnostic Equipment

P/N	DESCRIPTION	PRICE

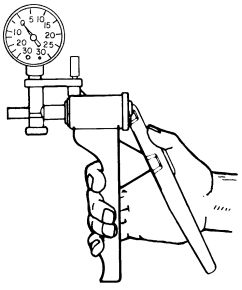
PLX DEVICES WIDE BAND A/F METER:
When setting up and tuning your supercharged Corvette there are two critical issues you MUST address: DETONATION (engine ping-knock) & AIR/FUEL RATION (W.O.T. requires ≈ 12.5:1). With the PLX M-300 it is now easier than ever to assure optimum A/F ratio. No bigger than a pack of cigarettes, this monitor sits on your dashboard with a small piece of velcro and is easily stashed in your glovebox. The PLX-M300 comes with a Bosch wideband O_2 sensor that you screw into the existing engine PCM O_2 sensor location. The PLX-M300 has a narrow band O_2 sensor output wire that you simply plug into the PCM O_2 sensor connector so that the engine computer still sees the necessary narrow band signal. Once installed you now have an accurate fast response wide band A/F ration digitally displayed with bright red LEDs. See photos. This relatively inexpensive monitor is a 'must' for all serious tuners. At $329.00 it's a bargain. Competitive units cost well over a thousand dollars!

M-300 > Plug-N-Play Digital Air/Fuel Ratio Meter with Bosch Wideband Sensor and Installation Harness..... $329.00

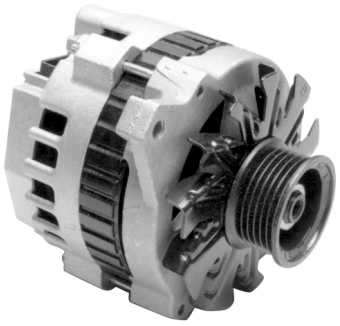




COMPOUND MITYVAC™
A combination hand-held vacuum/boost pump to test for air leaks and
6890 calibrate fuel controllers, etc. $45.00



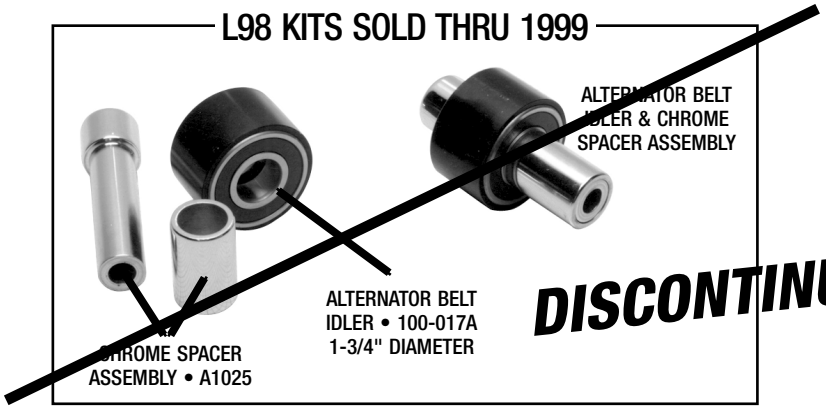
COMPOUND MITYVAC™
6890



ALTERNATOR • 321-286

ALTERNATOR WIRING
ADAPTOR • 1067

L98 KITS SOLD THRU 1999



ALTERNATOR BELT
IDLER & CHROME
SPACER ASSEMBLY

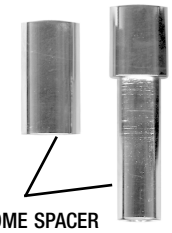
ALTERNATOR BELT
IDLER • 100-017A
1-3/4" DIAMETER

CHROME SPACER
ASSEMBLY • A1025

DISCONTINUED

L98 KITS SOLD BEGINNING 2000

ALTERNATOR BELT
IDLER & CHROME
SPACER ASSEMBLY



CHROME SPACER
ASSEMBLY • A1025-1

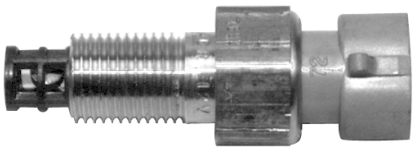
ALTERNATOR BELT IDLER •
100-017B
2-3/4" DIAMETER

LARGER O.D. LENGTHENS BEARING LIFE PARTICULARLY ON HIGH RPM ENGINES. THE ABOVE MAY BE USED TO REPLACE THE OLDER ASSEMBLY HOWEVER YOU MUST PURCHASE A NEW CHROME SPACER ASSEMBLY.

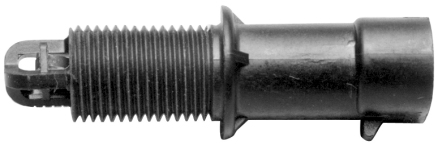
LT1 BILLET
ALTERNATOR
FAN & PULLEY SET
9010301 • 9010305

Select Testing & Diagnostic Equipment

P/N	DESCRIPTION	PRICE
	ALTERNATOR:	
	Replacement alternator for 1986 thru 1991 Corvettes. Delco CS Model 105 ampere.	
	Required with our supercharging system for 1985 Corvettes.	
321-286	> Rebuilt By Delco	$165.00
	> Core Charge	$50.00
	ALTERNATOR WIRING ADAPTOR:	
1067	Converts 1985 Corvette alternator chassis wiring to new '86 and up CS alternator.	$35.00
	ALTERNATOR FAN:	
	High speed fan for CS alternator. May be used on any year Vette.	
1068	> Looks better and will not flex due to its' one piece construction	$25.00
	ALTERNATOR BELT IDLER:	
	Replacement idler for L98 Corvettes equipped with our supercharging system,	
	either Paxton or Vortech. *Price does not include chrome spacer assembly.*	
100-017A	> L98 Systems sold thru 1999	*DISCONTINUTED*
100-017B	> L98 Systems sold beginning 2000 (also replaces 100-017A)	$49.00
	CHROME SPACER ASSEMBLY:	
A1025-1	Includes 2 polished chrome spacers for Alternator Belt Idler	$72.00
	LT1 BILLET ALTERNATOR FAN:	
9010104	> Satin Aluminum Finish *(Black, Red & Blue also available)*	$40.00
9010105	> High Polished Aluminum Finish	$60.00
	LT1 BILLET ALTERNATOR FAN & PULLEY SET:	
9010301	> Satin Aluminum Finish *(Black, Red & Blue also available)*	$75.00
9010305	> High Polished Aluminum Finish	$110.00
	LT1 BILLET PULLEY & CAP ASSEMBLY	
9010204	> Satin Aluminum Finish *(Black, Red & Blue also available)*	$40.00
9010205	> High Polished Aluminum Finish	$60.00
	HOOD RESTRAINT SYSTEM FOR 1985 THRU 1987 CORVETTES:	
	Tired of lifting that heavy hood? Wish you could put a big gas spring on it like the	
	1988 and newer Corvettes? Well, now you can with our hood restraint/support	
	conversion system for your 1985 thru 1987 Corvette. Our system includes a new GM gas	
	spring, a new hood plate that you rivet into place, and a lower bracket that bolts	
30042	right up. Your hood will rise effortlessly from now on.	$195.00
GM10175784	**GAS SPRING STRUT ASSEMBLY:**	$53.50
	HOOD RESTRAINT SYSTEM FOR 1988 THRU 1991 CORVETTES:	
	Our system includes a new hood plate that you rivet into place, and a lower bracket	
	that bolts right up. If you do not already have the gas spring or yours is tired	
CALL	order the above GM Gas Spring Strut Assembly.	$49.50



IAT SENSOR • 25037352/T

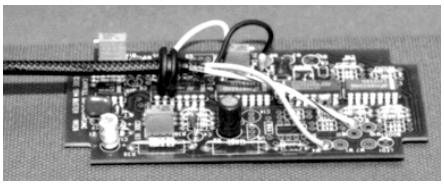


IAT SENSOR • 25037352/T

CODEBUSTER 103™ • 300-001

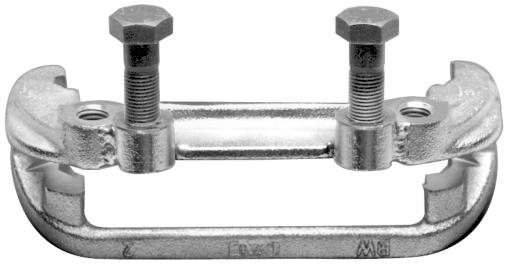
104+ SUPER OCTANE BOOST
OCT 10410

INJECTOR CLEANER

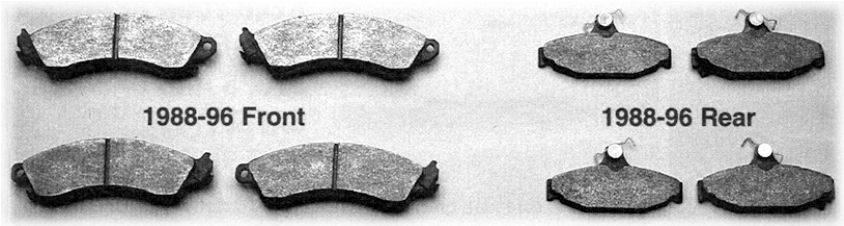


INSIDE OF CODEBUSTER 103™

CODEBUSTER 103™ AFTER BEING POTTED



1984 THRU 1987 DUAL PISTON CALIBER
ADAPTOR BRACKET



BRAKE PADS

Select Miscellaneous Accessories

P/N	DESCRIPTION	PRICE
	UNDERHOOD ROCKER LAMP SWITCH SYSTEM: Our switch installs on the hood lamp cavity just above the hood lamp itself. You do not have to reach down into the headlamp cavity as with other switch systems. It looks	
URLSK	really neat, as though GM did it! Complete detailed instructions are included.	$25.00
25037352/T	**SENSOR, IAT:** Intake Air Temperature, Threaded ½-20	$28.00
	CODEBUSTER 103™: All 1996 and newer GM engines now employ a Mass Air Flow sensor which is capable of reading excess engine air flow. At approximately 4 pounds of manifold boost pressure, the MAF reports this value to the PCM and a soft error code is displayed on the dash as the SES (Service Engine Soon) indicator light. The Codebuster 103™ holds the frequency output of the mass air flow sensor at the equivalent of "0" (zero) atmospheric pressure thus preventing the excess air flow error code. This product is plug-to-plug compatible with the MAF and takes only minutes to install.	
300-001	> 1996 and newer	$199.00
	104+ SUPER OCTANE BOOST: Increases horsepower by boosting fuel octane numbers four to seven points. They contain no lead or alcohol and won't damage fuel cell liners, gaskets, hoses, O-rings, or other engine parts. One bottle treats two tanks of fuel.	
OCT 10410	> 16 oz. bottle Super Octane Boost for racing	$9.99
	INJECTOR CLEANER:	
AMSOIL P.I.	> 16 oz. bottle	$6.95

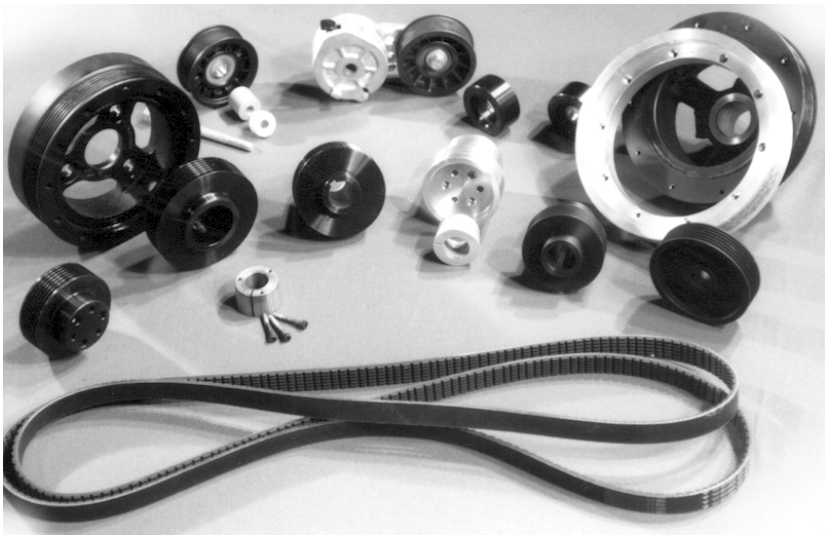
Select Brake Accessories

P/N	DESCRIPTION	PRICE
	BIG BRAKE KITS: **12" ROTOR SYSTEM –** 1984 thru 1987 Corvettes used single piston calipers on 12" rotors for the standard brake package with 16" wheels. Our large dual piston caliper and	
30033	caliper bracket will fit your rotors and amaze you! Reuse your brake pads or buy new	CALL
	13" ROTOR SYSTEM – 1988 thru 1996 Corvettes all used dual piston calipers however the standard brake package was a 12" rotor and caliper. Our 13" rotor and caliper package greatly enhances braking. System is complete and can be installed in two hours on 1985 thru 1996 Corvettes provided you have 17" wheels. All parts are genuine GM Corvette. System does NOT include a set of GM brake pads which must be purchased separately. Front pads from '88 Vettes on up may be reused. ***NOTE: System requires 17" wheels which are not standard on 1988 and older Corvettes.***	
30025	>	$750.00
30034F	> Set of 4 new large style GM front brake pads 1988 and newer	CALL
30034R	> Set of 4 new large style GM rear brake pads 1988 and newer	CALL
	CARBON – METALLIC DISC BRAKE PADS: Price per set/4 pads. Front and Rear requires 8 pads total.	
	> 1965-84 Corvette (front or rear disc)	CALL
	> 1985-87 Corvette (front or rear disc)	CALL
	> 1988-96 Corvette (front disc/4 pads)	$85.00
	> 1988-96 Corvette (rear disc/4 pads)	$65.00

TYPICAL L98 TAPER LOCK PULLEYS
ASSEMBLED

TAPER LOCK KEYLESS PULLEY FOR LT1
VORTECH OR PAXTON

TYPICAL L98 TAPER LOCK PULLEYS
DISASSEMBLED



PULLEY ASSORTMENT

Select Miscellaneous Accessories

P/N	DESCRIPTION	PRICE
	TAPER LOCK KEYLESS PULLEY: Six rib serpentine belt; available in .25 inch increments for most vehicles and superchargers. This pulley uses no key or keyway. Its unique tapered cone insert "grabs" the entire shaft when tightening. It's far superior to keyway type pulleys. Pulley is black hardcoated.	
CALL	> Please specify vehicle type and year and supercharger model.	$200.00
	TAPER LOCK KEYLESS PULLEY WITHOUT COLLET	$150.00
	SERPENTINE BELT:	
	1985 – 1987 L98 CORVETTE w/STOCK CRANK PULLEY 7.2" DIAM:	Belt Price
5060930	> 2.75" diam. Vortech pulley, 93.0 nominal length	$39.00
5060935	> 3.00" diam. Vortech pulley, 93.5 nominal length	$39.00
5060940	> 3.25" diam. Vortech pulley, 94.0 nominal length	$39.00
5060940	> 3.50" diam. Vortech pulley, 94.0 nominal length (stock pulley size)	$39.00
5060905	> 3.50" diam. Paxton pulley, 90.5 nominal length	$39.00
5060910	> 3.75" diam. Paxton pulley, 91.0 nominal length	$39.00
5060915	> 4.00" diam. Paxton pulley, 91.5 nominal length	$39.00
5060923	> 4.25" diam. Paxton pulley, 92.3 nominal length (stock pulley size)	$39.00
5060930	> 4.40" diam. Paxton pulley, 93.0 nominal length	$39.00
5060940	> 4.60" diam. Paxton pulley, 94.0 nominal length	$39.00
5060735	> Short belt to by-pass supercharger, 73.5 nominal length	$39.00
	1988 – 1991 L98 CORVETTE w/STOCK CRANK PULLEY 7.2" DIAM:	
K060966	> 2.75" diam. Vortech pulley, 96.6 nominal length (Gates Belt #)	$39.00
5060968	> 3.00" diam. Vortech pulley, 96.8 nominal length	$39.00
5060970	> 3.25" diam. Vortech pulley, 97.0 nominal length (5060968 may be used)	$39.00
5060980	> 3.50" diam. Vortech pulley, 98.0 nominal length (stock pulley size)	$39.00
5060945	> 3.75" diam. Paxton pulley, 94.5 nominal length	$39.00
5060955	> 4.00" diam. Paxton pulley, 95.5 nominal length	$39.00
5060960	> 4.25" diam. Paxton pulley, 96.0 nominal length (stock pulley size)	$39.00
5060968	> 4.40" diam. Paxton pulley, 96.8 nominal length	$39.00
5060976	> 4.60" diam. Paxton pulley, 97.6 nominal length	$39.00
5060775	> Short belt to by-pass supercharger, 77.5 nominal length	$39.00
	1992 – 1996 LT1 CORVETTE w/STOCK CRANK PULLEY 7.0" DIAM:	
5060565	> 2.75" diam. Vortech pulley, 56.5 nominal length (5060568 may be used)	$39.00
5080575	> 3.00" diam. Vortech pulley, 57.5 nominal length (3" idler easy/3.5" idler* tight but good)	$39.00
5080575	> 3.25" diam. Vortech pulley, 57.5 nominal length (3" idler)	$39.00
5080580	> 3.25" diam. Vortech pulley, 58.0 nominal length (3.5" idler*)	$39.00
5080585	> 3.50" diam. Vortech pulley, 57.5 nominal length (stock pulley size) (3.5" idler*) (5060590 may be used)	$39.00
5060590	> 4.00" diam. Vortech pulley, 59.0 nominal length	$39.00
5060675	> 3.75" diam. Paxton pulley, 67.5 nominal length	$39.00
5060685	> 4.00" diam. Paxton pulley, 68.5 nominal length	$39.00
5060690	> 4.25" diam. Paxton pulley, 69.0 nominal length (stock pulley size) (Paxton systems after 4/95)	$39.00
5060705	> 4-5/8" diam. Paxton pulley, 70.5 nominal length (Paxton systems through 4/95)	$39.00
	1996 LT4 CORVETTE w/STOCK CRANK PULLEY 7.0" DIAM:	
5060590	> 4.00" diam. Vortech pulley, 59.0 nominal length	

*All LT1 Vortech brackets shipped prior to 7/95 used a cap head bolt just above the 3" grooved belt idler. A 3.5" grooved idler cannot be used with either a 3.5" or a 3.25" supercharger drive pulley without changing the cap head bolt to a flathead bolt and countersinking.

NOTE: Some part numbers denote 8 rib which must be cut down to 6 rib with a razor.

Gaseous Intercooling™ BLOWERWORKS™ GASEOUS INTERCOOLING™ SYSTEMS

OVERVIEW

Carroll Gaseous Intercooling™ Systems are unique, highly refined high pressure water/alcohol direct injection systems. These systems may be used in conjunction with Carroll as well as other manufacturers' super and turbocharger systems to obtain superior engine performance and safety. A Carroll Gaseous Intercooling™ System is often used in conjunction with and/or to replace bulky air-to-air intercoolers. This technology is also known as Gaseous Intercooling™. Evaporative cooling causes the compressed air temperature to be reduced by, on average, 100°F. Typical mix is 50% distilled water and 50% alcohol.

A properly designed and installed Gaseous Intercooling™ system will ALWAYS produce more power than either overfueled or spark retarded engines. Additionally, an engine that uses Gaseous Intercooling™ will burn and stay cleaner, use less fuel, and run cooler under boosted conditions. Peak cylinder pressures and temperatures are reduced. Engine stress is greatly diminished; you will find no signs of hammered rod and crank bearings on engines equipped with a Carroll Gaseous Intercooling™ System. It is almost impossible to detonate an engine (and subsequently break a cast or hypereutectic piston) when using a properly designed and functioning Gaseous Intercooling™ system.

A properly designed Gaseous Intercooling™ system MUST utilize a high pressure (100 psig) pump and atomizing type nozzle. Windshield washer pumps in conjunction with a "jet" will NEVER work as well: so don't compare the two.

A properly designed Gaseous Intercooling™ system MUST have some sort of safety control to prevent injecting water when the engine is not running.

A properly designed Gaseous Intercooling™ system will drop the intake air temperature 50°F within 1 second after injection starts.

Why is it that other manufacturers of supercharging systems do not promote Gaseous Intercooling™? There are several reasons:

1. COST
2. DEGREE OF DIFFICULTY IN SELECTION OF COMPONENTS
3. DEGREE OF DIFFICULTY IN ENGINEERING THE OVERALL SYSTEM
4. BASIC KNOWLEDGE OR LACK OF
5. MAINTENANCE

The Carroll Supercharging Company has been designing, selling, and installing Gaseous Intercooling™ systems since 1972; does that say enough?

CHOICES

At BlowerWorks™ we have designed a number of Gaseous Intercooling™ systems to meet your needs and budget. They ALL work well and do what they are suppose to do: STOP DETONATION! All of our systems use the same high pressure diaphragm pump and stainless steel atomizing nozzle. All of the systems are fully automatic being activated by manifold pressure. What changes from system to system is the degree of complexity of the control systems. All of our systems use components made from plastic, brass or stainless steel so that they are unaffected by water and/or alcohol.

STANDARD™ WATER/ALCOHOL INJECTION SYSTEM

Our simplest and least expensive system is called STANDARD™ Gaseous Intercooling™. It consists of the pump, nozzle, reservoir, adjustable boost pressure activation switch, and power relay with wiring harness. The power relay is interlocked to the vehicle's fuel pump circuit so you cannot inject water unless the engine is running.

STANDARD PLUS™ WATER/ALCOHOL INJECTION SYSTEM

This STANDARD PLUS™ System includes all of the same quality components as our STANDARD™ Gaseous Intercooling™ System. The STANDARD PLUS™ System also includes a water pressure proof switch and lighted rocker switch that allows the system to be turned ON/OFF from inside the vehicle as well as give a visual indication of when water is actually being injected. This is the system we most often recommend for our truck and SUV supercharging systems.

GEN-IV™ WATER/ALCOHOL INJECTION SYSTEM

The GEN-IV™ Gaseous Intercooling™ System includes the following major components:

> Electronic Control Module ["Black Box"] With Trouble Alarm.
> Wiring Harnesses.
> Illuminated Rocker Control Switch.
> Blue Remote LED for Indicating Boost, i.e. "SUPERCHARGING".

The GEN-IV™ Gaseous Intercooling™ has the following controls, indicators & features:

> A two position momentary rocker switch with:
    1. An amber "ON" indicator to alert the driver that the system is active and ready to inject water and
    2. A green "ON" indicator when water is being injected and
    3. An "ON/TEST" switch and
    4. An "OFF/ALARM SILENCE switch.
> A super brite LED for indicating "SUPERCHARGING".
> An audible "ALARM" to alert the driver in case of trouble with the Gaseous Intercooling™ system such as no water.
> A 2-Bar MAP Sensor that senses the intake manifold pressure.
> A water pressure proof switch.

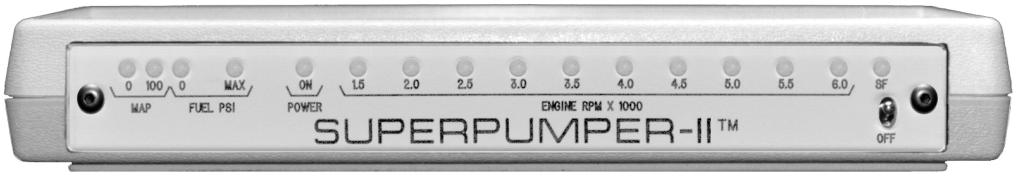
The GEN-IV™ Gaseous Intercooling™ System has the following features:

> The System is fully automatic, requiring no driver intervention.
> Automatically turns itself "ON" each time the engine is started.
> Allows you to "TEST" the injection system by manually injecting water.
> Allows you to turn "OFF" the Gaseous Intercooling™ system when not needed.
> Allows you to silence the trouble alarm with the "ALM. SIL." button.
> Automatically saves water by varying the speed of the Gaseous Intercooling™ pump.
> Includes standard and optional engine protection provisions.
> Prevents water from being injected unless the engine is running & under boost.
> Constantly monitors the water pressure and sounds an alarm if low Gaseous Intercooling™ pressure occurs.
> Constantly monitors the manifold pressure and lights the L.E.D. in boost.
> Prevents going into boost if the Gaseous Intercooling™ is inoperative.
> Optional feature prevents going into boost if engine oil is cold.

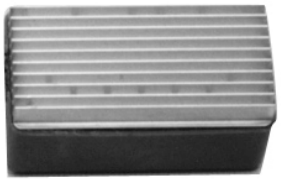
DELUXE GEN-IV™ WATER/ALCOHOL INJECTION SYSTEM

The GEN-II, GEN-III and now DELUXE GEN-IV™ System was developed in 1992 to match the performance requirements of the then new LT1 Corvette engine. The GEN-IV DELUXE™ System incorporates all of the parts and features of the GEN-IV™ System as well as an electrical solenoid and unique steel accumulator tank with bladder. This system stores the energy of the Gaseous Intercooling™ pump and delivers INSTANTANEOUSLY atomized water on demand. Because the system is so fast the water/alcohol does not have to be injected in advance in anticipation of detonation. Subsequently the tuning is finer and the end result is more usable POWER!

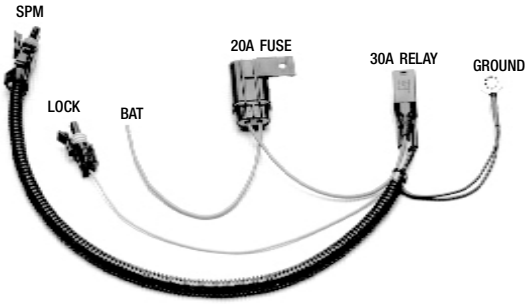
Fuel: SUPERPUMPER-II™



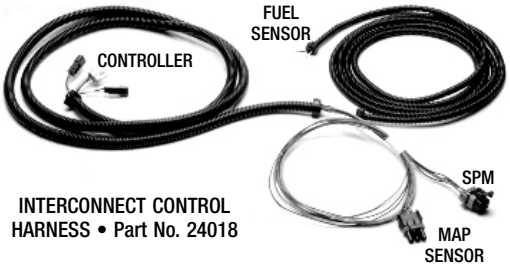
SPC – SUPERPUMPER-II™ CONTROLLER
Part No. 20003



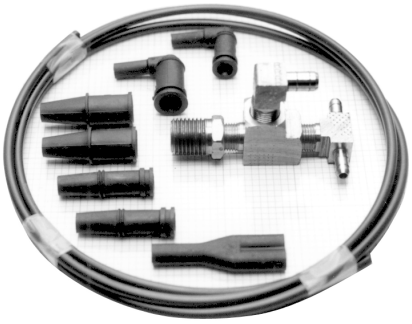
SPM–SUPERPUMPER-II™ POWER MODULE
Part No. 20004



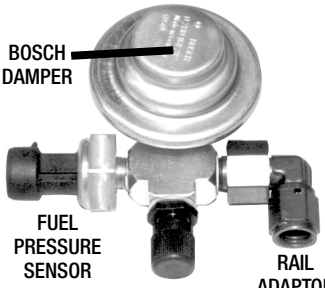
POWER RELAY & HARNESS
Part No. 24019

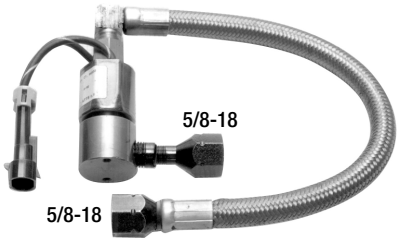


INTERCONNECT CONTROL HARNESS • Part No. 24018

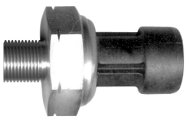


MANIFOLD VACUUM/BOOST SYSTEM
Part No. A1479

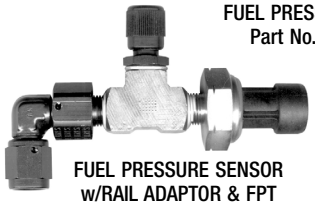




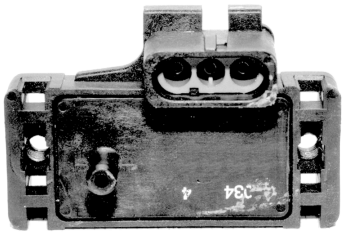
FMS – FUEL MANAGEMENT SOLENOID WITH GM INSTALLATION SYSTEM • A1433



FUEL PRESSURE SENSOR
Part No. 67CP3220



FUEL PRESSURE SENSOR w/RAIL ADAPTOR & FPT
Part No. 67CP3220-A



2-BAR MAP SENSOR
Part No. AS4S

AUTOMETER FUEL PRESSURE GAUGE • Part No. 2663-B

SUPPLEMENTAL FUEL CONTROLLER
VARIABLE RATE FUEL PUMP CONTROLLER

OVERVIEW

At the heart of our system is an electronic fuel pump controller whose acronym is SPC which stands for **SUPERPUMPER-II™ CONTROLLER.** The SPC is a 3 input closed loop controller designed to regulate fuel pressure in response to manifold pressure and engine RPM. The SPC monitors engine manifold pressure, fuel pressure and engine RPM. The SPC also monitors your settings (via the rotary hex switches) for fuel pressure along the boost RPM curve. Perhaps you wanted 50 pounds of fuel pressure at 3 pounds of boosted manifold pressure at 3000 RPM. The SPC sees this and then looks at the corresponding fuel pressure. If the fuel pressure is not correct the SPC varies the control signal to the power module that operates the fuel pump.

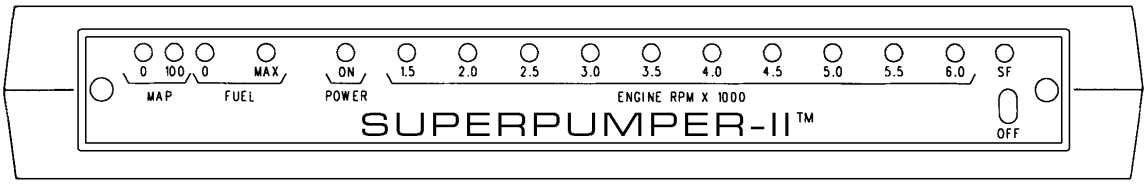
S/P CONTROLLER

1. Within the SPC is a programmable Fuel Curve Generator capable of dividing your fuel curve into 10 distinct zones and within each zone you can vary the fuel system pressure from 20 to 100 psi. This permits very precise fuel delivery anywhere along your fuel curve. You may compare it to an audio graphic equalizer but in terms of additional fuel delivery.
2. A 2 or 3-Bar MAP Sensor senses manifold pressure. A 0 to 100 psi fuel pressure sensor senses fuel pressure. Engine RPM is read directly. The combination of the three inputs allows one to accurately and easily dial in any fuel pressure at any combination of RPM and boost.
3. An independent switch on the “SPC” permits setting the main rail pressure while not in boost.
4. Independent LED’s monitor POWER, BOOST, MAX boost, pump OUTPUT, and RPM .
5. Consecutive LED’s, 1 thru 10, light to indicate engine RPM as well as to indicate which switch setting controls the injector rail pressure. Multi-position switches allow you to experiment with settings and return to the one that works best.
6. The green output LED is ON when the supplemental pump is operational. A dimly lit LED indicates low fuel flow while a bright or steady LED indicates a high fuel flow rate.

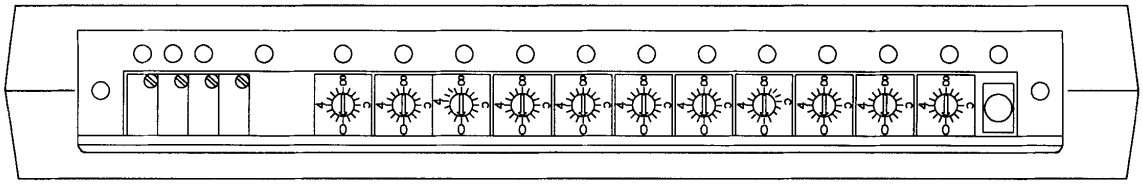
POWER MODULE

The “SPM,” is a solid-state pulse width modulated direct current motor controller capable of handling up to 30 amperes. It is driven by the SPC in response to the user settings and precisely regulates the fuel pump(s) and consquently the fuel pressure.

Fuel: SUPERPUMPER-II™



TO SET OR CHANGE FUEL CURVE, REMOVE THE FRONT BEZEL WHICH IS HELD IN PLACE WITH TWO SCREWS.



INDIVIDUAL ROTARY SWITCHES MAY BE ADJUSTED WITH A SMALL SCREWDRIVER; THUS GENERATING THE CURVE SHOWN BELOW.

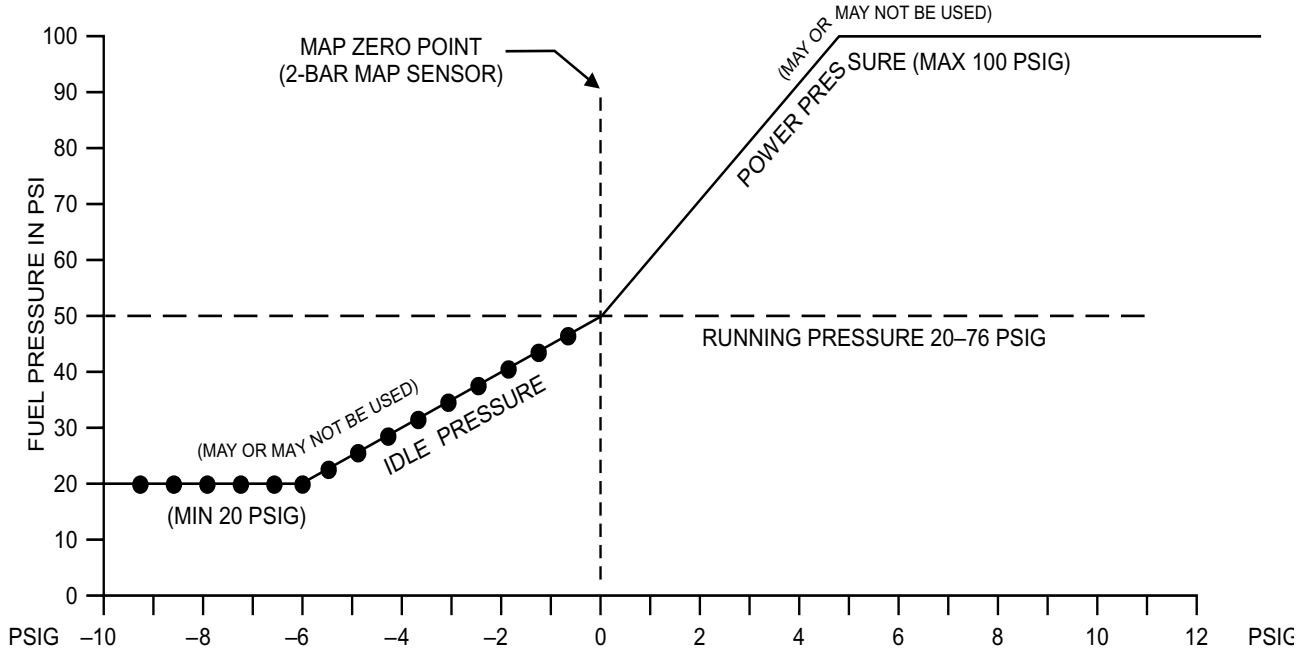
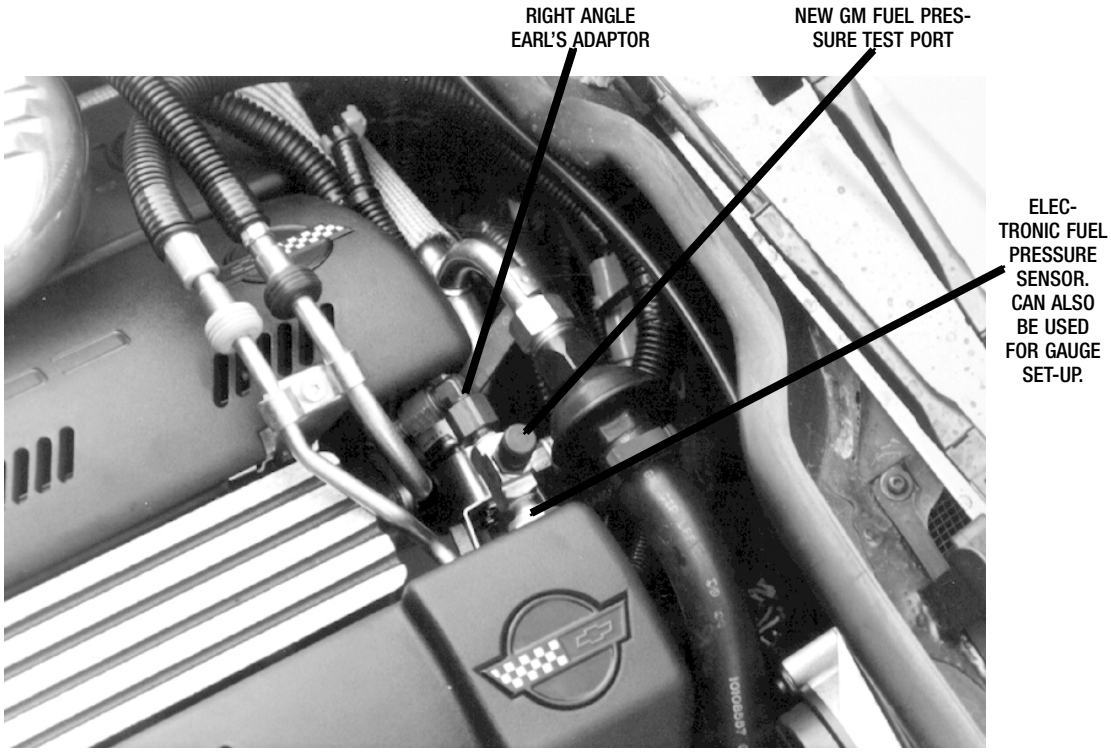


ILLUSTRATION 1.2
TYPICAL VACUUM/PRESSURE FUEL CURVE USING POWER 2-BAR MAP SENSOR



LT4 CORVETTE WITH SUPERPUMPER PRESSURE TRANSDUCER CONNECTED TO GM TEST PORT.

TOGGLE SWITCH LOCATED AT REAR OF VEHICLE ALLOWS FOR SELECTION OF STOCK GM MODE, OFF (VEHICLE THEFT) OR SUPERPUMPER.

BlowerWorks™ FAQs

MOST FREQUENTLY ASKED QUESTIONS ABOUT BLOWERWORKS™ SUPERCHARGING SYSTEMS FOR YOUR LT1/LT4/L98 CORVETTE

QUESTION: WHY SHOULD I BUY A CORVETTE SUPERCHARGING SYSTEM FROM BLOWERWORKS™ AS OPPOSED TO SOME OTHER MANUFACTURER OR VENDOR?

ANSWER: That's a real good question, especially in light of the amount of money you are considering spending. First and probably most important is to acknowledge in your own mind that experience in design, production and testing counts more than any other factor. NO one has spent anywhere near the time CARROLL has in perfecting the supercharged Corvette. We are the originators of the supercharged Corvette. Recognize that today's supercharging systems are very sophisticated and that the blower itself is only one small ingredient of the formula for success. Your car's performance depends on an integrated systems approach: fuel delivery, spark control, boost pressure, mechanical design, etc., etc. Perhaps the most important reason is that you will make the horsepower we show. Our kits are 100% complete right down to the spark plug. Often we end up selling "parts" to people and shops who have installed other manufacturers kits.

QUESTION: WILL THE SUPERCHARGER AFFECT MY EMISSIONS? WILL I PASS INSPECTION?

ANSWER: LT1: The emissions on your car with our supercharging system are actually slightly lower than the stock engine. And yes the system is C.A.R.B approved. Our exemption order number is D-281.

ANSWER: L98: The emissions on your car with our supercharger and Gaseous Intercooling™ will actually be lower than the stock car: particularly at W.O.T. Did you know that Gaseous Intercooling™ is used on fossil fuel power plants in order to reduce NOX emissions? With regard to inspection, you will pass all sniffer tests. Our system is 49 stage legal. We did not, nor will we at this point in time, apply for C.A.R.B. approval. However, if we did you can be sure it would be legal.

QUESTION: WILL MY CAR'S APPEARANCE CHANGE?

ANSWER: No!!! CARROLL CORVETTE systems fit neatly under your hood: L98 or LT1. Unlike some other supercharging systems, the CARROLL system utilizes all of GM's advanced tuned port technology maintaining the excellent driveability of the stock set-up.

QUESTION: WILL I BE ABLE TO RESTORE MY CAR TO ITS ORIGINAL CONDITION SHOULD I SO DESIRE?

ANSWER: Yes !!! Our system and the installation have been designed to make it easy to put your car back to stock easily and quickly. This is one of the advantages of our bolt-on supercharging system. Our INSTALLATION GUIDE specifies each piece you must save and tag in order to restore your car to stock. You can restore your vehicle to stock in about two hours.

QUESTION: WILL MY CAR BE NOISIER?

ANSWER: No!!!

QUESTION: HOW'S THE DRIVEABILITY?

ANSWER: Your car's driveability may actually improve. The extra torque the supercharger produces enhances the operation of the vehicle. In all cases the engine idles as smoothly and cruises effortlessly.

QUESTION: WILL THE RELIABILITY OF MY CAR CHANGE?

ANSWER: No!!! There are no changes to your car that will alter its' reliability in Stage I systems.

QUESTION: WHAT IS THE MAXIMUM STATIC COMPRESSION RATIO AT WHICH AN ENGINE CAN BE SUPERCHARGED?

ANSWER: With Gaseous Intercooling™ it is possible to supercharge an engine with a static compression ratio as high as 11:1.

QUESTION: HOW ABOUT THE EXTRA WEAR AND TEAR ON MY ENGINE? SURELY THE SUPERCHARGER WILL SHORTEN THE LIFE OF MY ENGINE?

ANSWER: The life of your engine and car depend on how you drive it and how you maintain it. If you put your foot to the floor at every light, your engine (with or without the supercharger) will not last as long as if you were to drive it easy. In fact, with our Deluxe Gaseous Intercooling™ System your engine will actually outlast a stock normally aspirated engine, given the same driver and driving conditions. The CARROLL Deluxe Gaseous Intercooling™ System in conjunction with the supercharger actually smooths out the power pulses on the crankshaft as well as extending valve, valve seat, piston and piston ring life. In many ways our unique Gaseous Intercooling™ system replaces the function that lead use to serve in gasoline. As you know when the lead was removed from gasoline the auto manufacturers had to resort to harder valves and valve seats in order to compensate.

QUESTION: HOW MUCH FASTER WILL I RUN THE QUARTER MILE?

ANSWER: With our Stage I supercharging system you will typically cut a full second off your present time.

QUESTION: HOW MUCH WILL SUPERCHARGING INCREASE MY TOP SPEED?

ANSWER: With our Stage I approximately 20 mph.

QUESTION: IF GASEOUS INTERCOOLING™ IS SO GOOD, HOW COME OTHER MANUFACTURERS AREN'T USING IT?

ANSWER: Our Gaseous Intercooling™ system adds expense and installation time. Also, the average consumer has enough trouble keeping his/her engine oil at proper level let alone filling another reservoir. However, our experience has shown that the Corvette owner is more than willing to fill a water bladder [about once a week with hard driving, normal driving uses no water] when it results in the kind of bolt on performance we are offering. Another little known fact is there have been auto manufacturers who have used it in the past but eventually dropped it due to cost and in the past the availability of LEADED high octane gasoline. Today please note there are many Corvette enthusiasts adding "alky" injection to their vettes for more power — they just discovered what we've known for 20 years!

QUESTION: WHAT IS SO UNIQUE ABOUT YOUR GASEOUS INTERCOOLING™ SYSTEM? I UNDERSTAND GASEOUS INTERCOOLING™ HAS BEEN AROUND SINCE WWI?

ANSWER: That's true; Gaseous Intercooling™ has been used on supercharged, turbocharged and normally aspirated engines since WWI. However, our system utilizes a Very High Pressure pump (100 psig) that forces the water thru a tiny stainless steel atomizing nozzle thus creating an extremely fine fog that easily mixes with the air the engine is consuming. The very fine fog evenly distributes itself to all cylinders cooling the valves, pistons, and cylinder heads. This results in more usable power (because there is no detonation) AND longer engine life.

QUESTION: WHAT TYPE OF CAMSHAFT SHOULD I USE WITH A SUPERCHARGER?

ANSWER: It is not necessary to change your camshaft as the supercharger works well with the stock camshaft. Specialty grind camshafts are available for Stage I and higher systems.

QUESTION: WHAT DO YOU DO WITH THE AUTOMATIC TRANSMISSION WHEN IT'S BEHIND A 500 OR 600 H.P. ENGINE AS FEATURED ON THE CARROLL SUPERCHARGED "406"?

ANSWER: You must blueprint your 700/R4 for applications above 400 H.P. There are many transmission shops that routinely build 700/R4s capable of handling 800 H.P.

QUESTION: HOW MUCH FASTER WILL MY 0–60 MPH TIME BE?

ANSWER: About one second faster than your present time with our Stage I system.

BlowerWorks™ FAQs | *CONTINUED*

QUESTION: HOW DO YOU CONTROL THE SPARK CURVE?

ANSWER: With our proprietary EPROMS for 1985–93 Corvettes and a reprogrammed PCM for 1994–96 models.

QUESTION: DOES SPARK RETARD WORK AS WELL AS IF YOU HAD USED GASEOUS INTERCOOLING™?

ANSWER: No it does not. We can make much more power with Gaseous Intercooling™ than with a retarded spark curve.

QUESTION: WHY DO SOME VENDORS INSIST ON NOT USING GASEOUS INTERCOOLING™?

ANSWER: That's simple: they do not have the expertise or components to properly utilize water. In all cases of an engine with 9.5 to 1 or higher compression ratios the vehicle can be made to run faster alcohol injection with water than with a boost/retard module, especially if the boost/retard curve cannot be adjusted every 500 rpm. What we are telling you here is not fiction but fact and can be easily proven on the dyno or the track.

QUESTION: WHAT ARE ROLLER ROCKERS?

ANSWER: GM uses a stamped piece of steel to change the up down pushrod movement into valve opening and closing. The ratio between the pushrod movement and the amount of valve opening is 1.5:1, i.e., if the pushrod were to move an inch the valve stem would move 1.5 inches. Roller rockers use needle bearings to reduce friction, tip rollers to eliminate valve guide side loading, expensive forgings to make accurate ratios and thus more accurate valve timing.

QUESTION: SHOULD I DECIDE TO CHANGE MY ROCKER ARMS TO ROLLER ROCKERS, WHAT RATIO SHOULD I GO WITH?

ANSWER: We recommend the 1.5 ratio on both the intake and exhaust for the LT1 Corvette engine and 1.6 ratio on both the intake and exhaust for the L98 Corvette engine. We also recommend you change the rocker arm studs from the stock $^{3}/_{8}$" diameter to $^{7}/_{16}$" diameter while you are doing the job: it's a simple change on the aluminum heads since the studs merely screw in. The heavier studs make for a more rigid valve train.

QUESTION: DOES IT MATTER WITH WHICH TYPE TRANSMISSION MY CAR IS EQUIPPED WITH?

ANSWER: Our testing has shown both the manual and automatic transmission work equally well.

QUESTION: WHAT ABOUT THE LIFE OF MY TRANSMISSION? WON'T IT BE SHORTENED FOR SURE?

ANSWER: Our testing has shown that the T6 manual and the automatic 700R4 are all more than adequate up to 400 H.P. We think that you will find that the life of either of the above will be much more dependent on your driving habits and your maintenance schedule than on the addition of the supercharger. Hole shots will eventually wear down any transmission, regardless of the torque and horsepower of the engine. Remember that all transmissions, automatic or manual have clutches in them. Clutches eventually wear out.

QUESTION: WHY A CENTRIFUGAL SUPERCHARGER? WHY NOT A ROTARY SCREW OR ROOTS TYPE SUPERCHARGER?

ANSWER: A centrifugal supercharger is about twice as efficient as a Roots type and about one-third more efficient than the rotary screw. That means better gasoline mileage and more usable horsepower at the wheels. Also both the Roots and the rotary screw type supercharger requires a pop-off valve to prevent destruction of the engine in case of back-fire. A centrifugal supercharger does not require a pop-off valve since it is not a positive displacement pump.

QUESTION: WHAT IS THE DIFFERENCE BETWEEN A CENTRIFUGAL SUPERCHARGER AND A TURBOCHARGER?

ANSWER: Both increase horsepower by introducing the air/fuel mixture into the combustion chambers at higher than normal (atmospheric) pressures. Both are fans and very efficient. However, the turbocharger, because it uses the exhaust gases as a driving means, transfers an enormous amount of heat to the incoming air stream due to the common shaft between the turbine and the compressor. Thus turbochargers require intercoolers if they are to work well. Also, because the exhaust gases are funnelled through a turbine, excessive amounts of heat and back pressure are put into the engine and engine compartment. Our centrifugal supercharger is belt driven from the crankshaft and runs cool. Throttle response is instantaneous, there is no "turbo-lag". Perhaps most important of all, there is no engine oil contamination.

QUESTION: WHAT WILL SUPERCHARGING DO TO MY GAS MILEAGE?

ANSWER: Our system will NOT reduce your mileage provided you drive the same way. Of course, if you drag from every stop light, your gasoline mileage will be less: with or without the supercharger.

QUESTION: WHAT MAINTENANCE IS INVOLVED WITH YOUR SUPERCHARGER?

ANSWER: A simple change of the supercharger's oil filter every 15,000 miles.

QUESTION: IS AN INTERCOOLER AVAILABLE FOR THE CARROLL CORVETTE SUPERCHARGING SYSTEM?

ANSWER: After extensive testing we found that air to air intercoolers actually caused a power loss when used in conjunction with an efficient supercharger such as the Vortech "S" Trim and less than 12 pounds of boost pressure. Intercooling works well with turbochargers because the air discharge temperature from the turbo is quite elevated: discharge temperatures of 350° from a turbo are not uncommon. The air discharge temperature from our belt driven centrifugal supercharger typically does not exceed 150° F for 5 to 6 pounds of boost pressure. For an intercooler to produce a positive net horsepower gain with an inlet air temperature of only 150°, the intercooler would have to be of the liquid to air type and use chilled water or freon or run boost pressures in excess of 15 pounds or have an inefficient supercharger. Additionally, any extra coolers placed in front of the Corvette radiator will seriously compromise hot weather operation particularly with air conditioning. Remember our gaseous intercooler (Gaseous Intercooling™) systems reduce the intake air temperature by 50° to 150° depending on application.

QUESTION: WHAT INTERNAL ENGINE MODIFICATIONS ARE REQUIRED IF I PUT YOUR SYSTEM ON MY CAR?

ANSWER: None whatsoever with the CARROLL system. Remember, our unique Very High Pressure Gaseous Intercooling™ system has been designed and engineered for the high compression Tuned Port Injection engine with cast pistons and crank.

QUESTION: WHAT IS AN "EPROM"?

ANSWER: "EPROM" stands for Erasible Programmable Read Only Memory. The EPROM or chip as it is called contains stored information pertaining to your model car. By changing the EPROM you can adjust the computer to specific models and engine changes such as adding a supercharger. We supply you with a chip that has the fuel and spark specifically optimized for your year car with THE CARROLL SUPERCHARGING SYSTEM.

QUESTION: WHAT ABOUT THE STOCK "EPROM" OR AN AFTERMARKET CHIP LIKE THE HYPERTECH?

ANSWER: Our experience has shown that chips other than one specifically optimized for 5 to 10 pounds of boost will cause detonation and subsequent engine damage.

BlowerWorks™ FAQs | *CONTINUED*

QUESTION: HOW LONG DOES IT TAKE TO INSTALL THE SUPERCHARGER?

ANSWER: On average, it will take 24 to 36 hours for a first time installer for an LT1 and 16 to 24 hours for an L98. Although our competitors claim 8 to 12 hours for their kits, we have never found this to be true. Many shops across the USA have given us feedback and we've yet to find a shop who has done an install in one day!

QUESTION: CAN I STILL MAKE OTHER CHANGES TO MY CAR SUCH AS MUFFLERS, LARGER THROTTLE BODY, ETC.?

ANSWER: Certainly, however we strongly urge and recommend that you supercharge your engine before spending time and money on other means of power increase, since we honestly feel that you will be more satisfied with the increased power and performance you will get from supercharging alone.

QUESTION: DO I HAVE TO TURN THE SUPERCHARGER ON OR OFF?

ANSWER: No, the Supercharger is always working making the car much more responsive to throttle position.

QUESTION: DOES THE SUPERCHARGER DRAW A LOT OF POWER?

ANSWER: A Centrifugal Supercharger uses power in proportion to the amount of work it is doing. Therefore at anything less than wide open throttle the blower uses almost no power.

QUESTION: WHAT EFFECT DOES THE REAR END RATIO HAVE ON MY CAR'S PERFORMANCE?

ANSWER: Automatic Corvettes typically have rear axle ratios between 2.59 and 3.07:1. These ratios provide a good balance between fuel economy, acceleration, and engine wear and tear. Higher ratios, like 3.54:1 will provide better acceleration but it comes at the expense of fuel economy and engine wear unless coupled to the new 6 speed manual transmission.

QUESTION: SHOULD I DECIDE TO SELL MY CAR WHAT SHOULD I DO?

ANSWER: We recommend you first try to sell your car as is. If you cannot sell the car with the system ON then advertise the system by itself either ON or OFF the car telling the potential buyer that the system can be boxed up and sent back to BlowerWorks™ to be made like new for whatever year car it is to go on for a small fee. Tell your potential customer to call us and ask!

QUESTION: I PLAN ON MAKING SEVERAL CHANGES TO MY CAR: HEADERS, CAM INTAKE AND MUFFLERS. WOULD YOU RECOMMEND I DO THESE CHANGES BEFORE OR AFTER I SUPERCHARGE?

ANSWER: We strongly urge and recommend that you supercharge your engine before spending time and money on other means of power increase, since we honestly feel that you will be more satisfied with the increased power and performance you will get from supercharging alone. Besides, with our system you can put your car back to stock within a day.

QUESTION: CAN YOU REMOTE THE SUPERCHARGER AIR FILTER FOR A SOURCE OF FRESH AIR?

ANSWER: You could but after extensive testing, we could not show any horsepower gains on a Corvette from so doing. In fact our testing shows a slight loss of power from remoting the air filter. The supercharger is VERY sensitive to inlet restrictions. A fresh air scoop built into the hood is the only good alternative we see but most Corvette owners are not interested in such a modification.

QUESTION: IS THERE ANY ADVANTAGE TO USING A REVERSE ROTATION SUPERCHARGER?

ANSWER: Not with regard to the LT1 Corvette. This is because centrifugal superchargers are far more sensitive to pressure drops at the inlet than they are at the outlet. Hence any ducting used to get fresh air to the blower more than offsets any gains from cooler air. Servicing a reverse rotation blower on an LT1 is a nightmare!

QUESTION: HOW FAST CAN YOU MAKE AN LT1 AND STILL STAY RELIABLE AND EFFICIENT?

ANSWER: With 350 cubic inches and a stock camshaft, an LT1 can run in the eleven's all day long!

QUESTION: DOES THE ENGINE OIL PAN HAVE TO BE REMOVED TO INSTALL THE OIL DRAIN FITTING FOR THE SUPERCHARGER?

ANSWER: Yes. We do NOT recommend trying to install an oil drain fitting with the pan on. In fact the pan is simple to remove on the L98 and LT1.

QUESTION: ON THE LT1 ENGINE WITH ITS' HIGH COMPRESSION AND HYPEREUTECTIC PISTONS I HAVE HEARD THAT THE PISTONS CAN CRACK WHEN SUPERCHARGING. IS THIS TRUE?

ANSWER: This is certainly true on the LT1 and is an important reason to buy your supercharging system from someone who has spent the time designing a system that does NOT detonate.

QUESTION: WHAT IS A CDI SYSTEM AND DO I NEED ONE?

ANSWER: A CDI or Capacitor Discharge Ignition system is a good enhancement to any vehicle with a distributor and spark plugs.

Without getting too technical, a CDI system fires the spark coil with about 400VDC (yes that's right – four hundred) as opposed to 12VDC which is what the standard ignition system uses.

What this means is that a CDI system makes available a LOT more energy to fire the spark plug if needed.

When you supercharge, or run a V8 engine past 5,000 RPM, or run large gap spark plugs you may need a CDI system. On our Stage I L98 system it is not required due to the low engine RPM and small gap spark plug. On our LT1 Stage I and higher system it is required due to the large gap spark plug and the 6,000 RPM range of the engine.

QUESTION: WHOSE CDI UNIT DO YOU USE?

ANSWER: We recommend the CRANE HI-6R.

QUESTION: DOES YOUR SUPERCHARGING SYSTEMS WORK EQUALLY WELL ON MAF AND SPEED/DENSITY CORVETTES?

ANSWER: Yes – our supercharging systems are all PROPERLY and PROFESSIONALLY engineered.

QUESTION: HOW CAN I IMPROVE THE PERFORMANCE OF MY LT1 SUPERCHARGER KIT BY VORTECH?

ANSWER:
1. Change your spark plugs to Champion 7401.
2. Modify your supercharger inlet rube as shown. The modifications can be done by BlowerWorks™ or we sell you the vane for $20.00.
3. Install one of our Gaseous Intercooling™ kits.
4. Change your blower belt to a Gates K060507.
5. Install our High Output In-Tank fuel pump.
6. Change your ignition wires to aftermarket 8mm heli-coil — we sell them.

QUESTION: HOW CAN I IMPROVE THE PERFORMANCE OF MY L98/LT1 PROCHARGER KIT?

ANSWER:
1. Change your spark plugs to Champion 7401.
2. Install one of our Gaseous Intercooling™ kits.
3. Add our Crane HI-6R Ignition System and wires.
4. Install our High Output In-Tank fuel pump.
5. Get a custom tune using LT1 Edit or HP Tuner.

BLOWERWORKS

Your BLOWERWORKS™ supercharging system is warranted by BLOWERWORKS™ for one year or 12,000 miles (whichever comes first). This warranty is limited to the original retail purchaser. This warranty does not cover labor, racing, neglect, abuse, misuse, mishandling, improper installation, vehicle accident, vehicle towing, or the like. All warranty work must be performed by BLOWERWORKS™. This warranty does NOT cover engine or piston failure as a result of detonation or loss of oil. Failure from detonation or loss of oil is the sole responsibility of the owner: both labor and parts.

MAINTENANCE REQUIREMENTS

- First engine oil and filter change must occur at 500 miles. Proof of all oil and filter changes to be provided.
- Thereafter engine oil and filter must be changed every 3,000 miles
- Engine oil type must be one of the following: AMSOIL, MOBIL, or REDLINE. 100% synthetic 10W-30 for summer use or 5w-30 for winter use. Engine oil filter must be one of the following brands: OEM, K&N, or AMSOIL
- Remove, inspect and clean supercharger oil pressure inlet fitting and supercharger oil filter every 5,000 miles.
- Customer must NOT operate vehicle at full throttle condition when the engine is cold. Customer must, when starting the engine each day, always allow plenty of time for the engine oil to reach full operating temperature ≥ 175°F before operating engine above 2,500 rpm. This may be as long as 20 minutes when O.A.T. is less than 32°F.
- Customer MUST be able to provide BLOWERWORKS™ with proof of compliance for all service intervals as outlined above.

BLOWERWORKS™ expressly disclaims any liability for incidental or consequential damages caused by product defects, racing or exceeding legal speed limits. This warranty does not cover any expenses incurred by the removal and/or reinstallation of the supercharger or engine or any other parts associated or not associated with our system, and/or freight charges and/or towing charges incurred while shipping parts to and from BLOWERWORKS™.

VEHICLE: YEAR _____ MODEL _____ VIN NO. _____

CUSTOMER NAME _____ DATE ___ / ___ / ___ ODOMETER _____

ADDRESS _____ CITY _____ STATE _____ ZIP CODE _____

AUTHORIZED BLOWERWORKS™ SIGNATURE _____

The following information and recommendations are designed to promote years of trouble-free service from your supercharger. Each BW Supercharger unit is built to exacting tolerances using the best materials available. Every unit is subjected to an intensive quality audit procedure from the time we first receive raw castings to the time the precision machined components become a completed Supercharger. All BLOWERWORKS Kits are likewise developed with the greatest attention to detail in the industry. Air/fuel ratios, ignition timing requirements and all aspects required to build fully integrated systems are tested rigorously. Once developed fully, no expense is spared in the final production version. A BW System typically costs a bit more, but ensures you a product which is refined to the point that a successful installation can be performed easily by an average enthusiast. When applied to a stock engine in sound working order, the installation of a complete BLOWERWORKS (BW) ™ results in the Highest Street Legal Performance at a Minimum of Engine Wear. If proper care is given to the supercharger and related systems and it is operated within the range set up by the factory, your supercharger has been designed to last the life of most vehicles.

THIS WARRANTY IS NULL AND VOID UNLESS ALL STATED TERMS AND CONDITIONS ON BOTH SIDES OF THIS WARRANTY ARE STRICTLY ADHERED TO!

1. Customer must not alter or remove the supercharger drive pulley or otherwise disassemble or modify the supercharger unit itself. Such alteration, removal, disassembly or modification, will exclude you from all warranties.
2. Customer must not operate the Supercharger without the in-line oil filter.
3. Customer must not attempt to disassemble the gearcase.
4. Customer must not remove, alter or replace the serial number tag.
5. Customer must not alter the original engine crank pulley diameter.
6. Customer must not use Teflon™ tape on oil inlet fitting. Teflon™ tape can dislodge and clog the small orifice on the oil inlet fitting. Evidence of improper use of sealants will **VOID** your warranty.
7. Customer must **NOT** operate vehicle at full throttle condition when the engine is cold. Customer must, when starting the engine each day, always allow plenty of time for the engine oil to reach full operating temperature ≥175°F before operating engine above 2,500 rpm. This may be as long as 20 minutes when O.A.T. is less than 32°F.
8. Customer ***MUST*** be able to provide BW with proof of compliance for all service intervals as outlined above.

Product Index