

CHARGIN' THUNDER

Volume IV

March 1999

The Official Newsletter of the Super Coupe Club of America



*Dedicated to the preservation and performance of the
Thunderbird Super Coupe – 1989 to 1995*

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Editor: Bill Evanoff

"For whosoever shall call upon the name of the Lord shall be saved" - Romans 10:13

Super Coupe Club of America

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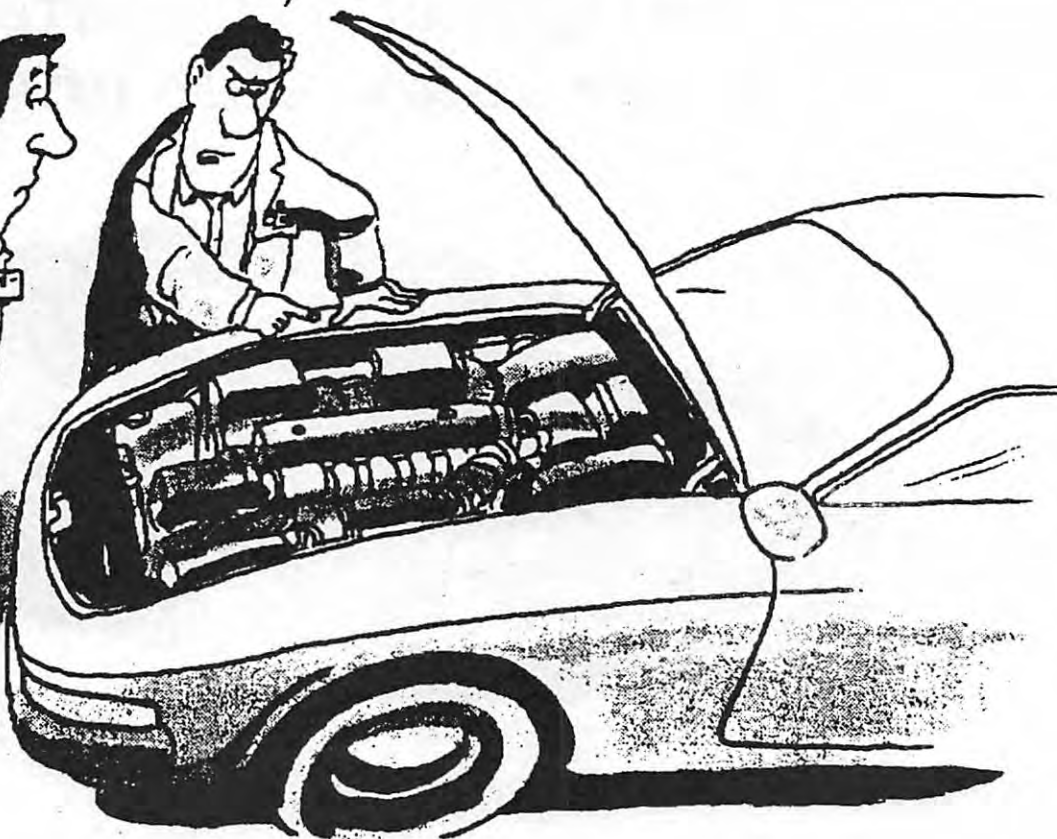
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Frank & Troise

Suspicious Confirmed # 42

Nope! I can still see the number four spark plug. Have the design team put the compressor in front of it and move the manifold closer!



Phil Frank

Bill Evanoff

From The Birds Nest

Spring has officially sprung, as of March 21st and warmer weather is sure to be in the near future. This year promises to be the biggest and the best ever for the SCCoA! I suspect that there will be more SC/XR7 owners taking their cars out to shows or race events than there ever has been in the past. There are now sixteen official SCCoA local chapters and more are forming every month. I'm sure that many local events will see their first Super Coupes in attendance and the national events will see more SCs than ever before.

SCCoA club membership is simply exploding. Bill Hull reports that he often gets ten to fifteen new members joining every week. Many of them are coming to join after learning about the club through the Internet web site. Total member numbers has surpassed 950. The amount of past members who decided to rejoin for '99 is not available yet, as many do so after the March deadline unfortunately. Typically, when they don't get a March newsletter, this serves as a reminder that they have forgotten.

This issue has come fairly quickly on the heels of the January '99 Chargin' Thunder. Having only about eight weeks to gather new information seemed to be a problem at first, but thanks to the input by many new individuals and a few past contributors, this issue is packed with more great information. Mike Puckett and Fred Holzhauer are back again with new articles. Their continued input is really appreciated! I want to thank Stan Wodysz and Aaron Hawks, as they have volunteered to have their cars featured in this issue. My plea in the last issue for individuals wishing to have their cars featured has fallen on deaf ears unfortunately as no one has contacted

me regarding this. I am again asking the membership to contact me if you would like to contribute a write up of your car for a future issue. Without contributions from SCCoA members, this magazine will begin to get very thin.

Ron Wiemer and Tim Mendoza have contributed what they have developed with a few suppliers in the aftermarket. These guys show that an individual can have a large impact and be responsible for the development of great parts for the cars that we love.

Kurt Kreisz shares with us his problem plagued transmission saga. This is a must read article for anyone out there interested in being a trendsetter (electronically and/or mechanically) or modifying your transmission. Kurt, Joe Baldazzi, and Wayne Ing also update us on their future SCCoA chapter activities. The KONI shock article I promised in the last issue is also finished and included.

This issue debuts the "Top 25 Fastest SCs" list. Many of us appreciate powerful straight-line acceleration (as well as curves) and this list will track who are the "BIG DOGS" among us. I plan to update and publish this list approx. twice per year. If you wish to participate read the rules and send the required information to the name given in the article.

The SCCoA web site continues to draw SC enthusiasts at a fevered rate. The front-page counter has broken past 65,000 visitors. Ron DiPaola, our Fabled Internet Guru (a.k.a., the head SCCoA Webmaster) has continued to add members cars, SCCoA Chapter events, SC articles, and a host of other improvements to the site.

Congratulations go out to our past "SC of the Month" award winners. They are:

October '98 – Micah Miller

November '98 – Mark Sayers

December '98 – Charles Markman

January '99 – Tim Mendoza

February '99 – Dick Adams

March '99 – Wayne Ing

See us at <http://www.sccoa.com/>

Fastest SCs in the SCCoA

This "Fastest" list has been started on the SCCoA web site and I've decided it should be regularly updated here within the pages of Chargin' Thunder. Hopefully a friendly competition will develop among the membership over top ten fastest and top 25 fastest bragging rights. For now, we'll keep the list limited to the top 25 cars unless there is a huge response dictating increasing the size of the list. Since this list was recently started on the web site, there are currently twenty members who have already gotten on the list.

I KNOW there are many more SC owners who have raced their cars down the quarter mile, so lets fill this list up and post your best times for everyone to see!

Read over the "Fastest SCs" rules below and be aware of the two-year time restriction that is on the list keeping it current. So please don't send us a three-year-old time slip and expect it to be valid.

Rank	Owner	Year of Car	Time
#1	Neil Frisbee	1990	12.4 @ 112 mph
#2	Wayne Ing	1992	13.0 @ 102.6 mph
		also	13.1 @ 105.6 mph
#3	Bill Hull	1991	13.5 @ 101 mph
#4	Stan Wodzis	1990 XR7	13.51 @ 99.9 mph
#5	Frank Joseph	1989	14.30 @ 96.03 mph
#6	Steve Griffith	1993	14.36 @ 96.63 mph
#7	Kurt Kreisz	1992	14.590 @ 94.34 mph
#8	Dan Welch	1989	14.591 @ 92.50 mph
#9	Brett Allender	1995	14.63 @ 92.92 mph
#10	Jimmy White	1995	14.737 @ 92.24 mph
#11	Mike Puckett	1990	14.797 @ 96.16 mph
#12	Charles Markman	1992	14.81 @ 92.16 mph
#13	Micah Miller	1989	14.835 @ 93.25 mph
#14	Ken Seegers	1992	14.916 @ 92.78 mph
#15	Bill Evanoff	1990	14.92 @ 92.5 mph

#16	Ryan Scott	1990	15.113 @ 94.10 mph
#17	Rick Cunningham	1990	15.159 @ 89.64 mph
#18	Brad Klein	1995	15.170 @ 90.82 mph
#19	Ron DiPaola	1993	15.228 @ 91.09 mph
#20	Mike Maroschak	1990	15.417 @ 89.16 mph

Lets Fill This List Up With Some Fast Times!

Fastest SCs List Rules

1. Must be a 1/4-mile time, No 1/8-mile timeslips will be considered.
2. No drag racing style suspensions. The stock independent rear suspension must be retained.
3. Drag radials or slicks acceptable.
4. Your engine must LOOK like a Ford 3.8L SC engine. Boring/stroking is acceptable. Any other engine than a Ford 3.8L SC based engine is NOT valid.
5. Any and all power adders are acceptable, but let us know if anything other than one supercharger is used.
6. G-techs, Vericomms and other hand held devices are not accepted as a valid quarter-mile time. You must have a time slip from a race track using electronic timers.
7. Someone must attest to your run. Another SCCoA member is preferred but not necessary.

To keep the list current, your time will stay on the list for a **MAXIMUM OF TWO YEARS from the date listed on the time slip**. This will keep the list fresh and indicate that your car has made this run fairly recently. You can repost at anytime before your two-year lock expires if your car gets faster or runs a similar time in order to remain on the list.

As time goes on we may have an All Time Fastest list for those cars which have not been kept actively racing and their FAST times have dropped from the list.

Send a copy of your time slip, your name, description of your SC (year/modifications/etc), and the name of the person validating your run to:

Ron DiPaola
519 June Street
Endicott, New York 13760

****Please include postage if you want your timeslip returned.**

Hello to Bill H. and Bill E. at Super Coupe Club ground zero, and the rest of you Super Coupe Clubbers. I'm a long time Ford fan. I still own a '67 Fairlane GTA which I have kept for nearly fifteen years. My first new car was a 1984 Turbo Coupe. When I first got a look at the new 1989 Super Coupe, I was blown away (no pun intended). Sitting on the showroom floor, it looked like it was ready for a few hot laps at Daytona Speedway.

I was ready to purchase a new car in the summer of 1990 and it just so happened my local Ford dealer has two 35th Anniversary edition models in stock. They were identical except one had a power moon roof and the other did not. As I was buying this car as a summer fun car, (Michigan winters are no good for high torkin' T-Birds) the power moon roof had to be the way to go!

With the salesman sitting along side, out I went for a test drive. We were soon on the freeway and I asked permission from my sales guy to punch her down. No sooner did he say "OK", then I had the car at full throttle. I could not believe how quick we attained 100 mph and neither could my poor salesman. He was holding on for dear life! Fortunately for both of us, a deal was struck. He made a sale and I now had a fabulous car!

As I use this bad Bird on nice days only, it still has only 11,000 actual miles. It has the 35th Anniversary package with the AOD transmission. I've added a Borla cat back stainless exhaust, a 10% overdrive pulley and a K&N pulley. I've also made a small adjustment on the TV cable that makes it shift a bit crisper. One of the stealth SCCoA supercharger tops is next on the list. This car still looks like brand new!

I think as time goes by, these cars will be held in high esteem among Ford enthusiasts much like other famous Ford performance vehicles of the past. I want to say thanks to Bill Hull for starting this club and giving this car the recognition it deserves and for sharing all that "School of hard knocks" knowledge with us. Thanks also goes to Bill Evanoff for helping this club to keep-on-keepin'-on with the Chargin' Thunder magazine! And thanks to Ford Motor Company for building it in the first place. I hope to meet up with you guys down the road at some of the national events that the SCCoA will be participating in this summer as well as the Midwest SCCoA chapter events (which I just joined) in the Michigan and Ohio areas. Until then, keep up the GREAT WORK.

Yours truly,
Aaron Hawks

Lansing Michigan
517-323-6974

Quick Cat

By Stan Wodzis
swodzis@aol.com

I purchased my 1990 Cougar XR7 back in '93. Honestly, I never was much of a Ford or Mercury fan, but my brother used to buy company cars from where he works when the leases would run out. He told me about the Mercury Cougar XR7 that the President of the company was driving at that time. The car had quite a few highway miles on it, but was in good shape and I couldn't beat the price.

Being a speed junky and having some friends with Mustangs, I couldn't help but mess with it. In '93 not many parts were available, so I bought a 10% pulley and the car went 15.2 seconds @ 90 mph with no traction on stock tires. I never planned on doing much to the car but the XR7 was such a great sleeper. The next modification was a Flowmaster exhaust system, which was good for 14.9 seconds. I had just gotten married, bought a house, and a '86 Suzuki GSXR 750 (10.90 bike) the previous year so it was hard to justify new parts to make a three year old car faster but I snuck in a Hypertech chip next. The chip was good for about .15 sec and a 14.7-second ET. The following year I purchased the Auto Specialty underdrive pulley set, a K & N filter, I bored the mass air meter out to 60mm, and removed the cat's and the car responded well with a 14.40 @ 94 mph at the track.

I had asked many people how I could tell if the knock sensor was retarding the timing but no one had any information. From what I understand, if you run more octane than you need you may actually lose power. One day in '96 the local SUNOCO had the high-octane pumps down. I had always run 92-94 octane gas and never heard any knocking. I decided to try some 89 octane to see what would happen. BAD move! At full throttle it sounded like someone took a sledgehammer and rapidly beat the crankshaft. It was like nothing I had ever heard before. This was definitely not your basic knock or ping. The engine started to idle a little rough. It also made a tick at 2500 rpm that sounded like a bad lifter and would also pop the dipstick at full boost.

By this time the engine had close to 100,000 miles so I thought, "no big deal", its time to freshen it up. I pulled the motor and when I removed the pistons, three of them had shattered the ring lands between 1st ring and the oil ring. The cylinder walls looked great and still had a crosshatch pattern on them, so I chuckled and thought everything was fine. A day later when I laid the other three pistons and rods down to clean them I got worried. The other three pistons had bent rods. One of them was pretty bad. I knew that the crankshaft was BIG bucks new and I was worried about possible cracks in it. I took the crank up to a local machine shop and had it magnafluxed. Luckily, it was OK. I was surprised that it could take this kind of punishment and still survive. The engine block was bored .020" oversize and all the rods were replaced. At this time the SCCoA was just starting out and I didn't know about it yet. I had Crane regrind the cam and I got out the die grinder and ported the heads (mostly on the exhaust side) myself and finally had the machine shop give them a good three-angle valve grind. Since I still had the stock rear gear and throttle body, the car only ran 14.0 seconds at the track.

Since then, I have installed a SCCoA 3/4" raised/enlarged supercharger top, a C&L 73mm mass air meter, and a BBK 70mm throttle body. I've fabricated a double intercooler, a 3" aluminum connector tube between the throttle body and mass air meter. I also removed the rear subframe, sandblasted it, and put in new body mounts and bushings. New Eibach lowering springs, OEM Tokico shocks complete the suspension. Additionally, I've set up the rear end with 3.73 gears, rebuilt the AOD transmission in the basement with a wide ratio kit and 2400 TCI converter, and built my own exhaust from mandrel bent tubing 2- 2.25" X 3". These modifications had the car down to 13.50 seconds @100 mph late last year.

I just finished installing a set of SCCoA short tube headers, 36lb injectors, and an adjustable fuel pressure reg. a few days ago. I've only had the car on dry pavement once and it feels strong on the top end now, where before it used to fade away after 4800 rpm. The headers are letting all the other modifications work and I hope to get into the 12s. If not, the "S" model supercharger is next and then I'm done messing around. I need to finish my 10 sec pro touring Firebird that has been waiting for five years, but it's so much fun messing with Vettes, Cobras and Ram Air T/As with my sleeper black Cat. There's nothing better than telling the other guy it's just a V6.

AIR Apparent

By Fred Holzhauser
fredholz@concentric.net

Your engine is basically a sophisticated "air pump" (I'm borrowing the term from our Grand Pooh-Pah and President for Life, Bill Hull). The power the engine makes is theoretically and practically limited by the amount of air we can get through it. The second aspect of air that concerns us is the force of resistance (drag) it presents to the vehicle as it tries to move through. Here's a little science about air.

Air is a mixture of gases, mostly Nitrogen, then Oxygen, with Argon, and Carbon Dioxide in minor amounts. 79 % is Nitrogen, which weighs 28 grams in a 22.4-liter volume and 21 % is Oxygen, weighing 32 grams in a 22.4-liter volume. Scientists have their reasons for using 22.4 liters, and they go on to specify that they are talking about 1.0 atmosphere of pressure and 0 °C. The conditions are called Standard Temperature and Pressure, or STP for short. Knowing all this, we can figure air density at STP.

$$\text{Density}_{\text{STP}} = [(79\% \times 28) + (21\% \times 32) \text{ grams}] / 22.4 \text{ liter} = 1.2929 \text{ grams / liter}$$

How much is an atmosphere? 14.2 psi. Scientists say 760 mm. Just remember that when you're reading a tire pressure gauge or your boost gauge, you are reading pressure in the tire or manifold relative to the air around the car, not relative to outer space.

Temperature affects the air density quite a bit. Every degree C increase will decrease the air density by about $1/273^{\text{rd}}$, or 0.364%. Here's the difference. Go to the drags on a cool day, say 60 °F. On a hot day, at 96 °F, we post a longer time, everything else being equal. How come? The 36 °F difference works out to 20 °C, there being 1.8 degrees F for every degree C.

$$\text{Change in Density} = 20\text{ }^{\circ}\text{C} \times (-0.364\text{ \% per }^{\circ}\text{C}) = -7.3\text{ \%} \quad !!$$

Now there's a change you can feel. You just lost 7.3 % of your power. Like going back to 3.27 gears from 3.55s.

Let's consider elevation for a minute. Every 1000 feet up costs you about 30.3 mm of the 760 mm that the scientists dish out at sea level. Doing the calculation for Denver at a mile high, we get .

$$\text{Change in Density} = 100\text{ \%} \times [5.28\text{ Kft} \times -30.3\text{mm} / \text{Kft}] / 760\text{ mm} = -21.1\text{ \%} \quad !!!!$$

Just call that a full second onto your ¼ mile time! A 13-second car at a mile high is **really** quick.

Let's talk about drag. The force on your car is proportional to your speed, **squared**. It also depends on the air density, too. For you eggheads, the equation is:

$$\text{Force} = 0.5 \times (\text{drag coefficient}) \times (\text{frontal area}) \times (\text{air density}) \times (\text{speed})^2$$

For MN-12's the drag coefficient is 0.32 and the area is roughly 22 ft². Your Power requirement is Force times Speed. Worked out to our favorite units, mph, that's . . .

$$F_{\text{MN-12}} = (\text{mph})^2 \times (\text{air density}) \times .0146$$

$$\text{HP}_{\text{MN-12}} = (\text{mph})^3 \times (\text{air density}) \times .00003894$$

I'll leave you with this somewhat sobering table.

At sea level, on a 60 °F dry day, the air density is 1.2232 gram / liter.

Speed	Force	Power
Mph	Pounds	HP
30	16	1
60	64	10
90	145	35
120	257	82
150	402	161
180	579	278
210	788	441

THE VEHICLE MAINTENANCE MONITOR

By Mike Puckett

In the dash of most of our Super Coupes is an interesting little instrument called the Vehicle Maintenance Monitor (VMM). Normally, we don't think too much about it until a fluid low light comes on or it says that it's time to change the oil; nor do we give much thought to how or under what conditions it generates these indications. With this article I'll unveil some of the mysteries of the monitor.

The VMM has two basic modes; normal and diagnostic. In the normal mode it activates all of the segments displayed for 1 second, goes blank for 1 second, and then enters the normal operating mode when the ignition is switched on. It measures for low oil, coolant, windshield washer solution, and fuel levels. Additionally it indicates the oil change interval status. Let's look at each measurement separately.

The low oil level indication is given when the oil is approximately 1 1/2 quarts low, although it seems that on my 90 SC it comes on at 1 quart low. Oil level measurements are made when the ignition is switched both on and off. The low oil level determination is made based on a combination of four of these readings.

The measurements and their indications are given as follows:

Key off key on Indication

normal normal normal

normal low normal

low normal normal

low low low

After the ignition is switched off the oil level is sensed continuously until the measurement either reads normal or a five-minute time-out occurs. This makes sure that all of the oil has drained back into the sump.

The low fuel light will come on after the fuel level reaches about an eighth of a tank for 1 minute. When the ignition is first switched on it will indicate within 15 seconds if the fuel level is low. The measurement is made via the fuel level sender in the tank. With a battery voltage of 13.5V the voltage will be 3.4V at 1/8 of a tank. The low fuel light will come on whenever the fuel sender voltage drops below 3.4V. However, the low fuel level light will not extinguish until the voltage reaches 4.0V. This property of low on, high off is called hysteresis and is not always a desirable characteristic in electronic circuits. In this instance it is used to prevent fuel slosh from making the indicator light flash.

The low radiator coolant indicator does not actually check the radiator level. It actually measures the overflow container level that usually indicates when the radiator is low or the system is consuming or losing coolant. Two electrodes are immersed in the fluid and a current is passed between them and the ionic solution of coolant. The indicator will show 'low' when the coolant drops below the sensor electrodes for 60 seconds and will light up in 15 seconds after the ignition is switched on if it is low at that time. It is a good idea to check and clean the electrodes occasionally as a crusty deposit can build up on the positive electrode and block the current flow giving a false low coolant indication. Likewise, if the transfer hose or the

plastic nipple on the container plug up, the coolant recovery container could stay filled with fluid while the radiator runs dry and never gives a low coolant indication.

The windshield washer indicator operates similarly but uses a float type sensor. When the monitor senses a constant battery voltage at its input it will enable the low light.

The oil change indicator operates in a very interesting manner. It isn't just based on miles driven since the last oil change. Rather, it is a qualitative assessment of the oil itself. The monitor measures the oil temperature and the tachometer signal to determine oil quality along with the elapsed mileage since it was last reset. The OK will indicate green for the first 89% of the oil change interval. The SOON will light yellow for the next 10% of the interval and NOW will light yellow from 100% to 115% of the interval. NOW will light and flash for 17 seconds after the ignition is switched on when the 115% point is reached.

To manually reset the monitor after each oil change, bend a paper clip straight and with the ignition off, insert it carefully into the tiny hole on the front face left of the display. Switch the ignition to run but don't start the engine. Within 15 seconds firmly press on the paper clip until the display flashes and maintain pressure until it stops. Behind the hole is a flat wafer thin switch. Don't use a sharp point or you could puncture the wafer and short the switch closed. Starting around the '92 model year, Ford began offering a VMM with a reset button which did away with the paper clip insertion. If you are using one of the extended oil change interval types of synthetic motor oils simply reset the monitor every time it indicates NOW until your normal change interval is reached.

What they never told us about was the diagnostics that the monitor will perform. In the test mode you can check the monitor's response to RPM, oil temperature, fluid levels, EIC (electronic instrument cluster) wiring harness, and strap inputs. This test mode can be reached by pressing and holding the reset switch for 4 seconds within 15 seconds of the engine being started. The entire display will flash unless the switch is released prematurely. However, if only the oil change section flashes the tachometer signal is missing and the test mode will not activate. If the reset switch is pressed again the monitor will progress to the next test function. Turning off the ignition will end the diagnostics testing.

The first test mode is the tachometer test. This will cycle the OK, CHANGE, NOW, SOON, and GREEN BAR lights with the tach signal. It will follow engine RPM as it changes. I once had a misfire that I was hoping the monitor would help me find, but alas they flashed steadily even when the engine misfired. Unless a condition exists that causes the tach signal cut out it will not indicate a misfiring cylinder. It can help to determine if a problem is a sensor, i.e. defective cam sensor, a malfunctioning tachometer or something else in the ignition system, i.e. plugs, wires, etc. Pressing and releasing the reset switch again will reach the oil temperature test mode.

The oil temperature will be indicated by the following chart:

COLD / Green Bar, OK

COOL / Green Bar, Soon, OK

NORMAL / Green Bar, Soon, Now, OK

Warm / Green Bar, Soon, Now, Low Radiator, OK

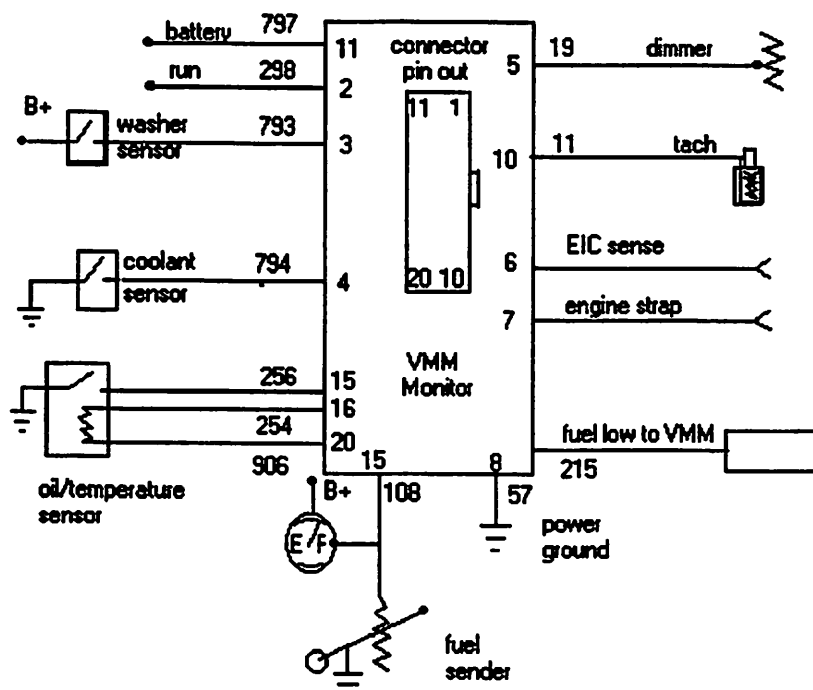
HOT / Green Bar, Soon, Now, Low Radiator, Radiator, OK.

Advance to the next test, fluid levels, by pressing and releasing the switch as before. Each of the fluids monitored: oil, fuel, coolant, and windshield washer, will be displayed. If the level is low then the low light will come on for that fluid and if the level is OK it will stay off. The oil indicator will take up to 8 seconds to respond due to the method of testing as was covered earlier.

The last test is the engine strap and EIC sense input test. This mode will show what engine and instrument is being sensed and is indicated by lighting the lines on each side of the CHANGE indicator. The OIL LOW light indicates a supercharged engine and is off for a normally aspirated. The WASHER LOW light shows an electronic instrument cluster and is off for the mechanical instrument cluster. Again, the test mode can be exited by shutting off the engine.

The monitor can be removed from the dash by inserting the blades of two miniature screwdrivers into the slots on either side of the monitor and pushing in to release the spring clips. The monitor will pop out and the connector can be separated to completely remove the unit. The front face tends to bow slightly with age and can potentially fall off because the plastic becomes brittle. Attempting to reglue the face is usually futile, as the repair does not last long. The electronics are fairly trouble free though. Replacement monitors may possibly be found in wrecks at salvage yards or from other club members who have spares for sale. Ford also still sells the monitors at their parts counter, but the price retails for over \$250. The VMM feature was also offered in some early LX models and these units are interchangeable.

The following is a connection diagram and pin out for the connector that may be useful. The tach signal could be tapped onto here if a tach signal was needed. A high voltage pickup would not be necessary. For the electronically inclined a number of sensor outputs are accessible. I hope that this has taken a little of the mystery out of the monitor and its functions and helps us to appreciate what a unique little instrument it really is.



IN QUEST OF A HOOD

By Ron Wiemer
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This quest started in November '98 as some of you may know from my post on the SCCoA Technical BBS. Don't get me wrong, I think the MN-12 is one of the nicest designs of any car on the road. A lot of cars have copied its basic design, but in my opinion the hood on the SC is lacking something. Although with other changes that made it a SC, the vehicle should have had a little more racy design to separate it from the LX.

In my quest to find a unique aftermarket hood, I came across several manufactures. Some did not have the quality that I expected for my vehicle, being fussy on my part, and others did not make anything for the 94-95 SC. Then, overlooking the obvious, almost right in my back yard was a company called American Sports Car Design Inc. located in Maryville TN. It was a rainy day and I had nothing to do at the time, so I took the 30-minute drive to Maryville to see this company for myself. Rex the owner personally met me and he gave me a tour of his plant. The first impression I got of Rex was that he was an honest, energetic, and happy person that seemed to come from when your working at a job that you like and are a basic automobile enthusiast. In the plant, the first thing that grabbed my eye was that he made fiberglass custom and replacement parts for Corvettes. Now we all know how picky and snobbish the owners of the Generals finest are, so now I knew this guy did not make junk. I explained my quest for a hood and the disheartening reply was that he did not make what I wanted. Now mind you, I was looking for a Mustang type ram air style. But to my surprise, he told me if I would let him use my car to fit the hood, he would make it what I wanted.

I then notified everyone of the news by posting it on the SCCoA web site and low and behold there was a discussion going on about cowl inducted and '95 Cobra R styles and I put it to a vote. The Cobra R style won hands down. Before I started this I had never seen a Cobra R hood and when you guys showed it to me I fell in love with it. I notified Rex and he said he would make both the Cobra R and the Ram air styles.

Now comes the process. Be forewarned getting the side torx hood bolts out isn't easy. I had to use a propane torch to heat the bolts on the inside for 20 seconds each to remove them all the while being scared about heat discoloration to the hood and with my white opalescent tri paint (pearl) that would not be a good thing. It worked no problems. Second of all, my vehicle had to be straight (no wrecks) and I had checked my vehicle thoroughly before I bought it last April, no problem. Then Rex got two metal factory hoods from Ford and test fitted it. He uses the metal hood for rigidity and conformity in making a plug for the mold. Even though the hoods were factory replacements, they had to be adjusted. Next came the templates of the Cobra R hood and the blending of the templates to flow with the original design of the MN-12 hood. When this is accomplished the plug is glassed and a mold is formed. The mold is prepared with a special wax and the gelcoat is applied. Then the chopped strand glass mat is hand laid with the resin to the mold. This gives the hood a consistent thickness throughout the entire hood, instead of using the pressure feed guns that make it hard to control the amount of material that is

applied specialty to curves and undercurves. A woven patterned fiberglass mat is used for strength at all points that are subject to stress. Then the hood is removed and you have the top half.

Next comes the hood frame. Rex uses an original metal hood frame for the plug for the mold and the above process is repeated. Now you have the hood and the hood frame. These two pieces are aligned and bonded together and there you have a hood. The latching system is reinforced with metal for safety. Now the process is more complicated than I have explained, but I am only giving layman's description of the process. Rex is always open to trying better materials, chemicals and processes to insure that the best quality product is leaving his plant, even down to the bubble wrap and boxing technique to ship his products.

This project has taken four and a half months to get the 94-95 hoods on the market. And I have probably been a big pain in the rear to Rex to try to hurry this project along. The standard reply from Rex was, "You want it fast or you want it right?" and I would reply, "I want it before I'm too old to drive".

The finished product was well worth the wait as a lot of you guys noticed from the posting of my pictures of the prototype hood on the SCCoA web site. This hood will use the original factory gas strut supports, hinges and original latch. This Cobra R style hood enhances the SC without drawing all the attention to the hood. It gives the SC a more sporty, muscular look that states, this car is special. It's an SC and not your run of the mill T-Bird. My SC used to get a lot of attention, but you should see the stares with just the prototype hood. My finished hood will be painted sometime between 3-15 and 3-19-99 and I should have more pictures posted on the web on 3-21-99. Also I am planning to be at the Atlanta Dragway for the All Ford Show on April 16, 1999 and the Spring Carlisle Pa. Show with Rex on April 22, 1999.

The 89-93 will be in production in a few months. Be patient guys, it's worth the wait. The ram air version is in its building stage as we speak. This project has got me excited and gives us guys another product for our luxury sport cars and is my way of contributing back something for all the helpful information I received from you guys at the SCCoA. You're the greatest!

TO INQUIRE ABOUT THESE BEAUTIFUL HOODS:

For more information and pricing you can contact Rex at American Sports Car Design Inc. 324 Home Ave, Maryville TN. 37801-3989. Phone 423-982-3901.

For those of you that have access to the Internet, American Sports Car Designs web site is <http://www.americansportscar.com>. To view color pictures of my "R" type hood on my '95 SC, go to <http://www.geocities.com/MotorCity/Lane/6526/RONS-SCPAGE.html>.

New suspension products

By Tim Mendoza

After months of contact and conversation with Kenny Brown Performance, they finally developed some suspension items for the Super Coupe. Although the Strut (shock) Tower Brace is still being finalized, the LECB or Lower Engine Cradle Braces are available now.

The Lower Engine Cradle Brace or LECB is designed to tie the "K" member under the engine to the frame. The LECB's do this by attaching a bar similar to a traction bar between the frame and the "K" member. A small bracket is welded to the frame and then the LECB is bolted from this bracket to an existing hole on the underside of the "K" member. The installation (except for the welding) is very simple and straightforward. The instructions supplied by Kenny Brown are very easy to understand. The pieces are cad plated and look very nice. The installation time is right about 45 minutes.

Initially you will have some concern since the LECB's are lower than the frame. You will lose an inch of clearance, but have no fear. My SC is lowered 1 1/2" and I have NO CLEARANCE PROBLEMS. In fact I have a driveway that would scare away most stock height cars and I haven't dragged any portion of the undercarriage or LECB's. Now for ride quality. You will instantly notice a better quality (firmer) ride in the front of your car. The sloppiness (for lack of a better word) seems to disappear. The LECB's gives your car a feel similar to that of adding a bigger sway bar. I felt very satisfied with my \$49 investment.

Now for the Strut (shock) Tower Brace; Kenny Brown Performance is still finalizing this piece. The problem lies in the 3/4 inch hi-rise top modification. The amount of clearance was a problem. Since I do not have a hi-rise top (YET). I have the prototype unit installed on my SC. The difference is fantastic in combination with the LECB's. The amount of front-end flex has been reduced virtually to NILL. The installation of this piece requires a little drilling. Installation can be accomplished with a drill and two wrenches. You will have to turn the steering wheel lock to lock to gain clearance to the inside of the fender well. This job will take approximately 30-45 minutes. For a \$109 (this cost could change just a little) price tag the difference is great.

These two pieces work BEST in unison. So when you are ready to make an impact to the front of your vehicle as GREAT as a larger rear sway bar does for the rear. Purchase the LECB's and Strut Tower Brace from Kenny Brown Performance.

Contact person at KB: Chuck Warren
Telephone # 317-247-5320
Web site: www.kennybrown.com

KONI Shock Installation on a '90 SC

By Bill Evanoff

The Midwest Chapter of the SCCoA had an outing last fall at my house and Bob Noack, one of the SC owners who attended, is an employee of KONI at their US headquarters in Hebron, Kentucky. He brought along a set of KONI shocks for the group to examine and he also gave rides to several Midwest members in his personal car that is equipped with a set of KONIs. After that day, I began seriously considering getting the KONIs and talked with Bob further. After a few phone conversations and emails, I was sold.

Bob made special arrangements for me to come to the Hebron Kentucky office for a tour and he would help me with the changeover required with the front strut assembly. I had heard that the KONI fronts were not a direct bolt in and was curious to see how they differed from the stock Tokicos. Prior to my visit, I removed both the front strut assemblies from my SC and just threw them in the trunk of my daily-driver beater (please forgive me, but it's a Buick) for the trip to KY. I had removed the front strut assemblies previously when I installed a set of Eibach springs. I look back upon my actions now and think that I should have done the Eibachs/KONIs together, but that was several years ago and my shocks were still in good shape at that time. I have a bad habit of doing the same work twice.

The KONI HQ is only 40 minutes from my house, so I met Bob after work one evening and we completed the installation of the front KONI strut inserts into the stock Tokico housings. The instruction sheet on the next page shows the steps necessary to perform the swap. If you've never done anything like this before, I would guess it might take a little more than an hour once the spring is removed from the assembly. It is VERY EASY!

Here are the steps broken down with a few helpful hints suggested along the way:

Note: It should be noted that the KONI strut inserts are designed to be installed inside of any OEM style '89 to '97 T-bird/Cougar Tokico housing. LX, as well as SC housings will work. If there is already another brand of shock installed in the car, such as a Monroe (or other manufacturer), you must get a stock Tokico housing for the changeover.

- ◆ Remove the spring from the strut assembly using an appropriate strut/spring compressor. (This step can be **VERY DANGEROUS** if not done properly. If you're not confident on how to do this, take your assemblies to a local garage. They will remove and later replace your springs for approx. \$25 to \$30. This is what I did the first time I installed my Eibachs. The KONI shop had a professional strut compressor for the job this time.)
- ◆ Center punch, then drill a 1/16-inch diameter hole in the lower portion of the Tokico housing. You just need to break through the housing wall. *TIP:* The purpose of this step is to release the gas pressurized inside the shock. If the shock has been shaken recently, there is a chance that oil may squirt out of this hole, so use eye protection when drilling. Once the hole is drilled, cover the hole with some masking tape to keep the shock oil from coming out and making a mess.
- ◆ Using a hacksaw or a large pipe cutter, cut off the top of the Tokico housing. Do not deviate from the recommended cut measurement. If you cut too much of the housing off, the new strut inserts may not seat properly. See figure B.
- ◆ Once the circular cut is completed, separate the two halves of the housing. *Tip:* You may have to tug fairly hard to get the halves apart as there are seals that fit tightly to the housing

FITTING OF "BOLT-THROUGH-THE-BOTTOM" STRUT DAMPERS

For normal use on the road, the new strut dampers must be fitted straight from the box. (Original adjustment). In all other cases see enclosed adjustment instructions.

1. ATTENTION: In case of adjustable attachments mark off their position first before unscrewing the nuts to obtain correct adjustment of wheel camber and caster angles after fitting.

Remove the complete suspension unit from the car. Compress the spring with coil spring clamps. Remove the fixing parts, bump rubber, dust cover (if any), spring, etc., keeping in mind the correct sequence and position for refitting.

★ The parts (drawn in dotted lines) could be absent or of a different shape.

2. Punch in the exact center of the base of the damper housing. First drill a pilot hole of 3mm diameter and then drill to \varnothing 14 mm (fig. a). Drain oil.

3. Saw off (depth 1.5-2 mm) the original damper housing, as shown with dotted lines in fig. b for the several types I + II. The cut must be made at highest point on the strut housing where the overall diameter is maintained. If the shock absorber interior cannot be removed by hand, use a light hammer. Remove all the inner parts. Beware of outstreaming oil.

4. Smooth the drilled hole on both sides. File off the nail W and clean the inside of the damper housing (fig. c).

5. Fit the rubber protection cover R on the strut damper (fig e-II) and slide the latter into the housing.

6. Fit now plate X - if supplied - with its profiled side directed to the bottom, then the locking ring and the bolt (fig. d).

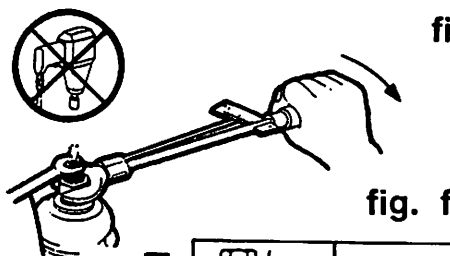
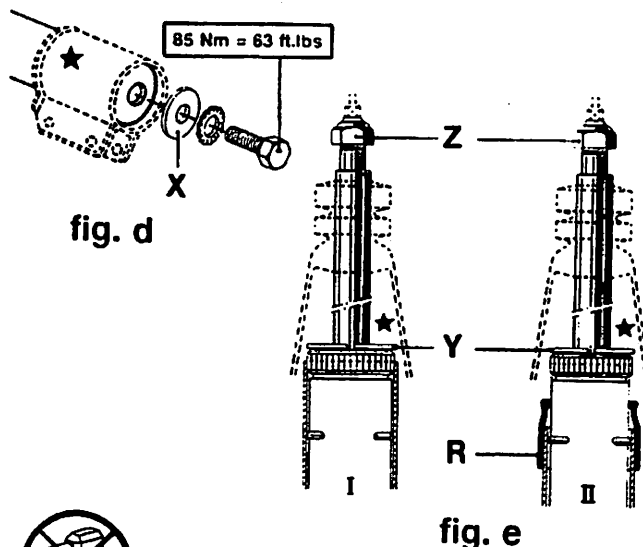
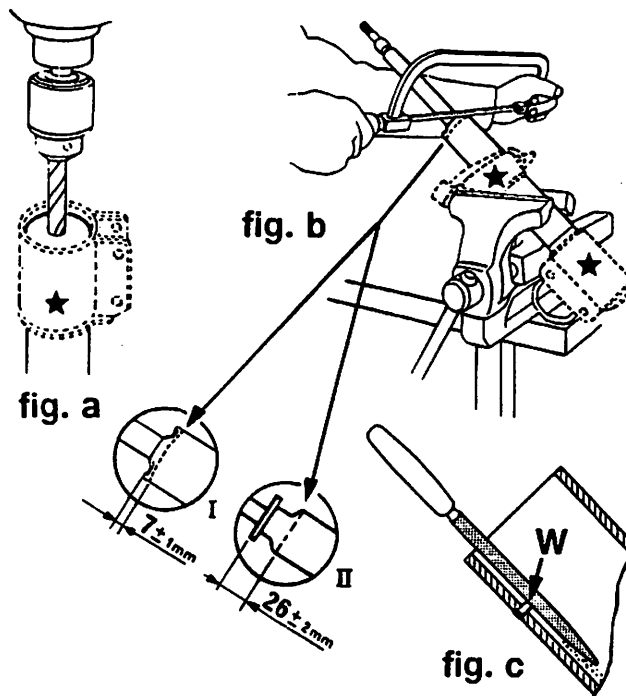
7. Draw the strut damper deeper into the original housing by tightening the bolt with a torque of 85 Nm (63 ft.lbs) and fit the rubber protection cover as per fig. e-II.

8. De-aerate the strut damper with piston rod by fully extending and compressing it several times.

9. Keep the piston rod extended as much as possible and place plastic collar Y -if supplied- between the damper body and the bumprubber (fig. e).

10. Fit the suspension unit in reverse order of dismantling. Renew the bump rubber, dust cover etc. in case of damage.

11. Tighten the fixing nut Z home as far as stop (bush or pin collar) using the torque setting prescribed in the table. (fig. f) and release the spring.



ATTENTION:

To avoid any unwanted adjustment of the strut damper never use a pneumatic or electric impact wrench.

Check and set wheel alignment after fitting.

	Z					
	Nm	ft.lbs	Nm	ft.lbs	Nm	ft.lbs
M10	35	26	45	33	-	-
M12	50	37	80	59	50	37
M14	80	59	125	92	80	59
M16	120	89	180	133	120	89
M18	165	122	250	185	165	122

wall. During this step, I suggest you separate the halves over a bucket as the shock oil inside the housing will likely spill out, potentially making a mess.

- ◆ Center punch, then drill a 9/16" or 14mm-diameter hole in the center of the bottom of the Tokico housing.
- ◆ At this point, you're ready to install the KONI insert into the Tokico housing. FIRST, thoroughly deburr the openings of the housing at the top and bottom (the 9/16" hole) using a file or deburring tool. See figure C.
- ◆ Install the KONI shock insert into the Tokico housing. Tip: This is best done by setting the shock housing on a bench with the cut end facing upward. Rapidly and firmly slide the KONI insert down into the housing until it bottoms out. I repeat...do this rapidly with some force. Once the insert is bottomed out in its housing, it should be a tight interference fit.
- ◆ Using the hardware supplied, insert and tighten the bolt that holds the insert to the bottom of the housing. See figure D.
- ◆ Install the rubber boot at the top of the housing to keep dirt out. See figure E (Item R is the rubber boot).
- ◆ Now you're ready to reinstall the springs and install the units on your car.

Once the assembly is installed in the front, you should leave the original equipment adjusters in place. I simply left them attached to the black shock cover and placed the adjuster on top of the KONI shock extension. Before covering up the top of the shocks, adjust the shocks to an initial setting of firmness. I would suggest a good starting point is 1.25 turns counterclockwise from the softest setting for a vehicle with aftermarket springs. KONI recommends starting at full soft for a vehicle still equipped with its stock springs. Adjust them to suite your tastes after driving the car for awhile.

The rear shocks are a direct swap and no change over is necessary with those. The only issue in the back is how much to tighten the nut on the top of the threaded shaft inside the trunk. Using two wrenches (one to hold the shock from spinning and another to tighten the nut) I just spun the nut down on the shaft until the rubber bushings had expanded out to approximately the same size as the washers that were supplied in the hardware kit. This is not a fun job in the trunk of a SC. As I've already said, you're using two wrenches, so you need both hands. Your lying on your back in the cramped trunk fighting for space with a large sub woofer housing and the trunk shelf which holds a stereo amp and two computers boxes (ride control and ABS). If you're a large person, I suggest you call for help from someone small on this job part of the job. This task isn't unique to the KONIs, but is standard procedure for any rear shock installation.

In the rear, I wrapped the shock adjuster in a rag and stuffed them into the trunk carpet to keep them from rolling around. There are two options to keep the cars ride control computer happy and keep any error codes in check since the adjustable ride control system is no longer active. The easiest is to switch the firm ride control switch to the on position and forget about it. The green firm ride light will illuminate, but no error codes will come on. The other option is to simply remove the offending light bulb and no longer worry about it. If the firm ride switch is not in the "Firm" mode, an error code will be stored. The way the system calls out an error is by flashing the firm ride control light on the dash. Without a bulb, you will never have to be concerned with it. I chose to switch on the firm ride control and keep the bulb in place. Hopefully it will burn out soon.

Once I had everything back together and had safely lowered the car back to the ground, I excitedly headed out for a ride. I had chosen a relatively medium/soft setting to start out with on

all the shocks. I had dialed in approx. 1 1/8" turns off the softest setting. Total adjustment is 2.5 turns. The car felt very controlled and the ride was beautiful. In combination with the Eibach springs I have, the ride was much improved over the factory original ride. When I had originally installed the Eibachs a few years ago, they alone had done much to improve the handling. The KONIs have now completed the package! When just tooling around town, the ride is not harsh at all. Potholes and bumps are absorbed easily without jarring the car violently. Overall, you would never think the springs/shocks had been changed from the stock pieces. The ride is that comfortable. The surprise comes when you begin to throw the car into some turns. The lowered ride height does wonders and the ultimate grip and cornering ability is simply unbelievable. No one would think your riding in a 4000-pound sled as the seat belt adjusters are tripped to tighten upon you because you just took the last corner at three times the posted speed. Interstate cloverleafs can be negotiated at speeds that make you dizzy. Just don't try this with your wife in the car, as she'll likely be screaming at you and potentially break your concentration. If your wife drives like this already, then she'll likely just have a big smile on her face around each corner.

KONI vs. Tokico comparison:

While at the KONI HQ, Bob and I ran both a stock Tokico (with approx. 35K miles on them, so they were still in excellent shape) and a KONI shock on their shock dynamometer. This machine oscillates the shock at varying degrees of velocity and force. This simulates different road conditions that the shock will see when on a vehicle. Each shock was run on its softest and firmest setting. The difference between the two graphs was dramatic. The KONIs on the soft setting were very similar to the original equipment (OE) shocks. The firm settings showed a huge difference. The degree of force that the KONIs can provide to small changes in velocity is tremendous compared to the OE shocks. This low speed/low velocity shock dampening forces allows a vehicle to corner flatter and more in control.

I am well aware that many SC owners may not be interested in the KONI shocks because they do away with the electronic ride control feature of the car that some people find desirable. For those individuals, only a Tokico replacement will suffice. These will continue to offer two-position (firm/soft) adjustability when replacement comes due. For the SC owner who is more interested in a truly adjustable suspension, then the KONIs are the only choice. I consider them practically infinitely adjustable as they offer any degree of firmness between full soft and full hard. They are not limited to only two settings as the OE shock is. The degree of firmness and softness is also much broader than the OEM shock. I would estimate the firmest setting on the KONIs to be more than twice as firm as an OEM shock and the softest setting to be slightly softer than the OEM shock. Granted, the firmest setting is not likely to be used by most drivers, but it does offer increased adjustment for special occasions (at the track) and also wear can be adjusted for by going slightly firmer for a truly lifetime shock with the same performance guaranteed throughout its life. If one drag races their car, the front shocks can be set to full soft to allow for proper weight transfer to the rear. If one road races their car, then the shocks can be dialed to a firmer setting for the day at the track.

Here is a little KONI rhetoric I gathered from their web site, but feel it is important as it further explains what makes their shocks different from those produced by other lesser manufacturers.

KONI's are not the average shock absorber; they feature a number of standards that make them unique:

- ♦ **ADJUSTABLE:** KONI's are adjustable, which means that you can influence the behavior of the car to meet your preferences. It also means that wear can be compensated for (however, you will probably never need it).
- ♦ **TAILORMADE:** They are designed for a specific car or even special driving conditions. A KONI is not a simple copy of the original but a tailor made design in order to get the most out of it.
- ♦ **IMPROVEMENT:** KONI's improve the ride and handling of your car. The damping characteristics are developed for each particular application. Our specialists keep on testing and modifying until they are convinced they reached the optimum in both handling and comfort. And that optimum is on a very high level.
- ♦ **SAFETY:** Do not forget that safety is a major issue. The handling of your car is essential for safe driving. Here the qualities of the KONI shock absorber make a great contribution.
- ♦ **INVOLVEMENT:** Involved drivers have their wishes, and KONI fulfills them in most cases. Why... ?? The KONI people are involved drivers themselves, so they know.
- ♦ **BUILT FOR A LIFETIME:** Last but not least, KONI's are built to last a lifetime. Once you've bought a set of KONI's for your car, they usually will outlive it.

KONI offers three product lines aimed to specific usergroups, the red KONI **Special**, the yellow KONI **Sport** and the black KONI **Classic**. All three lines are perfectly adjusted to individual drivers' needs:

SPECIAL: for car enthusiasts who want to raise road holding, comfort and safety to the top level.
SPORT: for those who are looking for the best handling and sporting characteristics.
CLASSIC: for owners and restorers of classic cars and cars from the 40's, 50's and 60's.
Whichever color, red, yellow or black: they are all real KONI's.

*NOTE: The '89 to '97 T-bird/Cougar KONI shocks are considered to be the **"SPORT"** (Yellow) classification.*

ADJUSTMENT AT THE TURN OF A HAND

The KONI Sport dampers for the '89 to '97 Thunderbird/Cougar are externally adjustable by means of a knob, so they need not be disassembled from the car. The fine-tuning of the damping forces to personal driving style and to different driving conditions is therefore not more than a matter of seconds.

Although a larger percentage of KONI Products are for the replacement market, an increasing percentage of shock absorbers are purchased by car manufacturers. Consequently KONI delivers their products as standard equipment to high-end manufacturers as Lamborghini (for use in the Diablo), Maserati (quattroporte), and Lotus (the Elise). Chrysler has chose KONI for their top-level cars the Viper and the Prowler. Ford also chose KONI as standard equipment in all their past Cobra R models.

Here is where to find the BEST deal on a set of KONIs for your SC/XR7

Contact: **Performance Parts, Inc.**

13120 Lazy Glen Court, Herndon, VA 20171-2326, Phone: 703-742-6207

Part Numbers: Front (8641-1209-Sport), Rear (8041-1202-Sport)

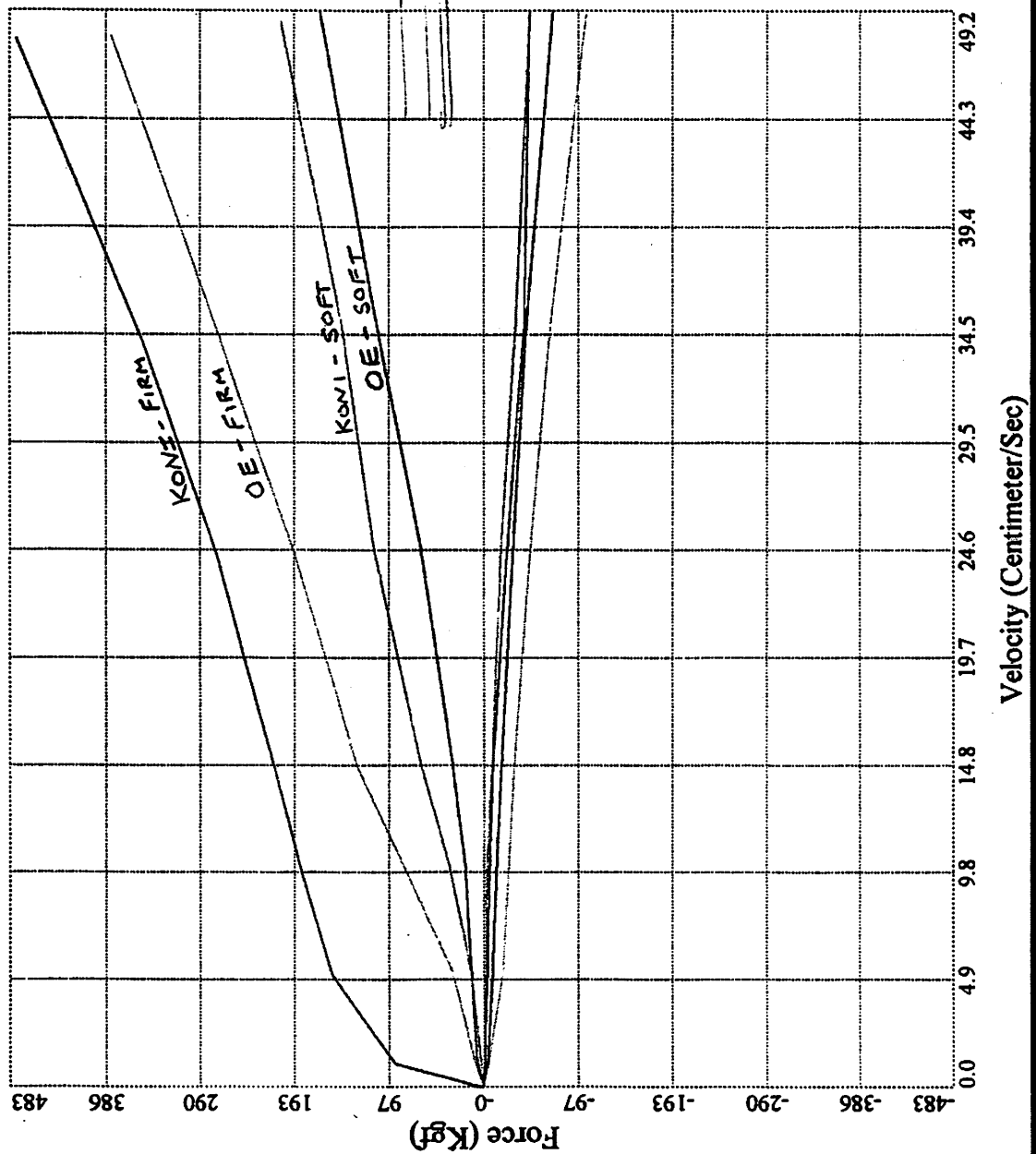
NOTE: The SCCoA has negotiated a special price with this dealer and you will find PPI's KONI set price to be less than most (if not all) advertised Tokico Illumina II premium replacement shock prices.

R
ROEHRIG
CORPORATION

■	O.E. SC Thunderbird soft
■	O.E. SC Thunderbird firm
■	KONI 8641-1209 Sport min
■	KONI 8641-1209 Sport max

REBOUND

COMPRESSION





Typically, having all the correct information makes all the difference when it comes to a choice of shock absorbers. Common questions asked of the KONI Tech Line are as follows:

Q: What is the difference between KONI Special (red) and KONI Sport (yellow)?

A: The KONI Special (red) has been engineered to maximize the ride comfort with good handling performance for each vehicle application. The KONI Sport (yellow) typically starts at a higher initial valving baseline to give a sportier feel and work on vehicles with higher performance parts. In some instances, KONI will only offer a Special or Sport valving and not both. Some modern cars come from the factory with higher tech suspension systems and wheel/tires packages so they would move directly into the Sport range, however they are still valved to give a comfortable ride with very good handling capabilities.

Q: How much stiffer are KONIs than factory shocks?

A: This is a difficult question to answer because every KONI application is developed for that specific vehicle to get the best ride and handling characteristics. In general, most factory shocks are under damped for optimized handling so KONI engineers select firmer valvings. Unfortunately factory shocks are generally chosen for financial reason rather than performance so lower technology, cheaper shocks are the standard. In some instances, a factory shock may have good characteristics in some parts of the working range but need some help in other part and there are even a few instances where the KONI engineers found better handling by softening the factory units.

Q: What is the best adjustment setting for my shocks?

A: There is no single best adjustment setting for your KONIs because every driver and vehicle has different preferences for comfort, performance, performance modifications and roads to drive on. For most vehicles, we suggest that new KONIs be installed in the full soft position (the standard setting right out of the box) to take advantage of the balance of ride comfort and handling designed by the KONI ride development engineers. If the car has performance upgrades (springs, wheel/tire packages, etc.) or the driver wants the car a bit more aggressive, most people find the optimum setting in the 1/2 to one full turn from full soft range. Over the extended life of the damper or if the driver wants a specific firm handling characteristic, the dampers can be adjusted up higher. Very rarely will a KONI ever need to be adjusted to the full firm setting.

Q: What are the best springs to match with my KONIs?

A: One of the great advantages of KONI adjustable shocks is that there is no specific spring for matching optimum

performance. Instead you can adjust you KONIs to match your springs. Most performance springs have a higher spring rate than the vehicle's original springs. Since the shock controls the motion of the spring, increased spring require more rebound damping for control and that is one of the reasons why KONIs are rebound adjustable (and some are double adjustable). Using higher rate springs with OE or soft shocks will very quickly overcome and wear out the shocks. The KONI adjustment range is typically about 100% (twice as firm at the full firm setting as at the full soft setting) to allow for the proper damping of OE springs and high rate performance springs.

Q: How far can I safely lower my car?

A: KONIs are designed to fit standard height cars and can work with lowered cars as long as they don't bottom out internally and become damaged. Unlike some shocks, KONIs are not position sensitive so they will work properly anywhere in their stroke range providing they are not bottoming or topping out. Different vehicle suspension designs have different stroke travels but a good rule of thumb is that most vehicles can be lowered acceptably about 1 1/2 inches, beyond that the possibility of bottoming increases rapidly although some longer stroke cars can go lower. Most vehicles are equipped with bump stops to keep the shocks and springs from bottoming out. When lowering a vehicle be sure to reuse your bump stops because they are cheap insurance to avoid bottoming damage. Remember also that severely lowered vehicles typically have negative effects on suspension geometry, ride quality and handling, and tire and suspension part wear.

Q: KONI makes some shocks that are not gas shocks. Why?

A: There are basically three types of shock absorber designs: mono-tube high pressure gas, twin-tube low pressure gas, and twin-tube hydraulic (non-gas). Each of these designs has certain ride and performance characteristics that can enhance the performance of a vehicle and KONI is the only company that makes all three designs. KONI ride development engineers evaluate each new vehicle and can decide which shock design would best apply to that vehicle. Some cars respond best to mono-tubes, some like gas pressurized and others don't. Most shock companies utilize only one or two of these styles because it is less expensive for manufacturing but are therefore, limited in design capability and function.

KONI TECH LINE

PHONE: 606-586-4100

Technical Questions can be answered 8-5 EST M-F.

My Transmission Woes

By: Kurt Kreisz

My transmission saga starts back in 10/97 when OD started slipping. As many of you know or will know, the OD-band in the AOD is one of the weak links of the transmission. I managed to limp around town until I put my car up for winter. Then the first warm day of February '98, I decided to take my car for a spin. One drive and I couldn't stand the result of the slipping OD and knew I had to start doing something now if I didn't want to miss the World Ford Challenge '98 in Bowling Green, KY.

I started researching my many options for a transmission. I called Art Carr, Level 10, Baumann Engineering, and numerous tranny shops around town in St. Louis. I was leaning toward a tranny shop to do the work because I cringed just thinking about swapping the tranny out of my lowered SC in my driveway. My original intent was a performance rebuild with the SVO Wide-Ratio kit, TransGo shift kit, the A+ servo and a 2400-2600 stall. I only found one shop that had installed a wide-ratio kit before (in a Mustang) and the mechanic told me he would NEVER do it again. He said he lost too much time and money trying to get the tranny to make each shift at the same RPM. Apparently, the 1-2 shift is generally 300-400 rpm higher than the remaining shift points, which in Bill Hull's car was making him "let-off" to shift into 2nd gear.

While reading a previous issue of Chargin' Thunder, I learned of a performance shop near Atlanta, GA that specialized in Fords that a member was pleased with their work on his wide-ratio install. So that set the ball rolling. A few days later while calling around about shift kits, I was talking to Baumann Engineering about the higher 1-2 shift of the wide-ratio kit. One thing led to another, and we were talking about their brand new "Baumannator TCS" a stand-alone computer controller for AOD-E and 4R70W transmissions. It would allow complete programmability of shift points and firmness. I knew I HAD to have this setup since I would be the 1st SC with it. I called the shop in Atlanta about this new project and they were anxious to try it. They were confident that they could do the swap and they seemed (and probably are) very knowledgeable.

Since this project had a lot of experimental things going on, the shop wanted some money up front for parts. The price for the job was agreed to be parts plus \$1000 labor. I know the labor seems high, but since this was the first time the shop had tried this swap. There would likely be a lot of work that might not be accomplished the most efficient way (just as all of us can change our plugs a lot faster the 2nd and 3rd times). Both parties agreed that this could (and definitely would) be cheaper in the long run than an hourly rate. They estimated 3 to 4 weeks, after they got the parts, to complete the job.

My first thought was to check into auto transport companies to haul my car from St. Louis to Atlanta. This turned out to be a dead end -- \$600-\$800 and most wouldn't do it after I mentioned that it was lowered and had headers (I know they are short tube, but at the cats I have less than 3" of clearance). I then looked into hauling the car myself. Getting a trailer for my S-10 was out of the question. The weight of the car and trailer would be more than the truck. I'm sure my truck could pull the weight, but I seriously doubt I could stop going down the mountains near Chattanooga. Therefore, the only remaining option was renting a truck and

a trailer. A co-worker had researched rental companies to haul a Super Bee back from Pennsylvania, and said the best trailer was from Ryder. I decided that the best delivery date was Good Friday, April 10th, since it was a holiday for me. Unfortunately, my help wasn't available for the return trip on Saturday so we delivered my car on Thursday, April 9th. This became the road trip from hell! I left St. Louis at 3am Thursday, went to Atlanta, and returned to St. Louis at 3am Friday. Total transportation cost: \$600.

I called the shop almost daily to check on the progress. At first I was just calling to see if all of my parts were in, then I was calling to check on progress. The shop sent my drive shaft out to be shortened to accommodate the shorter 4R70W. A couple of weeks went by without a lot of progress; as the shop did have other work. I planned on picking my car up the weekend before the WFC, but realized that this would be impossible since early in May the shop had burnt up the 1st tranny. The shop thought they had gotten a bad converter from Precision, so they had to order a new one (5 to 7 working days). Then they discovered that the drive-shaft had the wrong yolk on it. Not knowing much about drive shafts, I asked if the drive shaft would have to be re-balanced. I was told no, because the differences in the yokes were negligible. This didn't sit too well with me because of my experience with dynamics in college (Mechanical Engineer), but maybe the changes didn't matter. So it was time to wait for parts.

After the new converter and re-yoked drive shaft arrived, the shop had to wait for 1 of their 2 racks to become available before starting on my car. At this point, I figured "shit happens" and my car would be finished on the second attempt. As June approached, my car was ready for another test drive. I was told, "Something is not right with Over-Drive and there is a nasty vibration in (you guessed it) the drive-shaft above 100 mph." This led to its removal and an additional 2 weeks quickly went by. I then had to wait again for a lift to open up.

By the end of July, after numerous teardowns of the 4R70W tranny, the shop admitted that they couldn't accomplish the task. Since my car was already there, I decided to let them rebuild the original AOD. I figured that this wouldn't be a problem and I would have my car in a couple of weeks.

Once again, I was waiting on parts including a new drive shaft from Ford because my original one was now too short for an AOD. And again they burnt up the tranny. Only this time it was the AOD. As you can imagine, I was rather upset (to put it lightly). I did not expect a shop that specializes in Fords—mainly Mustangs to have any problems with the lowly AOD. By this time though, I had grown numb to the situation and just wanted my car fixed right.

The shop thought there might be a problem with my original transmission housing, so they got another core. That didn't eliminate the problem either, so they bought a new valve body from Ford and went from there. Not only was I waiting for parts and the rack, on occasion I heard "I didn't get to it today" or "I had to finish another car first". These excuses pissed me off and I even asked them how another car would get priority over mine, when I was sure that my car had been their longer than any other car in their shop.

I gave them a target date in August that I wanted to get my car. Since I was going to Florida for vacation, I could easily pick it up on the way back. They were a little surprised when I showed up unannounced a week earlier than expected. I mainly wanted to check and see that

my car was indeed being stored inside overnight. I even got to see my entire tranny laid out in pieces on their workbench. Of course I knew that with only a week to put my tranny back together that I wasn't going to be picking up my car on the way home from Florida.

In early October they told me my car was ready, so it was time for another "Road-trip-from-hell". This trip would be a little different though. In short, this is what should have happened; Drive my S-10 to Atlanta; pick up car; drive both vehicles to Rising Fawn, GA and drop off my hang glider; and finally drive both vehicles home. This is what actually happened. Arrived in Atlanta around noon and went for a test drive with mechanic. He commented that the shift from 2 to 3 was higher than the others because of a check valve that need a bigger countersink because of the shift kit install. He said that he drilled it using a drill bit instead of a countersink bit and therefore the countersink surface was not conical and the check ball wasn't "seating" properly. He said, that over time, it would seat properly. I didn't agree, but all I cared about was getting my car home.

I went to the closest gas station, filled up with premium, and was off. I made it a whole ten miles before I could no longer access OD. So, pissed off and cussing up a storm (my Mom probably heard me back in St. Louis), I drove back to the shop at 50 mph on the highway. The mechanic was definitely surprised to see me again. We went for another test drive, with him driving. Of course, as is the case with most car problems, the phenomenon did not repeat itself with him driving until about 7 minutes into our drive. He said he would swap out that check valve and check the valve body gaskets. He hoped that this would fix the problem. Since I had to drop off my hang glider before 6pm I didn't have time to wait for the last minute overhaul. We decided that I would drive up to Rising Fawn (North Western corner, about a 2 hour drive), drop off the hang glider, drive back to Atlanta and pick up my car, and then drive home. The mechanic suggested that I call from Rising Fawn. I did, and learned that the tranny was still screwed. So I returned home without my car. Cost of trip: \$200.

After having over 6 long hours during my drive home to figure out what to do, I decided to give them a firm deadline of Nov 14th. I told them that they had over 3 months just to build the AOD and that I was picking up my car whether it was finished or not. I knew that they had already lost their ass (and so did I) on my car so I figured this might inspire them to finish the job. I was wrong. In the remaining couple of weeks, I don't think that they did anything to my car. I arranged for a friend to meet me in Atlanta with a trailer and haul my car to Ocala, Florida if it wasn't finished (and it wasn't).

Now it was time to settle the bill. The shop wanted me to pay for all of the parts, including parts currently in the tranny and to forget about the labor. This was about \$1800, which included new drive-shaft, plug wires, A+ servo from Superior, TransGo shift kit, and all clutches and steels, etc. I said here's what I will pay for plug wires, A+ servo, half of the new drive-shaft (since I knew this project was experimental), and labor to install the wires and my 190 lb/h fuel pump. At first I said that there was no way I was paying for anything in the tranny because even though they said nothing "should" be wrong with the parts, they couldn't guarantee it. Despite urgings from my buddy not to pay for anything in the tranny, I paid for the converter and the A+ servo. This still came up to more than \$1000 for all the parts. They wrote me a check for the difference of my initial deposit and I cashed it before I left town. Cost of travel: \$350 (hotel and gas for both my buddy and me).

The tranny which was eventually installed in my car in Jacksonville, Florida cost me another \$1300. I paid \$1500 to reimburse my buddy, Mike, for his time and remaining fuel cost. Total cost, including travel, phone, parts, etc.: over \$4000. I'm not proud of this by any means. If I spent \$4000 on one transmission that was right on the first try and did everything that I wanted it to do, I might be proud of it.

So hear are a few things that I have learned or were reinforced:

1. If trying something that nobody has done before, expect it to take at least twice as long as stated.
2. Get a written contract at least for the work to be completed. It will be hard to get anyone to commit to dates, but you should try.
3. Be patient and don't get discouraged.

Kurt is also the organizer for the Gateway Super Coupe Club (one of the numerous SCCoA Chapters). Here are their plans for future events (Editor)



FUTURE EVENTS:

- Friday, April 23:** Test & Tune at Gateway International Raceway followed by local cruising. Gates open at 5:00 p.m.
- Sunday, May 2:** Gateway 5.0 Mustang Shoot-out: All Ford Race-n-Show.
Entry Fee \$35, \$30/ea for group rate.
Test & Tune format w/ Pro-Tree and you pick your opponent within your time class.
More details to come
- Wednesday, May 12:** Welcome party hosted by Gateway 5.0 Mustang Club for World Ford Challenge cruisers
- Thursday, May 13:** Cruise to World Ford Challenge

I should be available most weekends starting mid-April for impromptu cruising or whatever. Just call me, Kurt Kreisz. (H) 314-846-2402 or (W) 314-553-4559

More to come...

SC Club of Ontario Upcoming Club Events

Hello everybody,

I hope you are all ready for spring after our long winter. It's now time to get some club events rolling again.

Club Meeting, Hooters - North York, Sunday March 21, 1999

Our first meeting for this year will be held at Hooters in North York, Sunday March 21, at 1pm. It is located at 3757 Keele St. just south of Finch Ave. (416-638-2200).

Club Track Day, Cayuga Dragway Park, Saturday April 3, 1999

Our first track day of the year will be held at Cayuga Dragway Park, Saturday April 3. Opening day for the track is offering free admission for all racers and spectators. Traditionally, there will be a lot of racers there to kick the season off. There will be lots to see even if you don't intend on racing yourself.

I will be leaving Scarborough at 11am. If you wish to drive down together, we will meet at the Sunoco gas station on Kennedy Rd. just south of the 401.

National SCCoA Meet, World Ford Challenge, Joliet Illinois, Thursday May 13-15, 1999

Our club is attending the World Ford Challenge this year along with several other Thunderbird clubs from the US. It promises to be a great event. We have booked rooms at the Days Inn in Joliet Illinois for May 12-15. There is a small group of us driving down for the event. The drive is approximately 9 hours from Toronto. If you wish to join in, let us know soon. We will be leaving Toronto around 10am on Wednesday March 12, and returning around 2pm on Sunday March 15.

National SCCoA Meet, Carlisle All Ford Nationals, Carlisle Pennsylvania, June 4-6, 1999

Our club is attending the Carlisle All Ford Nationals this year along with several other Thunderbird clubs from the US. It promises to be a great event as usual. This is traditionally the largest SCCoA meeting of the year. Don't miss it. It is approximately 6 hours drive from Toronto. I have not yet decided if I'll be driving down just for the day or staying for the weekend. Please let me know if you are interested in attending.

Wayne Ing
Super Coupe Club of Ontario
416-571-3823
www.scco.com/sccoo

SC Club of Wisconsin - 1999 Schedule of Events

May 1, Spring Cleaning Tech Session - Brodhead, WI

Get your car out and ready for summer. This will be the first local event of the SCCoW chapter. Bring your car, favorite cleaning products, and any tips you want to share in keeping your SC looking its best. The intent of this event is not for members to clean their cars at my house, but more for sharing cleaning tips, favorite cleaning products, and just meeting the other SC enthusiasts in the southern WI, northern IL area.

Location: Chapter president's home - N4251 Country Club Drive, Brodhead, WI.

Will have burgers, brats and soda here. Please bring a food item to pass (chips, desert, etc.), your SC, and yourself. Will also have a nice touring route setup in this area to show off your SC, and take it for that first cruise of the season.

For more information: Contact Joe Baldazzi at (608) 862-1596 or by e-mail at sbalz@tds.net

Please RSVP by April 24, 1999. I will provide you with directions and map. Rain date: May 2

May 14 - 16, Mobil 1 World Ford Challenge - Joliet, IL

Presently the first national event in the area and season for the SCCoA, this is the second year for this event. It was held last year in Bowling Green, KY (home of the Corvette) where Ford fanatics showed Chevy the power of the blue oval. That event was a huge success, and I see this year being even better with the location more centrally located in the country. The Route 66 Raceway is a new facility and the first NHRA sanctioned stadium type setup for spectators of drag racing.

Location: Route 66 Raceway - Joliet, IL (my hometown)

Admissions: Thur.: FREE, Fri.: \$15/person, Sat.: \$20/person, Sun.: \$20/person, 3 Day pass: \$35/person

Car show entry: \$50 (includes 3-day pass for one person), Children under 12 FREE

The event includes a car show, several different classes of drag racing, vendors, and swap meet. Because of the close location, I recommend this to anyone in the local chapter who wants to meet other SC enthusiasts from around the country. The turnout last year from SCCoA was less than 10 cars. This is not representative of other events I have attended, and I really think we can do better this year.

The event is actually May 13- 16, but I do not intend on going down until Thursday night or Friday morning (Thursday is only for race registration, tech inspection, vendor setup, and cruise arrival. These can also happen Friday.) You can find more information on this at the Mobil 1 World Ford Challenge web site (www.worldfordchallenge.com) or on the SCCoA web site (www.scco.com) under events. If you do not have access to the Internet, call me with the specific interests you have in this event, and I can mail you printouts from these web sites. I believe you will also find advertisements for this in several of the Ford enthusiast magazines as it gets closer.

June 4 - 6, 1999 - All-Ford Nationals - Carlisle, PA

If you plan to attend only one of the national SCCoA events this year, make it to the Carlisle All-Ford Nationals. This weekend is a **BLAST!** Attendance of this event has been over 30 Super Coupes each year. Besides that, if you enjoy at all a good car show, especially all Fords, this is the grand daddy. Besides an enormous auto show and swap meet, there are lots of vendors, plenty of activities including tech sessions, games for the children (both young and old), a car cruise, and lots more.

Location: Carlisle, PA Fairgrounds. Admissions: \$6 per person each day

You can find more information on this at the Carlisle Productions web site (www.carpro.com/ford.htm) or on the SCCoA web site (www.scco.com) under events. If you do not have access to the Internet, call me with the specific interests you have in this event, and I can mail you printouts from these web sites.

July 23 - 25, Bryan Redman International Challenge - Elkhart Lake, WI

While this is not an event heavily attended by the SCCoA, or even many Ford owners, it is an enjoyable event for anyone who enjoys car racing, especially vintage cars. The entire weekend is filled with racing from morning to late afternoon of many different groups and classes of vintage car racing. Everything from small 4 cylinder powered sports cars (MG, Triumph, Fiat, Alfa Romeo) to American V8 (Corvettes, Shelby Mustangs, Trans Ams) to the unlimited class of Can-Am racers. If you have never seen and heard Can-Am cars run at speed, it is truly an experience. These cars were the result of a class of racecars that were limited only by the imagination and funding of the racing team. Many of these cars produce upwards of 700 HP, and apply power through all four wheels. Their acceleration, speed, and handling were exceeded by

none in their day. The fact that they traverse the 4 miles and 14 turns of the Road America track in just over 2 minutes truly displays their capabilities.

Location: Road America - Elkhart Lake, WI. (Located between Fond du Lac, and Sheboygan)

Admissions & Paddock (Pit) access: Thur.: \$10, Fri.: \$15, Sat.: \$25, Sun.: \$30

Superticket: \$55 - Advance three-day (Fri - Sun) w/ Paddock access and Souvenir Racing Program. Retail value \$76. Available by advance purchase only. Orders must be received by July 14. Children under 12 FREE. The other unique opportunity available at this event is the ability to drive your own car on the racetrack during the lunch break each day. This is their track touring session which costs an additional \$75 per day (no discount for advance purchase). You must pass an inspection check, and sign all the appropriate legal disclaimers. They also have a pre-session drivers meeting where they discuss all the rules and expectations of conduct while on the track. They do post a top speed of 70 MPH, which I believe is for insurance purposes. This seems to hold for the first few laps of the session, but soon eases up and you quickly find yourself being passed while doing over 100 MPH. There are no special safety requirements (helmet, etc.), just properly function seat belts. This is an absolute blast as this track has it all: long fast straights, quick tight twisties, and long sweepers. Enjoy an experience in your SC that few drivers ever do.

You can find more information on this at the Road America web site (www.roadamerica.com), e-mail them at info@roadamerica.com, or call 1-800-365-RACE. Feel free to contact me with questions about this event as I have been going to it for the past 5 years, and drove my SC in the touring sessions the past 2 years.

September 3 - 5, Ford Expo - Columbus, OH

I attended this event in 1997, but not last year. It was the first nationally attended SCCoA event I had attended, and I was hooked on making it to more of these. A little over 20 cars showed up during the course of the weekend. This event has a nice broad spectrum of events happening all in one location. There is the car show, car display area where mini meets were held such as the SCCoA (and Maverick/Comet club in case any of you still have one of these 1970s beauties), swap meet, vendors, and drag racing. I do not have the specific information on this event yet, and so the information below is based on when I attended in 1997, and knowing when/where it was last year.

Location: National Trail Raceway - about 25 miles east of downtown Columbus, OH

Basically, the events above are ones I plan to attend throughout the summer of 1999. The kickoff local event (Spring-Cleaning) at my house is the only local event I plan to host this summer. I am also willing to coordinate the weekend at Road America. If there are others of you that would be willing to set up/host events, I encourage you to do so.

Others local events I am aware of:

Autorama show hosted by the Lyons club in Beloit, WI. This is a nice car show held in a park on the river, and is around mid September. Jefferson, WI has a big car show/swap meet in both spring and fall. I don't have any specific information on that as I haven't attended it in over 6 years. Hot Rod Magazine's Power Festival. There are several throughout the year. The closest one is at the Route 66 Raceway in Joliet, IL (Chicago area). This is July 24-25.

Ideas I have for mini meets:

Finding out about drag strips in the area where we can meet, and do some runs.

A fall tech session event for meeting one last time before winter hibernation. This could be to share tips for winter storage, ideas on mods everyone plans to make for the next summer, and just one last meeting. I may be able to hold this. With everything I want to do this summer, I just may not have the time.

If anyone has other ideas, or wants to let others know about your car plans this summer, let me know. I am interested in all ideas, and will share what ideas you have to all other members. I am not sure if what I have above is what you expected (it is probably longer winded than you expected). If you would like to see more local events or regular meetings, I am interested in your suggestions. The one concern I have about regular meetings is where would we meet, and what would we discuss (besides just socializing and talking about plans for our cars). This is really your club. I am just the one foolish enough to say I would start it. So let me know your ideas, and we'll make this club what we want it to be. Feel free to e-mail me at sbalz@tds.net or call me at home at (608) 862-1596. Please leave a message if I am unavailable.

Joe Baldazzi

President, SCCoW

Brodhead, WI

INDUCTION SYSTEM LEAK DETECTION KIT

SERVICE PART NUMBER E9PZ-6F091-A

KIT CONTENTS		
Engineering Part Number	Description	Quantity
1. ESE-M4G168-B	Gasket Sealant Tape	1
2. ESE-M12A4-A	Anti-Seize and Lubricating Compound	1
3. E9SE-9F627-AB	Gasket - Throttle Body	1
4. E6AE-9D476-BB	Gasket - EGR Valve	1
5. E9SE-9E936-BA	Gasket - Adaptor Engine Charge Control to Intake Manifold	1
6. I.S. 5996	Instruction Sheet	1

The Intercooler system **MUST** be checked for leaks under the following conditions:

- The intercooler system is reassembled after any service procedure.
- There is a drive concern with symptoms typical of an air leak. (A leak may also be indicated by Self-Test Codes 41 and 91 - system always lean.)

PROPANE TESTING PROCEDURE

1. Inspect all flange joints for signs of leaks.
2. Bring the engine to normal operating temperature.
3. Connect an EEC-IV Monitor Tester to read the rich/lean state of the EGO sensors (Code 41 or 91 on EEC-IV Star Test).

WARNING: MAKE SURE THE CAR IS IN A WELL VENTILATED AREA AWAY FROM ANY SOURCE OF SPARK OR FLAME WHEN USING PROPANE.



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DEARBORN, MICHIGAN 48121
10-89

4. With the engine idling in Neutral or Park and the parking brake set, spray small amounts of propane around the following areas:

- Flange joint at the rear of the supercharger
- By-pass hose connections at the rear of the supercharger
- Flange joint at the supercharger outlet adaptor
- Tube joint at supercharger outlet to the upper tube
- Tube joint at upper intercooler inlet
- Tube joint at lower intercooler outlet
- Tube joint at intake manifold adapter inlet
- Intake manifold adapter to intake manifold flange

5. The EGO monitor box will indicate "RICH" Red Light for one or two seconds, then return to normal switching when propane is sprayed near an induction system air leak. The EGO monitor box will indicate "LEAN" Green Light after one or two seconds when the propane is removed from the leak.
6. If a leak is found, retighten the nuts at all tube flange locations and at the supercharger outlet adaptor "collar". Refer to the following "Mini-Sealing Procedure".
7. If a leak is still present after performing the "Mini-Sealing Procedure", the entire induction system must be disassembled and the sealing surfaces cleaned. Refer to the 1990 Thunderbird/Cougar Shop Manual, Section 24-43, "Induction System Disassembly & Assembly Procedures".

MINI-SEALING PROCEDURES

LEAK AT INTERCOOLER/TUBE CONNECTIONS

For leaks at the joint between the intercooler and the inlet or outlet tube, proceed as follows:

1. Slightly loosen the nut that attaches the inlet tube to the alternator-power steering bracket.
2. Re-torque the nuts at the intercooler flanges to 15-22 LB-FT (20-30 Nm).

I.S. 5996

SHEET 1 OF 3

**SUPERCHARGER AND INTERCOOLER KIT
1989-90 THUNDERBIRD/COUGAR**

MINI-SEALING PROCEDURES (Cont.)

3. Re-torque the nuts at the alternator-power steering pump bracket to 30-40 LB-FT (40-55 Nm).
4. Test all joints with propane.

LEAK AT SUPERCHARGER OUTLET ADAPTOR/TUBE CONNECTION

For leaks at the supercharger outlet adapter "collar" and the inlet tube joint, proceed as follows:

1. Slightly loosen the nut that attaches the inlet tube to the alternator-power steering pump bracket.
2. Re-torque the "collar" to 148 LB-FT (200 Nm).
3. Wait a minimum of ten (10) minutes and re-torque the "collar" to 148 LB-FT (200 Nm).

NOTE: WHEN COMPRESSED, THE SEALANT TAPE FLOWS AND FORMS TO THE SEALING SURFACE. IF THE "COLLAR" IS NOT RE-TORQUED, THE TORQUE OF THE "COLLAR" WILL DROP CAUSING A LEAK AT THIS JOINT.

4. Re-torque the nut at the alternator-power steering pump bracket to 30-40 LB-FT (40-55 Nm).
5. Test all joints with propane.

LEAK AT INTAKE ELBOW ADAPTOR/OUTLET TUBE CONNECTION

For leaks at the intake elbow adapter to outlet tube joint, proceed as follows:

1. Slightly loosen the nut that attaches the outlet tube to the alternator-power steering pump bracket.
2. Loosen the bolt that attaches the outlet tube to the cylinder block support bracket (bottom).
3. Re-torque the nuts at the intake elbow adapter to 15-22 LB-FT (20-30 Nm).
4. Re-torque the nut at the alternator-power steering pump bracket to 30-40 LB-FT (40-55 Nm).

5. Re-Torque the bolt that attaches the outlet tube to the cylinder block support bracket to 30-40 LB-FT (40-55 Nm).
6. Test all joints with propane.

SPECIFICATIONS

TORQUE SPECIFICATIONS		
Description	Nm	LB-FT
Supercharger Retaining Bolts - 8mm	20-30	15-22
Supercharger Retaining Bolts - 12mm	70-95	52-70
Supercharger Outlet Adapter Bolts/Stud	20-30	15-22
Throttle Body Assembly Retaining Nuts	20-30	15-22
Intake Elbow Bolts	8-13	6-9
Intercooler Tube Retaining Nuts	20-30	15-22
Intercooler Outlet Tube to Bracket Bolt	40-55	30-40
Supercharger Adapter Collar (Nut)	200	148
Intercooler Outlet Tube Bracket (to Cylinder Block) Stud	fully seat, then 2-10	17-88 LB-IN
Intercooler Outlet Tube Bracket (to Cylinder Block) Bolt	70-95	52-70
Intercooler Outlet Tube Bracket (to Cylinder Block) Nut	20-30	15-22
Intercooler Retaining (to Radiator Airboot) Screw and Washer Assys.	4-6	3-5

Anti-seize and Lubricating Compound

WARNING: Causes eye irritation. Avoid contact with eyes. Wash thoroughly after handling.

FIRST AID: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call physician. Contains: Zinc Oxide. Use in accordance with the Material Safety Data Sheet.

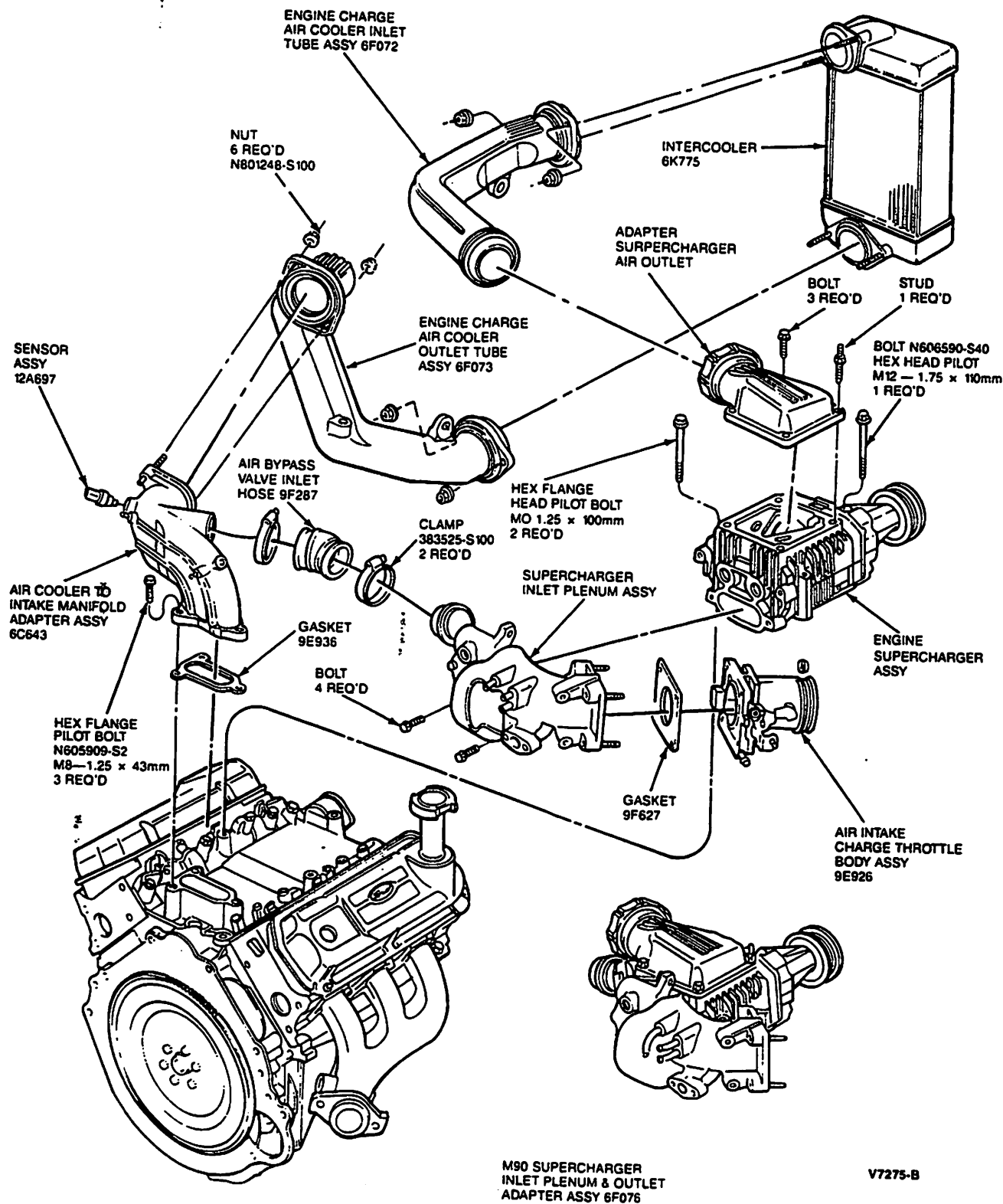


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SHEET 2 OF 3

**SUPERCHARGER AND INTERCOOLER KIT
1989-90 THUNDERBIRD/COUGAR**



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SHEET 3 OF 3

**SUPERCHARGER AND INTERCOOLER KIT
1989-90 THUNDERBIRD/COUGAR**

Super Coupe Club of America
2239 Danbury Street
Charlottesville, VA 22901

3/16/99

Dear Bill Hull:

I just wanted to take a moment and thank you personally for the wonderful job you have done with this club. Chargin Thunder is indeed the best magazine out there on the market for our SC lovers. Before stumbling upon your web site, I never knew there was so much I can do with this great car. I own a 1994 Crimson Red SC with a 5 speed. The car is fully loaded form leather, power seats, moon roof, keyless and every option there is. I love the car and cherish it everyday. When I found YOU "THE KING OF SUPER COUPES" I loved the car even more. I spoke to you several times and you were very helpful. I did purchase couple of performance items from you. I installed the K & N panel filter, removed the air silencer, installed Bosch platinum plugs, magnacor 8.5mm wires, 10 CD changer and tinted the windows. The car looks very sharp. Hopefully if money permits I'll do the exhaust next and then the modified SC top. Well that pretty much sums it up and also I am including \$40.00 fee that is due for 1999. (Can't wait to see the next Chargin Thunder). I will enclose pictures of my later so you can post them on the web. I will see you at the 1999 Caslile Show.

PS. Keep up the great work.

Sincerely,

A handwritten signature in cursive script, appearing to read "Tim Hendelman".

Tim Hendelman

Bill Hull
Supercoupe Club of America
2239 Banbury Street
Charlottesville, VA 22901



Subject: Membership Fee for 1999

Dear Bill,

Please find enclosed the membership fee for 1999. I have installed the fresh air induction kit in my 1990 35th Anniversary SC and I think, I can feel the car breaths a little easier. It took me about 45min to install it.

I have also received the latest issue of CT and I like your comments about the issue that some people feel it's not right to connect a club with business. I'm not aware of any other company that gives people so much information about their cars. They just like to sell parts. Even most of the authorised Ford dealers can not provide customers with the information I saw in your club magazine.

I plan to do more upgrades on my SC, however, right now I'm rebuilding my '71 pickup truck and need my hard earned money for that. But I plan to keep my bird as long I can.

I have seen a flyer for an Antic and Hot Rod show in Charlottesville on April 18, 1999. Will there be any participation from SCCoA ? I saw on the SCCoA website that to the same time further south are other activities, but Charlottesville is close enough for my, since I can spend only the Sunday that weekend, therefore I plan to go there anyway.

Best Regards

Engelbert Muelhaupt

SPEED COSTS MONEY - "HOW FAST CAN YOU AFFORD TO GO"?

**SUPER COUPE CLUB OF AMERICA
PERFORMANCE PARTS PRICE LIST**

"We Drive & Race What We Sell"

ALL Prices PLUS Shipping - Prices Subject to Change - Visa, MasterCard, American Express, & Discover cards accepted - Some Parts "Off-Road" Only

ELECTRONICS

MAGNECOR Competition 8.5mm Metal Core Sprial Wound Plug Wire Set	99.00
COMPETITION LIMITED High Performance Headlight kits w/ 2 80w, 2 100w	
Halogen bulbs, wiring harness w/fuse link, instructions 89-93 T-Birds	139.00
94-95 T-Birds, same as above but w/ 2 80/100w 9007 halogen bulbs	129.00
Double your headlight power!	
50w Halogen back-up bulbs ea.	18.00

ENGINE

K&N Lifetime Panel Air Filter - drop-in replacement	42.00
K&N 9" cone filter -	38.00
SCCoA fresh-air induction system, incl K&N 9" cone filter, March Ram-Air box, 3" inlet tube w/pcv fitting, bolt-on 15HP	179.00
C&L/Vortech 73mm Max-Flow Mass Air Meter w/30, 36, 38 or 42lb sampling tube	189.00
Replacement sampling tubes	40.00
Pro-M 77mm MAF, custom calibrated module, incl. inlet tube - for 350HP+ engines	429.00
Pro-M 75mm Bullet MAF, custom calilbrated module, bolt-on chrome	209.00
black plastic	199.00
EATON-MAGNUSON PRODUCTS S-Model Hi-Flow Supercharger - complete w/custom inlet&outlet porting, matching inlet plenum, pulley of choice exchange	1550.00
SCCoA Modified SC Adapter Air Outlet - ¾" raise, brand new castings, exchange	450.00
OTC Spanner Nut wrench for SC's - needed to switch SC tops	55.00
Blower Pulleys stock 89-93, or 94-95 SC	50.00
SVO 5% or SCCoA 10% OD	60.00
SCCoA 3-piece Accessory Underdrive Pulley set	179.00
SCCoA 10" Lo-Profile 900cfm Hi-Flo Intercooler Fan	99.00
SCCoA/Spearco Hi-Flo Intercooler - w/custom aluminum inlet duct - Exchange only	750.00
SCCoA "Double-Intercooler" w/ported inlet & outlet flanges - Exchange only (2) with optional ice tray	600.00
	750.00
BBK Throttle Bodies - modified w/SC throttle linkage	65mm 249.00
	70mm 259.00
	75mm 269.00
BBK custom SC Throttle Body - new production item	70mm only 249.00

Griffin Hi-Capacity all aluminum radiators, race quality, direct fit, 50% increase in capacity, incl. SCCoA pressure release cap, Manual or AOD trans		595.00
Robert Shaw Hi-Po Thermostats 180 or 195 degree w/Fel-pro gasket		10.00
SCCoA Pressure-release radiator caps, a must for all SC's		12.00
SCCoA Roller-rocker set, 1.73 ratio, race quality extruded aluminum, bolt-on, non-adj.		299.00
SCCoA Roller-rocker set, 1.73 ratio, Stud mounted (ARP) adjustable, w/CMRE custom guideplates, polylocks - race-quality extruded aluminum or chrome-moly		499.00
SCCoA Hi-Flo fuel pumps w/filter screen, direct fit	155lph	99.00
	190lph	119.00
	250lph	149.00
SCCoA adjustable fuel pressure regulator, great tuning tool for hi-hp engines, bolt-on		89.00
Vortech T-Rex In-line pump 60 gal/hr @70psi w/wiring & instructions - a must for NO2		299.00
Hi-Flo fuel injectors, set of 6	Bosch 30lb/hr	299.00
	Bosch 36lb/hr	359.00
	Lucas 38lb/hr	399.00
	Lucas 42lb/hr	449.00
SCCoA/ARP Head Studs, 190,000psi, 11mm w/12pt nuts, HD washers set		119.00
SCCoA/ARP Rod bolts, 190,000psi, 9mm set		79.00
SCCoA/ARP Rocker studs, 170,000psi - 3/8" - 7/16" for stud mounted rockers		79.00
SCCoA/ARP Main studs, 190,000psi, 12mm, w/12pt nuts, HD washers, set		119.00
SCCoA/CMRE main stud support girdle, CNC'd billet steel, incl ARP main studs		469.00
SCCoA crankcase windage tray, prevents oil captivation & foaming, aids oil drain back		49.00
EXTRUDE-HONE Power Flow incl UPS to & from E/H inlet plenum		140.00
	manifold adapter	140.00
	upper I/C tube	140.00
	lower I/C tube	190.00
	complete set 10% discount	549.00
SCCoA custom porting	inlet plenum 70mm or 75mm	75.00
	intake manifold, inlet port & runners	95.00
Fel-Pro gasket sets, upper engine head set, w/late design head gaskets, all years		150.00
	lower engine set, all years	75.00
	complete upper & lower engine sets	215.00

EXHAUST

All SCCoA cat-back exhaust systems are street legal. SCCoA headers & downtubes are sold "off-road" only (Too expensive to have EPA & CARB certified although the converters ARE EPA & CARB certified). The short tubes headers will pass emissions, even in CA.

SCCoA short-tube headers - 1-3/4" primaries, 2.4" I.D. collectors	304 Stainless	695.00
incl FelPro header gaskets & new 8mm bolts	16ga mild steel	595.00
SCCoA long-tube headers - 1-3/4" primaries, 3" 3 into 1 collectors	16ga mild steel	995.00
SCCoA 2-1/2" down-tubes for short-tube headers incl O2 fitting	w/hi-flo converters	300.00
	w/o converters	125.00
2-1/4" down-tubes for factory manifolds	prices same as 2-1/2"	

SCCoA 2 into 1 into 2 cat-back exhaust systems, , factory fit, dual 2-1/2" into 3' into

dual 2-1/2, incl Magnaflo resonator, 2 Dynamax or Magneflo Super Turbo's, uses factory hangers, etc Guaranteed to out-flow any other system on the market, except the "Big Dog" below!		749.00
Dual 2-1/2 into 3-1/2" into dual 2-1/2" "Big Dog" system w/o resonator for over 350HP applications incl 2 Dynamax Super Turbo's 92-up gas tanks only		749.00
Magneflo resonator dual-inlet, single outlet		119.00
Jet -Hot Metallic-Ceramic Thermal Coating, inside & out	short tube headers	180.00
	Down-tubes w/o cats	80.00
	Down-tubes w/cats	150.00
	Long-tube headers, inside & out	300.00

TRANSMISSION/DRIVELINE

HD Aliminum driveshafts - all models - custom order only	AOD	499.00
	5-sp	449.00
Centerforce Dual-Friction Clutch Kit - a racing clutch-pressure plate for the street w/release bearing, 89-93 SC's only		449.00
Art Carr 10" HD Super Torque street converter, 2500rpm non-lock-up, AOD		529.00
High-tech valve body shift improver kit AOD or 4R70W		79.00
AOD or 4R70W HD rebuild kit		190.00
Billet steel 1-piece input shaft		280.00
Finned aluminum AOD pan w/magnetic drain plug, new metric bolts, filter		179.00
Trans-Go shift kit - fully adjustable, w/full-throttle 3-4 up-shifts, holds OD (AOD only) incl. Hi-Rev kit (6000rpm upshifts - a \$50 part if purchased separately) ,w/instructional video. Absolutely the best on the market - used by most major trans shops!		119.00
SVO AOD Wide-Ratio/Upgrade Kit - (factory installed on 94-95 SC 4R70W), incl. 2.84 1" gear, HD planetary gear set w/higher torque capacity, sun shell assembly, reverse assembly w/HD 2" OD band, HD low inertia 6-plate direct-clutch assembly, reverse/forward clutch assembly, 6000rpm intermediate one-way clutch w/pressure plate, clutch steels & friction plates, & high rpm #2 thru #9 needle pinion bearing thrust washers. A high performance/durability upgrade for 89-93 factory AOD's.		645.00
Lakewood Hi-Po U-joints w/o grease fitting (not internally cross-drilled), super-strong, ea		42.00
Speedometer gears 21T for 3.73 AOD		12.00
23T for 3.55 5-sp		18.00
SCCoA custom urethane trans mounts NEW!		129.00

CHAISSIS/SUSPENSION

Air Bag for rear coil springs - helps cure wheel hop in 5-sp cars ea.		55.00
	pair	95.00
SCCoA 1-1/8" rear sway bar w/new end links (all gold cadmium plated) & urethane bushings - bolt-on		199.00
Baer High Performance & Racing brake packages	call for prices	
Eibach Pro-kit 1-1/2" lowering springs		279.00
Tokico Illumina Electronic Adjustable Shocks - factory replacement -30% firmer 2 frt		295.00
	2 rear	245.00

Performance Friction brake pad sets front only	89-91	49.00
	92-95	59.00
Raybestos brake pads, rear, all years		49.00
KVR Carbon-Fiber Semi-Metallic, Rotor friendly, race quality, frt or rear, all years		69.00
Hi-Po cross-drilled rotors, factory replacement, front or rear, all years ea.		99.00
black, gold, or silver cadmium plated - no rust! Ea.		20.00
Cobra/SVT T-Bird wheels 17" X7.5"	ea.. silver painted	149.00
	ea. chromed	249.00
Cobra/SVT T-Bird wheels 17"X 9" NEW!	ea. silver painted	199.00
	ea. chromed	299.00
16"X 8" NEW! avail. Jan. 99 prices not yet released		
Incl with any 4 wheel purchase - SCCoA members only - free shipping (\$40-\$60 value), or a complete McGard locking lug, regular lug, & chrome valve stem package (\$50 value)!		
"Fat-shaft" the "Big-Dog" 5-sp right side half-shaft, ea. while they last, new, OEM		299.00
NEW ! Kenny Brown/SCCoA T-Bird strut-tower brace , avail. Jan. 99		129.00
Kenny Brown/SCCoA lower chassis (engine cradle) brace		99.00

HIGH PERFORMANCE LUBRICANTS/FLUIDS

Entech Corp Energy Release for engines, transmissions, superchargers, power steering, many other uses 16oz bottle - enough for 2 oil changes, 1 oz for blower	24.00
Red Line Synthetic Racing AFT qt.	8.00
Red Line water-wetter 16 oz bottle ea	8.00
Eaton/Ford supercharger fluid 8oz	20.00
Haynes T-Bird/Cougar shop manual 89-96, all models incl/SC	15.00

SCCoA SPECIALTY ITEMS

License plate bracket, black anodized aluminum, T-Bird wing & SCCoA engraved	40.00
Pen & pencil holder, 24k gold plated, solid-cherry base, T-Bird & SCCoA engraved	50.00
Tire guage w/pocket clip, w/ printed "T-bird wing" insignia & "Thunderbird" ea.	5.00
Key chain w/enclosed 6 ft ruler (standard & metric), T-Bird logo	5.00
SCCoA coffee mugs, "SCCoA & Thunderbird" printed on two sides, T-Bird wing printed around base ea.	6.00

SCCOA PARTS PACKAGE DEALS (SCCoA members only)

SCCoA headers, downtubes, cat-back exhaust, & modified SC top combo - minimum 75 HP
- \$100 off

Magnuson S-Model blower & SCCoA modified SC top combo minimum 50 HP - \$100 off

BBK Throttle body, C&L or Pro-M MAF, SCCoA fresh-air induction system - \$50 off

Eibach springs, Tokico shocks, SCCoA rear sway bar combo, -\$50 off

For the complete SCCoA 350HP bolt-on package, call for special pricing - For CMRE cams, head & engine work call Coy Miller @ 540-433-0545

EDGAR A. GUEST 1935

IT COULDN'T BE DONE

Almost every day some new adventurer astonishes the world by doing something which yesterday couldn't be done. Henry Ford once said to me, Do you know the difference between the wise man and the fool? Well, the wise man knows a thing can't be done and he doesn't find out that it can be done until some fool who doesn't know that it can't be done comes along and tries it and does it.

How right the years have proved that to be. He, himself, today is doing things which a few years ago were listed among the impossible. In our homes we are using devices now commonplace and ordinary, which to our fathers and mothers were but the idle dreams of faddists and fanatics. It seems to me that all our culture and advancement and improvement come from the courage and the faith of a few. We are the throng, waiting until some plodding dreamer finds the way to lead us to comfort and convenience. Those brave visionaries seem to see beyond our day. They are too vague for us who doubt to understand. They are the servants of the possible; we are the admirers of the impossible. We are the foolish wise; theirs is the splendid folly to believe.

And so, out of Henry Ford's remark to me this bit was done:

**Somebody said that it couldn't be done, but he with a chuckle replied,
That "maybe it couldn't," but he would be one who wouldn't say so till he'd tried.
So he buckled right in with the trace of a grin on his face, If he worried he hid it.
He started to sing as he tackled the thing that couldn't be done, and he did it.**

**Somebody scoffed: "Oh, you'll never do that; at least no one ever has done it";
But he took off his coat and he took off his hat and the first thing we knew he'd begun
it.
With a lift of his chin and a bit of a grin, without any doubting or quiddit,
he started to sing as he tackled the thing that couldn't be done, and he did it.**

**There are thousands to tell you it cannot be done, there are thousands to prophesy
failure;
There are thousands to point out to you one by one, the dangers that wait to assail you.
But just buckle right in with a bit of a grin, just take off your coat and go to it;
Just start in to sing as you tackle the thing that cannot be done, and you'll do it.**

WHAT MATTERS MOST
IS HOW YOU SEE YOURSELF.

