



# Storm WARNING

By Matt Hardesty

**W**ithin the last few years, trucks, or pickups as many prefer to call them, have changed dramatically in both exterior and interior design. Square outward looks, bare interior accommodations, rough rides and low-geared, high-torque six-cylinder motors have given way to awe-inspiring, new-generation sport trucks like the Chevy SS 454. Although this change in the present-day truck market has come as a breath of fresh air, nothing, but nothing has blown away all of the traditional rules like the GMC Syclone.

Bursting upon the performance automotive scene early last year, the new Syclone promised a horsepower-hungry public a

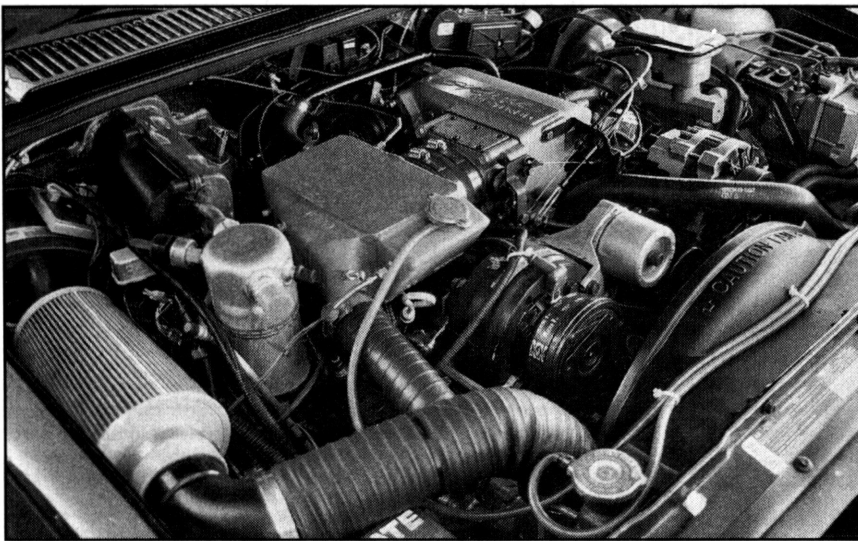
## Kenne Bell's 11-Second Supersonic Syclone

versatile vehicle that could haul a heavy load as well as run a hot quarter-mile. After a seemingly endless wait, the little Syclone finally made it to selected GMC dealers across the country, and just as everyone expected, this all-wheel-drive, 4.3-liter turbo V6 S-15 pickup was very impressive...but not perfect.

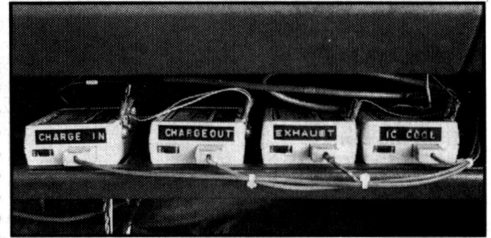
For most performance-minded people who invested their hard-earned cash into this radically new sport truck, the most disappointing aspect of the whole truck was the maze of confusion and disarray of hoses, wires and electrical components under the hood. It seemed the Syclone's new "international" motor would be more of a "foreign" nightmare when it came

Photos by Matt Hardesty and Les Bidrawn



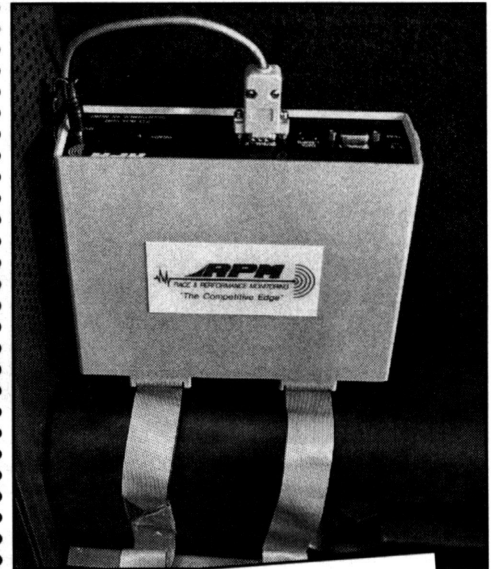
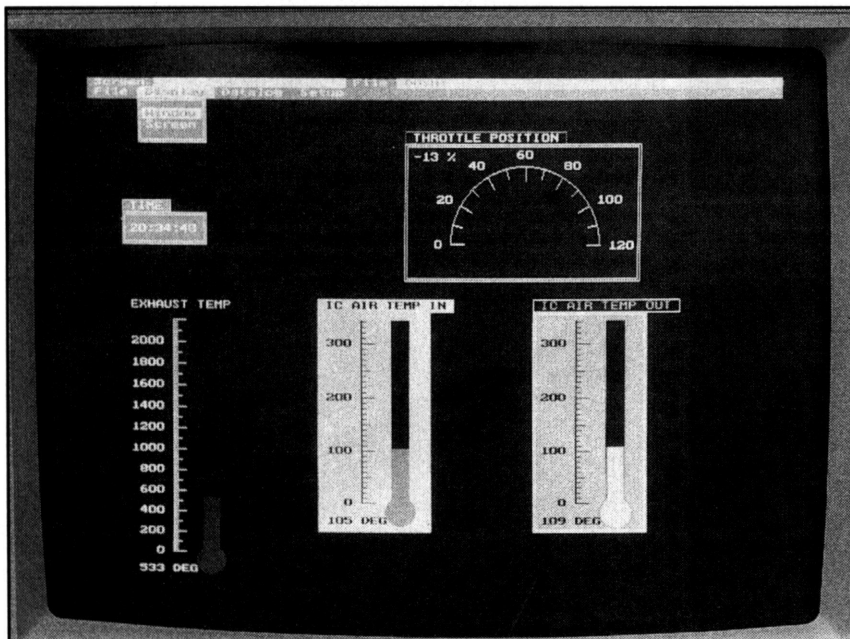


Here's the Kenne Bell-equipped Syclone turbo V6 with all of the performance pieces installed. As you can see, the only visible change is that of the hi-flow air intake and filter (note the low-profile battery used to provide more clearance for the air-intake tube).



Race and Performance Monitoring's (RPM) DS-1000 Data-logging computer equipment was installed on the Kenne Bell Syclone to determine the engine's performance on each quarter-mile run. Critical engine functions are monitored by sensors that relay information back to the computer, storing it for inspection after a run. The system reveals such functions as boost, speed, fuel pressure, intake air temperature, inter-cooler air temperature, rpm and a host of others.

The information recorded by the on-board computer is then displayed on a standard computer screen using RPM's specialized software. The engine functions are displayed in a gauge format for easy interpretation.



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time to change the plugs or any other maintenance-related necessities. Those who thought that adding performance racing equipment to the Syclone would be as easy as the ones used on the ever-popular turbo Grand Nationals soon realized how terribly wrong they were—this was definitely not a turbo Buick.

So where does one begin to look for added performance in a Syclone? A chip? Bigger turbo? Intercooler? This was the same question posed by Kenne Bell Performance Products in Rancho Cucamonga, California (714/941-6646). Kenne Bell's name is synonymous with Buick performance, whether it be V6, V8 or turbo power, but when the Syclone

arrived, Bell shifted gears a little to develop the first performance racing bolt-ons for this stout turbo truck.

Before attacking any such project, the first step is understanding what your stock subject is. In this case, the turbo 4.3 V6 in the Syclone is basically a stock motor with a few alterations, including the turbo. The 4.3-liter block has the same basic dimensions as the standard 5.7-liter Chevy 350. The heads and camshaft are also carry-over features from the standard Vortech 4.3-liter, normally-aspirated engine. The Syclone engine receives its boost in power from the Mitsubishi TD06 turbo, a liquid-to-air intercooler, port fuel injection and GM High Energy Ignition System with

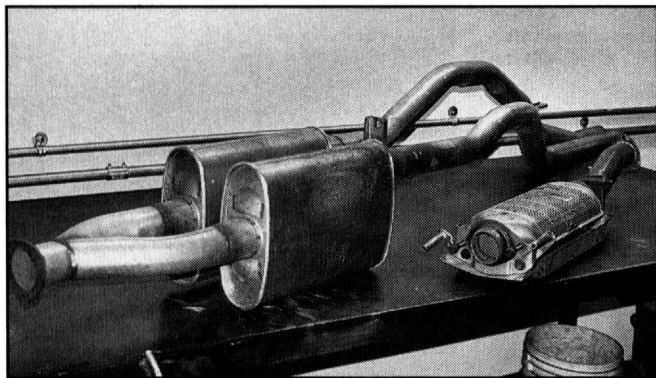
Electronic Spark Control to alleviate dangerous knock and ping. What this equates to is a system similar to the Buick's turbo (a system with which Kenne Bell is very familiar with), although the packaging in the Syclone is much more cramped and slightly more complicated.

Kenne Bell's president, Jim Bell, has spent much time and effort in understanding and improving the new Syclone and its 280-horsepower motor. Numerous baseline tests on a stock Syclone were conducted at Los Angeles County Raceway in Palmdale, California, by Jim and his staff to determine how they could pull extra horsepower out of a seemingly caged animal. Just as a doctor uses specialized and

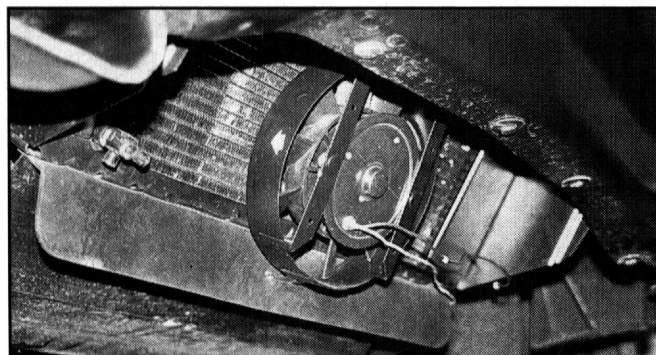
The stock, restrictive and twisted air intake hose is dysfunctional at best and easily replaced with Kenne Bell Hi-Flow units shown here. The short filter attaches easily to the stock air intake tube (also shown), while the longer filter attaches to the Kenne Bell Ram Air system that utilizes cool air from the front of the truck.



This is the stock dual muffler/catalytic converter exhaust system used on the Sycrone. The Kenne Bell Sycrone dropped 30 pounds of excess weight and gained a tenth of a second in the quarter mile with the addition of a three-inch straight pipe exhaust bolted directly to the stock catalytic converter.



To further increase cooling on the stock and very unique intercooler, a manually controlled fan was attached to the lower intercooler radiator.

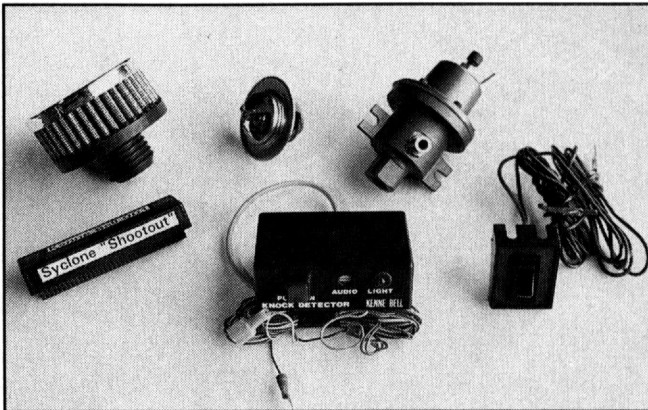


sensitive equipment to check patients, the Kenne Bell Sycrone was monitored by some pretty advanced computer equipment from Race and Performance Monitoring (RPM) in Scottsdale, Arizona (602/483-7885). RPM's DS-1000 computer data-logging equipment was used to determine such functions as: speed, rpm, boost, throttle position, exhaust temperature, exhaust pressure, manifold air temperature and fuel pressure. This system proved to be invaluable in determining the Sycrone's weak areas as it traveled down the straightaway.

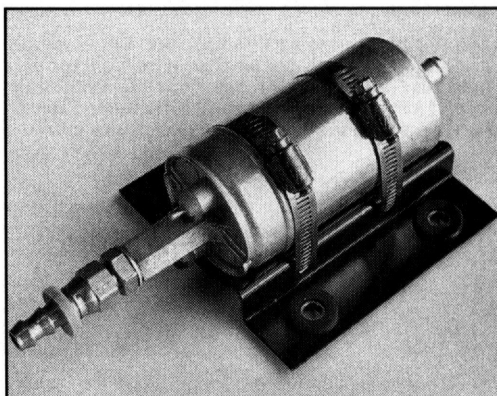
Initial quarter-mile times for the stock Kenne Bell truck were very quick, just as anticipated: 13.48 @ 96.80 mph.

Knowing full well that the Sycrone was not performing to its full capabilities, Jim Bell set to work on a flurry of bolt-ons guaranteed to increase power and decrease blast times. The first modification to the Sycrone was the addition of a billet aluminum adjustable fuel pressure regulator. The regulator allowed for a higher idle pressure (50 psi over 40 psi stock) and increased wide-open throttle fuel pressure (70 psi rather than 60 psi stock) that effectively reduced detonation during heavy acceleration and eliminated low-rpm surge and bog.

The next obvious step was modifying the computer chip. Unlike most GM computer chips, the one used on the Sycrone is very different in size and shape. Two new per-

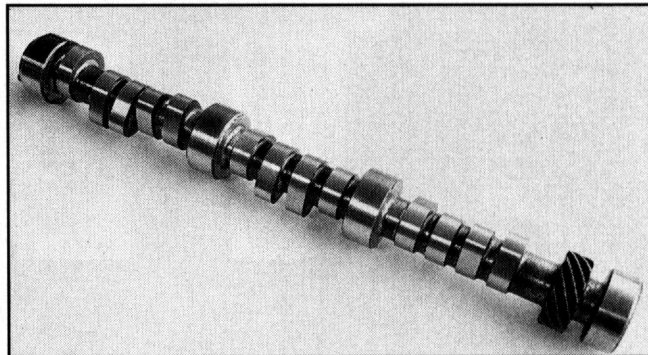


Kenne Bell's basic performance kit for the Sycrone includes: electronic torque converter override switch, adjustable fuel pressure regulator, 160 degree thermostat, oil filler breather cap and a performance chip like the Streetmaster or Shootout.



When combined with the adjustable fuel pressure regulator, this high-volume replacement pump provides the turbo motor with the extra fuel necessary to reduce bogging, hesitation and detonation.

The stock cam in the Sycrone turbo V6 is the same camshaft used in the normally aspirated Vortec V6. As one might imagine, a cam better suited to the needs of a high-horsepower motor is sure to increase both power and performance. Such is the case with the Kenne Bell 1TR Turbo Roller Cam pictured here.

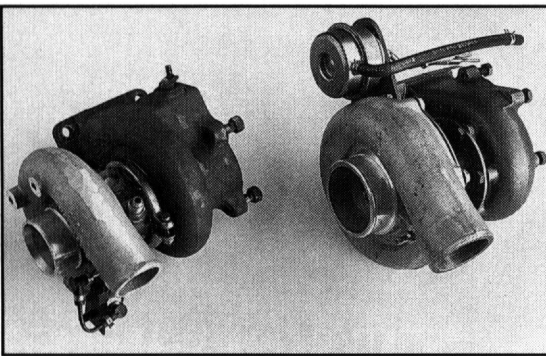


formance chips were tried: the Streetmaster and the Shoot Out 1. Both increased power and proved to be effective in lowering ETs, although the Streetmaster requires 94-octane fuel and the Shoot Out 1 should be used with racing fuel or aviation gas only. To complement the new chips, the twisted, restricted and utterly useless stock air intake was removed in favor of a high-flow assembly and smaller battery, leaving more space for a better fit.

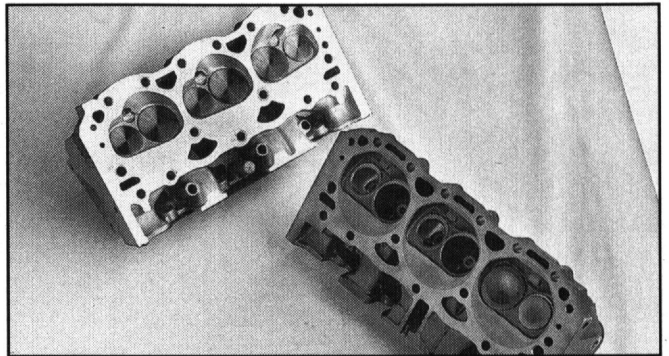
To find out how the Sycrone would react to a free-flowing exhaust, the stock dual mufflers and tailpipes were removed and replaced with a three-inch-diameter straight pipe. This not only shaved quarter-mile times, but weighed 30 pounds



The stock Mitsubishi TDO6 turbo works with the stock motor, but with performance modifications, the Syclone's V6 requires more air that only a larger turbo can provide.



The Kenne Bell Stage 2C Turbo Upgrade Kit consists of a visibly larger Garrett turbo equipped with an external, vacuum-operated wastegate control. This improvement netted two more miles per hour and two tenths of a second in the quarter mile.

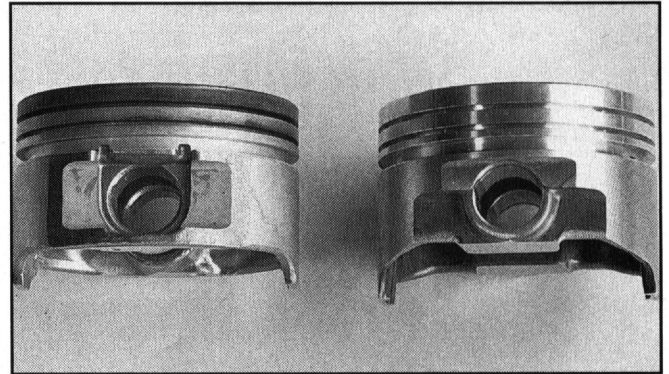
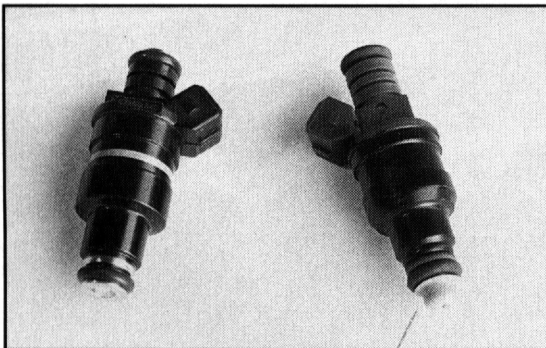


Kenne Bell offers their Turbo Swirl Ported aluminum Chevrolet heads that substantially out-flow the poor breathing, detonation-prone stock cast-iron heads. To use these heads though, custom headers from Kenne Bell must be used due to spark plug clearance.

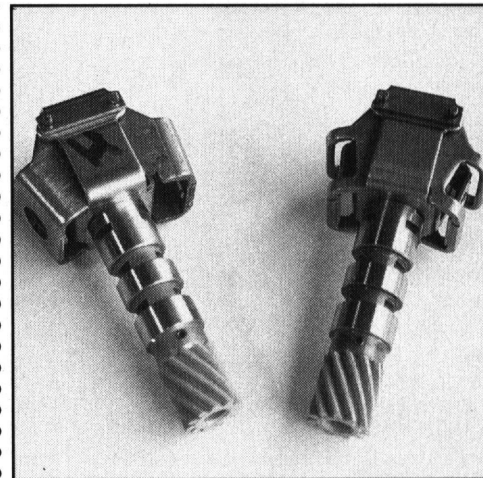
To keep abreast of all the engine's vital signs, a trick console gauge package like the one shown displays oil pressure, temperature, boost and fuel pressure, plus it provides four rocker switches to control the electronic torque converter, intercooler fan, intercooler water pump and fuel pump cut-off.



High-volume 40-pound injectors are also available and provide more reliable operation over the Pintle-type stock injectors. The high-volume injector (left) uses a very efficient flap-type mechanism as compared to the stock Pintle-type that suffers from build-up and clogging.



Kenne Bell offers forged replacement pistons for the Syclone that are substantially stronger than the stockers. The forged piston (right) is visibly different and is able to withstand increased stress from the upgraded motor.



The stock governor on the Syclone's 700 R4 transmission is good for 3800 rpm shift points (right), but with the addition of the roller cam, a higher-rpm shift is necessary. To achieve the needed 5000 rpm shift, Kenne Bell offers a high-rpm shift governor shown here on the left.

less than stock.

Experimentation with the electronic lock-up torque converter and an override switch that locks up the converter in second gear was good for another two-tenths. After an 11-inch Hi-Stall converter was also added, another two-tenths was gained.

The three largest improvements that pushed the Syclone into the 11-second range were the Stage 2C turbo upgrade kit (larger Garrett turbo), Mark 1TR Turbo Roller Cam (.440 lift/205 duration, compared to .345 lift/176 duration stock), and the Turbo Swirl Ported Heads. The larger Garrett turbo provides increased boost due to its larger turbine and compressor. The roller cam replaces the stock cam used on

the normally-aspirated 4.3-liter engines; an obvious gain was anticipated with the new cam and its addition pushed the Syclone to a blistering quarter-mile time of 11.99 @ 110.57. The aluminum Chevrolet heads provide dramatic airflow increases for both intake and exhaust, and because the stock heads are of "fast burn" design they tend to be more sensitive to detonation. This last addition has dropped the Syclone's ET nearly two-tenths lower to 11.74.

If you thought the Syclone was impressive in stock form, the Kenne Bell-treated truck will rearrange your definition of "impressive" in a big hurry. Those planning to race their Syclones will find these new performance pieces to be an absolute

blessing since they help take out so much of the guesswork and labor in trying to understand the turbo 4.3 V6. Additional good news for Syclone owners comes from the fact that Kenne Bell is developing more goodies: a trick ram-air intercooler is planned to replace the stock liquid-to-air unit, and custom headers are in the works for the serious drag racer. Bell has also designed a four-gauge bezel that fits directly in front of the automatic shifter, providing for instant and accurate information on boost, oil pressure, temperature and fuel pressure. Stay tuned for more information on the Kenne Bell Syclone products. They are sure to liven up the performance of your stock caged animal. 