SC3 VETTE VIBES

INSIDE THIS ISSUE

Southern Colorado Corvette Club

Mailing Address:
9 Ibis Lane
Pueblo, Co 81005

The May meeting will be held at Mineral Palace Park for a GROUP PHOTO followed by a potluck dinner.

Come join us.

SC3 SOUTHERN COLORADO CORVETTE CLUB PUEBLO, COLORADO

Rocky Mountain Muscle Car Classic

May 30, 2009

Pikes Peak International Raceway

4 shows at one location

16th Annual Southern Colorado Mustang and All-Ford Roundup
5th Annual Southern Colorado Mopar Festival
The 1st Rocky Mountain LX Meet
The 1st Southern Colorado All-GM Show

FEATURING:

DriveTech
Colorado Vintage Oval Racers

Schedule

Friday Evening: Cruise-In event, So-Cal Speed Shop, Pueblo, CO at 6 PM
Saturday: Registration (7 AM) and Show & Shine (9 AM to 3 PM) at Pikes Peak International Raceway - Awards will be presented at 3 PM.
Sunday: Cruise from Pueblo and Colorado Springs to the McCandless State Veterans Home in Florence, CO. Show & Shine, and a cookout for the residents and all participants. Cruise starts at 8:30 AM, distance is approximately 25 miles each way from either city.

BUILDING A Z06, by Kevin Koch

The C6 version of the ZO6 is certainly an impressive car featuring a 7 liter V8 engine producing a peak of 505 hp and 470 ft-lb of torque. That torque combined with a weight of only 3,150 lb. can get you from stationary to 60 mph in only 3.8 seconds if you are good enough to keep from burning the tires down in the process. But how is this car built and is the build process different than that of standard Corvettes?

Even though the car does go through final assembly at the Bowling Green plant along side the more mundane brothers, the special engine and aluminum space frame are assembled in dedicated facilities elsewhere. Following is a quick tour through the build process for a ZO6.

The foundation of the ZO6 is its 285 lb. aluminum space frame. This frame, lighter by 136 lb. than the steel frame used in the rest of the Corvette line is assembled by a group of highly trained welders and technicians at the Dana Technologies plant in Hopkinsville, Kentucky. The major sections of this frame that must be assembled are: the side rails, the front and rear bumpers, the roof bow and the drive train tunnel. These sections are made from aluminum sheet ranging in thickness from 1.0 to 5.0 mm. First the side rails are welded to the front and rear bumpers. Next the drive train tunnel and torque tube are installed. It takes about 20 minutes for robotic welders to install the drive train tunnel. Many of the other welds on the frame, however, are completed manually. Self-piercing rivets (236 in all) are also used in several locations to connect frame sections

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Trivia #1

Who built the first 4 speed in a Corvette and the first transaxle in a production Corvette?

Trivia #2

The (?) Corvette is the first Corvette to have windshield wipers that sweep in the same direction instead of opposing directions?

PMI DRAG NIGHT

Friday, June 12, 6:00 p.m.
Rain DELAY date Friday, June 19th

Cost is $35 for a 4 hour block of time.
Run you car as many times as you can (or want).

Check out the PMP Racer Handbook for more details, i.e. if your car is fast enough for a safety helmet use, can a passenger ride with you, etc.
Web site is http://www.pueblomotorsportspark.com/

Trivia #3

For the first time in history, the (?) Corvette is available in three distinct body styles... Coupe, Convertible, and Hardtop (aka, "Fixed Roof Coupe").

Trivia #4

The 2003 Corvette heralds the 50th anniversary with a special edition in Anniversary Red with Shale interior and a new, high-tech magnetic suspension option for all models but the (?), which continues essentially unchanged from the 2002 model?

BUILDING A Z06, cont.

- When all of the major sections of the frame are assembled, one CNC (computer numeric control) unit drills all necessary holes and completes final trimming operations.
- The final step in the frame construction is a thorough inspection using six video cameras controlled by two robots. Inspections are made to be sure all holes are in the proper location and all welds are sound.
- The completed frame is transported 65 miles to the Bowling Green plant by truck. The main assembly plant is divided into five major sections: car track, paint shop, chassis assembly, trim shop and testing area. When the frames first arrive each is cleaned with a special solution and then completely dipped into an anti-corrosion coating. Work then begins on the bare frames in the chassis assembly area.
- First the rear trunk tub is attached to the frame with adhesive. The main flooring is then attached. These floors have balsa wood cores and carbon fiber outer skins to save weight.
- While work progresses on the chassis the body panels are being coated in the paint shop. Extensive efforts are made to maintain a “clean” environment in the paint area. Anyone entering the paint shop must wear special clean uniforms and go through a decontamination process. Included is the “dust off booth” where multiple air nozzles are used in an effort to insure that no particles make into the paint area.
- All individual body panels are painted before they are assembled on the chassis. Each panel is washed and dusted with an automated process before the first coat of primer is applied. Primer coat, two base coats and clear coat are all applied by robotic process along two paint lines. Both primer and base coats are .001 inch thick. The clear coat is electrically charged to improve how well it adheres to each panel. The paint shop can process about 320 panels per hour. When the coating work is completed the panels are delivered to the trim area to be bolted on the frame.
- The other key component of the ZO6 that receives special treatment is the engine. All ZO6 engines are hand built using methods similar to those used to build competition engines. The engines are built at a facility in Michigan and shipped complete to Bowling Green. One of several master engine builders is responsible for the assembly of each unit start to finish. Once the engine completes its successful test run the builder will mount a tag with his name on the engine. It takes approximately four hours to assemble each engine. One process that saves considerable time and deviates from that of most hand built engines is the torque application for critical fasteners. Special automated, pneumatic torque wrenches are used on fasteners such as rod bolts, main bearing caps and head bolts. All of the head bolts on one side of the block are torqued simultaneously making clamping force as even as possible. The completed engine weighs in at about 450 lb. and is the only engine in the world rated over 500 hp that is so efficient that it can avoid the dreaded gas-guzzler tax.
- When the engines arrive at the Bowling Green plant they are bolted into the power train module along with the torque tube that connects the engine bell housing to the rear mounted transaxle. The rack and pinion steering assembly and the front and rear disc brake/hub assemblies are mounted on the power train module before the engines are installed.

- The stainless steel exhaust system is bolted to the body/frame as it travels in an elevated position on a different assembly line than the power train module.
- The next step is the marriage of the power train module and the body/frame as the two moving assembly lines merge. The elevated body/frame is lowered and the power train module is raised as the two assemblies are aligned and bolted together. Four technicians spend about three minutes making sure 30 critical fasteners are aligned and torqued. The moving assembly line never stops during this process. Dexterity and experience are a must.
- Next to be installed is the tank for a very trick dry sump oil system. This is the type of system that is common to almost all serious race cars. There is no oil pan bolted to the bottom of the block as is seen on most street car engines. Engine oil is stored in a remotely mounted external tank and pumped to the engine and back to the tank through a system of hoses. There are four reasons for this more expensive oiling system. The oil cannot slosh away from the pickup during sustained high lateral acceleration as can happen when the oil suction tube is in a standard oil pan (of course the car has massive corning capability). The front of the ZO6 is so low to the ground that the capacity of a standard design oil pan would be severely limited. The external tank has more capacity than a standard oil pan could have helping to lower oil operating temperatures. The tank is mounted toward the rear of the car further improving weight distribution.
- Next to be installed are the hood, urethane nose and front fenders. The front fenders are made of carbon fiber and weigh in a 3 lb. each, 80% percent less than the standard fiberglass fenders; again an effort to reduce weight on the front tires.
- As the almost completed car continues to travel down the moving assembly line the wheel/tire assemblies are mounted in the trim area. The technician works with a special hoist that carries each assembly to the proper position and all of the wheel nuts are tightened simultaneously using a five-socket torque wrench. The wrench displays a green light when the proper torque has been reached.
- With wheels and tires mounted the car can roll to the final testing station dynamometer. There the engine is started for only the second time, the transmissions is placed in gear and the rear wheels drive a rotating drum in the floor up to a simulated 70 mph. The car is then driven out of the testing station to undergo final inspection and shipment to a dealership and ultimately an excited customer.

SC3 Calendar - May 2009

					1 SC3 Sonic Night	2
3	4	5	6	7 CSCC Meeting	8	9 Fun In The Sun Car Show
10 SCCA Autocross	11	12	13	14	15	16 - Abbey Car Show NASA Nostalgia Days
17 NASA PMI Nostalgia Days	18	**19 SC3 Meeting 6:00 @ Mineral Palace Park**	20	21	22 SC3 Sonic Night	23 SCCA Autocross @ PPIR
24 SCCA Autocross @ PPIR	25	26	27	28	29	30 **– Rocky Mt Muscle Car Classic Show @ PPIR**

June 2009

31 May	1	2	3	4 CSCC Meeting	5 FAAST Friday @ PMI	6
7	8	9	10	11	12 **SC3 PMI DRAG NIGHT @ PMI**	13 Kwainas Club Car Show - by Gold's Gym
14	15	16 **SC3 Meeting**	17	18	19	20
21	22	23	24	25	26 SC3 Sonic Night	27 SECA HPR Track Day
28 SCCA Autocross @ PPIR	29	30				