

How To

DYNACORN '67 CAMARO BUILDUP START-TO-FINISH

Part Three

Firewall Smoothing,
Engine & Transmission
Mockup, Rearend
Installation.

BY BOB MCCLURG



In the November 2006 issue we concluded part two of our Dynacorn Classic Bodies, Incorporated "Dynacorn Gem," 1967 Camaro show car buildup series with the initial mockup assembly of both our Chris Alston Chassisworks Camaro front sub frame, (a rock-solid piece if there ever was one) along with the assembly of our bullet-proof, Wilwood Engineering-equipped, Currie Enterprises "9+", 31-spline, 3.89:1 geared, live rear axle housing.

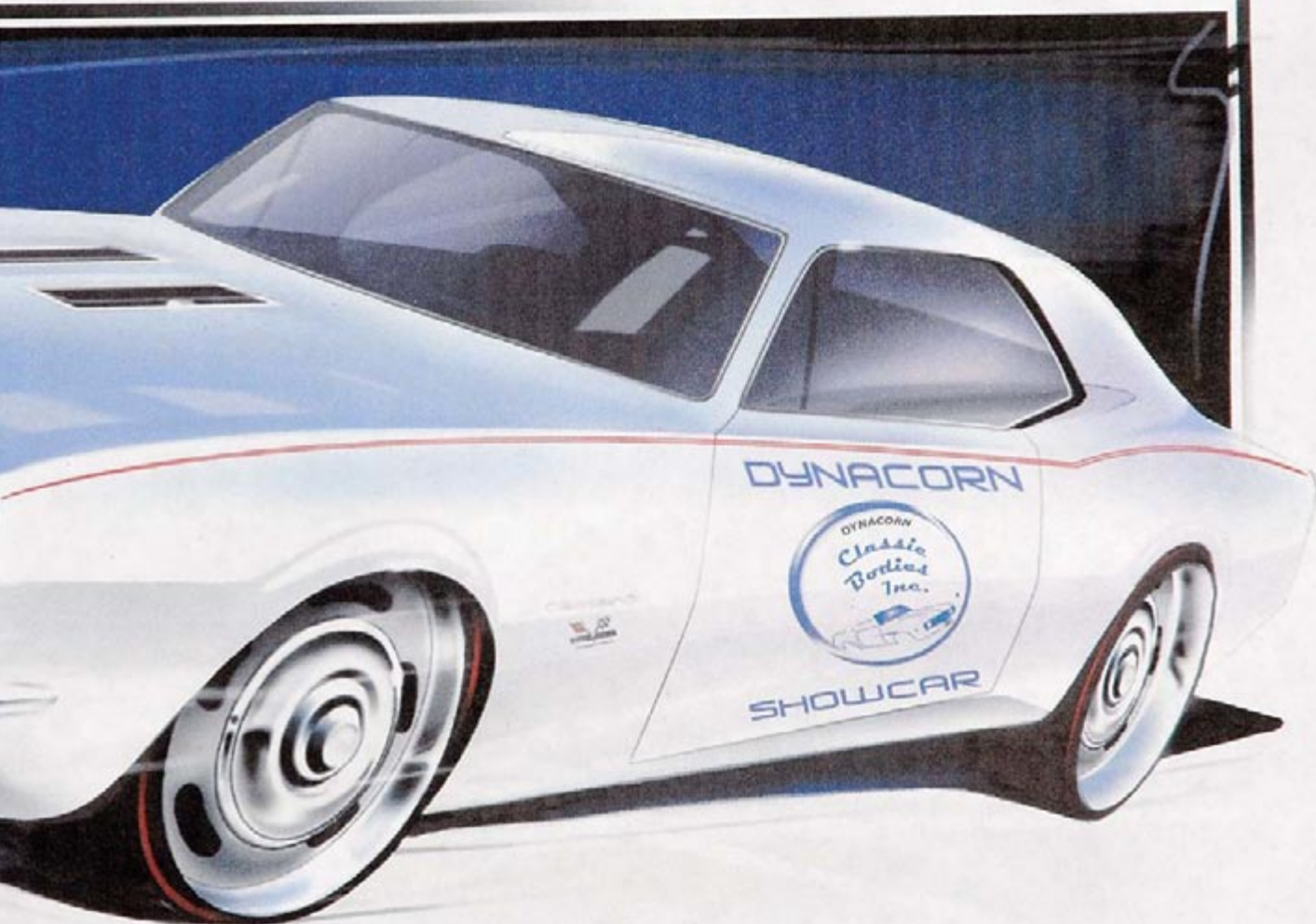
In our third installment, we're going to cover a number of subjects.

First: Since the Dynacorn Gem 1967 Camaro big-block is a street machine, it was not necessary to maintain that OE appearance. Given this fact, the builders decided that the '67

prototype should feature a filled and smoothed firewall according to current street machine standards, which will be initially covered in this installation.

Second: With firewall filled, smoothed and re-worked, we'll finish bolting together the Chris Alston Chassisworks CNC die-stamped and laser-cut boxed-steel 1967-69 Camaro front sub frame, (p/n 917701) complete with 2x4-inch boxed-steel front crossmember and Wilwood Engineering-equipped, Chassisworks unequal length a-arm front suspension, and bolt it up for the first time to the '67 Camaro unibody.

Third: In regards to the aforementioned 9.6:1 compression, four-bolt-main, 502-cid (4.47 x 4.00-inches) Holley 850-cfm-cabrured, GM Performance Parts "502/502 Deluxe" big-block





"CHOP, CUT & REBUILD" cable TV host Dan Woods identifies the areas to be filled in on the Dynacorn Camaro firewall for TV viewers at home. They include the heater and the windshield wiper motor holes along with a veritable ton of stamped mounting holes which would normally be used to bolt up the OE engine compartment accessories, were this a re-body, or concourse restoration.



With potential weld-in areas identified and duly marked, Woods uses a wheel-a-brator to initially open up these areas.



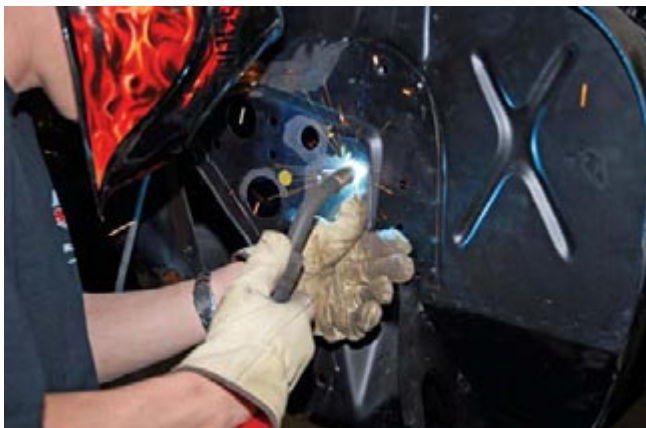
Then American Musclecars, Inc. craftsman Jeff Martin begins TIG welding in some of the smaller holes.



Dan Woods progressively follows up with a small die grinder to clean away excess welding slag from the filled-in areas.



One of the bigger areas in need of filling was the Windshield Wiper Motor mounting location which measures approximately 1-1/2 x 12-inches. When the car is completed, it will use a Specialty Power Hidden Windshield Wiper System, adapted by Perez' American Muscle Car crew, to fit the car.



Installer Martin first creates a weld-in "blank" which is initially tack-welded in place. After checking the fit it gets hammer welded in position.



Other firewall modifications include seam-welding the entire circumference of the firewall using a special heat absorbing putty called "Cool Blue" which was applied to the larger areas to avoid warp-age.



With the camera's rolling, Woods and Project Director Bret Maxwell focus (excuse the pun,) on installing the 11-3/4-inch vented directional rotor, Wilwood front disc brakes. First the mounting holes are all chased using the proper size tap.



Setup begins with the billet hub(s) being fitted to the backside of the rotor. The provided 12-point bolts measure 2-1/4-inches in length, and should be final torqued in sequence according to the Chassisworks Instruction Manual.



The bearing races are pressed into the billet hub at the factory. After packing the inner wheel bearing with a high-quality wheel bearing grease, our installers use a hammer and a seal installer to drive the seal into the hub.



Next, comes the installation of the front bearing, again using an ample supply of high quality wheel bearing grease.



Bret installs a completed rotor onto the correct spindle keeping in mind that they are directional. To fully set the bearings, the accompanying castle nut should be final torqued to 12 lb/ft while spinning the rotor in the forward direction. This will remove any excess grease that could cause wheel bearing play. The castle nut is then backed off to the "just loose" position which should produce the desired .001 to .005-inches of end play. Finally, the cotter pins are installed.



Next, Dan installs the passenger side Wilwood disc brake caliper using the 3/8-16 x 1-3/8-inch socket head Allen's, lock washers and flat washers provided in the kit.



Next, our installers drill and tap the side of the Chassisworks frame for two 10-32-inch threaded holes. These holes will position the brake line tab 2-inches below the top of the frame and 2-1/2-inches ahead of the weld on the front cross member. Once these holes have been made, the accompanying stainless-steel brake line brackets are installed using the provided 10-32 x 3/8-inch button head bolts.



With that done, we see the installation of the provided 3/8-inch, braided stainless brake lines.



Shown is the 90% completed Alston Chassisworks front frame.



After installing the SACHS clutch and pressure plate, Bret Maxwell bolts up the Lakewood big-block bell housing using the mounting bolts provided with the bell housing. CHOP, CUT & REBUILD host Dan Woods provides a little assistance.



Next, our man Dan installs the Chassisworks motor mounts provided using the provided 3/8-16 x 1-1/2-inch socket head Allens and 3/8-inch washers provided.



Now it's time to join together the 'Gem's GM Performance Parts 502/502 big-block and Keisler TKO 600 tranny.



Prior to dropping our 502 big-block power train into place, Woods and Maxwell install the Chassisworks transmission cross member using the provided bolts in the Chassisworks kit.



At this juncture it's time to begin positioning the big-block and five-speed into the Alston chassis.



Right off the bat, our installers experienced some clearance issues. For example, the factory GM HEI unit interfered with the Dynacorn Gem's firewall. However, a quick thinking Maxwell realized that an MSD Pro Billet HEI is slightly smaller. A quick substitution immediately rectified the problem.

Mating up front sub frame to the Camaro coachwork is a painstaking process.



Another of the pleasing features about the Chassisworks F-Body sub frame is that the manufacturer provides the builder with a pair of 5/8-inch threaded frame alignment pins, invaluable items for all important pre-assembly.



This is how our 99% completed Chassisworks front sub frame looks like from the rear of the car once trial-fitted in place,



Next, Maxwell and company measure straight up from the shifter location of the TKO 600 transmission, and cut a "shifter slot" measuring approximately 1-1/2 x 3-inches in the center of the transmission tunnel.



Woods trial fits the Alston sub frame connectors (p/n 5601-20) up to the underside of our Dynacorn Reproduction Bodies '67 Camaro uni-body.



In the process, some seat clearance issues were addressed with the floor pan. A couple of slots were cut prior to bolting up the sub frame connectors.





With sub frame connectors fitted in place, the mounting holes are drilled, and the combination 3/8-inch and 7-20 x 3-inch bolts are bolted into place.

With sub frame connectors properly bolted up, they should butt up to the Chassisworks front sub frame like this.

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Now it's time to install the 'Gem's Currie 9-plus live rear axle.



On the opposite end our crew installs the OE reproduction spring bucket for the Camaro rear leaf springs to "sit" in using the OE bolts provided.



Our installers begin with the installation of the Classic Industries '67 Camaro polyurethane spring eye bushings and shackle brackets using the provided reproduction Camaro shackle bracket bolts.



After the leaf springs are installed, the next step is getting the Currie "9+." rear axle housing in place. This is where having lots of friends is a good thing. And here's how it looks. In Part Four, we're going to install the fuel tank, exhaust system, and steering column. It's beginning to look like a car now.


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Chevrolet crate engine (p/n 12496962) rated at 502 HP (@ 5200 RPM and 567 lb/ft. or torque @ 4200 RPM; and accompanying Keisler-Tremec TKO-600 five-speed manual gearbox equipped with a SACHS 11-inch clutch and 650-pound pressure plate housed in a Lakewood bell housing, we will also be installing one of Chassisworks Rear Transmission Cross members (part of the kit) as well as adding a pair of Chassisworks F-Body sub frame connectors.

Fourth: Last, but certainly not the least, we'll be fitting our Currie Enterprises 3.89:1 geared, "9+" 9-inch live rear axle up to our '67 using a Classic Industries Camaro Rear Leaf Spring and Spring Shackle Kit. Since all parts are new in the modern Currie 9-

inch rearends, we don't have to use that "F" word in describing this part anymore.

Obviously, this is a pretty ambitious undertaking, especially since the American Musclecar's, Incorporated crew (consisting of Project Director Bret Maxwell and helpers Jeff and Brad Martin) were given just eight weeks to have the Camaro ready for its grand debut at "Hot August Nights-06," not to mention the fact that they were also working around a film crew and one lone still photographer throughout the entire car building process.

Follow along with us as we transform this pre-production 1967 Camaro Replacement Body Shell into an awesome looking and performing big-block Camaro street machine the American Musclecars, Inc. way. 

SOURCES

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