

September 15, 2009

Engineering Memo

**1949-54 Chassis w/ BBC:** Due to numerous issues, headers are currently not offered. These issues are:

1. Lack of room between exhaust ports and steering linkage: Even with a multiple U-joints, fitting the 2" primary tubes is extremely difficult.
2. Oil pan to steering rack clearance: The front sump area is extremely close to the steering rack, and most stock-type pans need to be approximately 1/2" shorter. A stock pan could be notched to work.
3. Possible valve cover to firewall clearance: Depending on deck and valve cover height, interference is possible ( but not confirmed).

**1949-54 Chassis w/ SBC:** The balancer on small blocks is located directly above the steering rack, and the engine sits somewhat low to allow transmission clearance in the stock tunnel. Because of this, the distance between crank centerline and steering rack body is less than 4" - meaning a common 8" balancer will not work. Alternatives are:

Summit Racing - SFI and non-SFI approved; less than 7" diameter

ATI - 6.375" diameter

Fluidampr - 6.25" diameter

Pioneer - 6.125" diameter

There are many alternatives from cheap to expensive, neutral balance to external balance, etc. The issue that will probably arise is most crate motors already come with 8" balancers. *LS engines do not have this problem.*

**Wilwood 12" Disc Brakes PN 140-9918:** These brakes narrow the overall hub track width by 1-1/8" compared to other Wilwood kits, much like the AME disc brake conversion kit. All other brakes appear to maintain the standard track width. Until we get confirmation from Wilwood, please use the predetermined wheel sizes and backsides for Tri-5 and be very careful if the customer wants the 12" brake kit.

## 1949-54 Chevrolet Chassis Notes

1. Three types of wheel & tire examples are shown:
  - a. Driver: This consists of 205/70R15 tires on 15x7-4.5" B.S. wheels, and is the same front to rear. Obviously for the guy who wants simple, stock type look. No minitubbing required. Due front fender shape, the front bulge width can be widened to 68" if a standard height spindle is used.
  - b. Modern performance: I suspect this to be the most popular type. 225mm tires up front with 255mm in the rear using 8" and 9" rims. The backspace required for these wheels will probably not be off-the-shelf, but will be a custom from Intro, Boyd, etc. This is the same front wheel as used on the GT55. This setup should be quiet and comfortable, but still be 0.90+g capable on the skidpad. *This setup may require some "cleanup" (trimming) on the stock tubs to fit.*
  - c. High performance: This is the same wheel and tire setup used on Woody's Hotrods build. Lots of grip with a wide rear tire to accommodate high-HP engines on corner exit. The stock tubs need to be widened such the inside tub surface is flush with the frame rail.
  
2. Other wheel and tires: If a customer wants a wheel & tire not shown, he should be aware the tire will most likely need to be "stretched" on the rim for proper bulge-to-bulge specs. For example, the 225mm tire shown is recommended to be installed on a 7" rim. By using an 8" wide rim, the distance between the outer tire bulge and the outer wheel surface is actually decreased, making the overall bulge-to-bulge narrower. While some people may not like the appearance of this (tire sidewall flush with wheel), it provides very crisp steering response.  
  
Rear bulge spec should never be more than 69-1/2" with or without fender skirt. Front bulge dimensions will change over time, and are somewhat conservative right now until we get more information from customers.
  
3. Pinchweld: The pinchweld is 1/4" above the frame bottom, front to back. The stock chassis hung 1"+ at the rear, less at the front. This chassis will almost be invisible.
  
4. Springs/Shocks/Roll Bars: Rear shocks will be 5205 with poly bushings and should use the lowest C/O stud hole on the axle housing. Front will be 5205 with bearings. Use the same spring rates as the Tri-5. Front anti-roll bar will be 7/8" with a 3/4" rear for now. The front bar will potentially increase to 1".
  
5. Trans X-Members: The same transmission crossmembers will be used on this chassis as used on the Tri-5.

6. Core Support: A 1/4" spacer may be required for later models at the core support.
7. Hardtop/Convertible/Sport Coupe body mounts: These models appear to have an extra mount, much like the Tri-5. In the meantime, all chassis will have this mount. When possible, have the customer count body mounts, or possibly circle on the faxed drawing which mounts his vehicle has. We need more data concerning this subject.
8. Special Note Concerning 1952 Bodies: These bodies will have the rear wheel approximately 1/2" forward in the wheel opening, as per stock. Other years should be centered.
9. Sheet Metal Cutting: All cars will require pockets to be cut and patched just above the coilovers regardless of frame width (patch panels will be provided). Narrow (minitub) frames will require more extensive tin removal. Some cars may have the floorboard contact the center frame crossmember depending on body sag; if this is the case, a thin strip of rubber between floor and crossmember will eliminate squeeks.

<b>Alignment Specifications</b>	
Toe	0-1/16" Total (in)
Camber	-0.5°
Caster	+6° to +6.5°

**Notes:**

1. Toe specs assume a 25" to 26" diameter tire.
2. If a customer wants a more aggressive alignment specification, use 0" to 1/32" toe out and +6° to +7° caster. Camber specs are best determined by the tire manufacturer; however, our IFS is capable of running as much negative camber as any tire will need by removing the large (thick) shim.