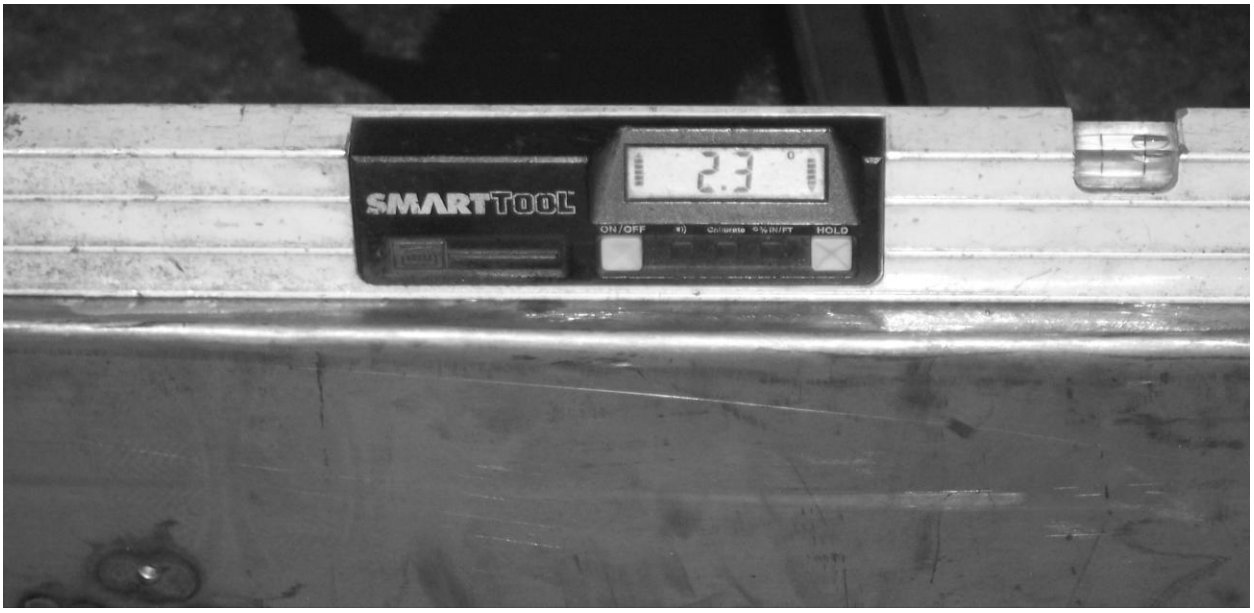
Hot Rod innovators FAT MAN FABRICATION by SOUTHERN Rods & Parts

MUSTANG II STAGE 2 & 4 IFS INSTALLATION INSTRUCTIONS

We are following along as a ’34 Ford receives our Mustang II IFS kit. Every kit appears just a little bit different due to the particular frame shape and dimension, but the installation procedure is always the same. We hope these photos will help make the written instructions more clear. We also stand ready to assist you in any way, should you need more help…please don’t hesitate to call!

Step 2 Shows our Install Shop Foreman and a customer setting the frame on stands, at the 2-3 degree forward rake we suggest. Note that the level is placed in the “belly” of the frame, about where the center post would be on a 4 door sedan.

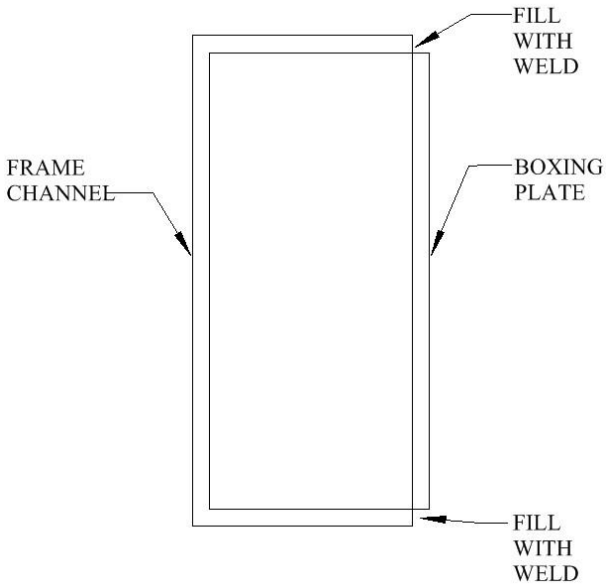
Front of frame is to the left in this photo, setting the frame on a forward rake to simulate the finished stance



Step 3 Marking the front axle centerline. In this case, see the vertical line thru the bolt hole.

Step 5 This photo is actually showing us relocating the radiator mounts (which were supplied in the kit for this application) using the measurements we made BEFORE removing the original mounts.

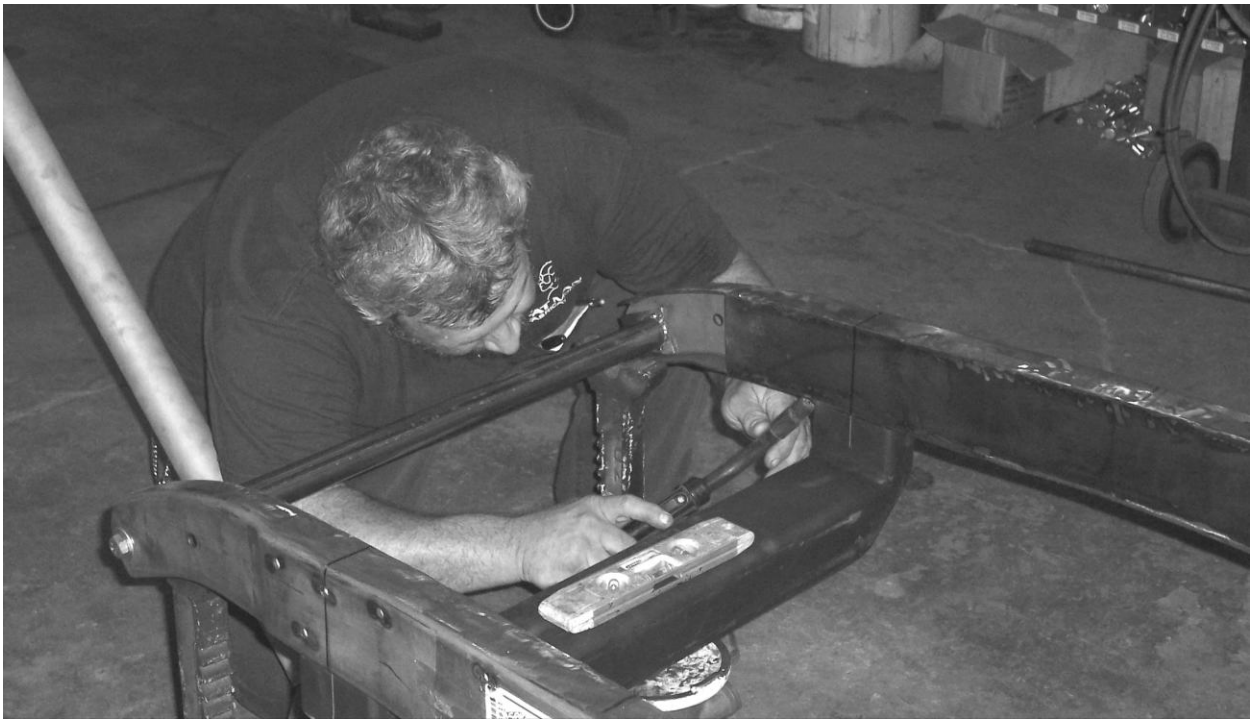
Step 7 Has you boxing the original frame, which is the hot rodder's term for adding a fourth, inside wall to a frame that does not have one. Since cars like 37-54 Chevys and 41-48 Fords already are factory boxed, this step will be unnecessary. You can see by the photo above that this 33-34 Ford example has been boxed per the instructions. We do not supply boxing plates, since the reality is that frames differ enough that no one pattern will fit all frames properly, and we would not want to sell you an ill fitting part. You will want to obtain some 1/8" or 3/16" steel plate, tall enough to cover the frame, and long enough to carry the boxing thru the front radiator mount, and to a point just inside the firewall. An easy way to mark the boxing is to clamp it in place on the frame and then spray a little aerosol paint to mark the frame profile. The drawing below explains that you must construct the joint in a way that allows the weld to fill the corner gaps, allowing the weld the be ground for a nice radius without removing all the weld.



Step 8 Has us installing the lower crossmember. Remember that in Step 2 we set the frame on a 2-3 degree forward rake. Now we set the new crossmember at zero degees, cross check for centering, and then finally tack, then weld it in place.

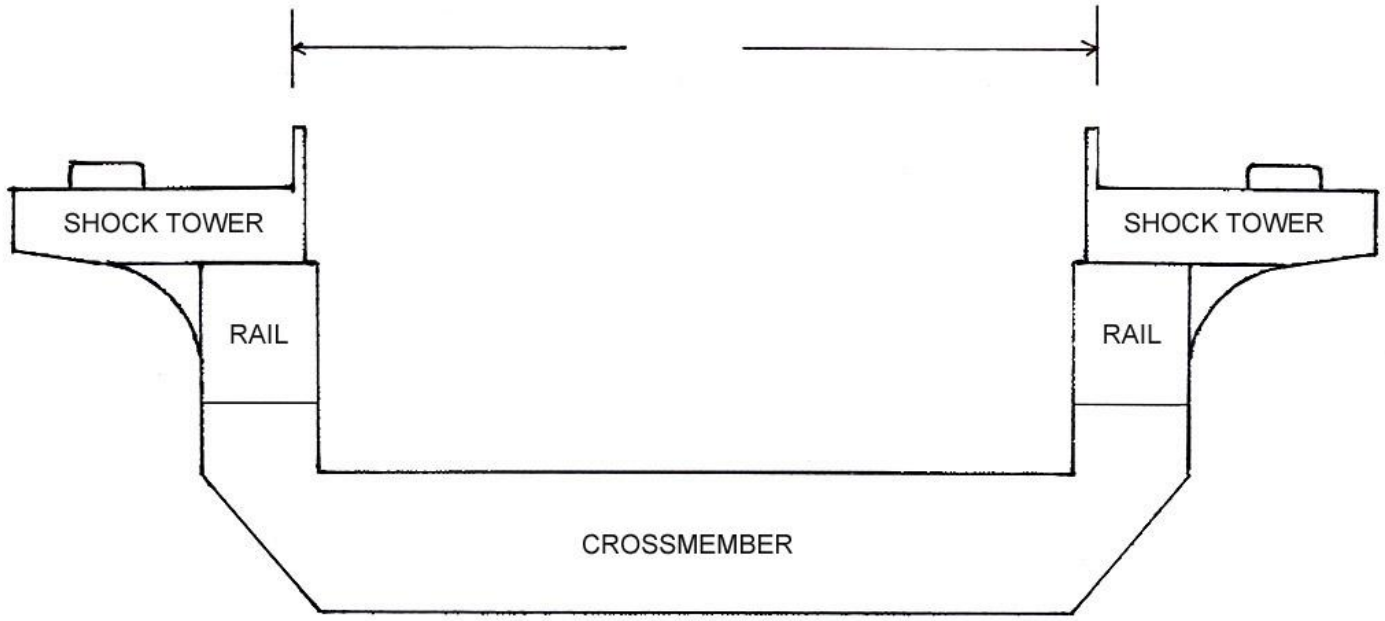
Cross measuring the center the crossmember


TOOLS
MOTORsports
#11 PIGEON FORGE TENNESSEE



Step 9: The fitting of the shock tower to the frame rail continues as shown in steps 10 and 11. The fore and aft placement of the shock tower as shown in the diagram on page 9 is more important than ever since the new shim type alignment system will not allow as much caster movement as the slot style adjustment did. To repeat; DO NOT SET THE UPPER SHOCK MOUNT HOLE DIRECTLY OVER THE AXLE CENTERLINE. By following the illustrations and instructions correctly it will be about 3/16" behind the axle centerline to preset some caster.

This measurement written in below is to the OUTSIDE of the vertical camber plates the drawing.

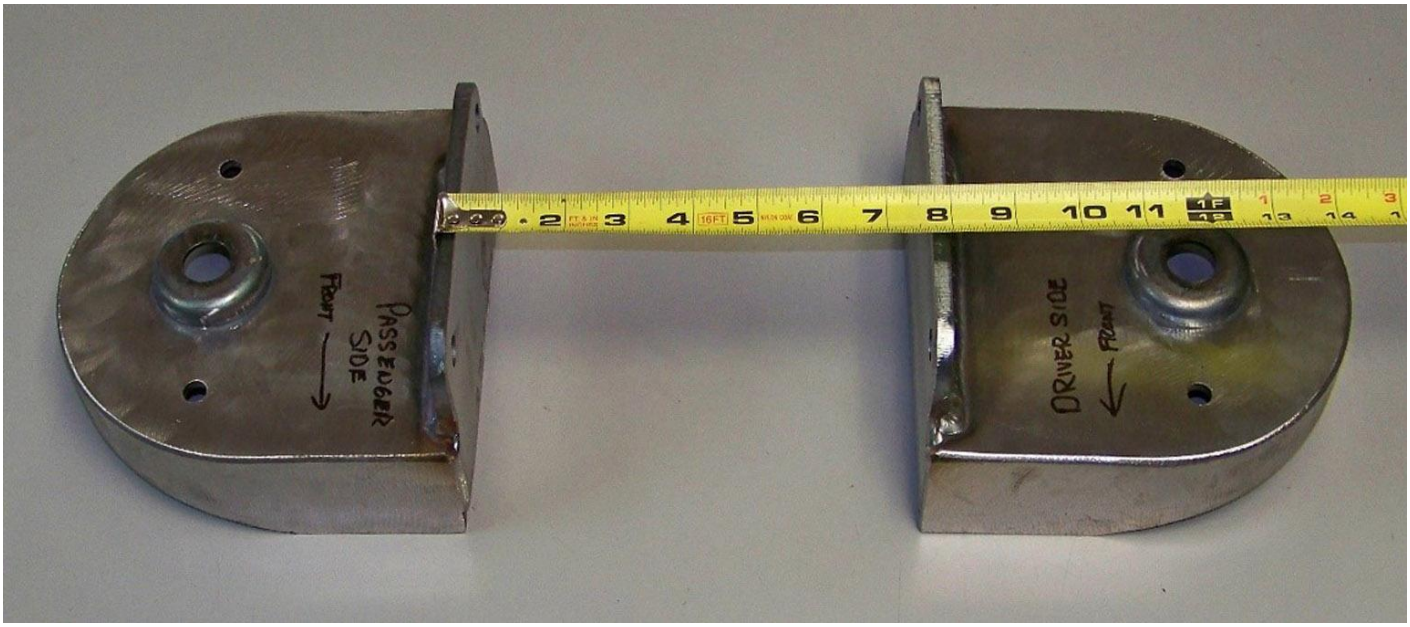


The upper control arm will now be mounted to that vertical chamber plate using the supplied 1/2" bolts, washers, and nyloc nuts. We never want to run out of adjustment so we have supplied three washers per bolt to be used outboard of the camber plate for a beginning alignment setting, with the upper control arm shaft then added outboard of the washers. We then anticipate your alignment shop to add or subtract normal drop in alignment shims to arrive at the specifications listed below.

Mustang II alignment specs are as follows:

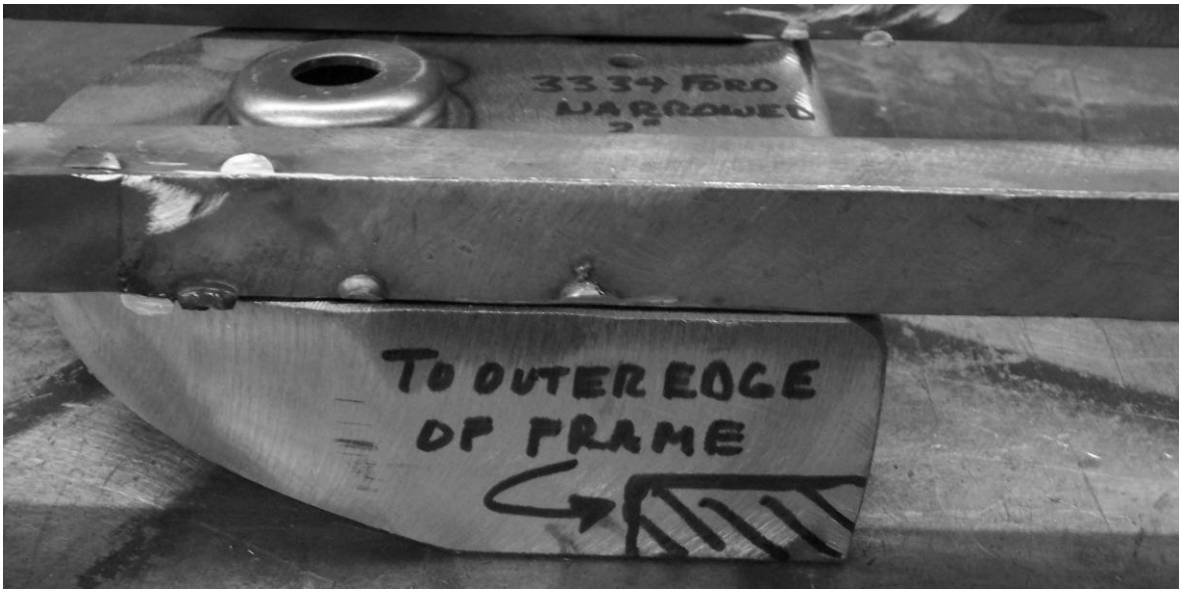
Camber +1/2 degree
Caster +1/2 to +1 degree (manual steering)
Caster +3-1/2 to +4 degrees (power steering)
Toe -1/8"

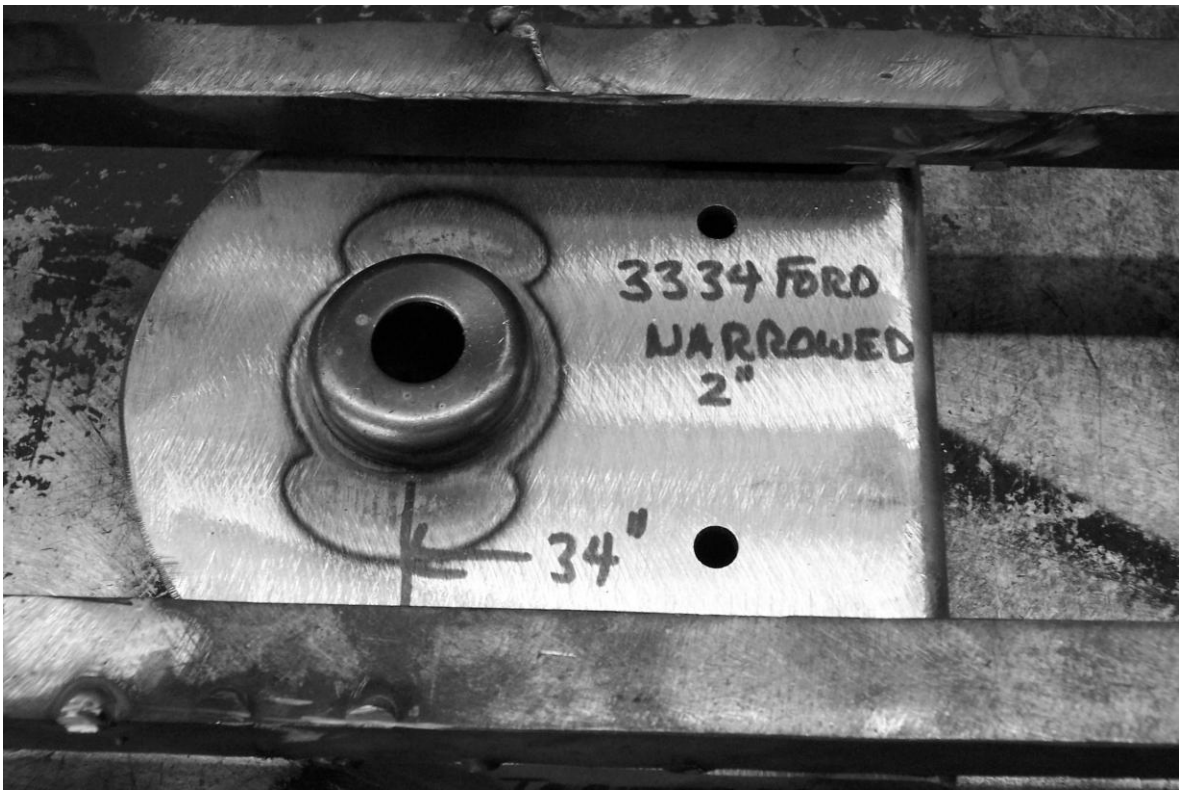
Please be sure to provide those recommended specs to the alignment shop as they generally will not see these instructions and will use OEM Mustang II specs, which do not call for enough positive caster for the improved road feel that our specs provide.

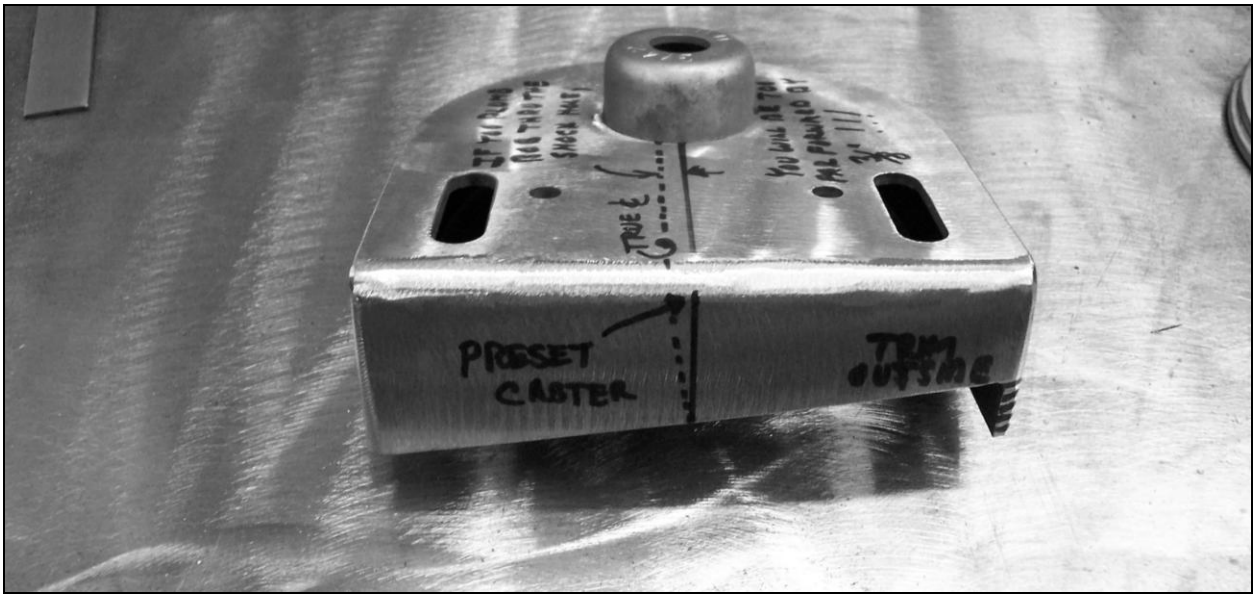


NOTE: The above photo is a visual aid ONLY. DO NOT place your camber plates 8" apart!

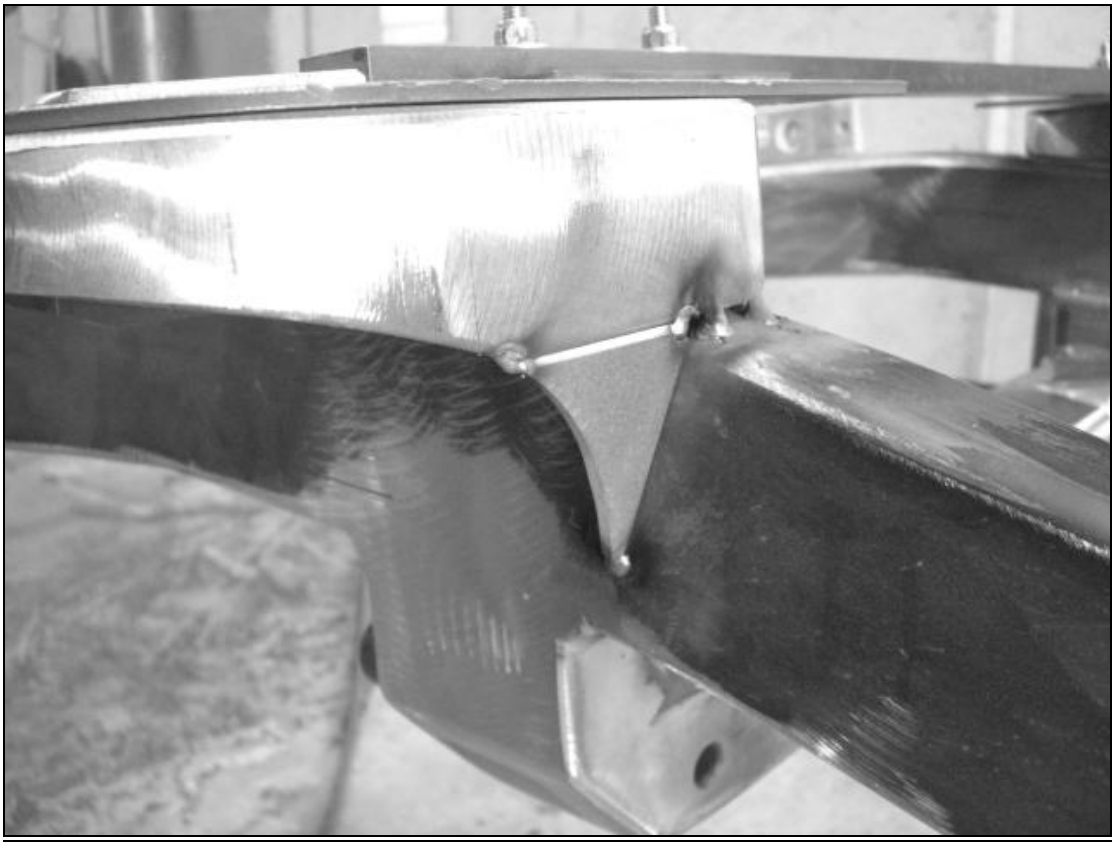
Step 10 These photos illustrate setting up and trimming the shock towers. The same info is repeated in the drawings on the bottom of the third page of the primary instruction sheet, just below Step 16.




3334 FORD
NARROWED
2"
34"


PRESET
CASTER

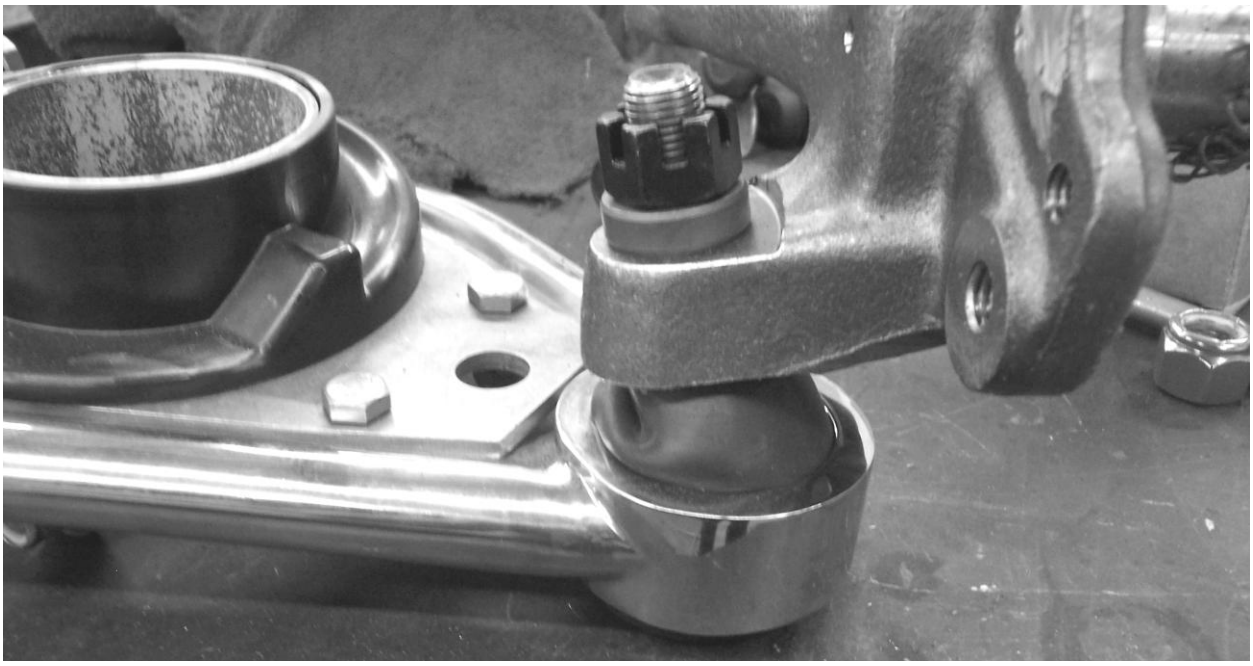
Step 11 We are finalizing the shock tower installation with the addition of the gussets.



Your suspension can now be finish assembled on the chassis, following the various instruction sheets which are specific to the control arms, brakes, etc. The rack and pinion will have its mounting bushings inside the rack box, with those bushings on the tie rods. The bushings install with the flange to the rear, against the crossmember. The easiest way to get them in place is to pull out the inner steel sleeve from the rubber bushing first. Then tap the rubber into the rack body, finally tapping the steel sleeve into place.

There are a couple other things installers often seem to miss when reading the instructions. With ECI Chevy pattern disc brake kits, the instruction tell you that the GM bearing races must be removed, and the races packed with the supplied A-12 and A-13 bearings installed. If you don't, the rotor will sit too far out on the spindle, and the cotter pin hole will not be accessible.

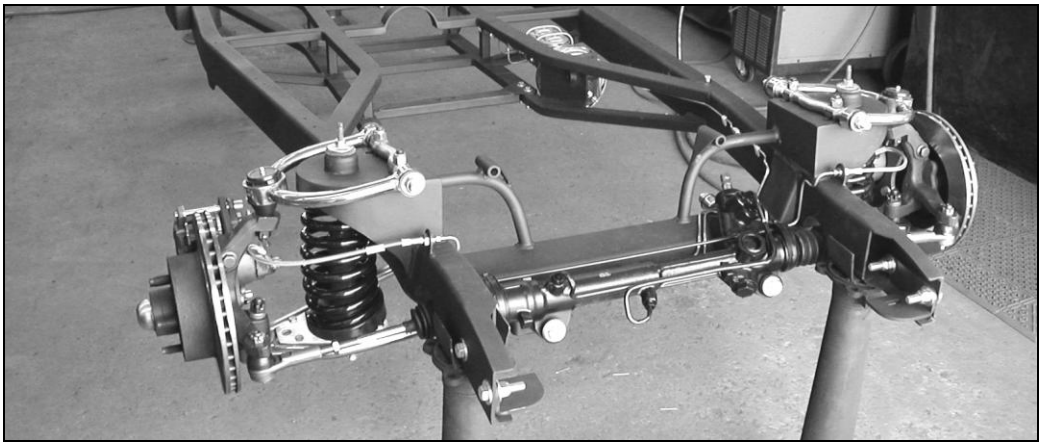
The control arm instructions explain that the lower ball joint requires a spacer we supply that raises the castle nut enough so that the nut can be securely tightened against the lower ball joint boss on the spindle.



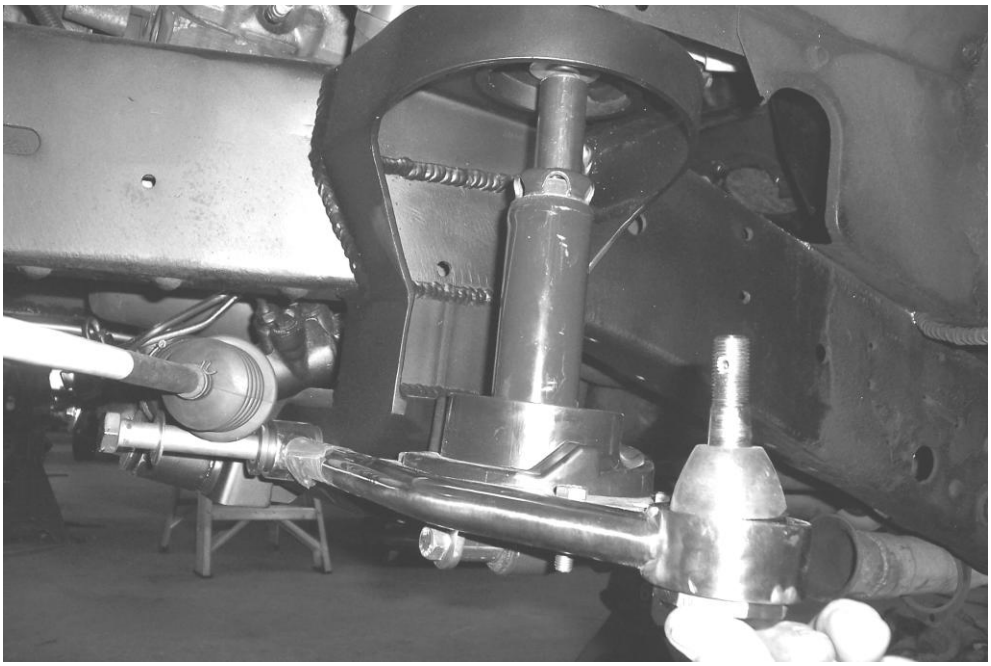
Please also note in the same photo above that the molded urethane lower spring seat sits on the arm as pictured. The cut, open wound end of the coil spring stops against the small "wedge" you see in the photo, that cut end goes outboard, toward the lower ball joint. The additional 5/8 hole you see on the plate is for the sway bar link, if used.

Rack bushings shipped on the tie rod

Pull out the steel sleeve out of the bushing, push the rubber bushing into the rack, with the flange in the rear side, facing the crossmember, then tap in the steel sleeve

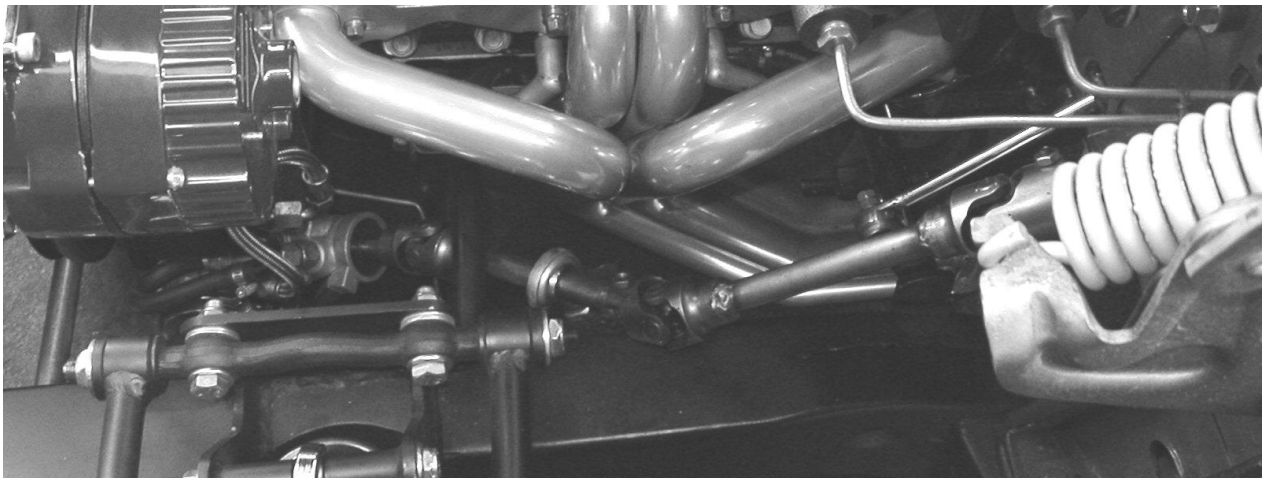


This photo shows the front suspension installed on a 35-40 Ford frame, including the springs. Since you cannot possibly know exactly how much spring you will need until 100% of the cars weight is in place, we have supplied you with simple shock tube spacers for mock up. These spacers are described in more detail in their own instruction sheet. They serve to convert the collapsible shock absorbers to a solid strut which will keep the suspension at proper ride height (the lower control arms level). Two large friends standing on the crossmember just will not serve well to approximate front end loading. Later, when all the weight is in place, the springs can be installed and trimmed as necessary.



Always use a “cold” method to trim the springs, such as an abrasive cut off tool. Torches and Plasma cutters induce softening and damaging the spring due to the heat used. Figure that each ½ coil will lower the car about 1”. You can cut up to 1 ½ coils without harm. In our shop, with a complete car, we use a “rule of thumb” where we jack up the car at the lower ball joint. If the car just comes off the jack stand you placed under the frame, behind the front wheel, as the lower arm comes to level, the spring trim is about right. We leave the height about 1” higher than the final desired height since the springs will settle that much as they break in.

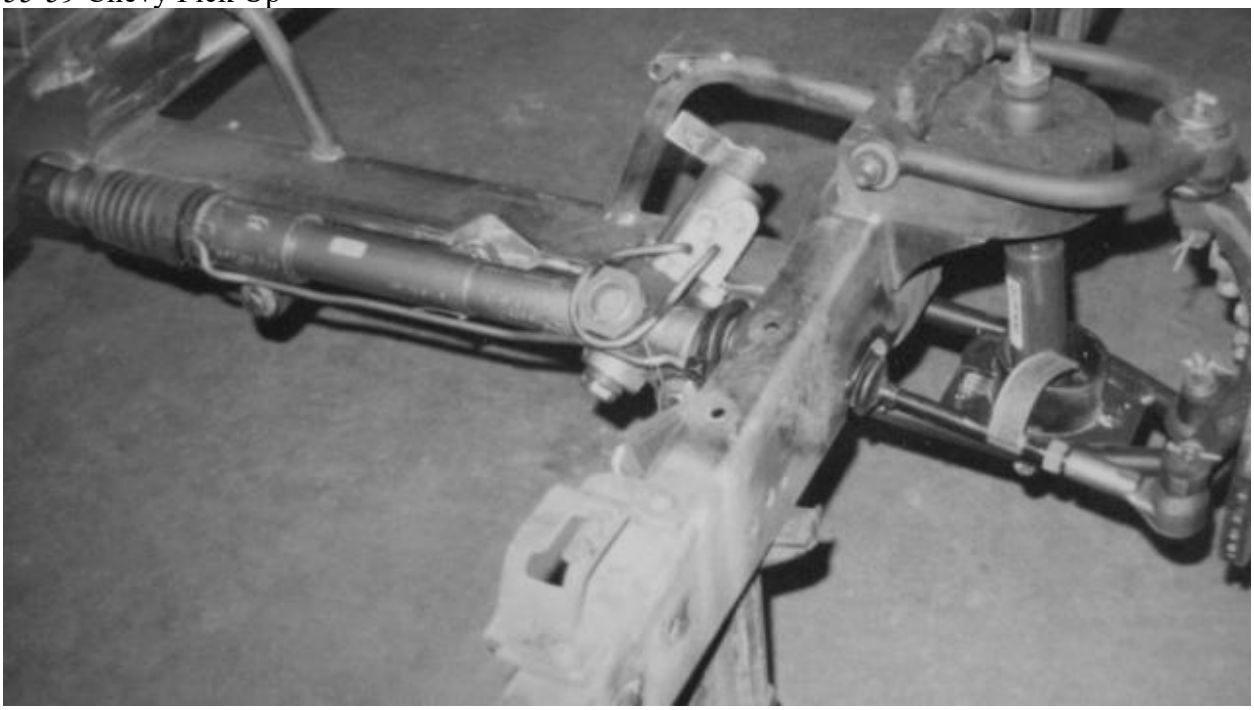
Step 12 A steering hookup example is shown below. It shows a 69 Camaro stub with our Stage II coilover suspension, but again, the basic design is pretty universal. We have this as a kit, supplying the proper U joints, shafts, and center bearing.



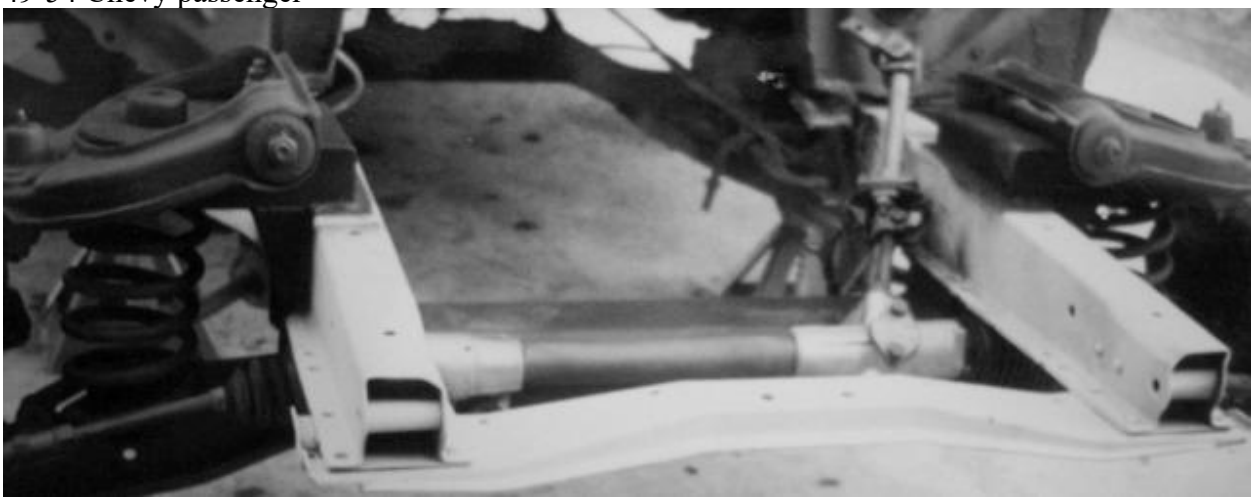
Step 13 deals with the different radiator mount arrangements. Below is a sampling of the different types.

These next five photos illustrate the easiest ones, where the stock radiator support is completely undisturbed by adding the Mustang II IFS kit. The mount is in a position where nothing interferes with using the stock mount.

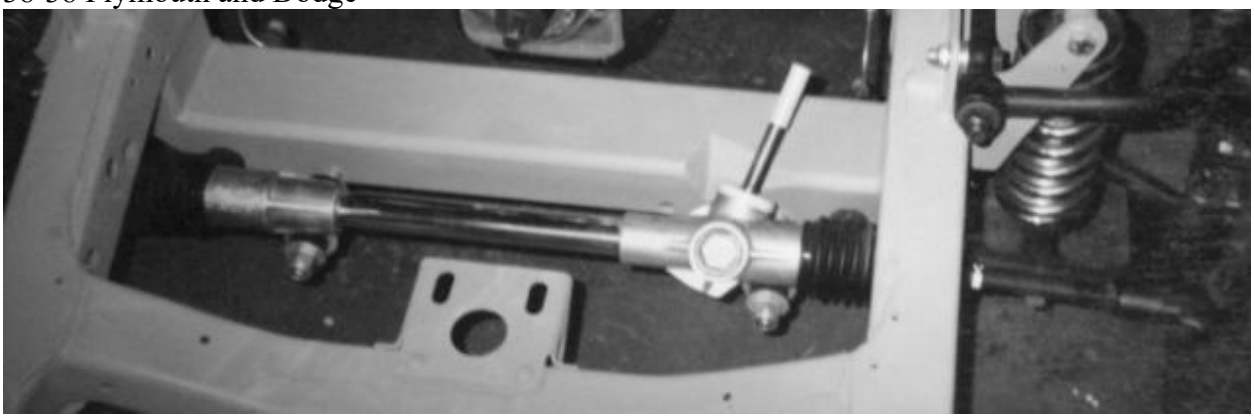
55-59 Chevy Pick Up



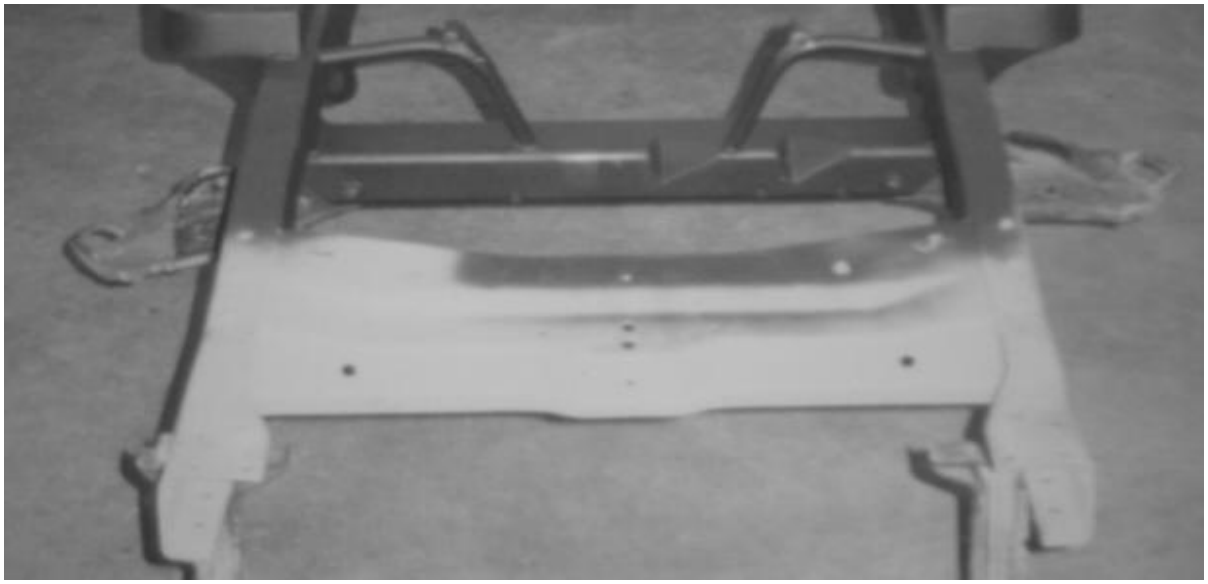
49-54 Chevy passenger



38-38 Plymouth and Dodge

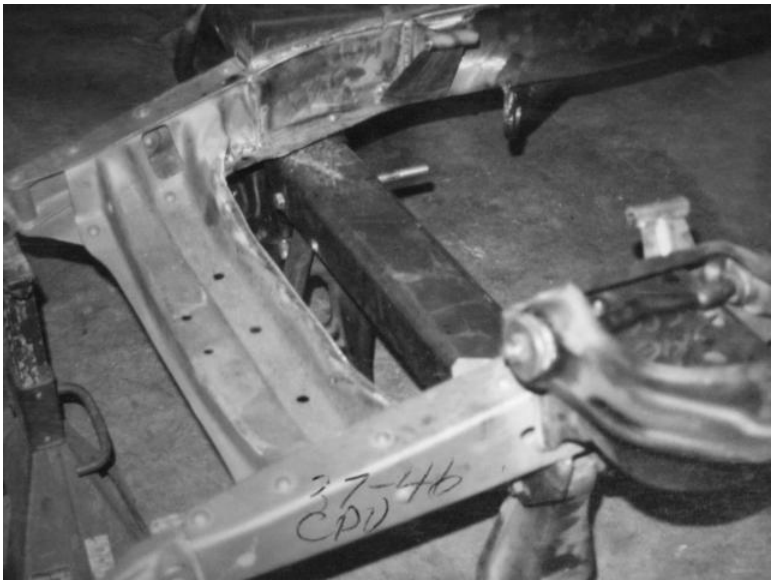


53-56 Ford Pick Up (the 48-52 F-1 are also OK as stock)

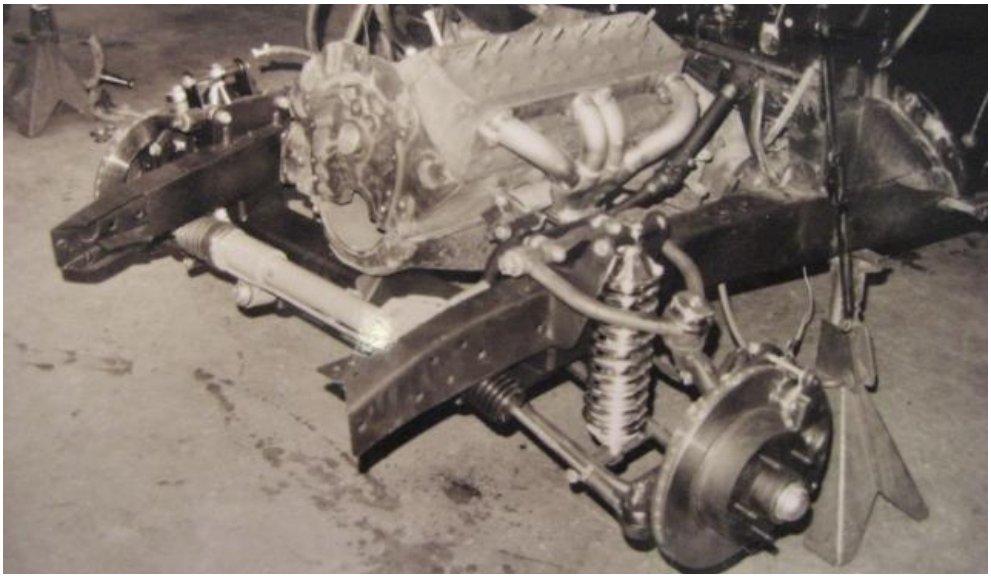


47-54 Chevy Pick Up below (yes! The famous Rod & Custom Dream Truck had a bad Camaro subframe installation replaced with our Mustang II IFS system!)

The next two applications can use their stock radiator mount, with a trim.



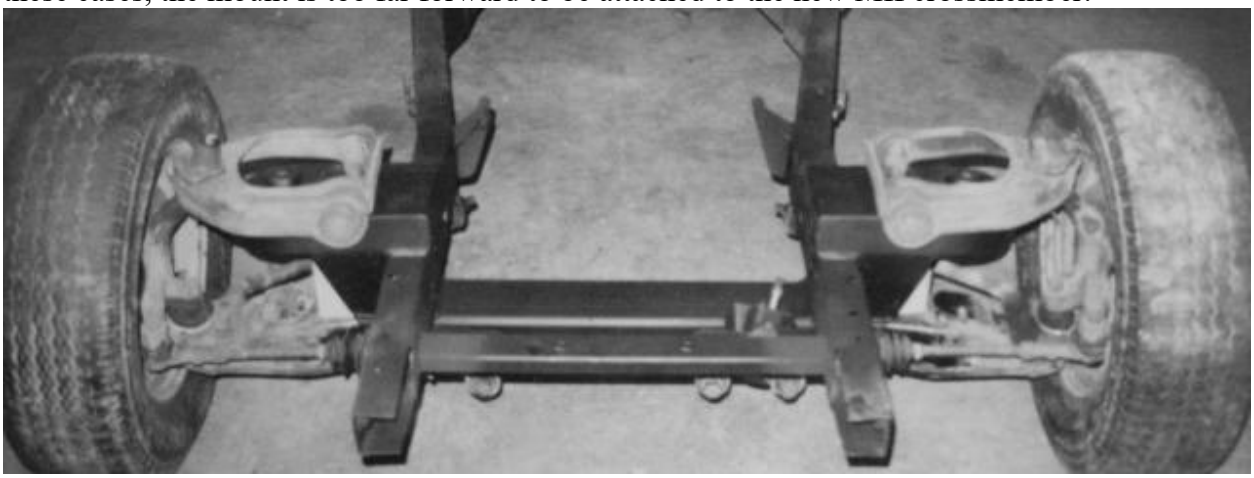
37-46 Chevy Pick Up


Humpy Wheeler's '37 Ford (of Charlotte Motor Speedway/Lowe's fame) 35-40 Fords can reinstall their original mounts, trimmed, and bolted back in the original rivet holes.

The next group uses a new radiator mount that we include with our MII IFS kit


This is typical of the 34-36 GM cars and trucks. We supply a 1 x 2 crossmember assembly for use on the 37-48 Chevy cars, replacing the original that leaves with the old crossmember.

The final style has the original radiator mount replaced with a length of 1 x 2 x .120 tubing. In these cases, the mount is too far forward to be attached to the new MII crossmember.



35-36 Chrysler, Dodge, Plymouth