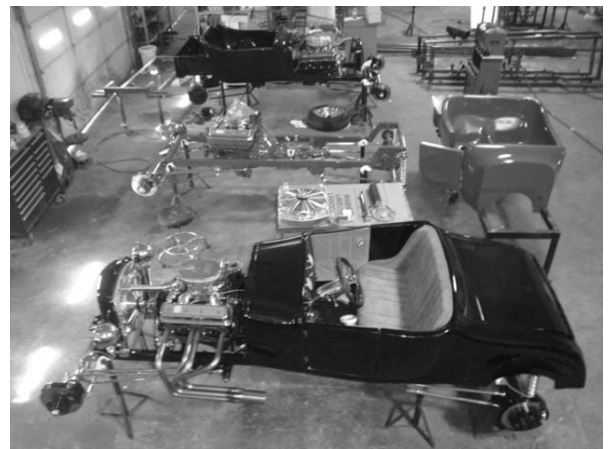
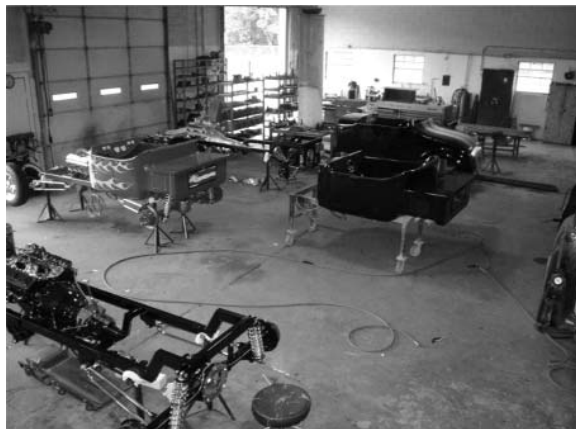
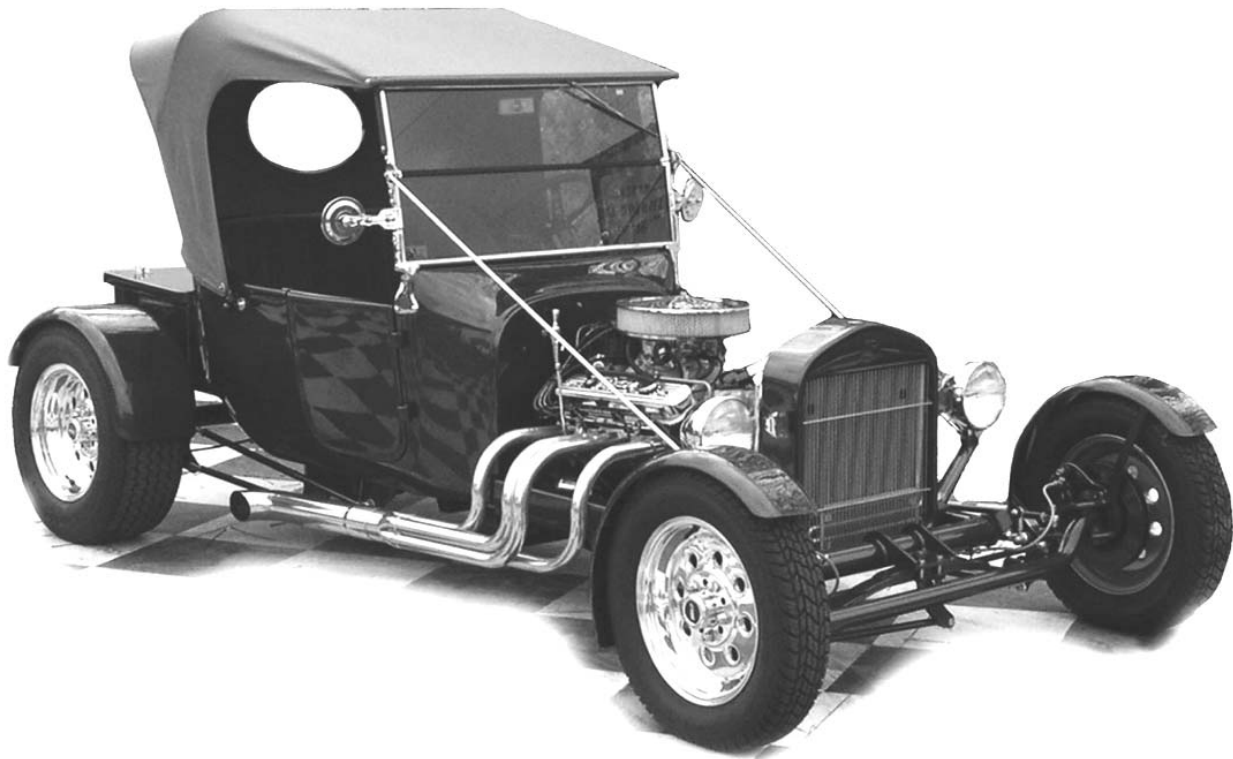




# ASSEMBLY MANUAL



Building a Spirit "T-Bucket" – Step by Step

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## ***Basic Tools Needed***

Drill with 5/8", 13/64" and 1/8" bits  
1/4 - 20 NC Tap  
Ratchet & Socket Set – 3/8" to 15/16"  
Open End Wrenches – 3/8" to 15/16"  
Allen Wrench Set  
Wheel Cylinder Hone  
Tubing Flaring Tool  
Tubing Cutter  
Wire Stripper  
Wire Crimping Tool  
Common Hand Tools

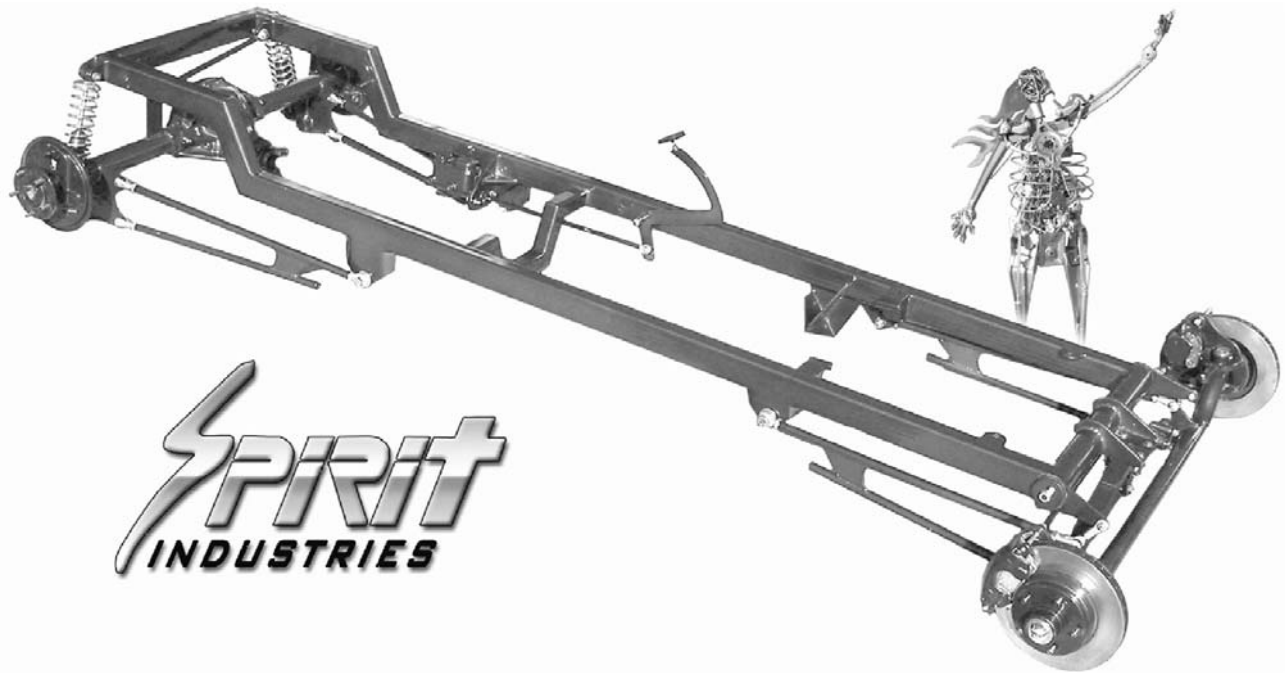
When building your bucket, remember there is more than one way to do it.

The chassis and basic design of a Spirit bucket is engineered for safety and simplicity. From that start, your imagination is your only limit. From drive train to paint scheme, you can style your bucket to match your personality.

It is our goal to see you through this project and help you accomplish the task of building the T bucket of your dreams.

If you have any questions feel free to call of at 1-870-425-5900

# Chassis Build



***The chassis is easily assembled in just a few hours.***

Before you begin building your kit, it's best to lay out all of the parts and familiarize yourself with the pieces.



**NOTE:** We recommend you pre-assemble your chassis prior to prepping and painting.



***We recomend using Loc-Tite on all nut-bolt combinatins.***



Spirit's grade 8 bolt kit are in labled packages.

## Frame Preparation



***Set the frame on jack stands and drill all necessary holes.***

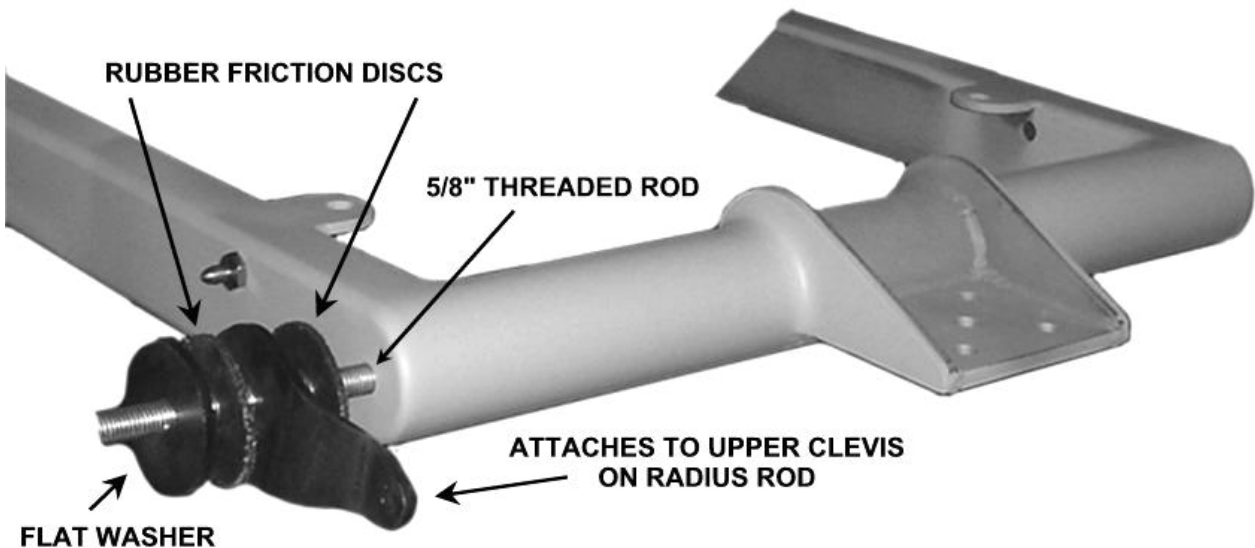
Holes to be drilled include 5/8" hole in front cross-member for threaded rod (front friction shocks), all thru-the-frame fittings, brake lines, wiring and ground strap.



**NOTE:** Thru-the-frame brake fittings require the holes to be drilled in the upper 1/3 portion of the frame to prevent interference with the radius rod.

Drill a 5/8" hole through the center of both ends of the front crossmember.

Then, slide the threaded rod through the cross member and install the friction shock components onto the rod..

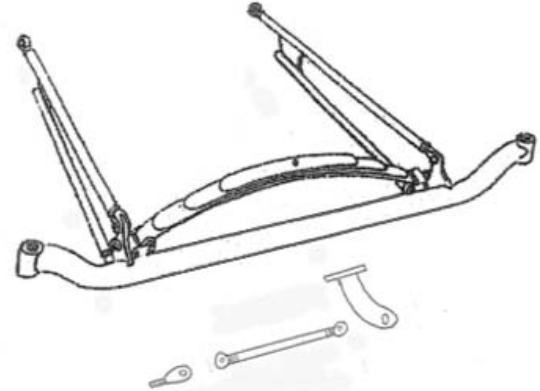
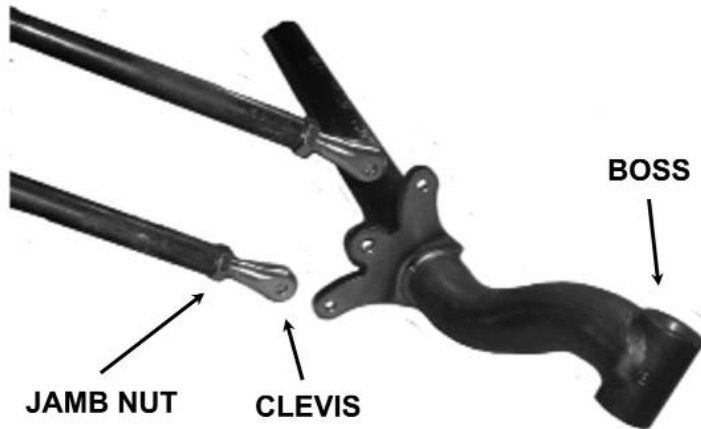


# Front Axle Assembly

***Be sure to use jamb nuts when installing clevises and rod ends into radius rods***

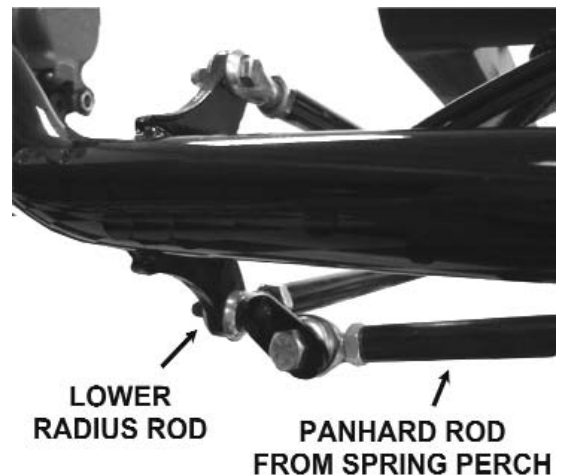
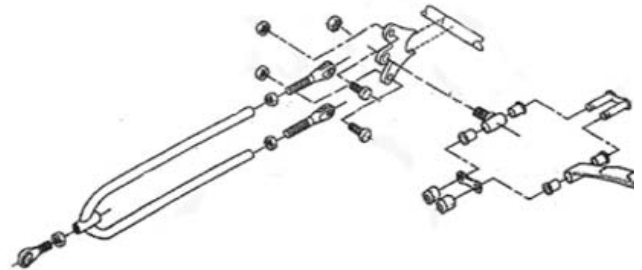
- 1.) Assemble axle on the floor with spring, shackle assemblies, and radius rods

**NOTE:** When installing the shackle bolts into the shackle and spring make sure the nuts are towards the front of the car. This gives you maximum turning radius. After lock nuts are tight cut off excess bolt flush to nut.



When attaching the radius rods to the front axle, use longer bolts through the upper clevis. These bolts will also be used to attach the axle to the friction shock.

**NOTE:** We recommend 5° - 7° positive caster. Camber is preset into the axle.



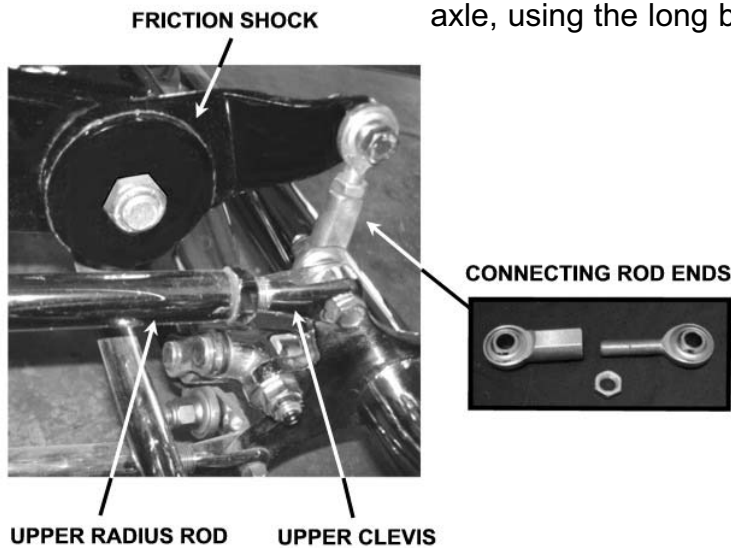
- 2.) After connecting the radius rods to the axle, attach the other end of the radius rods to the mounting brackets on the frame. Then lift the spring/axle assembly into the spring perch.

Using the panhard bracket, sandwich the spring between the bracket and the perch, and bolt together.

Attach the lower clevis to the right front radius rod to the axle using the bracket for the panhard rod.

***Be sure to use jamb nuts when installing clevises and rod ends into radius rods. Routinely check bolt tightness on all suspension parts.***

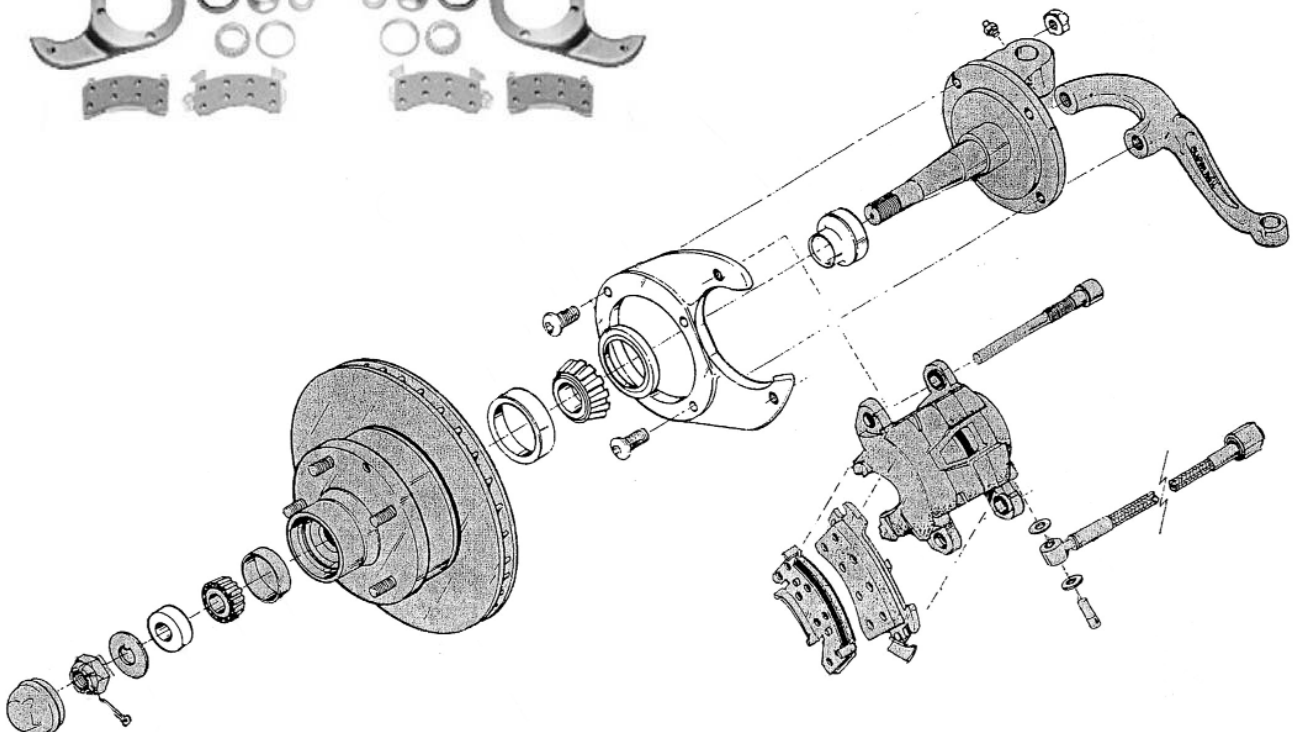
The connecting rod ends connect the friction shock to the axle, using the long bolt in the upper radius rod clevis.

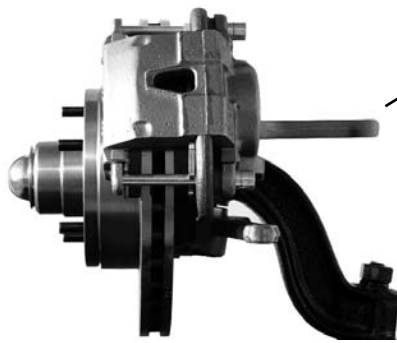


***Build front spindle/brake assemblies on the bench, then install on the axle.***

***Inner race must be replaced with the ones included in the kit.***

When assembling front hub assembly, make sure to use Loc-Tite on all nuts and bolts.



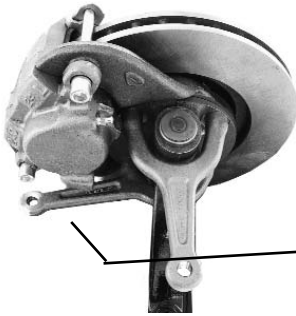


Slingshot Arm is located on top

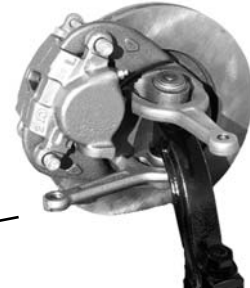
***Install slingshot arm using the 2 upper bolt holes in spindle on DRIVER'S SIDE ONLY.***



***Make sure the caliper bracket is in place on spindle before bolting on steering arms.***

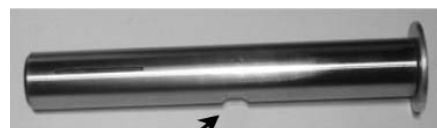


Steering Arm is located on bottom



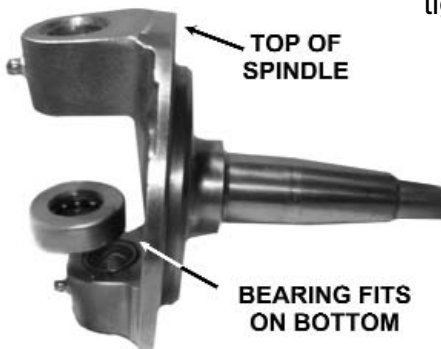
The hole in the axle boss may need to be honed to fit the king pin. If so, use a brake cylinder hone until the king pin barely slides into boss.

### ***Kingpin / Spindle Assy.***



SQUARE NOTCH FOR SET-SCREW

Make sure to face the flat spot on the king pin towards the set screw in the axle, prior to tightening the set screw.



Be sure to place cup washer and felt washer on the kingpin prior to installation. Apply grease to kingpin before installing into the spindle.

***Be sure to use jamb nuts when installing clevises and rod ends into radius rods. Routinely check bolt tightness on all suspension parts.***

When installing rear differential, first bolt radius rods to brackets on rear end.

With the differential on the floor at the rear of the car, attach the other end of each radius rod to the brackets on frame.

Use a floor jack to lift the differential into position and attach the shocks.



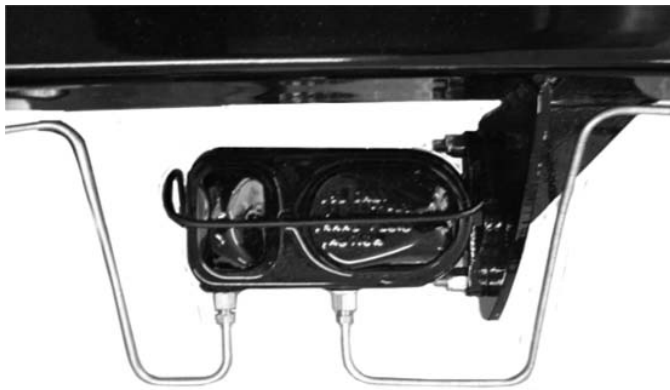
Rear panhard rod attaches to both rearend and frame using 1/2" bolts and nuts. We recommend using Loc-Tite on all nut & bolt combinations.

Once the rearend is hung, the differential can be centered by twisting the panhard rod.

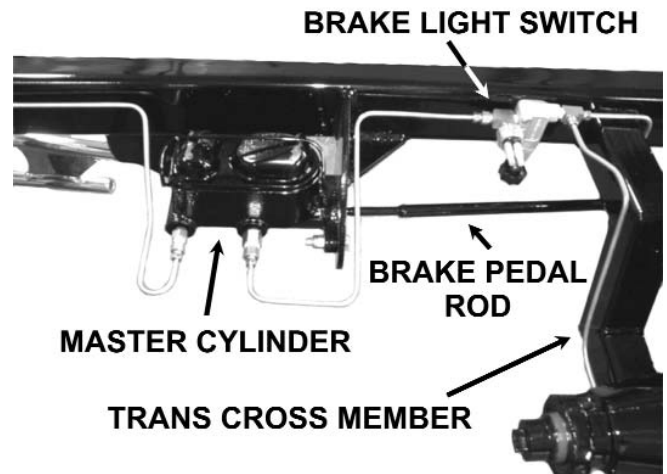




***Master cylinder bolts to bracket on frame.***



**TOP VIEW OF MASTER CYLINDER**



Brake line bracket on frame for attaching and securing fittings.



**Brake Pedal Assembly**

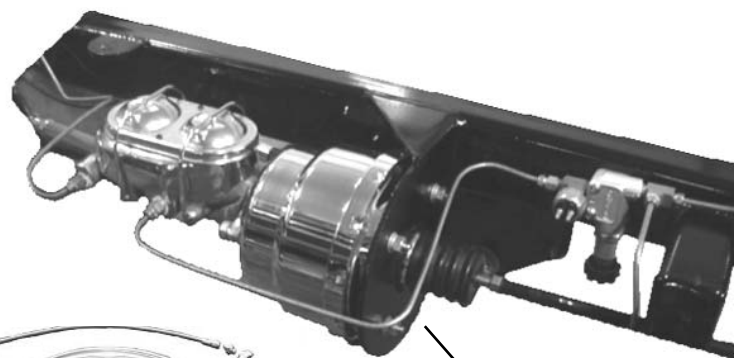


The brake pressure switch is installed in the line on the back side of the proportioning valve.

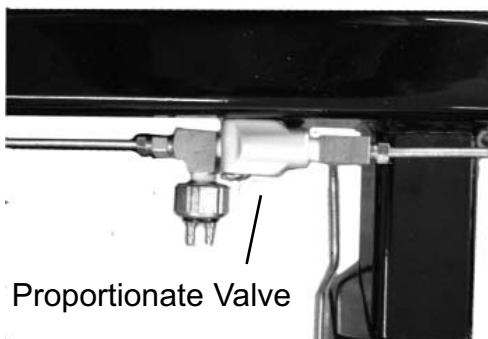
**Proportioning Valve** is used to adjust the brakes so that the front brakes do not lock up before the rear brakes.

Drill 13/64 hole and tap with 1/4 - 20 NC, and use 2" bolt to hang proportionate valve.

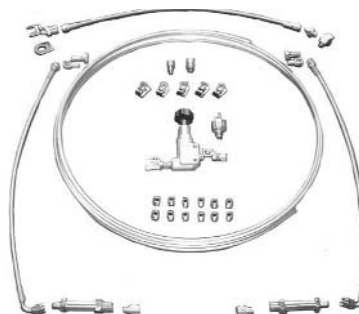
Brake pedal attaches to frame by sliding over the bolt welded into the frame on driver's side. When installing pedal, make sure you double nut it to keep it on and use grease on shaft.



**Optional Power Brake Booster**



**Proportionate Valve**



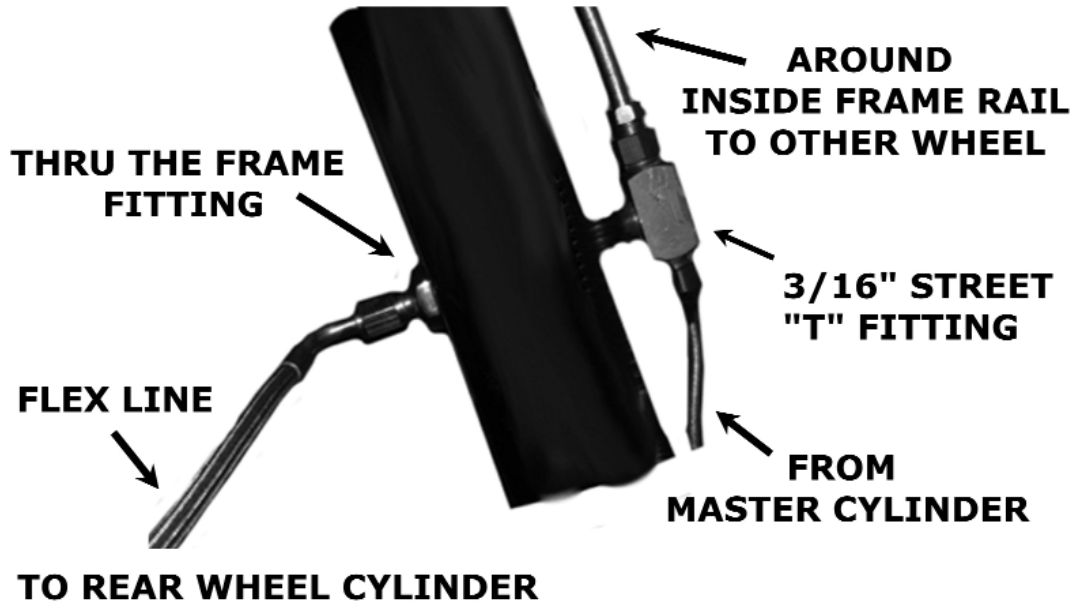
Brake kit includes all necessary fittings. Lines require cutting, and flaring tool is required to install fittings on lines.

## BRAKE LINES

### Rear thru-the-frame setup

This is just an example of one way to run brake lines.

There is no real standard. You can do a custom thru-the-frame installation if you'd like.

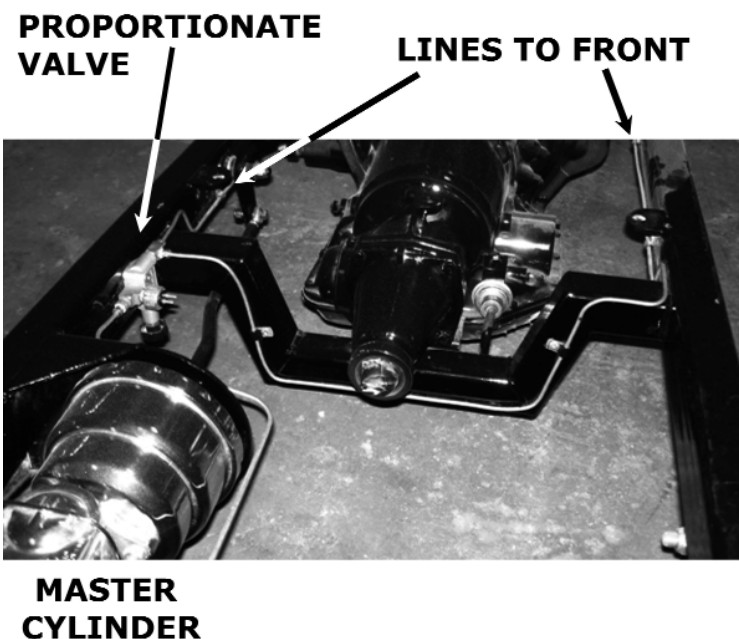


When running brake lines, you will need a tubing cutter and a flaring tool for the installation. Be careful not to "kink" the lines when making bends.

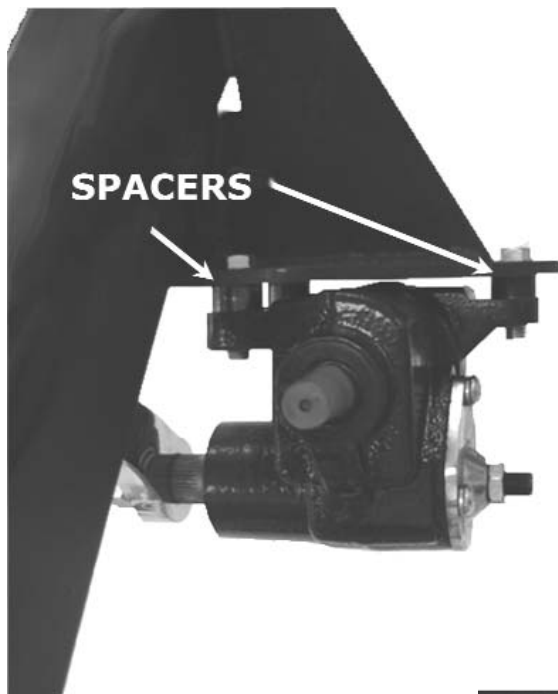
Lines coming off the brake pressure switch will split with a "T" fitting to run toward the front of the car. Install with c-clamps on transmission cross member, then run both sides to front and connect to thru-the-frame fittings.

Lines running to the rear will "T" at the thru-the-frame fitting on the line coming directly from the master cylinder. Continue from "T" fitting around the back of the car, bending and clamping the line to the frame. Connect to the thru-the-frame fitting on the rear passenger side of the car.

Connect steel braided brake lines to wheel cylinders and thru-the-frame fittings on all four wheels.



## Vega Steering Box



The Spirit frame is set up to use a Vega steering box. The steering box does NOT come standard with the Stage 3kit, but a Vega steering box can be purchased from Spirit, and includes the Grade 8 bolt kit with all bolts and spacers. A straight pitman does not work with the Spirit/Vega setup. Spirit's specially designed pitman arm is available in paint or chrome. See the catalog, or call for pricing.

The Vega steering box housing is rounded on the side that mounts to the welded frame bracket, so you must use spacers between the housing and the mounting bracket to get a good tight seat.

After mounting the Vega steering box, you will need to set the front-end alignment.

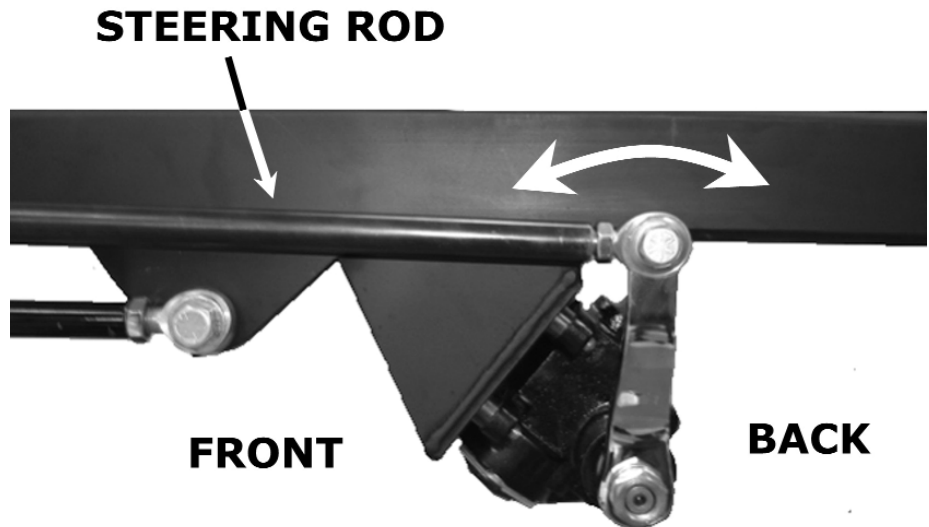
Before connecting the steering rod from the slingshot arm to the steering box, rotate the pitman arm back and forth all the way to the front and then all the way to the back in order to find the center of travel.

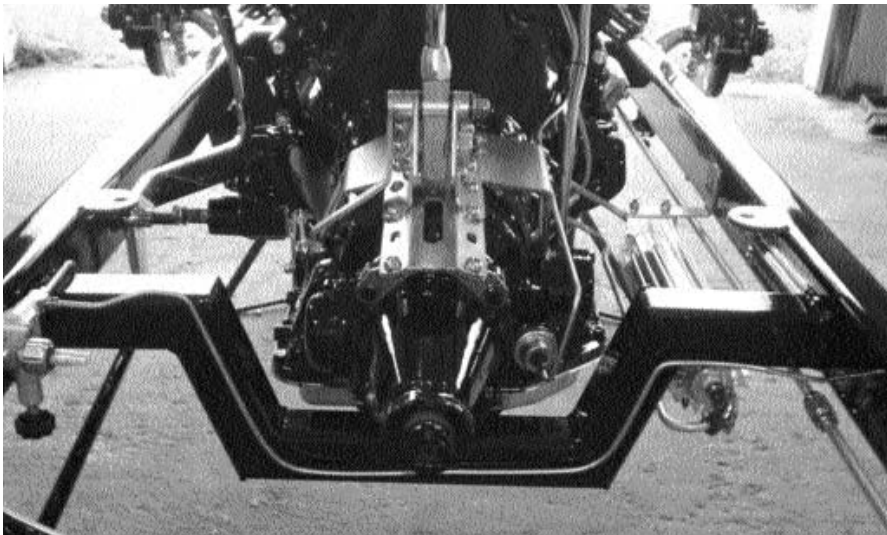
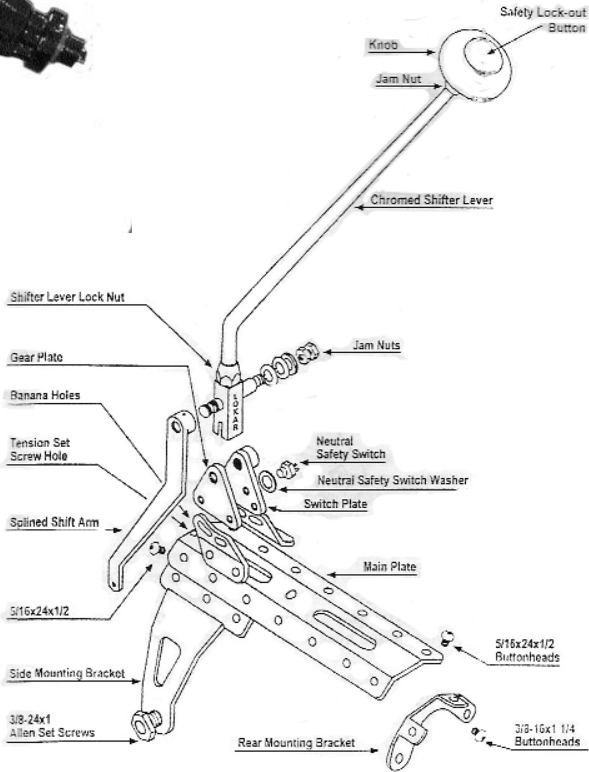
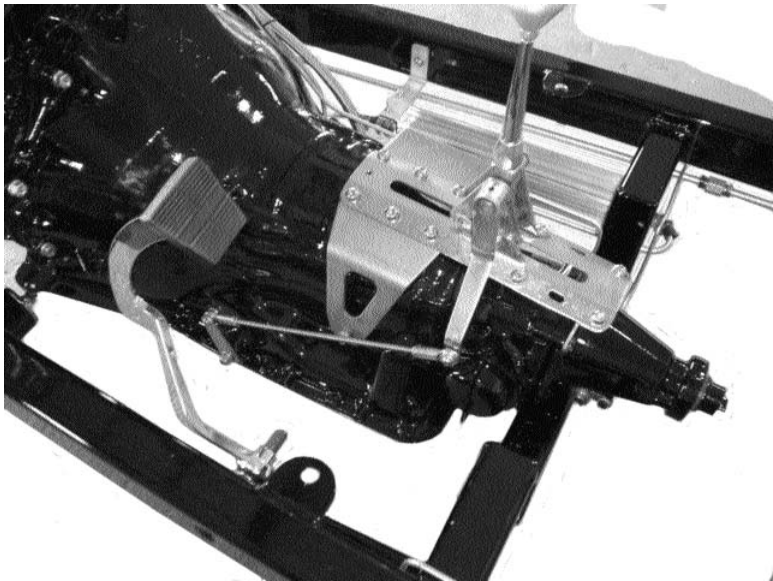
Next, align the spindles/rotors to point straight to the front as if traveling in a straight line.

Now, connect the steering rod from the slingshot arm to the steering box.

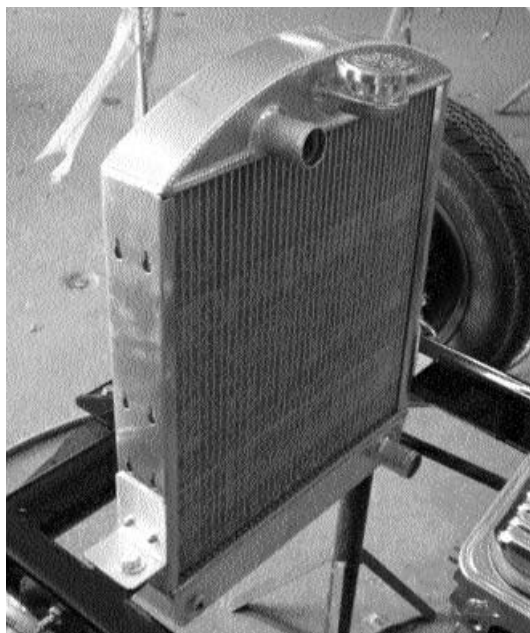
Minor adjustments may be required after installing your steering wheel.

**NOTE:** Set the toe-in to 1/8"

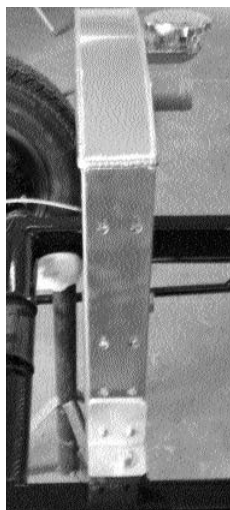




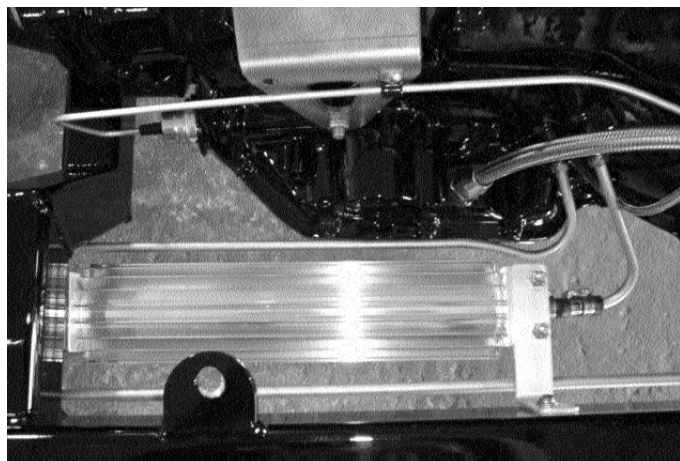
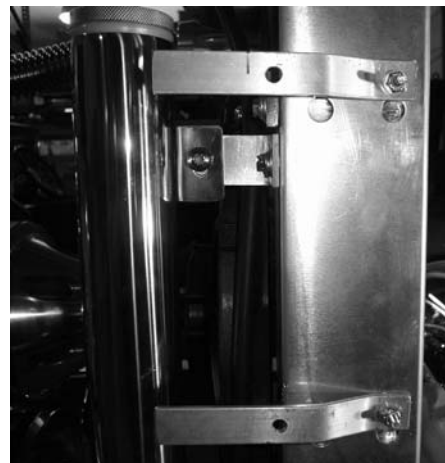
***Brass or copper radiators have internal transmission coolers.***



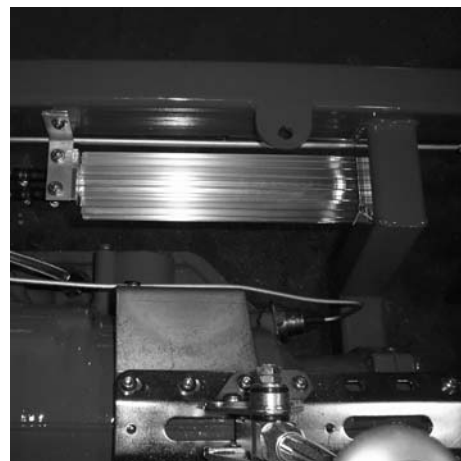
***The aluminum radiators have no transmission cooler and an external cooler is required.***



***A bracket must be made and attached to radiator to hold the grill shell in place.***



***Transmission cooler is mounted to frame below passenger seat.***



***When installing bed,  
make sure the area to  
be bonded is sanded  
with 80 grit sand paper.***



***Place bed into position,  
and tape in place.  
Make sure bottom of  
bed is parallel with  
bottom of bucket body.***



***Using a bedding material like  
Duraglass, attach bed to  
body from inside of the bed.***



***Fill gap on the outside  
between bed and body.  
Then lay a strip of  
fiberglass over seam.***

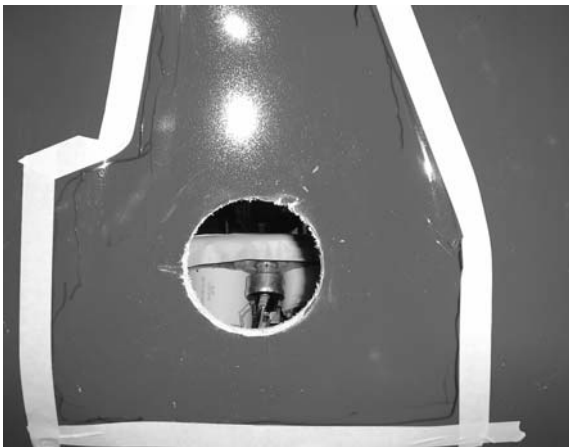




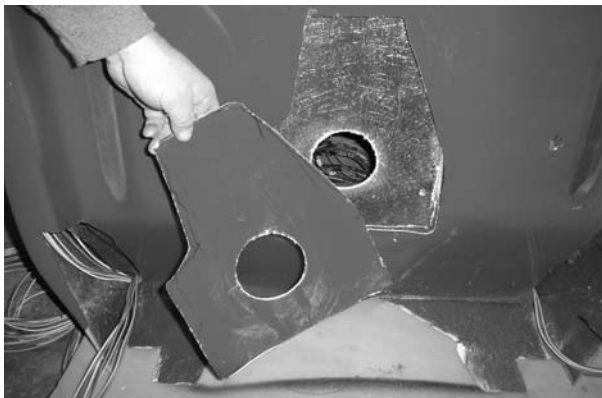
***Cut hole through both insert and floor in bucket for shifter.***



***Once body is installed on frame trim hole in insert to allow shifter to work properly.***

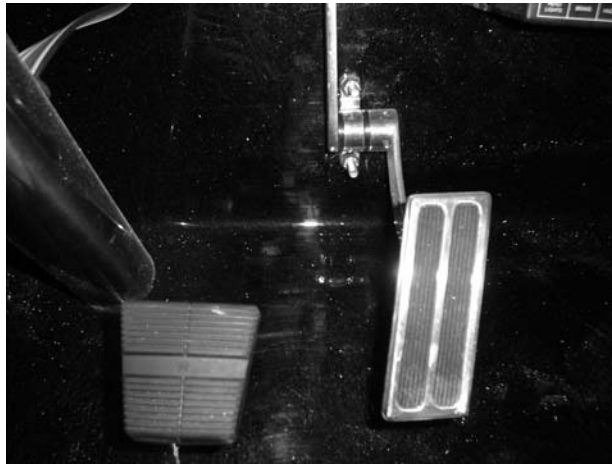


***Once shifter hole is located, cut out the floor in the bucket to allow room for shifter clearance and remove plywood from around cut away area.***

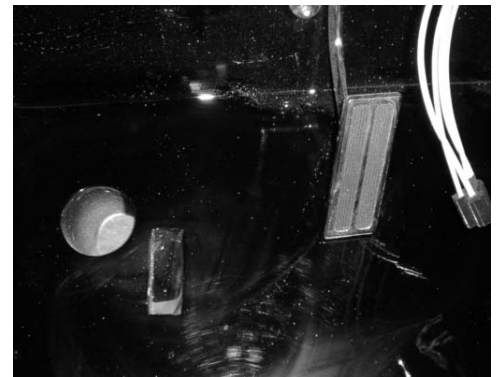


**DO NOT** cut through both layers of fiberglass when cutting floor to fit shifter. Leave the floor in the insert and cut only the floor on the bottom of the bucket.

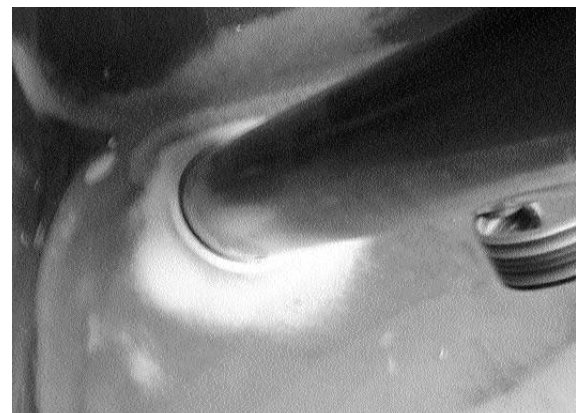
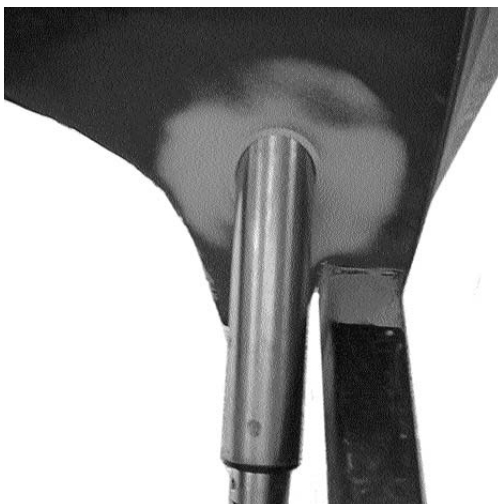
***Brake pedal comes up through the floor.***



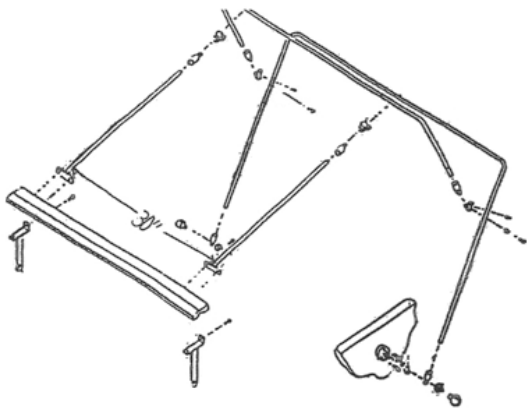
***Gas pedal mounts to the firewall on insert***



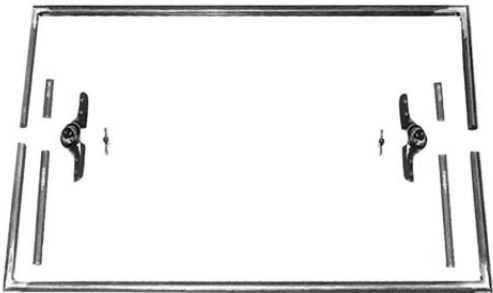
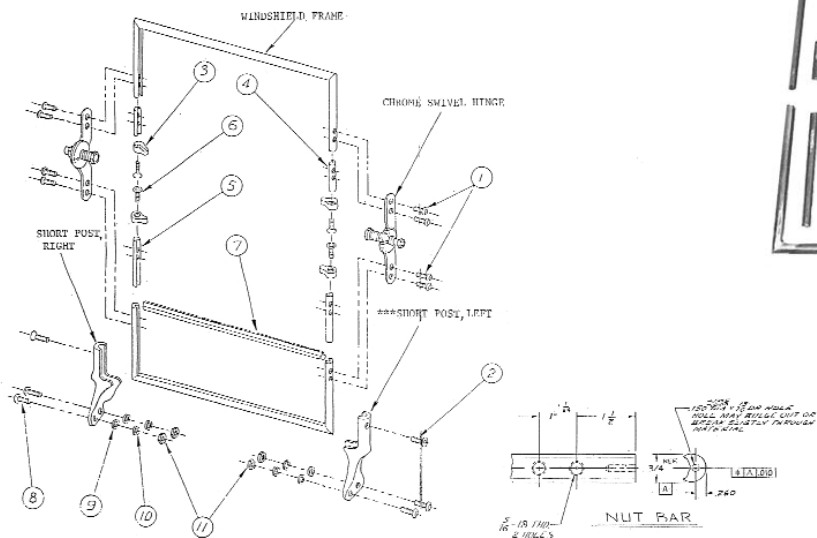
***A 2" I.D. PVC tube is installed through the floor for the steering column to slide through when being installed.***







***Assemble and pre-fit windshield before painting***





***Before starting to wire, it is easier if you decide where you want to run your wires and put them into looms before installing the fuse block.***



***Make sure to predrill all gauge holes before painting***



***Fuse block mounts under dash to the top of the insert. Use a piece of wood between insert and firewall to screw back of fuse panel to.***

