

6. Position the new frame rails in the chassis. The rear end will most likely be too long. Try to put the bend by the new firewall location. If the front of the frame does not clear the grillwork, shorten it. Be careful not to cut too much. The end of the frame must be at least 14 inches forward of the front spindle centerline to sit on the rack and pinion crossmember. The rails should be parallel at the correct width and centered in the frame. Measure diagonally to make sure the frame is square. Measure from the side of the frame to the body in several places to make sure the frame is centered in the body.

Use #4203 cage mount loops (purchased separately) to attach your existing cage side to the new frame without creating header clearance problems. Use whatever frame rake is necessary to attach the rear of the frame correctly, making sure you have enough ground clearance. The frame in the engine compartment should run up hill approximately 8 to 10 degrees.

7. Measure forward from the marks on the rocker panels that locate the front spindle line and draw a line across the floor (90 degrees to the car centerline) to represent the front spindle centerline. Use a large square or plumb bob to put a line on both sides of the new front frame rails, which will represent the front spindle centerline. All of your brackets will locate off of this line.

8. Install the forward and rear control arm mounts. Check the Assembly Drawing for their locations and angles. The angle of the brackets is determined by the angle of the control arm leading into them. For best results, position the brackets with the strut and control arms hanging in place. The centerline of the hole in the front control arm brackets must be even with the bottom of the rack and pinion crossmember. The front brackets will have to be trimmed to fit the crossmember correctly. The rear brackets just weld under the frame at their correct location.

9. Install the rack and pinion brackets to the crossmember at the correct location per the Assembly Drawing. The 15 degrees down angle on the bracket is necessary to position the rack and pinion at the correct height above the control arm. After the brackets are tacked in place, install a rack and pinion and measure the height distance from the center of the rack to the center of the hole in the forward control arm bracket. If the rack is not exactly 1 7/8 inches higher, rotate the angle on the rack mount bracket to set it correctly.

10. Make a stand that will simulate the top strut mount and bolt two 1/2-hole suspension tabs to it. It should be the correct width that you determined from step 4; 22 1/2 inches above the ground; and 1-3/4 inches behind the front spindle line. Also, the top strut mount brackets are tilted 10 degrees. Install the forward struts to the cage sides and front of the frame so they also attach to the top strut mount bracket. Install the 1 1/4 inch tubes to support the top strut mount per the Assembly Drawing.

11. Install the complete front suspension and steering, less the springs. Align the front end to 1/32 to 1/8 inch toe in, zero degrees camber, and 8 to 10 degrees of caster. Using a machinist level on the strut flats and steering arm you can align the front end.

12. Move the strut spindle through its full travel to make sure nothing binds up. Also, check for bump steer. If assembled correctly, all unnecessary bump steer can be removed by shimmying the tie rods up and down at the spindle or by raising or lowering the rack and pinion slightly (1/16 of an inch at a time).

13. After everything checks out okay, final weld it all. Use the frame end caps to cap the front open end of the frame.

Revision Date: October 25, 2002

Chris Alston's
CHASSISWORKS, INC.

7102
INSTRUCTIONS FOR STRUT FRONT FRAME 3 x 2

<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	2	4504	Front frame rail 2 x 3
2	1	1804	Tube 1 1/4 x .083 x 36"
3	2	4219	Forward strut
4	1	4211	Rack & pinion crossmember 1 5/8
5	2	2300	Rack and pinion mount
6	2	2001	Frame end cap
7	8	2101	Suspension tab 1/2 hole
8	4	2125	Frame tab 1/2 inch hole

YOU NEED A FAIRLY LEVEL GARAGE FLOOR TO OBTAIN GOOD RESULTS!

Your car must have an existing rear frame and a roll cage in order to use this kit.

1. First you must determine exactly where the stock front spindle centerline is located on your car. Measure from this point back to the rocker panel and make a reference mark. This will give you the front spindle centerline after the frame has been removed. Remove the stock frame and suspension but not the front fenders.

2. Determine where you are going to attach the rearward end of the new front frame. The best method is to install a 3 x 2 dropped crossmember between the rocker panels. Position the crossmember 2 to 3 feet forward of the rear end. The rear frame will weld to the backside of the dropped crossmember. The new front frame will attach to the front side of the crossmember.

3. Locate the body off of the floor so it is positioned at the new ride height. Block the rocker panels and rear of the frame so the car will be held steady. You need at least 3 inches of ground clearance from the front bumper to the tire and 12 inches behind the tire. Do not let your car sit too low.

4. Before you can install the frame and upper strut mounts, you must determine what strut mount width you need for your tires to clear your fenders.

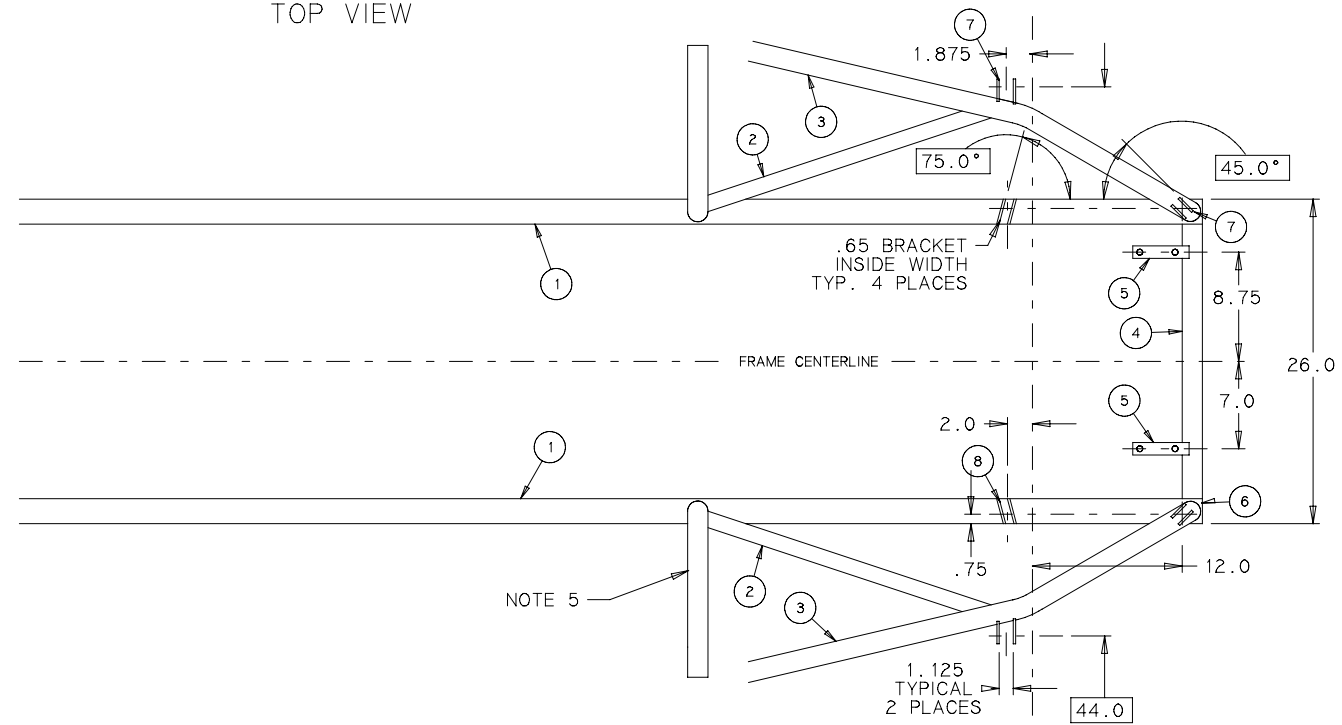
Step 1: Determine the outside front tire width that you need. Measure the width between the front fenders. You will need 4 to 5 inches of clearance from the side of the tire to the inner front fender lip. Subtract 8 to 10 inches from the inner fender width. This will equal the outside tire width.

Step 2: To determine the hub width, you need to know how much wider the outside of the tire is than the front hub. Put a yardstick across the outside of the tire and measure through the center to the side of the wheel that bolts to the hub. When the wheel is bolted on, it is this much wider than the hub. Multiply this by 2 and subtract this amount from the outside tire width you calculated in step one. This will be the required hub width.

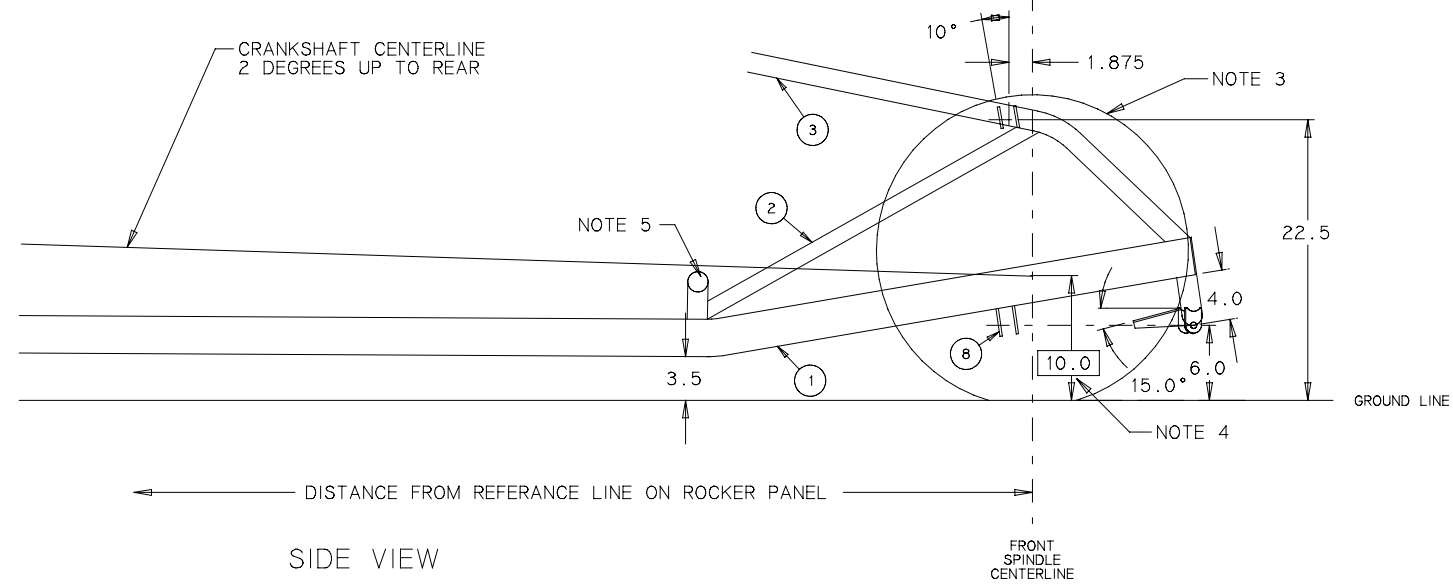
Step 3: Subtract 11 1/2 inches from the hub width to find the top strut mount width. Write your mount width on the Assembly Drawing.

5. Cut the legs off of the rack and pinion crossmember tube so it is only 4 inches tall and the correct width for your chassis (26"). Make some supports that hold the crossmember off the floor so it is centered on the body 6 inches above the ground and the back side is 12 inches forward of the front spindle line. This will be the crossmembers location at ride height.

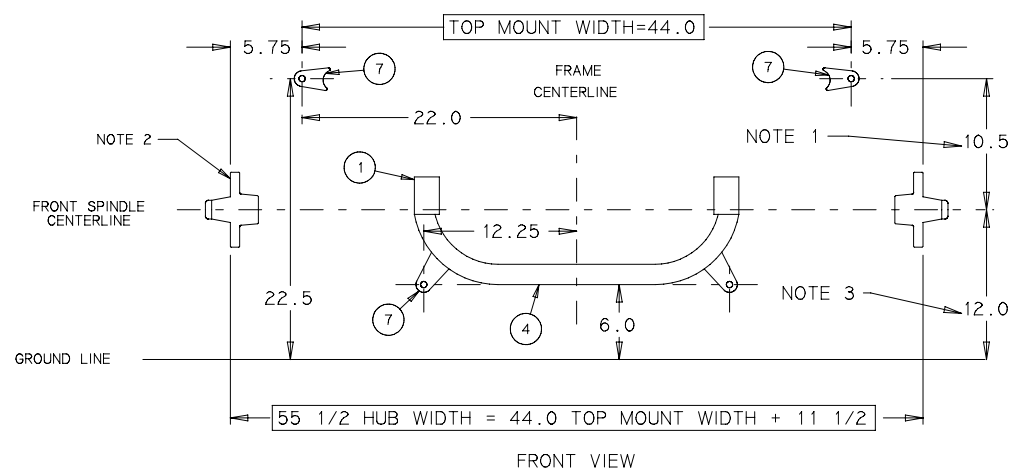
TOP VIEW



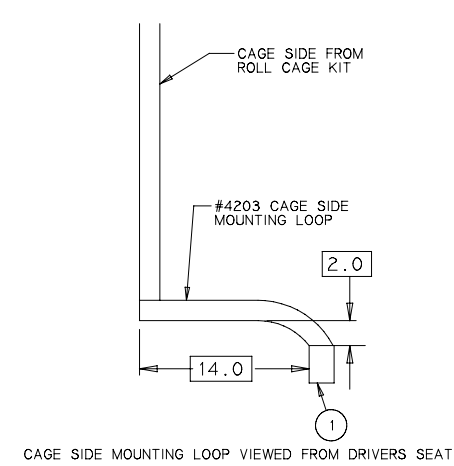
CRANKSHAFT CENTERLINE
2 DEGREES UP TO REAR



SIDE VIEW



FRONT VIEW



CAGE SIDE MOUNTING LOOP VIEWED FROM DRIVERS SEAT

#7102 STRUT FRONT FRAME 3 X 2

CHRIS ALSTON'S CHASSISWORKS INC 8661 YOUNGER CREEK DRIVE SACRAMENTO, CA 95828	DATE: 1/8/91 REVISION: #2 DO NOT SCALE DRAWING	SEE THE INSTRUCTION SHEET FOR THE ITEM NUMBER DESCRIPTIONS
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NOTE 1: DIMENSION SHOWN IS RIDE HEIGHT FOR 3 INCH TRAVEL FRONT STRUT. THE STRUT SHOCK ABSORBER TRAVEL BUMPER WILL BE COMPRESSED APPROXIMATELY 1/4 INCH.

NOTE 2: FRONT BRAKE HUB POSITION WITH STRANGE 3 INCH TRAVEL EYE MOUNT STRUT.

NOTE 3: ALL CHASSIS TO GROUND HEIGHT DIMENSIONS ARE FIGURED WITH A 25" DIAMETER FRONT TIRE

NOTE 4: THE FRONT OF THE ENGINE IS POSITIONED FROM 2" FORWARD TO 5" BEHIND THE FRONT SPINDLE CENTERLINE. THE CRANKSHAFT CENTERLINE IS 10" TO 12" ABOVE THE GROUND AND RUNS UP HILL TO THE REAR 2 DEGREES.

NOTE 5: CAGE SIDE MOUNTING LOOP IS REQUIRED TO ATTACH THE ROLL CAGE SIDE TO THE FRAME. IT MUST BE PURCHASED SEPARATELY.