7119
INSTRUCTIONS FOR 3 X 2 FRAME, STRUT, LADDER BAR

ITEM	QTY	PART NO.	DESCRIPTION
1	1	1819	Tube 1 5/8 x .120 x 72"
2	2	2300	Rack and pinion mount
3	12	2101	Suspension tab, 1/2 hole
4	1	4211	Rack and pinion crossmember
5	2	4504	Front frame strut 3 x 2
6	2	4501	Rear frame - ladder bar 3 x 2
7	1	1830	Tube 3 x 2 x 72"
8	1	1818	Tube 1 1/4 x .083 x 72"
9	2	2001	Frame end cap
10	2	2000	Front mount gusset
11	4	2100	Ladder bar front mount
12	4	2125	Frame tab 1/2 hole
13	4	3200	Locknut 1/2 - 20
14	8	1000	Misalignment bushings
15	4	3100	Bolt 1/2 - 20 x 2 1/4
16	1	927119	Assembly drawing

This frame kit is designed to be used with a 14-point roll cage, CHASSISWORKS part #7015. The roll cage is mandatory to properly support the frame. The body should be prepared for the frame by first measuring forward from the rear axle centerline and marking the rocker panel at 31 inches. The wheelbase should also be measured, this will be Dimension "A". Both of these dimensions will be used when installing the frame. Dimensions "A" through "F" need to be determined by you. Write them on the Assembly Drawing in the boxes provided. The instructions will help you determine the dimensions.

Remove the stock frame, floor, and suspension but not the front fenders. The frame can be installed without completely removing the floor if you simply slot the floor for the frame, however, this method is a lot more difficult and will result in a much heavier car. Before starting, position the body so it is at the desired ride height off the ground. 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.

1. Install the 3 x 2 crossmember first. When you cut the floor out, you should have left the inner part of the rocker panel in place. The rocker panel should be neatly trimmed to allow for a good fit of the crossmember. The crossmember does not have to be dropped, the drive-shaft passes above it. If your inner rocker panel is not straight, you will have to contour the ends of the crossmember. Make sure you have a good fit to the rocker panel or it will be difficult to weld. Tack weld the crossmember in place so the rear side is 31 inches forward of the rear axle centerline (the dimension you previously measured).

2. Cut the 9 inch long straight off the front of the rear frame rail. Measure from the back of the crossmember to the tail light panel, this length will be Dimension "D" plus 31 inches. Cut the frame rails to this length and tack them in place. The frame rails should be centered in the car an equal distance from the car's centerline. They should be 28" to 20" wide on the outside, this will be Dimension "E". Make the frame as wide as possible while leaving enough room for the tires. Make sure the rails are centered on the tail light panel, the quarter panel, and on the crossmember.
They should both be an equal distance from each side of the car and at the same height. Measure diagonally to make sure they are square.

3. Install the crossmembers. The rear crossmember should be even with the bottom of the frame and approximately 1/2-inch forward of the tail light panel. Weld the shock brackets to the center cross-member at the dimension shown on the assembly drawing. Make sure they are straight to each other. Put the crossmember between the frame rails at the dimensions shown.

4. Install the chassis ladder bar mount. The ladder bar mount attaches to the bottom of the frame and crossmember. The brackets are even with the outside edge of the frame. Use a rod end to get the correct spacing between them. The brackets must be straight or the ladder bar will not fit right. Install the ladder bar front mount gusset.

5. The two 1/2 x 2 1/4 inch bolts and the two 1/2 inch locknuts are used in the upper shock mounts to mount the shocks. The four misalignment bushings are also used in the shock mounts. One goes on each side of the shock bearings to fill the gap in the shock mount bracket. Use #6216 Adjustable Shock Mount for the lower mount.

6. Before you can install the front frame, you must determine what top strut mount width you need for your tires to clear your fenders, this will be Dimension "F".

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 yard stick 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. Forty-four inches is just a sample width. Determine your own width.

7. 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 crossmember's location at ride height.

8. 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 grill work, 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 (purchase 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.

9. Measure forward from the 3 x 2 crossmember between the rocker panels to 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.

10. 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.

11. 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.

12. 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.

13. 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. The front end can be aligned by using a machinist level on the strut flats and steering arm.

14. 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 shimming 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).

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

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