

INSTRUCTIONS

916-73010

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ROLL CAGE INSTALLATION GUIDELINES

CAREFULLY READ THESE GUIDELINES BEFORE STARTING!

These are basic guidelines for the installation of a roll cage as used in racing applications. In no way do we imply that these are the set standard for roll cage installation.

You must contact the sanctioning body which you intend to participate and request the rules and regulations for the class you place to race in. They may require a minimum tube diameter and thickness or design feature unique to their track. Check now and save yourself grief later.

With the wide variations of chassis designs, we cannot address each application. Think ahead, measure twice and cut once.

It is imperative that all welding be done by a certified welder. The roll cage is only as strong as its weakest point, and poor welds will surely lead to an unsafe product.

TOOLS RECOMMENDED:

Cutting Torch
7" Grinder
4" Grinder
Speedy Tubing Notcher
Wire Brush
Floor Jack
4 or more Jack Stands
Reciprocating Saw
Air Chisel
Hammers
Pliers
Levels
Angle Finder
Tape Measures
Wire Feed Welder
Fire Extinguisher
Gloves **(WEAR AT ALL TIMES!)**
Safety Glasses **(WEAR AT ALL TIMES!)**

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1) PREPARE CAR

- A) Prior to any cutting, welding or fabrication, you would normally strip the car of non-essentials. The first and most important item to be removed would be the fuel tank. It is recommended this be done outdoors with great caution. Also with great care, remove all glass from car. **(WEAR EYE PROTECTION AND GLOVES AT ALL TIMES!!!)**
- B) Next, you would remove the doors, hood, front end sheet metal, trunk lid and all interior items not required by the rules.
- C) Then remove drive shaft, engine and transmission as needed.
- D) Raise car to a comfortable height to allow easy access to the underside of the car. Place jack stands under the frame at the cowl area and in front of the rear axle. Additional stands at each corner would be advised.
- E) Place a level on the rocker panels on each side and across the frame, both front and rear. Adjust or shim jack stands until car is level in each direction.

2) SUB-FRAME CONNECTION (UNI-BODY OR SUB-FRAME CARS ONLY)

Don't be tempted to cut the roof off at this point!! On uni-body and sub-frame cars, you need to tie the front frame/sub-frame to the rear uni-body. Not only does this help take much of the flex out of the chassis, it also gives you something to weld the roll cage and door bars to. Normally 2"x2" or 2"x3" .120 wall tubing is used. (This material is NOT included with your kit. Available locally from welding shop).

- A) Locate where the front of the leaf spring mounts to the body. On some cars the leaf spring attaches to a bracket that bolts to the body. If your car has this feature, it is recommended that you retain the ability to replace the bracket easily when damaged (don't just weld it up). Start by removing sheet metal from the inside of the car directly over where the spring mount is located. You will be adding tubing to this area, so only remove as much material as needed.
- B) Lay tubing in spring mount recess of uni-body and tack weld in place. Then place a piece of tubing from this piece over to the rocker panel and tack in place. In most cases this is what you will mount your roll cage hoop to, so plan ahead.
- C) Now you will need to locate where on the front frame you are going to attach the frame connector to. On most Camaro/Firebird/Nova sub frames, 2"x3" .120 wall tubing will fit into the original frame. This will run back to the tubing you welded into the spring mount recess. In most cases you will need to notch the floor pan to allow the frame connector to clear. Try to get the tubing as far into the original frame as possible and tack weld in place.
- D) Now run 2"x2" .120 wall tubing along the rocker panel. This is what you will attach the door bars and door post to. Measure the length of your door bar and make sure the rocker panel tubing is far enough forward to attach the door post leg to. Run 2"x2" .120 tubing from the frame connector to the rocker panel tubing. Once you have all tubing in place and are comfortable with its layout, finish weld all tubing joints.

3) REAR HOOP INSTALLATION

- A) Remove roof. (A reciprocating saw works best here.)
- B) Locate the area where the rear hoop will be attached to the frame. Measure ahead the length of the door bar to make sure the door post and windshield post fit close, but do not interfere with each other. On a full frame car you will need to remove enough sheet metal from the floor to allow you to weld the hoop to the frame. On the uni-body cars you should have already prepared the body and tied the sub-frame together. (See 2 above)
- C) There are several different ways to attach the rear hoop to the frame. One is to use a hole saw and drill a hole into the frame rail on each side the same width as the rear hoop. Use caution when doing this, as some frame rails are not wide enough to accept the tubing without weakening the frame. Also some frames are rusted to the point you may need to plate the frame to strengthen it. Another method is to make a plate out of 1/8" plate 2 1/2"x21/2" and hole saw a 1 7/8" hole in the center. Weld this plate to the top of the frame rail, then set the rear hoop into it. This offers a degree of shear strength you would not get by just welding it to the top of the frame.
- D) Lay the rear hoop on the floor and find true center of the top. Then lay the roof hoop and gussets in place. Measure from center line out to each side and center roof hoop with the rear hoop. Tack weld the gussets only.
- E) Now put rear hoop in place and set roof back on. Measure how much you need to remove from the hoop. (Remember, measure twice, cut once.) It is best if the hoop just clears the roof when installed. Check rear hoop for level and square and tack weld in place. You may have to trim the inner sheet metal from the roof for additional clearance.

4) ROOF HOOP INSTALLATION

- A) With the roof in place, measure from rear hoop to the front edge of the roof to determine how much to remove from the roof hoop. Trim as needed. Level, square and tack weld.

5) DOOR POST INSTALLATION

- A) With the short end of the door post down, position the door post in place using the door bars as a guide. This allows you to mark the exact location for the door post. As in 3-C above, you will need to determine how you want to attach the door post to the frame. Once this is done, position door post in place and determine the maximum height above the frame that allows clearance between the door post and the windshield post. Trim as required. Cut long end of door post off flush with **TOP** of roof hoop. You will want to keep the door post behind the windshield post as much as possible to prevent blocking line of vision.

**THE DOOR POSTS ARE THE MOST DIFFICULT PIECES TO FIT IN THE ROLL CAGE KIT.
BE PATIENT AND MAKE SMALL CUTS.
USE SCRAP PIECES OR CARDBOARD TEMPLATES TO TRIAL FIT.**

B) When a good fit is achieved, check with level and use door bars to position door post. Tack weld.

C) Repeat for other side.

6) DOOR BAR INSTALLATION

A) Starting with the top door bar, check fit against door skin. Level in center and both ends. Tack weld.

B) Position second door bar and place spacers between top and second door bar. Level each end and tack ends only. Repeat with third and fourth door bars. Trial fit door skin with each door bar for fit.

C) Repeat for other side.

7) ROOF HOOP DIAGONAL BAR

A) This bar can be installed either diagonally or straight. Check your rules to clarify.

8) INSTALL DASH BAR BETWEEN DOOR POSTS.

9) REAR HOOP DIAGONAL, CROSS BAR AND SEAT MOUNT.

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A) Install lower rear hoop cross bar just above transmission tunnel. Level and tack weld.

B) Install rear hoop diagonal bar. Tack weld.

C) Install seat belt/seat brace bar. This should be approximately 2" below shoulder height. Level and tack weld.

10) REAR HOOP TO TRUNK BRACE INSTALLATION

A) Locate where you want the braces to connect in the trunk. Normally on a leaf spring car this would be directly above where the rear shackle would mount to the frame. It is advised to weld a piece of 2"x3" 3/16 thick plate to the top of the frame at this connection. You will need to remove sheet metal to allow the tubing to pass through.

B) Install rear shock bar and support braces. If the car is a uni-body design, you will need to use a plate (such as in 10-A) to reinforce the floor where these tubes attach. Coil spring cars would run these bars to the top of the coil spring bucket.

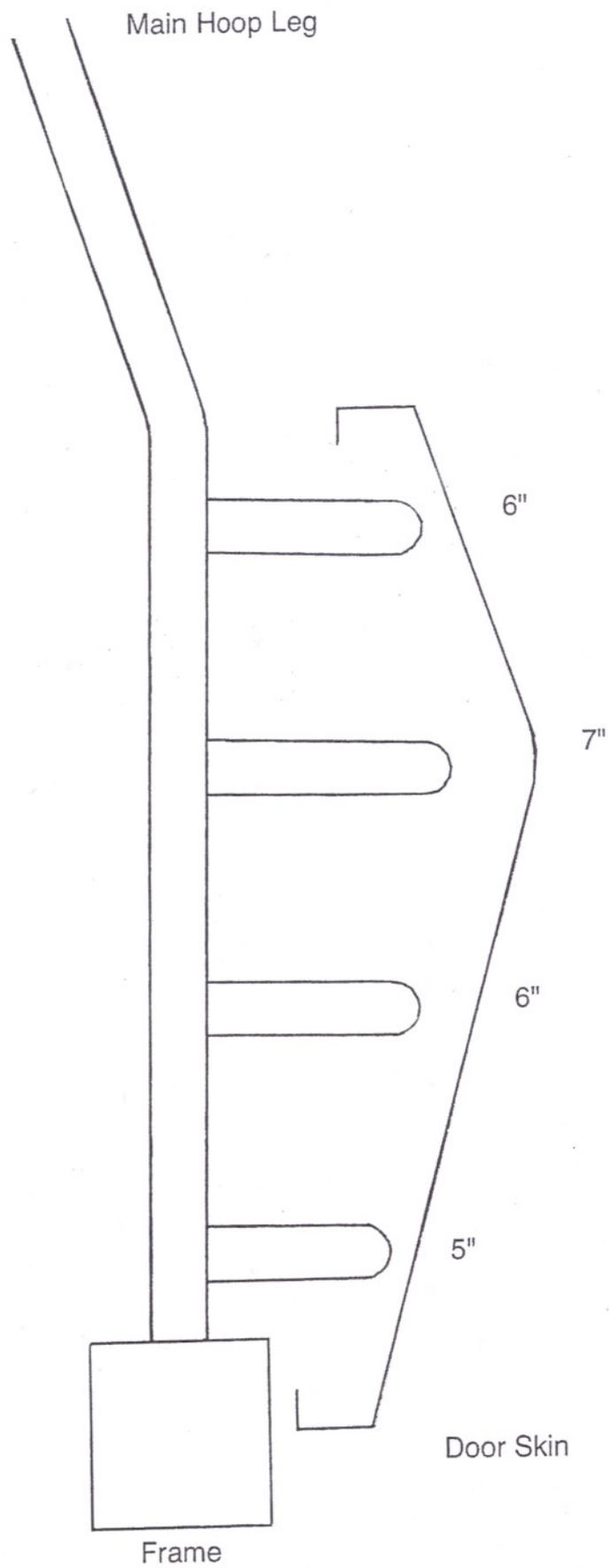
11) FRONT HOOP INSTALLATION

- A) Install fenders and cross measure to get them square. Measure hood to get width correct.
- B) Determine where the radiator and shroud are to be located.
- C) Cut two uprights to hold front most cross bar at proper height to support front fenders and radiator. The front cross bar may be cut to desired width and the ends capped, but is not necessary. Normally the hood pins would be mounted to the bar, so plan ahead. Do not weld at this point.
- D) You now need to trim sheet metal from the firewall to allow the front loop tubing to pass through. Remember it has to clear the master cyl., booster, etc.
- E) Measure from the door post to up to the uprights at the radiator support. Cut tubing to length, fit and tack weld.
- F) Add braces as close to the upper control arm mounts as possible. Some use these as their upper shock mount.
- G) Now turn wheels all the way both directions and bounce front end as far as possible to check for tire clearance. It is best if checked with the wheel/tire combination you will race with. Check for clearance at all points the tires could rub.

12) FINISH UP

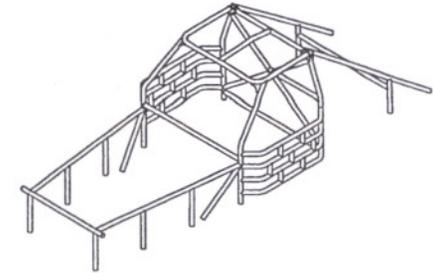
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- A) Install 45 degree brace from the door post to the dogleg area of the frame. Each application will be different. Placement and clearance will need to be considered carefully.
- B) Check hood and roof fit one more time. If everything fits the way you want, it's time to finish weld all joints.
- C) Re-attach roof. Weld seams.
- D) Mounting the seat. Normally you would use a prefabricated seat mount that welds to the roll cage and frame. When positioning the seat, the driver should sit in the car with driving suit and helmet on. Make sure his head is below the top hoop and that he is not so far to the left, that his arms hit the door bars when steering. Also check his line of sight. Too far left and he will be trying to look through the windshield post.

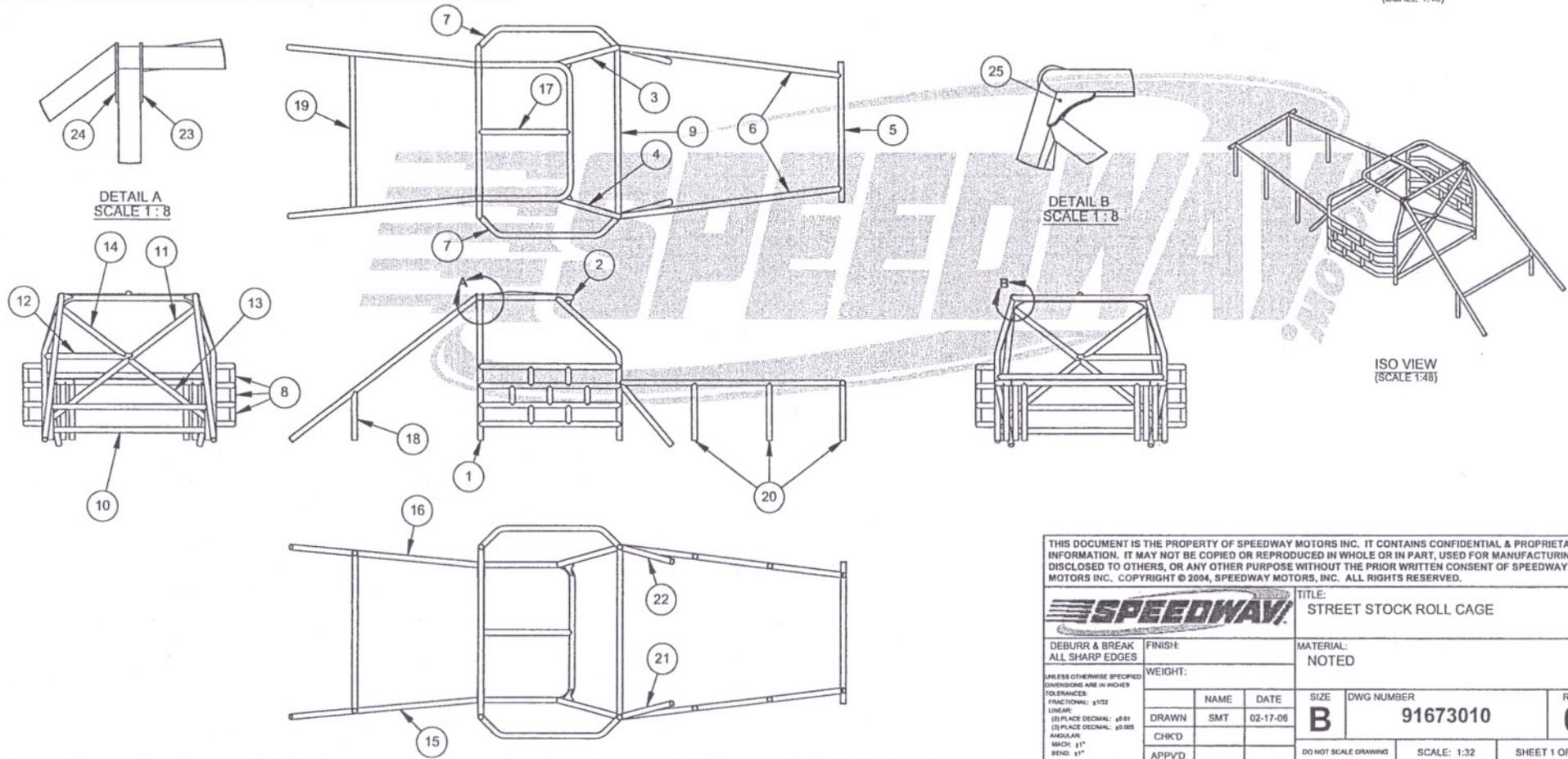


Viewed from back to front

BILL OF MATERIALS				BILL OF MATERIALS			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	91673010-1	MAIN HOOP	1	13	91673010-13	LOWER MAIN HOOP SUPPORT TUBE	1
2	91673010-2	TOP HOOP	1	14	91673010-14	UPPER MAIN HOOP SUPPORT TUBE	1
3	91673010-3	DOOR POST, DRIVERS SIDE	1	15	91673010-15	MAIN HOOP BRACE TUBE, DRIVERS SIDE	1
4	91673010-4	DOOR POST, PASSENGER SIDE	1	16	91673010-16	MAIN HOOP BRACE TUBE, PASS. SIDE	1
5	91673010-5	FRONT HOOP SUPPORT TUBE ASSEMBLY	1	17	91673010-17	ROOF SUPPORT TUBE	1
	91673010-5-1	FRONT HOOP SUPPORT TUBE	1	18	91673010-18	SHOCK TUBE UPRIGHT	2
	91673010-5-2	CAP, FRONT HOOP	2	19	91673010-19	SHOCK SUPPORT TUBE	1
6	91673010-6	FRONT HOOP SIDE TUBE	2	20	91673010-20	FRONT HOOP UPRIGHT SUPPORT TUBE	6
7	91673010-7	DOOR BAR, 6" OFFSET	8	21	91673010-21	DOOR POST KICKER TUBE, DRIVERS SIDE	1
8	91673010-8	DOOR BAR SPACER TUBE	14	22	91673010-22	DOOR POST KICKER TUBE, PASS. SIDE	1
9	91673010-9	DASH SUPPORT TUBE	1	23	91673010-24	PLATE, FRONT, TOP HOOP MOUNTING	2
10	91673010-10	FLOOR SUPPORT TUBE	1	24	91673010-23	PLATE, REAR, TOP HOOP MOUNTING	2
11	91673010-11	MAIN HOOP DIAGONAL SUPPORT TUBE	1	25	91673010-25	DOOR POST SUPPORT GUSSET	2
12	91673010-12	SEAT MOUNTING TUBE	1				



RIGHT ISO VIEW
(SCALE 1:48)



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SPEEDWAY

TITLE: STREET STOCK ROLL CAGE

DEBURR & BREAK ALL SHARP EDGES

FINISH:

MATERIAL: NOTED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: ±1/32 LINEAR: (1) PLACE DECIMAL: ±0.01 (2) PLACE DECIMAL: ±0.005 ANGULAR: MACH: ±1° BEND: ±1°

WEIGHT:

DRAWN	NAME	DATE	SIZE	DWG NUMBER	REV
CHK'D	SMT	02-17-06	B	91673010	0
APP'VD					

DO NOT SCALE DRAWING SCALE: 1:32 SHEET 1 OF 1

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SHEET 1 OF 1

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**Some items are not legal for sale or use in California on pollution controlled motor vehicles. These items are legal in California for racing vehicles only which may never be used upon a highway.

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