

Rod's Review

By Rod Burwell

Over Easy!

I want to make it very clear that this article is not a solicitation for frame repair. If a frame is rusty junk the car because it costs more to fix the frame than the car is worth. If you want a Citroen go to California and buy a rust free car.

I will review what I did to make frame repair easier. Ever since I worked on the first rusty frame, eight years ago, I dreamed of a way to avoid laying on my back rubbing rust out of my eyes. One idea was a total rebuilt assembly line. The car would be stripped of body panels, engine and suspension and the frame would be mounted in a Spit-like fixture so it could be rolled upside down. The old rusty bottom would be cut off at a predetermined line and a pre- assembled bottom would be welded in place and the frame would be done in one day. In the meantime someone in the drivetrain room is doing the engine-gearbox while someone is busy at the sewing machine making new upholstery and in the paint shop the body panels are being painted. In two weeks the car is totally rebuilt. This pipe dream could be a reality if someone could sell 200 cars.

A friend who made some tie rod tools for me had a D Special with a rear suspension that collapsed due to rust shortly after he replaced the clutch. I bought it with the intention of junking it. Jim, who rents our cottage, helped me bring the car home. I told him he could have the car if he wanted to fix it.

Don James and Dennis Foley were here the first week in February, on their way to RI to buy a 1952 15-6 Traction, The car was in really great

shape and I got to drive my first Traction. Don took pictures of the '71 rust bucket. Soon afterwards I wrote to Don and drew a picture of a huge fixture for rolling the car over. Before I put the letter in the envelope I wondered what one would do with such a huge piece of machinery when not in use, even if one went to all the expense of building it.

The idea came to me of making large rings and bolting them to the car so it could be rolled over like a barrel. These rings, if split in the middle, could easily be stored and they would not cost a fortune or take forever to make. The more I thought about the idea the more interesting it became until I just had to try it to see if it would work.

I mentioned the idea to several people, Peter Bazeley said that they had a device in England that bolted on the suspension that would roll the car part way over. Michael Cox sent me a French magazine with the picture of the device, described by Peter, mounted on a Jaguar. Other people asked me "who is going to make the rings for you?" My answer, I will make my own. If the idea did not work, the car was no great loss and I had only \$60 worth of steel and a week of labor in the project.

Since I had only a welder and a cutting torch, the only form I could use was a tee. It seemed like 10 gage steel would be about the right thickness. The next decision was what diameter and where is the center of gravity. If you position the center of the rings on the center of gravity of the car it can be rolled over with one hand. Once you know the center of gravity the radius of the rings can be determined by measuring the distance from the center of gravity to the rain gutter at the center door post.

Steel comes in 20' lengths, so I used that as a circumference. which equals a 38" radius. I decided to buy two 10 gage strips 20' long and 3" wide for the outside bands. The curved perpendicular pieces I planned

to cut from plate. The place I want to for the steel had no 20' 10 gage strips. He had a stack of 12 gage plates 2' wide and nearly 8' long, so I bought 3 and had one sheared into 3" strips.

From the remaining plates I flame cut 8 one quarter circles using the 38" radius for the out side cut and the inside cut. The sections were less than 3" at the ends and more in the middle. I welded the half rings, with a helper to avoid making fixtures to hold the parts in place. I overlapped the quarter circles at the center and welded them last after I checked the diameter across the ends.

Now I had to guess where the center of gravity was. Since the engine was good I had decided to leave it in the car. Even though the seats were out and the body panels and wheels were off the load on the front ring was considerable. If the center of the ring is 6" away from the center of gravity it will require a force of more than 200 on the ring when the car is half way over. The point I picked was at the top or the bracket that holds the front door open. I believe that the center of gravity is closer to one inch below the bracket. After taking several hard looks at the frame, the best locations for attaching the rings were the front and rear door posts. The rear door post is vertical so I drilled 3 holes in the post and bolted on a 12 gage plate that was curved on the outside to match the rings. The front door post is at an angle so I decided to weld tabs on the plate, one forward, one rear, and bolt them to the hinge anchors. This requires fitting on the car to get the plate for the rings vertical.

Another hard look and I realised that the rings needed to be stabilised top and bottom. The bottom was easy, I used a center seat belt anchor to bolt a strap to the bottom of the car. I welded 3/4" water pipe to each end of the strap, then I bolted the other end of each water pipe to the vertical part of the rings. For the upper half I bolted a plate to the center door post upper hinge anchor. The two pieces of water pipe

were placed on each side as close as possible to the directional light and windshield post.

Now for the moment of awful truth. First the battery must be removed, the engine and gearbox drained, the vent hole in the hydraulic reservoir plugged, gas tank drained or removed, trunk lid and hood removed. You can leave the radiator full. Proceed with care with blocks on both sides of one of the rings. It would be a horror scene to watch the car roll down the hill. The awful truth was why did I not do this 8 years ago!

Once the car is upside down the upper half of each ring can be removed, providing unobstructed access to the whole bottom. Once all the frame work is complete the headliner can be replaced with little effort!

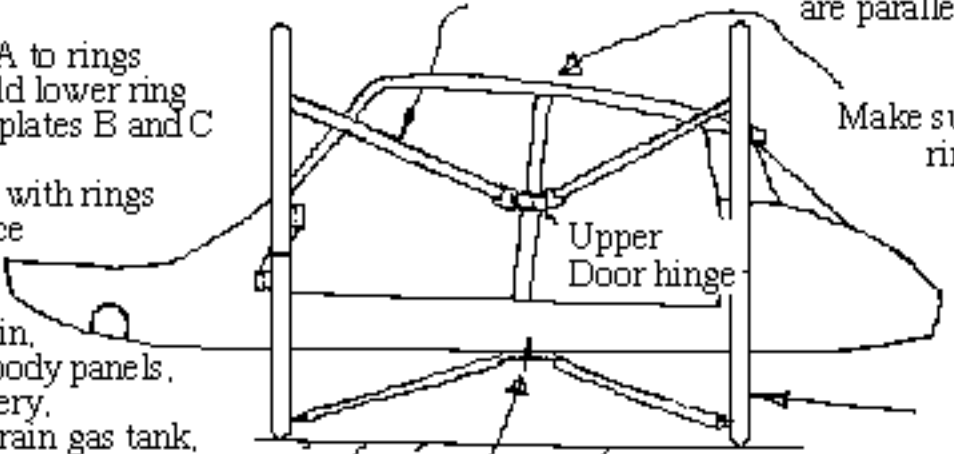
After looking at the car upside down for a week I realised that part of the reason every thing seems so much easier is that the light level is much much greater, every nook and cranny is clear and visible without any drop lights.

Two mistakes I made were missing the center of gravity and using too small a diameter. I used a 76" diameter, and found the rain gutter was outside the rings so I had to set the rings on planks when I rolled the car over to keep the rain gutter from hitting the ground. An 80" diameter would be just about minimum.

The next step would be to design the rings so they could be sold at a reasonable price. I would guess a rolled tube, either round or rectangular, would be the cheapest way to go. If a person or shop planned to do several frames the rings could be mounted on rollers so the frame could be positioned for the easiest cutting, welding or riveting.

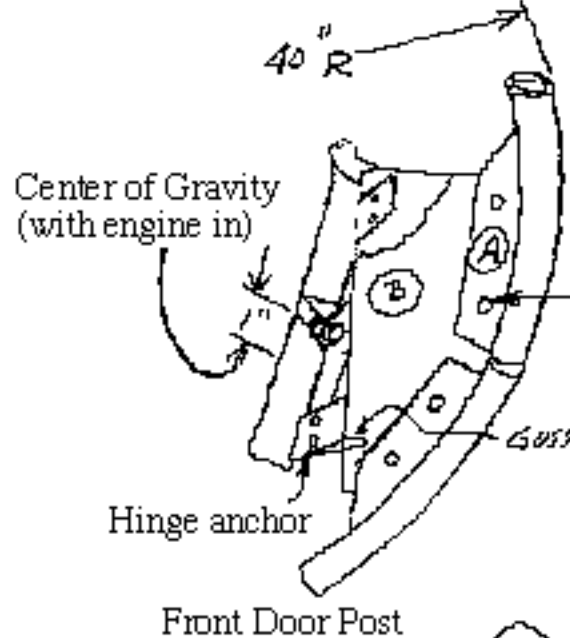
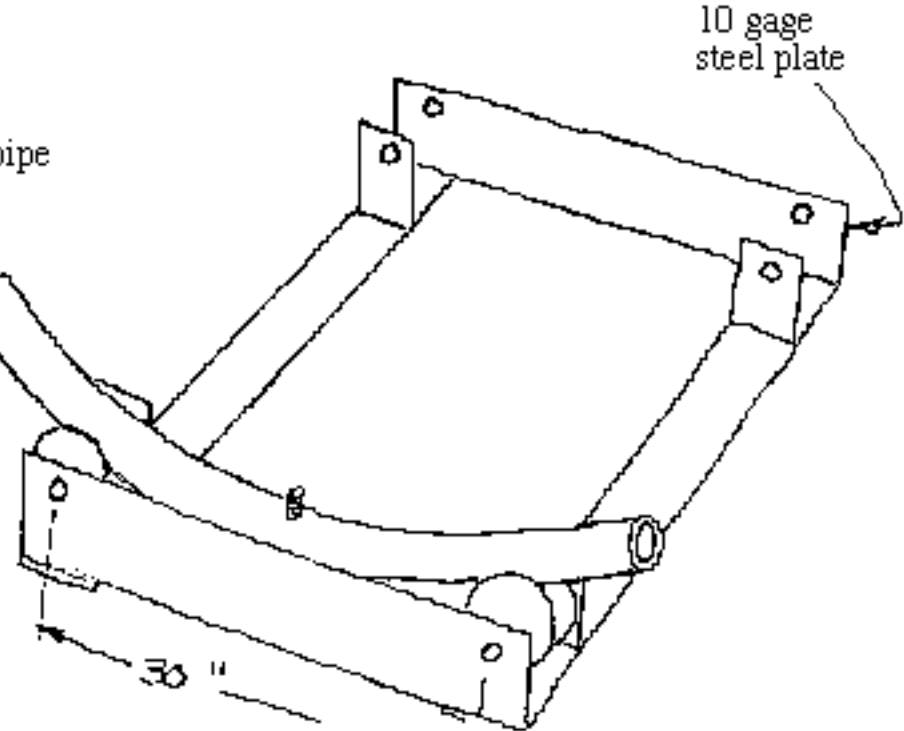
Brace on both sides, as high as possible, make sure rings are parallel before cutting braces

1. Roll Rings
2. Weld plates A to rings
3. Jack car - hold lower ring in place - fit plates B and C on the car.
4. Make braces with rings bolted in place
5. With engine in, Remove all body panels, Remove battery, Remove or drain gas tank, Plug hole in reservoir cap. Leave radiator full



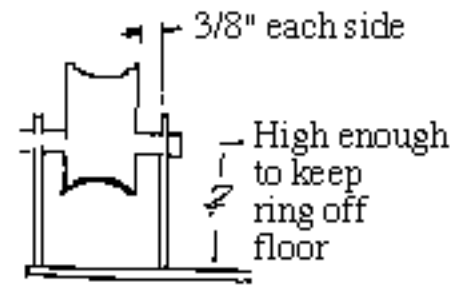
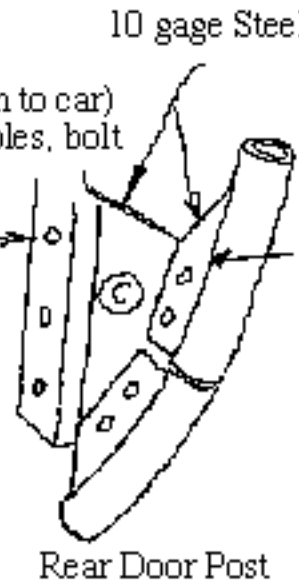
Make sure rain gutter is inside rings before rolling over

with rollers 1 1/4" pipe schedule 40



Center seat belt anchor

(only modification to car) Drill three 3/8" holes, bolt plate to door post.



Weld stud to center of bottom ring - 2 studs to top ring





















