Cage Build and other questions...

Posted by joeblow - 08 Jan 2015 09:14

I am feverishly prepping my car and have a couple of rules clarification questions.

Cage Main Hoop

In looking at the rules I am concerned about the section that discusses the main hoop (15.6.6) where is states that it should be the full width of the interior of the car. Unlike the, now standard, Hanksville cages, I do not usually worry about the width of the main hoop at the base meeting the width of the interior, but do go as wide as possible at the top. I intend to go as high and wide as possible at the top and then go 90deg down to the large unibody frame railing (mid way in the rear 1/4 window). In order to keep the hoop the full width of the interior, I would have to invoke the +/- 10deg rule to make the top bends 70-80deg or so and then do another 10 to 20 deg bend at the base of the B pillar. I know this is withing the rules but will then cause issues with my intended door bar design.

The reason I like to keep the space at the bottom of the hoop is so I can go from the hoop to the outer center of the door, make one bend and go to the front forward hoop for the door bars. Hanksville and others do 4+ bends to get the door bar to clear the door jams with the hoop so close to the interior wall. I think is overly complex and as a crumple zone forces the load to crumple at the bends which at the rear are right next to the driver.. Since my top door bar is basically in the middle of the door and higher up the loads are sent all the way back to the main hoop and/or to the forward pillar bar, both away from the driver. Also less bends are always good. The top and lower door bars are then connected with 3 or 4 vertical bars to keep them from spreading and adding more impact resistance and penetration from the impacting vehicle. Will the main hoop pass tech this way or does it have to go all the way to the lower frame rail wall below the 1/4 window?

Door bars and door cutting

OK so I have looked at built 944-SPEC cars and it seems that some doors are so extremely cut that there is not much more than the outer skin left. When I read the rules however, section 15.6.12, we are supposed to remove "the least amount to accommodate the door bar(s), and 2) can serve no other function." , other function for example being removal of weight. Then to add insult to injury guys with basic passenger side bars that dont even go into the door are still completely cut up. So is this a 'freebie' rule or what?

Inspection

So I know my cage will need to be inspected, but when done I intend the top to be basically touching the roof in several areas so I have Max clearance. I suspect that post installation inspection of the 360deg welds will be impossible. Can I take pics during the build to show the 360 welds before the cage is lifted and final welded to prove the 360 welds are there? Otherwise I am going to give up a lot of headspace to lower the cage to be inspectable.

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Re: Cage Build and other questions...

Posted by Kurt R - 09 Jan 2015 16:01

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I have an autopower bolt in cage in my 944, the bottom of the main hoop doesn't go to the rail, it goes all the way to the floor, so if the bottom of your main hoop is outside of that, I would think you would be OK. I measured, and at its widest point, which is about the bottom of the 1/4 windows, the cage is still 2 1/4" away from the side.

Door gutting: 17.2.11 says you can gut the doors, whether your door bars need it or not. So, yes, "freebie"

Inspection: I'd just leave enough room to get a finger up there, so the inspector can't feel the edge of the tube, but instead a weld. Remember you can weld the cage to the A and B pillars, so it isn't that important to get it tight and get a "free" attachment point.

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Re: Cage Build and other questions...

Posted by joeblow - 09 Jan 2015 16:08

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Thanks Kurt...I got so tied up on the NASA rules cage section that I missed the door section!

Still looking for confirmation on the hoop because at one point the autopower bends out to the 2 1/4" you mention. Mine would be right out the outer edge at the top but taper to as much as 3"-4" at the frame rail where it will be welded.

Also the inspection worries me as I will be touching the roof with the main hoop, forward hoops and front hoops so that verifying the 360 degree welds will be impossible after it is built.

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