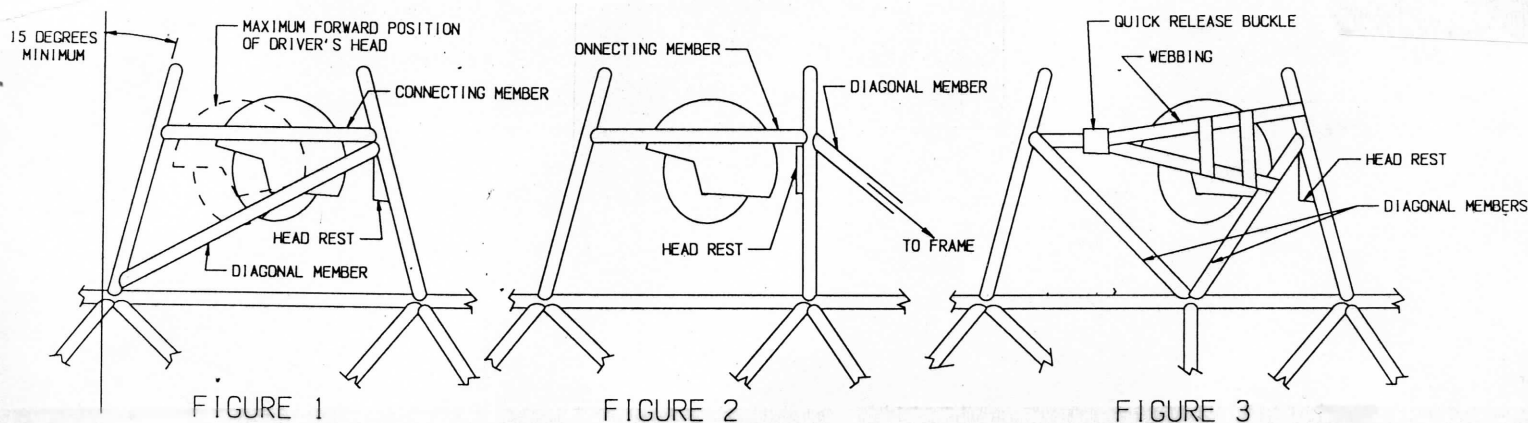


Roll Cage Notes

Below are three roll cage configurations that present the necessary features that will satisfy the current regulations. Note the horizontal tube element in Figures 1 and 2 that connects the front to the rear roll bar and provides a load path that will allow both roll bars to share loads. It also provides a constraint that prevents the side-to-side movement of the driver's head from protruding beyond the envelope of the roll cage. Figure 1 shows the diagonal piece between the roll bars and Figure 2 shows the diagonal piece outside of the roll cage. The third drawing shows a roll cage with the front roll bar significantly separated from the rear roll bar with the connecting horizontal member removed to allow driver egress between the roll bars. The configuration in Figure 3 will require a quick release webbing connecting the roll bars to keep the side-to-side movement of the driver's head within the envelope of the roll cage as seen in a frontal view.

The diagonal tubes member in Figure 1 and 2 provides the structure with a means of resisting high components of longitudinal loads that might collapse the roll cage. In other words, without this diagonal piece the roll cage becomes a "4-bar linkage" which will create high stress levels at the welded joints when the roll cage is subjected to high components of longitudinal loads. Also, the diagonal piece will make the roll cage structure more rigid, stronger per unit weight, and less subject to possible collapse given high enough longitudinal components of said loads. In all cases, the horizontal member and/or the diagonal members should be attached to the roll bars as high up on the roll bars as possible. **Asymmetrical roll cages are not recommended.**



The front and rear members of the roll cage shall be sloped to deflect the body panels up and away from the driver in the event of a collision that could break the panel from their latched position. Figure 1 shows a minimum slope on the roll bars of about 15

degrees. This angle is not specified in the rules but is recommended as a minimum value of slope the designer should seriously consider. The front roll bars shall be positioned far enough in front of the driver's head so when the driver's head is thrown forward in a frontal collision, the driver's head will remain within the roll cage envelope. See Figure 1.

The roll cage shall be mounted to the frame at points that are rigid and supported in a manner that will sustain the vertical loads applied to the roll cage without undo bending of frame members.

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