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Competition Engineering C3021

Competition Engineering C3021 Main Rollbar Hoop User Manual

Model: C3021 | Brand: Competition Engineering

PRODUCT OVERVIEW

The Competition Engineering C3021 Main Rollbar Hoop is a critical component designed for enhancing vehicle safety and chassis rigidity. This weld-on main hoop is constructed from 1-3/4 inch diameter steel tubing with a 0.134 inch wall thickness, finished in a natural state, ready for custom painting or coating. It is specifically engineered for GM F-Body vehicles from 1967-1969, providing a foundational element for a complete roll cage system.



An image showing the Competition Engineering C3021 Main Rollbar Hoop, a black, U-shaped steel tube structure designed to be welded into a vehicle chassis. The image also faintly shows the outlines of additional support bars that would connect to the main hoop, indicating a complete roll cage system.

INSTALLATION GUIDE

Installation of the C3021 Main Rollbar Hoop requires advanced fabrication and welding skills. It is highly

recommended that installation be performed by a certified professional with experience in automotive chassis modification and roll cage construction to ensure proper fitment, structural integrity, and compliance with safety regulations.

Safety Precautions

- Always wear appropriate personal protective equipment (PPE), including welding helmets, gloves, and fire-resistant clothing.
- Ensure the vehicle is securely supported on jack stands or a lift.
- Disconnect the vehicle's battery before beginning any welding operations.
- Work in a well-ventilated area to avoid inhalation of welding fumes.
- Have a fire extinguisher readily available.

Tools and Materials Required

- MIG or TIG welder
- Grinder with cutting and grinding wheels
- Measuring tape and marking tools
- Level and plumb bob
- Clamps and jack stands
- Safety glasses, gloves, and welding helmet
- Fire extinguisher

Installation Steps (General)

1. **Preparation:** Thoroughly clean the installation area within the vehicle chassis, removing any rust, paint, or undercoating where the roll bar will be welded.
2. **Positioning:** Carefully position the main rollbar hoop inside the vehicle, ensuring it is level and centered according to your vehicle's specific requirements and any applicable racing regulations. Use clamps to temporarily secure it in place.
3. **Fitment and Notching:** If necessary, notch the ends of the hoop or prepare mounting plates to ensure a flush and strong fit against the vehicle's frame or floor pan.
4. **Tack Welding:** Once satisfied with the positioning, apply small tack welds to hold the hoop in place. Re-check alignment and levelness after tack welding.
5. **Full Welding:** Systematically apply full, strong welds around all contact points, ensuring complete penetration and structural integrity. Allow welds to cool slowly to prevent cracking.
6. **Finishing:** Grind down any sharp edges or excess weld material. Apply primer and paint to the welded areas and the roll bar itself to prevent corrosion.
7. **Inspection:** Conduct a thorough visual inspection of all welds and mounting points to confirm structural soundness before operating the vehicle.

USAGE GUIDELINES

The Competition Engineering C3021 Main Rollbar Hoop is designed to enhance the safety of your vehicle, particularly in high-performance or racing applications. It serves as a primary structural component of a roll cage, providing protection in the event of a rollover or collision. While this hoop significantly improves safety, it does not guarantee complete protection in all circumstances.

Always ensure that any additional roll cage components (such as rear bars, door bars, and bracing) are properly installed and integrated with the main hoop according to relevant racing organization rules (e.g., NHRA, SCCA) if the vehicle is intended for competition use. Regular inspection of the entire roll cage system is crucial for continued safety.

MAINTENANCE

Proper maintenance of your Competition Engineering C3021 Main Rollbar Hoop will ensure its longevity and continued effectiveness.

- **Regular Inspection:** Periodically inspect the entire rollbar hoop and all welded connections for any signs of rust, cracks, deformation, or damage. Pay close attention to areas where the hoop is welded to the chassis.
- **Corrosion Protection:** If the hoop is not painted or coated, apply a rust-inhibiting primer and paint to prevent corrosion, especially in humid environments or areas exposed to moisture.
- **Cleaning:** Clean the rollbar hoop with a mild automotive cleaner and a soft cloth. Avoid abrasive cleaners or solvents that could damage the finish.
- **Damage Assessment:** In the event of an accident or impact, thoroughly inspect the rollbar hoop for any structural compromise. If damage is suspected, consult with a professional fabricator or chassis builder before using the vehicle.

TROUBLESHOOTING

As a static structural component, the C3021 Main Rollbar Hoop typically does not experience operational