

Helping New Zealanders Build & Modify Safe Vehicles



### Aftermarket Tubular Suspension Arms with Cantilever-style Ball Joints

LVVTA has recently become aware of poorly designed aftermarket suspension arms from various American companies (including Ridetech, Chris Alston's Chassis Works/KP Components, and Porterbuilt/PBFab), and is concerned for the safety of road users and occupants of vehicles fitted with these potentially unsafe arms. A range of issues have been identified, including strength and durability, examples of poor weld quality, and air-bag mounting platforms bending under the weight of a vehicle.

Tubular suspension arms of the designs described below cannot be LVV certified unless they have either been confirmed as a model that does not require rectification ([www.lvvtta.org.nz/aftermarket-arms](http://www.lvvtta.org.nz/aftermarket-arms)), or had an LVVTA-approved rectification carried out.

#### ► Issues

There are three predominant issues associated with this style of arm:

1. **Cantilever-style ball joint mounting platform:** The ball joint platform is welded onto the outer end of the arm, creating a cantilever. There is no gusseting to support the critical function welds, resulting in extremely high load concentrations at the end of the weld.
2. **Weld quality:** Multiple arms have been found with weld defects, including undercut, craters, and incomplete welds, which reduce weld strength and increase the risk of cracking, fatigue-related issues, or a catastrophic failure.
3. **Air-bag mounting platforms bending under the weight of a vehicle:** Loads on suspension components are significantly higher when a vehicle is in operation, creating substantial risk with long-term strength and general durability.

#### ► Guidance for Affected Vehicle Owners and LVV Certifiers

Owners of a vehicle fitted with potentially affected suspension arms should stop using the vehicle immediately and visit [www.lvvtta.org.nz/cantilever-arms](http://www.lvvtta.org.nz/cantilever-arms) to determine whether their arms are of the affected type.

LVVTA has examined a number of these arms. When an arm has been assessed, its part number and status will be listed on the page linked above. If a rectification is required (and available), an LVVTA Information Sheet, including templates and rectification instructions for that particular arm design, will be provided. The LVV Certifier will use the Information Sheet, along with any relevant LVV technical requirements, to assess the arm, so it is important that the document is followed. Additionally, an LVV Certifier must carry out a thorough visual inspection of all welds. If required, weld rectification details can be found via the web link above.

**An LVV Certifier presented with a vehicle fitted with cantilever-style suspension arms, must either confirm that rectifications are not required, or that the arms have been rectified as per the applicable Information Sheet, and thoroughly inspect the components to confirm no weld defects are present.**



*Above: A PBFab (Porterbuilt) Chevrolet C10 lower arm showing the cantilever-style ball joint platform design (which is the only issue that was identified with this particular arm).*



FOR FURTHER INFORMATION PLEASE CONTACT YOUR LVV CERTIFIER, OR LVVTA.