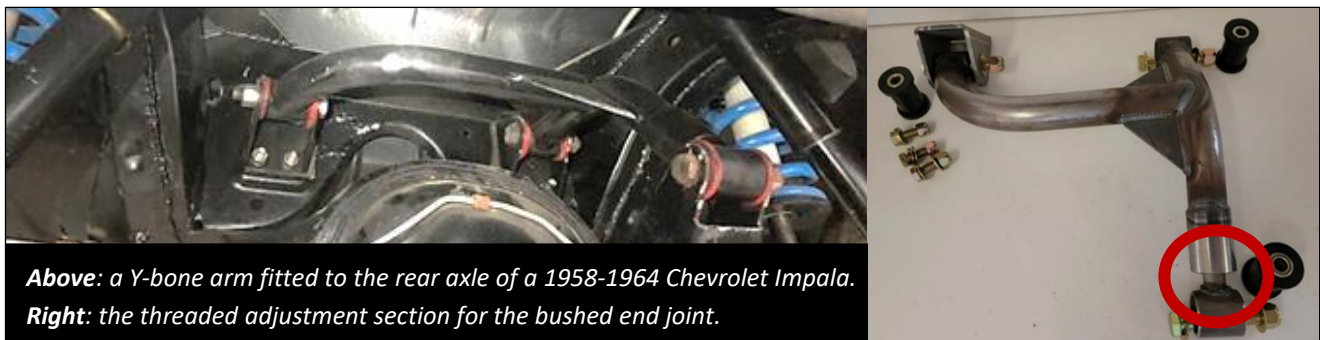


Helping New Zealanders Build & Modify Safe Vehicles



1958-1964 CHEVROLET Y-BONE REAR TRACK LOCATOR ARM

Recently, LVVTA has become aware of sub-standard aftermarket rear track locator suspension arms, usually fitted to full-size 1958-1964 Chevrolets. This type of arm is known as a 'Y-bone' due to its shape. Because of flaws in their design, these arms do not meet LVV requirements and are potentially unsafe.



*Above: a Y-bone arm fitted to the rear axle of a 1958-1964 Chevrolet Impala.
Right: the threaded adjustment section for the bushed end joint.*

► Issues Identified

A Y-bone arm is typically fitted to the rear axle of a full-size Chevrolet modified with a hydraulic or airbag suspension setup, and replaces the OEM single upper link arm and panhard rod suspension arrangement. Because of the removal of the panhard rod, part of the arm installation includes fitment of a new secondary mount for the Y-bone, which attaches to the chassis crossmember. Similarly designed Y-bone arms are available from various aftermarket manufacturers, and several inherent issues with this conversion and type of arm have been identified, including:

- A lack of compliance within the bushes means allowance needs to be made for articulation of the axle. However, with this type of Y-bone arm, articulation is achieved through the rotation of the threaded adjustment section for the joint - it does not have a jam nut, and the adjusting section is forced to wind in and out to allow for articulation of the axle. A standard thread is not designed for this application, and this is very poor engineering practice. A proper rotational joint would incorporate lubrication, and seals to prevent water and dirt ingress, the absence of which further exacerbates wear in the threaded section. This is not fit for purpose.
- The rear of the arm attaches to the OE trailing link mounting bracket on the rear axle, via a threaded end joint. This means that the joint is not only taking fore/aft loads and controlling the pinion angle (which it is intended to do), but also carrying the lateral loads of the vehicle, which places a side-loading through the threaded adjustment section. LVV requirements specify that an adjustable threaded spherical or bushed end must only be loaded in compression or tension - not laterally.
- The mounting bracket on the rear axle (which was not intended to withstand lateral loads) and the chassis crossmember (which was not intended for the attachment of a lateral member) are both subject to LVV Certifier assessment, and are beyond the scope of this Safety Alert.

► Guidance for Affected Owners and LVV Certifiers

A Y-bone-style rear arm cannot be LVV certified unless it has been individually approved in writing by the LVVTA Technical Advisory Committee, through the build approval process specified in Chapter 4 of the NZ Car Construction Manual.

Note that while this Safety Alert is focused on 1958-1964 Chevrolets, this information may also apply to other vehicles which use this style of arm.



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