

Helping New Zealanders Build & Modify Safe Vehicles



'TCI'-BRAND AFTERMARKET ONE-PIECE DROPPED SPINDLES (Stub Axles)

LVVTA has become aware that American aftermarket parts manufacturer Total Cost Involved (TCI) has been producing one-piece dropped spindles (stub axles) manufactured from ductile cast iron. The New Zealand Car Construction Manual Chapter 6.14.1 prohibits one-piece cast-iron stub-axles because this method of manufacturing dropped spindles is poor engineering practice, and inherently unsafe. These cast-iron dropped spindles are understood to be unique to TCI-brand coil-over style independent front suspension systems.

► **Technical Requirements and Guidance for Affected Vehicle Owners**

The use of cast-iron of any kind, including ductile iron, is not permitted in integral one-piece dropped spindles due to the risk that the spindle section (or pin) may fail, which could cause a complete loss of vehicle control. Potentially affected vehicle owners should cease using the vehicle immediately and contact a 1D-category LVV Certifier in order to determine whether the dropped spindles fitted to their vehicle are of the type detailed in this Safety Alert.

Owners who find that their vehicle is fitted with the affected cast-iron dropped spindles should contact TCI in the first instance, as TCI now offers a two-piece dropped spindle with a 4140-steel spindle (pin), that is a direct bolt-on replacement. There are no other known replacement dropped spindles that maintain the TCI's geometry at this time.

► **Identification of TCI cast iron dropped spindles**

Dropped spindles with integral pin, can be identified by the fact that the inner end of the pin is not visible from the back of the dropped spindle. The TCI-brand cast-iron dropped spindles feature a round backing plate flange similar to an early Ford V8-style spindle, but have a thick back-bone structure on the rear between the upper and lower ball-joint bosses, and bolt-on steering arms.

LVVTA requires LVV Certifiers, when LVV certifying a vehicle fitted with a TCI-brand front suspension, to determine if the stub axles are those covered by this Safety Alert, and if so, advise the vehicle owner to immediately cease using the vehicle until the unsafe components are replaced with safe and compliant components. Note that all TCI-brand independent front suspension assemblies also require TAC approval.



[See also: Safety Alert #12-2018 'TCI'-brand Independent Front Suspension Failure for other TCI-related issues, and Safety Alert #01-2021 'Magnum Force'-brand Aftermarket Dropped Spindles \(Stub Axles\) for more background information.](#)



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