

Helping New Zealanders Build & Modify Safe Vehicles



'MAGNUM FORCE'-BRAND AFTERMARKET DROPPED SPINDLES (Stub Axles)

LVVTA has become aware of a one-piece cast iron 'Magnum Force'-brand dropped spindle (stub axle) failure, where the spindle section snapped off the stub axle. 6.14.1 of the New Zealand Car Construction Manual prohibits one-piece cast-iron stub-axes, because this construction method is poor engineering practice and inherently unsafe.

The failure occurred on a vehicle used in circuit racing (the stub axle was purchased brand new and failed after less than one hour's use after fitting), however the failed component is identical to those sold for use in road-going applications, and there may be some road-going vehicles in New Zealand fitted with these same parts.

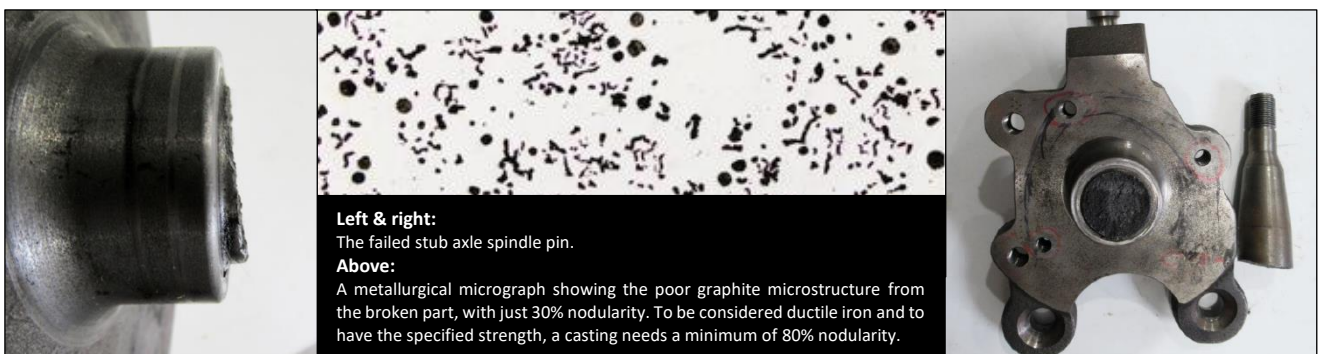
► Material Analysis Findings

LVVTA engaged a metallurgist to carry out a material and failure analysis on the failed component, and it was established that it was manufactured from low-grade cast iron, not ADI (austempered Ductile Iron) as was widely published by the manufacturers in their advertising material. The metallurgist's report concluded that: *"The dropped spindle has failed by bending fatigue through a relatively small radius where the stub meets the body. The material is poor quality cast iron with a low nodularity of 30 percent. This is not manufactured from austempered ductile iron (ADI)"*.

Note that even if these stub axles were found to be made from austempered ductile iron, they would still not be able to be LVV Certified because one-piece cast iron stub axles are unsafe and do not meet LVVTA's technical requirements.

► Technical Requirements and Guidance for Affected Vehicle Owners

The use of cast iron of any kind is not permitted in integral one-piece stub axles due to the risk that the spindle may fail (as has happened in this case), which could result in a complete loss of vehicle control. Potentially-affected vehicle owners should cease using the vehicle immediately, and make contact with a 1D-category LVV Certifier in order to determine whether the stub axles fitted to their vehicle are of the type detailed in this Safety Alert.



LVVTA requires all LVV Certifiers certifying a vehicle fitted with 'Magnum Force'-brand stub axles to identify whether or not the stub axles are the affected version, and if so, advise the vehicle owner to immediately cease use of the vehicle until the unsafe components are replaced with safe and compliant components.

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