

Helping New Zealanders Build & Modify Safe Vehicles



## COPIES OF 'ASTRO SUPREME'-BRAND WHEELS

### ► Introduction

*This Information Sheet (originally released in February 2011) has been re-released in order to better clarify exactly which copies of Astro Supreme-brand wheels are unsafe and cannot be LVV certified.*

This LVV Information Sheet has been compiled in order to assist LVV Certifiers to accurately identify **copies** of the aftermarket 'Astro Supreme'-brand wheels, and to provide guidance on what to do when a vehicle fitted with these wheels is presented for LVV certification. Both the original Astro Supreme-brand wheels and the copies are collectively known as 'Supremes'.

From a number of different sources, LVVTA has seen first-hand, and become aware of, a number of failures of the inferior copies of the original Astro Supreme-brand wheel. Copies of the Astro Supreme-brand wheels are marketed in the USA, and are in widespread use, predominantly in the hot rod and American custom car scene, and they are also commonly used to dress up largely standard '50s and '60s American classics. The information contained here-in has come from first-hand knowledge, and a number of different sources, including New Zealanders working within the Southern California aftermarket auto industry, where these wheels have been manufactured.

### ► Background of 'Supremes'

While Astro Supreme-brand wheels are included under the term 'Supremes', most of the 'Supremes' type of wheels that you'll see these days are not the original Astro Supreme-brand wheels. The original wheels were manufactured by a company called Astro Enterprises (hence the term 'Astro Supremes' even though most 'Supremes' haven't been manufactured by Astro Enterprises) in California, starting in 1964. Over the years, this very popular design has been copied by a number of different manufacturers, some done well, and some not so well.

### ► The Original 'Astro Supreme'-brand Wheels

In the opinion of some New Zealand contacts working in the Southern California aftermarket auto industry, the original Astro Supreme-brand wheel was a well-designed and manufactured wheel, and there were no issues with the original wheel design. Several well-known race cars of the time used them, and our Southern California-based Kiwi car people have verified that they have used the original Astro Supreme-brand wheels (new and used) on both their own cars, and customers cars, with no problems experienced or brought to their attention.

### ► Later Copies

There are, as far as LVVTA can determine, at least four different companies in the US that assemble 'Supremes'. Every reliable source that LVVTA knows is in agreement that most (but not all) of the manufacturers that copied the Astro Supreme-brand wheel - critically - did not duplicate the original construction method.

We believe that the centre sections of most copies of Astro Supreme-brand wheels are die-stamped steel, which is then chrome plated, with a poorly designed gusset for each of the five spokes of the centre section welded to the rim before also being chrome plated.

### ► Problems with Design and Assembly Process

It is LVVTA's opinion, which is shared by LVV Certifiers throughout New Zealand that we have shown these wheels to, that these wheels are both of a very poor design, and utilise an equally poor assembly process. Typically, the weld

quality is very poor and prone to fatigue cracking, eventually completely separating. If such a wheel isn't cracked yet, it probably will eventually. All such wheels are at risk of complete failure.

Popular opinion is that because the 'welder' engaged in joining the chromed centre section to the chrome rim (with weld-lugs attached to the rim) has the challenge of doing so without burning the chrome on the spokes of the centre section, the obvious solution is to keep the amperage of the welder deliberately low during the final welds so as not to discolour (burn) the chrome plating. One of our Kiwi car builders working in southern California has been into two of these shops in Southern California, and he describes the welding processes going on in both shops as 'certainly questionable' at best.

LVVTA has contacted the company that has been supplying a lot of these wheels into New Zealand, and the owner has agreed to stop supplying them. There will however be a lot of these wheels already here.

► **Distinguishing Between the Good and the Bad**

There is no simple way of identifying (i.e. just by looking at the front face of a wheel), whether the wheels being inspected are the original 'Astro Supremes', or a correctly manufactured copy, or a knock-off that uses the weld-lugs that are welded to the centre and to the rim. The only way to determine which wheels are safe and which aren't, is to remove the wheels from the vehicle, and visually inspect the back of the wheels.

The weld-lugs will be clearly visible with the wheel removed from the vehicle, to which, in turn, the separate centre section of the wheel is welded. Upon close inspection of the wheel, it is likely that the failed welds will be evident to the naked eye.



Image 1.

Image 2.

Image 3.

Image 4.

**Image 1:** Front face of typical copy of an Astro Supreme-brand wheel.  
**Image 2:** 'DOT' compliance marking is evident on rim, but that applies only to the rim itself, not the manufactured wheel.  
**Image 3:** View of back-face of a poorly designed and assembled 'Supreme' type wheel.  
**Image 4:** Weld failures on a copy of an Astro Supreme-brand wheel.

**Image Source:** Photos kindly supplied by Vahry Photography, Parnell, Auckland.

## ▶ LVV Certification Instruction

**Any wheels that are designed and manufactured in the same way as the inferior copies of Astro Supreme-brand wheels described in this Information Sheet may not be LVV certified.** This is regardless of the vehicle's build-date, or date of purchase or fitment of the wheels. The wheels are a known safety risk, and the LVV system must not allow their continued use.

Please study the images on page 2, which show the construction method of the wheels in question, and the types of typical cracking found on the wheels.

LVV certification must be refused to any vehicle fitted with these wheels, with the sole exception of the rear of trikes, provided that:

- the tare of the trike does not exceed 500 Kgs; and
- the wheels have been subjected to an appropriate method of non-destructive testing for cracking and have been found to have no defects.



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