

WHEELS and TYRES

YOUR WHEELS COULD BE ROLLING YOU TOWARDS *DISASTER*

You're driving down the road and suddenly one of your wheels falls off. Nasty, eh? If you survive and discover that a cracked wheel was the cause, it makes the 'bargain' wheels you bought seem rather expensive.



Cracks in spoked off-road-style wheels aren't unheard of in this country and date back almost to the original 'white spoke' craze of the 1980s. Back then, if you hadn't replaced your skinny 16-inch split rim wheels with 15x7 or 15x8 white spoke wheels you just weren't cool. Such wheels became popular enough to attract cheap imports and failure reports began.

Today, there are many different examples of steel spoked wheels in the market place and the most popular size is now 16-inch.

Although the spoked design of these wheels emulates aluminium spoked wheels the steel ones are not actually spoked: they're disc wheels with shaped cut-outs to give the appearance of spokes. Typical failures of cheaply made steel spoked wheels generally begin with cracks propagating between the cut-outs. In the case of extreme failures the cracks join up and the wheel rim and spoked section falls off, leaving the nave still bolted to the hub.

The wheel-cracking situation quietened down in the 1990s, probably as a result of aluminium wheel popularity among recreational 4x4 and ute buyers that dropped the numbers of steel spoked wheels being sold. However, those buyers who wanted steel strength and reliability for heavy duty applications continued to buy steel-spoke wheels. In this century there have been several cases of spoked wheel failures, particularly in mining operations.

The most recent incidents we've heard about happened in the last three years. In 2008 BHP Billiton posted a top priority safety alert concerning 16x7 wheels, following cracking in nine such wheels at its NickelWest Mount Keith operation. This year, Mullins Wheels announced a voluntary recall of 16x7, six-stud, Ranger white steel wheels that were recommended for fitment to Toyota HiLux 2005 onwards; Mitsubishi Triton 2006 onwards and Pajero 200-2007; Holden Rodeo, Jackaroo and Colorado 2003 onwards; Nissan Navara D22 2005 onwards and Pathfinder up to 2004.

These wheels may also have been fitted to different types of trailers, including camper trailers and caravans. They're characterised by a protruding centre or nave section, with red and blue pin striping around the circumference. These are 30P offset wheels – marked 'P30' on the inner face of the attachment area - with a PCD of 139.7mm. (PCD is 'pitch circle diameter' and is the dimension across the stud-hole centres.) The part number is 360-670P30-67W.

Avoiding Wheel Cracks



Any departure from the vehicle maker's standard wheel fitment must be considered carefully. It's understandable that people who intend to load their vehicles and use them on rough roads may feel the ex-factory wheel and tyre equipment is marginal and in many cases they'd be right. For example, the current fashion for large-diameter wheels and ultra-low profile tyres makes vehicles so equipped totally unsuitable for bush work, because there is no light-truck-rated, recreational tyre available in diameters larger than 17-inch. Also, many factory wheels have load ratings that only just match the vehicle's gross mass rating and many bush-travel vehicles are operating above the maker's rated GVM.

Yet another impetus for replacing the maker's standard wheels is the lingering love affair some makers – notably Toyota – have with the ancient split-rim 16-inch wheel. Advances in tubeless tyre technology and roadside puncture repair have made the split-rim an anachronism, but if you buy a Troop Carrier that's the only way it comes.

So, you're out to buy a set of replacement wheels for your towing vehicle; what's to look for?

First up, it's a really good idea if the wheels will actually fit legally, when shod with the tyre size you prefer. Overall diameter change of wheel and tyre and wheel track are controlled by State and Territory legislation, but a 15mm diameter increase should be your upper limit. That way, your gearing and braking power aren't greatly affected. (Most people don't realise the relationship between wheel diameter and braking power.)



Many buyers want the same wheel/tyre combination on their caravan or camper trailer, so that's another consideration.

Wheel load capacity is the next issue and can be assessed by checking the maximum load rating that's stamped or cast into the wheel. Unfortunately, the rating stamp is no indication of what test regime and quality control procedures have been employed. Australian Standard AS1638 covers wheel load ratings and testing, so look for a compliance stamp.



We're not saying that all Australian-made wheels are better than all imported wheels – some are and some aren't – but a recognised Australian brand, backed up by an AS1638 compliance stamp at least provides some assurance and accountability. Many imported wheels – especially those that seem too cheap to be true – don't provide that surety.

'Chinese-made' is not necessarily a poor reflection on wheel quality, but as we know from discussions with people who co-manufacture with Chinese companies or who import Chinese-made products, quality is an ongoing issue.



"You have to be on their backs all the time," is a comment made to us by an Australian-based boat importer and we've seen for ourselves that there are several tiers of quality possible out of the same factory: an example is a bus factory that produces underpowered standee-only buses for rural domestic use and high-performance, European-quality coaches on parallel production lines.

The message when buying replacement wheels is: safety first; price second.