

ROCKIN' ROLLERS

IN THE PAST, WE'VE LOOKED AT WHAT YOU CAN BUY AND FROM WHOM. THIS TIME, WE EXPLORE WHAT TO LOOK FOR WHEN YOU'RE UP FOR NEW WHEELS

STORY BY LIAM QUIRK
PICS FROM ARCHIVE AND RO44

With so many wheels to choose from, it's all too easy to let the shiny chrome, deep dish and stylised spokes hypnotise you and leave you short of a fair bit of dosh. When the standard wheels have done their time, or you're sick of your mates laughing at your car behind your back and you're set for some new shoes, keep the following points in mind and you'll be cuttin' sick in no time.

We asked our good friend John Varetimidis of Consulmotive where to start on your path to new wheels and tyres. It's always a good idea to check with the very people that will decide if your car is safe to see road, or unfit for driving duties.

"Usually the biggest problem is load rating. Suppliers fit whatever tyres they can, usually the cheapest they can sell to people, and it becomes unsafe. People get caught up in how good it looks and forget the legalities. Head to the RTA site and check out VSI (Vehicle Standards Information) 9. This will give you an understanding of the general guidelines," John says.

"When it comes time to purchase new wheels that are beyond what they call a 'general change' [only a slight modification], then I recommend they see a consultant, check the placard and see what the manufacturer specifies in terms of load and speed ratings and overall rolling diameter."

OFFSET

What John says:

"Offset will affect the wheel track set by the manufacturer. Anyone buying wheels should keep to a wheel that won't increase wheel track by more than 25mm. Increased offset will affect the wheel bearings and cause them to wear quickly. Spacers are not permitted unless fitted by the manufacturer."

And the rest:

Offset is one thing that many people overlook when they are fitting new wheels to their ride. Hell, it has stung me in the past when I went to fit later-model wheels to my VL and can cause no end of trouble.

The offset of a wheel is a measure of the mounting point of the wheel in relation to the actual centre of the wheel if you were to measure it. All Commodore wheels are positive offset, which means that the mounting surface of the wheel is positioned in front of the true centreline of the wheel. The higher the number, the more the wheel will tuck up under the guard.

Many take advantage of offset and use wheels with a higher offset than their original wheels and tyres to allow them to really drop the body lower over large-diameter wheels without guard modifications. A negative offset or an offset with a number smaller than the original listed number will have an effect quite contrary to this.

Stickers like this needn't turn you off a set of wheels. Many manufacturers design and test their wheels on shore but have them produced off shore for cost reasons. Similarly, many wheels distributors import cheap, overseas wheels that may not be suitable or safe for use on our shores



Going by the one-piece design and the country of origin, we can assume that this wheel is cast, which keeps cost down for manufacturer, and as such, we the consumers. It improves on the looks of the wheel without them having welds or bolts holding them together, but their structure and strength can be compromised

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The JW casting means that they have been tested to a load of 690kg



MANUFACTURING METHODS

What John says:

"All wheel manufacturers must have a safety standard cast into the rim. 690kg is about the average for passenger cars. In terms of one-off wheels, you still have to go through the process of engineering. Technically, even if you replace your wheels and tyres with aftermarket wheels of the same size, someone should check that they comply."

And the rest:

It's probably not the first thing you think about while browsing the wall of wheels at your local tyre shop, but the way wheels are constructed will impact a lot on their strength and integrity as well as how good they look.

Like any mass-produced item, their method of construction will also dictate the price, as more intricate and labour-intensive construction methods

come with attached costs. Most aftermarket wheels are either one, two or three-piece wheels.

It's pretty safe to assume that one-piece wheels are cast in a mould as a single piece. This process is relatively cheap as it allows many wheels to be turned out in a small amount of time. There are two methods of casting – low and counter pressure casting.

Low-pressure casting involves pouring liquid metal into the mould and allowing it to cool. Counter-pressure casting sees metal sucked into the mould via a vacuum from where the process can continue as per the low-pressure method.

Two and three-piece wheels, as the name suggests, are not one piece like cast wheels but rather separate pieces bolted or welded together to make one wheel. Two-piece wheels are made up

of a separate centre and barrel (outer rim), while three-piece wheels add a separate centrepiece to the equation. Modular wheels like these can be fixed together with high-quality fasteners such as extremely high-tensile bolts, or by a series of welds.

Billet wheels are experiencing a major comeback in the show and street scene after a fairly long hibernation. Their sudden popularity boost can be attributed to American hot rodders like Boyd Coddington and Chip Foose who are heavily marketing their own styles of billet wheels.

Billet is big at the moment, and like billet engine accessories or billet interior bits, billet wheels are milled from a single chunk of metal (called a billet, hence the name), giving them a smoother, more refined finish than cast or modular wheels.

The best thing about billet wheels is that you can have them made in pretty much any design, or have any kind of pattern cut into them. Billet wheels are without a doubt the most creative and unique of the different wheel types, but generally have a price tag to match.

Australian and International Standards

Any wheel sold in Australia must have been tested to and met the criteria as laid out in the Australian Standard for alloy passenger wheels, AS-1638, or the international JW standard.

In this test, wheels are tested to a maximum load capacity of 690kg, which is equivalent to the load rating of a 95-rated tyre. The wheels chosen should already comply with Australian Design Rules 20 (Safety Rims) and 24 (Tyre and Rim Selection), but it's always a good idea to double check.

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LEGALITIES

What John says:

"Wheel size will depend solely on the car. Manufacturers will fit minimum options, but people want to go beyond that. The load ratings vary. The biggest problem is load rating, which is a cost-cutting thing. Anything within 15mm [rolling diameter] is acceptable as anything larger and the speedo becomes incorrect."

And the rest:

All Commodores are bound by design rules that came into effect between 1971 and 1973 that specify strength, air pressures, speed ratings and allowable combinations of wheel and tyre sizes.

A quick consultation with your tyre placard (usually located in the glovebox, the engine bay or on a door pillar) will bring you up to speed with recognised and approved wheel and tyre combinations, load capacity, speed rating and the recommended air pressure of tyres. Laws will vary slightly between states, so a phone call to your local registry or engineer will ensure that you don't waste your cash on wheels that you can't use.

Load rating is oft overlooked but is a factor that should be taken into consideration depending on what you intend to use your car for. The range of Commodore-based vehicles is so varied that Holden has released a range of wheels specific to individual models and their varied applications.

Take, for example, two very similar cars in terms of wheel options and fitments, but with very different applications. A VZ Monaro's tyre placard reads 235/40R18 with a 91V load rating, denoting a carrying capacity of 615kg. On the other hand, vehicle number two, a Crewman of the same vintage with a tyre specification of 215/65R15 C and a load rating of 900kg.

If you drive the Crewman and are particularly fond of the Monaro wheels, while the 18s would bolt straight up, they are chronically underrated for the Crewman's carrying capacity, and technically illegal, not to mention dangerous to fit. That's not to say that you're bound to 15in of uninspiring steel for the rest of your stint with the car.

There are appropriately rated aftermarket wheels and tyres available for commercial vehicles like the Crewman. In short, you're tempting fate by fitting a vehicle with inappropriate load index wheels and tyres.

This marking specifies the wheel's load rating. As we learnt, many mesh-style wheels, though particularly sharp looking, don't meet load-rating requirements for Commodores



VIC

Mexicans have similar restrictions placed upon them when it comes time to re-shoe their pride and joy. Any replacement rim must not be more than 25mm wider than the widest wheel specified by the vehicle manufacturer for that model, nor can it be narrower than OEM gear.

Furthermore, the overall width of any new wheel and tyre combo must be no more than 15mm either side of the largest diameter specified by the manufacturer. If you've had your wheels widened for whatever reason, there must only be one peripheral weld. This must meet relevant engineering standards, and the wheel must still comply with all standing structural regulations as appropriate in the instance.

QLD

The Queensland Government is pretty cluey and has cottoned on to the fact that to get around the rolling-diameter loophole many just fitted lower profile tyres to larger diameter wheels. They say that it is fine and I suppose that rather than try to counter what will inevitably happen anyway, why not just embrace it?

The stance on wheel widths is a little more relaxed, allowing fitment of wheels 15mm taller than or as small as 26mm below the standard wheel size. Generally, to meet these requirements, 60 tyres are fitted to rims with a diameter 26mm larger than standard, and 50 series tyres fitted to rims with a diameter of 50mm larger than standard.

NSW

Good news, you can go up to 26mm wider than the original wheels as fitted to your car from the factory without having to notify the authorities in the Premier State. You can also go 15mm either side (15mm more or 15mm less) than the smallest diameter wheel and tyre combination specified for the vehicle.

The front wheels are bound by their own, specialised requirements. The front wheels must be no wider than the widest wheels allowed for the rear end (8in), no more than 70-percent skinnier than the rear rubber (forget bigs and littles on the street) and no narrower than the standard wheel as originally fitted.

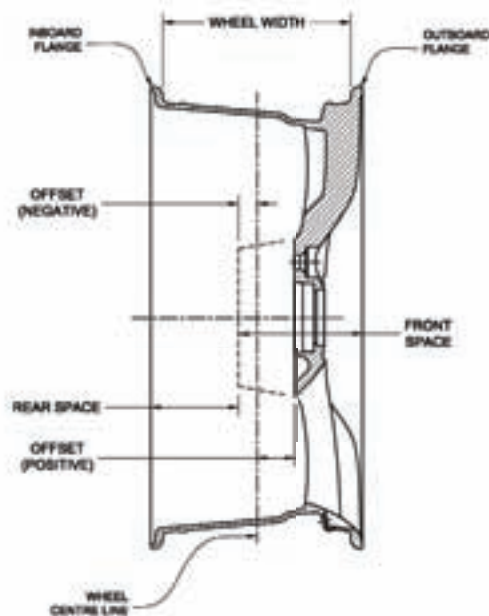
Knowing that you're restricted by the above rules, also consider that if you're going aftermarket the wheels must meet the following requirements:

- The rim itself must be no narrower than the originally fitted wheels
- The wheels must be contained inside the body work of the car
- The wheels must not interfere with any suspension or drivetrain components
- The wheels must not prevent the wheel nuts from fully engaging their studs
- All wheels and tyres fitted to an axle must be of the same carcass construction, diameter, offset, width and mounting configuration
- The only external welds on the

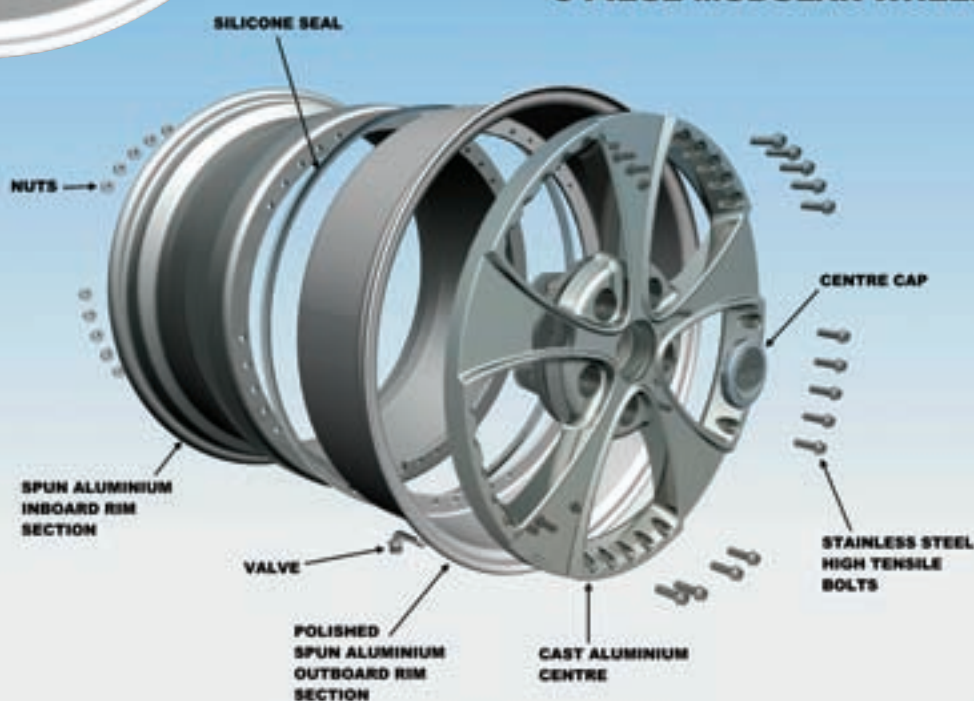
wheels should be to hold the wheel to the wheel centre

- Your speedo must still be accurate after fitting new wheels
- Spacers must not be fitted in order to properly attach the wheels to the hub, unless they were fitted by the manufacturer

Once you have your wheels in check, don't forget your tyres as they make up a vital part of the combination. The tyres you fit to the wheels must correctly fit and be aptly load rated. If the wheels are listed on your car's tyre placard or in the owner's handbook, then the tyres you fit must be those listed on the placard or in the handbook for these wheels.



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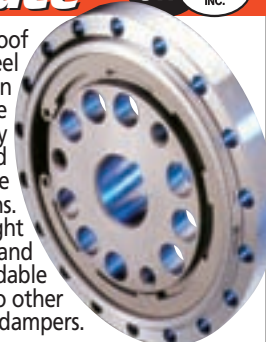


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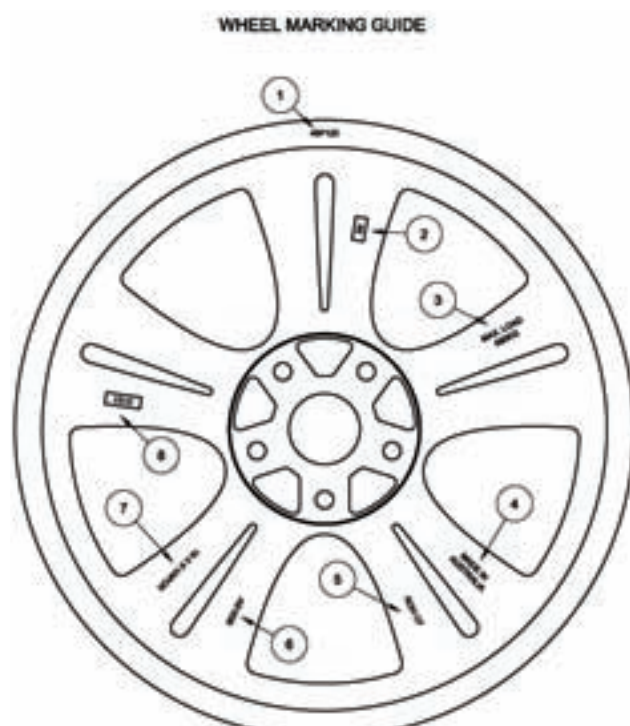
Sandropers, forget going more than 1in wider than what is shown on your tyre placard, and aftermarket wheels shall be no more than 7in wide. There are of course loopholes to this, and if your car originally came with wheels wider than 7in then go for your life and fit some nice, fat wheels.

NT

So they've clamped down on how fast you can go on the north end, but when it comes to wheels for your car, they're pretty blasé. Your wheel and tyre combination can be up to 15mm taller than that originally fitted. Width-wise, you have up to 51mm to play with.

The NT authorities recognise that many dodge tyre placards by getting one off the same model of vehicle that shows wider tyres as fitted by the factory, say 15x7in instead of 15x6in, so they accept that optional wheels as offered by the manufacturer shall count and you can travel 51mm from the widest wheel possible for fitment to that vehicle.

Pick the right offset and you can fit wheels that you never thought possible. Simmons wheels as pictured are custom-made to suit, and as such can be made to fit anything without a hassle. In this instance, the only real gripe would be wheel size, but when it looks that good we'll let them slide



REAR VIEW OF WHEEL

1. WHEEL OFFSET AND P.C.D.
2. SEQUENTIAL WHEEL CASTING NUMBER (FOR TRACEABILITY).
3. MAXIMUM WHEEL LOAD.
4. COUNTRY OF MANUFACTURE.
5. MANUFACTURER'S LOGO AND YEAR OF MANUFACTURE.
6. TEST STANDARD (OTHERS INCLUDE DOT, JWL, JWL.T, JIS, SAE, VIA)
7. RIM DIAMETER, RIM WIDTH AND STYLE NAME.
8. CASTING SHIFT AND DATE CODE (FOR TRACEABILITY).

ANY NUMBER OF THE ABOVE MARKINGS CAN BE FOUND ON THE FRONT AND OR REAR OF THE WHEEL DEPENDING ON THE MANUFACTURER.

"IF THE INCREASE (IN WHEEL SIZE) IS SUBSTANTIAL, THE VEHICLE MAY NEED TO CHANGE ITS BRAKING AND CHECK SPEEDO CALIBRATION TO SUIT, BUT THAT'S IN EXTREME CASES. CLEARANCE TO WHEEL ARCHES AND STEERING ARTICULATION IS OFTEN OVERLOOKED."

— JOHN VARETIMIDIS



SA

Good news for all of you in the city of churches. While the SA motor registry has been known to be a little dictatorial in the past with their stance on vehicle modifications, they have given you some leeway should you want to switch your wheels.

Your overall wheel track must not exceed the manufacturer's maximum track by 26mm. The figures for each vehicle can be obtained from Transport SA. Like other states, the wheels and tyres must not foul the body nor can they protrude from the body of the car.

Unless your car came with hub spacers from the factory then forget about fitting them, as they're a big no-no. You won't be able to fit wheels that have been widened by inserting a spacer band, and cars bound by ADR 24 (post 1973 construction) are not permitted to increase or decrease the diameter of the wheel by more than 50mm than the largest or smallest wheel listed on the tyre placard.

Fitment of larger-diameter wheels and tyres will throw out your speedo calibra-

You'll find castings like this on the back of all aftermarket wheels. There should be five markings in total starting with this one, which denotes width and diameter

tion but SA say no to this, and anything that affects your vehicle's speedo above 40km/h will not comply. SA go so far as to stipulate that the offset must not vary more than 13mm from the OEM wheels, though I can't see Mr. Plod going to far as pulling your wheel off and taking out a tape measure to give you a fine.



TAS

All tucked away down there, we almost forgot about Tassie. However, after seeing how many of you guys on the forum, we thought we'd better check up on what bind you guys in terms of wheels and tyres. Like the mainland, you can forget wheels and tyres that foul on the body, steering or suspension components at any time, and you're also stuck in terms of travelling from the original wheel track.

Tyres are allowed to be 30-percent wider than the manufacturer's widest optional tyre. Diameter-wise, it's a case of 15mm taller than or as small as 26mm below the standard wheel size

Non-standard wheels must meet the requirements laid out in the Tyre and Rim Association of Australian standards manual, and can comply with any international standards, be it Japanese (JIS-D4202), TUV or, Standards Association of Australia (SAA) or Wheel Industries Association Australia (WIAA).

Rims must not have any circumferential welds, other than that which attaches the hub to the barrel. Obviously, replacement wheels should be designed to suit the existing hub and stud pattern and wheel spacers are banned. Suspension, braking and under-car components cannot be modified to fit new wheels.