TruWeigh - Dual Axle Combination Report

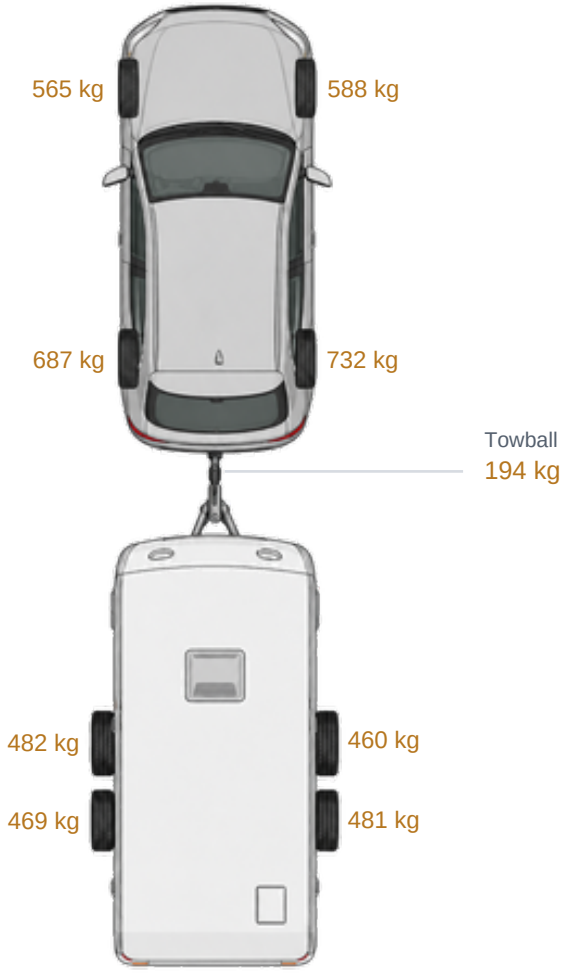
2026-01-14 | Joe Citizen | Isuzu MU-X + Jayco Journey

Car specifications

Front axle	1450 kg
Rear axle	1650 kg
GVM	2800 kg
GCM	5900 kg
Max towball mass	350 kg

Van specifications

Axle group rating	2900 kg
GTM	2182 kg
ATM	2300 kg
Tare	1746 kg
Empty coupling weight	118 kg



Front 1153 kg Rear 1419 kg Van front 942 kg Van rear 950 kg
GCM 4464 kg

Combination - WD engaged / normal towing

Car front axle	1153 kg	1450 kg limit	297 kg to spare
Car rear axle	1419 kg	1650 kg limit	231 kg to spare
Car GVM	2572 kg	2800 kg limit	228 kg to spare
Van axle group (GTM)	1892 kg	2182 kg limit	290 kg to spare

Van axle group (physical rating)	1892 kg	2900 kg limit	1008 kg to spare
GCM	4464 kg	5900 kg limit	1436 kg to spare

Car alone (disconnected, owner reference)

Front axle	1211 kg	1450 kg limit	239 kg to spare
Rear axle	1167 kg	1650 kg limit	483 kg to spare
GVM	2378 kg	2800 kg limit	422 kg to spare

Van left / right balance

Front axle L / R	482 / 460 kg	guide: within 10%	22 kg (2.3%) heavier left
Rear axle L / R	469 / 481 kg	guide: within 10%	12 kg (1.3%) heavier right

Towball / ATM

Towball mass vs vehicle max	194 kg	350 kg limit	156 kg to spare
ATM (van axle group + towball)	2086 kg	2300 kg limit	214 kg to spare
Towball % of ATM	9.3%	target 10%	Acceptable - aim for 10%

Comments

All measured figures are within the rated limits entered.

Report generated with the information provided. Please verify against the compliance plate.

Tyre Pressures

Pressure = (load / max load per tyre) x max pressure + 4 psi safety margin. Car shown as-weighed only; van shown at tare (excluding the coupling's share, since tyres don't carry that), at max (GTM, same reasoning), and at today's actual weighed load.

Car: as-weighed only. Van: T = tare, M = max (GTM), C = current.

Definitions

ATM / ATM rating

ATM is the actual weight of the loaded caravan on its own, unhitched. The ATM rating is the maximum ATM the manufacturer allows - the ceiling the actual ATM has to stay under.

GTM / GTM rating

GTM is the actual weight sitting on the caravan's own wheels once it's hitched up and ready to tow (roughly ATM minus towball weight). The GTM rating is the maximum GTM the compliance plate allows. On a dual-axle van this is the two axles added together.

Axle group rating

A separate, physical engineering limit for the van's axle assembly as a whole - caravans are rated by axle group, not by individual axle. Set by the axle manufacturer, usually higher than the GTM rating, giving some headroom underneath it.

Independent suspension and the 120% rule

Under VSB1 (Axles and Suspensions), a close-coupled axle group that isn't interconnected by a load-sharing suspension - which independent suspension is not - needs axle capacity of at least 120% of the load at ATM. In practice that means the axle group rating should be at least 120% of GTM. Vans with a load-sharing (equalising) suspension aren't held to this higher margin.

GVM / GVM rating

GVM is the actual weight of the tow vehicle on its own, loaded with fuel, passengers and gear. The GVM rating is the maximum GVM the vehicle manufacturer allows.

GCM / GCM rating

GCM is the actual combined weight of the tow vehicle and caravan together once hitched. The GCM rating is the maximum GCM the vehicle manufacturer allows - usually less than the GVM rating and ATM rating added together, so a rig can be under both individual limits and still be over the GCM rating.

Front axle / rear axle weight and rating

The actual weight sitting on each of the tow vehicle's individual axles, checked against the maximum the vehicle manufacturer allows on each - separately from GVM, because a load can be under the overall vehicle limit but still overload one axle.

Tare

The weight of the caravan as it left the factory - empty, no water, gas or belongings added. There's no separate rating for this - it's a fixed factory figure, not a limit.

Towball mass / Maximum towball mass (vehicle)

Towball mass is the actual downward force the caravan's coupling puts on the tow vehicle's towball, measured with the van loaded and hitched. Maximum towball mass is the heaviest towball load the tow vehicle's own towbar and chassis are rated to carry.

Empty coupling weight / towball mass at tare

The towball figure shown on the caravan's compliance plate, measured at tare (empty). Its provenance is unclear - manufacturers don't say how it's derived, so it may or may not reflect an actual measurement; it could just as easily be an arbitrary figure. TruWeigh's view is that this plated number should represent the minimum safe towball mass when the van is empty, but in practice it often doesn't. For that reason we don't rely on the plate figure - instead we apply our own guide of 8-12% of the van's actual weight at any given time, empty or loaded, with 10% as the optimal target for Australian conditions.

Left / right balance

How evenly the caravan's load is spread between its left and right wheels, checked separately for each axle. There's no legislated limit for this in Australia, but a lopsided load can affect handling and tyre wear.

Weight distribution effect (calculated)

When a weight distribution hitch is disengaged, the car's front axle is never directly reweighed - only the rear axle and the van are. The front axle figure for that state is calculated instead, on the basis that whatever weight the rear axle gains when the WD bars are released, the front axle loses the same amount.