

CARRY WORRY



MORE

LESS!

WE CHAT TO OUR GVM UPGRADE EXPERTS TO GET THE LOWDOWN ON INCREASING YOUR 4WD'S GROSS VEHICLE MASS, AND ANSWER SOME OF THE MOST COMMON QUESTIONS YOU ASK!



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VM Upgrades – they're the hot topic in the 4WD Industry right now, and with good reason. As vehicles become larger & heavier, and the list of available accessories and modifications that people are kitting out their rigs with

increases, it's surprisingly easy to load your vehicle over its Gross Vehicle Mass!

Why is knowing your vehicle weight important? There is no margin allowed with GVM! If your vehicle is overweight it is illegal, and can be grounded by state or territory authorities or police. There are heavy fines for exceeding your GVM, and

insurance companies have rejected claims for vehicles found to be over the GVM limit.

Exceeding your GVM is not just illegal, it's also risky. All that extra weight can have a negative affect on the handling & braking of the vehicle, decrease stability, and place extra strain on suspension, tyres, & driveline components.

"THE NUMBER ONE THING PEOPLE NEED TO DO WHEN IT COMES TO GVM UPGRADES, IS QUALIFY THEIR VEHICLE TO DETERMINE IF THEY NEED A GVM UPGRADE"

WHAT DOES IT ALL MEAN?

Now we know why it's important to stay within your GVM, let's have a closer look at how your vehicles GVM is calculated, what all the different terms mean, and what is involved in upgrading your vehicle.

GVM (GROSS VEHICLE MASS)

GVM is the maximum your vehicle can weigh when fully loaded, as specified by the manufacturer. This includes the actual weight of your 4WD, passengers and luggage, fuel, accessories, and even tow ball weight when hitched to a trailer.

GCM (GROSS COMBINATION MASS)

The Gross Combined Mass is the maximum allowable weight of your tow vehicle and trailer combined. Note, the GCM does not always equate to your vehicles GVM plus its braked towing capacity.

TARE MASS

This is the weight of an empty, standard vehicle with all of fluids (oils, coolants) and 10 litres of fuel in the tank.

KERB WEIGHT

This is the same as Tare Mass, but includes a full tank of fuel. The Kerb Weight does not include any accessories fitted (bull bars, roof racks etc).

PAYLOAD

Payload is any mass you add to the vehicle. To calculate your payload, subtract your kerb weight from the GVM. Your vehicle's payload includes but is not limited to; luggage, aftermarket accessories, fuel, water, and passengers!

AXLE LOADS

Your vehicle's GVM may seem like a BIG number, but it's also important to keep the smaller axle load numbers in mind when setting up your 4WD. The front and rear axle ratings are the maximum allowable weight that each axle can carry. The combined axle load rating may end up a little higher than the GVM.





A COMPLETE GVM UPGRADE KIT
READY TO BE INSTALLED IN THIS RAM 1500

WHAT IS A GVM UPGRADE, AND DO I NEED ONE?

The easiest way to determine if your 4WD is within its GVM and axle loads is to visit a weighbridge. Ensure that your 4x4 is loaded with a full tank of fuel, all the gear that you typically carry, and if you're planning on towing, hitch up the van as well.

Make sure you record your overall vehicle weight, front axle weight, and rear axle weight. You can subtract the Kerb Weight from the overall vehicle weight to determine the payload of your vehicle, and see how much weight you are actually carrying (hint – it's probably more than you think!)

If your vehicle is within its

GVM, and front & rear axle limits – great news, you're ready to hit the road and enjoy your next adventure! If you're a few kilos over on any of those weights, have a look at what you're carrying and see how what you can take out of the vehicle – do you really need that 3rd spare tyre, back-up shovel, and 2 extra sets of 'going out' clothes for just a weekend trip?

If you're well over your limits, it's time to consider upgrading your vehicle's GVM.

Upgrading your 4WD's GVM involves the professional fitment of an aftermarket suspension kit which has been designed,

tested and approved in Australia to increase the factory GVM, allowing you to carry more weight legally.

Tough Dog GVM Upgrade Kits include fitting new, upgraded springs front and rear, upgraded shock absorbers, and replacing a number of the stock suspension components with improved Tough Dog parts. Depending on your vehicle, the kit may also include a set of Air Assist air bags, and require the fitment CAT6 indicators and load-rated wheels & tyres. We offer both pre and post-registration kits for a wide range of popular 4WDs.

WHAT'S THE DIFFERENCE BETWEEN PRE & POST-REGO? IS IT JUST AN ENGINEER SIGN OFF?

Tough Dog is a certified Second-Stage Manufacturer, which means our Pre-Registration GVM Upgrades are Federally approved. A pre-rego GVM upgrade actually changes the vehicle's manufacturer at registration, converting it from say a Toyota Hilux to a 4Way Hilux.

There are 2 big advantages of a pre-registration GVM Upgrade:

1. It is a cheaper exercise due to an automotive engineer not being required to sign-off on the individual installation. This certification was completed when the suspension kit was tested for compliance and met minimum ADR safety requirements.
2. The vehicle is certified to with the increased GVM and payload anywhere in the country, even if you move or re-register that vehicle in another state.



Post-registration GVM Upgrades involve some extra steps, the main being an Authorised State Engineering Signatory needs to inspect, validate, and certify the upgrade.

Please note some states have different compliance laws from each other and require certain additional items to be approved by the engineer.

One positive is you can organise with the engineer to sign off on a couple of items at once making it cost-effective if your vehicle has other modifications like seat removal and other upgrades.

BRETT + WARNIE FROM BAW AUTO TALK ALL THINGS GVM + TOWING!

HOW MUCH LIFT WILL I GET WHEN I UPGRADE MY GVM?

GVM kits are designed for their weight-carrying capacity, rather than to lift the vehicle. If the vehicle is loaded up to its upgraded GVM and axle loadings, it will sit close to OEM height.

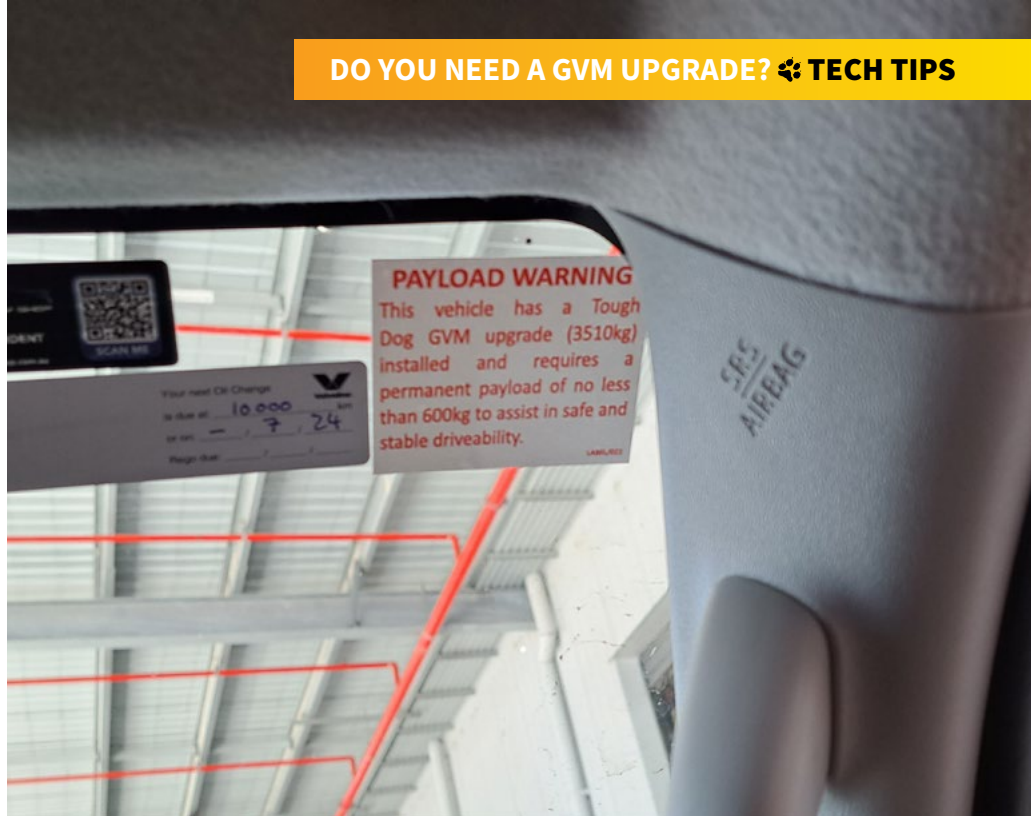
However, if you're only carrying the minimum payload, you might see a 30-40mm lift, depending on the vehicle.

As with any suspension upgrade, when weight is added to the vehicle, the height will decrease as the springs compress under load.



WHY DO TOUGH DOG'S GVM UPGRADES SPECIFY A "REQUIRED PERMANENT PAYLOAD" - AND WHAT DOES THAT ACTUALLY MEAN?

Tough Dog specifies a "Required Permanent Payload" for all its GVM Upgrade kits – this is the minimum weight required to be carried all the time, to match the upgraded spring rate of the GVM Kit. Maintaining the "Required Permanent Payload" as specified ensures that your vehicle is not over-sprung, and will provide you great on and off-road handling, exceptional load carrying capacity, and overall comfort.



WE TALK GVM UPGRADES WITH JILLAROO JESS!

WATCH THE VIDEO:



I'M UNDER MY GVM, BUT OVER MY REAR AXLE LIMIT – WILL A GVM UPGRADE FIX THAT?

Most Tough Dog GVM Upgrade kits increase both front and rear axle load limits. Understanding the payload of your vehicle and

where the weight needs to be distributed is key to having a 4x4 that handles well on and off-road.

If you've got the boot of your

wagon or the tray of your ute fully loaded, have a full tank of fuel, maybe a rear bar and larger spare, and then add on the ball-weight of your trailer, you could be over your rear axle limit, even with a GVM Upgrade. If you are over your axle loadings, it's important to consider what weight you're carrying in your vehicle and trailer, and trying to either redistribute that weight more evenly across your vehicle and trailer, or remove it entirely.

Depending on your weights, and what you're trying to achieve, you may need to look at upgrading to a different vehicle.



I TOW MY CARAVAN ON THE OCCASIONAL WEEKEND, BUT THE REAR OF MY 4WD SAGS BADLY WHEN I HOOK IT UP – DOES THAT MEAN I NEED A GVM UPGRADE?

We always tell customers to investigate their weights and how they plan to use the vehicle over the long term. If you only use the vehicle to tow, but do not carry any weight on the vehicle a GVM Upgrade might be the worst option for you, as the vehicle would be over-sprung when not towing,

giving you an uncomfortable ride and negatively affecting the handling & stability.

If you are under factory GVM, & within front and rear axle weights with the caravan or boat hitched up, our Air Assist system could be the perfect solution for your vehicle setup.

Tough Dog's Air Assist air

bags are specifically designed to provide additional support for the rear springs, levelling out and controlling the rear ride height of your vehicle. You can even adjust the pressures of the air bags to improve your ride from the comfort of the cab, with our Wireless Air Assist upgrade options!

"YOUR PAYLOAD INCLUDES YOU AND ALL PASSENGERS PLUS ANY ACCESSORIES FITTED TO THE VEHICLE, EVEN THE TOWBAR!"



WILL MY GCM INCREASE IF I GET A GVM UPGRADE? I WANT TO TOW A BIG CARAVAN AROUND AUSTRALIA

Currently in Australia, there is no ADR law stating you can change the factory GCM, even on an SSM Vehicle. Some states are now moving toward allowing these changes such as QLD and

WA, but these require additional tests which are new to the automotive industry.

One big thing to consider before wanting to upgrade GCM is whether the vehicle purchased

is correct for the application, factory GCM is commonly near the maximum threshold the components of the vehicle (such as transmission, engine, & brakes) can safely work at.

CAN I FIT BIGGER TYRES AFTER I UPGRADE MY GVM?

There isn't a simple yes or no answer for this one, and we always recommend speaking with your local authorities and checking with your state laws. According to the ADR's and VSB14 laws, some modifications do not require engineering compliance, allowing you to fit tyres no more than 7% larger than factory, considering speedo calibration and accuracy.

We always suggest when fitting a GVM upgrade keeping the wheels and tyres the same as the tyre placard ensuring safety, legality, and stability are maintained.

ARE YOU OVER YOUR GVM?



TOUGH DOG DOESN'T OFFER A GVM UPGRADE FOR MY VEHICLE — HOW CAN I UPGRADE MY GVM?

Apologies to the customers with vehicles that we don't currently have GVM kits available for, we are always working hard to make sure we have an extensive range of suspension to suit all

popular makes and models in the Australian market.

If we don't have a GVM kit available for your vehicle, we recommend speaking with an engineer in your State or

Territory, as depending on your vehicle they may be able to sign off on larger axle loadings without any major modifications, which in turn would give you a small increase in GVM.

"LOAD YOUR VEHICLE UP, PUT IT ON A SET OF SCALES AND WEIGH IT, SO YOU KNOW EXACTLY WHAT YOUR VEHICLE WEIGHS TRIP-READY"



WHAT'S THE NEXT STEP?

There's a lot to take in here, and you've probably got more questions now than on page 1! [CLICK HERE](#) to see the full range of available Tough Dog GVM Upgrade kits or find your local Authorised GVM Upgrade dealer on our [Dealer Locator](#) and have a chat about carrying more in your 4WD, safely and legally! 🐾