

Weights and dimensions / vehicle plating

Definitions

Gross vehicle weight (GVW) is the maximum legally permitted weight of the vehicle plus load (not to be confused with design weight, which is usually higher).

Gross train weight (GTW) is the total weight of the tractor unit plus trailer plus load (sometimes called gross combination weight (GCW)).

Maximum authorised mass (MAM) is a term for permissible maximum weight, used on the vehicle plate.

Which laws apply?

- EC Directive **EC/96/53**
- The Road Vehicles (Construction & Use) Regulations 1986 (**C&U Regs**)
- Overloading authorised axle, gross vehicle or train weights is an offence under the Road Traffic Act 1988 and carries a £5,000 penalty per offence

Plated weight

This is the total permitted weight of a loaded vehicle. Each vehicle should carry a permanently fixed Department of Transport (DfT) plate (also called a Ministry plate) and plating certificate (a VTG7). If there is no DfT plate, there should be a manufacturer's plate. DfT plates are fitted on trucks at first registration and on trailers after they have undergone a DfT annual test.

- Goods vehicles over 3,500kg gross: The vehicle must have a plate on the cab showing manufacturer, vehicle type, engine type, power, VIN number, number of axles and maximum design and plated weights.
- Goods vehicles below 3,500kg: No plate is required.
- Trailers over 1,020kg unladen weight: The trailer must have a plate showing manufacturer, chassis number, number of axles, maximum load imposed on towing vehicle, year of manufacture and maximum design and plated weights

Downplating

If the vehicle is unlikely to carry the potential maximum weight, it can be down plated in order to reduce Vehicle Excise Duty.

For many vehicles, this may not involve mechanical changes: simply complete a VTG10 Notifiable Alteration form and pay the appropriate fee to VOSA. An official plating test may be required. You can also uprate a downplated vehicle if, for example, you buy a downplated used truck but want to operate it at its original permitted weight.

To downplate to 3,500kg or 7,500kg, however, mechanical alternations to the vehicle are required.

For general enquires on uprating or down plating procedures call the Vehicle Inspectorate Technical Services Branch on 01792 458888. For information on specific vehicles, contact the vehicle manufacturer.

Weights

Maximum legal weights are determined by a number of factors, including the spacing between the axles, the outer axle and bogie spread, the number of tyres on each axle, and the type of suspension fitted.

Vehicles with Road Friendly Suspension (RFS) and twin tyres on the drive axle are permitted higher weights than those without. The majority of vehicles with RFS operate on air suspension, but some rubber and hydraulic suspension may also count as road-friendly.

- EC96/53 authorises trucks on international journeys at 40 tonnes GVW on five axles (a two-axle tractor towing a three-axle trailer) provided the drive axle weight does not exceed 11,500kg.

Did you know?

UK hauliers are allowed to operate at a higher weight limit than is generally the case in the rest of Europe. The government calculated that permitting 44 tonnes on six axles is less damaging to roads than the 40 tonnes on five axles authorised under EC96/53.

To operate at 44 tonnes both the tractor and trailer must have three axles, none of which should exceed 10,500kg and all of which must have RFS. The distance between the coupling centre and the centre of the rearmost axle of the semi-trailer must be at least 8m.

Authorised weights

The main weight categories are given below. The basis of the calculation is to multiply the distance between the foremost and rearmost axles in metres by the maximum permitted factor in kilograms. A factor of 6,000kg is applied to two-axle vehicles, tractor units and drawbars, 5,500kg to three-axle rigids and 5,000kg to four-axle rigids.

The maximum weights on three- and four-axled vehicles are only permitted with twin tyres and either RFS on the drive axle or with a single axle limit of 9,500kg.

The technical departments at the vehicle manufacturers and axle conversion specialists are expert at these calculations, so are the best source for advice.

Maximum axle weights

Solo, driven axles:	11,500kg
Solo, non-driven:	10,000kg
Tandem, driven:	19,000kg

Maximum gross weight

Rigids

2 axles	18,000kg
3 axles	26,000kg
4 axles	32,000kg

Tractors

2 axles	18,000kg
3 axles	26,000kg

Drawbars

3 axles	26,000kg
4 axles	36,000kg
5 axles	34,000kg
5 axles	40,000kg
6 axles	44,000kg

Trailers

1 axle	11,500kg (driven axle)
2 axles	20,000kg
3 axles	24,000kg

Train weight of tractor-trailer combination

3 axles	26,000kg
4 axles	38,000kg (18,000kg+20,000kg)
5 axles	40,000kg
6 axles	41,000kg
6 axles	44,000kg

Dimensions

Vehicle dimensions are also determined by EC96/53.

Height

For international journeys, a 4m height limit applies. Within the UK, however, there is no legal height limit, although any vehicle over 3m must display the height in the cab. The main constraint on height is the vehicle's ability to negotiate under motorway bridges, so the practical maximum is usually 4.8 or 4.9m.

Width

Dry freight trucks: 2,550mm.

Refrigerated trucks: 2,600mm (to accommodate 45mm insulated side panels and maintain internal load width).

Length

Permitted length depends on axle spacings.

Rigids: 12m

Artics: 15.5 or 16.5m provided kingpin to rear of trailer is within 12.2m and it meets turning circle requirements.

Turning circle

All vehicles now have to comply with turning circle legislation originally introduced for artics. This stipulates that when steering, the vehicle should not pass outside a 2.5m outer circle and a 5.3m inner circle. Rigid vehicles can alternatively meet a swing-out measurement of 8000mm (1000mm for vehicles with lift-axes.)

Up to 3,500kg

Vehicles and trailers below 3,500kg fall outside the C&U regulations – there is no legal requirement governing the weight of the towing vehicle and the weight of the trailers. Instead, the maximum GTW of a light truck or van is quoted by the vehicle manufacturer.

Trailers must not exceed 2,300mm width or 7,000mm length

<http://www.roadtransport.com/RoadLegal/11947/weights-dimensions-plating.html>