

Outfit match report

The Club advises that a BMW 7 Series 730d xDrive (2018) **is o.k. to** tow an ABI Award Tristar (1993)



Kerb weight: 68%

The caravan's laden weight is within 85% of the car's kerb weight, and therefore meets Club guidelines.



Towing limit: 62%

The caravan's laden weight is within the car's stated towing limit, and therefore meets legal limitations.



Gross train weight: 82%

The sum of the car and caravan's fully laden weights is within the car's gross train weight. This outfit can therefore be used legally with both the car and the caravan fully laden.



Nose weight: 70%

The car's nose weight should be fine to safely tow this caravan. If this figure is high, however, (typically over 100%) care will be needed to load the caravan so that the car's nose weight limit is not exceeded, but this should be practically achievable. Aim for 5-7% of the caravan's actual laden weight without overloading the car.



BHP per ton: 77

The car's engine power should be fine to safely tow this caravan.

B+E license required

The maximum combined weight of this car and caravan (car gross vehicle weight + caravan MTPLM) are over 3500kg, which means you need to have a category B+E driving licence. If you obtained your standard car driving licence before 1st January 1997, you already have this – if not you will need to take a B+E test to legally drive this outfit.

Disclaimer

The data on which this advice is based is collated from manufacturers' published data and credible industry data suppliers. While every reasonable precaution is taken to ensure its accuracy, the Caravan and Motorhome Club cannot accept any responsibility for the consequences of any errors or omissions which may occur.

Car details	
Make	BMW
Range	730d xDrive
Model	7 Series
Year	2018
Fuel type	Diesel
Transmission type	Automatic
Body type	Saloon
Kerb weight	1900.00kg
Towing limit	2100.00kg
Gross vehicle weight	2540.00kg
Gross train weight	4660.00kg
Nose weight	130.00kg
BHP	265
RPM for maximum BHP	4000
Maximum torque	620
RPM for maximum torque	2000
Overall height	1478.00mm
Overall width	1902.00mm
Overall length	5098.00mm
Engine size	3.00
Driven wheels	4x4
Number of doors	4
Number of speeds	8
Seating capacity	5
Self levelling suspension	No
Stability control	Standard
Trailer stability programme	-
Transmission description	Automatic with Manual Mode
CO2	132
Emission std met	E6
Gross trailer weight braked	2100.00kg
Gross trailer weight unbraked	750.00kg
Trailer weight braked incline %	0
Trailer weight unbraked incline %	0
Maximum trailer nose weight	0.00kg
Gross train weight	4660.00kg
Gross vehicle weight	2540.00kg
Variable towing limit applies	
Notes	

Caravan details	
Make	ABI
Range	Award
Model	Tristar
Year	1993
Trailer tent	Caravan
Berths	4
Number of axles	1
MTPLM	1300kg
MIRO	983kg
User payload	317kg
Hitch limit	Unknown
Shipping length	6.19m
Overall width	2.16m
Overall height	2.60m
Awning length	8.74m
Base make	
Base model	
Body length	4.64m
Dealer special	False
Dealer	
Extended height	Unknown
Fault report reference	
Folding camper	
Hitch limit	Unknown
Layout code	
Non UK built model	
Optional berths	1
Recall reference	
Tyre size	
User payload	317.00kg
Weight variant	False
Notes	Data taken from brochure

Glossary

The car	
Fuel type	If the car is not a conventional petrol or diesel engine, this will state ‘Alternative’. This includes electric, hybrid, LPG etc.
Body type	For full details of the various body type descriptions, see the Outfit Matching Help information on the webpage (http://www.camc.com/practical-advice/thinking-of-buying/outfit-matching/outfit-matching-help).
Kerb weight	The weight of the vehicle as it comes from the manufacturer with a full tank of petrol and sufficient other fluids for the engine etc. Depending on the exact definition used by the vehicle manufacturer, this may or may not include the weight of the driver, but will not include the weight of passengers or luggage.
Towing limit	The maximum weight of braked trailer that the vehicle can tow as specified by its manufacturer. This will often be based on the vehicle’s ability to restart on a 12% (~1 in 8) slope, which does not give a good indication of its actual towing capability over a variety of practical conditions. However, exceeding this limit would invalidate the car’s warranty, and possibly its insurance. Note that a lower limit (750kg or less) will apply if intending to tow an unbraked trailer.
Gross Vehicle Weight	The weight of the vehicle when fully loaded with luggage and passengers etc to its maximum permitted capacity. Exceeding this limit is likely to be considered illegal, and would probably invalidate both the car’s warranty and insurance.
Gross Train Weight	The train weight of the outfit is the combined weight of the vehicle when loaded with luggage and passengers, plus the weight of the loaded trailer. Many car manufacturers calculate this as being the sum of the GVW and the Towing Limit, which means that the car can tow its full towing capacity even if fully laden itself. Other manufacturers define a lower towing limit, such that the car can only be used with a high internal payload and modest towed load, or modest internal load and a heavier trailer, but not both simultaneously. Since August 1998, new cars have had to have this value defined for them, and it is a legal limitation. Some older cars may also have such a limit.
Nose Weight	The nose weight of the towing vehicle is the maximum vertical load that the towball can accept as specified by the vehicle manufacturer.
BHP	Brake Horse Power - an engine with more BHP will generally mean a better towcar, albeit at the expense of greater fuel consumption. If comparing engines of similar power, one which produces its maximum at lower engine revolutions per minute (rpm) will generally be preferable.
Torque	The turning force produced by an engine. In practical terms, this equates to the engine's ability to maintain speed under the increased load of climbing a gradient, say, or its ability to manage a hill start - its 'pulling power', therefore. A high torque output will give relaxed driving characteristics (with fewer gear changes required), and better towing performance. Note, however, that the ideal is a high torque output at low engine revs (rpm), since this gives good pulling power in the higher gears (and hence relaxed cruising) plus a better ability to pull away from standstill without undue risk of wheel spin (good for hill starts).

The caravan	
MTPLM	Maximum Technically Permissible Laden Mass. This is the maximum weight that the caravan can be loaded to as specified by the manufacturer. The term 'Maximum Allowable Weight' may also be used for older caravans.
MIRO	Mass in Running Order. The empty weight of the caravan as it comes from the manufacturer in its standard specification. This will not include the weight of items such as gas bottles, battery (except for 2011 model caravans and newer) or optional accessories, nor of any fluids such as gas or water. For older caravans, the term 'Unladen Weight' or 'Ex-Works Weight' may also be used.
User payload	The total weight allowable for user's accessories, i.e. battery (pre-2011 model year caravans only), crockery, cutlery, clothing, food etc.
Nose weight	The nose weight of the caravan is the vertical load which the caravan exerts on the towbar of the vehicle. Sometimes the caravan manufacturer will specify a value for this. More commonly, however, it has to be estimated or (preferably) measured. The Club recommends that the nose weight of the caravan should ideally be 7% of the caravan's actual loaded weight, assuming that this would not result in any maximum value specified for the caravan hitch, tow bar or towing vehicle being exceeded. Where no manufacturer's specified figure is available, we calculate a nose weight figure based on 7% of the caravans MTPLM, up to a practical maximum of 100kg.
Calculations	
Kerb weight ratio	The caravan's MTPLM as a percentage of the car's Kerb Weight. The Club recommends that this ratio should not exceed 85%, in order to ensure safe and comfortable towing under all likely operating conditions. Higher weight ratios will not only reduce performance, but will also make the outfit more vulnerable to stability problems. Although not specifically defined in law, a ratio of over 100% may well be considered illegal on grounds of roadworthiness.
Towing Limit Ratio	The MTPLM of the caravan as a percentage of the car's maximum Towing Limit. This should never exceed 100%, as this would be likely to invalidate your towing vehicle's warranty and insurance, and you may therefore be in breach of the law.
Gross Train Weight Ratio	The sum of the car's Gross Vehicle Weight and the caravan's MTPLM, expressed as a percentage of the car's Gross Train Weight. Values up to 100% are acceptable. A value above 100% indicates that you cannot use the towing vehicle in its fully loaded condition to tow a caravan as heavy as the vehicle's maximum towing limit. Instead, the towing vehicle and/or the caravan will have to be loaded to less than their allowable maximums, such that the sum of their actual loaded weights is equal or less than the train weight limit. Only car's registered since 1 August 1998 ('S' reg. onwards) are legally required to have a GTW limit.
Nose Weight Ratio	The recommended (or Club calculated) nose weight for the caravan expressed as a percentage of the nose weight limit of the towing vehicle. Values up to 100% are acceptable. A value somewhat in excess of 100% indicates that a lower than ideal noseweight will have to be used, with a consequent increase in the risk of instability of the outfit. A value well in excess of 100% may indicate an outfit where it is not practically possible to achieve an adequate nose weight to ensure high speed stability.
Footnotes	
1.	1.Variable towing limits. Some vehicle manufacturers specify a range of max tow values for certain models, depending on, perhaps, the number of passengers in the vehicle, or the steepest slope you plan to encounter. This may mean that the actual maximum tow figure for your vehicle is less than that shown on the outfit matching calculations in some operating conditions. Always check in the vehicle handbook for any such limitations.
2.	2.B+E Licence requirements. If the train weight of the outfit shown is likely to exceed 3500kg, a warning indicates that the driver will require a licence which covers both 'B' and 'E' vehicle categories. Drivers licensed since 1 January 1997 will not have the 'E' category unless they take an additional towing test.