

A GUIDE TO COMMERCIAL VEHICLE SELECTION


Arval Consulting
for Fleet Managers

Arval Consulting is an award-winning independent business unit within Arval, dedicated to delivering tangible results and added value for our customers.

As specialists in developing business car and van strategies, they regularly provide effective advice and action plans across a range of fleet objectives. These include: Defining and implementing fleet policy, cost reduction, limiting environmental impact, improving health and safety, complying with regulation and boosting driver satisfaction. They use the latest tools and techniques, many of which are unique to our business, to model the impact of different strategies and provide actionable recommendations to meet the specific needs and priorities of our customers.

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Please e-mail us on corporatesales@arval.co.uk
and we will be happy to help.



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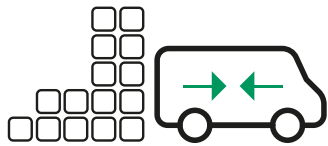
For the many
journeys in life

Selecting the right vehicle

Selecting the right vehicle for the job in hand is important, but with so many options it can be a challenging and daunting task.

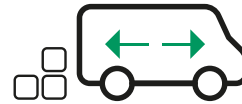
Selecting the wrong vehicle is likely to have a negative impact on your business operations. For example:

Too small



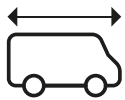
Selecting a vehicle that is undersized will impact vehicle and driver performance. It might also result in the vehicle being overloaded and/or the driver needing to take more trips to complete the job. Ultimately, selecting a vehicle that is too small may create the need for more vehicles than are strictly necessary.

Too big

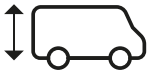


Conversely, selecting a vehicle that is oversized will have a direct impact on the cost of your operation. Larger vehicles generally cost more from the outset and are less economical, resulting in higher fuel bills and a larger than necessary carbon footprint.

It's critical that you have a clear idea of both what you need the vehicle to do, and what you need it to carry. We would recommend you consider the following points with considering suitable vehicles:



Load length



Load height



Payload



Drivetrain

The following information has been provided to assist you with the above and will guide you towards selecting the most cost effective and efficient vehicle.





Selecting the load length

How do I calculate my load length?

To determine a vehicles' load length requirements, operators must consider the following:

1. Quantity of cargo
2. Size of cargo

Consider how these points apply to your vehicle:

A. What is the single largest item transported in the vehicle?

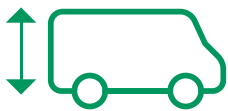
E.g. for a Housing Association this might be an 8x4 ft. sheet of plaster board.

B. How frequently is the largest item transported?

E.g. if the item in mind is required once a week, could it be delivered directly to site via a courier? If feasible, repeat the process and identify the next largest item.

C. Could the item in mind be stored on the roof of the vehicle in transit?

E.g. this could result in a cost saving as you might be able to reduce the size of the vehicle. If feasible, repeat the process and identify the next largest item.



Load height

How do I calculate my load height?

To determine a vehicles' load height requirements, operators must consider the following:

1. How an operative(s) is expected to interact with the vehicle
2. The areas in which the vehicle is expected to operate
3. The size and quantity of cargo

Consider how these points apply to your vehicle:

A. Are operatives required to carry out duties from within the vehicle?

A vehicles' internal roof height should be adequate to allow an operative to stand comfortably for long periods of time.

B. Are operatives required to access roof mounted cargo?

It would be extremely difficult for an operative to safely access roof equipment installed to a large vehicle. Without proper consideration and the necessary controls, this would be a hazardous task, posing significant risk to both the driver and operator.

C. Do vehicles operate, or are likely to operate, in areas with height restrictions?

Working height restrictions could prevent vehicles from accessing multi-story car park and underground facilities. If operatives are expected to work in urban areas, this could very easily result in an impairment or inability to perform duties.

D. How frequently is the largest item transported?

E.g. if the item in mind is required once a week, could it be delivered directly to site via a courier? If feasible, repeat the process and identify the next largest item.



Selecting the payload

As a van operator, it is essential that you are aware of the maximum weight limits of the vehicle.

It's generally acknowledged that this can be a confusing area with some operators incorrectly being led to believe that the gross vehicle weight refers to the weight allowed to be carried on the vehicle and as such mistaking this value for the vehicles payload.

How do I calculate my payload?

The advice in calculating how much a vehicle can carry is to weigh the vehicle with driver(s), full fuel tank and equipment that would normally be carried on the vehicle. Deduct this weight from the vehicles gross vehicle weight (GVW) and the balance represents the maximum weight the vehicle can legally carry.

The maximum gross vehicle weight (GVW) refers to the maximum permissible weight of a vehicle. It refers to the weight of the empty vehicle (inclusive of driver, passenger(s), plus fluids, fuel and all cargo. The vehicles GVW will be listed in the manufacturer technical brochure and it is usually shown on a plate or sticker fitted to the vehicle.

The unladen weight of a vehicle is the weight of the vehicle, exclusive of goods and fuel. This is inclusive of the body and all parts necessary for ordinary use of the vehicle, or vehicle with a trailer when working on the road.

Let's take a sample vehicle:

Gross Vehicle Weight	3,500Kgs
Unladen Weight	1,800Kgs
Weight of driver & passenger (assume 85Kgs each)	170Kgs
Weight of fuel tank of fuel (100 litres = 1Kg per litre)	100Kgs
Load that can be carried (Payload)	1,430Kgs

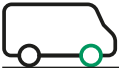
In this example the payload appears to allow 1,430Kgs to be carried, but it is sensible to allow a contingency for cargo that has not been accounted for. If using the method of payload calculation shown above, it is recommended that you reduce by 5-7%.



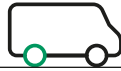
Selecting the drivetrain

How do I calculate my drivetrain?

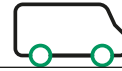
The drivetrain is the mechanism via which power from the engine is delivered to the wheels. Essentially, there are three common drivetrains available:



FWD systems send the power to the front wheels. They are the most commonly specified drivetrain, suited to vehicles that transport light-medium loads. When compared to their RWD and AWD counterparts, FWD systems are a cost effective capital purchase and typically consume c. 5% less fuel. FWD vehicles are the most commonly used drive train.



RWD systems send power to the rear wheels and are better suited to vehicles transporting heavy cargos, or vehicles required to frequently tow.



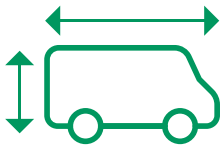
AWD systems are ideal for harsher climates and terrains. The power is directed to all four wheels, giving better traction on rough or slippery terrain.

Selecting the right drive train is critical as incorrect selection is likely to have a significant impact on both the driver and vehicle performance. For example:

- A. Using an FWD vehicle** to tow heavy loads will have a noticeable impact on vehicle performance and will put excessive strain on the engine and transmission. It will also increase fuel consumption as the engine will have to work much harder to move the load.
- B. Using an RWD or AWD** to transport light-medium loads on public highways will not impact on the vehicles physical performance. However, the vehicle itself is likely to cost more than the FWD counterpart and typically consume 5%+ more fuel.

To assist you in making the correct choice based on the vehicles usage consider the following for each type of vehicle on fleet:

Vehicle usage	Drivetrain
The vehicle operates solely on the public highways and does not go off road	FWD
The vehicle transports heavy cargo over the rear axle, putting the rear axle weight close to max weight	RWD
The vehicle tows infrequently at low loads that are less than 60% of the allowance	FWD / RWD
The vehicle tows frequently at high and variable loads	RWD
The vehicle operates off-road	AWD
If the vehicle operates off-road, and is required to tow	AWD



Vehicle size categories

Based on the previous sections, you will now have an improved understanding of your vehicle requirements.

With so many makes, models and variants available, selecting the right vehicle can still be a daunting task.

The table below can be used to help guide you towards the most appropriate vehicle.

Car Derived Van (CDV)



Load height	Up to 920mm
Load length	Up to 1300mm
Payload	Up to 550kg
Drivetrain	FWD

Small Van



Load height	Up to 1500mm
Load length	Up to 2100mm
Payload	Up to 1000kg
Drivetrain	FWD

Medium Van



Load height	Up to 1900mm
Load length	Up to 2950mm
Payload	Up to 1500kg
Drivetrain	FWD RWD AWD

Large Van



Load height	Up to 2170mm
Load length	Up to 4700mm
Payload	Up to 1640kg
Drivetrain	FWD RWD AWD

Utility (4x4)



Load height	N/A
Load length	Up to 2350mm
Payload	Up to 1340kg
Drivetrain	FWD RWD AWD



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