1. Brake efficiency

The brake efficiency will be calculated by the VTS Device using the following methods.

Total up the braking effort recorded from all the wheels of the vehicle when the service brake is applied (having taken into account wheel lock where appropriate).

Total up the braking effort recorded from the appropriate wheels when the parking brake is applied.

Calculate the service brake and parking brake percentage efficiencies by following the procedures detailed below according to the class of vehicle tested.

Class III and IV

Determine the brake testing weight for the vehicle e.g. from the VTS Device. The weight includes an element of 140kg for the driver, fuel, tools, etc.

Calculate the service brake percentage efficiency by dividing the total brake effort achieved when the service brake is applied by the vehicle weight and then multiply the result by 100.

$$\text{i.e.} \quad \frac{\textbf{Total brake effort}}{\textbf{Vehicle Weight}} \textbf{ X 100 = \% efficiency}$$

Calculate the parking brake percentage efficiency by dividing the total brake effort achieved when the parking brake is applied by the vehicle weight and then multiplying the result by 100 as above.

Class VII Vehicles

Obtain the vehicle Design Gross Weight (DGW) from the Department of Transport plate (commonly called 'Ministry' plate) fitted to the vehicle. If a Ministry plate is not fitted to the vehicle then obtain the DGW from the manufacturer's plate fitted to the vehicle (see 1 and 2, section 3.9) or from the VTS Device.

Calculate the service brake percentage efficiency by dividing the total brake effort achieved when the service brake is applied by the vehicle DGW and then multiply the result by 100.

$$\text{i.e.} \quad \frac{\textbf{Total brake effort}}{\textbf{DGW}} \textbf{ X 100 = \% efficiency}$$

Calculate the parking brake percentage efficiency by dividing the total brake effort achieved when the parking brake is applied by the vehicle DGW and then multiply the result by 100, as above.

Note: Plate Brake Test Only

Vehicles with a presented weight of 2000kg or more must be tested to the above criteria. On vehicles with a presented weight of less than 2000kg, the brake efficiency must be calculated using a nominal DGW figure of 2600kg.

$$\text{i.e.} \quad \frac{\textbf{Total brake effort}}{\textbf{2600}} \textbf{ X 100 = \% efficiency}$$

Alternatively, if ATL approved the computer controlled brake tester will automatically calculate the efficiency and any out of balance.

2. Brake Out-of-Balance

The out of balance of the braking effort on the front steered wheels when the service brake is applied is obtained by comparing the brake efforts at each front wheel when they are tested simultaneously (see sub-section 3.7.A2). Carry out the following calculation to determine the percentage imbalance:

$$\frac{\textbf{(Higher brake effort – Lower brake effort)}}{\textbf{Higher brake effort}} \textbf{ X 100 = \% imbalance}$$

3.8 Method of calculating Brake Performance

Temporary Replacement Page