



Abu Dhabi Heavy Vehicle Annual Test Manual



VERSION 1.00 (2015)



Mission Statements

القيادة العامة لشرطة أبوظبي
Abu Dhabi Police GHQ.



دائرة النقل
DEPARTMENT OF TRANSPORT



ABU DHABI POLICE MISSION

Working for a safe community, achievement of stability, reduction of crime rates. Contribution to implementation of justice in a manner that promotes the confidence of the public in police.

ABU DHABI DEPARTMENT OF TRANSPORT MISSION

Regulate, plan and develop an efficient and well-integrated transport system that serves the public interest by enhancing mobility and delivering safe, secure and environmentally responsible Aviation, Maritime, Public Transport and Highways sectors.



This publication entitled "Abu Dhabi Heavy Vehicle Annual Test Manual" was prepared by the Abu Dhabi Department of Transport. Every effort has been made to ensure the information contained in this document is accurate, however this does not guarantee the accuracy, or the completeness and usefulness of the information. Additionally the Abu Dhabi Department of Transport cannot accept liability for any loss or damages of any kind resulting from use of the information or guidance in this document.



Contents

Introduction	2
Pre-Test Information For Operators of Heavy Commercial Vehicles	3
Pre-Test Information For Testers of Heavy Commercial Vehicles	8
The Heavy Vehicle Annual Test	9
Summary Of The Test Procedures	10
1. Vehicle Weights And Dimensions Inspection	14
2. Pollution / Smoke Inspection	16
3. Driver's Compartment Area Inspection	18
4. Brake Components Inspection (1)	22
5. Brake Performance Test Inspection	24
6. Steering System Inspection	26
7. Suspension Inspection	28
8. Brake Components Inspection (2)	30
9. Transmission And Engine Inspection	34
10. Chassis / Underbody Inspection	35
11. Body Condition Inspection	36
12. Lights Inspection	38
13. Rear / Side Marking Inspection	42
14. Tyres And Wheels Inspection	44
15. Spare Wheel Inspection	47
16. Sideguards And Rear Protection System Inspection	48
17. Headlight Aim Inspection	50
18. General Items Inspection	51
Annex 1: Glossary Of Terms	54
Annex 2: Tyre Specification	56



Introduction

This manual provides a consistent standard for the annual testing of heavy vehicles. This standard is aligned with the Police Roadside Enforcement Standards providing consistency to transport operators and drivers at test stations and the roadside. The publication of this manual demonstrates the Abu Dhabi Police's and Department of Transport's ongoing commitment to improving road safety at all times.

The manual will be useful for both operators and inspectors of heavy vehicles. The initial part of the manual provides important information for the operators and inspectors respectively prior to a heavy vehicle test.

This manual provides all the details that both an operator and inspector require for the annual test. This includes a summary of the procedures and the detailed sections that relate to the annual test. These detailed sections provide the method of inspection and the reasons for failure.

Annex 1 provides a Glossary of Terms used in the manual that should be read prior to using the manual.

This manual contains the standards that a heavy vehicle has to meet at Annual Test. It is important that a vehicle should not be failed for a defect not included in this document.

The Annual Test Standards will be developed over time. Updated guidance will be published in accordance with the new standards.

For further information or queries about the heavy vehicle Annual Test you can contact the Annual Test helpline on:

 **600 5 77777**

This manual is also available for download in PDF format at the Freight 2030 website:

 **www.freight2030.ae**

If you are unsure about any aspect of the manual please contact the Department of Transport at

 **freight2030@dot.abudhabi.ae**



Pre-Test Information for Operators of Commercial Vehicles

This section of the manual provides important information for heavy vehicle operators to consider before they present a vehicle for annual test. This manual is relevant for operators of heavy vehicles greater than 2.5 tonnes unladen, trailers and buses. The manual does not include the standard for testing the interior and some parts of buses.

What is the Annual Test?

In order to maintain the registration of a heavy vehicle(s) and trailer(s) in Abu Dhabi they must pass an annual test. The annual test comprises of a detailed vehicle safety inspection to ensure the vehicle meets the established minimum safety standards.

Figure 1 provides an overview of the annual test process for heavy vehicles and trailers.

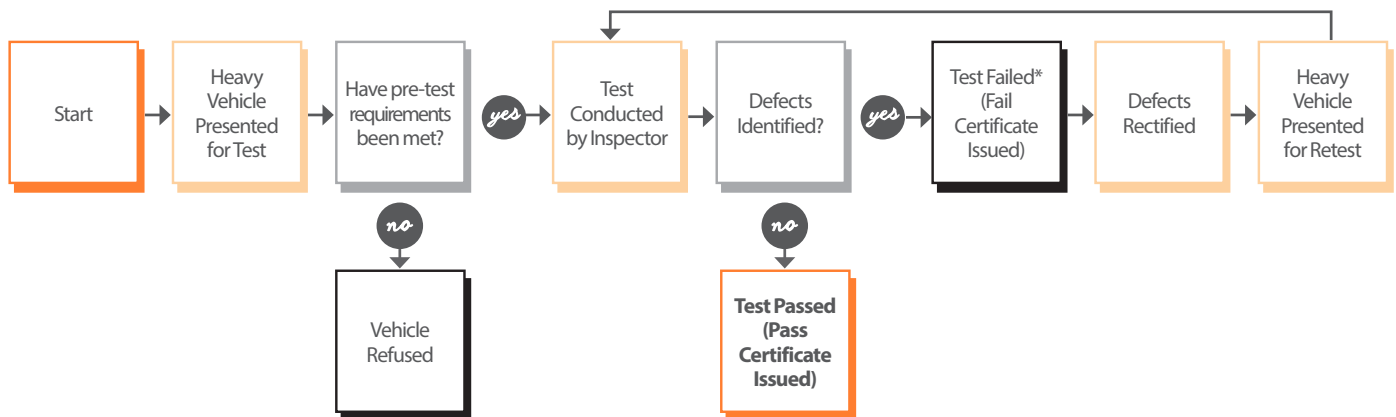


Figure 1 Annual Test Overall Process

*If a defect is very serious, a community of inspectors is formed to decide if the vehicle is repairable. If it is deemed irreparable, the vehicle will be cancelled.

What Should I Do Before the Test?

Prepare your vehicle by repairing any defects before you present it for annual test. A test fee is payable before the Annual Test can start. If your vehicle fails on the first test it will require a re-test. You are allowed a maximum of two retests within 30 days of the first test. If the vehicle is not passed within 30 days, the test fee must be paid again at the next retest.

Only failed items are examined when a vehicle is presented for retest.

If the vehicle has not been previously registered, its identification documentation must be presented (Customs Certificate, Export/Import Certificate, Cancellation Certificate).

TYPES OF DEFECT

There are four types of defects referred to in this manual:

- **Major Defect**
They are a defect(s) which will result in a test failure. Major defects will be saved on the test database until it is rectified and the vehicle is passed. A vehicle with major defects must not be driven.
- **Dangerous Defect**
They are a defect(s) which is an immediate risk to road safety. Similarly to a major defect, the vehicle will be failed and the defects saved on the test database until rectified and the vehicle is passed.
- **Major Chassis Defect**
They are a defect(s) which results in vehicle cancellation meaning it cannot be repaired or used again in Abu Dhabi.
- **Advisory Defect**
They are a defect(s) which does not result in a fail, however, the operator or driver should act on the advice of the inspector and have the defect rectified as soon as possible.

What happens if Your Vehicle has a Defect(s)?

If a defect is found during the Annual Test the vehicle will fail and you will be provided with a failure notice which outlines the identified defects.

If a major defect is identified, the vehicle will fail and this will be identified on the test database system until it is repaired. The vehicle must be presented at an Abu Dhabi test station to be retested. You should not operate that vehicle until the defect has been rectified and the vehicle passed.

If a dangerous defect is identified, the vehicle will fail and the vehicle presenter will be provided with a failure notice to show there are dangerous defects. As with a major defect, the vehicle must be presented at an Abu Dhabi test station for retest and it must not be operated until the defect has been rectified and the vehicle passed.

If there is a major chassis defect you will be advised if the vehicle will be 'cancelled' or whether it can be repaired. If a vehicle is cancelled it means that it cannot be repaired and you can no longer use it in Abu Dhabi.

There may be defects on your vehicle that the Inspector may advise you upon. You should get these repaired as soon as possible however they will not result in a test failure.

If no defects are found at retest then the vehicle will pass.



WARNING:
OPERATING A VEHICLE WITH DANGEROUS DEFECTS IS A SERIOUS VIOLATION

What Do I Do if I Have Made Changes or Repairs to My Vehicle Chassis?

If the vehicle chassis has been changed you must provide a document that states where the work was carried out and the details of the work carried out.

The changes will be assessed during the annual test to determine the safety of the vehicle.

What Other Documentation May Be Required?

If your vehicle has any advertising on it then it requires approval from the Abu Dhabi Department of Economic Development (ADDED) . If proof of approval cannot be presented, the vehicle will fail.

If your vehicle is oversized, it requires proof of exemption from the Police.

After the test, if the vehicle passes and requires further authorisation from an authority you have 15 days to present the approval documents; for example:

- ✓ Agency Certificate
- ✓ Certificate for Ambulance from Health Department
- ✓ Certificate for Chassis No. on Trailer
- ✓ Certificate for Freezer from Health Department(Medicine)
- ✓ Certificate from Abu Dhabi Waste Management Centre
- ✓ Certificate from Civil Defence
- ✓ Certificate From Factory For Tanker Capacity
- ✓ Certificate From Municipality For Freezer Fitted Vehicle
- ✓ Certificate From Municipality For food Carrying Vehicle
- ✓ Certificate From Planning & Economy Department For Advertisement
- ✓ Certificate from Traffic Police For (Number Plate Missing / Lost)
- ✓ Certificate from Traffic Police For Colour Change
- ✓ Certificate from Traffic Police For Vehicle Type Change
- ✓ Certificate from Water & Electricity Authority
- ✓ Certificate of Undertaking(Thahud)
- ✓ Letter from Company For Using Another Trailer
- ✓ Missing Chassis No: on Chassis by Police Approval

How Should My Vehicle be Presented for the Test?

Vehicles must be presented for Annual Test in the same manner as it was presented at the previous Annual Test. This includes the colour of paint, body type, number of seats, vehicle length and vehicle width. If the vehicle differs from the registration documents then the vehicle will fail. If the vehicle matches the registration document then the Annual Test will start.

If you wish to change the colour of your vehicle, you must have permission from the Police and present proof of this before the test can commence.

What Should I do with the Paperwork after the Test?

You should ensure that test certificates and paperwork provided to you in relation to Annual Test are kept in your fleet records and preferably files for individual vehicles. You may need to show these records to enforcement authorities.

¹ <https://ded.abudhabi.ae>



Other Annual Test FAQs

Q My tyres are over 5 years old, will the truck fail the test now?

A No! As long as the tyres meet the standards set in this manual, the tyres will pass the test.

Q My vehicle is not fitted with a spare wheel, do I need to fit one now?

A No!

Q Do I need to fit sideguards around my diesel tank?

A No! sideguards are designed to protect people and cyclists from being drawn under the truck, the tank acts as a device to do this.

Q My truck is equipped with an amber flashing beacon fitted to the top of the cabin. Is this covered by the test?

A Yes! All heavy vehicles are required to have beacon fitted to the top of the cabin and fuel tankers are required to have cabin and rear upper beacons.

Q I need to change my truck body, is there a limit on how high the body can be above the cab?

A No! But there is a maximum limit on the height of the vehicle (or trailer). Installation of a wind deflector may be required.

Q I have built a new trailer to carry my load that is over length, as vehicle and trailer dimensions are in the test, will this trailer now fail the test?

A Yes! You will not be allowed to use your trailer unless you seek special exemption from the Police or you change the trailer size. A Safety Certificate from manufacturer is required.

Q My truck has tinted windows and the extra film was put on before I purchased it, will I fail the test?

A Yes! You are not allowed to have a tinted windscreen or front side windows greater than the manufacturer's original standard.

Q What is the swept area of the windscreen?

A It is the area covered when the windscreen wipers clean over the windscreen.

Q How can I tell if my glazing is safety glass?

A *It will be marked but if not, you will have to have it independently tested and we will ask you to provide a document to state that it is safety glass.*

Q My seat belt has a small area of fraying and 2 tiny cuts, is this fail?

A *Yes! Any fraying or any cuts will result in a fail.*

Q I have a warning light permanently on – will this fail?

A *Yes!*

Q Is 35% brake efficiency a pass or a fail?

A *A pass.*

Q My shock absorbers are not leaking oil onto the ground but do have oil misting around the tubes, is this a fail or pass?

A *A pass.*

Q My truck was fitted with roof lights for desert driving, are these part of the test?

A *You cannot have additional lamps fitted on your truck, other than those specified in this manual.*

Q How much wear or play am I allowed before my truck and trailer will fail?

A *This depends upon the component, its location and effect upon the vehicle or trailer. In some cases you are not allowed any wear or play and in other cases we will consider the play based around what Industry normal standards are. Please see our 'Terms Used in this Manual' section that will help us and you to decide when to repair, adjust or replace components.*



Pre-Test Information For Testers of Commercial Vehicles

This section of the manual provides important information for inspectors to consider before they start an annual test inspection. This manual is relevant for inspectors of heavy vehicles greater than 2.5 tonnes unladen, trailers and buses. The manual does not include the standard for the internal testing of passenger vehicles. Following this chapter, the manual will provide a summary of the test procedures and then provide the full details of each annual test element that an inspector must follow.

IMPORTANT CHECKS TO CONDUCT BEFORE THE ANNUAL TEST

You should not start a test if any of the following circumstances exist:

- ✓ Where in your opinion any part of the vehicle is in such a dirty or dangerous condition as to make it unreasonable to examine the vehicle or trailer.
- ✓ You are missing any of the required documentation (see Page 5).
- ✓ If any of the test equipment is not functioning, out of calibration or not working. In this case you should seek advice from your manager.

If any of the circumstances above are identified, the vehicle will fail. (See Page 53; Section 18: General Items).

Inspection Terms

The terms outlined below are used throughout the annual test manual to describe various types of defects. You should consider the descriptions provided with these terms, along with the reasons for failure where you suspect there is a defect.

'Insecure' is used throughout this manual to describe when a component is loose. The term means:

- that a component on the vehicle has movement at its fixing and when it is supposed to be fixed to another component there should be no movement; or
- that a component is not safely or completely attached either at its fixing or to an associated component.

'Wear' is a term used usually in relation to a fixed component. A component is a fail when the level of wear is to such an extent that it is:

- likely to fail;
- cannot do the job it was intended to; or
- likely to affect the operation of another component.

'Play' has the same definition as 'wear', but is used in this manual when it affects a component that is supposed to move.

'Rusty' is a term used in this manual to describe corrosion in or around a component. In all cases any rust should be failed if it is within 30cm of the component mounting point. Rusty is when the part crumbles, is no longer rigid or holed under normal hand pressure.

Important Note if a Vehicle Fails

Where a vehicle has failed because of a dangerous defect (defects that are an immediate risk to road safety) you must issue the driver with a failure notice to provide advice about the defect(s).

In addition, the failure notice may also include a 'dangerous defects' stamp on the test card to show that there are dangerous defects identified on the vehicle; and that the vehicle should not be used until it has been repaired.



The Heavy Vehicle Annual Test - Inspection Procedures and Reasons for Failure

Summary of the Test Procedures

- 1 Vehicle Weights and Dimensions**
- 2 Pollution / Smoke**
- 3 Drivers Compartment Area**
- 4 Brake Components (1)**
- 5 Brake Performance Test**
- 6 Steering**
- 7 Suspension**
- 8 Brake Components (2)**
- 9 Transmission and Engine**
- 10 Chassis / Underbody**
- 11 Body Condition**
- 12 Lights**
- 13 Rear / Side Marking**
- 14 Tyres and Wheels**
- 15 Spare Wheel**
- 16 Side Guards and Rear Protection Systems**
- 17 Headlamp Aim**
- 18 General Items**



Summary of the Test Procedures

This chapter provides a summary of the test procedures to illustrate how an annual test should be conducted. The following diagrams outline the:

- Around the vehicle order of inspection;
- Underbody inspection procedure;
- Vehicle lighting procedure; and
- Additional items which should be inspected on a semi-trailer.

The order in which the test is conducted may vary depending on the layout of your test facility.

Around the Vehicle Test Procedure

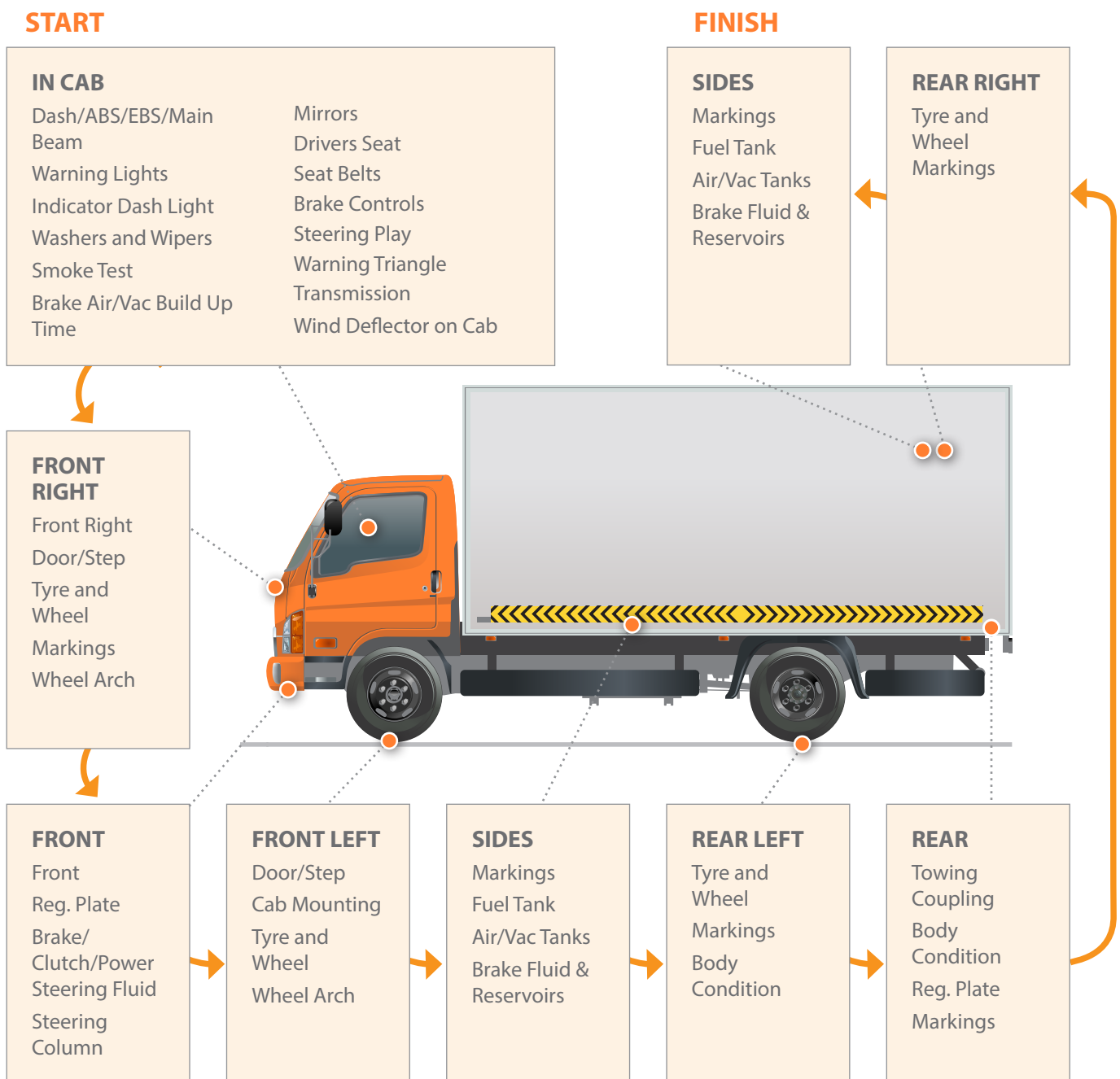


Figure 2 Annual Test Order of Inspection

Underbody Inspection Procedure

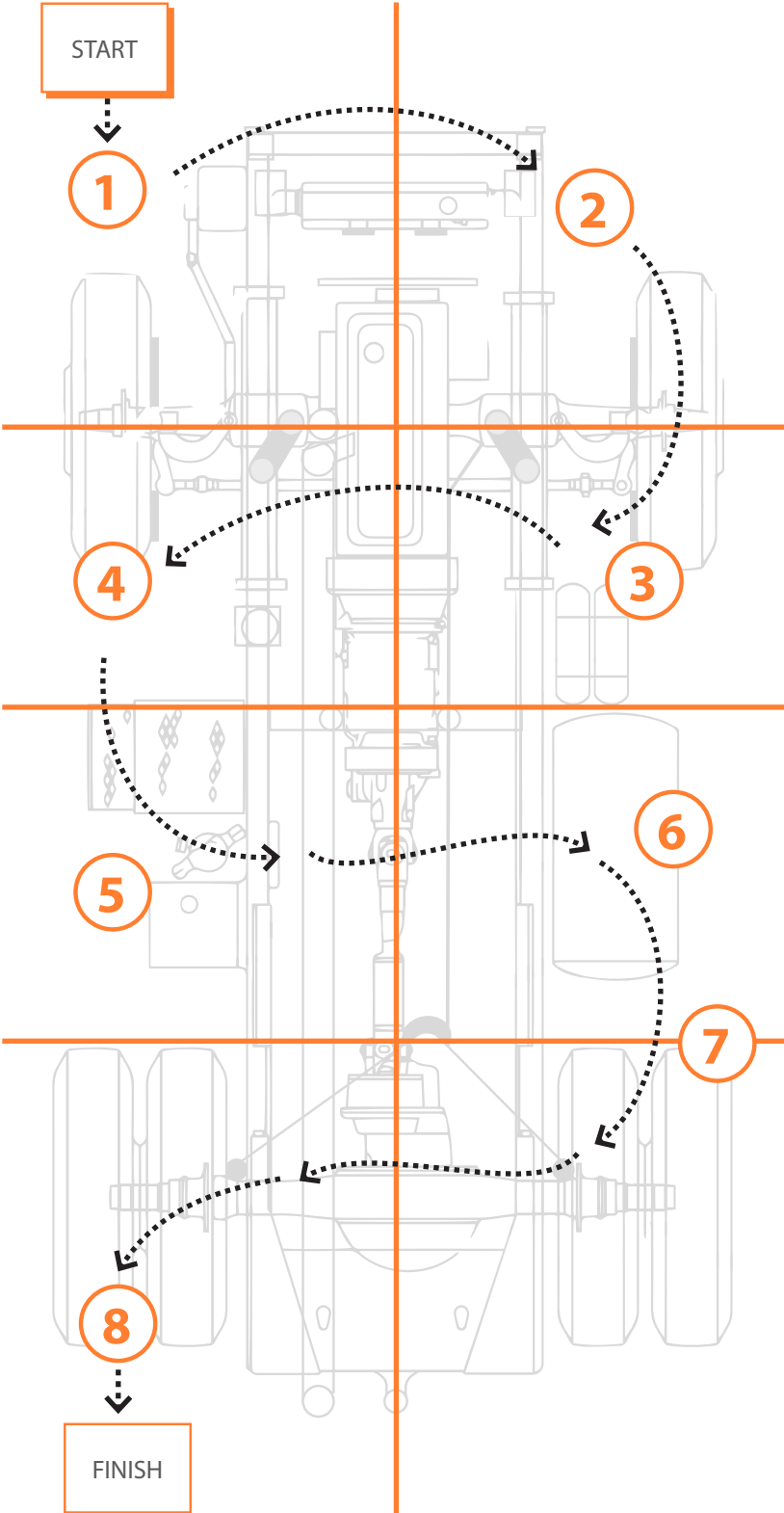


Figure 3 Underbody Inspection Procedure

Vehicle Lighting Inspection Procedure



Figure 4 Vehicle Lighting Inspection Procedure

Additional Items to Check on a Semi-Trailer

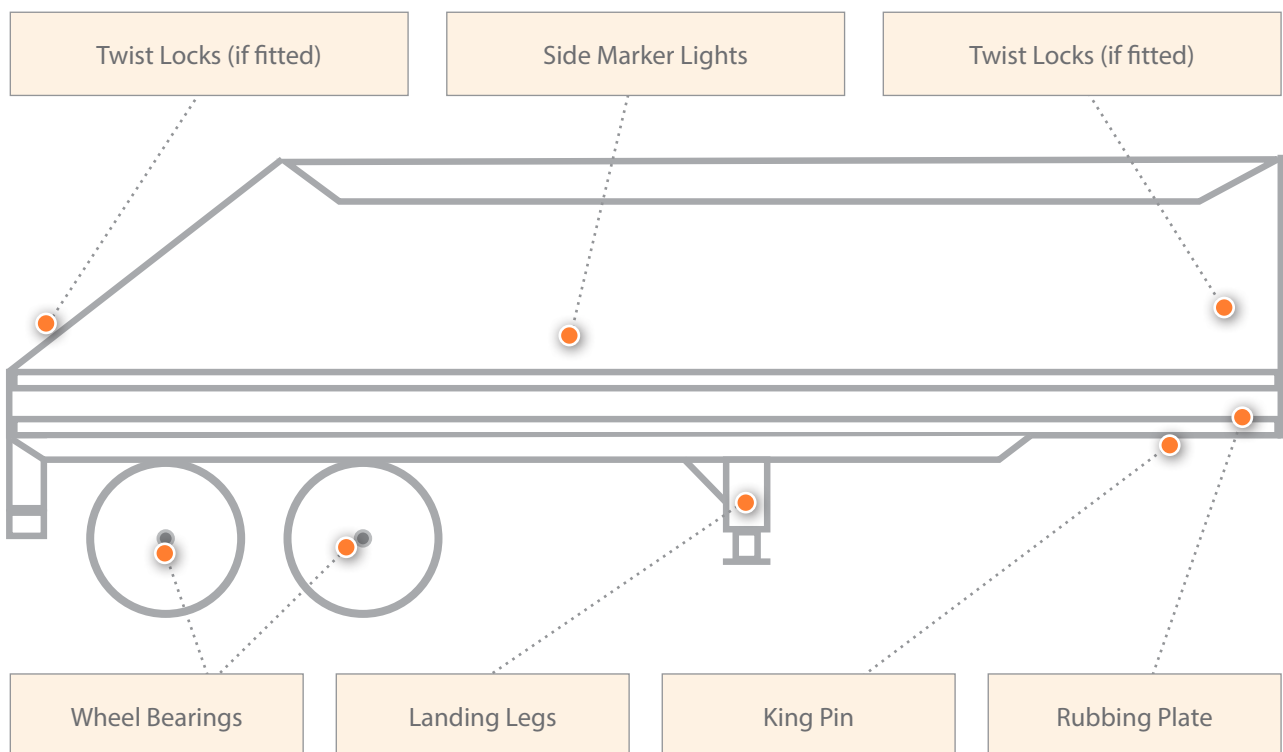


Figure 5 Additional Items to Check on a Semi-Trailer



Explanation of How the Individual Test Element Sections Work

The remaining sections of this manual aims to provide the detailed inspection elements of the annual test. To create a consistent approach each section follows the following format:

How to Inspect

This section provides the step by step inspection procedure for the vehicle inspector and makes reference to specific vehicle components and possible defects to look out for. The inspector should follow this procedure in the order which it is written.

Notes

The Notes section's in this manual provide useful information for the vehicle inspector which are additional to the inspection procedure itself. These will aid the inspector in determining whether the vehicle has passed or failed.

Example (s)

The diagram and examples within this manual act as a visual reference for vehicle inspectors in order to support the information in the 'How to Inspect' and 'Notes' sections. In most cases, the examples outline the vehicle components to be inspected and their approximate locations. Please note that they are only examples and there may be some variants on different vehicle makes.

Table of Reasons for Failure Against Each Test Item

These tables are linked to the inspection procedure and provide items that if detected on the vehicle must be failed. These defects stated in these tables should be considered by a vehicle inspector while undertaking the test procedure.

NOTES

- A diesel engine left idling for some time will give a high initial test reading
- Smoke density is shown on a m3 basis

2 Pollution/Smoke Inspection

Pollution and smoke inspections are important for environmental and road safety reasons. From an environmental perspective, excessive levels of pollution are unacceptable and are proven to contribute to climatic change and respiratory disease. In terms of road safety, excessive smoke from vehicles can affect the visibility of other road users.

HOW TO INSPECT

Importantly, do not start the test until the checks shown in Figure 8 have been carried out.

Does the vehicle emit excessive black or dense blue smoke?

Fail the vehicle with no metered smoke test

no

Check the engine oil pressure warning light

Is the engine oil pressure warning light on?

Do not conduct the test until the fault is rectified

no

Purge the exhaust and conduct the smoke test

Figure 5 Pollution/Smoke Test Checks

The inspection procedure for Diesel and Petrol Engine vehicles varies.

Diesel Engine Vehicles

- With the engine at normal operating temperature, raise the engine speed to about half the maximum engine speed and hold this steady for around 20 seconds to purge the system.
- Connect the smoke meter to the exhaust stack and follow the manufacturer's instructions.
- The machine should prompt you to depress the accelerator pedal firmly from the idle position until the governed maximum engine speed is achieved. Release the pedal.
- If the vehicle emits dense black smoke or dense blue, ignore the first acceleration. Repeat the operation a maximum of four times and note if the smoke continues to be black or dense blue for two successive accelerations not including the first.
- Record the results on the test card.

Petrol Engine Vehicles

- In the case of petrol engine vehicles check the carbon monoxide and hydrocarbon content of the exhaust gas at idle speed in accordance with the machine manufacturer's instructions using a carbon monoxide petrol emission tester.

Diesel Smoke Level

2.5m³ – Turbocharged engines
3m³ – Non-turbocharged engines

Petrol Emission Level

HC - 1200ppm
CO 4.5%

Figure 6 Diesel and Petrol Smoke and Emissions Standards

REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Diesel engine smoke	☒ The exhaust smoke is coloured black for two successive accelerations
	☒ The average smoke reading is greater than 2.5m ³ for Turbocharged engines or 3m ³ for Non-turbocharged engines
Petrol engine carbon monoxide and hydrocarbons	☒ The average carbon monoxide content is more than 4.5% at idle
	☒ The average hydrocarbon content at idle is greater than 1200 ppm of hydrocarbons.



NOTES

VEHICLE AND TRAILER MAXIMUM DIMENSIONS

- Height – The total height of heavy vehicles must not exceed 4.2m.
- Length – The total length must not exceed 12.5m for a single rigid vehicle, 18m for a tractor and semi-trailer, 20m for a truck and drawbar trailer and 23m for car transporters.
- Width – The total width of any kind of heavy vehicle must not exceed 2.6m.
- You should not test any vehicle which exceeds the dimensions below unless it has proof of exemption from the Police.
- Vehicles and trailers are built to specific dimensions and you will not be able to measure many of these during the test.
- A vehicle should not be tested which does not have a chassis plate. If it has a number stamped on the chassis, this is acceptable identification.

1 Vehicle Weights and Dimensions Inspection

It is important that certain vehicle and trailer information is plated to show conformity with legal standards and also for the purpose of roadside enforcement. Commonly vehicles illegally operate above their design weight. This has major road safety implications and results in fatalities. Additionally, such vehicles cause damage to the road infrastructure.

HOW TO INSPECT

- ✓ Check in the case of a motor vehicle and trailer that a metal plate similar to that shown in Figure 6 and Figure 7 is securely fitted to the vehicle.
- ✓ Check that the plate identifies the vehicle by its unique chassis number and this matches the registration and test data held.
- ✓ Check the security and condition of the registration plate(s) fitted to the vehicle or trailer and that these match the chassis number and this matches the registration and test data held.



Figure 6 Vehicle Plate Example

Chassis number				رقم الهيكل
Manufacturer				اسم المصنع
Country of manufacturing				بلد الصنع
Model				رمز الطراز (الموديل)
Date of manufacturer				تاريخ التصنيع
	(Kg) ١ Axle	(Kg) ٢ Axle	(Kg) ٣ Axle	
Max. Axle Weight				الوزن الأقصى على كل محور
Gross Weight				الوزن الكلي
Width				العرض (بالمتر)
Length				الطول (بالمتر)
Height				الارتفاع (بالمتر)
Comply with UAE Approved Standards				مطابقة للمواصفات القياسية المعتمدة
Special Notes				ملاحظات

Figure 7 Trailer Plate Example

× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Chassis Plate or Number (where required) and Registration Plate	☒ Not fitted, insecure or illegible ☒ Not matching the record available
Vehicle Dimensions	☒ Trailer height, width or length greater than legal maximum and no exemption certificate is provided at the time of the test



NOTES

- A diesel engine left idling for some time will give a high initial test reading
- Smoke density is shown on a m³ basis

2 Pollution/Smoke Inspection

Pollution and smoke inspections are important for environmental and road safety reasons. From an environmental perspective, excessive levels of pollution are unacceptable and are proven to contribute to climatic change and respiratory disease. In terms of road safety, excessive smoke from vehicles can affect the visibility of other road users.

🔍 HOW TO INSPECT

Importantly, do not start the test until the checks shown in Figure 8 have been carried out.

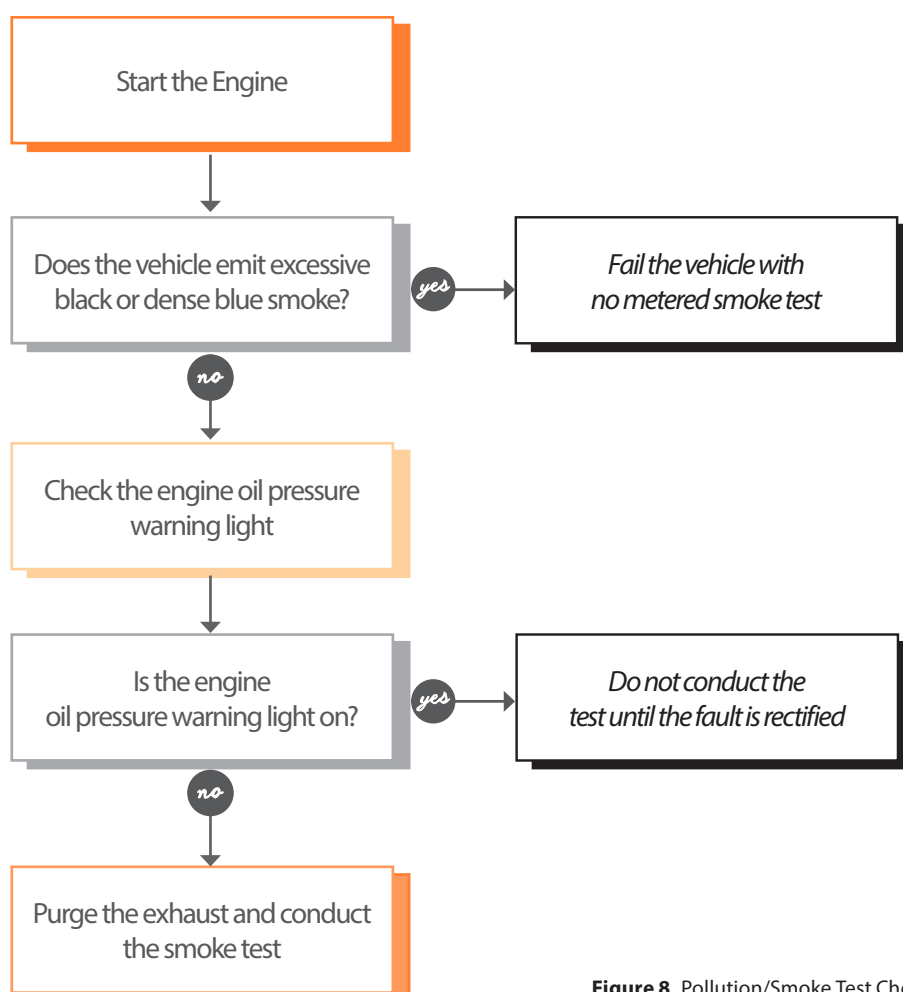


Figure 8 Pollution/Smoke Test Checks

The inspection procedure for Diesel and Petrol Engine vehicles varies.

Diesel Engine Vehicles

- ✓ With the engine at normal operating temperature, raise the engine speed to about half the maximum engine speed and hold this steady for around 20 seconds to purge the system.
- ✓ Connect the smoke meter to the exhaust stack and follow the manufacturer's instructions.
- ✓ The machine should prompt you to depress the accelerator pedal firmly from the idle position until the governed maximum engine speed is achieved. Release the pedal.
- ✓ If the vehicle emits dense black smoke or dense blue, ignore the first acceleration. Repeat the operation a maximum of four times and note if the smoke continues to be black or dense blue for two successive accelerations not including the first.
- ✓ Record the results on the test card.

Petrol Engine Vehicles

- ✓ In the case of petrol engine vehicles check the carbon monoxide and hydrocarbon content of the exhaust gas at idle speed in accordance with the machine manufacturer's instructions using a carbon monoxide petrol emission tester.

Diesel Smoke Level



Petrol Emission Level



Figure 9 Diesel and Petrol Smoke and Emissions Standards

× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Diesel engine smoke	☒ The exhaust smoke is excessively black or dense blue for two successive accelerations and obscuring vision
	☒ The average smoke reading is greater than 2.5m ³ for Turbocharged engines or 3m ³ for Non-turbocharged engines
Petrol engine carbon monoxide and hydrocarbons	☒ The average carbon monoxide content is more than 4.5% at idle
	☒ The average hydrocarbon content at idle is greater than 1200 ppm of hydrocarbons



NOTES

- Windscreen repairs are acceptable provided they allow the driver a clear view to the front.
- It is the responsibility of the presenter to prove that the window material is safety glass.
- Mirrors should offer the driver an adequate view of nearside or offside rear corners. If the vehicle is a head (tractor) unit this means the trailer corners.

3 Driver's Compartment Area Inspection

It is important that the driver's compartment area and the components within it are in full working order so that the driver is able to effectively operate the vehicle from a clean and safe environment. Defects can cause distractions and lead to serious road accidents.

🔍 HOW TO INSPECT

- ✓ Open and close the driver's door as you enter the driver's compartment area to make sure that the door operates and stays closed.
- ✓ Operate the washers and switch on the windscreen wipers; checking that they move over the windscreen freely and give the driver a good view of the road ahead, at the same time look out of the windscreen to make sure that it is not cracked or broken over the swept area and at least 200mm either side of the centre line of the steering wheel.
- ✓ Look to the left and right; checking that the rear view mirrors give a good view to the rear and that both are secure and not cracked or broken. As far as possible, check that they are adjustable. You may have to check the mirrors when you carry out checks around the outside of the vehicle.
- ✓ Check that the driver's seat is secure on its mounting and that the forward and rearward adjustment mechanism is working.
- ✓ Pull out the safety belt and click the end in the buckle and make sure it releases. Examine the belt webbing carefully for any cuts and any damage and as far as you can, check the condition of the vehicle structure around each of the seat belt mounting points.
- ✓ Check that a speedometer is fitted and when the vehicle is driven forward, that the needle moves and the gauge is illuminated.
- ✓ Where they are fitted, check the vehicle warning lights do not illuminate when you drive forward. Examples are: airbags, Electronic Stability Programme (ESP), Anti-Lock Braking systems (ABS/EBS) and steering system.
- ✓ Operate the horn and you will need to check its security during the underside examination.
- ✓ Check the clutch for smoothness in operation and other driver fittings including; sunshields, fire extinguisher.

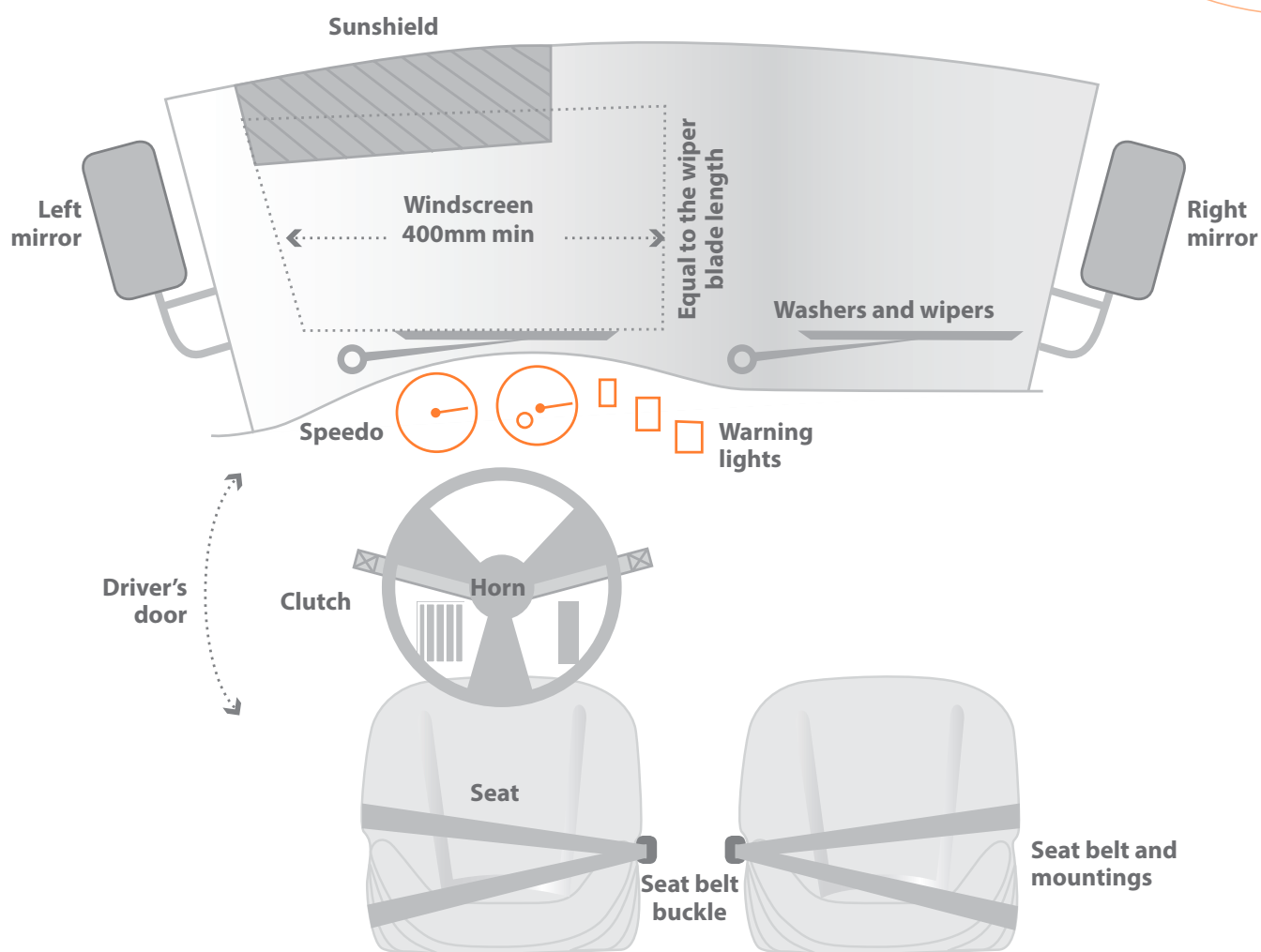
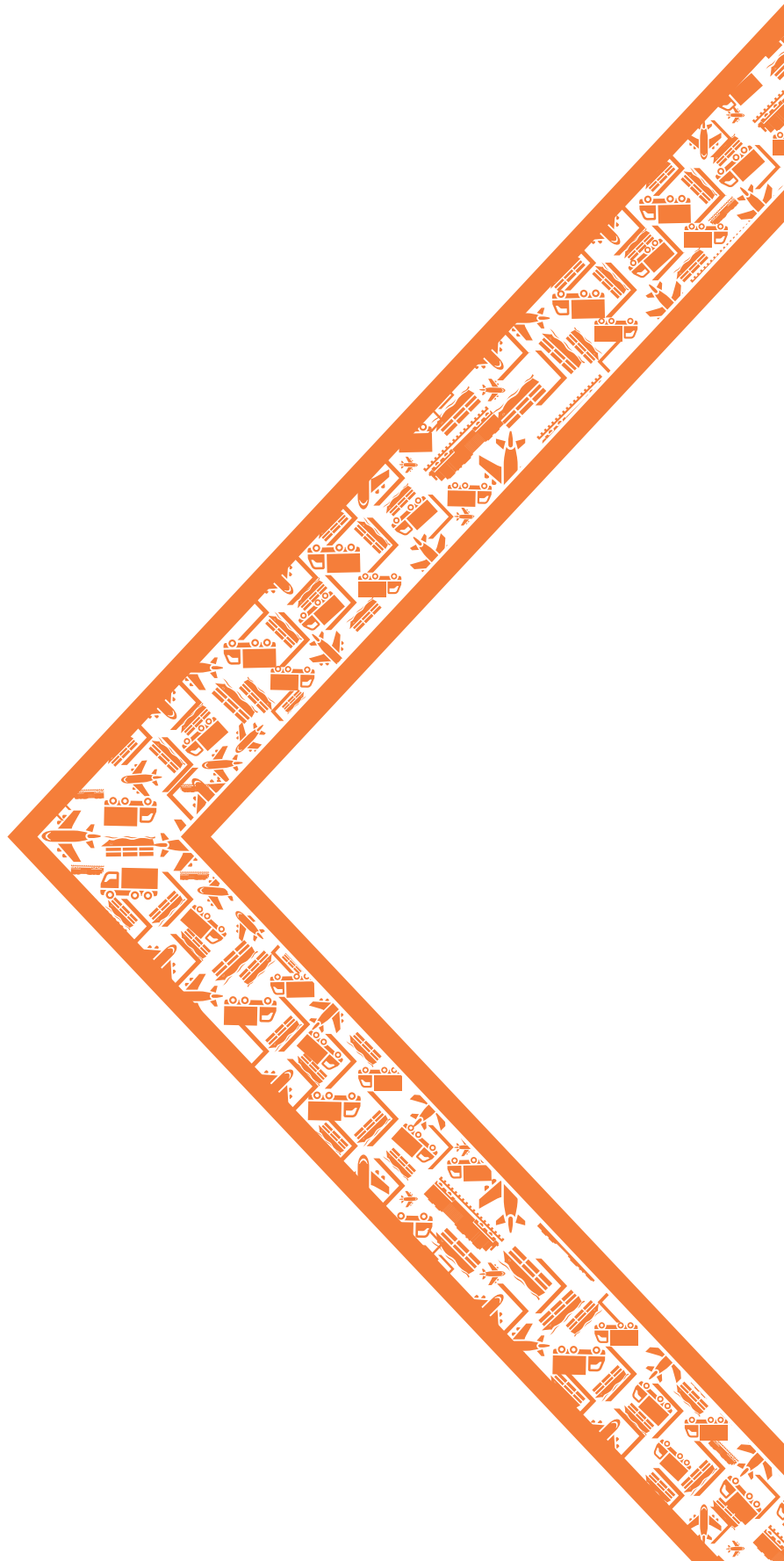


Figure 10 Drivers Compartment Area Inspections

× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Drivers Area and Doors	☒ A door missing ☒ Any wear in the door hinges or the door cannot be shut or opened properly
Wipers and Washers	☒ Wipers missing, or any part of the rubber torn or any wiper that does not sweep enough to give the driver an adequate view of the road ahead ☒ Washers not working or not hitting the windscreen in the swept area of the wiper blades
Windscreen/ Glass	☒ Missing or insecure or made of a material that does not have safety glass marking ☒ Side windows missing, broken or damaged or restricting the drivers view ☒ Objects in the windscreen area that are in the drivers direct line of view ☒ A windscreen or front side windows with greater than the original design tint
Mirrors	☒ Any rear view mirror missing, insecure or the glass in a condition so that the driver does not have a good rearward view of both nearside and offside rear vehicle corners ☒ A mirror unsuitably placed so the driver does not have a good rearward view of both nearside and offside rear vehicle corners ☒ Any rear view mirror not adjustable
Driver Seat and Fittings	☒ Driver seat insecure on its mounting, collapsed or framework damaged ☒ Driver seat adjustment not working or the seat upholstery torn or so badly damaged that comfort is affected ☒ Sunshields missing or cannot be folded down to offer the driver some sun protection ☒ Fire extinguisher missing, not showing 'full' or greater 1 year old
Safety Belt(s)	☒ A lap and diagonal safety belt not fitted ☒ Any safety belt frayed or cut ☒ Safety belt inoperative, insecure or detached fixing bolts or any rust within 30cm of an anchor point. This applies to the seat if the belt anchor is fixed to the seat
Speedometer	☒ Missing, not working or cannot be seen by the driver at all times ☒ Not illuminated
Airbags, ESP, ABS/EBS or power steering malfunction indicator lights	☒ Fault indicator not working or indicates a defect in the system
Horn	☒ Not working, not fitted or insecure ☒ Multi tone
Clutch	☒ Defective as to prevent gear engagement or driving operation





NOTES

- If the brake warning gauge has no warning mark take the (45 p.s.i / 3 bar) mark as the warning mark.
- Remember, chock the road wheels where necessary.
- Some trailers are fitted with mechanical levers or air control valve operating the trailer hand brake – this is included in the test.
- Air pressure build up should be no greater than 6 minutes for truck and trailer and 4 minutes for truck.

4 Brake Components Inspection (1)

Working brake components are essential to road safety. Faulty brakes is a major concern as evidenced by roadside inspections. This section applies to the elements of the braking components inspection which are undertaken from within the Drivers Compartment Area.

🔍 HOW TO INSPECT

- ✓ While you are sitting in the driving seat and the engine is off, check that there is an anti-slip provision on the brake pedal and the pedal is secure and in good order. Examine the vehicle structure carefully around the pedal.
- ✓ If fitted, note the reading on the brake gauge and press the footbrake and keep it depressed. Watch the gauge while this is being done. If the vehicle is fitted with a hydraulic brake system, check that the footbrake does not dip under pressure indicating a leak. If the vehicle is fitted with an air brake system, repeatedly apply the footbrake, gradually exhausting the system until the warning mark is reached. Once reached, there should be enough air in the system to apply the brake for two more applications.
- ✓ Start the engine and run it at just below maximum engine speed. For air brake systems, note the time it takes for the air pressure to build up.
- ✓ Carefully check the handbrake; this may be either a mechanical lever or an air operated valve. For all levers, including trailers, examine the condition of the brake lever and check that it is operating correctly and securely mounted. Check that it will release and when it is fully applied, it stays in the 'on' position.
- ✓ If the vehicle is fitted with an air brake system, listen carefully for air leaks with the hand brake in both the 'on' and 'off' position.

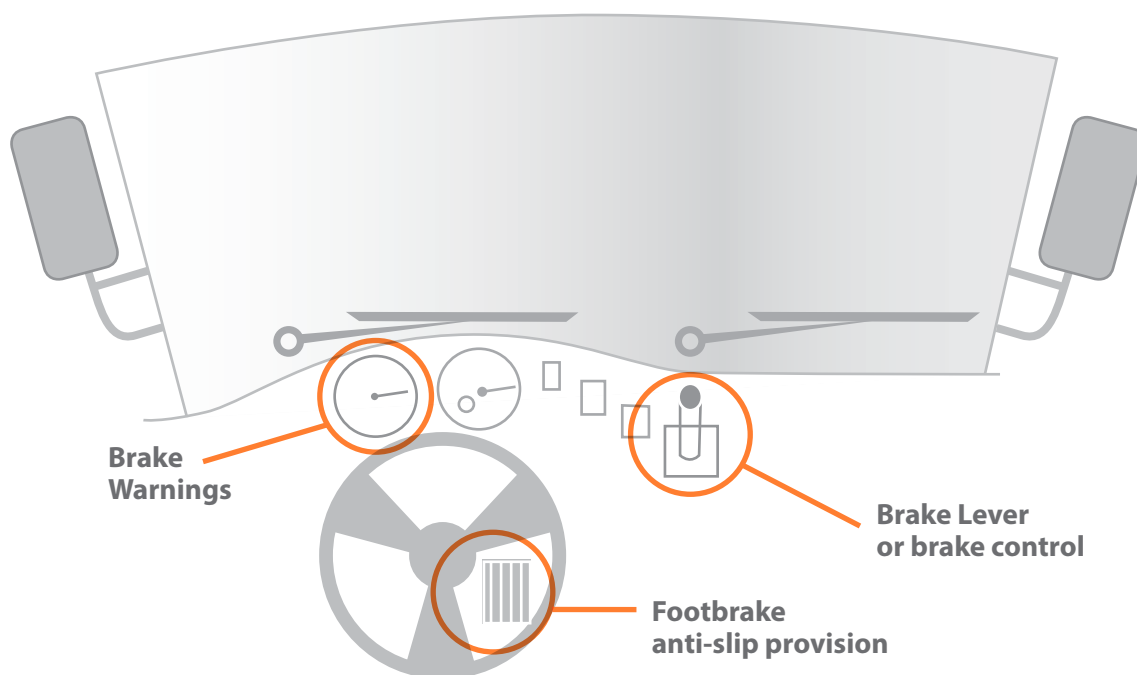


Figure 11 Drivers Compartment Area Brake Inspections

× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Service (foot) Brake	☒ Anti-slip provision missing from the brake pedal
	☒ Brake pedal insecure or obstructed
	☒ When the pedal is held depressed on a hydraulic system the gauge or pedal decreases
	☒ A brake warning device not fitted or not working
	☒ A brake warning device not illuminated
	☒ Insufficient air to give at least two brake applications after the warning has operated
	☒ Air pressure build up time too slow
Mechanical and Air Brake Levers	☒ Handbrake lever or mechanism missing, fractured, rusty within 30cm of the mounting or insecure
	☒ Handbrake not holding when it is fully on
	☒ An air brake control missing, worn, insecure, damaged, sticking, defective or leaking
	☒ Any brake control lever that cannot be moved over its full operation movement



NOTES

- You should have consideration for the safety of others during this test.
- It is compulsory to record and retain the brake test readings.
- Where the wheels of an axle lock up or slip out of the rollers during the brake test resulting in the brake efficiency not being achieved, the brake test must be repeated until the required efficiency is reached or the efficiency cannot be reached.
- Tyres should be inflated and neutral gear selected.
- The use of a roller brake tester may be inappropriate for some vehicles e.g. four wheel drive vehicles.
- You should be cautious that tyres do not have debris stuck between twin tyres or in the tread of construction vehicles.
- Vehicles with automatic gearboxes must never be in park when the rollers are engaged.
- For vehicles with servo brake assistance, the engine must be running.
- Some machines check for ovality, this is to be ignored.
- If the hand brake is a transmission brake, be cautious during the test as the wheels will still be rotating and the brake could be fully applied.
- Spring brakes are acceptable hand brakes.
- Brake efficiency is met when all wheels of the system lock.
- All new trailers manufactured after 1 October 2015 will be fitted with trailer park brakes.

5 Brake Performance Test Inspection

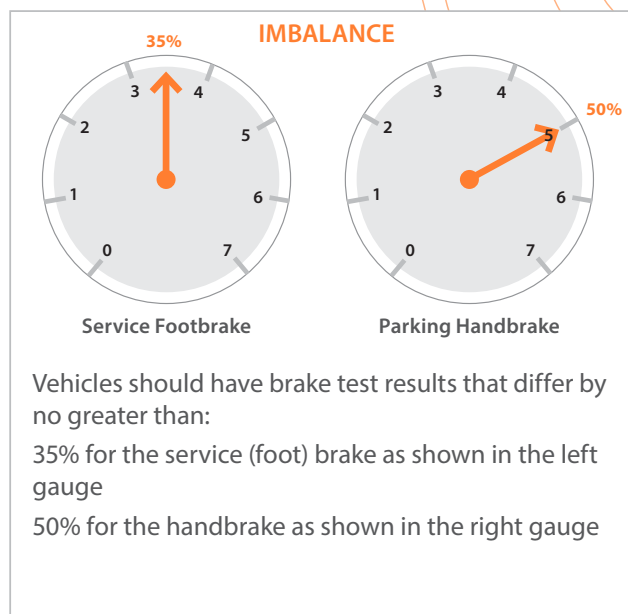
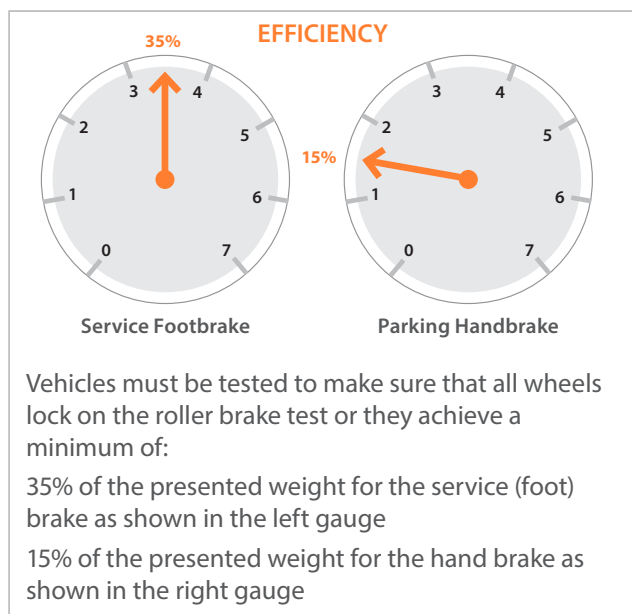
Working brake components are essential to road safety. Faulty brakes is a major concern as evidenced by roadside inspections. This section applies to the brake performance test which is conducted using a roller brake tester to assess a vehicles braking performance. The use of a roller brake tester allows braking performance to be compared to acceptable standards and improves the quality of inspection.

🔍 HOW TO INSPECT

If the vehicle can be tested using a roller brake tester, proceed as follows:

- ✓ Position the vehicle so that the wheels of each axle can be tested on the roller brake tester and apply the service (foot) brake slowly until the road wheel is just at the point of slip relative to the rollers, or until the service (foot) brake is fully applied or until sufficient braking effort is obtained; whichever occurs first.
- ✓ Note the reading for further consideration during the under vehicle examination.
- ✓ The roller brake tester will calculate the brake force as a percentage of the presented weight.
- ✓ At the same time as the service (foot) brake test is done an imbalance test should also be conducted and the same considerations should apply.
- ✓ If the vehicle is fitted with a hand brake and with the roller brake test machine driving the road wheels, apply the hand brake slowly until each road wheel is just at the point of slip relative to the rollers, or until sufficient braking is achieved, whichever occurs first. Note the reading for further consideration during the under vehicle examination. The roller brake tester will calculate the brake force as a percentage of the presented weight.
- ✓ Normally, at the same time as the hand brake test is done an imbalance test is also conducted concurrently and the same considerations should apply.

If the vehicle cannot be tested on a roller brake tester, it should have an alternative test. This is usually done using a decelerometer on the road. With the decelerometer set inside the vehicle, conduct the test in accordance with the manufacturer's instructions.



Vehicles must be driven centrally into the roller brake tester



Figure 12 Braking Performance

× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Service (foot) Brake Performance (All Vehicles)	☒ The braking force is less than 35% of the presented weight ☒ More than 35% brake effort imbalance between each side of the axle
Service (foot) Brake Performance (Vehicles with engines on a road test)	☒ The braking force is less than 35% of the presented weight ☒ Obvious pull to one side when the brakes are applied
Hand Brake Performance (All Vehicles including trailers)	☒ The braking force is less than 15% of the presented weight ☒ More than 50% brake effort imbalance between each side of the axle
Hand Brake Performance (Vehicles with engines on a road test)	☒ The braking force is less than 15% of the presented weight ☒ Obvious pull to one side when the brakes are applied

6 Steering System Inspection

The driver must be in full control of the vehicle at all times. The steering system plays an important part of this function. Not only does this have a major impact on road safety it also contributes to unnecessary wear of other components such as tyres and increases fuel consumption.

🔍 HOW TO INSPECT

- ✓ With the road wheels in the straight ahead position, turn the steering wheel to the left and right without making the road wheels move and measure the amount of free play at the steering wheel.
- ✓ Try to lift and push the steering wheel from the column and look/feel for any movement in the steering joints and couplings.
- ✓ Check the steered wheel side slip by driving slowly and straight over the side slip plate without moving the steering wheel or applying the brakes.
- ✓ When the vehicle is over the pit and if an assistant is available, ask him to turn the steering wheel quickly to the left and right examine the steering mechanism (rocking the wheel). It might be necessary to have the engine running if power steering is fitted.
- ✓ If no assistant is available and where wheel play detectors are fitted and the vehicle is over the pit, operate the wheel play detectors left and right; forwards and rearwards with the brake pedal application tool fitted so you can detect play in steering components and wheel bearings. It may be necessary to release the brake pedal application tool to check for wheel bearing play.
- ✓ With the vehicle over the pit, visually check the steering components including the power steering pump.

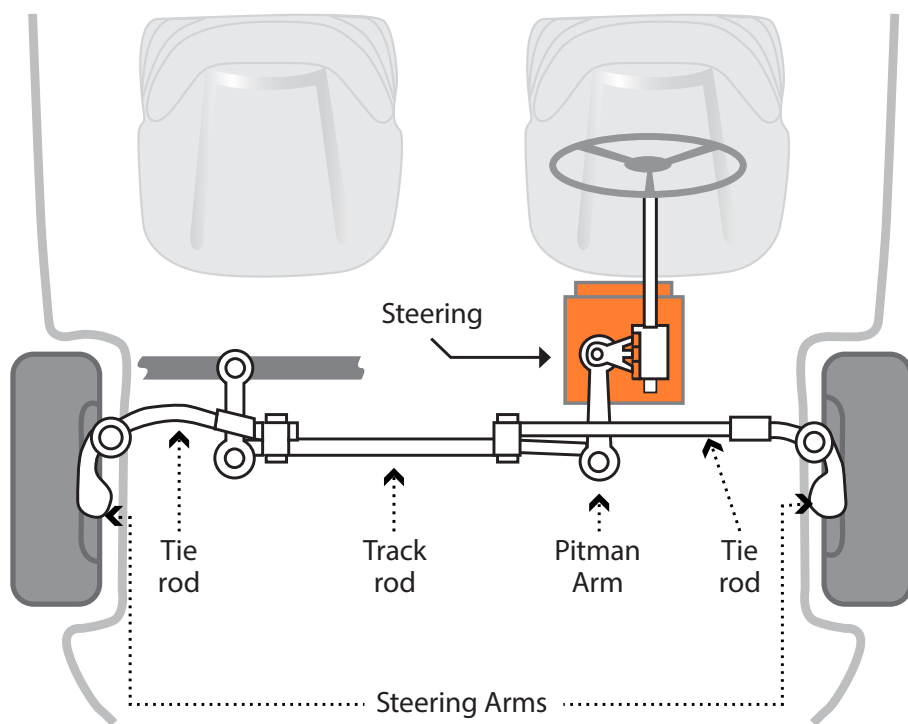


Figure 13 Heavy Vehicle Steering System

× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Play in the steering system at the steering wheel	☒ Play that is more than 100mm for a steering box system or more than 25mm for a steering rack system
Steering wheel/column/shaft/universal joint	☒ Play in steering components; wear in bushes, bearings or mountings.
Steering Alignment	☒ More than + 14m/km
Steering box or rack and steering components	☒ Play in steering joints ☒ Fractures or damage to steering components ☒ Any steering component insecure ☒ Any steering component dust cover torn deteriorated or missing
Power steering	☒ A power steering pump noisy, leaking or otherwise defective
Wheel bearings	☒ Obviously too much play



NOTES

- It may be possible to see much of the suspension systems on larger vehicles from the outside with the vehicle resting on a hard standing surface.
- Any wear visible in spring pins/bushes is a failure.

7 Suspension Inspection

Suspension is key component to the overall safety of a heavy vehicle. Not only does it make the driver more comfortable it also increases road safety. In Vehicles operate very high loads which emphasises the requirement that the suspension systems are in correct working order.

🔍 HOW TO INSPECT

- ✓ With the vehicle over the pit examine the suspension systems for their general condition and in particular for fractures in the spring leaves. Note whether the body is too close to the tyres because one spring is particularly weak causing the body to lean to one side.
- ✓ Examine the condition of all the spring components and check that there is no sign of movement of the spring indicating the spring centre bolt may be broken. Look also for signs of movement in the spring anchor points where bolts may be insecure, missing or broken. These checks also apply to coil spring suspension systems.
- ✓ If the vehicle is fitted with air suspension, listen for any air leaks and check the condition of:
 - Pipes;
 - Connections; and
 - Suspension air components.
- ✓ Examine the condition of the suspension levelling valve and the attachment of the suspension air bellows to the chassis/frame.
- ✓ If fitted with a different suspension, examine all other suspension components for security condition and wear. This includes:
 - Bonded suspensions;
 - Torsion bar; and
 - Spring pins and bushes
- ✓ If the vehicle is fitted with any suspension arms, check carefully the mounting bushes or joints for wear damage or distortion.
- ✓ Examine carefully the chassis around the suspension component mountings for signs of rust or distortion.
- ✓ Check the security and condition of the anti-roll bar and shock absorber mounting point.
- ✓ Pay particular attention to those vehicles where additional axles have been fitted.

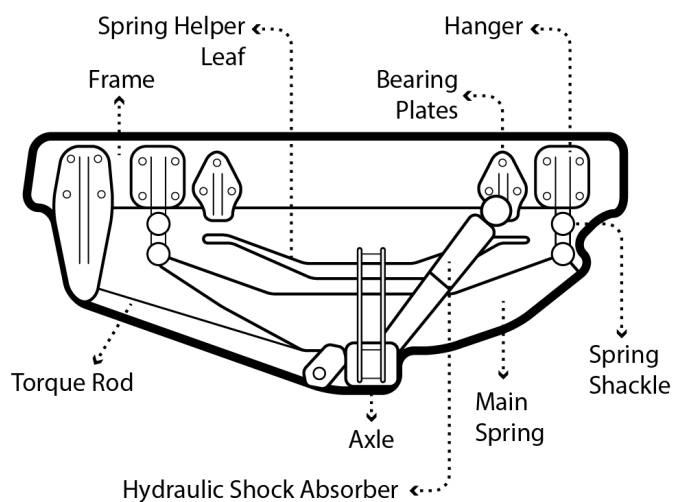


Figure 14 Suspension Leaf Spring

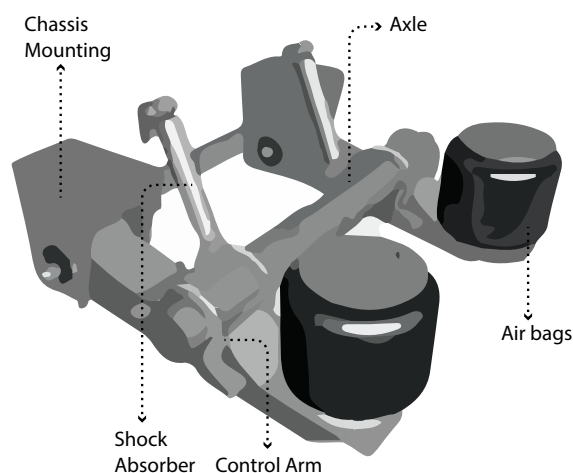


Figure 15 Air Suspension

× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Spring suspension components	☒ Worn or showing signs that allow the body to hit the tyres or the body to lean ☒ Spring leaf broken, fractured, welded or missing ☒ Any spring bolts insecure or missing ☒ A locking device missing ☒ Spring bushes worn or brackets damaged or lose
Air suspension	☒ Any leak, a levelling valve missing or not levelling the vehicle ☒ A suspension component not working ☒ An air pipe damaged or broken or likely to fail
Other suspension components	☒ Any suspension component failed or worn ☒ Axle beams mis-aligned ☒ Any mounting bush worn, damaged or distorted ☒ Any suspension component mounting point insecure or distorted ☒ Any non-standard suspension component fitted incorrectly to such an extent that alignment is affected or a suspension component is affected ☒ Load compensation linkage or brackets worn missing or distorted ☒ Any anti roll bar missing, distorted, insecure or bushes worn
Shock absorbers	☒ A shock absorber missing, insecure, with bushes worn or leaking oil onto the ground



NOTES

- No brake lining or pad should be less than 3mm thick
- Brake dust covers fitted to an air brake system should not be confused with brake assembly back plates that are fitted to a hydraulic brake system to retain the brake components
- If the brake warning gauge has no warning mark take the (45 p.s.i / 3 bar) mark as the warning mark
- Remember, chock the road wheels where necessary
- This inspection applies to vehicles and trailers
- Some trailers are fitted with air control valve operating the trailer hand brake – this is included in the test
- You may have to ask an assistant to apply the service (foot) brake or release the hand brake to check for leaks in parts of the system or you will have to apply the brake pedal application tool to pressurise the brake system
- This check includes those hoses and couplings for the trailer

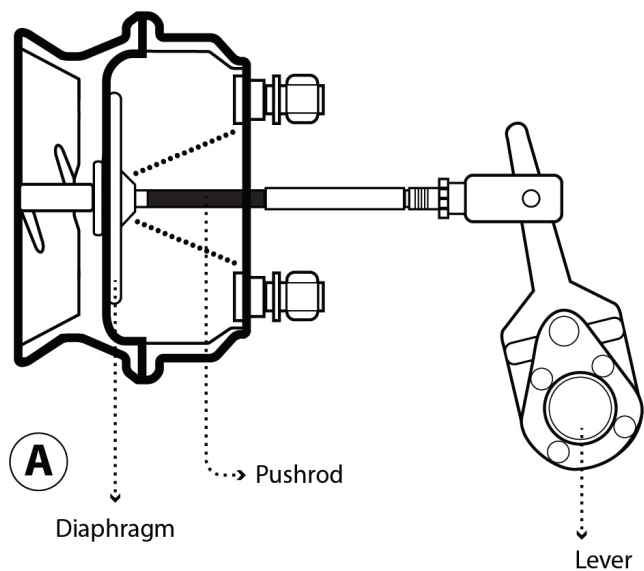
8 Brake Components Inspection (2)

Working brake components are essential to road safety. Faulty brakes is a major concern as evidenced by roadside inspections. This section applies to the elements of the braking components inspection which are undertaken externally at ground level and under the vehicle.

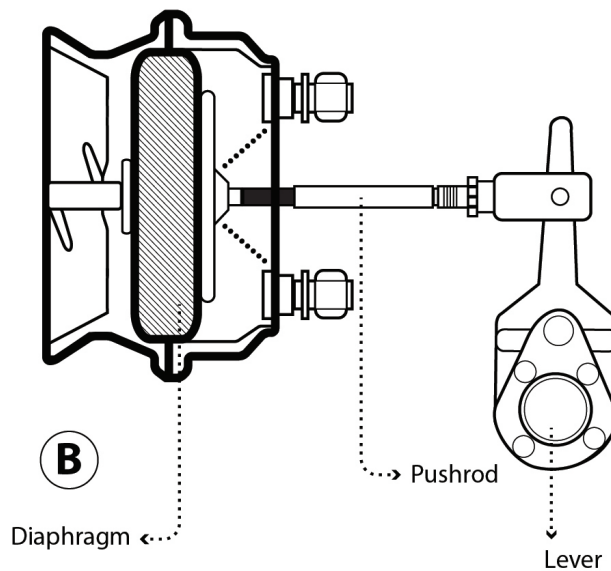
🔍 HOW TO INSPECT

- ✓ Examine the mechanical components of the brakes that can be seen from both outside the vehicle and during the underside check. Look particularly for:
 - Worn rods and levers
 - Brake cables frayed
 - Wear and rust in levers, linkages or connections
 - Missing locking devices
 - Worn brake pads, shoes, discs or drums
 - Any obstruction or abnormal movement in the system
 - Brakes not adjusted correctly indicated by a gap between the brake shoes and brake drum
 - Wear in brake slack adjuster
 - Wear in brake cam bushes
 - Operation and security of brake wheel units
 - Missing or insecure or badly deteriorated compressor belts or pulley
 - Security, condition and leaks from brake lines and hoses
 - Security, condition and leaks from brake fluid reservoir(s)
 - Security, condition and leaks from brake reservoirs/valves/master cylinders and connections

Brakes Off

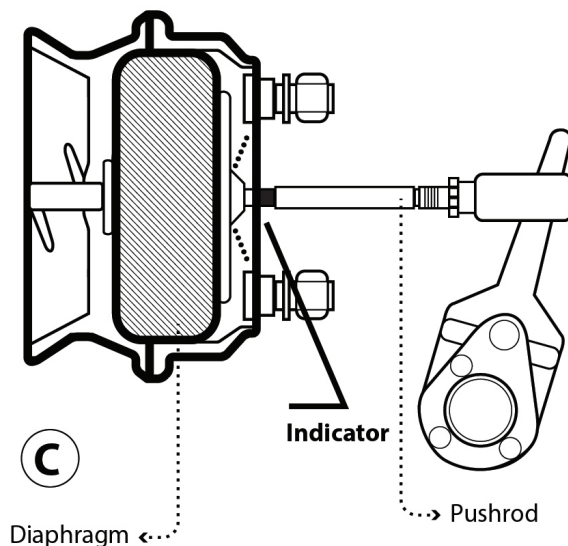


Brakes On



In this diagram, the brake application moves the diaphragm pushing the rod to the right and turning the lever to apply the brake

Brakes Overcentre



In this diagram, the brake application has moved the diagram as far to the right as possible and the brake lever is 'overcentre'

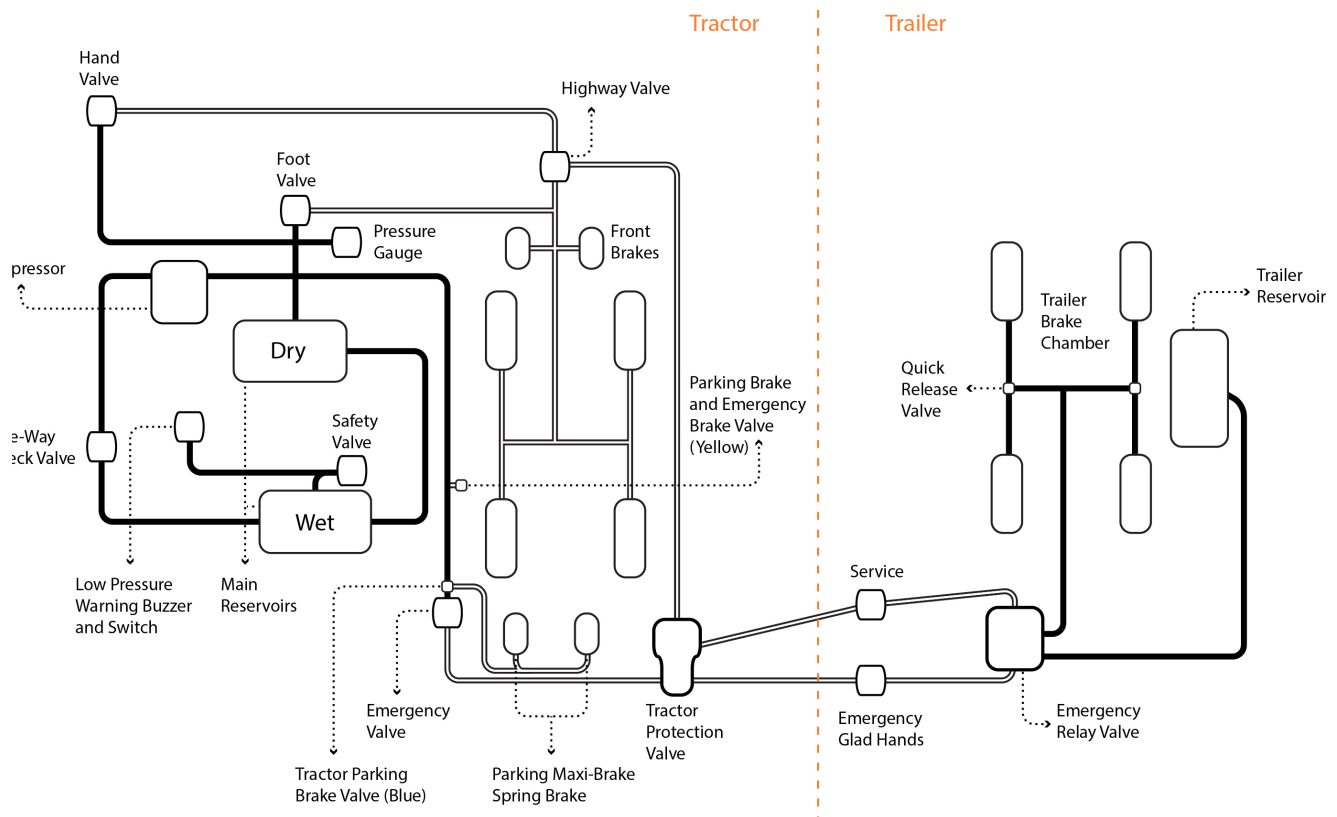


Figure 16 Air Brake System

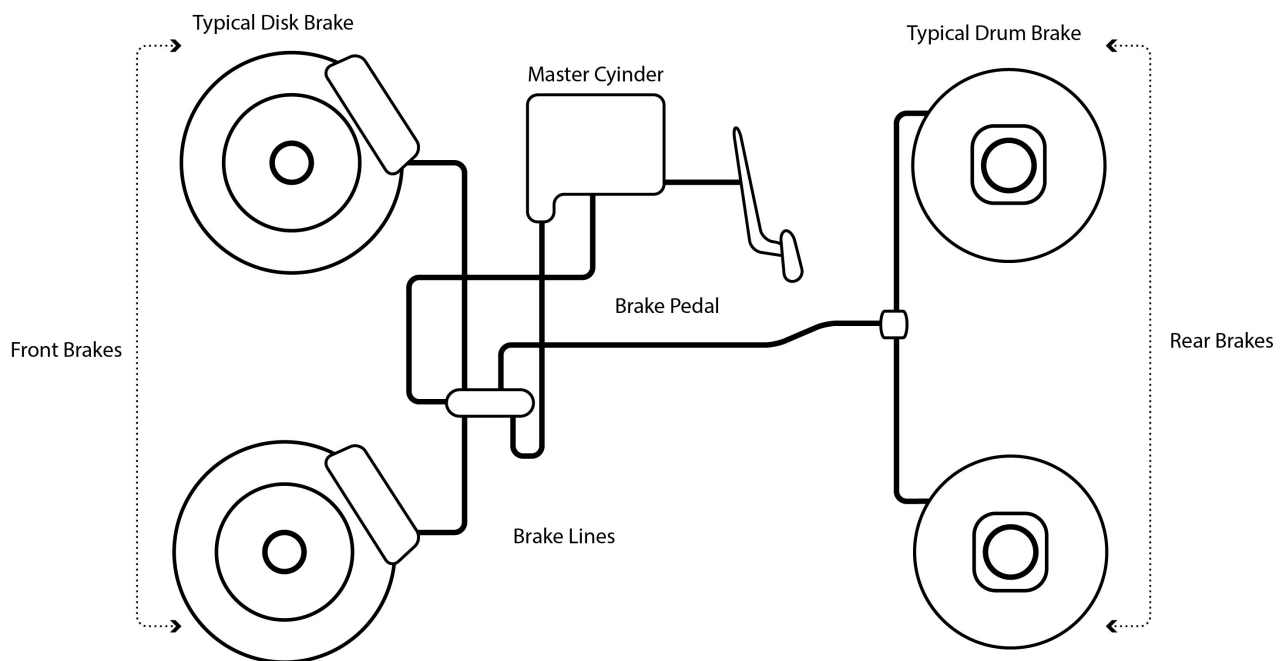


Figure 17 Hydraulic Brake System

× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Brake rods/ levers/ cables/ links/brackets/ mounting points/and retaining devices	☒ Missing, damaged, cracked, knotted, worn or obstructed ☒ Worn, rusty within 30cm of the mounting, seized or fitted incorrectly
Brake linings/pads	☒ Brake linings/pads contaminated with oil/grease, incorrectly fitted or worn below 3mm
Brake drums/ discs/ back plates	☒ Damaged, insecure or fitted incorrectly ☒ Any disc or drum worn ☒ Any disc or drum cracked from the outside to the inside
Levers	☒ Any lever (including a slack adjuster) missing, damaged, insecure or in need of adjustment ☒ Operating over centre ☒ Restricted , seized or abnormal movement
Brake actuator wheel units	☒ Damaged, rusty within 30cm of the mounting point, insecure or leaking actuators ☒ Excessive or restricted travel of operating cylinder indicating adjustment required ☒ Different size actuators fitted to the same axle ☒ Brakes not operating on all wheels when the service (foot) brake is applied
Air pressure compressor drive belt system	☒ Drive belt or pulley missing, insecure or badly deteriorated
Brake lines and hoses	☒ Any brake line or hose perished, kinked, damaged or rusty or insecure such that they are likely to fail ☒ Any flexible brake line or hose deteriorated and likely to fail ☒ Any leak ☒ Any risk of failure or fracture to a brake line/hose ☒ Damaged, rubbing twisted or brake hoses too short ☒ Hoses bulging under pressure ☒ Any incorrectly connected trailer coupling brake lines
Brake fluid reservoir	☒ Lower than half full or below the manufacturers limit ☒ Leaking or cap missing, insecure or fluid obviously dirty/contaminated
Air brake reservoirs/ valves/master cylinders and connections	☒ A master cylinder or brake valve insecure, leaking or defective ☒ Any brake valve or associated linkage seized or inoperative or showing discharge of oil such that it is leaking onto the ground ☒ Brake servos not working, insecure, rusty within 30cm of the mounting point, leaking or defective ☒ Brake reservoirs insecure, damaged or leaking ☒ Brake reservoir securing strap damaged, rusty within 30cm of the mounting point or rubbing against other fittings



NOTES

- It may be necessary to release the transmission brake to check the propeller shaft couplings

9 Transmission & Engine Inspection

If the transmission and engine are not properly tested and in working order then there is a major risk of an accident or incident whilst the vehicle is on the road.

HOW TO INSPECT

- ✓ With the vehicle over the pit, examine the propeller shafts paying particular attention to universal joints and propeller shaft retainer couplings.
- ✓ With the vehicle over the pit, examine the engine and gearbox mountings for security and condition.

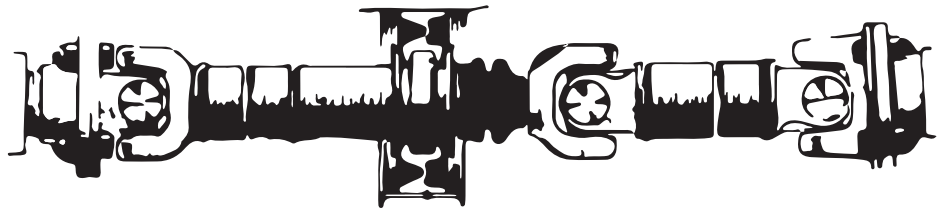


Figure 18 Propeller Shaft Universal Joint

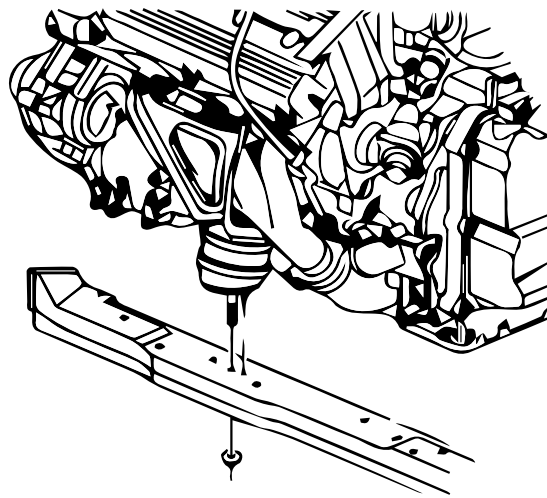


Figure 19 Engine Mountings

× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Propeller shaft	☒ Propeller shaft couplings worn or bolts insecure or missing
	☒ Propeller shaft retainer missing or insecure
Engine or gearbox mountings	☒ An engine or gearbox mounting insecure, deteriorated or broken



NOTES

10 Chassis/Underbody Inspection

The vehicle chassis provides the foundation for the whole vehicle. If there are defects on the chassis then the whole vehicle may be seriously unsafe. If operational this will cause serious road accidents.

🔍 HOW TO INSPECT

- ✓ While examining the underside of the vehicle carefully check the condition of the main chassis members for fractures, distortion or rust. Examine any cross members and any welding or repairs that has been carried out.
- ✓ Check carefully around cross member junctions for indications of movement and separation.
- ✓ Examine the trailer landing legs to make sure they are fixed and secure.

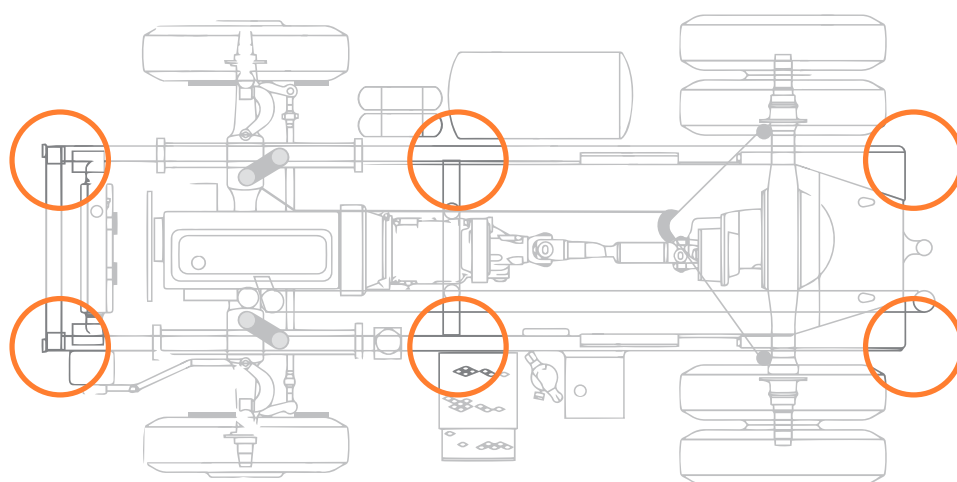


Figure 20 Chassis/Cross Member Inspection

× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Chassis/Frame/ sub frame/ underbody	❌ Welding fractured, any cracks in the chassis or underbody
	❌ Insecure or distorted chassis cross members
	❌ Insecure fixings rivets or bolts
	❌ Rust in the chassis or cross members such that it crumbles and produces holes under hand pressure
	❌ Repairs to the chassis not welded or insufficient weld to provide any strength
Trailer landing legs	❌ Insecure, defective, inoperative or missing
	❌ Cracks in the chassis around the landing leg

- No dismantling of components is allowed, therefore this check is confined to those parts you can see
- Small areas of damage may be repaired
- The chassis may need to be sand blasted or hot washed before any inspection for any import or registration from another Emirate and if the under vehicle is encrusted with dirt, the presenter should be advised to have the underbody cleaned for a closer inspection



NOTES

- Deterioration of paint work will lead to a request for a re-paint however; this requirement does not apply for operational areas of a vehicle (e.g. loading area on a flatbed) where paint damage is a daily occurrence.

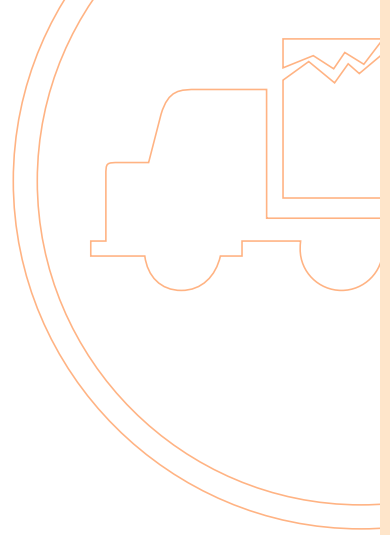
11 Body Condition Inspection

Though this item may seem cosmetic, defects could lead to serious fatalities. Items that are no longer fit for purpose may fall off the vehicle into the road and cause harm to other road users. Additionally, items that are essential to secure a load could break and cause the load to fall off the vehicle.

🔍 HOW TO INSPECT

As you check around the outside of the vehicle, there are a number of items that need to be considered.

- ✓ Examine the body structure for rust and damage or any projections that may cause injury. Examine the drivers' area for rust or damage and check that the drivers' area sits squarely on its mountings.
- ✓ Check that any fixings or brackets from the body to the chassis are secure.
- ✓ Check that any twist locks or containers retaining devices are in good condition and secure and any other body fixing such as:
 - Hinges and retaining devices for drop sides;
 - Tail boards; and
 - Loading devices.
- ✓ Examine all the wings and other similar devices to make sure they are secure and not affected by rust. Ensure they are free from tears or jagged edges and not rubbing on a tyre.
- ✓ Some vehicles may be fitted with tipping gear, check that there are no oil leaks dripping onto the ground.
- ✓ Check the bonnet locks, bumpers and the condition of any other visible body component for security, condition and ensure there are no jagged edges likely to cause injury.
- ✓ Check other items for security and condition:
 - Vehicle accident damage; and
 - Drivers compartment roof lining



× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Body structure and drivers area	☒ Body structure, doors, pillars and floor area insecure, damaged, cracked or rusty
	☒ Drivers compartment area (Cab) mountings worn or insecure
	☒ Drivers compartment area (Cab) locking device
Body security	☒ Body not sitting squarely on the chassis
	☒ Body fixings or brackets missing, insecure worn or damaged
	☒ Cross or longitudinal members deteriorated that the load cannot be carried safely
Body condition	☒ Body panels, pillars or floor deteriorated to such an extent that the load cannot be carried safely
Other items	☒ Insecure
	☒ Likely to foul other vehicle components
	☒ Wings missing, split, torn or rusted through (where required)
	☒ Tipping gear defective or with any oil leak dripping onto the ground
	☒ Bumper bars missing, insecure or has jagged edges likely to cause an injury
	☒ Main bonnet or boot locking mechanism not working
	☒ Any projection likely to cause injury
	☒ Any tanker body leak
	☒ Any accident damage greater than 25mm
	☒ Internal roof lining not fitted or deteriorated



NOTES

- In this section, “Rear lamps” does not refer to the brake or directional indicator lamps
- Any marker lamps fitted should be in working order
- Non O.E lamps (e.g. roof lights) or additional lights are not permitted
- Headlamps should consist of either 2 or 4 lamps
- Amber flashing beacons must be orange, rotating and located on or around the rear protection device and operate when the footbrake is applied. These are required on flat and low trailers. All heavy vehicles are required to have beacon fitted to the top of the cabin and fuel tankers are required to have cabin and rear upper beacons.
- Plant vehicles are required to comply if used on a road

12 Lights Inspection

Vehicle lighting is obviously an important part of any vehicle. If lights do not work then the vehicle becomes a moving hazard on the road. Broken lights can lead to heavy vehicles being hit by other road users which can lead to serious fatalities.

🔍 HOW TO INSPECT

- ✓ Check that all lamps are securely fitted.
- ✓ The rear lamps should provide a red light and the lamp must not be fitted more than 400mm from the side of the vehicle.
- ✓ Check that the registration plate lamp shows a white light and is operating.
- ✓ With the ignition and rear lights switched on and with the footbrake applied, observe the functioning of the stop lamps and flashing beacon (where fitted).
- ✓ Switch on the direction indicators and check that:
 - Each is working correctly and clearly visible;
 - Each is of the correct colour and correctly located; and
 - Indicator warning lamps are working
- ✓ Check that two positioning front lamps showing a white light are fitted to the front of the vehicle; one on either side of the vehicle’s centre line. No part of the vehicle should extend more than 400mm beyond the lamp and the lamps should be at the same height and no more than 2100mm from the ground.
- ✓ Check that side marker lamps are fitted to any trailer. These should be within 1m of the extreme front and rear of the trailer; and at least every 3m in-between.
- ✓ With the headlamps switched on dipped beam and main beam in turn, see that they each show a white light that sufficiently illuminates the road surface in front of the vehicle.

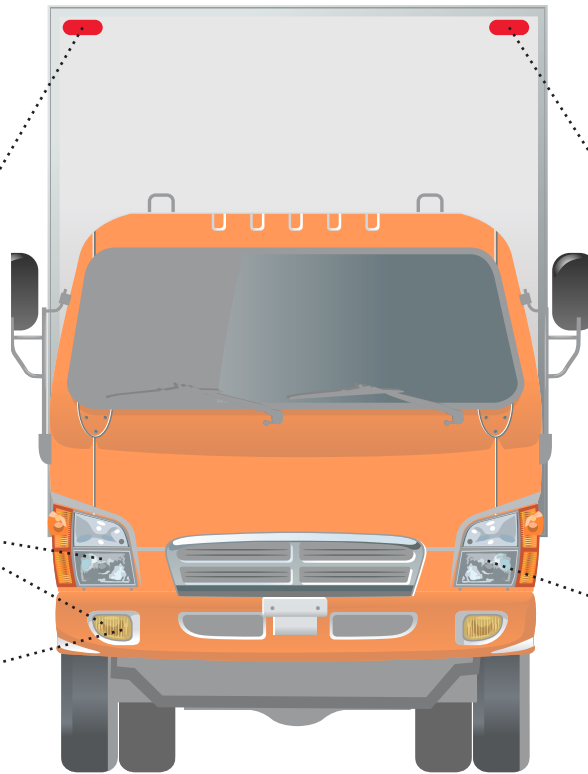
Max Height Range

Rear reflectors	250 - 1500mm
Stop lamps	305 - 2100mm
Rear lamps	350 - 2100mm
Indicators	350 - 2100mm

Marker lamp
condition and colour
security and white

Lens and reflective
material (free from
cracks and moisture)

Direction indicator
operation, colour and
speed 120/minute



Marker lamp position
within 400mm of
edge of vehicle

Headlamp aim
illuminate the road
and does not dazzle
other road users

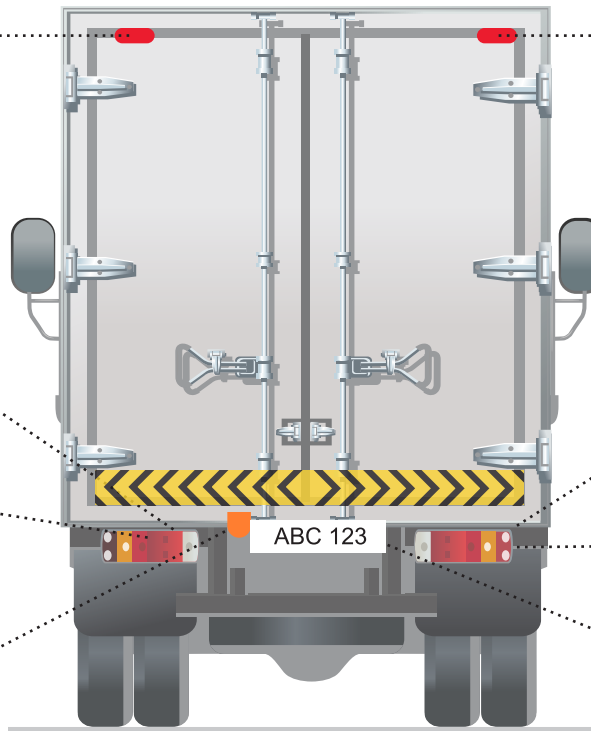
Figure 21 Front Lighting Inspection

Rear marker lamps
position (must be
within 400mm of the
edge of the vehicle)

Rear lamp
colour

Brake lamp operation
and colour must be
red and brighter than
rear lamps

Hazard beacon
colour



Rear marker lamps
condition

Lamp condition and
security

Direction indicators
colour and speed
120/minute

Registration plate
lamp illuminates
the plate

Figure 22 Rear Lighting Inspection

× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Rear Lamps	☒ Missing, not working, insecure or defective ☒ Lamps not fitted symmetrically either side of the vehicle ☒ A lamp dim or not about the same brightness ☒ Lens missing, broken or badly cracked ☒ Lamp contains water/moisture ☒ Not red ☒ Fitted >800mm from the rearmost part of the vehicle ☒ Less than 50% of LEDs working
Registration Plate Lamps	☒ Not working or not fitted ☒ Not white in colour
Stop Lamps	☒ Missing, not clearly visible, not working or defective ☒ A lamp dim or not about the same brightness ☒ Incorrectly positioned, not symmetrically located or insecurely mounted ☒ Lens missing, broken or badly cracked ☒ Lamp contains water/moisture ☒ Not red ☒ Not brighter than the rear lamps ☒ Less than 50% of LEDs working
Indicators	☒ Missing or not clearly visible, not working or defective ☒ A lamp dim or not about the same brightness ☒ Incorrectly positioned, not symmetrically located or insecurely mounted ☒ Lens missing, broken or badly cracked ☒ Lamp contains water/moisture ☒ Not amber or red in colour ☒ Indicator switch missing or not working ☒ Do not flash at about 1-2 per second

ITEMS	REASONS FOR FAILURE
Side Lamps	❑ Missing or not clearly visible, not working or defective ❑ Not symmetrically located and about the same brightness ❑ Incorrectly positioned or insecurely mounted ❑ Lens missing, broken or badly cracked ❑ Lamp contains water/moisture ❑ Not white or amber in colour
Side Marker Lamps (Trailer)	❑ Missing or not clearly visible, not working or defective ❑ Incorrectly positioned or insecurely mounted ❑ Lens missing, broken or badly cracked ❑ Lamp contains water/moisture ❑ Not amber
Main or Dipped Beam	❑ Dipped beams not working simultaneously ❑ Main beams not working simultaneously ❑ Contains water/moisture
Glass and Reflecting Material	❑ Insufficient brightness to illuminate the road in front of the vehicle ❑ Glass cracked to the extent that the lens glass is insecure ❑ Reflecting material damaged/discolored ❑ Missing
Mounting of Lamps	❑ Incorrectly or insecurely mounted ❑ Non O.E or additional lamps fitted
Dip or Headlamp Switch	❑ Insecurely mounted or missing ❑ Not in working order
Color	❑ White or yellow (all headlamps)
Main Beam Dashboard Warning Lamp	❑ Not working
Beacon	❑ A beacon missing, inoperative, not orange or not fitted in the correct location ❑ A rear beacon fitted to a trailer not illuminating when the footbrake is applied



NOTES

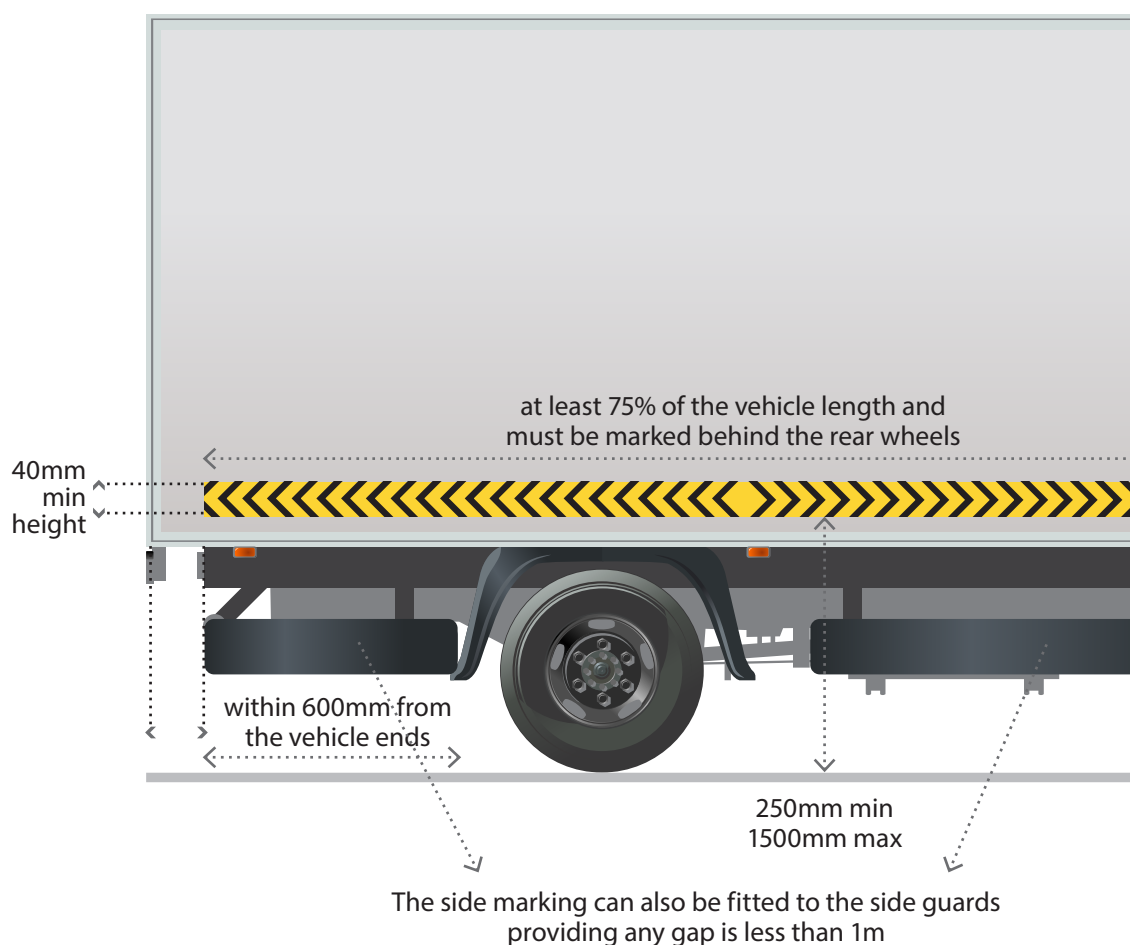
- Reflective stickers must have a minimum height of 40mm and extend across not less than 90% of the vehicles width at the rear and not less than 75% of the vehicle's length either standalone or in combination with the trailer.
- The markings should extend as close as is practical and no greater than 600mm from the rear end of the vehicle.
- The lowest edge of the reflector should be between 250mm and 1.5 metres from the ground. If this is not practical this can be increased to 2.5 metres.
- Markings should be continuous but may be broken, staggered or set back provided the gap is less than 1 metre between stickers.
- Reflective markings must be:
Reflective to a value of at least 300 candelas at an observation angle of 2 degrees or
Contain an E1 (European Approval).
Mark as appropriate.

13 Rear/Side Marking Inspection

Reflective markings are a legal requirement on the rear and sides of heavy vehicles. Reflective marking provide a visual warning to other road users and without them there is an increase in the possibility of an accident with other road users.

HOW TO INSPECT

- ✓ Reflective marking materials installed on trucks and trailers may be made up of one strip or a combination of several. The strip should be continuous or parallel or as close as possible, parallel to the ground. These rules apply to both trucks and trailers. For vehicles that are required to have side or rear reflective markings, check they are securely fitted and visually the dimensions are correct.
- ✓ A special optical device may be used to check reflective markings. This is optional for some entities.



× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Rear or side reflectors	☒ Missing or insecure
	☒ Dimensionally incorrect



Figure 23 Rear/Side Markings Dimensions



NOTES

14 Tyres & Wheels Inspection

A high percentage of accidents are the result of poor tyre and wheel condition or fitment. The tyres and wheels are the main point of contact between a vehicle and the road surface and have a direct impact on handling, braking and load capacity. It is extremely important that the test ensures that the tyres are safe. It is also important that operators ensure that their tyres always meet the legal requirements whilst in operation.

🔍 HOW TO INSPECT

- ✓ Check if the tyres appear to have been recut or retreaded where the tyre design does not permit it.
- ✓ Visually check that the tyre is not seriously underinflated. This is a major factor in load capability and can only be checked visually.
- ✓ Check twin configuration wheels for tyre sidewall contact.
- ✓ Examine the tyre for:
 - Any cut or break in the fabric of the tyre
 - Any lump or bulge
 - Any exposure of ply or cord structure
- ✓ Examine the valve stem for distortion or chafing
- ✓ Check that the tyres load rating is at least greater than:
 - The vehicles maximum gross axle weight for single or dual configuration tyres; or
 - The maximum weight carried by the vehicle (if less than the manufacturers limit)
- ✓ Check that the tyre speed rating is at least greater than the lower of:
 - The vehicles maximum operational speed; or
 - The maximum permitted speed for heavy vehicles (80 km/h)
- ✓ Check that tyres on the same axle are the same size and type.
- ✓ The minimum acceptable tread depth for heavy vehicles is 1.6mm around the whole circumference of the tyre. It will be necessary to move the vehicle to check the whole circumference.

- It will not always be possible to see the complete tyre on a vehicle from ground level, especially on dual configuration wheels and vehicles where the body hides part of the tyres. In such cases the vehicle should be moved to expose the hidden parts of tyres or the examination should be undertaken from under the vehicle, as well as at ground level
- Where wheel embellishers or hub caps are fitted to a vehicle, they must be removed by the operator or driver before the test
- Where the tread pattern is interrupted by tread wear indicators but the original tread pattern is visible, the tyre should not be failed for inadequate tread depth
- The driver should be advised if the tyre has less than 3mm of tread remaining
- Annex 2 of this document contains further information relating to tyre load and speed ratings
- Regroovable and retreadable tyres display the word “regroovable” or the  symbol on the sidewall

✓ Make an inspection of each part of the road wheels, paying particular attention to whether there is:

- Any fracture of the face of the wheel (flanges);
- Any fracture on tyre retaining rings;
- Any welding breaking away;
- Any stud hole badly worn;
- Any wheel stud missing;
- Any wheel nut missing;
- Any wheel nut insecure;
- Any tyre retaining ring, the ends of which are butting; or
- Any wheel distorted or bent



Figure 24 Tyre and Wheel Inspection

× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Tyre Fitment	☒ Tyres fitted to individual axles including twin wheels are not of the same type or size ☒ Are incorrectly matched with the wheels ☒ Radial ply tyres are fitted to the front wheels but not the rear wheels. ☒ A tyre type arrangement that is unacceptable ☒ Insufficient speed index or load capacity for maximum axles weight or heaviest load carried (See Annex 2)
Tyre Structure	☒ Evidence of any retreading or regrooving where the tyre design does not permit this. ☒ Seriously underinflated or cannot be inflated ☒ Wall contact on dual configuration wheel ☒ Any lump or bulge ☒ Any exposure of ply or cord structure ☒ Any tread deformation or flat spotting
Valve	☒ Obvious damage or distortion of the valve stem ☒ Valve stem chafing against the valve hole
Depth of Tread	☒ At least 1.6mm of the original tread pattern is not visible around the whole circumference and across the width of the tyre (excluding tread wear indicators)
Wheel	☒ Any cracks or defective weld ☒ Wheel buckled ☒ Fitted the wrong way or incorrectly fitted ☒ Damaged ☒ Incorrect size or wheel type fitted ☒ Any spoke or wheel component in such a condition that there is a danger of failure ☒ Any tyre retaining ring damaged or fitted in a manner likely to cause danger
Stud holes	☒ Worn, elongated or damaged
Studs or nuts	☒ Elongated, damaged or threads stripped ☒ Any stud or nut missing or insecure ☒ Any stud hole, stud or nut in such a condition that there is a danger that the wheel will become insecure ☒ Wheel nut incorrectly fitted ☒ Incorrect wheel nut fitted

15 Spare Wheel Inspection

Spare wheel is not mandatory. This part of the test is in relation to the spare wheel if fitted on the vehicle.

🔍 HOW TO INSPECT

- ✓ Examine the spare wheel carrier, if fitted, to make sure it is securely attached to the vehicle.
- ✓ Examine the mounting points and the structure of the carrier to see that they are free from fractures.
- ✓ If there is a spare wheel in the carrier, check that it is securely held and the tyre condition matches the same standards as the tyres section of this manual.

✗ REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Spare Wheel Carrier	☒ Cracked or insecurely mounted
Spare Wheel	☒ Insecurely mounted
Spare Tyre	☒ Not meeting the tyre condition standards shown in the Section 14 of this manual



NOTES

- Side guards and rear underrun protection are required on all vehicles and trailers over 2.5 tonnes unladen weight except:
 - A tipper lorry;
 - Street refuse or street cleaning vehicles;
 - A vehicle or trailer specially designed to carry exceptionally wide or long loads; or
 - A car transporter
- The rear protection device should be fitted as near as possible to the rear and extend across to within 100mm of the outer edges of the vehicle or trailer

16 Sideguards & Rear Protection System Inspection

In the case of a collision, sideguards and rear protection systems are very important as they act to prevent objects from going under the vehicle and coming into contact with the road wheels. Failure to have such equipment can lead to serious fatalities.

HOW TO INSPECT

- ✓ Check sideguards and rear protection systems are securely fitted, free from cracks, rust, jagged edges or damage that would allow the guard to be ineffective or render the guard a danger to other road users.
- ✓ Sideguard and rear protection dimensions are complex, you are not required to measure each section however, if you are in doubt this can be done to demonstrate a failed component area. Check visually that the dimensions are correct.

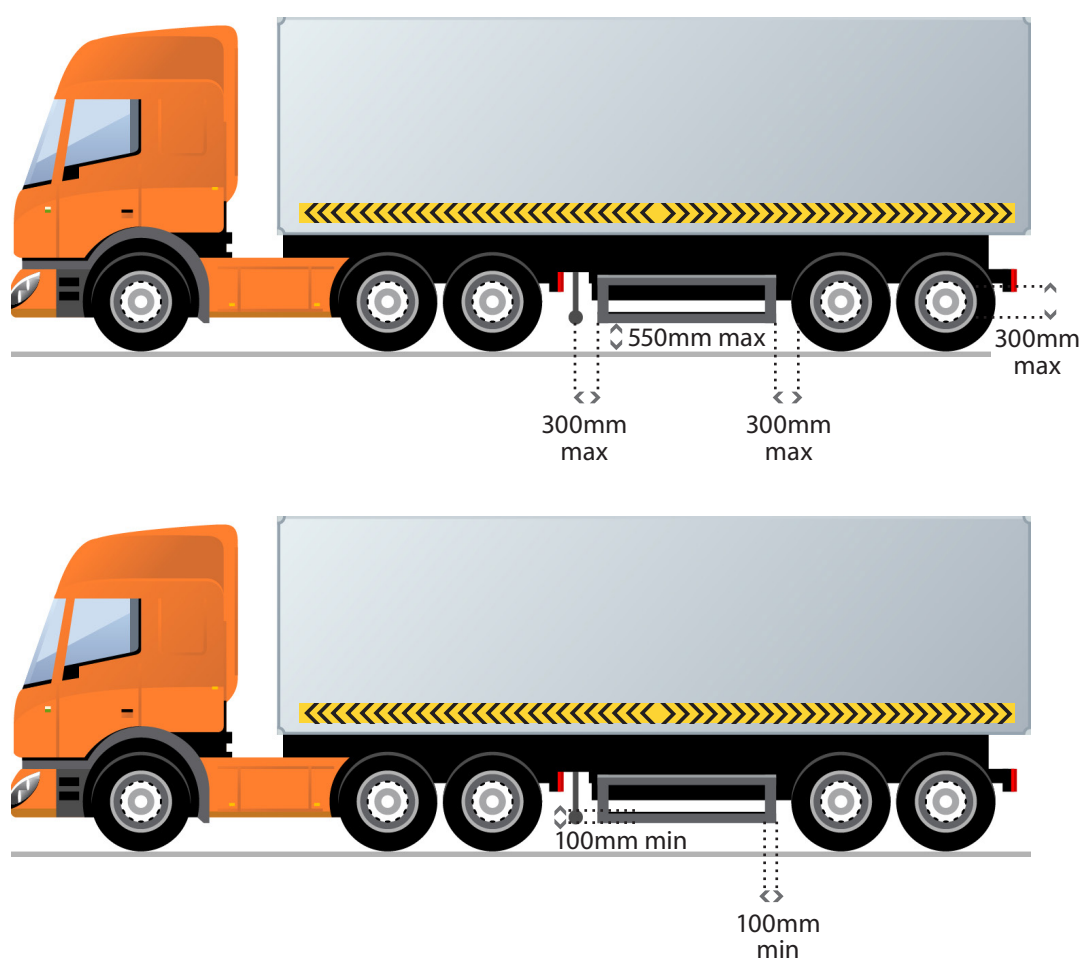


Figure 25 Heavy Vehicle Sideguard Dimensions

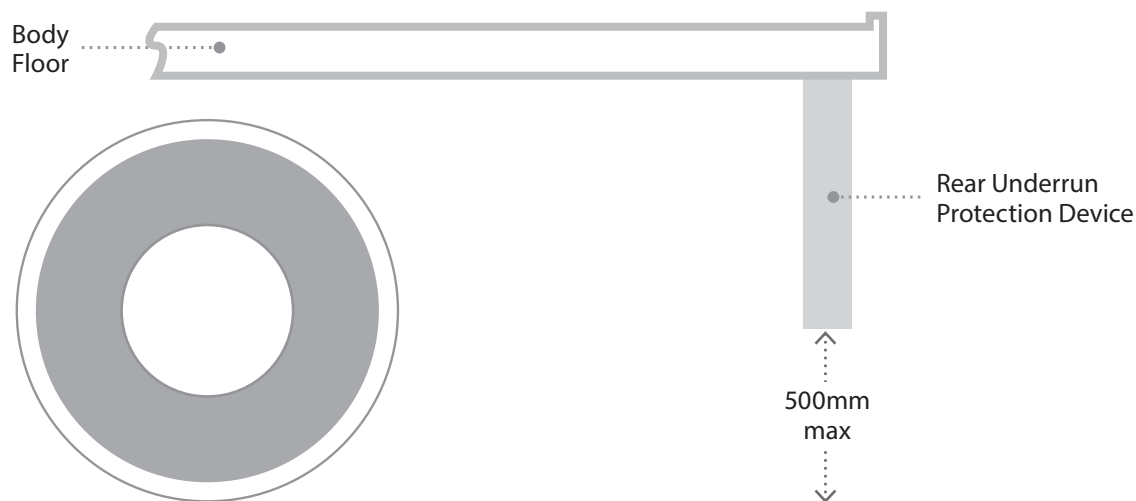


Figure 26 Rear Protection System Dimensions

× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Side Guard and Rear Protection System	☒ Not fitted where required
	☒ Fitted to incorrect dimensions
	☒ Insecure, cracked, rusty within 30cm of the mounting point, damaged or has sharp or jagged edges that could cause injury
	☒ The outer surface is not flat or projects outside the body of the vehicle



NOTES

- Headlamps generally fall into one main category and are checked on dipped beam.
- Tyre pressures have been visually checked before the brake test, but if tyre pressure appears too low, the headlamp test should not be carried out and the vehicle failed.
- The vehicle and beam tester should be located on the headlamp aim checking area within the premises
- Any headlamp range adjuster must be in the normal position

17 Headlight Aim Inspection

Headlamp aim inspection is important to ensure the headlamps sufficiently light the road surface while not dazzling other road users.

HOW TO INSPECT

- ✓ Place a calibrated headlamp beam tester in front of each headlamp in turn and with the dipped beam on, determine the gradient percentage of the highest point of the beam relative to the floor on which the vehicle is standing.



Figure 27 Vehicle Headlamp Aim Test

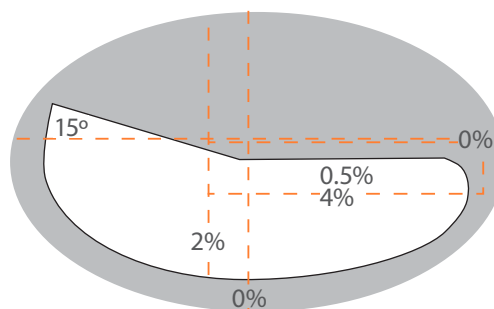
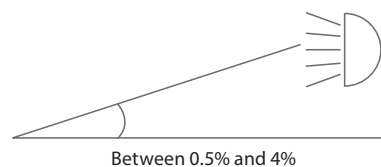


Figure 28 Vehicle Headlamp Aim Test

× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
For all headlamps	✗ The horizontal cut off line does not lie between the 0.5% and 4% boundary lines



NOTES

18 General Items Inspection

This section outlines other areas of the vehicle which should be considered during the test, including:

- Fuel System;
- Electrical System;
- Exhaust System;
- Towing Bracket/ Coupling/ Fifth Wheel;
- Oil Leaks;
- Registration Plates; and
- Vehicle Signage

🔍 HOW TO INSPECT

- ✓ While examining the vehicle all around at different stages of the test, check carefully the condition of other items. These are:
 - Exhaust system for security, position and leaks
 - Electrical system that includes the battery for security and all visible wiring and connections for condition and security. The electrical drive belt system should be checked wherever possible.
 - Fuel system. Check the fuel tank supports and brackets that they are secure and the mounting bolts to the chassis are not insecure. Check the fuel tank cap is present and secure and will not allow fuel spillage. Examine carefully the fuel pipelines to ensure they are not damaged or deteriorated or not fouled by other moving parts.
 - Towing bracket/coupling/fifth wheel. Check the condition of these components and ensure they are free from distortion and fracture. Examine the components for wear and check that the coupling is securely attached to the vehicle. Examine the fifth wheel assembly carefully and wherever possible check the jaw and fifth wheel plate for cracks and wear. Examine the safety locking device and visually check any component for wear and security of the fifth wheel device to the chassis.
 - Oil leaks. Check the underside of the vehicle for any oil leaks that may cause a hazard or is environmentally unfriendly.
 - Vehicle signage
 - Registration plates

- Fuel tanks on both the truck and trailer are included in the inspection
- Maximum 10mm total free play movement in the coupling between the vehicle and trailer
- The following notices must be on the driver's door:
 - Unladen Weight of the vehicle;
 - Maximum Payload of the vehicle; and
 - Heavy or light vehicle.
- These should match the vehicle registration card. Water tankers must also have drinking water/non drinking water written on both sides of the vehicle as appropriate. Fuel tankers must have the fuel as well as 'no smoking' written clearly on both sides of the tank
- An advertisement certificate must be presented for vehicles carrying advertisements
- If a registration plate is needed, this can be noted and it will be provided when the vehicle is re-registered
- Exhaust outlets must be above the cabin on vehicles greater than 2.5 tonnes unladen weight
- Drinking water tanker vehicles are required to have white painted bodies with a blue line. Other tankers should have the following line colours:
 - Red line for fuel carriers
 - Yellow line for gas carriers
 - White line for non drinking water

× REASONS FOR FAILURE

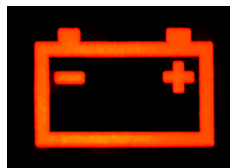
ITEMS	REASONS FOR FAILURE
Exhaust	❑ Does not exit upwards and is not equal to or higher than the drivers compartment ❑ Insecure such that it is likely to fall off ❑ Missing or with serious leaks



BEWARE – Exhaust systems can be HOT! Take care with exhaust fumes that can be HARMFUL.

Figure 29 Exhaust

ITEMS	REASONS FOR FAILURE
Electrical	❑ Battery insecure or leaking acid ❑ Wiring insecure or insulation damaged exposing bare wires ❑ An alternator drive belt or part of the system insecure or not working

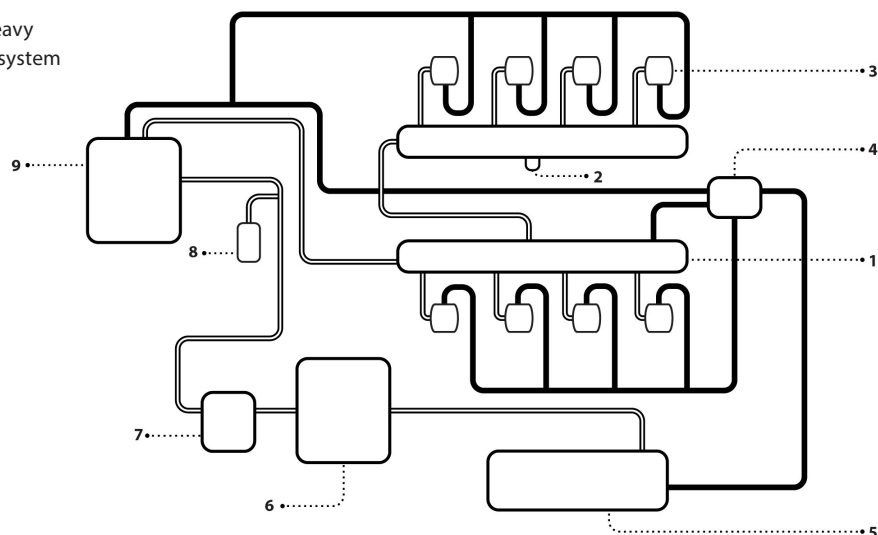


BEWARE – ELECTRICAL SYSTEMS MAY CAUSE ELECTRIC SHOCKS

Figure 30 Electrical System

ITEMS	REASONS FOR FAILURE
Fuel system	❑ Fuel tank, pump, filters and fuel lines incorrectly mounted, insecure, rusty such that they are likely to fail or leaking ❑ No fuel cap fitted or not fitted sufficiently tightly as to allow fuel spillage ❑ Fuel pipes/lines damaged or deteriorated, so they are likely to rupture or so close to a heat source that they may ignite

Figure 31 Heavy Vehicle Fuels system



BEWARE – When testing fuel line systems, some areas may be under high pressure. The darker fuel pipes in this diagram represent fuel lines under high pressure.

× REASONS FOR FAILURE

ITEMS	REASONS FOR FAILURE
Towing bracket/fifth wheel coupling	☒ Insecure or missing fastening or securing devices on any coupling
	☒ Wear on any coupling
	☒ A safety device not fitted or not operating
	☒ Cracked or distorted rubbing plate or jaw or any coupling assembly point
	☒ Any welding around the coupling cracked or breaking



Figure 32 Coupling

ITEMS	REASONS FOR FAILURE
Oil leak(s)	☒ Any oil leak dripping onto the ground
Other items	☒ A vehicle sign (where required) not fitted or not legible
	☒ Registration plate not fitted, insecure or illegible
	☒ Any part of the vehicle or trailer is in such a dirty or dangerous condition as to make it unreasonable to be examined
	☒ A change has been made to the vehicle or trailer without the necessary authorisation
	☒ A tanker not painted in the correct colour



Annex 1: Glossary of Terms

TERM	DEFINITION
ABS	Anti-lock brake system – An electrical support to the footbrake to prevent wheel lock in bad weather.
Air brake system	A braking system usually on trucks and buses that uses compressed air to apply the footbrake to all the wheels.
Bonnet lock	The mechanism which keeps the bonnet in the closed position.
Brake actuators	A relay device fitted close to the wheels and used on truck and trailer brakes to activate the brakes.
Brake linings	Brake components fitted to drum brakes.
Brake master cylinder	The braking component which converts the pressure applied to the service brake pedal to hydraulic pressure.
Brake pads	Brake components fitted to disc brakes.
Brake cylinders	Brake components fitted to hydraulic systems used to activate the brakes.
Brake valves	Brake components fitted to control the air brake system
Bushes	A cylindrical metal lining used to constrain, guide or reduce friction.
Cabin	The section of the vehicle where the driver sits and operates the vehicle. Known in this manual as the driver's compartment.
Cab mounting	The point at which the vehicle drivers compartment is attached to chassis. These are often designed to tilt for the purpose of vehicle service and inspection.
Calibration	The process to standardise (as a measuring instrument e.g. roller brake tester) by determining the deviation from a standard so as to ascertain the proper correction factors.
Chock	Wedges placed against a vehicles wheel to prevent accidental movement.
Compressor	The device which runs from the engine to provide compressed air for the air brakes.
Dazzle	Light shining into your eyes such that you are unable to focus for more than a few seconds.
Decelerometer	A device used to or measuring the rate of change of speed of a moving vehicle during deceleration.
Discs	Brake components usually fitted to the front wheels.
Distorted	Bent, twisted or not straight
Drivers compartment area	Also known as the cab or cabin
Drums	Brake components usually fitted to the rear wheels or on all wheels of trailers.
EBS	Electronic brake system – Usually fitted to trucks and buses to provide ABS and quick reaction times.
Flanges	A wheel flange is a round flat adapter hub that allows a wheel to be attached to an axle on a vehicle.
Hydraulic brake system	A braking system usually on cars and vans that uses brake fluid to apply the footbrake to all the wheels.
Indicator dash lamp	The dashboard lamps which inform the driver that the indicators (or hazard warning lamps) have been activated. These are usually a green arrow.
Indicators	The lamps mounted to the front, sides and rear of heavy vehicles which are activated by the driver to alert other road users to the drivers' intention to change direction.

TERM	DEFINITION
Jagged	Sharp
Front Axle King pin (1)	A steering component usually fitted to trucks and buses to hold the wheel bearings and an axis to rotate the road wheels.
Trailer King pin (2)	A coupling component used on head and trailers to connect between the two vehicles.
Leaf spring	A spring used for heavy vehicle suspension which is made of a number of strips of metal curved slightly upward and clamped together one above the other.
LED	A type of lighting source which is often used on vehicles. LED stands for light emitting-diode.
O.E	Original Equipment
Pitman arm	A steering link connected from the steering box towards the wheels.
Propeller shaft	The component which transmits power from the gearbox to the differential gear.
Radial ply	Refers to a tyre's internal construction- radial ply tyres can be identified by an 'R' on the sidewall e.g. 295/80R/22.5. Cross Ply is the other type of tyre internal construction.
Radius arm	A suspension component connected from the axle to the chassis.
Rear beacon	A rotating warning lamp which is fitted to the rear of heavy vehicles in Abu Dhabi to indicate that they are braking.
Rear underrun	A protective bar which prevents objects or vehicles from going under the vehicle and coming into contact with the wheels in the event of a rear side collision.
Reflective marking	Black and yellow chevrons with reflective properties.
Reservoirs	Brake component tanks used to store compressed air.
Roller brake tester	Equipment used to assess the braking performance of a motor vehicle.
Servo	The servo is a braking component which provides assistance to the driver by decreasing the braking effort. (Also known as the brake booster)
Side guards	A protective bar which prevents objects or vehicles from going under the vehicle and coming into contact with the wheels in the event of a side collision.
Side marker lamps	Lights fitted at minimum intervals along the length of the vehicle and trailer if articulated.
Spring brake	A brake actuator that is also used as a hand brake.
Suspension bellows	A suspension component which is pumped with air and raises the chassis from the axle.
Torsion bar	A long metal bar usually attached to the chassis and acts as a suspension component.
Track rod	A steering link that connects between each road wheel.
Trailer landing legs	The landing legs of a trailer are lowered in order to support it when it is not coupled to a head/tractor unit.
Tread lifting	The tyre tread area has partially separated from the tyre.
Twist locks	A locking device to secure shipping containers to the trailers which they are transported upon.
Tyre bulge	A lump in the tyre caused by partial separation of parts of the tyre.
Tyre cords	The metal wires built within the tyre.
Tyre retaining ring	A circular steel ring seen on the outside of the wheel used to fix to halves of a wheel split rim together.
Vacuum	Used in car and van brakes to assist in braking.
Wheel embellishers	A disk fitted to the outside of vehicle wheels to prevent the accumulation of moisture or dirt.



Annex 2: Tyre Specification

Tyre Load And Speed Rating

If tyres marked with a load capacity index are fitted the maximum permissible axle load for normal use can be found in this table. The Load Index may consist of one or two numbers e.g. 154 or 146/143. Where two numbers are displayed the first refers to the use of the tyre in single formation and the second in twin formation. Reference to the table shows that the maximum loads for this tyre are 6000kg in single formation and 10900kg in twin formation.

Speed Symbols

The speed capability is represented by a letter that is displayed adjacent to the Load Index marking e.g. 146/143J. This indicates the speed at which the tyre can carry the load(s) indicated by the Load Index marking(s). In the above example the tyres carry a load of 6000/10900kg at 100km/h.ph.

The minimum speed symbol requirement symbol is 'F' (80km/h).

Tyre Speed Ratings Table

SPEED SYMBOL	CORRESPONDING SPEED (KM/H)	SPEED SYMBOL	CORRESPONDING SPEED (KM/H)
F	80	R	170
G	90	S	180
J	100	T	190
K	110	U	200
L	120	H	210
M	130	V	>210
N	140		
P	150		
Q	160		

Structure

All tyres on an axle must be of the same structure and nominal size.

Tyres on an axle may be of different structures and nominal sizes to those on another axle with the following exceptions:

- All tyres on all steered axles must have the same structure.
- All tyres on all driven axles must have the same structure.
- On two axle motor vehicles where each axle is fitted with single wheels the only type of structure, which is allowed to be fitted to each axle, is cross ply on the front axle and radial ply on the rear axle.

Load Capacity Index Table

"Load Index Table" shows axle loads

LOAD INDEX	SINGLE KG	DUAL KG	LOAD INDEX	SINGLE KG	DUAL KG	LOAD INDEX	SINGLE KG	DUAL KG	LOAD INDEX	SINGLE KG	DUAL KG
70	670	1340	100	1600	3200	130	3800	7600	160	9000	18000
71	690	1380	101	1650	3300	131	3900	7800	161	9250	18500
72	710	1420	102	1700	3400	132	4000	8000	162	9500	19000
73	730	1460	103	1750	3500	133	4120	8240	163	9750	19500
74	750	1500	104	1800	3600	134	4240	8480	164	10000	20000
75	774	1548	105	1850	3700	135	4360	8720	165	10300	20600
76	800	1600	106	1900	3800	136	4480	8960	166	10600	21200
77	824	1648	107	1950	3900	137	4600	9200	167	10900	21800
78	850	1700	108	2000	4000	138	4720	9440	168	11200	22400
79	874	1748	109	2060	4120	139	4860	9720	169	11600	23200
80	900	1800	110	2120	4240	140	5000	10000	170	12000	24000
81	924	1848	111	2180	4360	141	5150	10300	171	12300	24600
82	950	1900	112	2240	4480	142	5300	10600	172	12600	25200
83	974	1948	113	2300	4600	143	5450	10900	173	13000	26000
84	1000	2000	114	2360	4720	144	5600	11200	174	13400	26800
85	1030	2060	115	2430	4860	145	5800	11600	175	13800	27600
86	1060	2120	116	2500	5000	146	6000	12000	176	14200	28400
87	1090	2180	117	2570	5140	147	6150	12300	177	14600	29200
88	1120	2240	118	2640	5280	148	6300	12600	178	15000	30000
89	1160	2320	119	2720	5440	149	6500	13000	179	15500	31000
90	1200	2400	120	2800	5600	150	6700	13400			
91	1230	2460	121	2900	5800	151	6900	13800			
92	1260	2520	122	3000	6000	152	7100	14200			
93	1300	2600	123	3100	6200	153	7300	14600			
94	1340	2680	124	3200	6400	154	7500	15000			
95	1380	2760	125	3300	6600	155	7750	15500			
96	1420	2840	126	3400	6800	156	8000	16000			
97	1460	2920	127	3500	7000	157	8250	16500			
98	1500	3000	128	3600	7200	158	8500	17000			
99	1550	3100	129	3700	7400	159	8750	17500			

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