



ROUTINE CHECKS AND MAINTENANCE MANUAL

Agricultural Tipping Trailers

Multi-Purpose Trailers

Low Loaders



Any K-Quip equipment with deviations or omissions must be reported to K-Quip within seven days of delivery.

All trailers are manufactured at K-Quip Ltd.

K-Quip Address;

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These instructions are provided to help you get the best service from your trailer. To ensure that the trailer is safe for use, we recommend that the instructions are read by all users and that every recommendation is followed. These instructions and maintenance routines should be followed to keep the trailer in a safe working condition, maintain the efficiency, and prevent any unnecessary breakdowns.

Failure to adhere to the given information listed may cause damage to the trailer and pose a danger the operator and other relevant parties.

Ensure to write down the serial number of your trailer. This will help identify your trailer and make it easier for any future references such as, ordering replacement parts.

Trailer Serial Number: _____

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This operator's manual must stay with the trailer at all times. If the trailer is resold, this manual must be passed on to the new owner.

Purpose of this manual

This manual should be used to familiarise the operator with the necessary checks and services that should be carried out on the trailer. The trailer must only be operated, serviced, and any repairs that are necessary done by people who are familiar with the trailer and have read and understood the manual.

K-Quip are not liable for any modifications carried out on the trailer (including the fitting of non-original parts) unless specific approval has been given by the manufacturer. This could result in damaging the trailer and making it unsafe for use.

This manual provides information for the use and maintenance of the K-Quip Trailer range.

K-Quip Ltd. operate with the goal of continual improvement; therefore, some items in this manual may differ slightly from the trailer that you received. K-Quip have the right to make amendments to the trailers or this manual without notice. Please note that the images within this manual are generalised to reflect the range of trailers and to give a general understanding of what is being described. Due to the bespoke nature of the trailers, the images shown may not accurately reflect yours.

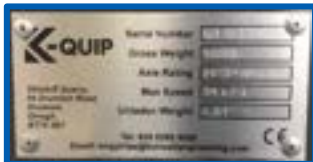
If you are unsure or have any doubt in regard to any aspect or operation of your trailer, contact K-Quip Ltd. or your K-Quip dealer for more information or guidance.

Safety and warning stickers are placed on the trailer in areas of danger to help identify risks and prevent injuries. These must be considered and taken seriously.

LEGAL REQUIREMENTS

Identification plate

The trailer's vehicle identification number (VIN) is required with all orders for spare parts and technical inquiries. This is necessary to ensure the correct delivery of spare parts. The identification plate with the trailer's VIN is located at the front of the trailer.



Operating on public roads

Before using the trailer on public roads, the towing vehicle must be properly linked to the trailer. Connecting the trailer's lights and testing the lighting system's functionality are also required. The hydraulic and/or pneumatic braking systems on the trailers must be properly attached to the towing vehicle and tested to ensure proper operation. The brake lines and any breakaway rope (breakaway brake) must be properly attached if the trailer uses an air brake system.

Number plate legislation

To 15 m.p.h. (25 km/h): trailers must be fitted with a number plate issued to the vehicle owner for one of their vehicles.

Over 15 m.p.h. (25 km/h): trailers must be fitted with a duplicate of the number plate fitted to the towing vehicle.

Road transport

Observe the applicable road regulations in your country.

Disposal of trailer

All components can be disposed of at an appropriate waste disposal facility once the trailer has served its purpose. When using oxy-acetylene cutting equipment, caution must be exercised. Before using cutting equipment, the wheels and tyres, hydraulic and pneumatic cylinders, valves, and hoses must all be removed. According to current legislation, oil must be drained, collected, and disposed of. The appropriate legal requirements must be followed while disposing of electrical components.

GENERAL HEALTH AND SAFETY

General hazard perception and safety

The following sections show warnings or cautions for hazards that may be present when operating the trailer or during maintenance of the trailer.

Before operating the trailer

All personnel operating or maintaining this K-Quip trailer must be fully aware of the following warnings. These warnings and cautions are of a general nature and are not task specific.

WARNING

The trailer must only be operated by properly trained and authorised personnel. An operator's licence or certificate may be required prior to operating the trailer. The trailer operator must be fully aware of the trailer's capabilities and limitations. The operator should be familiar with the working area or site, with the following particular checks being carried out:

- Vertical and horizontal clearances in the area
- Overhead obstructions
- Electrical powerlines (ensuring that the trailer remains at least 7.6m (25ft) from any powerlines)

Ensure that the trailer is equipped with a fully operational lighting system that is adequate for working conditions. Additional checks should be carried out to ensure that the trailer is compliant with local or national road traffic regulations.

Make sure that the trailer's reverse alarm and other warning devices are in complete working order.

The protective guards and covers must be checked to ensure that they are correctly fitted to the trailer.

The work area or site should be carefully evaluated for any changes in the stability of the ground surface, backfilled trenches, and the structural integrity of buildings, roofs, etc.

The vehicle's intended path or route should be clear of any obstacles.

WARNING

Before the trailer is moved, it must be checked to make sure no personnel are on, under, or near the trailer.

A collision between high-speed road traffic and slow-moving trailers can result in personal injury or death. Use flashing beacons and other lights according to local laws when on a public road. Where there is a national requirement, use a Slow Moving Vehicle (SMV) emblem displayed at the rear of the trailer. Pull over to let faster traffic pass. Signal and slow down before turning off the road.

Use warning devices (flags, the SMV emblem, lights, etc.), which are approved for use by your local government agencies, when using equipment on public roads. These devices should be kept clean and in good working order.

General

Unauthorised personnel must **not** be permitted to operate or maintain this trailer.

Ensure the location of high-voltage power lines and buried power cables are known. Serious injury or death by electrocution can occur if the trailer contacts these hazards.

Do not wear loose clothing or jewellery, which can snag on the controls or trailer structure, as this may cause personal injury.

Ensure that all protective guards and covers are secured in place on the trailer. If guards and covers are removed, a hazard to personnel will exist.

Ensure that all foreign objects and materials, such as oil, tools, debris, and other items, are kept clear of equipment, walkways, and steps on the trailer. Failure to do this can cause personal injury.

Make sure that all loose items that are not part of the equipment, such as tools, lunch boxes, and other items, are secured correctly before operating the trailer. Failure to do so can cause personal injury.

Always wear the correct protective equipment, including a hard hat and protective glasses when required.

⚠ WARNING

Trailer operators must be aware of the correct hand signals and the personnel authorised to give them.

Operators must accept hand signals only from a single, authorised person.

Ensure that all fluids used during maintenance of the trailer are stored in the correct containers. Never store these fluids in other types, such as glass containers.

Ensure that all fluids are disposed of correctly and in accordance with local health and safety regulations.

Ensure that all cleaning fluids are used with care and that any necessary repairs are reported immediately.

Ensure the size of the trailer, including any load, is known. This will safeguard that a correct and safe clearance is maintained when operating the trailer in confined spaces or near obstacles.

Pressurised air and water

If released, air or water in pressurised trailer systems can cause debris or hot water to be ejected. This can result in personal injury. At all times, care must be taken when working on pressurised trailer systems.

Operators using pressurised air or water for cleaning purposes must wear the correct protective equipment. This includes protective clothing, shoes or boots, and goggles or a face shield.

Operators using pressurised air or water for cleaning purposes must not exceed the following maximum operating pressures:

Air – 205 kPa (30 psi)

Water – 275 kPa (40 psi)

⚠ WARNING**Residual hydraulic pressure**

Refer to the service manual before releasing hydraulic pressure. Non-operating hydraulic systems can retain residual hydraulic pressure. If released, this residual pressure can cause:

- Sudden movement of the trailer or trailer attachments
- Disconnected hoses to whip
- Hydraulic fluid to be sprayed, causing a personal hazard through direct contact or ingestion

Fluid penetration

Before doing any hydraulic maintenance, disconnecting the system, or removing a component, residual hydraulic pressure must be discharged. Prior to releasing hydraulic pressure, consult the service manual. Hydraulic systems that are not in use might still have hydraulic pressure. Incorrect release may result in personal injury.

Even a pinhole leak from leaking fluid might enter the skin. Serious harm or even death could come from this. Always check for fluid leaks with a board or piece of cardboard. If fluid seeps through your skin, you need to get medical attention immediately, ideally from trained medical personnel.

Fluid spillage

Care must be taken to avoid fluid spillage during trailer maintenance, testing, adjusting, and repair. Before any possible fluid spillage can occur, a suitable container must be positioned to collect the fluid.

Disposal of waste material

The disposal of waste materials, including potentially harmful fluids, must be in accordance with local health and safety regulations.

Improper disposal procedures can be harmful to personnel and the environment. Always use the correct and leakproof type of container for the storage of waste fluids. Do not dispose of these fluids by pouring them onto the ground, into water sources, or down drains. Improper disposal procedures can be harmful to personnel and the environment.

⚠ WARNING

Asbestos hazards

Contact with asbestos must be avoided, particularly inhalation of airborne dust, as this can result in serious injury or death.

If it becomes necessary to come into contact with asbestos, you must use the guidelines that follow:

- Avoid creating dust if handling debris or components that may contain asbestos, such as brake pads and bands, liner material, clutch plates and some gaskets
- Never use compressed air for cleaning purposes
- Avoid machining or brushing materials that may contain asbestos
- Before disposal, use a wet, damping down method to concentrate material dust and debris
- If possible, a vacuum cleaner fitted with a high particle air filter (HEPA), should be used to collect debris and dust
- Use exhaust ventilation on permanent machining work
- Wear an approved respirator if there is no other way to control any dust produced
- Always comply with the applicable environmental regulations for the disposal of asbestos
- Use genuine K-Quip equipment, components and parts, which are supplied asbestos free

Crushing or cutting prevention

Before performing any work or maintenance from underneath the equipment, support it properly.

Never try to make modifications while the trailer is moving, the engine is running, or any other power source is active, unless specifically ordered to do so. With control operation or trailer movement, clearances in the trailer control linkages will alter.

Always keep clear of controls and areas where clearances can change.

Always keep clear of any spinning or moving trailer components. Any protection or cover that has been temporarily removed should be put back in place.

When handling cables, always use safety gloves. Never use cables that are kinked or frayed.

WARNING

Any object that is struck may release chips of debris that could injure someone.

Prior to striking an object, always put on safety glasses or goggles and check that the area is clear of other personnel.

A retaining pin that is struck forcefully enough to eject it could injure someone. Before striking a retaining pin, always make sure the area is free of other personnel and put on safety goggles or glasses.

Burn prevention

During operation, some parts will become hot, posing a risk of burns to operators. It is imperative that you always wait for these items to completely cool before performing any maintenance on them. Prior to performing any maintenance work, you must:

- Always allow components to completely cool before performing any maintenance work
- Before carrying out any maintenance work, always release any residual pressure in the air, hydraulic, and lubrication systems, in addition to any connected pipe lines or cables
- Hot surfaces and fluids can result in personal injury – Always avoid direct contact with hot surfaces and liquids

Fire and explosion prevention

All fuels, the majority of lubricants, and some coolant mixtures are flammable. A fire can be started if spillages occur on a hot surface or electrical components. Fire can result in fatalities or severe personal injury.

Do not operate the trailer near any open flames or heat sources.

Always start by thoroughly cleaning the pipes with a non-flammable solvent.

All electrical wires should be examined on a daily basis. Inspect and tighten all electrical connections and assess all electrical lines. Before using the trailer, tighten any loose or frayed cables as required.

Repairs to non-metallic parts like bumpers or hoods can create dust that can be combustible.

Always repair such parts far from open flames and heat sources in a well-ventilated location.

WARNING

Hoses and pipelines that leak can start a fire. Ensure that pipe and hose fittings are tightly fastened and inspect all pipes, hoses, and related supports for indications of wear, degradation, and damage.

Ensure that the connectors for the pipes and hoses are properly torqued.

Remove all flammable materials including fuel, oil, and debris, from the trailer.

Keep combustible materials, away from the trailer and the surrounding area.

Always store lubricants and fuels in the appropriate, clearly designated containers, away from unauthorised individuals.

Always store combustible materials, including dirty, oily cloths, in protective containers.

Smoking is not permitted in areas where flammable materials are kept in storage.

Any pipes or tanks that hold flammable liquids or vapours should not be flame cut or welded. Always use a non-flammable solvent to thoroughly clean such pipelines and containers before using them.

Pipes, tubes and hoses

A system failure or fire can be caused by leaks from loose or damaged pipes, tubes or hoses.

Regularly inspect pipes, tubes and hoses for indications of damage, leakage or slackness.

Never inspect pipelines, tubes, or hoses for leakage with your bare hands. Always use a board or piece of cardboard, and tighten connections to the recommended torque level if required.

Avoid striking or bending high-pressure pipes or installing a high-pressure pipe that has been damaged or bent.

You must replace any pipe, tube or hose if:

- End connections are damaged or are leaking
- Outer coverings are torn or chafed

⚠ WARNING

- Wires are exposed
- The outer covering is expanding or blistered
- A hose's flexible section is kinked
- Armour is incorporated into the outer covering
- End fittings are misaligned or damaged

Ensure that all clamps, guards and heat shields are properly installed. The correct installation will prevent vibration, contact between components and excessive heat.

Tyre Hazards

If excessive heat is applied through welding, heating rim components, external fire or excessive use of the brakes, an air inflated tyre can expand and explode.

An exploding tyre can eject axle and wheel debris 500 m (1500 ft) or more from the trailer, resulting in damage, potentially fatalities, and personal injury. Every employee needs to be aware of the risks posed by overheating tyres.

A blow out or rim failure can be caused by an overinflated tyre. Personal injury may result from this.

Tyre inflation should only be carried out by trained personnel.

You must use a self-attaching inflator and be positioned behind the tyre tread as you inflate it.

Maintenance on tyres and rims can be hazardous. A tyre explosion may occur if incorrect procedures are applied.

An exploding tyre can eject axle and wheel debris 500 m (1500 ft) or more from the trailer, resulting in damage, potential fatalities, and personal injury.

Maintenance on tyres and rims must only be carried out by trained personnel using the correct tools and procedures. You must adhere to the tyre dealer's or manufacturer's instructions.

 **WARNING**

Mounting and dismounting

You should never attempt to mount, dismount or jump from a trailer that is in motion.

Always mount or dismount the trailer at the designated points with steps and/or handholds. Ensure that the steps and/or hand hold are clean and inspected regularly. Carry out any necessary repairs.

Always maintain a three-point contact with the steps and hand holds. Three-point contact can consist of two feet and one hand or two hands and one foot.

Always face the trailer and never attempt to carry tools or supplies when you mount or dismount the trailer. Use a hand line or another suitable means to elevate or lower tools and supplies from the trailer.

GENERAL SAFETY

General safety instructions

Check that the trailer is roadworthy and safe for use before operating.

1. Adhere to current safety and accident prevention regulations in addition to the information provided in the operator's manual.
2. Observe all traffic regulations when using public roads.
3. Be familiar with all aspects of the equipment, controls and their functions before beginning work.
4. Ensure that there is no one nearby, particularly children, before operating the trailer. Ensure the visibility is adequate. If required, ask someone to guide you.
5. Maintain the trailer's cleanliness to prevent fire.
6. The engine of the towing vehicle must be switched off if access to the trailer is required. The ignition key of the towing vehicle should be removed.
7. Safety guards should be routinely inspected for deterioration and replaced as required.
8. Any absent safety decals must be replaced immediately.
9. The operator's clothing must be tightly fitted. Avoid wearing loose fitting clothing while operating or maintaining the trailer.

General

1. Only use the trailer's recommended fastenings.
2. Do not exceed the maximum load on the trailer's drawbar.
3. To reduce the risk of injury, exercise extreme caution when connecting and disconnecting the trailer from the towing vehicle.
4. Use the parking brake or wheel chocks to prevent the trailer from rolling away during maintenance or after use.
5. Exercise caution in the vicinity of the towing vehicle's three-point linkage due to the risk of crushing injuries.
6. Only connect and disconnect the trailer from the towing vehicle as specified in the instructions.
7. Ensure the towing vehicle has sufficient steering and braking capacity, as the performance of the towing vehicle can be impacted by the trailer.
8. Ensure nobody is positioned between the trailer and the towing vehicle unless they are both secured and unable to move.

9. The travel speed must always correspond to the under wheel conditions. When driving up a hill, down a hill, or across a slope, avoid sharp turns and braking.
10. Comply with the maximum permissible axle loads and total weights.
11. Only operate the trailer when all guards are fitted and in the correct position.
12. Ensure that the trailer is securely parked.
13. Before driving, ensure all equipment is placed in the transport position.
14. Always turn off the towing vehicle's engine before performing any troubleshooting or carrying out any repair, maintenance, or cleaning work. Remove the ignition key from the towing vehicle.
15. When working beneath elevated covers, ensure that they are sufficiently supported.
16. When handling components with sharp edges, wear appropriate protection, such as gloves and shoes.
17. Do not stand close to hinged covers.

Brakes

1. Check the brakes are working correctly before each journey.



2. Thoroughly inspect the brake system on a frequent basis.
3. If the brake system fails, immediately stop the towing vehicle and do not use the trailer. Repair the faults immediately.
4. Any adjustments and repairs to the brake system must be carried out by a K-Quip engineer or by an approved specialist workshop.
5. Before going downhill, engage a lower gear.
6. Before connecting or disconnecting the trailer, apply the parking brake.
7. Brakes must always be correctly adjusted. No liability can be accepted for wear and tear or unauthorised modifications.

Hydraulic system

1. High pressure exists in the hydraulic system.
2. Ensure that the hydraulic systems on the tractor side and the trailer side are depressurised before attaching the hydraulic lines to the towing vehicle hydraulics.
3. To avoid incorrect connections, the female and male couplings between the towing vehicle and the trailer should be labelled. There is a risk of an accident when links are reversed (e.g., lifting and lowering).
4. Maintain clean hydraulic plugs.



5. Inspect hydraulic lines frequently and repair them if necessary.
6. Any hydraulic lines that have been replaced, must meet the requirements of the manufacturer.
7. Before working on the hydraulic system, the engine of the towing vehicle must be switched off and the system depressurised.
8. Repair work on the hydraulic system must only be carried out by approved specialised workshops.

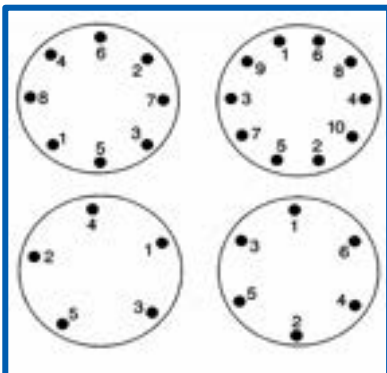
Wheels and tyres

1. Tyre repairs must be carried out by qualified technicians using appropriate tools.
2. Ensure that the trailer is secure and that the wheels are chocked to prevent it from moving while working on it.
3. Tighten the wheel nuts following the first trip with a load.
4. After the wheels have been replaced, tighten the wheel nuts or bolts after the first 10 operating hours. Following this, check them every 50 hours.

5. Ensure that the jack being used has sufficient load capacity.
6. Avoid using excessive inflation pressure.



7. Maintain the specified tyre pressure.
8. When inflating the tyre, keep your distance.
9. Regularly check the air pressure.
10. Regularly check the tightness of nuts and screws. If required, tighten the wheel nuts in the correct sequence.



11. Tighten all mounting nuts and bolts to the manufacture's recommended pressure.

Maintenance

1. Before beginning any troubleshooting, as well as before performing any repairs, upkeep, or cleaning, always turn off the motor of the towing vehicle. Remove the ignition key.
2. Wear protective gloves and use the proper tools when replacing working parts.
3. Always disconnect the power before carrying out any electrical system work.
4. Protection devices that are prone to deterioration must be inspected at regular intervals and replaced if required.

Jacking the trailer

All K-Quip trailers can be elevated by jacking beneath the appropriate axle in the event of a tyre inspection or wheel change.

There are no designated jacking points provided.

Use a suitable trolley jack or a hydraulic cylinder with a minimum lifting capacity of five tonnes and a sufficiently sized cup to engage the underside of the axle without slipping.

The trailer must be situated on firm, level ground. If necessary, support the jack with suitable shoring.

Raise the jack to the required height. Before removing the wheel, support the axle using a trestle or axle stand.

WARNING

Loaded trailers should only be jacked in exceptional circumstances by specialised contractors.

Trailer's must not be worked on or have wheels removed when only supported by the jack.

BEFORE OPERATION

The dealer is required by the manufacturer to carry out certain activities when supplying new trailers. Even though a pre-dispatch inspection sheet is conducted by the manufacturer, the dealer is obliged to carry out their own full pre-delivery inspection. This will ensure that the trailer is correct and meets the order requirement, is fully assembled to the customer's specifications, and is ready for use. Prior to delivery, the dealer will provide instructions and the basic principles of operation, including routine maintenance checks, safety precautions and comprehensive information detailed in this manual.

It is the responsibility of the owner to make sure that all operators have been informed of the instructions and have read through and understood the information given in the manual.

It is the responsibility of the owner or operator to check the following before operation:

1. Trailer braking system

K-Quip trailers are fitted with either of the following braking systems* :

- Air braking system
- Hydraulic braking system

** This will differ depending on the model of the trailer or nationally enforced traffic regulations depending on where the trailer is registered.*

2. Brakes must be checked before every use.
3. Check that all safety equipment is working correctly.
4. Ensure all grease points are lubricated before operation.

**GREASE
ALL POINTS
ONLY**



5. Check that all bolts and nuts are tight.
6. When coupling the trailer to the towing vehicle, make sure this is done at idle speed only.
7. Ensure all connections on both the towing vehicle and trailer are clean.
8. Check that wheel nuts are tight.



9. Check that tyre inflation pressure is correct.
10. If a wheel nut is changed, ensure the torque is correct prior to use and after 10 hours of operation.

11. If required, use a torque wrench to tighten the wheel nut using the guide. Do not use impact tools.

Wheel Nut	Torque Nm
M14 x 1.5	130
M18 x 1.5	270
M20 x 1.5	400
M22 x 1.5	450
M22 x 1.5 Commercial	750

12. Never leave the body tipped up unattended.
 13. Ensure that the trailer load is secure so that nothing will fall off the loading when traveling.



14. Pins and fittings must be checked and secured daily.
 15. Before moving off, ensure all connections are fitted correctly to the towing vehicle.
 16. Ensure that it is safe to take off and that there are no persons in danger. If someone is too close and in a danger zone, turn off the vehicle immediately.
 17. Ensure all lights are working correctly on the trailer.



18. If required, check air lines are not trapped or rubbing against any moving parts, and check to make sure air lines are not leaking before use.

Transportation

When transporting the trailer and it is impractical to do it on its own wheels, the trailer may be transported on a suitable commercial vehicle trailer.

There are four lash down points provided on each corner of the chassis.

The trailer should be positioned in the centre of the trailer and secured in position using suitable straps or chains around the axles or tyres. If changing the axles, take care not to damage any parts of the trailer.

Ensure the hand brake is applied and use chocks or wedges to stop the wheels from rocking.

Adjusting sprung drawbar height

The trailer chassis should run level or with the front of the trailer slightly raised when connected to the tractor. To achieve this, certain trailers may be fitted with a sprung drawbar that can be adjusted to suit the tractor.

If the sprung drawbar needs to be adjusted, remove any load from the trailer, lower the body, apply the parking brake, and disconnect from the towing vehicle.

Support the front of the trailer chassis on suitable supports and remove all weight from the drawbar. Using a suitable jack under the front of the drawbar, take the load and remove the nut and split pin from the pin. Withdraw the pin.

Using the jack, raise or lower the drawbar to the required height.

Insert the pin (1) in the lower hole (2) to increase the drawbar height, or in the upper hole (3) to reduce it.



⚠ REMEMBER – NEVER work beneath any unsupported vehicle

Adjustments for towing the trailer

Adjust the drawbar and/or the hitch of the towing vehicle so that when towing, the trailer body is slightly raised at the front when unladen and level when laden.

Adjusting the hitch too low can cause unnecessary wear to the suspension and brake components, typically on the front axle, and can also reduce the braking efficiency.

Adjusting the hitch too low can lead to additional loading being placed on the towing vehicle.

Loading the trailer

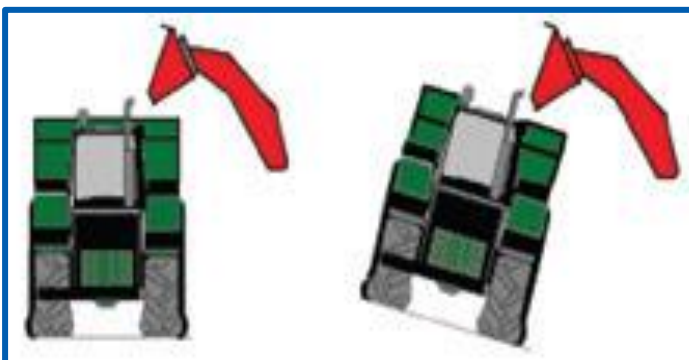
Each trailer is fitted with a VIN plate. On this, it gives the unladen weight of the trailer and its permitted gross weight. The load capacity of the trailer is the gross weight minus the unladen weight.

Do not overload the trailer. Be aware of dense materials when loading, such as stones and aggregates, and loads with a potential for high moisture content.



Always load by weight and not volume.

Ensure that both the towing vehicle and trailer are on a flat surface when loading.



Tipping the trailer

Before tipping, bring the towing vehicle and trailer to a stop.

Always try to keep the towing vehicle and the trailer in a straight ahead position wherever possible. Ensure that there are no obstructions or persons in the tipping area.



When tipping the contents of the trailer, control the raising speed of the tipping rams to suit the material being carried.

When the trailer is fully tipped up, drive forward slowly to ensure that the material in the trailer is fully discharged.

Ensure that both the towing vehicle and trailer are on a flat surface when tipping.

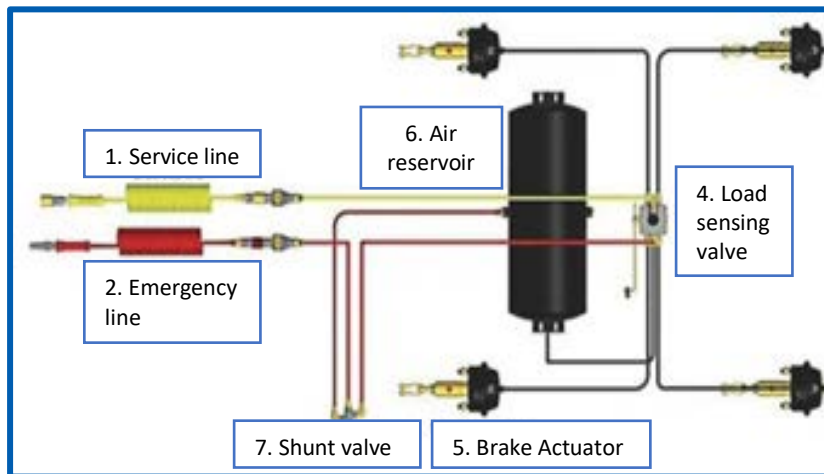


Two-line air braking system

The two-line trailer braking system is based on HGV trailer braking systems, which were designed to meet European Council Directive 71/320/EEC. This system uses one red airline (emergency line), which is permanently pressurised by the tractor when coupled to the trailer, and one yellow line (service line), which has a variable pressure. This variable pressure is controlled by the driver and is determined by how quickly the driver wishes to slow down or whether

the towing vehicle's handbrake is applied. Also, this is often fully pressurised when the towing vehicle's ignition is switched off.

Below is a typical basic layout for the air brake system:



Two-line system – operation

The air enters the trailer via the red susie (2) and passes through a filter. The filter is designed to trap particles of dirt to stop them from entering other valves further down the line. From time to time, it is worthwhile dismantling each filter and cleaning out any debris that has been caught.

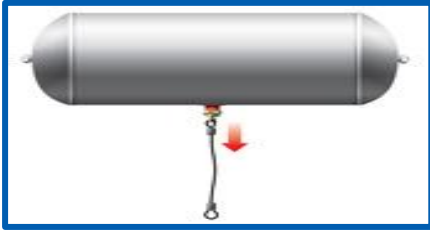
The air then passes through a shunt valve (7), which is mounted on the side of the trailer, and the air pressure pushes out its button. This button can be pushed in to release the trailer's brakes when a tractor with air braking is not available. The button can be pulled out again to re-apply the brakes, or it will automatically be reset after the red susie is reconnected to a tractor with air braking.

The air travels into the load sensing valve (RELSV) (4) at port 1, before exiting at ports 1-2 to feed the air tank (5). The tank is linked back to the shunt valve, and this link is used to 'fool' the RELSV into thinking the red susie has been reconnected after the shunt button is pushed in.

The tank then charges up with air until it reaches the system pressure set by the tractor. This is normally between 6.5 and 8.5 bars.

Drain the air tank using a drain valve that is found at the bottom of each air tank. Draining should be done periodically to remove any water that has condensed

in the air tanks. Failure to drain the tanks will lead to a reduction in the available air capacity of the tanks, affecting the brake performance.



During braking, a control pressure is sent to the trailer down the yellow susie. This pressure is determined by how hard the driver presses the brake pedal, and the pressure may be anything up to the maximum pressure in the tractor's system. However, under normal braking (known as check braking), this control pressure is often around 2 bar. The control pressure enters the trailer and passes through the yellow line filter before reaching the RELSV.

The RELSV has several functions, one of which is load sensing.

The service pressure may be modified by the RELSV based upon the weight sensed by the valve, as the RELSV is connected to the suspension via a vertical linkage (rod) and its operating arm. With tandem axle trailers, it is common to be connected between the two axles by either a telescopic pole or SHS in order to give the RELSV an average spring deflection.

As weight is removed from the trailer, its chassis raises, causing the RELSV's operating arm to lower (rotate clockwise). This has the effect of increasing the ratio between input and output pressures, thus reducing the braking pressure.

This new, modified pressure exits the RELSV and signals the ABS modulator valve. The ABS modulator then delivers this same pressure to all of the brake chambers.

The brakes are applied in a controlled manner, as pressure builds behind a rubber diaphragm housed inside the brake chambers and the output forces act on the slack adjusters.

As the driver releases the brakes, the control pressure drops. This results in the air within the brake chambers returning back up to the ABS modulator, where it exhausts into the atmosphere.





Trailer Serial Number:

Conducted on: / /

Inspected by:

Pre-journey Trailer Inspection Checklist

Wheel bearing movement within acceptable limits			
Satisfactory	Requires Repair	Not Applicable	Repaired
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Wheels and tyres in good condition			
Satisfactory	Requires Repair	Not Applicable	Repaired
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Wheel nuts tight			
Satisfactory	Requires Repair	Not Applicable	Repaired
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Lights operational			
Satisfactory	Requires Repair	Not Applicable	Repaired
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Trailer brake operation			
Satisfactory	Requires Repair	Not Applicable	Repaired
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Mud flaps and bumpers, if equipped, secure and undamaged			
Satisfactory	Requires Repair	Not Applicable	Repaired
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Trailer floor condition			
Satisfactory	Requires Repair	Not Applicable	Repaired
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

ROUTINE CHECKS AND MAINTENANCE MANUAL

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Springs in good condition			
Satisfactory	Requires Repair	Not Applicable	Repaired

Warning equipment, e.g., reflective triangles, in the towing vehicle			
Satisfactory	Requires Repair	Not Applicable	Repaired

CHASSIS

Frame			
Satisfactory	Requires Repair	Not Applicable	Repaired

Axle beam			
Satisfactory	Requires Repair	Not Applicable	Repaired

Springs			
Satisfactory	Requires Repair	Not Applicable	Repaired

Bolts			
Satisfactory	Requires Repair	Not Applicable	Repaired

Hub bolts			
Satisfactory	Requires Repair	Not Applicable	Repaired

Axle beam			
Satisfactory	Requires Repair	Not Applicable	Repaired

Wheels			
Satisfactory	Requires Repair	Not Applicable	Repaired

Tyres			
Satisfactory	Requires Repair	Not Applicable	Repaired

Trailer hitch			
Satisfactory	Requires Repair	Not Applicable	Repaired

Safety chain			
Satisfactory	Requires Repair	Not Applicable	Repaired

LIGHTS

Clearance			
Satisfactory	Requires Repair	Not Applicable	Repaired

Brake and tail lights			
Satisfactory	Requires Repair	Not Applicable	Repaired

Indicators			
Satisfactory	Requires Repair	Not Applicable	Repaired

ELECTRIC BRAKES

Indicators			
Satisfactory	Requires Repair	Not Applicable	Repaired

Indicators			
Satisfactory	Requires Repair	Not Applicable	Repaired

BRAKE CONTROLS

Electric controller unit			
Satisfactory	Requires Repair	Not Applicable	Repaired

Proper voltage			
Satisfactory	Requires Repair	Not Applicable	Repaired

Connector plug			
Satisfactory	Requires Repair	Not Applicable	Repaired

ROUTINE CHECKS AND MAINTENANCE MANUAL

Wiring			
Satisfactory	Requires Repair	Not Applicable	Repaired

Manual brake controls			
Satisfactory	Requires Repair	Not Applicable	Repaired

Hydraulic brake controls			
Satisfactory	Requires Repair	Not Applicable	Repaired

Completion