

**Newton Trailers Limited with Kind Permission of Fruehauf Trailers  
Presents Their Operation & Maintenance Manual**

**All operators of Fruehauf Tipping Trailers are expected to have read  
and understood this manual and be operating the trailer in  
accordance with these instructions.**



**FRUEHAUF**  
Legendary Excellence

**Operation  
& Maintenance  
Manual**

## **DETAILS**

**Operator/Owner:** \_\_\_\_\_

**Chassis No:** \_\_\_\_\_

**Fleet No:** \_\_\_\_\_

**Date:** \_\_\_\_\_

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## **How to use this manual**

This manual covers the general safety characteristics and operation instructions for all trailer models manufactured by Fruehauf trailers Ltd,

It has been compiled to give the Driver and Operator, essential information regarding Operation, Initial and Ongoing maintenance.

It is not intended to cover repairs and detailed stripping of components, this information is generally contained in the relevant manufacturers documentation.

If in any doubt contact your Fruehauf representative.

## **Safety**

This manual or a copy of it should remain with the vehicle at all times.

The operator should refer to this manual at all times prior to use.

It is the responsibility of the operator to ensure that all the recommended checks are carried out prior to and after use.



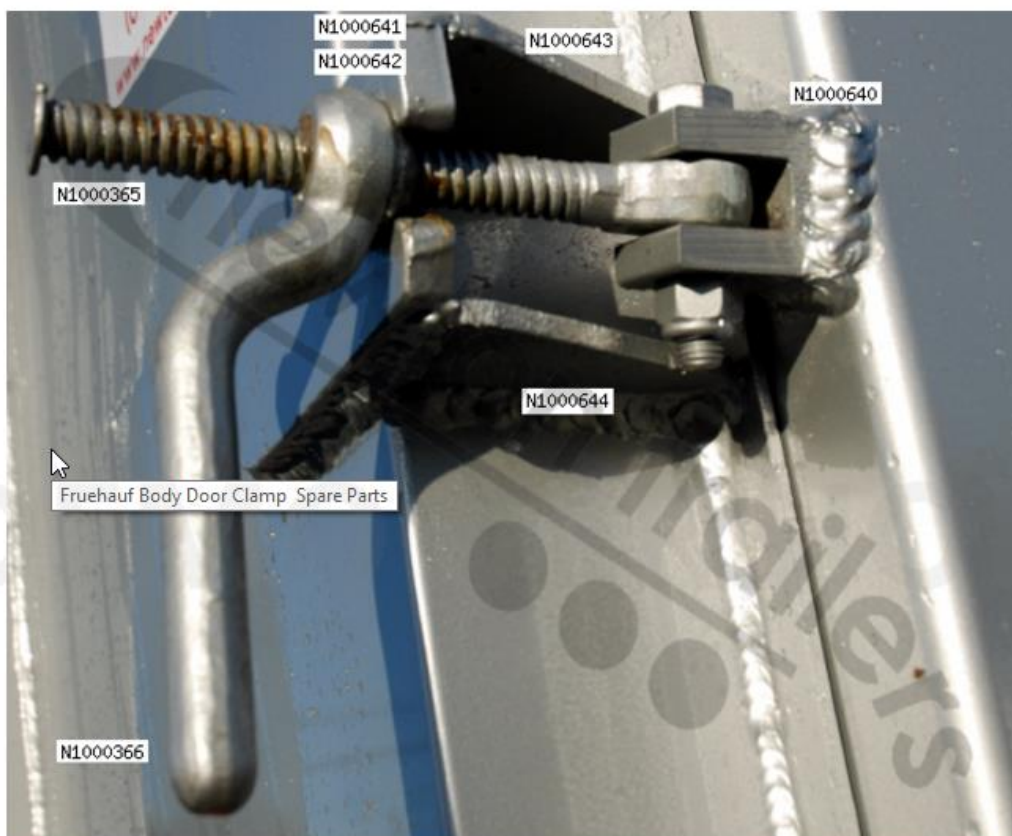
For Original Fruehauf Parts please call: 01525 872 466

Or buy from us online at [www.newtontrailers.com](http://www.newtontrailers.com)

Contact [parts@newtontrailers.com](mailto:parts@newtontrailers.com) for a full parts manual for your trailer.

Below is an example page from our online parts shop.

#### 4. Fruehauf Body Door Clamp Spare Parts



Manufacturer	Part No.	Description	Price
Fruehauf	N1000642	Cattle Clamp Counter Sunk Drop In Plate Left	£15.00
Fruehauf	N1000641	Cattle Clamp Counter Sunk Drop In Plate Right	£15.00
Fruehauf	N1000643	Fruehauf Cattle Clamp Counter Sunk Plate Bottom & Side Upper Support Gusset	£3.98
Fruehauf	N1000644	Fruehauf Cattle Clamp Counter Sunk Plate Side Lower Support Gusset	£2.96
Newton Trailers Limited	N1000366	Cattle Clamp Handle Coarse Thread	£6.68
Newton Trailers Limited	N1000365	Cattle Clamp Shank Coarse Thread	£4.38
Newton Trailers Limited	N1000640	Cattle Clamp Shank Fixing Bracket	£10.58



## Vehicle Identification

The vehicle identification plate shown above is fixed to the chassis of the trailer on the Left side adjacent to the support legs.

It contains the following information :

- 1 European Whole Vehicle Type Approval (EWVTA) number.
- 2 Vehicle Identification Number (VIN).
- 3 Information about the trailers mass
  - Max The Maximum Technically Permissible Laden Mass.
  - 0 - The Maximum vertical mass at the coupler.
  - 1 - The Maximum vertical mass allowed on axle 1.
  - 2 - The Maximum vertical mass allowed on axle 2.
  - 3 - The Maximum vertical mass allowed on axle 3.
  - T - The Tare mass.
- 4 Date of manufacture.

Ensure the VIN is quoted in all communications about this vehicle.

# European Whole Vehicle Type Approval

The vehicle to which this handbook applies has been designed and manufactured to ensure compliance with European directives and Regulations that are collectively known as Whole Vehicle Type Approval.

Operators and End users alike should be aware that any modifications to a part of the vehicle that is covered by the manufacturers type approval Certificate of Conformity is strictly forbidden.

Any additions/modifications carried out by the operator or end user will not be covered by the Certificate of Conformity and may require further testing to ensure their legality.

Particular attention should be given to the following areas:-

## **Lighting**

Modifications and Additions to lighting and reflective devices must conform to European and Local regulations.

## **Lateral Protection devices (LPD)**

These devices, fitted to the side of a vehicle and used to protect other road users **cannot** be removed in any circumstances other than for maintenance. Always service these in accordance with the manufacturers recommendations and ensure they are replaced before use on the highway.

## **Rear Under-run Protective Devices (RUPD)**

These devices, if fitted to the rear of a vehicle, are to prevent following vehicles from running under the chassis in the event of a rear end collision. They **must not** be removed during normal operation on the highway.

Under certain circumstances, where a vehicle may be supplied specifically to work with specialist equipment such as Road Pavers/ Rear material conveyors the RUPD will be omitted.

Other vehicles may remove the RUPD whilst working in this configuration, but it must be refitted prior to resuming normal On Highway work.

# Using this manual

## Identification of Warnings or Danger

All information within this manual related to the safety of the operator, and the safe operation of the trailer are marked with the following symbols. These, in some circumstances, may also be repeated on the trailer.



### **Warning**

*This symbol identifies that a hazard exists. If proper precautions are not taken, it is highly probable that the operator (or others) could be killed or seriously injured.*



### **Caution**

*This symbol gives a reminder of safety practices. Failure to observe these safety practices could result in injury to the operator (or others) and possible damage to the vehicle.*

# Warranty

## Procedure

Should the trailer become unserviceable during the warranty period, please adhere to the following procedure.

Contact your nearest Fruehauf Service or warranty agent with details of the problem. They will make an assessment and advise what further action is necessary.

Alternatively contact the authorised distributor through which the trailer was purchased.

Major problems should be referred directly to the manufacturers quality department.

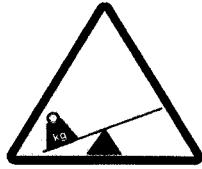
Fruehauf Ltd  
Houghton Road  
Grantham  
Lincs. UK  
NG31 6JE

☎ +44 1476 515515

✉ +44 1476 515516

Ancillary equipment carries the warranty of the original manufacturer.

# General Safety



## Loading & Unloading - Stability

As a general rule trailers **should not** be loaded or unloaded when they are not coupled to the prime mover (tractor).

Similarly, some trailers that have a long body length forward of the support legs or rearward of the axles may be unstable when de-coupled from the prime mover.

This warning symbol attached to the trailer will warn if this instability is a possibility.

## Loading & Unloading - Public Liability considerations

Loading & unloading operations **must** be carried out with due consideration for the environment and location.

### **Do Not Load or Unload**

Near Pedestrians or moving traffic.

Where this would cause an obstruction.

Where the vehicle may cause a sudden or unexpected hazard to other vehicles.

Where the lights of the vehicle are obscured.

Unless permission has been given and any site specific procedures have been adhered to.

On uneven or unstable ground.

# General Safety

## Asbestos

Although unlikely, some components may contain asbestos.

These components, Brake friction material, Heat shields and Gaskets should only be handled following the correct procedures.

Refer to the companies policies for handling and disposing of components that may contain asbestos.



*Breathing Asbestos dust is harmful.  
Always work in a ventilated area.  
Always wear a respirator.  
Do not remove dust by blowing, use a method recommended by your company Health & Safety Policy.*



*Never re-use Asbestos components or Asbestos contaminated material.  
Dispose of all material in accordance with National regulations.*

## Asbestos free components.

Asbestos Free brake linings also produce dust. Air borne dust of any kind is hazardous.



*Follow Company Health & Safety procedures when dust is present.  
Always wear adequate PPE  
(IE Gloves, Respirator, Glasses etc.)*

# General Safety



## Pressure systems

Avoid direct contact with exhausted air from Pneumatic systems and exposed skin.

Wear appropriate PPE and release trapped pressure before working on any part of the system.



## Fluoroelastic Polymers

Some components may contain synthetic rubber compounds such as Fluoro rubber (FKM) and Polytetrafluoroethylene (PTFE). These can give off harmful fumes and be dangerous to handle if they have been burnt or heated above their normal operating range.

Components affected may include, Fuel lines, bearings, oil seals, wiring harnesses and gaskets.

Always use the correct PPE when handling any of these components or others you may suspect of containing these compounds.

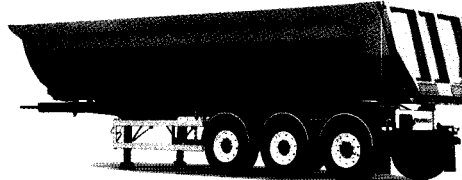
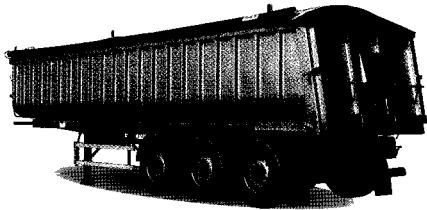
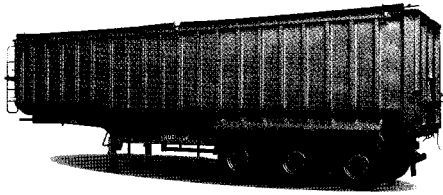


## Polyurethane Foam

Insulated vehicles may contain Polyurethane foam. This material is flammable and gives off harmful fumes if exposed to high temperatures.

Take precautions to prevent accidental ignition of this material, and wear appropriate PPE when handling it.

## Description



- “Bathtub” Bulk tipper**
- “Smooth Sider” Bulk tipper**
- “Aggregate Bathtub” Bulk tipper**
- “Aggregate Half pipe” Bulk tipper**

These vehicles consist of an end tipping body constructed in Steel or Aluminium, mounted on a semi-trailer chassis of stepped, sloped or straight configuration.

A single, telescopic hydraulic cylinder mounted at the front of the vehicle raises and lowers the body via a tractor controlled system.

The chassis incorporates specially designed beams with large box cross members creating a torsionally stiff construction for safer tipping.

The chassis also provides the support for the suspension, axles, running gear, and upper coupler connection via a king pin to the prime mover (tractor unit) fifth wheel.

Air suspension is fitted as standard and various makes of running gear are available with either disc or drum brakes.

Typical air suspension comprises of a heavy duty forged steel trailing arm or fabricated beam pivoting on a rubber bushed mounting in a hanger bracket at the leading end.

An air spring assembly comprising of piston and rolling rubber diaphragm (air bag) provides support at the trailing end with shock absorbers to damp the ride. The air springs are supplied with variable air pressure from an automatic height control (levelling) valve which maintains a level and stable attitude.



EBS Electronic Braking System is fitted as standard, incorporating a two line air pressure system used in conjunction with asbestos-free brakes and spring brake actuators; automatic slack adjusters are fitted to drum brakes.

The trailer brakes are activated by the controls in the tractor unit cab utilising the tractor's air pressure system via flexible coiled tubes to the trailer system; the connectors being either "C" type couplings (UK) or Palm type couplings (Europe). Alternative types of coupling or a 3rd line may be fitted to customer requirements.

The electrical system conforms to the current EEC requirements utilising two ISO seven-pin connectors and a dedicated ISO connector to power the anti-lock braking system.

Two speed support legs are fitted to support the trailer in the uncoupled condition, operated by a winding handle on the Left leg.

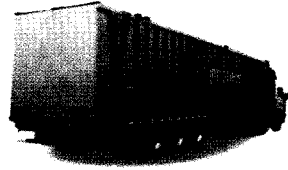
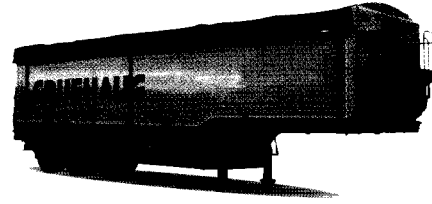
The hydraulic system usually an integral part of the prime mover is connected via a hose to the lower end of the multi-stage ram (when the combination is coupled).

A top hung tailgate ensures maximum protection during tipping operations; release is via a simple lever operated from either side of the body or using an automated pneumatic system. A rubber seal around the tailgate aperture allows the carriage of products with a high water content or products which have extremely 'free-running' properties. Barn doors, split tailgates or a combination of both may be also installed, together with internal doors or encapsulating roof structures.

The vehicle is suitable for transporting agricultural produce, animal feedstuffs, most common fuels (e.g. coal, coke) and lower density aggregates (e.g. sand, pea shingle, earth) - they are NOT suitable for high density aggregates (e.g. rock, large stone) or scrap metal (baled, crushed or loose). Other materials with high abrasive properties will also shorten the life of the body. Optional thicker floor material or additional overlay may be fitted.

Additional body materials and designs may be used for high density aggregate and scrap metals.

## Description



- “Cargo Walking Floor” Aluminium Bulk carrier**
- “Blower” Aluminium Bulk carrier**
- “Ejector” Aluminium Bulk carrier**

These vehicles consist of a non-tipping body constructed in Steel or Aluminium, mounted on a semi-trailer chassis of stepped, sloped or straight configuration.

The bodies with the exception of the walking floor, are available either as ribbed or smooth side configurations to suit customer requirements.

The chassis incorporates specially designed beams with large box cross members creating a torsionally stiff construction.

They feature extraction methods such as multi element, hydraulically operated walking floors, hydro-mechanical ejection and blower systems.

The suspension and running gear configuration is similar to the previous models shown.

## Before Use



### Legal

It is the operators responsibility to ensure that they comply with all regulations in force necessary for the operation of this type of vehicle.

Some of these conditions will vary from one country to another.

The trailer will carry where applicable plates, markings or information in its documentation where any restrictions apply.

Similarly, where provisions have been made for compliance with statutory regulations such as ADR (International carriage of dangerous goods by road), the trailer will carry the necessary markings and be supplied with the correct documentation.

Changes to the design of the vehicle, or modifications are not allowed unless by the express written permission of the manufacturer.

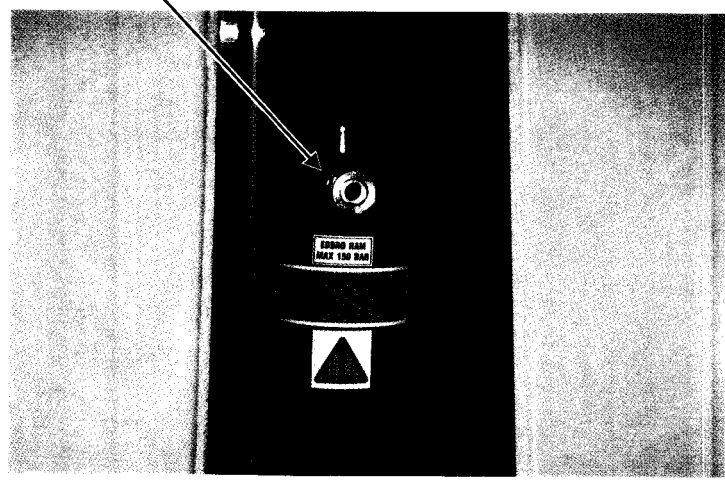
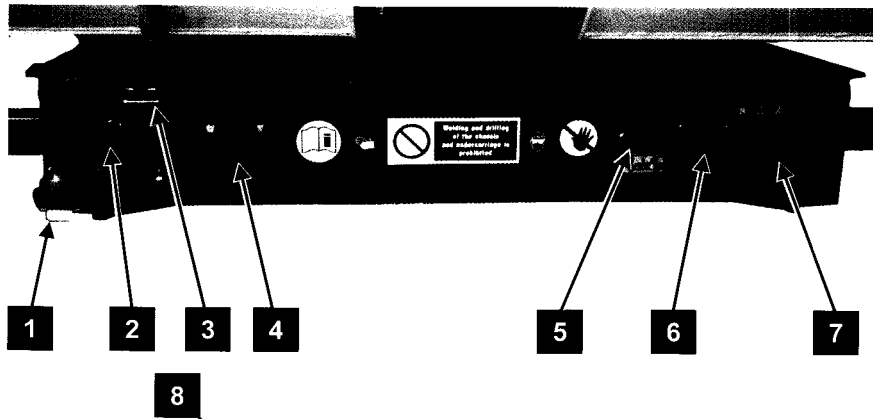
# Before Use

## Component location (Trailers General)

The following pages identify some of the components typically used on these vehicles. Read the operating instructions before attempting to use them.

### Couplings (located on the front chassis cross member)

- 1 In cab weighing equipment connection**  
Lift the flap and insert the connection lead from the prime mover.
- 2 Emergency Air Supply connection**  
Pull back the bayonet sleeve and push on the Red air brake connection line from the prime mover.
- 3 Electro Hydraulic Sheet Power supply**  
Push to fit the appropriate connection cable from the prime mover.
- 4 ISO 3731 Supplementary electrical connection**  
Lift the protective cap and locate the correct cable from the prime mover, push in to connect.
- 5 ISO 7638 Dedicated Electronic Brake connector**  
Lift the protective cap and locate the correct cable from the prime mover, push in to connect.
- 6 ISO 1185 Normal electrical connection**  
Lift the protective cap and locate the correct cable from the prime mover, push in to connect.
- 7 Service Air Supply connection**  
Pull back the bayonet sleeve and push on the Yellow air brake connection line from the prime mover.
- 8 Hydraulic tipping connection. (Various)**  
Pull back the bayonet sleeve or turn the coupler as required to push on the Quick release connection from the hose connection of the prime mover.



*Ensure any trapped hydraulic or pneumatic pressure is vented before coupling or de-coupling. Beware of any potential un-commanded movements of machinery.*



*Always wear appropriate PPE (IE Gloves, Glasses etc.) when coupling or decoupling Pneumatic and hydraulic devices.*

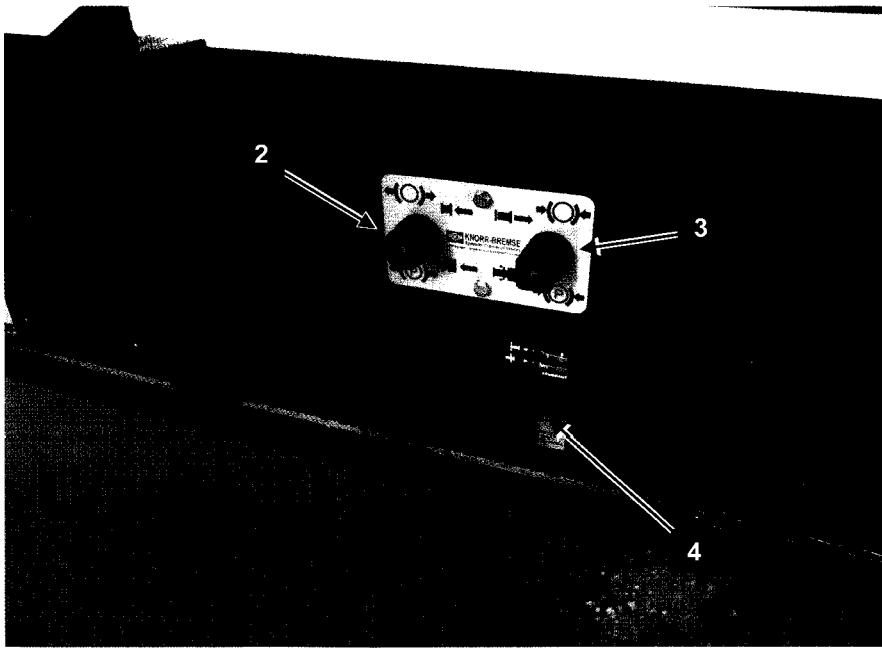
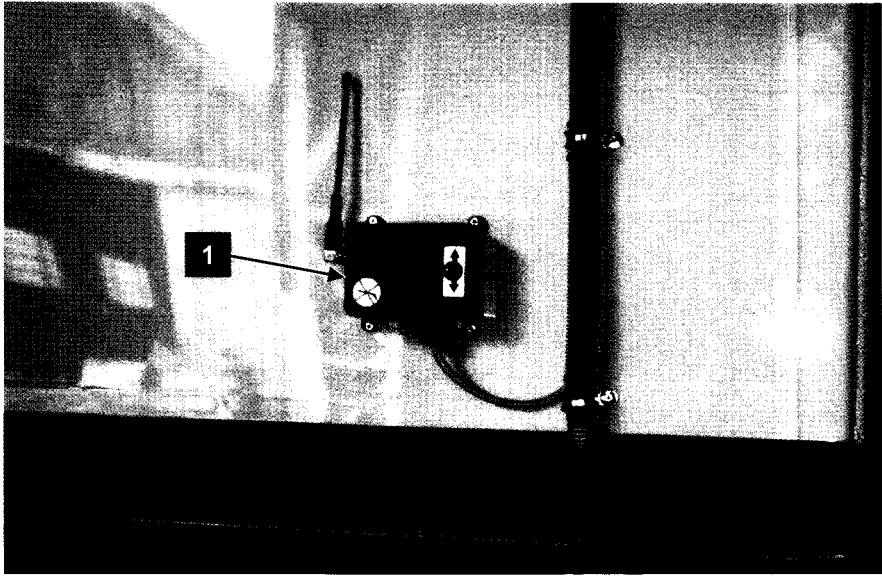


*Always ensure Parking Brake is applied before coupling or decoupling from the prime mover. Do not release the trailer parking brake unless coupled to the Prime mover.*

# Before Use

## Controls

- 1 Roll over sheet remote control receiver**  
Located on the front bulkhead of the tipping body. This device also contains an override switch to operate the sheet in the event of loss or failure of the remote control.
- 2 Shunt valve**  
Used to move the trailer when not connected to a prime mover.  
Pull the Black handle out to apply the wheel brakes.  
Push the Black handle in to release the wheel brakes.
- 3 Parking Brake valve**  
Used to apply the trailer parking brake  
Pull the Red handle out to apply the parking brake.  
Push the Red handle in to release the parking brake.
- 4 Air Suspension Dump or Exhaust valve**  
Used to release air from the air suspension units.  
Pull the Red handle out to release air from the system.  
Push the Red handle in to reset the ride height.



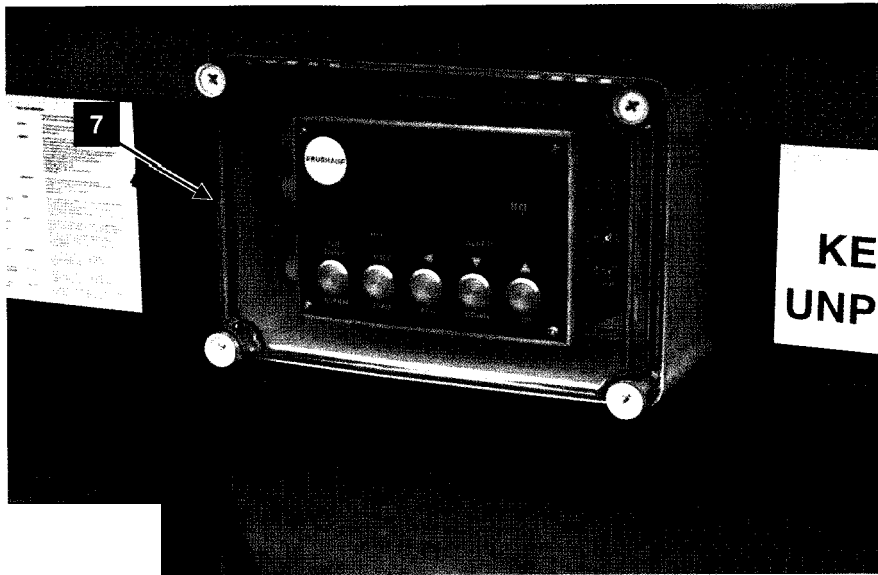
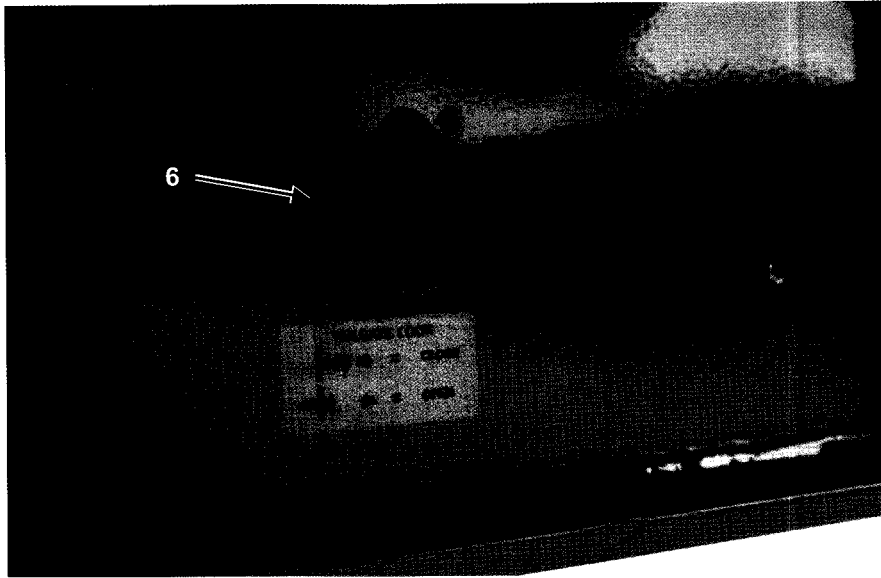
# Before Use

## Controls

- 5 Two speed support legs**  
Used to support the trailer mass whilst decoupled from the prime mover.
- 6 Tailgate lock control valve**  
Located on the right or left side chassis of the trailer.  
Pull the Red handle out to close the tailgate latches.  
Push the Red handle in to open the tailgate latches.
- 7 On board weighing system**  
The system is mounted to the front right side of the trailer chassis.  
It receives inputs from the load cells located at the front and rear of the trailer body and provides a readout of the loaded mass of the trailer.  
(see operating instructions on page 55)



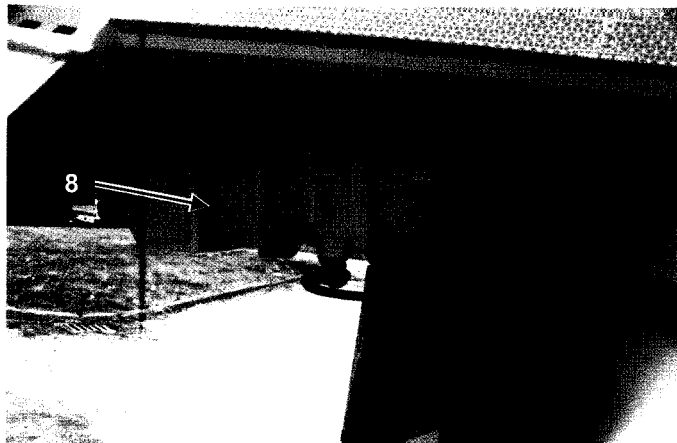


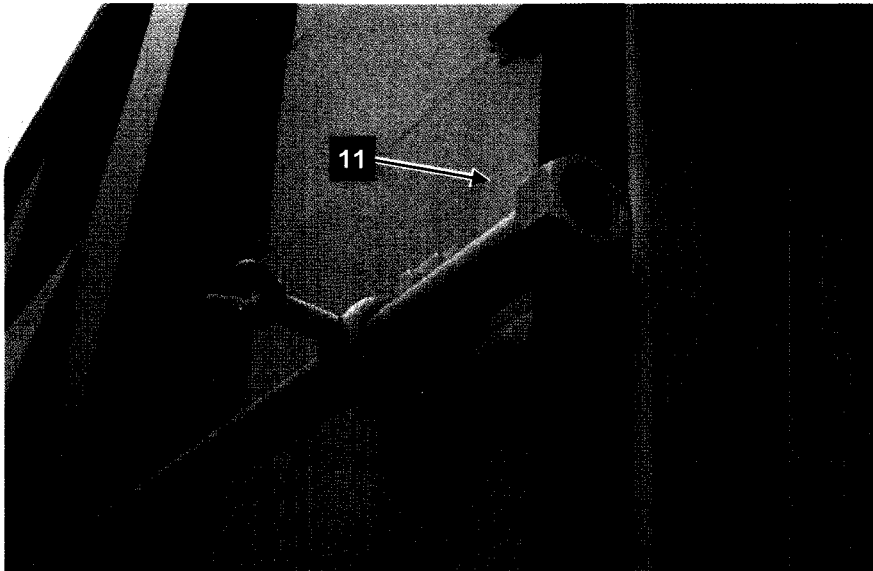
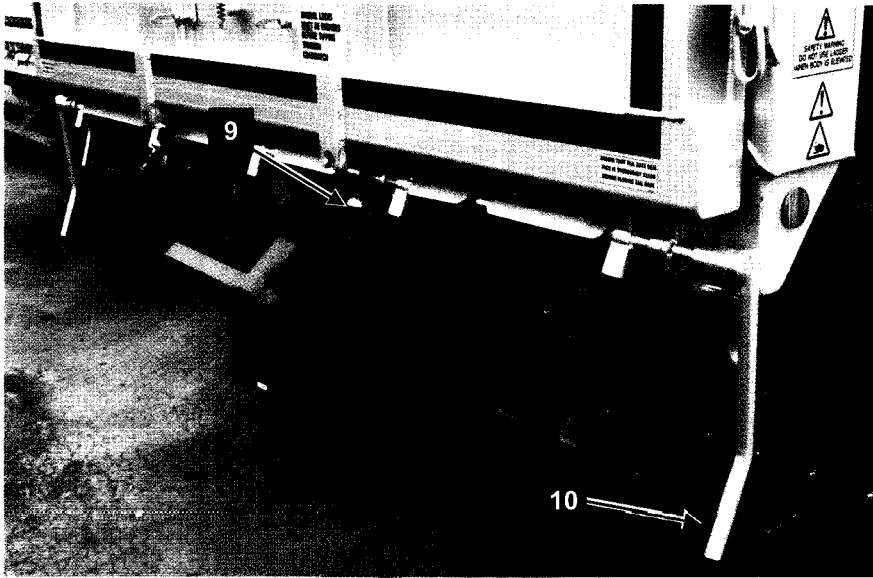


# Before Use

## Controls

- 8 Pneumatic Tailgate lock release mechanism**  
Located behind the rear bulkhead of the trailer body, pneumatic cylinders open or close the tailgate lock release mechanism.
- 9 Tailgate clamps.**  
Located on the rear tailgate. Turn the handles anti-clockwise to release and lower the clamps.  
Raise the handles and turn them clockwise to engage the clamps.
- 10 Tailgate manual lock release mechanism**  
Release from the loops and lower the levers to open the manual tail gate clamps.
- 11 Grain door operating mechanism**  
Fit the winding handle to this mechanism. Turning anti-clockwise raises the grain door. Turning clockwise lowers the grain door.

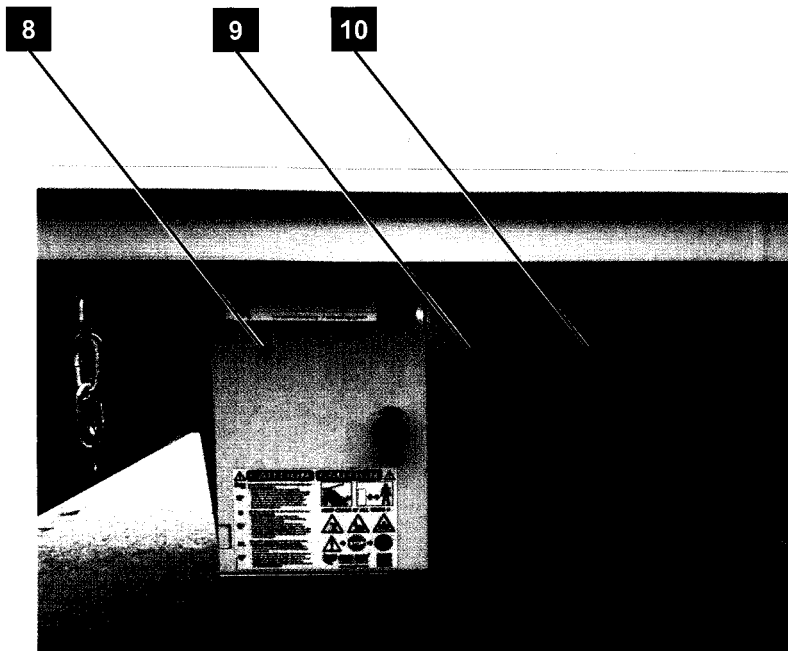
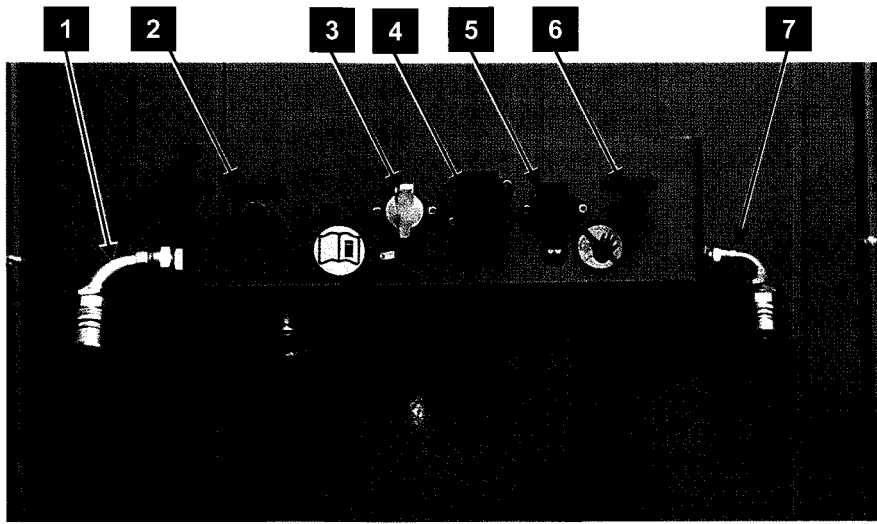




# Before Use

## Component location (Cargo Floor)

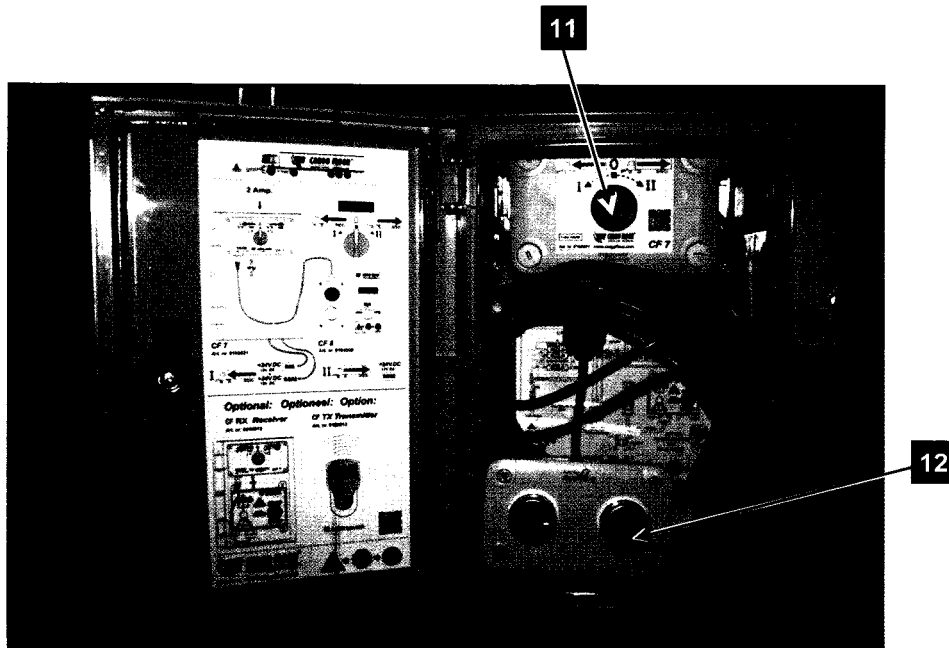
- 1 Hydraulic return connection. (Various)**  
Pull back the bayonet sleeve or turn the coupler as required to push on the Quick release connection of the return hose.
- 2 Emergency Air Supply connection**  
Pull back the bayonet sleeve and push on the Red air brake connection line from the prime mover.
- 3 ISO 3731 Supplementary electrical connection**  
Lift the protective cap and locate the correct cable from the prime mover, push in to connect.
- 4 ISO 7638 Dedicated Electronic Brake connector**  
Lift the protective cap and locate the correct cable from the prime mover, push in to connect.
- 5 ISO 1185 Normal electrical connection**  
Lift the protective cap and locate the correct cable from the prime mover, push in to connect.
- 6 Service Air Supply connection**  
Pull back the bayonet sleeve and push on the Yellow air brake connection line from the prime mover.
- 7 Hydraulic supply connection. (Various)**  
Pull back the bayonet sleeve or turn the coupler as required to push on the Quick release connection from the hose connection of the prime mover.
- 8 Control Cabinet**  
Controls the Cable or Radio remote control device for the cargo floor.
- 9 Door lock control valve**  
Pull the Red handle out to close the rear door latch.  
Push the Red handle in to open the rear door latch.
- 10 Height adjust valve**  
Push the lever down to lower the trailer floor height.  
Pull the lever up to raise it.



# Before Use

## Component location (Cargo Floor)

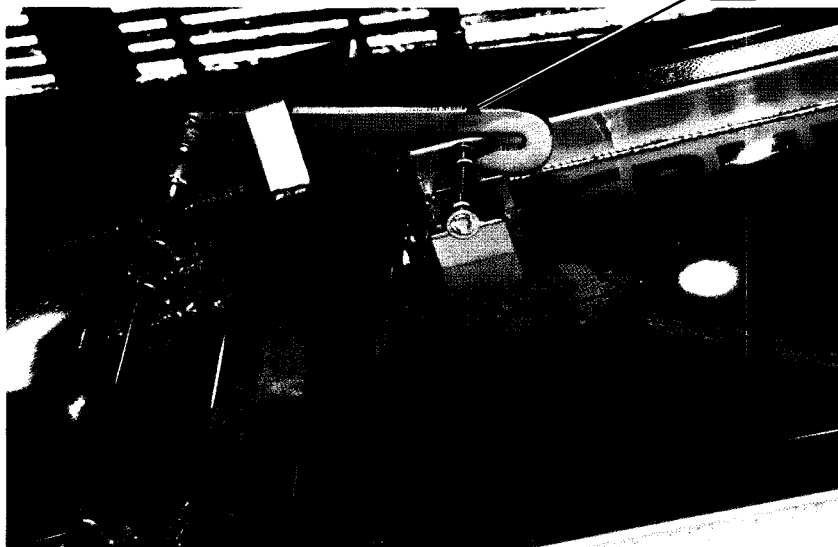
- 11 Cargo Floor Direction control**  
Follow the instructions on the panel located on the inside of the cabinet door. Turn the knob Anti-Clockwise for loading and Clockwise for Un-loading.
- 12 Cargo Floor Remote control**  
Follow the instructions on the panel located on the inside of the cabinet door. Use the Cable or Radio remote control unit when loading or unloading the trailer.
- 13 Door Lock**  
Prevents the doors from opening whilst the operator is stood behind the trailer.
- 14 Door catch**  
Allows for easier closing of the doors when a load has been partially discharged.



13



14



## Safety Decals



**CAUTION**

The provision of safety and instructional decals will not prevent accidents on their own.

Their purpose is to provide information that warns the operator of any area where a danger may be present, thereby allowing him to make a correct assessment of hazards.

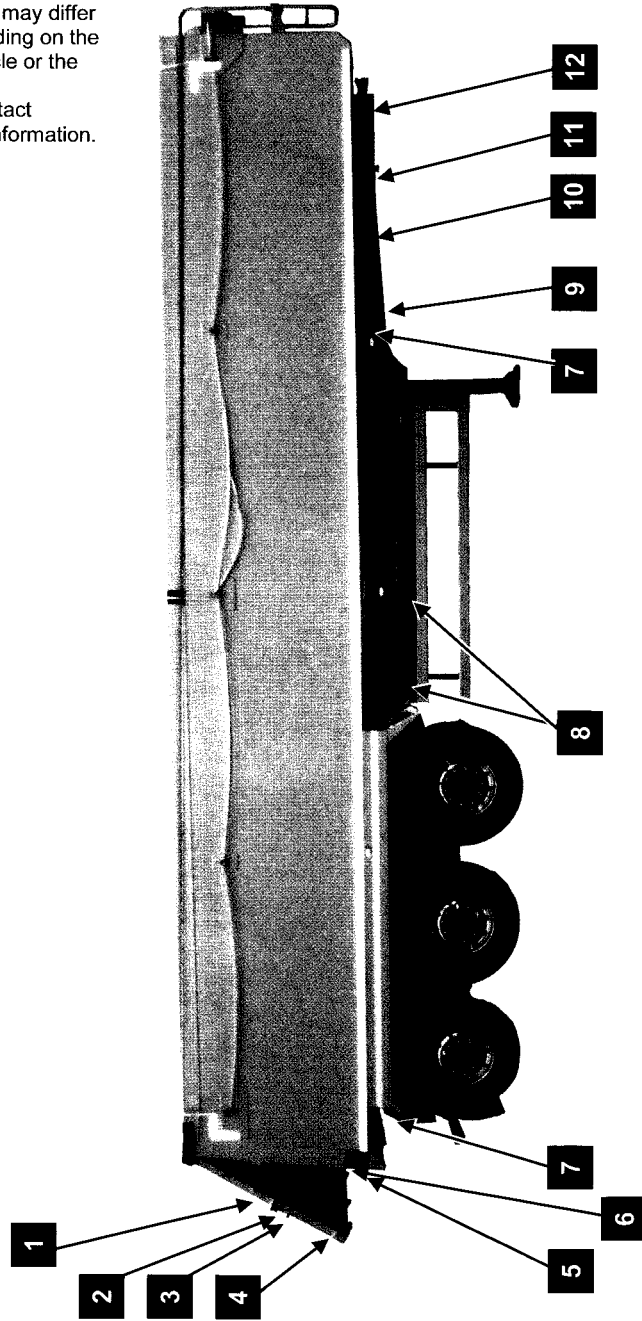
It is therefore imperative that decals are maintained in a legible condition, and where they become damaged that they are replaced.

The following pages list all of the main decals affixed to Fruehauf trailers.

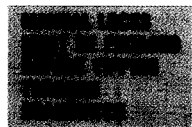
For replacement contact your Fruehauf authorised distributor.



**Note!** The locations of Decals shown may differ slightly depending on the model of vehicle or the options fitted. If in doubt contact Fruehauf for information.

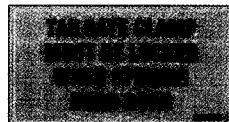


1



Fitted to the Grain hatch (Where equipped), may also be fitted either side at the rear of the trailer.

2



Fitted to the Tail gate or rear doors, may also be fitted either side at the rear of the trailer.

3



Fitted to the Tail gate or rear doors, may also be fitted either side at the rear of the trailer.

4



Fitted to the Tail gate.

5



Fitted to the Tail gate.

6



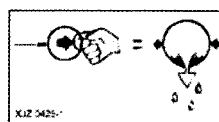
Fitted adjacent to the Tail gate at the rear of the trailer on each side.

7



Fitted adjacent to the MX load cells at the front and rear of the trailer on each side.

8



Fitted in Two positions on the Right side of the Trailer chassis adjacent to the Air reservoirs.

9



Operation instructions for on-board weighing system. Fitted adjacent to control panel on Right side of trailer chassis.

10

**DANGER**  
**KEEP CLEAR OF**  
**UNPROPPED BODY**

Fitted on each side of the Trailer chassis in various locations on the tipping body.

11



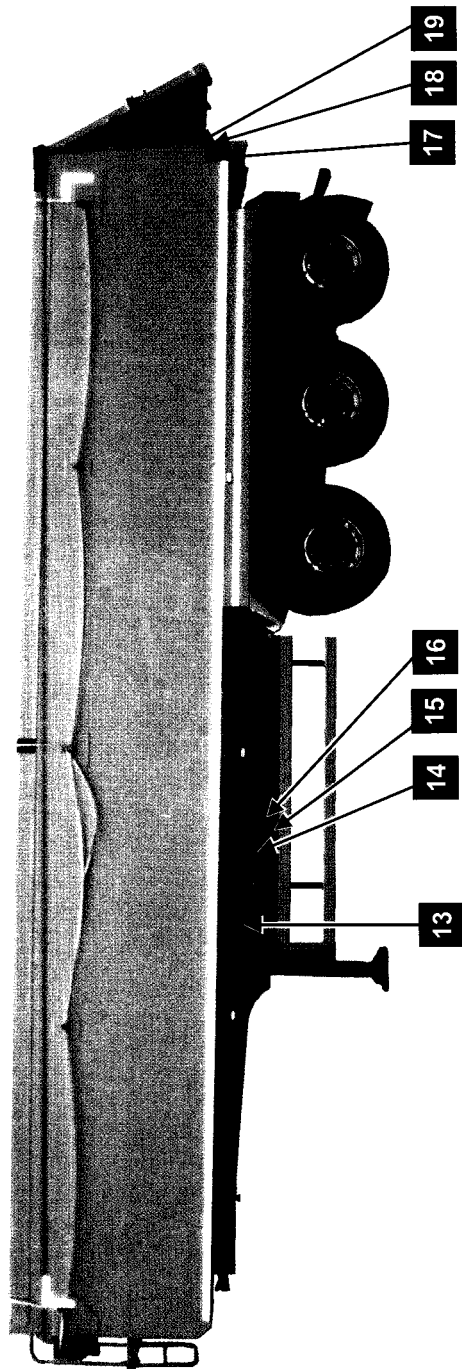
General Operation instructions for Fitted on each side of trailer chassis.

12

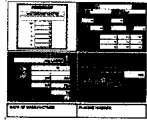


Operation instructions for the Tailgate latching mechanism control. Fitted adjacent to the Tailgate latch valve (s) which may be located on either side of the trailer chassis.

**Note!** The locations of Decals shown may differ slightly depending on the model of vehicle or the options fitted.  
If in doubt contact Fruehauf for information.

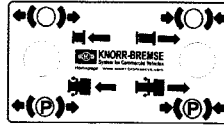


13



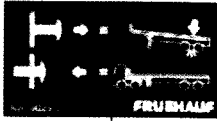
Manufacturers type plate fitted to the Left Side of the Trailer chassis.

14



Fitted to the Left side of the chassis adjacent to the Parking brake control.

15



Fitted to the left side of the chassis adjacent to the "Dump or Exhaust" valve.

16



Fitted to the left side of the chassis adjacent to the "shunt" valve.

17



General caution decal. Fitted adjacent to the Tail gate / Doors at the rear of the trailer, and on the ladder and platform. (May also be fitted in other positions)

18



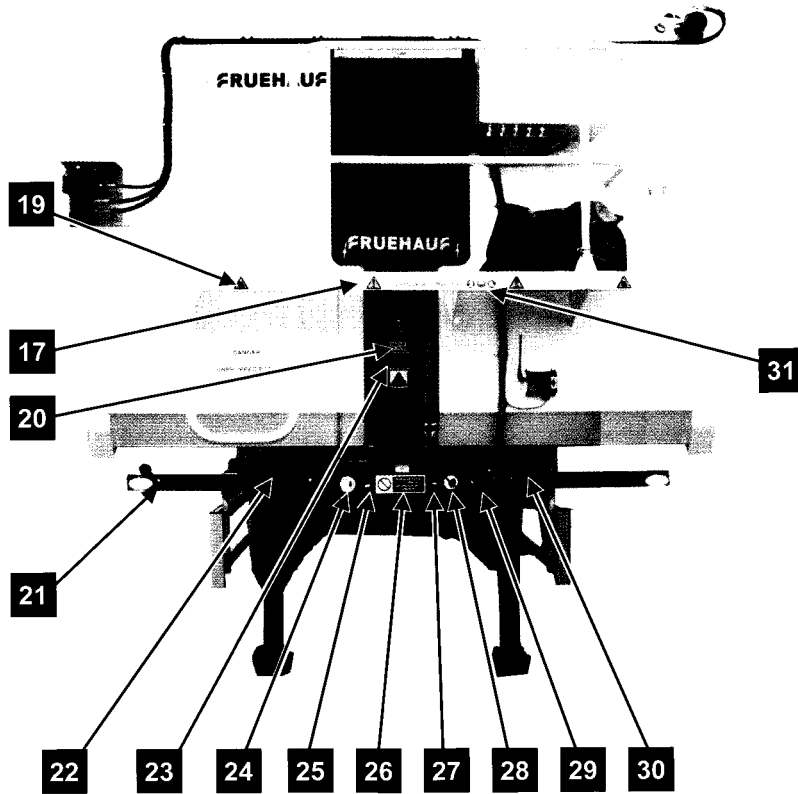
Trap hazard decal. Fitted adjacent to the Tail gate / Doors at the rear of the trailer. (May also be fitted in other positions)


19







Slip hazard decal. Fitted adjacent to the Tail gate / Doors at the rear of the trailer, and on the ladder and platform. (May also be fitted in other positions)



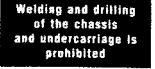
**Note!** The locations of Decals shown may differ slightly depending on the model of vehicle or the options fitted.  
If in doubt contact Fruehauf for information.







- 20**  Type and Pressure of Hydraulic cylinder.





**21**  Body raised warning, fitted adjacent to the body raised warning lamp.
- 22**  Brake line connection. (RED)

**23**  General tipping warning.
- 24**  General warning. Read Manual.

**25**  General warning. Wear Hand protection (Gloves) when coupling and uncoupling.
- 26**   General warning. No chassis modifications.

**27**  General warning. Wear Eye protection when coupling and uncoupling.
- 28**  General warning. Prohibition.

**29**  Mandatory Trailer connection protocol.
- 30**  Brake line connection. (YELLOW)

**31**  1x PERSON ONLY - MAX 140kg   

General safety warning. Prohibition. Mass on platform and PPE.

## Operation



**CAUTION**

This section provides details of the general operation of equipment that may be fitted to the trailer.

The information given is generalised and may not take into account customers special requirements or specialist equipment.

Where fitted this equipment may be supplied with separate operating instructions which should always be referred to.

If in doubt contact your Fruehauf representative.

# Support Legs

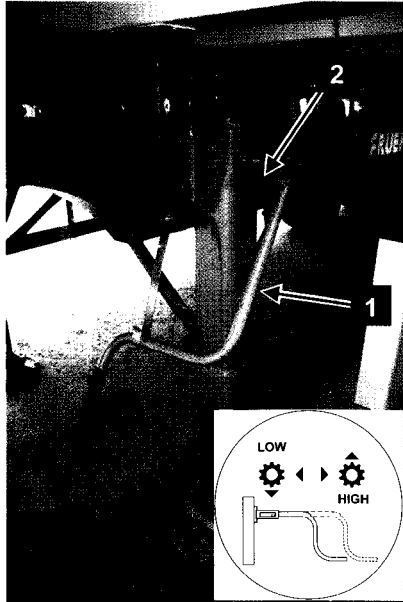


*Always uncouple the trailer on firm level ground. Where ground may become soft, ensure the legs are positioned on suitable footplates to prevent sinking.*



*Always lower the legs before uncoupling. Beware of backlash from the winding handle if released suddenly.*

The Support legs are used only for supporting the trailer when uncoupled in the lowered position, and for setting the coupling height prior to coupling.



## Lowering the Legs when Uncoupling

Unclip the winding handle [1] and pull the shaft [2] outwards to select high gear.

Rotate the handle [1] until the legs reach the ground, then STOP. Push the shaft [2] inwards to select Low gear and rotate the handle until the trailer is supported.

Do not raise the trailer. Secure the handle and uncouple the trailer.

## Setting Legs for Coupling

Unclip the winding handle [1] and push the shaft [2] inwards to Select Low gear. Rotate the handle [1] to adjust

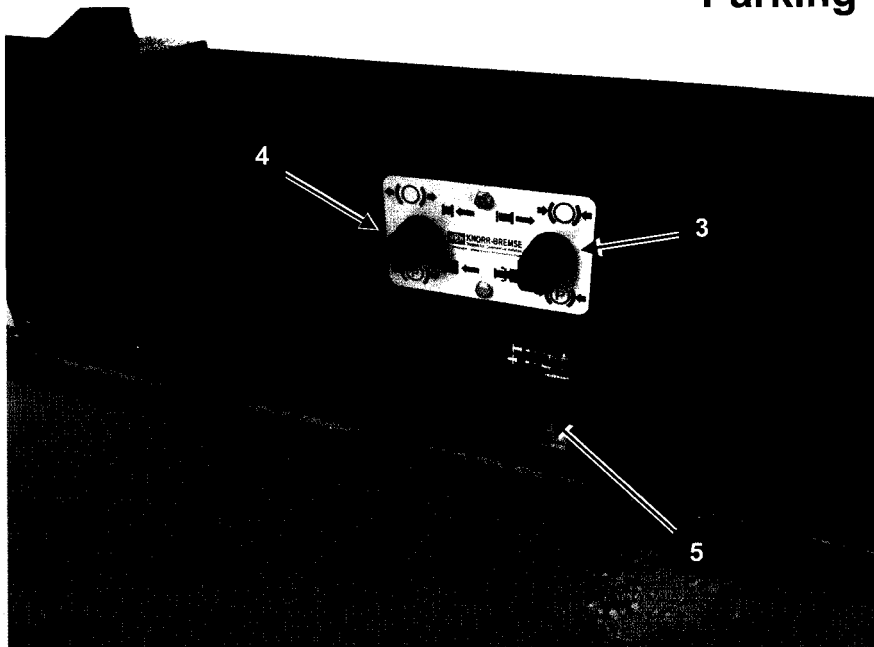
the trailer height so that the coupler is level or slightly lower than the Fifth wheel. Couple the trailer.

## Raising the legs when coupled

Pull the shaft [2] outwards to select high gear. Rotate the handle [1] until the legs are fully raised then STOP. Do not force beyond this position. Do not leave the support leg gearbox in neutral. Secure the handle in the stowage position.



## Parking



### Applying the Parking Brake

The Parking brake **must** be applied at all times **before** disconnecting the trailer from the prime mover.

When the Prime mover is removed from the trailer and the Red (Emergency) Line is disconnected, the trailer brakes are automatically applied by spring force as air is exhausted from the brake cylinders.

Pull the Red knob [3] out to apply the brakes.

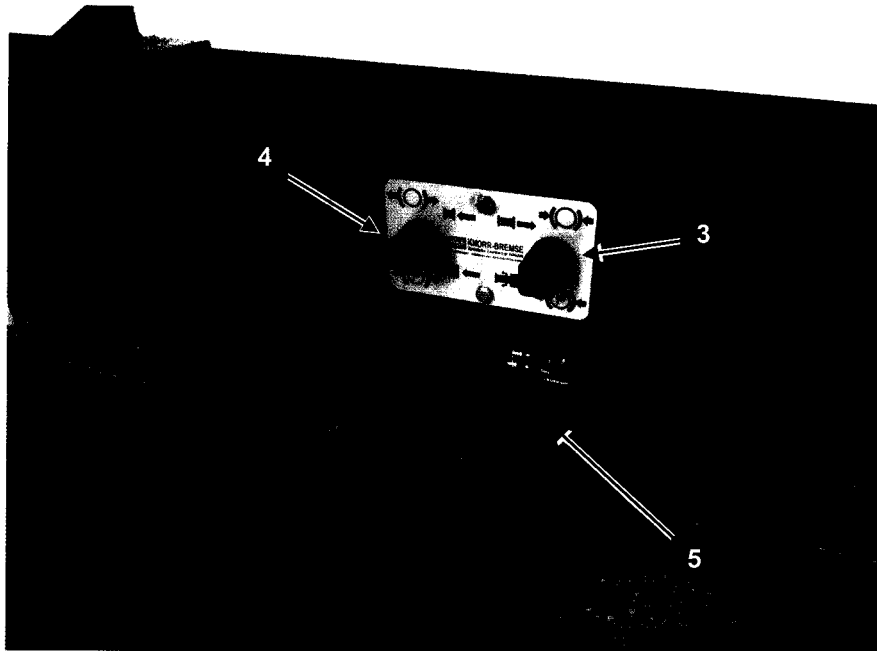
When coupled to the Prime mover and before moving off ensure the knob [3] is pushed in to release the brakes.



*Always ensure Parking Brake is applied before coupling or decoupling from the prime mover.*



*Do not release the trailer parking brake unless coupled to the Prime mover.  
Do not use the Trailer Brake release valve unless in an emergency.*



### Trailer Brake release valve

When the Prime mover is removed from the trailer pulling the Black knob [4] out will release the brakes so that the trailer can be "shunted" in an emergency situation by a suitable vehicle.

Ensure the knob [4] is pushed in to reset after use.



*Do not use except in emergency.  
Always use a suitable prime mover that is capable  
of handling the mass of the trailer..*

### Air Suspension Exhaust Valve

Pull the Red knob [5] out to exhaust air from the suspension and lower the trailer height. Push the knob in to reset.

# Parking



## Air Suspension Variable Height control

Push the control handle [6] in and turn to either Raise or Lower the suspension. On reaching the required level (or max allowable) set the handle back to the mid position.

Before use, reset the suspension to the running or ride height, ensure the control handle is in the mid position and pull the handle out.



*Do not exhaust air from the suspension if a lift axle is in the raised position.*



*Do not exhaust suspension before tipping trailer body.*



*Do not exhaust suspension before moving trailer.*

### Auto - Lift / Lower axles

This option allows an axle (usually the foremost axle) to lift clear of the road automatically when the laden condition allows it. The raised axle automatically lowers when the imposed load increases to a level that requires all trailer wheels to be in contact with the road.

### Traction Assist

The traction assist option allows an operator to lift the axle whilst in a fully laden condition. This is achieved either by operation from the cab of the prime mover or via a control on the trailer.

Lifting an axle in the laden condition increases the imposed load through the Kingpost thereby increasing the load on the drive axle. It is useful on inclines and off road conditions. The axle lowers automatically above 25km/h (15mph).

Holding the traction assist control for 5 seconds will override the auto lift system and lower the axle in an unladen condition to shorten the wheelbase and improve low speed manoeuvrability.



*Raising an axle in the fully laden condition will exceed the maximum rated loads and is only possible for low speed operation.*

### EBS - Anti lock braking system

Fruehauf trailers are equipped with full EBS Anti-lock Brake Systems featuring electronic load sensing equipment via an on-board electronic control unit (ECU) with self-diagnostic capabilities and full communication links to the EBS system of the prime mover.

EBS power supply is via an ISO7638 connector; emergency backup (without load sensing facility) is available from the brake light circuit via the ISO1185 (24N) connector.

The dedicated ISO7638 supply must be used if the prime mover has this facility.

Roll stability, auto-lift/lower axle, traction assist and suspension ride control are optional EBS functions only powered via the ISO7638 connector.



*Do not operate EBS system without a dedicated ISO 7638 supply.*

# Axles & Brakes

A 7 Pin ISO 7638 connector fitted to the prime mover indicates full EBS communication links.

A 5 Pin ISO 7638 connector fitted to the prime mover indicates ABS only.

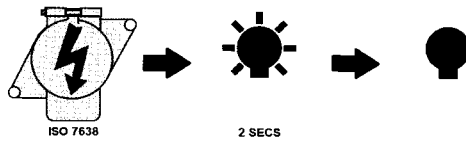
A lamp on the control panel of the prime mover will indicate the trailer EBS function and is the only indicator present for the trailer system.

## Checking the Anti Lock braking system

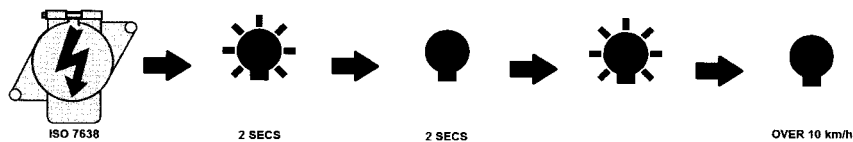
Two systems are fitted (A or B below) and the following lamp sequences indicate correct operation for each method of power supply.

Tractor with ISO7638 supply- on initial power-up (ignition ON) - use cab lamp in prime mover:

[A]



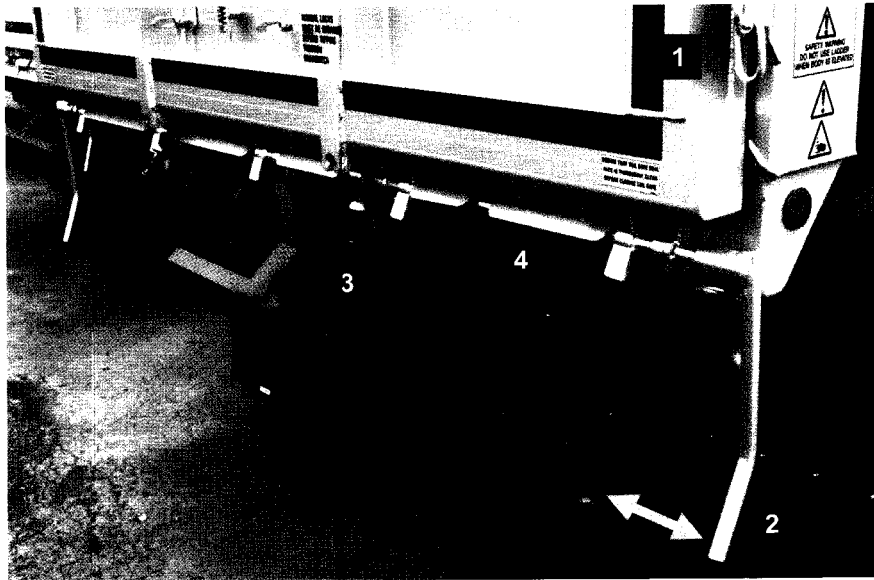
[B]



A malfunction is indicated either by:

No light or a continuous light on power-up and/or a continuous light above 10 km/h.

Switch the ignition ON, depress the brake pedal and check above lamp sequence with pedal depressed. If sequence is incorrect, check the dedicated ISO7638 supply is connected. If dedicated ISO7638 supply is connected a fault exists with the supply and the trailer is operating on brake light power only. Check out any fault immediately and before proceeding.



*Never stand immediately behind the trailer when opening the discharge doors. Always be aware that the load within the trailer may force open the door when released and discharge the load onto the operator.*



*Never stand behind the trailer when tipping a load, or when operating a cargo floor discharge system. Never stand under a raised/open tailgate.*

## **Tailgate**

The standard tailgate is a single door arrangement hinged at the top and secured (in the closed position) with a full width lock bar [4] located on the bottom rear cross member of the body.

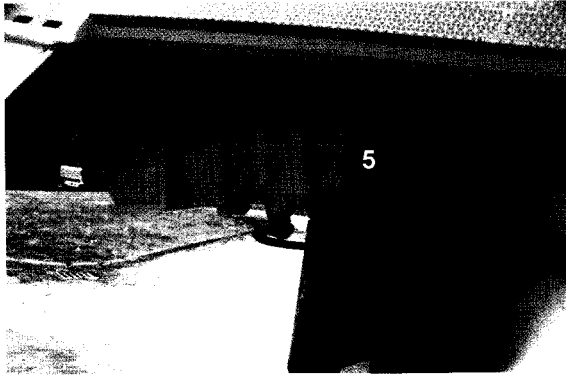
### **Operation - Manual Lock bar**

Release each of the screw-down swing bolts [3], at the sides and bottom of the Tailgate. Standing to the side of the trailer release the Lock bar handles [2] from the retaining rings [1], and push down the handle to release the lock bar.

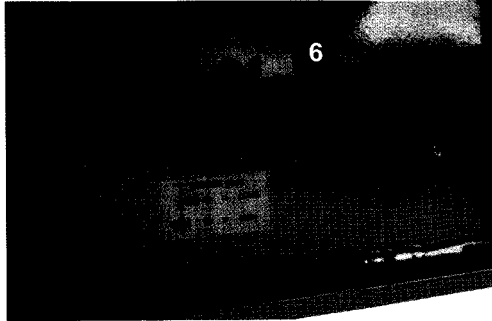
Tip the trailer to discharge the load.

When discharge is completed, ensure the tailgate is fully closed and that the seal is clear of debris.

Raise the locking bar handle [2] and secure with retaining ring [1]. Tighten screw-down swing bolts [3], at the sides and bottom of the Tailgate.



## Discharge



### Operation - Remote operation Lock bar

Release each of the screw-down swing bolts [3]. Operate the remote lock bar cylinder [5] by pushing in the remote control valve [6].

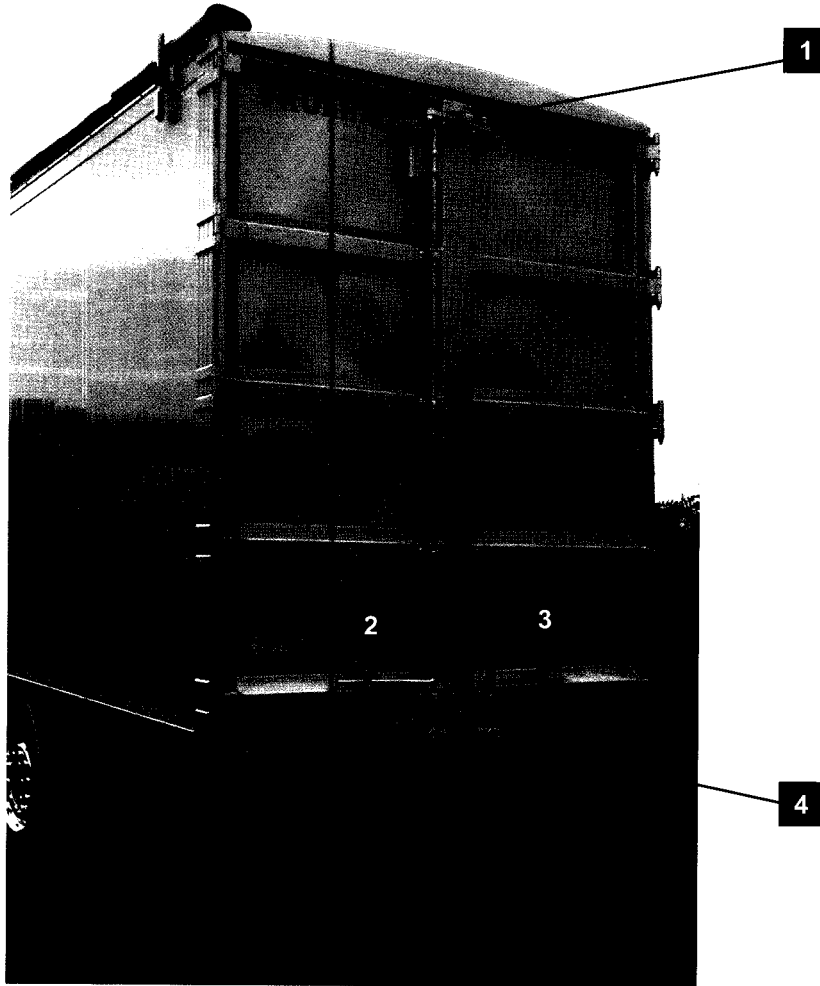
With the locks dis-engaged the trailer can be tipped, the discharging load will force open the tailgate.

When discharge is completed, ensure the tailgate is fully closed and that the seal is clear of debris.

Pull the remote control valve [6] to close the tail gate latches, check the tailgate is fully closed and latched, and the swing bolts [3] have been tightened before moving off.



*This system is designed for Single person operation. Always ensure all personnel are out of the danger area and away from the tailgate before operation. Entrapment in the tailgate mechanism can result in serious injury.*



*Never stand immediately behind the trailer when opening the discharge doors. Always be aware that the load within the trailer may force open the door when released and discharge the load onto the operator.*



*Never stand behind the trailer when tipping a load, or when operating a cargo floor discharge system. Never stand under a raised/open tailgate.*



# Discharge

## Barn Doors

Barn doors are a single or double door arrangement vertically hinged from the sidewall frames. These doors are commonly used on the cargo floor discharge systems.

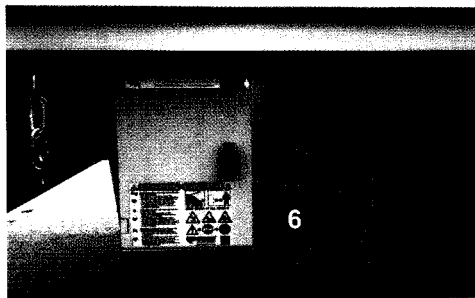
### Operation

Before opening the Barn doors ensure the Remotely operated latch plate [5] is raised in position.



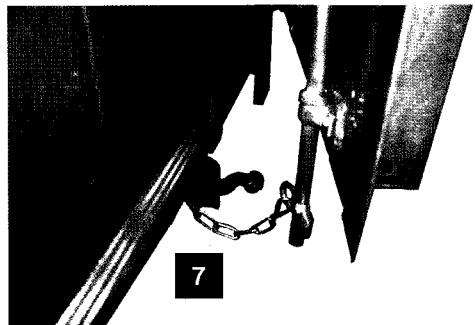
The latch plate [5] is operated by the remote control valve [6]. Pull the valve out to close the latch, this will prevent the doors from opening under pressure from the load.

Turn Locking handle [3] to open the Right door.



The door is prevented from fully opening until handle [2] of the Left door is operated releasing the upper latch [1], and the Latch plate [5] is released remotely.

When opened fully the doors should be held open by attaching the chains to the under body hooks. [7]



Beware of wind loading when opening the doors.

When the load has discharged, clean the door seal (if fitted) and close the Right door with locking handle [3]. Close the left door locating the upper latch [1] and locking with handle [2]. Push valve [6] in to close the latch plate. [5]

## Combination Tailgate & Barn Door

Combination tailgate/barn door assembly comprises a top hung tailgate frame with vertically (side) hung barn door.

Extra caution is required during operation to avoid tailgate frame distortion when opening.

### Operation

#### Barn door

When opening the barn door ensure the tailgate frame is locked to the tipper body with the bottom and side clamps, and lower lock rod.

Beware of load bearing on door, release locking arrangement with care be prepared for partial discharge of load as door opens.

Ensure door is fully secured closed on completion of discharge operation.

#### Tailgate

When opening the tailgate ensure the barn door is locked to the tailgate frame before releasing the clamps and bottom lock rod to open the tailgate.

Ensure tailgate is fully secured closed on completion of discharge operation.

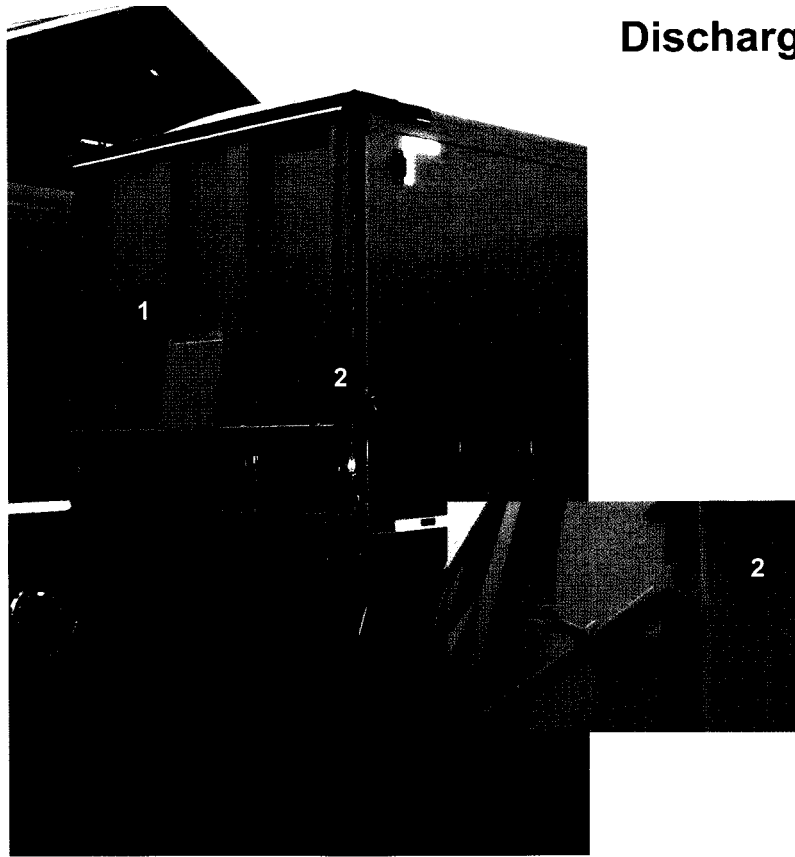


*Never stand immediately behind the trailer when opening the discharge doors. Always be aware that the load within the trailer may force open the door when released and discharge the load onto the operator.*



*Never stand behind the trailer when tipping a load, or when operating a cargo floor discharge system. Never stand under a raised/open tailgate.*

## Discharge



### Grain Hatch

If fitted the grain hatch may be used for the discharge of 'free-flowing' loads. These, usually, are used in conjunction with a grain sock which is attached to the hatch surround by the 'anti-luce' fasteners provided.

### Operation

Fit the Grain Sock to the Grain door [1] Progressively raise the body during tipping to avoid overloading the tailgate/doors.  
Attach the handle provided to the door lifting mechanism [2] and rotate to open or close door to regulate flow.

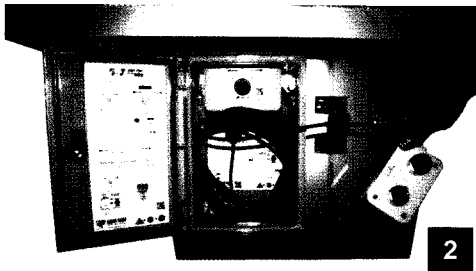
## Cargo Floor Discharge System

A Cargo or Walking Floor equipped trailer will be supplied with a separate Operation and Maintenance manual for the system supplied.

The controls for the Cargo floor will be located in a cabinet similar to that shown. [1]



The Cargo floor will be operated by either a cable connected remote control device or a Wireless remote device. [2]



*Never stand immediately behind the trailer when opening the discharge doors. Always be aware that the load within the trailer may force open the door when released and discharge the load onto the operator.*

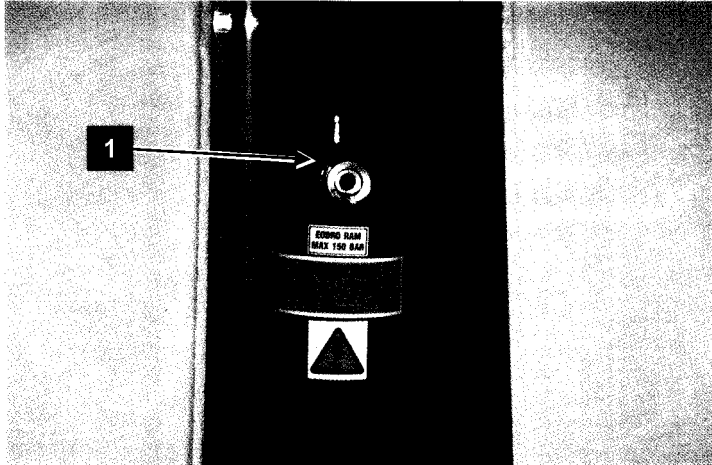


*Never stand behind the trailer when tipping a load, or when operating a cargo floor discharge system. Never stand under a raised/open tailgate.*

## Tipping Control

## Tipping

Trailers configured for tipping are equipped with a Single, Multi staged Telescopic Hydraulic cylinder located at the front. A single High pressure hose connects the trailer quick release coupler [ 1 ] to the hydraulic system of the prime mover.



### Tipping Sequence

The Hydraulic cylinder operating valve will usually have Three positions.

**Raise** - Hydraulic fluid is supplied from the prime mover to the cylinder. The cylinder extends raising the tipping body.

**Lower** - When the control in the prime mover is moved to lower, hydraulic fluid is released from the cylinder and the cylinder retracts under the weight of the tipping body.

**Hold** - In this position the valve of the prime mover is in the central position, trapping hydraulic fluid within the cylinder and holding its position.



*Never reach or work in the area beneath the unsupported raised tipping body.*



*Never Tip the trailer or leave it in a raised condition when it is disconnected from the Prime mover.*

## Tipping Sequence contd.

Before tipping ensure the Trailer and Prime mover are in the straight ahead position, on firm level ground and with all wheels on the ground.

Disengage the tailgate or door latches before tipping.

Engage the PTO of the prime mover and select Raise, and commence tipping.

Raise the tipping body progressively and observe the load as it is discharged.

To maintain the Tipping body at any position select Hold, and disengage the PTO of the prime mover.

To return the Tipping Body to the travel position select Lower. If a load is only partially discharged ensure the body is lowered carefully to prevent damage to the Cylinder or Chassis.

When Raising or Lowering ensure all movements are smooth to minimise the risk of instability or damage.



*Always check around the vehicle before tipping and lowering. Use the vehicles audible warning devices if necessary to warn bystanders of your intention to tip.*



*Only tip with the Prime mover and trailer in the straight ahead position and on firm level ground, and with the brakes applied.*



*Never tip with the Air suspension deflated.*

## Body Raised Warning

## Tipping

When in the raised position a lamp [ 1 ] fitted to the Front Right side of the trailer will illuminate warning the operator not to move or load the trailer with the body raised or partially raised.

On start up when the prime mover ignition is energised the lamp will flash for approximately 15 Seconds and then extinguish if the body is fully lowered.

The lamp will only flash if the body is raised and the trailer ISO 1185 (24N) socket is connected.



### Tipping - General warnings

Do not attempt to tip in high winds.

Do not tip in the vicinity of High Tension overhead electric cables.

Do not tip near to any overhead obstructions or doorways.

Always stay at the tipping control whilst tipping and be prepared to Stop or lower the tipping body immediately at the first sign of instability or if a load being discharged sticks.

# Loading

## Before Loading

Ensure the Rear Doors or Tailgate are all closed and secured.

Ensure any intermediate doors are closed and locked.

Ensure the Tipping body is fully lowered and supported by the chassis.

Check the trailers identification plate to determine the allowable weights before loading.

## Loading

Load the trailer evenly starting at the front where possible.

If the trailer is equipped with an on board weighing system raise the tipping body only to check the load, do not load the trailer with the body raised off the chassis.

Ensure the load is secure and properly sheeted before moving away.



# Weighing

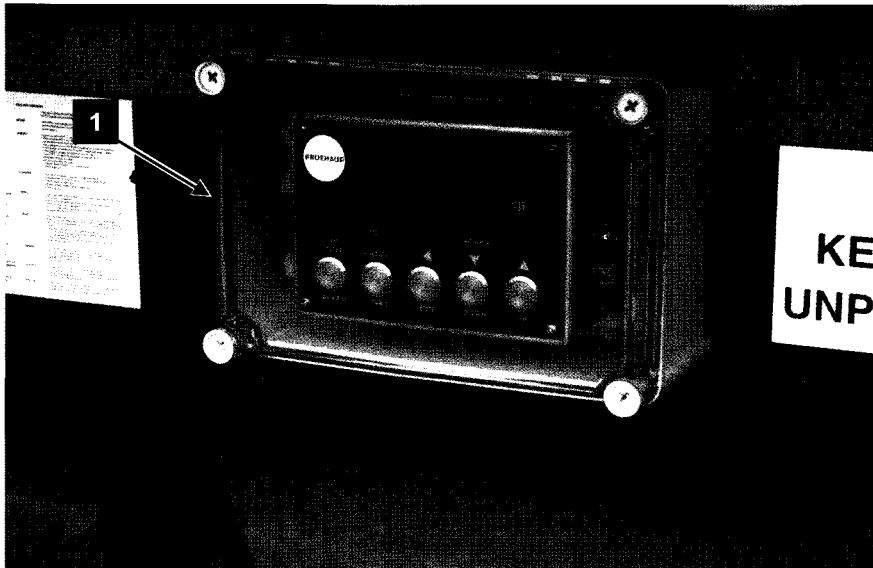
Some Trailers are equipped with a Fruehauf™ on-board weighing system.

The weighing equipment is set to “ZERO” at the factory but **must** be calibrated at “SPAN” when fully loaded. Until that time it will only show an approximate indication which should be treated with caution.



*Do not operate a vehicle unless the weighing system has been correctly calibrated.*

Complete the procedure on the following pages to correctly calibrate the weighing system and prepare it for first use.





For Original Fruehauf Parts please call: 01525 872 466

Or buy from us online at [www.newtontrailers.com](http://www.newtontrailers.com)

Contact [parts@newtontrailers.com](mailto:parts@newtontrailers.com) for a full parts manual for your trailer.

Below is an example page from our online parts shop.

26. Fruehauf OnBoard Weighing System Spare Parts

Manufacturer	Part No.	Description	Price
Fruehauf	N1003787	Fruehauf Onboard Weigher Side Mount Indicator Display Head	£577.30
Fruehauf	N1003804	Fruehauf OnBoard Bluetooth Remote Handheld Device Charging Lead	£18.77
Fruehauf	N1003803	Fruehauf OnBoard Bluetooth Weigher Remote Handheld Device With Charger	£180.00
MX OnBoard	N1002022	MX & Fruehauf Weigher Side Mount Plastic Box 280 x 190 x 130 Including lid	£84.33
Newton Trailers Limited	N1003805	Fruehauf MX Analogue Load Cell Replacement	£188.70
PM OnBoard	N1003943	Weld On Block For Load Cell Mounting WELDING BLOCK PM30866	£17.29

## SPAN Calibration

Ensure the vehicle is on Flat even ground.

Load the body with a known test load.

Raise the Body to the "Weighing " height. This should be raised approximately 300mm (12").

Turn on the Weigher by pressing button [3] "ON" once, or flashing sidelights.

Press and hold button [3] "ENTER" until  $SETP$  appears in the display.

Press button [6] "DOWN" until  $SPRn$  is displayed.

Press button [5] "EDIT" and use the arrow buttons [5,6,7] to enter a value for the test load. This will be shown in the display.

Press button [3] "ENTER", the display will show  $SUREP$  , press button [3] "ENTER" again to commence span calibration.

The display will show  $GOOD$  , if it does not repeat the above procedure.

Make a note of the Zero and Span calibration figures.

With  $ZERFACT$  displayed, press button [5] "EDIT" and note the zero factor.

Press button [4] "CANCEL" then button [6] "DOWN" to display  $CALFACT$

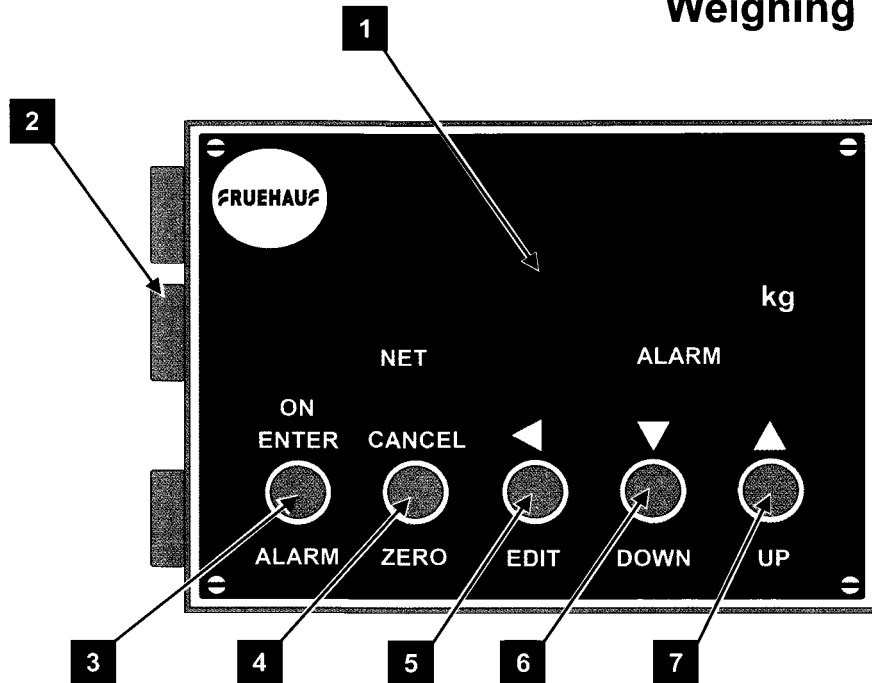
Press button [5] "EDIT" and note down the displayed span calibration factor.

Press button [4] "CANCEL"

Press button [6] "DOWN" until  $SETP$  appears in the display.

Press button [3] "ENTER", the display will show NET weighing.

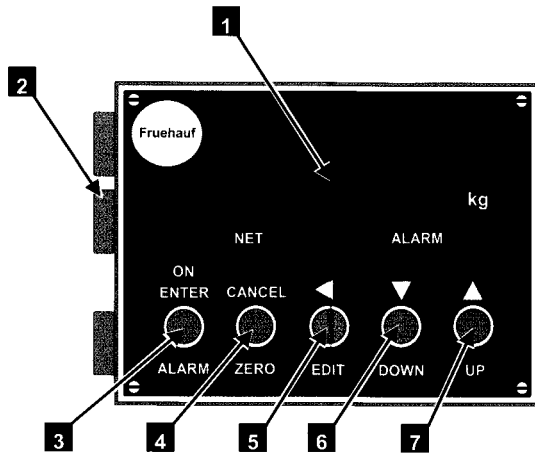
# Weighing



- 1 LED Display Panel
- 2 Electrical Connections
- 3 Push Button "ON", "ENTER" & "ALARM"
- 4 Push Button "CANCEL" & "ZERO"
- 5 Push Button "EDIT"
- 6 Push Button "DOWN"
- 7 Push Button "UP"



*It should not be necessary to recalibrate either Zero or Span, and excessive recalibration should be avoided unless and until a definite trend towards consistent Heavy or Light weighing is identified. Excessive recalibration can result in poor repeatability.*



## ALARM

The alarm can be selected to sound when the Maximum payload is exceeded.

Short press button [3] "ENTER", this toggles the alarm on or off and is indicated in the Display [1] above the word Alarm.

## CHANGING THE ALARM SETPOINT

Press button [6] "DOWN" to display for example  $\bar{R} 25000$  (the current alarm setting).

Press button [5] "EDIT", and use the arrow buttons [5,6,7] to enter a value for the Set point. This will be shown in the display.

Press button [3] "ENTER" to store the new value. (Press button [4] "CANCEL" to restore the original value.

Press button [6] "DOWN" to return to NET weighing.



*In Alarm setting mode the display will automatically revert to NET weight if no buttons are pressed for 30 Secs. If you do not press ENTER after the sequence the previous alarm value will be restored.*

## ZERO

# Weighing

This is the manual zero function.

Pressing button [4] "ZERO" for 1 second, zeros the display, providing the weight displayed is within 1000kg of the original calibrated zero.

If auto zero (RZEr0 i), zeroing takes place automatically on power up (sidelights flashed).

This is **NOT** zero calibration which should be a "once only" operation. This function compensates for zero drifts from the original calibration due to dirt build up, body wear, site level and other external factors.

## AUTOZERO

The Auto zero function attempts a zero net weight display on powering up when the body is empty. This is similar to pressing the "ZERO" button, and means a zero value can be forced without opening the weigher cover by simply flashing the sidelights.

Although manual zero allows a range of +/-1000kg from originally calibrated zero, auto zeroing only allows +/- 200 kg from the previous zero. In addition, it is only attempted between 20 and 30 secs after switching on (sidelight flash). It will fail if the body isn't stable or is in motion, or if displaying more than 200kg.

This feature is off by default but can be changed.

Press and hold button [3] "ENTER" until `SEtUP` appears in the display

Press button [6] "DOWN" until `RZEr00` or `RZEr0 i` is displayed.

Press button [5] "EDIT", and use the arrow buttons [5] "DOWN" to toggle the display to `0` for disabled or `i` for enabled.

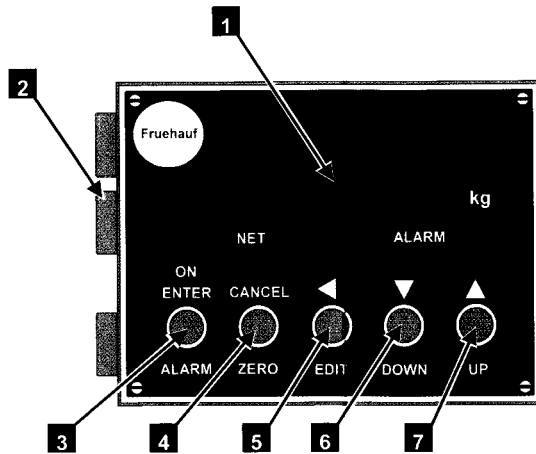
Press button [3] "ENTER"

Press button [7] "UP" until `SEtUP` appears in the display.

Press button [3] "ENTER", the display will show NET weighing.



*If the weigher is inadvertently turned on (sidelights flashed) before the body is raised into the weighing position, an incorrect zero weight will be acquired. This will affect the displayed loaded weight.  
Always ensure a "Good" zero is displayed before loading.*



## OVERVIEW OF SETUP MENU & SYSTEM CALIBRATION

To access Setup mode press and hold button [3] "ENTER" for 1 second.

Whilst in Setup pressing the arrow buttons [5,6,7] navigates through the various parameters, whilst pressing button [5] "EDIT" allows editing of certain values in the display.. EDIT mode is signified by a flashing digit. The digit to be modified can be moved by pressing button [5] and the value changed by pressing buttons [6] & [7]. After modification the new value is accepted by pressing button [3] "ENTER".

**SETUP** This is the entry and exit point of the menu. Pressing buttons [3,4 and 5] will return the display to NET weighing. Buttons [6 & 7] navigate to menu parameters.

**AZEro 1** Auto zero enabled. The Auto zero function attempts a zero net weight display on powering up when the body is empty. This is similar to pressing the "ZERO" button, and means a zero value can be forced without opening the weigher cover by simply flashing the sidelights.

**AZEro 0** Auto zero disabled.

**CountBy** The weigher counts by 20KG steps. This can be changed to 10, 20, 50, 100, 200 or 500kg steps.

# Weighing

- ZERO** This is for initial zero calibration only. It should not be repeated unless there is clear evidence of a permanent zero (empty body) weight shift, or parts of the system have been replaced.
- SPAN** This is for initial span (full weight) calibration and should not be repeated unless there is clear evidence of a repeatable weighing error or weigher parts have been replaced. Load the trailer with a known weight, or fill and use a weighbridge to determine net weight. (ideally near max gross weight). Ensure the body is raised to the weighing position. Press button [5] "EDIT" and edit in the payload shown using buttons. [5,6 & 7]  
Press button [3] "ENTER" to start SPAN acquisition. Press button [4] "CANCEL" to abort.
- CAL** This is displayed with a flashing "0" "9000" is displayed on successful completion. (An error code is displayed if it fails) The display returns to SPAN. Make a note of the new calibration factor as displayed in CALFACT described below.
- ZEROFACT** Pressing button [5] "EDIT" displays the zero (empty) calibration factor used internally.
- CALFACT** Pressing button [5] "EDIT" displays the span (Full load) calibration factor used internally.
- BLUETOOTH** This parameter is used to display the unique Bluetooth™ address of the currently connected remote display device (if option supplied) The address is 7 digits which may be alpha numeric.  
It is set to 0000000 if the Bluetooth™ option is unused (default) If it is edited to 000000 !, a new remote device will be searched for on return to normal weighing. See Bluetooth Remote device.
- CELL OP** This is used to display the load cell input in Millivolts per volt (mV/V). It is useful for troubleshooting. Press button [3] to display (the flashing bars in the left digit indicate mV/V mode). An empty standard Bathtub body gives a cell output of 0.04 & 0.08 mV/V. A 30t load gives around 0.65 mV/V.



## BLUETOOTH™ RADIO REMOTE CAB DISPLAY OPTION

### Introduction

This option allows remote display of weight on a battery powered portable module (the 'Remote'). It is a simple duplicate display of the NET weight shown on the normal chassis indicator, and has no control buttons.

### Operation

The remote is switched on by pressing the power button on the left hand side panel. This button requires a press of at least half a second to switch the unit on.

This is to prevent accidental powering on with consequent battery drain. (If the button is held depressed, it enters a diagnostic mode (see 'Troubleshooting', below).

The display will initially show the message  $\text{SIGNAL}$ , indicating no radio link established with the base. If the link remains down, the  $\text{SIGNAL}$  message is replaced with two flashing decimal points (DPs) to conserve battery power, whilst still indicating the remote is powered up.

If the base (on the Trailer) is now switched on (press a button or flash trailer side lights), the Bluetooth radio link will be established after a few seconds and the net weight will be displayed on the remote.

Switching off is by pressing the power button on the remote a second time.

The remote will automatically switch itself off after 5 minutes without a signal from the base. It will also switch off if its internal battery voltage drops below a safe limit  $\text{LOW BATT}$  will be displayed.

It is a good idea to switch on the remote around the same time as the base is powered on (sidelights flashed). If the base is turned on more than 30 seconds before the remote, it will attempt to search for a 'new' remote (as described below), and this may result in a longer wait for initial connection.

## Weighing

If the remote remains in this mode for more than two minutes with an operational base nearby, it is likely that the base is either already connected to another remote, has Bluetooth mode disabled, is not Bluetooth equipped, is out of range, or there is something interfering with the radio signal between base and remote.

Ensure the base is known to be Bluetooth equipped and move the remote close by and power both off and on again\*.

If this still fails to initiate a link after a couple of minutes, enter `SETUP > BLUETOOTH` on the base, and check for a valid Bluetooth address (a 7-digit number above 0000004 that may include some letters).

If the address is set to '0000000', Bluetooth has been disabled. Set '0000001' to initiate a search when the base is returned to normal weighing.

If there is a Bluetooth address in the base (indicated by 7 numbers and/or letters), see if it corresponds with that in the remote.

Press and hold the remote's power button to force the diagnostic mode – it will show the current software release, then perform a display segment test, then display a 7-digit address which should be the same as the one displayed in the Base's `BLUETOOTH` parameter.

(If the remote shows a blank address, keep the power button pressed until `IN THE AIR` is displayed – then try the diagnostic step again.)

If all of the above checks out, it may be a radio signal propagation problem. Perhaps the base and remote are too far apart, a large object is blocking the signal path, or strong external radio interference is present. This may happen if parked near a radio transmitting antenna or source of strong electrical interference, such as welding or large electric motors/control gear.

It is possible, but fairly unlikely, that a mobile phone, CB or 'walkie-talkie' could be sufficient to temporarily upset the Bluetooth link.

\*If the site is one where the driver is not permitted to leave the cab, try holding the remote out of the window, in 'view' of the base on the chassis until a successful link is achieved. It should then be possible to bring the remote back inside and still maintain the link.

## BLUETOOTH™ RADIO REMOTE CAB DISPLAY OPTION contd.

### Remote Diagnostic Function

The remote has a diagnostic function in which, if the power button is held pressed when switching on, the display will step through a series of self tests.

These are:

- a. Display firmware (internal software programme) version number – e.g. `DF6-309`.
- b. Perform a sequence of segment tests.
- c. Display Bluetooth address lower 7 digits (as used by the base in the `BLUETH` parameter).
- d. Display Bluetooth address upper 5 digits (giving a full 12-digit address).
- e. Force a re-initialisation of the Bluetooth module – `IN IL IRL`.

Note that if the module was not previously initialised, steps c. and d. above will show blanks. After step “e”, the address should show properly when the sequence is repeated. A reported Bluetooth address is a good indication the Bluetooth module is working correctly.

### Approximate Material Weights

Commodity	Tonne/m <sup>3</sup>	m <sup>3</sup> /Tonne
Ashes - Dry	0.8 - 1.03	1.0 - 1.25
Ashes - Moist	0.8 - 1.03	1.0 - 1.25
Ashes - Wet	1.01 - 1.33	0.75 - 1.0
Asphalt	1.59	0.6
Ballast - Dry	1.53 - 1.73	0.6 - 0.7
Ballast - Wet	1.73 - 1.93	0.5 - 0.6
Barley	0.63	1.6
Bricks/1000	3.05 - 4.46	
Bricks - Stacked	1.48 - 1.99	0.6
Bricks - tipped	1.26 - 1.66	0.6 - 0.8
Cement - Natural	0.9	1.1
Cement - Portland	1.45	0.7
Clay - Dry	1.01	1.0
Clay - Wet	1.76	0.6
Coal - Anthracite	0.9	1.1
Coal - Bituminous	0.76	1.3
Coal - Pulverised	0.55	1.8
Coke - Loose	0.6	1.7
Coke - Breeze	0.4 - 0.55	1.8 - 2.5
Concrete - Dry	1.25	0.8
Concrete - Wet	2.38	0.4
Corn	0.76	1.3
Earth - Dry	1.11	0.9
Earth - Damp	1.25	0.8
Fertiliser (Bulk)	1.03	1.0

Commodity	Tonne/m <sup>3</sup>	m <sup>3</sup> /Tonne
Flour (Bulk)	0.45	2.2
Flue dust	1.76 - 1.99	0.5 - 0.6
Garbage	0.68	1.5
Gravel - Dry	1.68	0.6
Sand & Gravel Dry	1.46 - 1.73	0.6 - 0.7
Sand & Gravel Wet	1.93	0.5
Hardcore - Fine	1.66	0.6
Hardcore - Rough	1.2 - 1.46	0.7 - 0.9
Iron Ore	2.12 - 2.56	0.4 - 0.5
Gypsum	0.91 - 1.0	1.0 - 1.1
Limestone	1.53	0.7
Oats	0.42 - 0.51	1.9 - 2.4
Asphalt - Mastic	2.39	0.4
Asphalt - Bitumen	2.13	0.5
Asphalt - Macadam	1.88 - 2.51	0.4 - 0.5
Rubble	1.05	1.0
Sand - Dry	1.33	0.75
Sand - Wet	1.66	0.6
Sand - Dry Silica	1.45 - 1.59	0.6 - 0.7
Sand - Foundry	1.45 - 1.59	0.6 - 0.7
Shale	1.43	0.7
Shingles - Dry	1.73	0.6
Shingles - Wet	1.93	0.5
Slag	1.36 - 1.66	0.6 - 0.8
Stone - crushed	1.59	0.6

### Approximate Material Weights

Commodity	Tonne/m <sup>3</sup>	m <sup>3</sup> /Tonne
Sugar	0.8 - 0.88	1.1 - 1.3
Urea	0.6 - 0.73	1.4 - 1.7
Wheat	0.76	1.3

### Typical Tipping Angles

Commodity	Angle in Degrees	Commodity	Angle in Degrees
Ashes - Dry	33	Garbage	30
Ashes - Moist	36	Gravel	40
Ashes - Wet	30	Ore - Dry	30
Asphalt	45	Ore - Mined	37
Brick	40	Rubble	45
Cinders - Dry	33	Sand - Dry	35
Cinders - Moist	34	Sand - Moist	40
Cinders - Wet	31	Sand - Wet	45
Cinders & Clay	30	Sand & Crushed Stone	27
Coal - Hard	24	Shingles	40
Coal - Soft	30	Stone - Whole	30
Coke	23	Stone - Crushed	30
Concrete	30	Stone - Broken	27
Earth - Loose	28	Grain	20
Earth - Compact	50		

# Maintenance

Drivers Routine Checks			
Weekly or 1600km (1000 miles)			
Daily			
Operation			
Inspect.	Securing devices for damage or wear	X	X
	Tyres for damage	X	X
	Identification plates for Security & Corrosion	X	X
Check	Tyre Pressures		X
	Hydraulic Oil Level	X	X
	Hydraulic Hoses & Connections	X	X
	King Post Security	X	
	Wheel Nut Torque	X	X
	Operation of Lights	X	
Drain	Air reservoir		X
	Air reservoir in freezing conditions	X	
Grease & Inspect	King post		X
	Rubbing Plate		X
	Fifth Wheel		X



*These checks are to be carried out in addition to any checks made by the operator before moving off.*

## Jacking



*Jacking of any vehicle should only be carried out by suitably qualified personnel and using suitable equipment.*



*Ensure any Jack used is suitable for the task and that the lifting pad is shaped to provide adequate support without slipping.*

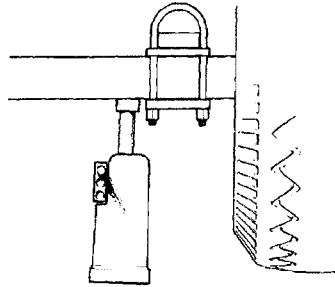


*Always provide additional support blocks etc. beneath the vehicle hard points (Axles etc.) to adequately support the vehicle. Never work beneath a vehicle only supported by the jack.*



*Always jack on firm level ground, with the parking brake applied and the wheels chocked.*

When carrying out jacking operations always ensure consideration is given to the following:-



**Always** use Jacking points where provided.

**Do Not** Jack beneath cast components

**Do Not** Jack beneath springs or Air Suspension trailing arms

**Do Not** Jack beneath radius arms or Panhard rods or mounts

**Do Not** Jack beneath spring hanger brackets

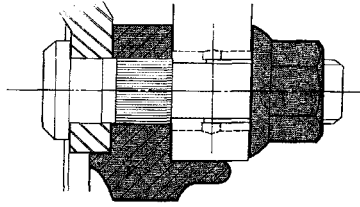
**Do Not** Jack beneath the Rear Under run Protection Device

**Do Not** Jack under the chassis/frame forward of the suspension.

**Do Not** Jack underneath the I Beams behind the suspension unless stiffeners are provided between the Top & Bottom flanges.

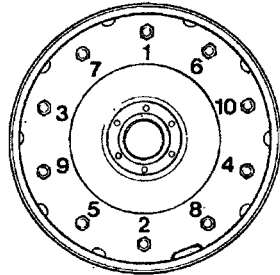


# Maintenance



## WHEEL CHANGING ISO SPIGOT WHEELS

ISO spigot mounting centralise the wheel to the hub on a protruding lip (spigot) where it is secured by ISO nuts with the captive collar; the wheel nave will usually feature parallel fixing holes. However, wheels with conical\* or spherical\*\* faced holes can be used on spigot hubs, providing the wheel has never been used on alternative types of mounting and that the nave bore complies with the following tolerance: 281mm Dia +0.2mm / -0mm.



All wheel nuts have right-hand threads.

Note: Protective wheel nut covers and loose nut indicators may be fitted, remove these and replace them on completion.

## REMOVING & REFITTING A ROAD WHEEL

Slacken the wheel nuts and jack up as previously described, adjacent to the respective wheel/s.

Remove wheel nuts and wheel/s following the sequence shown above.

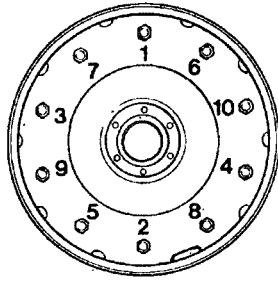
To fit a wheel: lightly lubricate the thread of the wheel nuts and check that the captive collar on ISO spigot nuts, rotate freely.

Position the wheel to be fitted as near as possible to the hub, place a bar underneath the base of the tyre and lever the wheel upwards and over the studs, taking care not to damage the threads.

Repeat this operation for subsequent wheels where necessary.

Refit the wheel nuts and tighten by hand.

**REMOVING & REFITTING A ROAD WHEEL contd.**



Tighten in sequence using a suitable tool.

Remove jack and finally torque load the nuts in sequence.

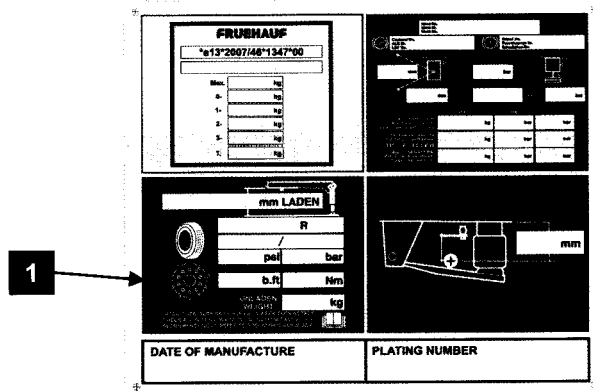
Repeating the tightening sequence after the first 80km (50 miles) and daily for first week.

Replace protective wheel nut covers and loose nut indicators (if applicable).



**CAUTION**

*Ensure the Wheel Nuts are tightened using a suitable and correctly calibrated Torque Tool*



If in doubt refer to the detailed information about Wheel Nut Torque and sequences given on the Chassis plate. [1]



**WARNING**

*It is essential that all Wheel nuts are checked Daily and torque tightened weekly or every 1600km.*

# Maintenance

## **IMPORTANT INFORMATION WHEEL FIXINGS**

The plate detailing the recommended torque figures are applicable to the manufacturer's original equipment only and may not apply should wheel nuts ever be replaced with alternative items.

It is recommended that all wheel stud holes are checked periodically for ovality as an early indication of wheel problems.

Over-tightening of wheel nuts will cause the hole to distort radially, while fretting as a result of under-tightening causes circumferential distortion.

The mating surfaces on wheels between hubs, wheel or wheel nuts should be left in the manufacturer's original finish. It is NOT recommended that these areas be painted.

## **NON-SPIGOT MOUNTED WHEELS (not illustrated)**

Wheels not mounted to ISO spigot hubs will require the installation of cones.

Check correct installation before fitting wheel. If in doubt, ask!

The wheel needs centralising on the studs by leverage whilst tightening.

## CARE & MAINTENANCE OF TRAILER TYRES

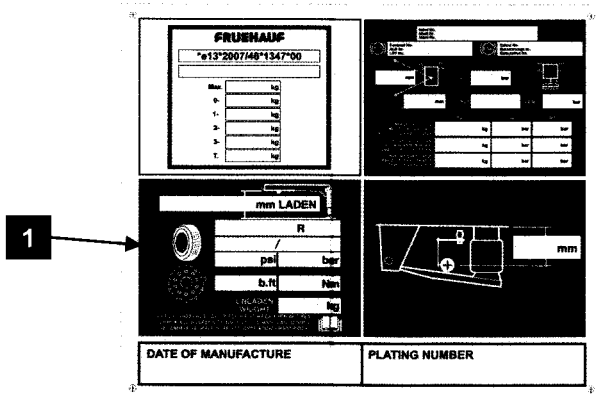
Refer to plate [1] positioned adjacent to the Chassis plate for tyre pressures.

Neglect of inflation pressures is one of the principal causes of premature tyre failure and for this reason the importance of regular checks cannot be overstressed.

Although they are often overlooked the same priority should be given to trailer tyres as those of the tractor unit and this is of paramount importance if maximum tyre mileage is to be obtained. Drivers and maintenance staff share the responsibility for ensuring that tyres are operated within the bounds of safety and efficiency.

It should be borne in mind that recommended inflation pressures are given for a 'cold' tyre. An increase in temperature as a result of running will cause pressure to rise giving a false indication. This pressure increase must never be reduced as the tyre is designed to safely withstand this condition.

Any reduction in pressure at this stage will cause the tyre to flex abnormally with subsequent heat generation and premature tyre failure.



# Maintenance

The following checks are recommended.

## **Checks by Drivers prior to any Journey:**

Tyre pressures for signs of under inflation

Wear to Tyre Crown or Shoulders

Cuts in Tread or Sidewall

Bulges in Sidewalls (Inner and outer)

Stones or other objects trapped in the tread pattern

Objects trapped between Tyres (Twin wheel Combinations)

## **Periodical Checks by Maintenance staff:**

Correct Inflation pressures

Leakage from inflation valves

Missing valve caps

Tread depth.

Tread wear and alignment

Valve accessibility (IE Twin wheels correctly positioned so that inner valve can be reached.)

## **Rolling Circumference - Important**

The rolling circumference is the linear distance a tyre travels in a single turn of the wheel. When replacing tyres ensure the rolling circumference (or Turns per mile value) is consistent with the specification and other tyres fitted.

Any difference will affect overall wear and may require the change of any hub odometer units fitted.

## TROUBLESHOOTING TRAILER TYRES

SYMPTOMS	CAUSE	RESULT
Uneven Tread Wear	Under inflation	Fire Risk Fracture or Rupture Ply Separation
Excessive Heat Build up		
Wear concentrated in centre of tread	Over Inflation or worn Shock absorbers	More susceptible to damage. Fracture of cords
Inconsistent (spotty) tread wear	Grabbing brakes Slack or worn wheel bearings Deformed brake drums/discs	Reduction in overall tyre life
Scrubbing	Axle Misalignment	
Tread cuts	Stone, Gravel, Sharp metal debris etc.	Damage to tyre cords
Irregular wear on tyre shoulders	Overloading	Bursting
Rapid wear	Excessive deflection due to mismatched tyres	Premature failure

### CHOICE OF REPLACEMENT TYRES

Tread pattern designs for trailer tyres are usually limited to those offering the minimum rolling resistance. It is extremely important that the tyre selected is capable of safely withstanding the axle load imposed upon it under normal operating conditions.

When tyres are used in twin wheel combinations they should be properly matched for diameter, if the tread depth between two tyres varies by more than 5mm the tyres are mismatched.

Care must be taken when pairing part worn tyres with re-grooved tyres. A tread depth which appears identical will in fact mean that the diameter of the tyres are different. In order to match this combination of tyres correctly, the difference in diameter must not exceed 10mm.

Mismatching results in the larger of the two tyres carrying extra weight and suffering excessive deflection. Wear now becomes more rapid increasing the risk of premature failure. Reference should be made to relevant legislation when mixing radial and cross ply tyres.

# Maintenance

Preventative Maintenance Schedule - Brakes					
Annually or 80000km (50000 miles)					
6 Monthly or 40000km (25000 miles)					
3 Monthly or 20000km (12000 miles)					
Monthly or 6400 km (4000 miles)					
Weekly or 1600km (1000 miles)					
Operation					
Check brakes for correct function	X	X	X	X	X
Check linings for wear and adjust if required			X	X	X
Check Disc brake Pad and rotor wear			X	X	X
Check Caliper operation (Disc brakes)			X	X	X
Lubricate anchor pins and if necessary linish* the brake linings and drum surfaces					X
Inspect brake hoses for damage			X	X	X
Drain air reservoir (daily when < 0 deg C)	X	X	X	X	X
Check Camshaft bearings & lubricate			X	X	X
Check slack adjusters where applicable			X	X	X
Grease parking brake cables where applicable & check for damage.			X	X	X
Test Anti lock brake system			X	X	X
Check brake system pressures					X

\* Linishing is a pattern of 'very' fine lines. This is achieved by abrading the surfaces by hand, using a suitable production paper on brake linings and emery cloth on the drum. The pattern should be in two directions, each at 45° across the surface to give a cross hatch effect. Observe Health and Safety guidelines; **DO NOT** use hand or power tools. **DO NOT** Linish disc brakes.

<b>Preventative Maintenance Schedule - Tyres &amp; Wheels etc.</b>					
<b>Annually or 80000km (50000 miles)</b>					
<b>6 Monthly or 40000km (25000 miles)</b>					
<b>3 Monthly or 20000km (12000 miles)</b>					
<b>Monthly or 6400 km (4000 miles)</b>					
<b>Weekly or 1600km (1000 miles)</b>					
<b>Operation</b>					
Inspect Tyres for damage	X	X	X	X	X
Check Tyre pressures	X	X	X	X	X
Check Wheel nut Torque	X	X	X	X	X
Check Hub bearing adjustment *				X	X
Clean and Grease Hub bearings*					X
Check axle and Suspension nut torque			X	X	X
Inspect axle and Suspension components for wear & damage			X	X	X
Crack detect axles (after 5 years then annually)					X
Check axle alignment				X	X
Check air suspension for leaks			X	X	X
Clean In Line Air filter (if fitted)			X	X	X
Check ride height			X	X	X
Check Lift axle components & function			X	X	X
Check shock absorbers				X	X
Check electrical system	X	X	X	X	X
Inspect electrical cables for damage & security				X	X

\* Refer to Axle manufacturer's' information



# Maintenance

<b>Preventative Maintenance Schedule - General</b>					
<b>Annually or 80000km (50000 miles)</b>					
<b>6 Monthly or 40000km (25000 miles)</b>					
<b>3 Monthly or 20000km (12000 miles)</b>					
<b>Monthly or 6400 km (4000 miles)</b>					
<b>Weekly or 1600km (1000 miles)</b>					
<b>Operation</b>					
Grease & inspect support legs				X	X
Grease & inspect Fifth wheel		X	X	X	X
Grease & inspect Rubbing plate				X	X
Grease & inspect King post	X			X	X
Check & lubricate Doors, Tailgates & locking devices		X	X	X	X
Inspect Steelwork and finished surfaces for security and corrosion				X	X
Inspect Identification plates for security and corrosion	X	X	X	X	X
Inspect TIR fastenings for security	X	X	X	X	X
Check & replenish automatic lubrication systems (where applicable)			X	X	X
Check Hydraulic Oil reservoir	X	X	X	X	X
Check Hydraulic components for leaks	X	X	X	X	X
Check Hydraulic components for security				X	X
Check Hydraulic cylinder mounting for security				X	X
Check body Hinge brackets for security				X	X

<b>Preventative Maintenance Schedule - General</b>				
<b>Annually or 80000km (50000 miles)</b>				
<b>6 Monthly or 40000km (25000 miles)</b>				
<b>3 Monthly or 20000km (12000 miles)</b>				
<b>Monthly or 6400 km (4000 miles)</b>				
<b>Weekly or 1600km (1000 miles)</b>				
<b>Operation</b>				
Grease Hydraulic cylinder pivots			X	X
Check condition of Roll Over sheet (where applicable)			X	X
Check condition of Pull Back straps	X	X	X	X
Check , clean and Lubricate ratchet tensioners	X	X	X	X
Check & lubricate winding handle joints	X	X	X	X
Check mechanically operated covers **	X	X	X	X

\*\* Refer to manufacturer's information

## Fault Finding



**CAUTION**

This section provides some details of commonly occurring faults and has been prepared to minimise delay in repair and maintenance by endeavouring to locate the cause.

It is not designed to allow unqualified personnel to attempt repairs.

Where problems persist always refer to qualified personnel and/or refer to your nearest Fruehauf agent.

If in doubt ask!

<b>BRAKES</b>		
<b>SYMPTOMS</b>	<b>CAUSE</b>	<b>RESULT</b>
Brakes will not release	Park Valve applied	Release and reset park brake
	Insufficient Air supply	Check Emergency line is connected and that the prime mover is supplying sufficient air  Check for restricted or damaged pipe work  Check for leaks  Discharge water from reservoir drain valve.
	Brakes rolled over camshaft (Drum brakes)	Check Brake lining wear and replace as required
	Caliper Seized (Disc Brakes)	Check callipers for free movement
	Hub bearing failure or misalignment	Replace bearing
	Faulty control valve	Check system for correct pressures and check function.
	Frozen Valves	
Binding or Grabbing brakes	Contaminated Linings or Pads	Replace
	Drum brakes out of adjustment	Readjust brakes. Check operation of slack adjusters where fitted.
	Disc Pad to Rotor clearance incorrect	Setup callipers and check slide pins.

<b>BRAKES</b>		
<b>SYMPTOMS</b>	<b>CAUSE</b>	<b>RESULT</b>
Binding or Grabbing brakes	Brakes not releasing fully	Lubricate camshaft bushes (drum brakes). If auto-slack adjusters check for correct operation and rectify if required.
	Check Caliper slide pins	Strip and lubricate slide pins. Replace as required
	Oval Brake drums	Ovality should not exceed 0.12mm (0.005"). Consult axle supplier.
Uneven Braking	Contaminated Linings or Pads	Replace
	Drum brakes out of adjustment	Readjust brakes. Check operation of slack adjusters where fitted.
	Disc Pad to Rotor clearance incorrect	Setup callipers and check slide pins.
	Brakes not releasing fully	Lubricate camshaft bushes (drum brakes). If auto-slack adjusters check for correct operation and rectify if required.
Inefficient Braking	Contaminated Linings or Pads	Replace
	Drum brakes out of adjustment	Readjust brakes. Check operation of slack adjusters where fitted.
	Disc Pad to Rotor clearance incorrect	Setup callipers and check slide pins.

## BRAKES

SYMPTOMS	CAUSE	RESULT
Inefficient Braking	Brakes need overhaul	Strip down and replace brake components as required
		Check actuators for correct function
		Check for leaks and rectify as required
	Linings glazed	Linish* Lining and Brake drum surfaces
	Inadequate Linings/ Pads fitted	Fit new replacement components. Contact your Fruehauf agent for details
	Low Brake (Service) Line pressure	Check for leaks in Service line and at valves with brakes applied replace as required
	Load Sensing Valve incorrectly set	Check valve for laden and unladen setting, if in doubt contact your Fruehauf Service agent
Slow Brake application	Drum brakes out of adjustment	Readjust brakes. Check operation of slack adjusters where fitted.
	Disc Pad to Rotor clearance incorrect	Setup calipers and check slide pins.

\* Linishing is a pattern of 'very' fine lines. This is achieved by abrading the surfaces by hand, using a suitable production paper on brake linings and emery cloth on the drum. The pattern should be in two directions, each at 45° across the surface to give a cross hatch effect. Observe Health and Safety guidelines; **DO NOT** use hand or power tools. **DO NOT** Linish disc brakes.

<b>BRAKES</b>		
<b>SYMPTOMS</b>	<b>CAUSE</b>	<b>RESULT</b>
Slow Brake application	Brakes need overhaul	Strip down and replace brake components as required.
		Check for leaks and rectify as required.
		Check actuators for correct function.
	Leak in system when brakes applied	Check for leaks with brakes applied. Rectify and replace components as required Contact your Fruehauf agent for details.
Noise & Vibration	Low Brake (Service) Line pressure	Check for leaks in Service line and at valves with brakes applied replace as required.
	Incorrectly assembled components	Check brake components & rectify as required
	Oval Brake drums	Ovality should not exceed 0.12mm (0.005"). Consult axle supplier.
	Excessive cracking and grooving of disc	Replace Disc rotor.
Disc run out not within tolerance		

<b>BRAKES</b>		
<b>SYMPTOMS</b>	<b>CAUSE</b>	<b>RESULT</b>
Anti Lock System fault	Continuous ABS warning above 10Km/h (6mph)	Contact your Fruehauf agent for advice
	Incorrect ABS warning lamp sequence on start up	
	No ABS warning lamp on start up	Check Bulb. Use the dedicated ISO supply. Contact your Fruehauf agent for advice
Excessive water in reservoirs	Reservoirs not drained often enough	Drain as per preventative maintenance schedule
	Prime mover Air Drier faulty	Check & rectify
Excessive oil in air system	Prime Mover compressor faulty	Service compressor



<b>Under carriage (Running gear)</b>		
<b>SYMPTOMS</b>	<b>CAUSE</b>	<b>RESULT</b>
Running out of alignment	Axles alignment incorrect	Realign axles. Check all suspension and axle components for damage. (U Bolts, Pivot pins & bushes, shock absorbers etc. Replace as required. Torque tighten all fittings.
	Broken Road spring/ Trailing arm	Replace
	Air suspension down on one side	Contact your Fruehauf agent for advice
Lift axle will not lift	Insufficient air supply	Build up Prime mover pressure to at least 5.8 bar (85psi)
	Leak in system	Inspect for damage, Leaks & rectify
	Faulty Valve(s)	Check hand control and regulating valves.
	Electrical fault	Check wiring and for cable damage on 24S connector
Lift axle will not lower	Faulty Valve(s)	Check hand control and regulating valves.
Air Suspension - Air bags flat	Insufficient air supply	Build up Prime mover pressure to at least 5.8 bar (85psi)
	Pressure protection/ Charging valve	Check and reset to 5 bar (72psi).
	Blocked in line filter	Clean or replace element

<b>Under carriage (Running gear)</b>		
<b>SYMPTOMS</b>	<b>CAUSE</b>	<b>RESULT</b>
Air Suspension - Air bags flat	Leak in system	Inspect for damage, Leaks & rectify
	Faulty levelling valve	Inspect test and replace Contact your Fruehauf agent for advice
	Faulty Air load sensing valve	
	Faulty exhaust valve (where fitted)	
	Faulty Raise/Lower valve (where fitted)	
Suspension deflates rapidly when parked	Leak in system	Inspect for damage, Leaks & rectify
Excessively worn Air bags	Bags contacting the frame Tyres or rims	Check for correct tyre sizes and inflation pressures.  Contact your Fruehauf agent for advice
	Over extension of Air bags	Adjust Ride Height  Check variable height control (Raise/Lower) valve and set to "Ride" position.
	Operating with insufficient air pressure	Check items listed under Air Bags flat
	Worn Shock absorbers	Replace
Trailer rides too High or Low	Levelling valve Linkage disconnected or broken	Repair or replace
	Incorrectly set levelling valve	Adjust.
	Incorrectly set variable height valve (if fitted)	Set to "Ride" position

<b>Under carriage (Running gear)</b>		
<b>SYMPTOMS</b>	<b>CAUSE</b>	<b>RESULT</b>
Trailer rides too Low	Incorrectly set exhaust valve	Reset. Push Knob in.
Excessive Shock absorber wear	Levelling valve (over active suspension)	Check and replace.
	Off road operation	Contact your Fruehauf agent for advice.
Support Legs Difficult to operate	Legs set in High gear	Push shaft in for Low gear. If this cannot be selected, strip gearbox and repair as required.
	Lack of Lubrication	Remove covers, inspect, lubricate and repair as necessary.
	Bent legs	Replace as required.
	Gears or components damaged	Overhaul legs.

Electrical		
SYMPTOMS	CAUSE	RESULT
Lights or other components not working	Poor connection or Broken wire	Check wiring connections, junction boxes etc. for corrosion or water ingress. Check continuity and Ground connections. Replace as required.
	Damaged	Inspect test and replace Contact your Fruehauf agent for advice



WARNING

*It is an offence to allow a vehicle to operate if any of the statutory lamps fitted are not functioning correctly, are damaged or are obscured in any way.*



CAUTION

*Checking that the lamps are functioning correctly is the drivers responsibility and should be undertaken before each journey.*

Hydraulic		
SYMPTOMS	CAUSE	RESULT
Pump fails to operate	Low Oil level in reservoir	Check and fill reservoir to correct level. (Single acting cylinders must be retracted when filling). Check for leaks
	Air locked in system	Bleed system
	Blockage	Check for restricted or damaged pipe work
		Check filter
		Check control valve
Tip cylinder fails to extend	Overload valve incorrectly set	Reset valve to 103 Bar (1500psi) Contact your Fruehauf agent for advice
Tip Cylinder creeps down slowly	Contamination in control valve	Service valve Contact your Fruehauf agent for advice



*Always release trapped residual Hydraulic pressure before dismantling any part of the Hydraulic system.*



*Never work beneath any unsupported load, when servicing the hydraulic system.*



*Always wear suitable Personal Protective Equipment (PPE).*

## Emergencies



**CAUTION**

This Section is included for guidance only, it is not intended to over-rule any emergency procedures the driver already knows but to assist where uncertainty may exist.

If you are conveying hazardous or dangerous substances you must **DISPLAY THE CORRECT EMERGENCY CARDS OR MARKERS.**

**IF IN DOUBT, ASK!**

## NOTIFYING AN EMERGENCY

### Emergencies occurring when loading or Discharging.

Follow the instructions of the supervisors or other qualified staff at the loading or unloading point.

### Emergencies occurring at other times.

At other times you will probably be the only person on the spot with any knowledge of what to do in an emergency, at least until the police, fire, ambulance or other specialised services arrive.

The action taken by the driver in the first few minutes may therefore be vitally important.

In all emergency situations your first concern must be to save life and prevent injury.



*Do not take any action that would place you or any other person in danger, or take any action that could cause harm to a person, livestock or property.*

Notwithstanding the warning above, the driver has a duty to try and prevent an emergency situation from escalating and thereby affecting other road users.

If the load is spilling/discharging or seems to be in danger - immediately notify the following services, giving details of the emergency, the location and the product involved:

Public Emergency Services (i.e. Police, Fire and Ambulance Service)  
Manufacturer's Emergency Centre.

If the danger is such that you have to stay with your vehicle ask someone else to make the telephone call for you.

Never leave spillage, leaking packages or leaking tanks unattended.

Think whether there is any other immediate action you should take to safeguard other people or to limit the effect of your emergency - this could include:

Applying battery isolation switch if spillage is of a low flashpoint (e.g. petroleum or any other inflammable liquid).

Operating the emergency warning flashers. (not with low flash point products)

Moving the vehicle to a spot where leakage causes least harm or damage.

# Emergencies

- Wearing protective clothing.
- Keeping people away.
- Keeping other vehicles out of the emergency area.
- Moving casualties away from emergency area.

## **Co-Operation with the Emergency services**

When the emergency services arrive they will take charge and you should:

- Show them the transport Emergency card or marker.
- Tell them what action has been taken.
- Tell them all you know about the load that may be helpful.

## **Reporting an Incident**

You must report incidents as soon as possible to the operator of the vehicle and the person responsible for the load. whether there has been a spillage or not, with details of:

- Injury to any person
- Damage to any vehicle
- Damage to any property
- Spillage of any product

## **Fire Extinguishers**

An extinguisher suitable for putting out fires involving engine or tyres must be carried. Such extinguishers should be of ample capacity for dealing with the initial fire and of a type that will prevent re-ignition, particularly of tyres.

## **Protective Clothing**

Protective clothing should be provided suitable for working with the type of product being transported, this may include:

- Eye protection, Gloves, Boots, Apron, Hood, Visor, Overalls.

Recommendations are given on the hazard warning labels and transport emergency cards regarding the need and type of protective clothing required. The material of the protective clothing must be resistant to the product involved.



## **Protective & Emergency Equipment**

Where specialised equipment is provided (for operational or emergency use) it should be regularly checked for correct functioning and training provided in its use where applicable.

## **Emergency Cards & Markers**

Ensure the correct Emergency Cards or Markers are displayed for the product being transported.

## **Driver Training**

All drivers of vehicles carrying dangerous goods must attend an approved basic training course. These courses equip drivers with information and tools so that they:

- are aware of the hazards in the carriage of dangerous goods.
- can take steps to reduce the likelihood of an incident taking place.
- can take all necessary measures for their own safety and that of the public and the environment to limit the effects of any incident that does occur.
- have individual practical experience of the actions they will need to take.



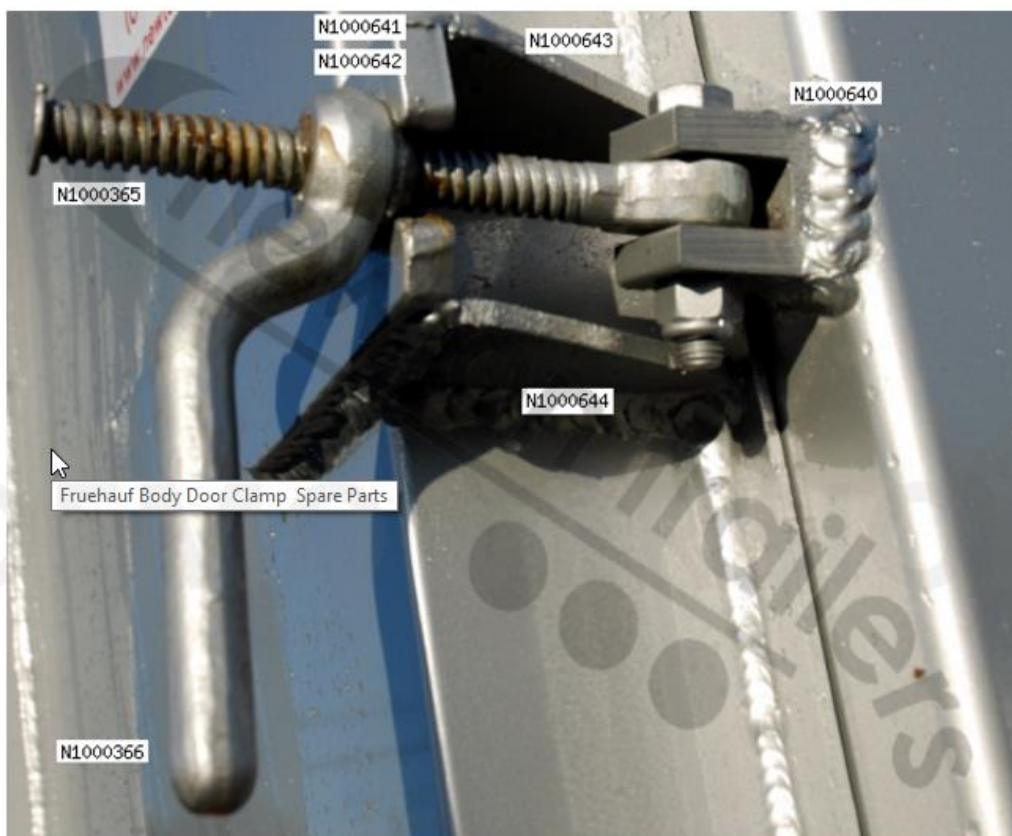
For Original Fruehauf Parts please call: 01525 872 466

Or buy from us online at [www.newtontrailers.com](http://www.newtontrailers.com)

Contact [parts@newtontrailers.com](mailto:parts@newtontrailers.com) for a full parts manual for your trailer.

Below is an example page from our online parts shop.

#### 4. Fruehauf Body Door Clamp Spare Parts



Manufacturer	Part No.	Description	Price
Fruehauf	N1000642	Cattle Clamp Counter Sunk Drop In Plate Left	£15.00
Fruehauf	N1000641	Cattle Clamp Counter Sunk Drop In Plate Right	£15.00
Fruehauf	N1000643	Fruehauf Cattle Clamp Counter Sunk Plate Bottom & Side Upper Support Gusset	£3.98
Fruehauf	N1000644	Fruehauf Cattle Clamp Counter Sunk Plate Side Lower Support Gusset	£2.96
Newton Trailers Limited	N1000366	Cattle Clamp Handle Coarse Thread	£6.68
Newton Trailers Limited	N1000365	Cattle Clamp Shank Coarse Thread	£4.38
Newton Trailers Limited	N1000640	Cattle Clamp Shank Fixing Bracket	£10.58