MULDOON
BULK BLOWING VEHICLE

OPERATION, SAFETY AND MAINTENANCE MANUAL

INTRODUCTION

Firstly we would like to thank you for investing in a Muldoon Bulk Blowing Trailer.

For your benefit we have compiled a maintenance and operations manual for your trailer. The manual contains basic operation guidelines for the driver and maintenance guidelines and schedules for the trailer.

These guidelines should be followed to ensure efficient operation of the vehicle and maximum lifespan of the vehicle and its components.

Our staff will be happy to assist you with any further advice required on operating and maintaining your vehicle. Our parts department stocks all the spare parts for your blowing trailer, with a next day delivery service anywhere in the UK or Ireland.

Muldoon's provide a certified inspection and service schedule for all vehicles if required. We also provide half day training courses on the safe operation, maintenance and service of all trailers with certificates issued to the drivers on completion.

Finally we would like to take this opportunity to wish you every success with your vehicle and look forward to being of service to you in the future.

Muldoon Transport Systems Ltd

WARNING

FOR YOUR OWN SAFETY, ALL INFORMATION AND WARNING MANUALS AND SIGNS SHOULD BE NOTED AND COMPLIED WITH AT ALL TIMES.

CONTENTS

SECTION I

DAILY WALKAROUND CHECKS AND FIRST USE INSPECTIONS

This section looks at the first of two essential roadworthiness inspections – the daily walkaround check and first-use inspection. It offers best practice advice on setting up a system for reporting faults and looks at defect reports, while clearly stating your legal position.

A responsible person must undertake a daily walkaround check before a vehicle is used. As a driver, you may carry out the check before you first drive the vehicle on the road each day.

Assistance may be required at some time during the inspection, for example to see that lights are working. Alternatively, a brake pedal application tool may be used as an effective way of making sure stop lamps are working and that the braking system is free of leaks. In addition, a torch, panel lock key or other equipment may be needed.

A system of reporting and recording faults

The person made responsible by the operator must carry out a minimum of one check in 24 hours. The check should consist of a walkaround look over the whole vehicle or combination. On multi-trailer operations a defect check should be made on each trailer being used. The check should cover the external condition, ensuring in particular that the lights, tyres, wheel fixings, bodywork, trailer coupling, load and ancillary equipment are serviceable.

There must be a system of reporting and recording faults that may affect the roadworthiness of the vehicle and having them put right before the vehicle is used. **Daily defect checks are vital, and the results of such checks should be recorded.**

It is important that enough time is allowed for the completion of these checks and that staff are encouraged and trained to carry them out thoroughly. Drivers should be made aware that daily defect reporting is one of the critical elements of any effective vehicle roadworthiness system. If you are the user of the vehicle, it is your responsibility to ensure that any hired, leased or borrowed vehicle is in a roadworthy condition and has all the necessary certification when used on the road. Therefore it is essential that you do a daily walkaround check (as described in the previous box) before any such vehicle is used. It is your responsibility to be able to provide maintenance records covering the period of use. Furthermore, if a vehicle has been off the road for a period longer than between planned maintenance inspections, it should be given a full safety inspection (see Section 4), prior to being brought back into use.

Drivers' defect reports

As the driver**, you are responsible** for the condition of your vehicle **when in use on the road.**

Drivers must be able to report any defects or symptoms of defects that could prevent the safe operation of the vehicles. In addition to daily checks you must monitor the roadworthiness of your vehicle when being driven and be alert to any indication that the vehicle is developing a fault (e.g. warning lights, exhaust emitting too much smoke, vibrations) or other symptoms.

When a vehicle is on site work, you should walk around the vehicle to identify any serious defects. If any defects are found, you must not use the vehicle on the road until it is repaired.

Providing a written report

Any defects found during the daily check, while the vehicle is in use or on its return to base **must be the subject of a written report** by you or some other person responsible for recording defects. The details recorded should include:

- vehicle registration or identification mark;
- date;
- details of the defects or symptoms; and
- the reporter's name.

It is common practice to use a composite form that also includes a list of the items checked each day. It is advisable that where practicable the system should incorporate 'Nil' reporting when each driver makes out a report sheet – or confirms by another means that a daily check has been carried out and no defects found. Electronic records of reported defects are acceptable and must be available for 15 months along with any record of repair.

Appropriate action

All drivers' defect reports must be given to a responsible person with sufficient authority to ensure that any appropriate action is taken. This might include taking the vehicle out of service. Any report listing defects is part of the vehicle's maintenance record and must be kept, together with details of the remedial action taken, for at least 15 months.

'Nil' defect reports, if they are produced, should be kept for as long as they are useful. Normally this is until the next one is received or until the next scheduled safety inspection is undertaken. 'Nil' defect reports are not required under the conditions of operator licensing. However, they are a useful means of checking that drivers are carrying out their duties in this respect.

If you are an owner-driver, you will probably not have anyone to report defects to, except to your transport manager (if you have one). In these cases, defects can simply be recorded and held for at least 15 months. Examples of a daily check and defect report form are shown in Annexes 3A and 3B (pages 24 and 25). Also see the pull-out diagrams at the end of this Guide showing the core safety inspection items.

Drivers' responsibilities

Drivers must be made aware of their legal responsibilities regarding vehicle condition and the procedures for reporting defects. This can be achieved by writing a letter to each driver, describing defect reporting systems as well as any other duties they are expected to perform. The driver should sign this letter to show in writing that they have received the letter and understand what is required. Drivers share the responsibility for the vehicle's roadworthiness with the operator. Drivers **may be prosecuted** for the existence of defects found on the vehicles they drive if **they are considered partly or wholly responsible** for the existence of them. **Failure to take these responsibilities seriously could result in the loss of the driver's licence to drive**.

Minor repairs by drivers

If you are an operator, you should bear in mind that drivers who are expected to repair minor defects in service, e.g. light bulb replacement, might need basic training.

Example of a driver's daily checklist

Fuel / Oil / Water levels
Fuel / Oil / Water leaks
Excessive engine blower noise or smoke
Lights – Indicators – Reflectors - Markers
Brakes and Brake lines
Battery security (condition)
Coupling security
Tyre Pressures
Tyres and Wheel fixings
Electrical connections
Spray Flaps
Security of body/wings/fittings etc
Wipers Washers
Steering
Horn
Mirrors
Glass
Security of load

SECTION II

REGULAR OPERATIONAL AND SAFETY INSPECTIONS

Regular safety inspections are essential to an effective roadworthiness maintenance system. Although a part of the overall vehicle maintenance plan, the inspections should ideally be undertaken as a separate, albeit often sequential, operation to routine servicing and repair. This provides the maintenance programme with the flexibility to intensify or otherwise change the frequency of inspections. It also allows the introduction of ad hoc inspections, should they be required, without affecting frequency of servicing and other routine work (e.g. when the operating conditions call for more regular checks or when first use inspections are required). In addition, freestanding inspection reports can be produced which provide the operator with the means of determining not only the roadworthiness of individual vehicles in service but also the **overall effectiveness** of their vehicle maintenance system, thus enabling the instigation of any changes that might be necessary.

Being cost effective

Although primarily undertaken in the interest of safe vehicle operations, roadworthiness inspections, together with prompt remedial action, are also cost effective. The early indication of wear, damage or maladjustment may prevent sudden failure of a component – resulting in unscheduled downtime – or prevent wear becoming so advanced that premature replacement becomes necessary. New vehicles entering service that have undergone a recorded pre-delivery inspection will not require a safety inspection provided that it is as comprehensive. Used vehicles, not previously operated, should be given a full safety inspection.

Inspection scope and content

A roadworthiness inspection can be a freestanding inspection of just those items affecting road safety and certain environmental issues. Or it can be part of a more comprehensive inspection that, in addition, takes into account items relating to the vehicle's work performance and economic operation.

We recommend that all blowing and ancillary equipment is checked and serviced at this stage.

Reference should be made to manufacturers' recommended tolerances to ensure that each item covered by the safety inspection is inspected properly and limits of wear and tolerance adhered to.

A roadworthiness safety inspection must include all the items covered by the statutory annual test.

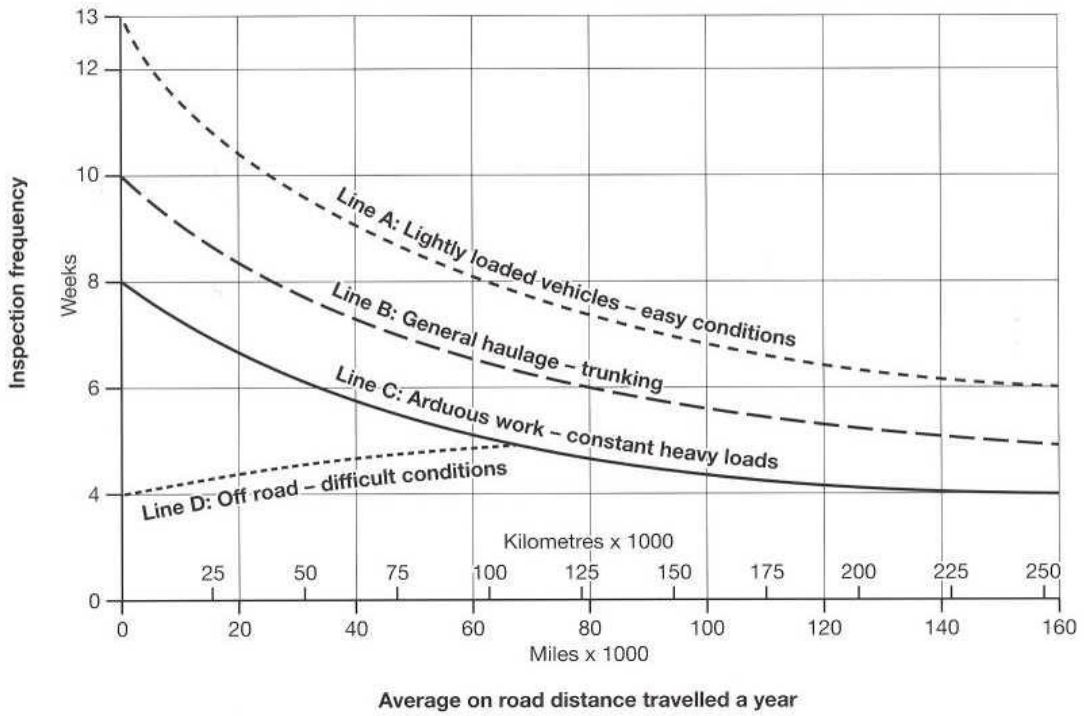
Safety inspection intervals

There are no set rules for inspection intervals but operational needs must not over-ride safety considerations.
Safety inspections should, where it is practicable, be programmed to follow a time-based pattern. The frequency at which inspections are undertaken should be determined by assessing the level of mechanical degradation likely to be incurred over a period as a result of the vehicle's usage. This will depend on such factors as:

- the type of vehicle, the nature of its load and the equipment and fittings it carries or supports;
- the type and range of operations on which it is likely to be engaged;
- the type of terrain and the nature of the environment in which it operates or is likely to operate; and
- the distance and speeds at which it travels and the journey times.

Assessing the above factors for each vehicle will, in the majority of cases, enable a time-based programme of inspections to be formulated. Some operations, however, are subject to continuous change, or vehicles can frequently be re-assigned alternative tasks or routes, making the adoption of a strictly time based inspection programme impracticable. Mileage-based inspection programmes may be more suitable for some operators but will need to be linked to time. The resulting intervals in time between mileage based inspections will need to be consistent with the guidance in the table below.

Industry standards for bulk blowing vehicles would normally see an interval of 6-8 weeks between inspections.



Adapting your systems

If you are an operator, you are free to tailor these inspections to suit the nature of your operations and vehicle characteristics. You may even deploy more than one system across a fleet, where vehicles and the nature of the work vary. Systems will be judged primarily on their effectiveness in maintaining roadworthiness. It follows therefore that in order to maintain an inspection regime that is sufficiently flexible to accommodate these changing criteria it might be more appropriate to adopt an inspection frequency determined by, for instance, the vehicle's mileage.

SAFETY INSPECTION AND REPAIR FACILITIES

This section covers the facilities needed to undertake safety inspections and the arrangements needed if you do not undertake your own inspections. The same guidance applies to the repair of any defects found during safety checks.

Own safety inspection facilities

If you decide to provide your own safety inspection facilities, **you must ensure that they are adequate for the job**. Facilities should ideally include:

• undercover accommodation for the largest vehicle in the fleet. This is required to ensure that safety checks can be conducted satisfactorily in all weathers (depending on fleet size the building may need room for more than one vehicle at a time);

• tools and equipment appropriate to the size and nature of the fleet; • an adequate under-vehicle inspection facility. Ramps, pits or hoists may not be needed if the vehicles have enough ground clearance for a proper inspection to be made on hard standing;

• adequate lighting

• access to brake test equipment (e.g. a roller brake tester, decelerometer)

• access to headlamp test equipment

• access to engine exhaust emission test equipment

• access to steam or pressure under-vehicle washing facilities; and

• a safe working environment.

Other requirements

A diesel engine smoke meter (or a gas analyser, if petrol) should be used to ensure that the level of exhaust smoke is within the legal requirements. Operators should also have access to a brake tester for the purpose of checking braking efficiency. While a decelerometer may be adequate for

some vehicles, **the use of a roller brake tester is strongly advised**.A roller brake test is an important indicator of braking efficiency, although not a substitute for regular and proper maintenance. Roadworthiness inspections can, of course, be included in an operator's overall maintenance plan.

Contracted-out arrangements

If you decide to use a contractor, **you are still responsible** for the condition of vehicles that are inspected and/or maintained for you by your agents or contractors.

Care must be taken to ensure that the facilities used by the agent are adequate and that the staff are competent. The list of facilities (on page 16) can be used to check a contractor. You should also ascertain that the agent/contractor is in possession of an inspection manual and has suitable inspection sheets.

Drawing up a contract

It is essential to have a written contract that sets out precise details of vehicles covered and frequency and type of check, along with a repair policy.

Contract limitations

Even when a maintenance contract exists between you (the operator) and an agent, **you remain legally responsible for the condition of the vehicle**, the authorization of any report work undertaken and the retention of records. You need to be satisfied at all times that the level of maintenance agreed matches the demands placed upon vehicles and that the standards achieved by the contractor **are kept at a sufficiently high level**. You should therefore **talk regularly** with the contractor to ensure that they are familiar with the operational needs of the vehicles they are required to inspect and repair. This knowledge is important if the contractor is to be called upon to advice on a particular course of action – particularly when your technical know-how is limited. Even when you get on well with a contractor, you should have a system for regularly monitoring the quality of work done. Obtaining first time pass rate annual test data from the contractor is one way of checking that their performance is satisfactory, but this should be supplemented by other checks. **Any sign of unreliability, incompetence or other shortcomings causing a reduction in the standards achieved should receive prompt attention**. Here again a good workingrelationship can help, but if problems persist you might well consider a change of contractor.

Visiting agents

As an operator, you may employ a visiting agent to undertake safety inspections, repairs and routine maintenance. However, you should ensure that the agent is qualified to work on the type of vehicles you operate and that adequate facilities and tools are provided. As is the case for contracted-out maintenance, **you are responsible for vehicle condition and upkeep of records**.

Roadside safety inspections

Only emergency repairs may be done at the roadside. Routine maintenance, including safety inspections and repairs, **may not** be carried out on the public highway.

Planning a safety inspection programme

Safety inspections must be planned in advance. Vehicles that are subject to a statutory annual test may have their year's programme planned around the anticipated test date to avoid duplication of work associated with the test, such as cleaning and major servicing.

A simple method of drawing up a programme is to use a year planner or flow chart. An example can be found in Annex 7 (page 34). Computer-based systems are equally acceptable, and the numerous electronic vehicle maintenance record management and storage systems available will often incorporate an electronic planning feature.
The information, **which should be kept in the simplest form possible and displayed prominently**, will serve as a reminder of programmed inspections or of any changes that have been necessary. All vehicles subject to programmed attention should be included. Ideally planners or charts should be used to set safety inspection dates at least six months in advance. Vehicles' annual test dates should be included, **as should servicing and other ancillary equipment testing or calibration dates, e.g. tachograph, lifting equipment, etc.**
The planner should be updated regularly by indicating the progress of the programme and recording any extra work carried out. Vehicles that have been taken off the operator's licence or other vehicles temporarily off-road should have their period of non-use identified, and a note should be made when vehicles have been disposed of. The planner or chart may be used to record other items in the vehicle maintenance programme, such as servicing, unscheduled work and refurbishing. Each activity should be clearly identified.

Monitoring

This section examines why the importance of continuous reviewing and monitoring of the quality of safety inspections is essential for all systems for maintaining a vehicle's roadworthiness. Continuous reviewing and monitoring of the quality of the systems in place is essential to ensure that they are sufficiently comprehensive to do the job.
One method of monitoring is to invite a technically competent third party periodically to re-inspect or undertake a safety inspection irrespective of whether inspections are done in-house or are contracted out. The content of completed inspection reports can also be analysed. **Checks should reveal any incomplete records and may also show patterns of faults.** If many faults are reported regularly this could indicate that:

- there are not enough safety inspections;

- daily walkaround inspections are not being completed correctly; or

- defects are not being corrected promptly or effectively.

If no defects or few defects are reported regularly, safety inspection intervals may be too short or the quality of the inspection may not be good enough.
Effective monitoring will enable you, the operator, to adjust the intervals between safety inspections to suit the operation of vehicles. In this respect there is considerable flexibility provided within the framework of this guide.

Annual test results

Attention should also be paid to annual test results and the issue of prohibitions and inspection notices. Regular monitoring of all available information will enable you to check the effectiveness of your system in keeping your vehicles roadworthy. The frequency or scope of safety inspections may need to be adjusted to ensure that the system maintains the roadworthiness of all vehicles operated.

Monitoring must continue whether or not changes are made to the inspection programme..

British standards (If applicable)

British Standard BS EN ISO 9000 is a standard for quality management systems. If you are an operator who has been awarded this standard, you must observe systems of working set out in a quality manual. Such a manual would contain details of the organisation of the business, responsibilities of staff and methods of operation. Those businesses aiming for BS EN ISO 9000 accreditation would need to consider the training, documentation recording, planning, standards and monitoring aspects of their organisation.

SECTION III

MAINTENANCE GUIDE – BULK BLOWING VEHICLES

Equipment checklist:

- Tipping gear inc hydraulic ram, brackets, hinge bar, bushes, fittings and hoses.
- Engine/ Blower assembly and system inc engine, blower, drive assembly, hyd pump, engine electrics, pipework and valves.
- Rotary valve, bottom pan, auger, control valves, motors and all hydraulics and fittings.
- Complete hydraulic system, pipework and fittings.
- Hyd tank, diesel tank, battery box, tool box, hosetrays and all accessories and fittings.
- Lights and wiring.
- Wheels and Tyres.
- Axle and Suspension assembly and components.
- EBS/ABS, braking valves, piping and wiring.
- Chassis mainframe assembly.
- Alloy body and equipment inc dividing doors, locking cams, catwalks / ladders, cover, windows, taildoor, back panel and fittings.
- Steering system, components and fittings.
- Feed hoses and couplings.
- Wipers, Washers, Steering, Horn, Mirrors, Glass (RIGID BLOWER).

Maintenance Schedule – **General Guide**.

Axles and Suspension etc -	For more details see manufacturers guide.
Engine -	For more details see manufacturers guide.
Blower -	For more details see manufacturers guide.
Steer System **(if fitted)** -	For more details see manual.

Every Week:

Grease:

1. Tipping ram brackets and body brackets.
2. Steering system (see steer system manual).
3. Blower (see manufacturers guide).
4. Tipping hinge bar and brackets.
5. Auger bearings.
6. Rotary seal.
7. Reduction gearbox extension shaft.
8. Dividing door locking cams / Taildoor locking bar.
9. Outer S cam bushes (Drum Brakes)
10. Inner S cam bushes (Drum Brakes)
11. Brake slack adjusters (Drum Brakes)
12. Steering System (See Steer Manual)

Check:

1. Hydraulic oil level.
2. Oil level in blower.
3. Blower air intake filters.
4. Engine - see manufacturers guide.

Every 2 / 3 Months:

Change:

1. Blower air intake filters.
2. Hydraulic oil filter element.
3. Engine oil and filters

Certified inspection of trailer should be carried out at this time and any maintenance or repairs carried out as required.

NOTE: Faults, breakages or damage occurring in the interim period should be notified to Management and arrangements made for repairs to be carried out at the earliest opportunity. This will reduce the risk of any potential accident or injury. It will also reduce extra repairs and expense in the long term and prolong the life of the vehicle and associated equipment.

SECTION IV

POSITIVE REAR STEER SYSTEM

(IF FITTED ON TRAILER)

DRIVERS MANUAL

INFORMATION ON OPERATION, ADJUSTMENTS, AND MAINTENANCE OF MULDOON POSITIVE REAR STEER SYSTEM.

1) INTRODUCTION

The steer system works through a low pressure, four line, self-contained hydraulic circuit, with a back up reserve accumulator. As the tractor unit turns left or right the front steer rams are activated which in turn move the rear rams, which steer the rear axle.

2) BASIC INFORMATION

A: **THE WEDGE**
B: **THE HYDRAULIC SYSTEM INDICATORS**
C: **STEERING ALIGNMENT**
D: **ADVICE AND WARNING**
E: **STEERING MAINTENANCE**

A) THE WEDGE

Always make sure the wedge is fully adjusted up into the slot in the 5th wheel plate.

To adjust Using a 24 mm (15/16") spanner, slack the 2 bolts under the wedge plus the lock nut on the adjusting screw
(See fig 1).

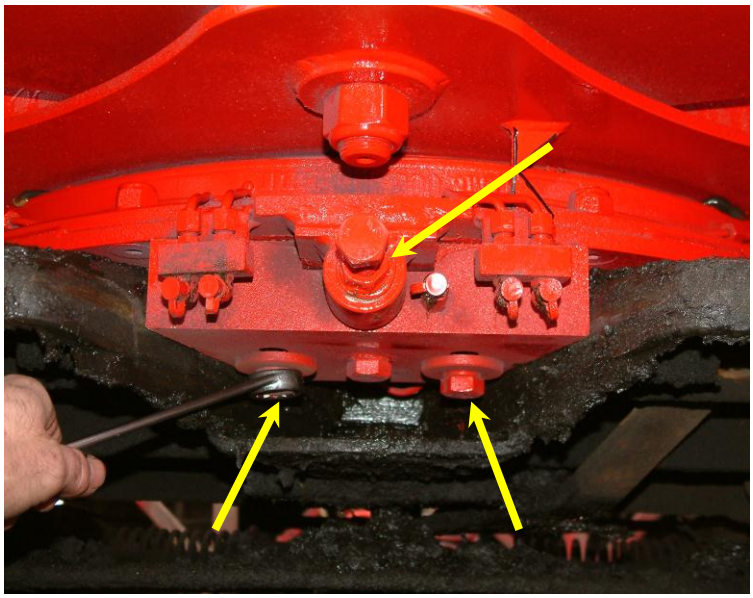


FIG 1

Screw in the adjusting screw until the wedge is **just fully engaged** in the slot with no clearance at either side
(See fig 2).

Fig 2

Do not **over tighten**, as it will be very difficult, if not impossible; to couple or uncouple the trailer.

When adjustment is correctly completed, tighten lock nut and the 2 bolts under wedge. *(See fig 1)*

B) THE HYDRAULIC SYSTEM INDICATORS

The hydraulic oil pressure and quantity should be checked regularly.
The hydraulic system has three separate indicators as to pressure and quantity of oil in the system

B (1): THE PRESSURE GAUGE,
B (2): THE ACCUMULATOR
B (3): THE WARNING LIGHT

B (1): <u>THE PRESSURE GAUGE</u>

The pressure gauge mounted on top of the accumulator indicates system pressure *(see fig 3)*

FIG 3

The normal pressure in the system is approximately 6 bar (85psi)

B (2): <u>THE ACCUMULATOR</u>

The accumulator holds a reserve quantity of hydraulic oil, of approx 1.5 Litres. There is a quantity indicator on the front of the accumulator. When the indicator is fully **<u>IN</u>** the accumulator is FULL *(fig 4a)*
When the indicator is fully **<u>OUT</u>** (approx 3" (75mm) the accumulator is empty *(see fig 4b,* and the pressure is at zero.
(See fig 4c).

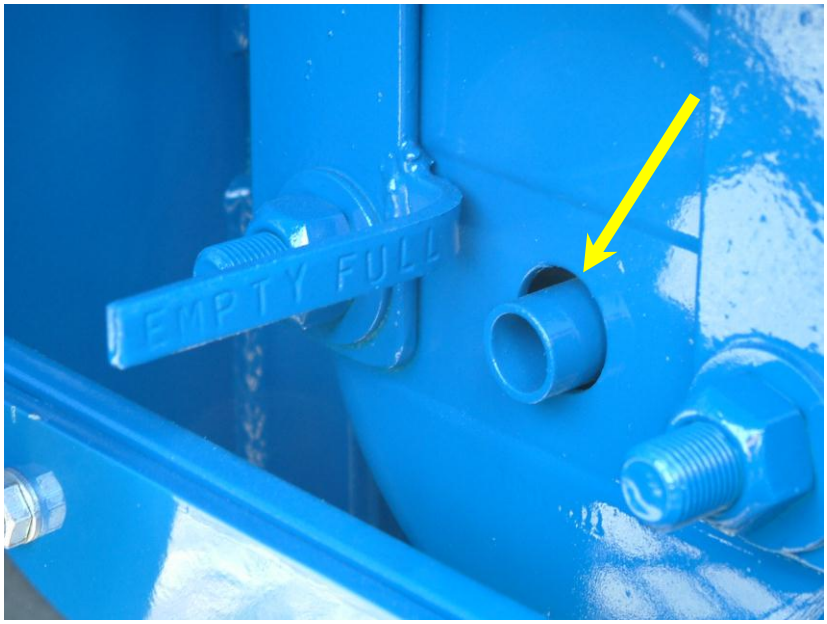


FIG 4a

Fig 4b

Fig 4c

B (3): **THE WARNING LIGHT**

If for any reason the system develops an oil leak, then the pressure will drop and the accumulator indicator will start to protrude.

If left undetected, the warning light will eventually come on; when the system pressure has dropped to approximately 1.5 bar (20 PSI).

At this stage the steer system is still in a safe and useable condition, however it is highly advisable that any oil leak be detected and repaired and the system primed to 6 bar (85 psi) as soon as possible.
Refer to the hydraulic system (in the workshop manual).

C) STEERING ALIGNMENT

Models produced prior to September 2000 require the steering to be aligned manually; Models produced after this date have an automatic alignment system.

MANUAL ALIGNMENT

WARNING MANUAL ALIGNMENT SHOULD ONLY BE ATTEMPTED BY COMPETENT PERSONNEL AFTER HAVING FIRST CONSULTED THE WORKSHOP MANUAL.
SERIOUS DAMAGE CAN OCCUR IF **ALL** INSTRUCTIONS ARE NOT FULLY ADHERED TO.

AUTOMATIC ALIGNMENT

Automatic alignment takes place when the tractor unit is turned to 90 degrees to the trailer in both left and right directions. It will be necessary to carry out the above operation **every time** the tractor unit is uncoupled and re-coupled, or if steering axle misalignment occurs.

D) ADVICE TO DRIVERS

ALWAYS un-couple and re-couple with trailer and tractor unit in a straight line. If this is not possible, then driver needs to take account of the angle the unit was uncoupled, and later attempt to re couple at the same angle. This is **most important** on trailers with non self-alignment.

CAUTION *REGARDING TIPPING TRAILERS*

STEERING AXLE TRAILERS MUST NOT BE TIPPED UNLESS UNIT AND TRAILER ARE IN A STRAIGHT LINE, AS TRAILER STABILITY COULD BE AFFECTED. ALSO, BLOWING EQUIPTMENT ETC COULD FOUL REAR AXLE.

WARNING
NEVER ATTEMPT TO TIP A LOADED BODY WHILE ON UNEVEN TERRAIN WITH AIR BAGS DUMPED. THIS CAN CAUSE MAJOR CHASSIS DAMAGE.

DO NOT MOVE TRAILER UNLESS BODY IS COMPLETELY LOWERED.

E) STEERING MAINTENANCE

The front and rear turntables should be greased weekly. Use good quality waterproof grease (see following list of recommended greases).
The driver should also look out for any oil leaks or damage in the hydraulic circuit, leaking steer rams, a drop in oil pressure or quantity as explained in 'B' above and excess vertical movement in the turntables that would indicate that a replacement may be necessary. Other eventual common replacement parts may be steer ram bearings and pins, steer module bushes, the cam roller bearing, the rubbing plate. If the trailer persists in running out of line, it is possibly due to one of the aforementioned faults. If he finds any other faults or damage to the front module, rear bogie or hydraulic system he should seek assistance immediately in order to avoid further damage or inefficient operation.

SUITABLE EQUIVILENT GREASES

SHELL - RETINAX HD2 OR HDX2
DUCKHAMS - LB 10
BP ENER GREASE - LSEP-2
FUCHS- RENOLIT EP-2
CASTROL SPHEEROL LEP-2 (OR HIGHER SPEC) PYROPLEX BLUE
OMEGA - 77
MOBILGREASE - XHP 222
ESSO - UNIREX EP-2
OR ANY EQUIVILENT HIGH QUALITY, LITHIUM BASED GREASE

Grease nipples are situated on the front offside corner of the rear bogey *(see fig 5)* and at the back of the wedge on the front turntable *(see fig 6)*

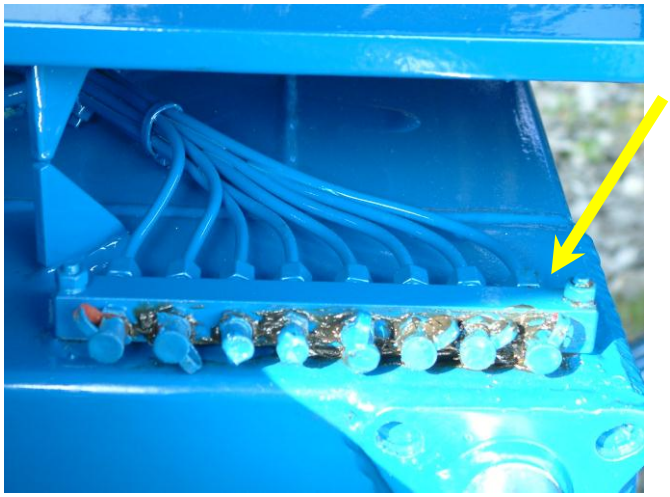


Fig 5

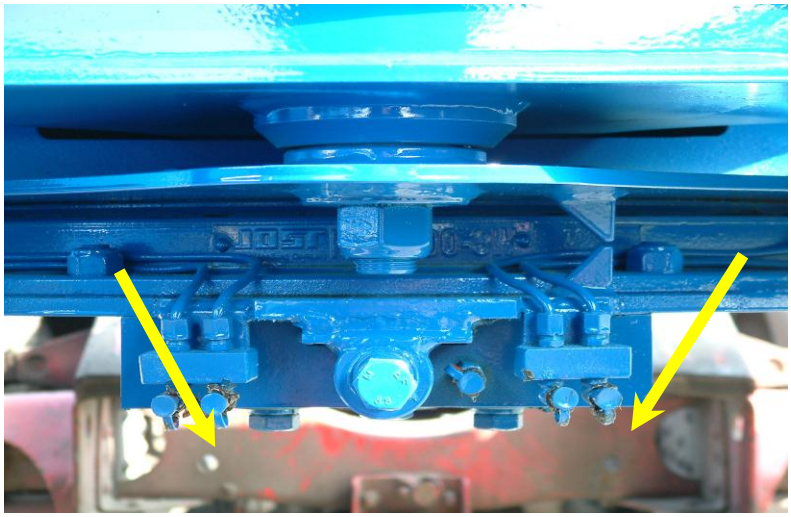


Fig 6

On earlier trailers the cam follower bearing grease nipple is situated just in front of the wedge under the rubbing plate *(See fig 7).*

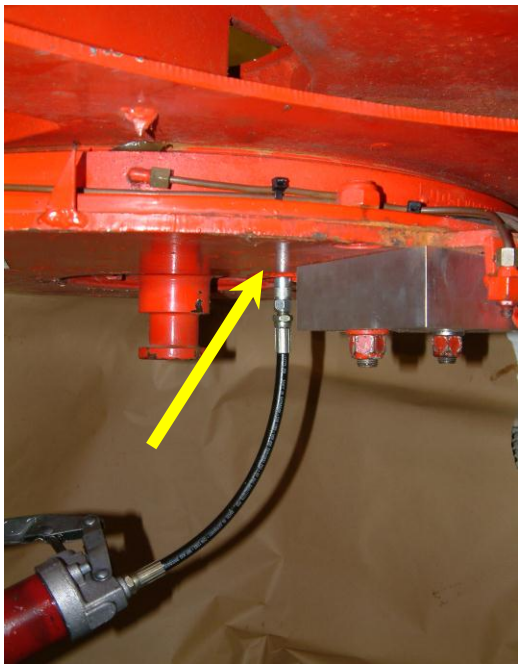


FIG 7

(The tractor unit needs to be uncoupled for this operation).
On later trailers the nipple is situated either under the wedge adjusting screw boss, or on the wedge itself.
(See fig 8)

FIG 8

Apply only two or three pumps of grease to cam follower, and also later type bellcrank centre bolt
(See (fig 9)

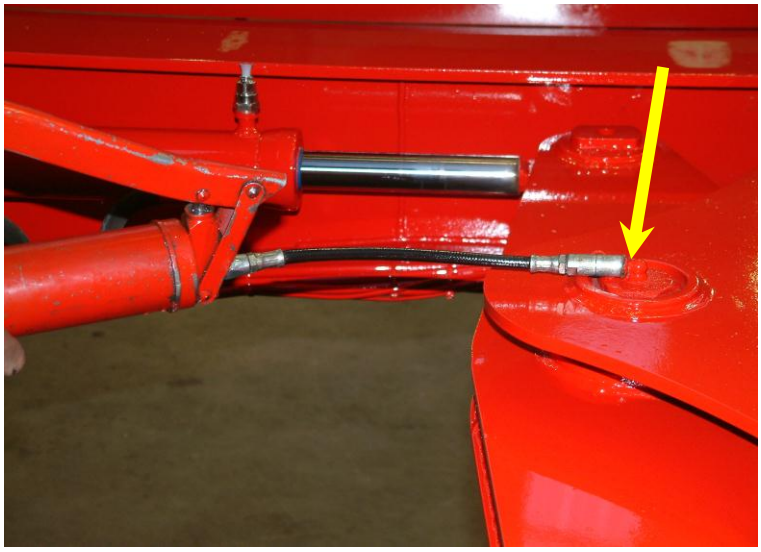


Fig 9

FOR PARTS OR REPAIRS PLEASE REFER TO SEPARATE MANUAL.

SECTION V

OPERATING / BLOWING PROCEDURE

LOADING PROCEDURE

Stand clear of trailer when loading.

Keep front platform cleaned to reduce risk of slipping and ensure safety rails are in good condition at all times.

When closing cover ensure it is ratcheted tight and the holding pin is properly in place.

Getting on top of body is not recommended. If getting on top of the body is necessary, do so using the ladder and platform at the front and the catwalk fitted along the length of the body.

Always ensure that the safety rail is up and secured before climbing on catwalk. For extra safety, a Safety Harness can be worn and clipped to the safety rail.

If climbing into the body, use steps fitted on the partition doors.

Do not enter the body whilst loading.

UNLOADING PROCEDURE

Enter farmers yard / delivery destination with care. Always be vigilant for people, farm animals, obstructions or overhead cables, especially in rainy, dull or dark conditions.

If required, extra traction can be gained by lifting the lift axle (See below).

Always park on level ground.

Keep unit and trailer in a straight line and never uncouple trailer from tractor unit when trailer is loaded.

Turn on work lamps if dull or dark.

Check for overhead cables.

Connect feed delivery hoses from vehicle to silo ensuring butterfly valves on the bottom pan (if fitted) are engaged in the proper direction.

Ensure butterfly valve on blowline (if fitted) is closed. Switch on engine and using throttle cable, gradually bring revs to 1,500 – 2,000 PSI depending on product, distance from silo etc.

Engage rotary seal at rear - See illustration).

Bring blowing pressure to between 7 – 10 PSI again depending on product and blowing distance by increasing the speed of the rotary seal by turning the speed control knob located on the valve bank at rear Anti Clockwise (See illustration).

If required, engage auger using lever located on valve bank at rear (See illustration).

Do not tip trailer until necessary and no higher than necessary to reduce risk of overturning.

Always stand clear of tail door when tipping.

Do not enter the body whilst unloading or when blowing equipment is in operation.

When rear bin is almost empty, engage auger using lever on valve bank to clean out the remaining product. (See illustration).

Let body down fully again.

Before leaving for next delivery, open door(s) of next compartment(s) to be delivered to allow product to flow to back of body during journey. This ensures better load distribution, traction and braking.

When all compartments are emptied, ensure all partition doors are securely locked again before recommencing journey.

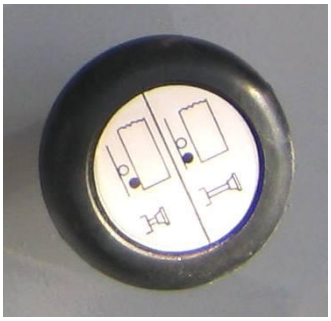
TRAILER OPERATING GUIDE ILLUSTRATIONS

1. Axle / Brake controls:

A. (RED) Park button (pull to engage brakes).

B. (BLACK) Shunt button (push to disengage brakes).

2. Manual lift axle button (If applicable) (Tri axle trailer).



3. Brakes / Electrics: ABS / EBS warning light in cab.

4. TIM Board (if fitted): Trailer Information Module (Faults and Diagnostics)
(See separate booklet for more information)

5. Engine Control Box:
(From Top)

A) Rev counter & Hour meter.
B) Heater light.
C) Steering hydraulic system fault.
D) Oil pressure.
E) Engine temperature.
F) Charging light.
G) Engine over speed.
H) Ignition / Stop.

A)
B)
C)
D)
E)
F)
G)
(H

6. Dual direction discharge bottom pan (at rear): Turn butterfly valves to change air flow direction as illustrated i.e. turn handle pointing out to the side you wish to blow while closing off the other one.

7. Diesel Tank / Toolbox: Drivers side.

8. Hyd Oil Tank / Battery box: Passengers side.

9. Auger / Rotary Seal controls: (From left)

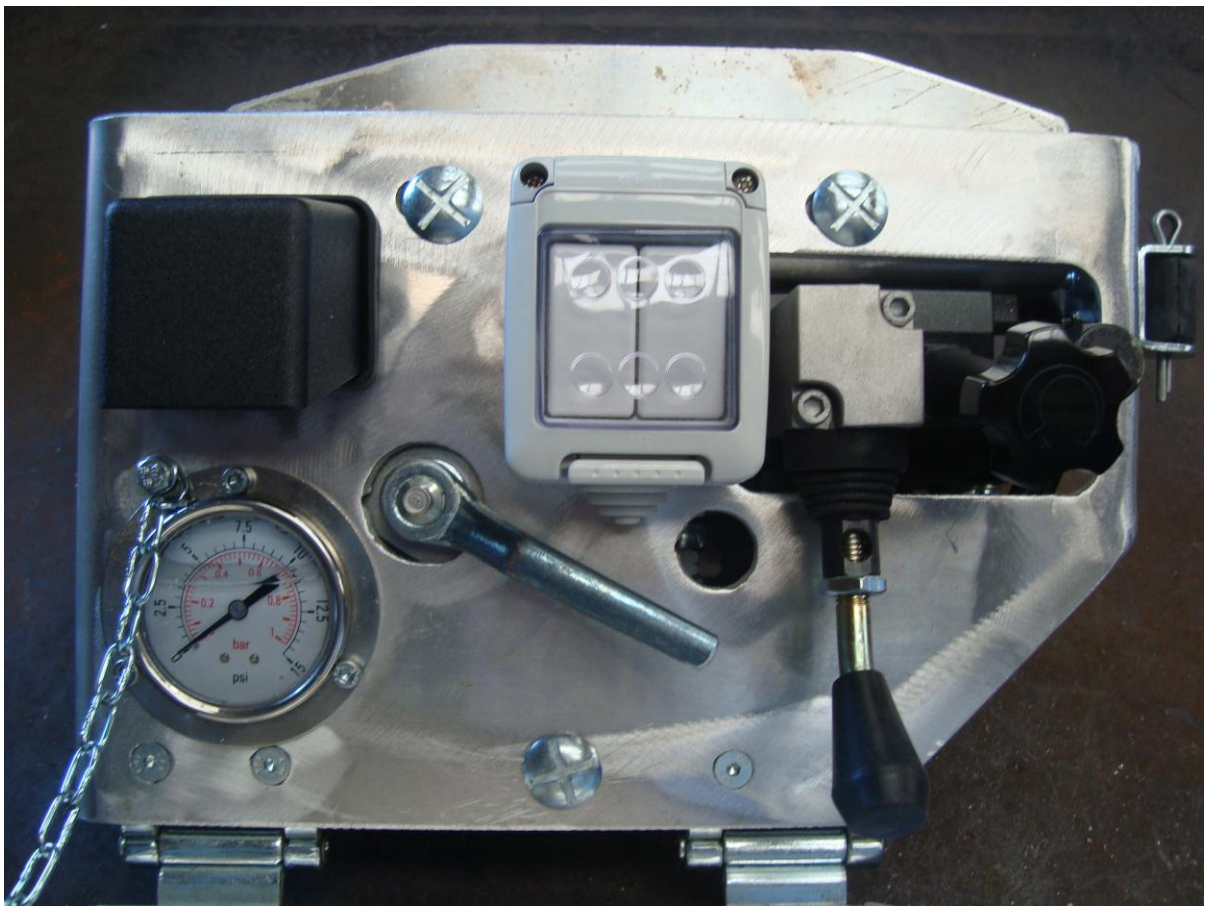
A) Blowing pressure gauge
(normal working pressure - 7 psi).

B) Auger speed control handle.

C) Rear work lamps / Rear compartment light switches.

D) Rotary seal direction – rotary seal should turn clockwise towards front when blowing.

E) Rotary seal speed control: Turn flow control knob anti-clockwise to increase speed, clockwise to reduce speed. N.B. Turn back to off position when finished blowing.



NOTES (TRAILERS):

ROLL STABILITY PROGRAMME

RSP (ROLL STABILITY PROGRAMME) IS A SAFETY FUNCTION THAT SLOWS THE TRAILER IF IT SENSES THE TRAILER IS TRAVELLING TOO FAST AROUND A BEND OR JUNCTION. IT IS AN IMPORTANT SAFETY FEATURE BUT CAN BE CANCELLED ON REQUEST.

LIFT AXLE

THE FRONT LIFT AXLE OPERATES VIA THE LOAD SENSING VALVE AND AUTOMATICALLY LIFTS AND LOWERS DEPENDING ON THE LOAD AND/OR THE POSITION OF THE LOAD. SO IF THE TRAILER IS HALF EMPTY BUT THE REMAINDER OF THE LOAD IS AT THE FRONT, THEN THE AXLE MIGHT LIFT SO IT IS IMPORTANT TO KEEP THE LOAD EVENLY DISTRIBUTED.

WHEN TRACTION HELP IS REQUIRED, RELEASE HANDBRAKE AND PUMP BRAKE PEDAL 6 TIMES WITHIN 12 SECONDS. THE LIFT AXLE WILL REMAIN LIFTED UNTIL THE VEHICLE EITHER EXCEEDS 30KPH OR THE IGNITION IN THE TRUCK IS SWITCHED OFF.

WHEN AXLE IS RAISED AND YOU WANT TO LOWER MANUALLY, RELEASE HANDBRAKE AND PUMP BRAKE PEDAL 3 TIMES WITHIN 6 SECONDS. THE AXLE WILL STAY LOWERED UNTIL THE VEHICLE IGNITION IS SWITCHED OFF AND ON AGAIN.

WHEN ADDITIONAL TRACTION ASSIST BUTTON IS FITTED TO TRAILER OR TRACTOR UNIT, PRESS ONCE FOR TRACTION HELP. THE AXLE WILL REMAIN LIFTED UNTIL VEHICLE EITHER EXCEEDS 30 KPH OR THE IGNITION IN THE TRUCK IS SWITCHED OFF. NOTE: THIS SWITCH MUST BE A NON LATCHING SWITCH.

IF THERE IS A WARNING OF AN EBS FAULT SHOWING ON THE DASHBOARD. THEN THE AXLE WILL NOT FUNCTION PROPERLY UNTIL THE FAULT IS RECTIFIED.

TRAILER INFORMATION MODULE (if fitted).

THE TIM (TRAILER INFORMATION MODULE) IS A DIAGNOSTIC AND INFORMATION UNIT THAT DISPLAYS ANY CURRENT BRAKING AND SUSPENSION FAULTS.

ABOVE GUIDE MAY VARY DEPENDING ON BRAKING SYSTEM USED AND/OR SPECIFICATIONS REQUESTED. IF IN DOUBT PLEASE CONTACT MULDOON TRANSPORT SYSTEMS LTD.

SECTION VI

IMPORTANT SAFETY NOTES

Always be vigilant for people, farm animals, obstructions or overhead cables, especially in rainy, dull or dark conditions.

Keep unit and trailer in a straight line and never uncouple trailer from tractor unit when trailer is loaded.

Turn on work lamps if dull or dark.

Check for overhead cables.

Do not tip trailer until necessary and no higher than necessary to reduce risk of overturning.

Always stand clear of body and tail door when body tipped.

Suitable body props must be used if inspecting or working under tipped body.

Do not enter body whilst loading or unloading or whilst blowing equipment is in operation.

Keep hands away from any moving or mechanical parts, fittings, hoses etc whilst engine or blowing equipment is in operation.

Suitable safety clothing and footwear should be worn where and when required.

NOTE:

If a fault or breakdown occurs, contact qualified or appointed technician as soon as possible. Do not attempt to continue using vehicle or blowing equipment or carry out repairs before seeking the advice of qualified or appointed personnel first.

ATTENTION

ALL INFORMATION AND WARNING MANUALS AND SIGNS SHOULD BE NOTED AND COMPLIED WITH AT ALL TIMES.
FAILURE TO DO SO COULD HAVE OPERATIONAL AND SAFETY IMPLICATIONS AND COULD RESULT IN ACCIDENT OR INJURY.

If you have any queries, contact Muldoon Transport Systems on
(44) 28 38 852002 / 851873

Warranty Guidelines

Warranty cannot be considered if the proper procedures and maintenance guidelines are not followed.
Within any warranty period, the vehicle / trailer must have a full inspection every 8-12 weeks and a full service every 12-16 weeks depending on vehicle usage. The inspection / service must be carried out by Muldoon Transport Systems Ltd or Approved Muldoon Service Agents using Genuine Parts supplied or Approved By Muldoon Transport Systems Ltd. Where a warranty claim is made, Muldoons' will require a fully completed inspection / service record showing full compliance with the inspection / service conditions for the vehicle / trailer.
Warranty claim work must be carried out by Muldoon Transport Systems or an Approved Service Agent. The work may be charged for pending the warranty outcome. Any faulty components will have to be returned to the supplier / manufacturer pending the warranty claim outcome.
Ancillary parts supplied to Muldoon Transport Systems are subject to manufacturers warranty conditions and Muldoon Transport Systems will not be liable for loss or damage resulting in such defects. The part will be returned to the supplier /manufacturer pending warranty and the customer will be credited for the part if warranty is approved. Where a warranty isn't approved by the supplier / manufacturer, then Muldoons' can not give warranty.
Warranty will not cover defects attributable to wear and tear, dirt, misuse, neglect or accident.