

INSTRUCTION MANUAL AND MAINTENANCE



LOADMAC 225 ULTRA

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 **LOADMAC**
Truck Mounted Forklifts

ABT Products Ltd, T/A Loadmac,
Ashburton Industrial Estate,
Ross on Wye,
Herefordshire,
HR9 7BW
Reg. Co. No. 1021755



Declaration of Conformity

The equipment which accompanies this declaration is in conformity with
EU Directive:

2006/42/EC

Manufacturer:

ABT Products Ltd,
Ashburton Ind Est,
Ross on Wye,
Herefordshire,
HR9 7BW,
UK

A copy of the Technical file for this equipment is available from:

ABT Products Ltd,
Ashburton Ind Est,
Ross on Wye,
Herefordshire,
HR9 7BW,
UK

Description of Equipment:

Truck Mounted Forklift - an IC powered hydraulic forklift that loads and unloads itself off and on to a suitable commercial vehicle, without the use of special tools.

Make/Model: Loadmac 225

The following harmonised standards have been used:-

The Supply of Machinery (Safety) Regulations 2008 (S.I.2008/1597)
ISO3471 (2006/42/EC 3.4.3 – Roll-over)
ISO3449 (2006/42/EC 3.4.4 – Falling objects)

Authorised signatory of Loadmac Ltd

A handwritten signature in black ink, appearing to read 'Mark Hignett', written over a horizontal line.

Mark Hignett
Managing Director
Ross on Wye, UK
10.02.2020

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1.0 PREFACE

The Loadmac 225 is a three-wheeled, non-counterbalanced forklift capable of being carried on a truck or trailer. Unlike a conventional forklift it does not have a counterweight fitted to the rear. The Loadmac 225 TRUCK-MOUNTED FORKLIFT is equipped with standard forks, primary and secondary reach mechanisms, and stabilizers. Its short turning radius makes it extremely manoeuvrable in restricted spaces. However, all turning manoeuvres should be done slowly and carefully.

NOTE: The Loadmac is also badged the 255 in some territories but manual refers to both models.

SAFETY INSTRUCTIONS

DO NOT OPERATE THIS MACHINE UNLESS:



- You have read and understand the safety and operating instructions contained in the operator manual.
- You have been trained in the safe operation of the Loadmac 225.
- You have checked your machine and all functions are operating correctly.

WHEN TRAVELLING WITHOUT A LOAD:



- Keep the forks fully retracted and as low as possible.
- Centre the fork carriage using the side-shift function.

WHEN TRAVELLING WITH A LOAD:



- Keep the forks fully retracted and the load as low as possible.
- Make all turning manoeuvres slowly and carefully. Do not stop suddenly.
- Travel with the load side-shifted to the centre position.

WHEN TRAVELLING ON INCLINES:



- Travel directly up or down, do not travel across an incline.
- Keep the forks facing uphill at all times.
- Engage the diff-lock if operating on slippery slopes.
- Keep the load as low as possible. Do not elevate the load.

WHEN LIFTING A LOAD:



- Check that the stabilizers are fully lowered on a firm and stable surface.
- Do not raise the stabilizers unless the forks are fully retracted.

WHEN PLACING A LOAD:



- Do not extend the forks forward unless the stabilizers are fully lowered on a firm and stable surface.

WHEN MOUNTING FOR TRANSPORT:



- Check that the forks are fully engaged in the mounting kit before raising the Loadmac 225.

2.0 GENERAL SAFETY

2.1 OVERVIEW

Three reasons why SAFETY is important to you:

- Safe operation can prevent accidents and injury.
- Most accidents cost money.
- Most accidents can be avoided by your care and attention. Stay alert!

The safety portion of this manual is intended to point out situations which may be encountered during the NORMAL operation and maintenance of your machine and to suggest possible ways of dealing with these conditions and avoiding injury.

When operating a Loadmac 225 you should:

- Only operate and drive your forklift sat on the seat with body inside cab structure.
- Know the lifting capacity of your forklift and operate within this limit
- Know the purpose of all controls and gauges.
- Lower the stabilizers fully before moving the forks fully forward to place a load.
- Lower the stabilizers fully before lifting a load if the forks are not fully retracted.
- Lower the forks to the ground when parking the machine.

READ THIS MANUAL BEFORE STARTING THE ENGINE OR TRYING TO OPERATE THE Loadmac 225. IF THERE IS SOMETHING IN THE MANUAL THAT YOU DO NOT UNDERSTAND, ASK YOUR SUPERVISOR TO EXPLAIN IT TO YOU.

**Never take chances. If you are unsure, it is better not to try.
It is better to be safe than sorry.**

2.2 ATTACHMENTS

This manual covers safe practices for a Loadmac 225 that is equipped with standard forks. All other attachments will affect the lifting capacity and operation of the machine. It should be stressed that attachments or equipment not furnished or approved by Loadmac Ltd. are used solely at the owner's or user's risk.

2.3 TRAINING REQUIREMENTS

For safe operation of a Loadmac 225, you must be a qualified operator. To be qualified you must:-

- Understand the written instructions in this manual.
- Have received a specific training program for the Loadmac 225 which complies with the relevant regulation requirements for your territory. This must include supervised hands-on operation of the machine.
- Know the safety rules and regulations required on the job site.

2.4 SAFETY SIGNS AND LABELS

There are several safety signs and labels on your machine; their location and descriptions of the hazards involved are explained in this section. It is important to take the time to familiarise yourself with these safety signs.

Safety Alert Symbol



The hazards are identified by the **Safety Alert Symbol** and followed by a signal word such as “**Danger**”, “**Warning**” or “**Caution**”. If these hazard warnings are not heeded, bodily injury or death could occur to you or to other persons. The Safety Alert Symbol identifies safety messages both on the forklift and in this operator manual.

WHEN YOU SEE THIS SYMBOL  FOLLOW THE INSTRUCTIONS IN THE SAFETY MESSAGE. PAY ATTENTION; YOUR SAFETY IS INVOLVED.

Safety signal words

Whenever you see the safety signal words **DANGER**, **WARNING** or **CAUTION**, or see the symbol  observe any pictorials and carefully read and understand the message panels accompanying these safety signal words.

DANGER:	Indicates an immediate hazardous situation which, if not avoided, WILL result in death or serious injury
WARNING:	Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.
CAUTION:	Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.

Always follow safe operating and maintenance practices to ensure your own safety and the safety of those around you. Never misuse the machine or operate it in a fashion that would represent a danger to yourself or to others. The warnings in this operator manual provide guidance for the safe and productive use of this forklift but common sense and good judgement on the part of the operator are also required.

An operator should not use drugs or alcohol or any medication which can affect alertness or co-ordination. Those taking prescription or over-the-counter medicines should seek professional advice from a qualified doctor, before attempting to operate the machine, to check that there are no side-effects which may affect their ability and put their safety at risk.

2.5 SITE SAFETY



- Inspect the surface over which you will be operating the Loadmac 225. Always look out for holes, drop-offs, obstacles, rough spots, soft soil or slippery surfaces that could cause you to lose control or reduce the stability of the Loadmac 225.

- Plan your work route so that you know where you will make your pickups, lifts, turns and deliveries.
- Check overhead clearances especially under electric power and telephone cables.
- Make certain you know how to use the horn and hand signals.
- Wear protective clothing where and as required.
- Do not start the forklift until everyone is clear of the machine.
- Never move the forklift with anybody on or near it.
- Check the clearance of overhead objects, doorways and canopies.

! DANGER:

Never approach power lines with any part of the forklift as electrocution could result.

! WARNING:

Remember that rain, snow, ice, mud, loose gravel and uneven or soft ground change the operating capabilities and could cause you to lose control or cause the forklift to tip over.

! WARNING:

Be aware of potential high winds and their effects, particularly when lifting at height and moving light, bulky loads.

! WARNING:

Be aware operating in confined spaces due to potential build up of exhaust fumes

2.6 REVERSE MOVEMENT SAFETY

Always proceed slowly and carefully when reversing. Use of a spotter/ banksman may be required on some job sites if your vision or movement is restricted.

Your Loadmac 225 has an audible reverse alarm and automatic reversing lights fitted to warn people in the vicinity of rearward movement of the Loadmac 225.

(NOTE: some countries offer an option to Mute the reverse buzzer for working in low noise areas. If this option is fitted the automatic reversing lights will continue to function to warn of the vehicles movement and a warning light will illuminate on the dashboard switch showing this function is activated.)

A flashing beacon is also fitted. Use of the flashing beacon alerts people to the movement of the machine.

2.7 NOISE AND VIBRATION



The Loadmac 225 is measured at 85dB of noise. Extended periods exposed to this noise level can cause damage to operators hearing. Wearing of ear protection even for short periods is recommended.

Loadmac 225 with Kubota 3 Cylinder engine fitted

Noise Test to Noise Directive

Measured Sound Power Level -- 103
Guaranteed Sound Power Level – 106
Operator Noise Level – 90

Noise Test to BS EN 12053

Sound Power Level – 100
Operator Noise Level – 87

Vibration Test to EN 13059

Whole Body Vibration 0.9

Loadmac 225 with Kubota 4 Cylinder Turbo engine fitted

Noise Test to Noise Directive

Measured Sound Power Level - 101
Guaranteed Sound Power Level - 104
Operator Noise Level – 90

Noise Test to BS EN 12053

Sound Power Level – 97
Operator Noise Level – 86

Vibration Test to EN 13059

Whole Body Vibration 1.3

3.0 INTRODUCTION TO THE LOADMAC 225

3.1 DAILY MAINTENANCE INSPECTION

Before you begin your work-day, take time to check your machine and make certain that all its systems are in good operational condition.

- Check for broken, missing or damaged parts.
- Check the forks, mast and lift chains.

WARNING:

The stabilizers must be fully lowered before extending the forks forward. Loads must be transported with the forks fully retracted and as low as possible

- Check all hydraulic hoses and connections.
- Check the wheels for any damage, missing or loose lug nuts.
- Check the tyres for cuts, bulges, thread depth and proper inflation pressure.
- Check the engine oil level. Add oil if required (see section Service Specifications, Engine Oil).
- If operating in a dusty or sandy environment these additional daily checks are recommended;
 - a. Check and clean engine air filter element and replace if necessary.
 - b. Clean all dust etc. from between radiator fins. Where necessary, remove radiator for proper cleaning.
- Lift the bonnet and check the engine cooling system. Fill to the necessary level. The proper coolant level is just below the radiator cap.

WARNING:

DO NOT REMOVE the radiator cap when the engine is hot. Escaping steam could cause severe burning (see section Service Specifications, Engine Coolant).

- Check the fuel level and top up if necessary. Ground the nozzle against the filler neck to prevent sparks.
- Check hydraulic oil level sight glass. Oil level must be between the red line (minimum) and the black line (maximum). Top up if necessary (see section Service Specifications, Hydraulic Fluid)

Note: A copy of this check-list is included at the back of the manual.

CAUTION:

Always turn off the engine and allow the engine and hydraulic system to cool before checking:

- Engine coolant level
- Engine oil level
- Hydraulic oil level

CAUTION:

The hydraulic tank is pressurized and hydraulic oil may be hot. To avoid injury when removing the cap, stop the engine and remove the cap very slowly to avoid spillage.

3.2 OPERATOR'S COMPARTMENT

Always mount the vehicle properly

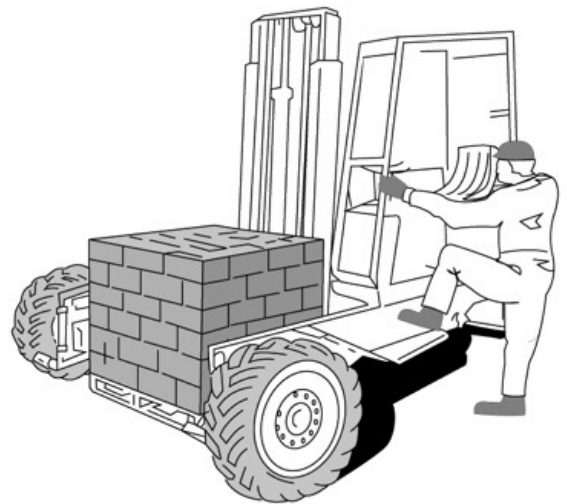
Use “three point contact” and face the machine when you mount or dismount the Loadmac 225 (“three point contact” means that 3 out of 4 arms and legs are in contact with the machine at all times during mount and dismount).

Clean your shoes and wipe your hands before climbing on. Use the handrails on the ROPS Frame and step when mounting or dismounting

Never mount or dismount the minute the machine is moving.

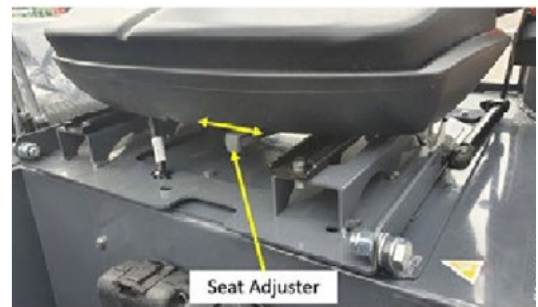
Never use the control levers or the steering wheel as a handhold when climbing on or off the forklift

Never step on the foot controls when mounting or dismounting.



SEAT

- Once seated adjust seat position fore-aft as required using adjustment lever. (NOTE: some countries use an alternative seat – see supplied seat manual for seat adjustment)
- For your safety the Loadmac 225 is fitted with both a seatbelt and seat occupancy switch. To activate the parkbrake release and drive pedal function you must be sat in the seat with your seatbelt fastened. Failure to do this will automatically deactivate the drive pedal and park brake release.



Depending on your territory's regulations and requirements two alternative options of seat/seatbelt interlocking are available.

- **Option 1. Standard interlocking.** With this option you must be sat in the seat and wearing your seatbelt to enable the drive pedal and parkbrake functions. Failure to wear seatbelt or be sat in the seat will deactivate these functions. With this option the key position does not influence the function of the interlocking.
- **Option 2. Sequenced interlocking.** With this option fitted you must fasten your seatbelt in the following order to enable the drive pedal and parkbrake function.
 - Mount truck and sit on seat (with seatbelt undone)
 - Turn ignition ON if not already on (this will enable seat occupancy detection before seatbelt is done up.)
 - Latch seatbelt. This will enable drive and parkbrake functions.

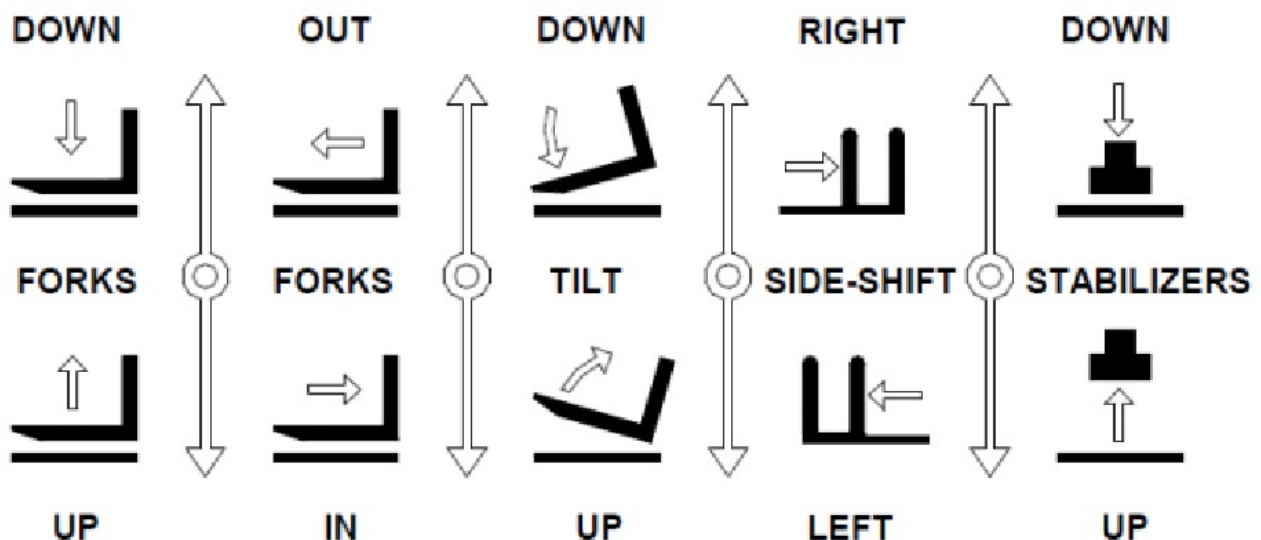
NOTE. If ignition is switched OFF while you are sat in the seat with your seatbelt fastened the sequencing will not work correctly and the drive and parkbrake functions will not be activated when you restart engine. To reset, switch OFF ignition, release seatbelt, turn ignition ON /restart engine and then relatch seatbelt.

3.3 HYDRAULIC CONTROL LEVERS

The Loadmac 225 is equipped with the following hydraulic levers which control movement of the mast, forks and stabilizers.

Study the diagram found inside the operators compartment on the Loadmac 225, before attempting to start the machine!

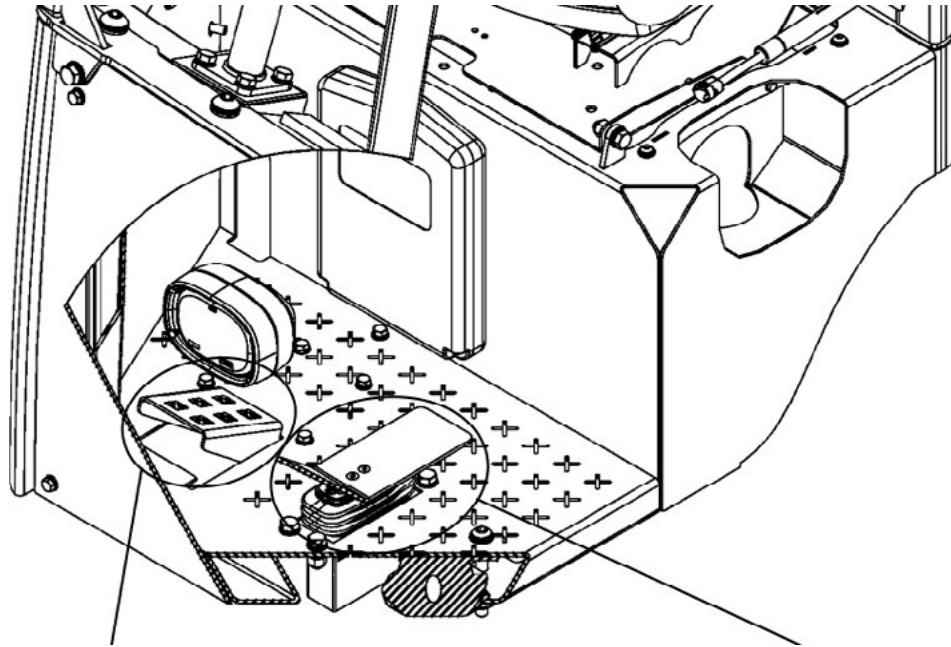
- Forks:** **Raise and Lower:** This lever raises and lowers the forks. Forward movement will lower the forks (down). Backward movement will raise the forks (up).
- Reach:** This lever operates the Independent Reach (iR). Forward movement will move the fork carriage out. Backward movement will move the fork carriage in.
- Tilt:** This lever tilts the forks (and fork carriage) up and down. Pushing the lever forwards tilts the forks downwards and pulling back tilts the forks upwards. Loads should be transported with the mast tilted back slightly.
- Optional: With Telescopic forks fitted they are operated using the same lever, by pressing and holding down the button on the top and at the same time moving the lever in required direction.
- Side-Shift:** This lever moves the forks to the left or right. Forward movement of the lever shifts the forks to the right. Backward movement of the lever shifts the forks to the left.
- Stabilizers:** This lever raises and lowers the stabilizing legs. When placing a load, the stabilizers must always be fully lowered before moving the forks forward. Movement of the lever forward will lower the stabilizers (down). Movement of the lever backwards raises the stabilizers (up). When lifting a load, never raise the stabilizers until the forks are fully retracted.



3.4 DRIVE CONTROLS

Foot-Pedal Control

The Loadmac 225 is equipped with two foot pedals. The RIGHT pedal is the accelerator pedal which controls the engine RPM. The LEFT pedal is the forward/reverse pedal, which controls the forward and reverse movement and the travel speed of the machine.



Accelerator Pedal – Engine RPM

This pedal is pressed down to increase engine RPM. It should be used to keep the engine at a constant RPM and should not be used to adjust the travel speed of the machine. The engine RPM also affects the speed of the hydraulic functions

Forward/Reverse Pedal-Travelling Speed

This pedal controls the forward and reverse movement of the machine. The machine will not move if you do not depress the forward/reverse pedal. Depress the pedal (toe) forward to move the machine forward. Depress the pedal (heel) back to move the machine in reverse. By returning the pedal to the mid-point (neutral) the machine will stop. This pedal is also used to control the speed of the machine's movement. The further the pedal is depressed in either direction, the faster the machine will travel.



When travelling on gradients or on rough terrain, forward / reverse pedal movement may need to be reduced and engine RPM increased to avoid overloading or stalling the engine.

3.5 DASH CONTROLS

Switch positions may vary.

Please note: Spare switch housings are provided for bespoke applications and future technologies to be retro-fitted to the machine.



1 FOG LIGHT – Option Fit depending on territory

- This switch engages the rear fog light. By pressing the switch at the bottom the light will turn on. By pressing the switch at the top will switch the fog light off.



2 UPPER WORK LIGHTS

- This switch turns the Upper cab work lights (front and rear). Pressing the bottom of the switch will activate the lights. Pressing to top of the switch will turn the lights off..



3 LOWER WORK LIGHTS

- This switch illuminates the lower front work lights. By pressing the switch at the bottom the lights will turn on. By pressing the switch at the top will switch the front lights off.



4 REVERSE MUTE SWITCH (Option fit depending on territory)

- This switch enables the Reverse Sounder / buzzer to be switch OFF for use in low noise areas / applications. Pressing the switch at the bottom to ON will switch OFF the reverse buzzer and it will NOT sound when reverse drive is engaged. Pressing the switch at the top to OFF will switch the reverse buzzer ON so it will activate when reverse drive is engaged.

NOTE: When the reverse buzzer is switched OFF the switch light illuminates when reverse drive is engaged. (in place of the buzzer)

Also when the reverse buzzer is muted by the switch the reverse light(s) at the rear of the forklift will still automatically switch ON when reverse drive is engaged.



5 DIFF LOCK

- This switch activates the vehicles differential lock. By pressing the bottom of the switch the Diff lock is Engaged. Pressing the top of the switch will disengage the diff lock.



6 HORN

- This switch sounds the horn on the vehicle. By pressing the bottom of the switch the horn will sound until it is released.



7 PARK BRAKE

- This switch engages the parking brake. Pressing the top of the switch will apply the brake and lock in place. Pressing the bottom of the switch will disengage the brake and allow the machine to move. Whilst engaged the drive to the wheel motors is disabled.

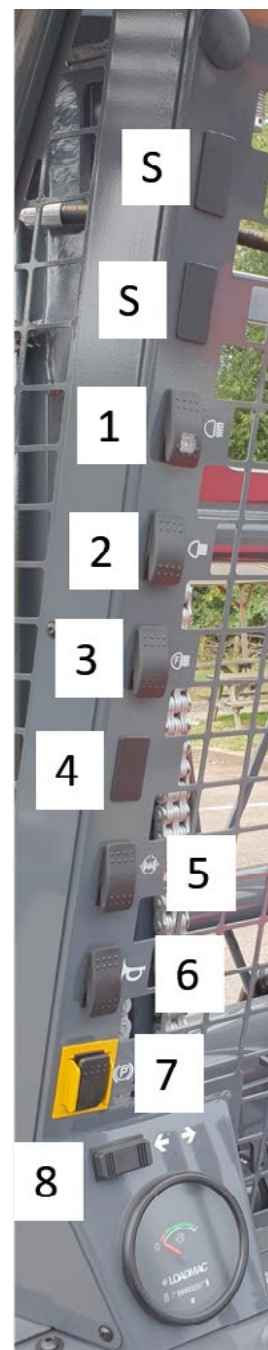
NOTE: The park brake switch works in conjunction with the seat and seatbelt interlocks (see seat section) and is only operational once you are sat in the seat with your seatbelt latched. If the seat and seatbelt set up is not correct the park brake will NOT release even if switched OFF.

- When the park brake is switched ON a warning light is also activated on the instrument panel (see instrument panel)



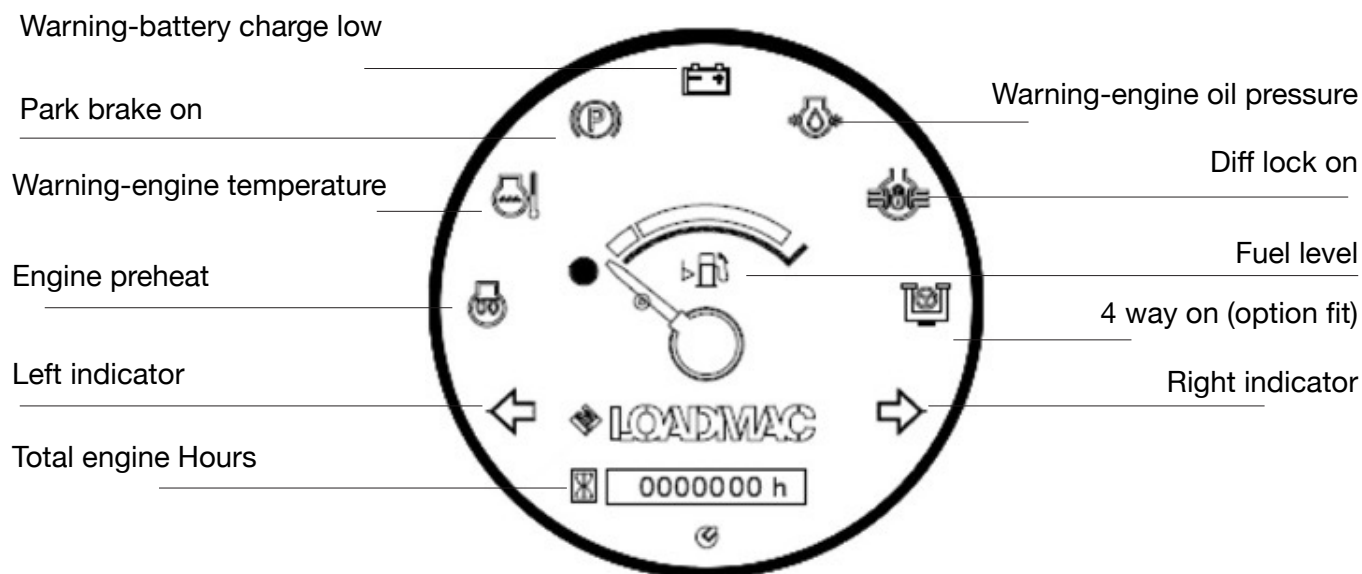
8 INDICATOR

- By activating this switch, the appropriate indication light will flash. By depressing the left-hand side of the switch, the left-hand turn signal lights will flash on. To stop the indication signal lights the switch needs to be returned to the centre position. By pressing the right-hand side of the switch, the right-hand turn signal lights will flash on. To stop the indication signal lights the switch needs to be returned to the centre position



Instrument Panel

The instrument panel is located at the bottom of the dash in the Loadmac 225, showing the fuel level, total hours and various warning lights.



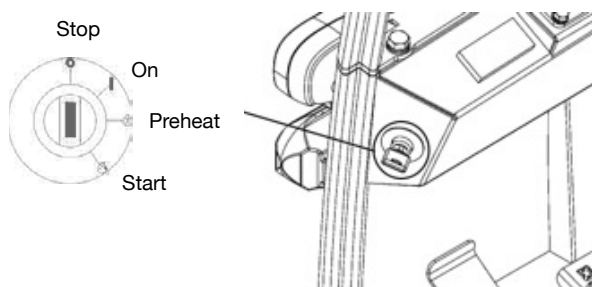
3.6 STARTING THE ENGINE

Start Safely

Whilst the Loadmac 225 is not in operation the battery isolator key must be removed to cut electrical power from the machine. Before starting the engine, the battery isolator key needs to be engaged into the battery isolator. To do this insert the separate isolator key, rotate clockwise a quarter of a turn to lock it in place and this allows power the machine. The isolator switch is located under the engine bonnet in close proximity to the battery.

Adjust the seat and fasten the seat belt. Check to see that the park brake is on. Put all operating controls in the neutral position before starting. Use the engine heater to preheat the engine. Alert people in the area before starting the machine. When starting your equipment in an enclosed space, make sure that there is adequate ventilation.

! WARNING: Do not use starting fluid or spray as these are highly flammable, corrosive and cause engine damage.



Insert the key in the ignition. Turn the key clockwise about a quarter of a revolution and hold in the 'PREHEAT' position for approximately 15 seconds. Note: preheat light on instrument panel will also light up. Depress the accelerator pedal half way and turn the key until the starter engages and the engine starts. Release the key and it automatically returns to the 'ON' position.

After starting, check that all red instrument panel warning lights have gone out and that all gauges are functioning properly. If all red warning lights have not gone out, stop the engine immediately. Do not attempt to operate the Loadmac 225 with a warning light on, as serious damage could occur to the engine.

3.7 PRE-OPERATIONAL CHECKS:

Make sure everything is functioning correctly

Cycle all hydraulic controls as follows:	✓
Raise and lower the forks - movement should be smooth.	
Extend and retract the forks using main mast and iSR reach - the forks should move forward and back fully.	
Tilt the fork carriage both to the forward and rearward - check the range of tilt.	
Side-shift the forks left and right - check for obstructions.	
Lower and raise the stabilizers.	
Check that the steering turns both left and right.	
Check operation of the horn and reverse alarm.	
Check operation of the park brake.	
Grease all moving parts manually at specified grease points (see "Grease Point Chart").	
If the machine is operating in a dusty or sandy environment, drain and remove the radiator. Clean all dust etc. from between the radiator fins. Replace the radiator and refill with the correct coolant (See section "Engine Coolant").	
Adjust and lubricate lift chains (see section "Chain Lubricant Specification").	

The operation of the above controls should be smooth. If any of the controls do not operate properly, report the problem to your supervisor immediately.

You are now familiar with the operating controls of the Loadmac 225. However, it is critical to your safety and important for your efficiency that you also understand the lifting capacity of this machine, the proper use of the stabilizers, the correct way to carry various shaped loads and the use of the diff-lock to assist operation over uneven or slippery ground surfaces.

4.0 LOAD CAPACITY

4.1 UNDERSTANDING THE RATED CAPACITY OF THE MACHINE

Make the right start - know the load capacities of your forklift. The rated capacity of the machine is the weight that the machine is capable of lifting under safe operating conditions. Remember that type of terrain or ground conditions can reduce the amount you should lift. The shape of the load will also affect the lift capacity of the machine. Inspect the load you intend to lift. Make sure that you know the weight of the load. If the weight is not marked or shown on the load, check the weight of the load with your supervisor or have it weighed. If it is too heavy, split the load and restack it. It is common for a large capacity conventional forklift to be used when loading trucks or trailers in a yard. Do not expect the Loadmac 225 to lift the load just because it was initially loaded by a conventional yard forklift.

Remember that, if attachments are used other than the standard forks fitted to the Loadmac 225, such attachments will reduce the lifting capacity and affect other machine handling characteristics. Where an attachment is fitted check alternative Loadchart associated with attachment fitted.

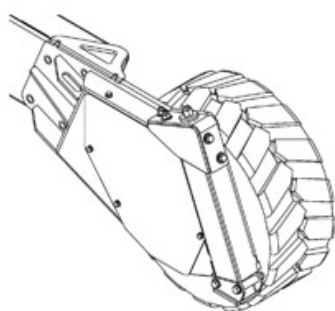
To rate the lift capacity of forklifts, manufacturers have standardised on a certain size of load. With the Loadmac 885, the rated capacity is based on a cube measuring 1.2m (4') in all three dimensions with the centre of gravity in the centre of this cube. This is known as a 600mm (2') load centre. If the dimensions of the load increase or the position of the centre of gravity or load moves forward or upwards, the lifting capacity of the machine will be reduced.

Consult the load chart relevant to your machine. Study it carefully and make sure you understand it before attempting to operate the Loadmac 225. Remember that the weight to be lifted must not exceed the rated capacity of your machine.

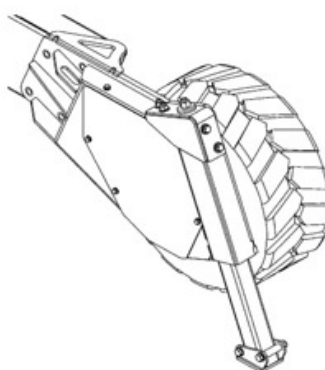
The load capacity chart relating to your particular model gives details of what the machine can lift with a 600mm (2') load centre under the following conditions:

- Stabilizers fully raised and forks (iR) fully extended
- Stabilizers fully raised and forks (iR) fully retracted
- Stabilizers fully lowered and forks (iR) fully extended
- Stabilizers fully lowered and forks (iR) fully retracted

Stabiliser Leg Raised



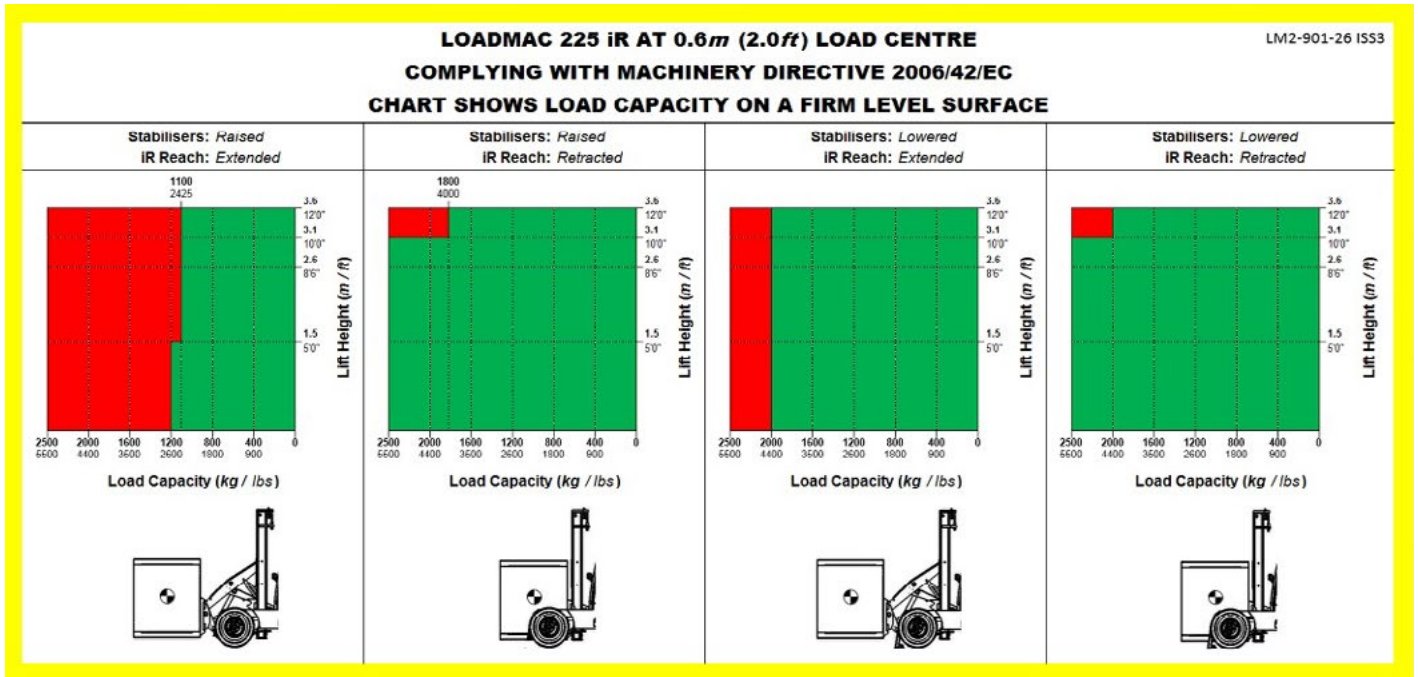
Stabiliser Leg Lowered



The following Load Capacity Chart illustrates the rated stacking capacity of the Loadmac 225 Truck Mounted Forklift.

NOTE:

- The load capacity may vary depending on attachments used. Consult the load chart below or on your machine for actual rated capacity.
- Each Truck Mounted Forklift has a different load capacity. Refer to the load capacity chart on your machine, located inside the operator's compartment, for specific rated capacity for your machine.
- Load capacity charts are available from Loadmac Ltd.



Indicates safe lifting range



Danger:

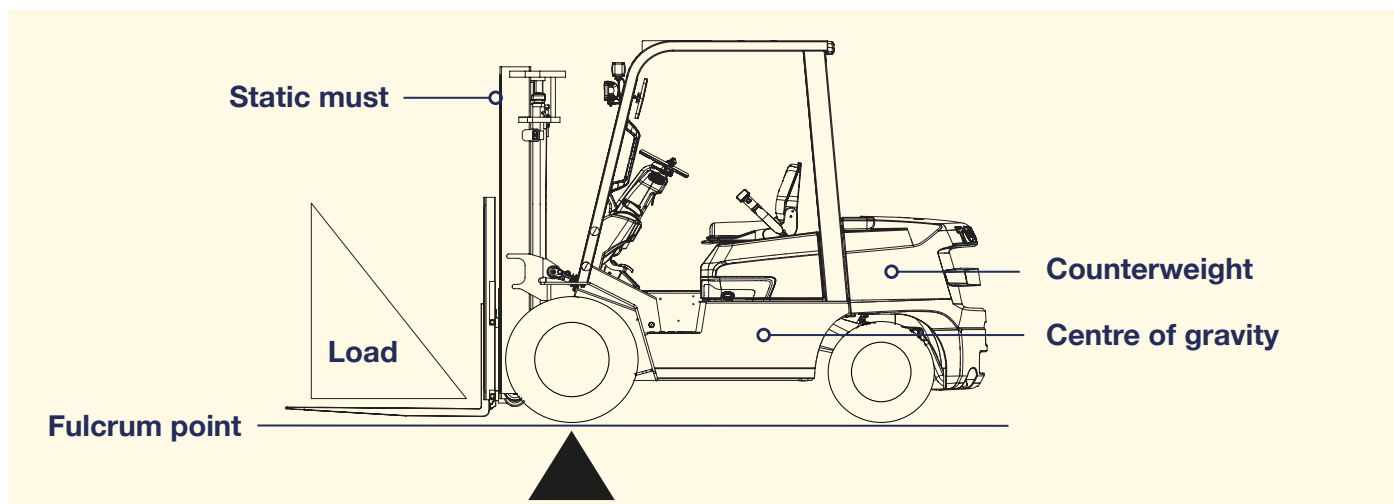
Never exceed the Loadmac 225's rated capacity or the machine may become unstable and could cause serious injury or death

4.2

COMPARISON BETWEEN A CONVENTIONAL FORKLIFT AND A Loadmac 225 TRUCK-MOUNTED FORKLIFT

CONVENTIONAL FORKLIFT

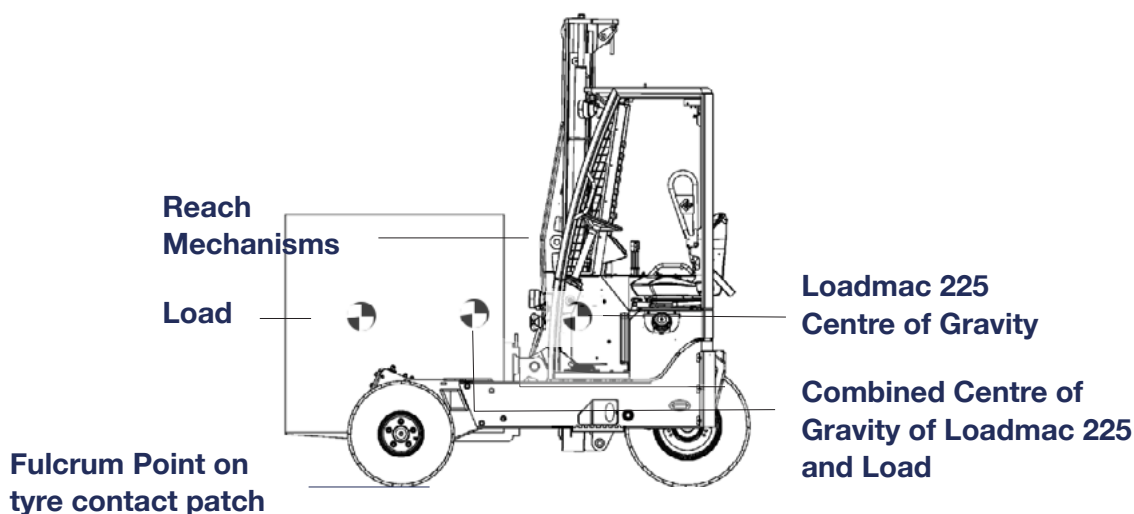
A **conventional forklift** is designed to lift and carry the load in front of the wheels. The load remains in this position during transit. The conventional forklift is able to lift the load in this position because it has a large rear-mounted counterweight to counterbalance the load. A conventional forklift is known as a counterbalance forklift.



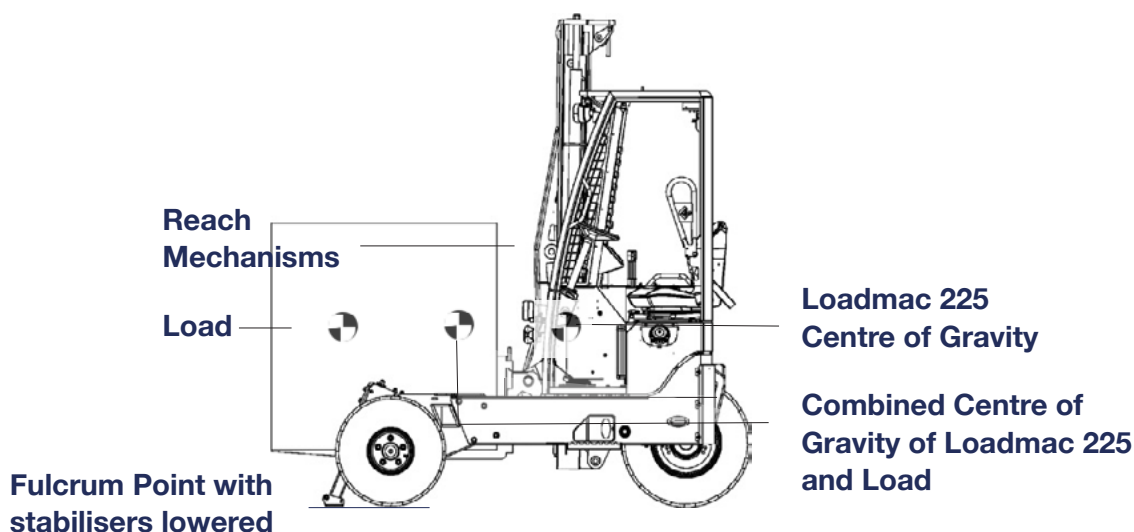
With a conventional counterbalance forklift, the position of the load remains stationary relative to the front wheels. The forks do not move forward and backward as is the case with a Loadmac 225. The front wheels of a conventional counterbalance forklift are the point of pivot known as the fulcrum point. If the load exceeds the rated capacity of the forklift, the weight of the load will overcome the counterbalance effect and cause the load and the forklift to tip forward.

Loadmac 225 truck-mounted Forklift

An important feature of the Loadmac 225 forklift is that it is light enough to be transported on the rear of a truck or trailer. Unlike a conventional forklift, it does not have a rear-mounted counterweight. With the stabilizers raised the fulcrum point is at the centre of the front wheels.



When the stabilizers are fully lowered, the fulcrum point moves forward to the point of contact between the stabilizers and the ground. This increases the counterbalance affect and enables the Loadmac 225 to lift the rated capacity with the forks in the forward position without the need for a large counterweight. When placing a load, the stabilizers must always be fully lowered before the forks are extended. When lifting a load, the stabilizers should be fully lowered and raised only after the forks are retracted fully. When carrying a load, the forks should always be retracted fully. The telescopic legs need to be extended before trying to manoeuvre a load. This keeps the fulcrum point forward.



WHEN OPERATING A Loadmac 225

With a load:

- Keep the forks fully retracted when travelling.
- Lower the stabilizers fully, before extending the forks to place a load.
- Keep the stabilizers fully lowered until the forks are fully retracted when lifting a load.
- Keep the load as low as possible.

Without a load:

- Keep the forks as low as possible.
- • Extend the independent reach (iR) fully to increase stability



WARNING:

When placing a load, the stabilizers should always be fully lowered before attempting to extend the forks. When lifting a load, the stabilizers should be fully lowered and raised only when the forks are fully retracted.

4.3 LIFTING AND PLACING LOADS

A. CUBED LOADS

A cubed load is one which fits between the front wheels and the frame of the machine. To achieve maximum machine and load stability, the load should be carried in this position and kept as low as possible at all times.

Lifting a cubed load from ground level

- Make sure the load to be lifted is stable and secure.
- Check the weight and load centre of the load to be lifted. If the weight is not marked or shown on the load, check the weight of the load with your supervisor or have it weighed. If it is too heavy, split the load and restack it.
- Adjust the forks to suit the load.
- Align the forks with the centre of the load.
- Approach the load squarely with the forks fully retracted and drive into it until the forks are fully engaged.

Tilt the mast rearwards slightly to secure the load.

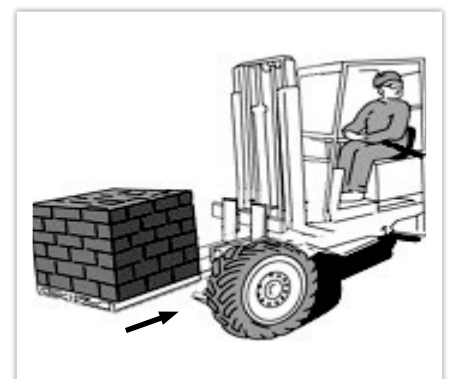
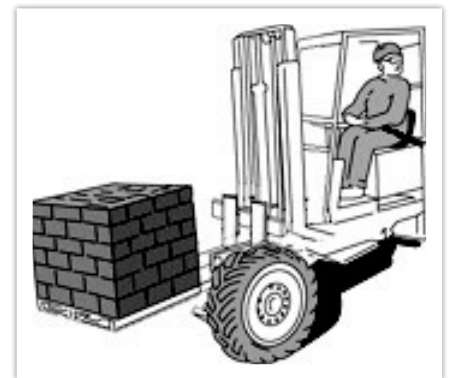
- Raise the forks to lift the load.
- Side-shift the forks to the centre position.
- Slowly drive away looking in the direction of travel.

Travelling with a cubed load.

- Carry the load as low as possible between the frame of the machine.
- Keep the forks retracted fully.
- Tilt the mast back.
- Do not side-shift the load while travelling or turning.
- Exercise caution when starting or stopping.
- Always look in the direction of travel.

Placing a cubed load at ground level

- Check the area and be certain that the load can be safely placed.
- Approach the placement area squarely.
- Lower the forks to the ground.
- Tilt the mast forward slightly to deposit the load.
- Back up carefully.
- Drive away slowly looking in the direction of travel.

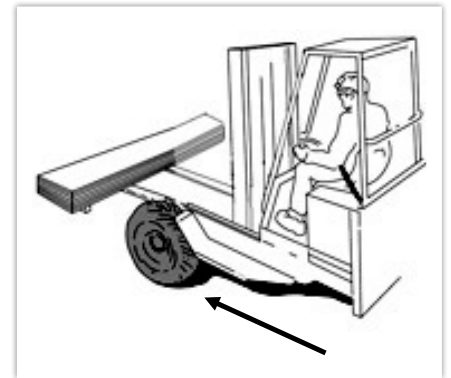


B. WIDE LOADS

A wide load is a load that will not fit between the front wheels and frame of the forklift.

Lifting a wide load

- Make sure the load to be lifted is stable and secure.
- Check the weight and load centre of the load to be lifted. If the weight is not marked or shown on the load, check the weight of the load with your supervisor or have it weighed. If it is too heavy, split the load and restack it.
- Space the forks to suit the load.
- Extend the forks.
- Align the forks with the centre of the load, approach it squarely and drive into the load until the forks are fully engaged.
- Check that the surface is strong enough to support the stabilizers.
- **Lower the stabilizers fully.**
- Raise the load to clear the ground.
- Tilt the mast rearwards to secure the load.
- Raise the load to clear the frame and wheels of the forklift.
- Side-shift the forks to the centre position.
- Retract the forks fully to bring the load above the front wheels.
- **Raise the stabilizers fully.**

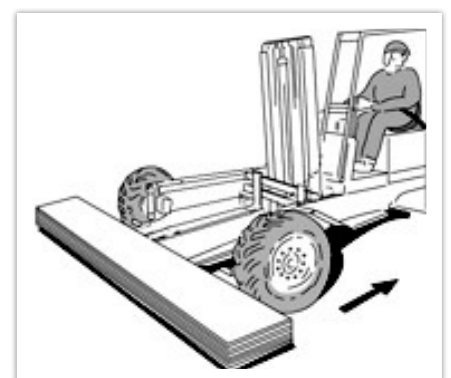


Travelling with a wide load

- Carry the load as low as possible above the frame of the machine.
- Keep the forks retracted fully.
- Tilt the mast back.
- Do not side-shift the load while travelling or turning.
- Exercise caution when starting or stopping.
- Always look in the direction of travel.

Placing a wide load

- Check that the area is clear of debris.
- Approach the final position squarely.
- Stop and side-shift the load if necessary to align it with the final resting position.
- Check that the surface is strong enough to support the stabilizers (if fitted).
- **Lower the stabilizers fully.**
- Extend the forks fully to clear the frame and wheels of the machine.
- Lower the forks to the ground.
- Tilt the mast forward slightly to deposit the load.
- **Raise the stabilizers fully.**
- Back up carefully.
- Retract the forks.
- Drive away slowly facing the direction of travel.



! Caution: When carrying wide loads your visibility may be blocked by the load. It may be safer to travel in reverse when moving such loads. You may require a banksman/signal person or “spotter” to guide you. **DO NOT** reverse uphill.

C. NON-PALLETISED OR LOOSE LOADS

- Use skids when necessary to allow insertion of the forks beneath the load.
- Do not allow the skids to interfere with the fork placement.
- Secure loose loads to prevent them from falling or shifting.
- Consult your supervisor before attempting to secure a loose load.
- Never attempt to handle a load which has been poorly wrapped or banded as it could injure you or others working around you.
- Follow the same procedure for handling cubed or wide loads when lifting or placing non-palletised or loose loads.



D. LOADS ABOVE GROUND LEVEL

These techniques apply to:

- Stacking one load on top of another.
- Loading a truck or trailer.
- Unloading a truck or trailer.

Picking up a load above ground level (e.g. unloading a trailer)

- Check the weight and load centre of the load to be lifted. If the weight is not marked or shown on the load, check the weight of the load with your supervisor or have it weighed. If it is too heavy, split the load and restack it.
- Adjust the fork height to suit the load.
- Extend the forks.
- Centre the forks and approach the load squarely until the forks are fully engaged in the load.
- Do not touch the pick-up area with the mast.
- Side-shift the forks to centre the load on the forks.
- Check that the surface is strong enough to support the stabilizers.
- **Lower the stabilizers fully.**
- If it is not possible to engage the forks fully, follow the procedure outlined in the section titled “Double Forking” until the forks are fully engaged.
- Raise the forks to lift the load clear of the pick-up area.
- Tilt the fork carriage rearwards to make the load more stable.
- If necessary, raise the load to clear the frame of the machine.
- Retract the forks fully.
- **Raise the stabilizers fully.**
- Check behind and back up slightly to clear the platform or vehicle body.
- Never manoeuvre or turn with a raised load.
- Lower the load as close to the ground as possible.
- Back out and drive away slowly, looking in the direction of travel.

E. DOUBLE FORKING

If it is not possible to engage the forks fully when lifting the load from a truck or trailer, it will be necessary to move the load to the edge of the body of the vehicle before picking it up. This is known as “Double Forking”. Remember that the lift capacity of the machine is reduced if the forks are not fully engaged.

To Double Fork the load

- Raise the load slightly and retract the forks sufficiently to bring the load out to the edge of the vehicle body. Lower the load back on to the vehicle body and fully engage the forks by extending them again. The load is now ready to be lifted.

WARNING:

Before attempting to load or unload from a truck or trailer, chock the wheels of the truck/trailer to prevent it moving. Always lower the stabilizers fully, before attempting to pick-up from a truck or trailer.

F. PLACING OR STACKING A LOAD ABOVE GROUND LEVEL

- Approach the landing area or trailer squarely and with care.
- Side-shift the load if necessary.
- Raise the load above the level of the landing area or platform.
- Drive forward carefully and make certain that the front of the machine does not hit the landing area or trailer.
- Check that the surface is strong enough to support the stabilizers.
- **Lower the stabilizers fully.**
- Extend the forks fully until the load is directly above the landing area.
- Lower the load carefully.
- Tilt the mast forward to position the load and place it on the resting area.
- **Raise the stabilizers slowly.**
- Back up cautiously to clear the load and platform.
- Retract the forks.
- Lower the forks as low as possible to the ground.
- Back up slowly, looking in the direction of travel.

NOTE: When lowering the stabilizers, make certain the ground is sufficiently firm to support the stabilizers. On loose or uneven soil it may be necessary to place a flat wooden or metal support beneath the stabilizers.

Additional precautions when placing a load above ground level:

- Where visibility is restricted, use a signal person.
- Make certain that the landing area is of sufficient strength to carry the load.
- Also check that the landing area is level and clear of debris.
- **Never side-shift with a raised load.**
The stability of the Loadmac 825 will be compromised and the machine could tip over.
- Always move controls in a smooth, steady manner. Do not force a hydraulic cylinder to the end of its stroke as the resulting “jolt” could spill the load.
- **Under no circumstances should a load be placed on or lifted from a scaffold platform.**

4.4 OPERATION OF DIFF-LOCK

Under normal driving conditions the Loadmac 225 operates in all-wheel drive. However, in the event of one or more wheels losing grip, the machine may lose traction and stop or skid. By engaging the diff-lock, you will get equal positive drive to all three wheels.

WHEN TO USE THE DIFF-LOCK

- If one or more wheels lose traction while travelling through soft or slippery ground conditions.
- To maintain traction while travelling on slopes or inclines.
- To improve braking and traction when reversing downhill.

! Caution: Use the diff-lock only while travelling in a straight line.

To avoid damage to the hydraulic system:

- Do not engage the diff-lock when the machine is moving.
- Do not use the diff-lock where traction is good.
- Do not use the diff-lock when turning corners.

How to activate the Diff-lock

- Return the forward/reverse pedal to neutral position to stop the machine.
- Check to see that the rear wheel is in the straight-ahead position.
- Press the diff-lock button to engage.
- Increase the engine revs to full RPM.
- Depress the forward/reverse pedal lightly in the required direction.
- Do not overload the engine.
- The diff-lock button may be pressed again to release the diff-lock while the machine is in motion.

4.5 OPERATING ON INCLINES AND UNUSUAL GROUND SURFACES (applicable only to all-wheel drive machines)

The Loadmac 225 is intended for use on firm, flat and stable surfaces. AVOID slopes and uneven or unstable surfaces where possible. However when job site conditions involve slopes, inclines or rough terrain, you must take additional care when operating the machine.

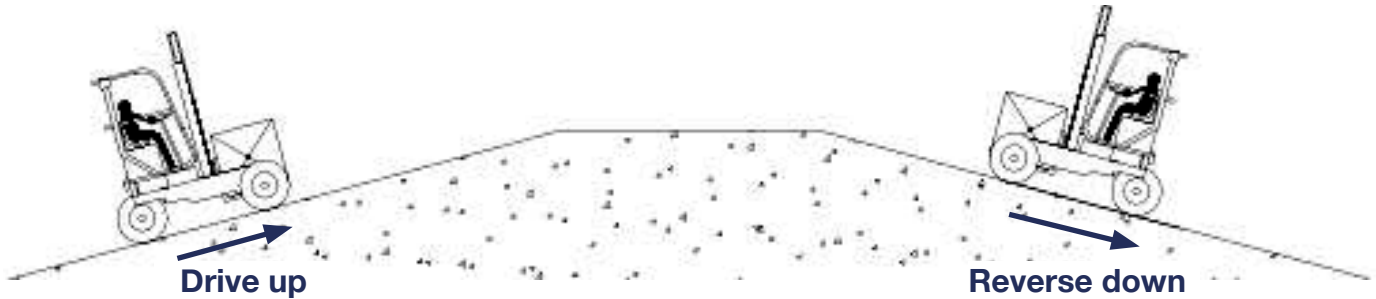
- Do not travel across an incline.

ALWAYS APPROACH AN INCLINE STRAIGHT ON AND TRAVEL UP AND DOWN THE INCLINE.

- **Keep the forks pointed uphill.**
- **Always travel in reverse when descending an incline.**
- Extend mast outwards to move COG forwards and reduce loading on rear wheel.
- Do not turn on an incline.
- Never stop or start suddenly. Operate all controls smoothly.
- Watch out for potholes or other obstacles that could affect the stability of the machine.
- Drive slowly over rough terrain.
- Where necessary, engage the diff-lock and travel slowly for additional traction.
- Do not attempt to reverse down an incline that you think you would have difficulty driving up.

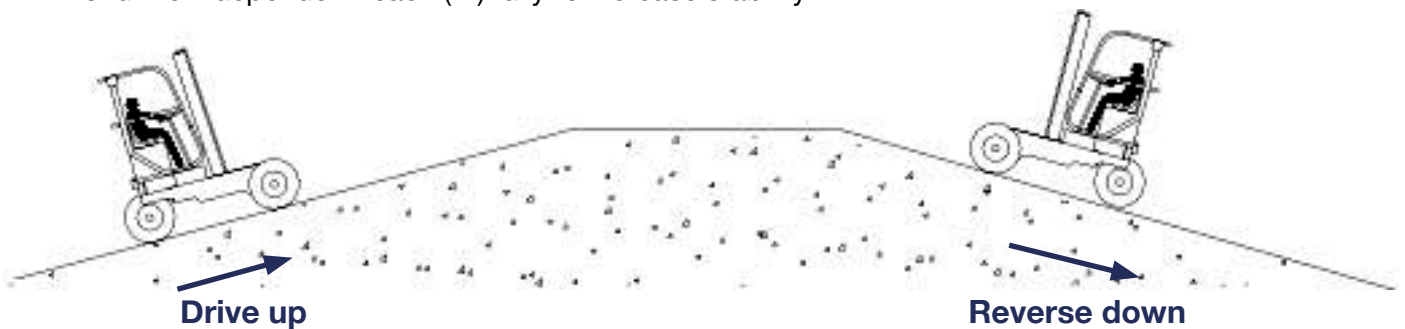
WHEN OPERATING WITH A LOAD

- Travel with the load and forks facing uphill.
- Make allowances for a reduction in both stability and lift capacity when operating on inclines.
- Always take great care when transporting wide loads on any incline. Carry the load as low as possible or just above the frame of the machine.



WHEN TRAVELLING WITHOUT A LOAD

- Keep the forks as low as possible and pointed uphill.
- Extend the independent reach (iR) fully to increase stability



Remember that your safety is most important and should not be compromised. You are the operator and you are in control of your safety. Do not take any chances! Always wear your seat belt when driving the Loadmac 225. The Loadmac 225 could tip over if operated incorrectly. To protect operators from the risk of serious injury or death in the event of a tip-over, it is best to be held securely in the seat. The seat and seat belt will help to keep you safely within the truck and operator's compartment. In the event of a tip-over, don't jump. Grip the steering wheel, brace your feet, lean away from the direction of tip-over and stay within the operator's compartment.



Caution:

If there is any indication or feeling of instability while lifting a load, stop immediately, lower the load, restack or break it down into two or more lifts



Warning:

Never leave the operator's seat without first

- lowering the forks to the ground.
- putting on the park brake.
- placing all controls in neutral.
- facing the machine uphill and turning the back wheel sideways if stopped on an incline.

5.0 LOADMAC 225 SHUTDOWN PROCEDURES

5.1 STOPPING PROCEDURE

- Neutralise all hand control levers as well as the accelerator pedal and the forward/reverse pedal.
- Set the park brake to the “on” position.
- Switch off the ignition and remove the key.
- Release the seat-belt.
- Dismount using the 3-point contact method.

If something comes loose, breaks or fails to operate:



Caution:

- stop
- shut off the engine
- get it repaired

5.2 PARKING THE 855 OR LEAVING IT UNATTENDED



WARNING:

Avoid

- sudden stops
- sudden starts
- sudden turns

Do not touch, lean or reach through the mast.

Do not permit others to do so.

- Always park the Loadmac 225 in a designated safe area.
- Lower the forks to the ground.
- Neutralise all controls.
- Set the park brake to the “on” position.
- Switch off the ignition and remove the key.
- Chock the wheels if the vehicle is on uneven ground.
- **If parking on an incline**, point the machine uphill, chock the front wheels and turn the rear wheel across the incline.

5.3 IN CASE OF BREAKDOWN

- Should your Loadmac 225 breakdown it is essential to leave it in a safe condition until it can be repaired / recovered.
- If forklift can be safely driven to a safe place do so carefully ensuring no additional risks are taken.
- Park forklift on level ground if possible and if not chock wheels to stop unintentional movement.
- Lower forks /load to the ground and switch off engine and remove key from switch.
- Release hydraulic pressure from circuits by carefully cycling levers on valvebank.
- Remove battery isolator from switch to stop unintentional start up by the ignition key.
- If forklift may present a hazard to others due to its position ensure adequate warning signs are posted to advise others of its location.
- If there are local requirements for highlighting parked / broken down vehicles of roads ensure they are adhered to.

Recovering / repairing forklift.

- Depending on fault forklift may be able to be repaired locally. If this is possible ensure service technician is able to affect repair in a safe area.
- If repair requires work on hydraulic components ensure any spillages are controlled, contained and collected.
- If forklift cannot be repaired and needs to be recovered it cannot be towed due to the hydrostatic drivetrain.
- Ideally forklift should be lifted onto a suitable trailer for recovery using a crane as this does not affect the drivetrain.
- If this is not possible there is a release bolt on the parkbrake which will release the brake pressure and details to operate safely can be found in the service manual.
- Releasing of the parkbrake disc will allow the forklift to be towed SLOWLY onto a recovery trailer. DO NOT DRIVE THE FORKLIFT with the park brake bolt released as damage will occur.
- If your Loadmac 225 is loaded onto a trailer for transport there are 4 inbuilt lashing/ tiedown points. Use these lashing points if possible as they have been designed and located to give optimum tiedown point for flatbed transportation.

5.4 LONG TERM STORAGE

Should your Loadmac 225 be stored for long periods of time without be used the following procedures should be followed.

- Depending of storage period planned lift and support forklift so wheels are OFF the ground. If this is not possible increase tyre pressures to MAX recommended on tyres fitted to reduce potential of damage.
 - Ensure all hydraulic circuits are released of any pressure (cycle valvebank levers).
 - Drain diesel fuel from tank.
 - Isolate or remove battery to avoid electrical drain.
- Store under cover in a dry cool location if possible avoiding extremes of temperature.
To recommission your Loadmac 225 from long term storage ensure the following are carried out.
- Check all hydraulic & fuel hoses / electrical wiring for deterioration / rodent damage
 - Check all fluid levels are correct and top if necessary using correct fluids.
 - Fully charge battery before attempting to start forklift.
 - Add new diesel into tank and allow fuel pump to run for 5-10 minutes to prime and flush fuel lines.
 - Grease all greasepoints and ensure all pivoting items operate freely
 - With general checks carried out start engine and check for leaks of any fluids.
 - Operate hydraulic functions carefully and cycle fully to check for full movement cylinders checking piston seals.
 - Lower wheels to ground (or reduce tyre pressures to operating pressures) and slowly drive machine checking drive and steering functions.

**WARNING:**

Do not attempt to transport the Loadmac 225 unless you have read this section of the manual very carefully!

The Loadmac 225 is designed to be transported on the rear of a truck or trailer. A transport mounting kit has been fitted to your vehicle for this purpose. The Loadmac 225 has been designed to fit on various types of trailer mounting kit depending on the equipment fitted to your Loadmac 225.

Ensure the Mounting kit fitted to the truck / trailer is suitable for the weight and dimensions of the Loadmac 225. This is especially important if the mounting kit was not supplied by Loadmac. Your supplying Dealer will be able to advice and confirm if the mounting kit fitted is suitable.

The three common types of mounting kits are:

Sliding Box Mounting (Hard Ride). This requires specific mast valving to be fitted to your Loadmac 225.

Wheelplate Mounting (Soft Ride). This is the standard Loadmac 225 set up unless optioned differently.

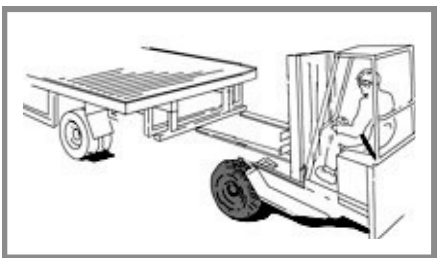
Hook Mounting. This requires specific hooks to be fitted to the Loadmac 225.

Other specialised mounting kits are also available but work on variations of the above 3 mounting principles. (See Dealer for specific specialist options fitted)

General mounting principles.

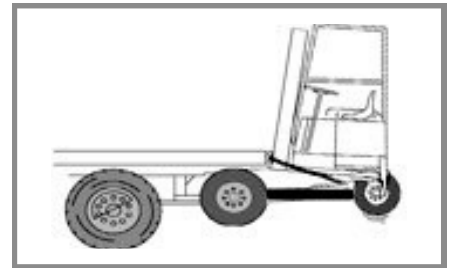
During transport the forks are slotted into the fork support pockets or between specific supporting crossbars on the truck / trailer. The forklift is then lifted up off the ground and located onto the specific mounting kit fitted (See later specific information) and safely secured. The rear lights of the truck or trailer are then replicated at the rear of the Loadmac 225 by the means of an electrical cable (pigtail), which is located on the lower front panel outside the operators compartment and connected to the electrical socket on the truck / trailer.

6.1 Mounting the Forklift on a truck or trailer



- Approach the rear of the truck/trailer slowly with the iR fully retracted and the mast extended to a minimum to suit specific mounting kit.
- If necessary, adjust the spacing between the forks to match fork pockets / support brackets.
- Lift stabiliser legs fully.
- Drive slowly forward until the forks are fully engaged in the fork pockets / support brackets in the mounting kit.

- Lower the forks slightly until the rear of the trailer starts to lift slightly.
- Engage park brake.
- Remove seatbelt and dismount using the 3-point contact method.
- Lift seat on gas-strut and engage rear "Man-on-Ground" levers.
- Using rear levers to lift, tilt and move forklift forwards locate forklift onto place on specific mounting lift (see details in section later)
- With forklift correctly located on mounting kit connect transport / safety chains.
- Switch off engine.



- Depending on mounting kit fitted release hydraulic pressure using mast pressure release switch (located in cab foot well) or cycling the rear levers. This will release mast pressure where required to settle forklift onto mounting kit.
- Connect the electrical cable for the rear lights.
- Check that all transport lights are functioning properly.

6.2 REMOVING THE FORKLIFT FROM A TRUCK OR TRAILER

- Disconnect the electrical cable and stow safely.
- Start the engine (while standing as the side of the cab).
- Using the rear levers lift the forklift slightly.
- Disconnect and stow the safety / transport chains.
- Using rear levers to lift, tilt and move forklift rearwards manoeuvre forklift off the mounting kit ready to lower to the ground.

With forklift clear of mounting kit lower to the ground and level so all 3 wheels are on the ground.

- Climb aboard using the 3-point contact method.
- Fasten the seat belt.
- Lift / tilt forks so they are loose in the fork pockets / support brackets
- Turn rear wheel so it is the “straight ahead” position.
- Switch parkbrake OFF.
- Checking surrounding area slowly reverse forklift to remove forks from fork pockets/ support brackets until clear of truck / trailer.

6.3 RULES FOR SAFE TRANSPORTATION

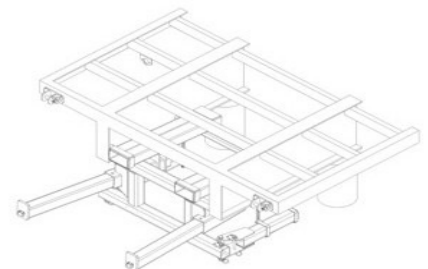
If the forklift is to be driven on the highway, be certain that all local and national laws and regulations are observed. Make sure all operating and directional signal lights are functioning and visible. If required by law, make sure any “Slow Moving Vehicle” sign is visible to any vehicle approaching from the rear. When travelling on public roads, obey all local traffic movement regulations. Approach intersections with caution, observe speed and traffic control signs. Do not speed. Avoid panic stops and sharp turns. When transporting the forklift on a truck or trailer, know the overall height to avoid coming in contact with overhead obstructions such as bridges, power lines, etc. **Do not attempt to transport the Loadmac 225 on a truck or trailer that is not equipped with a mounting kit designed and installed to Loadmac specifications.**

Make certain that your vehicle, when carrying a Loadmac 225 truck-mounted forklift, complies with the relevant local and national laws and regulations regarding maximum vehicle weight, axle loading, overall vehicle length and overhang.

6.4 SPECIFIC MOUNTING KIT DETAILS

Sliding Box Mounting (Hard Ride)

This mounting kit uses 2 box sections which slide out from the truck / trailer to support the weight of the forklift. The forklift is held in place by raising the forks and thus pressurising the truck onto the box sections. The hydraulic pressure is then maintained with lockvalves in the mast circuit.



With this mounting kit the chains fitted between the forklift and the rear of the truck / trailer are left loose and are fitted as safety chains.

Once the forks are located in the forks pockets / support brackets the following specific procedure is required to mount the forklift correctly onto the mounting kit.

- With the mast fully retracted (and front wheels under the truck / trailer tilt the truck forwards to lift the rear wheel off the ground.
- Lift the forklift until the rear crossmember is slightly higher than the sliding supports.
- Switch OFF Engine.
- Extend the sliding box supports fully so they are under rear crossmember.
- Switch engine ON.
- Lower the forklift (raise forks) onto the sliding supports and pressurise machine down onto the sliding supports.
- Switch OFF engine.

To dismount a forklift from a sliding box mount the following procedure is required once the electrical cable and safety chains have been removed.

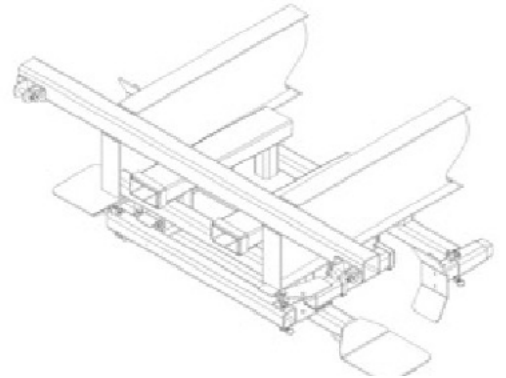
- Start the engine.
- Raise the machine off the sliding supports.
- Tilt the forklift forwards to lift the crossmember clear of the sliding support ends.
- Switch OFF engine.
- Retract the sliding support into the truck / trailer so they are clear of the forklift.
- Start the engine.
- Using the rear levers lower the forklift to the ground and using the tilt level off with all 3 wheels on the ground.

Wheelplate Mounting (Soft Ride)

This mounting kit uses wheelplates located on the truck / trailer to locate the forklifts front wheels. Weight of the forklift is then supported by the wheelplates and the forklift is then held in place the using transport chains to both hold the forklift in position and support some of the forklifts weight.

*NOTE: once mounted these chains should be **taut with no slack** otherwise the forklift may move during transportation.*

With this mounting kit there should be no pressure on the mast hydraulics and the forks should be “loose” in the fork pockets / support brackets.



Once the forks are located in the forks pockets / support brackets the following specific procedure is required to mount the forklift correctly onto the mounting kit.

- Extend / position Forks using iR Reach so that the front wheels are just behind the wheelplates.
- Using the rear levers tilt the truck forwards so the rear wheel is off the ground.
- Lift the truck so the front wheels are just above the wheelplates.
- Retract the iR Reach to move the truck forwards so the front wheels are fully on the wheelplates.
- With iR reach fully retracted lift truck / tilt forwards slightly to allow transport chains to the fitted.
- With transport chains securely fitted switch OFF engine.
- Cycle the rear levers release the mast hydraulic pressure and the forklift will settle onto the wheelplates and tension the transport chains.

To dismount a forklift from a Wheelplate mount the following procedure is required once the electrical cable has been removed.

- Start the engine.
- Using the rear levers lift the forklift slightly to release pressure on the transport chains.
- Remove and safely stow the transport chains.
- Lift the forklift so front wheels are off the wheelplates.
- Extend the mast with the rear levers until the front wheels are clear of the wheelplates.
- Using the rear levers lower the forklift to the ground and using the tilt level off with all 3 wheels on the ground.

Hook Mounting

This mounting kit uses a “hook” on the forklift side frames to locate onto specific bars on the truck / trailer rear crossmember. These bars then locate and support the forklift. The mast hydraulic pressure is then released and the forklift naturally pivots backwards until the front wheels locate on pads on the truck / trailer to position the forklift for transport. To ensure the forklift cannot come off the truck / trailer a locking mechanism is incorporated into the hook / bar design to “lock” the forklift onto the trailer.

With this mounting kit the chains fitted between the forklift and the rear of the truck / trailer are left loose and are fitted as safety chains.

Once the forks are located in the forks pockets / support brackets the following specific procedure is required to mount the forklift correctly onto the mounting kit.

- Extend the iR reach so that the hook is just behind the hook bar on the truck / trailer
- Using the rear levers tilt the truck forwards so the rear wheel is off the ground.
- Lift/tilt the truck so the hooks are inline with the bars on the truck / trailer.
- Retract the mast to move the truck forwards so the hooks locate onto the bars.
- Depending on hook kit type lower forklift hooks onto bars.
- Locate and lock hook retaining device.
- Fit transport chains.
- Switch OFF engine.
- Using dump valve switch or rear levers release the mast hydraulic pressure and the forklift will settle onto the hook and pivot to locate front wheels of location plate.

To dismount a forklift from a Hook kit mount the following procedure is required once the electrical cable and transport chains have been removed.

- Remove / release the hook retaining devices.
- Tilt the forklift slightly forwards to give front wheel clearance to the location plate.
- Lift / tilt /Extend the mast with the rear levers to release hooks from the bars and extend mast until hooks are clear of the bars.
- Using the rear levers lower the forklift to the ground and using the tilt level off with all 3 wheels on the ground.

7.0 SERVICE SPECIFICATIONS

When servicing your Loadmac 225 we recommend using original Loadmac spares as they have been designed and specified to work on your machine.

Where safely critical items are repaired or replaced it is vital that this is done in accordance with Loadmac's specifications to ensure machine safety is maintained. Contact your local dealer for spare parts.

For repairs and servicing all work must be carried out in accordance to Loadmac Specifications. No Modifications or alterations may be carried out to the forklift outside of specification without approval from Loadmac in writing.

Only in the event that Loadmac is no longer in business and there is no successor in the interests to the business, may the user arrange for a modification or alteration to a powered industrial truck, provided, however, that the user:

- arranges for the modification or alteration to be designed, tested and implemented by an engineer(s) expert in industrial trucks and their safety.
- maintains a permanent record of the design, test(s) and implementation of the modification or alteration.
- approves and makes appropriate changes to the capacity plate(s), decals, tags and instruction handbook.
- affixes a permanent and readily visible label to the truck stating the manner in which the truck has been modified or altered, together with the date of the modification or alteration and the name and address of the organisation the accomplished those tasks.

Always ensure items removed from your Loadmac during servicing are disposed of correctly in line with local environmental legislation.

Special attention should be adhered to regarding safe storage and disposal of fluids, engine oil, hydraulic fluid, coolant etc.

Where possible items removed for disposal should be recycled in accordance with the material and part in question. For further information on recycling or disposal of Loadmac parts contact your local dealer of Loadmac directly.

7.1 ENGINE OIL

The engine must be operated using heavy-duty lubrication oils meeting the following API requirements. Straight mineral oils are not suitable, neither are oils of less detergency.

AMBIENT TEMPERATURES	-1°C TO 25°C 30°F TO 77°F	4°C TO 30°C 39°F TO 86°F
Up to 100 hours	SAE 10W/30 to API CC	SAE 15W/40 to API CC
After 100 hours	SAE 10W/30 to API CD/CE	SAE 15W/40 to API CD/CE

7.2 HYDRAULIC FLUID

Oils conforming to the International Standard ISO G344HV grade oils with improved viscosity/temperature characteristics should be used. The hydraulic oil used in the Loadmac 225 must have the correct temperature range for the ambient temperature in which the machine is being operated. If the operating temperature is outside the standard range, the standard oil should be replaced with the correct grade. Here are some examples of commercially available oils. Make sure the correct type is used in the relevant ambient environment.

AMBIENT TEMPERATURES	Low Range -20°C to 25°C -4°F to 77°F	Standard Range -10°C TO 35°C +14°F TO 95°F	High Range 0°C TO 45°C 32°F TO 113°F
Castrol: Hyspin	AWH 32	AWH 46	AWH 68
B.P.: Bartran	HV 32	HV 46	HV 68
Esso: Univis	N 32	N 46	N 68
Mobil:	13 M	15 M	16 M
Shell: Tellus Oil	T 32	T 46	T 68
Texaco:	HDZ 32	HDZ 46	HDZ 68
Millers Oils		MILLMAX HFD (U)	HDZ 68

MILLER OILS is a BIODEGRADABLE Hydraulic fluid fitted to specific trucks where ordered. Once filled with this oil ONLY biodegradable (HEES / HFD u) or equivalent can be used to top up or replace. Should a truck fitted with biodegradable oil need to be converted to "standard" oil advice must be taken to avoid costly damage to seals and components as the 2 oil types are not compatible.

NOTES:

- The sequence in which the brand-names are listed does not signify any grading as to their quality or preference.
- Machines are supplied with the standard-range hydraulic fluid unless otherwise stated.
- Trucks fitted with biodegradable hydraulic fluid are clearly marked as such.

7.3 ENGINE COOLANT

A mix of 50% permanent type anti-freeze and 50% distilled water should be used to fill the cooling system. This coolant mixture both inhibits corrosion and also gives the system protection down to -37°C (-35°F). A good quality coolant with a specific gravity of 1.080 at 15.5°C (60°F) should be used.

The antifreeze should comply with one of the following specifications:

SAE J1034 • BS 6580: 1985 • MIL-A-117 55D • MIL-A-461 53/B

The concentration of the coolant may deteriorate over a period and therefore should be checked at least once a year or at each 250 hours' service whichever occurs first.

7.4 ENGINE FUEL SPECIFICATION

The engine should be operated only on diesel fuel oil which conforms to one of the following:

BSS2869: 1970 Class A1 or A2.

USA Specification ASTM D-975-77 Grades No. 1-D and 2-D.

The fuel injection system is manufactured to very fine tolerances. To avoid excessive wear or damage, it is important to use clean fuel which is free from dirt or water. In colder climates summer-grade fuel is unsuitable for use in winter because it becomes cloudy, separates and forms a wax which rapidly clogs the fuel injection equipment. In these conditions winter-grade fuel should be used.

7.5 CHAIN LUBRICANT SPECIFICATION

The lubricant oil's viscosity should be chosen so that it will remain fluid at all occurring ambient temperatures. Under normal temperature conditions, lubricating oils with a viscosity from SAE 20 to SAE 40 (50 to 2000 mm²/s at 40°C) are suitable. The following are examples of commercially available chain-lubricating products.

- Rexnord high-performance Chain Spray
- BP Energol Transmission Oil 80
- ESSO Transmission Oil ST80
- Shell Tonna Oil T200

7.6 GREASE SPECIFICATION

The recommended grease for all moving parts is Lithium EP2 or equivalent specification. This is particularly important for all bearings and chain rollers.

7.7 WHEELS AND TYRES

Recommended tyre pressures

SPECIFICATION	PRESSURE
23 x 8.5 – 12. 6ply	4 Bar
23 x 8.5 – 12. 8 ply	4 Bar
27 x 10.5 – 12. 8 ply	4 Bar

8.0

MAINTENANCE SPECIFICATION

It is important for both operator safety and forklift longevity that it is inspected and maintained according to the specified schedule. Failure to check and maintain the forklift as prescribed could lead to premature wear and failure of parts (including safety critical items leading to possible injury).

If issues are found during checks and servicing they should be reported and rectified as soon as possible to avoid further wear or potential safety concerns.

Before carrying out any maintenance/ checks, the engine should be turned off and allowed to cool down, the battery isolated and the forks safely positioned on the ground.

8.1 DAILY CHECKS

The Loadmac 225 should be checked and inspected by the operator daily for damage, worn parts, fluid levels etc. to ensure the machine is safe to use.

The following daily checks should be carried out and noted (Section 10 has a recommended checksheet that can be printed out and filled in by the operator to show checks have been carried out.)

- Check for broken, missing or damaged parts.
- Check the forks, mast and lift chains.
- Check all hydraulic hoses and connections.
- Check the wheels for any damage, missing or loose lug nuts.
- Check the tyres for cuts, bulges, thread depth and proper inflation pressure
- Check the engine oil level. Add oil if required (see section “Engine Oil”).

If operating in a dusty or sandy environment;

- Clean engine air filter element and replace if necessary.
- Clean all dust etc. from between radiator fins. Where necessary, remove radiator for proper cleaning.

Lift the hood and check the engine cooling system. Fill to the proper level if necessary.

Check the fuel level and top up if necessary. Ground the nozzle against the filler neck to prevent sparks.

Check hydraulic oil level sight-glass. Top up if necessary (see section “Hydraulic Fluid” for oil specification).

8.2 WEEKLY CHECKS / MAINTENANCE

- In Dusty Conditions check radiator fins for debris / blockages, Clean as Necessary
- In Dusty conditions check air cleaner element. Clean or replace as necessary
- Grease ALL grease points

Before carrying out the following maintenance, the engine should be turned off, the battery disconnected and the engine allowed to cool.

8.3 FIRST 50 HOURS OF OPERATION

	✓
Change engine oil and oil filter (see section "Engine Oil").	
Check engine air-filter element and replace if necessary.	
Replace fuel-filter element.	
Check alternator/fan-belt tension and adjust if required.	
Replace the hydraulic oil return filter element in tank mounted "combo" filter.	
Check all bolts and fittings for tightness.	
Check all wheel nuts for tightness (200 Nm, 150 lb. ft.).	
Check the hydraulic oil level with all cylinders retracted. Top up to the upper mark on the gauge. Do not overfill.	
Grease all moving parts manually at specified grease points (see "Grease Point Chart").	
If the machine is operating in a dusty or sandy environment, drain and remove the radiator. Clean all dust etc. from between the radiator fins. Replace the radiator and refill with the correct coolant (See section "Engine Coolant").	
Adjust and lubricate lift chains (see section "Chain Lubricant Specification").	

8.4 EVERY 200 HOURS OF OPERATION

	✓
Change engine oil and oil filter (see section "Engine Oil").	
Replace engine air-filter element.	
Replace fuel-filter element.	
Check coolant level and concentrate (see section "Engine Coolant").	
Check alternator/fan-belt tension and adjust if required.	
Adjust the engine idling speed if necessary (950 rev/min).	
Replace the hydraulic oil return filter element in tank mounted "combo" filter.	
Check the hydraulic oil level with all cylinders retracted. Top up if necessary.	
Check all mast bearings and replace where necessary.	
Check all wheel nuts for tightness (200 Nm, 150 lb. ft.).	
Check the machine for loose bolts, nuts, leaks or damage.	
Inspect mast chains and rollers.	
Check mast wear pads by shaking mast.	
Check top and bottom lift cylinder mountings.	
Check condition of hoses and cylinders.	
Check condition of forks and fork boards (plates).	
Check condition of wear plates.	
Check seat, seat belt, overhead guard mounting and warning decals. Repair or replace if necessary.	
Check tyre condition and pressure.	
Grease all moving parts manually at specified grease points (see "Grease Point Chart").	
Check rear steering pivot bearing for wear.	
Check hydrostatic drive and park brake operation.	
Check operation of steering, diff-lock, pedals, valve levers, warning lights, gauges, horn and reverse alarm.	
If an oil cooler is fitted, check that it is clean and functioning correctly.	
If the machine is operating in a dusty or sandy environment, drain and remove the radiator. Clean all dust etc. from between the radiator fins. Replace the radiator and refill with the correct coolant (See section "Engine Coolant").	
Check lift chains for elongation. Adjust or replace if necessary.	
Lubricate lift chains (see section "Chain Lubricant Specification").	
Test drive the machine with a load.	
Check transport lights, chains and mounting kit on trailer/truck.	

8.5 EVERY 1000 HOURS OF OPERATION

	✓
Change engine oil and oil filter (see section "Engine Oil").	
Replace engine air-filter element.	
Replace fuel-filter element.	
Check coolant level and concentrate (see section "Engine Coolant").	
Check and adjust the alternator/fan-belt tension. Adjust or replace if worn.	
Adjust the engine idling speed if necessary (950 rev/min).	
Drain and clean the fuel tank.	
Change hydraulic oil and replace the hydraulic oil strainer filter located inside the hydraulic oil tank (see section "Hydraulic Fluid" for correct type)	
Replace the hydraulic oil return filter element in tank mounted "combo" filter.	
Check the machine for loose bolts, nuts, leaks or damage.	
Check all mast bearings and replace where necessary.	
Check all wheel nuts for tightness (200 Nm, 150 lb. ft.).	
Inspect mast chains and rollers.	
Check mast wear pads by shaking mast. Adjust or replace where necessary.	
Check condition of hoses and cylinders.	
Grease all moving parts manually at specified grease points (see "Grease Point Chart").	
Check top and bottom lift cylinder mounting.	
Check condition of forks and locks.	
Check condition of fork carriage.	
Check seat, seat belt, overhead guard mounting and warning decals. Repair or replace if necessary.	
Check tyre condition and pressure.	
If oil cooler is fitted, check that it is clean and functioning correctly.	
Check rear steering pivot bearing for wear. Replace if necessary.	
Check all hydraulic hoses for external wear and replace where necessary.	
Check all electrical connections for tightness and corrosion. Replace where necessary,	
If the machine is operating in a dusty or sandy environment, drain and remove the radiator. Clean all dust etc. from between the radiator fins.	
Replace the radiator and refill with the correct coolant (See section "Engine Coolant").	
Check lift chains for elongation. Adjust or replace if necessary.	
Lubricate lift chains (see section "Chain Lubricant Specification").	
Check park brake function.	
Check operation of steering, diff-lock, pedals, valve levers, warning lights, gauges, horn and reverse alarm.	
Test drive the machine with a load.	
Check transport lights, chains and mounting kit on truck/trailer.	

ITEM NO	DESCRIPTION	NO. OF GREASE POINTS
1	Accelerator & Forward/Reverse Pedal	Pivot Pin
2	Mast Middle Section – Stage 1	2
3	Mast Outer Section – Stage 2	2
4	Mast Inner Section – Stage 3	4
5	Fork Carriage – Slide rails	Manually Grease
6	Tilt Carriage – Pivot Bearings	2
7	Tilt Carriage – Side Shift Bearings	2
8	Long iR Arm - Mast Bearings	2
9	Long iR Arm – Carriage Bearings	2
10	Long iR Arm to Short iR Arm Pivot	2
11	Chain Rollers Upper & Lower	4
12	Slew Ring	2
13	Side-Shift Cylinder Bushing	2
14	Tilt Cylinder Bushing	1
15	Reach Cylinder Bushing	2

10.0

DAILY MAINTENANCE INSPECTION CHECK SHEET

Operator:

Date:

ACTION/DESCRIPTION	✓	x
Check for broken, missing or damaged parts.		
Check the forks, mast and lift chains.		
Check all hydraulic hoses and connections.		
Check the wheels for any damage, missing or loose lug nuts.		
Check the tyres for cuts, bulges, thread depth and proper inflation pressure		
Check the engine oil level. Add oil if required (see section "Engine Oil").		
If operating in a dusty or sandy environment; a. Clean engine air filter element and replace if necessary. b. Clean all dust etc. from between radiator fins. Where necessary, remove radiator for proper cleaning.		
Lift the hood and check the engine cooling system. Fill to the proper level if necessary. The proper coolant level is just below the radiator cap. Do not remove the radiator cap when the engine is hot. Escaping steam could cause severe burning (see section "Engine Coolant").		
Check the fuel level and top up if necessary. Ground the nozzle against the filler neck to prevent sparks.		
Check hydraulic oil level sight-glass. Oil level must be between the red line (minimum) and the black line (maximum). Top up is necessary (see section "Hydraulic Fluid").		



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SERVICE INFO SPARE FOR LOCAL DEALER

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