

CLYDESDALE

Powering the Future **User Instructions**

CLY 750 1-3000

Sahlins 3000kg, 3 Phase Drum Winch

READ THESE INSTRUCTIONS CAREFULLY BEFORE OPERATING



Thank you for choosing a SAHLINS product.

We want you to be satisfied with your Overhead Line Winch.

This instruction manual has been written to help you operate and look after it safely.

We ask you to read the manual thoroughly before you start using the machine so that you are aware of the safety measures you need to take when using it.

GENERAL.

This equipment has been carefully designed and developed to eliminate health and safety risks.

There are certain risks when working with conductors and poles, to avoid these it is important that:

- Instructions are studied and observed
- Personnel are regularly trained in maintenance and safety
- Appropriate equipment and tools are available
- Winch owner and work supervisors take responsibility for ensuring that an effective safety programme and regulations are drawn up and followed by all personnel.

Our instructions contain important information which all users must be aware of and understand before they use the equipment. For your sake and the sake of others please take special notice of the items/sections with the following headings.

WARNING. This is important information that warns you of the risk of serious personal injury or threat to life if the instructions are not followed.

CAUTION. Important information that describes how to prevent damage to the machine and equipment or how to avoid a situation that could cause personal injury.

NOTE. Advice regarding operation, care and maintenance of the machine and equipment.

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SAFETY RULES.

GENERAL SAFETY PRECAUTIONS

Personnel safety

1. Read and remember all safety warnings, precautions and directions in the operation and maintenance instructions, and read and learn the meaning of all signs that are on and around the equipment. If you are in any doubt, make sure you get answers to all your questions before starting work.
2. Do not work with machinery or equipment if you are under the influence of alcohol, strong medication, sedatives or other drugs that could make you less alert or affect your judgement.
3. Take the necessary precautions to avoid loose hair or clothes becoming trapped in moving parts of controls.
4. Whenever possible wear safety gloves to protect your hands and fingers from cuts, grazes, burns and solvents.
5. Always wear safety goggles whenever there is a risk of flying particles, splinters, dust or other objects that could damage your eyes, and when safety regulations demand it. Look after your eyes!
6. Always wear a safety helmet and safety shoes when work requires it
7. Always wear hearing protection in areas with a high noise level.

Safety in the work place

8. Keep your working area clean and uncluttered
9. Keep unauthorised personnel away from the working area. Always keep a good check on who is present.
10. Surfaces that you touch with your hands or feet must be kept clean, dry and free from oil or grease.
11. Store parts and tools in a place appointed for that purpose when they are not in use.
12. Do not stand underneath or allow anyone else to stand underneath any raised or suspended equipment.
13. Find out the weight limits of lines and lifting equipment and the clearance they require when in use.

Equipment safety.

14. Warning signs, prohibition signs and information signs must not be obscured, changed, damaged or removed.

15. Before setting up mobile equipment make sure that the ground is firm and level. Check that supports and securing devices are safely in place. Follow the instructions for securing and setting up the equipment where appropriate.

16. Before moving mobile equipment you must check that brakes and road lights work satisfactorily. Make sure that supports are raised high enough above the ground to permit safe transport. Check that there are no loose parts that could fall off during transport.

17. Check the components of the equipment each time before use to make sure that no parts are damaged or suspected of being damaged. Repair or replace damaged parts or parts that are suspected of being damaged. Repair or replace damaged parts before starting or operating the equipment. Use only original spare parts.

18. Before starting or operating the equipment make sure that no person, animal, tool, part or other foreign object is inside, on, under or near the equipment. Check that all protection and safety equipment is correctly installed and in satisfactory condition.

19. Do not let untrained personnel start or operate any equipment without supervision by a trained operator.

20. Never leave the equipment unsupervised.

21. When starting and operating the equipment watch out for defective instruments, visible defects, smells or unusual noises that could be a warning of a fault. Stop the equipment immediately if you suspect a fault.

22. Carry out all inspections, maintenance, lubrication and adjustments very carefully and in accordance with the manufacturer's recommendations. Always stop the machine before carrying out maintenance.

Safety from fire and flammable substances.

23. Store highly flammable, flammable and hazardous substances in a safe place in the appropriate containers. These must be clearly marked according to the relevant regulations.
24. Do not permit smoking or naked flames in the vicinity of fuel and oil tanks or other flammable substances.
25. Switch off all engines when topping up oil or fuel. Follow the regulations and recommendations that apply to handling these substances.
26. Never start a diesel or petrol engine in a closed space unless it is properly ventilated. Harmful gases can kill.
27. Never use highly flammable and /or flammable substances such as petrol, paraffin or diesel to clean parts. Always use low flammability solvents that are intended for cleaning.

Safety with hydraulic systems

28. Do not carry out maintenance on components of the hydraulic system without first depressurising the system.
29. Do not carry out any checks on the oil system without first depressurising the system. Oil under pressure can be dangerous if the pressure is released incorrectly. Oil can get very hot during operation. Wait until the system has cooled down before starting work.
30. Do not disconnect a hydraulic cylinder from its couplings until the system has been depressurised.
31. Do not operate a pressurised system with worn or damaged hoses, valves and seals. Replace damaged components before operating the system again.
32. Do not try to remove hydraulic cylinders or other hydraulic equipment unless you are trained to do such work.
33. Never adjust hydraulic system pressure settings above the recommended values.
34. Follow the manufacturer's recommended inspection and maintenance instructions for pressurised systems to make sure that safe conditions exist during operation.

OVERHEAD LINE WINCH 2241

Overhead line winch 2241 is a hydraulically-driven drum winch which can accept a variety of drums for different applications. It is designed solely for pulling suspended cable and conductors using a pilot line drum, or for removing and replacing conductors with a split drum or wooden drum. The machine

allows continuously variable regulation of pulling force and reel-in speed, which gives complete control over line pulling.

To ensure maximum safety the machine has a failsafe brake to maintain the load in case of stoppage. The winch is equipped with hydraulic outrigger legs, line spreader, road axle, overrun brake and manual hand brake.



TECHNICAL DATA

Pulling force: Max. 1500 kg with 500 mm drum diam.
Appr. 500 kg with full drum diam. of 1000 mm

Speed: Continuously variable from 0 - 100 m/min.

Hydraulics: Variable displacement pump. Max. oil pressure 180 bar, max. oil flow approx. 60 l/min.

Drum: Split drum O.D. 900mm / I.D. approx. 350mm / Int. width 200mm
Split drum O.D. 900mm / I.D. approx. 350mm / Int. width 720mm Pilot rope drum O.D. 1100 mm with 1500 m 10 mm (Paracore) Pilot rope drum O.D. 1000 mm I.D. 273 mm Int. width 725 mm Wooden drum max. K16 (O.D. 1600 mm X width 1018 mm)

Pulling line: 10 mm Paracore line - Breaking load 3250 kg

Drum shaft: Diam. 70 mm. A "failsafe" automatic brake is built in, to lock the drum shaft (hold the load).
- for 3 pilot drums for new installation with 1500 m 10 mm rope.
- for pilot drum diam. 1000 mm width 725 mm.
- for wooden drums max. K16 (diam. 1600 width 1018 mm) for cable replacement or removal.
- for split drums.

Engine: Briggs & Stratton 4-stroke air-cooled petrol engine, 22 hp electric start

Weight: **Max Gross weight 1600 kg, unladen weight 1000 kg**
 Max. drum weight for transport 600 kg

Winch unit without drums, with axle and line spreader	1000kg
Drum axle (alone)	35 kg
Pilot drum with 1500 m 10 mm synthetic line	210 kg
Steel drum diam. 100 mm excl. line	145 kg
Scrap reel (200 mm)	50 kg
Scrap reel (720 mm)	85 kg

Width: 2200 mm (outside wheels)

Height: appr. 2000 mm (guard), appr. 2150 mm (line spreader) 3

Hydraulic pump: Variable displacement 0-1 9 cm³/rev, max. pressure 210 bar

Hydraulic motor: AR 100 NC 25 max. pressure 210 bar

Noise level: 95 dB(A)

Oils:

Hydraulic sys: Hydraulic oil ISO VG 32 (ISO 3448) around 38 l
Planetary gear: Transmission oil ISO VG 150 (ISO 3448) 0.5 l
Engine: B&S Engine oil SAE IOW-30 1.4 l (1.6 for filter change)

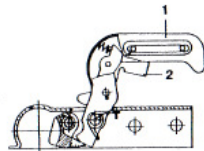
HANDLING

Working with overhead line winches.

SAHLINS overhead line winch are reliable and designed to let you work safely. It can help you carry out your work in a simple and straightforward manner. You must however follow these instructions carefully since incorrect handling can endanger life.

Hitching up:

Adjust the position of the jockey wheel so that the ball coupling is at the right height for connection to the ball hitch on the towing vehicle. Reverse the towing vehicle towards the trailer or pull the trailer up to the ball hitch. Open the coupling by pulling the handle (1) firmly upwards and releasing the safety catch (2) if fitted.



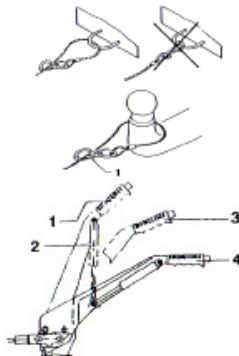
Place the ball coupling over the ball hitch and release the should now return to its original position, push down on the handle just to make sure. The safety catch secures the coupling automatically. Connect the safety wire and lighting cable, if fitted, to the towing vehicle. Crank the jockey wheel up to its highest position and clamp securely.

Unhitching:

Crank down the jockey wheel, disconnect the safety wire and lighting cable. Pull the handle firmly upwards and release the safety catch, if fitted. Lift the ball coupling off the ball hitch.

Attaching the safety wire:

To make sure that the trailer brakes are applied if the trailer breaks loose from the towing vehicle, the safety wire must be secured around the existing tow hitch on the towing vehicle as shown.



Parking brake:

Pull the lever past the dead zone (the gas spring will automatically tension if the trailer rolls backwards). To release the handbrake: Press the button on the handbrake lever and push the handbrake lever firmly downwards into the neutral position (against the stop). When parking the winch unit always place wedges under the wheels.



Jockey wheel:

Always crank the jockey wheel all the way up to the stop before driving. Make sure the jockey wheel does obstruct the brake rod.

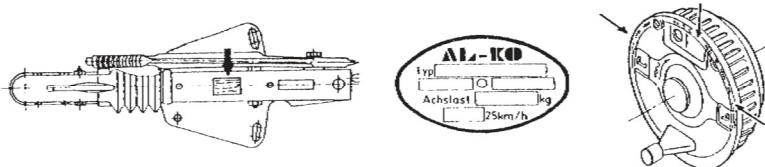
Ball hitch load:

Always check the load on the ball hitch before driving. Under no circumstances should you exceed the maximum permissible loads on the ball hitch, ball coupling (75 kg) and trailer brake (1600 kg). Avoid overloading the ball hitch as this will have a negative effect on driving characteristics and impair braking

Marking:

Axle serial plate

Trailer brake - model designation, type approval no. Handbrake - model designation, type approval no.



BEFORE STARTING

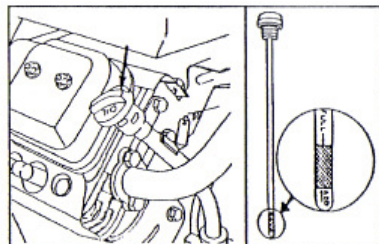
Check the oil level: (make sure winch is level)

- Engine

If necessary top up to the Full mark on the dipstick, pouring slowly.

Insert the dipstick all the way until the cap is touching the pipe.

The dipstick must be pushed firmly into the pipe when the engine is running.



- Hydraulic tank

oil level should be between the min. and max. marks on the level glass.



Also read the instruction manual for the engine.

STARTING AND STOPPING THE ENGINE

WARNING: Wear approved hearing protection when the engine is running.

Check the fuel level. If necessary fill up with 95 octane unleaded petrol.

WARNING: Do not overfill the tank. Leave about 6 mm of space for expansion. Make sure the filler cap is screwed on tightly.

Open the fuel tap

Turn the "Speed" control clockwise to the bottom setting (pointing straight up).

Pull out the choke. Apply some throttle (about half throttle). Turn the key to "On" or "Start"

After starting, gradually reduce the choke setting and let the engine warm up for 5-10 minutes.

Never start a warm engine without choke.

To stop, turn the throttle to the idle setting and turn the key to the "Off" or "Stop" position.

Close the fuel tap.

WARNING: Always remove the key from the ignition switch when you leave the machine unsupervised and when it is not in use.

When the machine is not in use it should be protected against the direct effects of weather.



OPERATION

Control of speed, forward-reverse, outrigger legs, line spreader and drum lift are all by means of controls on the operator's panel. From the operator's panel the operator has a good view of the set-up and line-pulling operation.

WARNING: Make sure you understand the functions of the controls before starting the machine.

SETTING UP THE MACHINE

Unhitch the machine from the towing vehicle

After starting the engine set the "Speed" control roughly midway.

Then lower the outrigger legs to the ground, extending them to their full length.

WARNING: Always extend the outrigger legs before doing anything else. (Otherwise the machine may topple.)

If necessary you should also anchor the machine by means of the towing eye (especially when pulling heavy lines).

WARNING: Make sure the machine is anchored securely so that it can hold the load.

CAUTION: Fit the exhaust hose if necessary. FITTING

THE DRUM AXLE

Wooden drum.

Fit the drum axle so that the drive is on the correct side of the drum.

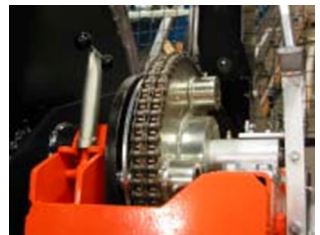
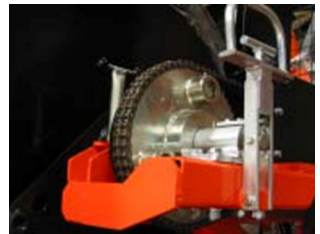
Always use SAHLINS standard tapers to centre the drum axle in the hole in the drum. Mark and drill two 27 mm diameter holes for the drive studs. Secure the drum with the axle nut so that it is firmly located on the axle. Make sure the drive

studs engage correctly in the drilled holes.

Lift up the front part of the chain guard. Release the axle bearing clamp and lift up the top half. Then lower the boom so that the drum can be rolled in.



Roll in the drum and raise the boom. Engage the drive studs, then lock the bearing clamp halves together and lower the chain guard.



WARNING: Check that the tensioning nut and bearing clamp have been securely locked and that the chain guard has been lowered.

Scrap cable reel/s (Split drums)

When using the scrap cable reel, fit the drum axle so that the drive studs engage between two spokes on the scrap reel and that the drive studs on each drum engage between two spokes. Otherwise the procedure is the same as for wooden drums.

Pilot line drums

When using the drum axle with three pilot line drums, follow the same procedure as for the "Wooden drum" above, the only difference being that each drum can be engaged and disengaged on the drum shaft independently when pulling and reeling in line.

The drum can be raised and lowered using the controls on the Operator's panel



WARNING: Always extend the outrigger legs to the ground before operating any controls. (Otherwise there is a risk that the machine will topple.)

OPERATION

WARNING: Before you operate the machine make sure you understand the functions of the controls.

REGULATING PULLING FORCE AND SPEED

The speed is controlled using the "speed" control. Set the control to the desired reeling- in speed and pulling force. (High speed = low pulling force).

Turn up the speed control (clockwise) to "minimum" (handle pointing straight upwards). Pull the handle marked "Winch in" and turn the speed control (clockwise) to give the desired reeling-in speed. (Always run the engine at full throttle.)



The pulling force is controlled by an overflow valve. Unscrew the knob on the valve (anticlockwise) until the drum axle stops, then screw it in about 1-1.5 turns. This is also a safety valve, if the line becomes snagged for any reason, the pressure will rise until the drum stops. This avoids damage to poles, lines and personnel.

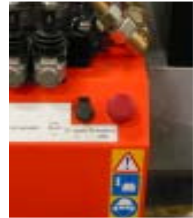
The overflow valve must be adjusted during line pulling when the pulling force increases. If the engine seems to be labouring, reduce the pump displacement (turn knob clockwise) so that the speed drops and the pulling force can increase.

WARNING: Do not screw in the overflow valve so far that it could damage, lines, poles, etc.

To stop reeling, release the "Winch in" handle, the failsafe brake will hold the load. (Max. hydraulic pressure 210 bar).

In case of emergency, release the "Winch in" lever and press the "Emergency stop button".

NOTE: When pulling out a pilot line it is not necessary to start the engine.



USING THE SCRAP CABLE DRUM (SPLIT DRUM)

WARNING: Before pulling cable make sure that the cable is in good condition and not likely to break, as this could cause personal injury or damage to property.

Fit the reels on the drum axle and fit the drum axle so that the drive studs engage between two spokes on the scrap reel and the drive studs on each drum engage between two spokes. Otherwise the procedure is the same as "Fitting the drum axle".



The old cable is wound onto the drum and "lashed" before the drum is lifted out of the machine. Always lift off the line spreader or run very carefully when line splices are reeled in. Do not wind more wire onto the reel than you can handle. To separate the drums undo the locking nut and lift off the wire reel.

WARNING: Always use a line spreader when reeling in line in order to prevent accidents.

CAUTION: Do not reel synthetic fibre line onto the scrap drum as the elasticity of this line can cause the drum to collapse or explode.

USING THE LINE DRUM

WARNING: Before pulling line make sure the line is not damaged or incorrectly spliced.

WARNING: When pulling line make sure there is a safe margin between the pulling force and the breaking load of the line. See "Technical data".

WARNING: Always use the line spreader whenever you reel in line in order to avoid accidents.

The line drum is used for pulling lines and overhead cables. The drum must only be used with Clydesdale paracore rope (10 mm, length 1500 m). If you want to use other lines please contact Clydesdale for approval before doing so. Use a swivel between

the drag line and the pulling coupling. Lines must only be joined with approved splices. **Do not tie lines together.**

When using a drum axle with three pilot line drums, each drum can be engaged and disengaged independently on the drum axle when pulling or reeling in line. See also "Fitting the drum axle".



USING THE LINE SPREADER WARNING: It is

very important that the line spreader is used for all types of reeling in order to avoid accidents.

The line spreader is an accessory and must be used with:

- reel for winding in wire
- winch drum with pilot wire
- wooden drum



The wire spreader is operated by a separate lever on the operator's panel.

MAINTENANCE

ENGINE: See separate engine instructions.

HYDRAULIC SYSTEM The hydraulic system must be maintained in order to work properly. The main task of the oil in the system is to transmit force. It also has to lubricate the moving parts of the hydraulic components and protect against rust, as well as carrying away heat and particles of dust from the system. The oil should be changed after the first 50 hours in operation. After that the oil should be analysed or changed at least once a year. The tank must be cleaned if a layer of dirt precipitates out.

The oil filter must always be replaced at the same time as the oil is changed or when major work is done on the hydraulic system.

Check the oil level in the tank regularly.
If the level drops, the leak must be repaired immediately.



Always pour in new oil through the filter, up to the top level mark on the tank.

Hydraulic oil filter.

The filter should be changed twice a year or when the oil is changed, or when major work is done on the hydraulic system.

1. Unscrew the cap and lift out the filter insert.
2. Unscrew the nut underneath the filter cartridge.
3. Take off the cartridge.
4. Wipe the magnet with a cloth, not cotton waste. Blow it clean with compressed air.
5. Check the sealing rings and fit a new cartridge, making sure the spring underneath the cartridge is correctly positioned. Tighten the nut until it reaches the end of the thread.
6. Fit the cap with the spring underneath it.

WARNING: Do not wash the paper cartridge under any circumstances.
Always replace with a new cartridge. Do not unscrew the stack of magnets.
If the magnets are fitted incorrectly the filter will not work.

Check the controls and all hydraulic couplings for leaks. Tighten the couplings if a leak appears.

CAUTION: Always wash your hands if they have been in contact with oil or petrol.

NOTE: Used oil is a threat to the environment. Do not pour it onto the ground or down the drain. Take it to a recycling station for re-use.

GEARBOX/BRAKE

Check the oil level regularly. Make sure the oil is always at the correct level. Replace the oil after the first 50 hours in operation, then every 500 hours or at least once a year. (See tech. data for oils.)

BALL COUPLING/TRAILER BRAKE/WHEEL AXLE model AL-KO After

2000 km or 6 months:

Check the hub bearings by first placing the winch on blocks or extending the outrigger legs so that the wheels are free of the ground, then disconnect the brake rod. The wheels should rotate freely without any resistance from the axle.

If adjustment is necessary, contact SAHLINS workshop if the user is not qualified to carry out the work or does not have the specialist tools that are required.

Every 5000 km or 12 months:

Adjust the brake shoes to compensate for wear to the brake linings. If you drive on very hilly roads the brake linings will wear more quickly.

WARNING: Never adjust the brake rod or fork. Every

10000 - 15000 km or 12 months:

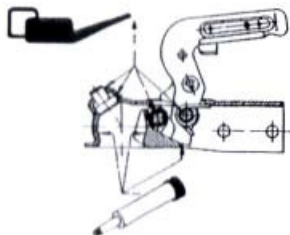
- Lubricate the wheel bearings and adjust the bearing axial play.
- Inspect brake linings for wear through the inspection opening. If necessary replace the brake linings and old return spring on the brake shoes.
- Adjust the braking mechanism.
- Lubricate and oil the sliding surfaces and linkage of the trailer brake.

Reasons for overheating of wheel brakes:

- Wheel brakes incorrectly adjusted or too tight.
- Brake cable, frayed, wire does not return to neutral position.
- Return springs slack or broken.
- Corrosion on brake drum
- After long period stationary.
- Handbrake lever not fully released.
- Brake rod not releasing fully.

Ball coupling

Clean the coupling thoroughly, then lubricate the socket, pins and bearings with grease or oil (see diagram).



GENERAL

Inspect the chain transmission and tighten the chain if necessary.
Lubricate the chain and all other lubrication points at regular intervals.

Inspect the drive studs on the axle to make sure they engage properly and work correctly.

Check the operation of the drums and make sure they are secure. Replace locking pins if they are bent or damaged.

Check the pulling lines on the pilot line drums and replace if necessary

WARNING: Only replace with SAHLINS original pulling line. Contact SAHLINS MASKIN AB for approval of other lines.

Contact SAHLINS workshop if the user is not qualified to carry out the work or does not have the specialist tools that are required.

TOWING THE OVERHEAD LINE WINCH Max.

drum weight for towing: 900 kg



WARNING: Before towing, raise the lifting boom into the correct position for towing.

WARNING: Close the fuel tap when towing the machine to prevent fuel leaking from the carburettor.

STORAGE FOR AN EXTENDED PERIOD.

The storage area must be clean and dry. Drain off the fuel, empty the fuel tank into a suitable vessel. Start the engine and let it run until it runs out of fuel. Drain the oil from the crankcase while the engine is still warm. Refill with new oil. Remove the spark plugs and pour a spoonful of clean oil into each cylinder. Replace the spark plugs and turn the engine over slowly to distribute the oil. Remove dirt and debris from the cylinder, cylinder head flanges, fan cover, the rotating grille and the area around the silencer. Recharge the battery and store it according to the battery manufacturer's instruction.

MAINTENANCE CHART INTERVAL		Every time	Monthly or 20 hrs	Every 3.mon or 50hrs	Every 6.mon or 100hrs	Yearly or 300 hrs
Engine switch "ON", "OFF"	Check	x				
Control lever. "Dead-man handle"	Check	x				
Silencer	Check/ leaks	x				
Oil level/engine	Check Replace	x	x(3)	x		
Oil filter	Replace				x	
Air filter	Clean Coarse Filter Filter Element		x(1)		x(1)	
Fuel filter	Replace					x(2)
Fuel tank	Clean					x(2)
Cooling system	Clean				x	
Spark plugs	Clean/Adjust Replace			x		x
Valve clearances	Check /Adjust					x(2)
Gearbox/Brake	Check Replace			x		x
Hydraulic oil	Check Replace	x		x(4)		x
Hydraulic filter	Replace				x	
Ball coupling	Check	x				
Trailer brake	Check				x	
Wheel axle	Check				x	

Maintenance must be carried out at the intervals given in the table, at the specified monthly or hourly intervals, whichever comes first

- (1) Clean more often in dusty conditions.
- (2) Must be carried out by SAHLINS workshop unless the user is qualified to carry out such work and has the necessary specialist tools.
- (3) Replace the oil after the first 8 hours in operation. (4) Replace the oil after the first 50 hours in operation.

CAUTION: Always wash your hands after coming into contact with oil or petrol.

NOTE: Used oil is a threat to the environment. Do not pour it onto the ground or down the drain. Take it to a recycling station or similar centre for re-use

BATTERIES

THE LEAD ACID BATTERY IN THIS WINCH CAN BE RETURNED TO CLYDESDALE FOR SAFE AND ENVIRONMENTALLY SOUND DISPOSAL AT ANY POINT DURING THE MACHINE'S LIFE.

IF RETURN OF THE BATTERY TO CLYDESDALE IS EITHER NOT POSSIBLE OR NOT CONVENIENT THEN PLEASE RETURN THROUGH A LOCAL ENVIRONMENT AGENCY APPROVED COLLECTION POINT LOCAL TO YOU.