

CLYDESDALE

Powering the Future

User Instructions: CLY 750 3 1000 1000kg Combi Winch



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Multi-winch 2103 - a hydraulic powered - 2 speed combined capstan and drum winch with a large capacity. For overhead lines or underground cables. Fitted with double bull wheels and a separate storage drum for the pulling rope. For pulling overhead lines especially ABC cable a synthetic pulling rope is used. A steel wire rope is used with underground cables. The full 1000 Kg pulling force is always available due to the capstan system. The rope can easily be wound on or off of the bull wheels, which are open at the side. The rope drum is also easily dismantled.

When changing conductors or winding in old ones the 2100 can be used as a drum winch. A split drum can be fitted to the outlet shaft of one of the bull wheels (only certain models). Drums with large amounts of pilot rope (max. 1100 m) can also be used to pull long lengths of small conductors when the pulling force requirement is not too great. The machine is fitted with a line spreader.

TECHNICAL DATA

Pulling force:	Max. 500/1000kp (infinitely variable)
Speed:	Max. 20/40 m/min.
Pulling rope:	For ABC cables 500 m synthetic rope, 8 mm. For underground cables 500 m steel wire max. 8 mm. The special underground winch with adjustable dynamometer, max. 5 mm steel wire rope.
Engine:	Four-stroke petrol engine 13Hp
Drive:	Hydraulic operation with air-cooled hydraulic oil tank.
Weight:	260 kg (without rope).

OPERATING

Remove the machine from the towing hook. Screw the jockey wheel up as far as possible. Then adjust the support legs to a suitable height and lock them, now screw the jockey wheel down so that the machine rests firmly on the support legs. When necessary (when pulling heavy duty conductors cables) also anchor at the pulling eye.



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FITTING THE DRUM

Fit the drum so that the catch on the drum fits against the locking hole on the drum shaft. To pay out the rope, fit the drum so that the catch goes into the slot to disengage the drum (3) and feed direct from the drum. When winding in, the drum is locked by allowing the catch to go through the locking hole on the drum shaft. Fitting the drum to the outlet shaft of the bull wheel: run the winch so that the wide slot on the shaft points at angle, forward and upwards. Fit the drum with the catch pulled in and slide the drum coupling into the slot and turn so that the catch engages (4), lock the bearing cover to the axle end using the eccentric lock.



FITTING THE ROPE ON THE BULLWHEELS

Overhead line winch: Make 5 loops as shown in picture (5). Start by fitting the last loop's outgoing rope in the inlet roller on the winch and then thread the rope around all the grooves on the bull wheel and then through the line spreader to the drum (6). Special underground cable winch: Make five loops in the steel wire (as for the overhead winch, 5). Fit the wire through the inlet roller and then around the rear measuring wheel and forward to the underside of the bull wheel. Now fit the wire around each groove on the bull wheels and through the line spreader on to the drum (7). Fit the protective covers over the bull wheels and lock into position using the front and back screws. NOTE! be extremely careful when fitting the covers and check that the steel wire runs correctly in the bull wheel grooves



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BEFORE STARTING

Check the oil level: (make sure the winch is standing level). Engine, refill if necessary up to the "Full mark" on the dipstick, pour gently. Slide the dipstick in fully so that the cap rests against the pipe when checking the oil. The dipstick must always be fully inserted into the pipe while the engine is running. Hydraulics, see level glass (8), the oil level between minmax marking. Refill oil at the bleed nipple on the upper side of the tank (22 mm spanner). 4



STARTING AND STOPPING THE ENGINE

Fill with petrol, 95 octane unleaded or 96 octane Set the lever in choke or start position. Stop switch to the "ON" position. Give a little throttle.

Alt. 1 Pull the starter handle firmly. Never pull the starter cord out completely or let the starter handle fly back, let it gently return to its starting point.

Alt 2. Turn the key to start position



As soon as the engine has started gradually return the choke lever.

Always start a warm engine without choke. Run warm for approx. 5-10 minutes before pulling cable/rope.

Always run at full throttle while winding cable/rope.

When stopping, set the stop switch to the "OFF" position.



WINCHCONTROL

Control of the speed, power force, and forward/backward movement is made through the controls located on the winch unit. Manometer for reading-off the pulling force (the special underground winch is also fitted with a dynamometer for presenting the max. permitted force).



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SETTING THE PULLING FORCE

Special underground winch: The short circuiting cable from the dynamometer is connected to the engine. When the pre-set max. force is reached the engine stops. To restart the engine a higher value must be set. The maximum permitted pulling force is set on the dynamometer. Remove the centre cap and the red indicator is then turned using the attached key. Press down while turning (9).

Overhead line winch (with manometer and adjustable relief valve): The pulling force is set using an adjustable relief valve (10). Unscrew the handwheel on the valve completely (anti-clockwise). Set the lever on the direction valve for winding. Now screw the handwheel in until the bull wheels and the drum rotate, then screw the handwheel a further 1-1,5 turns. This means the maximum permitted pulling force is set just above the value currently



displayed on the manometer i.e. if the rope for some reason sticks or "runs-off" the drum on the drum unit the power force will increase and reach the pre-set maximum power force level causing the relief valve to blow and the winch to stop. This is to prevent the risk of pulling the conductor apart or damaging poles. As the winding progresses the pulling force requirement increases which means the valve must be periodically adjusted. When the force required increases and the winch shows a tendency to stop or it has difficulty, screw the force setting handwheel in 1-1,5 turns and continue until the winding is complete. Another option is to set the maximum pulling force by fixing the pulling rope to a fixed object, then unscrew the handwheel (anti-clockwise) completely. Set the lever on the direction valve for winding and screw in the handwheel on the force setting valve until the required maximum permitted pulling force is reached, then lock the handwheel using the locking nut.

MAINTENANCE

Engine: See engine manual.

HYDRAULIC SYSTEM

The hydraulic oil should be inspected or changed at least once a year. The tank should be cleaned if the oil leaves a sediment in the bottom of the tank. Hydraulic oil: OK Delta oil 32 Shell Tellus T32 or equivalent. Tank volume: approx. 9 litres. Hydraulic oil filter: The filter is replaced after approx. 200 hours, however, at least every 6 months. The oil filter should always be changed when changing the oil or if major repairs are carried out on the hydraulic system. The filter cartridge should never, under any circumstances, be washed, as this can cause serious damage to the system if reused. Always replace using a new cartridge. Hydraulic oil filter: 10 my (Art No. 1011-1125). Check controls and all hydraulic couplings for leakage, tighten couplings if found to leak.

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CHASSIS

The chassis is galvanised and requires no special attention. Check the forward jockey wheel and tyres periodically. Tyre pressure 2.75 Bar

WINCH UNIT

The oil level in the winch housing is checked at the oil level plug on the forward end plate. Fill if necessary using gear box oil 80W90, refill at the bleed nipple above the winch housing. The oil is changed once a year, approx. 3 litres. Lubricate the line spreader (and the pulling force sensor arm, at the lower, rear end of the winch) using grease. If necessary lubricate the chain, open the cowling at the top above the slip clutch. Make sure that no oil spills on the friction lining. Lubricate the bearings on the inlet roller, bull wheel and the line spreader wheel/roller. Grease the line drum shaft and support bearing for the winding wheel/winch drum on the chassis. Check the rope periodically for damage.

The drive chain for the collection drum can be adjusted using the chain tensioning device on the drum holder frame. (14)



GENERAL

Lift the winch using the forward lifting eye and the upper hole of the support leg, use an approved lifting device. Weight approx. 260 kg, without rope. Friction clutch friction brake: To gain access to the friction clutch/-brake remove the protective cowling on top of the frame. If the bull wheels rotate without any rope being wound in, the friction clutch is too loose. The friction brake, which prevents the drum from "running away" can be adjusted. Loosen the locking nuts and adjusted using the Allen screws. Adjustments are made with a fully wound drum. Pull out some of the rope through the bull wheels and make sure it does not run too sluggishly and that the drum does not rotate too long after you have stopped. (17) The friction clutch can be adjusted if necessary. The Allen, locking screws on the adjustment nuts must first be loosened (15). Adjustments should be made with a full drum and the friction brake should be adjusted first. (17) The nut is turned using a special spanner (supplied with the machine). Tighten until the winch begins to pull, checking that the maximum pulling force (1000 kg) is reached. NOTE! do not tighten too much. (16)



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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.