

**PLEASE READ THESE INSTRUCTIONS
CAREFULLY BEFORE OPERATING !**

Thank you for choosing a Clydesdale product.

We want you to be satisfied with your 3 x 710kg Cable Drum Trailer. This instruction booklet 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 wires and pylons and to avoid these it is important that:

- Instructions are studied and observed
- Personnel are regularly trained in maintenance and safety
- The appropriate equipment and tools are available
- The 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.

Important information that warns you of the risk of serious personal injury or threat to life if 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.

Read this manual carefully, observing all the operating and safety instructions before and during use. This equipment has been manufactured to conform to current EC Directives and is issued with a declaration of conformity.

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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. 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 or controls.
4. Whenever possible wear safety gloves to protect your hands and fingers from cuts, grazes, burns and solvents.
5. Always wear a 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 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 the 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 equipment. Use only original spare parts.
18. Before starting or operating the equipment make sure that no person, animal, tool 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 manufacturers 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 flame 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 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.

DESCRIPTION

Patented , self - loading trailer which facilitates the handling of up to 3 drums and the dispensing of cable and conductor. Available in two versions, featuring either manual or powered hydraulic operation. For use with a maximum combined pulling force of 2000Kg . Patent No. 2277316.

TECHNICAL DATA

CAPACITY

Maximum Combined Pulling Force:	2000Kg
Maximum No. of Drums:	3
Maximum Drum Diameter:	1.2 m
Maximum Drum Width:	1.0 m
Maximum Drum Weight:	710 Kg

TRAILER DIMENSIONS & SPECIFICATIONS

Length :	5.1 m
Width :	2.22 m
Min Ground Clearance :	410 mm
Unladen Weight :	1220 kg (including 3 drumshafts)
Max Laden Weight :	3350 kg
Cable Drum Shaft Diam. :	70 mm
Cable Drum Brakes :	Individual Hydraulic Disc & Calliper Brakes Providing Static Brake Torque of 500Nm
Rear Stability Jacks :	Angled Drop & Pin
Wheel & Tyre Size :	245/70R17.5 12PR , 6 x 205 PCD
Brakes :	Full auto-reverse overrun type
Mudguards :	Mitred Steel Galvanised
Coupling :	3500 kg capacity with 40mm or 76mm eye
Tow Hitch Height :	559mm
Axle :	Avonride Full Beam Rubber 3500kg
Lighting :	12V, IVA Compliant, includes fog and reverse lights

TOWING AND HANDLING

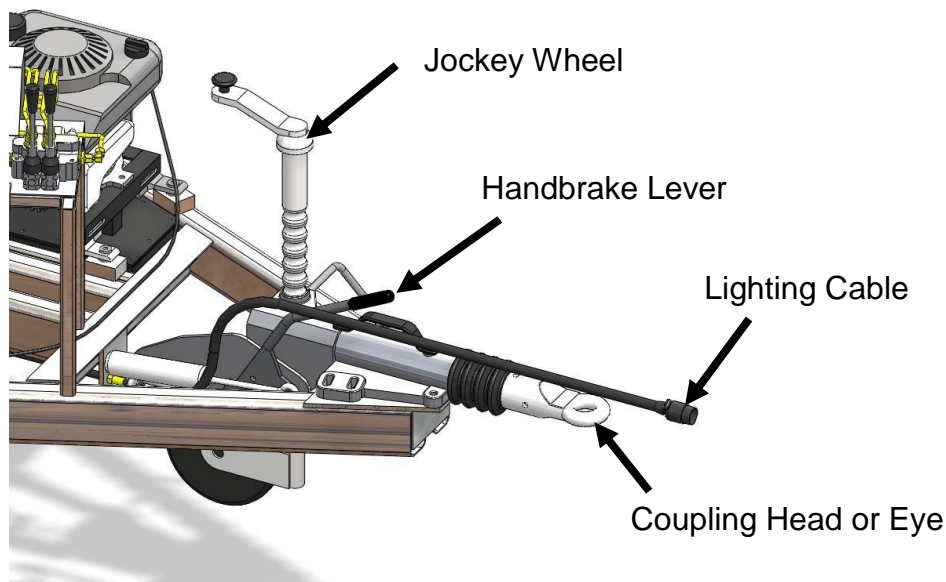


Fig 1.

HANDLING

Hitching – Adjust the jockey wheel so that the coupling head or eye is at the right height for connection to the hitch point of the towing vehicle. Reverse the towing vehicle towards the trailer or pull the trailer up to the hitch point.

- If the coupling is fitted with an eye, remove the retaining pin from the vehicle hitch point, manoeuvre the eye into the hitch point and re-insert the retaining pin ensuring it is locked in place according to the manufacturer's instructions.
- If the coupling is fitted with a ball head, open the head by pulling the lever firmly upwards. It may be necessary to release the safety catch if fitted. Place the head over the vehicle ball hitch and release the handle. Ensure that the handle returns to its original position.

Connect the lighting cable to the socket of the vehicle ensuring the cover tabs lock the plug in place. Connect the red safety cable (fig2) to the towing vehicle as shown noting that the cable should be looped over or through a suitable anchor and clipped back on to itself. This safety cable will ensure that the trailer brakes are applied should the trailer break loose from the towing vehicle.

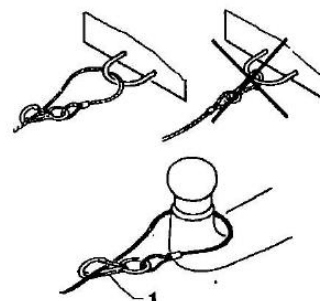


Fig 2

Breakaway chains when fitted should be clipped onto suitable sturdy anchors on the towing vehicle.

Once the trailer is securely attached to the towing vehicle, crank the jockey wheel up to its highest position such that the locking tab locates in the serrated shaft stopping the bottom shaft rotating. Insert the R-clip and clamp securely in highest position. Ensure that it does not obstruct the brake rod. Release the parking brake by pushing the handbrake lever to its down-most position.

CAUTION: Always check the loads on the vehicle hitch before driving. Under no circumstances should you exceed the maximum permissible loads on the vehicle hitch, trailer coupling (150kg) and trailer brake (3500kg). Avoid overloading the ball hitch as this will have a negative impact on braking and driving characteristics. When towing the trailer unloaded, the top drum frame must be pinned in its lowered position to reduce the weight on the nose to a safe level.

Unhitching- Securely clamp jockey stem in suitable location then crank down the jockey wheel until the trailer weight has been transferred from the towing vehicle hitch point to the jockey wheel. Ensure that the parking brake has been applied by lifting the handbrake lever.

CAUTION: The handbrake is spring-assisted hence care should be taken to prevent injury from powerful spring forces.

Disconnect the, safety cable, lighting cable and breakaway chains if fitted.

- If the coupling is fitted with an eye, remove the retaining pin from the vehicle hitch point. Drive the vehicle forward.
- If the coupling is fitted with a ball head, open the head by pulling the lever firmly upwards. It may be necessary to release the safety catch if fitted. Lift the coupling head off the vehicle hitch.

TOWING

CAUTION: Extreme care must be taken when towing a loaded drum trailer on the road. The high centre of gravity due to the weight of the drums and the height at which they are carried may make the trailer easy to over-turn while cornering if excessive speed is used. It is also essential that the drums are secured using the shaft retainers and not allowed to slide from side to side along the shafts.

CAUTION: When towing the trailer unloaded, the top drum frame must be pinned in its lowered position to reduce the weight on the nose to a safe level. See operating instructions.

OPERATING INSTRUCTIONS

CAUTION: Trailer handbrake must be applied and trailer must remain hitched to a tow vehicle or suitable anchor for all operations ie. loading drums , dispensing cable and unloading drums. This is necessary to provide stability and a safe working condition.

WARNING: The CLY 760 3-710, Three Drum Trailer is designed for one man operation. All areas around the trailer should be treated as Danger Zones.

CAUTION: In the three drum configuration , it is essential that all drums be of approximately the same size and weight.

CAUTION: When only one drum is carried , it must be in the middle position. When only two drums are used , we would advise that a third drum be carried to ensure that balance is maintained. Failure to do this will result in the machine becoming out of balance and an illegal road condition may result.

LOADING DRUMS ONTO TRAILER

Refer to figures 3 to 7 for item names and locations. The trailer is always loaded top drum first, procedure as follows.

1. Ensure the trailer is on level ground.
2. Two types of stability leg may be fitted: telescopic wind down or drop and pin. Telescopic wind down: Remove rear stability legs from storage position and attach to spigots at the rear of the chassis using retaining pins. Screw down legs such that weight is borne by road wheels and stabilisers.
Drop and pin: Pin legs (A) in lowest configuration & adjust jockey wheel such that stabilisers and road wheels support weight.
3. Remove the trailer-board (B) and bottom frame anti-bounce transit straps (C).
3. Remove the main frame pins (D). (Engine will not start unless pins have been removed.)

WARNING: Do not place limbs on or near the trailer frames when they are being rotated for loading or unloading - Danger of Moving Parts.

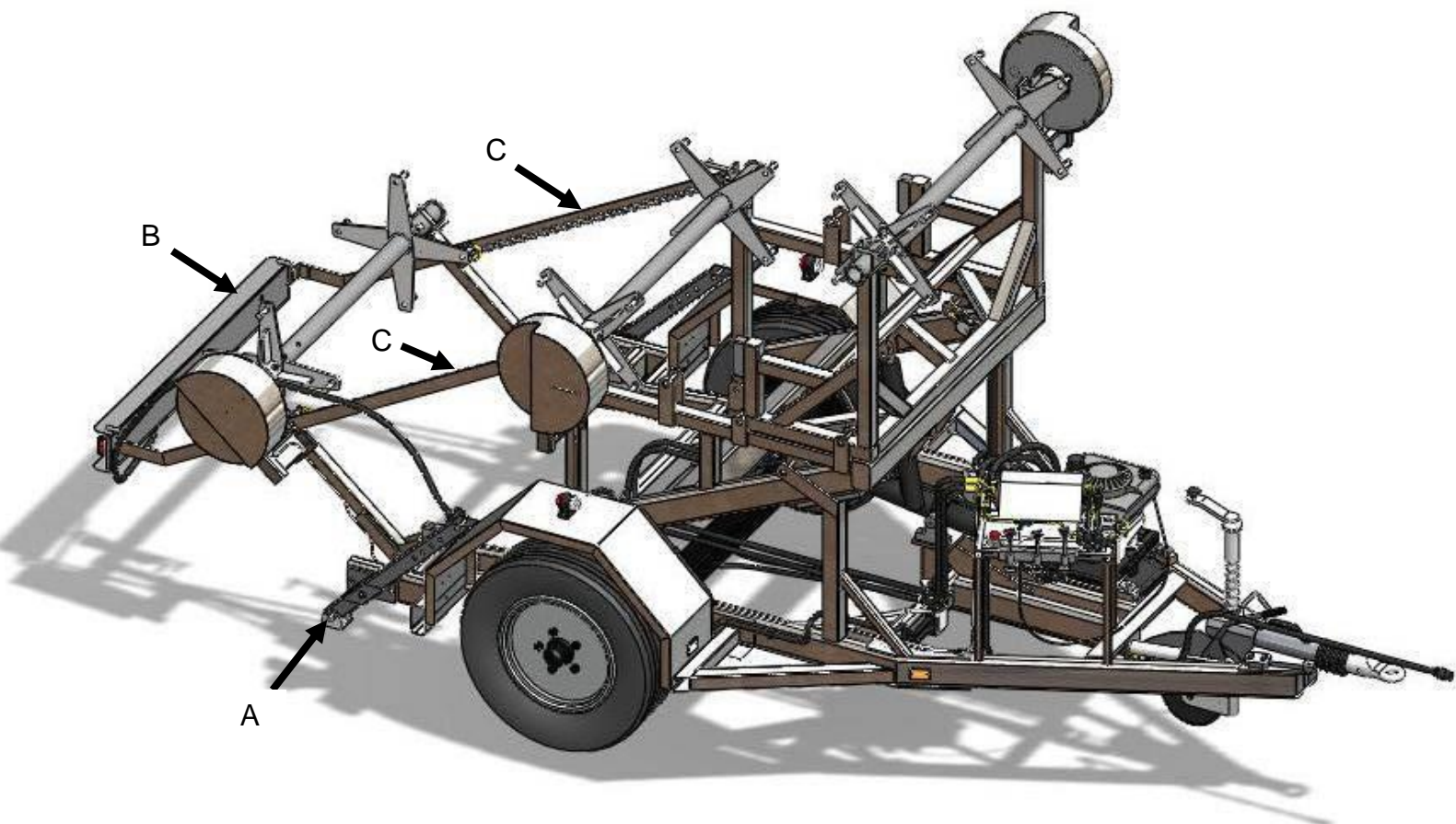


Fig. 3

4. Move throttle control lever (E) to fast position. Ensure emergency stop (T) is not latched closed by twisting clockwise to release. Push engine primer (F) firmly 3 times before starting engine. Grasp rope handle (G) and pull slowly until resistance is felt. Then pull cord rapidly to overcome compression, prevent kickback and start engine. Repeat if necessary with throttle control in FAST position. Operate engine in FAST position.

5. If the top drum frame is in the lowered position for unladen transit, it must be returned to the raised position. Ensure all four top drum frame retaining pins (M) have been removed. Operate top drum hydraulic lever as indicated by operating decal to rotate the top frame into raised position. Re-fit retaining pins.

6. Operate the main ram lever (H) in the direction indicated on operating decal (J) to rotate the main frame backwards lowering the rear drum frame to the ground.

7. Remove the disc brake drive retaining pin (K) and slide the shaft out of the disc brake coupling sufficient to clear the coupling and no more.

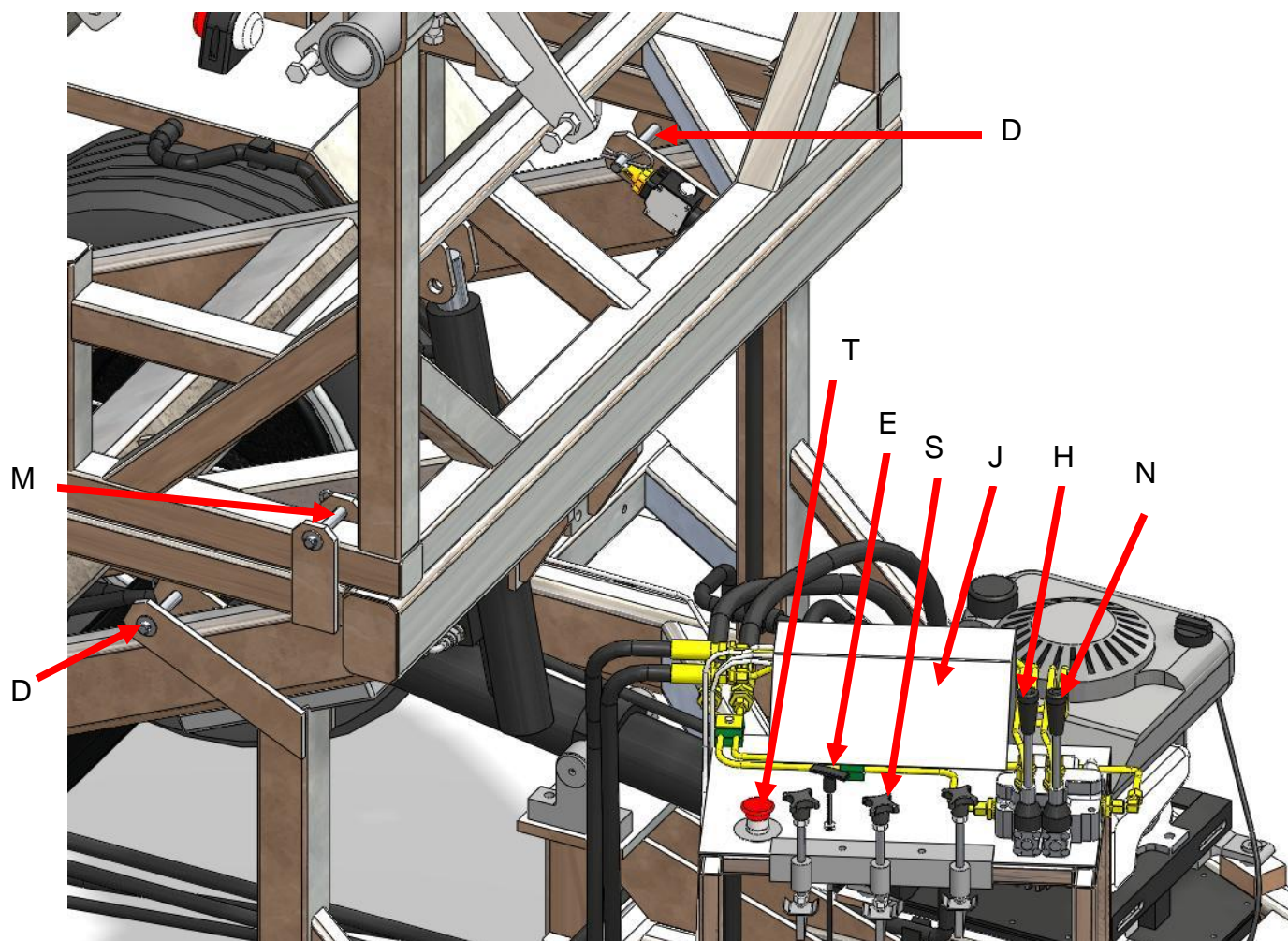


Fig. 4

8. Remove the shaft retaining pins (L) and extract the shaft from the bearing cups.
9. Use the main ram lever (H) to continue rotating the main frame until the centre shaft reaches its lowest point. Remove the pins and shaft as in steps 7 and 8 above.
10. The top drum frame is now lowered by removing pins (M) and operating the top ram lever (N) in the direction indicated on the operating decal (J) until the top drum frame uprights are almost horizontal.

CAUTION: Only operate one ram at a time for reasons of safety.

11. At this stage the shaft should still be supported by the bearing cups and can be safely removed by following steps 7 and 8 above.
12. The top drum frame can now be lowered the remainder of the distance.
13. Remove the clamp up star drive from the shaft loosening lock bolts (P).



Fig. 5

14. Retract the screw studs (R) in both the fixed and the clamp up star drive.
15. Place shaft through cable drum so that the fixed star drive will be positioned on the disc brake side , and the cable dispenses from the top of the drum as shown.
16. Re-fit the clamp up star drive onto the shaft and secure bolts (P) as tightly as possible before re tightening the screw studs (R) into the sides of the drum. Please note - the disc brake mechanism is only as effective as the connection between drum and star drives.
17. Place shaft complete with drum into the bearing cups of the top drum frame and secure with retaining pins.

WARNING: At no time is the operator or other personnel to stand under or near a load being lifted by the trailer.

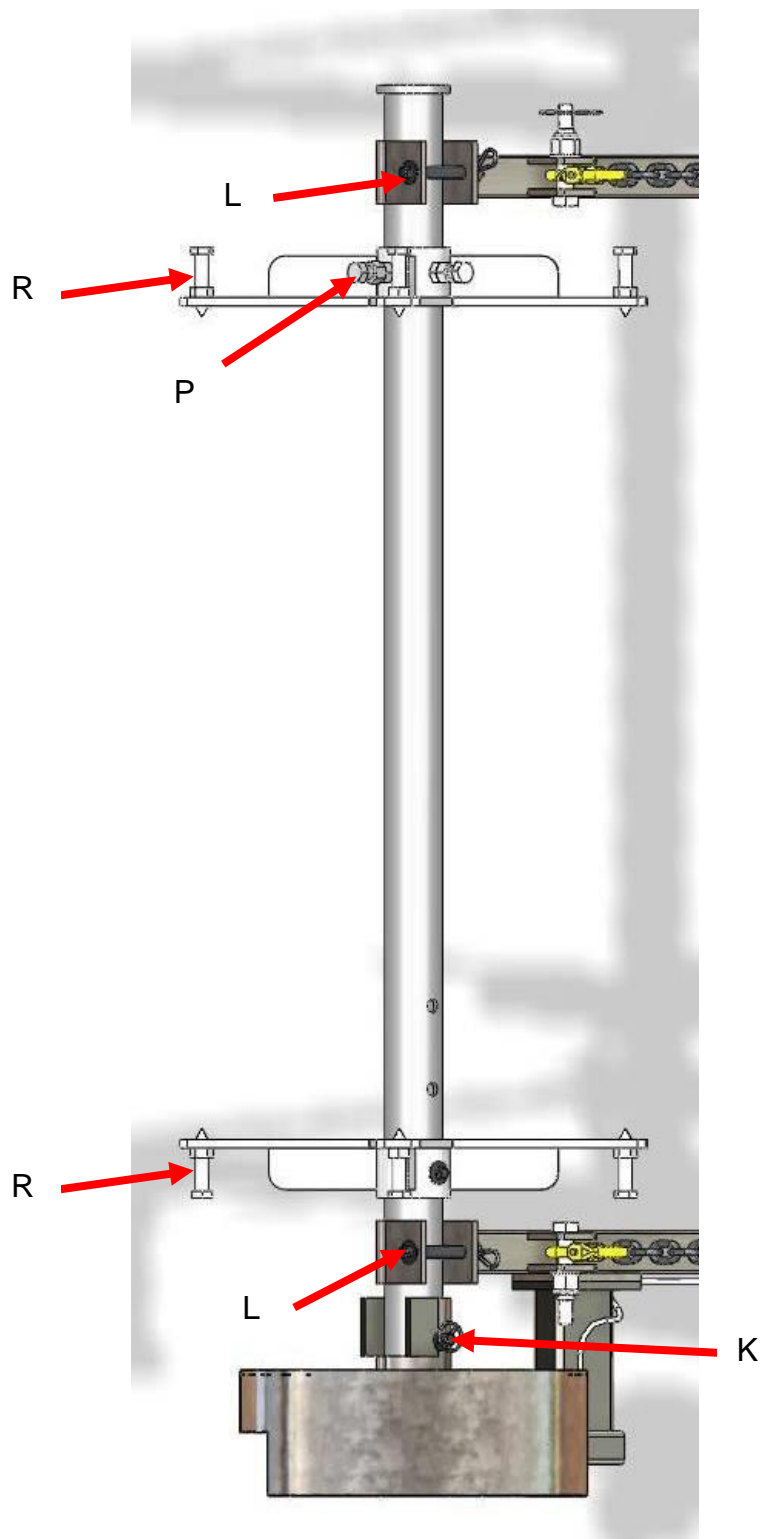


Fig. 6

18. Operate the top ram lever in the direction indicated by the operating decal (J), to raise the top drum frame so that the drum is just clear of the ground.

19. Slide the drum shaft assembly sideways to connect with the disc brake coupling. Replace retaining pin and safety clip.

CAUTION: Loads must never be lifted more than is sufficient to clear the ground before the drum shaft is mated to the disc brake coupling as this is the only means by which the shaft / load is held in the frame.

20. Continue to operate the top ram lever, to rotate the top drum frame into its working position and replace the retaining pins.

21. Repeat the above stages to load the remaining two drums.

NOTE: In case of emergency, the engine is fitted with an emergency stop button. Pressing this button will stop the engine and hydraulic pressure immediately. The drum frames will remain in position until the engine is re-started. To reset the switch, twist clockwise.

DISPENSING CABLE

In order to ensure safe operation of the trailer unit, the following points must be adhered to.

- Position trailer as level as possible.
- Trailer to remain hitched to tow vehicle or suitable anchor.
- Rear stabiliser legs used but road wheels must remain in contact with ground to provide braking.
- Trailer hand brake applied.
- Trailer positioned in line with first stringing pole and cross arm to ensure direct feeding of conductor from drum without snagging.

Trailer placed sufficient distance from first stringing pole to reduce the approach angle of the cable to the cross arm.

- Ensure the drum disc brakes are off before pull commences by turning brake adjuster 'T' screws (S) anti-clockwise, such that they are fully disengaged from the brake levers. Apply brakes as necessary by turning 'T' screws clock-wise as pull continues.

MAINTENANCE

It is essential that your machine receives regular attention to ensure that it remains in peak condition. All the road running gear i.e. brakes , lights , mudguards , tyres etc. are statutory requirements and as such must be maintained in good condition.

Full details of the minimum servicing requirements are given on the following overall maintenance schedule.

All maintenance should be carried out by skilled and competent personnel.

Where adjustments are to be made to electrical equipment, qualified electrical personnel should be used.

DAILY CHECKS - OPERATOR

1. Inspect the trailer for any signs of damage. Check for any missing or loose bolts and replace or tighten as necessary. Report any problem including any damage and in extreme cases take trailer out of service.
2. Ensure that the tyres pressure are correct.
3. Check for the correct operation of the lighting pods mounted on the wheel arches.
4. Retaining pins should be checked for damage and that spring clips are present and in working order.
5. Star drives should be checked for good order and easy operation of the screw studs and that all studs and clamping bolts are present.
6. Drum shaft bearing cups should be greased.
7. Check condition of hydraulic hoses and brake lines. Inspect for leaks.
8. **NOTE: After the first 5 hours of operation the oil in the engine unit needs to be changed.** Otherwise check the oil level, clean the finger guard and clean around the muffler.

MONTHLY CHECKS - OPERATOR

1. Check the disc brake callipers , hoses and master cylinders for external leaks and damage. Check the level of hydraulic oil in the master cylinder reservoir. Use only brake fluid as recommended.
2. Grease the trailer hitch mechanism using a grease gun on the grease nipple positioned on the top face of the unit. Use a general purpose grease.

3. Lubricate the cable drum frames cradle pivot points with a general purpose grease.
4. Check the stabiliser screw legs for correct operation and lubricate.
5. Replace air cleaner if very dirty or damaged. Wash pre-cleaner in liquid detergent and water. Allow to dry thoroughly before using. Do not oil pre-cleaner. Clean cartridge by tapping gently on a flat surface. Do not use petroleum solvents, e.g. kerosene, which will cause the cartridge to deteriorate. Do not use pressurised air, which can damage the cartridge. Do not oil cartridge.

SIX MONTHLY CHECKS - WORKSHOP

1. Visually inspect all fixings for signs of looseness and rectify.
2. Remove tyres and examine for wear and damage. Repack wheel bearings with grease.
3. Check the thickness and condition of the disc brake pads on the cable drum cradle. Replace as necessary.
4. Ensure the correct operation of the trailer brakes and adjust as necessary. Check wear and condition of brake pads and replace as necessary.
5. Check the condition of the wiring on the trailers lighting system. Ensure that any damaged cables are replaced.
6. Change oil and replace spark plug. Note plug gap should be set at 0.76 mm Or 0.030 in.

RECOMMENDED LUBRICANTS

Disc braking system - Lockheed Brake Fluid
Hydraulic ram system - ISO 46 rated oil

Power pack engine - The SAE viscosity grade of oil used is dependent on the ambient operating temperature of the engine. For operation at 4° C (40° F) or above use a SAE 30 oil. At temperatures below this use a multi-viscosity oil such as 5W-30, or 10W-30.

CLYDESDALE SERVICING PLAN

If you wish to ensure that your machine is kept in reliable good working condition , then why not let us , the manufacturers , look after it for you. We have as part of our service a fully mobile team of service engineers who travel the country ensuring that our machines out-perform any others , not only now but into the future. We operate a service contract system whereby we guarantee to repair or replace within 24 hours. For further details , please contact us.

EC DECLARATION OF CONFORMITY

MANUFACTURER..... Clydesdale Ltd.
Install House
3 Sunbeam Road
Woburn Road Ind.Est.
Kempston , Beds
MK42 7BZ

In accordance with **The Supply of Machinery (Safety) Regulations 1992** we hereby declare that the product described conforms with the Essential Health And Safety Requirements , the following EEC Directives : **89/392/EEC** and amendments **91/368/EEC**, **93/44/EEC** and **93/68/EEC** and the following transposed harmonised standards : **EN 292-1** , **EN 292-2** and **EN 1050**.

SIGNED



POSITIONManaging Director.....



PRODUCT DESCRIPTION3 Drum Trailer.....

MODELCLY 760 3-710.....

SERIAL NUMBER

DATE OF MANUFACTURE

NOTES / SERVICE LOG

CLYDESDALE Ltd. Specialist manufacturer and supplier of overhead line and underground cable installation equipment, associated tools and personal protective equipment (PPE).



www.clydesdale.net

Instal House, 3 Sunbeam Rd,
Woburn Rd Industrial Estate,
Kempston, Beds, MK42 7BZ
Tel: (0044) (0) 1234 855855
Fax: (0044) (0) 1234 855800