

Yale®



Yale®

EN - Translated Operating Instructions (Also applicable for special versions)

Endless winch

YaleMtrac Mini

Columbus McKinnon Industrial Products GmbH

Yale-Allee 30

42329 Wuppertal

Germany

CMK
COLUMBUS MCKINNON

Table of Contents

Introduction	19
Permanent Sound Pressure Level	19
Theoretical service life	19
Regulations	19
Safety equipment	19
Correct operation	19
Incorrect operation	20
Assembly	22
Electrical Connection	22
Inspection before initial operation	26
Operation	27
Inspection, Service & Repair	29
Transport, Storage, Decommissioning and Disposal	30

INTRODUCTION

Products of CMCO Industrial Products GmbH have been built in accordance with the state-of-the-art and generally accepted engineering standards. Nonetheless, incorrect handling when using the products may cause dangers to life and limb of the user or third parties and/or damage to the hoist or other property.

The operating company is responsible for the proper and professional instruction of the operating personnel. For this purpose, all operators must read these operating instructions carefully prior to the initial operation.

These operating instructions are intended to acquaint the user with the product and enable him to use it to the full extent of its intended capabilities. The operating instructions contain important information on how to operate the product in a safe, correct and economic way. Acting in accordance with these instructions helps to avoid dangers, reduce repair costs and downtimes and to increase the reliability and lifetime of the product. The operating instructions must always be available at the place where the product is operated. Apart from the operating instructions and the accident prevention act valid for the respective country and area where the product is used, the commonly accepted regulations for safe and professional work must also be adhered to.

The personnel responsible for operation, maintenance or repair of the product must read, understand and follow these operating instructions.

The indicated protective measures will only provide the necessary safety, if the product is operated correctly and installed and/or maintained according to the instructions. The operating company is committed to ensure safe and trouble-free operation of the product.

PERMANENT SOUND PRESSURE LEVEL

The equivalent permanent sound pressure level at the workplace of the operating staff is ≤ 70 dB. It was determined with the use of the measurement surface sound pressure level method (distance from lifting device 1 m, 9 measuring points, precision class 2 DIN 45635).

THEORETICAL SERVICE LIFE

The Yale continuous winches of the Mtrac Mini type are classified in accordance with ISO 4301-1 / DIN 15020 in the FEM Group M3 / 1Bm. This results in a theoretical service lifetime of 400 operating hours under full load.

Basic principles for the calculation of the theoretical remaining service life are given in DGUV Vorschrift 54. When the theoretical remaining service life has been reached, the hoist should be subjected to a general overhaul.

REGULATIONS

Before the initial start-up, a check must be performed by a competent person as per the mandatory accident prevention rules applicable in the user's country, as well as in accordance with the recognised rules for safety and proper working.

In Germany, these are the accident prevention specifications of the Trade Association DGUV Vorschrift 54, DGUV Vorschrift 54, DGUV Regel 100-500 and VDE 0113-32/EN 60204-32:2008.

SAFETY EQUIPMENT

The following safety devices are integrated to guarantee the safety of the Yale devices:

• EMERGENCY Stop

By pressing the EMERGENCY Stop button, the total control is deactivated.

ATTENTION: The device is not free of tension!

Turn the button in the direction of the arrow and pull it to unlock.

• Motor brake

All Yale winches have an electromagnetically ventilated spring action brake, which closes automatically upon releasing the push button for UP or DOWN movement, as well as in case of a power failure.

• Overload protection

The included slip clutch will be activated if there is an overload.

If the reason is a too big load, the load has to be reduced till WLL. Is the reason a stuck during the upward moving the load has to be lowered and the obstacle has to be removed.

CORRECT OPERATION

Yale continuous winches are provided for material transport and should only be used for this purpose. All other types of use are to be agreed with the manufacturer and any applicable regulatory authorities.

The wire rope is not stored by the Yale electric winch but transported through it at a constant speed. This means that, the rope length, i.e. the lifting height is practically unlimited.

If the load capacity of the Yale continuous winch is not sufficient for direct hoisting, it can be increased in accordance with the pulley block principle.

Any different or exceeding use is considered incorrect. Columbus McKinnon Industrial Products GmbH will not accept any liability for damage resulting from such use. The risk is borne by the user resp. operating company alone.

The lifting capacity indicated on the hoist/trolley is the maximum safe working load which must not be exceeded.

ATTENTION: The unit may be used only in situations in which the load carrying capacity of the device and/or the supporting structure does not change with the load position.

The attachment point and its supporting structure must be designed for the maximum loads to be expected.

The selection and calculation of the appropriate supporting structure are the responsibility of the operating company.

The Yale continuous winch may only be hung on the designated hook provided for it.

The Yale continuous winches must be fastened so that the loaded rope is positioned vertically when viewed from any direction.

Do not allow personnel to pass under a suspended load.



After lifting or tensioning, a load must not be left unattended or remain lifted for a longer period of time.

The operator may start moving the load only after it has been attached correctly and all persons are clear of the danger zone.

The operator must ensure that the hoist/trolley is attached in a manner that does not expose himself or other personnel to danger by the hoist, trolley, chain(s) or the load.

The units can be operated in ambient temperatures between $-40\text{ }^{\circ}\text{C}$ and $+70\text{ }^{\circ}\text{C}$. Consult the manufacturer in case of extreme working conditions.

Prior to operation of the load lifting attachment in special atmospheres (high humidity, salty, caustic, alkaline) or handling hazardous goods (e.g. molten compounds, radioactive materials) consult the manufacturer for advice.

If the lifting device is used in a noise-intensive environment, it is recommended that the operator as well as maintenance staff wear ear protection.

Ensure that the rope can move out freely from the winch! The loose end of the rope must hang freely and must be able to untwist itself, or be routed properly, so that loops may be avoided.

The wire rope must always be mildly lubricated!

Wire ropes must be always wound and unwound from winches properly.

In order to ensure correct operation, not only the operating instructions, but also the conditions for inspection and maintenance must be complied with.

If defects are found or abnormal noise is to be heard stop using the hoist/trolley immediately.

ATTENTION: Disconnect the power supply without failure before performing repair and maintenance work, even if the type of check rules this out!

Maintenance work and the annual inspection of the units must not be carried out in explosive environments.

ATTENTION: Residual risks

There are residual risks that cannot be covered from the design:

- As the overload protection system is normally set in the factory to the maximum load capacity of the winch, the operator must check whether the live load of the fastening device corresponds to the value of the overload protection system or the live load of the winches. If the check reveals that a lesser value is required, the overload protection system must be reset either at the factory or by a trained person, or the specified live load of the winch must be reduced.

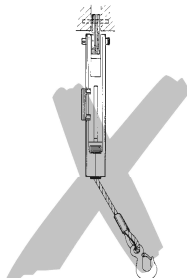
INCORRECT OPERATION

(List is not complete)

The lifting capacity indicated on the hoist/trolley is the maximum safe working load which must not be exceeded.

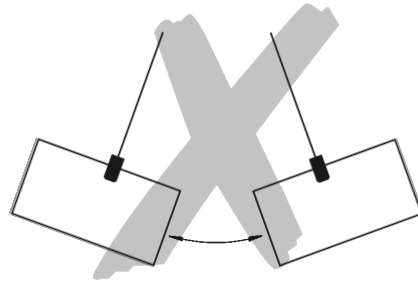
The unit must not be used for pulling free fixed loads. It is also prohibited to allow loads to drop when the rope is in a slack condition (danger of rope breakage).

The hoist must not be used for pulling loads at an angle.

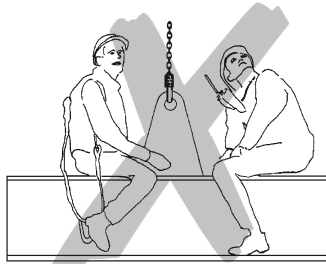


Removing or covering labels (e.g. adhesive stickers), warning information signs or the rating plate is prohibited. Removed or illegible labels and instructions must be immediately replaced.

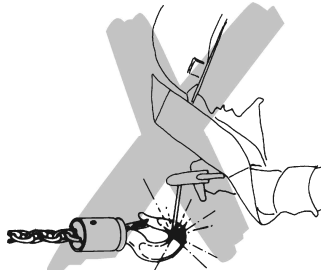
When transporting loads ensure that the load does not swing or come into contact with other objects.



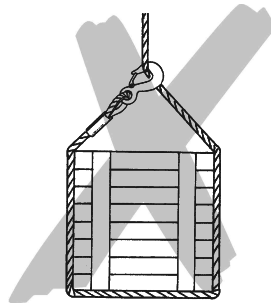
Excessive inching operation by short and frequent actuation of the control switch should be avoided.
Do not use the hoist/trolley for the transportation of people



Welding on hook and rope is strictly forbidden. The rope must never be used as a ground connection during welding.

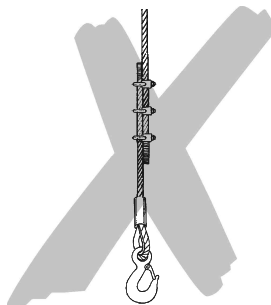


The wire rope must not be used for lashing purposes (sling rope).



Do not pull the rope over edges.

Do not tie knots in the rope or extend or shorten it by using rope clamps, screws or similar. Ropes must not be repaired.



The loose end of the rope must not be used for attaching loads.

The load must not be moved into areas which are not visible to the operator. If necessary, he must seek help.

Any modification of the lifting device is prohibited. A unit modified without consulting the manufacturer must not be used.

Turning of loads under normal operating conditions is not allowed. If loads must be turned in normal operation, an anti-twist swivel must be used or the manufacturer must be consulted.

Do not throw the hoist or trolley down. Always place it properly on the ground.
 Never reach into moving parts.
 The unit must not be operated in potentially explosive atmospheres.

ASSEMBLY

Assembly and maintenance of the device is to be entrusted only to persons who are trained in the field in question and have been commissioned by the owner to assemble and service the device.

These persons must know the common accident prevention rules, e.g. "Winches, lifting and hoisting devices (DGUV Vorschrift 54)", "Cranes – power driven winches (EN14492-1)" etc., and must be appropriately trained. They should also be familiar with the operating and installation instructions drafted by the manufacturer.

NOTE: If the unit is operated in the open, it must be appropriately protected against adverse weather conditions (e.g. by roofing).

Inspection Before Assembly

Check for transport damage

Check for completeness

- Check to make sure that the rated load capacity data on the continuous winch and (optional) safety retainer match
- Check the wire rope or ropes for diameters matching the used continuous winch.

Fixing the continuous winch

ATTENTION: The owner must make sure that the suspension structure and the lifting unit associated with the winch fulfil all the applicable specifications!

Required components

- A Yale continuous winch with adequate load
- A sufficiently long original Yale wire rope
- A sufficiently long connecting cable
- If necessary, rope pulley(s) with sufficient load to deflect or reeve the rope (not included in delivery scope).

Installation of the Yale continuous winch

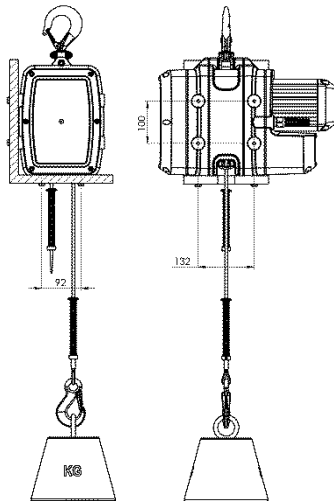
The Yale continuous winches are to be fastened in such a way that when viewed from any direction, the loaded rope always runs vertically into the winch!

When planning to fasten winches, we recommend consulting CMCO Industrial Products.

In each case, the supporting structure for suspending the rope as well as the component to which the winch is fastened must have minimum 2.5 times the load capacity (no permanent deformation allowed) as compared to the live load of the winch, so that the requirements of standard EN14492-1 can be met.

Screw attachment points on the winch housing

At the bottom and on each of 2 outsides of the winch are 4 threaded holes (M8) for fixing the winch to consoles, supports, etc. If the winch is fixed to a console or screwed to a support, at least 4 screws (strength class 8) must always be used, tightening to a torque of 20 Nm.



ELECTRICAL CONNECTION

ATTENTION: Work at electrical installations may be carried out by electrical experts only. The local regulations have to be strictly observed, e.g. EN 60204-32 / VDE 0113.

The operating company is responsible for connecting the Yale material winches. Here, the provided circuit diagrams must be considered under all circumstances.

Before beginning work on electrical components the mains current switch must be switched OFF and secured against unintentionally being switched back on.

Before connecting the chain hoist ensure that the electrical data on the nameplate match the local supply specifications.

Three-phase alternating current: 400V (3P+N+PE), 50 Hz with 16A two-pin earthed plug
 or 460 V (3P+N+PE), 60 Hz with 16 A CEE connector

Single-phase alternating current: 230V (1P+N+PE) 50Hz with 16A Schuko-stecker

- A 4-core (3-phase device) or 3-core (1-phase device), insulated cable with a flexible braid (heavy rubber cable) must be used for the mains connection. The earth wire must be longer than the current-carrying wires. The cross-section must be min. 1.5 mm² and the cable length a maximum of 50 m.
- Fuse protection for the different models are shown in the table.
- The ends of the cable must be fitted with wire end sleeves.

Modell	P [kW]	n [1/m in]	ED [%]	Schaltart / Switching / Connexion	I _n [A]	cos φ	Schaltungen / Counts / Démarrage [c/h]	Schutzart / Protection Class / Indice de Protection	Betriebsart / Operation Mode / Mode d'Opération	Sicherung träge / Delay Fuse / Fusible temporisé [A]	
230V											
YMT1-15	230V 1PH/50Hz	0,37	1400	25	C _A =31,5μF / C _B =12,5μF	3,3	0,99	150	IP55	S3	6
YMT3-5	230V 1PH/50Hz	0,37	1400	25	C _A =31,5μF / C _B =12,5μF	3,3	0,99	150	IP55	S3	6
230/400V											
YMT1-30	230/400V 3PH/50HZ	0,55	2800	50	Δ / Y	2,34/1,35	0,77	300	IP55	S3	6
YMT3-10	230/400V 3PH/50HZ	0,55	2800	50	Δ / Y	2,34/1,35	0,77	300	IP55	S3	6
YMT5-5	230/400V 3PH/50HZ	0,55	1400	50	Δ / Y	3,6/1,8	0,65	300	IP55	S3	6
400V											
YMTF0,6-30	400V 3PH/50HZ	0,09/0,37	700/2900	17/33	Y / Y	0,8/1,35	0,47/0,63	100/200	IP55	S3	6
YMTF2-10	400V 3PH/50HZ	0,09/0,37	700/2900	17/33	Y / Y	0,8/1,35	0,47/0,63	100/200	IP55	S3	6
460V											
YMT1-30	266/460V 3PH/60HZ	0,44	3360	50	Δ / Y	2,34/1,35	0,77	300	IP55	S3	6
YMT3-10	266/460V 3PH/60HZ	0,44	3360	50	Δ / Y	2,34/1,35	0,77	300	IP55	S3	6
YMT5-5	266/460V 3PH/60HZ	0,63	1680	50	Δ / Y	3,6/1,8	0,65	300	IP55	S3	6
YMTF0,6-30	460V 3PH/60HZ	0,11/0,44	850/3500	17/33	Y / Y	0,8/1,35	0,47/0,63	100/200	IP55	S3	6
YMTF2-10	460V 3PH/60HZ	0,11/0,44	850/3500	17/33	Y / Y	0,8/1,35	0,47/0,63	100/200	IP55	S3	6

ACHTUNG / ATTENTION / ATTENTION: träge Sicherung / delay fuse / fusible temporisé

Wire rope installation

Attention: Always wear protection gloves for handling wire ropes.

- Use the original Yale wire ropes exclusively.
- Make sure that the wire rope has the correct diameter and an adequate length.
- Always uncoil the wire rope properly and without a spin (caused by the rotation with reel) Otherwise, the wire rope could get entangled while being coiled/uncoiled on the drum and become unusable.
- Examine the condition of the wire rope:
 - Cable eye/pressure grouting not damaged?
 - For ropes with hooks: the fuse hatch is intact, hooks are not bent?
 - Proper rope tip without visible damage along the entire length?
 - Rope must always be mildly lubricated!

Use simple multi-purpose oil or grease for lubrication.

Molybdenum disulphide (MoS₂) or PTFE containing lubricants are not to be used.

Inserting the rope:

- Connect the supply voltage.

- Install spring-kit assembly for limit switches (support-hook side)

Installation sequence: Mounting sleeve with cylinder pins (2x), spring and switching plate.

- Then the top of the supporting cable (2), is pushed through the opening of the rocker switch (5) from below into the device until, between cable strip (1) and pulley (4), it touches the traction sheave (3). (The view from the motor side, left-hand side of the rocker switch is shown in the illustration below)

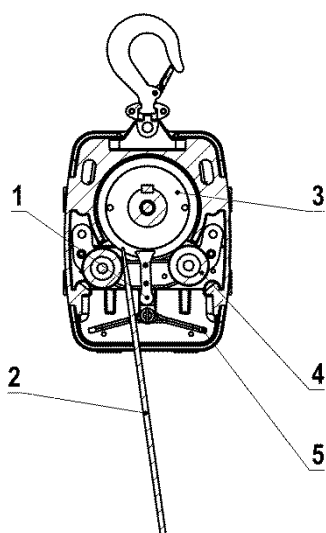
By pressing the ON button and simultaneously pushing the support rope, the independent transporting of the support rope is achieved.

The support rope then runs through the opposite opening of the rocker switch, back out of the device.

If the cable does not run in, check whether the rope is in good condition and if the ON button has been pressed, and possibly change the motor's direction of rotation (using phase inverter in the CEE plug).

- Install second spring-kit in reverse order:

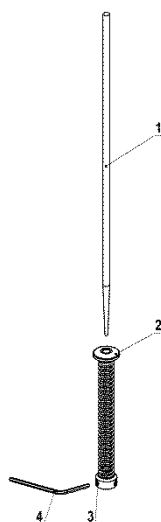
Switch plate, spring and mounting sleeve with two cylinder pins. The mounting sleeve is fixed approximately 3 cm above the top of the cable (hand tighten cylinder pins).



(View from the motor side)

Mounting spring-kit for limit switches

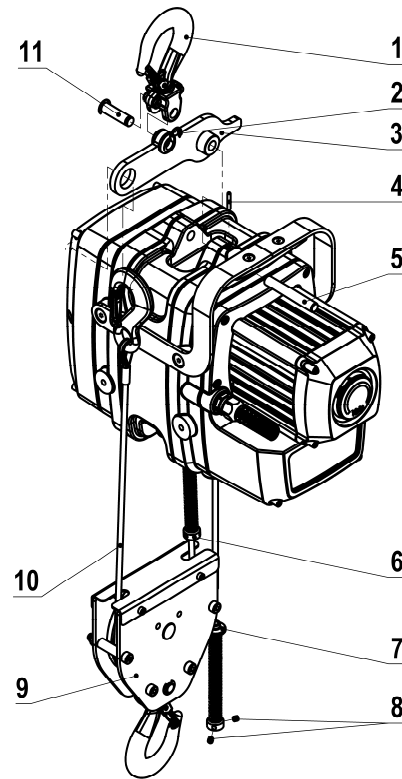
Slide supporting rope (1) through the spring-kit (pos. 2+3) until the rope protrudes app. 5 cm over the opposite side. Then screw the two threaded pins with an SW 3 Allen key until the roped is jammed (torque approx. 3 Nm).

**Modification of 1-strand to 2-strand version (optional)**

Install support hook (1) and suspension bar (3) with suspension bolt (14) and retaining ring (2).

Then install suspension bar on the main unit with suspension bolts (5) and roll pin (4). Slide support rope with the tip of the cable through the spring-kit (6) and then through the guide pulley (9). Then mount the wedge end clamp (11) onto the end of the cable as described. Secure wedge end clamp (11) with pin (12) and split pin (13) on the suspension bar (3). The threaded pins of the shock-absorbing spring-kit (6) are not tightened or installed here.

The shock-absorbing spring-kit (7) is installed as normal on the other end of the support rope with the threaded pins.



Assembling the second hooks for the pendulum stroke (optional)

As an option, a hook for the pendulum stroke can be mounted on the loose rope end with the aid of a wedge socket. To do this, after the assembly of the wedge socket the eyelet hook (6) is attached to the wedge socket with the pin (5) and split pin (4).

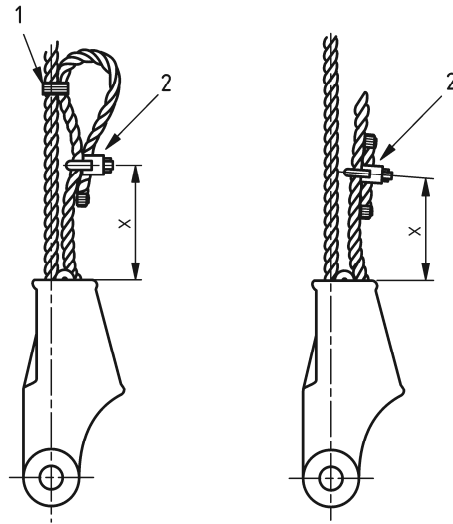
Installation of a wedge socket (optional)

- Before assembling, check the parts for any signs of damage
- Only use wedge sockets with the appropriate dimensions and break load for the rope used.
- Components of different wedge sockets must not be used together
- If the wedge socket is shifted on the rope, the section of the rope that the clamp was in use on must no longer be in the load line and must be separated, if necessary
- To install the rope and the wedge in the housing of the wedge socket, both rope ends must be under tension. The wedge should then be driven in with a tool which does not damage the rope, the wedge and the housing. Then the system must be loaded under supervision with a load of at least 10 % of the breaking load of the rope, so that the wedge and rope settle in. The wedge must be seated accurately before the system is put into operation.
- The dead rope end must be secured so that the rope is prevented from pulling through during the creation of the rope connection and the wedge cannot come loose during operation.

The following methods are recommended:

(a) The dead rope can be bent back to form a loop and secured by means of a wire rope clamp that has a U-shaped clamping bracket according to EN 13411-5. The loop should be tightly bound to the load-bearing part of the rope with appropriate means such as soft binding wire, to prevent the rope from protruding during operation.

(b) If there is the possibility that the loop in method a) bumps against an obstacle (for instance, a component in the operation), which could loosen the wedge and make the rope pull through, the dead rope end should not be bent back, but placed parallel to the load-bearing part of the rope. A spacer or a short rope end with the same diameter and a rope cable clamp with U-shaped clamp according to EN 13411-5 are required to ensure that the rope is secured sufficiently. If necessary, the dead rope end can be bound tightly with soft binding wire to the load-bearing section.



Note: Dimension X, as the distance of the clamp from the nearest part of the housing, should not exceed 75 % of the total length of the wedge, to prevent the rope from being damaged if X is too small, or the wedge falling out of the housing if the rope is relaxed and X is too large.

ATTENTION: The operating instructions of the manufacturer of a wedge end clamp must always be taken into account.

Lose rope-end

- The exiting rope must always be able to run out freely! The loose end of the rope must hang freely and must be able to untwist itself, or be routed properly, so that loops may be avoided.
- To prevent the unloaded wire rope from being damaged, install a pulley or some other suitable rope guide!

ATTENTION: To prevent the unloaded wire rope from running on the edges and being damaged, install a pulley or some other suitable rope guide!

Before operating the continuous winch, the following must be checked by a competent person through one or more test drives, and the result must be recorded in writing:

- Does the rope run through the winch smoothly and the optionally available safety devices?
- Damaged ropes endanger work safety and must therefore be replaced immediately!
- Is the unit fastened to the suspension structure, the suspension, the working platform or basket properly?
- Are the control switches working (UP, DOWN, EMERGENCY STOP)?
- Upon releasing the UP or DOWN button, as well as on actuating the EMERGENCY STOP button, the load movement must stop immediately.
- Is the upper EMERGENCY limit switch working?
For this, actuate the trigger manually during the upward movement. The load movement must be stopped immediately!

INSPECTION BEFORE INITIAL OPERATION

According to the existing national/international accident prevention or safety specifications, lifting units must be checked

- At least once per year by a competent person
- According to the risk assessment of the operating company,
- Before the initial start-up,
- Before restart following a shutdown
- After basic alterations.

Actual operating conditions (e.g. operation in galvanizing facilities) can dictate shorter inspection intervals.

The checks are essentially visual and functional, which should guarantee that the unit is in a safe condition and if necessary, faults and damages caused by e.g. improper transport or storage, can be identified and remedied.

The condition of components with regard to damage, wear, corrosion or other changes must be assessed, and the completeness and effectiveness of the safety devices must be determined.

Competent persons may be, for example, the maintenance engineers of the manufacturer or the supplier. However, the company may also entrust the inspection to its own appropriately trained specialist personnel. The inspections have to be initiated by the operating company.

Initial operation and recurring inspections must be documented (e.g. in the CMCO works certificate of compliance).

Paint damage should be touched up in order to avoid corrosion. All joints and sliding surfaces should be slightly lubricated. In case of heavy contamination, the unit must be cleaned.

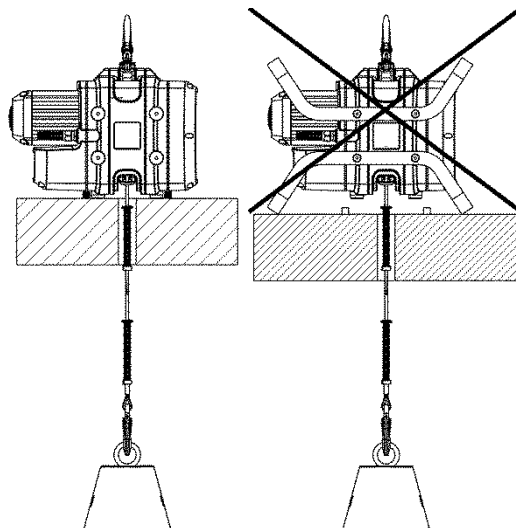
If the hoist is used as a crane, it has to be inspected and approved by a crane expert before initial operation. This inspection has to be registered in the crane inspection book. The inspection by the crane expert has to be instigated by the operating company.

OPERATION

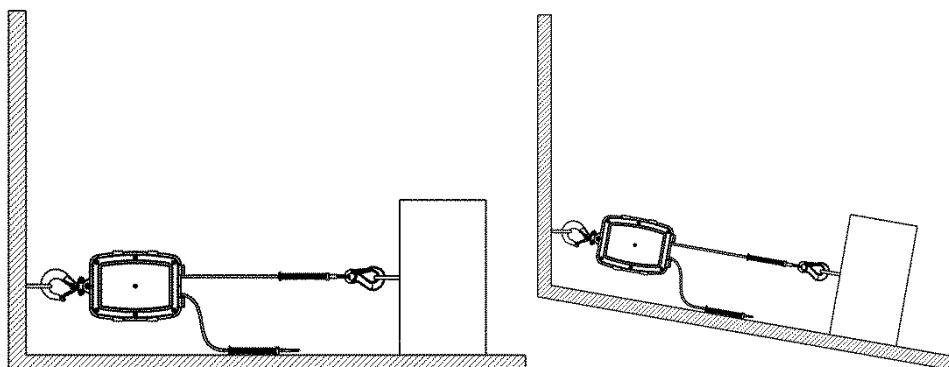
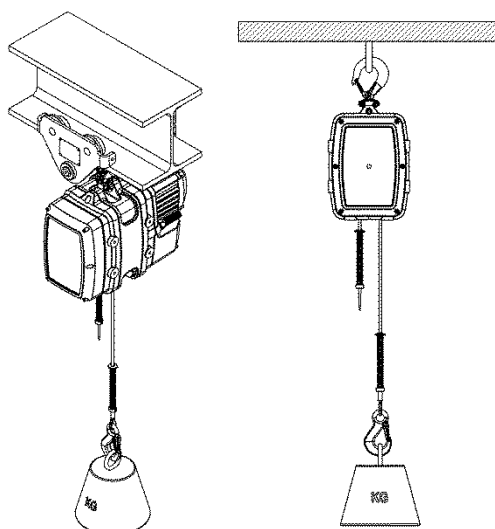
Installation, service, operation

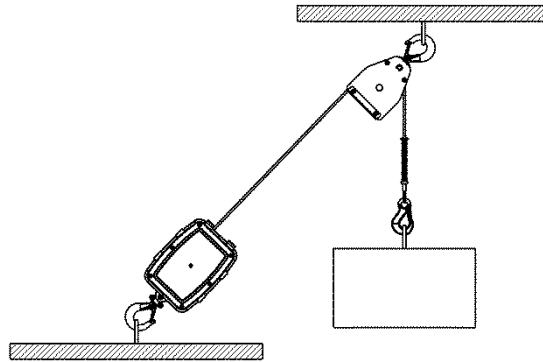
Operators delegated to install, service or independently operate the hoist must have had suitable training and be competent. Operators are to be specifically nominated by the company and must be familiar with all relevant safety regulations of the country of use.

Application or fastening of the winch



ATTENTION: The optional mounted railing must only be used for support or as protection. The railing should not be put under load!





Inspection before starting work

Before starting work inspect the hoist/trolley, chains and all load bearing components every time for visual defects. Furthermore test the brake and make sure that the load and hoist/trolley are correctly attached by carrying out a short work cycle of lifting and lowering resp. travelling in both directions. Selection and calculation of the proper suspension point and beam construction are the responsibility of the operating company.

Daily checks by the regulator

- Check the proper fastening of the Yale continuous winch to the suspension.
- Check the working of the UP and DOWN as well as the EMERGENCY STOP button.
- Check the working of the limit switch: If the switch is pressed manually during the upward movement the load shall stop immediately.

Weekly checks

As damaged ropes endanger work safety, wire rope(s) must be checked for damage once per week (in accordance with Chapter "Checking, Repair and Maintenance"). Replace, if necessary. This applies to the suspension rope as well as to the optionally used safety rope.

To increase the life of wire ropes, ensure cleanliness and mild lubrication. Power supply and control cables must be checked regularly and replaced if necessary.

Increasing the load capacity by suitable pulley blocks.

If the single max. nominal load capacity in direct pull is not sufficient, it can be multiplied by the use of return pulleys/wire rope blocks based on the pulley block principle. The load is then distributed to several rope falls. The following requirements must be fulfilled:

- A competent person must establish that the load capacity of the return pulley is adequate.
- The return pulley must be provided with a device which prevents unintended opening.
- The return pulley must be rated for the same temperature range as the hoist.
- Only use hooks with a safety latch.
- The diameter of the return pulley must be at least 12 times the nominal rope diameter.
- The groove depth of the return pulley must be at least 1.5 times the nominal rope diameter.
- The return pulley must be provided with a rope guide ensuring that the rope remains in the groove of the return pulley also in the event of slack rope.

Lifting/lowering the load

The load is lifted by depressing the ▲-button, it is lowered by depressing the ▼-button. For hoists with two speeds: The first stage of button depression activates the slow speed, further depression activates the faster speed. The slow speed may only be used for short distances.

Stop and EMERGENCY STOP

To stop the load movement, release the UP or DOWN push button. The winch must stop. If the winch does not stop, press the EMERGENCY STOP switch and pull out the GEE connector for safety reasons!

UP/DOWN operation

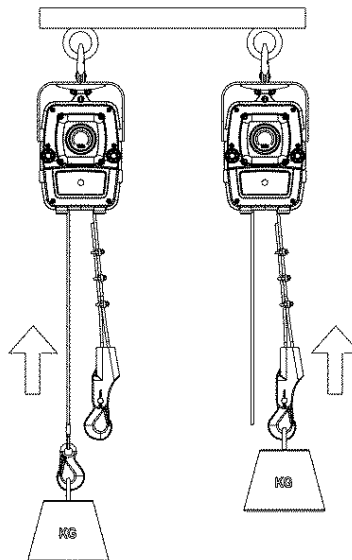
To activate the control, turn the red EMERGENCY-STOP knob to the right until it comes out.

Press the UP button for upward movement and the DOWN button for downward movement. To stop, just release the concerned button.

Pendulum mode

The design of the Mtrac rope winch enables pendulum mode.

Loads can be alternately raised and lowered. The maximum load capacity must not be exceeded (see load capacity plate).



INSPECTION, SERVICE & REPAIR

Service and inspections may only be carried out by a competent person.

The inspection must determine that all safety devices are present and fully operational and covers the condition of the hoist, lifting gear, accessories and supporting constructions.

The service intervals and inspections noted are for normal working conditions. Adverse working conditions, e. g. heat or chemical environments, can dictate shorter periods.

- Yaletrac Mini electric winches are classified according to FEM/ISO in the mechanism group 1Bm/M3. This results in the theoretical duration of use of 400 full-load hours.

This is equivalent to 10 years under normal operating conditions. After this period the hoist requires a general overhaul by the manufacturer or by a specialist.

Attention: Maintenance work requires subsequent function testing with nominal load.

Daily Checks

- Visually check the pendant control switch and all cable for damage.
- Check the proper fastening of the rope winches to the supporting structure.
- Function check of the brakes (incl. triggering the EMERGENCY STOP button)
- Function check of the limit switches
- Function check of all installed safety devices

Regular Inspections, Service And Testing

According to the existing national/international accident prevention or safety specifications, lifting units must be checked

- At least once per year by a competent person
- According to the risk assessment of the operating company,
- Before the initial start-up,
- Before restart following a shutdown
- After basic alterations. The concerned use conditions (e.g. operation in galvanizing facilities) can dictate shorter inspection intervals.

Repair work may only be carried out by a specialist workshop that uses original Yale spare parts. The inspection (mainly consisting of a visual inspection and a function check) must determine that all safety devices are complete and fully operational and cover the condition of the unit, suspension, equipment and supporting structure with regard to damage, wear, corrosion or any other alterations.

Initial operation and recurring inspections must be documented (e.g. in the CMCO works certificate of compliance).

If required by the trade association, the results of inspections and appropriate repairs must be verified.

If the hoist (from 1 t lifting weight) is fitted on or in a trolley, or if the hoist is used to move a lifted load in one or several directions, the installation is considered to be a crane and the further inspections must be carried out, in accordance with DGUV Vorschrift 54 Cranes. Paint damage should be touched up in order to avoid corrosion. All joints and sliding surfaces should be slightly lubricated. In case of heavy contamination, the unit must be cleaned.

ATTENTION! Power supply must be disconnected while inspecting the device, unless the type of the examination excludes this!

Daily checks by the regulator

- Check the proper fastening of the Yale continuous winch to the suspension.
- Check the working of the UP and DOWN as well as the EMERGENCY STOP buttons.
- Check the working of the upper EMERGENCY limit switches: If the trigger is pressed manually during the upward movement of the unit, the load should stop immediately.

Maintenance of the wire rope

ATTENTION: Always wear protection gloves for handling wire ropes.

Only original Yale wire ropes in good condition shall be used.

The Yale continuous winches are specially designed for this wire rope. For this reason only ropes that have been explicitly approved by the manufacturer for these units shall be used.

A worn wire rope must be replaced only by a wire rope of the same type, dimensions and quality.

Non-compliance with this specification will render the legal warranty or guarantee void of CMCO Industrial Products GmbH with immediate effect.

Criteria for evaluating the discarding status of a wire rope

Wire ropes must be replaced immediately if at least one of the following defects (see also DIN 15020-2 and ISO 4309) is detected during the weekly check:

- More than 6 wire breaks over a length of 3.9 cm or more than 13 wire breaks over a length of 19.5 cm
- Reduction of the outer diameter at one point to less than 5.9 mm
- Severe rust formation on the surface or inside
- Heat damage (recognisable by tempering colours)
- One of the following types of external damage to wire ropes (DIN 15020):
 - corkscrew-like deformation
 - birdcaging
 - the formation of loops on wires
 - flattening as a result of the cable being driven over
 - kinks
 - buckling

Lubricating the wire rope

- Make sure that the load chain is lubricated over its entire length, including the part of the chain in the housing of the hoist.
- In case of a constant lifting path of the chain, the change-over area from lifting to lowering movement must be carefully checked. Use simple multi-purpose oil or grease for lubrication. Molybdenum disulphide (MoS₂) or PTFE containing lubricants are not to be used.
- During lubrication, the wear condition of the wire rope must also be checked.

Maintenance of the rope drive

The rope drive is almost maintenance-free. Regular lubrication of the wire rope gives the rope drive sufficient lubrication, which significantly increases the life time. The drive capacity of the rope drive is not influenced by correct lubrication.

Maintenance Of Gearbox

The gear is provided with a permanent lubrication and is practically maintenance-free. Service is therefore restricted to checking the oil level and checking for oil losses.

Servicing of motor and motor brake

The motor is maintenance-free under normal conditions, and it does not require any special inspection. Under more difficult conditions, make sure that sufficient volume of air is provided to the motor at all times. For this, the unit must be regularly cleaned. The motor brake is maintenance-free.

ATTENTION: Do not allow the brake friction pads to come into contact with lubricant or similar.

General maintenance of continuous winch

In particular check following parts:

- Threaded connections in general

Check all nuts, screws and locking devices for tightness.

Repairs may only be carried out by authorized specialist workshops that use original Yale spare parts.

CMCO Industrial Products does not accept liability for damages resulting from the use of non-original parts or alterations and modifications made to the devices delivered by CMCO Industrial Products.

What is more, CMCO Industrial Products GmbH does not accept any liability and warranty for damages and operational faults that occur due to the non-observance of this operating instructions manual.

TRANSPORT, STORAGE, DECOMMISSIONING AND DISPOSAL

Observe the following for transporting the unit:

- Do not drop or throw the unit, always deposit it carefully.
- Do not bend control switch cables and power supply cables.
- Wire ropes must be transported in a way to avoid knotting and formation of loops (e.g. on a reel).
- Use suitable transport means. These depend on the local conditions.

Observe the following for storing or temporarily taking the unit out of service:

- Store the unit at a clean and dry place where there is no frost.
- Protect the unit (including all attached parts) against contamination, humidity and damage by means of a suitable cover.
- Do not bend control switch cables and power supply cables.
- Protect the rope against corrosion by greasing.

If the unit is to be used again after it has been taken out of service, it must first be inspected again by a competent person.

Disposal:

After taking the unit out of service, recycle or dispose of the parts of the unit in accordance with the legal regulations.

Further information and operating instructions for download can be found at www.cmco.eu!

Produktinformation (Übersicht der Komponenten)

- | | |
|------------------|--------------------------------|
| 1. Antriebsmotor | 6. Lasthaken |
| 2. Seiltrieb | 7. Steuerung |
| 3. Lasthaken | 8. Steuerschalter |
| 4. Traggriff | 9. Netzanschluss |
| 5. Seil | 10. Lasthaken, Kit (Pendelhub) |

