

# Yale<sup>®</sup>

Endless winch – Transport of materials

## Model YaleMtrac

Capacity 500 kg – 980 kg

Translation of original operating  
and maintenance instructions



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Ident.-No.: 09901088/08.2011

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## Yale® Mtrac endless winch

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# Yale® Mtrac endless winch



## Information for manufacturers of installations for transporting material

Manufacturers incorporating Yale endless winches and/or Yale safety locks in installations such as, for example, load lifts, assembly accessories or cranes must integrate all information necessary for safe assembly and safe operation contained in these instructions in the appropriate parts of their own instructions for the installation! For meeting the requirements of the EC machinery directive and further applicable standards, it is not sufficient to merely attach these instructions!

**These operating instructions must be available to the user at any time.**

## Explanation of the pictograms used in these instructions

Pictogram	Meaning of the pictogram
	Important information for use
	Danger of material damage to the winch due to a dangerous situation
	Danger of injuries or material damage due to a dangerous situation
	Danger of injuries and/or danger to life caused by heavy current
	Danger of injuries and/or danger to life



## Yale® Mtrac endless winch

### 1. Important safety information for assembly and operation

- Installation and maintenance of Yale endless winches may only be carried out by persons who are familiar with this work and have been assigned to these tasks by the operating company.
- These persons must know the relevant accident prevention regulations, for example "Winches, lifting and towing devices" (BGV D8), "Cranes – Power driven winches and hoists" (EN14492-1), etc. and must have received appropriate relevant instructions; furthermore they must have read and understood the operating and assembly instructions of the manufacturer.
- Yale endless winches are only intended for transporting material and exclusively approved for this purpose. Any other applications must be agreed with the manufacturer and, if applicable, licensing authorities.
- The load capacity indicated on the unit is the maximum working load limit (rated load) that must not be exceeded.
- The use of Yale endless winches in areas with an explosion hazard is prohibited.
- Yale endless winches may only be used at ambient temperatures between -40°C and +70°C.
- Do not lift or transport loads, as long as persons are in the danger zone of the load.
- Do not allow personnel to stay or pass under a suspended load.
- A lifted or clamped load must not be left unattended or remain lifted or clamped for a longer period of time.
- The operator may start moving the load only after he has checked that it has been attached correctly and all persons are clear of the danger zone.
- When attaching the unit, the operator must ensure that during operation of the hoist neither the hoist, the supporting equipment nor the load pose a danger to himself or other personnel.
- Fixed or obstructed loads must not be lifted.
- Loads must not be turned during operation. If it is necessary to turn loads during operation, anti-twist swivels must be provided and/or the manufacturer must be consulted.
- Avoid excessive inching operation by frequent, brief actuation of the control switch.
- For lifting the load from the ground, always use the lowest available lifting speed. The rope must first be tensioned at this speed; it must not be slack when the load is lifted from the ground. If the winch has two speeds, the low speed must only be used for short distances.
- It is forbidden to use the hoist for the transportation of persons.
- Welding work on the hook and the rope is strictly forbidden. The rope must not be used as earth conductor for welding work.
- Before starting assembly, check all parts for completeness and faultless condition.
- Only use perfect Yale endless winches, ropes, electrical cables and lifting tackle.
- Only use the original Yale wire rope in appropriate condition. Only use common multi-purpose oil or grease for lubricating the winch and wire rope. Do not use any lubricants which contain molybdenum disulphide (MoS<sub>2</sub>) or PTFE! Using any other wire rope voids all warranty claims against Yale Industrial Products.
- Yale endless winches and Yale safety lock systems must only be fastened at the fixing bore holes provided for this purpose.
- Yale endless winches must be fastened in such a way that the loaded suspension rope enters vertically from all directions.
- Overloading Yale endless winches is strictly forbidden.
- Inspections or repairs must only be carried out by Yale Industrial Products or by a hoist service company authorised by the manufacturer.
- The electrical connection of Yale endless winches and of electrical accessories must be carried out by qualified electricians in accordance with EN60204-1 or -32. Inspections and repairs of the electrical equipment must only be carried out by qualified electricians or by a hoist service company authorised by the manufacturer.
- Yale Industrial Products does not accept any liability for damage resulting from the use of other than the original parts or caused by conversion and modification of units supplied by Yale Industrial Products.



## 2. Description of the winch

### 2.1 Correct operation

Yale endless winches of the YMT-M series are electrical hoisting equipment for lifting and lowering loads in accordance with EN14492-1 up to the specified load capacity and by means of Yale wire ropes. The load capacity indicated on the unit is the maximum working load limit (rated load) that must not be exceeded.

For trouble-free and safe working with Yale endless winches it is imperative that an original Yale rope be used.

Yale endless winches with an operating speed of 9 m/min are classified in group of mechanisms M3/1Bm, and with 18 m/min in M2/1Cm in accordance with ISO4301-1 / DIN15020.

### 2.2 Winch operating mode

On the control system, there is a pushbutton for UP and one for DOWN travel.

The Yale endless winch does not collect the wire rope but moves it through the winch at a constant speed. Therefore, the rope length, i.e. the lifting height, is virtually unlimited.

All Yale endless winches for transporting material can be fitted with an optional overload switch-off.

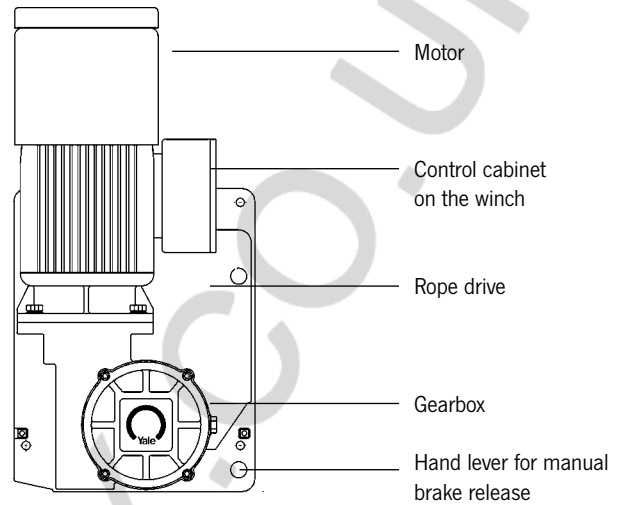
If the load capacity of the Yale endless winch is not sufficient in direct pulling it can be increased based on the pulley principle.

### 2.3 Original Yale rope

Yale endless winches must only be operated with the original Yale rope: Marking on the tag as follows:

Front: CMCO + batch number

Rear: Nominal diameter + rope length (for the relevant nominal rope diameters, see the technical data in section 2.5).



### 2.4 Yale control systems

Yale endless winches can be provided with different control systems. They are connected to the mains network by wiring in the control system or by means of a CEE plug.

The control elements comprise a pushbutton for 'UP', one for 'DOWN' and an emergency-stop pushbutton.

A lockable main switch and a change-over switch for simultaneous or separate control of two endless winches are available as options. Limit switches and emergency-limit switches can also be connected to the control system as options.



# Yale® Mtrac endless winch

## 2.5 Technical data

Winch	Useful load	Nominal rope diameter	Nominal rope speed 1G/2G	Power supply	Motor output	Power consumption	Group of mechanisms to DIN15020	Noise at a distance of 1 m	Weight without ropes	Dimensions		
										kg	mm	m/min
YMT/F 5-9-M8	500	8,3	9/4,5	400 V, 3 ph	1,1	3,0	1 Bm/M3	≤75	54	599	301	261
YMT/F 5-18-M8	500	8,3	18/9	400 V, 3 ph	2,0	5,5	1 Cm/M2	≤75	54	599	301	261
YMT/F 6-9-M8	600	8,3	9/4,5	400 V, 3 ph	1,1	3,0	1 Bm/M3	≤75	55	599	301	261
YMT/F 6-18-M8	600	8,3	18/9	400 V, 3 ph	2,0	5,5	1 Cm/M2	≤75	55	599	301	261
YMT/F 8-9-M8	800	8,3	9/4,5	400 V, 3 ph	1,8	3,4	1 Bm/M3	≤75	55	599	301	261
YMT/F 8-18-M8	800	8,3	18/9	400 V, 3 ph	3,6	6,5	1 Cm/M2	≤75	56	599	301	261
YMT/F 10-9-M9	980	9,3	9/4,5	400 V, 3 ph	1,8	4,2	1 Bm/M3	≤75	55	599	301	261
YMT/F 10-18-M9	980	9,3	18/9	400 V, 3 ph	3,6	7,5	1 Cm/M2	≤75	56	599	301	261

Subject to technical alterations

## 2.6 Safety features

The following equipment is available to ensure the safety of Yale units:

### A) Emergency stop

By pushing the emergency-stop button, the whole control system is switched off in event of an emergency. By turning and pulling the button in the direction indicated by the arrow, it is unlocked again.

### B) Motor brake

All Yale endless winches are provided with an electro-magnetically released spring brake, which closes automatically when the pushbutton for UP/DOWN travel is released and in the case of a power failure.

### C) Manual descent

In the event of a power failure, the brake can be released manually by means of the lever.



Pull the lever out of the handle of the winch, insert it in the bore hole of the motor brake and push it upwards.

### D) Overload switch-off (optional)

The overload switch-off available as an option switches off UP travel in the event of an overload. At the same time a warning signal (buzzer) is triggered which only stops, if the cause of overloading has been eliminated.

Possible causes for switch-off:

- the winch is overloaded, e.g. owing to unfavourable load distribution or
- the load has been caught during upwards travel.

After a switch-off, reduce or redistribute the load until overload has been eliminated or travel downwards until the load is freed from the obstacle; it is essential to remove the obstacle before restarting.

### E) Phase sequence monitoring (optional)

Yale control systems with an integrated phase sequence monitoring feature prevent the winch from operating in the case of an incorrect phase sequence, since an incorrect assignment of the UP/DOWN direction buttons may render limit switches or any fitted overload switch-off features inoperative.

Possible correction: change over two of the phases of the plug or turn the phase changer in the plug through 180°.

### F) Emergency limit switch UP (optional)

For safety reasons, at least one limit or emergency-limit switch should be fitted at the top for each Yale endless winch which, when triggered, immediately stops all movements of the load.

For this purpose, a stop plate must be fitted on the suspension rope under the rope swaging which triggers the limit switch.

Maintain a safety clearance of at least 1.0 m to the winch.

If there are any obstacles protruding into the path of the load, the stop plate must be lowered so that the winch always stops early enough.

When an emergency-limit switch has been approached, no further electrical movement is possible.

This means that the winch then must be lowered with the manual descent (see section 2.6 C) until the actuating lever of the emergency-limit switch is free again.



## 2.7 Information on remaining risks



Remaining risks exist which cannot be covered by the design of Yale endless winches:

- Since the optional overload switch-off is normally set to the maximum load capacity of the winch in the factory, the operating company must check, if the useful load of the lifting tackle also corresponds to the value of the overload switch-off and/or to the useful load of the winch. If this check shows that a lower value is required, the overload switch-off must be adjusted accordingly, either ex-works or by a trained person or the specified useful load of the winch must be reduced.
- If no Yale safety lock is fitted on an additional safety rope, a failure of the winch or a broken rope may result in dropping of the load.

## 3. Putting the winch into service

### 3.1 Basic principles

The operating company is responsible for ensuring that the suspension structure for the winch and the lifting tackle comply with all relevant regulations.

### 3.2 Necessary components

- Yale endless winch(es) with appropriate useful load;
- Original Yale rope(s) with an appropriate length
- Connection cable with an appropriate length
- If necessary, rope sheave(s) with an appropriate useful load for returning/reaving the rope (not included in the scope of supply).

### 3.3 Fixing of the Yale endless winch

#### A) Mounting material

Yale endless winches of the YMT-M series can either be fixed with two M10 bolts (for the double-shear connection use two of the four boreholes dia. D that are not diagonally arranged!), with four M10 bolts (for the single-shear connection use all four boreholes dia. D) or with one M16 bolt (use borehole dia. C!) and by applying self-locking nuts.

Bolts must be long enough so that they only carry by the barrel and never by the thread (use spacers if necessary).

The strength class must be at least 8.8. Higher strength classes (10.9 and in particular 12.9) should not be used since these bolts, especially the galvanized version, tend to become brittle.

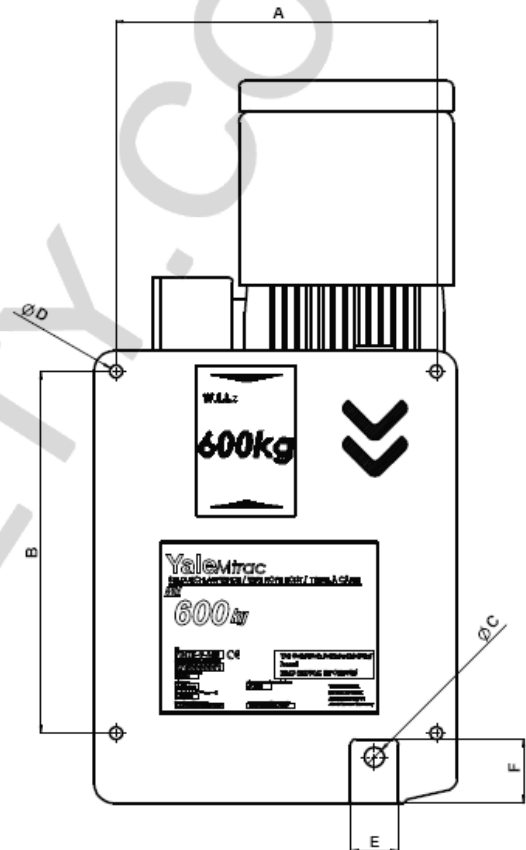
Instead of the M10 bolts, studs or similar with at least the same strength may also be used.

A load bolt with a dia. of 16 mm is included in the scope of supply of every winch.

## B) Fixing of the Yale endless winch



Fix Yale endless winches in such a way that the loaded suspension rope always enters the winch vertically from all directions!



We recommend that Yale Industrial Products be contacted for planning the fastening arrangement of the winch, as required.

In any case the structure for suspending the suspension rope as well as the component on which the winch is fixed must have **at least 2.5 times the load capacity** (lasting deformation not permissible) compared with the useful load of the winch in order to meet the requirements of standard EN14492-1.



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### 3.4 Yale control systems

#### A) Contactor control

Access for the mains cable and the control cable is provided on the contactor control system. Always make sure that the control cable is provided with a strain relief arrangement.

**Important:** This control system is only suitable for stationary operation

#### B) Control system with phase sequence monitoring

A CEE-16A plug is provided on the control system with phase sequence monitoring for power supply to the endless winch. The control cable is connected by means of a cable union. Always make sure that the control cable is provided with a strain relief arrangement.

Motor and, if required, emergency-stop limit switch can be connected to the control system by means of plug connectors.

#### C) Control system for two endless winches

A CEE-16A plug is provided on the control system for two endless winches for power supply to the endless winches. The control elements for operating the endless winch and the emergency-stop pushbutton are arranged on the door of the switching cabinet of the control system. The main switch of the endless winch is also located on the control system.

The two motors and, if required, emergency-stop limit switches can be connected to the control system by means of plug connectors.

Type of winch	Required cable cross section in mm <sup>2</sup> for cable lengths up to			
	25 m	50 m	100 m	200 m
1x YMT/F 5-9-M8	1,5	1,5	1,5	1,5
2x YMT/F 5-9-M8	1,5	1,5	1,5	2,5
1x YMT/F 5-18-M8	1,5	1,5	1,5	2,5
2x YMT/F 5-18-M8	1,5	2,5	4,0	6,0
1x YMT/F 6-9-M8	1,5	1,5	1,5	1,5
2x YMT/F 6-9-M8	1,5	1,5	1,5	2,5
1x YMT/F 6-18-M8	1,5	1,5	1,5	2,5
2x YMT/F 6-18-M8	1,5	2,5	4,0	6,0
1x YMT/F 8-9-M8	1,5	1,5	1,5	1,5
2x YMT/F 8-9-M8	1,5	2,5	4,0	6,0
1x YMT/F 8-18-M8	1,5	1,5	1,5	2,5
2x YMT/F 8-18-M8	1,5	2,5	4,0	10,0
1x YMT/F 10-9-M9	1,5	1,5	1,5	1,5
2x YMT/F 10-9-M9	1,5	2,5	4,0	6,0
1x YMT/F 10-18-M9	1,5	2,5	4,0	10,0
2x YMT/F 10-18-M9	1,5	4,0	10,0	16,0

### 3.5 Power supply

The operating company is responsible for the connection of the Yale endless winches. It is essential that the circuit diagrams included in the supply be taken into account.



Complete the electrical connection of the winches in accordance with EN 60204-1 or EN 60204-32. Always pull the power plug before opening any control system.

- 1) Always check whether mains voltage and motor voltage match  
Three-phase current: 400 V (3P+N+PE), 50 Hz with 16 A CEE plug
- 2) For min. cross sections of the supply cables, comply with the following table!

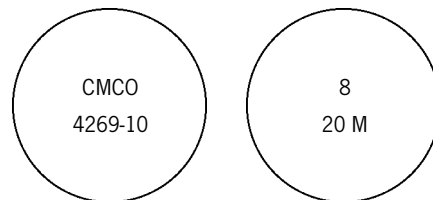
### 3.6 Fitting the wire ropes

#### A) Preparation



Caution when handling wire ropes:  
Always wear protective gloves.

- 1) Only use original Yale wire ropes.  
Example for the marking of the Yale 8.4 mm rope (tag on the thimble):



Front

Rear

- 2) Make sure that the wire rope has the correct diameter and an appropriate length.
- 3) Always unwind the wire rope orderly and without twisting (by also turning the winder). Otherwise the wire rope may be rendered unusable as a consequence of rope slings.



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4) Examine the condition of the wire rope:

- Thimble/swaging undamaged?
- For ropes with hook: undamaged safety cover, hooks not bent open?
- Proper rope head, without any obvious damage along the entire length?



Never use the towing rope as an attachment rope and never wind it around the load! Ensure unrestricted rope lead-off from the winch! Never pull the rope over edges! The rope must always be slightly lubricated!



Use common multi-purpose oil or grease for lubricating. Do not use any lubricants which contain molybdenum disulphide (MoS<sub>2</sub>) or PTFE.



Always attach the ropes at the top of the suspension before letting them run into the winch!

### B) Fitting the suspension rope

Insert the head of the wire rope from above as far as possible into the inlet tube of the Yale endless winch.

- While pushing the UP button, push the rope as long as it winds on by itself and exits again at the bottom.



Running in the rope with the DOWN button may take the overload switch-off (optional) out of operation.

If the rope does not run in, check whether the rope head is in order and whether the UP button has been pushed.

### C) Loose end of the rope

- The rope must always be able to run out unhindered! The loose end of the rope must hang freely to be able to untwist or it must be collected appropriately and must not form any loops.
- In order to prevent the unloaded wire rope from being damaged, fit a return sheave or another suitable rope guide, if required!



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## 4. Operation of the winch

### 4.1 Safety checks before initial operation (by a competent person)

Prior to initial operation, a competent person must:

- carry out the checks described in sections 4.2 and 4.3,
- perform a trial run of the system with max. useful load and
- actuate the emergency-stop button  
=> The load must stop immediately. Turn the emergency-stop button clockwise for restarting. Travel on and
- check the emergency-limit switch:  
during upward travel, press down the actuating lever by hand:  
=> The load must stop immediately.

Document and file the results of the safety checks before initial operation.

### 4.2 Daily checks by the supervisor

- Check the correct fastening of the Yale endless winch on the suspension.
- Check functioning of UP and DOWN buttons as well as emergency-stop button.
- Check functioning of the upper emergency-limit switch: During upward travel, press down the actuator by hand:  
=> The load must stop immediately.
- Make sure that no person stays under the suspended load or may be able to stay there.

### 4.3 Weekly checks



Since defective ropes are a hazard to safe operation, check suspension ropes and safety ropes for damage at weekly intervals in accordance with section 6.2 A and replace them, as required.



In order to increase the service life of the wire ropes, make sure that they are clean and slightly lubricated. Check supply cables and control cables at regular intervals and replace them, as required.

## 4.4 UP / DOWN operation

### A) Stop and emergency stop

- a) For stopping the load, release the UP or DOWN pushbutton.

#### If the winch does not stop:

- b) Press the emergency-stop button => the endless winch must stop immediately

#### If the winch still does not stop:

- c) Pull the CEE plug!



Stop working immediately if the load does not stop as described in a)! Arrange for a qualified electrician to carry out inspection and repair.

### B) UP / DOWN operation

- a) For switching the control system on, turn the red emergency-stop button clockwise until it pops out.
- b) Press the UP button for travelling upwards and the DOWN button for travelling downwards. Release the button to stop the winch.

For lifting the load from the ground, always use the lowest available lifting speed. The rope must first be tensioned at this speed; it must not be slack when the load is lifted from the ground. If the winch has two speeds, the low speed must only be used for short distances.



If operation is not possible check whether the integrated phase sequence monitoring feature blocks control because two phases in the supply line have been changed over. Turn the phase changer in the plug through 180°, as required.

- c) The motor brake of the winch stops the load safely in every position.

## 4.5 Manual descent

In the event of a power failure, the brake of the winch motor can be released by hand.

To do this, pull the lowering lever out of the handle on the rear side of the winch and insert it through the opening of the cover of the motor into the bracket of the brake.

Pull the lever upwards to start lowering the winch in a controlled manner. A built-in centrifugal brake ensures that the lowering speed is limited. Release the lowering lever to slow down. Always put the lever back into the handle after use.



Using the manual descent in the case of an overload is prohibited!  
Using the manual descent as a replacement for electrical lowering is prohibited!



## 5. Eliminating malfunctions



In the case of malfunctions, act calmly and carefully in order to avoid serious injuries:



Always pull the power plug before opening the electric box on the winch or the control system!



1) Inspections and repairs of the electrical equipment must only be carried out by qualified electricians or by an authorised hoist service company. Circuit diagrams can be found in the control system of the Yale endless winch.

2) Repairs of Yale endless winches and safety locks must only be carried out by Yale Industrial Products or by an authorised hoist service company!


Problem	Possible cause	Fault elimination
Winch neither travels up nor down but the motor turns when the UP/DOWN button is pushed	<p>Never continue to operate!</p>	
	<b>A Rope jam inside the winch</b> Damaged/incorrect wire rope or rope lead-off not possible	Stop working immediately and require assistance (manufacturer or supplier of the winch)
	<b>B Safety lock (optional) has triggered and holds the load on the safety rope as a consequence of a broken suspension rope or damage to the winch</b>	Stop working immediately and require assistance (manufacturer or supplier of the winch)
	<b>C Load is caught</b> e.g. on an obstacle	Free the load. Check system for safety.
Problem	Possible cause	Fault elimination
Winch only travels down but not up, motor does not turn when the UP button is pushed	<p>Only continue travelling, if there no longer is a safety risk!</p>	
	<b>D Load is caught</b> e.g. on an obstacle	Remove obstacle Check system for safety
	<b>E Winch is overloaded, lifting force limitation has switched off the winch</b>	Reduce the load or distribute it more evenly
	<b>F Fault in UP circuit of the control system</b>	Check contactors and wiring, repair, if required
	<b>G One phase has failed</b>	Check supply line and fuse links
	<b>H No motor output</b> a) Start-up capacitor defective  b) Centrifugal force switch defective (only for single-phase motors)	a) Check start-up capacitor and replace if necessary  b) Measure current on auxiliary winding, repair only possible by Yale Industrial Products
<b>I Brake rectifier defective</b>	Replace brake rectifier	



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Winch only travels up but not down, motor turns when the DOWN button is pushed	 Only continue travelling, if there no longer is a safety risk!	
	<b>J</b> Load has been stopped on an obstacle or caught by an obstacle.	Remove obstacle. <b>Check system for safety</b>
	<b>K</b> Safety lock (optional) holds the load on the safety rope a) Load caught/stopped with safety lock YISL b) Inclined position of the load with safety lock type YISL c) Winch speed too high with safety lock YOSL d) Triggering speed too low with safety lock YOSL	a) Travel up until the loaded suspension rope opens the safety lock b) Travel up lower side of the load until the loaded suspension rope opens the safety lock c) Replace the affected winch and have it checked d) Replace the safety lock and have it checked
	 Defective safety locks are a safety risk and must therefore be replaced immediately!	
..., but the motor does not turn when the DOWN button is pushed	<b>L</b> Fault in DOWN circuit of the control system	If required, actuate the <b>manual descent</b> (see section 4.5) Check contactors and wiring, repair, if required



Problem	Possible cause	Fault elimination
Motor does not run at all	<b>M No power supply</b> a) Control system switched off  b) No power supply in the network  c) For three-phase motors: the phase sequence relay blocks control  d) Supply line between mains connection and control system interrupted	a) Turn the emergency-stop button clockwise until it pops out.  b) Determine the cause and wait until power is available again  c) Turn the phase changer in the plug through 180°  d) Check supply and control cables, fuse links and connections or wiring of the control system and repair, as required
	<b>N Incorrect connection,</b> e.g. missing neutral conductor	Compare connection and circuit diagram, if necessary conversion by Yale Industrial Products
	<b>O Safety cut-off due to overheating</b> a) One of the phases is missing  b) Motor cooling insufficient  c) Overvoltage or undervoltage	a) Check/repair fuse links, supply line and connections  b) Clean motor cover  c) Measure voltage and power consumption on motor with load, increase cable cross sections, if required
	<b>P Brake does not release (no click when switching on/off)</b> a) Power cable, coil or brake rectifier defective  b) Brake rotor worn	a) Have the supply line, brake coil and rectifier checked and repaired/replaced by an electrician  b) Have the winch repaired
Motor hums strongly or rope drive scrunches, although up and down travel is possible	<b>Q Overheating</b>	See item O for individual causes and their elimination
	<b>R Dirt in the rope drive</b>   Travelling on may cause damage to rope and rope drive.	If possible replace winch immediately and have it checked/repared by Yale Industrial Products or by an authorised hoist service company



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<b>Winch runs on for more than 20 cm after the DOWN button has been released</b>	<b>S Brake defective/worn</b> a) Brake rotor worn b) Air gap incorrectly adjusted	a) Have the winch repaired b) Adjust air gap correctly
	<b>T Brake wet/aquaplaning</b>	Make sure that the brake is dry (e.g. by means of protective cover, only continue travelling if the brake works)

Contact Yale Industrial Products or an authorised hoist service company, if the steps mentioned above do not result in clarifying and eliminating the cause.

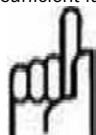
## 6. Maintenance

Date/performed by	Regulations	Item to be checked	Description
<b>Each working day by the supervisor</b>	EN14492-1 Cranes – Power driven winches and hoists	Fastening parts	In section 4.2
		Yale endless winch	In section 4.2
<b>Each week by the supervisor</b>	DIN15020 sh. 2/ISO 4309	Wire ropes	In section 6.2 A
	EN14492-1	Electrical cables	In section 6.2 A
<b>Annually by a competent person</b>	BGV D8 (Winches, lifting and towing devices)	Entire installation	
		Yale endless winch	In section 6.2 B
<b>After 200 h (M2/1Cm) or 400 h (M3/1Bm), at the latest, by Yale Industrial Products</b>	EN14492-1, BGV D8 (Winches, lifting and towing devices)	General overhaul of the Yale endless winch and Yale safety lock	In section 6.2 B

### 6.1 Maintenance and servicing

#### A) Rope drive and gearbox

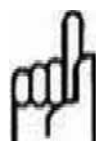
Rope drive and gearbox are almost maintenance-free. Lubricating the ropes on a regular basis provides the rope drive with sufficient lubrication.



The service life of the rope drive is considerably increased by lubrication. The traction of the rope is not affected by proper lubrication.

#### B) Wire ropes

- Wire ropes must always be slightly lubricated. Ensure that they are clean, i.e. do not deposit them on dusty ground or in dirty surroundings.
- Never use wire ropes to fix a load.
- Always wind and unwind the wire ropes properly on/from the reels.
- Never pull wire ropes over edges.



Use common multi-purpose oil or grease for lubricating. Do not use any lubricants which contain molybdenum disulphide (MoS<sub>2</sub>) or PTFE!

#### C) Motor and motor brake

The electro-motor of the winch is maintenance-free. Clean the motor cover if it is extremely dirty to make sure that the motor is supplied with enough air.

The motor brake is maintenance-free; it must, however, be kept free of oil and grease!

Only clean in the case of exceptional operation conditions and in the case of strong dirt accumulation.



## 6.2 Regular checks

### A) Ongoing checks

Before and during operation always make sure that all components used, i.e.

- Yale endless winches
- Yale safety locks
- Yale wire ropes
- Rope return sheaves
- Sling gear, etc.

are correctly fitted and are free of detectable defects.



Stop working immediately if defects occur during operation.

All type and instruction plates must be fitted and legible. Any missing or no longer legible type and instruction plates must be replaced immediately!



Wire ropes must be replaced immediately if a defect according to DIN15020 sheet 2 or ISO4309 has been detected during the weekly check:

- more than 11 broken wires over a length of 24 cm (dia. 8) / 27 cm (dia. 9) / 30 cm (dia. 10)



- Strong formation of rust on the surface or inside
- Heat damage, indicated by burning discoloration
- Reduction of the outer diameter to less than 7.6 mm (dia. 8 mm) / 8.5 mm (dia. 9 mm) / 9.4 mm (dia. 10 mm)

If damage is detected on the insulation or on the cable connections during the weekly check of the electrical cables, replace or repair supply and control cables immediately!

Excerpt from DIN15020: Illustration of the most common types of outer damage of wire ropes:

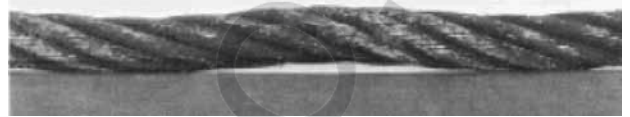


Figure 1: Wire rope with corkscrew-like deformation

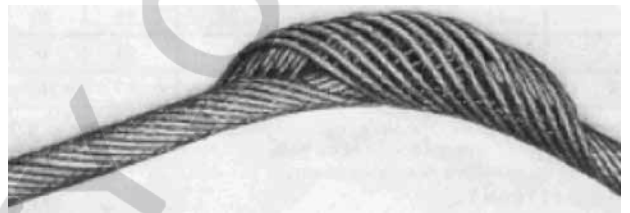


Figure 2: Wire rope with bird-caging

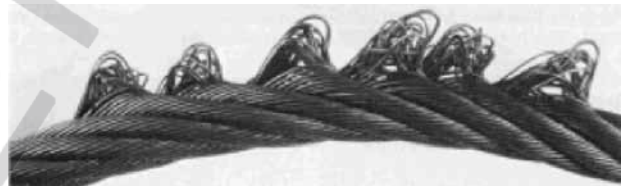


Figure 3: Wire rope with wire loops



Figure 4: Wire rope with flattening caused by being run over



Figure 5: Wire rope with kink

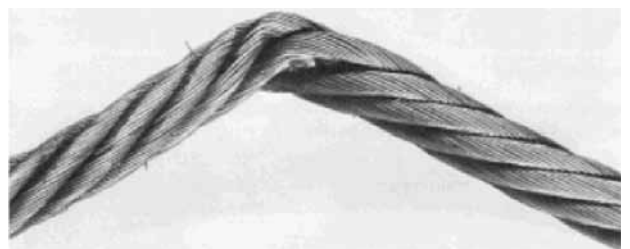


Figure 6: Wire rope with bend



## Yale® Mtrac endless winch

### B) Safety check by a competent person

A competent person has been enabled to carry out safety checks on Yale endless winches by adequate training at the manufacturer's.

Safety checks of Yale endless winches must be carried out at least once a year by a competent person.

Exceptional ambient conditions or conditions of operation may require additional safety checks according to the relevant accident prevention regulations for "Hoists, lifting and towing devices" (BGV D8) and the standard "Cranes – Power driven winches and hoists" (EN14492-1).

Yale endless winches with M2/1Cm group of mechanisms must be subjected to a general overhaul after 200 hours at the latest, and Yale endless winches with M3/1Bm group of mechanisms after 400 hours of operation, at the latest, by the manufacturer.



All results of the annual and extraordinary inspections must be entered into a log booklet.

This is the responsibility of the operating company.

### 6.3 Repairs of the winch

Any repairs on Yale endless winches must only be carried out by Yale Industrial Products or a hoist service company authorised by Yale; only original spare parts must be used for repairs.

Only use gear oil type Mobil SHC 632 for refilling or for changing the gear oil!



**Yale** Mtrac endless winch



**Inspection comments**

Inspection before initial operation on: \_\_\_\_\_

by: \_\_\_\_\_

Date of initial operation: \_\_\_\_\_

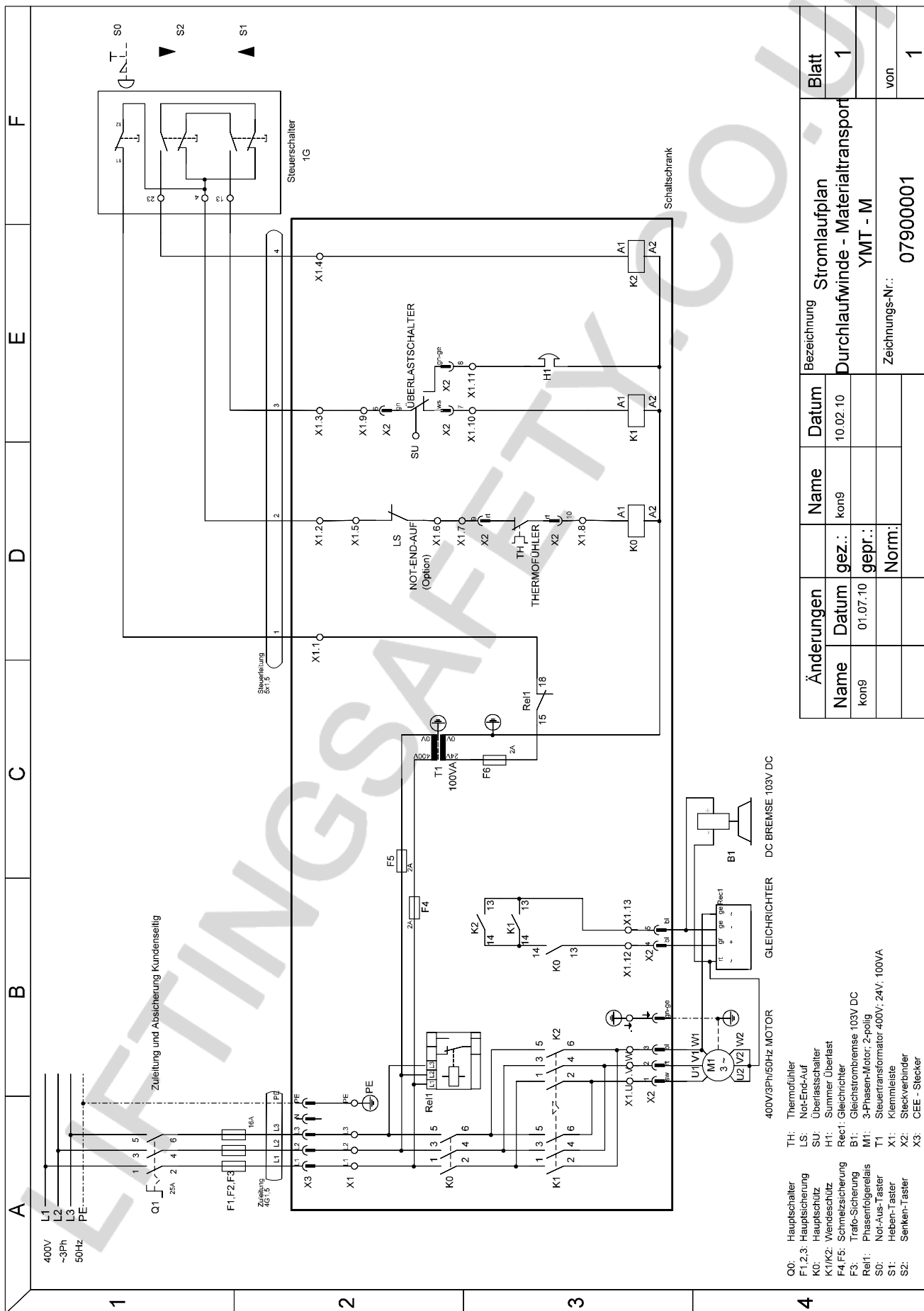
**Recurring inspections**

Date	Findings	Repairs	on	Test by *

\* competent person



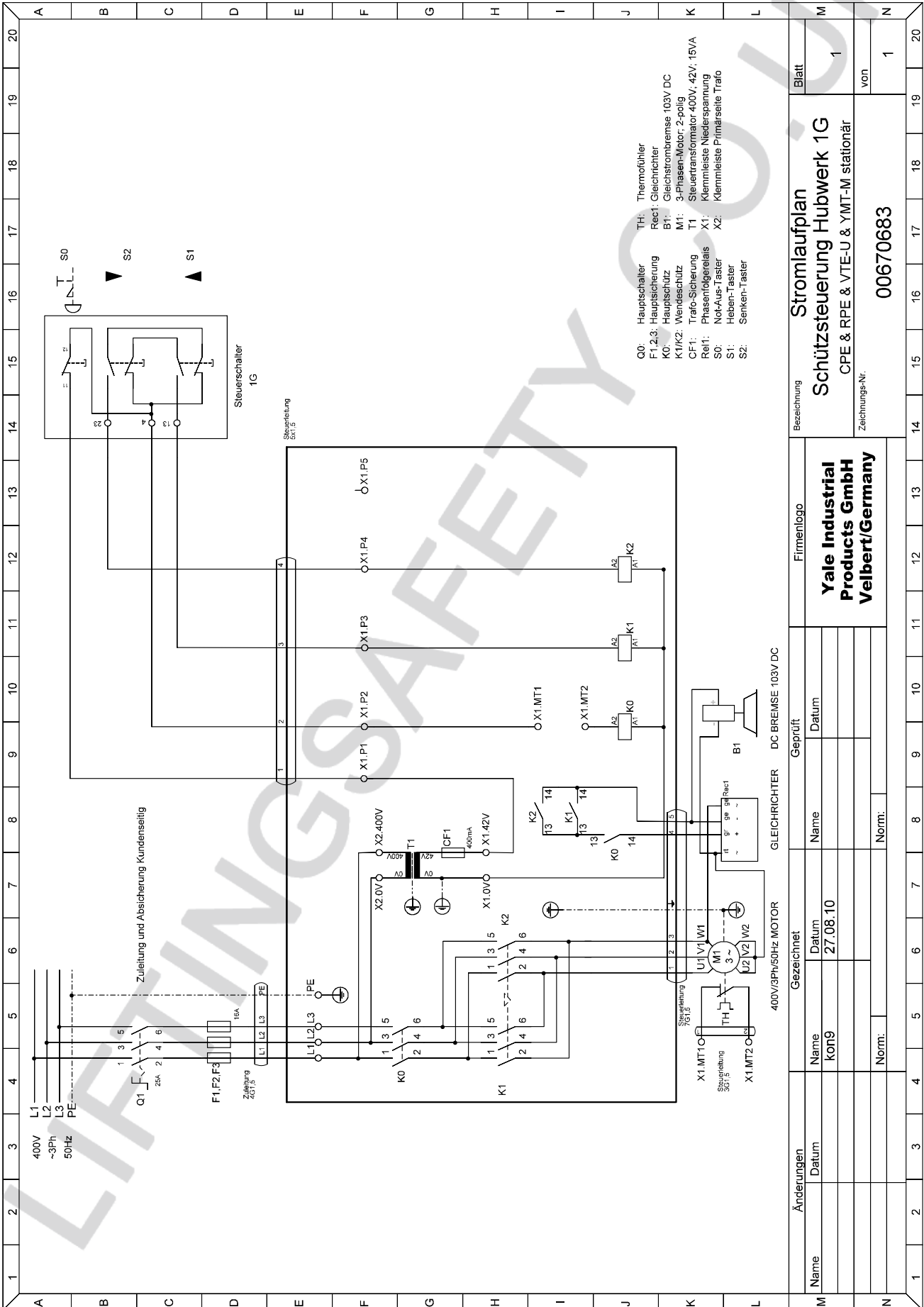
# Yale Mtrac endless winch



- Q0: Hauptschalter
- F1,2,3: Hauptsicherung
- K0: Hauptschutz
- K1/K2: Wendeschutz
- F4,F5: Schmelzsicherung
- F3: Trafo-Sicherung
- Rel1: Phasenfolgerlais
- S0: Not-Aus-Taster
- S1: Heber-Taster
- S2: Senken-Taster
- TH: Thermofühler
- LS: Not-End-Auf
- SU: Überlastschalter
- H1: Summer Überlast
- Rec1: Gleichrichter
- B1: Gleichstrombremse 103V DC
- M1: 3-Phasen-Motor; 2-polig
- T1: Not-Transformator 400V; 24V; 100VA
- X1: Klemmleiste
- X2: Steckverbinder
- X3: CEE - Stecker

Änderungen		Name	Datum	Bezeichnung	
Name	kon9	kon9	10.02.10	Stromlaufplan	Blatt
Datum	01.07.10			Durchlaufwinde - Materialtransport	1
gez.:				YMT - M	
gepr.:					
Norm:				Zeichnungs-Nr.:	von
				07900001	1

# Yale Mtrac endless winch



Änderungen		Gezeichnet		GLEICHRICHTER		DC BREMSE 103V/DC	
Name	Kon9	Name		Name		Name	
Datum	27.08.10	Datum		Datum		Datum	
Norm:		Norm:		Norm:		Norm:	
Blatt		Firmenlogo		Bezeichnung		Blatt	
1		<b>Yale Industrial Products GmbH</b> <b>Velbert/Germany</b>		<b>Schutzsteuerung Hubwerk 1G</b> CPE & RPE & VTE-U & YMT-M stationär		1	
von						1	
Zeichnungs-Nr.		00670683		19		20	



## Yale® Mtrac endless winch

### Translation of original declaration of incorporation in accordance with EC Machinery Directive 2006/42/EC (Appendix II B)

Hereby we,

**COLUMBUS McKINNON Industrial Products GmbH**  
42549 Velbert, Am Lindenkamp 31, Germany

declare that the design, construction and commercialised execution of the partly completed machinery designated below comply with the essential health and safety requirements of the EC Machinery Directive. The validity of this declaration of incorporation will cease in case of any modification of or supplement to the partly completed machinery without our prior consent. Furthermore, validity of this declaration of incorporation will cease in case that the partly completed machinery is not operated correctly and in accordance with the operating instructions and/or not inspected regularly. The partly completed machinery may only be put into service, when the machinery into which the partly completed machinery has been incorporated, has been subjected to a conformity evaluation in accordance with EC Machinery Directive 2006/42/EC and fulfils all requirements.

<b>Designation of machinery:</b>	YaleMtrac endless winch Mod. YMT 5-9-M8; Mod. YMT 5-18-M8; Mod. YMT 6-9-M8; Mod. YMT 6-18-M8; Mod. YMT 8-9-M8; Mod. YMT 8-18-M8; Mod. YMT 10-9-M9; YMT 10-18-M9; Mod. YMTF 5-9-M8; Mod. YMTF 5-18-M8; Mod. YMTF 6-9-M8; Mod. YMTF 6-18-M8; Mod. YMTF 8-9-M8; Mod. YMTF 8-18-M8; Mod. YMTF 10-9-M9; Mod. YMTF 10-18-M9 Capacity: 500 – 980 kg
<b>Type of machine:</b>	Endless winch
<b>Serial number:</b>	Serial numbers for the individual units are registered
<b>Relevant EC Directives:</b>	EC Machinery Directive 2006/42/EC
<b>Applied harmonised standards, in particular:</b>	ISO 4309:2004+AMD1:2008 ISO 12100:2010 EN 349:1993+A1:2008 EN 12385-1:2009 EN 14492-1:2006+A1:2009 EN 60204-32:1999
<b>Completely or partly applied national standards and technical specifications, in particular:</b>	DIN 15020-1:1974, BGVD8
<b>Quality assurance:</b>	EN ISO 9001:2008
<b>Authorised representative for technical data:</b>	COLUMBUS McKINNON Industrial Products GmbH Am Lindenkamp 31, 42549 Velbert, Germany




**Original Einbauerklärung  
gemäß EG-Richtlinie Maschinen 2006/42/EG (Anhang II B)**

Hiermit erklären wir,

**COLUMBUS McKINNON Industrial Products GmbH  
D-42549 Velbert, Am Lindenkamp 31**

dass die nachstehend bezeichnete unvollständige Maschine in ihrer Konzipierung und Bauart sowie in der von uns in Verkehr gebrachten Ausführung den einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen der EG-Richtlinie Maschinen entspricht. Bei einer nicht mit uns abgestimmten Änderung/Ergänzung der unvollständigen Maschine verliert diese Einbauerklärung ihre Gültigkeit. Weiterhin verliert diese Einbauerklärung ihre Gültigkeit, wenn die unvollständige Maschine nicht entsprechend den in der Betriebsanleitung aufgeführten bestimmungsgemäßen Einsatzfällen eingesetzt und die regelmäßig durchzuführenden Überprüfungen nicht ausgeführt werden. Die unvollständige Maschine darf erst in Betrieb genommen werden, wenn die Maschine, in die die unvollständige Maschine eingebaut worden ist, einer Koformitätsbewertung nach EG-Richtlinie Maschinen 2006/42/EG unterzogen worden ist und die Anforderungen erfüllt.

<b>Bezeichnung der Maschine:</b>	Seildurchlaufwinde YaleMtrac Mod. YMT 5-9-M8; Mod. YMT 5-18-M8; Mod. YMT 6-9-M8; Mod. YMT 6-18-M8; Mod. YMT 8-9-M8; Mod. YMT 8-18-M8; Mod. YMT 10-9-M9; YMT 10-18-M9; Mod. YMTF 5-9-M8; Mod. YMTF 5-18-M8; Mod. YMTF 6-9-M8; Mod. YMTF 6-18-M8; Mod. YMTF 8-9-M8; Mod. YMTF 8-18-M8; Mod. YMTF 10-9-M9; Mod. YMTF 10-18-M9 Tragfähigkeit: 500 - 980 kg
<b>Maschinentyp:</b>	Seildurchlaufwinde
<b>Seriennummer:</b>	Seriennummern für die einzelnen Geräte werden archiviert
<b>Einschlägige EG-Richtlinien:</b>	EG-Richtlinie Maschinen 2006/42/EG
<b>Angewandte harmonisierte Normen insbesondere:</b>	ISO 4309:2004+AMD1:2008 ISO 12100:2010 EN 349:1993+A1:2008 EN 12385-1:2009 EN 14492-1:2006+A1:2009 EN 60204-32:1999
<b>Vollständig bzw. auszugsweise angewendete nationale Normen und technische Spezifikationen insbesondere:</b>	DIN 15020-1:1974, BGV D8
<b>Qualitätssicherung:</b>	EN ISO 9001:2008
<b>Dokumentationsbevollmächtigter:</b>	COLUMBUS McKINNON Industrial Products GmbH Am Lindenkamp 31, 42549 Velbert, Germany
<b>Datum/Hersteller-Unterschrift:</b>	23.08.2011 
<b>Angaben zum Unterzeichner:</b>	Dipl.-Ing. Andreas Oelmann Leiter Qualitätssicherung

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