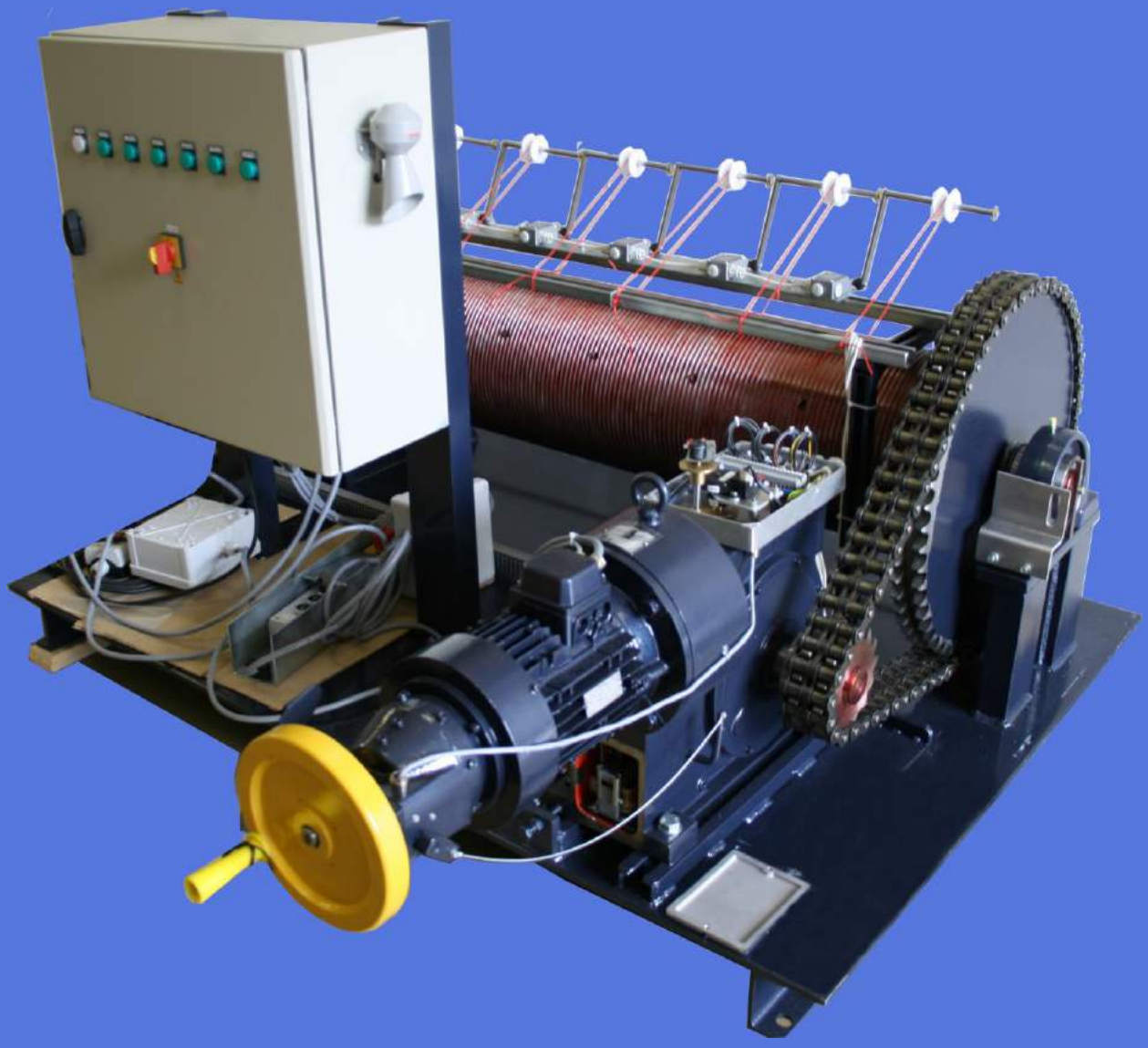
Platform-winch



OPERATING INSTRUCTIONS

Plattform-winch for NESTEC

Copyright

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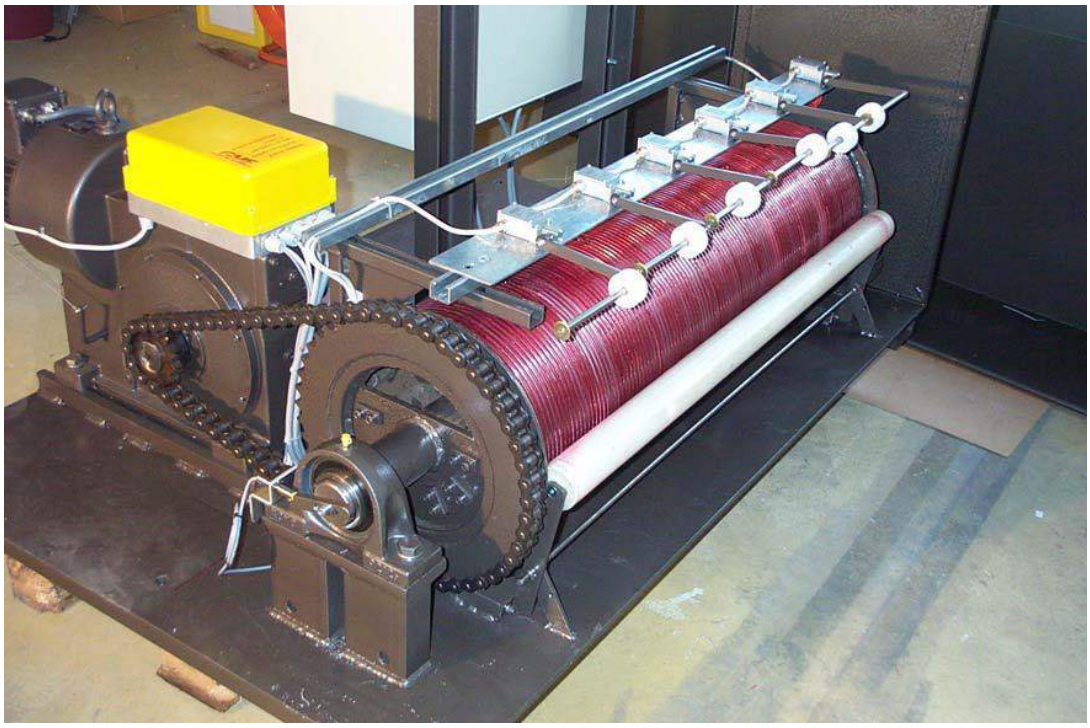
Plattform-winch for NESTEC

Platform winch for NESTEC

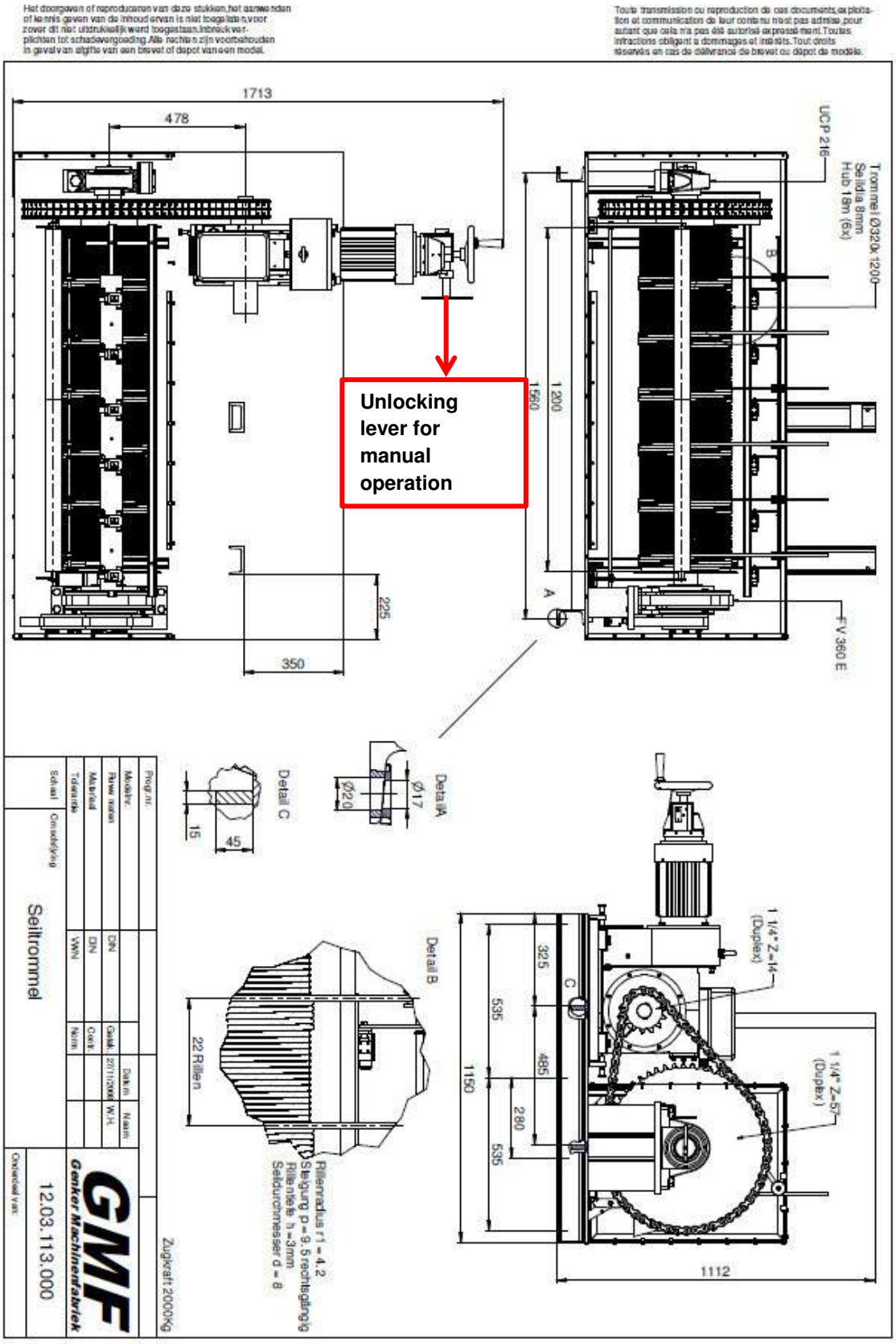
1. Platform winch Nestec

1.1. Data sheet



	(Used by PAMAX)	
Fabrication no.	1x-130xx	(order number)
Lifting force	2xx daN	
Lifting stroke	1x m	
Worm wheel gear	WHNExx	**Fabr. no.** xxxxxxx
Safety bearing	FV 360	**Fabr. no.** xxxxxxx
Special model	Text	

1.2. Overview drawing



1.3. Installation of the platform winch and preparation for initial operation

Attention!

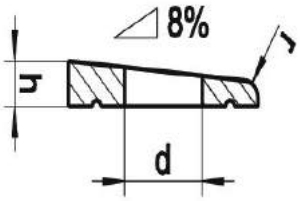
Limit switches are set in the top position!!!

Operate the winch with the emergency activation or electrically when the following points 1 - 8 (cables fixed) have been completed.

Position the platform winch and anchor with tie rods on the floor.

The permissible loads of walls, floors, ceilings, fixtures, connection and gear elements must also not be exceeded at maximum holding or catching torque (→ specifications)

Observe detail A in the general drawing (page 3) for correct connection, use wedge disks DIN 434 M16.



*The winch may be activated (moved) **neither** with the emergency hand wheel **nor** with the drive.*

Fixing cables

1. Bring the platform of the silo into the limit position and secure it with the eccentric locking devices.

   The cover of the cable reel consists of a massive frame to which the individual side covers are fixed.

2. Remove the reel cover; this consists of a massive frame to which the individual side covers are fixed.

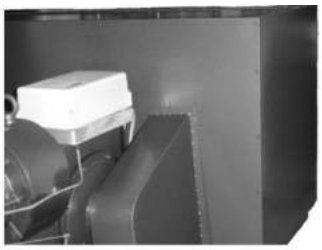


Fig. 1 Dismantle reel cover

3. Fix all 6 supplied cables to the platform and lead them over the pulleys to the reel.

4. Lead the cables through the holes in the reel individually to the cable clamps on the front side of the reel. Use the thin, taut wire cables from us for this purpose.

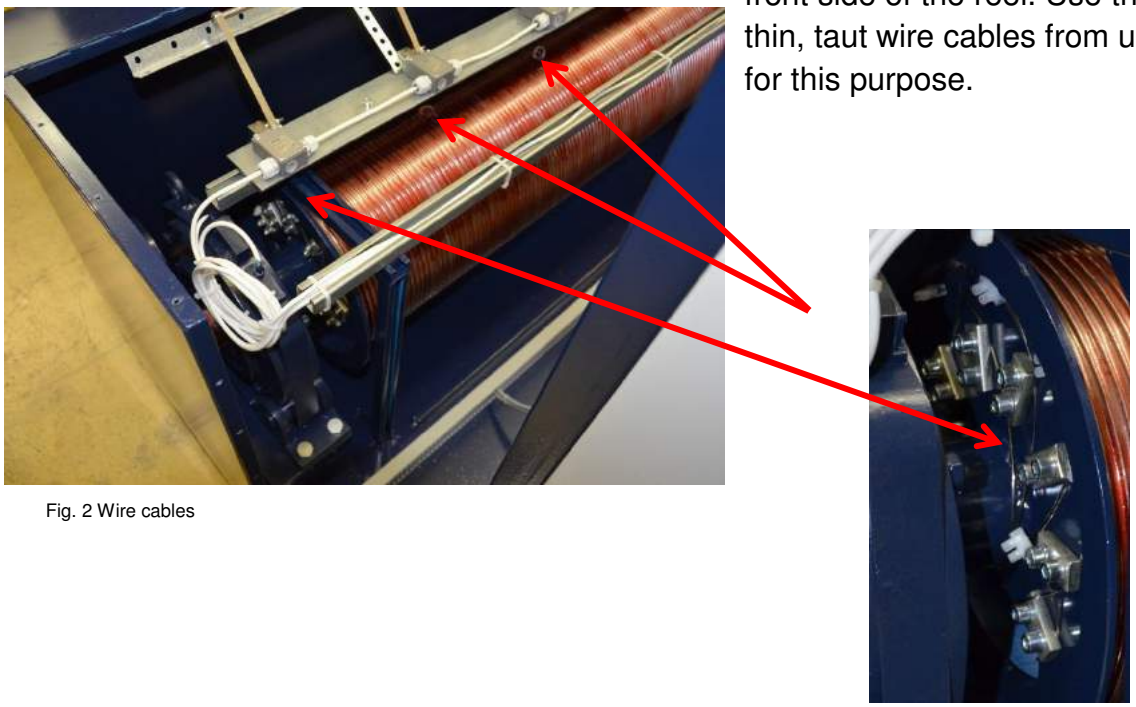


Fig. 2 Wire cables

5. Wind each cable from left to right onto the cable reel.

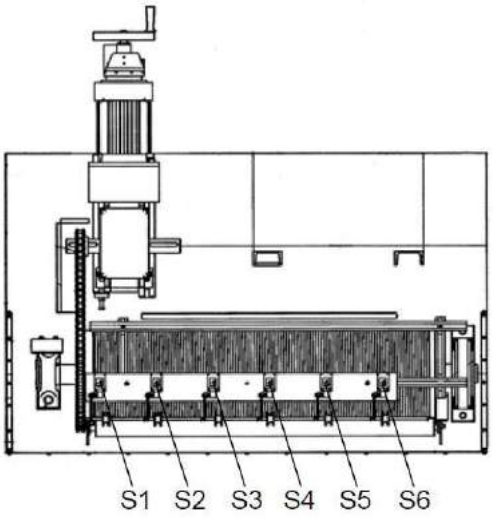


Fig. 3: 21 windings (all grooves must be filled)

Each cable has 21 windings on the reel.

S1-S6: Slack rope switches

6. Use the clamping screws of the cable attachment on the platform for the fine adjustment of the cable tension.

Clamping screws

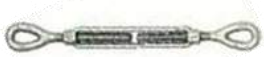


Fig. 4 Entire system with platform

6 cables

6 pcs. eccentric locking

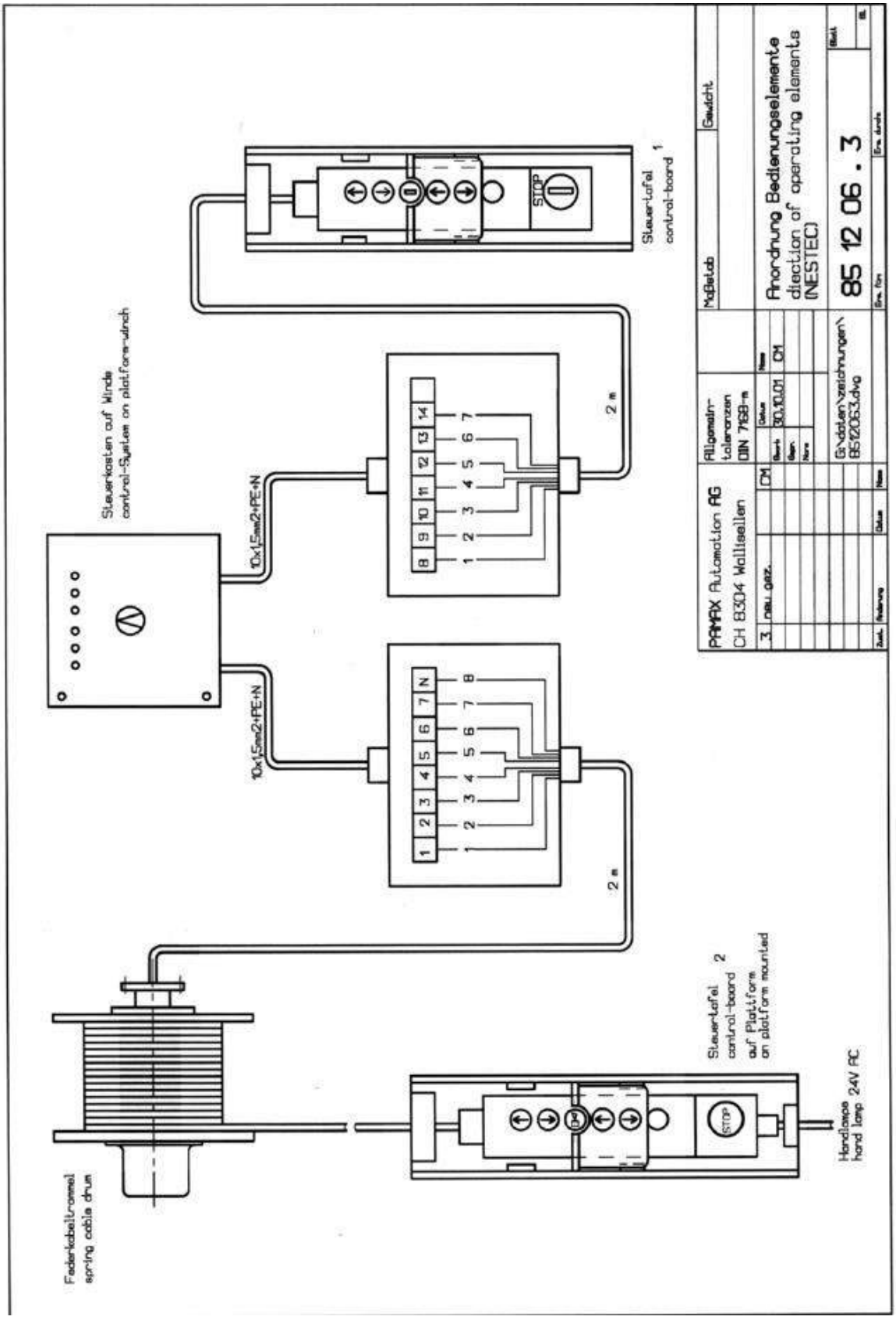
6 pcs. clamping screws

3 pcs. stabilizing bracket

7. Tighten all the ropes evenly.

8. Test the cable tension by loosening **three** eccentric locking devices **lying next to each other**; the platform may only be lowered in the **millimeter range**, otherwise, the cables must be tightened more. Repeat this process with the remaining three eccentric locking devices.

1.4. Arrangement of operating controls



1. Fix the control panel 1

2. Fix the spring cable reel over the platform on the ceiling. Note the cable strain relief on the control panel 2 (Fig. 5, page 10).

3. Connect the supply line 3 x 400 V N + PE on the terminal strip X1 *(Main circuit Section 4 page 2 in the circuit diagram)* (Fig. 7, page 10).

The winch is now ready for operation.

1.5. Initial operation - 1st Drive

Note

All movements are carried out in "dead man switching", i.e., the platform will only move while the corresponding key is being held down.

1. Open eccentric locking devices on the platform.

2. Turn the main switch on the control cabinet to the ON position, the control lights L1 to L5 must now light up. L6 lights up only when lowering, as soon as the top final position is exited.

   L1 Voltage
   L2 Motor circuit breakers F1
   L3 Safety bearing
   L4 Slack rope safety
   L5 Emergency gear
   L6 Platform in top position
   L7 Locking

3. Operate the platform with the control panel 2. **Caution - the key of the control panel 1 must be in position 0.**

   Key in position 0 of the control panel 1 = Control panel 2 is activated
   Key in position 1 of the control panel 1 = Control panel 1 (fixed mounting) is activated

Mobile control panel 2

Fig. 5

Fixed mounted control panel 1

Fig. 6

4. By using the top key combination of the control panel 1 (Fig. 6), the platform can now be lowered ↓. ***If the platform does <u>not</u> move, two phases L1 + L2 must be swapped*** (Main circuit Section 4, page 2 in the circuit diagram + Fig. 7)

Fig. 7 Phases

5. Now drive the platform with the ↓ key to the programmed intermediate stop (is reached after approx. 3m). The control lamp **L6** lights up as soon as the platform leaves the top final position.
6. Now swing out the stabilization bracket (Fig. 4, page 7).
7. Slide the key cover **upwards** so that you can continue lowering the platform with the bottom key combination ↓.
8. When the lowest programmed point is reached, the platform stops at the factory preset "**bottom**" position through the control WST18 (Fig. 8, page 11).

The positions "Swing around stabilizing arms" and the "**top**" position were set at the factory and should ***not be corrected***. (In case of an emergency, observe Section 5 WST 18, page 8)

WST 18 microprocessing control

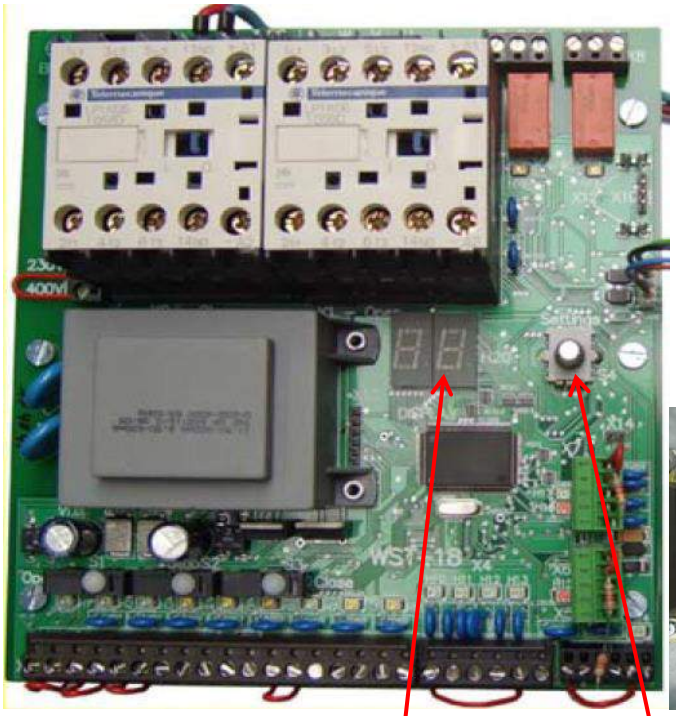


Fig. 8 WST 18 Microprocessor control

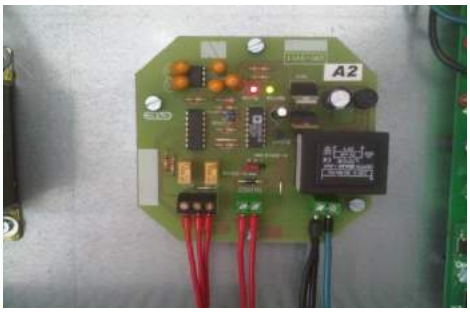


Fig. 9 UWI board evaluation potentiometer (see Section 5, Page 18)

Display segment

Menu switch

9. The bottom position can be corrected up and down via the menu of the WST 18. To do this, refer to Section 5 WST 18 (page 12, menu item 14).
10. Check the correction by driving the platform at least 1m upward ↑ and then approaching the lowest position again afterwards. *Repeat this procedure until the desired position is set.*
11. If the desired position has been definitively approached and programmed, the following symbol must appear in the display segment. 
12. Drive the platform upward by pressing the ↑ key until it automatically stops approx. 3m below the top limit position.
13. Retract stabilizing arms.
14. Slide the key cover down and drive the remaining 3m upwards with the key ↑. The platform stops approx. 10 cm before the lid is fully closed.

15. The last few centimeters up until the final position must be put back with the hand wheel. Procedure:
    Reverse the release lever (overview drawing on page 3) by 90°, the brake is released with the connection cable, crank the remaining 10 cm with the hand wheel upwards. As soon as lamp L6 goes out, the highest point is reached (actuated by mechanical limit switch Fig. 10, page 13). The switching point can be shifted with the fine adjustment screw on the limit switch cams (Fig. 10 and Fig. 11, page 13). Screw counter-clockwise, switching point is shifted upward. Correction max. ¼ turn, afterwards another attempt.
    Lock the platform with the eccentric locking devices once it is in the final position (Fig. 4, page 7). L6 is off.
16. After locking, bring the release lever (overview drawing on page 3) back into the starting position.
17. For safety reasons, turn the power switch on the control box to the OFF position.

1.6. Locking with external systems

The cable winch can be locked with external systems. A message can be taken directly in the control box terminal lock X1, if required. These terminals (15/16 & 17/18) are potential-free (register 4, circuit diagram 15.25.009.010-09).

1.7. External position reporting

The potentiometer in the limit switch housing is used for external position reporting. A value of 200 kΩ must be displayed in the top final position (locked) (see Section 5, para. 12.1). A calibration must be performed. (See Section 4 Circuit diagram 15.25.009.010-08 / Section 5, page 18)

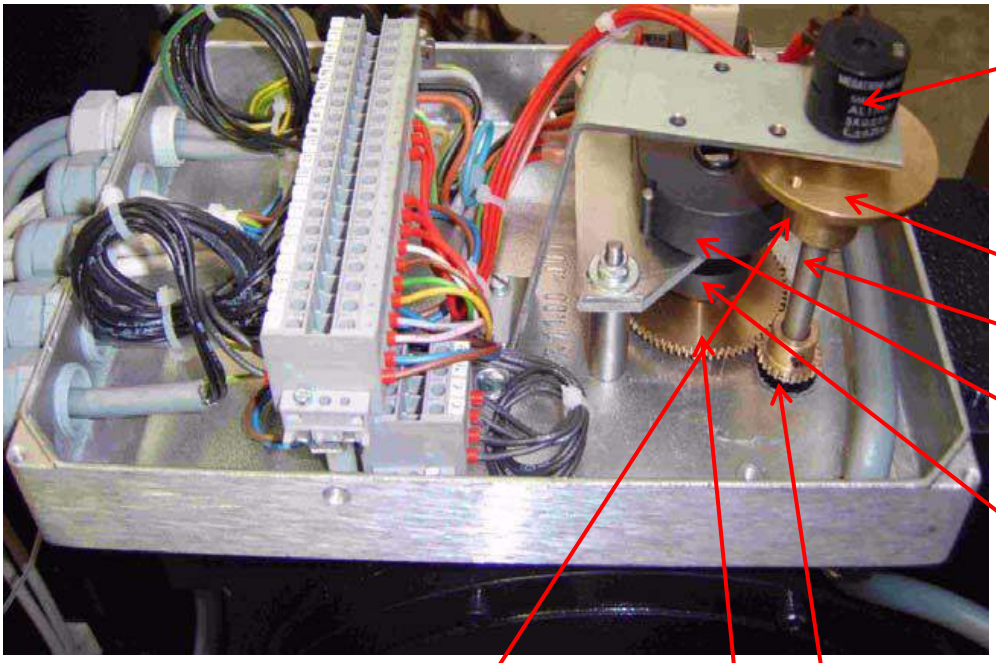


Fig. 10 limit switch housing

Fig. 11 Switching cams S1

The installation is now ready for operation!!!

Enter the date of initial operation in the service book.

1.8. Normal Operation Safety Instructions

The system may only be operated by instructed and trained personnel.

All movements are carried out in "dead man switching", i.e., the platform will only move while the corresponding key is being held down.

1.9. Operation of the winch

1. Open eccentric locking devices on the platform.

2. Turn the main switch on the control box into position ON

3. The control lamps L1 to L5 must now light up. L6 lights up only when lowering, as soon as the top final position is exited. (See page 7, pos. 2)

4. For maintenance work on the platform, select the mobile control panel 2 (Fig. 5, page 10), turn the key to the permanently mounted control panel 1 into position 0 for safety reasons, pull out the key and hand it over to the person monitoring the work. This ensures that the monitoring person can activate the platform winch in an emergency.

5. The top key combination ↓ of the control panel (Fig. 5 and 6, page 10) lowers the platform approx. 3 m. Swing out the stabilizing bracket. (Fig. 4, page 7)

6. Slide the key cover upwards, drive downward with the bottom key combination ↓. When the lowest set position is reached, the platform stops. (Fig. 5 and 6, page 10).

7. You can interrupt the movement by releasing the ↓ key and after that drive in both directions with the bottom key combination ↓↑.

8. If the work is completed, drive the platform with the bottom key combination of the control panel ↑ until it stops approx. 3 m before the top position.

9. Retract stabilizing arms. (Fig. 4, page 5)

10. Slide the key cover (Fig. 5 + 6, page 10) down and drive the winch with the top key combination ↑ until it stops approx. 10 cm below the top position.

11. Reverse the release lever (page 3) to 90°. The brake is released via the connecting cable. Turn the platform upward with the hand wheel until lamp L6 goes out.

12. Lock the platform with the eccentric locking devices (Fig. 4, page 5).

13. After locking, bring back the release lever on the gear (page 3) into the starting position.

14. For safety reasons, turn the power switch on the control box to the OFF position.

15. The work operation is now complete

1.10. Maintenance work

1.10.1. Cable reel locking device

Maintenance work may only be carried out by mechanically and electrically qualified personnel.

1. The cable reel locking device must be mounted during *all maintenance work* on the platform and on the winch. This is located under the cover hood on the opposite side of the gear.

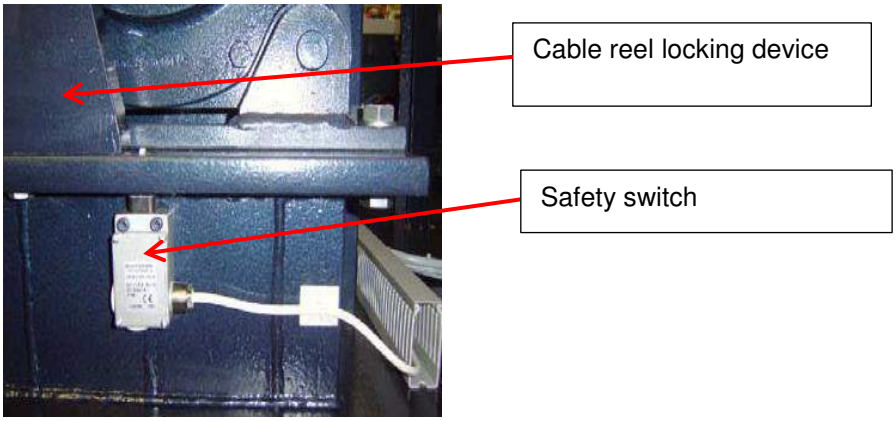


Fig.12 Cable reel locking with safety switch

The cable reel locking device is removed from the working position (A) and fixed in the maintenance position (B). The required torque for the screws is indicated on the label underneath the cable reel locking unit

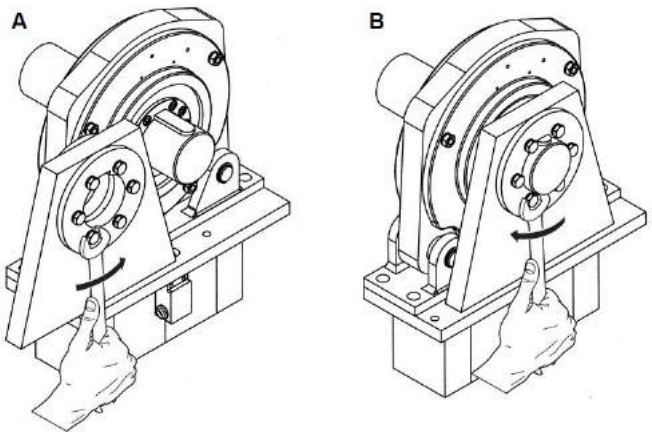


Fig. 13 Shield screw tightening torque

The safety switch (Fig. 12) interrupts the control circuit (SK/SK, Section 4 wiring diagram, page 9) so that the winch can not be operated.

1.10.2. Maintenance

A visual inspection and examination of the complete platform winch incl. pulleys and load cables must be carried out annually to avoid injury or damage.

- All screw connections must be checked for tightness.
- Check cables for pressure points, squeezing, and kinks.
- Dismantle casing and check winding and cable attachment on the reel cable.
- Check screws and fasteners and tighten where necessary.

1.10.3. Worm wheel gear

Observe operating manual worm wheel gear Section 2.

Opening the gear during the warranty period without our permission voids any warranty.

The gear is made of high quality materials. All parts are true to gauge and therefore interchangeable. They are wired ready for connection and provided with semi-fluid grease filling and are maintenance-free.

The worm wheel gear is equipped with permanent lubrication and is maintenance-free under normal operating conditions.

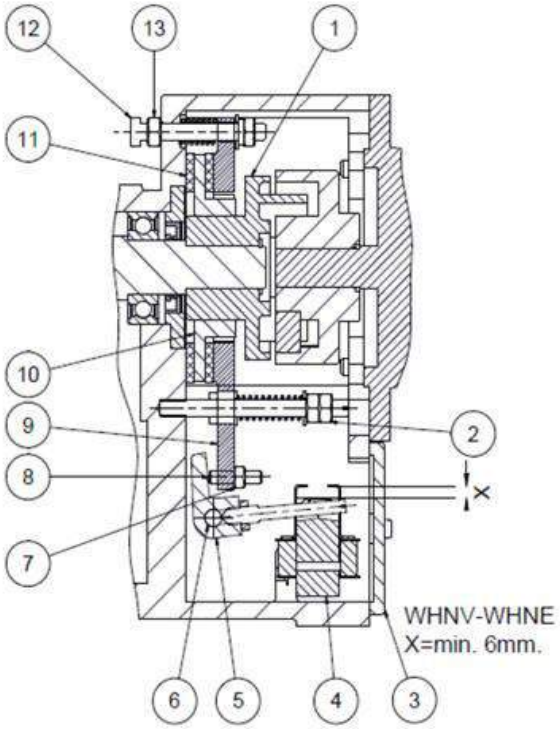
The disk brake supplied is set at the factory. Depending on the operating levels and load on the gear, the brake must be adjusted from time to time.

In normal operation, the brake is subject to virtually no wear.

If no pinpoint stopping (overrun) is possible in the lowering movement, the brake must be readjusted.

When the engine is operating, the wire cable of the emergency gear must be loose (See Section 2, page 2, Fig. 1, No. 10).
It is not necessary to open the brake chamber cover for normal slight wear.

1.10.4. Readjusting brake



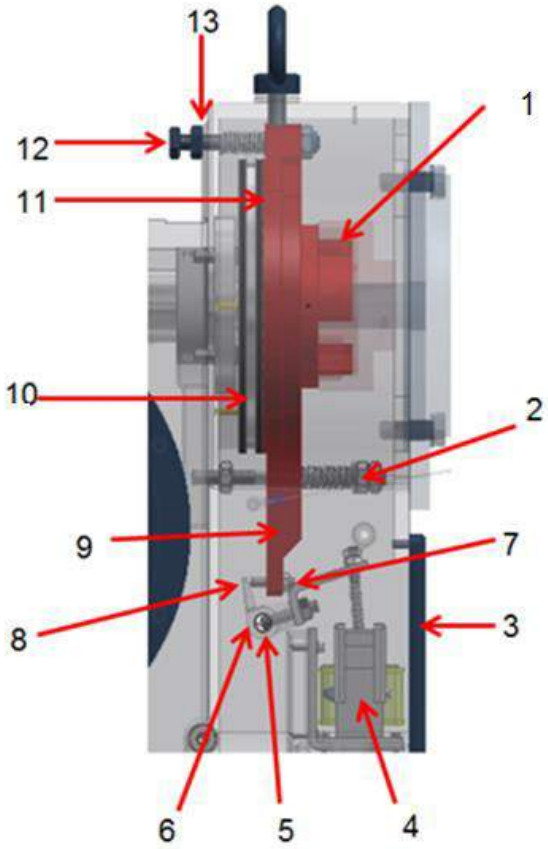


Fig. 14 Brake

1 Coupling
2 Locknut for stud bolts
3 Brake chamber lid
4 Brake magnet
5 Joint piece
6 Brake release lever
7 Locknut for stud screw
8 Stud screw
9 Brake plate
10 Brake disk
11 Brake lining
12 Adjusting screw for brake
13 Locknut for the adjusting screw

Proceed as follows to adjust the brake. (The adjustment of the brake is done from the outside).

1. Loosen the lock nut no. 13 of the adjusting screw no. 12 with a screw wrench
2. Unscrew the adjusting screw no. 12 about $^{1}/_{8}$ to $^{1}/_{4}$.
3. Retighten the lock nut no. 13.

The brake pressure can be increased inside by tightening the lock nut no. 2. (Access after dismantling the brake chamber lid no. 3).

1. Note that the air gap on the brake magnet no. 4 is approximately 6mm
2. Adjust the air gap with the stud screw no. 8
3. Make sure that the lock nut no. 7 is also tightened, i.e., is countered.

1.10.5. Two year inspection

Every two years, the motor must be disconnected from the gear so that the coupling inserts (type no. 60.0105001017) can be changed.

1.10.6. Chain reduction gear

The chain must not be operated dry.

Oil or grease the chain with suitable substances appropriate for the operation, (e.g., chain spray WD40 or similar).

1.10.7. Safety bearing

The safety bearing is a safety element.

It must be included in the annual inspection of the entire system.

The following should be observed for the functional inspection:

- When the winch moves downward, uniform clicking should be heard in the safety bearing, caused by the falling noise of the individual rolling elements.
- The regular clicking indicates that all rolling elements are free and therefore ready for operation.

In case of irregularities during catching process, proceed as follows:

1. Shut down the system.
2. Replace the safety bearing.
3. The safety bearing must be checked by the supplying factory.
4. This can be used again as a reserve after inspection.

Enter all maintenance work in the service book and confirm this with your signature.

1.10.8. Spring cable reel

No special maintenance is necessary for the cable reel because of its simple construction. The reel is maintenance-free up to the inspection (30,000 duty cycles).

All parts have been carefully checked before delivery. The ball bearings are greased and do not need to be greased again.

WARNING

Risk of accident!

Improper handling of springs can lead to in serious injury.

Additional details: See Section 3, Chapter 5 Maintenance.

1.11. Faults and their correction

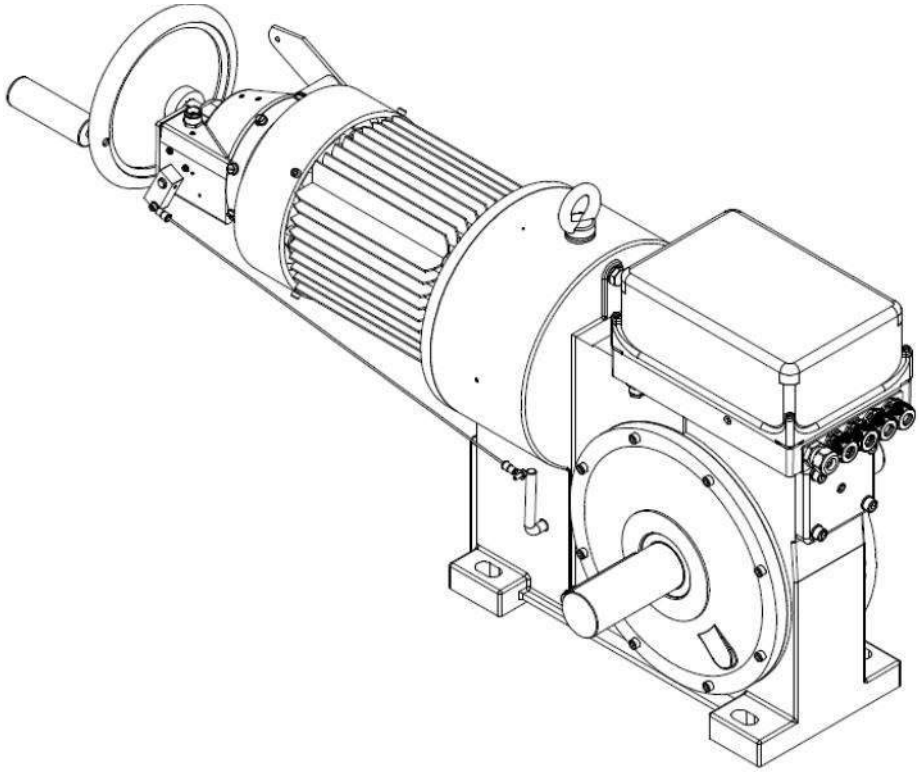
Fault	Reason	Correction
Platform winch does not run	Magnetic brake not sufficiently released	Note instructions concerning brake setting
Control lamps do not light up	Emergency stop button is pressed (control panel 1 + 2)	End resting
	Fuse blown	Replace the fuse
	Motor protection relay has been tripped	Push in red peg on the motor protection relay FI in the control box
Winch only runs occasionally	Cable break or loose screw connection in the terminals (loose cable)	Search for the source of the fault and correct it
Contactor chattering or does not activate at all	Defective neutral conductor (MP)	Check the neutral conductor
	Voltage is not the same as the protective coil voltage	Reconnect the circuit breaker according to the switching diagram
	Cable break or loose screw connection in the terminals (loose cable)	Search for the source of the fault and correct it
Lamp L2 and subsequent lamps do not light up	Motor protection relay has been tripped	Push in red peg on the motor protection relay FI in the control box
Lamp L3 and following do not light up	Latched fall protection or safety switch of the cable reel blocking	Unlock by lifting the emergency crank (approx. 10cm) (unlock switch Fig. 12, page 16)
Lamp L4 and following do not light up	A slack cable switch is damaged or cable not tensioned	Check all cables, replace cable if necessary. Adjust all switches.
Lamp L5 does not light up	Emergency hand wheel is not correctly in the motor operation position	Latch the coupling correctly with the lever by turning the emergency hand wheel
No voltage on WST 18 (no diodes light up)	Fuse F1 defective (Section 5, page 20)	Replace fuse F1 on board

Pay attention to other possible faults and their rectification in Section 5, WST 18.

Plattform-winch for NESTEC

Worm wheel gear

Type WHNE 400/550



1. Gear description

A self-locking worm wheel gear of the series WH-WHNE.

Worm machined from solid. Worm wheel made of special bronze. Worm wheel and worm are ball bearing spindle, which ensures low-noise operation.

Two free, emergent shaft ends are secured against oil leaks by shaft seals.

The gear is lubricated for life; filling semi-fluid grease.

The gear is fitted with an adjustable disk brake as standard.

An electric motor is flange mounted via two-tier flexible coupling.

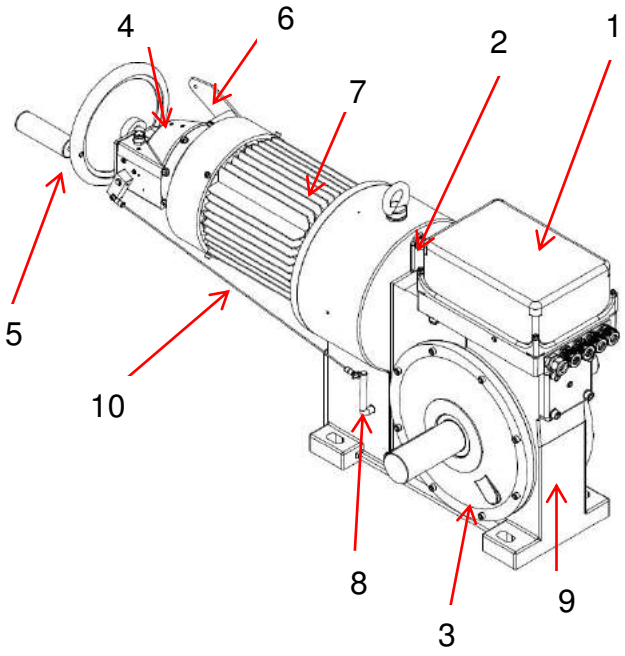
The motor can be replaced without any problems.

The limit switch housing is mounted on the gear with a limit switch shaft, digital limit switch DES, mechanical cam limit switch NES as well as the potentiometer (Ra/Rb/Rc) for accurate position indication (Fig. 2, page 4).

Digital limit switch DES, cam limit switch and potentiometer are provided with a 1:3 translation.

The limit switch gear is installed in the gear housing as the second worm gear gear and runs in semi-fluid grease.

The gear is equipped with an emergency gear, which is engaged or disengaged via the actuating lever (Pos. 6). The brake is automatically released here and the control circuit is interrupted.



1	Limit switch housing
2	Adjusting screw for brake
3	Gear
4	Emergency gear
5	Hand wheel
6	Disengagement/engagement lever
7	Electric motor
8	Brake release lever
9	Oil filler screw
10	Wire cable for brake filling

Fig. 1 Worm wheel gear

2. Delivery condition

All gears are subjected to a comprehensive test run on the test bench before shipment.

The trial run and acceptance are performed in accordance with the order data.

The gear is made of high quality material. All parts are true to gauge and therefore interchangeable. They are wired ready for connection and provided with semi-fluid grease filling and are maintenance-free.

During the warranty period, the gear may only be opened with our permission.

Repairs that are carried out during the warranty period without our knowledge release us from any warranty obligation.

3. Mounting

The raising (mounting) of chain sprockets or similar on the output shaft using strong impact or shock is never allowed, since this damages the rolling bearings, locking rings, etc.

The chain sprocket holes should be performed with bore tolerances according to ISO H7, the keyways according to DIN 6885 Sheet 1.

When installing the gear, make sure that the mounting surface is perfectly straight.

The mounting screws should be evenly tightened. Misalignment can lead to breakage of the shafts and the housing.

4. Electrical connection

Please observe the VDE regulations and the regulations of the local electric utilities for the electrical connection.

Warning! Connection only with the power off!

When connecting, make certain that the mains voltage matches the voltage specified on the type plate.

Limit switch reduction, digital limit switch DER, switching cams, spur gear reduction, potentiometers and terminal strips are mounted and wired in the limit switch housing (Fig. 2, page 4).

All wires have been made in the delivery mechanism and lead to terminals in the control box (see Section 4 Circuit diagram).

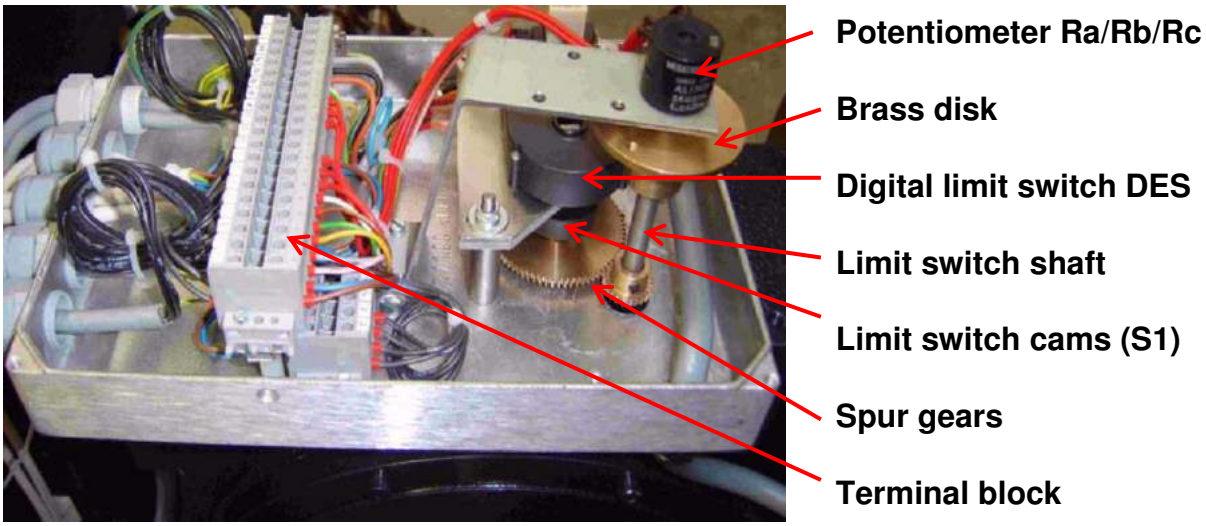


Fig. 2 Limit switch housing

5. Limit switching

The digital limit switch was set in the supplying factory. If correction is necessary, proceed in accordance with Section 5, point 4.1 Setting the end position with DES.

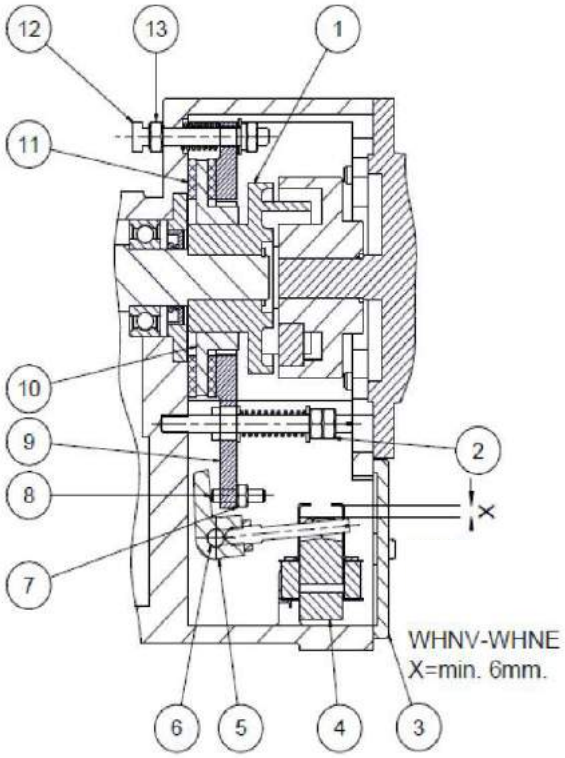
The position of the limit switch cams was also set at the factory. If a correction is necessary, perform this via fine adjustment (see Section 1, page 12, point 15)

The positions "Swing around stabilizing arms" and the "**top**" position were set at the factory and should ***not be corrected***. (In case of an emergency, observe Section 5 WST 18, page 8)

6. Maintenance

The gear is equipped with permanent lubrication and is maintenance-free under normal operating conditions.

7. Readjusting brake



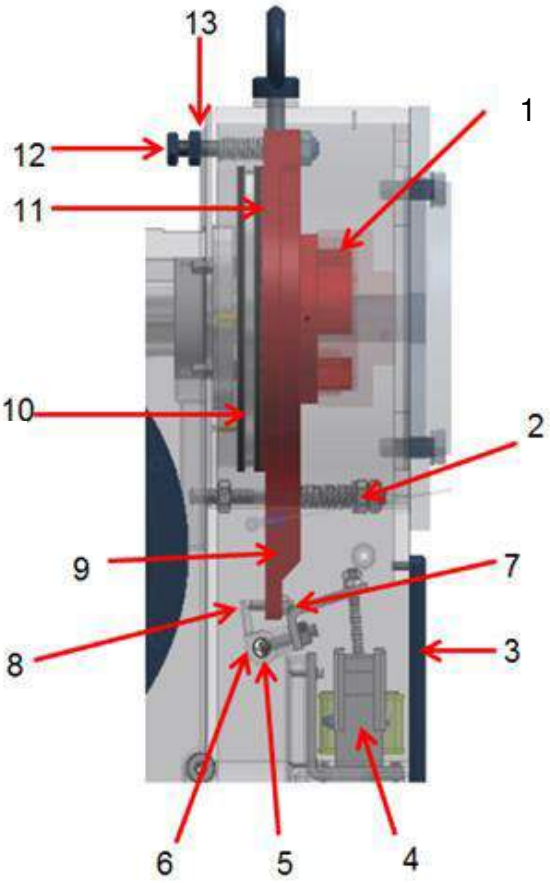


Fig. 3 Brake

1 Coupling
2 Locknut for stud bolts
3 Brake chamber lid
4 Brake magnet
5 Joint piece
6 Brake release lever
7 Locknut for stud screw
8 Stud screw
9 Brake plate
10 Brake disk
11 Brake lining
12 Adjusting screw for brake
13 Locknut for the adjusting screw

Proceed as follows to adjust the brake. (The adjustment of the brake is done from the outside).

1. Loosen the lock nut no. 13 of the adjusting screw no. 12 with a screw wrench
2. Unscrew the adjusting screw no. 12 about $^1/_8$ to $^1/_4$.
3. Retighten the lock nut no. 13.

The brake pressure can be increased inside by tightening the lock nut no. 2. (Access to dismantle the brake chamber lid).

1. Note that the air gap on the brake magnet no. 4 is approx. 6mm
2. Adjust the air gap with the stud screw no. 8
3. Make sure that the lock nut no. 7 is also tightened, i.e., is countered.

8. Repair

In case of malfunction, the system must be shut down immediately and checked by a competent person and the cause of the error determined and corrected.

If the drive is opened independently, any warranty is immediately voided. (Opening the lid for the purpose of electrical connection excluded).

ATTENTION

The system must be de-energized when working on the limit switch housing

9. Two-year inspection

Every two years, the motor must be disconnected from the gear so that the coupling inserts (type no. 60.0105001017) can be changed.

10. Possible faults and their correction

Effect	Cause	Remedy
Winch continues running after releasing the "Lower" button	Magnetic brake does not brake sufficiently.	Refer to instructions for adjusting the brake.
Motor does not start up.	Defective fuse	Replace with new one.
	Motor protection relay has shut down	Press in red peg on the motor protection relay F1 (in the control box).
The gear runs only intermittently.	Broken cable or loose screw connection.	Search for the source of the fault and correct it.
Contactor chattering or does not activate at all.	Defective neutral conductor (N)	Check the neutral conductor.
	Cable break or loose screw connections at the terminals (loose cable)	Search for the source of the fault and correct it.
No voltage on WST 18 (no diodes light up)	Fuse F1 defective (Section 5, page 20)	Replace fuse F1 on board

Plattform-winch for NESTEC

Spring-driven cable reel

1. Description

The spring-driven cable reels are designed for the automatic winding of the supply lines of portable power consumers.

The following instructions must be observed when installing the cable reels as well as when connecting the cable. Hazard notes, see page 8, point 6.

The listed hazard notes do not claim to be exhaustive.

2. Specifications

2.1. Type code

<table>
<tr><th>FKT</th><th>270</th><th>20-04</th><th>2 24H</th><th>R</th><th>RLS</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>Accessories</td></tr>
<tr><td></td><td></td><td></td><td></td><td colspan="2">Haul-off right</td></tr>
<tr><td></td><td></td><td></td><td colspan="3">Spring</td></tr>
<tr><td></td><td></td><td colspan="4">Slip ring bodies</td></tr>
<tr><td></td><td colspan="5">Reel size</td></tr>
<tr><td colspan="6">Reel type</td></tr>
</table>

Drive spring: high quality spiral spring from texture material

Protection type: protection against contact and against ingress of foreign bodies and water (see EN 60529 DIN VDE 0470-1)

Spring parameter: n_v : Revolutions for pretension

n_a : Revolutions for work

n_R : Revolutions for reserve

n_{Bl}: Revolutions to block

Haul-off direction: Standard left (seen on slip ring) see directional arrow on the reel

2.2. Type plate

The most important specifications are summarized on the type plate. In addition to the type designation, the year of manufacture, the order and material number are found here.

Fig. 1 Type plate

1. For Nestle winches only low voltage 24V.

2.3. Environmental conditions

The reels comply with the relevant DIN/VDE regulations. Due to the very robust design, the reel is suitable for almost all applications and environmental conditions.

The reel and external connecting elements are hot-dip galvanized or galvanized and thus resistant to all conventional environmental influences.

For special operating conditions such as maritime climate or treatment plant operation, seaworthy paints or VA material are recommended.

By default, the reels are suitable for ambient temperatures from -40°C to +80°C.

The driving springs and bearings are greased with a special grease for a temperature range of -55°C to +100°C. (Storage in deep-freeze possible)

The max. lift speed is 63m/min with an acceleration of max. 0.3m/s$^{2.}$

For questions, please contact our engineers and technicians with confidence. They will also offer you special customized solutions.

3. Structure of the spring reel

Lines, hoses or wire cables are wound automatically with spring reels via a spring drive for portable consumers.

The structure of the reel can be seen in the following sectional drawing

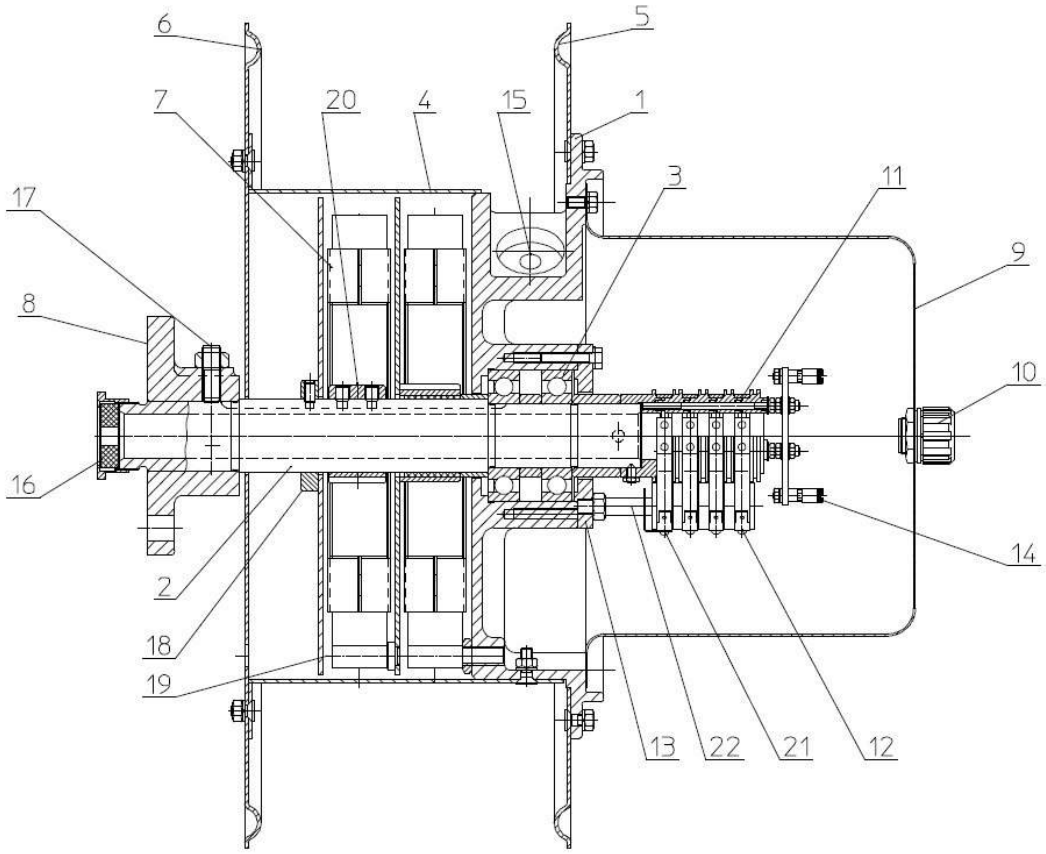


Fig. 2 Structure of spring drive

Hub no. 1 is rotatably mounted on the hollow axle no. 2 by ball bearings no. 3.

The reel bodies no. 4 are fastened to the hub and the two side sheets nos. 5, 6.

Spring drive no. 7 consists of one or more spiral springs, which are connected in parallel or in series and housed in the reel body.

High quality texture spring steel with a long service life is used as spring material.

Flange no. 8 screwed onto the hollow axle is used to fasten the reel.

The current transmitting slip ring body (SK) no. 11 is fastened on the opposite side of the hollow axle.

The associated brush apparatus no. 12 is connected to the hub via flange no. 13.

The ring body consists of brass rings which are insulated from one another by plastic or air. The current collectors (brushes) are provided with massive bronze coals.

Protective hood no. 9 is provided to protect the slip ring bodies.

The sealing of the protective hood is ensured by a rubber seal and corresponds to a protection IP54.

Optionally, ventilation screw no. 10 can be attached to ventilate the protective hood.

An insertion no. 15 with a screw connection is provided to insert the reelable line into the slip ring body space.

4. Initial operation

4.1. Replacement of the spring cable reel

Proceed as follows to replace the spring cable reel:

1. Remove the protective hood no. 9
2. Run the line through the PG screw connection no. 15 in the hub to the current collectors no. 12

Observe the haul-off direction

3. Fasten the line with the provided clamp(s) on the hub with strain relief.
4. Reconnect the individual wires of the line on the current collectors.
5. Tighten the PG screw connection.
6. Wind up the line by hand without twisting.
7. Tie the line end firmly on the reel.
8. Fasten the reel on the application site.
9. Run the solid lead through the screw connection flange side no. 16 and hollow axle no. 2 to the slip ring body no. 11.
10. Connect the individual wires on the slip rings directly or to the mantle terminals no. 14 of the terminal board.
11. Tighten the screw connection no. 16 tightly.
12. Attach the protective hood. Now the reel is pretensioned and held tight with n_v revolutions in the haul-off direction.
13. Loosen the end of the line.
14. By hand, unwind as much line as is necessary for the shortest distance to the fastening point.
15. Fasten or connect the cable end at this point.
16. Release the reel. The cable reel is now ready for use.

5. Maintenance

The reel is maintenance-free up to the inspection (30,000 duty cycles).

From time to time, based on the specific operating conditions, certain types of work should be performed on reel, slip ring bodies and line.

Reel:	As this concerns a screw model for the drum, all screws, bolts and nuts must be checked for tightness. The sealing of the protective hood and the line screw connections must be checked for damage or leaks.
Slip ring bodies:	Clean slip ring bodies of abrasion (suck out). Check ring surface and wear of the current collector and replace it if necessary. Attention. Do not use contact oils. The coals are self-lubricating. Check all cable wires or strands for tightness and insulation damage.
Lines:	Check for irregularities or damage (knots or corkscrew). Check lines for tangles and untangle.

6. Repair

RISK OF ACCIDENT!

Improper handling of springs can lead to serious injury. Please observe the notes relating to dealing with springs.

Switch off power supply before opening or dismantling the reel.

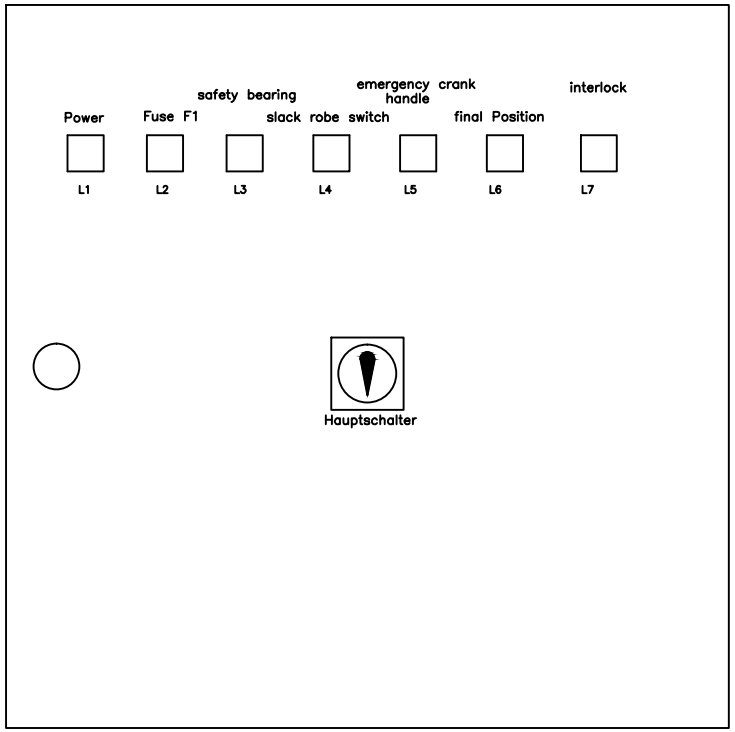
DANGER TO LIFE!

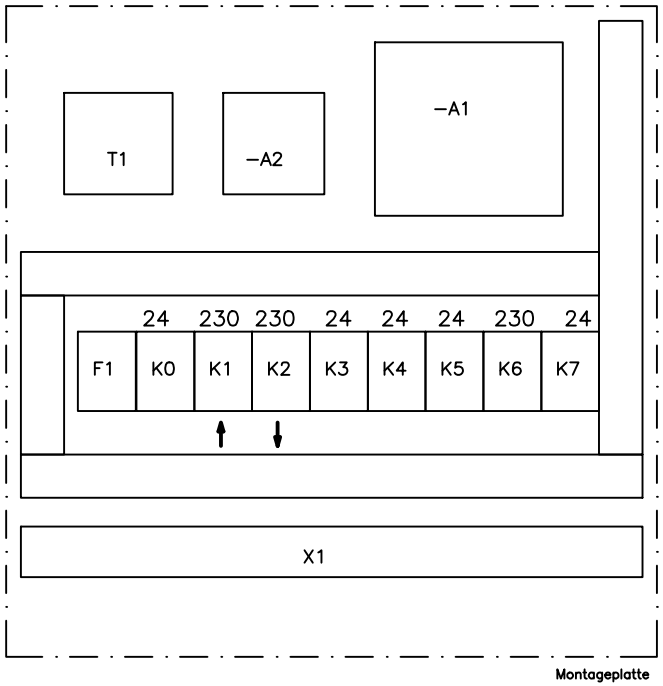
Springs are always under pretension. Do not remove the spring retaining strap and housing.

If a spring breaks, there is a danger that jammed parts of the spring may pop out and cause serious injury.
No resistance when rotating the reel in the haul-off direction.

Repair of a broken spring is not possible. It is recommended to send the entire spring cable reel to the manufacturer. This ensures correct repair and proper function. Therefore, we recommend having a spring cable reel in storage as a replacement.

Plattform-winch for NESTEC





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geä.	15/3/14	Schuermans E
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Kunde: PAMAX AG

Benennung: Wendeschütz für Nestec−Winde

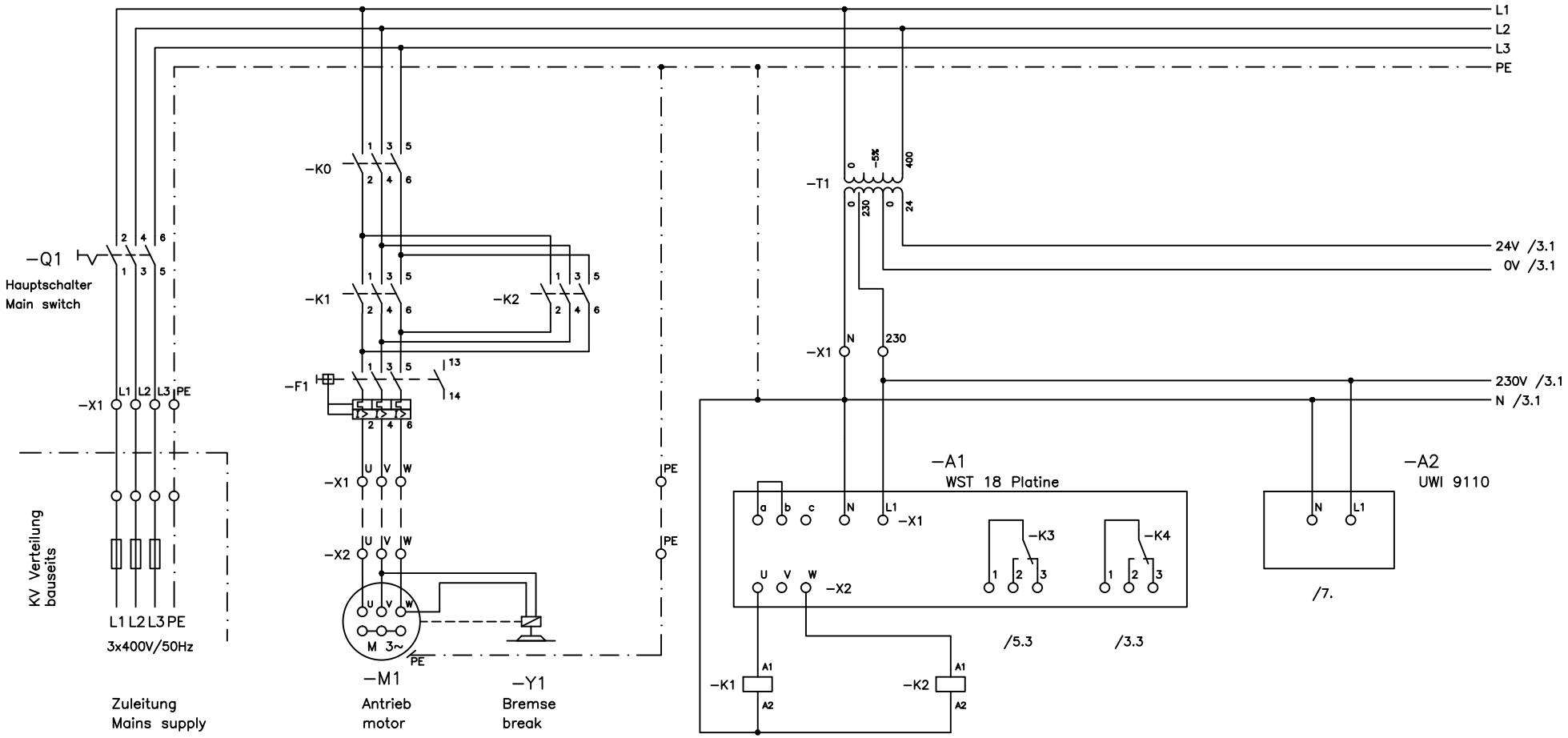
Blattinhalt: Aufbauplan

Zeich.−Nr.: 15.25.009.012−01

Projekt−Nr.:

Blatt: 1

von: 9



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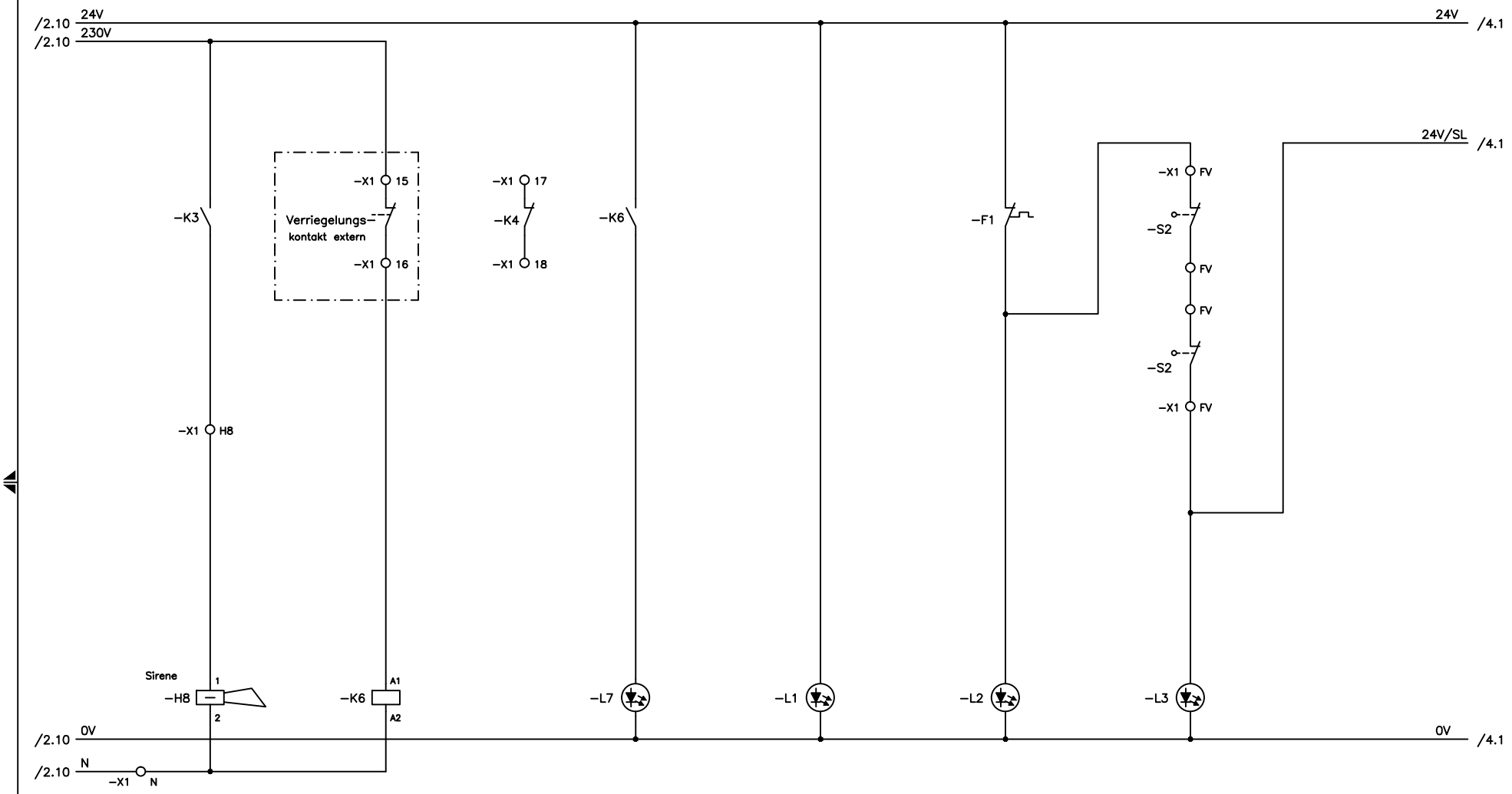

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Kunde

Benennung
Wendeschütz für
Nestec-Winde

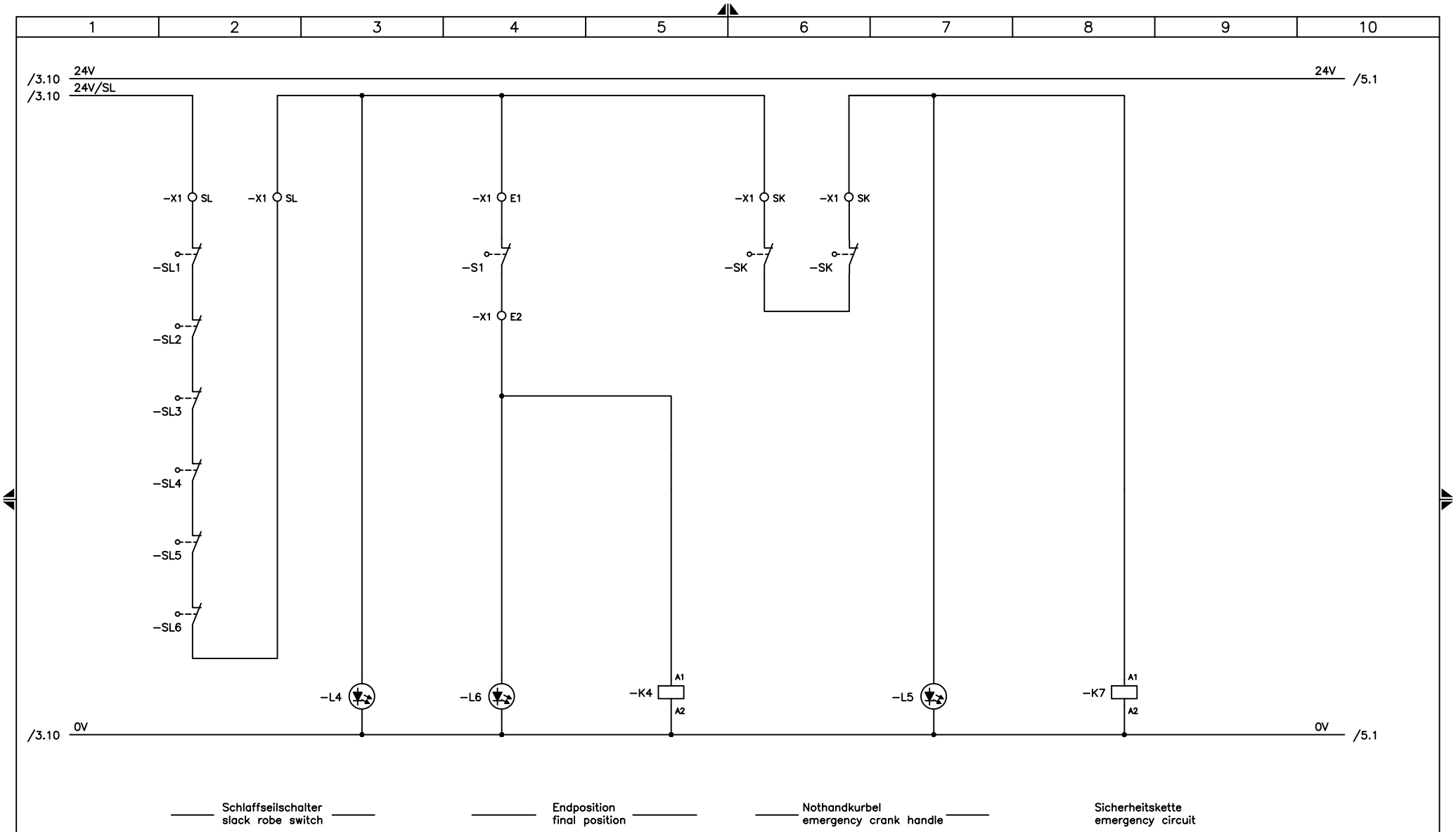
Blattinhalt
Steuerstromkreis

Zeich.-Nr.
15.25.009.012-03

Projekt-Nr.

Blatt
3

von
9



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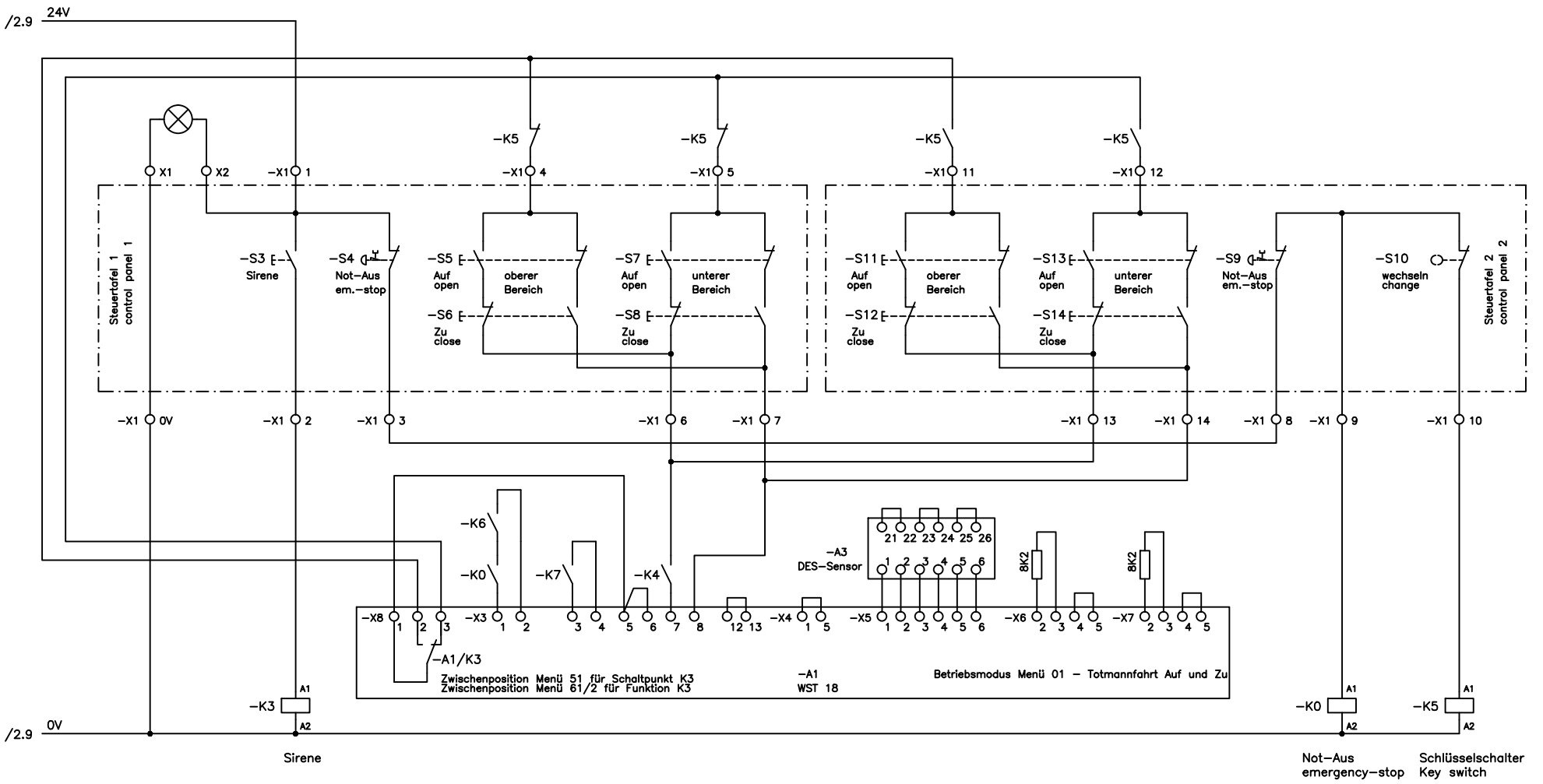

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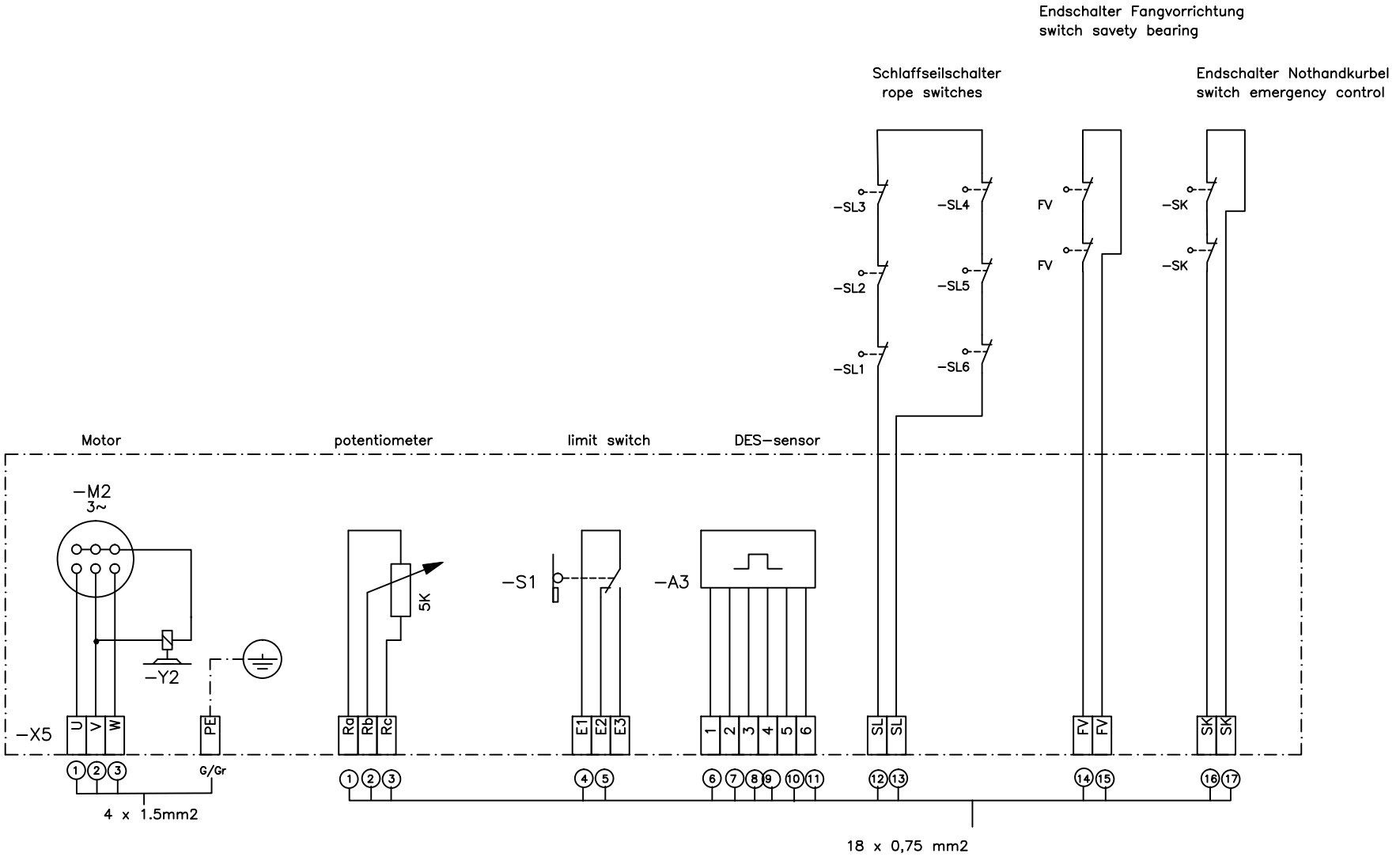

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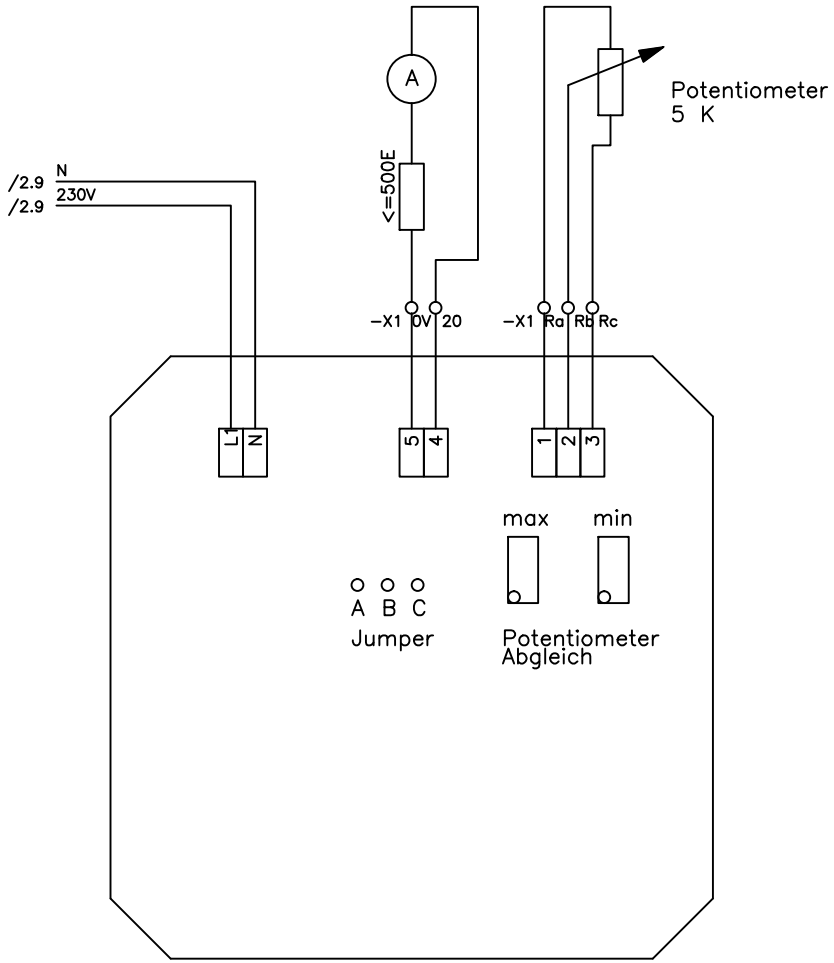

UWI 9110

Beschreibung:
Die Platine gibt unter Veränderung eines mehrgängigen Potentiometers ein analoges Signal aus.
Jumper A+B für 4–20 mA
Jumper B+C für 0–20 mA

Anschluss:
Bürdenwiderstand <= 500 Ohm an Klemmen 4+5.
Potentiometer aus Antriebseinheit an Klemmen 1,2,3.

Anzeigen:
LED grün: Betrieb
LED rot: Bürde zu groß oder nicht vorhanden.

Einstellung:
Bei dem Potentiometer handelt es sich um ein 3–gängiges Potentiometer 5 Kohm. Die Kupplung des Potentiometer ist auf der Endschalterwelle im Auslieferungszustand gelöst.
In Endposition OBEN das Potentiometer auf ca. 200 Ohm einstellen und anschließend die Kupplung festziehen. Das Potentiometer verändert jetzt beim Lauf der Anlage seinen Wert entsprechend der Position.

Abgleich:
Anlage in Position OBEN:
Mit einem Messgerät den Strom zwischen Klemmen 4+5 messen. Mit Potentiometer MAX auf der Platine gewünschten Wert von z.B. 20 mA einstellen.
Anlage in Position UNTEN:
Mit Potentiometer MIN auf der Platine gewünschten Wert von z.B. 0 mA bzw. 4 mA einstellen.

	Datum	Name
gez.	10.1.12	Houben J
geä.	15/3/14	Schuermans E
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Kunde

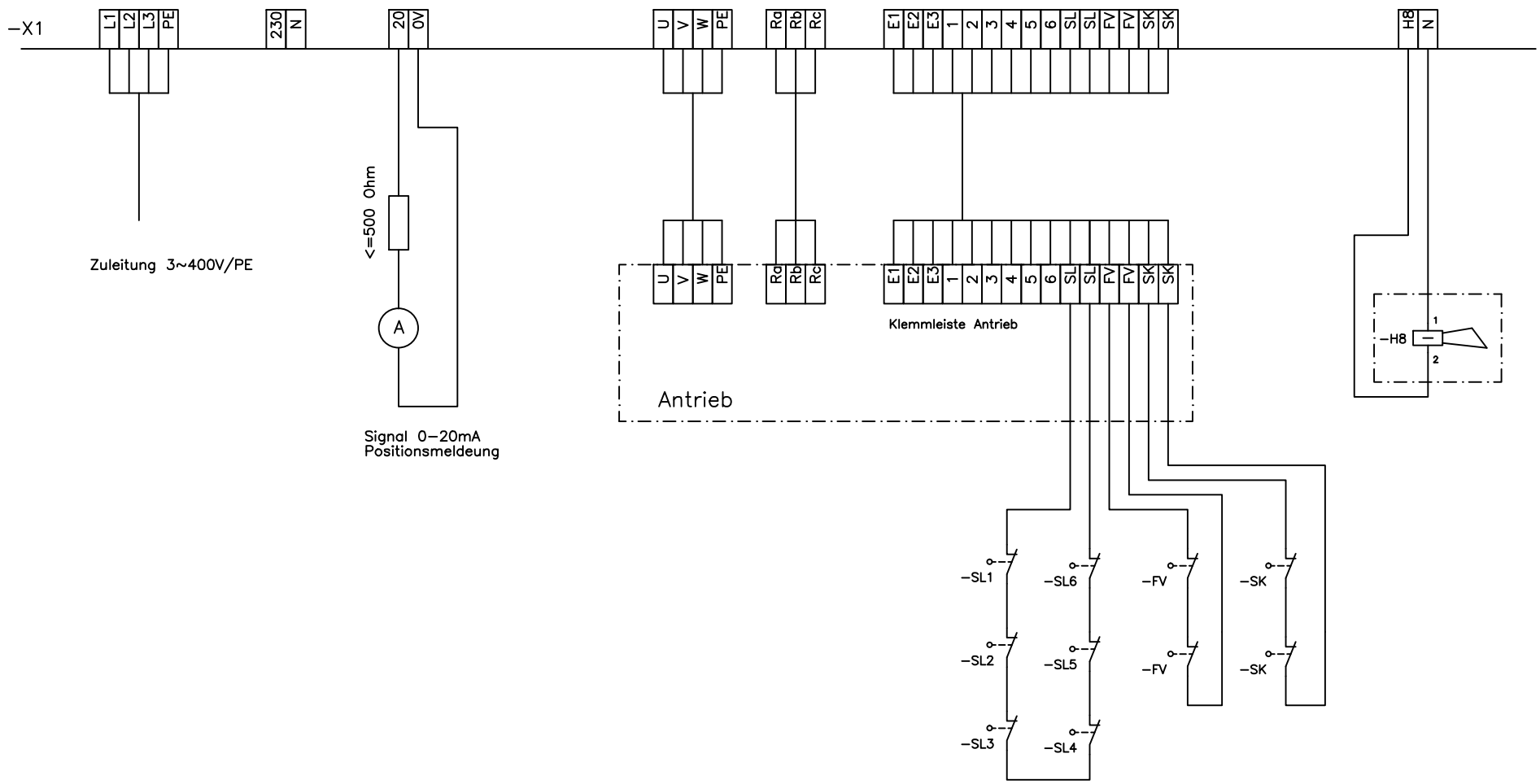
Benennung: Wendeschütz für Nestec–Winde

Blattinhalt: UWI 9110 analoges Signal

Zeich.–Nr.: 15.25.009.012–07

Projekt–Nr.:

Blatt: 7 von 9



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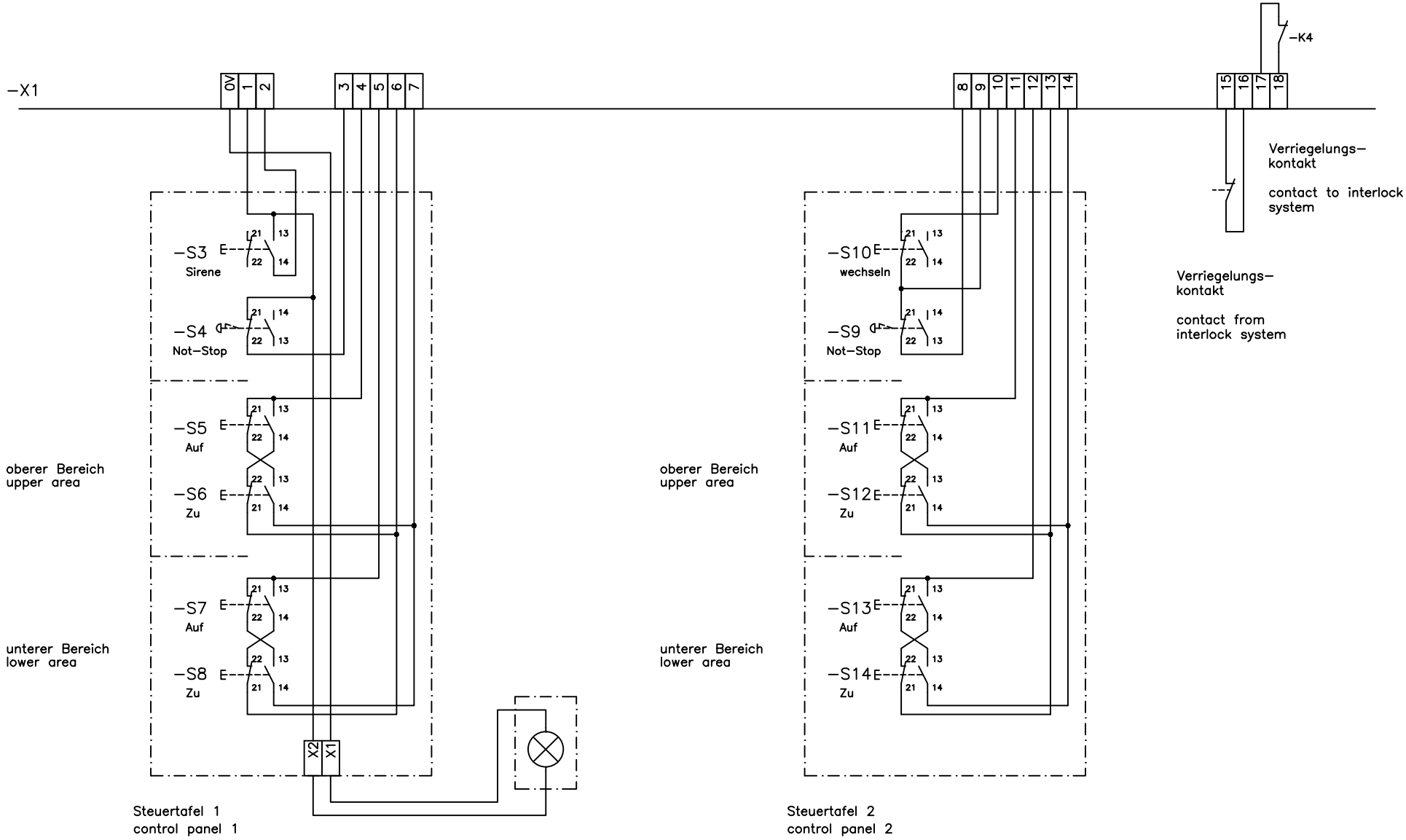

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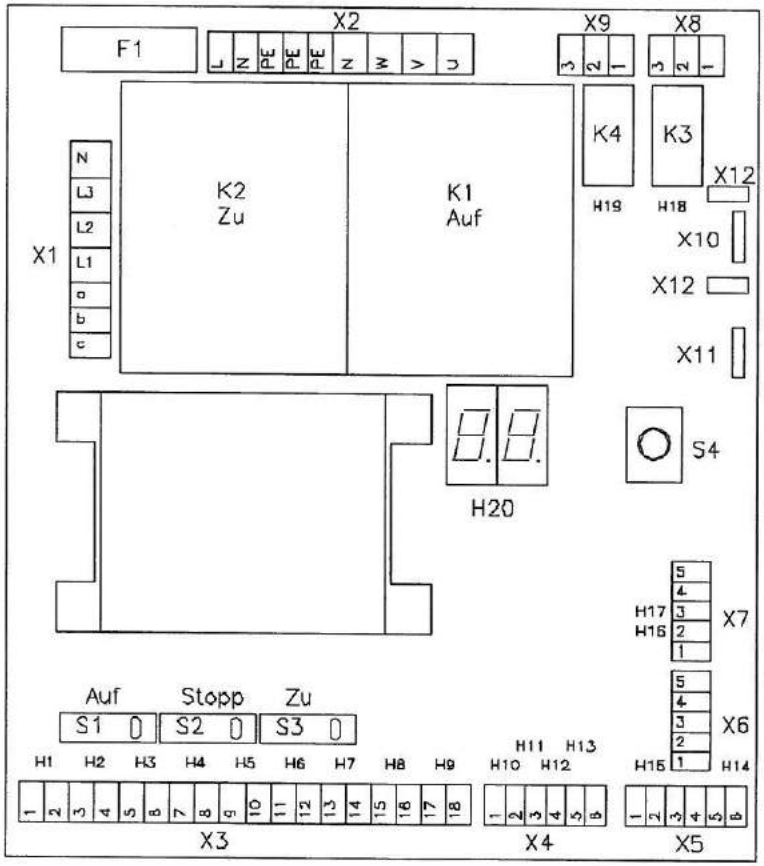

Bauteilübersicht

F1	Steuerkreissicherung 1A (Primärkreis Steuertrafo)
H1...19	Statusanzeigen zu Klemmenbelegung (s. Klemmenplan). gelbe LED = Schließerkreise grüne LED = Öffnerkreise (Stopp-Funktionen) rote LED = Störung
H20	Segmentanzeige
K1	Lastschütz Auf
K2	Lastschütz Zu
K3	Melderelais, max. Strombelastung 2A
K4	Melderelais, max. Strombelastung 2A
S1	Befehlstaster Auf
S2	Befehlstaster Stopp
S3	Befehlstaster Zu
S4	Menüschalter
X1	Klemmleiste Netzanschluss
X2	Klemmleiste Motoranschluss
X3	Klemmleiste Befehlsgeräte
X4	Klemmleiste für Positionsendschalter
X5	Klemmleiste für DES-Absolutwertgeber
X6	Klemmleiste Absicherung Zufahrt
X7	Klemmleiste Absicherung Auffahrt
X8	Klemmleiste Melderelais K3
X9	Klemmleiste Melderelais K4
X10	Steckleiste für Folientastatur
X11	Schnittstelle für Zusatzmodule
X12	Stecker für Sicherheits-Trennschütz

beigelegt:

R1	8,2K Widerstand (grau-rot-rot-gold)
R2	8,2K Widerstand (grau-rot-rot-gold)
R3	1,2K Widerstand (braun-rot-rot-gold) für Druckwellensystem

Bei Installations- oder Wartungsarbeiten ist die Anlage vor dem Öffnen des Gehäusedeckels spannungslos zu schalten!

	Datum	Name
gez.	01.02.07	Rose
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geä.		

GTE Gesellschaft für phys. Technologie und Elektronik
GTE Industrieelektronik, Helmholtzstr. 38-40, D-41747 Viersen

Kunde

Benennung: WST 18 Platine

Blattinhalt: Bauteilübersicht

Zeich.-Nr.: 21.06.001.008-01

Blatt: 1

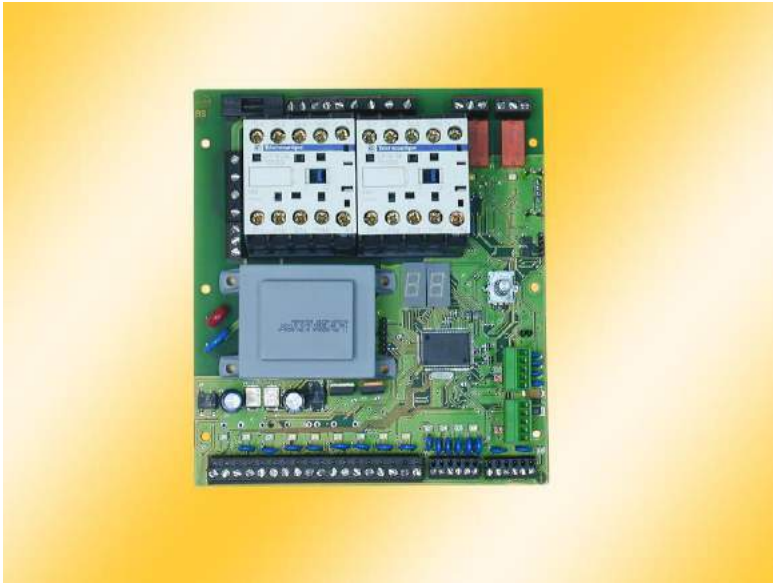
Projekt-Nr.: xxxx

von: 1

Plattform-winch for NESTEC

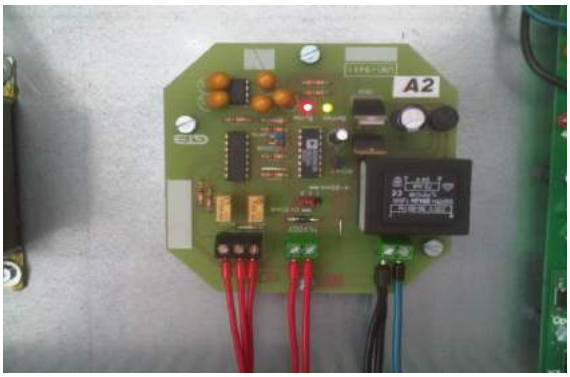
WST 18 + UWI 9110

Operating manual
No. 21.06.001.008



Compact controller for NESTEC Winch

WST 18 board spare part no. 60.0745520000



UWI 9110

UWI board spare part no. 60.074552400

Configuration:

- low-noise reversing contactor up to 1.1 kW
- two additional alarm relays
- plug-in terminals for control device connection
- segment display for easy menu-driven function programming
- status displays, e.g., cycle counting
- control key or emergency control key
- plug for membrane keypad
- light diodes for clear connection and function check
- connection for mechanical and inductive limit switches
- connector for digital limit switch DES
- event memory for statistical queries
- interface for additionally available modules

Safety:

- according to standards EN 12453 and EN 61508
- hardware safety shut-down circuit
- shut-down for processor failure
- short-circuit proof control circuit
- runtime monitoring
- security against persistent commands by, e.g., defective control board
- switching delay as short-circuit protection for main power contactors

Functions:

- open commands with return run function
- selectable functions for signal relays, position report
- automatic detection of the position sensor
- programming the limit positions (in connection with DES)
- advanced menu (in conjunction with DES or with additional modules)
- cycle counter
- storage of the last occurring error
- storage of the last configuration changes executed

1. Explanation of control concept

The WST 18 is a microprocessor-based controller which is designed according to the high requirements of EN 61508. The main features of the controller are the universal configuration, the modularity and the program structure that enables customized special designs.

The controller offers extensive functions, which can be easily adjusted via the segment display in connection with the rotary switch. The operation is thus always the same, so initial operation and programming are as simple as possible.

Conventional limit switches, inductive limit switches or a digital limit switch DES can be connected to the controller. There are even more options when using a drive with DES. For example, the limit positions can be easily programmed. This is useful and generally easier to use, especially for hard to reach places.

By default, the control is fitted with two additional output relays. The output relays can be configured freely with a currently available palette of functions. Therefore, for example, a simple position report or driving a rotary light is possible when moving the platform.

2. Safety instructions

Read operating manual before initial operation! The system must be disconnected from the mains for installation and maintenance! There is a danger to life when working on an energized control board! Unauthorized opening and improper interventions can lead to personal injury or property damage.

To avoid serious physical injuries or major property damage, only professionals who are familiar with electrical drive equipment may work on the control. Only those persons who are familiar with the set-up, installation, initial operation and operation of control systems and have the corresponding qualifications for their activities are qualified. They must be able to assess the work assigned to them, identify potential sources of danger and take suitable safety measures.

This control is designed and tested in accordance with EN 12453 and prEN 12978 and left the factory in a perfectly safe condition. To maintain this condition and to ensure safe operation, all instructions and warning notes contained in this manual must be observed.

Modifications or changes to the control WST 18 are only permitted after consultation with the manufacturer. The operational safety of the delivered WST 18 is only ensured if used as intended. The limits specified in the technical data must never be exceeded (see corresponding sections of the operating manual).

2.1. Safety Regulations

During installation, initial operation, maintenance and testing of the control, the application safety and accident prevention regulations that are valid for the specific case of application must be observed. You must pay particular attention to the following regulations (no claim to completeness):

In addition, the normative references of the standards listed must be observed.

- VDE regulations
- DIN EN 418 — Safety of machinery
  EMERGENCY STOP — Equipment, functional aspects, principles for design
- DIN EN 60204-1
  VDE 0113-1 — Electrical systems of electrical equipment
- DIN EN 60335-1
  VDE 0700-1 — Safety of electrical appliances for household and similar purposes

- BGV A2 — Professional Association's Institute for Industrial Safety

- Fire safety regulations
- Accident prevention regulations

3. Preparatory work / Installation instructions

The following points, among others, must be monitored and considered for the professional installation of the controller:

- The control board must be mounted in a suitable housing. The housing must be suitable for use on site and the occurring environmental conditions.
- In order to maintain the IP protection, the cable entries must be exchanged for cable glands where appropriate. Additional sealing measures must be taken if necessary.
- PVC insulated power cables should only be used indoors!
- The controller must be protected against short circuit and overload at all poles with a fuse rating of **max. 10 A** per phase. This can be done by means of a 3-pole circuit breaker 'F0' (3 x 10 A), which is externally upstream of the control in the indoors installation. A higher protection can destroy the control in case of failure!
- The following applies for a permanent connection of the control to the indoors installation: Connect the controller via a permanently laid out cable and secure the control as previously described for each phase conductor. To shut down the control from the mains, an all-pole disconnecting device must be also installed in the permanently laid out electrical installation, e.g. a main switch which has a contact opening width in accordance with the conditions of overvoltage category III on each pole for full separation!
- The minimum level of protection as well as the appropriate protective measures must be set.
- The system must be secured against overruns of the limit position by stops, safety limit switches or other safety systems.

4. Initial operation

- Detection of the position sensor
- Monitoring direction of rotation
- Position display - segment display
- Limit positions set with DES

ATTENTION! The controller must be switched off from the supply circuit at all poles before access to the connecting terminals!

Connect the position sensor before switching on the mains voltage. After switching on, the controller automatically detects which position sensors are connected and configures the control accordingly. If the controller is inadvertently misconfigured, there may be no movement. In this case, changing or resetting the control via the menu is easily done.

After hanging up the line voltage or plugging in the power cord, the system can then be operated via the internal keyboard with deadman drive open or closed, i.e. keys must be pressed continuously. The direction of rotation **must** correspond to the command keys. If that is not the case, switch off the mains voltage and reverse two motor lines. The limit positions can be set or programmed after checking the direction of rotation.
After setting the limit positions, the configuration can be performed via the menus. An important parameter for the protection of the drive consists in setting the run-time monitoring.

4.1. Monitoring the installation

A review of the installation is clearly possible with the help of LED (light emitting diodes).

green LED: Stop and safety circuits (normally closed). All green LEDs must light up in neutral position*.

yellow LED: Activating control device (normally open). All yellow LED should be off in neutral position.

*Neutral position: System stands between the limit positions. Segment display p. 9

4.2. Rotary switches - operation

The rotary switch S4 (see page 20) has two functions. The menu items can be called up by turning the knob left or right (segment display) and the selection can be confirmed by pressing the knob.

The main and sub menus are listed in the following and assigned to a numerical code or a display. You can access and return from the sub-menus by setting the numerical codes and then pressing the key.

The type and manner of programming is always the same:

1. **Switching on programming mode:** Press rotary knob 3 sec. The main menu is displayed.
2. **Select main menu:** The corresponding numerical code is set by turning the knob and changed to the appropriate sub-menu by pressing the knob.
3. **Setting the functions:** The desired setting is made by turning to the corresponding numerical code and confirming the selection by pressing. Display changes into the main menu.
4. **Quit programming mode:** Automatically after 10 seconds or turn rotary knob until display 00 appears and press rotary knob.

4.3. Setting the limit positions with DES

Only to be observed during control exchange or resetting the controller

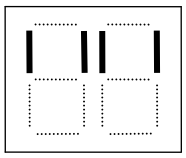
ATTENTION the upper limit position must **not** be adjusted (was permanently set in the supplier factory). This step must only be considered after replacing the control.

The digital limit switch DES is mounted under the yellow cover of the drive (see Section 1, Fig. 10). The DES allows programming of the limit positions and also provides other useful options that can be activated via the menu. Upon detecting DES, the WST 18 prompts for programming by flashing segment display.

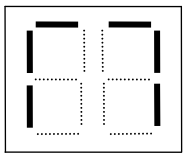
a. Select Menu 11 with rotary switch S4 (page 20), confirm by pressing S4 -> System display flashes
b. Drive system up with UP-key drive into the top limit position -> top segment display flashes.
c. Press STOP key on board WST18 approx. 3 seconds until the display changes. Open position is stored.
d. Select Menu 20 with rotary switch S4 (page 20) and confirm by pressing S4 -> segment display flashes.
e. Drive system with internal AB key into the bottom final position. Lower segment display flashing.
f. Press STOP key for about 3 seconds until the display changes. Bottom position is stored.
g. To exit programming mode, see 4.2 point 4 page 8.

The system can now be operated in deadman drive with the external keys, i.e., keys must be pressed continuously. For other settings, see 'Configuration'. The limit positions can be readjusted later via a menu item.

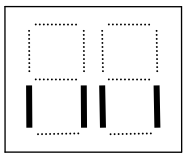
Segment displays (see page 20, H20):



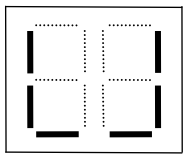
Calling up the programming for the top limit position



After programming display top limit position

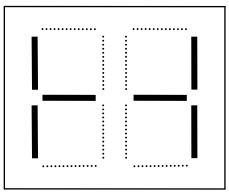


Calling up the programming for the bottom limit position

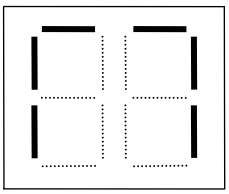


After programming display bottom limit position

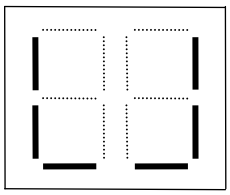
Position display (see page 20, H20):



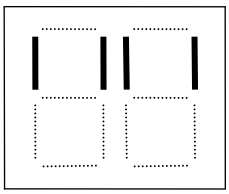
No limit position



Top limit position



Bottom limit position



Calling up the programming for the top limit position

5. Numerical codes - Menu structure

Explanations:

Some menu items are available only in conjunction with the corresponding components.
There are 3 types of menu structures:

a) Usually, a sub-menu with various selection options follows after selecting a main menu.
   Example: Main menu 13 Function Fine adjustment (not necessary in normal cases)
   Move sub-menus 0 to 9 for top position to x values

b) A main and sub-menu can also consist of a main menu and a setting parameter.
   Example: Main menu 14 Fine adjustment
   Move sub-menu 0 9 closed position to x values

c) A drive is necessary after selecting a main menu.
   Example: Main menu 11 Correcting limit position
   Sub-menu -.- Calling up the drive

Note: Positions designated with "(W)" are configured at the factory.

6. Configuration of the WST 18 control

-.- = position drive. Press drive keys after selecting one such sub-menu.
(W) = labeled positions are configured at the factory.

Group 0: Basic functions

01	**Operating mode**		**store**
W	1	Deadman drive in open and closed direction	
04	**Switch position sensor - Special menu item**	**store**	
	0	Position sensor must be connected. 0 is displayed when the function is selected. Then press internal open key. Display changes to 1.	a. Open key
	1	Press internal stop key for 3 seconds. Position encoder is read again. Function settings retained.	b. 3 sec. Stop key

Group 1: Positioning

11	**Set open limit position (only with DES)**		**Store**
	-.-	Approach the desired open position with internal keys	Stop key
12	**Set closed limit position (only with DES)**		**Store**
	-.-	Approach the desired off position with internal keys	Stop key
13	**Open limit position fine adjustment (only with DES)***		**Store**
	-.0	Open position can be moved by setting a value to open or closed	**Only when resetting or replacing the control:** Press rotary switch
	--.0..9	Move open position to x values toward Open **	
	_.0..9	Move open position to x value toward Closed ***	
14	**Closed limit position fine adjustment (only with DES)***		**Store**
	-.0	Closed position can be moved by setting a value toward open or closed	Press rotary switch
	--.0..9	Move closed position to x values toward Open **	
	_.0..9	Move closed position to x values toward Closed ***	
16	**Set partial opening (only with DES)**		**Store**
	-.-	approach the desired partial opening position with internal keys	Stop key

* possible several times
** rotate clockwise
*** rotate counterclockwise

Group 2: Setting functions

22	Overrun traverse correction (only with DES)		Store
w	1	Overrun traverse of the system is not considered	Press rotary switch
	2	Shut-down point is corrected around the overrun (dyn. process)	
29	**Partial opening (see additional description)**		**Store**
w	1	for selector switch stopover	
	2	for control device stopover	Press rotary switch

Group 5: Setting relay switch points for function 61.1 and 61.2 (only with DES)

51	Relay K3		Store
	-.-	Approach the desired position with internal keys	Stop key

Group 6: Setting the relay functions

61	Relay K3		Store
	2	Permanent contact from intermediate position or programmed switching point	
	8	Rotating light	

7. Detailed function descriptions

7.1. Deadman drive

The system runs only as long as the control device is pressed. This feature has been set for initial operation in the delivery.

7.2. Partial opening (pivoting of stabilization arms)

Prerequisite: additional limit switches or programming of a partially open position for drives with DES. A selector switch can choose between two opening positions. All connected control devices open into the preselected position. Alternatively, both the full opening as well as the partial opening is possible on each defined control device. The function can be set via Menu 29.

7.3. Cycle counter

The cycle counter is started at initial operation and cannot be reset. The maintenance intervals can be monitored or set for the system using the cycle counter.

7.4. Relays

The WST 18 has integrated multiple functional options for the two output relays. These functions can be configured independently and individually on a relay.

ATTENTION! Observe the maximum load capacity of the relays. Under certain circumstances, a securing of the circuit is to be performed.

7.5. Overrun correction

The WST 18 has a function that allows the open and closed position of the system to be kept constant. Due to external influences, the way between switching off the contactors and the actual shutdown of the system (overrun) may vary. That is possible, for example, under thermal stress or wear on the brakes. The WST 18 registers overshooting of the programmed switch-off position and switches off the contactors correspondingly earlier for the next drive. **ATTENTION!** This function may only be activated if the system is subject to regular maintenance! It must thus be ensured that the system, for example, takes on no hazardous conditions due to inadmissible wear or lack of readjustment (complete loss of braking action).

8. Calling up information

Group 9: Information and reset to factory settings

91	Cycle counter 7 digits		Selection
	0..7	After pressing the setting knob, 7 numbers are displayed sequentially in the right segment. Highlighting the graduation mark in the left segment reveals which number is found. First graduation mark for number 1, two graduation marks for number 2 and so on .. The numbers in the right segment written in succession yield the count of cycles as a number. Example: 0003526 for 3526 cycles.	Press setting knob
92	**Display of the last 2 errors**		**Selection**
	F..	After pressing the setting knob, the numerical codes of the last two occurring errors are displayed alternately.	Press setting knob
93	**Last configuration change**		**Selection**
		After pressing the setting knob, 7 numbers are displayed sequentially in the right segment. Highlighting the graduation mark in the left segment reveals which number is found. First graduation mark for number 1, two graduation marks for number 2 and so on .. The numbers in the right segment written in succession yield the cycle count at which the most recent programming change was performed.	Press setting knob
94	**Display of the program version**		**Selection**
		The program version of the WST 18 is displayed.	Press setting knob
95	**Reset to factory settings (delivery status)**		**Store**
	0	0 is displayed when the function is selected. Activate internal up key in order to activate reset. Display changes to 1.	a. On-key
	1	Press internal stop key for 3 seconds. Reset is performed.	b. 3 sec. Stop-key

9. Status display / Error handling

Information on the current status of the controller is displayed during normal operation of the system. The status display for error and commands consists of a letter and a number together that are displayed alternately.

- After activating a command, the control displays the movement direction by flashing top or bottom segments. Upon reaching the position, the segments go from blinking into a continuous display.
- The activation of a command is shown with an **E** and then an index number.
- The indication of a fault is displayed via an **F** and then an index number.

Display	Description	Remedial measures	Terminal	
F 11	Safety circuit triggered	Check emergency manual activation, safety catch contact. Drive overloaded or blocked?	X3	3-4
F 13	Safety circuit DES	Check whether slack rope contact is closed or whether there is an open circuit in the cabling.	X5	1-5
F 14	Emergency stop contact activated	Check whether emergency stop control device is actuated or whether there is an open circuit in the connecting line.	X3	1-2

Display	Description	Remedial measures	Terminal	
F 31	Upper emergency limit switch range approached	Move the system back or reset upper limit position in the zero-energy condition using emergency manual activation.		
F 33	no limit switch	Limit switches open position and closed position are both activated.	X4	2-3
F 52	Register error	Reset the controller by switching on and off, possible change of controller required and reprogramming in accordance with point 4.1.		
F 53	RAM error	Reset the controller by switching on and off, possible change of controller required and reprogramming in accordance with point 4.1.		
F 54	Internal control error	Reset the controller by switching on and off, possible change of controller required and reprogramming in accordance with point 4.1.		
F 55	DES not active	Check connection to the DES. Reset the controller by switching on and off, possible change of DES required and reprogramming in accordance with point 4.1.		
F 56	Drive does not run	Blocking or failure of a phase of the network. Check the mechanics. Check the limit switch shaft for rotary movement.		
F 57	Rotary field wrong (in connection with DES)	Replace outer conductor of the supply line or the motor.		
F 58	DU error (with DU)	Error in the direct converter.		

Display	Description	Remedial measures	Terminal	
F 59	Runtime error	the normal runtime for a complete drive is exceeded. Drive blocked.		
F 81	Drive time error	Programming drive too short. Control still has overrun properties not registered. Longer drive in position.		
E 11	It concerns an open command		X3	7
E 12	It concerns a stop command		X3	5-6
E 13	It concerns a closed command		X3	8

9.1. more error handling

Problem	Cause	Correction
No movement is possible and no error is displayed.	no limit switches connected	Reconnect limit switching.
	Limit switch open and closed both open	Check limit switching. Check wiring.
	incorrect position sensor configured	Teach position sensor via Menu 04 again and reprogram limit positions again, see point 4.1
No voltage on WST 18 (no diodes light up)	Fuse F1 defective (Section 5, page 20)	Replace fuse F1 on board

10. Technical Specifications

Power supply:	1 Ph 230 V/N/PE ±10%, 50/60 Hz
Fusing:	on site, max. 10 A slow
max. switching capacity:	1.1 KW according to standard (parts 2.2 KW)
max. motor current:	5 A
Control voltage:	24 V DC (no voltage tap)
Control current:	10 mA
Control fuse:	1 A slow, microfuse
external power supply:	24 V DC
max. current consumption:	**max. 150 mA**
Fusing:	thermal element, 0.8 A, self-resetting
Control inputs:	24 V DC, 10 mA,
Wiring control inputs:	only use potential-free contacts
Relay outputs:	potential-free changeover contacts
max. current load:	resistive load 1 A inductive load max. 1 A in connection with freewheel diodes for interference suppression
Temperature range:	-10…+50°C
Humidity range:	max. 95%, non-condensing
Assembly:	select vibration-free mounting. Position independent.
Protection type:	in the housing IP 55 to IP 65
Service life cycle:	500,000 switching cycles

11. Operating Manual UWI 9110

11.1. Evaluation Platform Position

Potentiometer Ra/Rb/Rc: Section 1, point 1.7 Fig. 10 and Section 4 Circuit diagram 15.25.009.012


Potentiometer Ra/Rb/Rc (in yellow motor terminal box) is **not** connected to limit switch shaft on delivery.

The potentiometer - limit switch shaft connection is made by the brass disk with hub. The value of 200 kΩ must be displayed in the final position (locked). Adjustment is made by turning the brass disk. After that, the brass disk should be fixed with two locking screws (located in their hub) on the limit switch shaft using the screwdriver (Section 1, Fig. 10, page 13) .

The evaluation for the exact location specification (height indicator) of the winch platform is thus performed.

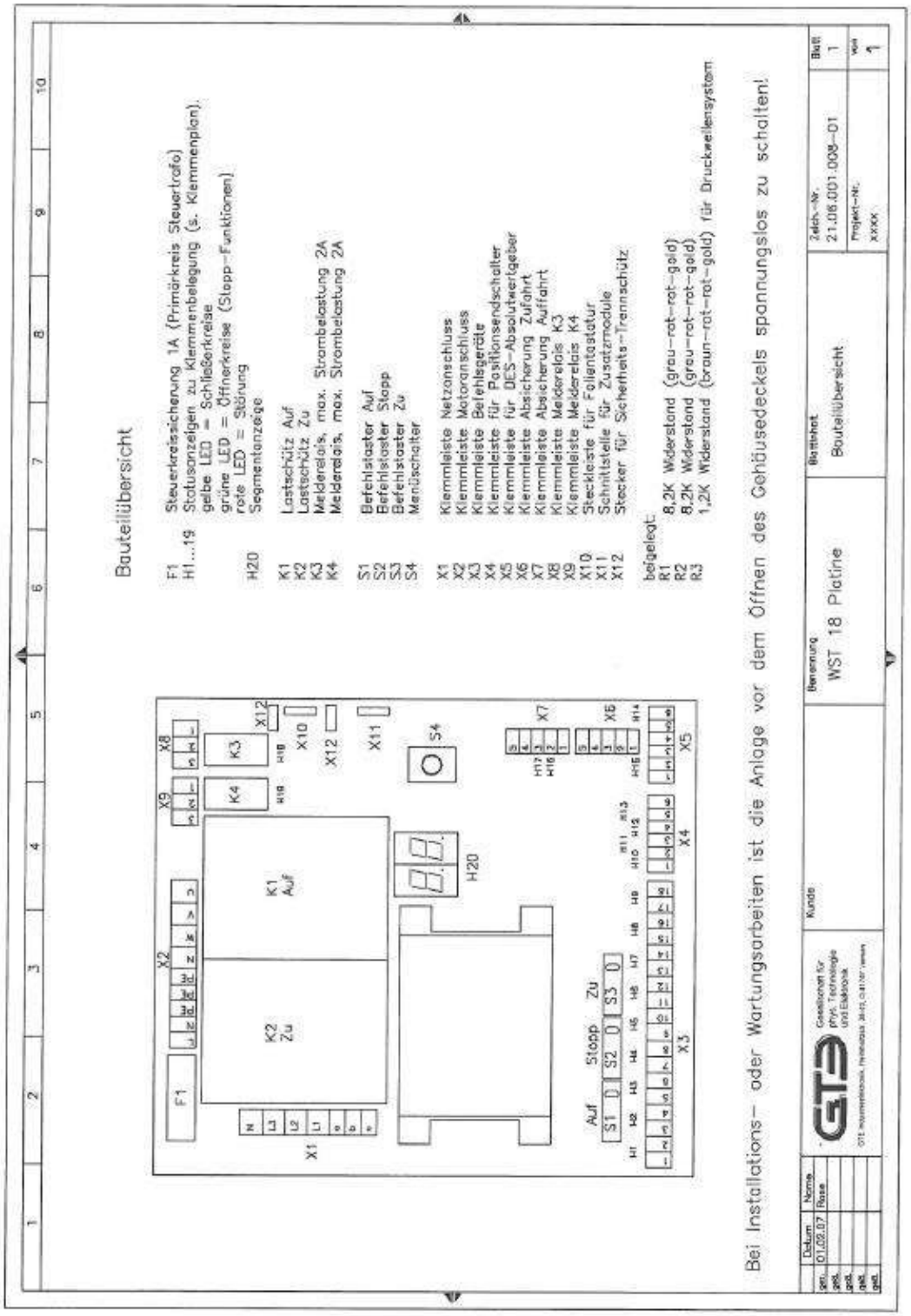

Settings **may** only be performed after the initial operation of the winch (set limit switch).

The analog signal is processed on the UWI board and can be taken on the terminal strip X1 in the control box on the terminals 20/0V.

The exact position of the winch platform can be displayed on the PC using the Pharagraph display.


For additional details, refer to Section 4, circuit diagram no. 15.25.009.012.

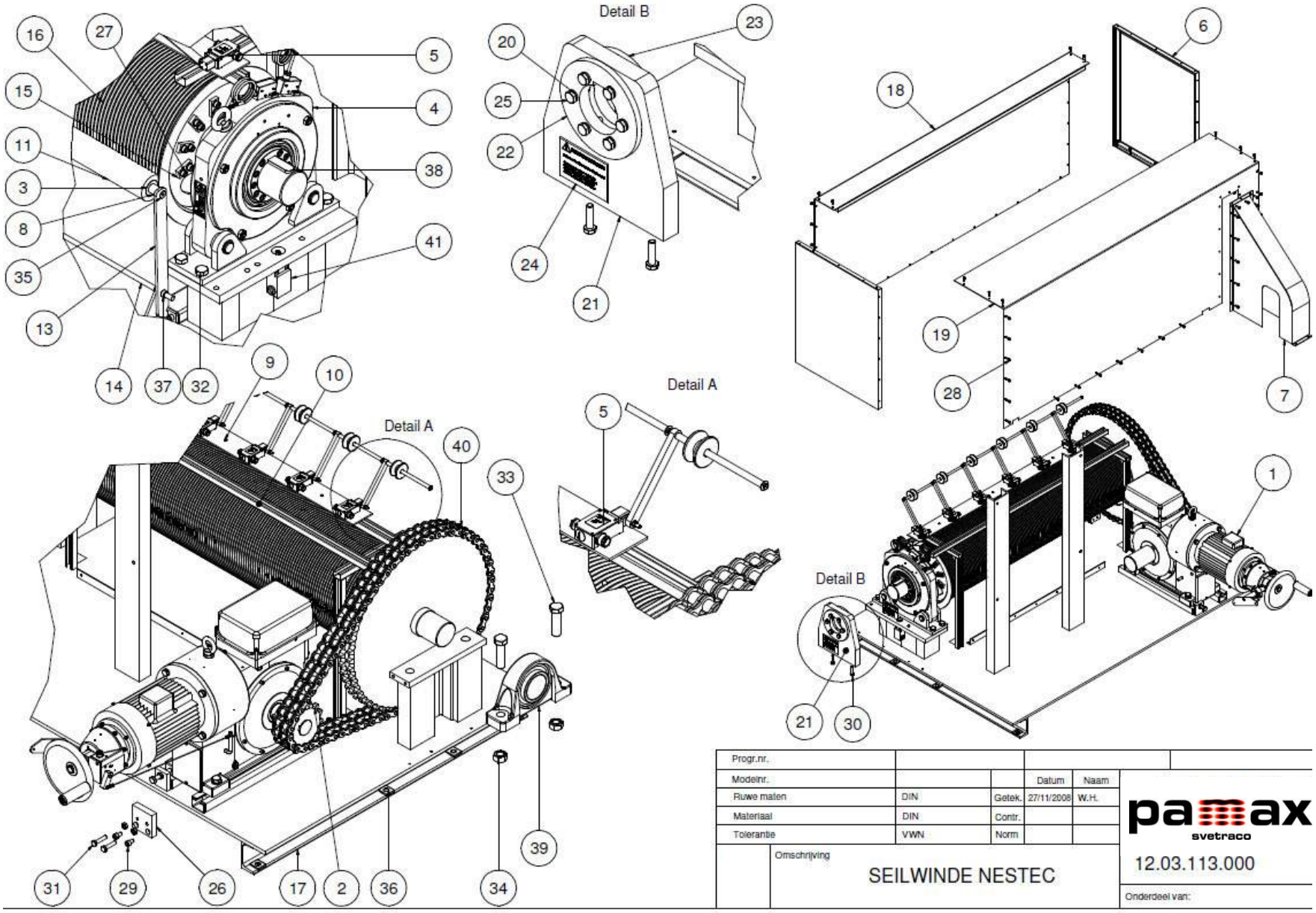
12. Component overview WST 18



See Section 4, Drawing no. 21.06.001.008-01

Plattform-winch for NESTEC

Ersatzteilliste / Spare part list / Liste des pièces détachés



Hubkraft / lifting capacity / capacité de levage 2000 kg, Hub / stroke / course 18m

Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	1	1	Ja Yes Oui	60.0105501000	Schneckengetriebe komplett WHNE 550 RKG DES Worm gear completely WHNE 550 RKG DES Engrenage à vis sans fin complètement WHNE 550 RKG DES
	2	1	Ja Yes Oui	60.0814451000050	Kettenrad 1 ¼" z=14 Duplex Sprocket 1 ¼" z= 14 Duplex Pignion à chaÎne 1 ¼" z= 14 duplex
	3	2	Ja Yes Oui	60.0874001005	Büchse Bushing Bague
	4	1	Ja Yes Oui	60.0875505000	Abrollsicherung FV 360 E.A. mit 5 m Kabel Halogenfrei Safety bearings FV 360 E.A. avec 5 m cable sans halogène Parachute FV 360 E.A. with 5 m cable halogen-free
	5	6	Ja Yes Oui	60.1203001008	Schlaffseilschalter kompl. mit Welle + Rolle Slack-wire switches complete with shaft and roll Interrupteurs de rupture de fil complètes avec arbre et rouleau

Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	6	2	Ja Yes Oui	60.1203001022	Seitenverschalung Side panel for shuttering Panneau latéral pour coffrage
	7	1	Ja Yes Oui	60.1203001026	Kettenschutz Chain guard Protection chaîne
	8	1	Nein No Non	60.1203001032	Achse für Anpressrolle Ø 20mm Axis of pressure roller Ø 20mm Axe du rouleau de pression Ø 20mm
	9	1	Nein No Non	60.1203001034	Support für Schlaffseilschalter Support for slack rope switches Support pour interrupteurs de rupture de fil
	10	2	Ja Yes Oui	60.1203001035	C-Profil L=1300mm Profil-C L= 1300mm Profile-C L= 1300mm

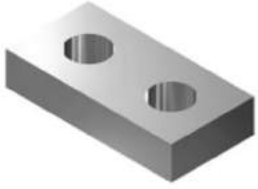
Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	11	2	Ja Yes Oui	60.1203001036	Anpressrolle aus Kunststoff Ø 60mm Pressure roller plastic Ø 60mm Pression rouleau plastique Ø 60mm
	12	1	Nein No Non	60.1203001037	Hebel links für Anpressrolle Lever left for pressure roller Levier gauche pour pression rouleau
	13	1	Nein No Non	60.1203001038	Hebel rechts für Anpressrolle Lever right for pressure roller Levier droit pour pression rouleau
	14	1	Nein No Non	60.1203001050	Verbindungswelle Ø10mm Connecting shaft Ø10mm Arbre de liaison Ø10mm
	15	7	Nein No Non	60.1203001064	Seilklemmlasche 20 x 8 x 40 Cable clamping bracket 20 x 8 x 40 Câble étrier de serrage 20 x 8 x 40

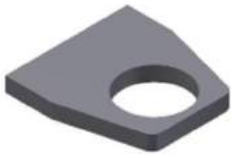
Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	16	1	Ja Yes Oui	60.1203113001	Seiltrommel Ø320 x1200mm cable drum Ø320 x1200mm Tambour à câble Ø320 x1200mm
	17	1	Ja Yes Oui	60.1203113003	Grundplatte komplett 1150 x 1700mm Baseplate completely 1150 x 1700mm Bassisplatte complète 1150 x 1700mm
	18	1	Ja Yes Oui	60.1203113010	Abdeckhaube vorne Cover front Couverture avant
	19	1	Ja Yes Oui	60.1203113012	Abdeckhaube hinten Cover rear Couverture arrière
	20	2	Ja Yes Oui	60.1203113017	Seiltrommel-Blockierung komplett Cable drum blocking complete Câble tambour blocage complet
	21	1	Ja Yes Oui	60.1203113018	Support zu Blockierung Support for blocking Soutien pour le blocage

Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	22	1	Ja Yes Oui	60.1203113019	Flansch 1 zu Blockierung Flange 1 to blocking Flasque 1 de blocage
	23	1	Ja Yes Oui	60.1203113020	Flansch 2 zu Blockierung Flange 2 to blocking Flasque 2 de blocage
	24	1	Ja Yes Oui	60.1203113024	Informationsschild (Anleitung) Information plate (manual) Plaque de l'information (manuel)
	25	6	Nein No Non	60.510100933504	Sechskantschrauben Din 933-M10x45 (A2 Inox) Hex screws DIN 933-M10x45 (A2 stainless) Vis à tête hexagonale DIN 933-M10x45 (A2 inoxydable)
	26	1	Ja Yes Oui	60.1203113034	Platte zur Ausrichtung des Stehlager (Fig. 39) Plate for aligning the plummer (image 39) Plate pour aligner la plummer (illustration 39)
	27	14	Nein No Non	60.510100912073	Zylinderschraube DIN 912 - M8x40 (verzinkt.) Cap screw DIN 912 - M8x40 (galvanized) Cap vis DIN 912 - M8x40 (galvanisée)

Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	28	75	Nein No Non	60.510100912098	Zylinderschraube DIN 912 - M6x16 (verzinkt) Cap screw DIN 912 – M6x16 (galvanized) ap screw DIN 912 - M8x40 (galvanized)
	29	2	Nein No Non	60.510100912105	Zylinderschraube DIN 912 - M10x10 (verzinkt) Cap screw DIN 912 – M10x10 (galvanized) Cap screw DIN 912 – M10x10 (galvanized)
	30	2	Nein No Non	60.510100933053	Sechskantschrauben Din 933-M10x40 (verzinkt.) Hex screws DIN 933-M10x40 (galvanized) Vis à tête hexagonale DIN 933-M10x40 (galvanized)
	31	2	Nein No Non	60.510100933054	Sechskantschrauben Din 933-M10x45 (verzinkt) Hex screws DIN 933-M10x45 (galvanized) Vis à tête hexagonale DIN 933-M10x45 ((galvanized)
	32	4	Nein No Non	60.510100933088	Sechskantschrauben Din 933-M16x40 (verzinkt) Hex screws DIN 933-M16x40 (galvanized) Vis à tête hexagonale DIN 933-M16x40 ((galvanized)

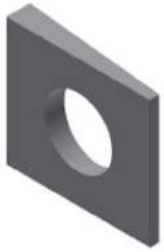
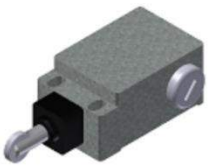
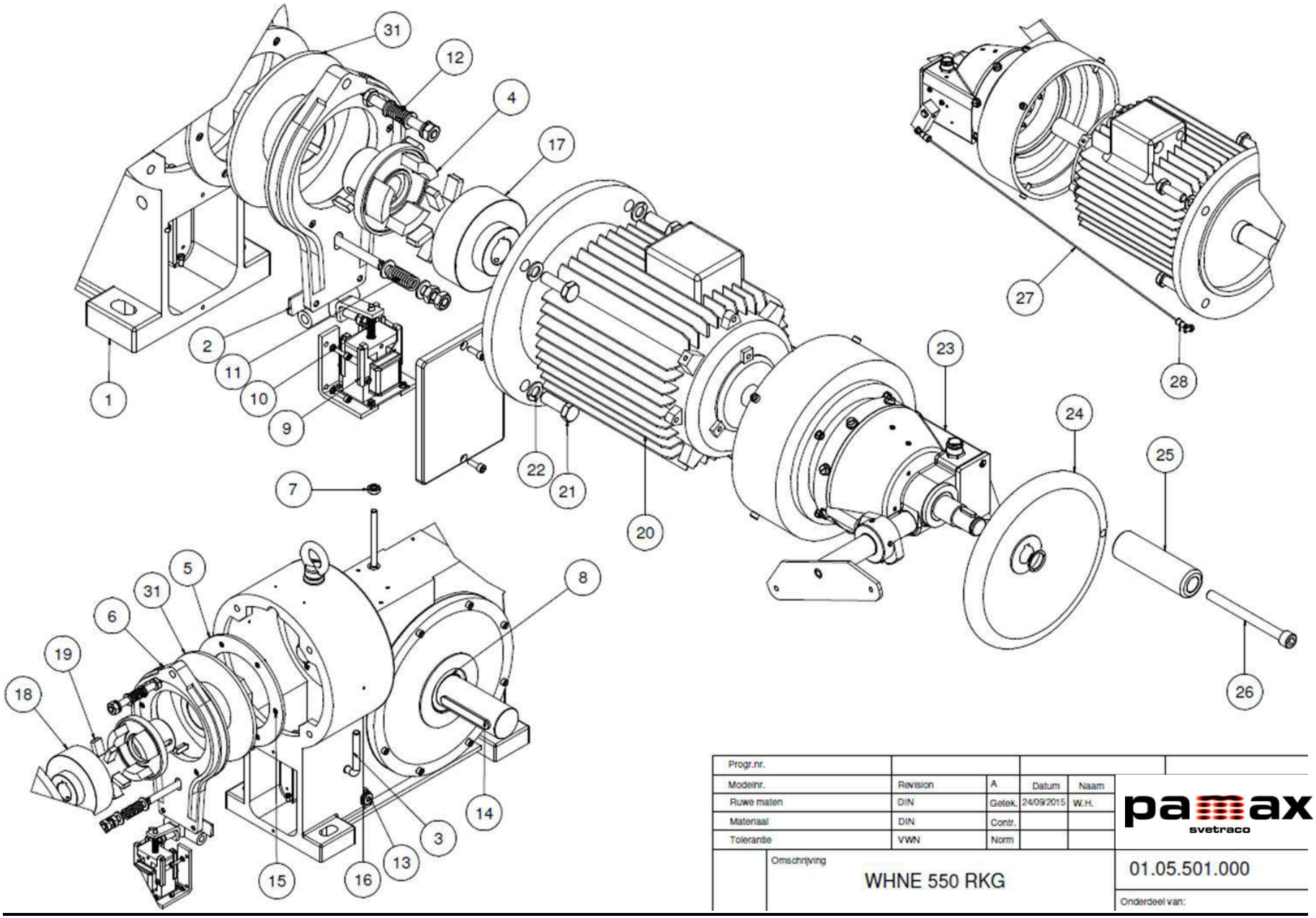
Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	33	2	Nein No Non	60.510100933524	Sechskantschrauben Din 933-M24x90 (verzinkt) Hex screws DIN 933-M24x90 (galvanized) Vis à tête hexagonale DIN 933-M24x90 ((galvanized)
	34	2	Nein No Non	60.510100934509	Sechskantmutter Din 934 - M24 (verzinkt) Hexagonal nut DIN 934 - M24 (galvanized) Écrou hexagonal DIN 934 - M24 (galvanized)
	35	2	Nein No Non	60.510107991503	Senkschrauben mit innensechskant M8x35 (A4 Inox) Countersunk screws with hexagon socket M8x35 (A4 stainless) Vis à tête fraisée à six pans creux M8x35 (A4 inoxydable)
	36	8	Ja Yes Oui	60.510200434500	Keilscheiben 8% Taper washers 8% Wedge rondelles 8%
	37	4	Ja Yes Oui	60.510300705011	Stellringe Collars Colliers
	38	1	Ja Yes Oui	60.510306885523	Passfeder 22x14x160 Keyway 22x14x160 Clavette 22x 14x 160

Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	39	1	Ja Yes Oui	60.520100626014	Stehlager SL 80 (UCP 216) Palier SL 80 (UCP 216) Ball Pillow Block Bearings SL 80 (UCP 216)
	40	1	Ja Yes Oui	60.530208187500	Duplex-kette 1"1/4 Duplex chain 1 "1/4 Duplex chaîne 1 "1/4
	41	1	Ja Yes Oui	60.630199993001	Sicherheitsschalter Trommelblockierung (Steute EM 411 WR) Safety switch drum blocking (Steute EM 411 WR) Interrupteur tambour sécurité blocage (Steute EM 411 WR)

Ersatzteilliste / Spare part list / Liste des pièces détachés



Progr.nr.					
Modelnr.	Revision	A	Datum	Naam	
Ruwe maten	DIN	Getek.	24/09/2015	W.H.	
Materiaal	DIN	Contr.			
Tolerantie	VWN	Norm			
Omschrijving: WHNE 550 RKG					01.05.501.000
					Onderdeel van:

Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	1	1	Ja Yes Oui	60.0105001500	WHNE Schneckengetriebe kpl. WHNE Worm gear WHNE Engrenage à vis sans fin
	2	1	Ja Yes Oui	60.0104001016	Gelenkstück Joint piece Pièce de jonction
	3	1	Ja Yes Oui	60.0104001017	Bremslüfthebel Brake release lever Levier de libération de frein
	4	1	Ja Yes Oui	60.0105001009	Kupplungshälfte Getriebeseite Coupling half gearbox side Couplage côté boîte de vitesses
	5	1	Ja Yes Oui	60.0105001019	Bremsbelag Brake lining Brake lining

Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	6	1	Ja Yes Oui	60.0105001502	Bremsplatte mit Belag Brake disc with lining Disque de frein avec doublure
	7	1	Ja Yes Oui	60.510503760003	Simmerring A10x18x6 Rotary shaft seal 10 x 18 x 6 mm Simmerring 10 x 18 x 6 mm
	8	2	Ja Yes Oui	60.510503760039	Wellendichtring AS50 x 70 x 10 (INOX) Oil Seal AS50 x 70 x 10 (INOX) Joint d'huile AS50 x 70 x 10 (INOX)
	9	1	Ja Yes Oui	60.630799999015	Bremsmagnet WL 230-01-230 Volt Brake magnet WL 230-01-230 Volt Aimant de frein WL 230-01-230 Volt
	10	1	Ja Yes Oui	60.1412001019	Druckfeder (Bremsmagnet) Pressure spring (brake magnet) Ressort de compression (Aimant de frain)

Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	11	1	Ja Yes Oui	60.1412001035	Druckfeder unten Pressure spring (below) Ressort de compression (ci-dessous)
	12	1	Ja Yes Oui	60.1412001037	Druckfeder oben Pressure spring (up) Ressort de compression (dessus)
	13	1	Ja Yes Oui	60.510100908001	Verschlussschraube R1/4” Locking screw R 1/4" Vis de blocage R 1/4"
	14	2	Ja Yes Oui	60.510306885078	Passfeder DIN 6885 B 14 x 9 100 Feather DIN 6885 B 14 x 9 x 100 Coin DIN 6885 B 14 x 9 100
	15	6	Ja Yes Oui	60.510307338002	Rohrniet Ø4x15 Tubular rivet 4 x 15 Tube rivet 4 x 15

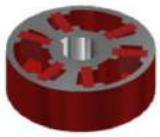
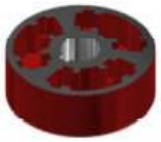
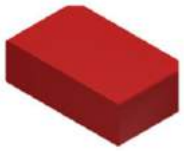
Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	16	1	Ja Yes Oui	60.510507603003	Scheibe Cu A13x18x1.5 Washer Cu A13 x 18 x 1,5 Rondelle Cu A13 x 18 x 1,5
	17	1	Ja Yes Oui	60.0105001501	Kupplungshälfte (motorseitig) WHNE 400/550 **mit** Kupplungseinsätzen Pos 19 Coupling half (motor side) WHNE 400/550 **with** coupling insert Item 19 Demi-accouplement (côte moteur) WHNE 400/550 **avec** Pos. 19
	18	1	Ja Yes Oui	60.0105001010	Kupplungshälfte (motorseitig) WHNE 400/550 **ohne** Kupplungseinsätze Pos. 19 Coupling half (moto side) WHNE 400/550 **without** coupling insert Item 19 Demi-accouplement (côte moteur) WHNE 400/550 **sans** Pos. 19
	19	1	Ja Yes Oui	60.0105001017	Kupplungseinsatz WHNE 400/550 Coupling insert WHNE 400/500 Insert d'accouplement WHNE 400/550
	20	1	Ja Yes Oui	60.1403006010	Drehstrommotor 4 kW Three-phase motor 4 kW Moteur triphasé Volt ..... **?** Hz.....**?**

Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	21	4	Nein No Non	60.510100933067	Sechskanntschraube M12x35 Vis M12x35 Screw M12x35
	22	4	Nein No Non	60.510200127007	Federring M12 Lock washer M12 Rondelle de blocage M12
	23	1	Ja Yes Oui	60.0105007504	WHNE Notgetriebe NESTEC **ohne** Handrad Pos. 24 WHNE emergency gear NESTEC **without** handwheel Item 24 WHNE engrenage d'urgence NESTEC **sans** volant a mains Pos. 24
	24	1	Ja Yes Oui	60.0104017500	Handrad Handwheel Volant a mains
	25	1	Ja Yes Oui	60.1203113031	Handgriff Handle Manipuler

Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	26	1	Ja Yes Oui	60.510100912520	Zylinderschraube DIN 912 - M10x110 Verz. Cap screw DIN 912 -M10x110 galvanized Cap vis DIN 912 -M10x110 galvanisé
	27	1	Nein No Non	60.53039999950001	Stahlseil Ø2 Steel cable Ø2 Câble d'acier Ø2
	28	2	Ja Yes Oui	60.620246237021	Ringkabelschuh M4 Ring cable lug M4 Cosse à oeillet M4
	29	1	Ja Yes Oui	60.0105501503	Schutzkappe Achse Cap axis Axe Cap
	30	1	Ja Yes Oui	60.0711504000	Steuerautomat NESTEC mit DES Endschaltung Automatic controll Box with digital limit switch DES Le contrôle de la machine Nestec DES circuit de terminaison

Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	31	1	Ja Yes Oui	60.0105001005	Bremsscheibe WHNE 400/550 Brake disc WHNE 400/550 Disque de frein WHNE 400/550

Ersatzteilliste Bedienungstableau 1/ Spare part list Control panel 1/ Liste des pièces détachés panneau de contrôle 1

Art. 50.120901-EX

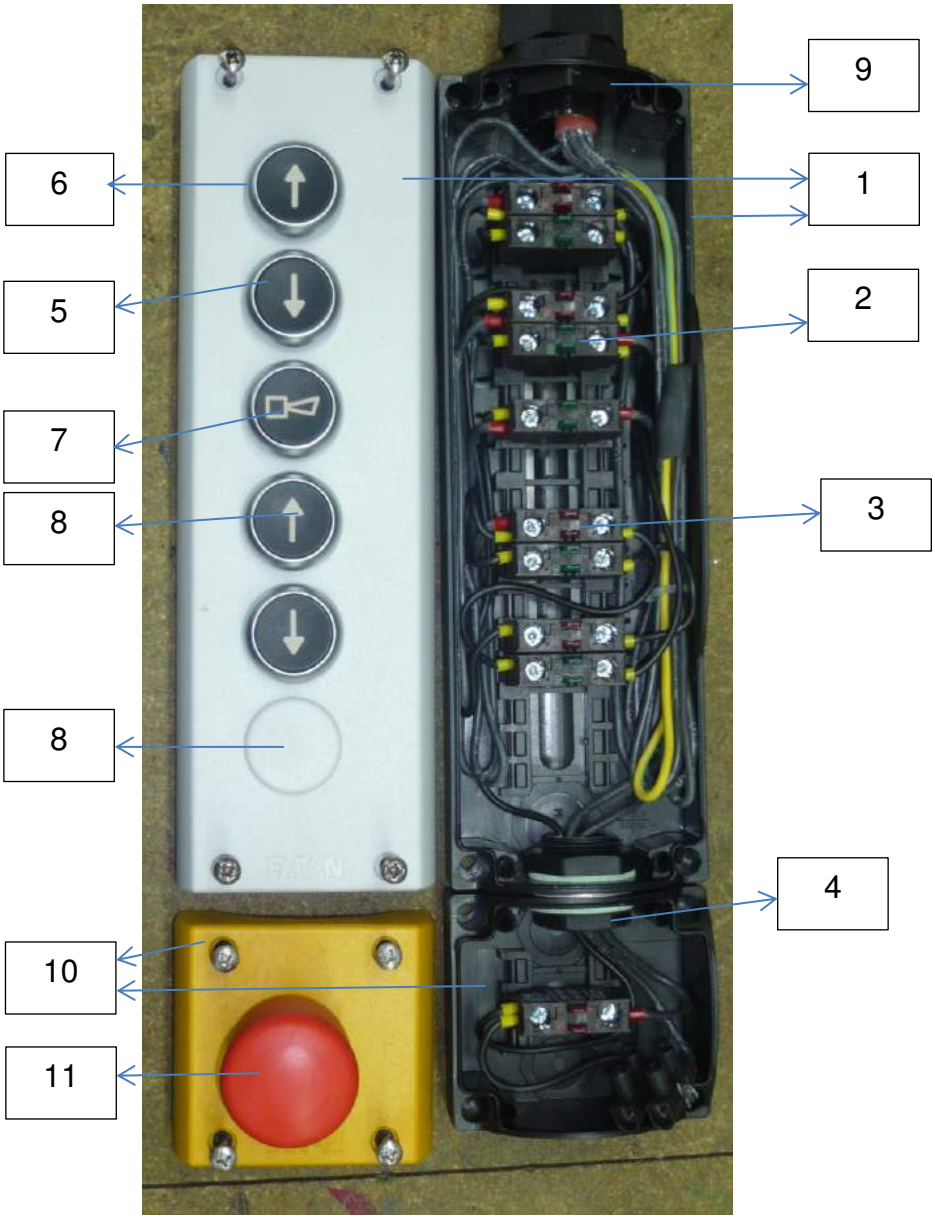
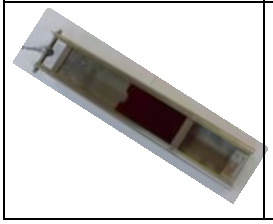


Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	1	1	Ja Yes oui	51.M22-I6	Aufbaugehäuse 6 Taster Mounting housing 6 button Logement 6 de bouton de montage
	2	4	Ja Yes oui	51.M22-KC10	Schliesser-Kontakt Boden Close contact bottom Contact fermé sol
	3	6	Ja Yes oui	51.M22-KC01	Öffner-Kontakt Boden Opener-contact bottom Ouvere contactez sol
	4	1	Ja Yes oui	99.M25-VBN	Gehäuse Verbindungsnippel Housing connecting nipple Mamelon de raccordement boîtier
	5	4	Ja Yes oui	51.M22-XD-S-X7	Tastenplatte mit Pfeil Key plate with arrow Tâtonner plaque avec flèche
	6	5	Ja Yes oui	51.M22-D-X	Drucktaste flach schwarz mit Gegenmutter Pushbutton flat black with locknut Bouton poussoir noir mat avec écrou
	7	1	Ja Yes Oui	51.M22-XD-S-X17	Tastenplatte mit Horn Symbol Key plate with horn icon Plaque avec de la corne icône

Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	8	1	Ja Yes oui	51.M22-B	Blindverschluss grau Blanking gray grau
	9	1	Ja Yes Oui	99.M20 6-12MM	Kabelverschraubung grau M20 G Cable screwing gray M20 G Câble baise gris M20 G
	10	1	Ja Yes oui	51.M22-IY1	Aufbaugehäuse gelb 1 Taster Mounting housing 1 button yellow Logement 1 bouton de montage jaune
	11	1	Ja Yes oui	51.M22-PV	Not-Aus-Pilztaster Emergency stop button Interrupteur arrêt d'urgence
	12	1	Ja Yes oui	09.00000810-1	Steuertafelsupport INOX Control Panel Support INOX Support de panneau INOX

Ersatzteilliste Bedienungstableau 2/ Spare part list Control panel 2/ Liste des pièces détachés panneau de contrôle 2

Art. 50.120902-EX

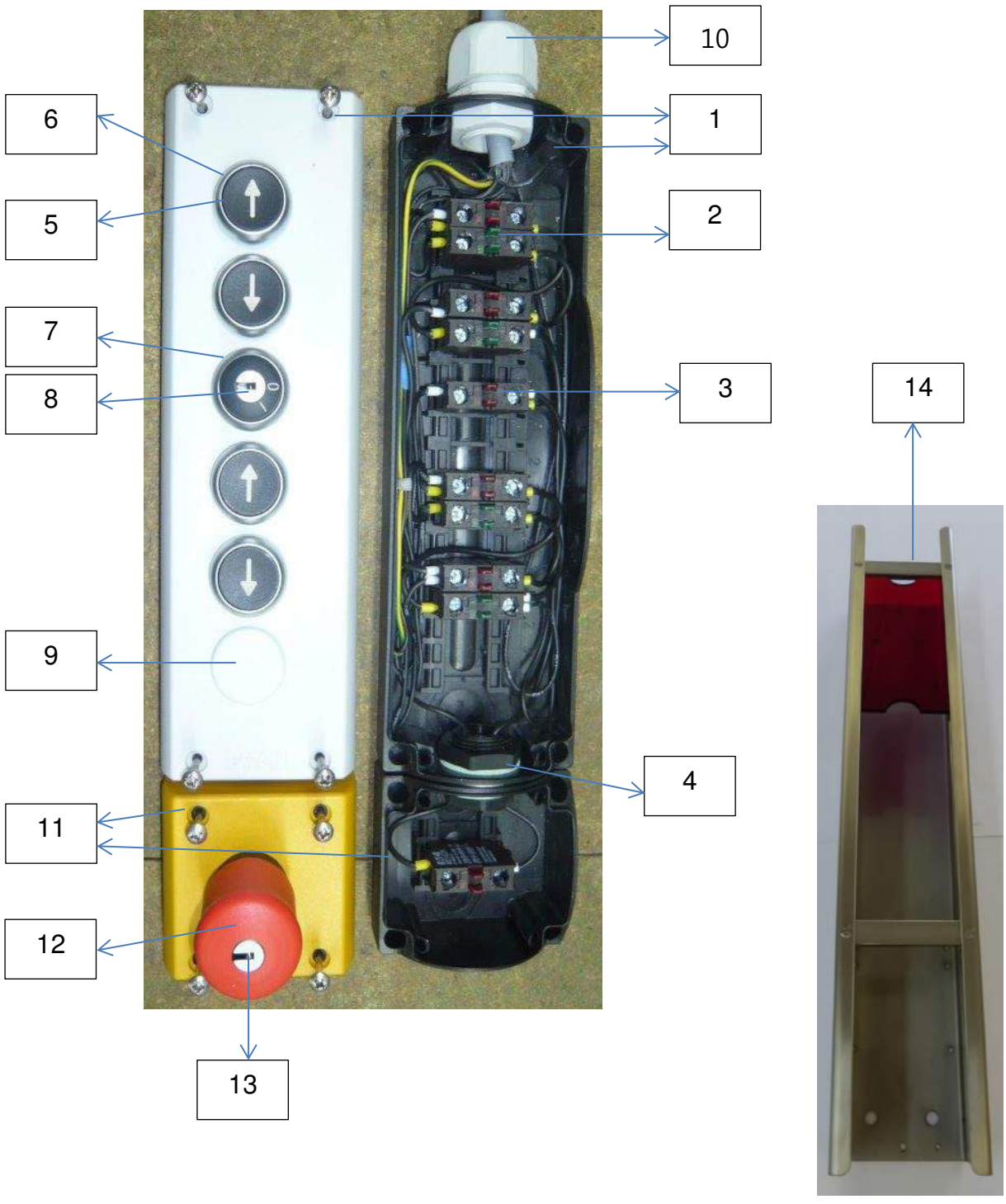
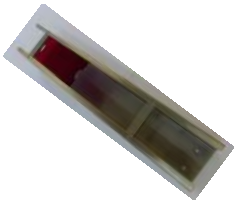


Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	1	1	Ja Yes oui	51.M22-I6	Aufbaugehäuse 6 Taster Mounting housing 6 button Logement 6 de bouton de montage
	2	4	Ja Yes oui	51.M22-KC10	Schliesser-Kontakt Boden Close contact Contact fermé
	3	6	Ja Yes oui	51.M22-KC01	Öffner-Kontakt Opener-contact Contact normalement fermé
	4	1	Ja Yes oui	99.M25-VBN	Gehäuse Verbindungsnippel housing connecting nipple mamelon de raccordement boîtier
	5	4	Ja Yes oui	51.M22-XD-S-X7	Tastenplatte mit Pfeil Key plate with arrow Plaque de clé avec la flèche
	6		Ja Yes oui	51.M22-D-X	Drucktaste flach schwarz mit Gegenmutter Pushbutton flat black with locknut Bouton poussoir noir mat avec écrou
	7	1	Ja Yes Oui	51.M22-WRS	Schlüsselschalter 2 Pos. 0 I rastend Key-operated actuator 2 Pos.0 I latching Interrupteur à clé avec crantage 2 Pos. 0 I

Bild picture photo	Pos. Item Pos.	Anzahl quantity quantité	Bestellbar Can be orderd Lievrable	Art. Nummer Art. number Objet nombre	Beschreibung Description Description
	8	1	Ja Yes oui	51.M22-ES-MS1	Ersatzschlüssel Spare key Clés de rechange
	9	1	Ja Yes oui	51.M22-B	Blindverschluss grau Blanking gray Obturation gris
	10	1	Ja Yes Oui	99.M20 6-12MM	Kabelverschraubung M20 G Cable screwing M20 G Câble baise M20 G
	11	1	Ja Yes oui	51.M22-IY1	Aufbaugehäuse gelb 1 Taster Mounting housing 1 button yellow Logement 1 bouton de montage jaune
	12	1	Ja Yes oui	51.M22-PVS	Not-Aus-Pilzschlüsseltaster Emergency stop mushroom key switch Interrupteur arrêt de clé de champignons d'urgence
	13	1	Ja Yes oui	51.M22-ES-MS1	Ersatzschlüssel Spare key Clés de rechange
	14	1	Ja Yes oui	09.00000810	Steuertafelsupport INOX Control Panel Support INOX Support de panneau INOX

Service sheet Nestlé winches (at least every 12 months)

Serial number:
Transmission number:

Service general works See Section 1, Chapter 1.10 etc.	**Date + initials**	**Date + initials**	**Date + initials**	**Date + initials**
Fastening of all pulleys and checking their bearings				
Check anchoring of the winch				
Check all screws for tight fit (transmission, reel bearings)				
Check cable attachment on the reel (*Section 1, page 6, Fig. 2)*				
Check cables for pressure points, squeezing, and kinks				

Transmission	**Date + initials**	**Date + initials**	**Date + initials**	**Date + initials**
Check platform overrun				
While the emergency gear is engaged, the brake release lever must be pulled with the wire cable until it stops.				
Readjust brake if necessary (*Section 1, Chap. 1.10.4)*				

Chain reduction gear and gear wheels	**Date + initials**	**Date + initials**	**Date + initials**	**Date + initials**
Check gear wheels about abrasive wear				
Check chain, clean if necessary, and spray with chain spray.				

safety bearing	**Date + initials**	**Date + initials**	**Date + initials**	**Date + initials**
Check for regular clicking of the roller bodies during descent according to Section 1, Chap.1.10.7 (Must never be opened and must not be treated with sprays, etc.)				

Every two years	**Date + initials**	**Date + initials**	**Date + initials**	**Date + initials**
Separate motor from the transmission and replace coupling inserts (ET no. 60.0105001017)				

Every five years	**Date + initials**	**Date + initials**	**Date + initials**	**Date + initials**
Clean the slip ring body of the spring cable reel of abrasion (suck out) see also Section 3, Chap. 5				