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HANDLEIDING

Scanclimber Personen-goederenlift 14/32

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0. PREFACE

SCANCLIMBER® SC Builder's Hoist

The purpose of this instruction manual is to give information on the hoist's characteristics and its proper use.

The manual contains useful instructions on the safe, proper and economical operation of the hoist. These instructions help avoid risks, cut down operating costs and increase the hoist's service life.

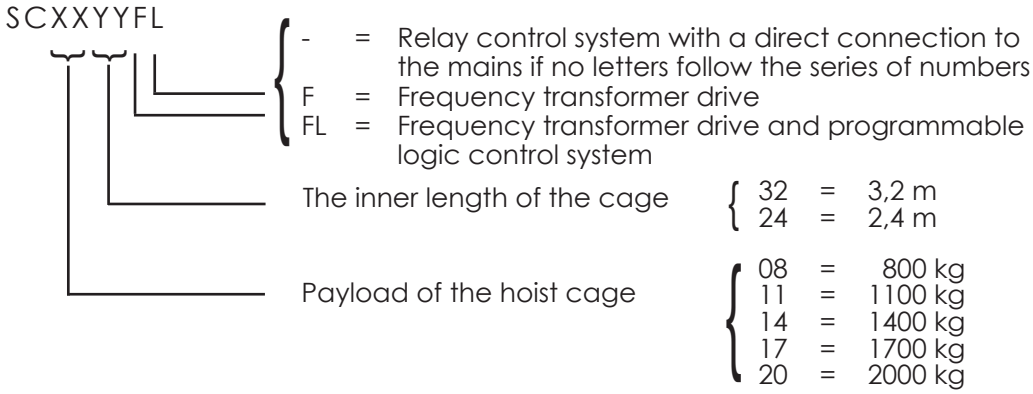
The instruction manual should always be available for those working with the hoist and it must not be removed from the hoist cage.

In addition to the requirements of this manual as well as those of the law and statutes, attention must be paid also to the national and the site's regulations on the safe and careful use of the hoist.

The manual covers the following hoists of the series **SCANCLIMBER**:

- SC0832
- SC0824
- SC2032-48
- SC1132
- SC1124
- SC1432
- SC1424
- SC1732
- SC1724

The identification on the hoist model includes the following information:



In this document the following way is used to refer to hoists of various series:

1. If the model identification is not specifically mentioned the issue covers all the hoists of the SC series in the chapter
2. If the model identification consists of only numbers, e.g. SC1432, the issue covers all the versions of SC1432 (SC1432, SC1432F, SC1432FL)
3. If the model is identified e.g. SC1432F and/or SC1432FL the issue covers only this particular model

1. GENERAL INFORMATION

1. GENERAL INFORMATION

1.1 Technical Data

1.1.1 Capacity

Capacity	SC2032 -48	SC1732 SC1724	SC1432 SC1424	SC1132 SC1124	SC0832 SC0824
Payload (kg)	2000 kg or 24 persons	1700 kg or 21 persons	1400 kg or 17 persons	1100 kg or 12 persons	800 kg or 10 persons
Speed (m/min)	36			21	36
Max.lifting height, with anchored mast (m)	200				
Max. lifting height, free standing (m)	4,5 m	max. 6.0 m depending on the means of foundation			
Distance between anchors (m)	9 m	max. 12 m depending on the type of anchoring			
Free mast after topmost anchoring (m)	4,5 m	max. 6.0 m depending on the type of anchoring			
Maximum wind speed (m/s) - during erection and dismantling - during operation - when the cage is in ground station	12,5 20,0 42,0				
Operation temperature (C˚)	-25..+40				
Noise level [dB(A)]	< 85				

1.1.2 Weights and Dimensions 3,2m / Single

Weights and dimensions / SINGLE	SC2032 -48	SC1732	SC1432	SC1132	SC0832
Cage floor height from the ground with the hoist at the ground station, min. (mm)	395	395	395	395	395
Dimensions of the lifting cage (internal)					
length (mm)	3200	3200	3200	3200	3200
width (mm)	1390	1390	1390	1390	1390
height (mm)	2055	2055	2055	2055	2055
cage weight (kg)	1242	1242	1230	1230	1230
Dimensions of the cage door opening					
width (mm)	1390	1390	1390	1390	1390
height (mm)	2000	2000	2000	2000	2000
Dimensions of the mast section					
square mast (mm)	539.5 (598) x539.5	539.5 (598) x539.5	539.5 (598) x539.5	539.5 (598) x539.5	539.5 (598) x539.5
height (mm)	1508	1508	1508	1508	1508
mounting bolts	M18x160-8.8	M18x160-8.8	M18x160-8.8	M18x160-8.8	M18x160-8.8
gear rack module (mm)	6	6	6	6	6
Weight of the mast section with one gear rack (kg)	75	75	75	75	75
Dimensions of the ground station					
length (mm)	3800	3800	3800	3800	3800
width (mm)	2450	2450	2450	2450	2450
height (mm)	2900	2900	2900	2900	2900
weight (kg)	1260	1260	1260	1260	1260
Dimensions of the top drive unit weight (kg)	485	485	485	370	370

1.1.3 Weights and Dimensions 3,2m / Twin

Weights and dimensions / TWIN	SC2032 -48	SC1732	SC1432	SC1132	SC0832
Cage floor height from the ground with the hoist at the ground station,min. (mm)	395	395	395	395	395
Dimensions of the lifting cage (internal)					
length (mm)	3200	3200	3200	3200	3200
width (mm)	1390	1390	1390	1390	1390
height (mm)	2055	2055	2055	2055	2055
cage weight (kg)	1242		1230		
Dimensions of the cage door opening					
width (mm)	1390	1390	1390	1390	1390
height (mm)	2000	2000	2000	2000	2000
Dimensions of the mast section					
square mast (mm)	539.5 (638) x539.5	539.5 (638) x539.5	539.5 (638) x539.5	539.5 (638) x539.5	539.5 (638) x539.5
height (mm)	1508	1508	1508	1508	1508
mounting bolts	M18x160-8.8	M18x160-8.8	M18x160-8.8	M18x160-8.8	M18x160-8.8
gear rack module (mm)	6	6	6	6	6
Weight of the mast section with two racks (kg)	91	91	91	91	91
Dimensions of the ground station					
length (mm)	3800	3800	3800	3800	3800
width (mm)	4110	4110	4110	4110	4110
height (mm)	2900	2900	2900	2900	2900
weight (kg)	2500				
Dimensions of the top drive unit weight (kg)			485		

1.1.4 Weights and Dimensions 2,4m / Single

Weights and dimensions / SINGLE	SC1724	SC1424	SC1124	SC0824
Cage floor height from the ground with the hoist at the ground station, min. (mm)	395	395	395	395
Dimensions of the lifting cage (internal)				
length (mm)	2400	2400	2400	2400
width (mm)	1390	1390	1390	1390
height (mm)	2055	2055	2055	2055
cage weight (kg)	1152	1140	1140	1140
Dimensions of the cage door opening				
width (mm)	1390	1390	1390	1390
height (mm)	2000	2000	2000	2000
Dimensions of the mast section				
square mast (mm)	539.5 (598) x539.5	539.5 (598) x539.5	539.5 (598) x539.5	539.5 (598) x539.5
height (mm)	1508	1508	1508	1508
mounting bolts	M18x160-8.8	M18x160-8.8	M18x160-8.8	M18x160-8.8
gear rack module (mm)	6	6	6	6
Weight of the mast section with one gear rack (kg)	75	75	75	75
Dimensions of the ground station				
length (mm)	3050	3050	3050	3050
width (mm)	2450	2450	2450	2450
height (mm)	2900	2900	2900	2900
weight (kg)	1170	1170	1170	1170
Dimensions of the top drive unit				
weight (kg)	485	485	370	370

1.1.5 Weights and Dimensions 2,4m / Twin

Weights and dimensions / TWIN	SC1724	SC1424	SC1124	SC0824
Cage floor height from the ground with the hoist at the ground station,min. (mm)	395	395	395	395
Dimensions of the lifting cage (internal)				
length (mm)	2400	2400	2400	2400
width (mm)	1390	1390	1390	1390
height (mm)	2055	2055	2055	2055
cage weight (kg)		1140		
Dimensions of the cage door opening				
width (mm)	1390	1390	1390	1390
height (mm)	2000	2000	2000	2000
Dimensions of the mast section				
square mast (mm)	539.5 (638) x539.5	539.5 (638) x539.5	539.5 (638) x539.5	539.5 (638) x539.5
height (mm)	1508	1508	1508	1508
mounting bolts	M18x160-8.8	M18x160-8.8	M18x160-8.8	M18x160-8.8
gear rack module (mm)	6	6	6	6
Weight of the mast section with two racks (kg)	91	91	91	91
Dimensions of the ground station				
length (mm)	3050	3050	3050	3050
width (mm)	4110	4110	4110	4110
height (mm)	2900	2900	2900	2900
weight (kg)				
Dimensions of the top drive unit				
weight (kg)		485		

1.1.6 Electrical Equipment

Electrical data / cage	SC2032 -48	SC17XX	SC14XX	SC11XX	SC08XX
Power - lifting motors (kW)	2 x 11	2 x 11	2 x 9,2	2 x 7,5	1 x 9,2
Supply voltage/frequency (V/Hz)	400/50	400/50	400/50	400/50	400/50
Control voltage/frequency (V/Hz)	48/50, 24 DC	48/50, 24 DC	48/50, 24 DC	48/50, 24 DC	48/50, 24 DC
Max. starting current (A)	100	250	226	180	110
Power consumption (kW)	23	23	19	16	10
Size and type of the main fuse (A)	63 / slow	63 / slow	63 / slow	63 / slow	32/ slow
Socket of hand tools, voltage/current (V/ A)	230/10	230/10	230/10	230/10	230/10

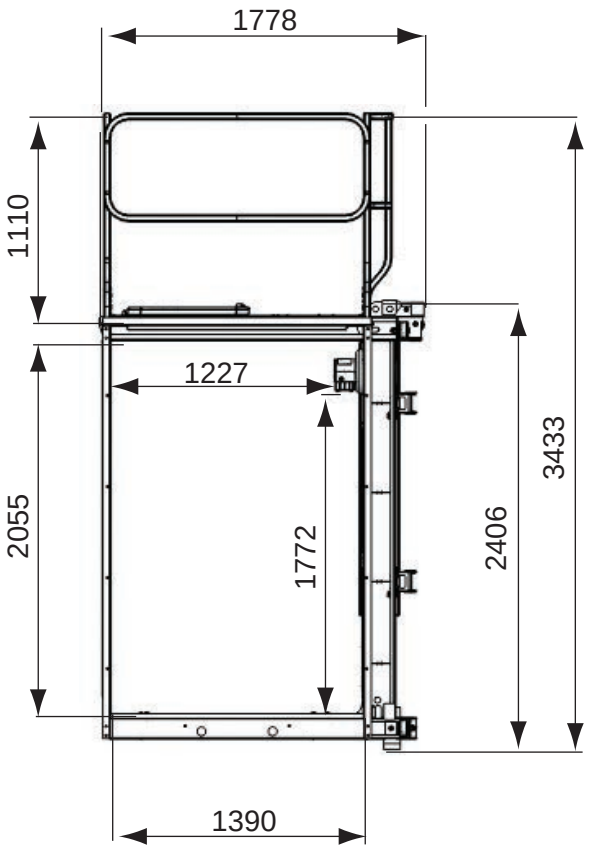
1.1.7 Safety Equipment

Safety equipment	SC2032 -48	SC17XX	SC14XX	SC11XX	SC08XX
Mechanical safety brake (UC-3.0)	X	X	X	X	X
Emergency lowering system	X	X	X	X	X
Safety railing (1,10 m) and kick board on the roof	X	X	X	X	X
Final limit switch on the top and bottom ends of the mast	X	X	X	X	X
Functional limit switches on the top and bottomends of the mast	X	X	X	X	X
Emergency stop buttons at the ground station, in the cage and on the roof	X	X	X	X	X
Overload detection device	X	X	X	X	X
Residual current device	X	X	X	X	X
Landing door/gate closed, limit switch	X	X	X	X	X
Landing door locking device in closed position, limit switch	X	X	X	X	X
Cage door closed limit switches	X	X	X	X	X
Cage door locking device in closed position, limit switch	X	X	X	X	X
Service key switch on the roof	X	X	X	X	X
Roof hatch closed limit switch	X	X	X	X	X
Lockable service door at the ground station	X	X	X	X	X
Buffers at the ground station under the cage	X	X	X	X	X
Brakes - spring-loaded disc brake	X	X	X	X	X
Brake torque (Nm)	250	170	150	120	120

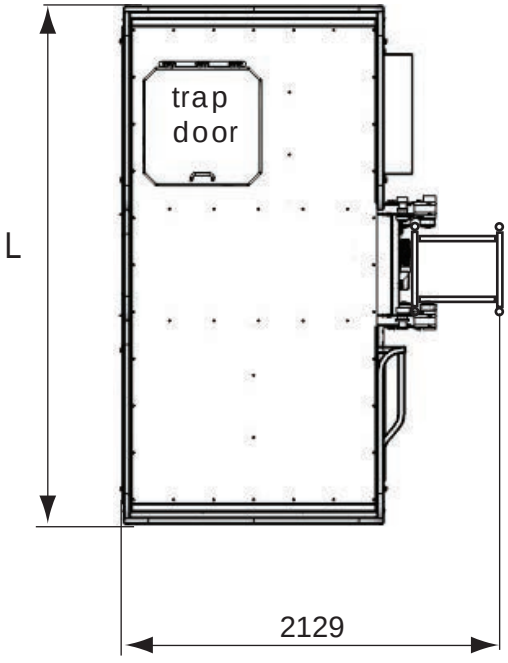
1.1.8 Main components and dimensions

CAGE

Hoist	Weight:
XX24	598 kg
XX32	691 kg



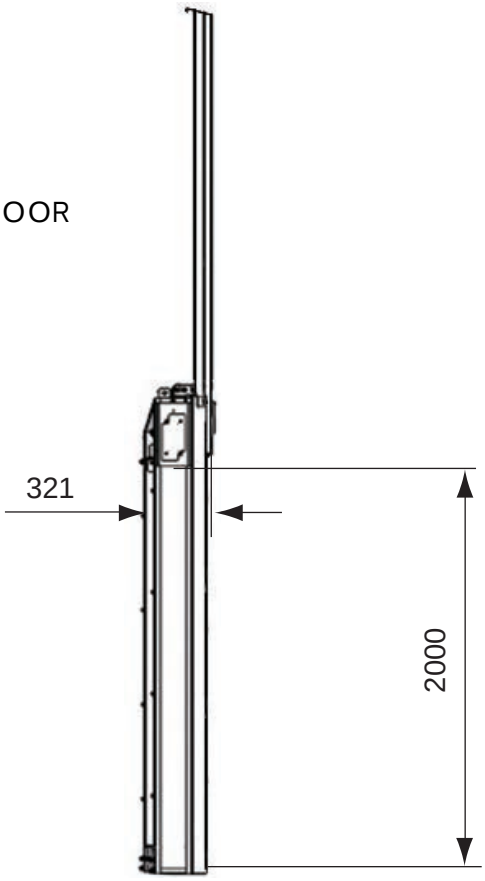
Hoist	L
XX24	1974 mm
XX32	2774 mm



DOORS

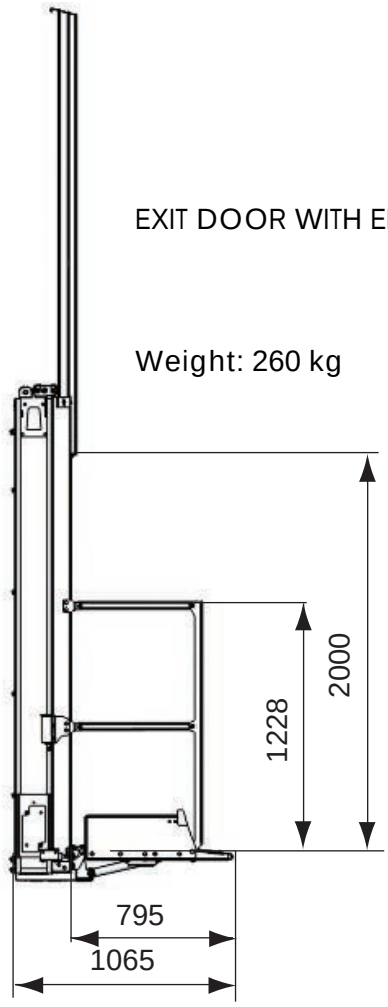
VERTICAL FULL HEIGHT ENTRANCE (EXIT) DOOR

Weight: 151 kg

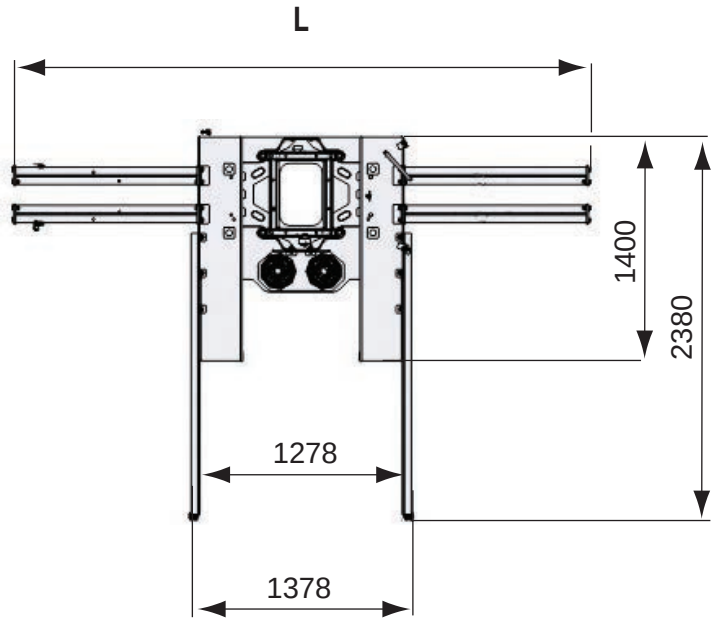


EXIT DOOR WITH ELECTRIC-HYDRAULIC OPERATED LOAD RAMP

Weight: 260 kg

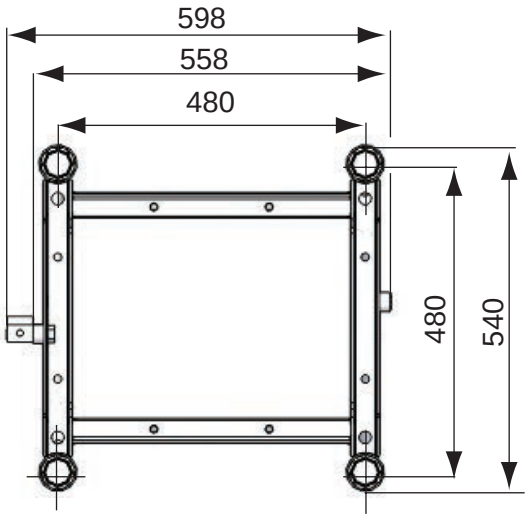


BASE FRAME



Cage length	L
XX24	2800 mm
XX32	3594 mm

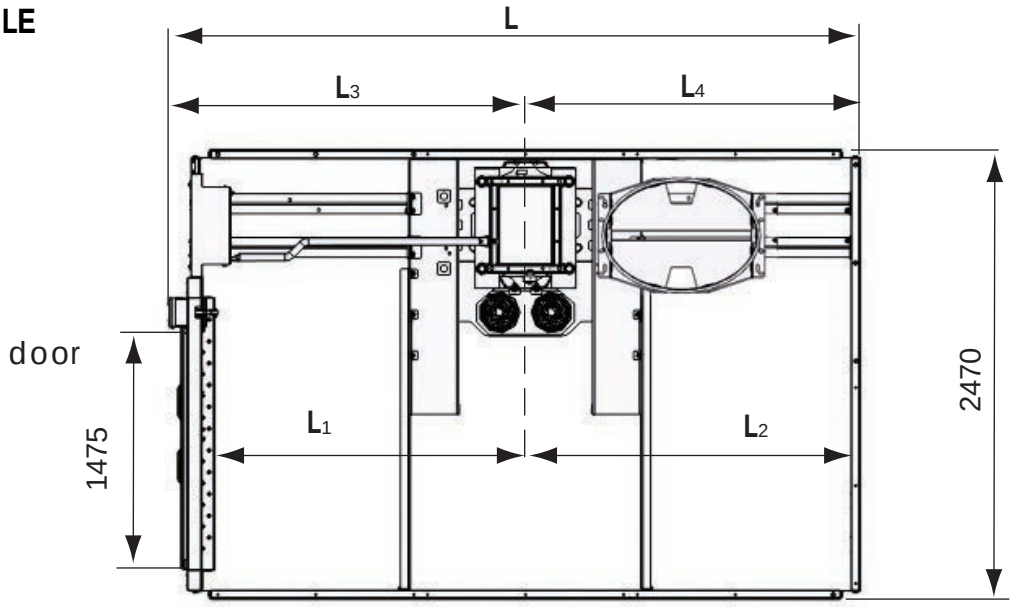
MAST SECTION



Height: 1508 mm
Weight: 74 kg/ 88 kg (twin)

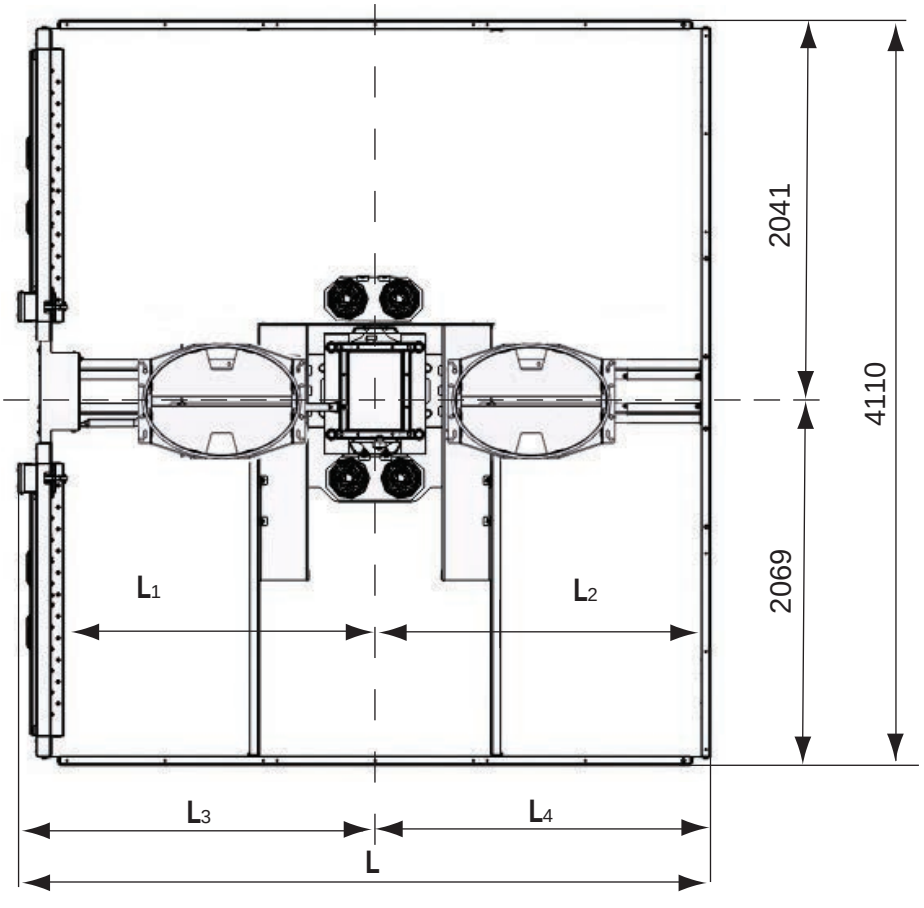
GROUND ENCLOSURE FOR SINGLE AND TWIN CAGES

SINGLE

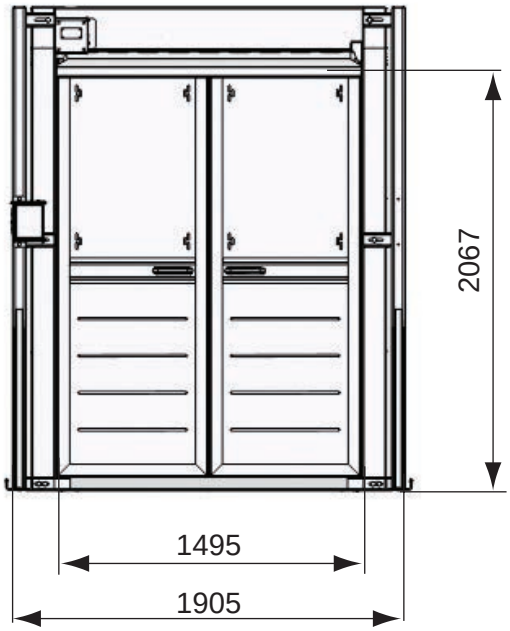


Hoist	L	L1	L2	L3	L4
XX24	3048 mm	1315 mm	1398 mm	1603 mm	1443 mm
XX32	3846 mm	1714 mm	1797 mm	2022 mm	1842 mm

TWIN

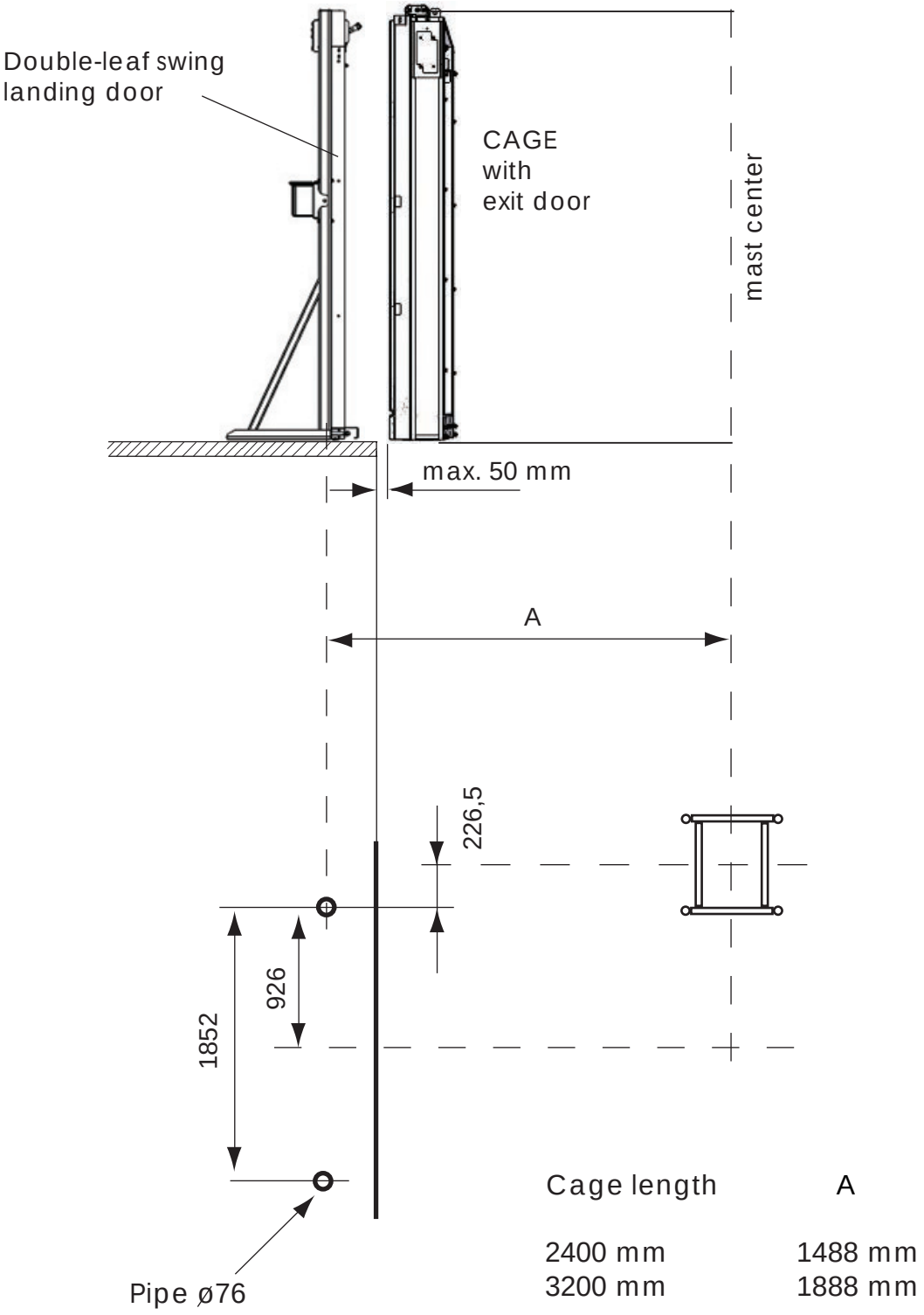


DOUBLE-LEAF SWING LANDING DOOR
used without pipeline



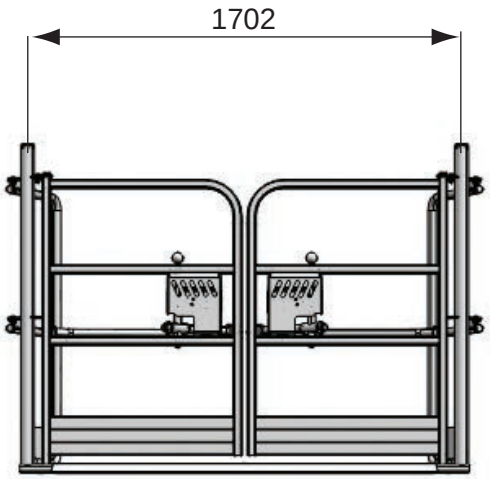
Weight: 243 kg

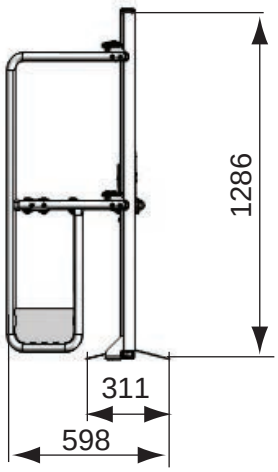
LOCATION OF LANDING DOOR

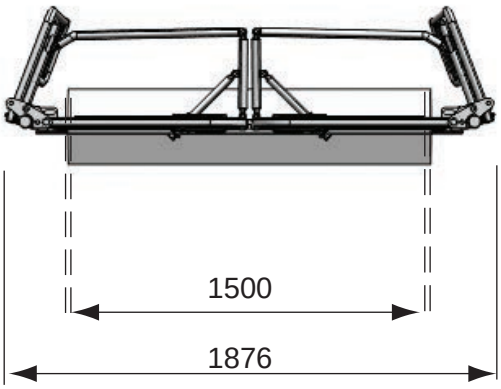


Cage length	A
2400 mm	1488 mm
3200 mm	1888 mm

DOUBLE-LEAF SWING LANDING GATE

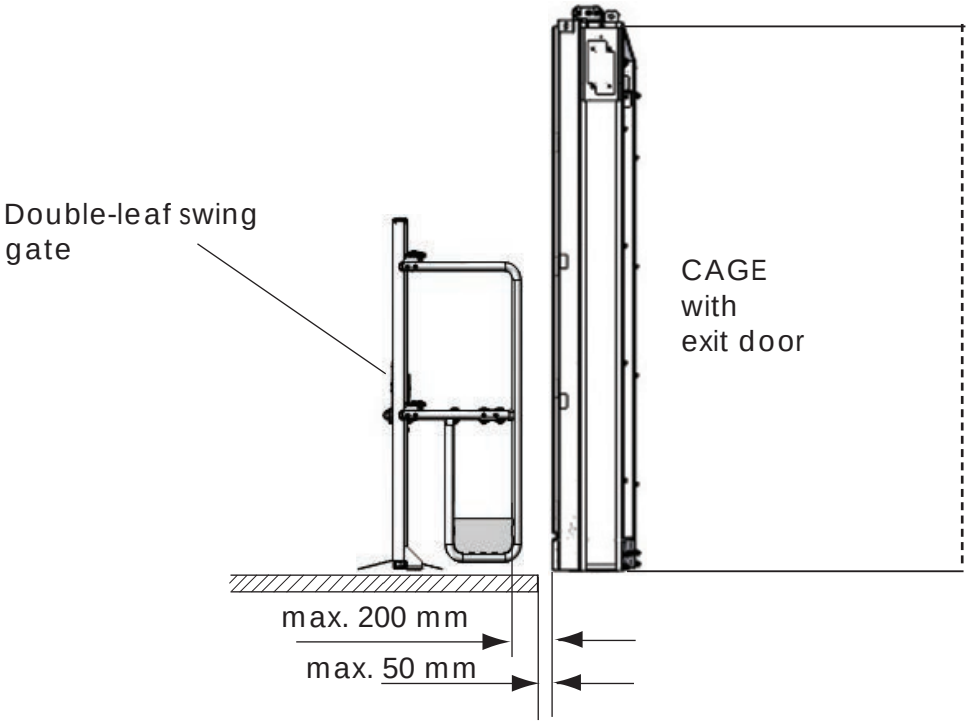


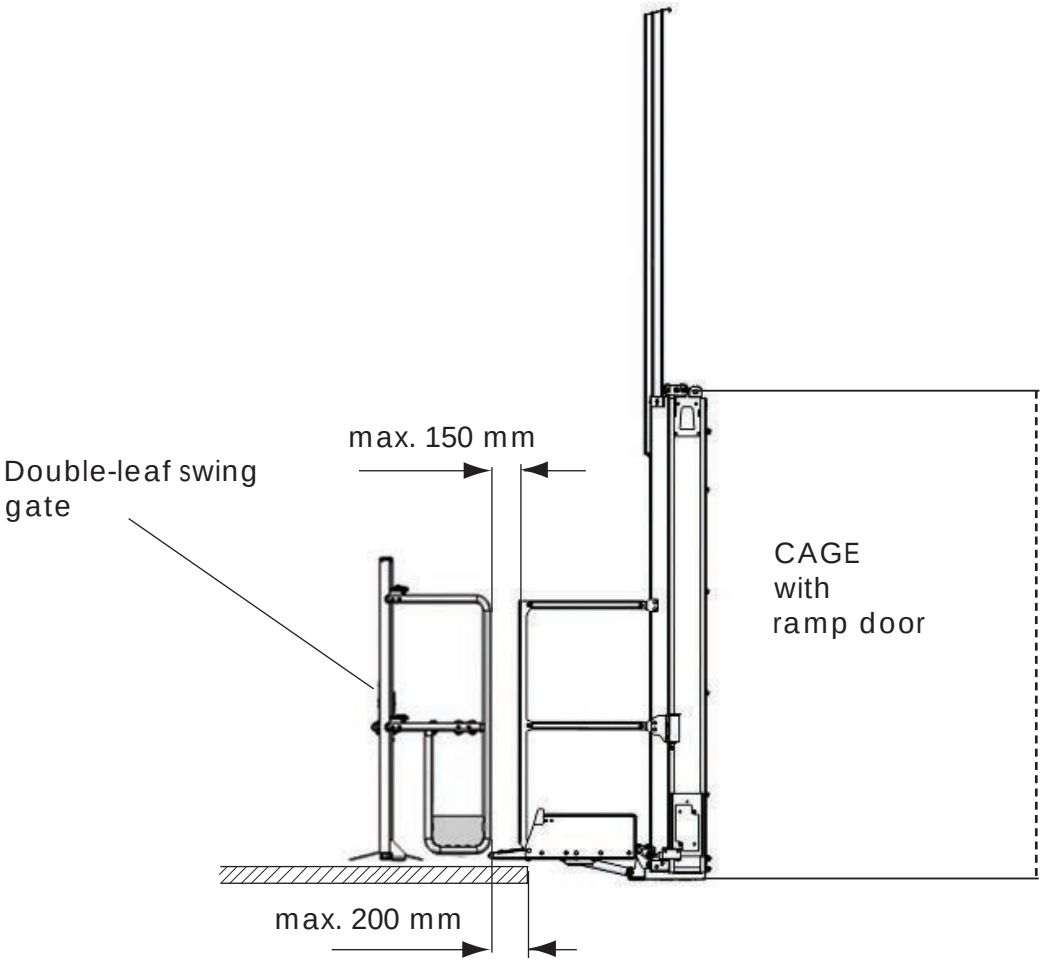




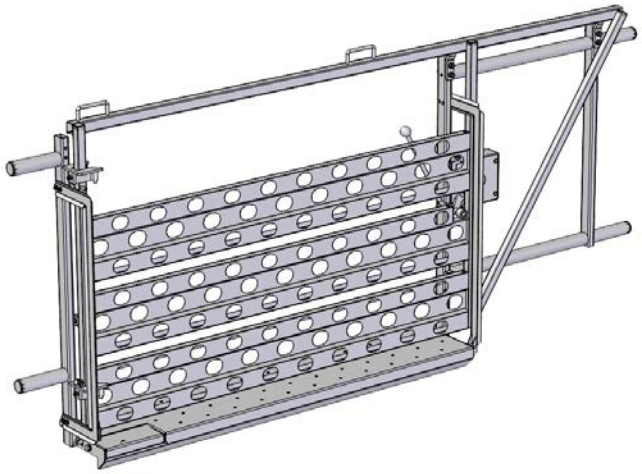
Weight: 71 kg

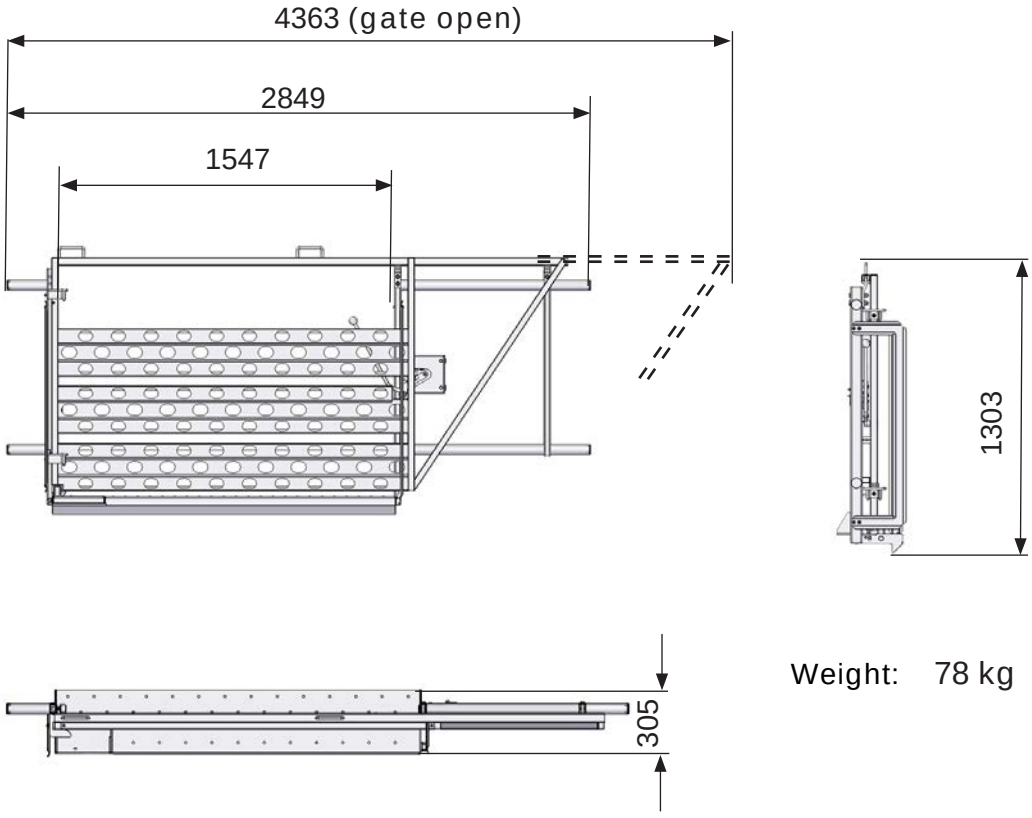
LOCATION OF DOUBLE-LEAF SWING GATE





HORIZONTAL SLIDING LANDING GATE

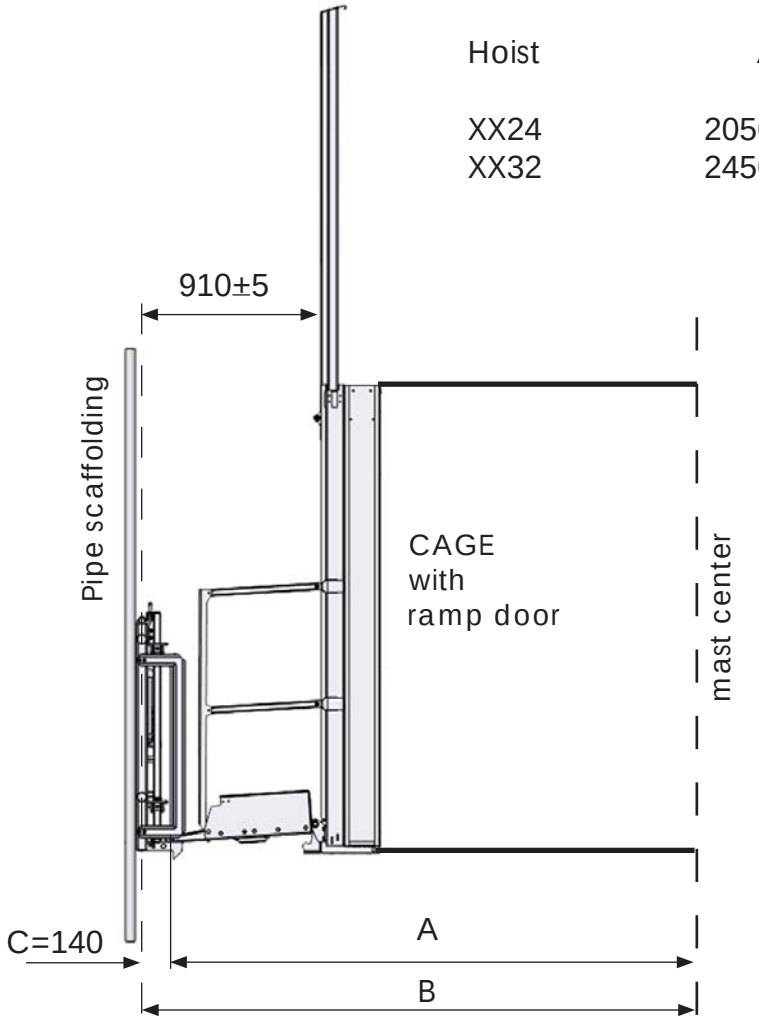


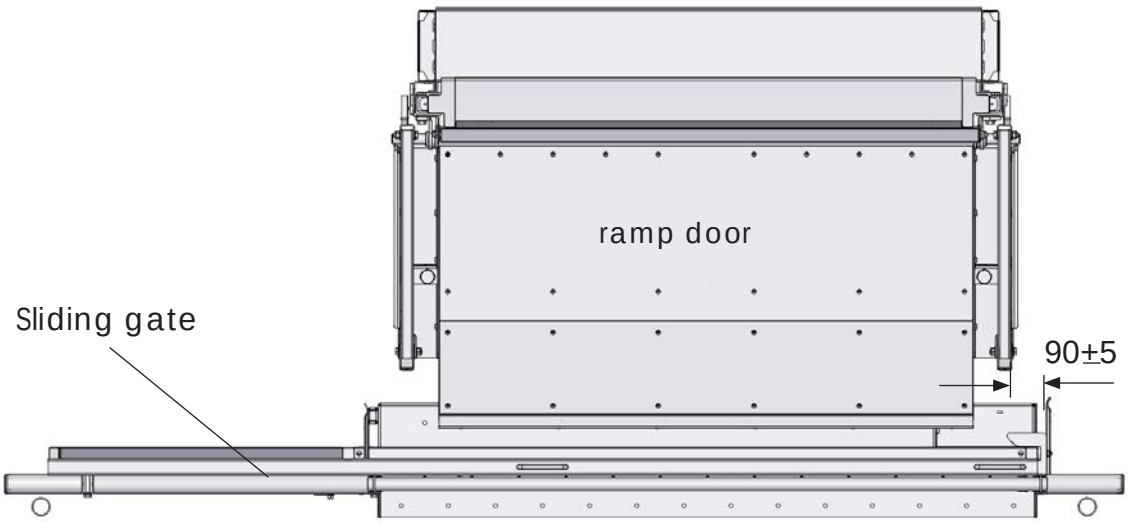


Weight: 78 kg

LOCATION OF SLIDING GATE

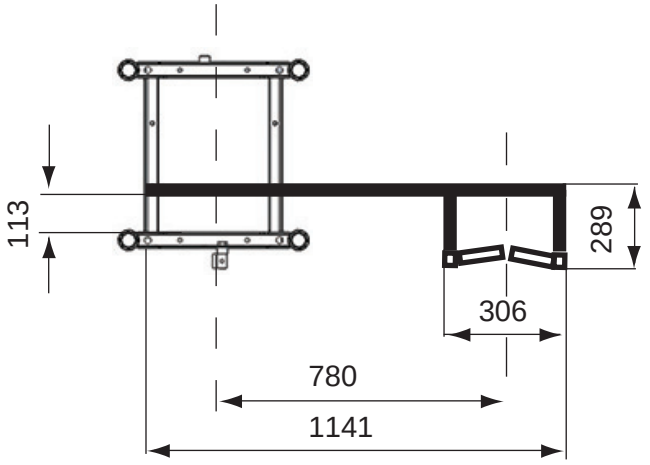
Hoist	A	B
XX24	2050 mm	2190 mm
XX32	2450 mm	2590 mm





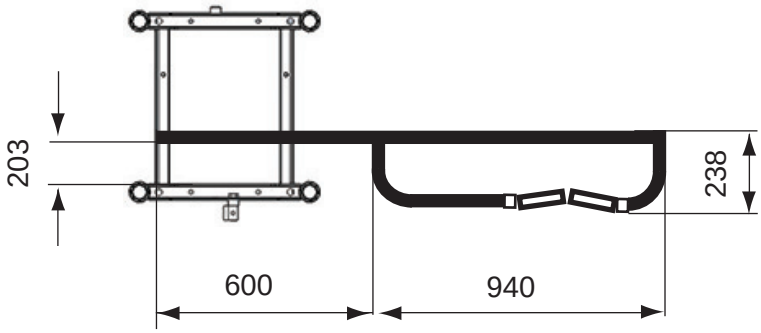
CABLE GUIDE

Weight: 4,26 kg

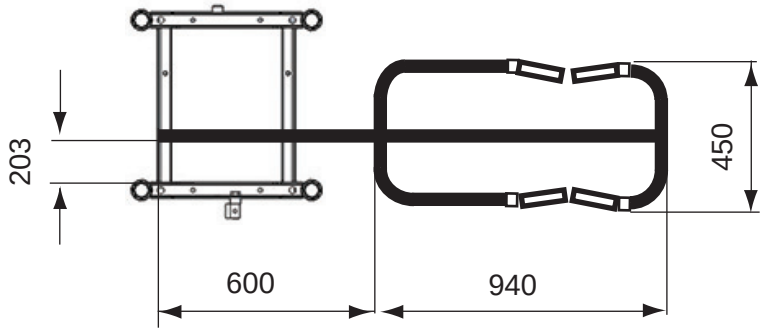


CABLE GUIDES FOR TROLLEY

Single weight: 8 kg



Twin weight: 11 kg



2. SAFETY INSTRUCTIONS

2. SAFETY INSTRUCTIONS

2.1 General Information

Safety Instructions and Symbols
In this instruction manual the following note is used to emphasize the importance of the matter.

Special information, instructions and warnings to avoid personal injuries or material damages.

The hoist is designed and manufactured in accordance with the existing standards and safety regulations. Nevertheless, the operator or third parties may be injured or killed, or the hoist may be damaged or cause other material damage, if the hoist is used carelessly or against the instructions.

It is allowed to use the hoist only according to the instructions and with the hoist in perfect technical condition. Also the operator must be informed about the risks involved in the operation of the hoist. The defects and faults weakening the safety should immediately be repaired.

The builder's hoist is meant for transportation of persons and materials only inside the hoisting cage. As an exception are permitted the hoist's mounting, dismounting and maintenance work which are allowed to be carried out only by persons well familiar with the hoist and trained for these tasks.

The proper use of the hoist requires good knowledge and understanding of the operation and maintenance instructions as well as the strict following of these instructions.

2.2 Before the Operation

Read the instructions and warning signs thoroughly before operating the hoist.

Only an inspected hoist which is in perfect condition is allowed to be adopted to use.

The hoist must be checked once a day before the beginning of the shift in order to make sure there are no defects. The possible defects must immediately be reported to the person in charge of the hoist's operation, the site's foreman or other person in charge of the occupational safety. If necessary, the hoist must be withdrawn from use until the fault or the defect is repaired

Always before the operation of the hoist make sure that no-one's safety is at risk!

The operation of the hoist is allowed only when every protection and safety equipment is installed and in perfect condition.

All operations and working methods against the instructions and involving a risk of accident are strictly forbidden!

Take care of your personal safety! Use the helmet and protection shoes!

See that the hoist is sufficiently illuminated when working with it. See that all passages and landings are sufficiently illuminated.

Tools and other movables should be kept in their proper places.

The passages must be kept free! The steps, railings, bridges and ladders are to be kept clean of dirt, snow and ice!

2.3 Operation

The persons working with the hoist must be trained to use it.

The transportation of load or persons on the roof of the hoisting cage is forbidden! It is also forbidden to let the burden hang from the cage.

The hoist must not be overloaded. Remember the maximum load of the cage in kilos or the maximum number of persons permitted in the cage.

Should malfunction occur the hoist must immediately be stopped and withdrawn from the use until the fault or defect is repaired. The malfunction must immediately be reported to the person in charge of the hoist's operation, the site's foreman or other person in charge of the occupational safety.

When the wind velocity is over 20 m/s the hoist's operation must be stopped and the hoist driven to the ground station.

After finishing the work with the hoist it must be locked against undue and unauthorized use.

2.4 Mounting and Dismounting

During the mounting and dismounting operations the working site must be secured and protected with a fence and warning signs.

During the mounting and dismounting the wind velocity should not exceed 12,5 m/s.

For the mounting and dismounting operations carried out high up use a proper personnel lifting device especially designed for this purpose or equipment otherwise safe and suitable for this task. The hoist parts must not be used as ascending supports.

Always use safety harness during the mounting and dismounting operations. There is always the risk of falling down.

Carefully follow the instructions on foundation and supporting of the hoist given in the installation instructions.

Separate parts and larger structural elements must be fastened to the cage during the work. Make sure that they do not cause any danger. Use only appropriate loading device and load fastening device which are in good condition.

If the surface of wind exposed area is increased e.g when mounting a billboard to hoist cage, the wind load has to be taken into consideration.

Wind speed may increase near surrounding of tall buildings.

The electrical installations are allowed to be carried out only by qualified electricians.

The hoist shall be protected against lightning.

When working on the cage roof and while the hoist is moving do not hang down or lean out beyond the railings. Especially during the upward movement there is a great risk of collision or squeezing against the cage and/ or the landing structures.

Carry out one working phase at a time carefully and always finish it before starting the next phase or having a break.

2.5 Service and Maintenance

Keep the instruction and warning signs and stickers undamaged and readable. If necessary change them!

Only qualified persons well familiar with the hoist are allowed to carry out service and maintenance operations.

Secure and protect the service area with fences and warning signs when necessary for the occupational safety.

It is not permitted to change the hoist's constructions, to add any supplements or make other rearrangements without the permission of the manufacturer or the importer. This concerns both the design and the installation of the safety equipment as well as the welding of the constructions including repair welding.

All spare parts must be of equal quality with the original spare parts and approved by the manufacturer or the importer of the hoist. The user is obliged to check the quality of the spare part prior to its installation.

If during the service or repair operations any device or its part connected to the safety system is removed, it must be reinstalled and tested immediately after finishing the service and repair operations!

Operations connected with the electrical equipment are allowed to carry out only by qualified professionals in electricity well familiar with the equipment's operation.

Prior to electrical or other service operations shut off the voltage and secure the de-energization by locking the main switch. Put out a warning sign telling that the hoist is under repair.

Follow the service instructions and service intervals given in the hoist's instruction manual.

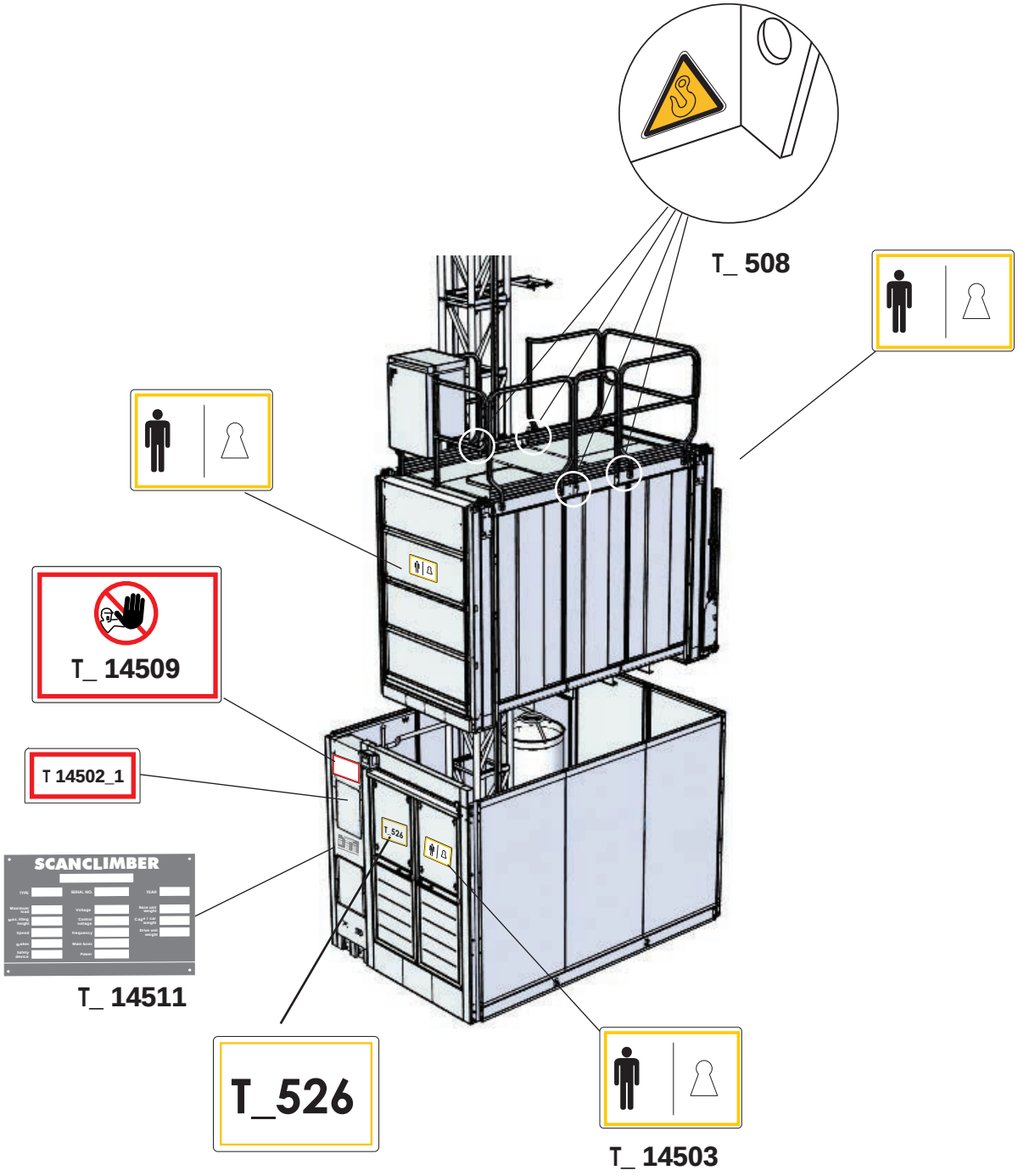
The hoist is to be inspected in the intervals prescribed by the law and local regulations. Keep records on the inspections.

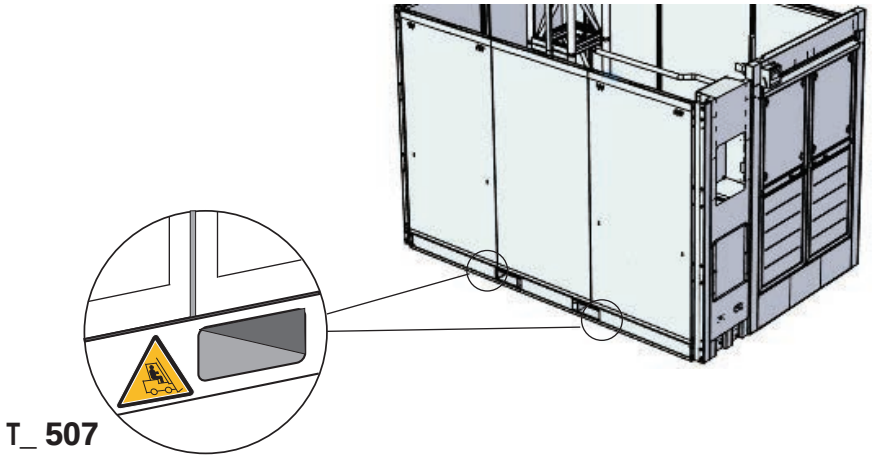
2.6 Instruction and Warning Decals

The number of decals in the table below are related to single cage hoists. If it is question about double cage hoists, the decal numbers in table are multiplied with two.

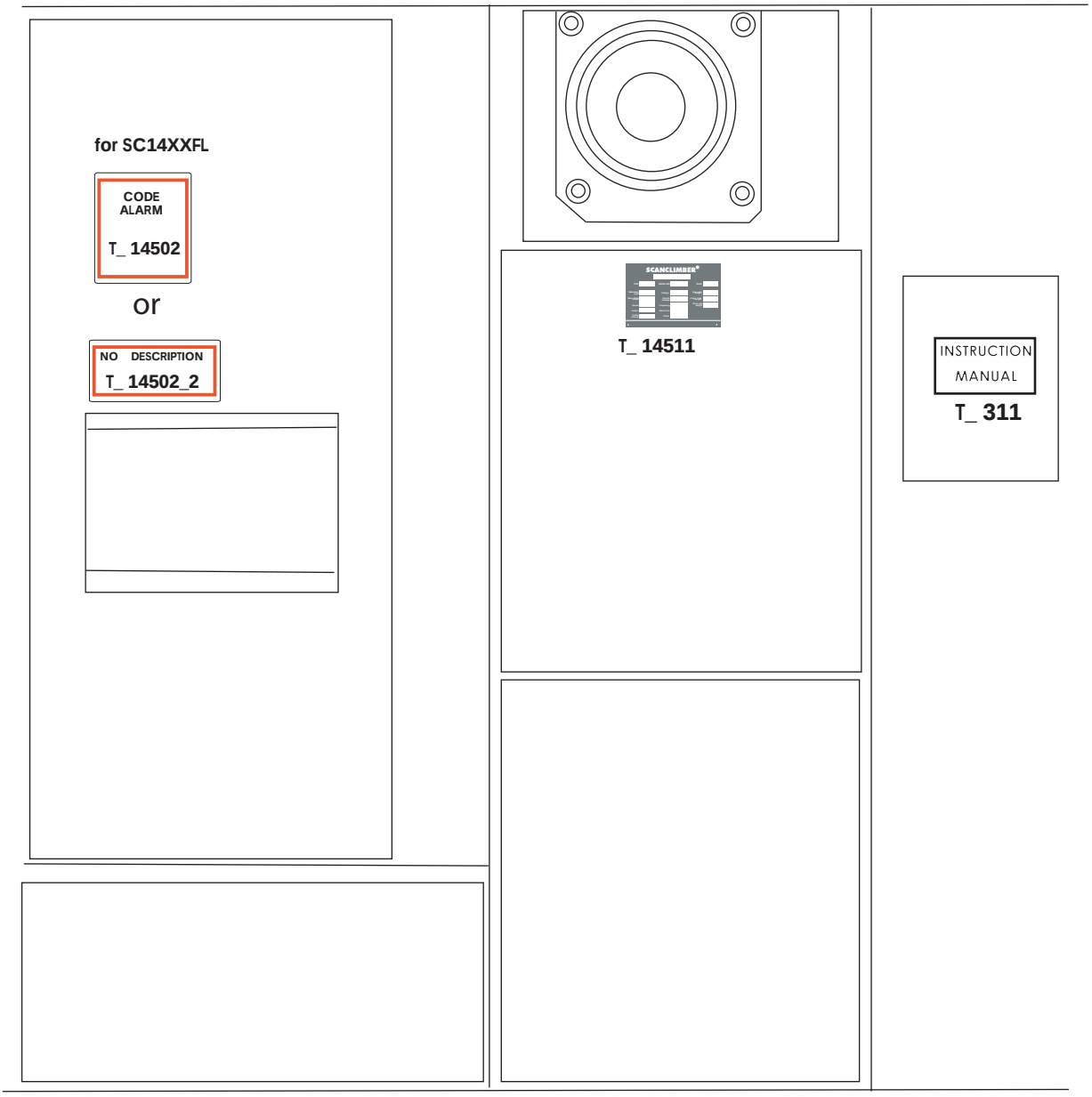
Code	Description	pcs / hoist	SC1432 SC1424				SC1132 SC1124				SC0832 SC0824				SC2032-48			
			-	F	L	FL	-	F	L	FL	-	F	L	FL	-	F	L	FL
T_500 1/2	Safety instructions	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T_500 2/2	Safety instructions	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T_501 1/2	User instructions	1			X	X			X	X			X	X			X	X
T_501 2/2	User instructions	1			X	X			X	X			X	X			X	X
T_15501 1/2	User instructions	1	X	X			X	X			X	X			X	X		
T_15501 2/2	User instructions	1	X	X			X	X			X	X			X	X		
T_14502	Alarm codes	1				X				X				X				X
T_14502_1	Alarm codes	1	X	X			X	X			X	X			X	X		
T_14502_2	Alarm codes	1	X	X			X	X			X	X			X	X		

Code	Description	pcs / hoist	SC1432 SC1424				SC1132 SC1124				SC0832 SC0824				SC2032-48			
			-	F	L	FL	-	F	L	FL	-	F	L	FL	-	F	L	FL
T_14503	Loads	4	X	X	X	X												
T_11503	Loads	4					X	X	X	X								
T_08503	Loads	4									X	X	X	X				
Tx503	Loads	4													X	X	X	X
T_504	Read instructions	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T_505	Max wind Speed	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tx506	Roof warnings	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tx507	Fork lift	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tx508	Hook	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T_510 PG104112	Mast compati-bility	1 / mast sec-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T_14511	Machine plate	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
T_14512	Assembly instructions	1	X	X	X	X	X	X	X	X	X	X	X	X				
Ta512_48	Assembly instructions	1													X	X	X	X
T_526	Attention	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

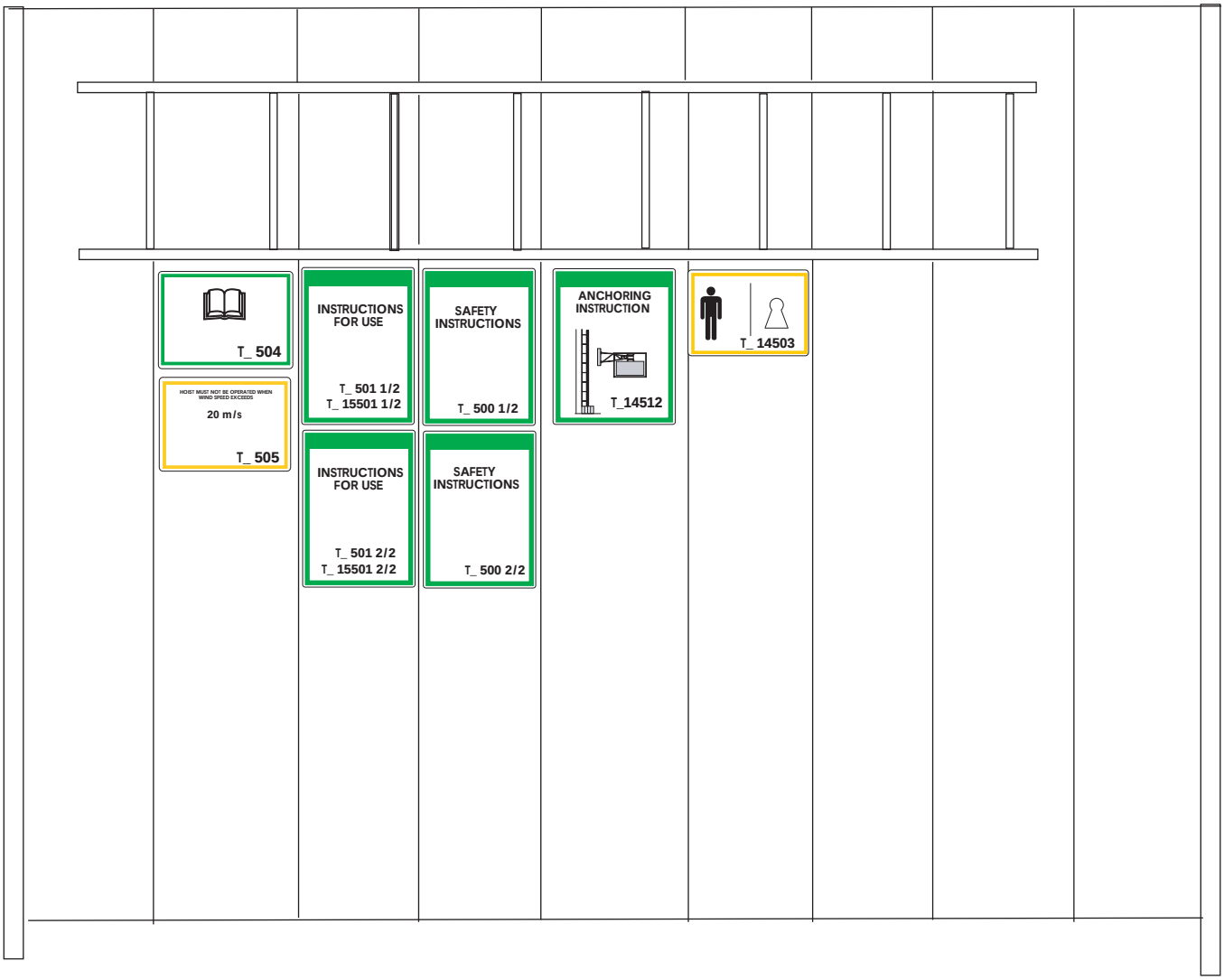

T_ 508
T_ 14509
T 14502_1
SCANCLIMBER
T_ 14511
T_526
T_ 14503

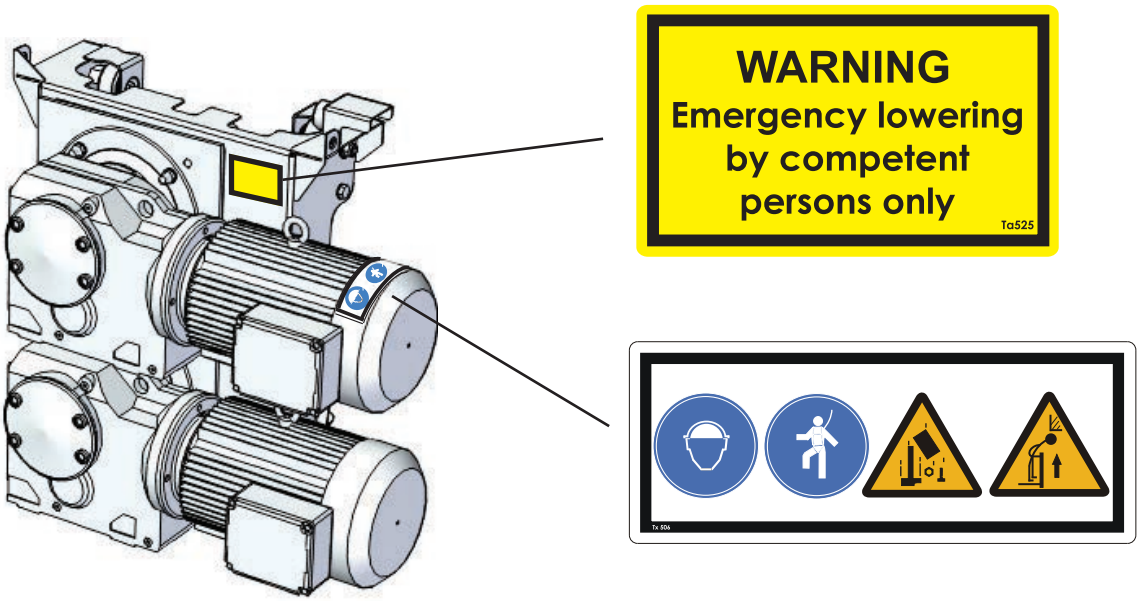

T_ 507

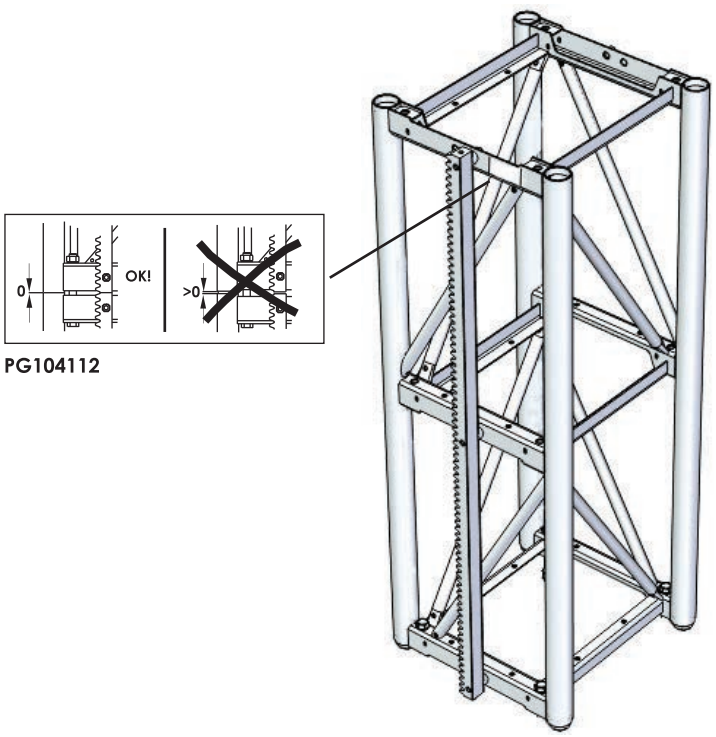
IN THE CAGE


for SC14XXFL
CODE
ALARM
T_ 14502
or
NO DESCRIPTION
T_ 14502_2
T_ 14511
INSTRUCTION
MANUAL
T_ 311

IN THE CAGE


T_ 504
HOIST MUST NOT BE OPERATED WHEN WIND SPEED EXCEEDS
20 m/s
T_ 505
INSTRUCTIONS FOR USE
T_ 501 1/2
T_ 15501 1/2
SAFETY INSTRUCTIONS
T_ 500 1/2
ANCHORING INSTRUCTION
T_14512
T_ 14503
INSTRUCTIONS FOR USE
T_ 501 2/2
T_ 15501 2/2
SAFETY INSTRUCTIONS
T_ 500 2/2


WARNING
Emergency lowering
by competent
persons only
Ta525


0
OK!
>0

PG104112

SAFETY INSTRUCTIONS

Prior to daily use of this hoist the following safety procedures shall be performed carefully

FUNCTIONAL TESTING

- CAGE DOOR CAN BE OPENED ONLY WHEN CAGE FLOOR IS AT LANDING LEVEL
- IT SHALL NOT BE POSSIBLE TO START AND KEEP IN MOTION THE CAGE UNLESS ALL CAGE DOORS ARE IN CLOSE POSITION. DOORS ARE TESTED ONE BY ONE
- IT SHALL NOT BE POSSIBLE TO START AND KEEP IN MOTION THE CAGE UNLESS ALL LANDING GATES/DOORS ARE IN CLOSE POSITION. GATES/DOORS ARE TESTED ONE BY ONE.
- IF GATE IS OPENED WHILE CAGE IS MOVING, IT MUST STOP IMMEDIATELY. LANDING DOOR SHALL NOT BE POSSIBLE TO OPEN IF CAGE IS NOT AT LANDING LEVEL.
- EMERGENCY STOP MUST STOP MOVEMENT OF THE CAGE IMMEDIATELY
- LANDING CALLS (UP/STOP/DOWN) ARE TESTED ONE BY ONE IN EVERY LANDING

ATTENTION! MAKE SURE TO CHECK ONLY ONE SWITCH/FUNCTION AT A TIME

- CAGE MUST STOP EXACTLY TO THE LANDINGS
- MOTOR BRAKES SHALL BE TESTED ONE BY ONE
- INTERCOM/SIGNAL DEVICE

Ta 500 1/2

SAFETY INSTRUCTIONS

Prior to daily use of this hoist the following safety procedures shall be performed carefully

CHECK LIST

- FOUNDATION
- FASTENING BOLTS OF MAST ELEMENTS
- FASTENING BOLTS OF RACKS
- FASTENING BOLTS OF WALL TIES
  - IN FASADE, IN MAST, IN VERTICAL PIPES
- FASTENING BOLTS OF PIPE SUPPORTS
- FASTENING BOLTS OF LANDING BARS
- FASTENING BOLTS OF LANDING GATES/DOORS
- MOVEMENT AND TOLERANCES OF GUIDING ROLLERS
- WIRE ROPES OF VERTICALLY LIFTED CAGE DOORS
- LUBRICATION OF RACK
- POSSIBLE OIL LEAKS OF GEAR BOXES
- CABLE GUIDES AND SPRING PLATES OF CABLE GUIDES
- HOIST CABLE(S), POSSIBLE WEAR AND TEAR
- OPERATION OF HOIST CABLE(S). WINDING BOTH OUT FROM BASKET AND INTO THE BASKED
- OPERATION AND FASTENING OF LIMIT SWITCHES AND CAMS OF LIMIT SWITCHES
- LANDING FLOORS, BRIDGES, RAILINGS, SAFETY ASPECTS
- WARNING SIGNS ARE READABLE

Ta 500 2/2

DECAL SCXXYYL / SCXXYYFL

USER INSTRUCTIONS

PUT INTO SERVICE

- CHECK, THAT THE **HOIST WAY** IS **FREE**
- SWITCH ON THE **MAIN SWITCH (Q1)** IN THE BASE FRAME CONTROL BOX TO POSITION "1"
- SWITCH ON THE **MAIN SWITCH (Q2)** IN THE HOIST CAGE CONTROL PANEL TO POSITION "1"
- HOIST POWER SUPPLY IS IN ORDER WHEN THE GREEN PILOT LAMP **(H1) "POWER SUPPLY"** IN THE DOOR OF CONTROL BOX OF BASE FRAME IS ON.
- THERE IS SAFETY CIRCUIT BROKEN WHEN YELLOW PILOT LAMP **(H2) "SAFETY CIRCUIT"** IN THE CAGE CONTROL PANEL IS ON. CORRESPONDING LAMP EXISTS ALSO AT EVERY LANDING LEVEL. WHEN SAFETY CIRCUIT IS BROKEN, IT IS NOT POSSIBLE TO THE HOIST. SEE ERROR CODE FROM DISPLAY.
- THERE IS AN OVERLOAD IN CAGE WHEN RED PILOT LAMP **(H3)"OVERLOAD"** IN THE CAGE CONTROL PANEL IS ON. REMOVE OVERLOAD.
- HOIST IS READY TO RUN WHEN THE GREEN PILOT LAMP **(H4)"READY"** IN THE CAGE CONTROL PANEL IS ON.

START AND STOP

CLOSE DOORS (BASE FRAME DOOR OR LANDING GATE/DOOR AND CAGE DOOR).

A) AUTO - MODE

- SELECT CONTROL MODE WITH SWITCH **(S20) "CONTROL MODE"**. TURN SWITCH TO POSITION 1 - **"AUTOMATIC".**
- ENTER LANDING NUMBER FROM KEYBOARD WHERE YOU WANT TO GO. FOR EXAMPLE, IF YOU WANT TO GO TO FIFTH FLOOR, PRESS KEY "5" AND CONFIRM WITH KEY "#"=>HOIST STARTS, AND STOPS AUTOMATICALLY ON FIFTH FLOOR.
- AT LANDING LEVEL YOU CAN CALL HOIST BY PRESSING BUTTON "ARROW UP" WHEN YOU WANT TRAVEL UPWARDS. PUSH BUTTON "ARROW DOWN" WHEN YOU WANT TRAVEL DOWNWARDS. BUTTON IS ILLUMINATED WHEN THE CALL IS ACCEPTED. HOIST STOPS AUTOMATICALLY ON FLOOR, WHERE "CALL BUTTON" HAS BEEN PUSHED.

B) MANUAL - MODE

- SELECT CONTROL MODE WITH SWITCH **(S20) "CONTROL MODE"**. TURN SWITCH TO POSITION 0 - **"MANUAL".**
- PUSH THE BUTTON **(S2)"UP"** IN CAGE CONTROL PANEL. CAGE MOVES UP-WARDS AS LONG AS BUTTON IS PUSHED AND STOPS WHEN BUTTON IS RELEASED.
- PUSH THE BUTTON **(S3) "DOWN"** IN CAGE CONTROL PANEL. CAGE MOVES DOWNWARDS AS LONG AS BUTTON IS PUSHED AND STOPS WHEN BUTTON IS RELEASED.

- WHEN IN DANGER, PUSH THE **"EMERGENCY STOP"** - BUTTON**(S1,S21)** DOWN AND THE HOIST STOPS **IMMEDIATELY**. THE BUTTON IS MECHANICALLY LOCKED TO IST LOWER POSITION AND HAS TO TURNED CLOCKWISE AND/OR PULLED OUTWARDS BEFORE IT IS RELEASED AGAIN.

- AT LANDING LEVEL PUSH BUTTON **(S24.N) "STOP"** WILL STOP CAGE IMMEDIATELY WHEN PUSHED. SAME TIME CALLS ARE ERASED.

Ta 501 1/2

USER INSTRUCTIONS

ATTENTION! THE HOIST WILL NOT MOVE IF ANY OF THE LANDING GATES/ DOORS OR CAGE DOORS IS OPEN. THE HOIST WILL NOT MOVE EITHER IF THE ROOF HATCH IS OPEN NOR WHEN THERE IS OVERLOAD IN CAGE.

CONCLUDING THE WORK

- RUN THE HOIST TO THE GROUND STATION.
- CLOSE DOOR (BASE FRAME DOOR AND CAGE DOOR)
- TURN THE **MAIN SWITCH (Q1)** IN THE BASE FRAME CONTROL BOX TO POSITION "0". WHEN NECESSARY USE SEPARATE LOCK TO LOCK THIS SWITCH TO PREVENT ILLICIT USE.

ATTENTION! IN WEATHER CONDITIONS, WHERE THE TEMPERATURE GETS CLOSE TO ZERO OR UNDER IT AND THE RELATIVE HUMIDITY IN THE AIR IS HIGH, IT CAN BE NECESSARY TO LEAVE THE MAIN SWITCH (Q1) TO THE POSITION "1" IN ORDER TO KEEP THE HEATING ON AND PREVENT WATER FROM CONDENSING IN THE EL-BOX.

ACTION DURING POWER CUT

- IF THE POWER SUPPLY IS CUT AND HOIST WILL STOP, **CALL HELP** BY GIVING AN EMERGENCY SIGNAL. PUSH THE PUSH BUTTON **(S15)"ALARM SIGNAL"** OR USE THE PHONE.

ATTENTION! DO NOT GET OUT WITHOUT SUPERVISION, AND DO NOT CLIMB ACROSS SCAFFOLDING OR ACROSS THE MAST BECAUSE OF THE DANGER OF FALLING DOWN!

- IF THE POWER CUT LAST FOR A LONG TIME, THE HOIST CAN BE LOWERED TO THE NEXT LANDING LEVEL BY OPENING MOTOR BRAKES MANUALLY. PRESS BOTH LEVERS SLIGHTLY BACKWARDS, TOWARDS THE MOTOR END. THE BRAKES ARE LOOSENED AND THE HOIST MOVES SLOWLY DOWNWARDS.

ATTENTION! DO NOT LOWER THE HOIST TOO FAST, AS THE SAFETY BRAKE MIGHT THEN ENGAGE AND STOP THE HOIST ENTIRELY.

- AFTER REACHING THE NEXT PLATFORM, OPEN THE CAGE DOOR AT THE LANDING SIDE MANUALLY WITH "TRIANGLE KEY".

ATTENTION! IF CAGE HAS BEEN LOWERED MANUALLY DURING POWER CUT, HOIST MUST BE SWITCHED TO MANUAL-MODE AND DRIVE IT MANUALLY INTO ITS LOWEST POSITION IN BASE FRAME BEFORE HOIST IS TAKEN INTO USE IN AUTOMATIC CONTROL MODE.

SAFETY BRAKE

- ONCE THE SAFETY BRAKE HAS ENGAGED, IT IS NO LONGER POSSIBLE TO RUN THE HOIST.
- **CALL HELP** BY GIVING AN EMERGENCY SIGNAL. PUSH THE PUSH BUTTON **(S15)**.
- THE PERSON RESPONSIBLE FOR MAINTENANCE OF HOIST MUST BE INFORMED

ATTENTION! WHEN THE SAFETY BRAKE HAS ENGAGED, THE REASON FOR THIS HAS TO BE CLARIFIED CAREFULLY AND THE POSSIBLE DEFECT HAS TO BE FIXED BEFORE THE HOIST IS TAKEN INTO USE!

Ta 501 2/2

DECAL SCXXYY / SCXXYYF

USER INSTRUCTIONS

PUT INTO SERVICE

- CHECK, THAT **THE HOIST** WAY IS **FREE**
- SWITCH ON THE **MAIN SWITCH (Q1**) IN THE BASE FRAME CONTROL BOX TO POSITION "1"
- SWITCH ON THE **MAIN SWITCH (Q2)** IN THE HOIST CAGE CONTROL PANEL TO POSITION "1"
- HOIST POWER SUPPLY IS IN ORDER WHEN THE GREEN PILOT LAMP **(H1) "POWER SUPPLY"**IN THE DOOR OF THE CONTROL BOX OF BASE FRAME IS ON
- THERE IS SAFETY CIRCUIT BROKEN WHEN YELLOW PILOT LAMP **(H2) "SAFETY CIRCUIT"** IN THE HOIST CAGE CONTROL PANEL IS ON. CORRESPONDING LAMP EXISTS ALSO AT EVERY LANDING LEVEL. WHEN SAFETY CIRCUIT IS BROKEN, IT IS NOT POSSIBLE TO RUN THE HOIST.
- THERE IS AN OVERLOAD IN HOIST WHEN RED PILOT LAMP **(H3) "OVERLOAD"** IN THE HOIST CONTROL PANEL IS ON. REMOVE OVERLOAD.
- THE HOIST IS READY TO RUN WHEN THE GREEN PILOT LAMP **(H4) "READY"** IN THE HOIST CAGE CONTROL PANEL IS ON.
- THERE ARE PILOT LAMPS AND A LIST OF THE MOST COMMON FAULT SITUATIONS IN THE HOIST CAGE CONTROL PANEL.

START AND STOP

- CLOSE DOORS (BASE FRAME DOOR OR LANDING GATE/DOOR AND HOIST CAGE DOORS)
- PUSH THE BUTTON **(S2, S22, S22.n) "UP"** IN ANY OF CONTROL PANEL PLACES. HOIST STARTS TO MOVE UPWARDS.
- PUSH THE BUTTON **(S2, S22, S22.n) "DOWN"** IN ANY OF CONTROL PANEL PLACES. HOIST STARTS TO MOVE DOWNWARDS.
- THE HOIST IS STOPPED WITH PUSH BUTTON **(S4, S24, S24n) "STOP NEXT LANDING"** PRESS BUTTON IN ANY OF THE HOIST CONTROL PLACES AND HOIST STOPS TO THE NEXT LANDING IN RUNNING DIRECTION.
- WHEN IN DANGER, PUSH THE **"EMERGENCY STOP"** - BUTTON **(S1, S21)** DOWN AND THE HOIST STOPS **IMMEDIATELY**. THE BUTTON IS MACHANICALLY LOCKED TO IST LOWER POSITION AND HAS TO BE TURNED CLOCKWISE AND/OR PULLED OUTWARDS BEFORE IT IS RELEASED AGAIN.
- AT LANDING LEVEL THE PUSH BUTTON **(S24.N) "STOP"** WILL STOP THE HOIST IMMEDIATELLY WHEN PUSHED. NOTE! IT IS NOT AN EMERGENCY STOP.
- PUSH BUTTONS S1, S2, S3, S4 IN THE HOIST CAGE, PUSH BUTTONS S21, S23, S24 IN THE BASE FRAME CONTROL PANEL, PUSH BUTTONS S21.n, S22.n, S23.n, S24.n AT LANDING LEVELS.

Ta 15501 1/2

DECAL SCXXYY / SCXXYYF

USER INSTRUCTIONS

ATTENTION! THE HOIST WILL NOT MOVE IF ANY OF THE LANDING GATES/ DOORS OR CAGE DOORS IS OPEN. THE HOIST WILL NOT MOVE EITHER IF THE ROOF HATCH IS OPEN OR WHEN THERE IS OVERLOAD IN CAGE.

CONCLUDING THE WORK

- RUN THE HOIST TO THE GROUND STATION.
- CLOSE DOOR (BASE FRAME DOOR AND HOIST DOOR)
- TURN THE **MAIN SWITCH (Q1)** IN THE BASE FRAME CONTROL BOX TO POSITION "0". WHEN NECESSARY USE SEPARATE LOCK TO LOCK THIS SWITCH TO PREVENT ILLICIT USE.

ATTENTION! IN WEATHER CONDITIONS, WHERE THE TEMPERATURE GETS CLOSE TO ZERO OR UNDER IT AND THE RELATIVE HUMIDITY IN THE AIR IS HIGH, IT CAN BE NECESSARY TO KEEP THE HEATING ON AND PREVENT WATER FROM CONDENSING IN THE EL-BOX.

ACTION DURING POWER CUT

- IF THE POWER SUPPLY IS CUT AND HOIST WILL STOP, **CALL HELP** BY GIVING AN EMERGENCY SIGNAL. PUSH THE PUSH BUTTON **(S15)" ALARM SIGNAL"** OR USE THE PHONE.

ATTENTION! DO NOT GET OUT WITHOUT SUPERVISION, AND DO NOT CLIMB ACROSS SCAFFOLDING OR ACROSS THE MAST BECAUSE OF THE DANGER OF FALLING DOWN!

- IF THE POWER CUT LAST FOR A LONG TIME, THE HOIST CAN BE LOWERED TO THE NEXT LANDING LEVEL BY OPENING MOTOR BRAKES MANUALLY. PRESS BOTH LEVERS SLIGHTLY BACKWARDS, TOWARDS THE MOTOR END. THE BRAKES ARE LOOSENED AND THE HOIST MOVES SLOWLY DOWNWARDS.

ATTENTION! DO NOT LOWER THE HOIST TOO FAST, AS THE SAFETY BRAKE MIGHT THEN ENGAGE AND STOP THE HOIST ENTIRELY.

- AFTER REACHING THE NEXT PLATFORM, OPEN THE HOIST DOOR AT THE LANDING SIDE MANUALLY WITH "TRIANGLE KEY"

SAFETY BRAKE

- ONCE THE SAFETY BRAKE HAS ENGAGED, IT IS NO LONGER POSSIBLE TO RUN THE HOIST.
- **CALL HELP** BY GIVING AN EMERGENCY SIGNAL. PUSH THE PUSH BUTTON **(S15)**
- THE PERSON RESPONSIBLE FOR MAINTENANCE OF HOIST MUST BE INFORMED.

ATTENTION! WHEN THE SAFETY BRAKE HAS ENGAGED, THE REASON FOR THIS HAS TO BE CLARIFIED CAREFULLY AND THE POSSIBLE DEFECT HAS TO BE FIXED BEFORE THE HOIST IS TAKEN INTO USE!

Ta 15501 2/2

DECAL SCXXYYL / SCXXYYFL

CODE ALARM
F01.... ROOF HATCH IS OPEN
F02.... MOTOR CIRCUIT BREAKER TRIPPED
F03.... FREQUENCY CONVERTER FAULT
F04.... LANDING GATE IS OPEN, FLOOR NUMBER X
F05.... CAGE IN MAST SAFETY LIMIT
F06.... EMERGENCY STOP GROUND LEVEL
F07.... GROUND LEVEL DOOR IS OPEN
F08.... LANDING STOP SENSOR FAULT
F09.... EMERGENCY STOP CAGE
F10.... EMERGENCY STOP ROOF
F11.... CAGE DOOR LANDING SIDE IS OPEN
F12.... CAGE DOOR GROUND LEVEL SIDE IS OPEN
F13.... CAGE DOOR LOCKING FAULT
F14.... SAFETY BRAKE ENGAGED
F15.... CAGE IN UPPER MAST LIMIT
F16.... MAST OVERRUN PROTECTION
F17.... DROP TEST REMOTE CONTROLLER CONNECTED
F18.... POWER SUPPLY FAILED
F19.... SAFETY CLAMPS IN USE
F20.... ROOF CONTROL
F21.... MANUAL CONTROL
F22.... PULSE COUNTING FAULT
F23.... LANDINGS: BUS FAULT
F24.... CAGE / GROUND UNIT: BUS FAULT
F25.... OPPOSITE RUN DIRECTION
F26.... CAGE SIDE DOOR IS OPEN
F27.... HYDRAULIC RAMP: MOTOR CIRCUIT BREAKER TRIPPED
F28.... HYDRAULIC RAMP IS NOT CLOSED
F29....
F30.... CONTROL FROM CAGE ONLY
F31.... PLC: INTERNAL FAULT 1
F32.... PLC: INTERNAL FAULT 2

Ta 14502

DECAL SCXXYY / SCXXYYF

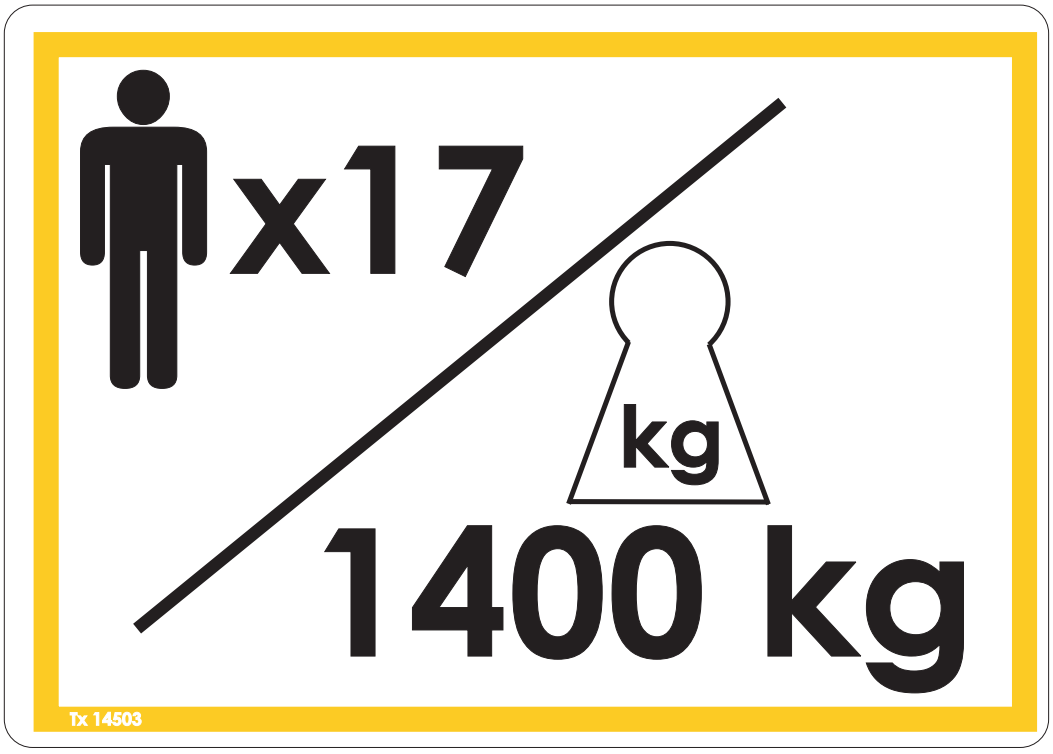
NO	DESCRIPTION
1	POWER SUPPLY
2	SAFETY CIRCUIT NOT IN ORDER
3	EMERGENCY STOP
4	
5	GROUND STATION DOOR IS OPEN
6	GROUND STATION DOOR LOCKING IS OPEN

Ta 14502_1

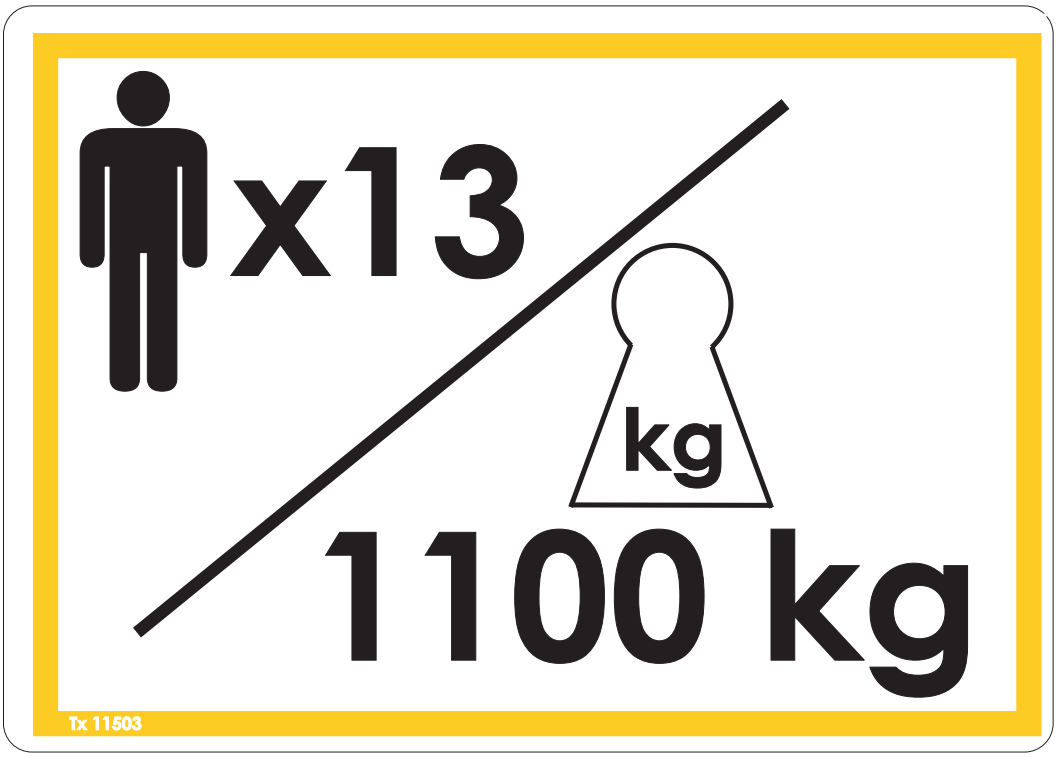
NO	DESCRIPTION
7	MAST LIMIT
8	MOTOR CIRCUIT BREAKER TRIPPED
9	EMERGENCY STOP
10	CAGE DOOR LANDING SIDE IS OPEN
11	CAGE DOOR GROUND LEVEL SIDE IS OPEN
12	ASSEMBLY BRIDGE IS DOWN (option)
13	ROOF HATCH IS OPEN
14	OVERSPEED SAFETY DEVICE ENGAGED
15	CAGE IN MAST SAFETY LIMIT
16	SAFETY CLAMPS IN USE
17	FREQUENCY CONVERTER FAULT (option)

Ta14502_2

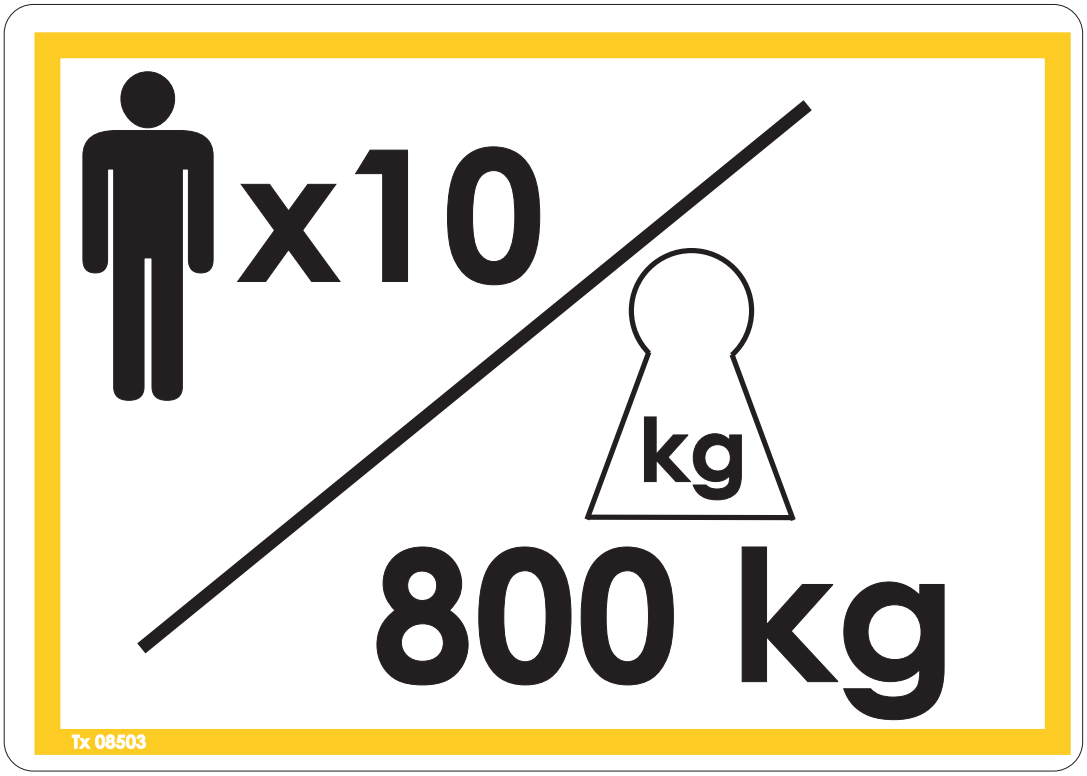
DECALS SC14YY

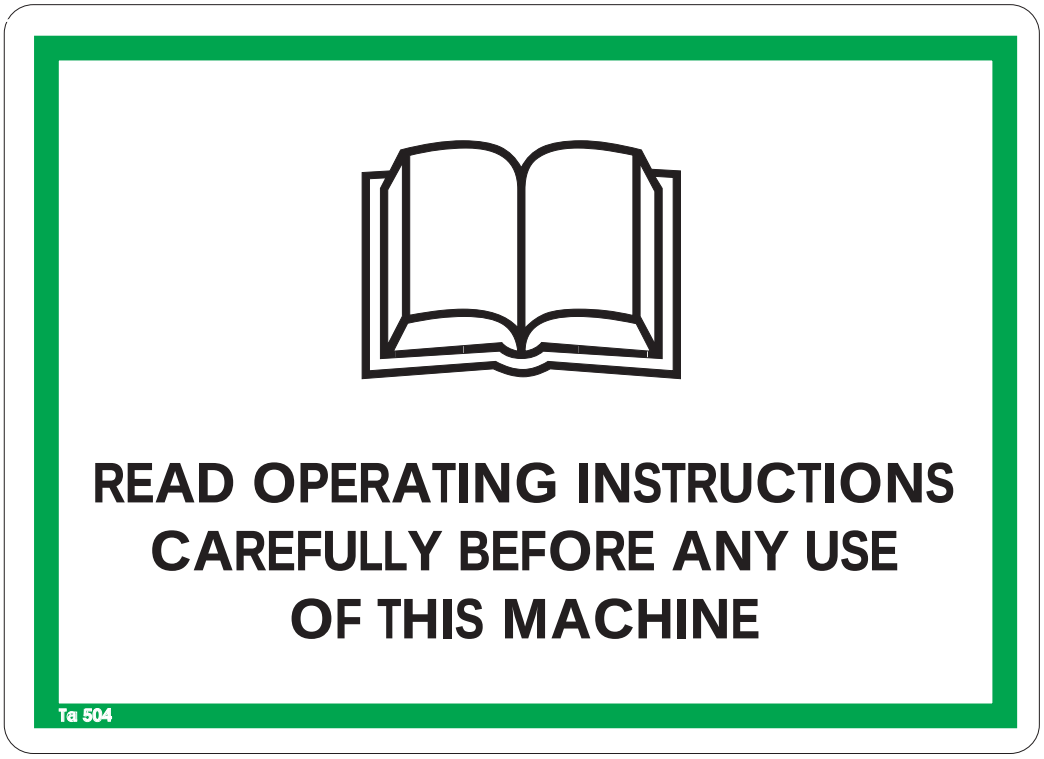


DECALS SC11YY



DECALS SC08YY





HOIST MUST NOT BE OPERATED WHEN WIND SPEED EXCEEDS

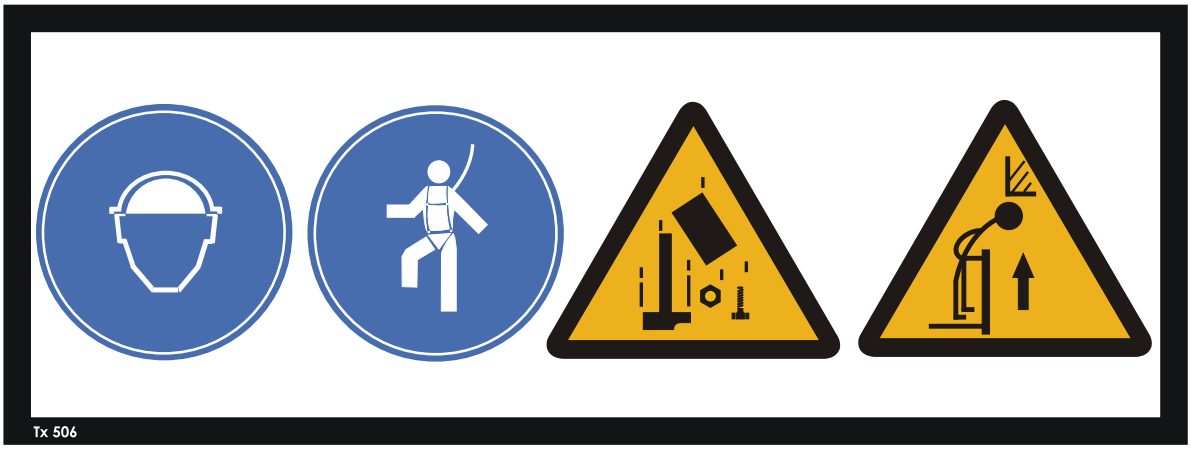
20 m/s

Operation temperature (C^0) -25.....+40

After exceptional weather conditions, hoist must be inspected by an authorised expert before taking into use.

In weather conditions where icing appears, hoist must be taken at the ground level after completion of work. Ice must be removed from the mast and cable(s) before taking the hoist into use.

Ta 505

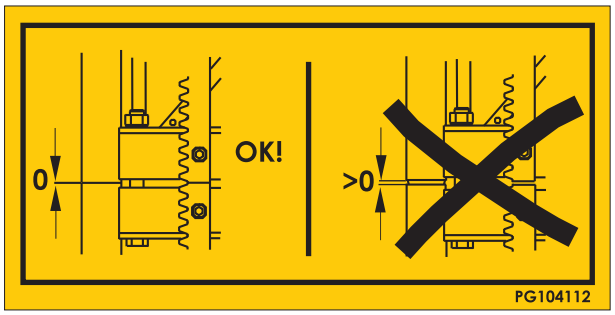


Tx 506


Tx 507


Tx 508


ATTENTION !
Open two locking screws before reset of safety brake
Locking screws class 5.8
Lubrication every 50 hours of work
grease nipple
UC3-01E



SCANCLIMBER®

CE

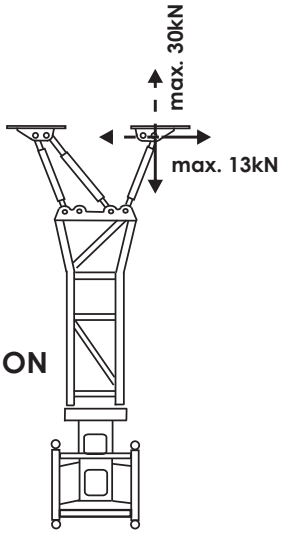
TYPE	SC2032F-48	SERIAL NO.		YEAR	
Maximum load	2000 kg or 24 passengers	Voltage	400 VAC	Base unit weight	2480 kg
Max. lifting height	200 m	Control voltage	48 VAC/24 VDC	Cage / car weight	1242 kg
Speed	36 m/min	Frequency	50 Hz	Drive unit weight	734 kg
Brakes	250 Nm	Main fuses	63 A		
Safety device	UC 3.0 A	Power	22,5 kW		

SCANCLIMBER OY Turkkirata 26 FI-33960 PIRKKALA, FINLAND
www.scanclimber.com

Ta511-48

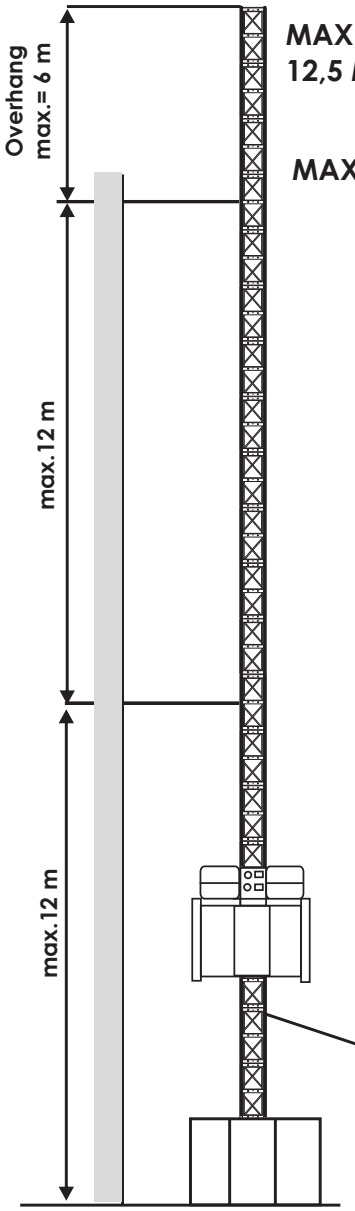
ASSEMBLY INSTRUCTION SCANCLIMBER SC HOIST

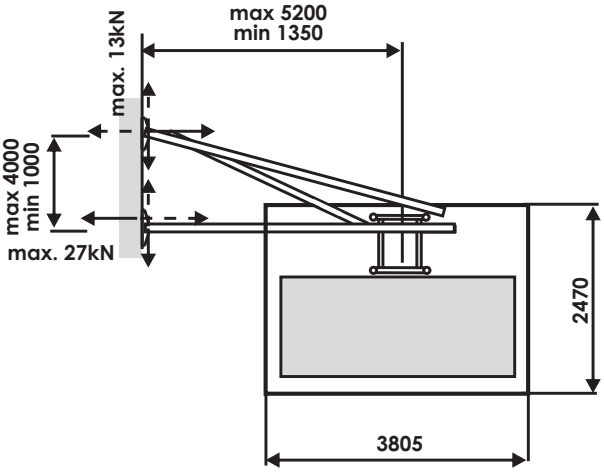
MAX. ALLOWED WIND SPEED 20 M/S



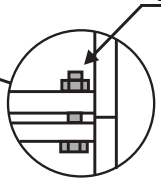
MAX. WIND SPEED
12,5 M/S DURING ERECTION

MAX. LOAD 800KG DURING ERECTION





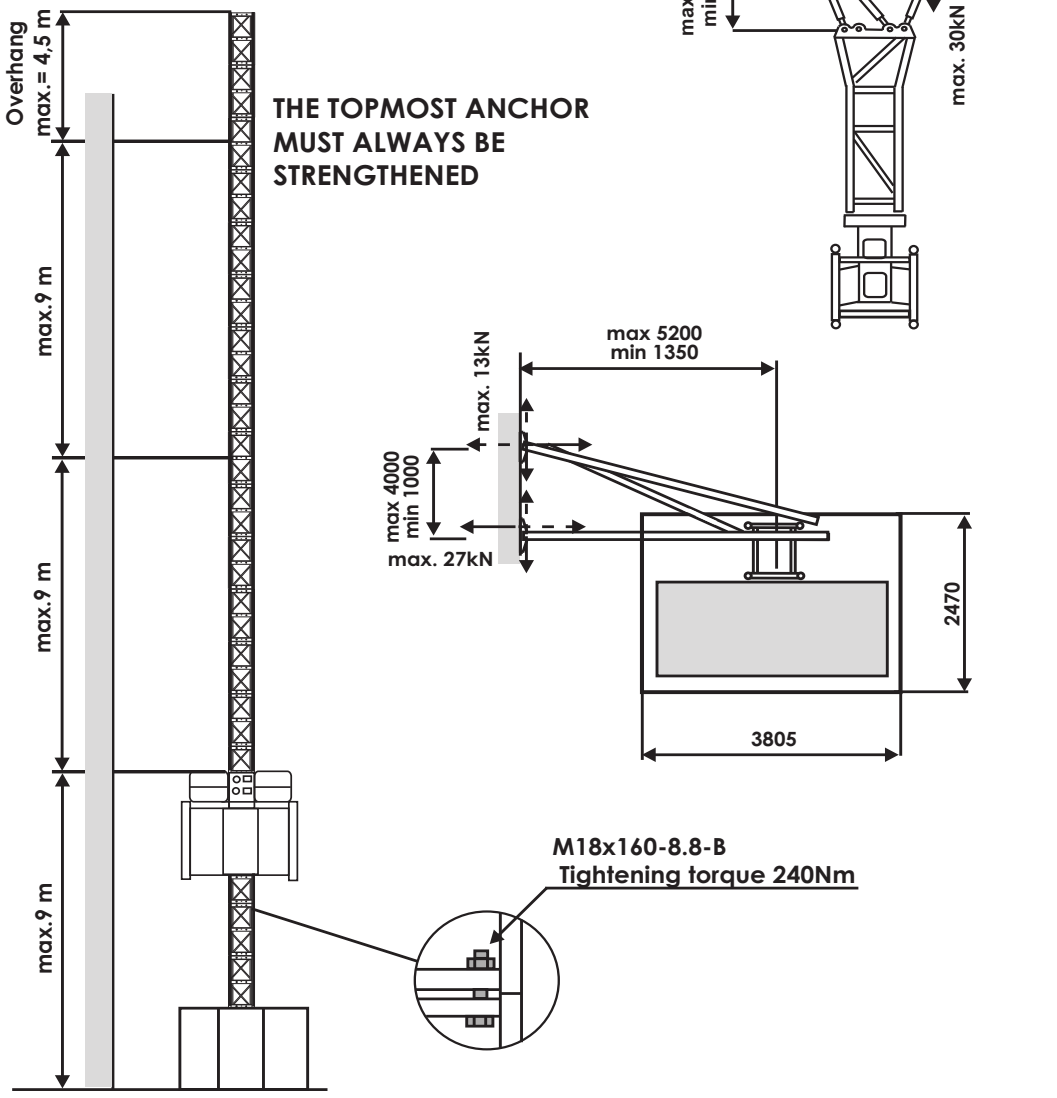
M18x160-8.8-B
Tightening torque 240Nm



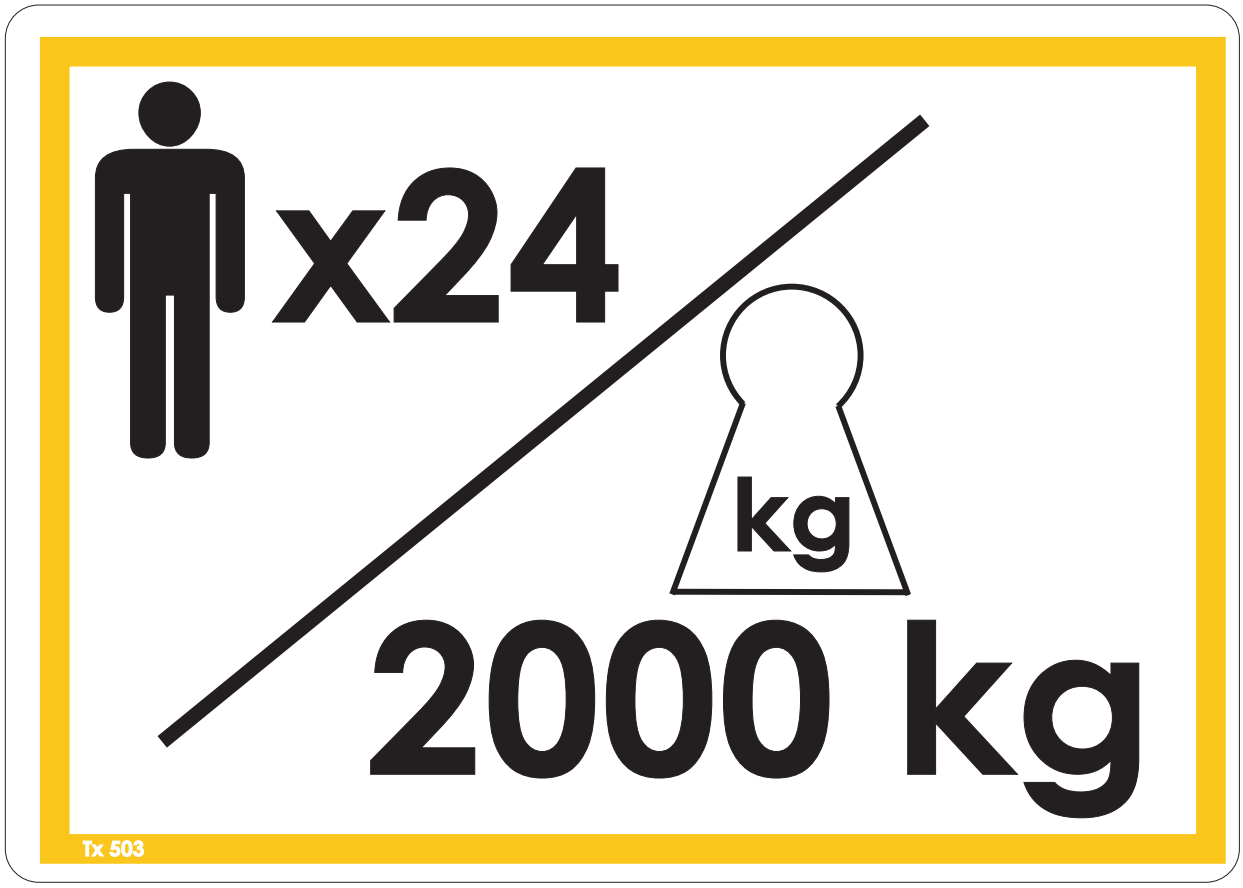
Ta14512

ASSEMBLY INSTRUCTION **SCANCLIMBER SC2032-48**

MAX. WIND SPEED 12,5 M/S DURING ERECTION
MAX. LOAD 800KG DURING ERECTION
READ INSTRUCTION MANUAL ERECTION INSTRUCTIONS
SEE THE INSTRUCTION MANUAL FOR ANCHOR FORCES



Ta512-48


x24
kg
2000 kg
Tx 503


ATTENTION
DO NOT OPEN
THE DOORS BEFORE
THE HOIST HAS
STOPPED!
Ta526

3. OPERATING INSTRUCTIONS

3. OPERATING INSTRUCTIONS

3.1 Prior to the Use

Prior to the daily use of the hoist it must be checked both visually and functionally. This inspection does not replace the scheduled maintenance and is to be carried out separately by the person in charge of the hoist's operation.

Should during the daily inspection be discovered for instance loose screw connections or other defects they must be immediately repaired before putting the hoist in use.

3.1.1 Check List

1. The hoist's driveway must be free of any obstacles. No material or objects must protrude from the landings to the hoist's driveway.

2. Check the hoist's foundation. If the hoist is mounted on ground foundation check that the ground has not sunk under the hoist.

3. Check the bolt joints of the mast sections.

4. Check the fastening of the gear racks.

5. Check the bolt joints of the anchorage and the ties to the building, pipeline and mast.

6. Check the support of the pipeline.

7. Check the landing ties.

8. Check the clearances of the hoist guide rollers.

9. Check the functioning of the hoist doors.

10. Check the condition of the pinions on the mast side on the ground platform.

11. Check that there are no oil leaks in the gearboxes.

12. Lubrication of the gear rack.

13. Check the cable guides installed on the mast. The cable may slip out of the faulty guide, get caught in the guide or be squeezed between the hoist guide rollers and damage.

14. The cable should move freely and be uncoiled without obstacles as well as recoiled into the basket during downward run.

15. Check the fastening of the limit switches and limit cams as well as the functioning of the limit switches.

16. Check that the passages, railings, etc. on the landings are in condition according to the regulations.

17. The warning and instruction signs should at all times be well readable. Damaged signs must be replaced with new ones.

3.1.2 Functional Testing

The hoist door can be opened only when the cage is on a landing.

The hoist must not start if any of the hoist door is open. The doors are tested one by one by opening each door at a time and at the same time giving the hoist a command to start. At that time the hoist must not move.

The hoist must not start off if even one of the landing gates or doors is open. The doors and gates are tested one by one by opening each one of them at a time and at the same time giving the hoist a command to start. At that time the hoist must not move.

If the landing gate is opened while the hoist is moving the hoist should immediately stop. The landing door should not be able to open if the hoist is not standing on the landing.

The emergency stop buttons are tested one by one. The hoist should stop immediately when the emergency stop button is pushed.

The landing calls are tested on each landing at a time.

Every limit switch and gate must be tested one by one. The defects and faults discovered must be repaired immediately and prior to the use of the hoist.

During the hoist's test run check that the hoist is stopped exactly on the landing. The hoist load may cause some variation in the hoist's stopping places.

The testing of the engine brakes. Push the brake's release levers one by one towards the engine end on the ventilator side. The cage must not descend when one brake is released.

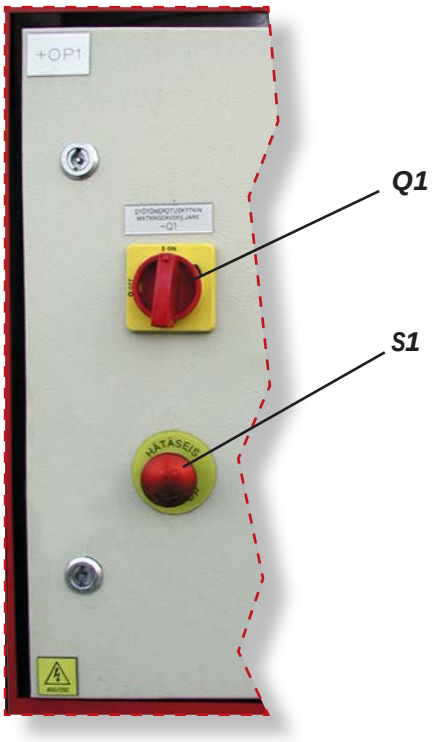
Test the hoist's signalling devices and the possible hoist intercommunication.

3.2 The Hoist's Start-up

The start-up of the hoist with a relay control system is carried out as follows:

1. Switch **the main switch (Q1**) in the ground station control box to position"1".

2. Check that the ground station **emergency stop button (S1)** is released. If it is not, turn the button clockwise and at the same time pull it outwards.



3. Switch **the main switch (Q2)** on the hoist control panel to position "1".

4. The power supply is in order, when the **"Power supply" pilot lamp (H1)** on the ground station control box door is switched on.

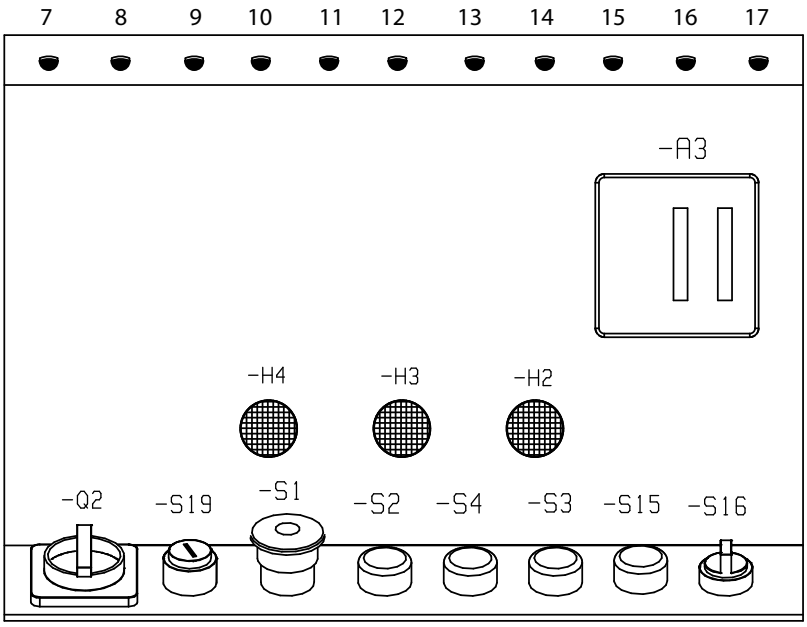
5. The hoist is ready for use, when the green **pilot lamp (H4) "Ready for use"** on the hoist control panel is switched on.

6. The hoist is **overloaded**, when the red **pilot lamp (H3)** on the hoist control panel is switched on. Remove the overload.

7. The hoist's safety circuit is disconnected, when the yellow **pilot lamp (H2) "Safety circuit disconnected"** on the hoist control panel is switched on. This pilot lamp is also found in the ground station control box and in the call boxes on the landings. When the safety circuit is disconnected the hoist cannot operate.

3.3 Start and Stop of the Hoist

3.3.1 Relay Control



1. Close the door / the gate at the ground station / on the landing and the hoist door.

2. Push the button **"Up"** (S2, S22, S22.n), the hoist starts moving upwards.

3. Push the button **"Down"** (S3, S23, S23.n), the hoist starts moving downwards.

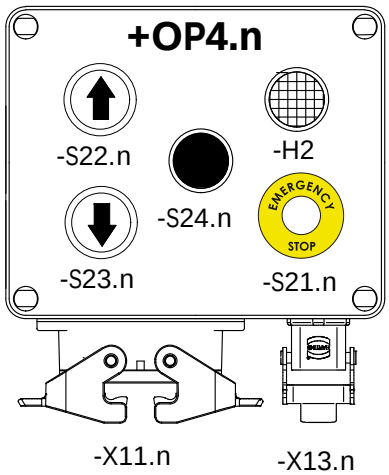
4. By pushing the buttons **"Stop next landing"** (S4, S24, S24.n) the hoist is stopped on the next landing in the direction of its motion. The hoist stops on the top and bottom landings automatically.

5. **In case of emergency** hit the **"Emergency stop"** button (S1, S21) down, and the hoist stops immediately. The button locks to its down position. The button is released by turning it clockwise and/or pulling outwards.

6. On the landing the red button (S21.n) stops the hoist immediately, but it is not an emergency stop button and does not lock when pushed.

(The buttons S1, S2, S3, S4 are situated in the hoist, the buttons S21, S22, S23, S24 at the ground station and the buttons S22.n, S23.n, S24.n, S21.n on the landings)

The hoist does not move if any of the landing gates or doors is open. The hoist does not move if the roof hatch is open or if the hoist is overloaded.



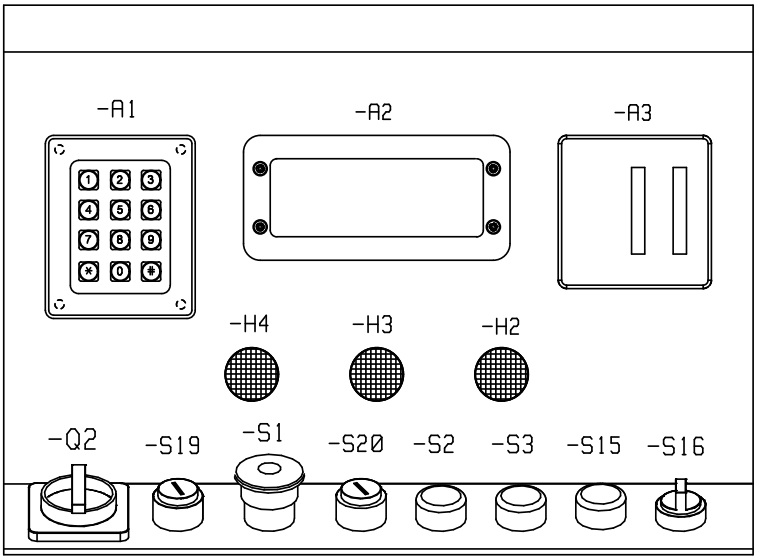
3.3.2 PLC (Programmable Logic Control)

Close the door/the gate at the ground station or on the landing and the hoist door.

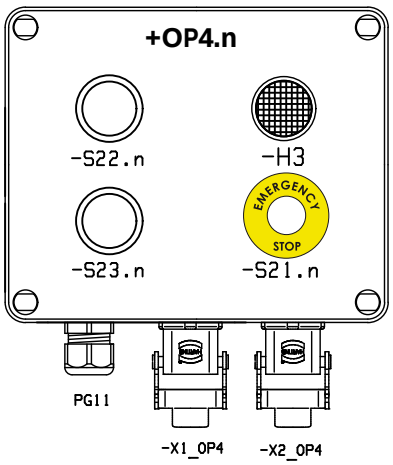
3.3.2.1 Automatic Control

1. Choose with the switch (S20) "Mode selection" on the cage control panel position "1" – Automatic control.

2. Use the keyboard to select the desired floor, for instance if you wish to get to the fifth floor **push the digit key** 5 and **confirm by pushing the key #** => the hoist starts moving and stops automatically on the fifth floor.



3. On the landing call the hoist by pushing either the button S22.n (the arrow up) if you wish to go up or by pushing the button S23.n if you wish to go down. The hoist stops automatically on the landing on which the call button was pushed.



3.3.2.2 Manual control

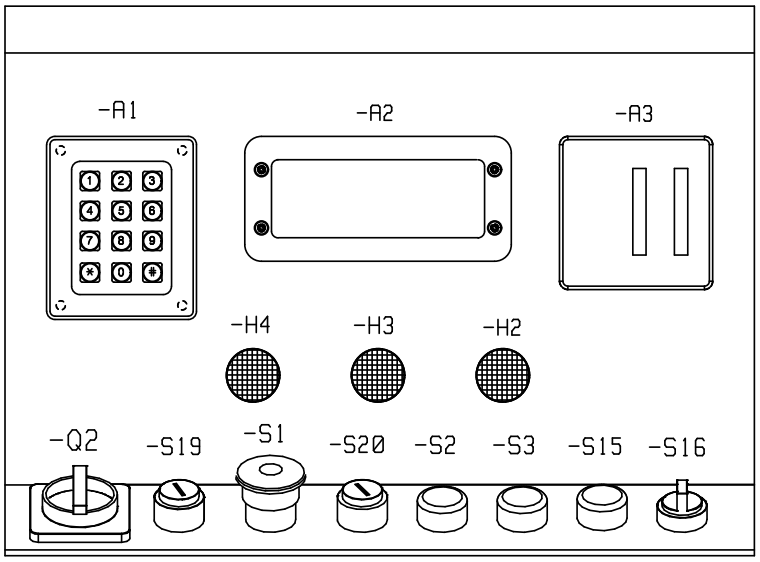
1. Choose with the switch (S20) **" Mode selection"** on the cage control panel position **"0" – Manual control**.

2. Use the **push button** (S2) **"Up"** on the cage control panel to go up and correspondingly the push button (S3) **"Down"** to go down. The hoist will move as long as the button is pushed and stops immediately when the button is released.

With manual control from the hoist the hoist moves in lowered speed.

3. **In case of emergency** hit the button (S1 or S21) **"Emergency stop"** down, and the hoist stops immediately. The button locks to its down position. The button is released by turning it clockwise and/or pulling outwards.

The hoist does not move if any of the landing gates or doors is open. The hoist does not move either if the roof hatch is open or if the hoist is overloaded.



3.4 Closing the Operation

Drive **the hoist to the ground station**.

Close the hoist and the ground station **doors**.

Switch **the main switch** (Q1) in the ground station control box **to position "0"**. If necessary **lock** the disconnecting switch with a separate lock.

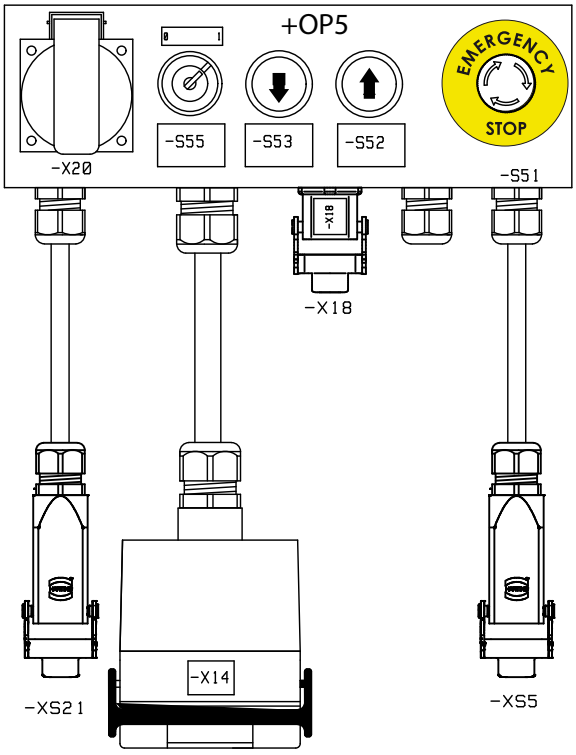
When the temperature declines near zero degrees of Celcius or when the relative atmospheric humidity is high as well as during frost, leave the disconnecting switch (Q1) for the weekend in position "1", so that the heating of the electrical cabinets stays on and there occurs no condensation inside them.

3.5 Erection, Maintenance or Inspection Operations

When carrying out erection, maintenance or inspection operations the hoist is controlled with the push button box on the cage roof.

1. Switch the key switch (S55) on the hoist roof **"Hoist roof control"** to position "1".

2. The hoist moves only by pushing the buttons on the roof (S52) **"Upwards"** and (S53) **"Downwards"**. The hoist stops immediately, when the button is released. The selection of the "Hoist roof control" excludes functions from any other locations for control.



Picture 3.5. Control panel +OP5 on the cage roof

The hoist with a PLC control system moves in a lowered speed when controlled manually from the hoist roof.

3. In case of emergency hit the button (S51, S1 or S21) "Emergency stop" down, and the hoist stops immediately. The button locks to its down position. The button is released by turning it clockwise and/or pulling outwards.

4. When the hoist is stopped for erection, maintenance or inspection operations, the emergency stop button (S51) on the roof must be pushed down for this period of time.

5. After finishing the work switch the key switch (S55) on the hoist roof "Hoist roof control" back to position "0" and take the key from the switch.

3.6 Operation during Power Cut

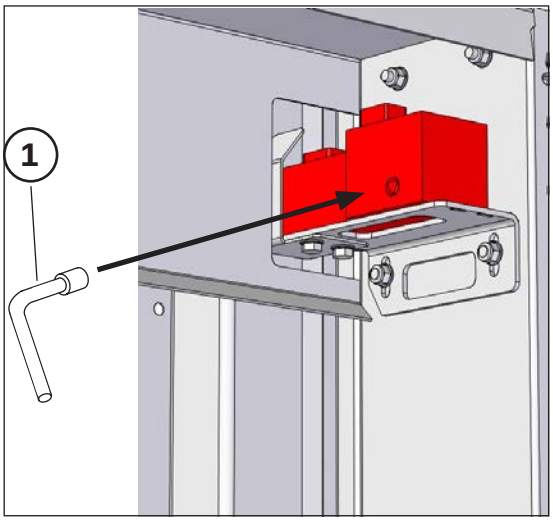
If the power supply is disrupted and the hoist stops **call for help** by pushing the "Sound signal" button (S15) or use the hoist phone. Contact the person in charge of the hoist's service.

Do not get out of the hoist without supervision. Do not climb the scaffolding or the mast! You could fall down!

In case the power cut lasts long, the hoist can be descended to the next landing by releasing the engine brakes manually. Push both the brake levers lightly backwards towards the end of the engine. The brakes are released and the hoist starts moving downwards.

Do not descend the hoist too fast, because in such case the safety brake may stop the hoist.

The door on the landing side is opened manually with an emergency key (1) - picture 3.6, and the exit from the hoist is safe. The emergency key is located in the cage.



Picture 3.6 Cage door opening

THIS CONCERNS HOISTS WITH A PLC CONTROL. IN CASE THE HOIST HAS DURING THE POWER CUT BEEN DESCENDED BY RELEASING THE BRAKES MANUALLY, THE CAGE MUST AFTER THE RESTORATION OF THE POWER BE DRIVEN MANUALLY TO THE GROUND STATION BEFORE SWITCHING TO THE AUTOMATIC CONTROL.

3.7 Safety Brake

1. After the safety brake has switched on the hoist stops and it is impossible to operate it.

2. **Call for help** by pushing the "Sound signal" button (S15) or use the hoist phone.

3. Contact the person in charge of the hoist's maintenance.

The safety brake is allowed to be bypassed only by a person well familiar with the hoist's operation. Before the bypass of the safety brake **make sure** of the **reason** for the brake operating. Switch the key switch (S19) on the cage control panel to position "I", "By-pass of the safety brake" and simultaneously push the button (S2) "Up". The hoist is stopped on the next landing. For more information, see chapter 4.4 Safety Brake.

When the safety brake has operated, the reason for this must always be thoroughly cleared up, and the possible fault repaired prior to restarting the hoist.

The limit switch of the safety brake is allowed to be bypassed only by a person well familiar with the hoist's opreration and in charge of its maintenance and installation.

After the bypass of the safety brake do not forget to take the key off the switch. The key must not be kept in the control panel, but in possession of the site's supervision or the person in charge of the hoist's maintenance.

3.8 Safety Limit

When the hoist reaches the safety limit (S18), the control circuit is disconnected and it is impossible to operate the hoist.

3.8.1 The Bottom Safety limit

Possible reasons for the hoist reaching the bottom safety limit:

- The hoist has been descended manually by releasing the brakes, for instance during transportation.
- The hoist has been overloaded and because of this the braking distance became longer than normally and the hoist reached the safety limit.
- The brakes of the lifting motors are not correctly adjusted or for instance one of the brakes does not work. That is why the braking distance becomes longer than normally and the hoist reaches the safety limit.
- The cams of the bottom limit and the safety limit at the lower end of the mast are not correctly adjusted in relation to each other. The distance between these limits is shorter than the braking distance with full load.
- The mast's bottom limit switch is not working and only the safety limit stops the downward movement.

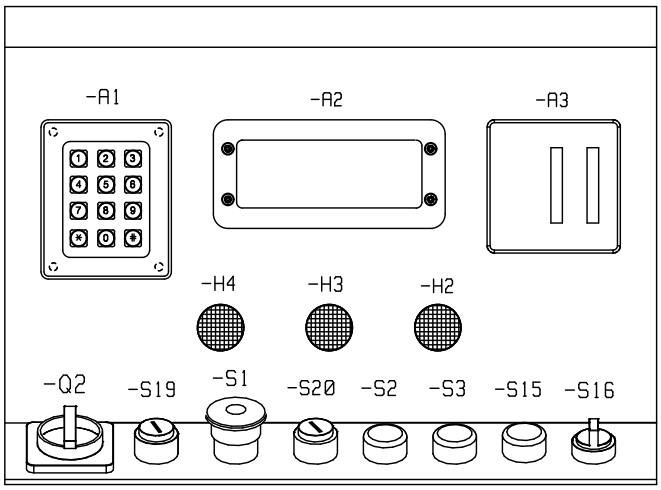
3.8.1.1 Bottom Safety Limit Reset

Turn the bypass switch (S19) on the hoist control panel to position "II".

When working with PLC controlled hoist, turn additionally key switch (S20) "Mode selection" on the cage control panel to position "0" Manual control.

Keep the bypass switch in position "II" and simultaneously push the button (S2) "Up". The hoist starts to move upwards and is lifted from the safety limit. Move the hoist only to its normal range of operation and stop the hoist.

Return the key switch (S19) to its normal position "0" and remove the key from the switch. When working with PLC-controlled hoist, return the key switch (S20) to position "1" Automatic control.



3.8.2 The Top Safety Limit

Possible reasons for the hoist reaching the top safety limit:

- The cams of the top limit and the safety limit at the upper end of the mast are not correctly adjusted in relation to each other. The distance between these limits is shorter than the braking distance required for the hoist.

- The brakes of the lifting engines are not correctly adjusted or for instance one of the brakes does not work. That is why the braking distance becomes longer than normally and the hoist reaches the safety limit.

- The mast's top limit switch is not working and only the safety limit stops the upward movement.

3.8.2.1 Top Safety Limit Reset

Lower the hoist from the top safety limit by releasing the engine brakes manually. Open the engine brakes by pushing carefully both levers simultaneously towards the end of the engines on the ventilator's side. See that the speed does not become too fast. In too fast speed the safety brake stops the hoist. **DO NOT USE** the bypass switch (S19) at the top safety limit.

When the hoist has reached the safety limit, the reason for this must always be thoroughly cleared up, and the possible fault repaired prior to restarting the hoist.

The safety limit is allowed to be bypassed only by a person well familiar with the hoist's operation and in charge of its maintenance and installation.

After the bypass of the safety limit do not forget to take the key off the switch. The key must not be kept in the hoist control panel, but in possession of the site's supervision or the person in charge of the hoist's maintenance.

3.9 Ramp Door

The hoist can be equipped with an optional ramp door. The ramp door can be manually operated or electro-hydraulic powered when the operation is automatic. When using a ramp door it is not necessary to build a pipeline, that saves time and material expense when erecting the hoist. See chapter 6 The erection of the Hoist for the installation instructions.

The ramp door consists of a sliding door and access bridge lowering onto the landing side. The access bridge is equipped with safety railings opening up to both sides when the bridge is lowered.

The ramp door position and locking is controlled with limit switches. Whenever the ramp door operation lever is lifted or pulled to open position the limit switch disconnects the safety circuit. Accordingly when the upper half of the door is opened the limit switch disconnects the safety circuit and prevents driving the hoist door open. Besides the door opening the door locking is controlled. If the locking bolt is not in the closed position even when the door is closed, the safety circuit remains disconnected and the hoist cannot be driven.

3.9.1 Hydraulic Ramp Door

3.9.1.1 Opening

1. The cage stops at the required landing automatically. The hydraulic ramp door lowers automatically after the cage has stopped. When the ramp door is in the lower position the cage door locking is released.
2. Push the sliding door up to open position.

Attention! When getting off the hoist open the landing gate prior to closing the cage door.

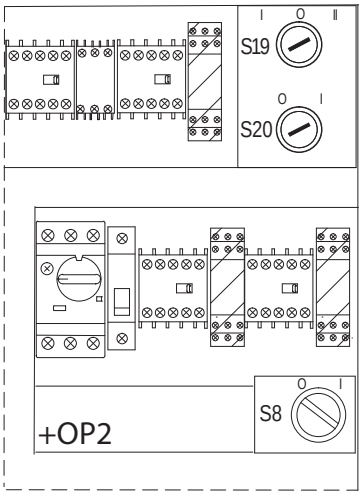
3.9.1.2 Closing

1. Close the cage sliding door by pulling it to the closed position.
2. The hydraulic ramp door is lifted automatically when the hoist gets the command to drive. The cage door locking locks the door. The hydraulic ramp door closure is secured with the limit switch prior to the hoist movement.

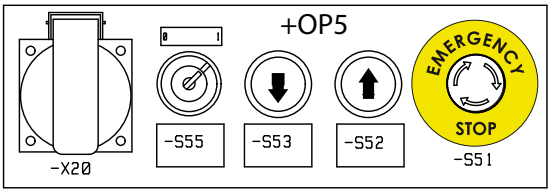
3.9.2 Opening the Hydraulic Ramp Door Manually

The hydraulic ramp door can be opened manually with the key switch S8 in the control cabin +OP2 during the erection, dismounting and maintenance work.

If the hoist is equipped with the PLC control system and the automatic drive to landings, the hoist control must be switched to manual drive with the switch S20 on the control panel prior to using the hydraulic ramp door manually.



If the hoist is equipped with the relay control system and the Stop next landing-control, the hoist control must be switched to manual drive with the key switch S55 on the cage roof control box prior to using the hydraulic ramp door manually.



The ramp door is lowered manually by turning the key S8 to position 1. The sliding door locking is released when the ramp is open.

The ramp is closed manually by turning the key switch S8 to position 0. The sliding door is locked automatically when the ramp is closed.

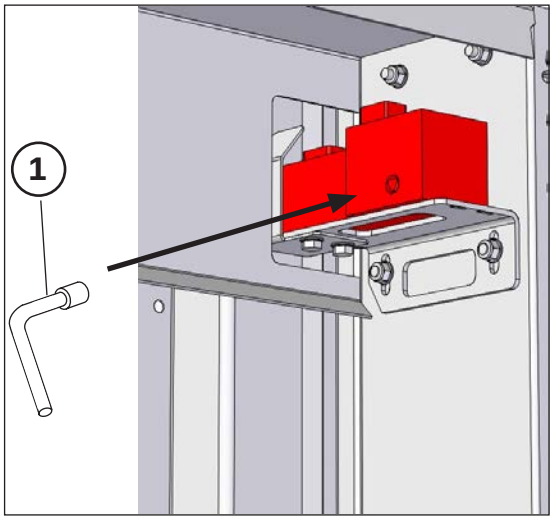
The cage sliding door locking can be opened with an emergency key (*Picture 3.9.3*).

Attention! The ramp door is allowed to be opened manually only by a person with appropriate qualifications and in charge of the hoist use.

Attention! Prior to driving the ramp door to open position make sure that it can be done safely. There must not be any obstacles under the ramp door.

3.9.3 The Hydraulic Ramp Door Emergency Use

During power cuts or in other emergency situations the hydraulic ramp door can be opened without power. The cage door locking is released by an emergency key (1) and the sliding door is lifted to the open position. The hydraulic ramp door is then pushed open to the lower position for instance with foot. When pushing the ramp door the release valve of the hydraulic system is opened and enables the ramp door opening.



Picture 3.9.3 Cage door opening

4. TROUBLE SHOOTING - When the Hoist does not move

4. TROUBLE SHOOTING - When the Hoist does not move

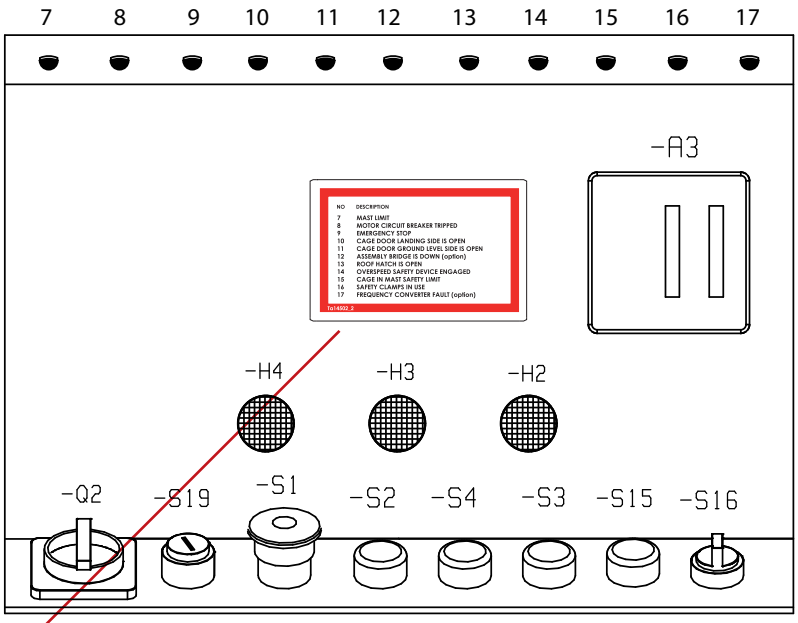
4.1 General Information

4.1.1 Relay Control

The series SC builder's hoists are equipped with fault diagnostics or a status display system, which in most of the cases can tell why the hoist is not able to move.

The hoists with relay control system are equipped with a status display with pilot lamps showing the state of limit switches and emergency stop buttons etc.

There are eleven red LED pilot lamps on the cage control panel. Their meanings are listed below (decal Ta 14502_2).



NO	DESCRIPTION
7	MAST LIMIT
8	MOTOR CIRCUIT BREAKER TRIPPED
9	EMERGENCY STOP
10	CAGE DOOR LANDING SIDE IS OPEN
11	CAGE DOOR GROUND LEVEL SIDE IS OPEN
12	ASSEMBLY BRIDGE IS DOWN (option)
13	ROOF HATCH IS OPEN
14	OVERSPEED SAFETY DEVICE ENGAGED
15	CAGE IN MAST SAFETY LIMIT
16	SAFETY CLAMPS IN USE
17	FREQUENCY CONVERTER FAULT (option)

Ta14502_2

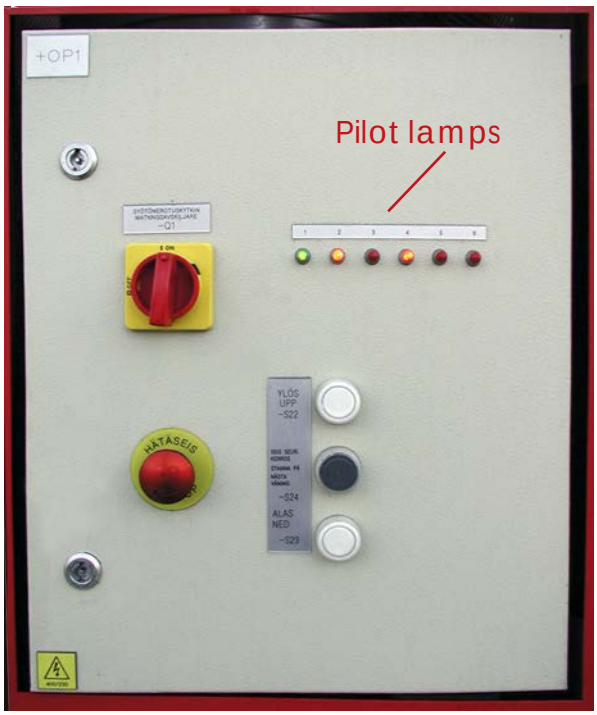
In addition there are three pilot lamps on the cage control panel to show the state of the hoist.

1. The green pilot lamp (H4) "Ready for use" is switched on when the hoist is in working condition and starts moving when operated. In this case no other pilot lamp is switched on.

2. The red pilot lamp (H3) "Overload" is switched on when the hoist is loaded with a burden bigger than the nominal load or the number of persons is exceeded. Reduce the overload until the overload pilot lamp is switched off and the ready for use lamp is switched on.

3. The yellow pilot lamp (H2) "Safety circuit broken" is switched on when for example the hoist door is open and thus the control system's safety circuit disconnected. The hoist must not move when operated. The more specific reason for the safety circuit being broken is shown on the status display, where a red pilot lamp is switched on by the cause. Remove the cause, for instance by closing the door. The yellow pilot lamp of the safety circuit is switched off and the ready for use pilot lamp is switched on. The yellow pilot lamp of the safety circuit is also found at the ground station and on every landing with a call box.

In addition there are one green and five red LED pilot lamps in the ground station control centre. Their meanings are listed below (Ta14502).



NO	DESCRIPTION
1	POWER SUPPLY
2	SAFETY CIRCUIT NOT IN ORDER
3	EMERGENCY STOP
4	
5	GROUND STATION DOOR IS OPEN
6	GROUND STATION DOOR LOCKING IS OPEN

Ta 14502_1

4.1.2 PLC (Programmable Logic Control)

The hoists with a PLC control system are equipped with a programmable fault diagnostics and a display unit, on which the fault codes are shown.

In case of a failure, that is mainly when one tries to operate the hoist, but it does not move, a fault code is shown on the display unit. Its meaning can be checked on the list beside the display (see the decal Ta 14502).

CODE ALARM
F01.... ROOF HATCH IS OPEN
F02.... MOTOR CIRCUIT BREAKER TRIPPED
F03.... FREQUENCY CONVERTER FAULT
F04.... LANDING GATE IS OPEN, FLOOR NUMBER X
F05.... CAGE IN MAST SAFETY LIMIT
F06.... EMERGENCY STOP GROUND LEVEL
F07.... GROUND LEVEL DOOR IS OPEN
F08.... LANDING STOP SENSOR FAULT
F09.... EMERGENCY STOP CAGE
F10.... EMERGENCY STOP ROOF
F11.... CAGE DOOR LANDING SIDE IS OPEN
F12.... CAGE DOOR GROUND LEVEL SIDE IS OPEN
F13.... CAGE DOOR LOCKING FAULT
F14.... SAFETY BRAKE ENGAGED
F15.... CAGE IN UPPER MAST LIMIT
F16.... MAST OVERRUN PROTECTION
F17.... DROP TEST REMOTE CONTROLLER CONNECTED
F18.... POWER SUPPLY FAILED
F19.... SAFETY CLAMPS IN USE
F20.... ROOF CONTROL
F21.... MANUAL CONTROL
F22.... PULSE COUNTING FAULT
F23.... LANDINGS: BUS FAULT
F24.... CAGE / GROUND UNIT: BUS FAULT
F25.... OPPOSITE RUN DIRECTION
F26.... CAGE SIDE DOOR IS OPEN
F27.... HYDRAULIC RAMP: MOTOR CIRCUIT BREAKER TRIPPED
F28.... HYDRAULIC RAMP IS NOT CLOSED
F29....
F30.... CONTROL FROM CAGE ONLY
F31.... PLC: INTERNAL FAULT 1
F32.... PLC: INTERNAL FAULT 2

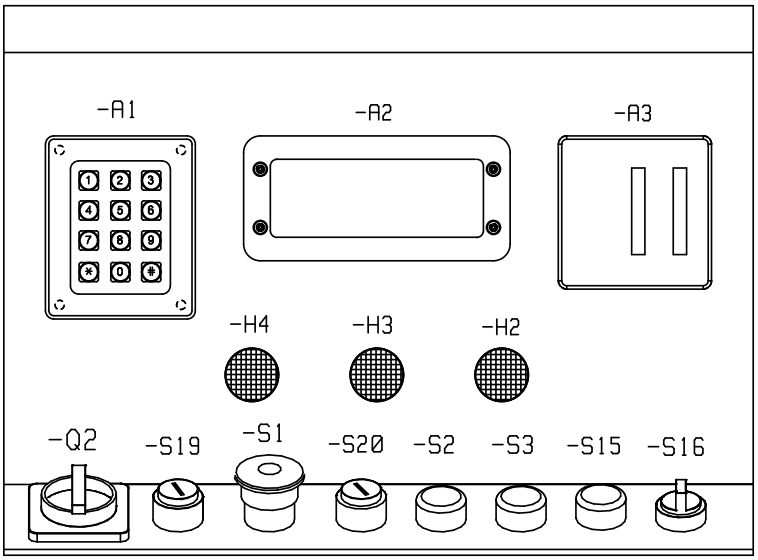
Ta 14502

In addition there are three pilot lamps on the cage control panel to show the state of the hoist.

1. The green pilot lamp (H4) "Ready for use" is switched on when the hoist is in working condition and starts moving when operated. In this case no other pilot lamp is switched on.

2. The red pilot lamp (H3) "Overload" is switched on when the hoist is loaded with a burden bigger than the nominal load or the number of persons is exceeded. Reduce the overload until the overload pilot lamp is switched off and the ready for use lamp is switched on.

3. The yellow pilot lamp (H2) "Safety circuit broken" is switched on when for example the hoist door is open and thus the control system's safety circuit disconnected. The hoist must not move when operated. The more specific reason for the safety circuit being broken is shown on the fault diagnostics display, where the corresponding error code is shown. Remove the cause, for instance by closing the door. The yellow pilot lamp of the safety circuit is switched off and the ready for use pilot lamp is switched on. The yellow pilot lamp of the safety circuit is also found at the ground station and on every landing with a call box.



4.2 The Supply Voltage

If the hoist control system seems dead check the hoist's supply voltage.

- Check that the main switch (Q1) on the ground station electric cabinet door is switched on to position 1.
- Check the hoist's supply voltage by taking a look at whether the pilot lamp (H1) on the ground station electric cabinet door is switched on. The lamp itself may also be faulty.
- Check that the main switch F1 in the ground station control centre is switched on.
- Check that the residual current breaker F2 in the ground station control centre is switched on.
- Check that the main switch (Q2) on the cage control panel is switched on to position 1.
- Check that the possible cable plugs supplying the hoist are properly connected.
- Check that the switch gear on the site's switchboard or other switchboard is switched on.

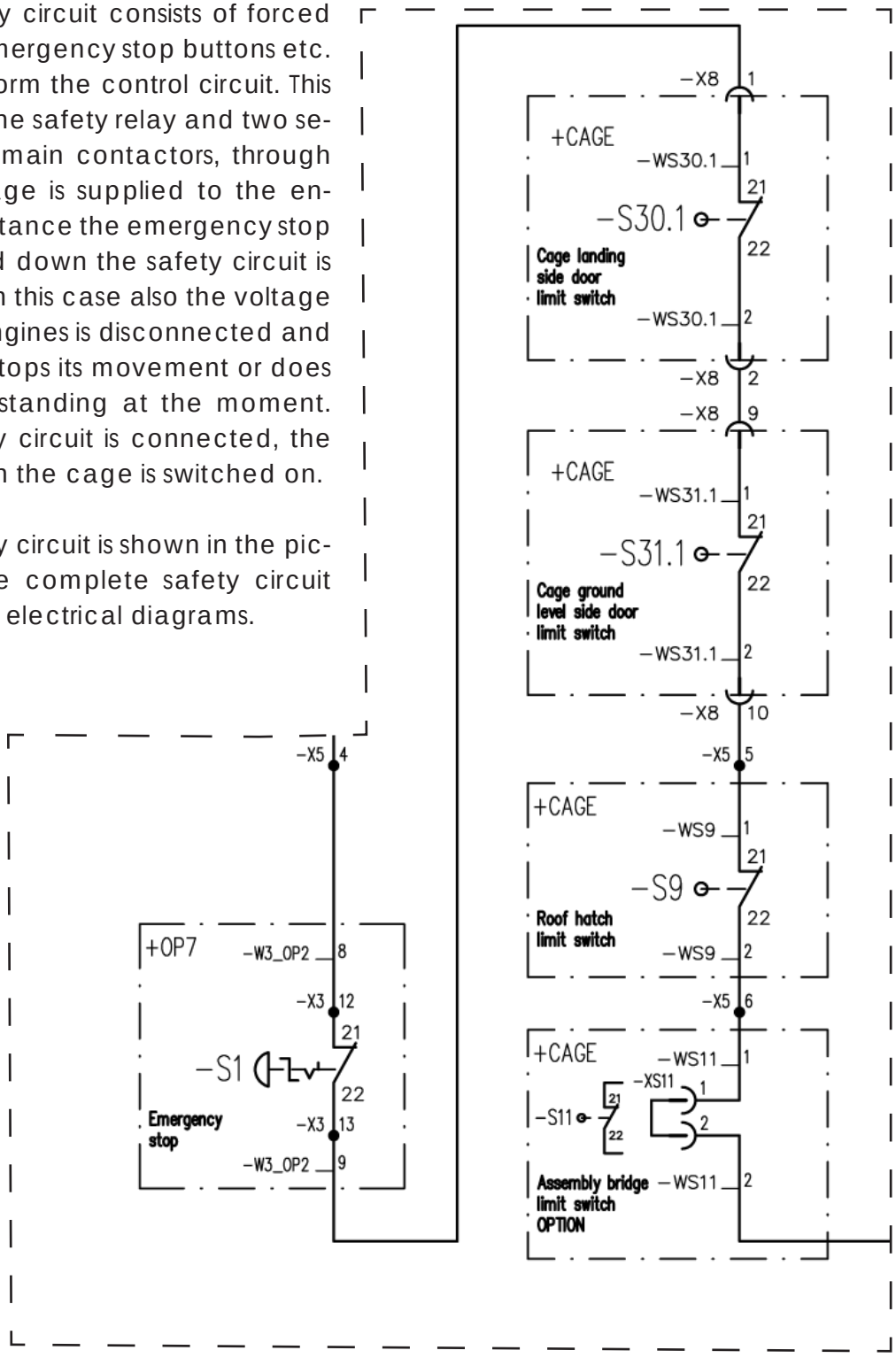
All electrical installations are allowed to be carried out only by a qualified professional in electricity.

The main switch in the electric cabinet must be switched to position 0 prior to opening the cabinet.

4.3 The Safety Circuit

The hoist's safety circuit consists of forced limit switches, emergency stop buttons etc. which in series form the control circuit. This circuit controls the safety relay and two series-connected main contactors, through which the voltage is supplied to the engines. So if for instance the emergency stop button is pushed down the safety circuit is disconnected. In this case also the voltage supply for the engines is disconnected and the hoist cage stops its movement or does not start if it is standing at the moment. When the safety circuit is connected, the pilot lamp (H2) in the cage is switched on.

Part of the safety circuit is shown in the picture beside. The complete safety circuit can be found in electrical diagrams.



4.4 Other Possible Reasons

For discovering these reasons the electric cabinet must be opened by a professional electrician.

The Ground Station Control Box:

- The fuse automat (F1) has switched off.
- The fault current switch (F2) has switched off.
- The fuse automat (F4), (F5), (F6), (F7) has switched off.
- The phase sequence control relay (F3) has switched off. One of the phases is missing, the phase sequence is not correct.

The Hoist Control Box:

- The motor circuit breaker (FM4, F4M.1). The adjusted value of the circuit breaker/the nominal current of the motor, Motor phase failure, -connection error, - short circuit, - ground fault, - overloading.
- The fuse automat (F1), (F2), (F2.1), (F2.2), (F3), (F4), (F5), (F6), (F7) has switched off.

The Hoist's Frequency Converter Box (optional equipment):

- The motor circuit breaker (FM1, FM2). The adjusted value of the circuit breaker/the nominal current of the motor, Motor phase failure, - connection error, - short circuit, - ground fault, - overloading.
- The fuse automat (F1) has switched off.
- The frequency converter failure. Check the error code on the frequency converter control panel.

Do not change the frequency converter parameters on your own initiative. As a result you may cause serious malfunction!

4.5 Errors - Trouble Shooting

4.5.1 "Visible Error"

The so called “visible error” is an issue discoverable with the naked eye and not necessarily an error at all, but usually a condition caused by the operator’s functions. Such issues can be for instance the following:

- The hoist door is open.
- The landing railing/gate is open.
- The main switch is not switched on.
- The emergency stop button is pushed.
- etc.

4.5.2 "Invisible Error"

The so called “invisible error” is usually not discoverable with the naked eye, at least not without opening the electric cabinets. Often to locate the error a professional electrician and measuring equipment are required. Such errors can be for instance the following:

- A fuse automat or a circuit breaker has switched off as a consequence of overload or short circuit.
- A limit switch, relay or contactor is stuck or a contact is not working properly.
- A connecting lead inside or outside the control cabinet is disconnected or the connection has become loose.

The electrical installations are allowed to be carried out only by qualified professionals in electricity.

4.5.3 The most common reasons for the Hoist not moving:

1. Is the main switch (Q1) in the ground station electric cabinet switched on?

2. Is the main switch (Q2) in the hoist electric cabinet switched on?

3. Is the emergency stop button pushed down in the cage, at the ground station or on the roof?

4. Is the pilot lamp (H1) "Supply voltage" on the ground station electric cabinet door switched on? In case the pilot lamp is not switched on, check that all three phases in the centre/cable supplying the hoist exist. Check that the lamp is not faulty.

5. Is the supply phase sequence correct? When the phase sequence is correct and all the phases exist, the pilot led of the phase guard relay (F3) in the ground station electric cabinet is switched on.

6. Are all the landing railings / - doors on the floors as well as the doors at the ground station closed? When the safety circuit is in order, the green pilot lamp (H4) on the hoist control panel is switched on.

7. Has the hoist reached the top or bottom limit of the mast? The mast bottom limit (S13); the mast top limit (S14). When the hoist has reached the upper or lower limit of the mast, it can be operated only in the opposite direction.

8. Has the hoist reached the safety limit (S18)? When the hoist has reached the safety limit, it does not move at all.

9. Has any of the limit switches stuck mechanically without returning to its normal position?

10. In case the hoist when operated from the cage does not move or does not answer the calls from landings, check whether the selected control mode is "Erection/inspection operation" (S55) and the select switch on the hoist roof is in position 1. In normal use the switch should be in position 0.

11. Has the motor circuit breaker (F4 or F4.1) switched off?

12. Has a fuse automat in the ground station control centre switched off?

13. Has a fuse automat in the cage control centre switched off?

14. Is any connector not properly connected, has for instance a screw connection become loose or a connection lead damaged?

5. SERVICE AND MAINTENANCE

5. SERVICE AND MAINTENANCE

5.1 Inspections

The purpose of the inspections and maintenance work is first of all to secure the safe use of the equipment. The purpose of regular maintenance is also to guarantee the reliable use of the equipment and thus prevent failures..

Read carefully chapter 2 SAFETY INSTRUCTIONS in this Instruction Manual before starting the service or maintenance operations.

The service and maintenance work on the hoist is allowed to be carried out only by professionals qualified to these tasks.

5.1.1 Daily Inspections

Prior to the daily use of the hoist it must be checked both visually and functionally. The most important daily check points are presented in chapters 3.1.1 Check List and 3.1.2 Functional Testing.

Always when the cage is operated from the cage roof due to inspection or maintenance operations, the selection of the control location must be switched to the cage roof control with the key switch (S55). Thus the hoist can be operated only with the buttons on the cage roof.

When working on the cage roof and while the hoist is moving do not hang down or lean out beyond the railings. Especially during the upward movement there is a great risk of collision or squeezing against the cage and the landing constructions.

5.2 Scanclimber General Warranty Conditions

This warranty information is a valuable document that will help the purchaser, owner or leaseholder (=client) to gain maximum use of the Scanclimber equipment (=product) to which the warranty applies. Scanclimber Oy (=supplier) which is the legal entity responsible under this warranty supplies the product.

Before using the product please observe the following: Read carefully through and follow the original operational, safety, erection, maintenance and other instructions. If the manuals or instructions are not available or if a copy in different language is needed, contact your local Scanclimber representative.

5.2.1 Conditions for the Applicability of the Warranty

The following conditions must be met in order for this warranty to apply:

- The product must be operated and maintained strictly in accordance with the supplier's product documentation, operation, safety and maintenance instructions.
- Only genuine spare parts have been used in the maintenance of the product.
- Replaced parts must be kept available for supplier representative's inspection until the warranty claim is finally settled.
- Electricity supply is according the specifications of the product.
- All defects under this warranty must be claimed in writing to supplier within the period of time specified below.

It is the responsibility of the owner to ensure that the above conditions have been fulfilled.

5.2.2 Scope

Subject to the conditions in this warranty information, supplier warrants that the product specified in the Sales Agreement, when delivered to the original purchaser, is free from defects in material and workmanship as well as conforms with the supplier's specifications relating to the product.

This warranty applies to the original purchaser and any subsequent owner who acquires the product within six months of date of delivery of the product to the original purchaser, but cannot be further transferred.

This warranty does not cover consumable parts, for example; fluids, seals, filters, rollers, heating elements, bulbs, fuses, bolts nuts, etc. unless it can be undisputedly evidenced that such a part was defective already at the time of delivery of the product to the client.

Supplier reserves the right to change the designs or specifications of its products at any time without incurring any liability to carry out identical or similar changes to products already sold, manufactured or delivered to any purchaser.

5.2.3 Warranty Period

Warranty period is 12 month unless else agreed

This warranty will remain in force as written in Sales Agreement of the specific product.

The warranty of a replaced or repaired part expires at the same time as the original warranty of the supplied product.

5.2.4 Implementation of the Warranty

The warranty covers the repair or replacement (repaired or new component) of defective parts, at supplier's option. Any defective parts that are replaced become the property of supplier. If special expertise is not needed for replacing the defective part, supplier fulfils its responsibility by delivering the replacement part to the client.

If special expertise is needed to solve the warranty claim, all the work carried out under this warranty must be performed by supplier and during normal working hours. This warranty does not cover any repair work performed by client if this is not separately agreed beforehand and confirmed in writing by supplier.

Where applicable, supplier shall deliver parts covered by warranty, free of charge under terms CIP, to the client's nearest international entry. All other costs e.g. all duties, are to be carried out by the client. When parts are required to be returned to the supplier, the right to accept return costs in advance is reserved.

5.2.5 What the Warranty Does not Cover

The supplier will not repair or replace any part that:

a) has been damaged in shipment for which the supplier is not responsible according to the applicable delivery conditions;

b) becomes defective as a result of an accident after delivery to client, improper or unauthorized service, overloading, carelessness or improper storage, handling or use as an additional defect by not reporting to the first defect/part under the warranty:

c) becomes defective as a result of normal wear and tear;

d) becomes defective as a result of the use of spare parts and components which were supplied by third parties;

e) otherwise has been used, maintained or serviced in a manner not consistent with supplier's operation, erection and maintenance instructions and recommendations;

f) in case of false or imperfect information of the original failure given by the client;

g) has been damaged in due to interventions, modifications or repairs made by third parties without prior written approval given by supplier; or

h) the conditions for the applicability of the warranty as set out above have not been met.

This warranty does not cover routine mechanical or electrical adjustments described and explained in the original documentation of the operation and maintenance supplied to the original purchaser. Such adjustments are under the responsibility of the client. In addition minor defects, which do not effect to the use or performance of the product, are not covered by the warranty.

Supplier shall not be liable for special, indirect, incidental or consequential damages, whether in contract, warranty, tort, negligence, strict liability or otherwise including but not limited to, travel expenses, allowances and shipment costs, loss of use of the product, loss of profits or revenue, damage to other property, delays, or claims of

clients or other third parties for such or other damages.

Under any circumstances the liability of supplier of any damages shall be limited to the purchase price of the product directly and without any additional options or side products or components built together with basic unit.

Notwithstanding the before mentioned provisions, supplier's mandatory liability under any applicable law relating to product liability, as in effect from time to time, remains unchanged.

Supplier does not accept any liability for promises or warranties relating to the product and its parts, extending supplier's liability beyond the conditions clearly expressed in this warranty.

5.2.6 Reporting of Defects

It is the responsibility of the client to report any nonconformity under this warranty in writing to Scanclimber. All defects must be reported as soon as possible, but in no case later than fourteen (14) days after the owner first discovered such defect or ought to have discovered the defect and have claimed within two months.

Any reported defect shall be inspected and confirmed by technical personnel from supplier, if not otherwise agreed in writing.

5.2.7 Law

This warranty shall be governed and interpreted as written in Sales Agreement of the product.

5.3 Maintenance and lubrication

Always prior to the service and repair work the hoist must be withdrawn from the use. Switch off the disconnecting switch in the ground station control center and lock it.

In case there are more than one person working on the hoist, always be aware what your fellow worker is doing.

In case the service work is done underneath the hoist cage, fix the safety clamps on top of the drive unit and switch off the disconnecting switch before going under the cage.

The maintenance and lubrication intervals are defined for the use of the hoist in one working shift. Should the hoist be used in more than one shift, these intervals have to be made correspondingly shorter.

5.3.1 Transmission

40 service hours	120 service hours	Measure	Method
X		Approximate visual check of the gear rack fastening. If you suspect looseness tighten with appropriate tools. Greasing the gear rack	Tightening Grease
X		Check the condition of the pinions. Check also the condition of the gear rack toothing.	
	X	Check the level and quality of the transmission oil.	
X		Look for possible oil leaks in transmissions.	
X		Check the fastenings of the geared motor and the safety brake.	
	X	Lubricate the safety brake sliding bearings and the pinion bearings.	Grease gun
X		Visual check of the fastening bolts in the mast sections. If you suspect looseness tighten them.	Torque wrench
	X	Visual check of the mast pipes. If longitudinal grooves or excessive wear is discovered adjust the guide roller. Check the condition of the pinion and the counter roller. Adjust.	
X		Check the cable guides.	
X		Check the cable by its full length (for fractures, curling). The coiling of the cable into the basket.	
X		The landing gates / doors should be properly on their hinges. Does the gate / door leaves open smoothly? Functional test. In case the gate / door is even slightly open the cage must not move.	Oil, grease

X		Check the cage doors. Are the cable wires in good condition and greased? Do the doors move smoothly? Does the door locking work properly? Are the limit switches adjusted?	Grease
	X	Check the clearances of the cage guide rollers. Check the wear and bearings in the guide rollers.	Adjust or replace. Readjust.
	X	Motor brakes: Measure the clearances (0,5 – 1,1 mm). One brake should stop the cage in full load.	
X		Check the mast anchoring. All the fastening screws in every anchoring section should be tightened.	
X		Lubricate the guide rollers of the limit switches.	Machine oil

5.3.1 Transmission

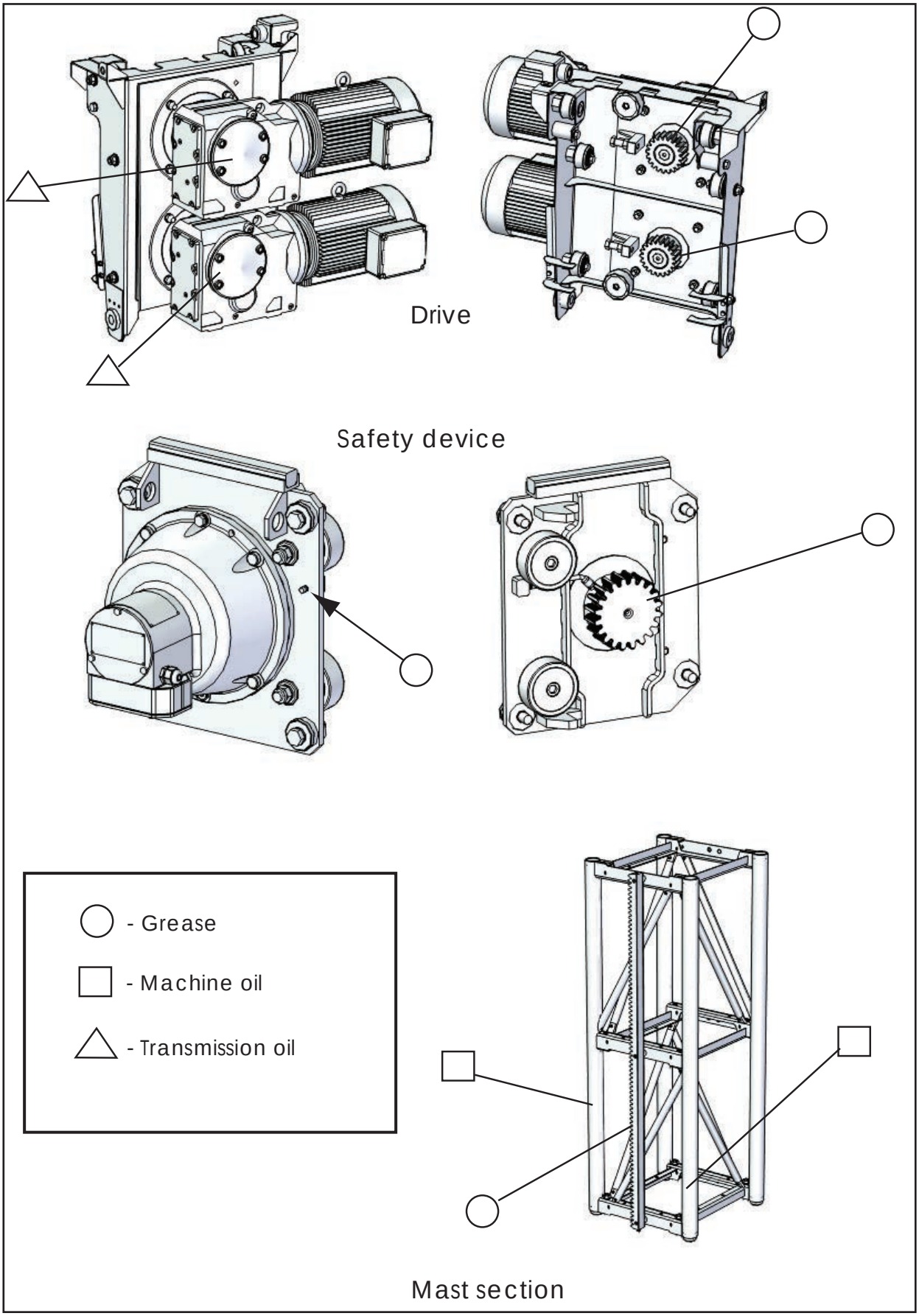
- Check the transmission oil level regularly.
- The lubricant is changed at intervals of 10.000 service hours or minimum at intervals of two years.
- When changing the oil first clean the transmission carefully.
- The lubricant is selected according to the manufacturer's maintenance instructions, taking into account the conditions, in which the hoist is used.

Check the lubricant volume in the transmission according to the transmission manufacturer's maintenance instructions.

It is recommended to use synthetic oil. For example: Mobil SHC 220, Shell Omala 220HD, Petro-Canada Super Gear 220.

Do not mix synthetic and mineral oil based lubricants.

5.3.2 Inspection, Maintenance and Lubrication Points



5.4 Adjustments

Brake motor, safety brake, pinions, guide rollers.

Lower the cage to ground station and lower manually on the buffer springs before brake service

5.4.1 Motor Brake

In order to achieve sufficient braking torque for the brake, it is important, that the brake clearance is correctly adjusted and that the brake disc cover is in perfect condition.

If the air slot is too big adjust the brake. In case the air slot is too big the brake does not stop the hoist properly and as a result the braking distance becomes long or in the worst case the brake does not work at all.

The nominal brake air slot is 0,4 mm for 150Nm brake. The brake must be adjusted if the air slot exceeds 1,1mm

The nominal brake air slot is 0,5 mm for 250Nm brake. The brake must be adjusted if the air slot exceeds 1,2 mm

The brake is adjusted as follows:

- Unscrew the fastening screws.
- Adjust the adjusting screws, every one of them evenly.
- Tighten the fastening screws.
- Measure the air slot with a clearance gauge

See also additional "Operating and mainteance instruction" NORD supplement. Detailed description the brake motor.

The friction disc of 150 Nm brake must be replaced, when it is worn 3,5 mm or its thickness is 14,5 mm, which is the minimum permissible thickness for a friction disc

The friction disc 250 Nm brake must be replaced, when it is worn 3,5 mm or its thickness is 16,5 mm, which is the minimum permissible thickness for a friction disc

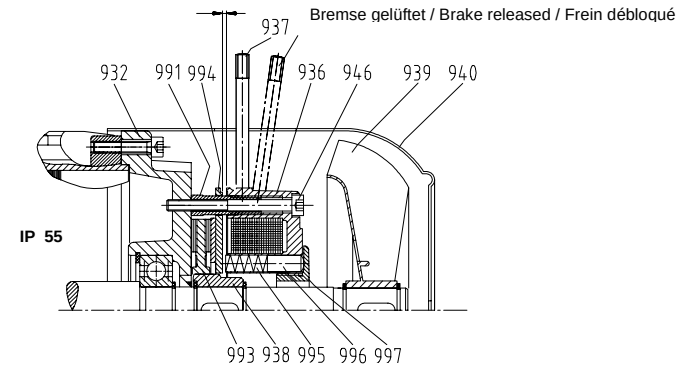
The friction disk is adjusted as follows:

- Unscrew the fastening screws.
- Pull the brake backwards and replace the friction disc.
- Fasten the brake with the fastening screws.
- Adjust the air slot as described above.

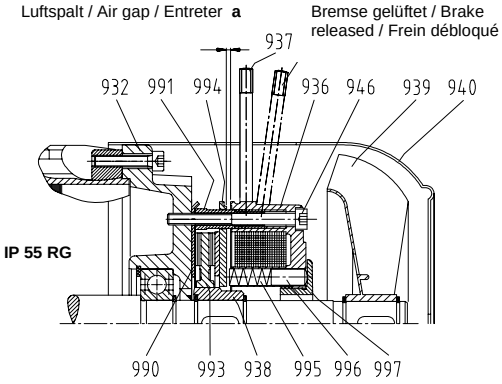
During the inspection clean the brake from braking dust. If there is a sealing tape around the brake remove it and blow the dust away. Use a breathing mask when cleaning the brakes.

BREMSEN
BRAKE
FREINS

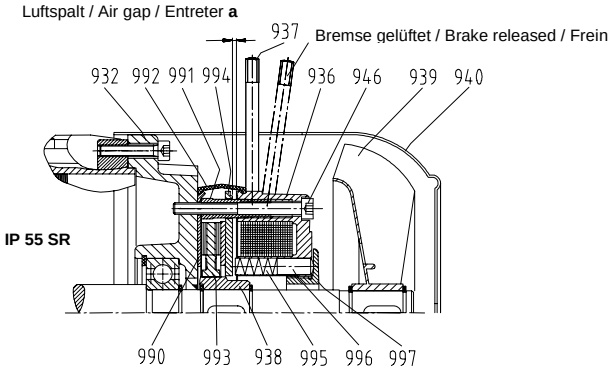
Luftspalt / Air gap / Entreter **a**



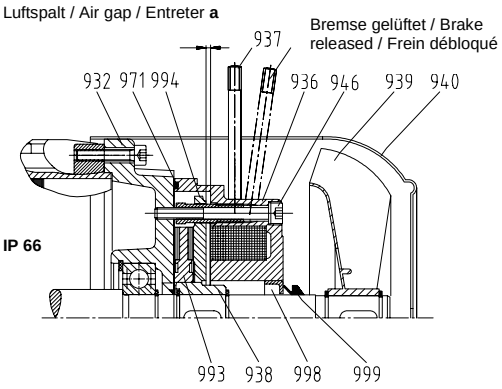
Luftspalt / Air gap / Entreter **a**



Luftspalt / Air gap / Entreter **a**



Luftspalt / Air gap / Entreter **a**



Achtung: IP 66 in den Größen 5 - 400 Nm - Zuordnung Bremsengröße und Motorbaugröße auf Anfrage.
Attention: IP 66 with sizes 5 - 400 Nm Opt. match of brake size and motor frame size on request.
Attention: IP 66 dans les tailles 5 - 400 Nm Allocation de tailles frein aux encombrements moteur sur demande.

932	B-Lagerschild	932	non-drive endshield	932	Flasque B
936	Bremse, komplett	936	complete brake	936	Frein complet
937	Handlüftung	937	manual brakereferse	937	Déblocage manuel
938	Bremsmitnehmer	938	brake hub	938	Entraîneur
939	Ventilator	939	fan	939	Ventilateur
940	Lüfterhaube	940	fan-cowl	940	Capot ventilateur
946	Befestigungsschraube	946	fixing screw	946	Vis de fixation
971	O-Ring	971	O-Ring	971	Joint torique
990	Reibblech	990	friction plate	990	Disque de friction
991	Einstellschraube	991	setting bolt	991	Vis de réglage
992	Staubschutzring [1)]	992	dust protection ring [1)]	992	Anneau anti-poussiére [1)]
993	Bremsbelag	993	brake lining	993	Disque de frein
994	Anker	994	armature	994	Armature
995	Druckfeder	995	spring	995	Ressort de pression
996	Druckstück **	996	pressure plate **	996	Tacquet d'appui **
997	Einstellring **	997	adjusting ring **	997	Ecrou de réglage **
998	Buchse / Dichtungslamelle	998	Bushing / Seal	998	Lamelle d'étanchéité
999	V-Ring	999	V-Ring	999	Joint trapézoïdal

* Option / option / option

** nur für Bremsen 5 Nm bis 40 Nm / only for brakes 5 Nm to 40 Nm / seulement pour freins 5 Nm jusqu'à 40 Nm

[1)] nicht bei Bremse 20 Nm, 400 und 800 Nm / not for Brakes 20 Nm, 400 Nm and 800 Nm / pas pour les freins 20 Nm, 400 jusqu'à 40 Nm et 800 Nm

5.4.2 The Safety Brake

5.4.2.1 The Operation of the Safety Brake

Do never open the safety brake or otherwise try to impact its operation. In case the safety brake has been arbitrarily tampered will all warranty claims lapse. The faulty safety brake must always immediately be replaced with a new one. The function of the new safety brake must be tested prior to putting the hoist in use.

Remove the faulty safety brake and replace it with a new one.

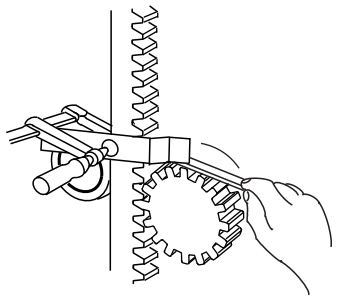
Send the faulty safety brake to the manufacturer for repair.

The safety brake is to be sent to the manufacturer for measuring the release speed and adjustments. The safety brake undergoes also the inspection of bearings, spring set, wear of the brake surfaces, micro switch as well as the possible damages in the cover.

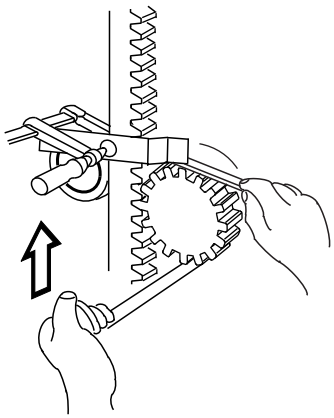
THE SAFETY BRAKE MUST BE REPLACED AT INTERVALS OF FOUR YEARS.

5.4.2.2 The Radial Clearance of the Safety Brake Bearings

In order to determine the radial clearance of the safety brake bearings fix a metal plate to the gear rack with a clamp as described in the picture. Put in the metal plate so that the slot between its lower edge and the highest tooth on the safety brake pinion ring is appr. 1mm. Measure the slot with for example a clearance gauge and write down the result.



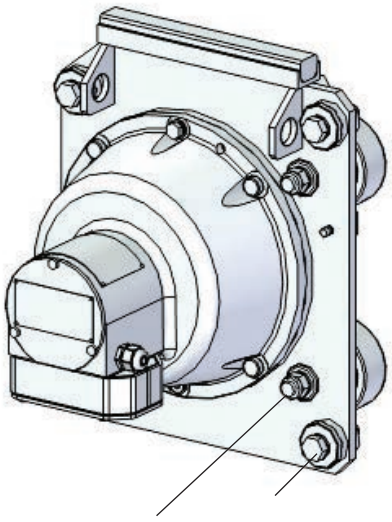
Then lift the safety brake pinion upwards for instance with a metal rod or a similar item. Now measure the distance between the metal plate and the tooth again and write down the result.



The clearance is the difference between the measurement results. The clearance must not exceed 0,3mm. If it does, remove the safety brake and replace it with a new one.

5.4.2.3 Adjusting the Safety Brake Pinions

The safety brake pinions are not directly adjustable, the tooth contact between the pinions and the gear rack is adjusted with the help of the counter roller placed on the opposite side of the gear rack. As the hoist cage moves guided by the guide rollers, the tooth contact is to be checked if the guide rollers of the lifting mechanism have been adjusted.



M14x50 8.8
Torque 90Nm

M16x65 8.8
Torque 140Nm

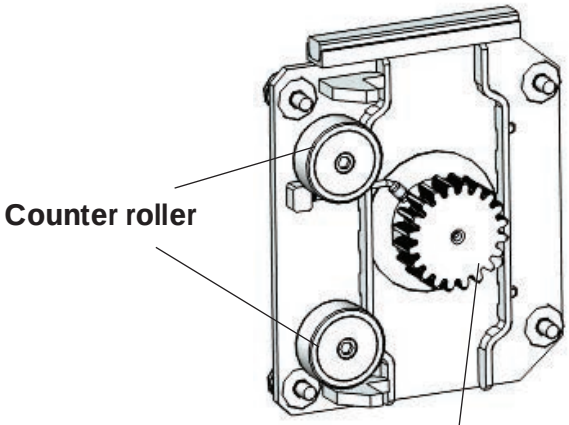
On the counter roller axle there is an eccentric, and by rotating it one can adjust the tooth contact.

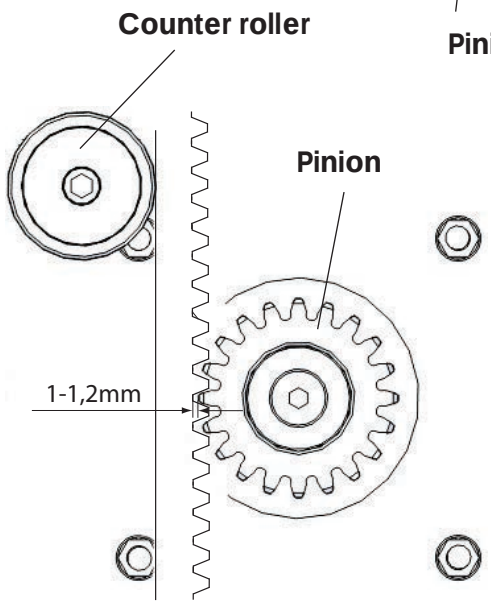
Firstly, loosen the four screws with which the safety brake is fastened to the hoist cage.

Check that the pinion teeth are right-angled between the two gear rack teeth.

Tighten the counter roller by adjusting the eccentric so that the counter roller lies lightly against the gear rack and that the groove distance between the top of the pinion and the gear rack teeth is 1,0..1,2 mm.

Tighten the safety brake fastening screws.

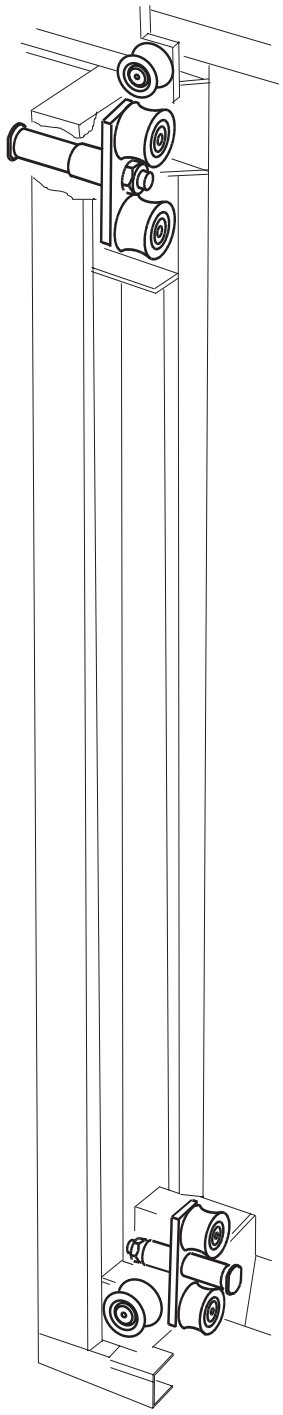




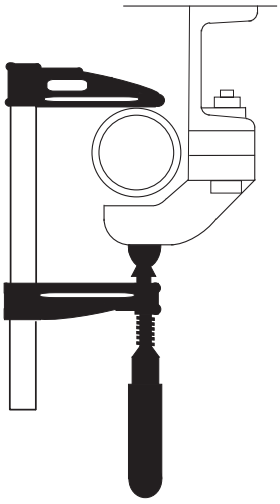
5.4.3 The Guide Rollers

5.4.3.1 Replacing the Guide Rollers

In case service work is done underneath the hoist cage, fix the safety clamps on top of the drive unit and switch off the disconnecting switch before going under the cage.



Support the hoist cage safely from underneath and secure to both of the mast pipes using for example big clamps or other wedges so that the cage cannot move after the guide rollers have been removed. Loosen the tightening of the guide rollers and turn the eccentric so that there is a sufficient clearance between the mast and the guide rollers. Remove the guide roller. Install a new guide roller. However, do not tighten the axle fastening screw fully as yet. Now turn the eccentric with a spanner so that the guide roller lies lightly against the mast pipe. Remove the clamps or wedges securing the cage and tighten the guide roller axle's fastening screw properly.

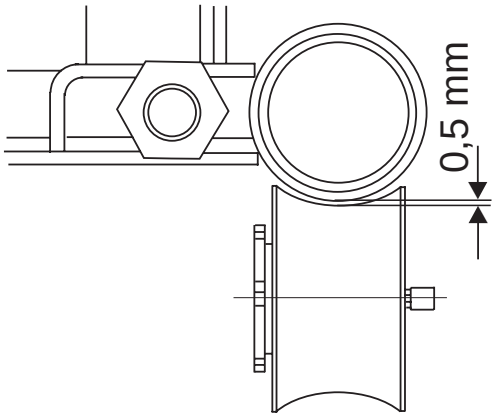


The lower guide rollers are replaced in the same way as the upper ones. Secure that the cage stays in place and remove the cage load for example with clamps. Remove the old guide rollers and install the new ones. Adjust the guide rollers lightly against the mast with the eccentric placed on the guide roller axle so that the clamps used for supporting the cage can be removed.

The replacement of the guide rollers of both the hoist cage and the lifting mechanism is carried out according to the same principle.

5.4.3.2 The Guide Roller Clearance

The guide roller clearance should be 0,5 mm on both sides as shown in the picture. A quick adjustment is possible also so that the clearance of the guide roller on one side is shut and the guide roller on the opposite side adjusted to the distance of 1 mm.



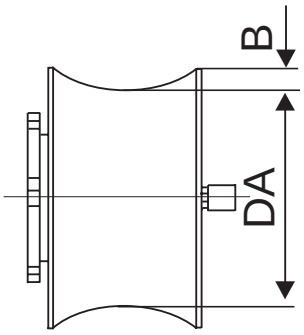
After adjusting the guide rollers check also the contact of the gear rack and the pinion.

Tightening torques:

- The guide roller axles fastening screw 120 Nm
- The eccentric fastening screw 300 Nm

5.4.3.3 The Guide Roller Dimensions

The maximum permissible wear is shown in the table below. If the roller diameter is too small replace the roller.



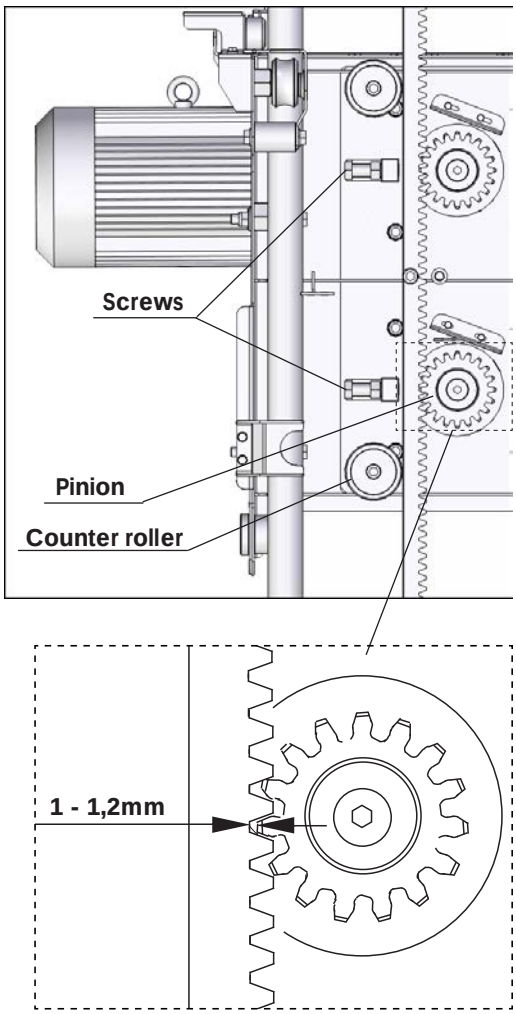
Dimensions	New roller	Worn roller
DA	70 mm	min. 66 mm
B		min. 4 mm

5.4.4 Adjusting the Lifting Mechanism Pinions

The power transmission pinions are not directly adjustable, the tooth contact between the pinions and the gear rack is adjusted with the help of the special screws placed on drive plate. Using screws set the pinion to gear rack teeth for requre distance (1-1,2mm).

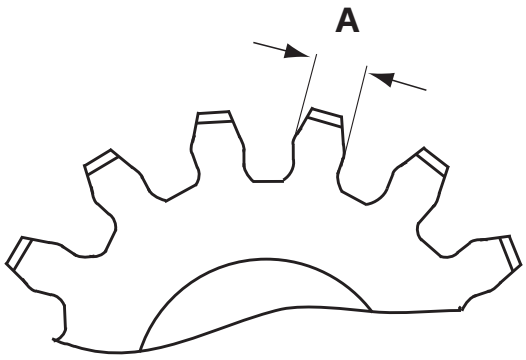
As the hoist cage as well as the lifting mechanism move guided by the guide rollers, the tooth contact is to be checked if the guide rollers have been adjusted. Check that the pinion teeth are right-angled between the two gear rack teeth.

Tighten the counter roller by adjusting the eccentric so that the counter roller lies lightly against the gear rack and that the groove distance between the top of the pinion and the gear rack teeth is 1..1,2mm. See the picture.



5.4.5 The Pinions

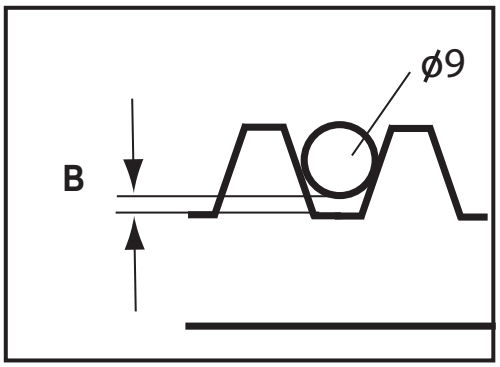
The pinion shall be checked regularly. Inspect the pinions visually for abnormal wear.
Measure pinion teeth:
If the measurement A is less than 9,0 mm, replece pinion.



5.4.6 The Mast Section and the Gear Rack

Check the structure of the mast sections regularly. The wear of the mast section pipes can be measured by measuring the pipe's outer diameter with a slide gauge. The possible inside corrosion of the pipe can be discovered by measuring the pipe wall thickness with an ultrasonic device suitable for this purpose. Check the mast sections also for possible mechanical damages as well as their welded seams.

Check the gear rack for its possible wear and its fastenings to the mast section frame.



In the picture you can see the dimensions of the new tooth as well as the minimum dimensions of the worn tooth. Note that a well lubricated tooth does not wear and helps the hoist move more smoothly.

B = 3 mm for new rack

If B is less than 2 mm replace rack

5.5 The Safety Brake

The safety brake is a type tested safety device approved by the authorities which is an important part of every personnel hoist.

Using the hoist without a tested safety brake or with a faulty safety brake is strictly forbidden.

The arbitrary repair of the safety brake is forbidden.

Remove the faulty safety brake and replace it with a new one. Send the faulty safety brake to the manufacturer for repair.

THE SAFETY BRAKE MUST BE REPLACED AT INTERVALS OF FOUR YEARS.

5.5.1 When the Safety Brake Has Engaged

When the safety brake has engaged it is impossible to operate the hoist. When the safety brake operates, the limit switch (S10) inside it disconnects the safety circuit.

When the safety brake has engaged, always contact the person in charge of the hoist's maintenance.

If it is certain that for instance in the mechanic structure of the hoist (geared motor, brake, pinions, cage guide rollers) there are no such damages which would prevent or endanger the hoist's operation, the safety brake limit switch can be temporarily bypassed.

When the safety brake has operated, the reason for this must always be thoroughly cleared, and the possible fault repaired prior to restarting the hoist.

To get the people out of the hoist cage, switch the key switch (S19) on the cage control panel to position "I", *"Bypass of the safety brake"*. Drive the hoist to the next landing up and make an exit.

The limit switch of the safety brake is allowed to be bypassed only by a person well familiar with the hoist's opreration and in charge of its maintenance and installation.

After the bypass of the safety brake do not forget to take the key off the switch. The key must not be kept in the hoist cage, but in possession of the site's supervision or the person in charge of the hoist's maintenance.

Prior to safety brake disengagement the reason for the safety brake engagement must be cleared up. Check the following points:

- The functioning of the motor brakes, both mechanical and electrical.
- The condition of the geared motors, the flanged joint of the gear and the motor as well as the wedge placed on the motor shaft.
- The condition of the guide rollers and the counter rollers.
- The condition of the pinions and gear racks in the drive.
- The adjustment and functioning of the safety brake limit switch. If the safety brake has operated and the limit switch is working correctly the cage must not move when operated.

In case the safety brake engagement was caused by a fault in the load bearing structure, for instance the pinion, gear box or lifting motor the safety brake must not be released before the fault is repaired.

The use of the hoist prior to releasing of the safety brake is forbidden.

See chapter 5.4.3 Adjusting the Safety Brake.

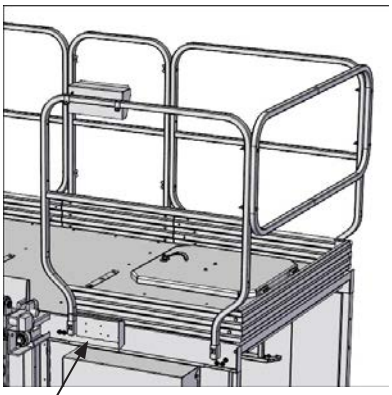
5.5.2 Testing the Safety Brake

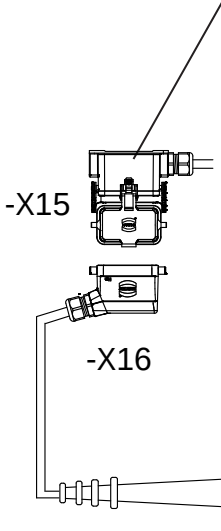
The safety brake must be tested with the hoist's nominal load prior to the first adoption of the hoist and after that regularly in accordance with the maintenance and scheduled inspections instructions.

Only a professionally qualified person is allowed to carry out the safety brake test.

Staying in the cage or on the cage roof during the test is strictly forbidden.

Make sure that the motor brakes work properly before testing the safety brake.





- Connect the safety brake test remote control to the multi-pole connector (X15) placed on the upper part of the cage wall on the mast's side. The remote control cable is led down over the safety railing surrounding the hoist.
- In case the hoist is equipped with a logic control system turn the key switch (S20) on the cage control panel to position "0-Manual control".
- Close the cage doors and the roof hatch.
- Drive the hoist up using the remote control button to appr. 5 meters.
- Turn the remote control key switch (S60), "Brake release", and keep it in this position, the motor brakes are released.
- The cage now falls freely, until it reaches the limit speed of about 0,9m/s and the safety brake stops the cage.

In case the safety brake does not stop the cage, when it has been falling down for about 2m it must be stopped by turning back the remote control key switch (S60), "Brake release".

5.5.2.1 The Correct Function of the Safety Brake

The safety brake is working correctly and stops the falling movement of the cage. Simultaneously the safety brake limit switch disconnects the electric safety circuit of the hoist.

- Turn the remote control key switch (S61), "*Safety brake bypass*", the safety brake limit switch (S10) is bypassed and the hoist can be operated with the remote control.

- Drive the cage with the remote control button (S62) upwards for about 1 meter so that the safety brake centrifugal clutch is detached from the brake cone and the safety brake is released.

- Drive the cage with the remote control button (S63) down to the ground station and disconnect the remote control from the connector (X15).

- Switch the disconnecting switch (Q1) in the ground station control box to position "0".

- Adjust the safety brake according to the instructions given in point 5.4.3 Adjusting the Safety Brake.

- After finishing the work switch the disconnecting switch (Q1) in the ground station control box back to position "1".

- Concerning the hoists with logic control turn the key switch (S20) to position "1-Auto".

5.5.2.2 The Incorrect Function of the Safety Brake

The safety brake does not stop the falling movement of the cage. The movement was stopped with the key switch (S61), and the motor brakes stopped the cage.

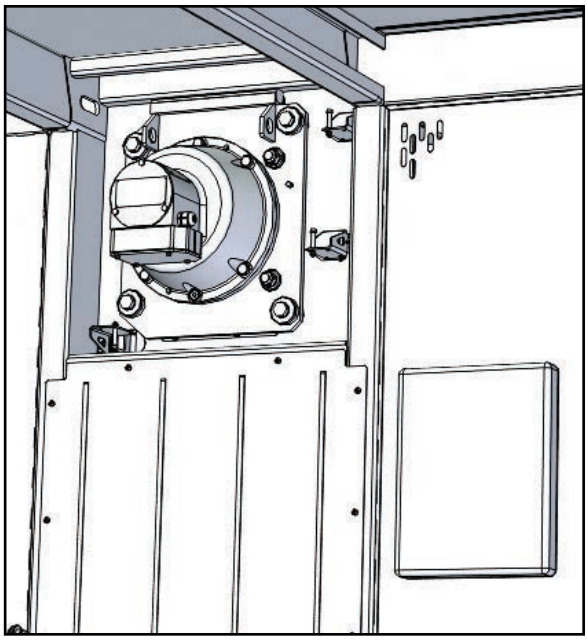
- Drive the cage with the remote control button to the ground station.
- Switch the “Disconnecting switch” Q1 in the ground station control box to position “0”.
- Remove the safety brake and send it to the manufacturer for repair.
- Install a new safety brake and repeat the test.

Using the hoist without a correctly tested safety brake is forbidden.

Using the hoist without a safety brake or with a faulty safety brake is strictly forbidden!

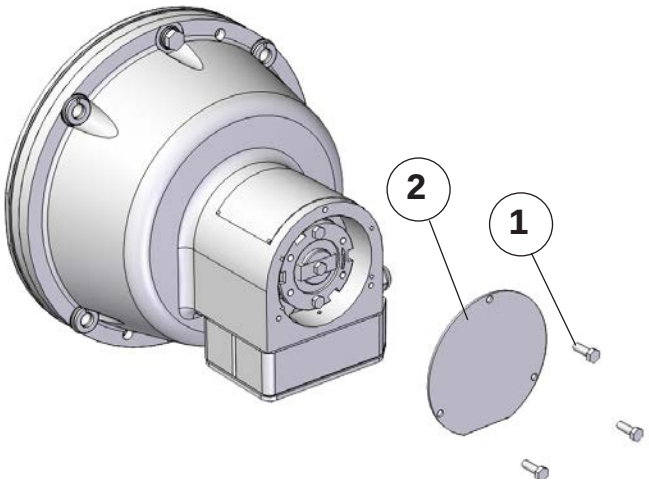
5.5.3 Releasing the Safety Brake

When the safety brake has engaged as a result of the testing or other reason, it has to be released prior to the next use of the hoist. The safety brake is released in the following way:



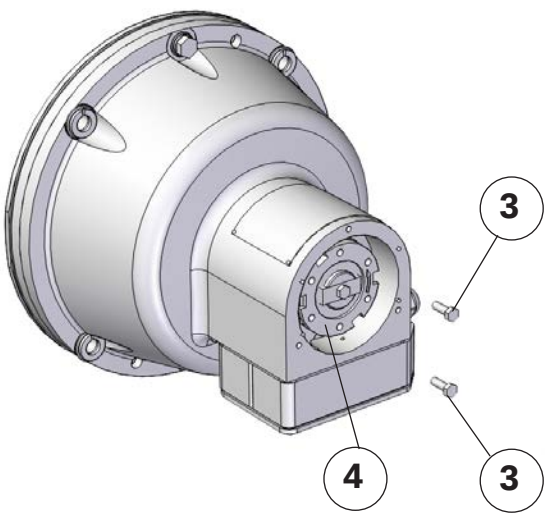
Location of safety brake in the hoist cage.

1. Switch the disconnecting switch (Q1) at the ground station to position 0.

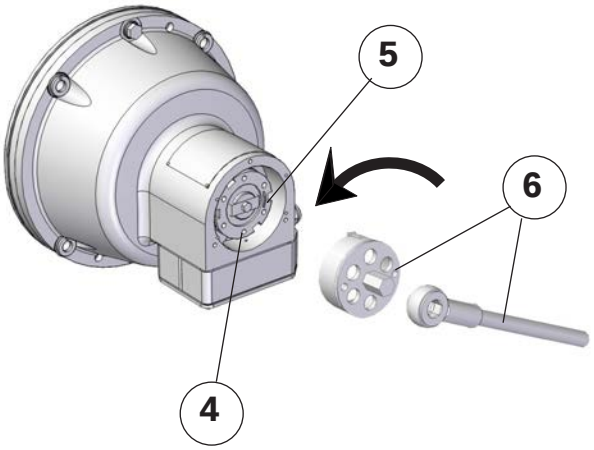


2. Unscrew the three screws (1) fastening the back plate (2) of the safety brake.

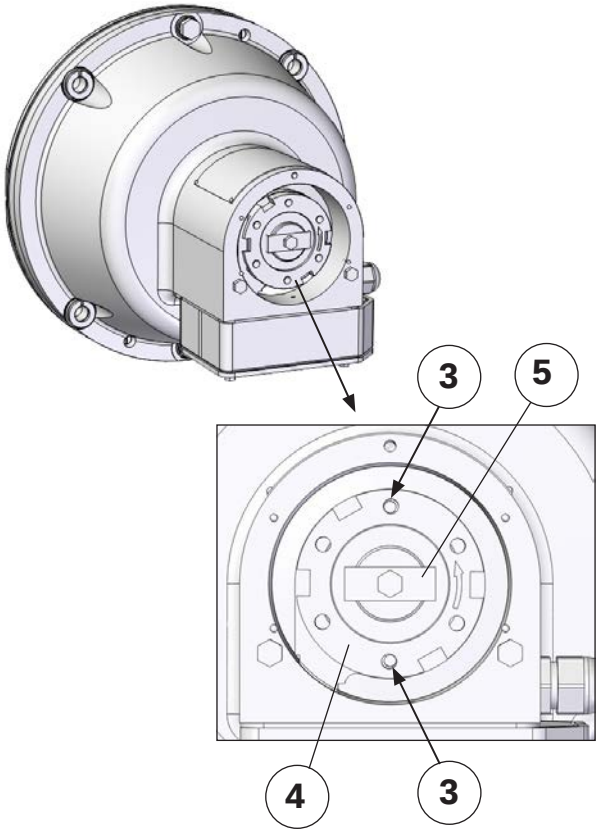
3. Open the two screws (3) of the bronze nut (4) with 10 mm wrench.



4. Rotate the bronze nut (4) counter clockwise (unscrew) until it rests against the top plate(5).
   Do not bend the plate.
   Use the special key(6).

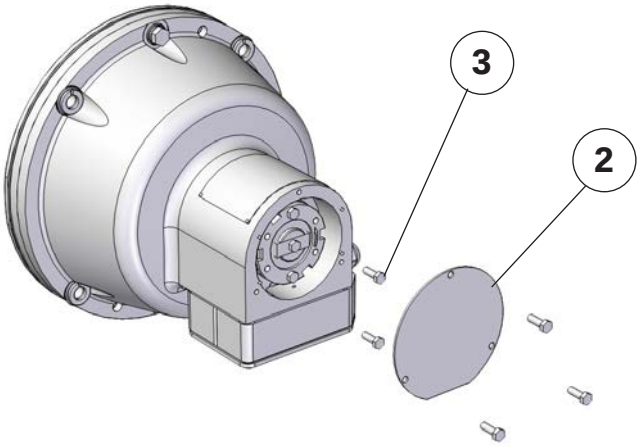


5 Rotate the bronze nut (4)by hand to align the two screw(3).



6. Install the two screws (3).

7. Mount the cover (2)



8. INSPECTION FORMS

THE BUILDER'S MATERIAL AND PERSONNEL HOIST ERECTION INSPECTION FORM

Job site address:	**Inspector:**
Hoist number:	**Site engineer:**
Hoist model:	**Inspection date:**
Other participants of the inspection:	
Persons trained to carry out weekly maintenance inspections:	

INSPECTION OBJECT	IN ORDER	TO BE REPAIRED	UNNECES-SARY	REMARKS	REPAIR DATE
Foundation					
Mast sections					
Mast section bolts					
Racks and pinions					
Wall ties					
Guiding rollers					
Safety fences					
Cage and doors					
Roof gate and railings					
Counter weight and ropes					
Landings and gates/doors					
Control devices					
Main switches					
Control switches					
Limit switches					
Emergency stops					
Safety brake					
Overload device					
Safety brake test					
Electric motors					
Gear boxes and hydraulic cylinders					
Brakes and lowering levers					
Power cable					
Control cable					
Contactors and relays					
Horn and illumination					
Main power switch					
Signs and markings					
Hoist surroundings					

Inspector signature _____

THE BUILDER'S MATERIAL AND PERSONNEL HOIST MAINTENANCE INSPECTION FORM

Job site address _____
Hoist number _____
Hoist model _____
Site engineer_____

A = in order
B = remark; enter the repairs and remarks overleaf the inspection form

	Inspector																
	Week/year																
CHECK		**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**
1.	that the ground has not sunk and that the hoist/mast is vertical																
2.	that the fastening mast base to fundation slab are in order																
3.	fastening and condition of mast sections, racks and wall ties																
4.	that the guide rollers are in proper places																
5.	that the cage and hoist fences are undamaged																
6.	function of all limit switches and that the cage does not start moving if any of the cage or landing gates/doors is open or if the emergency stop button is pushed down																
7.	that the hoist's control buttons work on the ground, on the landings and in the cage																
8.	that the doors and landing gates/doors open and close properly and the landings are in regulatory condition																
9.	that the motor, gearbox and it's base plate bolts are tight and that there are no oil leaks in the gear box																
10.	that the brakes work properly and that the safety brake is in working order (visually)																
11.	that the hoist electric cables are in order, the cable guides on the mast are undamaged																
12.	that load signs on the ground level and in the cage are in their places																
	Day/month																

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