



## USER AND SERVICE MANUAL FOR EXE-RISE CHAIN HOIST



**250/500/1000 kg  
D8 (DC)**

**250/500/1000/2000 kg  
D8+ (DC/LVC)**



**EXCLUSIVELY DISTRIBUTED BY**

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**[ORIGINAL INSTRUCTION]**

**MANUFACTURER IDENTIFICATION**  
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Retain this manual for future reference and use.

Forward this manual to the chain hoist operator and maintainer.

Should you have any questions or have problems with this product, please call RWM S.r.l..

Check the EXE website for the latest version of the manual or the manual related to the year of purchase of your hoist.

<i>Revision</i>	<i>Modifications</i>	<i>Description</i>	<i>Issue Date</i>
01	All manual	First issue in according to Machine Directive 2006/42/CE	07/02/2019
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Before using the hoist, please fill in the following information (referred to the hoist identification plate). Such information must be communicated every time that the RWM S.r.l service department or your local distributor is contacted. If you are in doubt or need any further information, please contact us.

<b>Customer Name and address (1)</b>	
<b>Customer Name and address (2)</b>	
<b>Model number</b>	
<b>Instructions for use</b>	
<b>Serial number</b>	
<b>Purchase date</b>	
<b>Voltage</b>	
<b>Nominal capacity</b>	



**Do not use a chain hoist before all operators have carefully read this manual.**  
**Failure to operate the equipment as here described may cause injury or even death.**

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## 1. GENERAL INFORMATION

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Thank you for choosing an EXE-Rise chain hoist.

### 1.1 MANUAL SCOPE

Scope of manual is to inform operator about properly install, operate of chain hoist to prevent and minimize risks during the man-machine interaction. In addition, the manual contains also information confidential to the maintainer to perform maintenance work.

Follow all instructions and signs for inspecting, maintaining and operating this chain hoist. The use of any chain hoist presents risk of personal injury or property damage. That risk is greatly increased if proper instructions and warnings are not followed.

Before using this chain hoist, each operator should become thoroughly familiar with all warnings, instructions, and recommendations in this manual. To carry out these operations, all safety rules specified therein must be followed. Should some passages not be clear, please contact RWM S.r.l.

#### **DANGER**

*The manual should be adhered to and followed to ensure safe, reliable and correct function of the product, in order to eliminate the possibility of any damage to persons or equipment.*

#### **WARNING**

*For health and safety reasons people operating, assembling, disassembling, transporting and maintaining the chain hoist should wear adequate Personal Protection Equipment like, but not limited to, gloves, noise protection, hard hats and safety shoes.*

This manual and the other documents contained in the packing are an integral part of the supply, and must be carefully kept for the lifecycle of the hoist. You should keep this manual clean, complete and in a legible condition for future references. They must follow the hoist in case of transfer to any other user or new owner.

The information reported in this document refers solely to care and maintenance of a single chain hoist; that is to say, the “rigging” process and they way to control the hoist is not covered by this manual.

#### **NOTICE**

*It is the sole responsibility of the client to check with local authorities if the legislation used by EXE-Rise chain hoist is acceptable in the country of use.*

#### **SAFETY INSTRUCTIONS**

*Please make sure manuals are available at all times for all users and employees. The operator is responsible for supervising all personnel involved and ensuring they are aware of the hazards and safety implications of working with the electric chain hoist.*

## 1.2 CHAIN HOIST IDENTIFICATION

EXE-Rise chain hoists are marked on the body by an aluminium plate visibly, legibly and indelibly with dimensions 90x90 mm and thickness 0.8 mm.



Figure 1 "Example of EXE-Rise chain hoist plate"

The title of plate contains the business name and full address of the manufacturer, designation of the machinery and website. The body of plate contains:

- **Model:** commercial name, model and type of machinery;
- **Type:** Direct or Low Voltage model
- **Working Load Limit (WLL):** the maximum working load designed by the manufacturer;
- **Power supply;**
- **Current;**
- **Control Supply:** only for LVC chain hoist
- **Motor power:** units of measure "kW";
- **Working speed:** units of measure "m/min" and "ft/min";
- **IP RATE;**
- **Chain size;**
- **Body Self-Weight;**
- **Chain Self-Weight;**
- **FEM Class**
- **Duty Factor**
- **Years of construction;**
- **Serial number**
- **Serial number;**

### NOTICE

The plate is in English language. In others languages, the translation is present only in this manual.



### 1.3 SAFETY SIGNAL

The present manual contains different safety signal to individuate and to point out precautionary statements. The safety signals are sentences providing information on potential hazards, and proper procedures, as is provided below:

#### **DANGER**

**DANGER:** indicates a hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

#### **WARNING**

**WARNING:** indicates a hazardous situation which, if not avoided, could result in death or serious injury.

#### **CAUTION**

**CAUTION:** indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

#### **NOTICE**

**NOTICE:** address practices not related to personal injury.

#### **SAFETY INSTRUCTIONS**

**SAFETY INSTRUCTIONS:** is used to list steps, procedures or instructions that might otherwise constitute a DANGER, WARNING or CAUTION notification. Note that equivalent phrases, such as SAFE OPERATION PROCEDURES or SAFE SHUT DOWN PROCEDURE, can be used in place of the words “SAFETY INSTRUCTIONS.”

### 1.4 TERMS AND DEFINITIONS

**Operator:** it is intended a person who, by virtue of training and professional experience, has a specific competence in the field of safety and mechanical equipment and is familiar with the related national rules on health protection and safety at work and with the rules of good technical practice (technical regulations issued by the Country in which the hoist is used). The expert must be able to verify the safety and mechanical equipment and give the related evaluation.

**Maintenance:** a combination of all technical and administrative actions, including supervision actions, intended to maintain or restore an entity in a state where they can perform the required function.

**Maintainer:** personnel authorized to perform maintenance

**Lifting Machinery:** also known as lifting gear, is a general term for any equipment that can be used to lift loads. This includes jacks, block and tackle, hoists, rotating screws, gantries, A frames, gin poles, shear legs, sheerleg, windlasses, lifting harnesses, fork lifts, hydraulic lifting pads, air lift bags, and cranes.

## 1.5 REPAIRING – REPLACEMENT – WARRANTY POLICY

### REPAIRING AND REPLACEMENT POLICY

The hoist has been checked and performance verified by RWM S.r.l. or one of its authorised service agents before shipping.

If the correctly maintained hoist should present a performance problem due to faulty material or workmanship, after inspection by RWM S.r.l. or authorised agent, repairing or replacement of the unit will be made free of charge in favour of the original purchaser.

This repairing/replacement policy only applies to installed, under maintenance and operating Hoists, as highlighted in this manual and does not include the parts subject to normal wear and tear, misuse, improper installation, inadequate and incorrect maintenance, the effects of hostile environments and unauthorised repairing/modifications.

The manufacturer and dealers cannot accept responsibility for any damage or lack of functionality due to the following situations:

- carrying out inappropriate operations for an electric chain hoist;
- product modification without the express authorization of the manufacturer;
- inappropriate operation of the hoist;
- operational errors;
- failure to use the product as stated in the manual.

### NOTICE

*RWM S.R.L. DECLINES LIABILITY FOR ANY DAMAGES ARISING FROM A NON-COMPLIANT INSTALLATION AND MAINTENANCE INDICATED IN THIS DOCUMENT.*

### WARRANTY POLICY

1. For a period of 12 month we undertake to repair, free of charge any damage attributable to faulty materials or workmanship, provided that the appliance is forwarded, freight paid, to our works or one of the EXE contract service organisations.
2. The guarantee-period begins with the day of the delivery, proven by a purchase receipt like an invoice or delivery note or their copies.
3. The guarantee only is applicable for new equipment.
4. The guarantee does not cover damage due to transport damage, negligent handling, overload or parts subject to normal wear and tear. Nor damages that originate from a case of misuse because of non-observance the instructions in this manual.
5. Warrantee also does not include the cost to be made to get access to a hoist in case it is built in. It is the users sole responsibility that hoist can be inspected and service in a normal manner and in places accessible for persons and their equipment.
6. The fitting of replacement parts not supplied by us or modifications of our design by third parties also invalidates the guarantee.
7. Guarantee repairs do not renew nor extend the guarantee-period.
8. In case of a claim under the guarantee, a malfunction or spare part requirements please contact your point of sale or EXE

The complete chain hoist comes with a 12 month manufacturer's limited warranty from the date of purchase. A 24-month warranty covers the mechanicals parts excluding electrical and wear parts (brake disc, pendant with cable, safety catch, plastic box, chain bag ).

## **WARRANTY LIMITATIONS, REMEDIES AND DAMAGES**

This warranty does not apply where normal wear, abuse, improper or inadequate maintenance, eccentric or side loading, overloading, chemical or abrasive actions, excessive heat, outdoor use without appropriate measures or unauthorised modifications or repairs cause deterioration of the hoists. This warranty does not apply to products which RWM S.r.l. has determined to have been misused or abused, connected to voltages other than those recommended, improperly maintained by the user, or where the malfunction or defect can be attributed to the use of non-genuine RWM S.r.l. parts.

This expressed warranty is in lieu of all other warranties, expressed or implied, of marketing, fitness for a particular purpose, or in any other manner, no promise or assertion of fact declared by any vendor's agent or representative shall constitute a vendor's warranty or shall determine any liability or obligation.

The vendor guarantees that at the delivery date to the forwarding agent the goods are free from defects in workmanship and materials. The sole obligation of possible breach of the warranty or contract for negligence or in any other manner concerning the goods sold, shall be exclusively limited to repair or replacement, f.o.b. vendor's shipping point of any part that the vendor determines to be faulty, or, should the vendor determine that such repair or replacement cannot be undertaken, to a reimbursement of the purchase price upon return of the goods to the vendor.

Any action against the vendor for breach of contract, negligence or others must be initiated within one year from the occurrence of such trial action.

No claim for damages to the vendor for any defects of the goods shall be deemed valid or applicable without the written notification of the purchaser if it is not received by the vendor within one year from the shipping date.

The vendor is not liable for any damage, injury or loss due to improper use of the goods if, before such damage, injury or loss, such goods are (1) damaged or used in an improper manner following the delivery of the vendor to the forwarding agent (2), not serviced, inspected or used in compliance with the applicable laws and vendor's written instructions and advices; or (3) installed, repaired, tampered or modified without compliance with such law, instructions or advices. Under no circumstance the vendor shall be liable for accidental or consequential damages since these terms are defined in section 2-715 of the uniform commercial code.

## **COMPENSATION AND USE UNDER SAFETY**

The purchaser must follow and request his labour force to follow the provisions indicated in the instructions and manuals supplied by the vendor, and must use them and request his labour force to follow such instructions and manuals and take suitable care in the maintenance of such products. The purchaser must not remove, or allow anyone to remove, any warning plates or instructions on the product. In the event of personal injury or damages to property or the Company resulting from the use of the product, the Purchaser must give a written notification of such injury or damage to the vendor within 48 hours.

The Purchaser must cooperate with the Vendor in the inquiries on such injury or damage and in defence of any claim for damages.

If the Purchaser fails to follow this section or if the injuries or damages are caused, totally or partially, by the Purchaser's non-observance of the federal or state laws on safety, the Purchaser must indemnify and keep harmless the Vendor from any claim, loss or expense for injuries or damages connected to the use of the product.

## 1.6 DOCUMENTATION

The manual is integral part of EXE-Rise chain hoist and it contains the following documents attached:

- Declaration of conformity of EXE-Rise chain hoist;
- Declaration of conformity of chain;
- Declaration of conformity of hook;
- Wiring Diagrams;
- Data sheet of EXE-Rise chain hoist.



*These documents are an integral part of the manual and they are an integral part of the hoist.*

## 2. SAFETY INFORMATION

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### 2.1 GENERAL SAFETY WARNING

Indicated below are the structural and environmental requirements that must be checked by the user for guaranteeing safe use of the hoist:

- ⚠ The user is responsible for the construction method used for the set-up structure, the related load capacity and the conditions of the suspension points arranged in the place of use. In addition to the risk evaluation and operating procedures, project documentation (calculation reports, drawings, etc.) related to such aspects, must also be prepared.
- ⚠ The set-up structure and the related elements involved (hoist anchoring point, hoist and related accessories and the load thereof) must be able to bear the imposed loads (during the use of the load) with a suitable safety factor. In the overall analysis, the dynamic forces must also be considered.

#### **WARNING**

*Use of the hoist under conditions other than those described, can result in accidents that may cause injuries and/or material damages.*

Check that the electrical supply system to be used is adequate and conforms to local standards.

Supplementary to the manual, the local statutory regulations governing general accident prevention and environmental protection are to be enforced.

#### **NOTICE**

*It is the sole responsibility of the client to check with local authorities if the legislation used by EXE-Rise chain hoist is acceptable in the country of use.*

Do not allow anyone under 18 years of age to operate the chain hoist.

STAY ALERT! Watch what you are doing and use common sense. Do not use the hoist when you are tired, distracted or under the influence of drugs, alcohol or medication which may diminished control.

#### **CAUTION**

*The employer has a duty to ensure that the operator has skills and knowledge to understand the contents of this manual.*

### 2.2 SAFETY WARNING FOR USE AND MAINTENANCE

The hoist can be used only and exclusively by authorised and qualified operator.

The operational parameters of the electric chain hoist also encompass compliance with the predefined operating, service and maintenance requirements laid down by the manufacturer.

Chain hoists may only be used when in an acceptable technical condition, in accordance with their operating parameters, by trained personnel in a safe and responsible manner.








The hoist must be used with a control system that meets local electrical safety regulations.

The operational parameters do not allow, but are not limited to:

- exceeding the defined load capacity
- any lateral load to be applied the hoist body
- any side pull to be applied the lift chain
- heaving, pulling or dragging the load
- standing beneath suspended and/or lifted loads
- transporting excessive loads
- pulling on the control cable
- failing to observe the load hook constantly
- failing to observe the load constantly
- running the chain over edges
- slack chain to occur which may cause the load to fall
- use at temperatures below -10° C or above +40° C
- use in an explosive environment.

Bumping operations shall be limited; ground mooring and driving against the limit switches should be avoided. The manufacturer accepts no responsibility for damage to equipment and third parties ensuing from such action.

Special attention shall be taken when hoists are used in or near aggressive environments (e.g. Salt water or chloroform ). The aluminum and steel alloys used might not be particularly suitable for such environments. Special attention to protect the chain shall be taken. A high level of lubricant as well as a proper condition of the zinc layer helps to prevent the chain from becoming corroded. Do not allow anyone under 18 years of age to operate the chain hoist. In addition to the instructions mentioned in this manual, the user must follow the rules on accident prevention and safety that are in force in the country where the hoist is being used. Follow these operating instructions:

-  Only competent persons are permitted to use the equipment. Make sure you are adequately trained.
-  Know your load before lifting! Make sure all loads exposed are considered. For example but not limited to; Self-weight of the load to be lifted, Self-weight of the lifting equipment, the dynamic factor caused by start and stopping of the hoist, point of gravity of the load and environmental influences such as wind.
-  When preparing to lift a load, be sure that the attachments to the hook are firmly seated in hook saddle. Avoid off centre loading of any kind, especially loading on the point of the hook.
-  Before lifting, check for twists in the load chain. On single reeved chain hoist used in conjunction with head blocks and ground support systems, check for twists between the hoist and head block. Twisted load can result in a jammed chain and damage to the hoist.
-  On double reeved units a twist can occur if the lower hook block has been upturned between the strands of chain. The hook should be reversed to remove the twist from the chain before operation. A safe way of storage in order to avoid turns in the chain is to run the lift hook back to the hoist body, or secure the hook to a fixing point within its transportation case.
-  Warn personnel of your intention to lift a load. Make sure the only noise in the area is that of running hoist. This way abnormalities can be detected easier. Use spotters at required position in order to observe the lift.
-  In the event of any abnormal sound coming from the hoist, lifting should be ceased immediately and the noise investigated by a competent person.

- ⚠ Secure the load with a secondary device before entering the area beneath the suspended load . or use D8+ hoist with EXE-Load cells. Depending on local legislation and the outcome of a risk assessment the hoist may be left without these precautions.
- ⚠ Take up a slack load chain carefully and start load gently to avoid shock and jerking of the hoist weight chain. If there is any evidence of overloading, immediately lower the load and remove the excess load.
- ⚠ When lifting, raise the load only enough to clear the floor or support and check all attachments to the hook and load are firmly seated and secure. Continue to lift only after you are certain all attachments are in good order and the load is free from any obstructions.
- ⚠ Arrange periodic maintenance to ensure the hoist is functioning correctly and in accordance with this document.
- ⚠ In general, use of the hoist with materials, adjustments or modifications not envisaged in this document strictly is prohibited
- ⚠ Maintenance shall be solely executed by RWM S.r.l. authorised persons.
- ⚠ Keep the hoist clean and efficient by carrying out the suggested maintenance program.
- ⚠ Avoid “bumping” of a hoist. With bumping is meant frequently pressing the start and stop button to adjust the hoist position.
- ⚠ Do not load hoist beyond the rated capacity. Overload can cause failure of some load-carrying part or create a defect causing subsequent failure at less than rated capacity.
- ⚠ Working inside or near powered equipment can result in electric shock: before carrying out any work on the hoist, always disconnect power supply and make sure that no one can insert the plug again until the task is complete.
- ⚠ When possible, maintenance must be carried out without suspended load; failing this, the area must be enclosed and monitored and the load must be held by means of a secondary safety component.
- ⚠ Do not clean the hoist using a pressure washing device.
- ⚠ Keep maintenance and test reports issued by RWM S.r.l. together with the manual.
- ⚠ All maintenance, repair, adjustment, cleaning operations must be carried out only by qualified personnel duly trained and competent, who has fully read and understood this document.
- ⚠ Maintenance must be carried out in a safe area whilst using proper tools and safety equipment.
- ⚠ In case of poor ambient lighting, install a lamp for local lighting for maintenance interventions or use adequate portable devices.
- ⚠ Replace any cable or wire with like for like items.
- ⚠ Use only spare parts identical to those to be replaced or previously authorised by the manufacturer.
- ⚠ Follow industrial hygiene rules during cleaning of the machine.
- ⚠ In the instance of maintenance work being carried out at height, please ensure the correct access equipment is employed, and local safety regulations are taken into consideration.
- ⚠ No makeshift repairs with the aid of extra pieces or taping are allowed. It is prohibited to warm equipment with flames, hot air or other instruments in case they are stiffened or blocked.
- ⚠ Always wait for parts to cool if the hoist has been running intensively before maintenance.

### **2.3 SAFETY WARNING FOR INSTALLATION, ASSEMBLY AND DISASSEMBLY**

The hoist must be assembled and disassembled only by authorized and qualified operator. The necessary qualifications for planning, assembly, disassembly, and activation, depend on the degree of risk and the location and type of job.

Operator are required to provide current overload protection and grounding on the branch circuit section in keeping with the code. Check each installation for compliance with the application, operation and maintenance sections of these articles.

This manual gives the necessary information for safe installation, use, and maintenance in a generic working environment. Since it is not possible to foresee all the risk conditions of the working environments in which the hoist will be used, the person responsible for the management and supervision of the installation, assembly and disassembly must produce their own specific risk assessment each time the hoists are used.





















The hoist must be tested only by authorised and qualified operator. The person in charge of management and supervision is liable to give his approval to the use of electric chain hoists. Such approval can only be given on condition that the occurred carrying out of the tests is duly proved. Every possible transfer to other users must be documented in writing.

The hoist is equipped with various guards and devices designed to prevent accidents and to ensure the product complies with various safety standards.

## 2.4 SAFETY WARNING FOR INCORRECT USE

### DANGER

Do not lift people. Using the EXE-Rise chain hoist to carry people is strictly forbidden.

-  Do not use the hoist if it is damaged, malfunctioning, or functioning in an unusual way or exhibits unusual or incorrect movement or anomalous noises.
-  Do not use the hoist if the chain is distorted, corroded, damaged, or worn out.
-  Do not make modifications nor apply accessories other than those provided by RWM S.r.l..
-  Accessories causing overstressing or leading to accidental unexpected overloads or limiting the free handling of the load, are not allowed. Therefore only lifting accessories that interpose in a passive way between the equipment and the load are allowed.
-  Do not try to lengthen the lifting chain or repair it if damaged.
-  Do not hit, deform, or crush the hoist chain; danger of cracks or broken links may occur.
-  Do keep the hoist and chain away from open fire or flame.
-  Do not use the lifting chain as sling and do not wrap the chain around the load.
-  Do not put tools or foreign bodies in the links of the chain.
-  Do not place the load on the point or on the spring latch of the hook.
-  Do not perform welding to any component.
-  Do not use the hoist if it is not perfectly efficient, even if it can still function.
-  Do not use the hoist with worn out, open hook or with missing spring latch.
-  Do not lift loads exceeding the maximum working load limit of the hoist (*In Motor-down mode the self-weight of the hoist should be taken into consideration. The self-weight of the hoist should be added to your payload calculations*).
-  Do not allow the load to swing or twist while lifting.
-  Do not lift the load above people or do not leave hanging loads without the operator's control and appropriate measures.
-  Do not use the hoist outdoors or anywhere with water jets or environmental conditions without adequate protection.
-  The use in explosive, aggressive atmosphere or with high concentration of powders or oily substances suspended in the air is prohibited. Electrical devices produce arcs or sparks that can cause a fire or explosion.
-  Do not operate hoist at unusual extremes of ambient temperatures. The product is designed for use in temperatures ranging between -10°C and +40°C.
-  It is prohibited to tamper with the hoist in order to modify its performances.



- ⚠ Do not remove or tamper with the protective and safety devices
- ⚠ Use of the hoist is prohibited to unauthorised operators who are not adequately trained in use of the hoist and the associated dangers.
- ⚠ Do not use of the hoist outside the limits indicated in this document.
- ⚠ Make sure the chain is running straight into the hoist body. Any side pull will cause significant wear and tear on the hoist.
- ⚠ Do not apply a lateral load to the body of the hoist.
- ⚠ Make sure the pick-up points are always in-line with the hoist. Any side pull will cause an increase in loading on both the hoist and the structure.

## 2.5 SAFETY WARNING FOR RESIDUAL RISKS

Residual risks related to a machine are accident risks that remain after the carrying out of all the safety measures taken by the manufacturer (and which therefore must be managed by the user).

The most serious residual risks are indicated on the hoists safety labels. These are as listed below (*Table 1*).

Residual risk, dangerous zone and person exposed	Course of action to eliminate or reduce risk
Malfunction or falling load due to overload	Do not exceed the hoist load limit
Various types of risks owing to the wrong installation and use of the hoist.	Read the instructions before installing or using the hoist
Fall risk to people being lifted by the hoist	It is prohibited to lift people by means of the hoist
Damage to hoist due to dry chain	Chain should be kept lubricated
Risks of structural collapse	Check structure is able to support the proposed load. Check all components in the lifting system are suitably rated and able to bear the proposed load
Risk of injury from malfunction hoist or manoeuvre error	Working area should be managed and access controlled
Fall risks (of the installer or serviceman) from the load or structure	Appropriate PPE should always be used. Climbing the load or structures should be avoided if possible. When possible carry out all maintenance at ground level
Various types of risks owing to the illegibility of the labels	Do not remove or cover labels
Various types of risks owing to the lack in periodical maintenance	Check that the annual periodical maintenance has been carried out.
Various types of risks when used in severe weather conditions	Check the environment conditions before using the hoist.
Malfunctioning risks owing to wrong power supply	Make sure that the power supply is the same as indicated on the chain hoist plate.
Chain fall due to damaged chain bag	Check bag for damage before use. Do not fill bag over 75% capacity
Various types of risks owing to (electrocution, malfunctioning, etc.) non-sectioning before any maintenance intervention.	Before any maintenance intervention, disconnect the power supply from the hoist. Maintenance operations can be carried out only by competent and authorised persons.

Residual risk, dangerous zone and person exposed	Course of action to eliminate or reduce risk
Sudden start owing to the insertion of the plug into a normal socket.	Do not insert the hoist power plug directly into a CEE socket. The hoist may only be powered using suitable control devices, such as EXE-DRIVE controllers. For low voltage controlled hoists, a dedicated controller must be used with an UP/DOWN push-button panel that complies with the wiring diagram provided.
Various types of risks owing to tampering or removal of the safety devices.	It is prohibited to tamper or remove the safety devices

Table 1: "Residual risks"

## 2.6 SAFETY WARNING FOR ELETRICAL CONNECTION

Before a hoist is connected to its control device the power supply shall be checked for correct voltage. A fluctuation of +/- 10% is allowed. In order to prevent a voltage drop, the user should ensure there is the minimum number of connections as possible in any power cable run. Keep length of power cables as short as possible (see table below) and remove corrosion on the contacting pins of the electrical connectors as it might lead to a voltage drop. In order to minimize the voltage drop between the power source and the hoist the following cable lengths shall be used as maximum (see Table 2).

Model <sup>(*)</sup>	Capacity kilogram	Capacity Pounds	1,5 mm 2 wiring				2,5 mm 2 wiring			
			400V/50Hz		230V/50Hz		400V/50hz		230V/50Hz	
D8+	250 kg	551 lbs	250 m	820 ft	75 m	246 ft	255 m	837 ft	80 m	262 ft
D8+	500 kg	1102 lbs	100 m	328 ft	40 m	131 ft	110 m	361 ft	45 m	148 ft
D8+	1000 kg	2205 lbs	65 m	213 ft	25 m	82 ft	75 m	246 ft	25 m	82 ft
D8+	2000 kg	4409 lbs	65 m	213 ft	25 m	82 ft	75 m	246 ft	25 m	82 ft

<sup>(\*)</sup> EXE-Rise Models are explained in paragraph 3.2

Table 2 "Relation between power and lengths of cable"



The electrical power plug must be disconnected from the power supply of the hoist in case of maintenance or emergency.

Dangerous voltage drop can be caused by using excessively long extension cables as well as by overheating the wire.

## 3. EXE-Rise CHAIN HOIST INFORMATION

The intended use of EXE-Rise chain hoist is to vertically lift loads or hold loads once lifted within the rated capacity of the model selected. They can be installed either as a fixed device or can be mobile.

### 3.1 GENERAL DESCRIPTION

- The EXE-Rise chain hoist are designed for installation of structures aimed at realizing events. Events include elements such as concerts, shows, conferences, meetings, exhibitions, presentations, demonstrations, television or film shoots and the like. The position of these events include, among other places, theaters, multipurpose halls, studios, film sets, television and radio broadcasts, concert halls, convention centers, schools, exhibitions, fairs, museums, clubs, recreational parks, sports facilities, outdoor theaters and meetings.

The EXE-Rise chain hoist consists in several parts. In *Figure 2* and in *Table 3* are reported main of these.

*Table 3 “EXE-Rise chain hoist parts”*

<b>COD</b>	<b>TITLE</b>	<b>DESCRIPTION</b>
<b>A</b>	<b>BODY</b>	The <b>body</b> s made in cast aluminium to be as light, yet as strong as possible. The matt black finish is corrosion resistant and non-reflective.
<b>B</b>	<b>CHAIN</b>	The <b>chain</b> is in Zinc Galvanized, with grade of steel equal to 80.
<b>C</b>	<b>HOOK</b>	The <b>hook</b> is in Carbon Steel and they are equipped with a sprung safety latch that prevents accidental release of loads
<b>D</b>	<b>CHAIN BAG</b>	The <b>chain bag</b> is in Polyvinyl chloride coated 65% PVC (Nylon 840), 35% Polyamide.
<b>E</b>	<b>PLUG and SOCKET</b>	The <b>plug</b> and <b>socket</b> are produced from Polyamide 6 as well as PC7ABSm (IP66/67)
<b>F</b>	<b>BRACKET</b>	The chain-bag <b>bracket</b> in aluminum and the design ensures the bag is positioned correctly to accept chain without the need for any adjustment.
<b>G</b>	<b>GUIDE PLATE</b>	The <b>chain guide plate</b> is made in PVC to prevent breaking the chain guide if the chain jams(Small body hoists use steel guide plate.



*Figure 2 “EXE-Rise chain hoist parts”*

### 3.2 IDENTIFICATION

The chain hoist EXE-Rise are uniquely identified by a serial number carved on the hoist body. The manufacturer RWM marked years of construction too.



Figure 3 “EXE-Rise chain hoist serial number”

Accordance with the procedure that RWM Srl has established, EXE-RISE hoists are encoded as follows:

**XRH + A + B + CCC+ DDD+ EE + F**

CODE FORMAT	DESCRIPTION	TYPE			
<b>XRH</b>	EXE-Rise chain Hoist	----			
<b>A</b>	version hoist number	<b>1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 ....</b>			
<b>B</b>	type of control and limit switch size	<b>D</b> =Direct Control	<b>L</b> = Low Voltage Control - limit switch 50 m	<b>M</b> = Low Voltage Control - limit switch 30 m	<b>N</b> = Low Voltage Control - limit switch 60 m - RWM
		<b>O</b> = Low Voltage Control - limit switch 40 m-RWM		<b>V</b> =EXE-Vario 20 m/min	
<b>CCC</b>	load capacity/10	<b>015</b> =150 kg	<b>025</b> =250 kg	<b>030</b> =300 kg	
		<b>050</b> =500 kg	<b>060</b> =600 kg		<b>080</b> =800kg
		<b>100</b> =1000 kg	<b>120</b> =1200 kg	<b>200</b> =2000 kg	
<b>DDD</b>	model hoist	<b>S8-</b> = D8 SF 8:1		<b>D8-</b> = D8 SF 5:1- 1 brake	
		<b>D8+</b> = □ D8+ SF 10:1		<b>DB-</b> = D8 SF 5:1- 2 brake	
<b>EE</b>	chain length in meter	max length = 100 m / 220 lbs			
<b>F</b>	chain bag size	<b>XS</b>	<b>S</b>	<b>M</b>	<b>L</b> <b>X</b> (XL)

Table 4 “EXE-Rise chain hoist identification”

For example **LT XRH1D100DB-20M** is EXE-Rise chain hoist D8 double brake direct control with WLL 1000kg, chain bag size M and with 20m of chain.

### 3.2.1 Model

EXE-Rise Chain hoist models are based on a German standard that differentiates between three types of electric chain hoists:

#### D8 Hoist

Electric chain hoist according to DGUV 115 (formerly known as BGV D8) "Winches, lifting and pulling devices") for use as a chain hoist for lifting loads in construction.

#### D8 Plus Hoist

Electric chain hoist based on DGUV 115 "Winches, lifting and pulling devices" for use as a chain hoist for lifting loads in construction with the special characteristic of being able to hold loads statically above people without the use of secondary safety devices. The types of electric chain hoists specified above can be operated both individually and in groups. The choice of the type of electric chain hoist depends on the operating conditions:

	D8	D8 with secondary safety device	D8 Plus**
With people under the load			
Holding loads	not permitted	permitted	permitted
Erection /dismantling, rigging operations	not permitted	not permitted	not permitted
Scenic movement	not permitted	not permitted	not permitted
Complex scenic movement	not permitted	not permitted	not permitted

Table 5 "Selection criteria for electric chain hoists for moving and holding loads above people"

### SAFETY INSTRUCTIONS

Local legislation shall be checked for specific regulations. For guidance we refer to the German regulation DGUV 17 (formerly known as BGV) The user could refer to German SQ-P2 code-of-practice for information, which can be obtained at [www.igww.org](http://www.igww.org)

\* Source: IGWW SQ P2 – Electric chain hoists

\*\* For statically indeterminate loads, Load cells shall be used in combination with hoist control. The lifting operation shall be stopped in the event of exceeding the pre-set over- or underload – limits. Values shall be derived from structural analysis of the applied loads

### 3.2.2 Type of Control

Selection of the hoist also depends on the duty class needed. The duty class refers to the time the hoist can operate under full load. EXE-Rise chain hoists have a minimum rating of 1Bm and maximum rating of 2m as per FEM classification; See table 6.

Class	1Bm	1Am	2m	3m
Duty factor of motor	25%	30%	40%	50%
Starts per hour	150	180	240	300

Table 6 "FEM Classification"

Depending on its operating hours and the load applied the same hoist can also be used in another duty class. Please contact RWM for support if this is required. Table 7 gives guidance for correct selection

Load spectrum	Average operating time per day in hours						
	≤0.25	≤0.5	≤1	≤2	≤4	≤8	≤16
Light				1Bm	1Am	2m	3m
Moderate			1Bm	1Am	2m	3m	
Heavy		1Bm	1Am	2m	3m		
Very Heavy	1Bm	1Am	2m	3m			

Table 7 “Average operating time per day in hours”

### Direct control hoists

#### NOTICE

*The terms direct control (DC) and low-voltage controlled (LVC) refer to the system used to manage hoist movement, not to the power supply voltage.*

With DC hoists, the travel direction is determined directly by the phase sequence of the three phase power supplied to the red CEE plug fitted (CEE 16A 6h 400 VAC – 3PH). Phase reversing contactors are inside the controller and not inside the hoist. The hoist lifts when the three power phases are in normal sequence and lowers when they are inverted.

DC hoists have an integrated mechanical emergency overload device known as the slip clutch. This slip clutch is adjustable but changes to this device must only be performed by an officially trained and competent person. A chain stop (a two part metal block) is attached to the end of the load chain, 11 links from the end, which prevents the chain from running through the hoist should it overrun the length of the chain.

#### NOTICE

*The chain stop shall be placed 11 links from the end. This gives the user or person carrying out any inspection, access an unloaded length of chain as measuring reference compared to rest of the chain which will have been under load.*

### Low Voltage Controlled hoist

LVC hoists are fitted with a CEE plug (CEE 16A 6h 400 VAC – 3PH) for three phase power and a yellow CEE plug (CEE 16A 4h 24 VAC – 3PH) for control purposes. The direction signal is given by a low voltage hoist controller and is transmitted along the control cable which activates reversing contactors inside the hoist body. LVC hoists have an integrated mechanical emergency overload device known as the slip clutch. This slip clutch is adjustable but changes to this device must only be performed by an officially trained and competent person.

LVC hoists also have an integrated adjustable electrical limit switch that halts the lifting and lowering operation at pre-set positions. The control signal is a 24 VAC low voltage circuit.

These electrical limit switches can be set to limit the chain travel during both lifting and lowering operations. The factory default settings can be adjusted by altering the position of the “up” and “down” cams. The limit switches are factory calibrated in such a way as to stop the motor automatically a few links before the chain comes to an end in both directions.

After setting the up/down selector, press the start button on the control unit to which the EXE-Rise LVC hoist has been connected. When the external up / down button is selected the control signal activates the contactor inside the hoists and powers the motor, setting the chain in motion in the required direction. The

chain will continue to travel through the hoist in the chosen direction until it reaches a mechanical stop on the chain, or until the electrical limit switch reaches its pre-set end point. Once the limit switch is activated the hoist can only be run by reversing the direction of travel.

**⚠ CAUTION**

*Any control unit used to power EXE-Rise LVC hoists must provide an "un-inverted" three phase power supply. An incorrect sequence of phases make the hoist run in a different direction as the limit switch. This will result in damage of the limit switches and potential over run of the chain.*

Electric chain hoists are offered in a variety of designs and feature options; as well as with different safety devices. This means that the choice of chain hoist is extremely important. Consideration must be given to risks arising from the nature of the intended operational use and the specific operating conditions.

The selection must be based on the hazards arising from the type of use, taking into account the specific conditions of use whilst abiding to the local laws in the country of use. We strongly advise that the user/operator carries out a risk assessment on which the choice of your hoist shall be based.

### 3.3 COMPONENTS DESCRIPTION

Every single component of the EXE-Rise hoist body is manufactured in Italy. The high grade Lifting chain is coming from Germany and complies with the strictest EN and DIN standards relating to lifting in the entertainment industry. The EXE-Rise clutch system is located outside the load path. The DC brakes give a real instant response to electrical impulses thanks to a unique component specifically created for us. The 5-pocket load wheel, helical gears with dynamic lubrication and the precise aluminum chain guide make the EXE-Rise series one of the quietest on the market.



Figure 4 "EXE-Rise chain hoist 2000 kg DC principal components"

### 3.3.1 Chain

The chain used for EXE-Rise chain hoist is in Zinc Galvanized Steel EN DIN 818-7 (grade of steel: 80). There are five measures in order to hoist chain of destination:

CHAIN	SF-8	<input type="checkbox"/> D8+
4x12 mm	D8 198-250 kg	D8+ 250 kg
6x18 mm	D8 500 kg	D8+ 500 kg
8x24 mm	D8 1000 kg	D8+ 1000 kg D8+ 2000 kg

Table 8 "Chain measures"

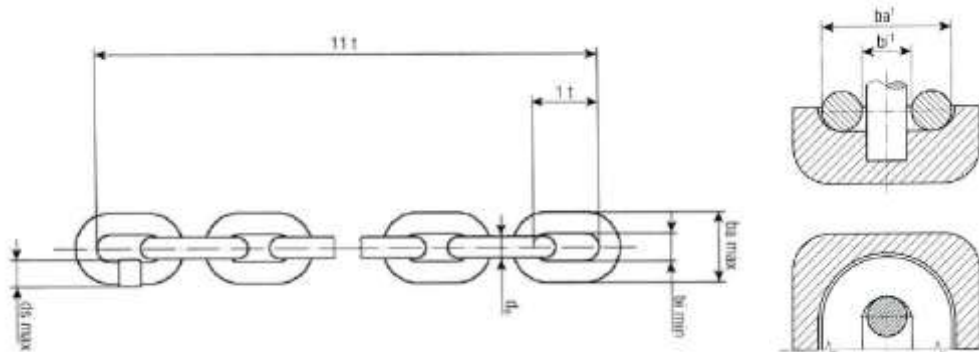


Figure 5 "Chain dimensions"

Each chain has specific characteristics, among them the most important are reported:

	CHAIN 4x12	CHAIN 6x18	CHAIN 8x24
<b>Code</b>	XRC032-01M	XRC0618-01M	XRC0618-01M
<b>Weight</b>	0.35	0.78	1.39
<b>d<sub>n</sub> [mm]</b>	4.0	6.0	8.0
<b>1t [mm]</b>	12.0	18.0	24.0
<b>b<sub>i</sub>min [mm]</b>	5.0	7.2	9.6
<b>b<sub>a</sub>max [mm]</b>	13.7	20.2	27.0
<b>Gauge length [mm]</b>	132.0	198.0	264.0
<b>d<sub>s</sub>max [mm]</b>	4.3	6.5	8.6
<b>σ<sub>min</sub> [N/mm<sup>2</sup>]</b>	800	800	800
<b>F<sub>min</sub> [kN]</b>	20.1	45.2	80.4
<b>A<sub>min</sub></b>	10 %	10 %	10 %
<b>WLL [kg]</b>	320	720	1280

Table 9 "Chain technical data"

LEGEND:

**d<sub>n</sub>**: nominal diameter – **1t**: nominal pitch – **b<sub>i</sub>min**: minimum inner width – **b<sub>a</sub>max**: maximum outside width – **Gauge length**: 11t (11 links) – **d<sub>s</sub>max**: maximum welding diameter – **σ<sub>min</sub>**: minimum stress at breaking force – **F<sub>min</sub>**: Minimum Breaking Force (MBF) – **A<sub>min</sub>**: minimum total ultimate elongation – **WLL**: max Working Load Limit.

Chain can be identified from the manufacturers stamped identification marks on the chain. The stamps shown are repeated at regular intervals along the length of the chain.

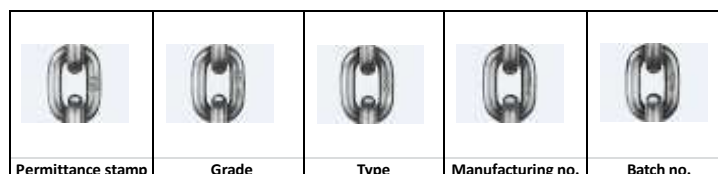


Figure 6 "Chain identification"

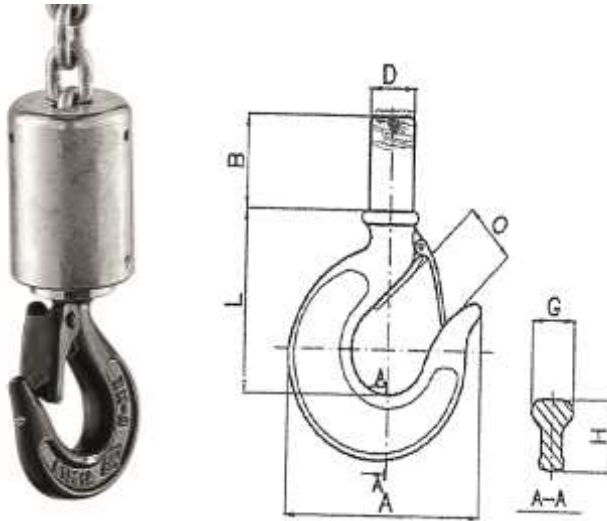


### 3.3.2 Hook

The hooks are forged Carbon Steel or Alloy Steel with heat treatment in according to Machinery Directive. Small body hoists use Stainless Steel.

#### CHAIN SWIVEL HOOK

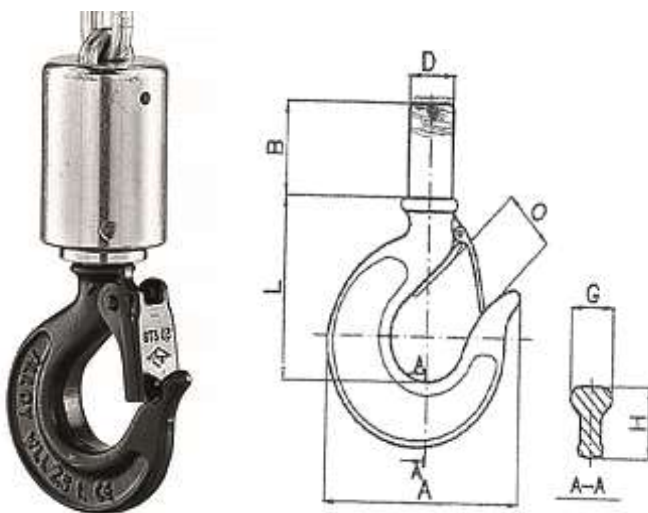
##### SMALL AND MEDIUM FRAME



DIMENSIONS [ mm ]						
A	B	D	G	H	L	O
73	51	15	16	20	64	18

Figure 7. "Lift chain hook with safety latch" small and medium frame

##### LARGE FRAME 1 FALL



DIMENSIONS [ mm ]						
A	B	D	G	H	L	O
92	64	20	21	27	72	30

Figure 8. "Lift chain hook with safety latch" large frame 1 fall

**LARGE FRAME 2 FALL**

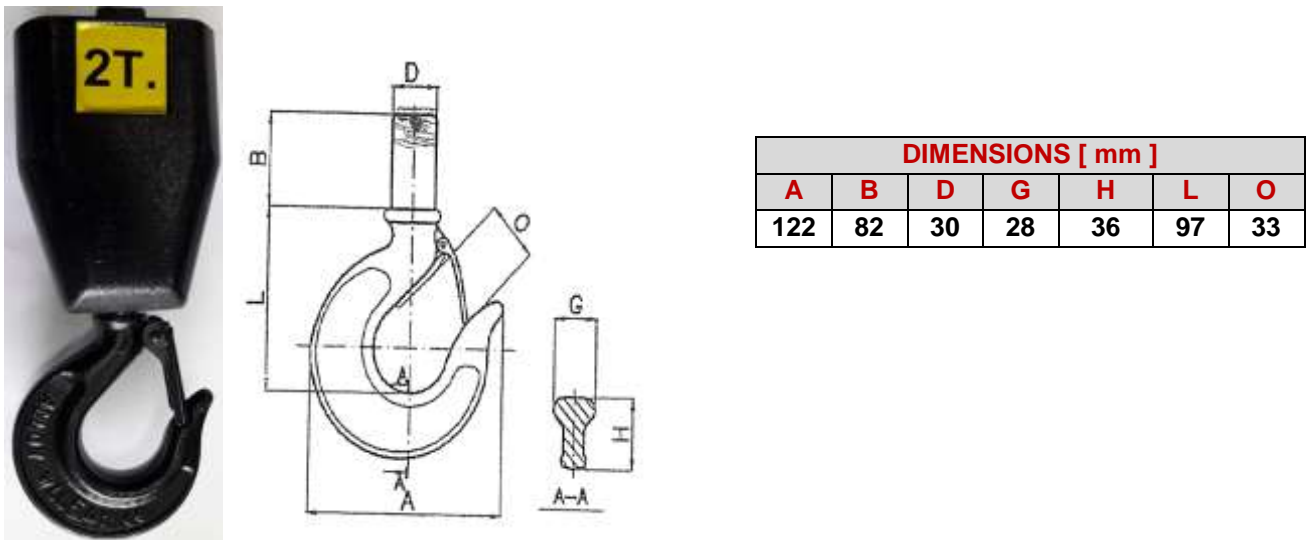


Figure 9. "Lift chain hook with safety latch" large frame 2 fall

The standard ingress protection Level of IP55 means that when the hoist is used in wet environments, adequate protection of the hoist body is required.

**BODY SWIVEL HOOK**

Body swivel hook is an assemblage of a plate with two holes, two fixing screws and hook (see Chain Swivel Hook for models).



Figure 10. "Example of Body Swivel Hook"

EXE-Rise chain hoists with a lifting speed up to 8m/min generate a dynamic factor of 1.2 during start and stop. Tolerances in lifting speed up to 5% can occur within same models of the same manufacture. Lifting speeds vary depending on the load, and if the load is lifted or lowered.

### 3.3.3 Chain Bag Bracket

The chain-bag bracket allows the hoist to be used motor up or down. The design ensures the bag is positioned correctly to accept chain without the need for any adjustment, reducing the chance of chain spills.

### 3.3.4 Chain Stop

Fits below dead end link on lifting chain for added measure of safety.



Figure 11 “Chain stop”

Litec Code	Chain size [mm]
XRSFC412	4x12
XRSFC515	6x18
XRSFC722	8x24

Table 10 “Chain stop code”

### 3.3.5 Quick Link

#### CONNECTION INSTEAD OF BRACKET

Chain bags shall be suspended by Quicklinks or Carabiners made according to DIN 56927 or equivalent standard. Some bags are supplied with a suitable rated captive spring hook. Only rated hooks supplied by RWM should be used.

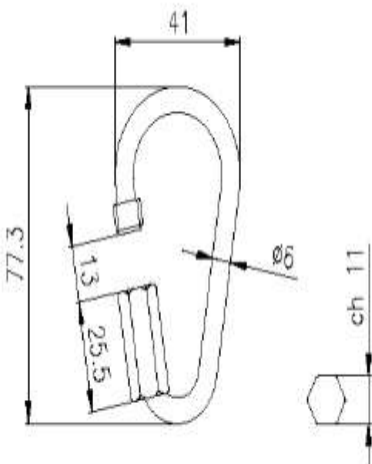


Figure 12 “Chain bag – bracket Quick Link dimension”

<b>Litec Code</b>	CHB004
<b>Commercial name</b>	Quick link
<b>Description</b>	<b>Material:</b> Zinc Galvanized Carbon Steel <b>Color:</b> black <b>Diameter:</b> 6 mm
<b>DIN</b>	DIN 56927
<b>SWL (Safe Working Load)</b>	250 kg
<b>Safety Factor</b>	10:1
<b>Weight</b>	47 g

Table 11 “Chain bag – bracket Quick Link technical data”

#### CONNECTION INSTEAD OF BRACKET

Manufactured according to BGV C-1. It has a compact shape, is galvanized and stamped with the DIN standard, manufacturer’s name and the carrying capacity.

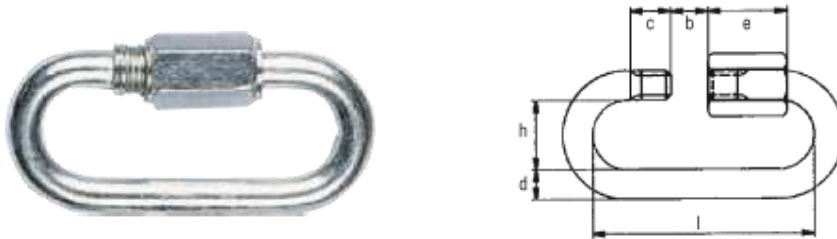


Figure 13 “End chain – bracket Quick Link dimension”

Litec Code	Chain size [mm]			WLL	d	c	e	l	h	b	weight
				[kg]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[g]
CHB037	6x18	7x22	8x24	140	5.0	3.0	22.0	52.0	13.0	13.0	25
CHB041	4x12			50	3.5	-	-	29.0	10	5	9
CHB041	5x15			90	4.0	-	-	32.0	11	5	13

Table 12 “End chain – bracket Quick Link technical data”

### 3.3.6 External Chain Guide Plate

The External Chain Guide Plate is made from a special PVC is used to minimize the chance of chain jamming should the chain become twisted. This sacrificial plate helps protect both the chain and internal chain guides. (Small body hoists use steel guide plate).



Figure 14 “External Chain Guide Plate”

### 3.3.7 Plugs and Socket

Plugs and sockets are produced from POLYAMIDE 6 as well as PC/ABS. The main characteristics of these materials are:

- excellent impact resistance combined with high rigidity and solidity,
- high thermal stability (self-extinguishing),
- very good insulating qualities,
- high disruptive strength,
- high abrasion resistance,
- high weathering resistance,
- very good chemical resistance to various chemicals,
- free from cadmium and halogen (fluorine, chlorine, bromine, iodine, astatine),
- black color.



Figure 15 "Plug and socket"

### 3.3.8 Brake

The spring-applied brake is a single-disk brake with two friction surfaces. Several compression springs create the braking torque by friction locking. The brake is released electromagnetically.



Figure 16 "Double brake version"

The spring-applied brake is designed for the conversion of mechanical work and kinetic energy into heat. For operating speed. Due to the static brake torque, the brake can hold loads without speed difference. Emergency braking is possible at high speed. The more friction work, the higher the wear.

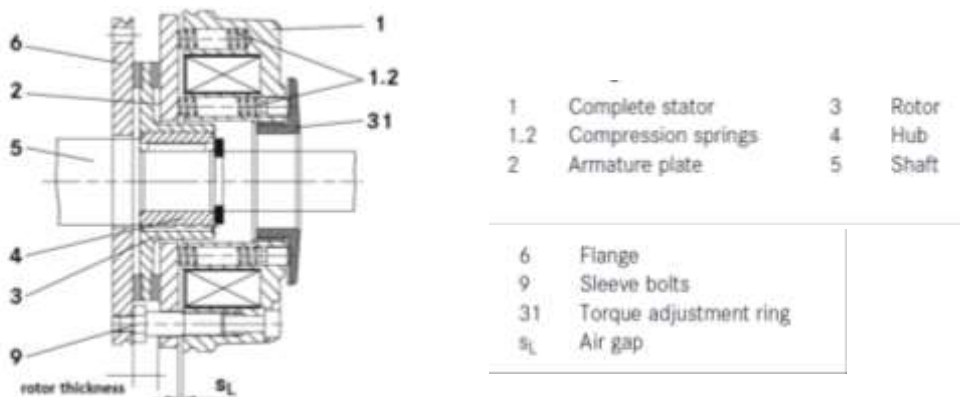


Figure 17 "Brake Features"

<b>EXE-Rise chain hoist</b>	Small e medium frame	Large frame 1 fall	Large frame 2 fall
<b>DC Brake Size</b>	06	08	10
<b>DC Brake Power</b>	20W	25W	30W
<b>DC Brake Operating Voltage</b>	105VDC	105VDC	105VDC
<b>DC Brake Rated Torque</b>	4Nm	8Nm	16Nm
<b>DC Brake Rated Torque Reduction at the speed specified x% (1500r/min)</b>	87% (1500 r/min)	85% (1500 r/min)	83% (1500 r/min)

Table 13 "Brake technical data"

### 3.3.9 Limit switch

Limit switch consists of 4 cams and a gear motor that transfers movement through a primary input reduction stage (worm gear and helical toothed gear) and one or more secondary output stages (pairs of straight toothed gears).

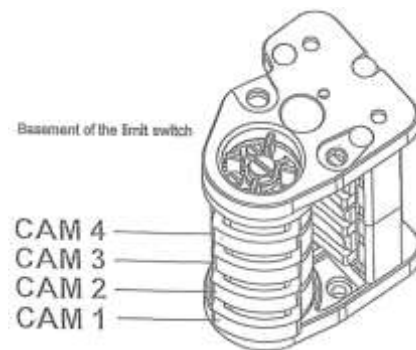


Figure 18 "Limit Switch large medium and body"

### 3.3.10 Chain Bag

Chain Bag used for EXE-RISE chain hoist is in Polyvinyl chloride coated polyamide 65% PVC (Nylon 840), 35% Polyamide. There are five size (XS, S, M, L, XL) in order to hoist chain of destination.

<b>Description</b>	Nylontex 840 P.V.C. flame ritardent + PP BELT
<b>Material</b>	Polyvinyl chloride coated polyamide 65% PVC (Nylon 840), 35% Polyamide + PP Yanr Multifilament 100% (Melting Points ≈ 165°)
<b>Color</b>	Black
<b>Classification</b>	Reaction to fire classification: E combustible not inflammable - partially fire retardant. Conformity to EN 119925-2
<b>Safely Factor</b>	5:1

Table 14 "Chain bag characteristic"



Figure 19 “Chain bag”

SPECIFICATIONS	CHAIN BAG XS	CHAIN BAG S	CHAIN BAG M	CHAIN BAG L	CHAIN BAG XL
<b>Litec Code</b>	CHB029	CHB024	CHB025	CHB026	CHB027
<b>External Dimensions [cm]</b>	14x9	20x17	20x17	20x17	27x21
<b>Height [cm]</b>	40	34	42	58	65
<b>Selfweight [kg]</b>	≈ 0.75	≈ 1.00	≈ 1.00	≈ 1.00	≈ 1.00

Table 15 “Chain bag dimensions”

CHAIN	Up to 26m @75%	(26-40)m @75%	From to 40m @75%
4X12	XS	XS	-
6X18	S	M	L
8X24	M	L	XL

Table 16 “Chain bag size”

### 3.3.11 Bolts and nuts

	8.8 bolts	
	Lbsft	Nm
<b>M4</b>	2	3
<b>M5</b>	4,5	6
<b>M6</b>	7,5	10
<b>M8</b>	18	25
<b>M16</b>	159	215

All bolts and nuts used in the line of forces, shall be fastened by means of a torque wrench. Grade 8.8 bolts are used and the following torque shall be applied.

Table 17 “Bolts”

### 3.3.12 EXE-Rise Chain Hoist Controllers

More EXE-Rise Chain hoists shall be operated by controllers designed and specified for this purpose. We advise to use the EXE-DRIVE range controllers for proper use of your EXE-Rise chain hoist.

The use of other brands, in alternative to EXE-DRIVE controllers is not recommended unless they comply with the applicable directives and standards. The controller shall provide the required control and monitoring functions for safe operation. The control system must meet the requirements of:

1. EN 60204-32: 2008 Safety of machinery - Electrical equipment of machines - Part 32: Requirements for hoisting machines (IEC 60204-32: 2008);
2. 2006/42 / EC - Machinery Directive;
3. 2014/30 / EC - Electromagnetic Compatibility (EMC) Directive.

Controllers shall be chosen depending on the power consumption of an individual hoist, which can vary, as well as its model (direct control or Low voltage control) or the amount of hoist one would like to control at the same time.

We strongly advise to keep good view on the load being lifted. Using more than two hoist on one load requires much more attention. Based on a risk analysis the user shall identify if the hoist and controllers need additional control options such as Load cells, encoders etc...

In case the controller is equipped with Molded Case Circuit Breakers (MCCB), make sure the correct setting of amperage is applied and the correct MCCB.



## 3.4 SAFETY DEVICE

The hoist is equipped with various guards and devices designed to prevent accidents and to ensure the product complies with various safety standards.

### 3.4.1 Primary Safety Component



*The guards and devices listed below must not be removed by the user. Before operation the user should ensure all guards and devices are present, correctly fitted and have correct setting.*

Removal of these guards and safety devices should only be allowed during maintenance by competent and authorised persons and in controlled conditions.

#### Chain guide plate

EXE Rise chain hoists are fitted with a special plastic chain guide plate that provides various safety functions.

- Prevents accidental contact with the internal moving parts.
- Prevents accidental contact with the internal parts that could reach high temperatures.
- Prevents wear between the chain and internal chain guide.
- Prevents jamming of the chain.
- Helps to reduce the chance of twisted chain entering the hoist.

These chain guides are a consumable item and should be replaced if they become worn.

Badly worn plates can be a sign of misuse. Eg. Side loading of the chain.

#### Hooks

The hooks are equipped with a sprung safety latch that prevents accidental release of loads when applied correctly to the hook.

If this spring latch does not engage against the point of the hook correctly, or can fall through the opening of the hook, the hook has overloaded and shall be replaced.



*An unloaded hook attached to a lifting point can disengage itself when put under tension. Therefore the hook shall be held under tension manually until loaded*

#### Slip Clutch

The Slip clutch is designed and set up to act in the case of excessive load and therefore only shall be considered as an emergency overload device. If overloaded, it starts to slip and the hoist will not lift.

The slip clutch shall never be used as a lifting height limiter.



*If the clutch is subject to prolonged slipping it can overheat and become damaged. The clutch should not be allowed to slip continuously for several seconds.*

Considering the above statements, these hoists should not be used in an application where a suspended load can be increased by adding additional weight. For example food lifts etc.

### 3.4.2 Secondary Safety Component

A secondary safety component is a second independent suspension element of equivalent capacity to the primary suspension point, which is intended to prevent the fall of the load should the primary point fail. Some application examples are illustrated here below.

#### **WARNING**

*When operating a system according to the German DGUV V54 standard, or if maintenance is required on a hoist that is still suspended, a secondary safety device should be used.*

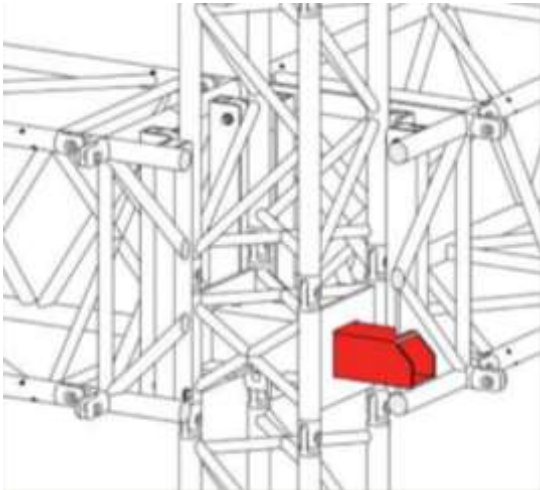


Figure 20: Example of securing a load suspended from a tower by means of a locking bar

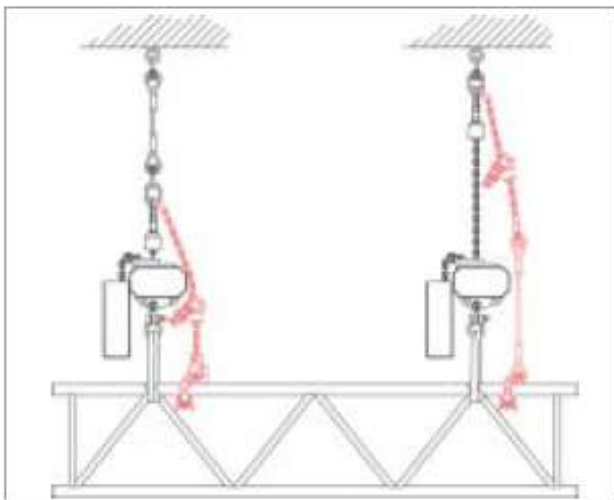


Figure 21: Example of a secondary safety component attached directly to the load that is being lifted (front view)

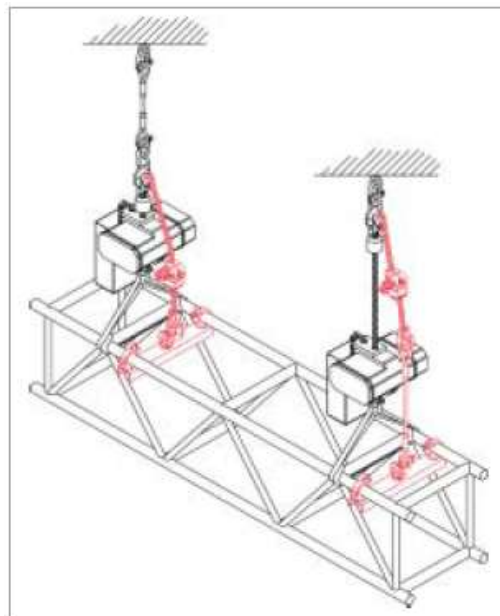


Figure 22: Example of a secondary safety component attached directly to the load that is being lifted

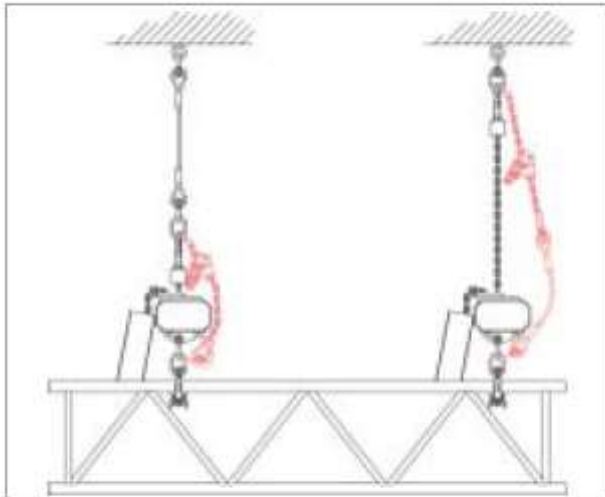


Figure 23: Example of a secondary safety component attached below the hoist, bypassing the hoist lifting mechanism (front view)

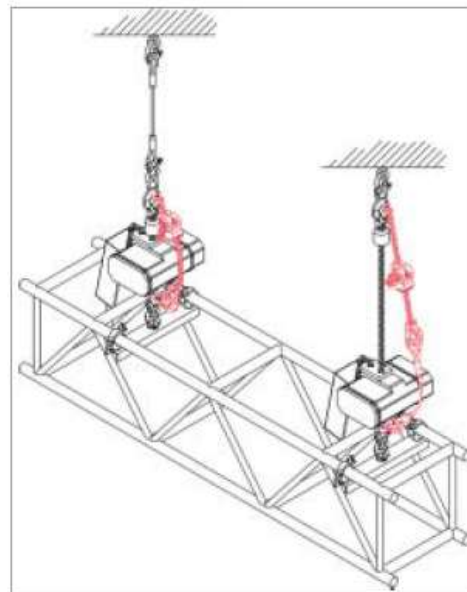


Figure 24: Example of a secondary safety component attached below the hoist, bypassing the hoist lifting mechanism (perspective view)

**⚠ WARNING**

Never use a chain clutch to connect the hoists lifting chain to a safety device. A lateral load to the lifting chain can easily lead to failure.

**3.4.3 Safety Conditions**

**Environmental conditions**

To ensure the hoists function correctly, the following environmental conditions shall be observed:

<b>Temperature</b>	Temperature ranging between -10°C and +40°C
<b>Humidity</b>	The relative humidity must not be higher than 50% with maximum temperature of +40°C. A higher relative humidity is allowed at lower temperatures (ex. RH. 90% AT 20°C).
<b>Altitude</b>	Maximum altitude at 3000m
<b>Electromagnetic environment</b>	The hoist is designed to work correctly in an industrial type electromagnetic environment, falling within the emission and immunity limits provided by the harmonized rules currently in force
<b>Wind</b>	Wind can have a significant influence on the load suspended. The exposed influence shall be considered at all time

**Lighting of work place**

During the set-up, dismantling and maintenance, it is favourable that the diffusion intensity does not have a value lower than 300 lux. In case of use in environments with poor lighting (typical of the entertainment sector), the localised lighting of the control devices and the intervention area must be arranged.

### 3.5 TECHNICAL DATA

- 4 x 1.5 mm<sup>2</sup> power cable fitted with CEE 16A 6h 400VAC – 3PH +G black plug.
- 4 x 1.5 mm<sup>2</sup> control cable fitted with CEE 16A 4h 24VAC – 3PH +G black plug (LVC only).
- Internal 25VA transformer: 400VAC on the primary windings, and 24VAC on the secondary windings.
- Delay fuse 100 mA (0.1 A) on the primary windings, and rapid fuse 1 A on the secondary windings.
- Three-pole Schneider Electric series LC2-K09 reversing contactors with 24 V AC coil for a rated power of 4 kW (AC3/400V).
- Mechanical limit switch 4 position with manual cam adjustment.
- Maximum control (Low Voltage Control) cable length attachable to motor: 50 m.
- Maximum chain length managed by low voltage control hoist: 60 m for single fall models and 30 m for double fall models.

Other voltages and frequency are available on request.

For fully markets the chain hoist configuration available is 208VAC - 3 @ 60Hz. Custom configuration are also possible, please refer to your local EXE TECHNOLOGY representative for all information.

<b>MODEL D8 DC</b>	<b>D8 198kg</b>	<b>D8 250kg</b>	<b>D8 500kg</b>	<b>D8 1000kg</b>
<b>Hoist Specifications</b>	<b>Hoist Specifications</b>	<b>Hoist Specifications</b>	<b>Hoist Specifications</b>	<b>Hoist Specifications</b>
<b>Working Load Limit (WLL)</b>	198kg	250kg	500kg	1000kg
<b>Lifting Speed @50Hz</b>	4m/min	4m/min	4 m/min	4m/min
<b>Motor Power</b>	0.5 kW	0.5 kW	0.8 kW	1.0 kW
<b>Operating Voltage Δ / Y</b>	230/400VAC - 3 - 50 Hz	230/400VAC - 3 - 50 Hz	230/400VAC - 3 - 50Hz	230/400VAC - 3 - 50Hz
<b>3 ph Δ 230 VAC Y 400 VAC</b>	Δ 2.70A – Y 1.56A	Δ 2.70A – Y 1.56A	Δ 3.93 A – Y 2.27 A	Δ 4.62 A – Y 2.67 A
<b>Falls of Chain</b>	1	1	1	1
<b>Load Wheel</b>	5 pockets	5 pockets	5 pockets	5 pockets
<b>Protection Class</b>	IP55 DIN 40050	IP55 DIN 40050	IP55 DIN 40050	IP55 DIN 40050
<b>FEM Classification</b>	2m	2m	2m	2m
<b>Duty Factor of Motor</b>	40%	40%	40%	40%
<b>Starts Per Hour</b>	240	240	240	240
<b>Connection Cable Length</b>	1m	1m	1m	1m
<b>Δ Power Supply Connector (*)</b>	CEE 16A 9h 230VAC – 3PH + G black plug	CEE 16A 9h 230VAC – 3PH + G black plug	CEE 16A 9h 230VAC – 3PH + G black plug	CEE 16A 9h 230VAC – 3PH + G black plug
<b>Y Power Supply Connector</b>	CEE 16A 6h 400VAC – 3PH + G black plug	CEE 16A 6h 400VAC – 3PH + G black plug	CEE 16A 6h 400VAC – 3PH + G black plug	CEE 16A 6h 400VAC – 3PH + G black plug
<b>Noise Level</b>	67.5 db @ full load	67.5 db @ full load	67.5 db @ full load	67.5 db @ full load
<b>DC Brake System</b>	1 or 2	2	2	2
<b>DC Brake Size</b>	06	06	06	08
<b>DC Brake Power</b>	20W	20W	20W	25W
<b>DC Brake Operating Voltage</b>	105VDC	105VDC	105VDC	105VDC
<b>DC Brake Rated Torque</b>	4Nm	4Nm	4Nm	8Nm
<b>DC Brake Rated Torque Reduction at the speed specified x% (1500r/min)</b>	87% (1500 r/min)	87% (1500 r/min)	87% (1500 r/min)	85% (1500 r/min)
<b>Clutch Characteristics</b>	Clutch is friction based force-limiter. Clutch outside the line of kinetic movement.	Clutch is friction based force-limiter. Clutch outside the line of kinetic movement.	Clutch is friction based force-limiter. Clutch outside the line of kinetic movement.	Clutch is friction based force-limiter. Clutch outside the line of kinetic movement.
<b>Selfweight</b>	≈ 17.0kg	≈ 17.0kg	≈ 24.0kg	≈ 43.0kg
<b>Chain Specifications</b>	<b>Chain Specifications</b>	<b>Chain Specifications</b>	<b>Chain Specifications</b>	<b>Chain Specifications</b>
<b>Size</b>	4x12mm	4x12mm	6x18mm	8x24mm
<b>Safety Factor</b>	8:1	8:1	8:1	8:1
<b>Selfweight</b>	0.35kg/m	0.35kg/m	0.78kg/m	1.39kg/m
<b>Material</b>	Zinc Galvanized Steel grade 80	Zinc Galvanized Steel grade 80	Zinc Galvanized Steel grade 80	Zinc Galvanized Steel grade 80
<b>Chain Bag Specifications</b>	<b>Chain Bag Specifications</b>	<b>Chain Bag Specifications</b>	<b>Chain Bag Specifications</b>	<b>Chain Bag Specifications</b>
<b>(Chain Length Up to 26m) Size - Selfweight - External dimension - Height</b>	XS - 0,75kg - 140x90mm - 400mm	XS - 0,75kg - 140x90mm - 400mm	S - 1,00kg - 200x170mm - 340mm	M - 1,00kg - 200x170mm - 420mm
<b>(Chain Length 26/40m) Size - Selfweight - External dimension - Height</b>	XS - 0,75kg - 140x90mm - 400mm	XS - 0,75kg - 140x90mm - 400mm	M - 1,00kg - 200x170mm - 420mm	L - 1,00kg - 200x170mm - 580mm
<b>(Chain Length From to 40m) Size - Selfweight - External dimension - Height</b>		Not Provided	L - 1,00kg - 200x170mm - 580mm	XL - 1,00kg - 270x210mm - 650mm

<b>MODEL D8+ DC / LVC</b>	<b>D8+ 250kg</b>	<b>D8+ 500kg</b>	<b>D8+ 1000kg</b>	<b>D8+ 2000kg</b>	
<b>Hoist Specifications</b>	<b>Hoist Specifications</b>	<b>Hoist Specifications</b>	<b>Hoist Specifications</b>	<b>Hoist Specifications</b>	
Working Load Limit (WLL)	250kg	500kg	1000kg	2000kg	
Lifting Speed @50Hz	4m/min	4m/min	4m/min	4m/min	
Motor Power	0.5kW	0.8kW	1.0kW	1.6kW	
Operating Voltage Δ / Y	230/400VAC - 3 - 50Hz	230/400VAC - 3 - 50Hz	230/400VAC - 3 - 50Hz	230/400VAC - 3 - 50Hz	
3 ph Δ 230 VAC Y 400 VAC	Δ 2.70A – Y 1.56A	Δ 3.29 A – Y 1.90 A	Δ 3.59 A – Y 2.07 A	Δ 4.59 A – Y 2.65 A	
Falls of Chain	1	1	1	1	2
Load Wheel	5 pockets	5 pockets	5 pockets	5 pockets	
Protection Class	IP55 DIN 40050	IP55 DIN 40050	IP55 DIN 40050	IP55 DIN 40050	
FEM Classification	2m	2m	2m	2m	
Duty Factor of Motor	40%	40%	40%	40%	
Starts Per Hour	240	240	240	240	
Connection Cable Length	1m	1m	1m	1m	
Δ Power Supply Connector (*)	CEE 16A 9h 230VAC – 3PH + G blue plug	CEE 16A 9h 230VAC – 3PH + G blue plug	CEE 16A 9h 230VAC – 3PH + G blue plug	CEE 16A 9h 230VAC – 3PH + G blue plug	
Y Power Supply Connector	CEE 16A 6h 400VAC – 3PH + G red plug	CEE 16A 6h 400VAC – 3PH + G red plug	CEE 16A 6h 400VAC – 3PH + G red plug	CEE 16A 6h 400VAC – 3PH + G red plug	
Control Supply Connector (only LVC)	CEE 16A 4h 24VAC – 3PH + G yellow socket	CEE 16A 4h 24VAC – 3PH + G yellow socket	CEE 16A 4h 24VAC – 3PH + G yellow socket	CEE 16A 4h 24VAC – 3PH + G yellow socket	
Noise Level	67.5 db @ full load	67.5 db @ full load	67.5 db @ full load	67.5 db @ full load	
DC Brake System	2	2	2	2	
DC Brake Size	06	06	08	10	
DC Brake Power	20W	20W	25W	30W	
DC Brake Operating Voltage	105VDC	105VDC	105VDC	105VDC	
DC Brake Rated Torque	4Nm	4Nm	8Nm	16Nm	
DC Brake Rated Torque Reduction at the speed specified x% (1500r/min)	87% (1500 r/min)	87% (1500 r/min)	85% (1500 r/min)	83% (1500 r/min)	
Clutch Characteristics	Clutch is friction based force-limiter.Clutch outside the line of kinetic movement.	Clutch is friction based force-limiter.Clutch outside the line of kinetic movement.	Clutch is friction based force-limiter.Clutch outside the line of kinetic movement.	Clutch is friction based force-limiter.Clutch outside the line of kinetic movement.	
Limit Switch (only LVC)	Not Provided	4	4	4	
Selfweight	≈ 17.0kg	≈ 24.0kg	≈ 43.0kg	≈ 43.0kg	≈ 45.0kg
<b>Chain Specifications</b>	<b>Chain Specifications</b>	<b>Chain Specifications</b>	<b>Chain Specifications</b>	<b>Chain Specifications</b>	
Size	4x12mm	6x18mm	8x24mm	8x24mm	
Safety Factor	8:1	8:1	8:1	8:1	
Selfweight	0.35kg/m	0.78kg/m	1.39kg/m	1.39kg/m	
Material	Zinc Galvanized Steel grade 80	Zinc Galvanized Steel grade 80	Zinc Galvanized Steel grade 80	Zinc Galvanized Steel grade 80	
<b>Chain Bag Specifications</b>	<b>Chain Bag Specifications</b>	<b>Chain Bag Specifications</b>	<b>Chain Bag Specifications</b>	<b>Chain Bag Specifications</b>	
(Chain Length Up to 26m) Size - Selfweight - External dimension - Height	XS - 0,75kg - 140x90mm - 400mm	S - 1,00kg - 200x170mm - 340mm	M - 1,00kg - 200x170mm - 420mm	M - 1,00kg - 200x170mm - 420mm	
(Chain Length 26/40m) Size - Selfweight - External dimension - Height	XS - 0,75kg - 140x90mm - 400mm	M - 1,00kg - 200x170mm - 420mm	L - 1,00kg - 200x170mm - 580mm	L - 1,00kg - 200x170mm - 580mm	
(Chain Length From to 40m) Size - Selfweight - External dimension - Height	Not Provided	L - 1,00kg - 200x170mm - 580mm	XL - 1,00kg - 270x210mm - 650mm	XL - 1,00kg - 270x210mm - 650mm	

**3.6 EXE-Rise DRAWING**

**SMALL FRAME**

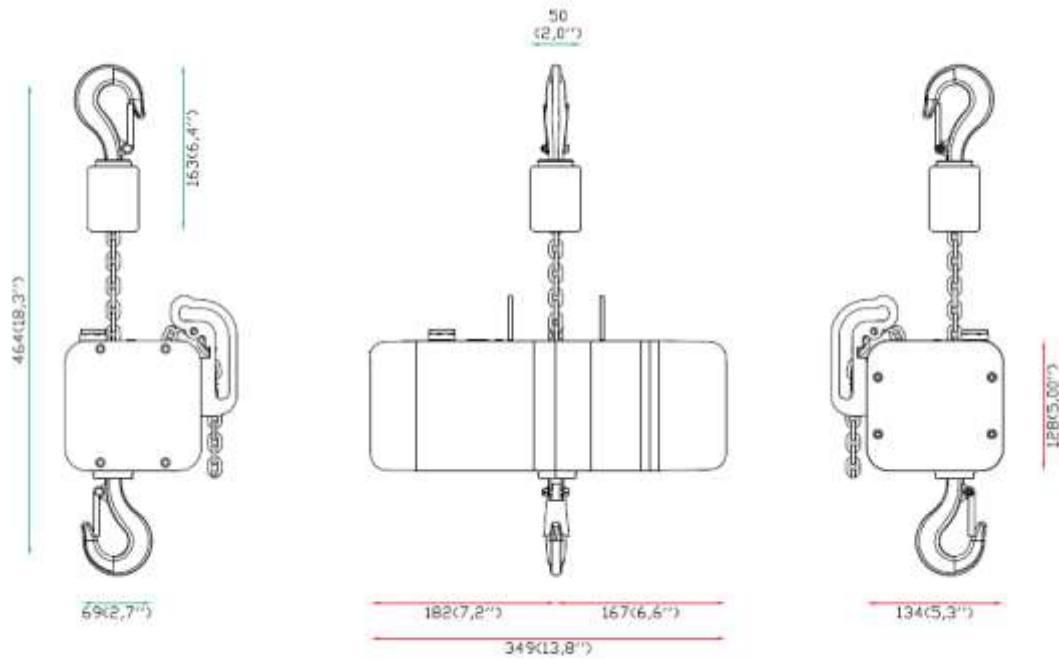


Figure 25: "EXE-Rise DRAWING: SMALL FRAME"

**MEDIUM FRAME**

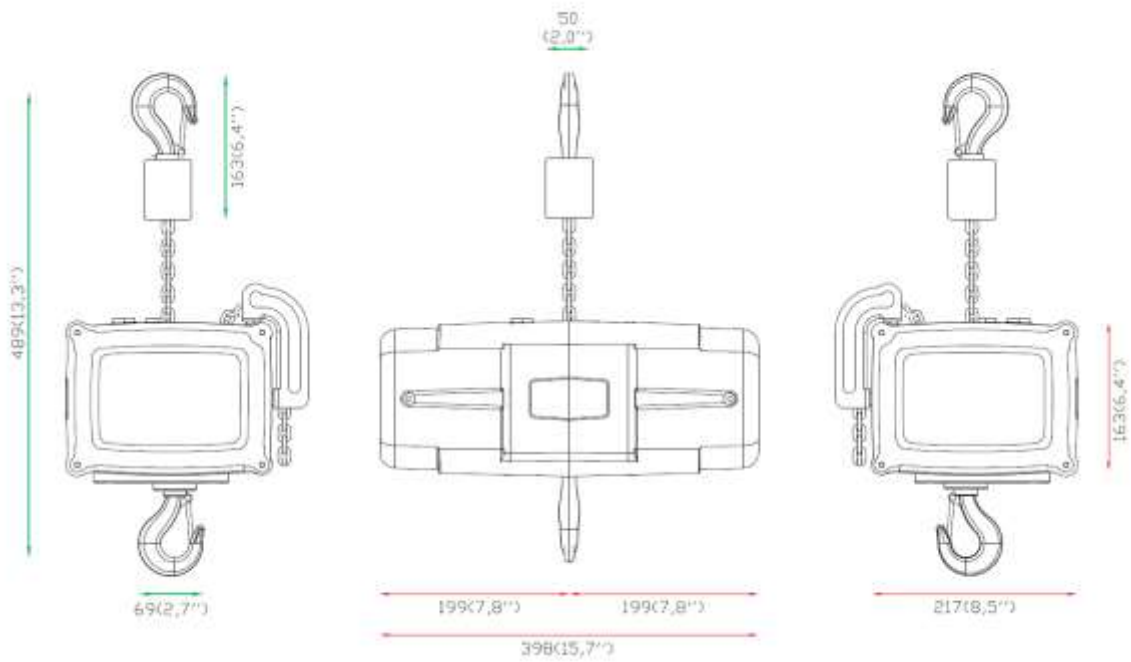


Figure 26: "EXE-Rise DRAWING: MEDIUM FRAME"

**LARGE FRAME 1 FALL**

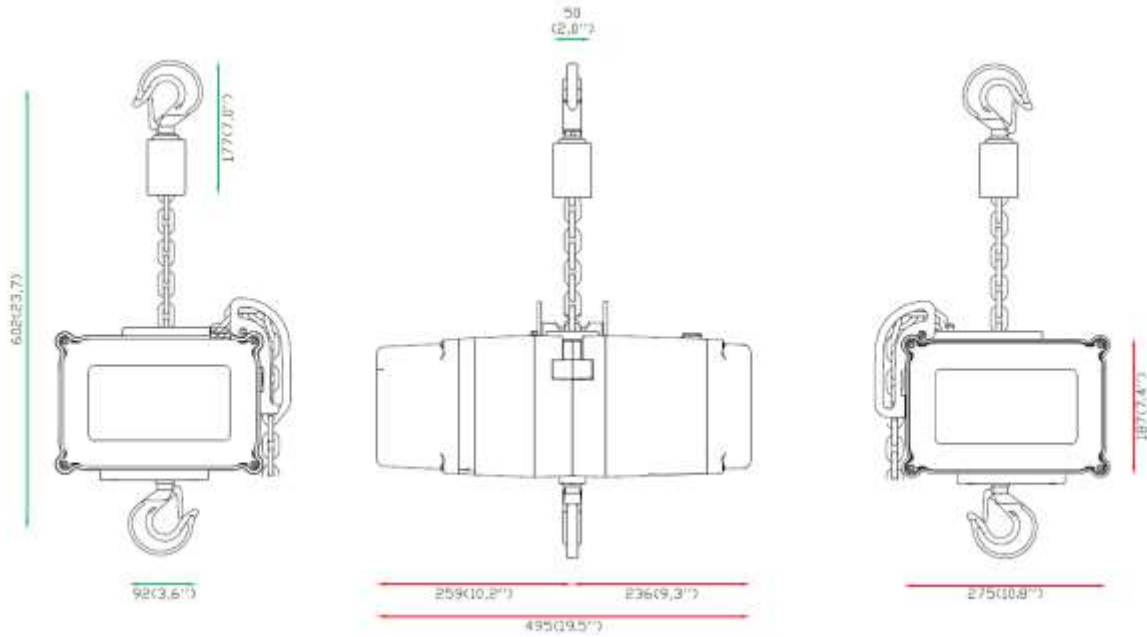


Figure 27: "EXE-Rise DRAWING: LARGE FRAME 1 FALL"

**LARGE FRAME 2 FALL**

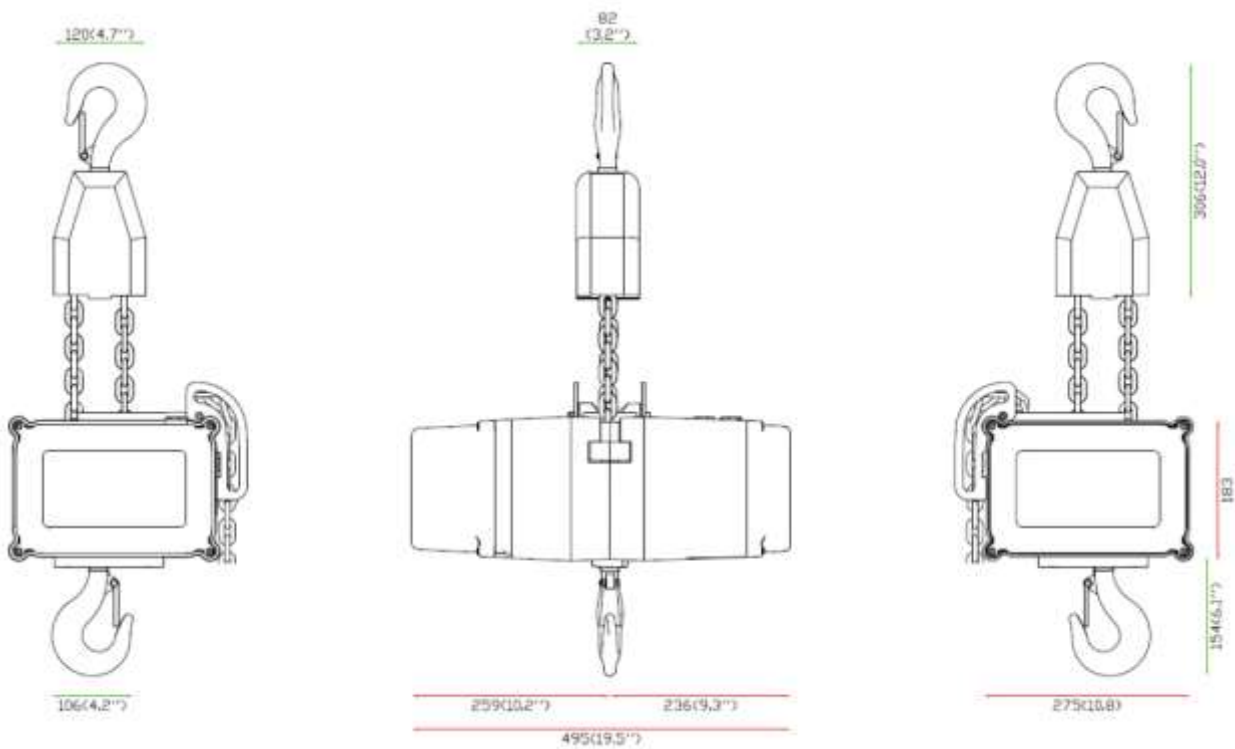


Figure 28: "EXE-Rise DRAWING: LARGE FRAME 2 FALL"



## 4. HANDLING AND INSTALLATION

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When handling and unpacking the hoist you should use safe handling techniques.

Electric chain hoists must be assembled by qualified personnel. Always refer to your local areas manual lifting directives, as well those mentioned in this manual.

Should the electric chain hoist be destined for operation outdoors then it is necessary to use a protection cover to shield it from the effects of the weather. NB! This can also be protection against fine sand!

### 4.1 HANDING & TRANSPORTATION

The customer must carefully check if the goods are complete and undamaged upon delivery. Any damage in transit is the responsibility of the carrier. The packaging should be disposed of in an environmentally friendly manner. Ensure all routes and areas which are intended for handling are free from obstacles.

When working at height the user should employ relevant and suitable access and safety equipment.



*Lifting, shifting and handling operations must be carried out by trained personnel. Do not halt, for any reason, below suspended loads during lifting operations.*

The package contains a label on the front and on the back side, reporting serial number, code, description and number of pieces of EXE-Rise chain hoist. It means you have a chance of reading all labels when they are stacked on a pallet as opposed to no chance if the labels are on top. The follow figure is an example of packing label.



Figure 29: "EXE-Technology package label"

## 4.2 TRANSPORT AND STORAGE

- It is advised to transport the electric chain hoist in its original packaging or a dedicated flight case.
- Before putting your EXE Rise hoist in storage make sure all components are dry
- Use flight cases with ventilation openings for all compartments
- Keep the chain oiled to prevent corrosion
- Do not stack carton boxes in which the hoist comes from the factory higher than two
- Provide a clip on attachment point for the lift chain hook in the flight case. This minimises the risk of chain becoming entangled during transport.
- When air freighted the pressure inside the hoist can increase and cause leakage of oil/grease. This is a temporary effect caused by difference in air pressure.

A Banksman should be present when moving goods with machinery such as lift trucks.

Packaging such as plastic bags, expanded polystyrene must not be released to the environment but must be kept in order to pack again the hoist after using it.

### 4.2.1 Packaging storage

The goods are packaged in a way that offer protection from damage. This packaging should be stored in a dry environment away from moisture, heat and temperatures from 10degrees Celsius up to 40degrees Celsius

Should the hoist not be operated immediately, it is recommended to store it inside its packaging, in a covered, dry and clean area, away from heat sources that might jeopardise its integrity.

### 4.2.2 Unpacking and ground handling of the hoist

Remove the hoist from its packaging. Lift the hoist by the handles.

- Check that the packaging label information are the same as those on the hoist plate.
- Check that the hoist has not suffered damage arising from an inadequate transport. Perform the following checks;
  - Make sure the plugs and cables are undamaged
  - Check integrity of the hoist metal housing
    - No cracks or dents must be present
    - All casing screws should be present and tight
    - Check for water ingress.
  - Check that the sprung latches on the hooks are present and functioning correctly.
  - Check chain bag for damage.
  - Inspect the load chains for dents or notches

If a damage arising from shipment has been detected please refer to the accompanying document envelope on the box for the claim procedure.

Possible claims related to hoist damages must be presented within 8 days from receipt of the goods; in any case it must be pointed out that the hoist is subject to an accurate inspection in every part before being packed and shipped to the customer.

Place the hoist on the ground and attach the chain bag; make sure that the screw closures of the bag connecting links have been correctly closed.

### 4.3 SUSPENDING THE HOIST

It is the user's responsibility to ensure all hanging points, lifting hardware and control systems are inspected and tested prior before use.

Cables must be placed in such a way that they do not come into contact with sharp edges and do not run the risk to be cut off or damaged. Cables must not be placed under tension.

#### 4.3.1 Mounting the hoist "motor-down" (self-climbing mode)

1. Move the hoist in the required location whilst still in its packaging.
2. Connect the hoist to its control system.
3. For the first installation run the complete chain through the hoist and back. This way correct storage of the chain in the bag or chain container is guaranteed
4. Connect the hook end of the chain to the fixing point at height. The hoist can then be operated and run up to a working height position where the load to be connected.

#### 4.3.2 Mounting the hoist in "motor-up" position

5. Use an appropriate method of lifting the hoist body and attach the anchorage hook to the point of the structure.
6. Connect the hook on the hoist body to the suspension point.
7. Connect the hoist to its control system.
8. For the first installation run the complete chain through the hoist and back. This ensures the chain will be correctly stored in the chain bag.
9. Lower the lifting chain to its required height



Figure 30: "EXE-Rise motor up and down"

## 4.4 ELECTRICAL CONNECTIONS

**⚠ WARNING**

Before connecting the hoist to the power supply, check that voltage and power of the electric supply corresponds to those reported on the chain hoist plate. Check also that the earthing system is efficient.

**⚠ WARNING**

Do not insert the plug of the hoist directly into a power socket. Only use a dedicated chain hoist controller.

Installers must equip the branch circuit with a grounding system, protection against current overloads and short circuits that comply with the requirements of the laws on safety and health protection on work place of the Country where the hoist is installed.

In order to avoid risk of electrocution and malfunction, check that all cables powering the hoist are protected against possible external damages.

EXE Rise chain hoists are available in both direct and low voltage control. They must be connected to a power and control system that is suitably designed to operate the chain hoists and handle the power consumption of the motor.

EXE Rise hoists are factory set to be run with a voltage of 400 V AC. The DC hoist is fitted with a CEE 16A 6h 400VAC – 3PH +G black plug. plug as standard. The LVC hoist comes with a CEE 16A 4h 110VAC - 3PH +G black socket.

**⚠ WARNING**

Electrotechnical adjustments may only be performed by authorised specialists.

EXE Rise hoists are manufactured to be run with a voltage of 400 V AC. The DC hoist is fitted with a CEE 16A 6h 400VAC – 3PH +G black or red plug. plug as standard with IP RATE 67. The wiring must be done according to the standard sequence following:

Low Voltage Control		Direct Control	
PIN	COLOR	PIN	COLOR
L1	Brown	L1	Grey
L2	Black	L2	Black
L3	Grey	L3	Brown
PE	Yellow – Green	PE	Yellow – Green

Table 18: "Plug wiring"

The LVC hoist comes with a CEE 16A 4h 110VAC - 3PH +G black or yellow socket, with IP RATE 67. The wiring must be done according to the standard sequence following:

PIN	COLOR	FUNCTION
L1	Brown	Up
L2	Grey	Down
L3	Black	Common 24 VAC
PE	Yellow – Green	Earth

Table 19: "Socket wiring"

**WARNING**

When power extension cords CEE 16A 6h 400VAC – 3PH +G and / or Control extensions CEE 16A 4h 110VAC - 3PH +G are used, you must make sure that the electrical connections have been made according to the rules respecting the position of PIN to PIN for each pole plugs and sockets (L1-L1, L2-L2; L3-L3, PE-PE). Incorrect wiring means that the hoist does not perform its function.

**WARNING**

Do not insert the plug of the hoist directly into a power socket. Only use a dedicated chain hoist controller. The chain hoist EXE-Rise LVC must only be connected electrically to a motor controller compatible to command EXE- Rise LVC.










## 5. USE

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**WARNING**

**STAY ALERT!** Watch what you are doing and use common sense. Do not use the hoist when you are tired, distracted or under the influence of drugs, alcohol or medication that can cause diminished control.

Improper operation of the hoist can create a potentially hazardous situation which, if not avoided, could result in death or serious injuries. Permit only authorised and qualified personnel to operate the unit. Do not use the hoist or any other overhead materials handling equipment for lifting persons.

-  Do not use the hoist unless it is perfectly efficient, even if the hoist still operates.
-  Do not use the emergency stop button to habitually stop hoist motion.
-  Do not carry out operations or manoeuvres on one's own initiative that do not fall within one's area of expertise and can compromise the safety of everyone.
-  Do not wear loose fitting clothes as these can get entangled in moving parts.
-  Do pay attention at all times when operating the hoist.
-  Do ensure the chain container is not obstructed in any way.
-  Do stay clear of moving chains.
-  Do ensure chain is lubricated at all times.
-  Call your EXE Rise supplier if the hoist does not work properly.

**WARNING**

If damaged or worn parts are detected do not use the hoist. Seek assistance for service of the unit.

**SAFETY INSTRUCTIONS**

During the movement of the load always appoint a responsible person to monitor and ensure the load is safe. If the load encounters any obstruction stop movement immediately. If the load is being moved on multiple hoists a safe operating procedure must be pre-defined.

**SAFETY INSTRUCTIONS**

Limit switch adjustment for LVC models: The device is calibrated in a standard way at the factory. Official trained and competent operators can adjust it according to their specific needs.

## 5.1 ATTACHING AND MOVING THE LOAD

1. Insert the lifting hook into the load pick-up point.
2. Make sure chain travel is in the same direction as shown on the controls.
3. Check to be sure that the attachments to the load hook are firmly seated. Make sure the hook latches are closed and not supporting any part of the load.
4. Check to ensure that the load point is in line with the hoist head. WHEN APPLYING A LOAD, IT MUST BE DIRECTLY IN LINE WITH THE HOIST. AVOID OFF CENTRE LOADING OF ANY KIND.
5. Make sure the load has enough room to be free to move: no obstructions must be present along its travel.
6. Make sure no other sound than the hoist can be heard
7. Have a clear view on the load. Other wise use spotters with appropriate means of communication. They shall be in direct contact with the operator
8. Select each hoist one by one and move it just that far that it is under tension and pick up the load
9. Before moving the load check for twists in the load chain.
10. Level the load before lifting.
11. Select the travel direction of all hoist connected to the load
12. Move the load by operating the go button of the associated controller.
13. Raise the load only enough to check the attachments to the hook and load are firmly seated.
14. Move the load slowly to avoid shock and jerking of load chain. If there is any evidence of overloading, immediately lower the load and remove the excess load.
15. Stop at intermediate heights to check if the structure is still in the required position
16. When the hoist is are at trim height apply a secondary safety if required. Follow the instructions as given in the chapter “safety instructions”
17. Switch of the hoist main circuit breaker to avoid un intended operation

## 5.2 LOWERING AND DISCONNECTING THE LOAD

### NOTICE

*It shall be noted that lowering a load suspended on multiple hoist incorporates many more risk of overload as lifting.*

If one hoist is not following the lift sequence it is very likely it immediate is overloading itself, its suspension point and the pickup point at the load:

1. Switch on the main circuit breaker of the hoist controller
2. Check if the travel path of the load is free of obstructions
3. Clear the area from people
4. Make sure no other sound than the hoist can be heard
5. Select the operation direction to “down” for each hoist connected to the load
6. Have a clear view on the load. Other wise use spotters with appropriate means of communication. They shall be in direct contact with the operator
7. Activate all hoist by pressing the “Go” button
8. Check if all hoist are running. If not lift the load to its original position and solve the problem
9. Lower the load till the hoist are un loaded
10. Remove the hoist from their load. Use if possible its own lifting chain to place it back in its flight case.
11. Disconnect the power supply from the hoist
12. Disconnect the lifting chain
13. Make sure the chain is fed back in the chain bag in an appropriate way without getting entangled.

### 5.3 LIMIT SWITCH SETTING AND RE-SETTING

Manufacturer set limit switch as follow.

- ULTIMATE UP between 3<sup>th</sup> and 4<sup>th</sup> links
- STANDARD UP between 9<sup>th</sup> and 10<sup>th</sup> links
- STANDARD DOWN at the 21<sup>th</sup> link
- ULTIMATE DOWN at the 16<sup>th</sup> link
- CHAIN STOP at the 11<sup>th</sup> link

Any Limit Switch re-setting is prohibited. Only RWM authorised service engineers are allowed to carry out re-setting of limit switch.

#### NOTICE

320kg LVC model and 160kg D8+ hoist come without limit switch.

#### NOTICE

For a double reeved hoist like the 2000kg version, the length of chain travel is double. This reduces the lifting height to 24.5 metres.

### 5.4 TURN 1000kg SINGLE REEVE IN 2000kg DOUBLE REEVE

EXE-Rise chain hoist D8 1000kg single reeve (DC and LVC) can be turned in D8 2000kg double reeve (DC and LVC). The procedure to be performed is reported below:

- 1) Make sure the lifting chain is just 100cm long before modifying the hoist.
- 2) Reverse barycenter, rotating hoist body hook of 180° as in figure below. Unscrew the screws of the plate, rotate 180° and tighten the screws, that they are M16 (8,8 steel) and the correct torque for tightening these screws is 198 Nm (see figure 32).



Figure 31: "Reversing of barycenter"

- 3) Procure lift "chain hook" with load well for 8x24mm chain and "dead end block 8x24mm chain" (see figure 33).



Figure 32: "Required Components"

- 4) Remove the lifting hook.
- 5) Remove Aluminum Frame Block (see figure 34).



Figure 33: "Removing the Frame Block"

- 6) Feed the lifting chain through the new lift hooks pulley. Make sure the chain is not twisted (see figure 35).



Figure 34: "Replacement of the Chain hook"

- 7) Re-connect the chain to the aluminum frame block (see figure 36).



Figure 35: "Re-applying of the frame block"

- 8) Run the chain minimum 2 meter through the lift hook to ensure good operation.



## 6. INSPECTIONS

For a correct and safe use of EXE-Rise chain hoist it's important to carry out appropriate inspections and control. RWM recommended to comply with the frequency of inspections and follow the check reported in this chapter.

### 6.1 INITIAL AND EACH ASSEMBLY INSPECTION AND CONTROLS

The purpose of the following test and inspection is to ensure the hoist has been correctly assembled, installed, is not damaged and is safe to use. RWM recommended to perform the following checklist



*When handling and unpacking the hoist you should use safe handling techniques.  
The following test should be carried out prior to each new use of the hoist.*

#### Visual inspections and controls

Visual inspections and controls should be carried out on the following elements to check for any damage or faulty parts:

Presence and congruence of use and maintenance manual, wiring diagram and declaration of conformity of EXE-Rise chain hoist	Identification and congruence of CE marking and the data plate on the EXE-Rise body
Correspondence between the power supply and that provided for the hoists	Any visible damage to the hoist body, hook, chain, bag, Quick Link and controller.
The value of the power supply is within the +/-10% limits of the nominal value	Body work and Chain hook
Connections to the hoist controller	Chain bag connection
Power and control cables from the hoist to the hoist controller	Load chain

#### Functional inspections and controls

Functional inspections and controls should be carried out on the following elements to check for any damage or faulty parts:

Connect the hoist to a suitable controller	Listen for any strange noises from the hoist while chain is running
Operate the hoist in both directions to check phasing is correct. If not correct the sequence	Chain should run smoothly into the chain bag
Check E-stop of the controller is working correctly	Ensure chain is not allowed to bunch up while entering or exiting the hoist. Chain should be allowed to run clear of the hoist.
Check the chain runs smoothly through the hoist	Check all functions of the controller

## 6.2 FREQUENT AND PERIODICAL INSPECTION

Here the term inspection refers to the visual examination of the hoist and its accessories.

In order to keep a continuous and satisfactory operation inspection intervals must be determined by the individual application and are based on the type of service to which the hoist will be subjected and the degree of exposure to wear, deterioration or malfunction of the critical components. Check periodically that all the labels are present and legible on the hoist.

In addition to the suggested inspection program below, please also refer to the local regulations relating to lifting machinery. Appropriate actions as an outcome of the inspection and testing regime can be found in the chapter “maintenance “

The type of service to which the hoist is subjected can be classified as "Normal", "Heavy", or "Severe".

**Normal Service:** Involves operation with randomly distributed loads within the rated load limit, or uniform loads less than 65% of rated load for not more than 25% of the time.

**Heavy Service:** Involves operating the hoist within the rated load limit which exceeds normal service.

**Severe Service:** Normal or heavy service with abnormal operating conditions.

Two classes of inspections – frequent and periodic – can be performed

**Frequent Inspections:** These inspections are visual examinations by the operator or other designated personnel. Records of such inspections are not required. The frequent inspections are to be performed monthly for normal service, weekly to monthly for heavy service, and daily to weekly for severe service, and they should include those items listed in *Table 14*.

**Periodic Inspections:** These inspections are visual inspections of external conditions by an appointed person. Records of periodic inspections are to be kept for continuing evaluation of the condition of the hoist. Periodic inspections are to be performed yearly for normal service, every six months for heavy service and quarterly for severe service, and they are to include those items listed in *Table 15*.



*Any deficiencies are to be corrected before the hoist is returned to service. Be aware that the external conditions may show the need for more detailed inspections, which, in turn, may require the use of non-destructive type testing.*

TYPE OF SERVICE			ITEM
Normal	Heavy	Severe	
Monthly	Weekly to monthly	Daily to weekly	a) Brake for evidence of slippage. b) Control functions for proper operation. c) Hooks for damage, cracks, twists, excessive opening, latch engagement and latch operation d) Load chain for adequate lubrication, as well as for signs of wear, damaged links or foreign bodies e) Load chain for proper reeving and twists.

Table 20: “Minimum frequent inspections”

TYPE OF SERVICE			ITEM
Normal	Heavy	Severe	
Yearly	Every six months	Every three months	a) All items listed in Table 8 for frequent inspections. b) External evidence of loose screws, bolts, nuts. c) External evidence of worn, corroded, cracked or distorted hook block, suspension screw, bearings and dead end block and chain pin. d) External evidence of damage to hook retaining nut and pin. e) Check the integrity of the power plug of the chain hoist and control socket for LVC models. f) Check the electrical cords and cables and controller for damaged insulation. g) Inspect for signs of lubricant leaks. h) Setting and functioning of the slip clutch

Table 21: "Minimum periodic inspections"

### 6.2.1 Chain Inspection

Chain should feed smoothly into and away from the hoist or hook block. If chain binds, jumps or is noisy, first clean and lubricate it. If trouble persists, inspect chain and mating parts for wear, distortion or other damage.

#### SAFETY INSTRUCTIONS

*The chain stop at the end of each lifting chain shall be placed at 11 links from the "dead end". This dead end is your reference for chain defaults as it never will be subject to load or wear and tear.*

#### Lubrication:

Chain should always be kept well lubricated. No chain link may be overlooked as this can lead to premature wear. Change-over links especially should be lubricated. Change-over links are those links which stop on, resp. immediately at the inlet of the drive and reversing wheels at constant stroke when switching from lifting to lowering. Beside the contact point of 2 links need sufficient lubrication.

#### Inspecting the chain and chain wheel:

The chain must be inspected at regular intervals, but at least once annually, in accordance with the stipulations of ISO 7592 and the valid accident prevention regulations in the country of use. As the frequency of use increases, the chain inspection program should be reviewed and carried out at more regular intervals. Increased use will mean wear, corrosion, the effects of the heat and greater susceptibility to faults occur.

The inspection includes detecting surface damage of the links such as deformation, cracks, wear and corrosion. The choice of a suitable lubricant is dependent on the operating environment. Please contact RWM for recommendations of appropriate lubricants.

For usage a high pressure resistant lubricant will suffice.

During inspection, the chains must be examined along their entire length, including the hidden parts. If the lifting equipment is frequently used with a constant lifting distance or if switchover from upward to downward often takes place in the same area, a particularly thorough inspection and lubrication is required in this switch-over area. Together with the chain the wheels, chain guide and fixing parts should be inspected for damage, corrosion, abnormal area of wear or other defects.

Particular attention should be paid to the condition of all bolts and safety components. If defects are discovered the hoist must be taken out of service and repaired immediately.

**TIP!** To detect surface damage and deformations on the external surfaces of the links, use a piece of cotton fabric and pull the chain through. Any surface damage such as nicks or cracks will hook catch on the fibres of the fabric and thus can be easily detected.

#### **Discard criteria of chain:**

The chain must be replaced if the average wire diameter ( $d_m$ ) has been reduced due to wear by more than 10% of the nominal thickness at any point on the chain link.

The average wire diameter  $d_m = (d_1 + d_2) : 2 \leq 0.9d$ , whereby the average wire diameter ( $d_m$ ) is calculated from two individual values  $d_1$  and  $d_2$  measured rotated through  $90^\circ$  with respect to each other. The chain must be replaced if a single chain link is permanently lengthened or if the inner pitch  $t$  of the individual link has increased in size by more than 5% as a result of wear.

The chain must also be replaced if the inner pitch  $11t$  has increased in size by more than 2% along a measuring section of 11 chain links.

The lubricant shall sit at the contact points between to chain links as this part is subject to the utmost wear and tear

#### **Chain wheel inspection:**

If the chain is found to have reached the point of wear of 2% pitch enlargement (over  $11t$ ), the lift wheels must be inspected carefully. Damaged wheels have to be replaced together with the chain. If no severe wear has occurred to the lift wheel pockets the lift wheels do not have to be replaced.

#### **External chain guide inspection:**

The external chain guide helps feed the chain properly into the lift wheel. Its shape is specially designed in order to disentangle chain before entering the hoist.

Excessive wear makes to the guide reduces its functionality. Wear that is apparent on one side of the chain guide clearly indicates side pull on a loaded hoist. In both cases the chain guide shall be replaced.



*Figure 36: "External chain guide plate"*

### **6.2.2 Hook Inspection**

Hooks damaged from chemicals, deformations, cracks or which have a 10° twist from the hook's unbent plane must be replaced.

If the throat of the hook is deformed or has excessively opened enough to allow the latch to not engage with the tip of the hook correctly, it must be replaced. Any hook that is twisted or has excessive opening indicates abuse or overloading of the unit. Inspect other load sustaining parts, hook block screws, load pins and chain block body for damage.

Check and inspect that the spring latch is not damaged or bent and that it operates properly with sufficient spring pressure to keep the latch tightly closed against the tip of the hook and allow the latch to spring back to the tip when released.

If the latch does not operate properly, it should be replaced. The check on the max hook opening allowed see drawings and dimensions below.

### **6.2.3 Chain Bag Inspection**

Chain bags should be inspected for signs of excessive wear and tear to the fabric of the bag and the attachment loops. Damaged bags shall be replaced at all times.

Chain bags shall be filled to a maximum of 75% .

Chain bags shall be suspended by Quicklinks or Carabiners made according to DIN 56927 or equivalent standard. They shall have a 5:1 safety factor as suitable for overhead suspension. Some bags are supplied with a suitable rated captive spring hook. Only rated hooks supplied by RWM should be used.

Any attaching devices should also be inspected. Danged or worn devices should be discarded immediately and replace.

## **6.3 PERIODICAL CONTROLS**

The hoist must be tested as often as deemed necessary, based on usage logs, or at least once a year. Testing should be carried out by an authorised expert. In case of heavy services or intensive use, the user must carry out additional extraordinary testing based on his own risk evaluation. Periodic testing must be carried out by the authorised RWM maintenance service engineer.

Testing shall consist of lifting a dynamic load in order to test the functioning and setting of the slip clutch and the brake.

In addition, the slipping properties of the clutch and brake can be affected by, but not limited to, the position of the pocket wheel, operation in extreme temperatures (above 65dgr. Celsius or below -10dgr. Celsius), humidity or fluctuations in the friction material. This could lead different values of the clutch setting as seen on the initial test report.

The clutch settings of the EXE RISE hoist are set at 120% of the nominal load to meet the German standards for the use of hoists above people. Due to the nature of the clutches and the above conditions, these settings can vary easily by +/- 10%... The testing shall be performed with a suspended load of 120% of the maximum WLL. Other countries may have different regulations. However, clutch settings shall remain in between 110% and 160% at all times (EN14992-2).

## **6.4 EXTRAORDINARY INSPECTION**

In case of extraordinary events which can jeopardise the safety of the working equipment, extraordinary testing must be carried out. In particular, extraordinary events include accidents, modifications to the hoist, prolonged downtime periods and natural phenomena.

Testing must be carried out only by authorised personnel, duly authorised for the purpose.

In addition to the above inspection and testing procedure, a preventive maintenance program should be established to prolong the useful life of the hoist and maintain its reliability and continued safe use. The program should include the periodic and frequent inspections with particular attention being paid to the lubrication of the various components using the recommended lubricants.

## 7. MAINTENANCE AND REPAIR

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### **WARNING**

*Visual inspection and testing of the hoist and lubricating the chain are the only interventions that should be undertaken by the user of the hoist.*

All other maintenance, replacement, adjustment interventions that involve the opening of the hoist housing should only be carried out by RWM authorised service engineers.

The hoist must therefore be delivered to RWM authorised centre that will issue special control and maintenance reports.

Maintenance and service are preventive measures designed to preserve the full functionality of electric chain hoists. Non-compliance with maintenance and service routines can result in reduction in the useful function of and/or damage to chain hoists.

Maintenance work encompasses visual checks and cleaning routines. Service work includes additional functional checks. During the functional checks, all securing elements and cable clamps must be checked for secure seating.

During maintenance and service work, general accident prevention directions, special safety directions as well as hazard protection instructions should be followed.

### **CAUTION**

Before carrying out any kind of maintenance, repair, cleaning or any activity that requires a manual intervention on the machine, disconnect the power supply to the hoist.

Ensure the power cannot be re-connected to the hoist by securing or clearly marking the plug "do not connect".

### 7.1 CHAIN MAINTENANCE

#### **WARNING**

*Use of commercial or other manufacturers' chain and spare parts to repair the hoist may cause load loss. Use only chains supplied by the manufacturer.*

The valid accident prevention regulations and the stipulations of ISO 7592 must be observed during all maintenance work.

#### 7.1.1 Cleaning Chain

Clean the load chain with acid-free solvent and coat with new high pressure oil. Wipe excess oil to prevent dripping. Never apply grease to the chain.

#### 7.1.2 Lubrication of Chain

Lubricated chain has a much higher (15-20 times) lifecycle than a dry chain. We recommend to lubricate the chain along its entire length before putting into operation. It must be ensured that all chain links are lubricated. During lubrication, ensure that the lubricant penetrates into connection point between chain links. This spot is most susceptible to wear. Change-over link should be lubricated especially careful. Change-over

links are those links which stop on, resp. immediately at the inlet of the drive and reversing wheels at constant stroke when switching from lifting to lowering. These chain links are charged especially heavy by dynamic vibrations and have therefore to be lubricated carefully in shorter intervals. The choice of a suitable lubricant is dependent from the operating place and the existent environment conditions. An appropriate lubricant recommendation can be inquired by RWM. For average applications a high pressure resistant lubricant will do.

## 7.2 BRAKE AND LIMIT SWITCH MAINTENANCE / ADJUSTMENT

EXE-Rise chain hoist are equipped with an INTORQ brake.

1. Measure the rotor thickness of the brake by means of a Vernier Caliper gauge. (See table below for allowable Values)
2. If required, exchange the entire rotor. See chapter "SPARE PART " for further instruction.
3. Check the air gap "s<sub>L</sub>" near the fixing screws between the armature plate and stator using afeeler gauge.
4. Compare air gap measured to maximally permissible air gap "s<sub>L</sub> max.", (see table below)
5. If required, set air gap to "s<sub>LN</sub>"

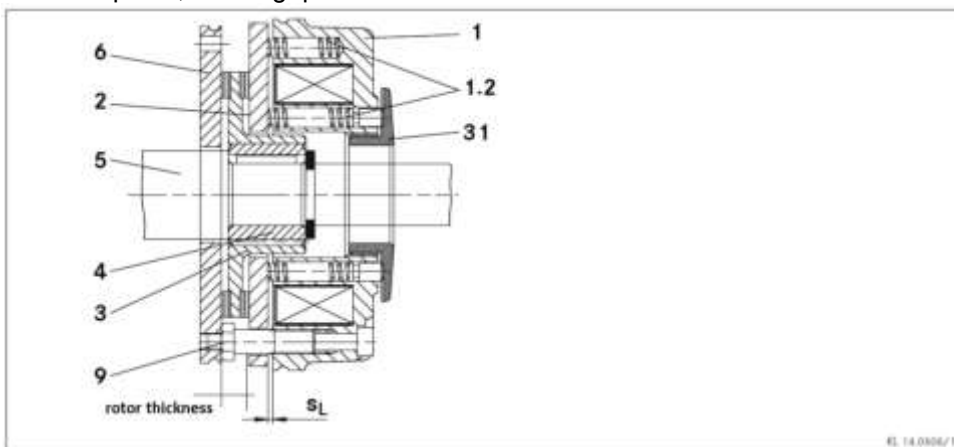


Fig. 1 Design of the spring-applied brake INTORQ BFK458: basic module E (complete stator) + rotor + hub + flange

1	Complete stator	3	Rotor	6	Flange
1.2	Compression springs	4	Hub	9	Sleeve bolts
2	Armature plate	5	Shaft	31	Torque adjustment ring
				s <sub>L</sub>	Air gap

Type	s <sub>LN</sub> +0.1 mm -0.05 mm [mm]	s <sub>Lmax.</sub> Service brake [mm]	s <sub>Lmax.</sub> Holding brake [mm]	Max. adjustment, permissible wear distance [mm]	Rotor thickness		Excess of the torque adjustment ring h <sub>E</sub> max. [mm]
					min. <sup>1)</sup> [mm]	max. [mm]	
BFK458-06	0.2	0.5	0.3	1.5	4.5	6.0	4.5
BFK458-08					5.5	7.0	
BFK458-10					7.5	9.0	

Figure 37: "Brake components"

Any intervention on the brake is prohibited. Only RWM authorised service engineers are allowed to carry out maintenance work on brakes.



### 7.3 CLUTCH AND GEAR BOX MAINTENANCE / ADJUSTMENT

Any intervention on the clutch is prohibited. Only RWM authorised service engineers are allowed to carry out maintenance work on clutches.



*Do not use any kind of fluid or spray which causes a lubrication effect on the clutch friction disk. For cleaning use a resolving agent suitable for the application.*

### 7.4 TROUBLESHOOTING

TROUBLE	PROBABLE CAUSE	CHECK AND REMEDY
<b>1) Hoist does not respond to the controller or control device</b>	a) No voltage at hoist main line or control circuit switch open; control line fuse blown or circuit breaker tripped.	a) Close switch, replace fuse blown.
	b) Phase failure – power cable damaged; power supply cable damaged; broken stator winding.	b) Check for electrical continuity and repair or replace defective part.
	c) Open control circuit – primary transformer fuse blown; broken transformer winding; broken up/down limit switch; up/down contactor coil broken; loose connection or broken wire inside the circuit; contactor jammed.	c) Check electrical continuity and repair or replace defective part.
	d) Wrong voltage or frequency.	d) Use the voltage and frequency indicated on hoist identification plate.
	e) Low voltage.	e) Check the power supply voltage.
	f) The brake does not open – the brake power supply coil is open, short-circuited or broken; circuit breaker blown.	f) See item c).
	g) Excessive load.	g) Reduce loading to the capacity limit of hoist as indicated on the identification plate.
<b>2) Chain moves in the opposite direction</b>	a) Three-phase power inverted.	a) Refer to installation instruction in chapter 4.
<b>3) Hook lowers but will not raise.</b>	a) Excessive load mechanical load clutch slipping.	a) Refer to installation instruction in chapter 4.
	b) Open hoisting circuit-open or shorted winding in reversing contactor coil loose connection or broken wire in circuit; control station contacts not making; upper limit switch contacts open.	b) Check electrical continuity and repair or replace defective part.
	c) Phase failure.	c) See item 1b
<b>4) Hook raises but will not lower.</b>	a) Open control circuit – "down" contactor coil broken or short-circuited; "down" limit switch broken.	a) Check electrical continuity and repair or replace defective part.
<b>5) Hook lowers when hoisting control is operated.</b>	a) Phase failure	a) See item 1B
	b) Phase reversal.	b) Refer to installation instruction in chapter 3.

<b>6) Hook does not stop promptly</b>	a) Brake slipping.	a) Check brake.
	b) Excessive load.	b) See item 1H
<b>7) Hoist operates sluggishly</b>	a) Excessive load	a) See item 1H
	b) Low voltage	b) Correct low voltage condition.
	c) Phase failure or unbalanced current in the phases.	c) See item 1b.
	d) Brake dragging.	e) Check brake.
<b>8) Motor overheats.</b>	a) Low voltage.	a) Correct low voltage conditions.
	b) Excessive load.	b) See item 1H.
	c) Extreme external heating.	c) Above an ambient temperature of 40°C (104°F) the frequency of hoist operation must be limited to avoid overheating of motor. Special provisions should be made to ventilate the space or shield the hoist from radiation.
	d) Frequent starting or reversing.	d) Avoid excessive inching, jogging or plugging. This type of operation drastically shortens the motor and contactor life and causes excessive brake wear.
	e) Phase failure or unbalanced current in the phase.	e) See item 1B.
	f) Brake dragging.	f) Check brake.
<b>9) Hook fails to stop at either or both ends of travel.</b>	a) The limit switches do not open the circuits because they are stuck. Limit switches not adjusted correctly.	a) Check switch connections, electrical continuity and mechanical operation. Check the switch adjustment of Limit Switches.
	b) Limit switch shaft not rotating.	b) Check for damaged Limit Switch gears and their fixing.
	c) Travelling nuts not moving along shaft-guide plate loose; shaft or nut threads damaged.	d) Tighten guide plate screws. Replace damaged part.
<b>10) Hook stopping point varies.</b>	a) Limit switch not holding adjustment.	a) see item 9.
	b) Brake not holding.	b) check the brake.

Table 22: "Troubleshooting based on hoist behaviour"

## 8. SPARE PART

### SMALL FRAME

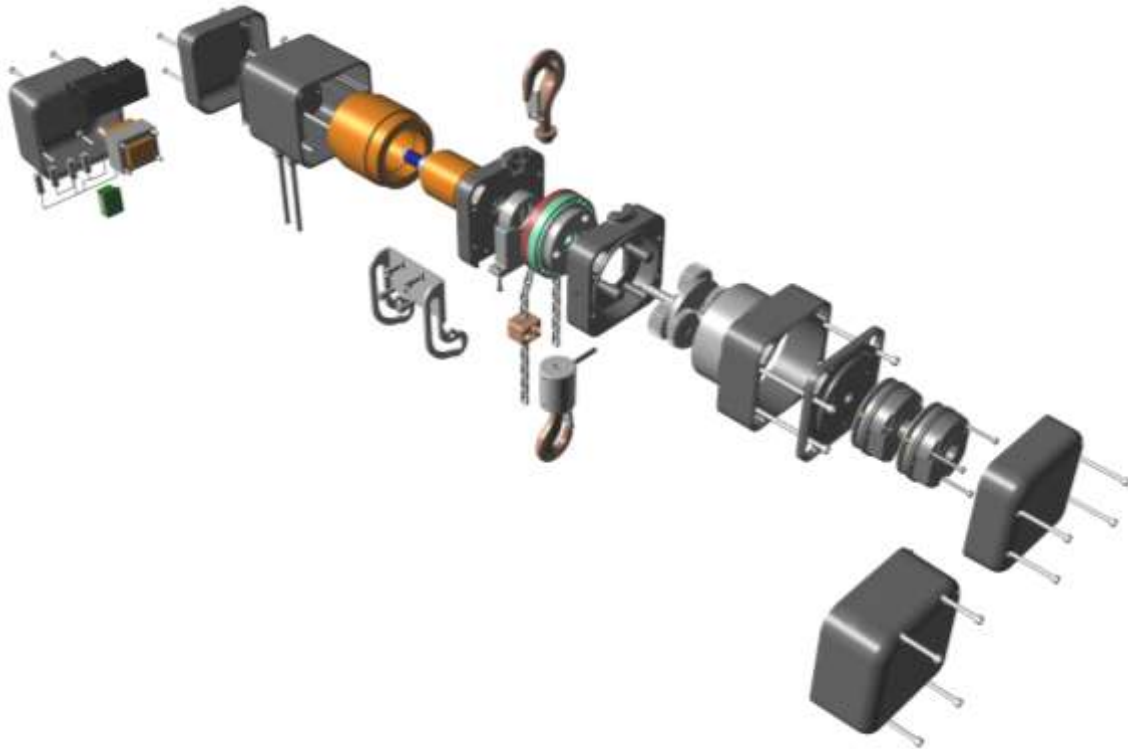


Figure 39: "Spare Part of SMALL FRAME"

CODE	DESCRIPTION	CODE	DESCRIPTION
	COVER		GEAR BOX
	COVER		ROTOR
	BRAKE FLANGE		STATOR
	GEAR BOX HOUSING		BRACKET
	GEAR BOX FLANGE		FRAME BLOCK
	LOAD WHEEL HOUSING		LIMIT SWITCH
	LOAD WHEEL FLANGE		REVERSING CONTACTOR
	MOTOR HOUSE		FUSES
	BODY SWIVEL HOOK		RECTIFIER
	CHAIN SWIVEL HOOK		TRASFORMER
	CHAIN STOP		SCREW
	EXTERNAL CHAIN GUIDE		
	LOAD WHEEL		
	DOUBLE BRAKE		

Table 23: "Spare Part of SMALL FRAME"

**MEDIUM FRAME**

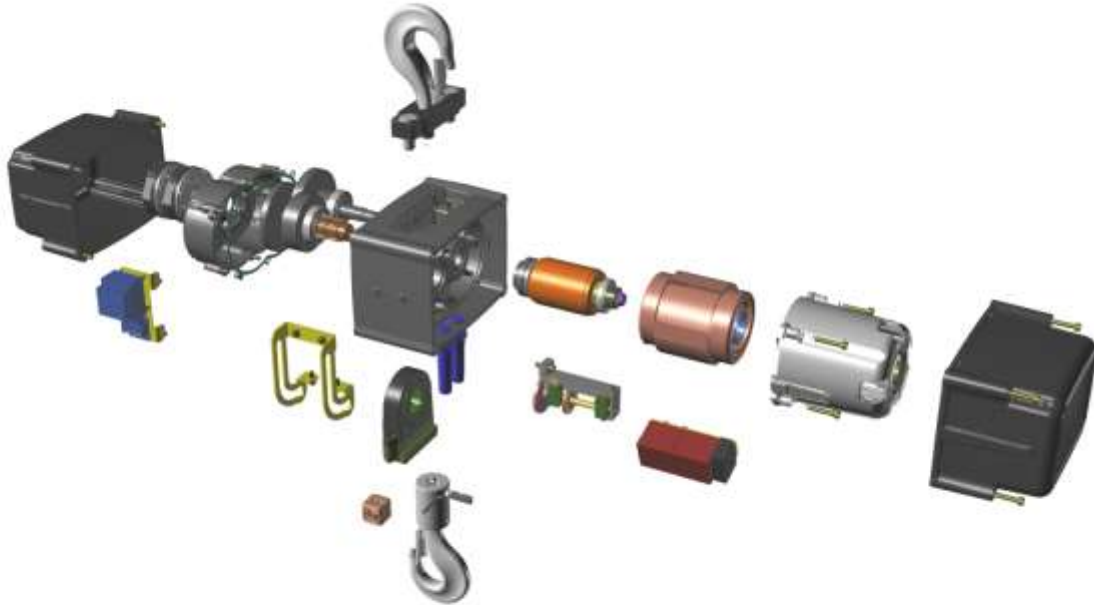


Figure 40: "Spare Part of MEDIUM FRAME"

CODE	DESCRIPTION	CODE	DESCRIPTION
	COVER		GEAR BOX
	COVER		ROTOR
	BRAKE FLANGE		STATOR
	GEAR BOX HOUSING		BRACKET
	GEAR BOX FLANGE		FRAME BLOCK
	LOAD WHEEL HOUSING		LIMIT SWITCH
	LOAD WHEEL FLANGE		REVERSING CONTACTOR
	MOTOR HOUSE		FUSES
	BODY SWIVEL HOOK		RECTIFIER
	CHAIN SWIVEL HOOK		TRASFORMER
	CHAIN STOP		SCREW
	EXTERNAL CHAIN GUIDE		
	LOAD WHEEL		
	DOUBLE BRAKE		

Table 24: "Spare Part of MEDIUM FRAME"

**LARGE FRAME**

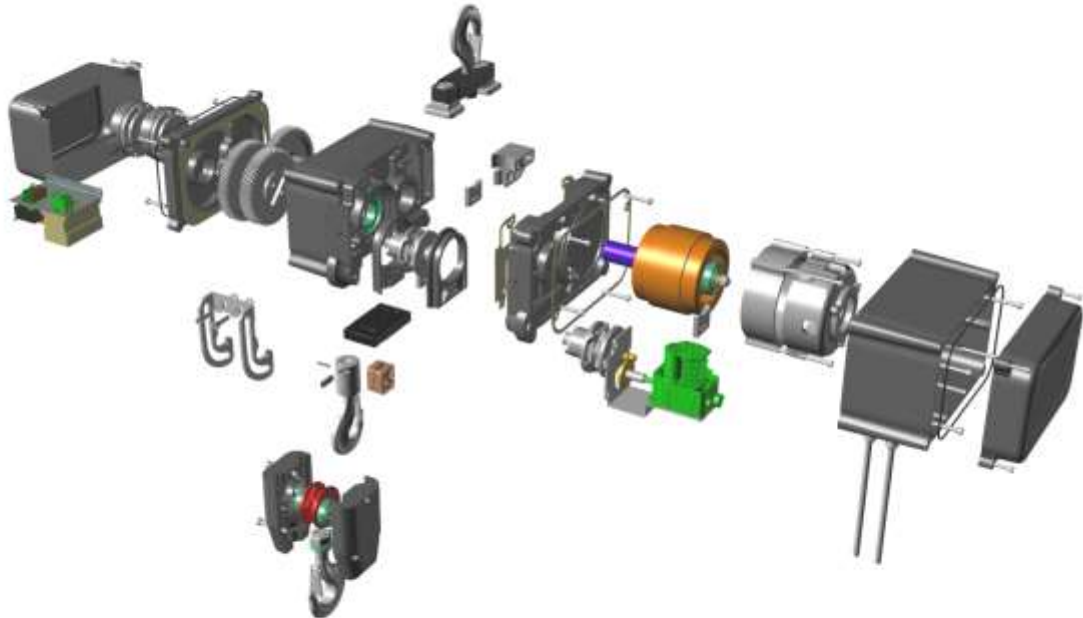


Figure 22: “Spare Part of LARGE FRAME”

CODE	DESCRIPTION	CODE	DESCRIPTION
	COVER		GEAR BOX
	COVER		ROTOR
	BRAKE FLANGE		STATOR
	GEAR BOX HOUSING		BRACKET
	GEAR BOX FLANGE		FRAME BLOCK
	LOAD WHEEL HOUSING		LIMIT SWITCH
	LOAD WHEEL FLANGE		REVERSING CONTACTOR
	MOTOR HOUSE		FUSES
	BODY SWIVEL HOOK		RECTIFIER
	CHAIN SWIVEL HOOK		TRASFORMER
	CHAIN STOP		SCREW
	EXTERNAL CHAIN GUIDE		
	LOAD WHEEL		
	DOUBLE BRAKE		

Table 25: “Spare Part of LARGE FRAME”

## 9. DEMOLITION AND DISPOSAL

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Before carrying out demolition and disposal of the hoist, complete the working cycle and disconnect power.

Upon demolition, plastic parts must be separated from electric components and must be sent to selective collections according to regulations in force.

With regard to metal housing, aluminium parts should be separated from all other metals before sending for recycling.

To dispose of hydraulic oil, please refer to the product safety report or data sheet.

It is prohibited to pour rejected liquids such as oils, circuit liquids, etc. on the ground or into drainage systems. Please dispose of components or fluids that may be hazardous to health or the environment in a manner compliant with local regulations.

During operations of hydraulic oil replacement and disposal, the operator must wear gloves and protective overalls indicated in the product safety report.

**10. DECLARATION MODELS****CONFORMITY DECLARATION**

according the specification of Machinery Directive 2006/42/CE and subsequent amendments, Enclosure II A the constructor :

R.W.M. S.R.L.  
Via della Tecnica, 15  
36034 Molina di Malo (VI)  
Tel. 0039 +445 637002 r.a. Fax. 0039 + 445 637019  
declare with his responsibility that the electric chain hoist

<b>Model</b>	<b>Type</b>
<b>Number</b>	<b>Capacity Kg</b>
<b>Normal and climbing use allowed</b>	
<b>Manufactured</b>	

is made in conformity of the following directive :  
Machinery Directive 2006/42/CE  
Low Voltage Tension Directive 2014/35/CE  
Electromagnetic Compatibility Directive (EMC) 2014/30/CE

UNI EN 12100 : 2010 (safety of the machine)  
CEI EN 60204-1 2006 (safety of the electrical parts)  
CEI EN 13850 (emergency button)  
IEC-34-5 ( IP protection) FEM 9511 (mechanical classification)  
FEM9671 (chain quality) FEM 9681 (trolley motor classification)  
FEM 9682 (lifting motor classification)

Legal Representative

Malo. \_\_\_\_\_

Firma \_\_\_\_\_

 **WARNING**

The declaration of conformity completed, dated and signed is attached to this manual. This document is integral part of the manual.

**EXE-RISE CHAIN HOIST**  
**IS EXCLUSIVELY DISTRIBUTED BY**  
**LITEC ITALIA S.R.L.**

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