

USE AND MAINTENANCE MANUAL

Chain hoist from 198kg to 2500kg



EN [TRANSLATION OF THE ORIGINAL INSTRUCTIONS]

EX3
RISE

This product is intended for professional use only.
Read the entire document before installing, using and inspecting the machine.

Code: LT ACHMIS028
Revision 04
Date of issue 19/07/2022

All rights reserved. Partial reproduction of the content of this document and/or its transmission is not permitted without prior written authorisation and for the purposes permitted by law.
Offenders will be liable for damages.

It has been verified that the contents of this document correspond to the machines described in it.

The information contained in this document is reviewed regularly and any changes deemed necessary will be included in the next revision.

Any suggestions are welcome for consideration and, if necessary, for integration into the next revision.

AREA FOUR INDUSTRIES ITALIA wants this document to be also provided in electronic format, preserved and printed in its entirety.

ABBREVIATIONS:

AREA FOUR ITALIA S.R.L. in A4I ITALIA

RWM S.R.L. in RWM

CONTENTS INDEX

1	PREFACE	5
1.1	IDENTIFICATION	5
1.2	GENERAL INFORMATION	7
1.3	CONTACT DETAILS OF THE MANUFACTURER AND AUTHORISED REPRESENTATIVE	7
1.4	TERMINOLOGY	7
1.5	INTENDED USE	8
1.5.1	METHOD OF IMPLEMENTATION	8
1.5.2	SINGLE OR MULTIPLE LIFTING	9
1.5.3	D8 AND D8+ PREFIXES	9
1.6	MECHANICAL CLASSIFICATION	10
1.7	WARRANTY	11
2	SAFETY INFORMATION	12
2.1	SYMBOLOLOGY	12
2.2	SAFETY SIGNS	12
2.3	SAFETY INSTRUCTIONS FOR INSTALLATION	12
2.4	OPERATING SAFETY INSTRUCTIONS	13
2.5	SAFETY INSTRUCTIONS FOR USE	14
2.6	PROHIBITIONS	15
3	MACHINE DESCRIPTION	16
3.1	GENERAL OVERVIEW	16
3.2	COMPONENTS DESCRIPTION	18
3.3	LOAD CHAIN	18
3.4	HOOKS	20
3.5	CHAIN STOP	22
3.6	EXTERNAL CHAIN GUIDE PLATE	22
3.7	EXTERNAL CHAIN GUIDE PLATE	22
3.8	CHAIN BAG	23
3.9	EXTERNAL POWER AND CONTROL CABLES AND SOCKETS	24
3.10	LIMIT SWITCH	25
4	TECHNICAL INFORMATION	26
4.1	DATA SHEET	26
4.2	DRAWINGS AND DIMENSIONS	27
5	CONTROLLER	32
5.1	INTRODUCTION AND COMPATIBILITY	32
5.2	INSTALLATION AND USE OF THE CONTROL SYSTEM	33
6	INSTALLATION AND USE	34

6.1	PACKING AND TRASPORT	34
6.2	ELECTRICAL COONECTION	34
6.3	PRE-USE CONTROL	35
6.4	CONNECTION TO THE ANCHOR POINT	35
6.5	CONNECTION TO THE SUSPENDED LOAD	36
6.6	USE	36
7	INSPECTION	38
7.1	LIST OF INSPECTION, CLEANING AND LUBRICATION OPERATIONS	38
7.1.1	DAILY / PRE-USE INSPECTION	38
7.1.2	FREQUENT INSPECTION	38
7.1.3	PERIODIC INSPECTION	40
7.1.4	STRAORDINARY INSPECTION	41
7.1.5	QUARTERLY CHECK CHAIN	41
7.2	PERFORMANCE OF INSPECTION OPERATIONS	41
7.2.1	HOOK INSPECTION	41
7.2.2	LOAD CHAIN INSPECTION	42
7.2.3	CHAIN LOAD LUBRIFICATION	42
7.2.4	EXTERNAL CHAIN GUIDE PLATE INSPECTION	43
7.2.5	CHAIN BAG ISPECTION	43
8	REPAIR AND REPLACEMENT	44
8.1	HOOK REPLACEMENT	44
8.1.1	BODY HOOK REPLACEMENT	44
8.1.2	CHAIN HOOK REPLACEMENT	44
8.2	EXTERNAL CHAIN GUIDE PLATE REPLACEMENT	45
8.3	FUSE REPLACEMENT	47
8.4	OTHER REPAIRS AND REPLACEMENTS	47
9	TROUBLESHOOTING	48
10	DISPOSAL	50
11	SPAR LIST	51
11.1	SPARE PARTS MEDIUM FRAME COMPACT	51
11.2	SPAR LIST MEDIUM FRAME	55
11.3	SPAR LIST LARGE FRAME 1 REEVE	62
11.4	SPAR LIST LARGE FRAME 2 REEVES	69
11.5	SPAR LIST EXTRA LARGE FRAME	73
12	WIRING DIAGRAM	75
12.1	WIRING DIAGRAM DIRECT CONTROL	75
12.2	WIRING DIAGRAM LOW VOLTAGE CONTROL	76
13	DECLARATION OF CONFORMITY	78

1 PREFACE

This manual contains the information regarding use, maintenance and processing of faults and anomalies, providing indications for the most suitable behavior for the correct use and correct operation of the machine as foreseen by the manufacturer.

1.1 IDENTIFICATION

The instructions in this manual concern only the products of the EXE RISE electric chain hoists range listed below.



CAUTION

Before installing the EXE RISE electric chain hoist for the first time, the machine owner must fill in the following tables by referring to the information on the machine identification plate. These information shall be provided whenever the technical assistance and maintenance service is contacted and updated in case of change of ownership of the hoist.

MACHINE SPECIFICATIONS

Model	
Serial number	
Rated capacity (WLL)	
Voltage	
Date of first purchase	

OWNER INFORMATION

NUMBER 1:

Company Name	
Address	
Telephone number	
Date of Purchase	
Date of Transfer	

NUMBER 2:

Company Name	
Address	
Telephone number	
Date of Purchase	
Date of Transfer	

NUMBER 3:

Company Name	
Address	
Telephone number	
Date of Purchase	
Date of Transfer	

BODY FRAME	RANGE	CAPACITY	TYPE	REEVE	CHAIN
SMALL FRAME	D8+	198kg	DC / LVC	1	4x12mm
		250kg			
	D8	198kg			
MEDIUM FRAME COMPACT	D8+	198kg	DC / LVC	1	5X15mm
		250kg			
	D8	198kg			
MEDIUM FRAME	D8+	198kg	DC / LVC	1	6x18mm
		250kg			
		500kg			
		250kg	SP		
		500kg			
LARGE FRAME	D8+	1000kg	DC / LVC	1	8x24mm
		2000kg		2	
EXTRA LARGE FRAME COMPACT	D8+	1600kg	DC / LVC	1	10x28mm
		3200kg		2	
EXTRA LARGE FRAME	D8+	2000kg	DC / LVC	1	11.3x31mm
		4000kg		2	
	D8	2500kg		1	
EXTRA EXTRA LARGE FRAME	D8+	2500kg	DC / LVC	1	13x36mm
		5000kg		2	

The D8 and D8 + prefixes relate to the intended use of the machine as specified in paragraph 1.5.3 of this operation and maintenance manual.

The DC and LVC suffixes indicate the type of electrical system on board the machine and are necessary to identify the relevant control system to be integrated.

The SP suffix indicates that the machine model is powered by single-phase current. All other models are powered by three-phase current.

Revisions to this operation and maintenance manual are listed in following table. The owner of the machine can check the latest revision by contacting EXE TECHNOLOGY personnel.

Rev. No.	Capitoli modificati	Amendments description	Date of issue
01	Entire manual	First issue	25/11/2019
02	Entire manual	Extra Large Frame integration	07/08/2020
03	Entire manual	Content Update	14/12/2020
04	Entire manual	Integrazione Medium Frame Compact	19/07/2022

1.2 GENERAL INFORMATION

The operating and maintenance instructions have been compiled and provided by A4I ITALIA as the authorised representative of the manufacturer (RWM).



CAUTION

Please read this operation and maintenance manual before installing the machine

The owner and the machine operator must read and understand these instructions before operating the machine. If you need clarifications about the instructions, please contact A4I ITALIA or RWM using the contact details in Section 1.3.



CAUTION

The operating instructions must always be available at the installation site and must be consulted before operating the machine.

1.3 CONTACT DETAILS OF THE MANUFACTURER AND AUTHORISED REPRESENTATIVE

Manufacturer

RWM S.r.l.

Via Bartolomeo Colleoni, 80/7
36034 Malo (Vi) - Italy

Tel: +39 0445 637002

Email: rwm@rwmitalia.com

Authorised representative

Area Four Industries Italia S.R.L.

Via Martin Luther King, 70
31032 Casale sul Sile (TV) - Italy

Tel: +39 0422 997300

Email: info@exetechnology.com

1.4 TERMINOLOGY

Secondary safety devices

A secondary safety device is an additional, independent item of equipment capable of preventing the fall of the load.

Rated capacity (WLL - Working Load Limit)

Maximum net load that the equipment is designed to lift, in a given configuration and in a defined load position, during its normal operation.

D8

Electric chain hoist whose requirements are in accordance with the German regulation DGUV-54 (BGV-D8) concerning electric chain hoists for lifting loads in the construction and entertainment industry.

D8+ (D8 Plus)

Electric chain hoist, whose requirements are in accordance with German Regulation DGUV-54 (BGV-D8) concerning electric chain hoists for lifting loads in the construction and entertainment industry, which can support static loads suspended above persons without secondary safety devices. The conditions of use of this type of hoists are contained in the SQ-P2 German Code of Practice, available on the website www.igvw.org.

Motor controller

Chain hoist control system which also serves as a power supply switchboard.

Operator

Person who operates (manoeuvres) the controls of the lifting equipment.

EXE TECHNOLOGY authorised person

An EXE TECHNOLOGY authorised person is a competent person who is formally authorised by RWM to perform extraordinary inspection and maintenance operations on EXE RISE machines.

Authorised person

A competent person is a person with adequate theoretical and practical knowledge and experience to carry out their duties and supervise work activities, who is aware of the limits of their own skills and knowledge.

Rigger

The rigger is a competent person specialized in the assembly and placement of suspension systems for the installation of machines for the operation of stage equipment.

1.5 INTENDED USE

EXE RISE electric chain hoists are machines for lifting and suspension of loads intended for the performing arts and entertainment sector.

In this sector, the lifting and suspension of loads mainly concern the assembly of structures and operation of installations.

EXE RISE electric chain hoists are machines designed for professional use and must only be used by competent personnel.

The areas of installation of such machines are not limited to theatres but include multi-purpose halls, exhibition halls, film, television and radio studios, concert halls, sports halls, schools, bars, nightclubs, outdoor stages and other places for shows and events.



CAUTION

The hoist can be installed and used outdoors provided that it is suitably protected from the weather.

1.5.1 METHOD OF IMPLEMENTATION

EXE RISE electric chain hoists can be installed in two modes:

- Standard Mode (Body Up), that is with the body hook connected to the anchoring point and the Chain hook connected to the load to be handled, as shown in figure 1.1;
- Self Climbing Mode, that is with the chain hook connected to the anchoring point and the Body hook connected to the load to be handled, as shown in figure 1.1;



figure 1.1 – “Standard Mode and Self Climbing Mode”

1.5.2 SINGLE OR MULTIPLE LIFTING

EXE RISE electric chain hoists can be used individually or configured as a group for multiple lifts. A multiple lift must be carried out by means of EXE RISE electric chain hoists of the same model and capacity.



WARNING

Multiple lifting operations must be carried out only with sets of EXE RISE electric chain hoists.

A multiple lift with electric chain hoists other than EXE RISE ones may cause unforeseen hazards not covered by the risk analysis of the machine.

Residual risks due to multiple lifting shall be assessed and minimised by additional protection measures including, but not limited to:

- calculation of suspended loads;
- using load cells;
- use of appropriate control systems;
- specific risk analysis and assessment.

1.5.3 D8 AND D8+ PREFIXES

Static suspension of loads with the presence of people in the danger zone may be carried out under the following conditions.

- With EXE RISE D8 series electric chain hoists, secondary safety devices are required to create an additional static load suspension system.
- With EXE RISE D8+ series electric chain hoists, secondary safety devices are not required, as specified in the reference procedure code IGWW SQP2:2018 and technical document EN 17206:2018 for UC1 and UC2 classes.

Any other use not included in the intended uses shall be prohibited, unless the machines - as a group, constituting an additional set of machines - are supplemented with sufficient safety devices or additional protections to permit a change of use.

In the case of a change in use, the manufacturer of the set of machines shall declare the compliance of the new machine.

In case of any doubts or queries please check with the manufacturer and/or authorised representative whether a particular use complies with the intended ones.



DANGER

The intended use of EXE RISE D8 and D8+ electric chain hoists does not include the movement of loads with the presence of people in the danger zone, for example, movements above people.



WARNING

EXE RISE D8 and D8+ electric chain hoists cannot be used to move people.



WARNING

A multiple lifting system with D8+ hoists shall be equipped with an automatic load detection device and an automatic stop of all moving machinery in the event of overload.

1.6 MECHANICAL CLASSIFICATION

Based on the mechanical classification (which is reported on the plate data), the electric chain hoists can be used for the times and methods established by the aforementioned standards. The maximum number of hours worked allowed in 10 years is also imposed by them.

In the following figure, all the features and operating modes are detailed.

VERTICAL MOVEMENTS

ISO 4301	FEM 9.511	DUTY FACTOR OF MOTOR	MINUTES PER HOUR <i>Uniformly Distributed Work Period</i>	STARTS PER HOUR	HOUR PER DAY	HOUR / 10 YEARS Bearing Time
M1	1Dm	15%	9	90	≤ 0,25	400
M2	1Cm	20%	12	120	≤ 0,5	800
M3	1Bm	25%	15	150	≤ 1	1600
M4	1Am	30%	18	180	≤ 2	3200
M5 (*)	2m	40%	24	240	≤ 4	6300
M6 (**)	3m	50%	30	300	≤ 8	12500

(*) SMALL MEDIUM AND LARGE FRAME

(**) EXTRA LARGE FRAME

RATE OF LOADING	Average time of supposed daily operation T_m (hour)		to 0.25	from 0.25 to 0.5	from 0.5 to 1	from 1 to 2	from 2 to 4	from 4 to 8	from 8 to 16
	Rate of loadin Total operating Time (hour)		to 400	to 800	to 1600	to 3200	to 6300	to 12500	to 25000
LIGHT	<i>When normally working with approx. 1/3 of W.L.L. and rarely with W.L.L.</i>	ISO FEM	--	M1 1Dm	M2 1Cm	M3 1Bm	M4 1Am	M5 2m	M6 3m
MEDIUM	<i>When normally working with approx. 1/3 to 2/3 of W.L.L. and sometime W.L.L.</i>	ISO FEM	M1 1Dm	M2 1Cm	M3 1Bm	M4 1Am	M5 2m	M6 3m	M7 4m
HEAVY	<i>When normally working with approx. to 2/3 of W.L.L. and often with W.L.L.</i>	ISO FEM	M2 1Cm	M3 1Bm	M4 1Am	M5 2m	M6 3m	M7 4m	M8 5m
VERY HEAVY	<i>When normally working with W.L.L. or near W.L.L.</i>	ISO FEM	M3 1Bm	M4 1Am	M5 2m	M6 3m	M7 4m	M8 5m	--

1.7 WARRANTY

The performance of EXE RISE electric chain hoist is checked and verified by A4I ITALIA /RWM before shipping. The manufacturer or their authorised representative shall ensure that the machine is free from defects in material and workmanship at the time of dispatch.



WARNING

Upon receipt of the goods, it is necessary to carry out quantitative and qualitative checks. If non-compliance is detected, it shall be returned to the carrier.

A4I ITALIA/RWM shall repair and replace under warranty of the EXE RISE electric chain hoists that prove to be defective upon inspection by its personnel.

The warranty lasts 12 months from the date of delivery stated on the documentation certifying the purchase of new machines.

Warranty repairs do not renew or extend the warranty period.

Warranty replacements and repairs are carried out only on EXE RISE electric chain hoists used as intended and subjected to proper inspection and maintenance as specified in this manual.

Warranty replacements and repairs do not affect the consumables of the machine, such as:

- | | | | |
|-------------------|---------------|--------------|------------------|
| - Electric Cables | - Clutch Disc | - Load chain | - Chain Stop |
| - Guide Plate | - Chain Guide | - Chain hook | - Brake Assembly |
| Outer Chain | Inner | Body Hook | |

In addition, warranty replacements and repairs do not include:

- transport damage;
- negligent handling;
- connection to voltages other than those recommended in this manual;
- chemical or abrasive actions;
- overload, eccentric or lateral load;
- excessive heat and outdoor use without appropriate measures;
- malfunction or defect due to the use of non-original parts;
- exceeding FEM class operating times.

A4I ITALIA /RWM competent technician reserves the right to assess replacements and warranty repairs concerning electrical parts.

The warranty does not include the cost of transporting the goods and/or travel expenses for A4I ITALIA /RWM authorized personnel to perform on-site repairs, barring different commercial agreements entered into at the time of purchase.

2 SAFETY INFORMATION

2.1 SYMBOLOGY

This operation and maintenance manual contains the following symbols to highlight safety information on residual risks:



CAUTION

Used with the safety warning symbol, it indicates a potentially dangerous situation which, if not avoided, may cause minor or moderate injury.



WARNING

Indicates a potentially dangerous situation that, if not avoided, could result in death or serious injury.



DANGER

Indicates a situation of imminent danger that, if not avoided, will cause serious injury or death.

2.2 SAFETY SIGNS

The following safety signs (pictograms) are applied to the EXE Rise electric chain hoist:



Title / Meaning / Referent:

Do not use this lift for people

Description of the function:

To prohibit the use of the lift for the transportation of people

Image content:

Human figure (front view) in a rectangle, short arrows above and underneath the rectangle



Title / Meaning / Referent:

Warning; Electricity

Description of the function:

To warn of electricity

Image content:

Lightning bolt

2.3 SAFETY INSTRUCTIONS FOR INSTALLATION

- Before installing the machine, perform the pre-use checks as defined in section 6.3; if these checks fail, do not use the hoist.
- Ensure that there is no unauthorized personnel in the installation area, and allow access to it only to persons who are informed about exposure to the risks arising from the installation and handling of suspended loads.
- Before installation, check that the lifting and set up operations for the suspended loads have been properly designed and planned.

- Before installation, check that the anchoring points and/or their suspension points have been properly dimensioned in relation to the rated capacity of the machine and/or the actual suspended loads in use.
- During installation always wear the following PPE in addition to those required for any interference with other activities: safety shoes, gloves, helmet and high visibility clothing.
- Install hoists that have been subject to regular inspection and maintenance as defined in these instructions.



WARNING

The operating instructions must always be available at the installation site and must be consulted before operating the machine.



WARNING

The control system must be installed by competent personnel.

2.4 OPERATING SAFETY INSTRUCTIONS



CAUTION

Always make sure that there is good communication between operator, installers and rigger.

- Before connecting the control system, make sure that it is compatible with EXE RISE electric chain hoists. See chapter 5 for more details.
- EXE RISE electric chain hoists are compatible with the following control systems:
 - The use of EXE RISE electric chain hoists with control systems other than those indicated above could compromise the outcome of the manufacturer's or authorised representative's risk analysis.
 - EXE DHx
 - EXE XDDBx
 - EXE XDDCx
 - EXE XDDLx
 - EXE XNDLxS
 - EXE XDDWx



WARNING

The use of EXE RISE electric chain hoists with control systems other than those indicated above could compromise the outcome of the manufacturer's or authorised representative's risk analysis.

- EXE RISE electric chain hoists may be integrated with control systems other than those specified above provided that a further risk analysis is completed to cover and analyse the additional risks arising from the integration of EXE RISE electric chain hoists with other control systems.
Following further risk analysis, additional protection measures must be implemented.



WARNING

The control system must be installed by competent personnel.

- Disconnect the power and control plug before carrying out any inspection, maintenance or repair operations.
- When replacing the chain bag and its carabiners or quick links, a competent person shall assess their compatibility with the hoist and with the characteristics set out in these instructions.

2.5 SAFETY INSTRUCTIONS FOR USE

DANGER

Always check that the necessary safety conditions are met before carrying out the lifting operations.

- Protect the hoist and its components from corrosive chemicals, inclement weather, heat sources and open flames (e.g. fireworks).
- Attach the suspended load to the Chain hook of the hoist by means of lifting accessories and/or suspension points integrated into the load itself.
- Before lifting the suspended load, make sure that it is firmly placed in the saddle of the hoist hook.
- In case of use of hoists with double chain fall (multiple chain lengths) check that the chain is not twisted; if applicable, rotate the pulley-hook block until the twist is completely removed.
- Before moving the load, notify the personnel in the area of installation and set up of suspended loads.
- Limit "bumping" operations, i.e. repeatedly starting and stopping the machine to adjust the position of the EXE RISE hoist.
- The lifting operation must be planned and analysed before moving the load; lifting operations can generate additional hazards during the installation phases.
- To operate EXE RISE electric chain hoists in multiple lifting mode, the additional hazards listed in table below shall be considered and appropriately reduced.

Type	Consequence	Origin
Mechanical	Crushing	Failure of lifting accessories
Mechanical	Entanglement	Entanglement with suspended load
Electric	Electrocution	Electrocution by equipment
Involuntary	Shock	Starting the machine without the presence of the operator
Involuntary	Crushing	Failure to control speed and position
Involuntary	Crushing	Malfunction of control software
Involuntary	Crushing	Security measures ignored or bypassed
Misuse	Shock	Use of the system by an unauthorized person

The additional protection measures to be implemented must:

- Be of solid construction.
- Be safely installed.
- Not be the source of further hazards.
- Not be easy to ignore, bypass or render ineffective.
- Be located at an appropriate distance from the danger zone.
- Not impede the operator's view.
- Allow the normal installation and operating procedures of EXE RISE electric chain hoists, ideally without having to remove such protections.

WARNING

The list of hazards is not exhaustive, and includes only the minimum hazards to be considered.

- Once the suspended load reaches the operating position it is necessary to install secondary safety devices if required by the intended use of the hoist and/or by local regulations.
- When the whole chain is collected in the bag, at the last one quarter of it must be empty so as to prevent the chain from accidentally falling out.
- Ensure that the chain stop does not come into contact with the machine frame; in case of accidental contact, operate the hoist by reversing the direction of travel so as to remove the stop from the body.
- Remove secondary safety devices before lowering suspended loads.

2.6 PROHIBITIONS

- DO NOT move the hoist by handling it from the power and/or control cable.
- DO NOT operate the hoist if the power and/or control cable and relative cable glands are damaged.
- DO NOT install and use the hoist in explosive atmospheres.
- DO NOT install and operate the hoist in environments with a temperature below -10°C or above 40°C.
- DO NOT move and/or use suspended loads greater than the rated capacity of the hoist; in case of doubt have the actual load in use checked by a competent person.
- DO NOT pull the suspended load diagonally or drag it across surfaces.
- DO NOT move the suspended load if the chain is twisted.
- DO NOT alter and/or install accessories to the hoist if these are not provided for by the manufacturer or authorised representative.
- DO NOT operate the hoist if the operator does not have a clear view of the machine and the loads to be moved.
- DO NOT move persons with EXE RISE D8 and D8+ electric chain hoists as it is forbidden by the manufacturer/authorised representative.
- DO NOT install lifting accessories in the hook saddle whose dimensions are not sufficient to fit on the axis of the chain.
- DO NOT connect the hoist plug directly to a power outlet but use a control system that meets the minimum requirements as specified in these instructions.
- DO NOT install the hoist in a position where the chain, hoist frame and chain bag can come into contact with external bodies.
- DO NOT use the hoist chain to harness the suspended load or to perform operations other than vertical lifting.
- DO NOT approach the moving chain so as not to be exposed to the risk of entanglement and/or dragging.

3 MACHINE DESCRIPTION

3.1 GENERAL OVERVIEW

EXE RISE electric chain hoists are machines for lifting and suspension of loads intended for the performing arts and entertainment sector.

EXE RISE chain hoists models differ according to:

1. intended use of the machine;
2. rated lifting capacity in kg;
3. electrical equipment;
4. configuration of safety components and accessories.



WARNING

Make modifications and/or install accessories to the hoist only if these are provided for by the manufacturer or authorised representative.

The various models are coded according to the following format:

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

- LT** Prefix indicating the company of the authorised representative A4I ITALIA (ex LITEC)
- XRH** Prefix indicating the "EXE RISE electric chain hoist"
- A** The version of the model - increasing number: 1 – 2 – 3 – 4etc
- B** Type of electrical equipment and possible limit switches

BODY FRAME	PREFIX	CONTROL TYPE	LIMIT SWITCH
SMALL	D	Direct	NA
	L	Low Voltage	
MEDIUM COMPACT	D	Direct	NA
	E	Direct	RWM 30m
MEDIUM	L	Low Voltage	RWM 30m
	D	Direct	NA
	E	Direct	RWM 30m
	K	Low Voltage	Without Limit Switches
LARGE	L	Low Voltage	RWM 30m
	D	Direct	NA
	E	Direct	RWM 60m
	L	Low Voltage	TER 50m
	M	Low Voltage	TER 30m
	N	Low Voltage	RWM 60m
EXTRA LARGE FRAME	O	Low Voltage	RWM 40m
	E	Diretto	RWM 90m
	G	Diretto	STR 60m
	L	Low Voltage	RWM 90m

CCC	Nominal lifting capacity	020 =198kg	050 =500kg	160 =1600kg	250 =2500kg	400 =4000kg
		025 =250kg	100 =1000kg	200 =2000kg	320 =3200kg	500 =5000kg
DDD	Chain hoist series	DB- D8 with SF 5:1		XB- D8 with SF 5:1 - 2 brakes		
		S8- D8 with SF 8:1 - 2 brakes		X8+ D8+ with SF 8:1		
		D8+ D8+ with SF 8:1				
EE	Meters of loading chain in meters					
F	Size of the chain bag:	XS Extra Small		M Medium	XL Extra Large	
		S Small		L Large	XXL Extra Extra Large	

EXE RISE electric chain hoists are marked and identified by the unique serial number printed on the frame and on the machine identification plate. In addition to the serial number, the marking includes also month and year of construction in the MM/YY format, as shown in figure 3.1.

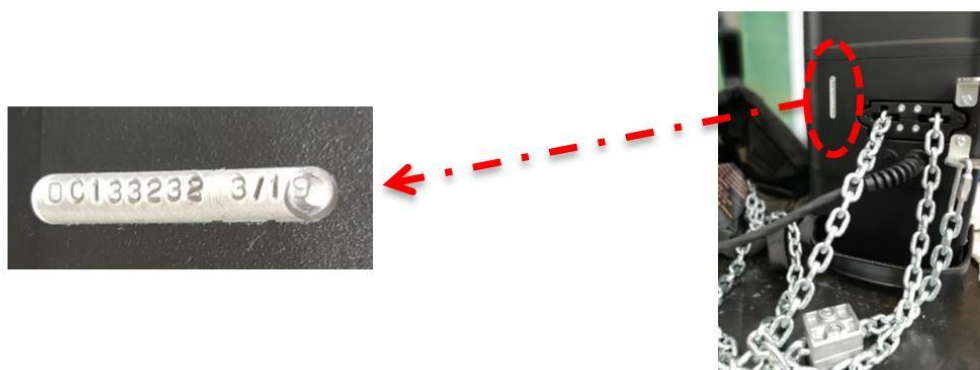


figure 3.1 – "Serial number and year of construction"

The machine identification plate is a legible, indelible aluminium plate (figure 3.2) with the following information in English:

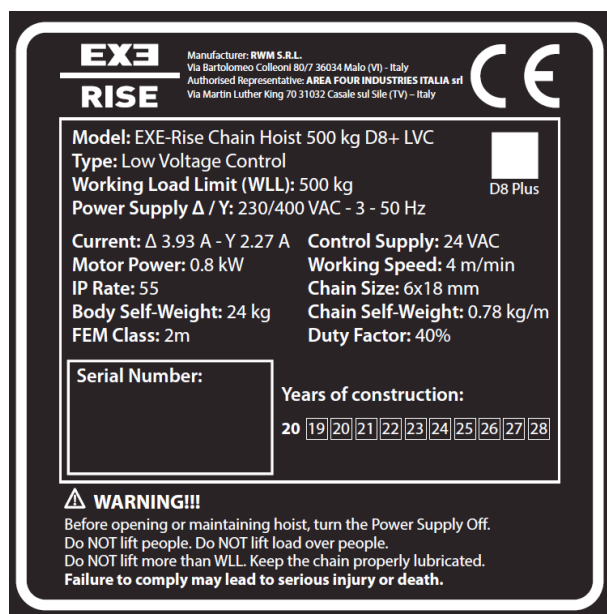


figure 3.2 – "Machine identification plate"

- Name and address of the manufacturer and his authorized representative.
- Model, series and type name of the EXE Rise chain hoist
- Load capacity, voltage and current.
- Motor power and rated speed.
- Classe FEM, IP RATE e Duty Factor.
- Size of the chain and its weight per meter.
- Body weight.
- Serial number and year of construction.
- CE marking.

3.2 COMPONENTS DESCRIPTION

EXE RISE electric chain hoists consist of several components detailed in figure 3.3 and described.

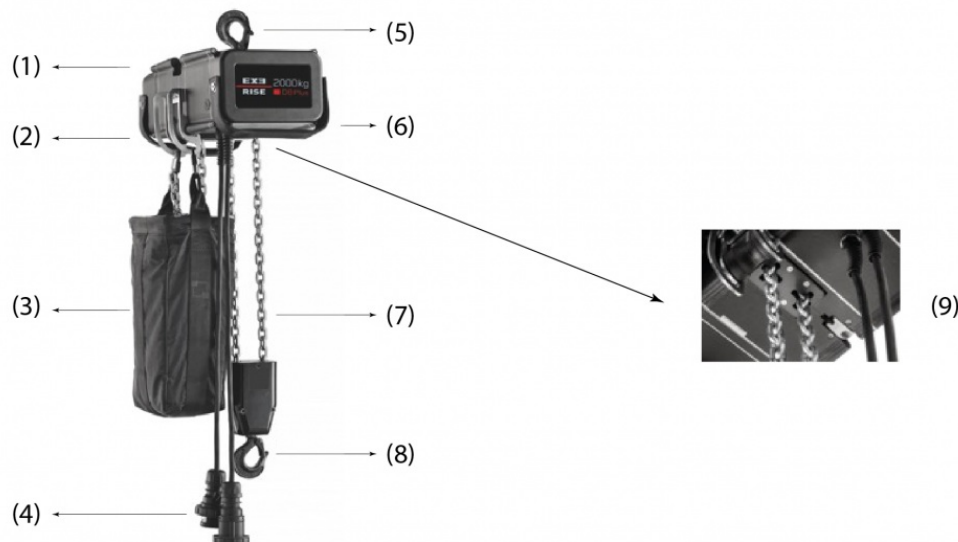


figure 3.3 – "Components of an EXE RISE electric chain hoist"

Num	Component name	Component description
(1)	Body	The body (frame) is made of aluminium alloy. The finish is non-reflective matte black. Excellent corrosion resistance.
(2)	Chain Bracket	The bracket is made of steel and has grooves for positioning the chain bracket in both modes of use.
(3)	Chain bag	Sacca catena in cloruro di polivinile (65% PVC – 35% poliammine), tessuto con classe di reazione al fuoco E.
(4)	Plug and socket	Black plugs and sockets with IP RATE 66/67.
(5)	Body Hook	Alloy steel swivel hook with spring-loaded safety latch locked with a nut welded onto a plate.
(6)	Handles	Handles usable in both modes.
(7)	Load Chain	The chain is made of zinc-plated steel. Steel grade 80.
(8)	Chain Hook	Alloy steel swivel hook with spring-loaded safety latch, locked with a roll pin in a metal block.
(9)	External Chain Guide Plate	PVC plate for all models but the small and extralarge frame, which are made in aluminium.

3.3 LOAD CHAIN

The chain installed on EXE RISE electric chain hoists is a DAT type, RTS chain made of galvanized alloy steel grade 80 and complies with the harmonized standard DIN EN 818-7.

Depending on the EXE RISE electric chain hoist model, different size of chain are used:

The same EXE RISE electric chain hoist model can be equipped with different chain lengths.

All the size and technical specifications of the chains are listed below as referred in figure 3.4.

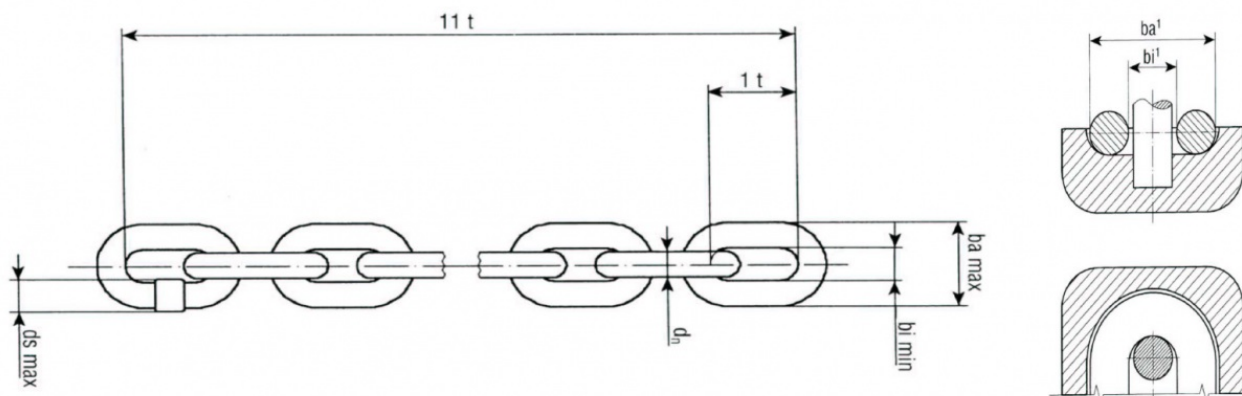


figure 3.4 – "Chain diagram"

Frame	S	M comp	M	L	XL comp	XL	XXL
Size	4x12mm	5x15mm	6x18mm	8x24mm	10x28mm	11.3x31mm	13x36mm
Code	XRC032-01	XRC062	XRC0618	XRC0824	XRC1028	XRC11M331	XRC1336
Weight/metre	0.35kg/m	0.54kg/m	0.78kg/m	1.39kg/m	2.24kg/m	2.85kg/m	3.80kg/m
Nominal diameter (dn)	4.0mm +0.1/-0.2mm	5.0mm +0.1/-0.2mm	6.0mm +0.1/-0.2mm	8.0mm +0.1/-0.3mm	10.0mm +0.1/-0.4mm	11.3mm +0.1/-0.4mm	13.0mm +0.1/-0.5mm
Rated pitch (1t)	12.0mm +0.2/-0.0mm	15.0mm +0.2/-0.1mm	18.0mm +0.25/-0.1mm	24.0mm +0.3/-0.15mm	28.0mm +0.35/-0.2mm	31.0mm +0.4/-0.2mm	36.0mm +0.5/-0.2mm
Gauge length (11t)	132.0mm +0.9/+0.3mm	165.0mm +0.5/-0.0mm	198.0mm +1.0/-0.0mm	264.0mm +0.6/-0.4mm	308.0mm +1.0/-0.5mm	341.0mm +1.1/-0.5mm	396.0mm +1.4/-0.5mm
Minimum inner width (bimin)	5.0mm	6.0mm	7.2mm	9.6mm	12.0mm	12.6mm	14.9mm
Min. outer width (bamax)	13.7mm	16.9mm	20.2mm	27.0mm	34.0mm	36.6mm	42.9mm
Max. welding diameter (dsmax)	4.3mm	5.4mm	6.5mm	8.6mm	10.7mm	12.1mm	13.9mm
Min. stress at breaking strength (σ_{min})	800N/mm ²	800N/mm ²	800N/mm ²	800N/mm ²	800N/mm ²	800N/mm ²	800N/mm ²
Min. Breaking Strength (Fbmin)	20.1kN	31.4kN	45.2kN	80.4kN	126.0kN	160.5kN	212.3kN

Each chain length is identified by an indelible and +E400:E414legible mark at regular intervals on the chain's links, which includes (see figure 3.5):

- Manufacturer's name;
- Batch number;
- Fabrication number;
- Type of execution;
- Quality designation;
- Regulatory company test stamp.

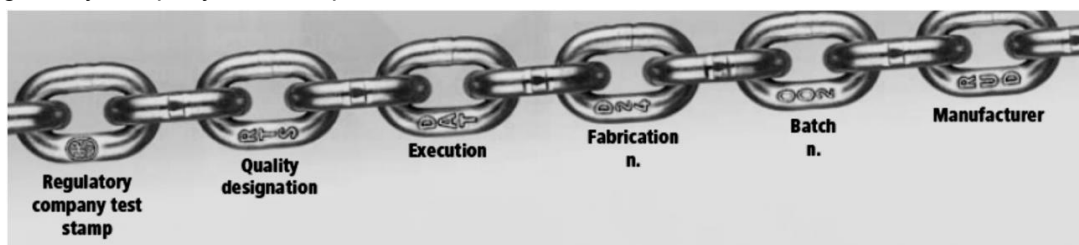


figure 3.5 – "Chain markings"

The free end of the chain is attached to the chain bag bracket through a dedicated bracket, allowing it to position correctly according to the hoists mode of use (standard or self-climbing).

The last link of the chain is attached to the chain bag bracket by means of carabiners complying with DIN 56927 or DIN 5299 standards or equivalent. These carabiners report the working load limit (WLL). The size and technical characteristics are given in figure 3.6.

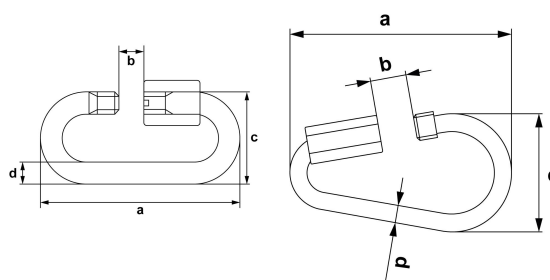


figura 3.6 – "End chain-chain bag bracket carabiners"

Code	Chain size	WLL	d	c	Weight
LT CHB041	4x12mm	50kg	3.5mm	5mm	9g
LT CHB042	5x15mm	90kg	4.0mm	5.5mm	12g
LT CHB037	6x18mm 8x24mm	140kg	5.0mm	10mm	25g
LT CHB004	10x28mm 11.3x31mm 13x36mm	250kg	6.0mm	13mm	47g



DANGER

The carabiner must be positioned and oriented in such a way that the closure is carried out by screwing the nut downwards.

3.4 HOOKS

The hoist hooks are made of alloy steel and are categorised as body hook and chain hook.

Both hooks are swivelling and are equipped with an automatic safety latch that prevents the load from accidentally coming unhooked.

The types of Chain hook and body hook, and therefore their sizes, differ depending on the hoist model.

Listed below, the dimensions and technical specifications of both chain and body hook for each EXE RISE chain hoist model, referring to figure 3.7. The corresponding product codes are listed in Chapter 11 of this operation and maintenance manual .

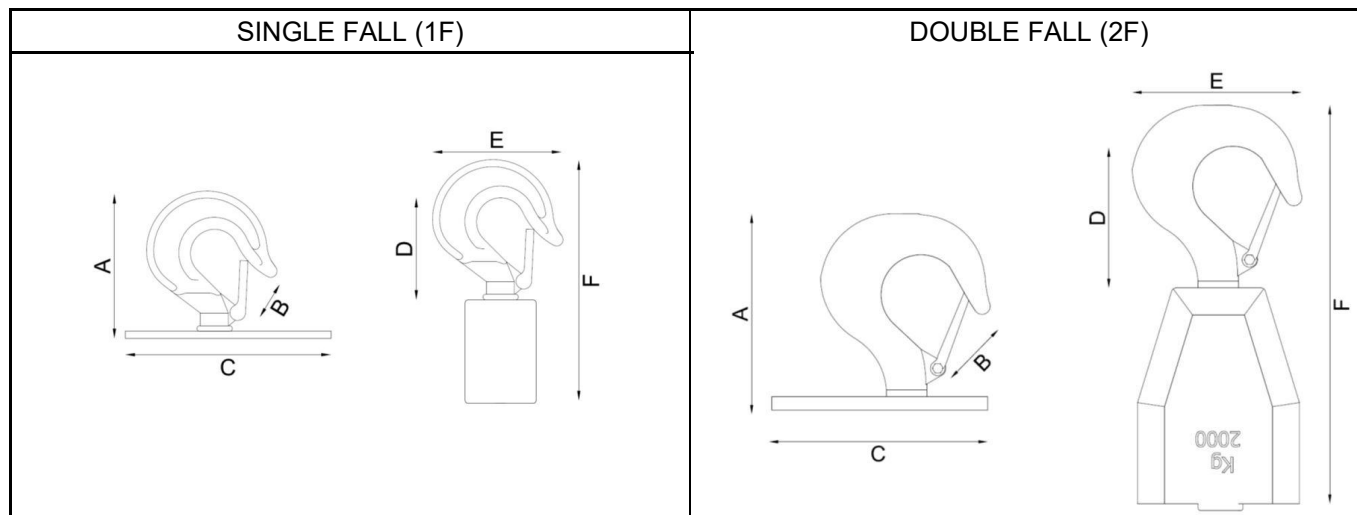


figure 3.7 – "Body/chain hook diagram"



DANGER

Each hook type CANNOT be used as a mechanical limit switch.



WARNING

The working load limit (WLL) is not the one embossed on the hook, but is shown on the chain hook bottom block as shown in figure 3.8.



Listed below, the dimensions and technical specifications of both chain and body hook for each EXE RISE chain hoist model, referring to figure 3.7. The corresponding product codes are listed in Chapter 11 of this operation and maintenance manual .

Frame - [kg]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
S (1F) - 1.25 t	94	18	44	64	73	153
M (1F) - 1.25 t	95	18	143	64	73	153
L (1F) - 2.5 t	112	24	143	72	92	177
XL (1F) - 5.4 t	154	33	265	97	122	233
XXL (1F) - 8.0 t	171	41	265	120	155	
L (2F) - 5.4 t	154	33	143	97	122	296
XL (2F) - 5.4 t	154	33	265	97	122	
XXL (2F) - 8.0 t	171	41	265	120	155	

The Body/Chain hook codes are given in Chapter 11 of this operation and maintenance manual.

3.5 CHAIN STOP

The chain stop, represented in figure 3.9, is made of a shockproof material and is inserted at the end of the chain to prevent the chain from accidentally falling out of the hoist.

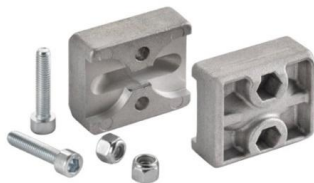


figure 3.9 – "Chain stop"

The chain stop shall be installed at a distance of 11 links from the end of the chain so as to have a sufficient length of chain to check for wear and deformation during inspection and maintenance operations.

The Body/Chain hook codes are given in Chapter 11 of this operation and maintenance manual.



CAUTION

The chain stop is a mechanical device to prevent the load chain from falling out from the hoist body, but should not be used as a mechanical limit switch.

3.6 EXTERNAL CHAIN GUIDE PLATE

The external chain guide plate is located at the point where the chain enters / exits out to protect both the chain itself and the inner chain guide, and is secured to the frame by means of screws.

The small frame is equipped with an aluminium plate, while medium and large frames are equipped with a special PVC plate to prevent wear and jamming of the chain, as depicted in figure 3.10.

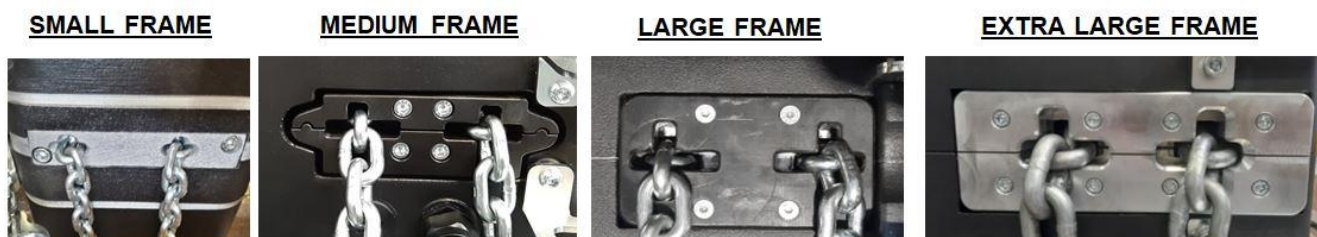


figure 3.10 – External chain guide plate

The Body/Chain hook codes are given in Chapter 11 of this operation and maintenance manual.

3.7 EXTERNAL CHAIN GUIDE PLATE

The external chain guide plate is located at the point where the chain enters / exits out to protect both the chain itself and the inner chain guide, and is secured to the frame by means of screws.

The small frame is equipped with an aluminium plate, while medium and large frames are equipped with a special PVC plate to prevent wear and jamming of the chain, as depicted in figure 3.10.

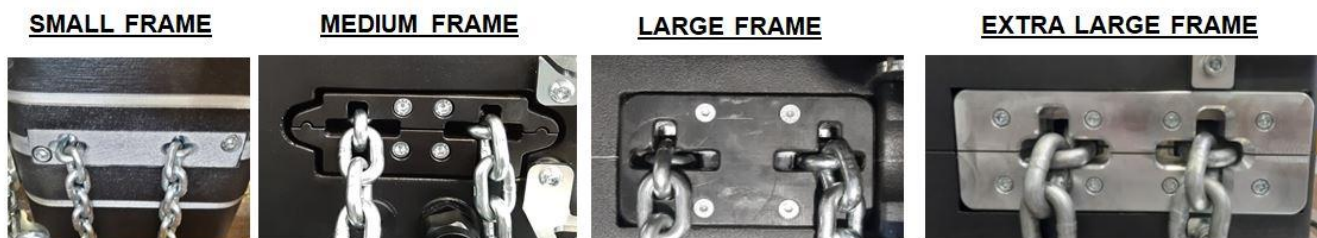


figure 3.10 – External chain guide plate

The Body/Chain hook codes are given in Chapter 11 of this operation and maintenance manual.

3.8 CHAIN BAG

EXE RISE electric chain hoists come with a PVC-coated 840 nylon chain bag. The chain bag is available in 5 different sizes (XS, S, M, L, XL and XXL) depending on the size and length of the chain the hoist is equipped with.



WARNING

When the whole chain is collected in the bag, at the last one quarter of it must be empty so as to prevent the chain from accidentally falling out.

Below, referring to figure 3.11, follows the size and technical specifications of the chain bags, and the maximum permitted chain length in order not to exceed 75% or 65% capacity of the chain bag.

Code	Size	Weight [kg]	A [mm]	B [mm]	C [mm]	Meter of chain
LT CHB029	XS	≈0.75	14	9	40	Ø4/32m @75%
LT CHB059	S-	≈0.75	20	17	17	Ø5-6/12m @75%
LT CHB024	S	≈1.00	20	17	34	Ø5-6/25m @75% - Ø8/12m @75%
LT CHB025	M	≈1.00	20	17	42	Ø5-6/40m @75% - Ø8/25m @75%
LT CHB026	L	≈1.00	20	17	58	Ø5-6/65m @75% - Ø8/40m @75%
LT CHB051	L+	≈1.00	27	21	55	Ø8/50m @75% - Ø10-11.3/20m @65%
LT CHB028	XL	≈1.00	27	21	65	Ø8/70m @75% - Ø10-11.3/30m @65%
LT CHB056	XXL	≈1.50	20/20	25/40	80	Ø10-11.3/50m @65% - Ø13/40m @65%
LT CHB058	XXXL	≈10.00	20/20	20/40	125	Ø10-11.3/80m @75% - Ø13/60m @75%

The chain bag is attached to the frame of the hoist (body) through a special bracket. Position the bag correctly depending on the hoists orientation (body up or body down).

The bag is attached to the bracket by means of 2 quick link carabiners compliant with DIN 56927 or DIN 5299 standards or equivalent. These carabiners report the working load limit (WLL).



DANGER

The carabiner must be positioned and oriented in such a way that the closure is carried out by screwing the nut downwards.

The size and technical characteristics are given, referring to figure 3.11.

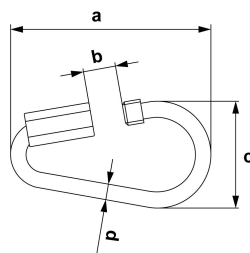


figure 3.11 – "Pear-shaped chain link"

Code	WLL [kg]	SF	a [mm]	b [mm]	c [mm]	d [mm]	Weight [kg]
LT CHB004	250	5	77.3	41	13	6	47
LT CHB055	250	10	77.5	43	14	7	89



WARNING

When replacing the chain bag and its carabiners or quick links, a competent person shall assess their compatibility with the hoist and with the characteristics set out in these instructions.

3.9 EXTERNAL POWER AND CONTROL CABLES AND SOCKETS

The external power cables are:

- 4 x 1.5 mm² with EEC 16A 6h 400VAC 3PH+E plug for Small and Medium Frame
- 4 x 2.5 mm² with EEC 16A 6h 400VAC 3PH+E plug for Large and Extra Large Frame

For LVC type models with low voltage control system the additional external cables are:

- 4 x 1.5 mm² with EEC 16A 4h 24VAC 3PH+E socket for Small and Medium Frame
- 4 x 2.5 mm² with EEC 16A 4h 24VAC 3PH+E socket for Large and Extra Large Frame

The power and control sockets are made of Polyamide 6 and/or PC / ABS material with IP66/67 protection rating. They're both black as shown in figure 3.12.



figure 3.12 – "Plugs and sockets"

The wiring of the plug (direct control and low voltage) and of the socket (only low voltage) is made according to this standard sequence:

PLUG (DC/LV)				SOCKET (LVC)		
L1	R	U	Brown	L1	Brown	Up
L2	S	V	Black	L2	Grey	Down
L3	T	W	Grey	L3	Black	Common 24 VAC
PE			Yellow - Green	PE	Yellow - Green	Earth



DANGER

When using extension cables EEC 16A 6h 400VAC - 3PH + E (power cable) and/or EEC 16A 4h 24VAC 3PH+E (control cable) is it necessary to ensure the electrical connections have been realized properly and respecting for each pole of plug and socket a pin-to-pin connection (L1-L1, L2-L2, L3-L3, PE-PE). If the wiring has not been done correctly, the electric chain hoist will not work as intended.

3.10 LIMIT SWITCH

The EXE RISE models of the LVC type (with the exception of the small frame) with low voltage control system are equipped by default with limit switches with 2 or 2 + 2 positions as shown in figure 3.13.

The EXE RISE DC type models (with the exception of the small frame) with direct control can be equipped with 2 or 2 + 2 position limit switches as shown in figure 3.13. extra large frame models are equipped with them as standard.

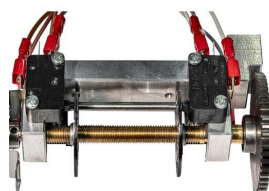


figure 3.13 – “2 position limit switches”

These devices are set when the hoist is assembled in the factory with a tolerance of 3-5 cm, depending of the length of the chain. The factory setting is detailed in figure 3.14.

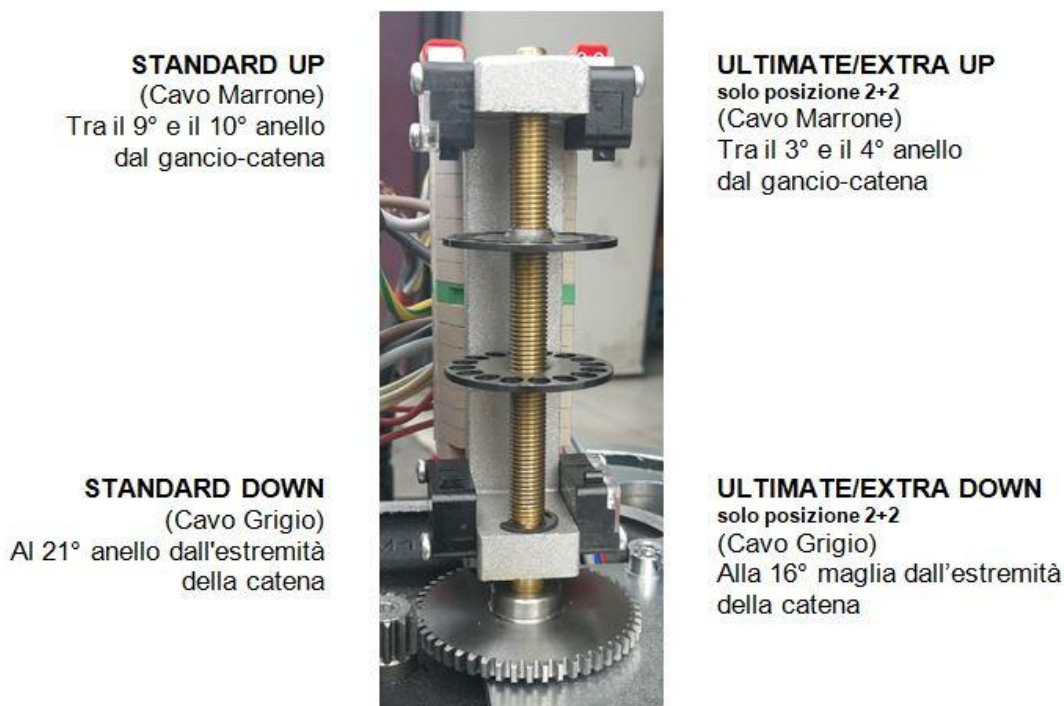


figure 3.14 – “Settings for 2 and 2+2 position limit switches”

The limit switches cannot be subsequently adjusted with prior authorization from A4I ITALIA or RWM.

4 TECHNICAL INFORMATION

4.1 DATA SHEET

	Small Frame	Medium Frame Compact	Medium Frame	Large Frame 1F	Large Frame 2F	Extra Large Frame Compact	Extra Large Frame	Extra Extra Large Frame
Serie	D8 o D8+	D8 o D8+	D8+	D8+	D8+	D8+	D8+	D8
Tipo	DC o LVC	DC o LVC	DC o LVC	DC o LVC	DC o LVC	DC o LVC	DC o LVC	DC o LVC
Capacità di carico	198 kg o 250 kg	198 kg o 250 kg	500 kg	1000 kg	2000 kg	1600 kg	2000 kg	2500 kg
Tiri catena	1	1	1	1	2	1	1	1
Frequenza	50 HZ o 60 Hz	50 HZ o 60 Hz	50 HZ o 60 Hz	50 HZ o 60 Hz	50 HZ o 60 Hz	50 HZ o 60 Hz	50 HZ o 60 Hz	50 HZ o 60 Hz
Velocità	4m/min o 4.8m/min	4m/min o 4.8m/min	4m/min o 4.8m/min	4m/min o 4.8m/min	4m/min o 4.8m/min	4m/min o 4.8m/min	4m/min o 4.8m/min	4m/min o 4.8m/min
Potenza	0.5 kW	0.5 kW	0.8 kW	1.0 kW	1.6 kW	2.0 kW	2.0 kW	2.5 kW
3ph Tensione Δ/Y	230/400VAC	230/400VAC	230/400VAC	230/400VAC	230/400VAC	230/400VAC	230/400VAC	230/400VAC
3ph Corrente Δ/Y	Δ2.70A – Y1.56A	Δ 2.94 A – Y 1.70 A	Δ 3.93 A – Y 2.27 A	Δ 4.62 A – Y 2.67 A	Δ 8.37 A – Y 4.83 A	Δ 9.9 A – Y 5.7 A	Δ 9.9 A – Y 5.7 A	Δ 12 A – Y 7 A
Giri al minuto	1400	1400	1400	1400	1400	1400	1400	1400
Δ - Spina - Connettore Alimentazione (*)	CEE 16A 9h 230VAC – 3PH + G	CEE 16A 9h 230VAC – 3PH + G	CEE 16A 9h 230VAC – 3PH + G	CEE 16A 9h 230VAC – 3PH + G	CEE 16A 9h 230VAC – 3PH + G	CEE 16A 9h 230VAC – 3PH + G	CEE 16A 9h 230VAC – 3PH + G	CEE 16A 9h 230VAC – 3PH + G
Y – Spina - Connettore Alimentazione	CEE 16A 6h 400VAC – 3PH + G	CEE 16A 6h 400VAC – 3PH + G	CEE 16A 6h 400VAC – 3PH + G	CEE 16A 6h 400VAC – 3PH + G	CEE 16A 6h 400VAC – 3PH + G	CEE 16A 6h 400VAC – 3PH + G	CEE 16A 6h 400VAC – 3PH + G	CEE 16A 6h 400VAC – 3PH + G
Numero di freni	1 o 2	1 o 2	1 o 2	1 o 2	2	2	2	2
Taglio del Freno DC	6	6	6	8	10	10	12	12
Potenza del Freno DC	20 W	20 W	20 W	25 W	30 W	30 W	40 W	40 W
Tensione del freno DC	103 VDC	103 VDC	103 VDC	103 VDC	103 VDC	103 VDC	103 VDC	103 VDC
Coppia nominale DC	4 Nm	4 Nm	4 Nm	8 N	16 Nm	16 Nm	32 N	32 Nm
Riduzione della coppia nominale a specifiche di velocità x %	87% (1500 r/min)	87% (1500 r/min)	87% (1500 r/min)	85% (1500 r/min)	83% (1500 r/min)	83% (1500 r/min)	81% (1500 r/min)	81% (1500 r/min)
Interferro freno DC (S _L)	0.2 mm	0.2 mm	0.2 mm	0.2 mm	0.2 mm	0.2 mm	0.3 mm	0.3 mm

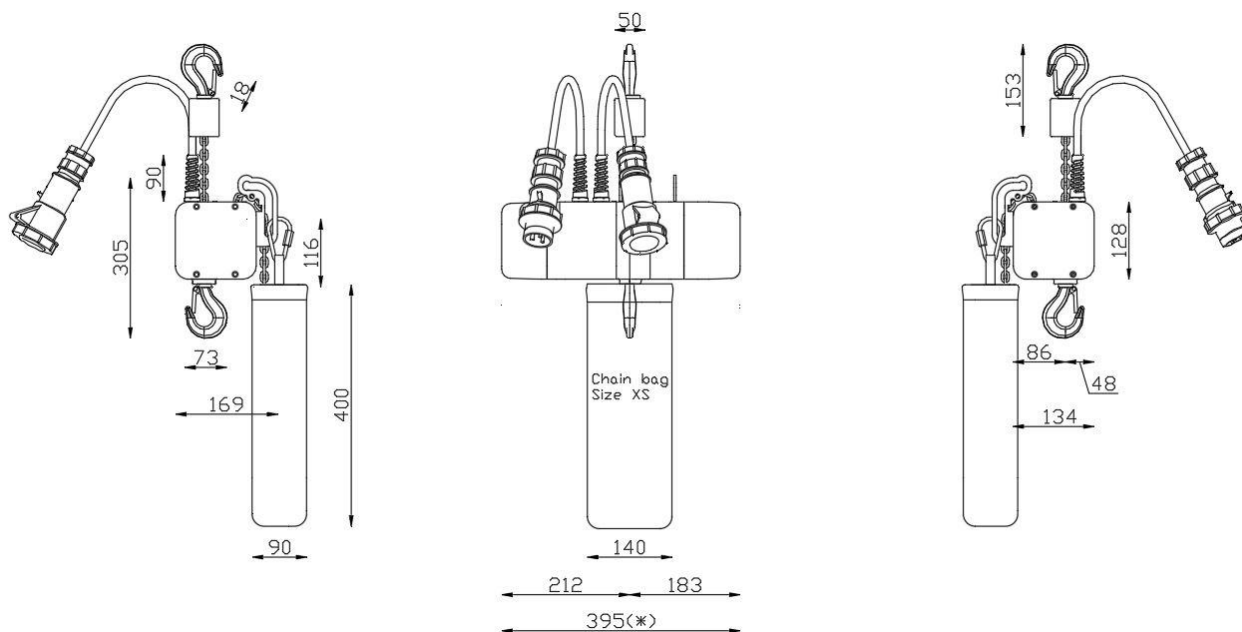
	Small Frame	Medium Frame Compact	Medium Frame	Large Frame 1F	Large Frame 2F	Extra Large Frame Compact	Extra Large Frame	Extra Extra Large Frame
Peso proprio	17 kg	23.5/23 kg	24 kg	43 kg	45 kg	110 kg	123 kg	123 kg
Presa - Connettore Controllo (LVC)	CEE 16A 4h 24VAC – 3PH + G	CEE 16A 4h 24VAC – 3PH + G	CEE 16A 4h 24VAC – 3PH + G	CEE 16A 4h 24VAC – 3PH + G	CEE 16A 4h 24VAC – 3PH + G	CEE 16A 4h 24VAC – 3PH + G	CEE 16A 4h 24VAC – 3PH + G	CEE 16A 4h 24VAC – 3PH + G
Finecorsa	assente	2 o 2+2 position	2 o 2+2 position	2 o 2+2 position	2 o 2+2 position	3 o 2+2 position	4 o 2+2 position	5 o 2+2 position
Fattore sicurezza	≥ 8	8	8	8	8	8	8	8
Classe Fem	2m	2m	2m	2m	2m	3m	3m	2m
Fattore Duty	40%	40%	40%	40%	40%	50%	50%	40%
Start per Ora	240	240	240	240	240	300	300	240
Tempo di vita/10 years	6300 h	6300 h	6300 h	6300 h	6300 h	12500 h	12500 h	6300 h
Tipo di Catena	Acciaio zincato grado 80	Acciaio zincato grado 80	Acciaio zincato grado 80	Acciaio zincato grado 80	Acciaio zincato grado 80	Acciaio zincato grado 80	Acciaio zincato grado 80	Acciaio zincato grado 80
Taglia Catena	4x12 mm	5x15 mm	6x18 mm	8x24 mm	8x24 mm	10x28 mm	11.3x31 mm	11.3x31 mm
Peso proprio Catena	0.35 kg/m	0.54 kg/m	0.78 kg/m	1.39 kg/m	1.39 kg/m	2.24 kg/m	2.85 kg/m	2.85 kg/m
Max metri Catena	32 m	65 m	65 m	50 m staffa standard 70 m staffa speciale	50 m staffa standard 70 m staffa speciale	70 m	70 m	50 m
IP Rate	55	55	55	55	55	55	55	55
Classe di isolamento	F	F	F	F	F	F	F	F
Noce di carico	5 sacche	5 sacche	5 sacche	5 sacche	5 sacche	5 sacche	5 sacche	5 sacche
Livello del rumore	67.5 dB	67.5 dB	67.5 dB	67.5 dB	67.5 dB	67.5 dB	67.5 dB	67.5 dB
Lunghezza cavi/i	(75 ± 5)cm	(75 ± 5)cm	(75 ± 5)cm	(75 ± 5)cm	(75 ± 5)cm	(75 ± 5)cm	(75 ± 5)cm	(75 ± 5)cm

4.2 DRAWINGS AND DIMENSIONS

Below are the drawings of all the models of the EXE RISE electric chain hoists showing the main prices, in order to understand their size. The measurements are all expressed in millimeters [mm].

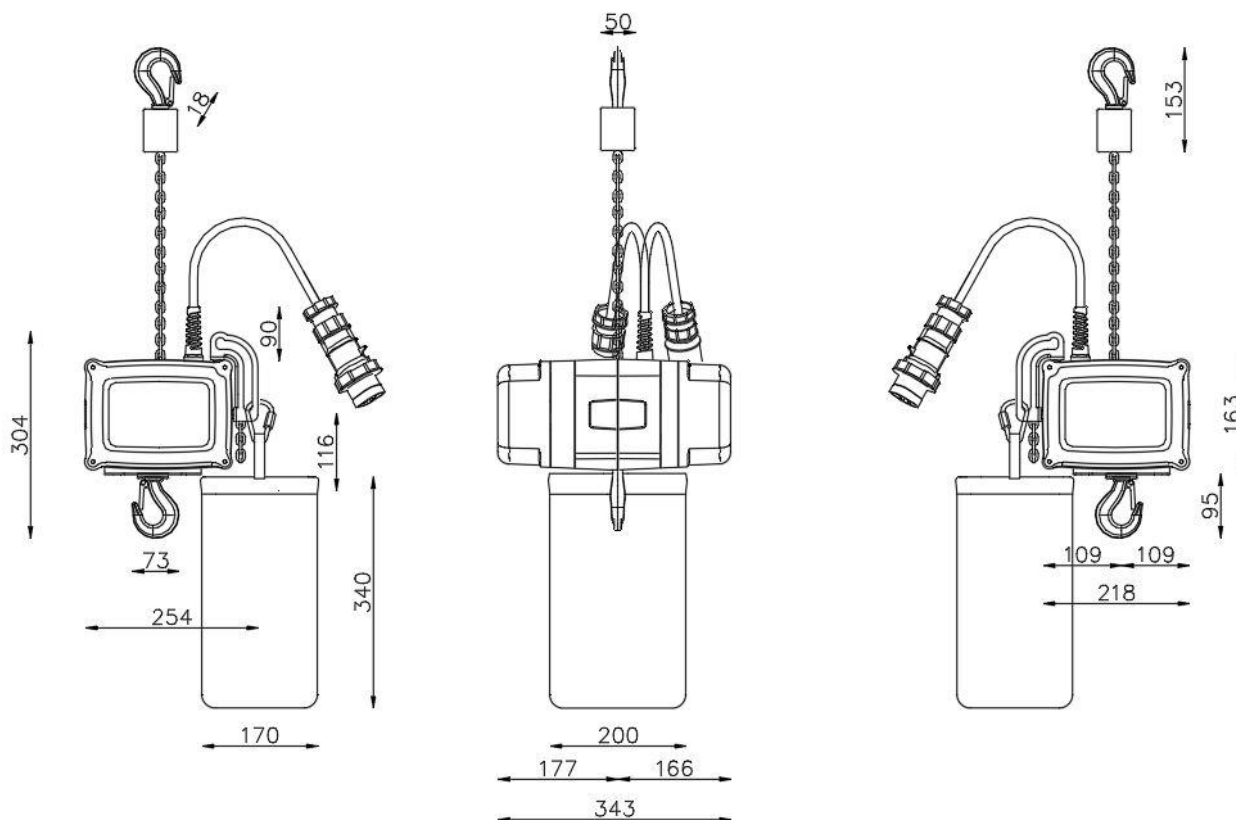
The models of EXE RISE electric chain hoists represented in the drawings are low voltage control. Direct control models have only one cable (instead of 2).

SMALL FRAME

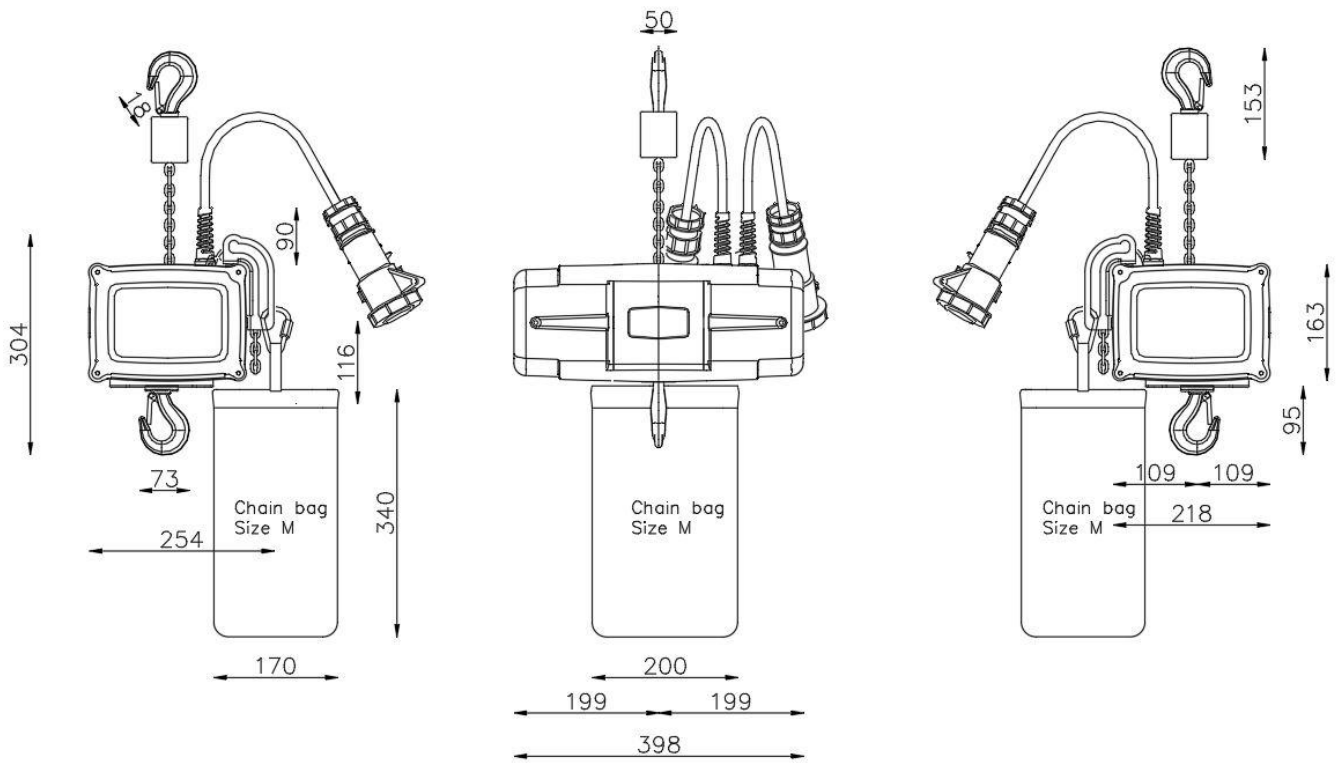


(*) 395 mm refers to the EXE RISE Small Frame D8+ LVC models.
This is 365 mm for the EXE RISE Small Frame D8+ DC models.
This is 349 mm for EXE RISE Small Frame D8 DC models.

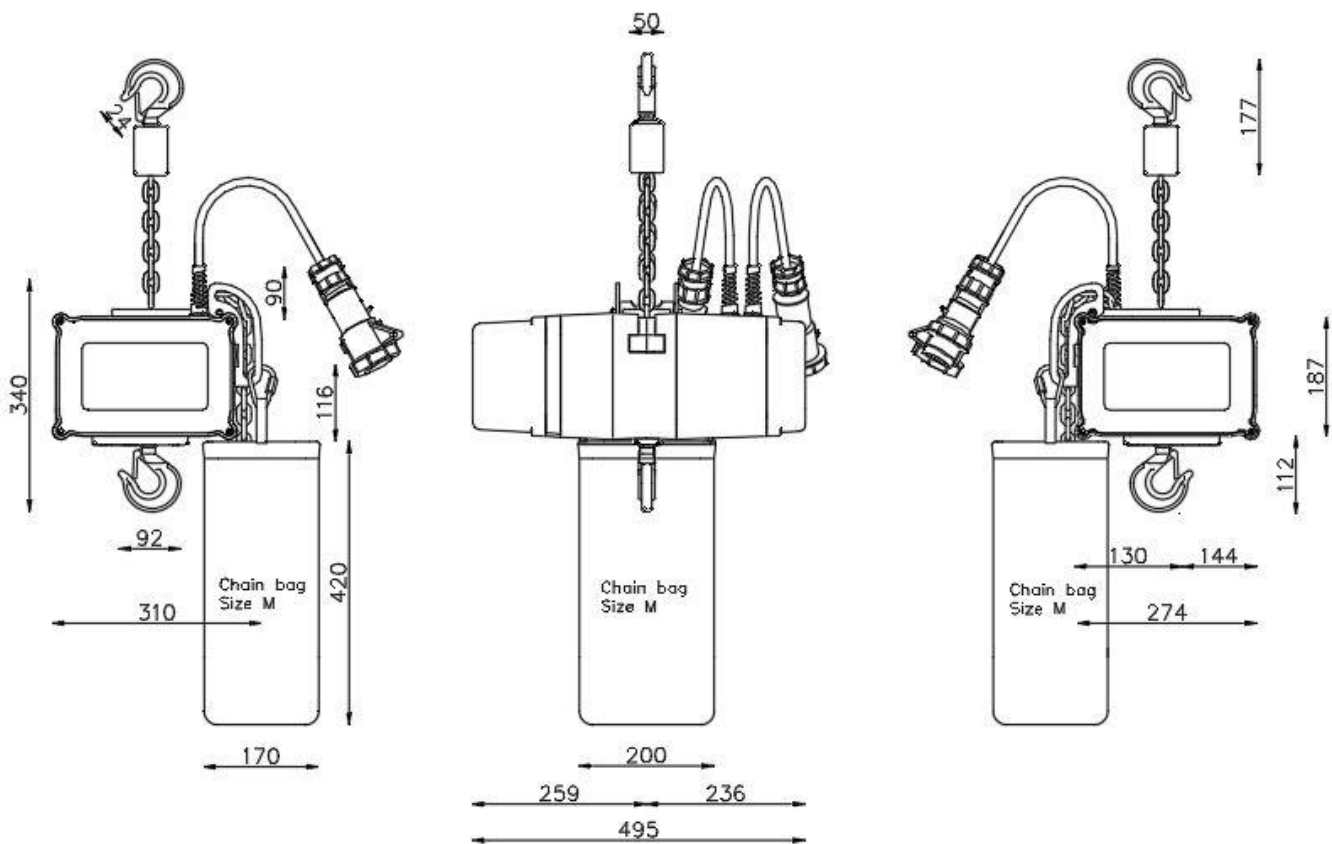
MEDIUM FRAME COMPACT



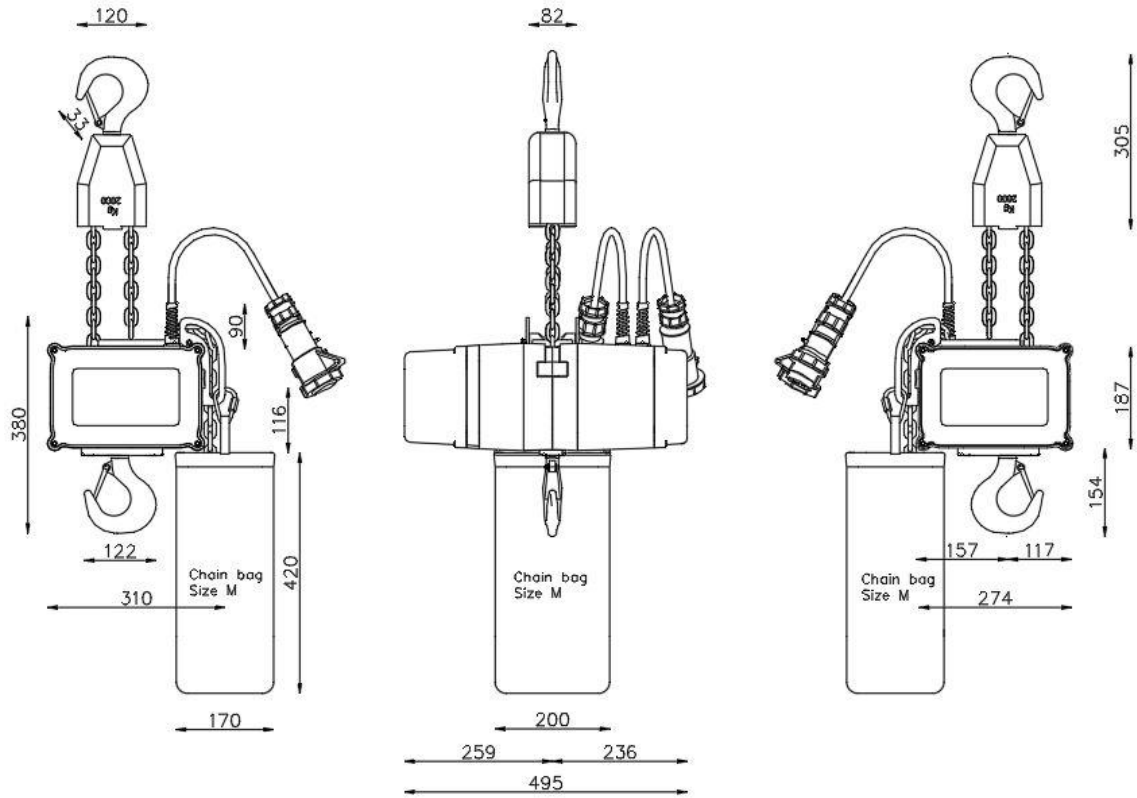
MEDIUM FRAME



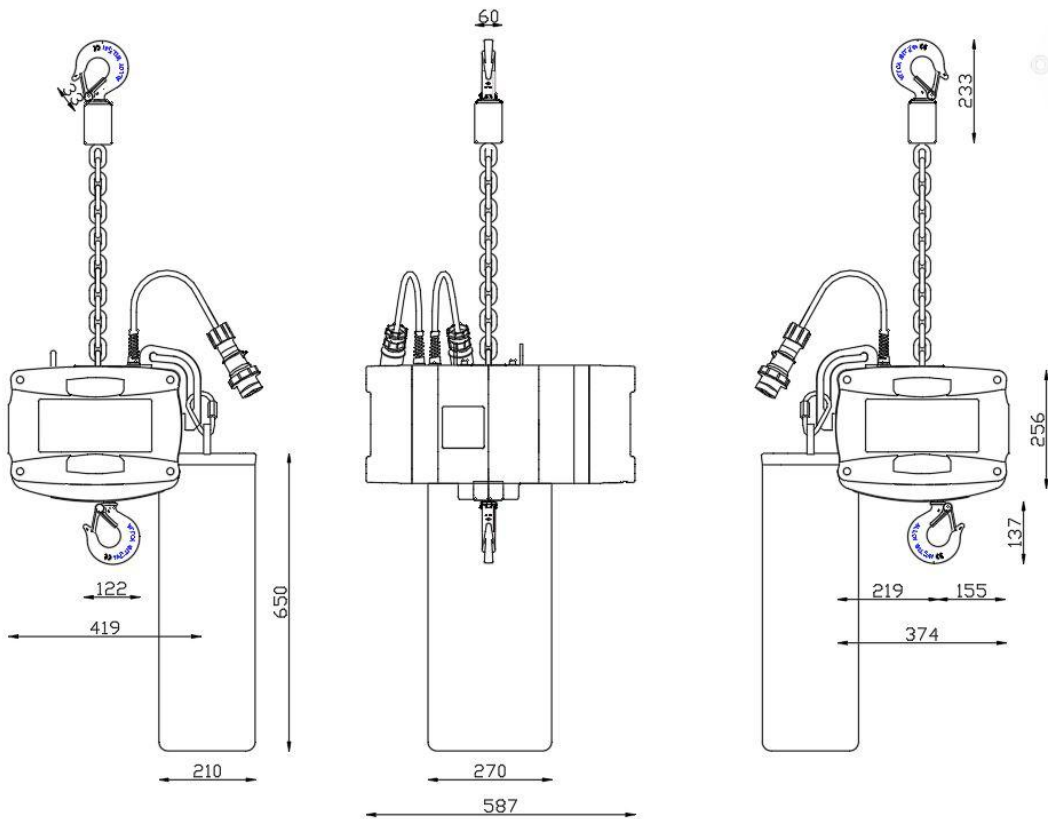
LARGE FRAME 1F



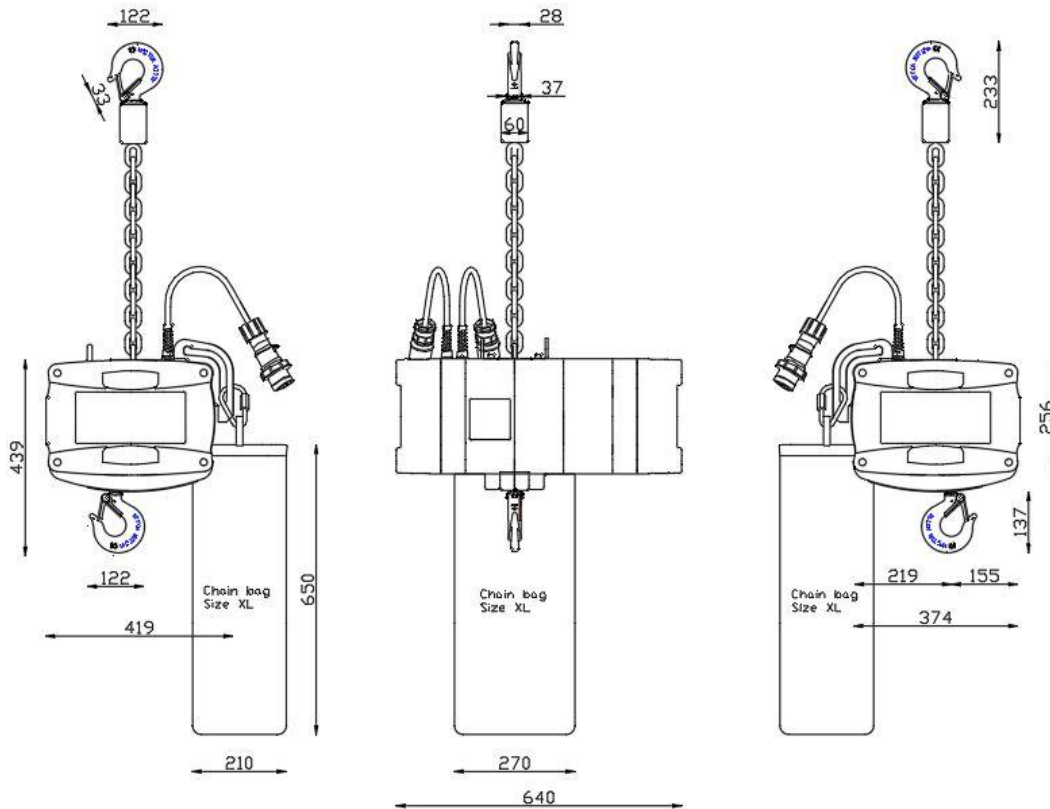
LARGE FRAME 2F



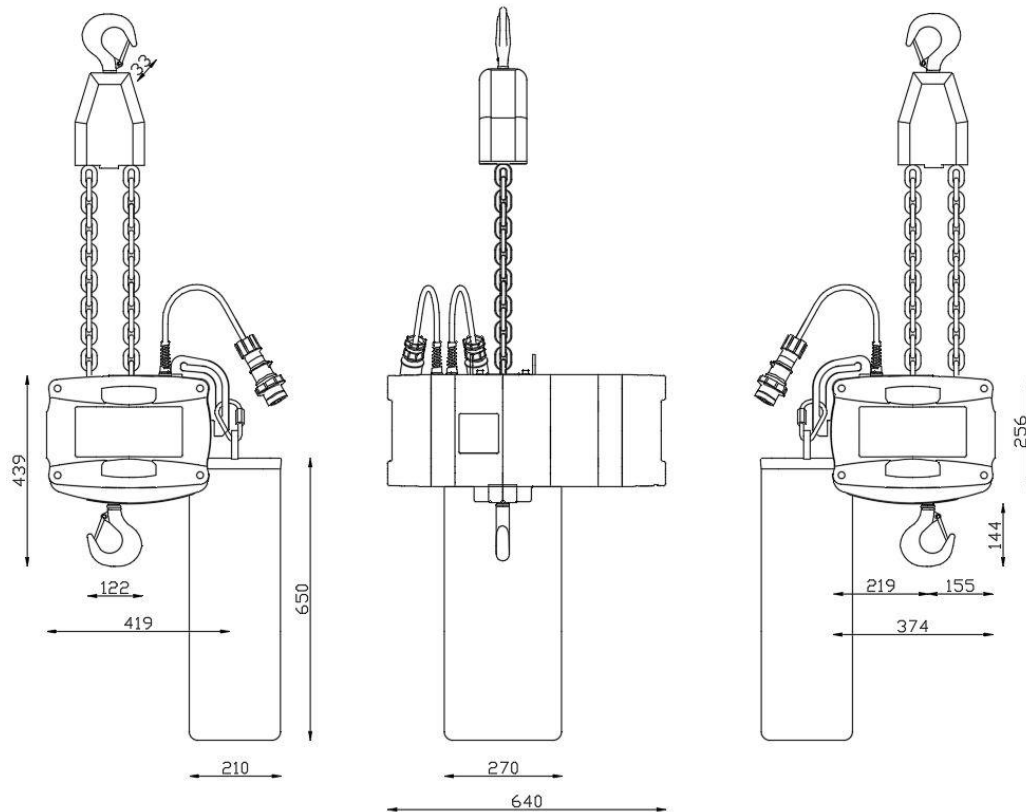
EXTRA LARGE FRAME COMPACT



EXTRA LARGE FRAME 1F



EXTRA LARGE FRAME 2F



5 CONTROLLER

5.1 INTRODUCTION AND COMPATIBILITY

To power and control EXE RISE electric chain hoists, it is recommended to use EXE DRIVE Motor Controllers. Depending on the model, these control systems are designed to handle groups of up to 4/8/16/24 EXE RISE electric chain hoists.

The number of hoists that can be simultaneously operated with the control system defines the maximum number of machines that can handle a multiple lift.



DANGER

Do not connect the hoist plug directly to a power outlet but use a control system that meets the minimum requirements as specified in these instructions.



WARNING

The control system must be installed by competent personnel.

Before powering the EXE RISE electric chain hoist, it is necessary to check its compatibility with the EXE DRIVE Motor Controller control system, as summarised in the following table.

MOTOR CONTROLLER EXE DRIVE	SMALL MEDIUM COMPACT	MEDIUM	LARGE 1F	LARGE 2F	EXTRA LARGE EXTRA LARGE COMPACT	EXTRA EXTRA LARGE
DH1	✓	✓	✓	✓	✓	✓
DH2	✓	✓	✓	✓	✗	✗
XDDL4 XDDL4-LV	✓	✓	✓	✓	✓	✓
XDDL6	✓	✓	✓	✓	✓	✓
XDDL8 XDDL8-LV	✓	✓	✓	✗	✗	✗
XDDL16 XDDL16-LV	✓	✓	✓	✗	✗	✗
XDDL24 XDDL24-LV	✓	✓	✓	✗	✗	✗
XDDB4 XDDB4-LV	✓	✓	✓	✗	✗	✗
XDDB8 XDDB8-LV	✓	✓	✓	✗	✗	✗
XDDC4 XDDC8	✓	✓	✓	✗	✗	✗

EXE RISE electric chain hoists are designed to be used with EXE DRIVE Motor controllers; however, they are compatible with any control systems that meet all of the following minimum requirements:

- compliance with LVD Low Voltage Directive;
- compliance with EMC Electromagnetic Compatibility Directive;
- compliance with EN 17206 standard;
- compliance with EN 60204-1 standard;
- compliance with EN 60204-32 standard;
- be equipped with an emergency stop button compliant with EN ISO 13850;
- be equipped with a control system designed to carry out single, not multiple lifting operations;
- be able to start a lifting operation only by using a dead-man switch;
- prevent automatic restart of the hoist after an emergency stop even if the dead-man switch is being pressed;
- prevent the automatic restart of the hoist after an emergency stop even if the "dead man" button is kept pressed;
- be able to remove current to the actuators and bring the machines to a Category 0 STOP if the emergency stop is activated;
- prevent the emergency stop function from being bypassed by other operating modes;
- to be able to manage an automatic shutdown of the machines in use in case of overload in a multiple lifting system.



CAUTION

Before connecting the control system, make sure that it is compatible with EXE RISE electric chain hoists.

The power and control systems must also be chosen according to the maximum electrical absorption of each individual EXE RISE electric chain hoist and the maximum number of hoists to be simultaneously moved to perform a multiple lift.

EXE RISE electric chain hoists are standard wired for 400V-3ph-50Hz operations. For other voltages the motor must be reconnected internally.

5.2 INSTALLATION AND USE OF THE CONTROL SYSTEM



CAUTION

The control system must be installed by competent personnel.

The control system must be located in an area that allows the operator an unimpeded view of all connected machines. In this way the operator can have a full view and control of the lifting operation and ensure there are no people in the area of exposure to danger from the handling of suspended loads.

The machine's control panel must be easily accessible by the operator.

In the case of use in low-light environments it is necessary to provide spot lighting near the control devices and in the area where load handling operations take place.

The control system must be connected to the individual hoists so that the operator can easily recognize on the control panel which hoist the individual control corresponds to.



WARNING

Always check that the necessary safety conditions are met before carrying out the lifting operations.

6 INSTALLATION AND USE

EXE RISE electric chain hoists must be installed by competent personnel who are informed about the regulations in force at the installation site regarding health and safety at work.

If the hoists are intended for outdoor use, they must be protected from weather conditions.



WARNING

Do not use the hoist chain to harness the suspended load or to perform operations other than vertical lifting.



WARNING

During installation always wear the following PPE in addition to those required for any interference with other activities: safety shoes, helmet and high visibility clothing.

6.1 PACKING AND TRASPORT

EXE RISE electric chain hoist must be transported in its original packaging or in a dedicated container (e.g. flight case).

Dedicated containers should be fitted with an attachment point for the Chain hook in order to minimise the risk of the chain twisting.

During transport it is recommended to detach the chain bag in order to facilitate the handling of the hoist. The chain inside the dedicated bag must remain lubricated so as to avoid corrosion.

At the time of the first delivery, the customer must carefully check the condition of the packaging and ensure that it is not damaged.

In the event that a dedicated container is not used, the packaging elements, such as plastic bags and polystyrene foam, should be kept aside to pack the hoist once finished using.

Avoid excessive vibration of the hoist during transport.



WARNING

Do not move the hoist by handling it from the power and/or control cable.

Once the hoist has been removed from its dedicated packaging or bag, place it on the ground or on another stable surface. If applicable, hang the chain bag using the carabiners or quick links supplied.

In case of long periods of inactivity, the EXE RISE electric chain hoist must be stored in accordance with the following precautions:

- properly ventilate the bag to avoid moisture and/or condensation;
- lubricate the chain;
- store the hoist in an environment not subject to significant temperature variations, where the temperature is between -10°C and 40 °C;
- ensure no corrosive substances come into contact with the packaging or bag and with the hoist.

6.2 ELECTRICAL COONECTION

The electrical connection of the EXE RISE electric chain hoists and their power and control system shall be carried out by competent personnel with sufficient theoretical and technical-practical knowledge to analyse the risks arising from electricity.



WARNING

The control system must be installed by competent personnel.

 **DANGER**

Do not operate the hoist if the power and/or control cable and relative cable glands are damaged.

Before connecting the hoist to electrical power, check that the voltage and power of the power line correspond to those given in this manual and/or on the identification plate, and check the efficiency of the grounding system of the installation site.

Check that the cables powering the hoist are protected against external damage.

Uniquely identify the power and/or control cables of the hoists before connecting them to the motor controller in order to assign them the relevant channels on the control panel.

6.3 PRE-USE CONTROL

 **WARNING**

Before installing the machine, perform the pre-use checks as defined in these instructions; if these checks fail, do not use the hoist!

 **WARNING**


Install EXE RISE electric chain hoists that have been subject to regular inspection and maintenance as defined in these instructions!

Pre-use checks must be carried out before operating the hoist at a new installation site.


These pre-use checks are visual and logging them is not mandatory.

If pre-use checks fail, do not operate the hoist and ensure it is inspected, maintained and repaired, if necessary.

The minimum pre-use checks are given in paragraph 7.


 **WARNING**

Do not install the electric chain hoist in a position where the chain, hoist frame and bag can come into contact with external bodies!

 **WARNING**

Make sure that the chain stop does not come into contact with the frame of the machine! In case of accidental contact of the chain stop with the frame, operate the hoist by reversing the direction of travel so as to remove the stop from the body.

6.4 CONNECTION TO THE ANCHOR POINT

 **WARNING**

Before installation, check that the lifting and set up operations for the suspended loads have been properly designed and planned!

 **DANGER**

Before installation, check that the anchoring points and/or their suspension points have been properly dimensioned in relation to the rated capacity of the machine and/or the actual suspended loads in use!

Before connecting the EXE RISE electric chain hoist to the anchoring point, check that the latter has been properly designed for actual loads in use and the intended lifting operations.

The hoist must be installed on the anchor point so as to be with the relative chain in a vertical position. The chain must be sufficiently spaced from external bodies so as not to come into contact with them.

6.5 CONNECTION TO THE SUSPENDED LOAD

Insert the Chain hook inside the load suspension point. Only use CE-marked lifting accessories to connect the load suspension point to the hoist Chain hook.

 **DANGER**

Do not move and/or use suspended loads greater than the rated capacity of the electric chain hoist! In case of doubt, have a competent person check the actual load in use.

 **DANGER**

Attach the suspended load to the body hook of the hoist by means of lifting accessories and/or suspension points integrated into the load itself!

 **DANGER**

Before lifting the suspended load, make sure that it is firmly placed in the saddle of the Chain hook of the electric chain hoist!

 **WARNING**

Do not install lifting accessories in the hook saddle whose dimensions are not sufficient to fit on the axis of the chain.

6.6 USE

The machine operator must be a competent person in optimal psychophysical conditions, i.e. unaffected by factors such as fatigue, distraction, substances such as medications, drugs, etc.

 **WARNING**

Ensure that there is no unauthorized personnel in the installation area, and allow access to it only to persons who are informed about exposure to the risks arising from the installation and handling of suspended loads!

After installation procedures raise the load by a few centimetres and, with the chain in tension, check that the Body/Chain hooks are correctly positioned at the anchoring point and at the point of connection to the suspended load.

In case of use of hoists with double chain fall (multiple chain lengths) check that the chain is not twisted. If necessary, rotate the pulley-hook block until the twist is completely removed.


Move the suspended load steadily, avoiding intermittent operation of the control system.

 **DANGER**

Do not move the suspended load if the chain is twisted!

 **DANGER**

Do not approach the moving chain so as not to be exposed to the risk of entanglement and/or dragging!

 **CAUTION**

Always ensure that there is good communication between operators, installers and riggers and that the operator has a good view of the machine and moving loads.

During the handling of the suspended load with the hoist, the operator must have full view of the hoist and, if necessary, be in contact with other people able to supervise the lifting operations.

The operator must ensure that during handling the suspended load does not collide with obstacles or that no one is present in the areas of exposure to the dangers typical of lifting operations.

It is allowed to lift the hoist when it is still in its packaging or container in order to minimize manual load handling operations.

For D8 series hoists, once the suspended load reaches the working position, secondary safety devices shall be installed in order to have a redundant suspension system from the anchoring point to the load suspension point, as shown in figure 6.1.

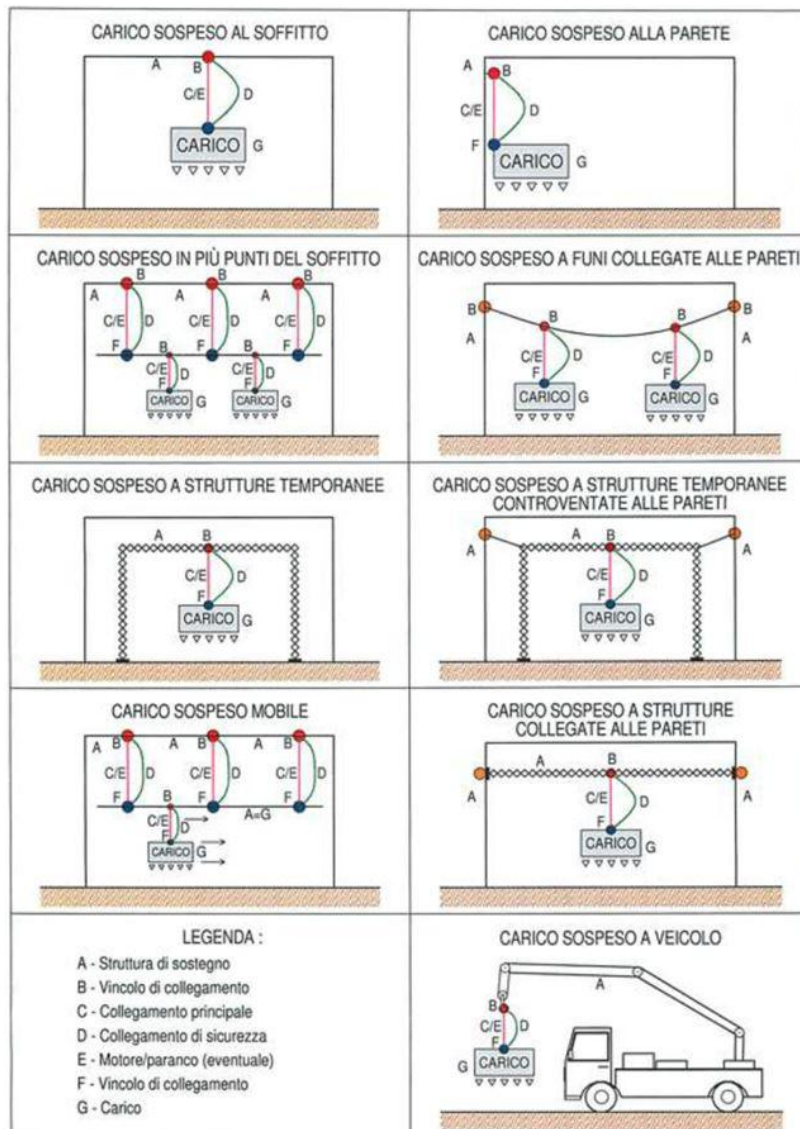


figure 6.1 – "Safety Devices"

In case of multiple lift, ensure that all simultaneously controlled hoists are correctly connected to the control and power supply system by tensioning each chain individually.



WARNING

Before moving the load, notify the personnel in the area of installation and set up of suspended loads!



WARNING

Do not pull the suspended load diagonally or drag it horizontally across surfaces!



DANGER

Once the suspended load reaches the operating position, install secondary safety devices if required by the intended use of the hoist and/or by local regulations!



DANGER

Remove secondary safety devices before lowering suspended loads.

7 INSPECTION

7.1 LIST OF INSPECTION, CLEANING AND LUBRICATION OPERATIONS



DANGER

Install hoists that have been subject to regular inspection as defined in these instructions!

EXE RISE electric chain hoists must undergo the following inspections:

1. Daily / pre-use inspection;
2. Frequent inspection;
3. Periodic inspection;
4. Special inspection;
5. Quarterly chain check.

In addition to the above inspection and maintenance operations as defined by the manufacturer of the machine, check local regulations requirements concerning health and safety at work.

Inspection, cleaning and lubrication operations are preventive measures to preserve the functionality of the hoists over time and ensure safety requirements are maintained.

Failure to inspect the machine can cause damage and reduce the residual life of the hoist itself.

Inspection, cleaning and lubrication operations shall not be carried out on an installed hoist and/or with suspended load in use.

EXE RISE electric chain hoist users are only allowed to perform pre-use and frequent inspection of the hoist, and cleaning and lubrication of the chain.

All other periodic and extraordinary inspection/maintenance operations, involving disassembly of the machine or replacement of parts, can only be performed by EXE TECHNOLOGY authorized personnel.

7.1.1 DAILY / PRE-USE INSPECTION

Inspection carried out by the user and/or other competent person in charge before starting lifting operations. They consist of a visual inspection and/or functional tests.

These checks do not need to be recorded in writing on a logbook if no defects and/or anomalies on the machine have been identified.

The minimum checks to be carried out during a pre-use inspection are given in the table in the next chapter (7.12).

7.1.2 FREQUENT INSPECTION

Inspection carried out by the user and/or other competent person in charge on a monthly, weekly or daily basis depending on equipment operation. They consist of a visual inspection and/or functional tests. These checks must be recorded in writing on a logbook.

The minimum checks to be carried out during a frequent inspection are given in the following table.

The inspection intervals must be determined by the user of the machine according to the specific use of the machine and its operation and are divided into three classes:

1. Ordinary operation
Involves operation with uniform loads below 65% of the rated capacity for no more than 25% of the time or, in the case of multiple lift, total distributed loads below the total rated capacity for no more than 25% of the time.
2. Heavy operation
Implies the operation of the hoist within nominal capacity, but under conditions that exceed those of ordinary operation.

3. Severe operation
Ordinary or heavy operation under conditions other than normal operation, such as:
- close to extreme ambient temperatures;
 - frequent machine starts and stops.

Pre-use inspection checks are part of frequent inspections but their schedule differs based on individual installations.

Subject of the check	Mode	Notes
Documentation	Check for the presence of the operation and maintenance manual of the hoist and its circuit diagram	
Hoist as a whole	Check for the presence and integrity of the "CE" marking and identification plate	
Hoist as a whole	Check for the presence and integrity of pictograms	Electrical hazard Do not lift people
Hoist as a whole	Check the integrity of the frame and components	Absence of dents, cracks, sharp edges. Integrity of the coating.
Hoist as a whole	Check that the fixing screws are secured and not loose	
Chain bag	Check the correct attachment and positioning of the chain bag	Proper closure of the carabiners
Chain bag	Ensure that the bag is not in contact with external bodies that can affect its position	
Chain bag	Check that no foreign objects are contained in the chain bag	Ensure that the chain is free to run into the bag
Load chain	Check that the chain is not damaged	Absence of dents, cracks, sharp edges. See section 7.2.2.
Load chain	Check that the chain is properly lubricated	See section 7.2.3.
Load chain	Check that the chain is not twisted and that it can move properly inside the hoist and into the bag	Perform this check more carefully in the case of chain with reeving system
Outer chain guide plate	Check the integrity of the outer chain guide plate.	Absence of deformations and cracks. Paragraph 7.2.4
Chain hook	Check the suitability of the load/Body hook closure	paragraph 7.2.1
Chain hook	Check that the safety latch of the load/Body hook works correctly	paragraph 7.2.1
Electrical equipment	Check the integrity of the plug/socket, power cables and their cable glands	
Electrical equipment	Check that it is connected to a compatible control system	See section 5.1
Hoist as a whole	Perform a functional check of pushbutton-operated movements, speed and direction of travel (up-down/ slow-fast)	Functional check
Hoist as a whole	Perform a functional check on brakes (braking distance and times) (up-down / slow-fast)	Functional check
Hoist as a whole	Check for abnormal noise (up-down / slow-fast)	Functional check

7.1.3 PERIODIC INSPECTION

Inspection carried out exclusively by EXE TECHNOLOGY authorised personnel according to a schedule based on the hoist's operation, but at least every 12 months (except for periods of inactivity). As a result of these inspection and maintenance operations a report is issued certifying the operations carried out on the machine. The results must be recorded in a logbook, kept and presented during surveillance checks.

The minimum checks to be carried out by authorised EXE TECHNOLOGY personnel during a periodic inspection are listed in the following table.

Subject of the check	Mode	Notes
Subject of the check	Check the presence of all accessories (chain, hooks, handles, chain bag, flight case, control panel). Integrity and cleanliness check. Bolted joint check. Check for cracks, deformations, wear and/or ruptures, oxidation. Check for the presence and integrity of the "CE" marking and identification plate	
Electrical equipment	Check integrity of the power (and main circuit, if applicable) cable. Check integrity and cleanliness of the power plug (and of the socket, if necessary)	
Documentation	Check for the presence, correspondence, integrity and readability of: - Identification plate and CE mark - Declaration of conformity of the electric chain hoist - Declaration of conformity of the hooks and chain - Circuit diagram (power diagram if applicable) - Operation and maintenance manual	
Control devices	Check for the presence, integrity and cleanliness of a control device. Checking the functionality of the control device.	
Chain hook	Check for signs of wear, deformation, cracks and other surface defects. Check for efficiency and degree of wear	See 7.2.1
Load chain	Check for the absence of appreciable deformations. Check degree of wear Check lubrication status	See 7.2.2 e 7.2.3
Outer chain guide plate	Check for the absence of appreciable deformations. Check degree of wear	See 7.2.4
Bottom block	Check for the absence of appreciable deformations. Check degree of wear	
Chain stop	Check for the absence of appreciable deformations. Check degree of wear	
Carabiners	Check the presence and integrity of the chain bag carabiners. Check the presence and integrity of the chain stop carabiner.	
Lifting motors	General check for functionality and absence of abnormal noise. Check that the temperature of the frame is not excessive	Load test
Electrical equipment	Check the functionality of the electronic components in the different modes of use.	Load test
Brake(s)	General functionality check Check for efficiency and degree of wear	
Gearbox	Check for noise and the degree of lubrication and greasing. Checking for excessive play, misalignment, worn parts and the condition of the bearings.	Load test
Load wheel and chain guide	Check the integrity of the pockets. Check for noise and functionality	Load test
Limit switch (where available)	Check for up/down efficiency (working and extra)	
Clutch	Check clutch calibration.	

LOAD TESTS

To test the functionality and settings of the brake and clutch it is necessary to carry out static and dynamic load tests as defined below:

- Static load test: apply a suspended load equal to 125% of the rated capacity to the non-powered hoist. The test is deemed successful if the height of the suspended load does not change.
- Dynamic load test: Apply a suspended load equal to 125% of the rated capacity to the hoist. Move the suspended load for a short stretch. The test is deemed successful if the overload clutch does not activate, and the brake is able of stopping the suspended load without slippage.

For both load tests, the anchoring point should be appropriately sized taking into account the actual loads in use.



WARNING

Any interventions on the brake and overload clutch are prohibited. Only authorised EXE RISE personnel may perform maintenance and replacement operations to the brake and overload clutch.

7.1.4 STRAORDINARY INSPECTION

Inspection conducted exclusively by EXE TECHNOLOGY authorised personnel to ensure the maintenance of appropriate safety conditions whenever exceptional events occur which may have detrimental consequences for the safety of work equipment, such as repairs, modifications, accidents, natural phenomena or extended periods of inactivity. The procedure for this inspection is analogous to that for “periodic inspections” in paragraph 7.1.3. The results of the checks must be recorded in a logbook, kept and presented during surveillance checks.

7.1.5 QUARTERLY CHECK CHAIN

Checks to highlight possible wear, kinks, deformations, cuts, corrosion, chemical damage, section shrinkage, lengthening, with particular attention to the contact area between links, the contact areas with wheels and pinions, as well as the attachment points to the chain ends fitted with pins. A useful reference for chain checks is UNI EN 818-7 standard. The results of the checks must be recorded in a logbook. The procedures for the checks are set out in paragraph 7.2.2.

7.2 PERFORMANCE OF INSPECTION OPERATIONS

7.2.1 HOOK INSPECTION

Chain hooks must not present cracks, permanent deformations or be damaged by corrosion and/or chemical agents; otherwise they must be replaced (see section 8.1)

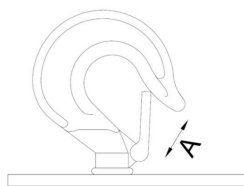


figure 7.1 – “Hook opening”

The maximum acceptable permanent deformation of the hook opening (A) as showed in figure 8.1 must be less or equal to 5% of the normal value. The maximum permanent deformation due to torsion must be less than 10° in relation to the plane of symmetry of the hook.

Any hook with deformations that exceed the above limits indicates overload and must be replaced.

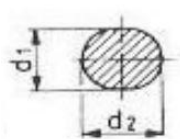
The safety latch must open without excessive play, and snap back to the tip to its position when released. The safety latch and its rotation pin must not be bent or damaged.

Inspect the other supporting parts, hook block screws and load pin for damage.

7.2.2 LOAD CHAIN INSPECTION

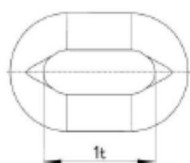
The chain must not be crushed, cracked, permanently deformed or damaged by corrosion and/or chemical agents, otherwise it must be replaced. The chain may be replaced only by authorised EXE TECHNOLOGY personnel.

On a quarterly basis, inspect the chain at the points of contact between the links to check that wear is regular and within tolerance limits as defined below:

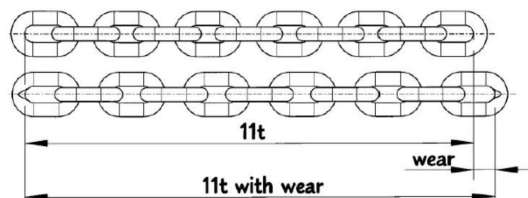


d_m = diametro medio
 d_1/d_2 = dimensioni reali
 d = diametro nominale

10% maximum shrinkage of the link's mean diameter d_m due to friction, calculated in the two positions rotated by 90° according to the formula:
 $d_m = (d_1 + d_2) : 2 \leq 0.9d$



5% increase in the single link pitch $1t$ (inner length measured on the major axis) calculated by comparing with a chain link located after the chain stop



2% increase in the length of 11 links $11t$, calculated by comparing the 11 chain links located after the chain stop

If the chain is not sufficiently lubricated and/or noisy or tends to jam, clean with neutral solvent and lubrication with lubricant for high pressure applications.

The chain should be able to slide smoothly into and out of the chain guide of the hoist, or hook block in the case of the double chain hoist.

7.2.3 CHAIN LOAD LUBRIFICATION

Before lubricating the chain, secure the hoist. To ensure long service life and best performance, lubricate the chain with the following lubricant or a compatible one:

STABYLAN 2001: a green semi-synthetic, medium viscosity lubricant, used for lubrication of all types of chains, even at higher temperatures ($-15 / + 150^\circ\text{C}$).

The consistent application of even small amounts of lubricant greatly increases the lifespan of the load chain.



DANGER

Do not allow the chain to dry.

It is essential to keep the chain clean and lubricate it regularly with chain oil. Normally, weekly lubrication and cleaning of the chain is sufficient, but in hot and dirty conditions, it may be necessary to clean the chain at least once a day and lubricate it several times between cleaning operations.

When lubricating the chain, apply sufficient lubricant to achieve normal movement and full coverage, especially at the points of contact between links.



CAUTION

Do not use used motor oil as a chain lubricant.

7.2.4 EXTERNAL CHAIN GUIDE PLATE INSPECTION

Check that there are no cracks or damage that could compromise its operation. In case of damage or cracks, proceed with the replacement of the outer chain guide plate following the instructions in paragraph 8.2.

Check the tightening of the connection screws to the frame and that the external chain guide plate is correctly installed in its seat.

7.2.5 CHAIN BAG INSPECTION

The chain bag should be inspected for excessive wear and tear in the fabric and fastening eyelets.

Also check the fastening and functionality of the carabiners or quick links that connect the eyelets to the hoist frame brackets.

8 REPAIR AND REPLACEMENT

8.1 HOOK REPLACEMENT

If the body and/or chain hooks show permanent deformations during the inspection referred to in paragraph 7.2.1, they must be replaced.



CAUTION

Before replacing the body or chain hooks, the EXE RISE electric chain hoist must be disconnected from the power supply!

8.1.1 BODY HOOK REPLACEMENT

SMALL and EXTRA LARGE FRAME

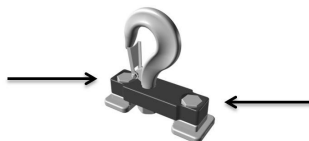


WARNING

The Body hook of the small and extra large frame model cannot be replaced except by EXE TECHNOLOGY authorized personnel!

MEDIUM and LARGE FRAME

1. Place the EXE RISE electric chain hoist upright on a working surface
2. Loosen and remove the two M16 bolts with an M24 socket wrench.



3. Make a note of the position of the hook's centre of gravity on the plate because the hole in which is inserted the shank of the hook is not in the centre of the plate, but varies according to the model.
4. Remove the Body hook kit and replace it with the new one, paying attention to the position of the centre of gravity.



DANGER

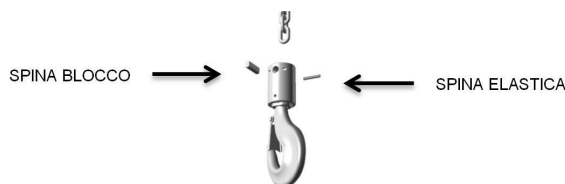
If the Body hook is installed with its centre of gravity in a position other than the default one means that it will no longer be in line with the load.

5. Tighten bolts M16 (steel 8.8 – friction coefficient 0.15) with a torque wrench. The tightening torque is 198 Nm.

8.1.2 CHAIN HOOK REPLACEMENT

1 FALL OF CHAIN

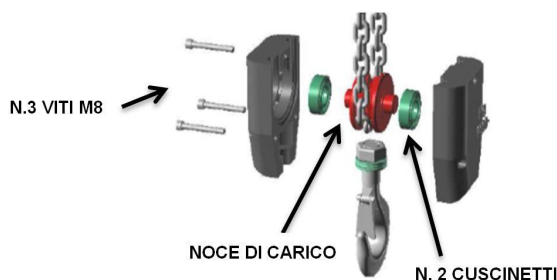
1. Place the EXE RISE electric chain hoist upright on a working surface.
2. Place the Chain hook on the working surface.



3. Remove the roll pin using a roll pin punch (mechanical punch).
5. Remove the Chain hook (bottom block + hook) from the chain and replace it with the new one.
6. First insert the lock pin, then the roll pin.

2 FALLS OF CHAIN

1. Place the EXE RISE electric chain hoist upright on a working surface.
2. Place the Chain hook on the working surface so that the side of the bottom block with the screws is at the front.



3. Remove the 3 M8 screws (steel 8.8 - friction coefficient 0.15) with an M6 Allen key.
4. Gently pull out the front block of the pulley, taking care not to compromise the position and mechanism of the bearings, load wheel, Chain hook and the other block of the pulley.
5. Remove the hook from the block and replace it with the new one.
6. Gently close the front block of the pulley, taking care not to compromise the position and mechanism of the bearings, load wheel, Chain hook and the other block of the pulley.
7. Secure and tighten the 3 M8 screws with a torque wrench. The tightening torque is 23 Nm.

8.2 EXTERNAL CHAIN GUIDE PLATE REPLACEMENT

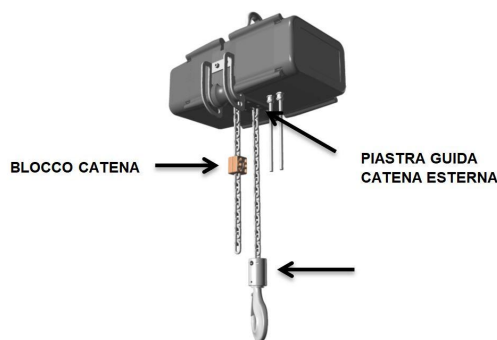
SMALL FRAME

Small frame EXE RISE electric chain hoists are not equipped with external PVC chain guide plates, but are a single block with the inner chain guides, so they cannot be replaced without replacing the whole block. This replacement operation may be performed only by authorised EXE TECHNOLOGY personnel.

MEDIUM AND EXTRA LARGE FRAME

Note: in the following figures it is only reported the large frame model as an example.

1. Place the EXE RISE electric chain hoist in standard (fixed) mode.



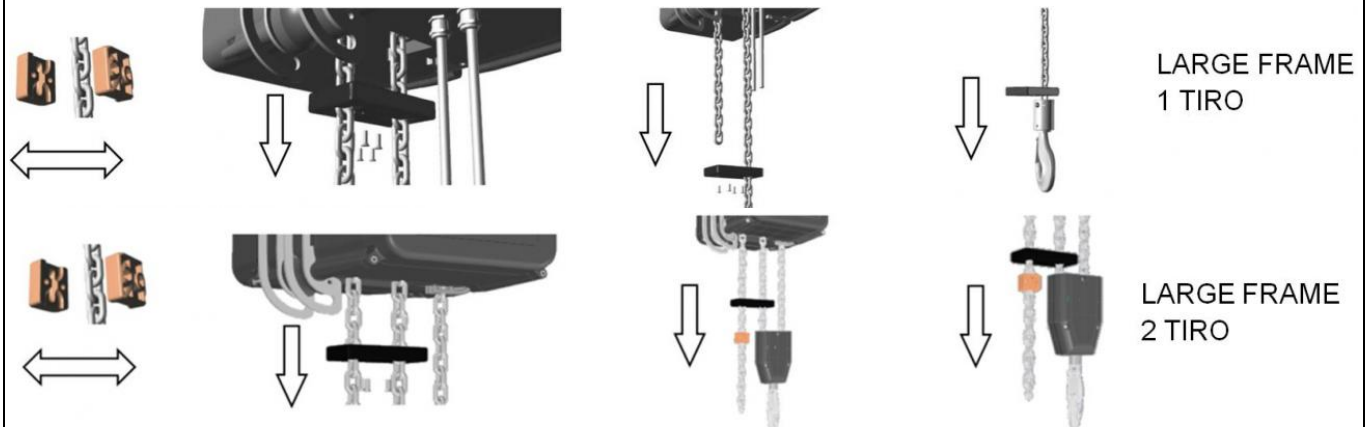
2. Loosen and remove the screws of the outer plate which is divided into two parts with an Allen key. In the case of the medium frame there are 4 screws and a 4mm Allen key is required. In the case of the extra large frame, there are 8 screws and a 5mm Allen key is required.



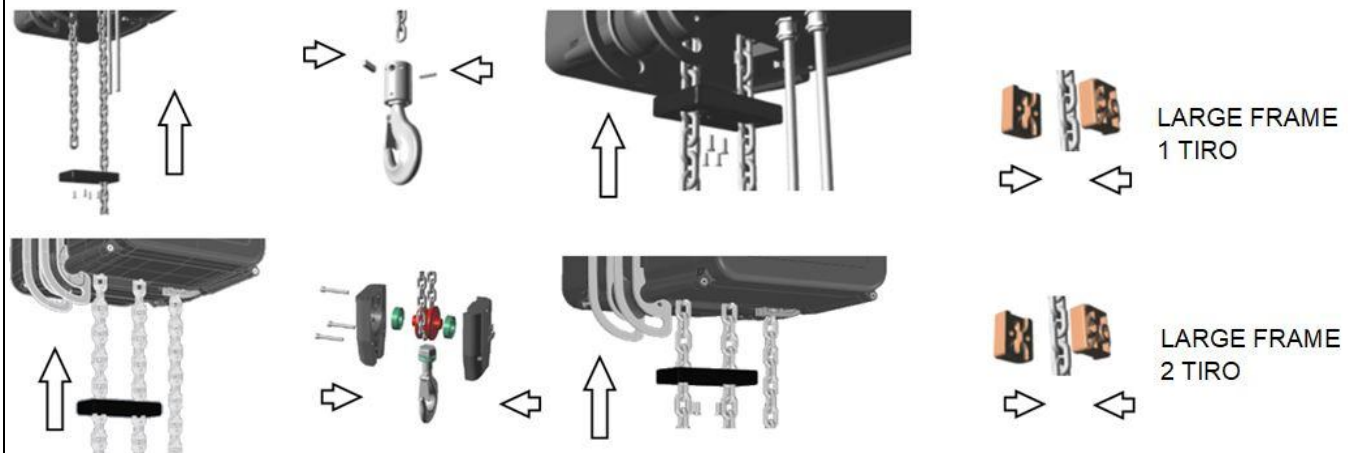
3. Remove the two parts of the outer plate and insert the new one (also divided into two parts).
4. Secure and tighten the screws with an Allen key.

LARGE FRAME

1. Place the EXE RISE electric chain hoist in standard (fixed) mode.
2. Connect the EXE RISE electric chain hoist to an electrically compatible motor controller (see Chapter 5) and run the chain up to the 16th-22nd link from its end (chain stop side). At the end, disconnect the hoist from the motor controller.
3. Remove the chain stop with a 5mm Allen key.
4. Loosen and remove the screws of the outer plate with a 3mm Allen key.
5. Slide the outer plate up to the Chain hook block.



6. Remove the Chain hook.
7. Insert the new chain guide outer plate, making sure that the chain is perfectly tensioned.



8. Insert the Chain hook as detailed in paragraph 8.1.2 for a single fall, and in paragraph 8.1.3 for double fall. The roll pin must be replaced with a new one.
9. Slide the new plate to its site, making sure the chain is always in tension.



DANGER

If the chain is not perfectly tensioned, it will twist and the plate will not be able to be secured.



10. Secure and tighten the 4 screws with a 3mm Allen key.
11. Secure the chain stop with a 5mm Allen key.

8.3 FUSE REPLACEMENT

The EXE RISE LVC electric chain hoist with low voltage control system is equipped with 300 mA (0.3 A) delay fuse on the primary winding and 1 A quick fuse (1.25 A delay fuse) on the secondary winding.

To replace the fuse, disconnect the external power supply, remove the fixing screws, remove the cover and replace the fuse with another having the same characteristics.



DANGER

Before replacing a fuse, the EXE RISE electric chain hoist must be disconnected from the power supply!



WARNING

Be careful with handling hot parts if EXE RISE electric chain hoist has been powered and used before replacing the fuse!

8.4 OTHER REPAIRS AND REPLACEMENTS



WARNING

Any repair and replacement operation other than those listed in this chapter IS PROHIBITED. Only authorised EXE TECHNOLOGY personnel can carry out such interventions!

Repairs and/or replacements not included in the following sections of this chapter may only be carried out by authorised EXE TECHNOLOGY personnel, including:

1. LOAD CHAIN AND INNER CHAIN GUIDE REPAIR/REPLACEMENT
2. CLUTCH AND BRAKE REPAIR/REPLACEMENT
3. LOAD WHEEL AND LIMIT SWITCH REPAIR/REPLACEMENT
4. ROTOR, STATOR AND GEAR BOX REPAIR/REPLACEMENT

All repairs / replacements not shown in the aforementioned list must be communicated to EXE TECHNOLOGY personnel, who avail themselves of the right not to authorize such interventions.

9 TROUBLESHOOTING

PROBLEM	Possible CAUSE	CHECKS and SOLUTIONS
1. The electric chain hoist is connected to the control system but does not work	a. The upstream circuit breaker has tripped.	Reset the tripped circuit breaker.
	b. The command line fuse is broken or blown	Replace the fuse according to the instructions in paragraph 8.3.
	c. Failure of a mains phase. Damaged power cord. Interrupted stator winding.	Check electrical continuity and identify the defective part. If the repair does not fall within the authorised ones (see Ch. 8), contact EXE TECHNOLOGY personnel.
	d. The power supply or control circuit are open.	Supply the hoist with voltage and frequency as indicated on the hoist identification plate.
	e. Interrupted transformer or reversing starter coil winding.	Reduce the load according to the limits indicated on the hoist identification plate.
	f. Up/down limit switch failure.	
	g. Loose or interrupted connection within the circuit.	
	h. Mechanical jamming of the reversing starter.	
	i. The brake does not open; the brake coil is open, short-circuited or interrupted; blown trip unit.	
	j. Wrong supply voltage or frequency	
	k. Excessive load	
2. The hoist moves in the opposite direction	a. Inversion of the three-phase sequence supply.	Operate on the plug's mechanical inverter for a direct 3-phase sequence supply.
3. The hoist moves only down and not up	a. The clutch slips with excessive loads.	Reduce the load according to the limits indicated on the hoist identification plate.
	a. Open control circuit. b. Down reversing starter coil winding open, interrupted or short-circuited. c. Up limit switch failure. d. Loose or interrupted connection within the circuit.	Check electrical continuity and identify the defective part. If the repair does not fall within the authorised ones (see Ch. 8), contact EXE TECHNOLOGY personnel.
	a. Open control circuit. b. Down reversing starter coil winding open, interrupted or short-circuited. c. Speed selection relay coil winding open, interrupted or short-circuited. d. Down limit switch failure. e. Loose or interrupted connection within the circuit.	Check electrical continuity and identify the defective part. If the repair does not fall within the authorised ones (see Ch. 8), contact EXE TECHNOLOGY personnel.
	a. Open control circuit. b. Down reversing starter coil winding open, interrupted or short-circuited. c. Speed selection relay coil winding open, interrupted or short-circuited. d. Down limit switch failure. e. Loose or interrupted connection within the circuit.	Check electrical continuity and identify the defective part. If the repair does not fall within the authorised ones (see Ch. 8), contact EXE TECHNOLOGY personnel.
4. The hoist moves only up and not down	a. Open control circuit. b. Down reversing starter coil winding open, interrupted or short-circuited. c. Speed selection relay coil winding open, interrupted or short-circuited. d. Down limit switch failure. e. Loose or interrupted connection within the circuit.	Check electrical continuity and identify the defective part. If the repair does not fall within the authorised ones (see Ch. 8), contact EXE TECHNOLOGY personnel.
	a. The brake slips. b. Excessive load.	Check brake adjustment. If the repair does not fall within the authorised ones (see Ch. 8), contact EXE TECHNOLOGY personnel. Reduce the load according to the limits indicated on the hoist identification plate.
5. The hoist does not stop immediately	a. The brake slips. b. Excessive load.	Check brake adjustment. If the repair does not fall within the authorised ones (see Ch. 8), contact EXE TECHNOLOGY personnel. Reduce the load according to the limits indicated on the hoist identification plate.

PROBLEM	Possible CAUSE	CHECKS and SOLUTIONS
6. The hoist moves at a very low speed	a. Excessive load.	Reduce the load according to the limits indicated on the hoist identification plate.
	b. Phase failure or unbalanced current in phases.	Check electrical continuity and identify the defective part. If the repair does not fall within the authorised ones (see Ch. 8), contact EXE TECHNOLOGY personnel.
7. The motor overheats.	c. The brake has not been adjusted correctly.	Check brake adjustment. If the repair does not fall within the authorised ones (see Ch. 8), contact EXE TECHNOLOGY personnel.
	a. Excessive load.	Reduce the load according to the limits indicated on the hoist identification plate.
	b. Frequent starts and stops.	Comply with the conditions of use described in the FEM class (section 4.1)
	c. Phase failure or unbalanced current in phases.	Check electrical continuity and identify the defective part. If the repair does not fall within the authorised ones (see Ch. 8), contact EXE TECHNOLOGY personnel.
8. The hoist does not stop at the limit switch (in one or both directions).	d. Extreme outside temperature.	Use hoist at a temperature range -10°C / + 40°C
	a. Limit switches do not open the circuits because they are glued.	Check mechanical operation, connections and limit switch adjustment. If the repair does not fall within the authorised ones (see Ch. 8), contact EXE TECHNOLOGY personnel.
9. The hoist stops at different points	b. Limit switches are not adjusted properly.	
	a. Limit switches keep slipping after adjusting.	
	b. Limit switch malfunction.	

10 DISPOSAL

At the end of its life, dispose of the EXE RISE electric chain hoist by separating the various parts so that they are properly disposed of.

Metal parts must be separated by type of metal and/or alloy and sent to the relevant recycling services.

Plastic parts must be separated from any electrical components and sent to the relevant recycling centres.

Oils must be disposed of in accordance with manufacturer instructions.

11 SPAR LIST

11.1 SPARE PARTS MEDIUM FRAME COMPACT

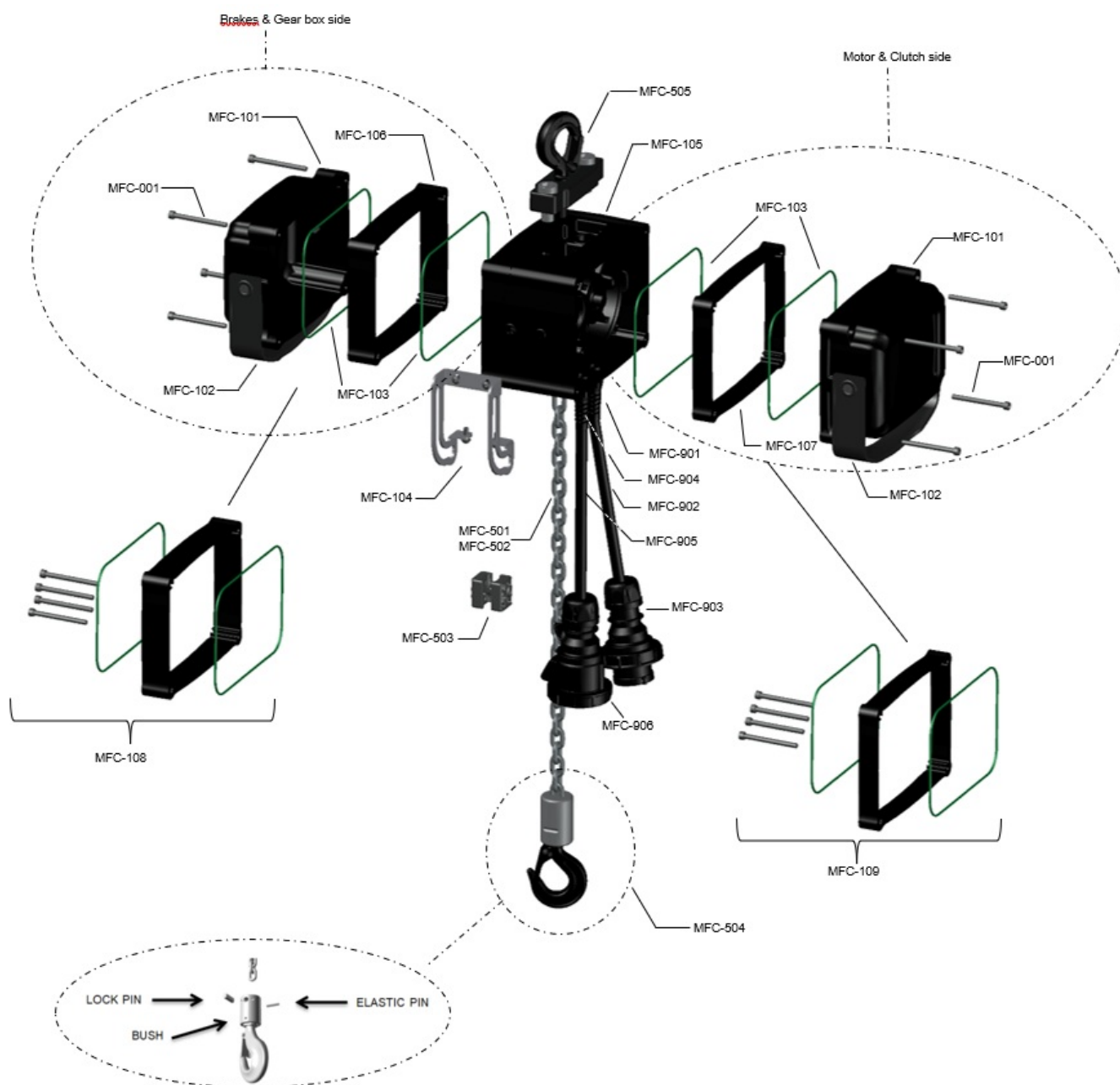


WARNING

The code and description of the spare parts may be subject to changes. Please contact EXE Technology office before proceeding with the official order.

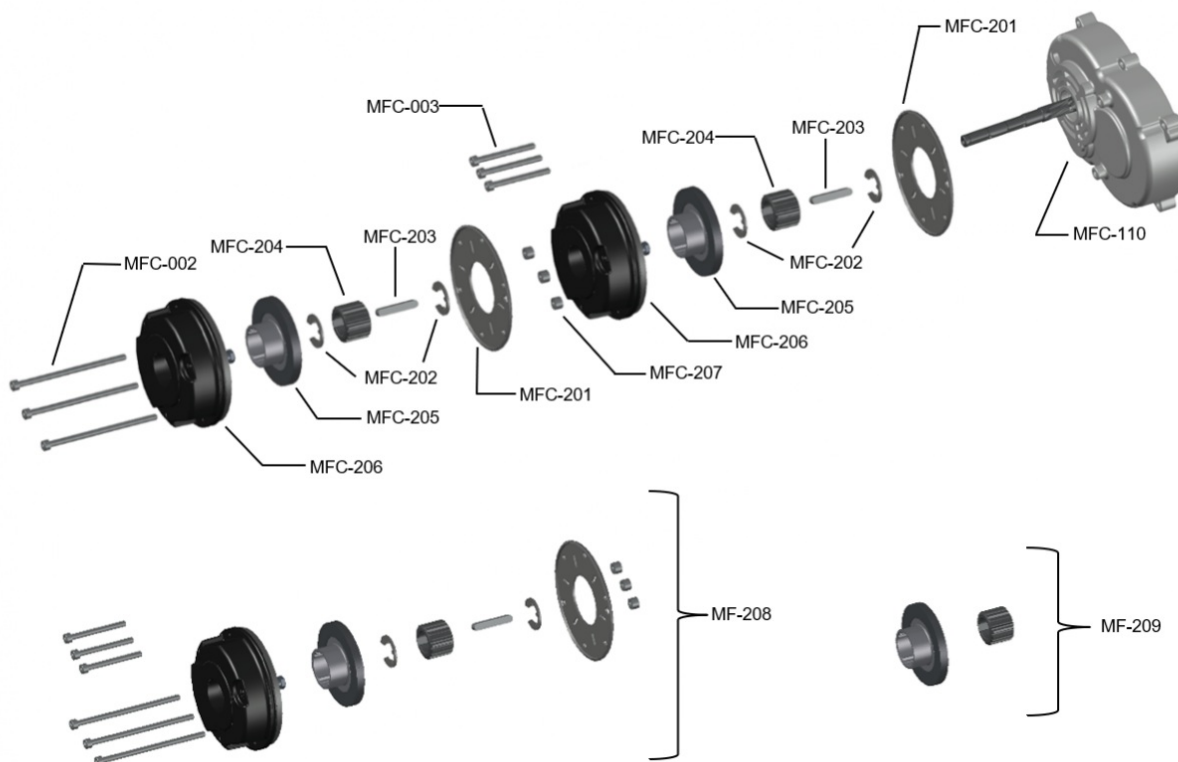
MFC - I level Exploded Drawing

Chassis – Chain – Hook – Cables – Plug/Socket



KEY NUMBER	DESCRIPTION	A4I ITA CODE
MFC-101	Medium Frame Compact Black Cover with Handle 215x160x77mm (without screws)	LT 999
MFC-102	Medium Frame Compact KIT Cover Handle 42x430mm – Ø11.75 with: n.2 Screw TSPEI M6x25 10.9 ZB n.2 Self-locking Nut High M6 n.2 Bush Øe18 - Øi6 - L=11mm	LT XRS-0136
MFC-103	Medium Frame Compact Gasket 214x160mm S=1mm (n.2 x Frame – n.4 x hoist)	LT XRS-0191
MFC-104	Medium Frame Compact Chain Bag Steel Bracket with n.4 Screw UNI 7380 6x16mm TBEI 10.9 ZB	LT XRS-0080
MFC-105	Medium Frame Compact Load Wheel Housing	Not available as spare
MFC-106	Medium Frame Compact Frame Brake Side 215x160x35mm	LT 999
MFC-107	Medium Frame Compact Frame Motor Side 215x160x25mm	LT 999
MFC-001	Screws UNI 5931 6x75mm TCEI 8.8 ZB (n.4 x cover)	LT 999
MFC-108	Medium Frame Compact KIT Frame Brake Side 215x160x35mm (MFC-106) with: n.4 Screw UNI 5931 6x75mm TCEI 8.8 ZB (MFC-001) n.2 Gasket S=1mm (MFC-103)	LT XRS-0189
MFC-109	Medium Frame Compact KIT Frame Motor Side 215x160x25mm (MFC-107) with: n.4 Screw UNI 5931 6x75mm TCEI 8.8 ZB (MFC-001) n.2 Gasket S=1mm (MFC-103)	LT XRS-0190
MFC-901	(for DC/LVC Hoist) Black Spiral Cable Gland PG13.5 for Cable 4G1,5mmq	LT XRS-0038
MFC-902	(for DC/LVC Hoist) Power Cable 4G1.5mmq	LT AXCAVNE4G1.5
MFC-903	(for DC/LVC Hoist) Shark Plug CEE 400VAC 16A 6h 3P+T IP67	LT AXPCE0142-6X
MFC-904	(for DC Hoist) Closed hole with plug Black Stop Plug PG 13.5. Control Cable not provided.	LT AXCEM1052013N
	(for LVC Hoist) Black Spiral Cable Gland PG13.5 for Cable 4G1,5mmq	LT XRS-0038
MFC-905	(for DC Hoist) Control Cable not provided	Not provided
	(for LVC Hoist) Control Cable 4G1.5mmq	
MFC-906	(for DC Hoist) Control Cable not provided	Not provided
	(for LVC Hoist) Shark Socket CEE 230VAC 16A 9h 3P+T IP67	
MFC-501	Galvanized Steel Chain 5x15mm RTS DAT (1m)	LT XRC062-01M
MFC-502	Phosphated Black Steel Chain 5x15mm RTS DAT (1m)	LT XRC062K-01M
MFC-503	Medium Frame Compact Chain End Stop Block 5x15mm	LT XRSFC515
MFC-504	Medium Frame Compact KIT Swivel Chain Hook (Bush M14 + Hex Socket) with: n.1 Chain Hook 1.25t-SF 4:1 (Bush M14 + Hex Socket) – (LT XRS-0183) n.1 Chain Hook Block 1 reeve for chain 5x15mm n.1 Lock Pin n.1 Elastic Pin – (LT XRS-0097)	LT XRSFC515LT 999 (XRSGCW1250G)
MFC-505	Medium Frame Compact KIT Swivel Body Hook (Bush M14 + Hex Socket) with: n.1 Body Hook 1.25t-SF 4:1(Bush M14 + Hex Socket) + plate n.2 Screw UNI 5739 M16x30 TE 8.8 ZB	LT XRSGGW1250D

MFC - Brakes Exploded Drawing



KEY NUMBER	DESCRIPTION	A4I ITA CODE
MFC-110	Gear Box alum. housing + n.6 screws UNI 5931 6x35mm TCEI 8.8 ZB	Not available
MFC-201	Steel brake disk Øe 84mm - Øi 31.9mm – S=1.5mm (n.1 per brake)	LT XRS-0137
MFC-202	KIT n.4 Seeger-Ret. Shaft Locking Washer Set Ø10mm (n.2 x brake)	LT XRS-0159
MFC-203	Metal key 4x4x20mm (n.1 x brake)	Not available separately (MFC-208)
MFC-204	Hub gear (n.1 x brake)	Not available separately (MFC-208 MFC-209)
MFC-205	Rotor brake (n.1 x brake)	Not available separately (MFC-208 MFC-209)
MFC-206	KIT Stator brake L06 103VDC (n.1 x brake)	Not available separately (MFC-208)
MFC-207	(Only double brake) Spacers (n.3 x pair of brake)	Not available separately (MFC-208)
MFC-002	(Only double brake) n.3 Screws UNI 5931 4x80mm TCEI 8.8 ZB (n.1 kit x pair of brake)	LT XRS-0153
MFC-003	(Only single brake) n.3 Screws UNI 5931 4x40mm TCEI 8.8 ZB (n.1 kit x brake)	LT 999
MFC-208	KIT 1st or 2nd brake MFC-201 + n.2 MFC-202 + MFC-203 + MFC-204 + MFC-205+ MFC-206 + n.3 MFC-207 + n.3 TCEI-M4x80 + n.3 TCEI-M4x40	LT XRKB06
MFC-209	KIT Rotor brake + Hub Gear MFC-204 + MFC-205	LT XRS-0091

MFC - Gear Box Exploded Drawing

WARNING
For more information contact EXE Technology Office

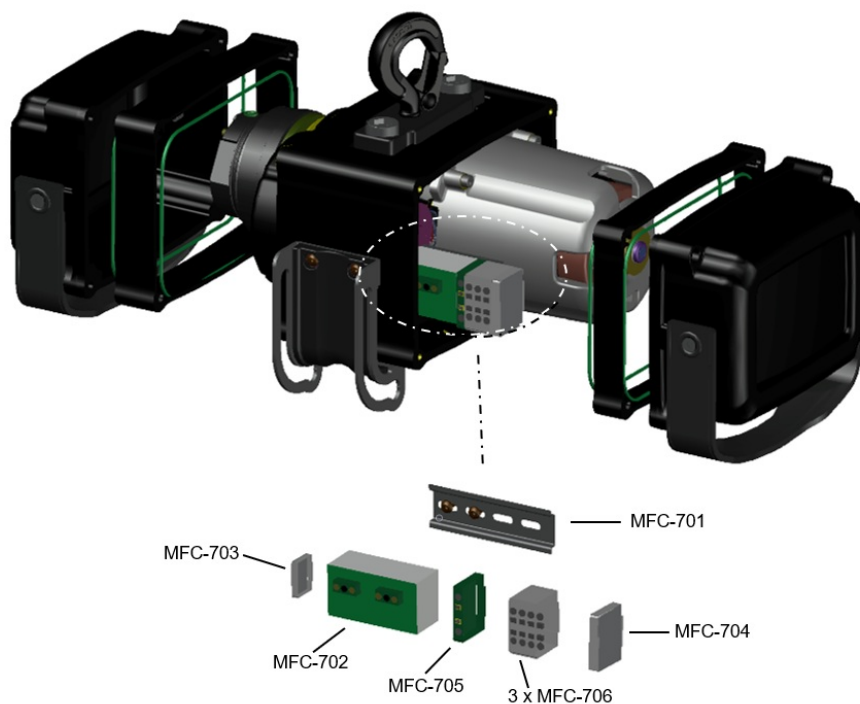
MFC - Motor Side Exploded Drawing

WARNING
For more information contact EXE Technology Office

MFC - Load Wheel & Chain Guide Exploded Drawing

WARNING
For more information contact EXE Technology Office

MFC - Electrical components Exploded Drawing: Direct Control



KEY NUMBER	DESCRIPTION	A4I ITA CODE
MFC-701	Omega Support with screws	LT XRS-0174
MFC-702	Rectifier & Circuit Breaker 120Vac/105Vdc (for Brake 105Vdc)	LT XRS-0008
MFC-703	Terminal block of screw terminal and omega support	LT AXWEI792034
MFC-704	End plate of screw terminal	LT AXWEI170475
MFC-705	Yellow-green PE screw terminal	LT AXWEI171281
MFC-706	n.1 Single terminal screw	LT AXWEI171275

MFC - Electrical components Exploded Drawing: Low Voltage Control

WARNING
For more information contact EXE Technology Office

11.2 SPAR LIST MEDIUM FRAME

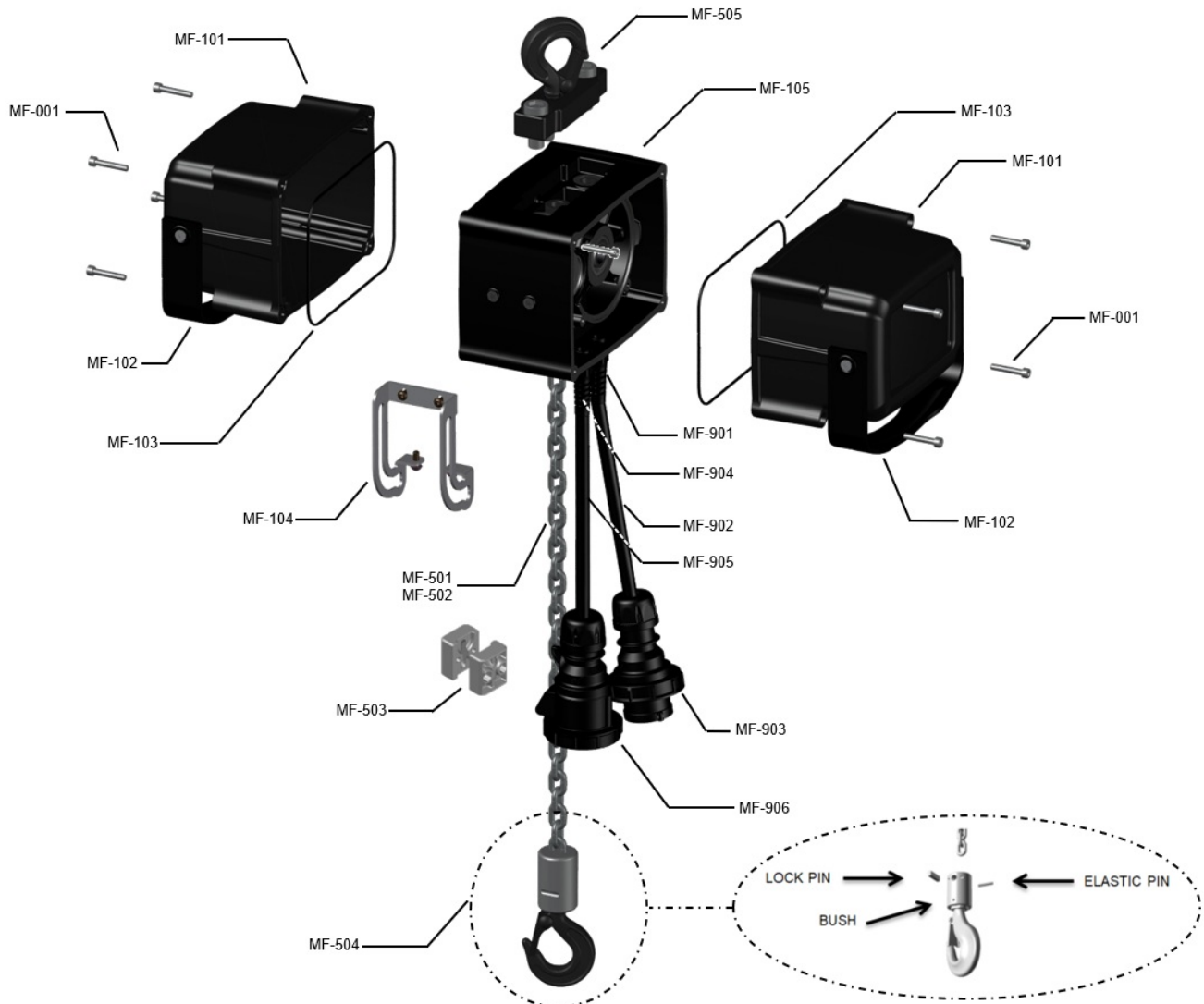


WARNING

The code and description of the spare parts may be subject to changes. Please contact EXE Technology office before proceeding with the official order.

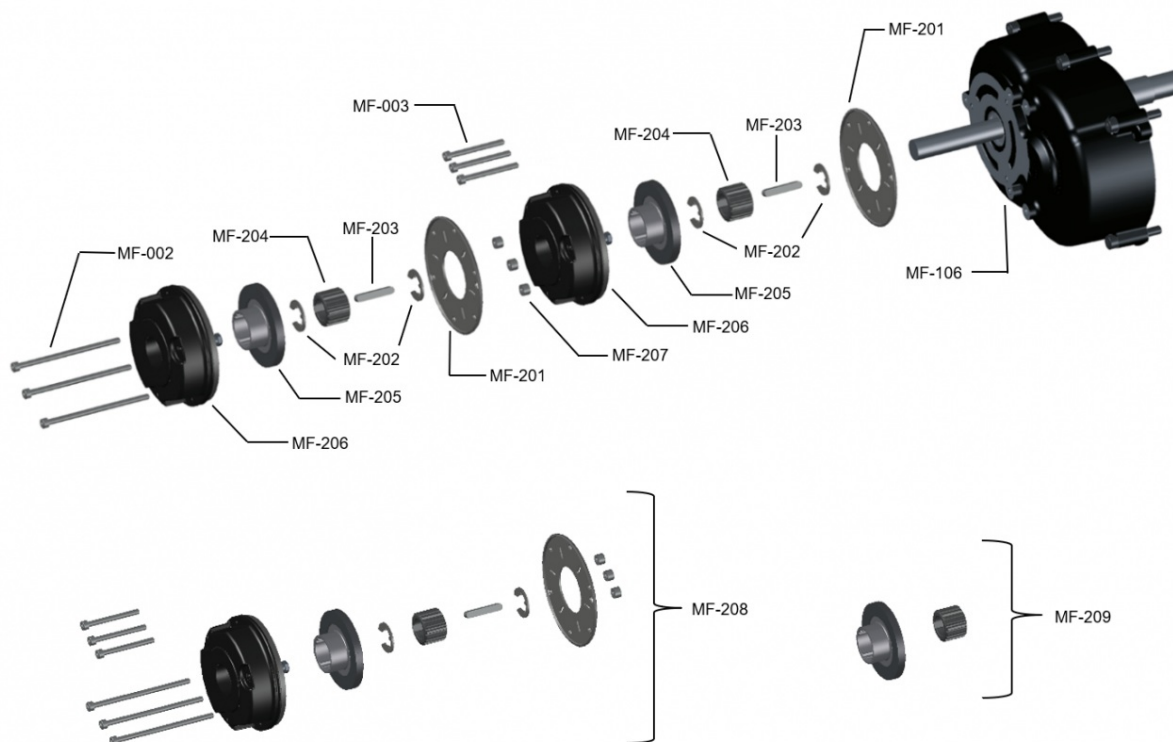
MF - I level Exploded Drawing

Chassis – Chain – Hook – Cables – Plug/Socket



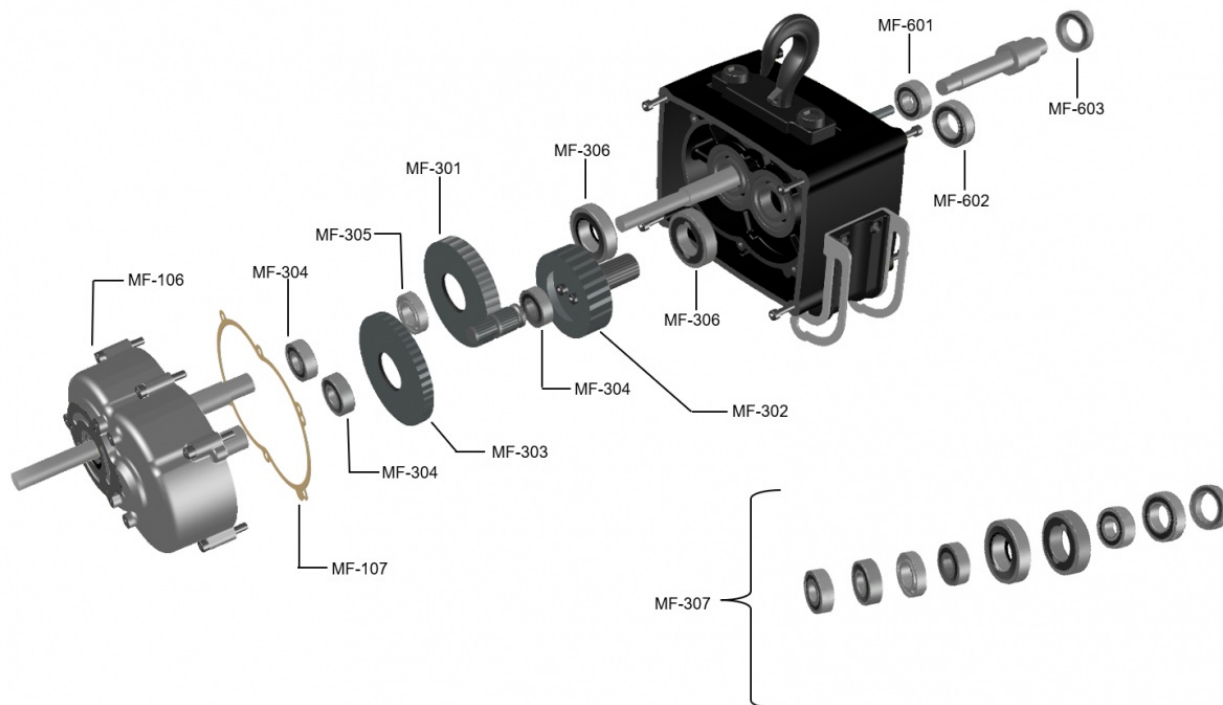
KEY NUMBER	DESCRIPTION	A4I ITA CODE / NOTE
MF-101	Medium Frame Black Cover with Handle 215x160x139mm (without screws)	LT XRS-0079
MF-102	Medium Frame KIT Cover Handle 42x430mm – Ø11.75 with: n.2 Screw TSPEI M6x25 10.9 ZB n.2 Self-locking Nut High M6 n.2 Bush Øe18 - Øi6 - L=11mm	LT XRS-0136
MF-103	Medium Frame Cover Gasket Ø3mm – L=650mm (n.1 x Cover)	LT XRS-0138
MF-104	Medium Frame Chain Bag Steel Bracket with: n.4 Screw UNI 7380 6x16mm TBEI 10.9 ZB	LT XRS-0080
MF-105	Medium Frame Load Wheel Housing	Not available as spare
MF-001	Screws UNI 5931 6x40mm TCEI 8.8 ZB (n.4 x cover)	3.0740
MF-901	(for DC/LVC Hoist) Black Spiral Cable Gland PG13.5 for Cable 4G1,5mmq	LT XRS-0038
MF-902	(for DC/LVC Hoist) Power Cable 4G1.5mmq	LT AXCAVNE4G1.5
MF-903	(for DC/LVC Hoist) Shark Plug CEE 400VAC 16A 6h 3P+T IP67	LT AXPCPE0142-6X
MF-904	(for DC Hoist) Closed hole with plug Black Stop Plug PG 13.5. Control Cable not provided.	LT AXCEM1052013N
	(for LVC Hoist) Black Spiral Cable Gland PG13.5 for Cable 4G1,5mmq	LT XRS-0038
MF-905	(for DC Hoist) Control Cable not provided	Not provided
	(for LVC Hoist) Control Cable 4G1.5mmq	LT AXCAVNE4G1.5
MF-906	(for DC Hoist) Control Cable not provided	Not provided
	(for LVC Hoist) Shark Socket CEE 230VAC 16A 9h 3P+T IP67	LT AXPCPE2142-9X
MF-501	Galvanized Steel Chain 6x18mm RTS DAT (1m)	LT XRC0618-01M
MF-502	Phosphated Black Steel Chain 6x18mm RTS DAT (1m)	LT XRC0618K-01M
MF-503	Medium Frame Chain End Stop Block 6x18mm	LT XRSFC618
MF-504	Medium Frame KIT Swivel Chain Hook (Bush M14 + Hex Socket) with: n.1 Chain Hook 1.25t-SF 4:1 (Bush M14 + Hex Socket) – (LT XRS-0183) n.1 Chain Hook Block 1 reeve n.1 Lock Pin n.1 Elastic Pin – (LT XRS-0097)	LT XRSGGCW1250E
MF-505	Medium Frame KIT Swivel Body Hook (Bush M14 + Hex Socket) with: n.1 Body Hook 1.25t-SF 4:1(Bush M14 + Hex Socket) + plate n.2 Screw UNI 5739 M16x30 TE 8.8 ZB	LT XRSGGW1250D

MF - Brakes Exploded Drawing



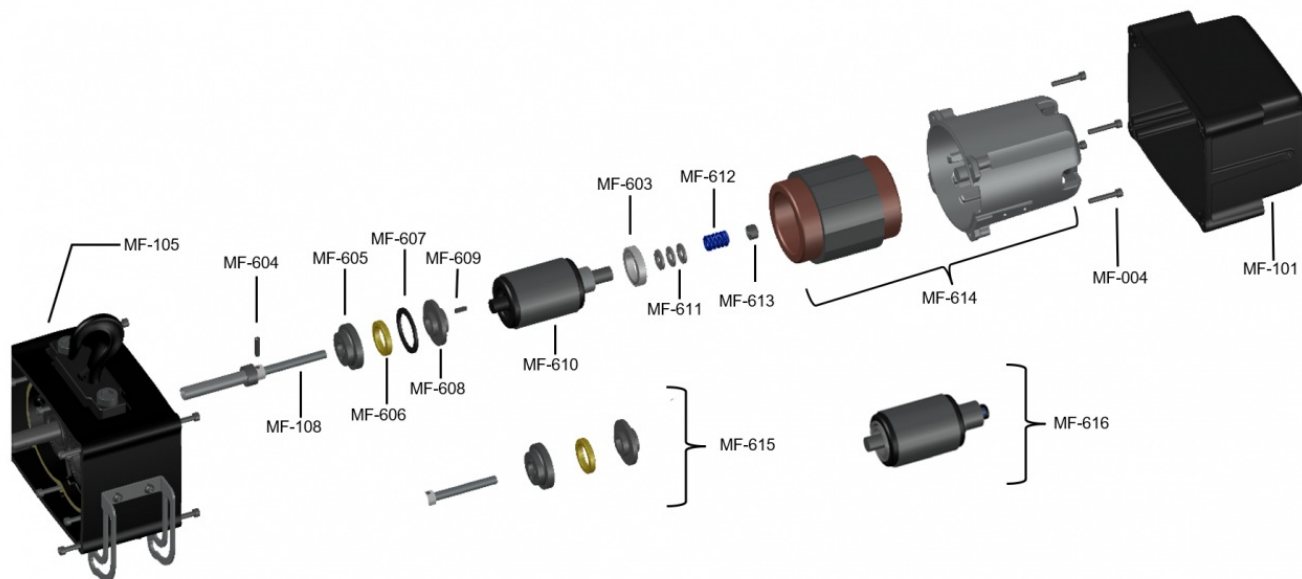
KEY NUMBER	DESCRIPTION	A4I ITA CODE / NOTE
MF-106	Gear Box alum. housing + n.6 screws UNI 5931 6x35mm TCEI 8.8 ZB	Not available as spare
MF-201	Steel brake disk $\varnothing e$ 84mm - $\varnothing i$ 31.9mm – S=1.5mm (n.1 per brake)	LT XRS-0137
MF-202	KIT n.4 Seeger-Ret. Shaft Locking Washer Set \varnothing 10mm (n.2 x brake)	LT XRS-0159
MF-203	Metal key 5x5x25mm (n.1 x brake)	Not available separately (MF-208)
MF-204	Hub gear (n.1 x brake)	Not available separately (MF-208 MF-209)
MF-205	Rotor brake (n.1 x brake)	Not available separately (MF-208 MF-209)
MF-206	KIT Stator brake L06 103VDC (n.1 x brake)	Not available separately (MF-208)
MF-207	(Only double brake) Spacers (n.3 x pair of brake)	Not available separately (MF-208)
MF-002	(Only double brake) n.3 Screws UNI 5931 4x80mm TCEI 8.8 ZB (n.1 kit x pair of brake)	LT XRS-0153
MF-003	(Only single brake) n.3 Screws UNI 5931 4x40mm TCEI 8.8 ZB (n.1 kit x brake)	LT 999
MF-208	KIT 1st or 2nd brake MF-201 + n.2 MF-202 + MF-203 + MF-204 + MF-205+ MF-206 + n.3 MF-207 + n.3 TCEI-M4x80 + n.3 TCEI-M4x40	LT XRKB06
MF-209	KIT Rotor brake + Hub Gear MF-204 + MF-205	LT XRS-0091

MF - Gear Box Exploded Drawing



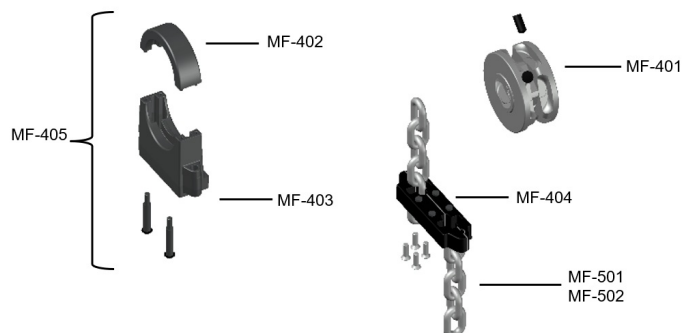
KEY NUMBER	DESCRIPTION	A4I CODE / NOTE
MF-106	Gear Box alum. housing + n.6 screws UNI 5931 6x35mm TCEI 8.8 ZB	Not available as spare
MF-107	Reduction Gear Box Housing Gasket	LT XRS-0120
MF-301	1st Gear stage	Not available as spare
MF-302	2nd Gear stage	Not available as spare
MF-303	3rd Gear stage	Not available as spare
MF-304	Bearing 6202RS	Not available separately (MF-307)
MF-305	Bearing 16004RS	Not available separately (MF-307)
MF-306	Bearing 6006RS	Not available separately (MF-307)
MF-601	Bearing 6203RS	Not available separately (MF-307)
MF-602	Bearing 6005RS	Not available separately (MF-307)
MF-603	Bearing 6906RS	Not available separately (MF-307)
MF-307	KIT Bearing n.3 6202RS (MF-304) + n.1 16004RS (MF-305) + n.2 6006RS (MF-306) + n.1 6203RS (MF-601) + n.1 6005RS (MF-602) + n.1 6906RS (MF-603)	LT XRS-0107

MF - Motor Side Exploded drawing



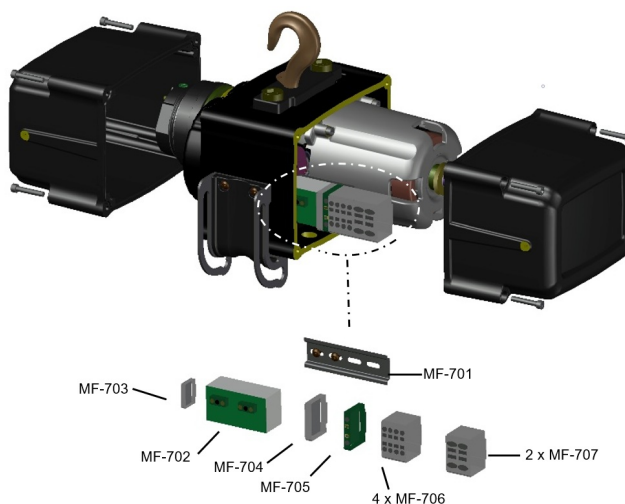
KEY NUMBER	DESCRIPTION	A4I CODE / NOTE
MF-105	Medium Frame Load Wheel Housing	Not available as spare
MF-108	Clutch and Rotor 0.8kW Shaft	Not available separately (MF-615)
MF-603	Bearing 6906RS	Not available separately (MF-307)
MF-604	Metal Pin 6x26mm	LT 999
MF-605	Clutch inferior support	Not available separately (MF-615 MF-616)
MF-606	Brass Clutch Disk	Not available separately (MF-615 MF-616)
MF-607	Ferrite Clutch Disk	LT XRS-0108
MF-608	Clutch superior support	Not available separately (MF-615 MF-616)
MF-609	Flat key 5x3x16mm UNI7510A	LT 999
MF-610	Rotor 230/400VAC-3-50Hz 0.8Kw	LT 999
MF-611	Thrust Bearing for rotor shaft	LT XRS-0169
MF-612	Blue Spring Clutch	LT 999
MF-613	M10 Nut DIN985	LT 999
MF-614	Stator 230/400VAC-3-50Hz 0.8Kw + Aluminium Housing	LT XRS-0095
MF-004	n.4 Screws UNI 5931 6x35mm TCEI 8.8 ZB	3.0800
MF-101	Medium Frame Black Cover with Handle 215x160x139mm (without screws)	LT XRS-0079
MF-615	KIT Clutch with shaft	LT 999
MF-616	KIT Rotor-Clutch with shaft	LT XRS-0118

MF - Load Wheel & Chain Guide Exploded Drawing



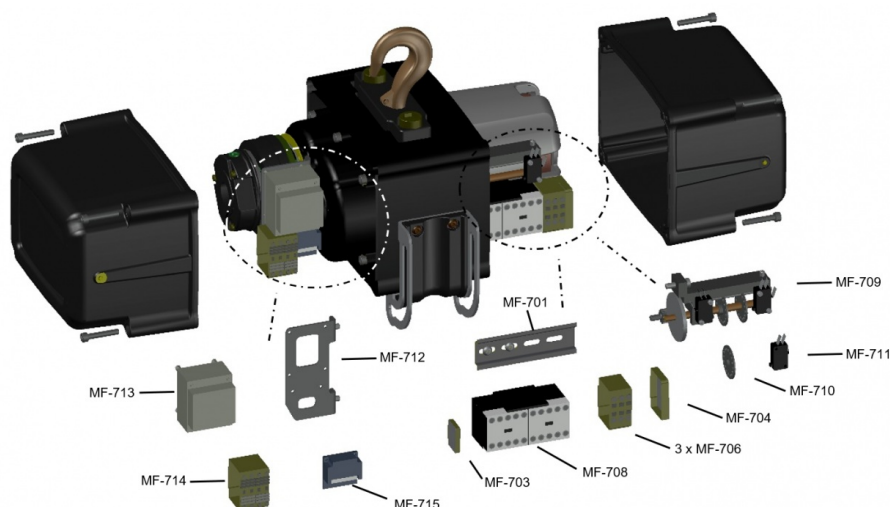
KEY NUMBER	DESCRIPTION	A4I CODE / NOTE
MF-401	Medium Frame Load Wheel 5 pocket for 6x18mm chain + Hex Socket	LT XRS-0126
MF-402	Medium Frame Internal Chain Guide for 6x18mm chain	LT XRS-0134
MF-403	Medium Frame External Chain Guide for 6x18mm chain with n.2 screws UNI 5931 6x35mm TCEI	LT XRS-0158
MF-404	Medium Frame PVC External Chain Guide Plate (2 parts) for 6x18mm chain with n.4 screws 5x25mm TCEI	LT XRS-0074
MF-501	Galvanized Steel Chain 6x18mm RTS DAT (1m)	LT XRC0618-01M
MF-502	Phosphated Black Steel Chain 6x18mm RTS DAT (1m)	LT XRC0618K-01M
MF-405	Medium Frame KIT Chain Guide for 6x18mm chain (Internal + External + screws) = MF-402 + MF-403	LT XRS-0146

MF - Electrical components Exploded Drawing: Direct Control



KEY NUMBER	DESCRIPTION	A4I CODE / NOTE
MF-701	Omega Support with screws	LT XRS-0174
MF-702	Rectifier & Circuit Breaker 120Vac/105Vdc (for Brake 105Vdc)	LT XRS-0008
MF-703	Terminal block of screw terminal and omega support	LT AXWEI792034
MF-704	End plate of screw terminal	LT AXWEI170475
MF-705	Yellow-green PE screw terminal	LT AXWEI171281
MF-706	n.1 Single terminal screw	LT AXWEI171275
MF-707	n.1 Double terminal screw	LT AXWEI171278

MF - Electrical components Exploded drawing: Low Voltage Control



KEY NUMBER	DESCRIPTION	A4I CODE / NOTE
MF-701	Omega Support with screws	LT XRS-0174
MF-703	Terminal block of screw terminal and omega support	LT AXWEI792034
MF-704	End plate of screw terminal	LT AXWEI170475
MF-706	n.1 Single terminal screw	LT AXWEI171275
MF-708	Micro Reversing Contactor 3pin+2cont. 2.2kW 400Vac coil 24Vac 50Hz	LT AXBENK05D/2 LT AXBENK0W-VB
MF-709	Medium Frame 2p Limit Switch RWM (30m) with extended shaft for Encoder Lika CK41	LT XRS-0186
	Medium Frame 4p Limit Switch RWM (30m) with extended shaft for Encoder Lika CK41	LT XRS-0115
MF-710	n.1 Wheel for Limit Switch RWM	LT XRS-0188
MF-711	"Giovenzana" Microswitch (intermediate spring) - Faston connection 0.8x6.3 + n.2 screws UNI 7687 TCBI+ M3x16	LT XRS-0166
MF-712	Aluminium support + n.2 screws	LT 999
MF-713	Transformer Meth Type T4 25VA 400/24vac	LT XRS-0066
MF-714	Fuse holder	LT 999
MF-715	Rectifier PMESF 400S	LT XRS-0016

11.3 SPAR LIST LARGE FRAME 1 REEVE

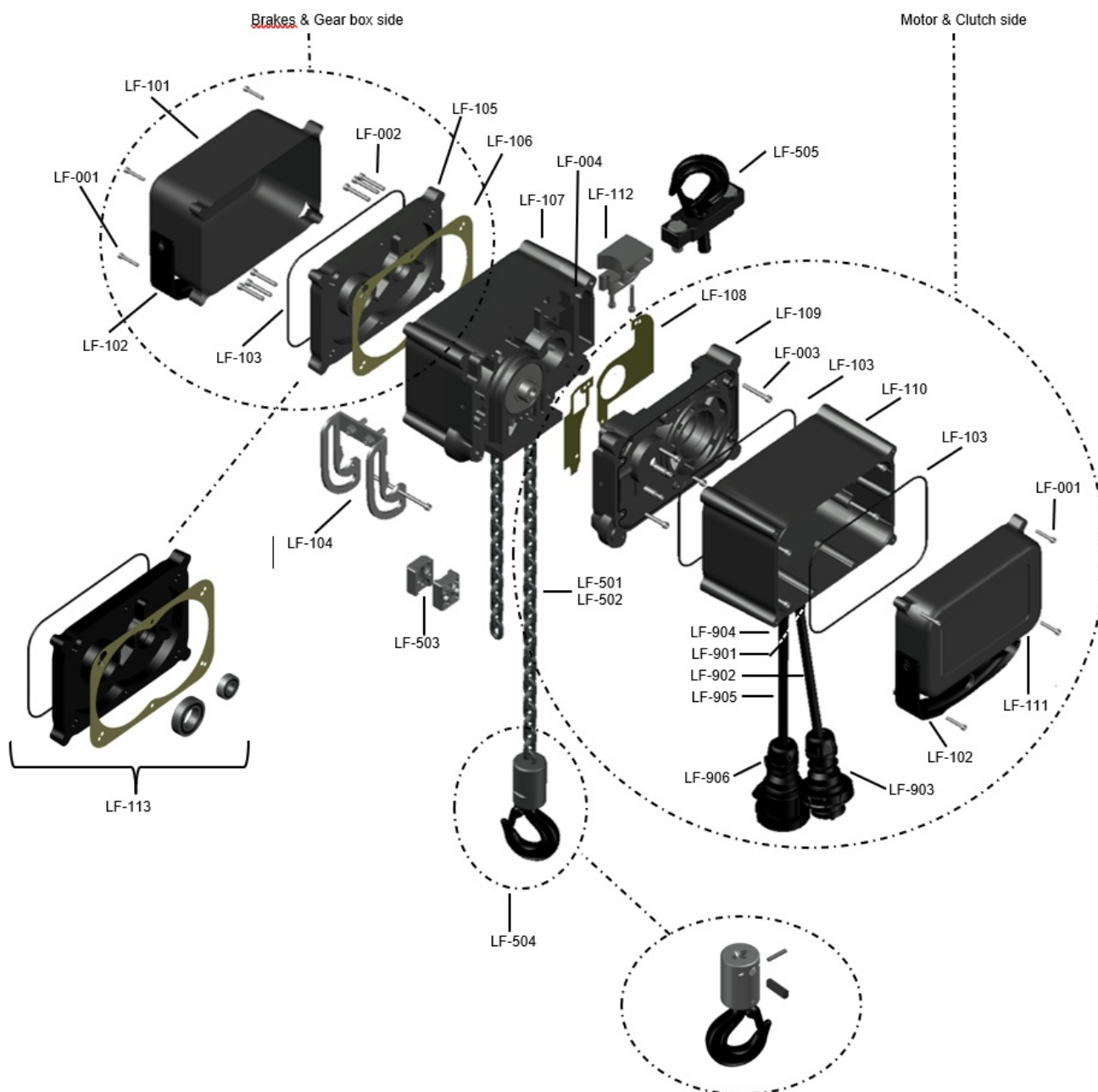


WARNING

The code and description of the spare parts may be subject to changes. Please contact EXE Technology office before proceeding with the official order.

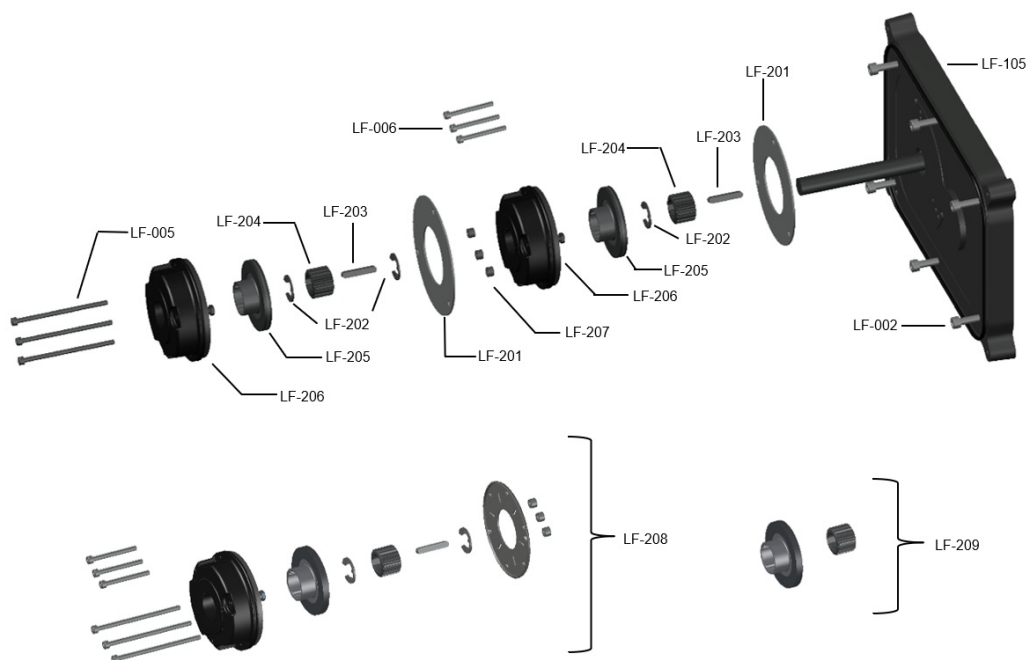
LF - I level Exploded drawing

Chassis – Chain – Hook – Cables – Plug/Socket



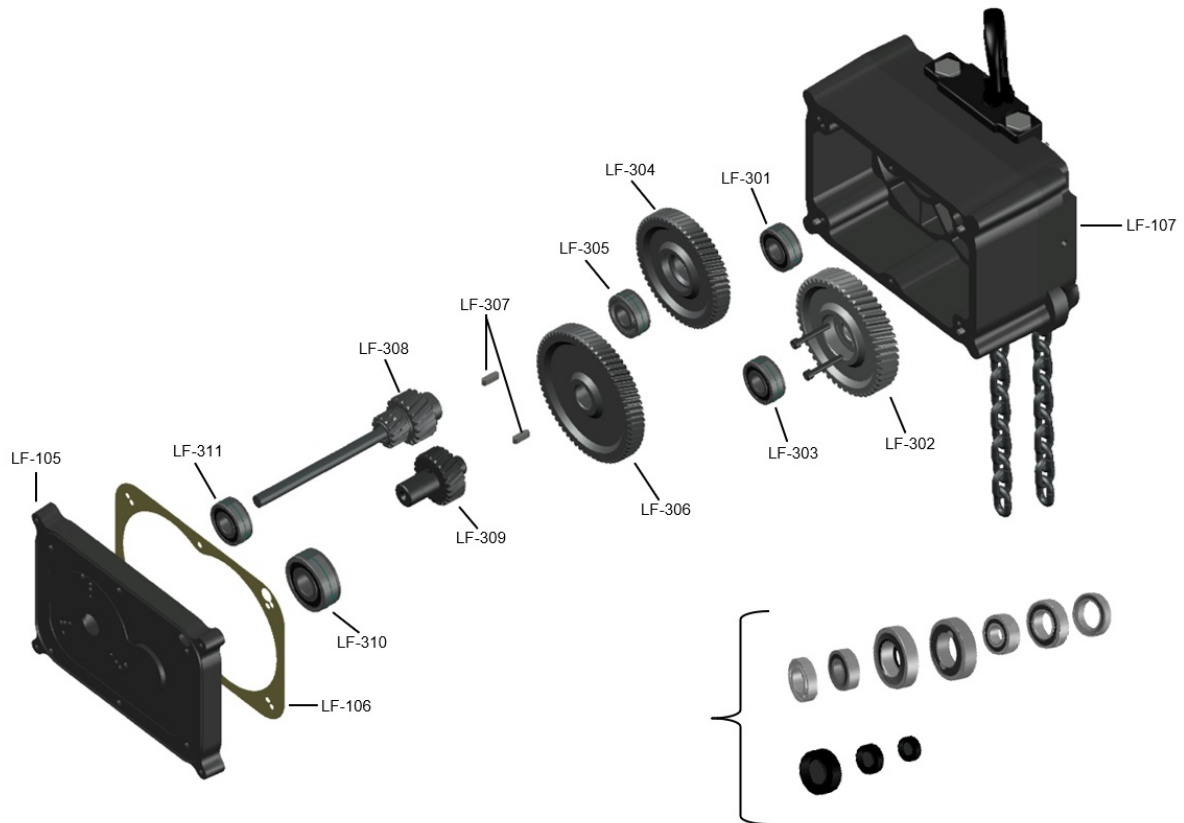
KEY NUMBER	DESCRIPTION	A4I ITA CODE
LF-101	Large Frame High Black Cover with Handle 265x178x110mm (no screws)	LT XRS-0081
LF-001	Screws UNI 5931 5x30mm TCEI 8.8 ZB (n.4 x cover)	LT 999
LF-102	LF-102 Large Frame KIT Cover Handle 42x475mm – Ø11.75 with: n.2 Screw TSPEI M6x25 10.9 ZB n.2 Self-locking Nut High M6 n.2 Bush Øe18 - Øi6 - L=11mm	LT XRS-0058
LF-103	Large Frame Tubular Gasket Ø2.5mm – L=750mm (n.1 x Cover + n.1 x Motor Housing)	LT XRS-0078
LF-104	Large Frame Chain Bag Steel Bracket with n.2 Screw 5931 8x30mm TCEI 8.8 ZB n.2 Washers M8 n.1 Screw 5931 6x100mm TCEI 8.8 ZB n.1 M6 Selflocking Nut	LT XRS-0005
LF-105	Large Frame Brake Frame	Not available separ. (LF-113)
LF-002	Screws UNI 5931 6X40mm TCEI 8.8 ZB (n.4 x frame)	3.0740
LF-106	Large Frame Gearbox Housing Gasket	LT XRS-0075
LF-107	Large Frame Gearbox Housing	LT XRS-0140
LF-004	Metal Pin 6x16mm (4 per Gearbox Housing – 2 per side)	LT 999
LF-108	Large Frame Loadwheel Housing Gasket	LT XRS-0077
LF-109	Large Frame Loadwheel-Electric Motor Frame	LT XRS-0141
LF-003	Screws UNI 5931 6X30mm TCEI 8.8 ZB	3.7790
	Screws UNI 5931 6X35mm TCEI 8.8 ZB	3.0800
	Screws UNI 5931 6X45mm TCEI 8.8 ZB (n.2 x frame)	3.7784
LF-110	Large Frame Motor Housing with: n.1 PG16 and M16x1.5 cap + n.4 Screws 5931 6X75mm TCEI 8.8 ZB	LT XRS-0067
LF-111	Large Frame Low Black Cover with Handle 265x178x59mm (no screws)	LT XRS-0025
LF-112	Large Frame Aluminium Turnbuckle with n.2 screws	LT XRS-0069
LF-113	Large Frame KIT Brake Frame with: n.1 brake frame + n.2 bearing 6005 / 6205 n.1 tubular gasket (LT XRS-0078) n.1 loadwheel housing gasket (LT XRS-0075)	LT XRS-0110
LF-901	(for DC/LVC Hoist) Black Spiral Cable Gland PG16 for Cable 4G2,5mmq	LT XRS-0057
LF-902	(for DC/LVC Hoist) Power Cable 4G2.5mmq	LT AXCAVNE4G2.5
LF-903	(for DC/LVC Hoist) Shark Plug CEE 400VAC 16A 6h 3P+T IP67	LT AXPCE0142-6X
LF-904	(for DC Hoist) Closed hole with plug Black Stop Plug PG16. Control Cable not provided.	LT AXCEM1052016N
	(for LVC Hoist) Black Spiral Cable Gland PG16 for Cable 4G2,5mmq	LT XRS-0057
LF-905	(for DC Hoist) Control Cable not provided	Not provided
	(for LVC Hoist) Control Cable 4G2.5mmq	LT AXCAVNE4G2.5
LF-906	(for DC Hoist) Control Cable not provided	Not provided
	(for LVC Hoist) Shark Socket CEE 230VAC 16A 9h 3P+T IP67	LT AXPCE2142-9X
LF-501	Galvanized Steel Chain 8x24mm RTS DAT (1m)	LT XRC0824-01M
LF-502	Phosphated Black Steel Chain 8x24mm RTS DAT (1m)	LT XRC0824K-01M
LF-503	Large Frame Chain End Stop Block 8x24mm	LT XRSFC824
LF-504	Large Frame KIT Swivel Chain Hook (Bush M20 + Hex Socket) with: n.1 Chain Hook 2.5t-SF 4:1 (Bush M20 + Hex Socket) – (LT XRS-0195) n.1 Chain Hook Block 1 reeve for chain 8x24mm n.1 Lock Pin + n.1 Elastic Pin – (LT XRS-0097)	LT XRSGGCW2500E
LF-505	Medium Frame KIT Swivel Body Hook (Bush M20 + Hex Socket) with: n.1 Body Hook 2.5t-SF 4:1(Bush M20 + Hex Socket) + plate n.2 Screw UNI 5739 M16x35 TE 8.8 ZB	LT XRSGGW2500B

LF - Brakes Exploded drawing



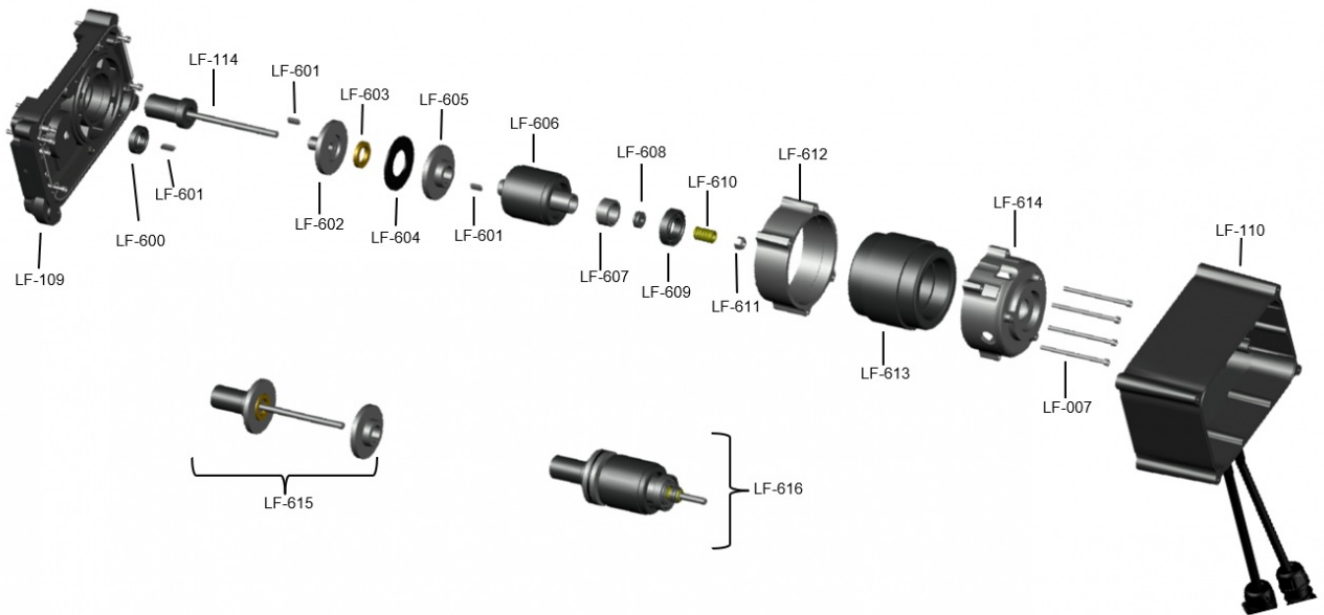
KEY NUMBER	DESCRIPTION	A4I ITA CODE
LF-002	Screws UNI 5931 6X40mm TCEI 8.8 ZB (n.4 x frame)	3.0740
LF-105	Large Frame Brake Frame	Not available separately (LF-113)
LF-201	Steel brake disk $\text{Øe } 100\text{mm} - \text{Øi } 50\text{mm} - \text{S}=1.5\text{mm}$ (n.1 per brake)	LT XRS-0128
LF-202	KIT n.4 Seeger-Ret. Shaft Locking Washer Set $\text{Ø}10\text{mm}$ (n.2 x 2nd brake – n.1 x 1st brake)	LT XRS-0160
LF-203	Metal key 6x28mm (n.1 x brake)	Not available separately (LF-208)
LF-204	Hub gear (n.1 x brake)	Not available separately (LF-208 LF-209)
LF-205	Rotor brake (n.1 x brake)	Not available separately (LF-208 LF-209)
LF-206	KIT Stator brake L08 103VDC (n.1 x brake)	Not available separately (LF-208)
LF-207	(Only double brake) Spacers (n.3 x pair of brake)	Not available separately (LF-208)
LF-005	(Only double brake) n.3 Screws UNI 5931 5x90mm TCEI 8.8 ZB (n.1 kit x pair of brake)	LT XRS-0154
LF-006	(Only single brake) n.3 Screws UNI 5931 5x40mm TCEI 8.8 ZB (n.1 kit x brake)	
LF-208	KIT 1st or 2nd brake LF-201 + n.2 LF-202 + LF-203 + LF-204 + LF-205+ LF-206 + n.3 LF-207 + n.3 TCEI-M5x90 + n.3 TCEI-M5x40	LT XRKB08
LF-209	KIT Rotor brake + Hub Gear LF-204 + LF-205	LT XRS-0124

LF - Gear Box Exploded Drawing



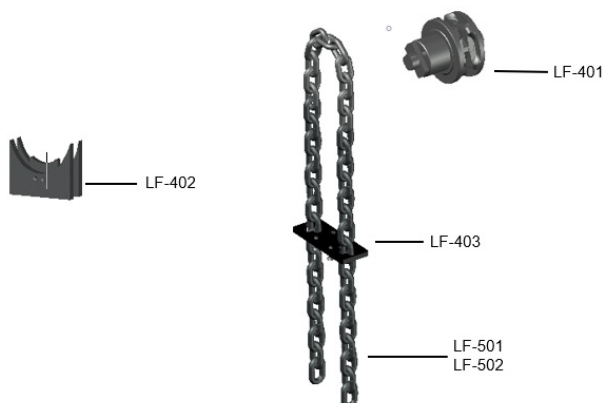
KEY NUMBER	DESCRIPTION	A4I ITA CODE
LF-107	Large Frame Gearbox Housing	LT XRS-0140
LF-301	Bearing 6204RS	Not available separately (LF-312)
LF-302	1st Gear stage + 2 screws	Not available as spare
LF-303	Bearing 6006RS	Not available separately (LF-312)
LF-304	2nd Gear stage	Not available as spare
LF-305	Bearing 16004RS	Not available separately (LF-312)
LF-306	3rd Gear stage	Not available as spare
LF-307	Metal Pin 6x16mm	Not available as spare
LF-308	Primary sprocket M2 Z14 + Final sprocket M2.5 Z17 + shaft	Not available as spare
LF-309	Secondary sprocket M2 Z24	Not available as spare
LF-310	Bearing 6005RS	Not available separately (LF-312)
LF-311	Bearing 6204RS	Not available separately (LF-312)
LF-106	Large Frame Gearbox Housing Gasket	LT XRS-0075
LF-105	Large Frame Brake Frame	Not available separately (LF-113)
LF-312	KIT n.7 bearing + n.3 oil seal Set	LT XRS-0100

LF - Motor Side Exploded Drawing



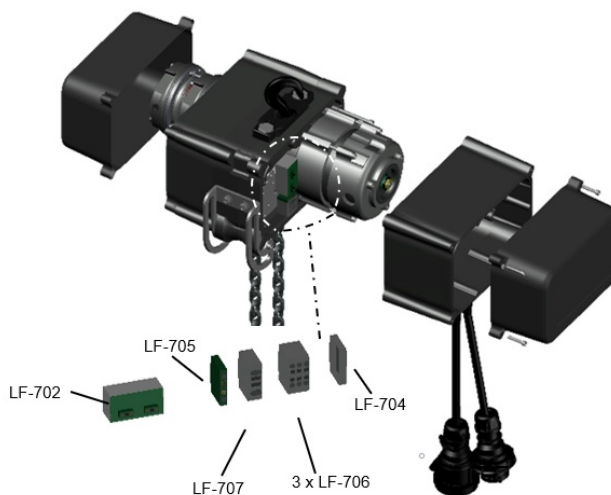
KEY NUMBER	DESCRIPTION	A4I ITA CODE
LF-109	Large Frame Loadwheel-Electric Motor Frame	LT XRS-0141
LF-114	Clutch and Rotor 1.0kW Shaft	Not available separately (LF-616)
LF-600	Bearing	LT 999
LF-601	Flat key 6x6x20mm UNI7510A	LT 999
LF-602	Clutch inferior support	Not available separately (LF-615 LF-616)
LF-603	Brass Clutch Disk	Not available separately (LF-615 LF-616)
LF-604	Ferrite Clutch Disk	LT XRS-0122
LF-605	Clutch superior support	Not available separately (LF-615 LF-616)
LF-606	Rotor 230/400VAC-3-50Hz 1.0kW	LT 999
LF-607	Stell Ring Spacer Øe=40mm - Øi=30mm - H=17mm	LT XRS-0047
LF-608	Bearing 5100 for H60	LT 999
LF-609	Bearing 6006RS	LT 999
LF-610	Yellow Spring Clutch	LT 999
LF-611	M10 Nut DIN985	LT 999
LF-612	Aluminium Ring Motor Frame	LT XRS-0048
LF-613	Stator 230/400VAC-3-50Hz 1.0kW + Aluminium Housing	LT XRS-0046
LF-614	Aluminium Cap Motor Frame	LT XRS-0049
LF-007	n.4 Screws UNI 5931 6x120mm TCEI 8.8 ZB	LT 999
LF-110	Large Frame Motor Housing with: n.1 PG16 and M16x1.5 cap n4 Screws UNI 5931 6X75mm TCEI 8.8 ZB	LT XRS-0067
LF-615	KIT Clutch with shaft	LT XRS-0094
LF-616	KIT Rotor-Clutch with shaft	LT XRS-0054

LF - Load Wheel & Chain Guide Exploded drawing



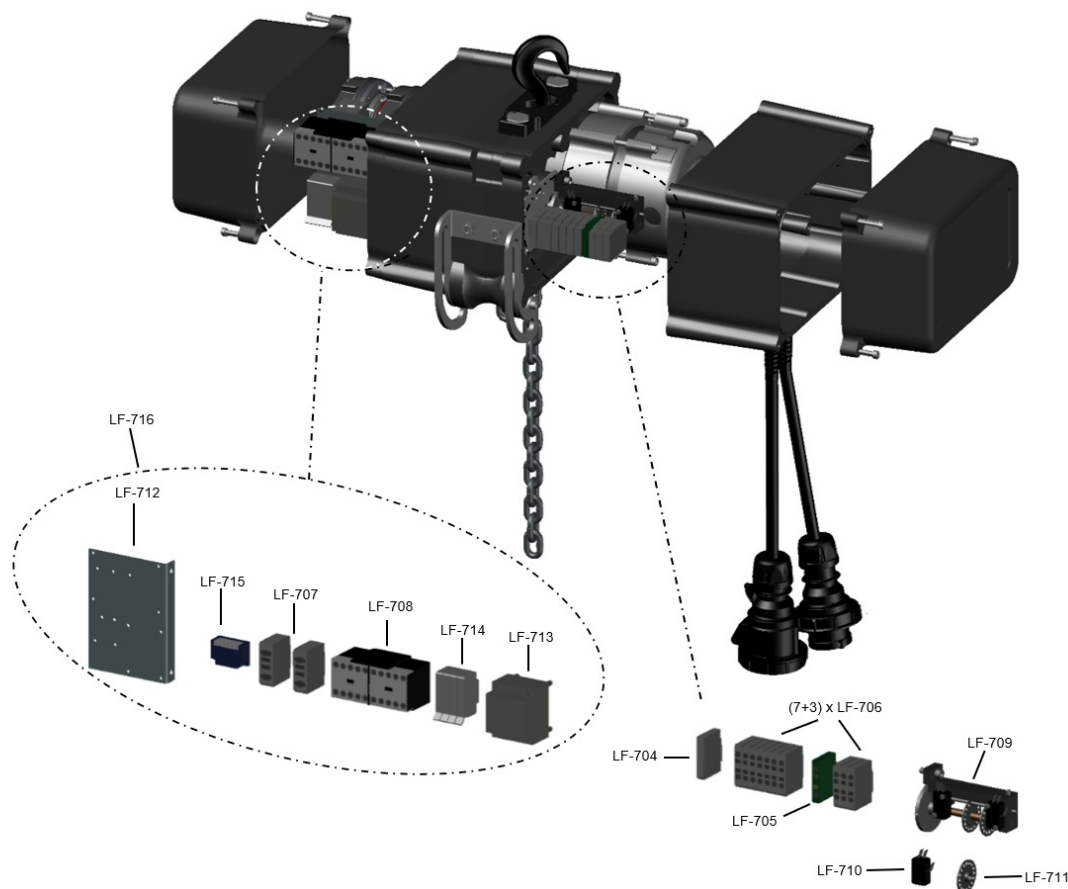
KEY NUMBER	DESCRIPTION	A4I ITA CODE
LF-401	Large Frame Load Wheel 5 pocket for 8x24mm chain + shaft & gear	LT XRS-0125
LF-402	Large Frame KIT Internal Chain Guide for 8x24mm chain (2 pcs) with n.2 cylindrical fixing pins and 1/2 moon inserter	LT XRS-0147
LF-403	Large Frame PVC External Chain Guide Plate for 8x24mm chain with n.4 screws 5x30mm TSPI+ ZB	LT XRS-0061
LF-501	Galvanized Steel Chain 8x24mm RTS DAT (1m)	LT XRC0824-01M
LF-502	Phosphated Black Steel Chain 8x24mm RTS DAT (1m)	LT XRC0824K-01M

LF - Electrical components Exploded drawing: Direct Control



KEY NUMBER	DESCRIPTION	A4I ITA CODE
LF-702	Rectifier & Circuit Breaker 120Vac/105Vdc (for Brake 105Vdc)	LT XRS-0008
LF-704	End plate of screw terminal	LT AXWEI170475
LF-705	Yellow-green PE screw terminal	LT AXWEI171281
LF-706	n.1 Single terminal screw	LT AXWEI171275
LF-707	n.1 Double terminal screw	LT AXWEI171278

LF - Electrical components Exploded drawing: Low Voltage Control



KEY NUMBER	DESCRIPTION	A4I ITA CODE
LF-704	End plate of screw terminal	LT AXWEI170475
LF-705	Yellow-green PE screw terminal	LT AXWEI171281
LF-706	n.1 Single terminal screw	LT AXWEI171275
LF-707	n.1 Double terminal screw	LT AXWEI171278
LF-708	Micro Reversing Contactor 3pin+2cont. 2.2kW 400Vac coil 24Vac 50Hz	LT AXBENK05D/2 (*) LT AXBENK0W-VB
LF-709	Large Frame 2p Limit Switch RWM (30m) with extended shaft for Encoder Lika CK41	LT 999
	Large Frame 4p Limit Switch RWM (30m) with extended shaft for Encoder Lika CK41	LT XRS-0115
LF-710	n.1 Wheel for Limit Switch RWM	LT XRS-0188
LF-711	"Zippy" Microswitch (intermediate spring) - Faston connection 0.8x6.3 + n.2 screws UNI 7687 TCBI+ M3x16 – Standard UP/DOWN	LT XRS-0166
	"Giovenzana" Microswitch (rigid spring) - Faston connection 0.8x6.3 + n.2 screws UNI 7687 TCBI+ M3x14 – Extra UP/DOWN	LT XRS-0112
LF-712	Aluminium support	LT 999
LF-713	Transformer Meth Type T4 25VA 400/24vac	LT XRS-0066
LF-714	Fuse holder	LT 999
LF-715	Rectifier PMESF 400S	LT XRS-0016
LF-716	Large Frame LVC KIT plate assembly	LT XRS-0064

11.4 SPAR LIST LARGE FRAME 2 REEVES

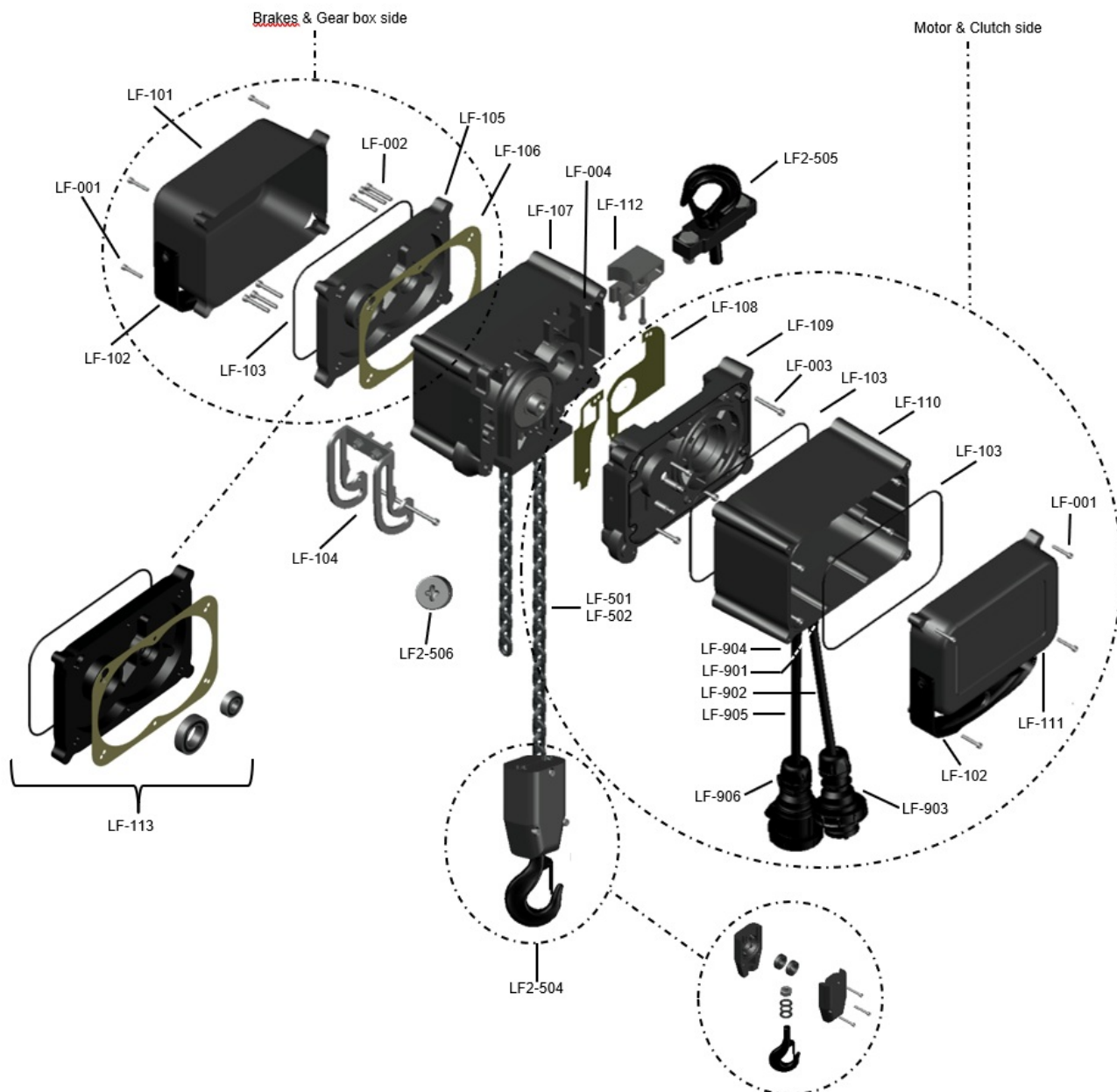


WARNING

The code and description of the spare parts may be subject to changes. Please contact EXE Technology office before proceeding with the official order.

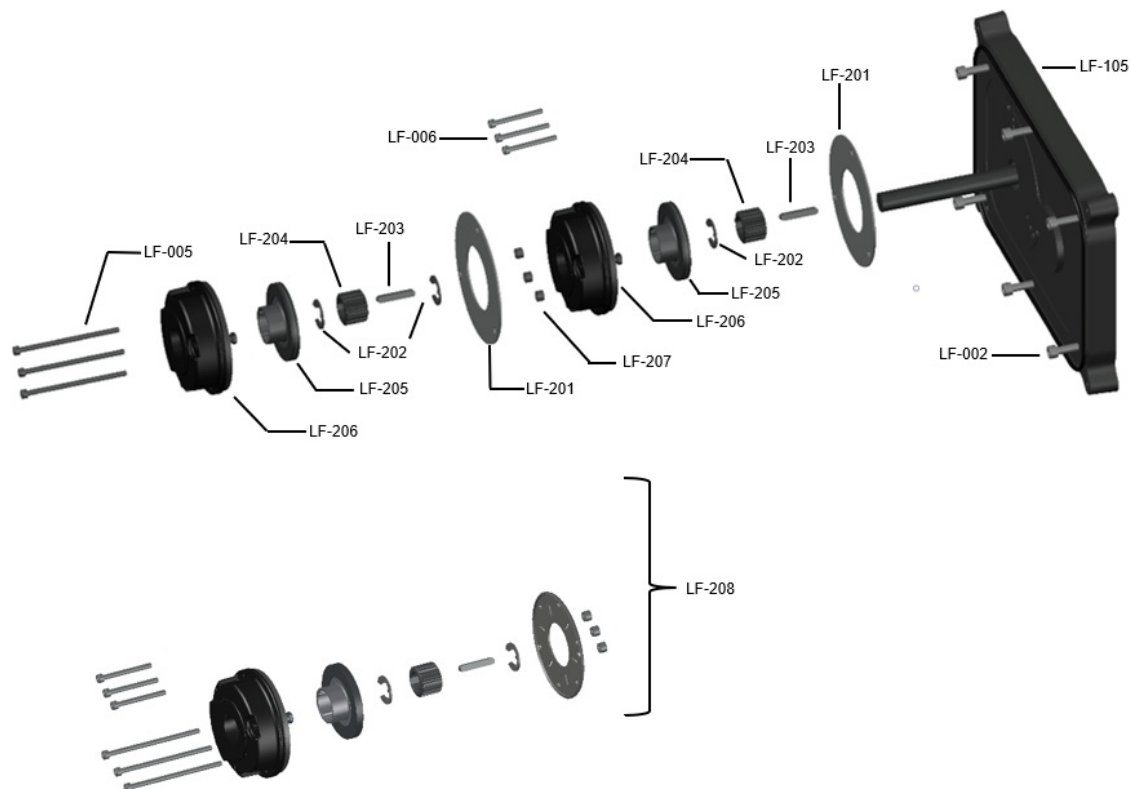
LF2 - I level Exploded drawing

Chassis – Chain – Hook – Cables – Plug/Socket



KEY NUMBER	DESCRIPTION	A4I ITA CODE
LF-101	Large Frame High Black Cover with Handle 265x178x110mm (no screws)	LT XRS-0081
LF-001	Screws UNI 5931 5x30mm TCEI 8.8 ZB (n.4 x cover)	LT 999
LF-102	Large Frame KIT Cover Handle 42x475mm – Ø11.75 with: n.2 Screw TSPEI M6x25 10.9 ZB n.2 Self-locking Nut High M6 n.2 Bush Øe18 - Øi6 - L=11mm	LT XRS-0058
LF-103	Large Frame Tubular Gasket Ø2.5mm – L=750mm (n.1 x Cover + n.1 x Motor Housing)	LT XRS-0078
LF-104	Large Frame Chain Bag Steel Bracket with n.2 Screw 5931 8x30mm TCEI 8.8 ZB n.2 Washers M8 n.1 Screw 5931 6x100mm TCEI 8.8 ZB n.1 M6 Selflocking Nut	LT XRS-0005
LF-105	Large Frame Brake Frame	Not available separately (LF-113)
LF-002	Screws UNI 5931 6X40mm TCEI 8.8 ZB (n.4 x frame)	3.0740
LF-106	Large Frame Gearbox Housing Gasket	LT XRS-0075
LF-107	Large Frame Gearbox Housing	LT XRS-0140
LF-004	Metal Pin 6x16mm (4 per Gearbox Housing – 2 per side)	LT 999
LF-108	Large Frame Loadwheel Housing Gasket	LT XRS-0077
LF-109	Large Frame Loadwheel-Electric Motor Frame	LT XRS-0141
LF-003	Screws UNI 5931 6X30mm TCEI 8.8 ZB	3.7790
	Screws UNI 5931 6X35mm TCEI 8.8 ZB	3.0800
	Screws UNI 5931 6X45mm TCEI 8.8 ZB (n.2 x frame)	3.7784
LF-110	Large Frame Motor Housing with: n.1 PG16 and M16x1.5 cap n4 Screws UNI 5931 6X75mm TCEI 8.8 ZB	LT XRS-0067
LF-111	Large Frame Low Black Cover with Handle 265x178x59mm (no screws)	LT XRS-0025
LF-112	Large Frame Aluminium Turnbuckle with n.2 screws	LT XRS-0069
LF-113	Large Frame KIT Brake Frame with: n.1 brake frame n.1 tubular gasket (LT XRS-0078) n.1 loadwheel housing gasket (LT XRS-0075) n.2 bearing 6005 + 6205	LT XRS-0110
LF-901	(for DC/LVC Hoist) Black Spiral Cable Gland PG16 for Cable 4G2,5mmq	LT XRS-0057
LF-902	(for DC/LVC Hoist) Power Cable 4G2.5mmq	LT AXCAVNE4G2.5
LF-903	(for DC/LVC Hoist) Shark Plug CEE 400VAC 16A 6h 3P+T IP67	LT AXPCE0142-6X
LF-904	(for DC Hoist) Closed hole with plug Black Stop Plug PG16. Control Cable not provided.	LT AXCEM1052016N
	(for LVC Hoist) Black Spiral Cable Gland PG16 for Cable 4G2,5mmq	LT XRS-0057
LF-905	(for DC Hoist) Control Cable not provided	Not provided
	(for LVC Hoist) Control Cable 4G2.5mmq	LT AXCAVNE4G2.5
LF-906	(for DC Hoist) Control Cable not provided	Not provided
	(for LVC Hoist) Shark Socket CEE 230VAC 16A 9h 3P+T IP67	LT AXPCE2142-9X
LF-501	Galvanized Steel Chain 8x24mm RTS DAT (1m)	LT XRC0824-01M
LF-502	Phosphated Black Steel Chain 8x24mm RTS DAT (1m)	LT XRC0824K-01M
LF2-504	Large Frame Double Reeves KIT Swivel Chain Hook (5.4t-SF 4:1)	LT XRSGCW5400A
LF2-505	Large Frame Double Reeves KIT Swivel Body Hook (5.4t-SF 4:1)	LT XRSGGW5400A
LF2-506	Large Frame Dead and Block 8x24mm	LT XRS-0119

LF2 - Brakes Exploded drawing



KEY NUMBER	DESCRIPTION	A4I ITA CODE
LF-002	Screws UNI 5931 6X40mm TCEI 8.8 ZB (n.4 x frame)	3.0740
LF-105	Large Frame Brake Frame	Not available separately (LF-113)
LF-201	Steel brake disk $\text{Øe } 122\text{mm} - \text{Øi } 50\text{mm} - \text{S}=1.5\text{mm}$ (n.1 per brake)	LT XRS-0192
LF-202	KIT n.4 Seeger-Ret. Shaft Locking Washer Set $\text{Ø}10\text{mm}$ (n.2 x 2nd brake – n.1 x 1st brake)	LT XRS-0160
LF-203	Metal key 6x28mm (n.1 x brake)	Not available separately (LF-208)
LF-204	Hub gear (n.1 x brake)	Not available separately (LF-208 LF-209)
LF-205	Rotor brake (n.1 x brake)	Not available separately (LF-208 LF-209)
LF-206	KIT Stator brake L10 103VDC (n.1 x brake)	Not available separately (LF-208)
LF-207	(Only double brake) Spacers (n.3 x pair of brake)	Not available separately (LF-208)
LF-005	(Only double brake) n.3 Screws UNI 5931 5x90mm TCEI 8.8 ZB (n.1 kit x pair of brake)	LT XRS-0154
LF-006	(Only single brake) n.3 Screws UNI 5931 5x40mm TCEI 8.8 ZB (n.1 kit x brake)	
LF-208	KIT 1st or 2nd brake LF-201 + n.2 LF-202 + LF-203 + LF-204 + LF-205+ LF-206 + n.3 LF-207 + n.3 TCEI-M5x90 + n.3 TCEI-M5x40	LT XRKB10

LF2 - Gear Box Exploded Drawing



WARNING

For more information contact EXE Technology Office

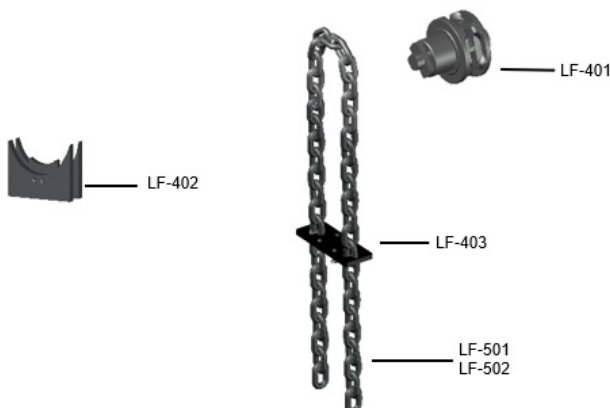
LF2 - Motor Side Exploded Drawing



WARNING

For more information contact EXE Technology Office

LF2 - Load Wheel & Chain Guide Exploded drawing



KEY NUMBER	DESCRIPTION	A4I ITA CODE
LF-401	Large Frame Load Wheel 5 pocket for 8x24mm chain + shaft & gear	LT XRS-0125
LF-402	Large Frame KIT Internal Chain Guide for 8x24mm chain (2 pcs) with n.2 cylindrical fixing pins and 1/2 moon inserter	LT XRS-0147
LF-403	Large Frame PVC External Chain Guide Plate for 8x24mm chain with n.4 screws 5x30mm TSPI+ ZB	LT XRS-0061
LF-501	Galvanized Steel Chain 8x24mm RTS DAT (1m)	LT XRC0824-01M
LF-502	Phosphated Black Steel Chain 8x24mm RTS DAT (1m)	LT XRC0824K-01M

LF2 - Electrical components Exploded Drawing



WARNING

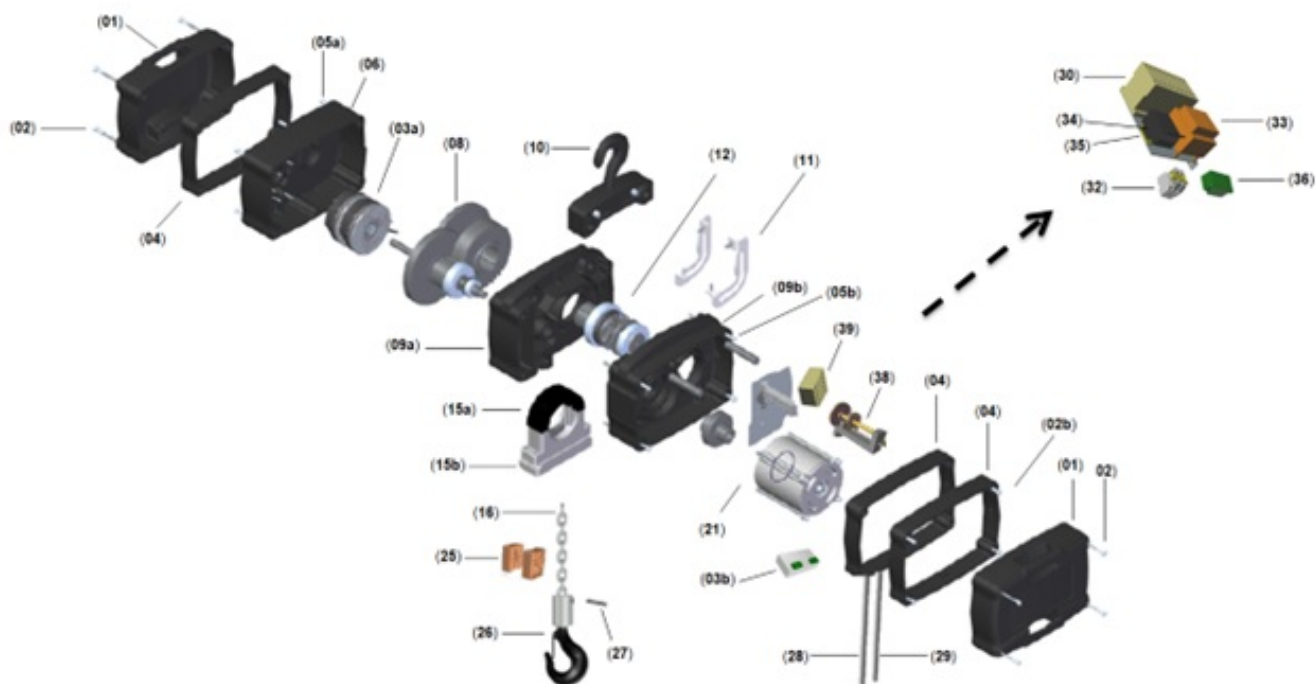
For more information contact EXE Technology Office

11.5 SPAR LIST EXTRA LARGE FRAME



WARNING

The code and description of the spare parts may be subject to changes. Please contact EXE Technology office before proceeding with the official order.

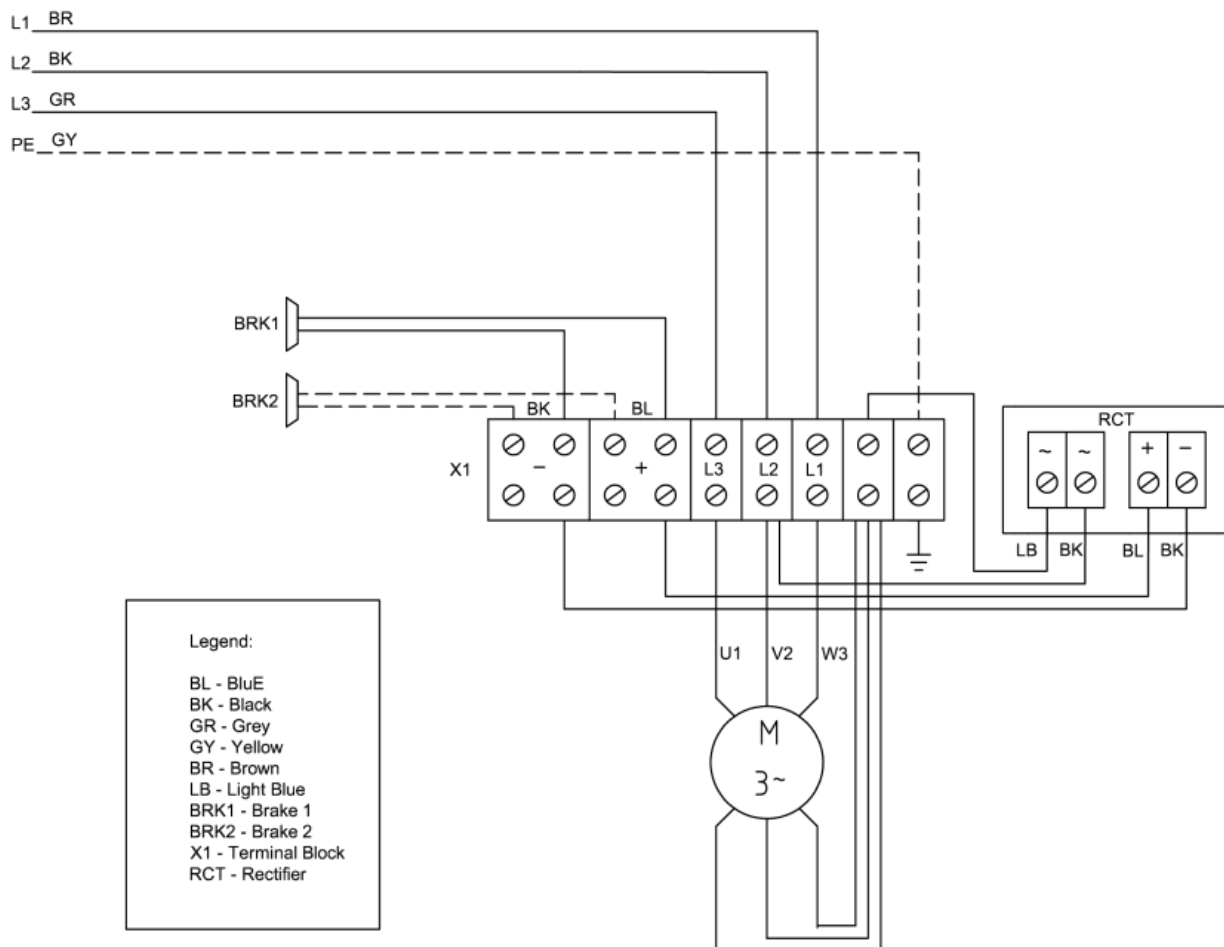


N.	Code LITEC	Product Name	Note
01	999	Cover with handle	Without screws
02	999	Screw UNI 5931	4 parts for Cover
02b	999	Screw UNI 5931 8x80mm	4 parts for Flange
03a	999	Brake unit size 12 (1st or 2nd) 103Vdc	Complete with fixing screws for 1st and 2nd brake
03b	LT XRS-0008	Rectifier and circuit breaker 230V AC / 105V DC	Only for direct control
04	LT XRS-0161	Flange	With 4 screws 02b
05a	999	Screw UNI 5931	
05b	999	Screw UNI 5931	
06	999	Brakes Housing	Without screws
08	999	Extra Large Frame Gearbox KIT	With screws, bearings, pinion and shaft
09a	999	Central Housing side Gearbox	
09b	999	Central Housing side Stator	
10	999	Swivel Body Hook KIT	
11	999	Chain Bag Bracket KIT	
12	999	Chain Bag Bracket KIT	
15a	999	Internal chain guide plate	
15b	999	External chain guide plate	
16	LT XRC11M31-01M	Chain Load	
21	999	KIT Rotor+ Stator + Cluth 2ton	
25	999	Chain block 11.3x31mm	
26	999	KIT chain hook	
27	999	Spirol Pin	
28	LT AXCAVNE4G2.5	Power cable	PG16 hole plug (LT AXCEM1052016N) PG16 spiral cable gland (LT XRS-0057)
38	999	Limit switch 2	
39	999	Electronic board	
Low Voltage Control Only			
29	LT AXCAVNE4G2.5	Control cable	CEE 16A 4h 24VAC – 3PH + G
30	999	Reversing Contactor 3P+T 200/250VAC 16A 9h 1P67	
32	999	Screw Clamp Wieland WKM 4/15	
33	999	Transformer T4 25VA 400/24VAC	
34	999	Primary Fuse	
35	999	Secondary Fuse	
36	999	Rectifier 400-S	

12 WIRING DIAGRAM

12.1 WIRING DIAGRAM DIRECT CONTROL

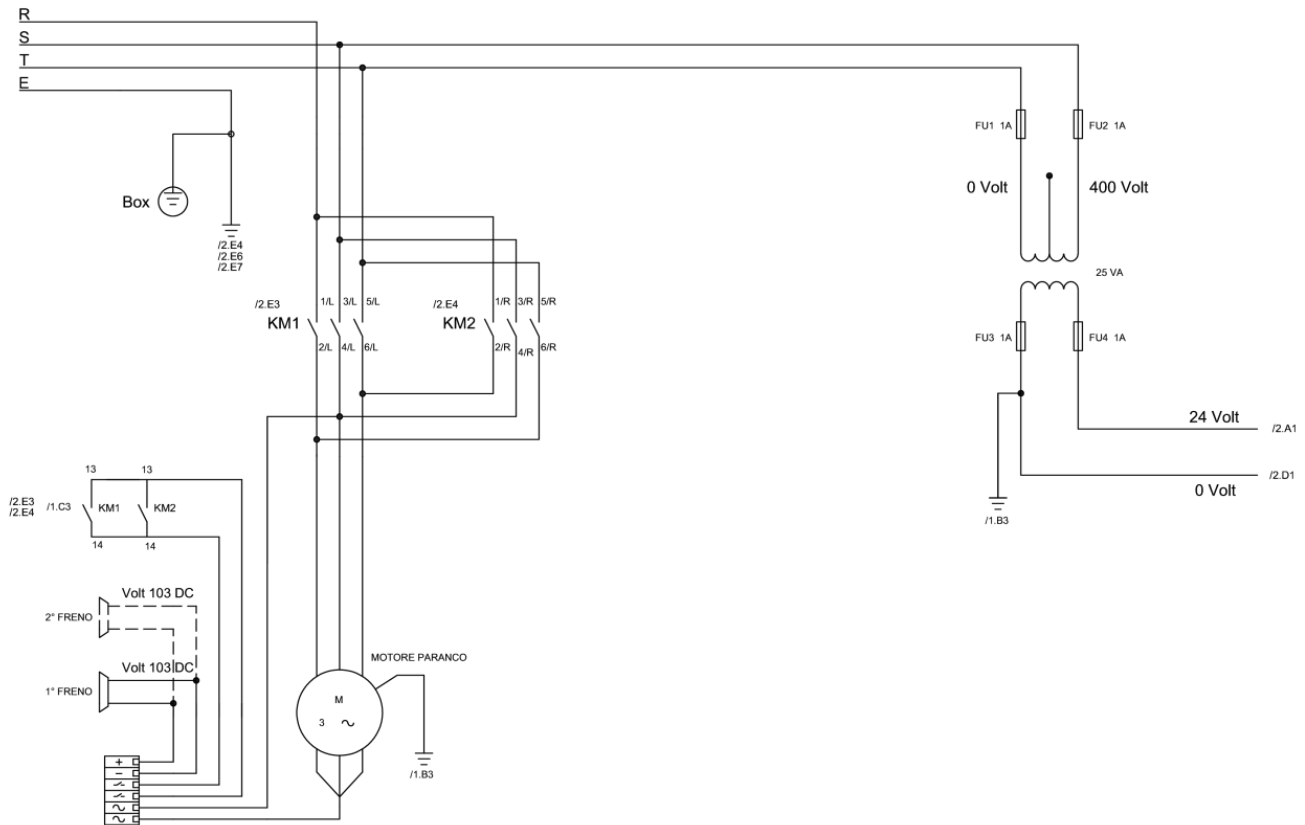
Medium Compact - Medium - Large Frame



12.2 WIRING DIAGRAM LOW VOLTAGE CONTROL

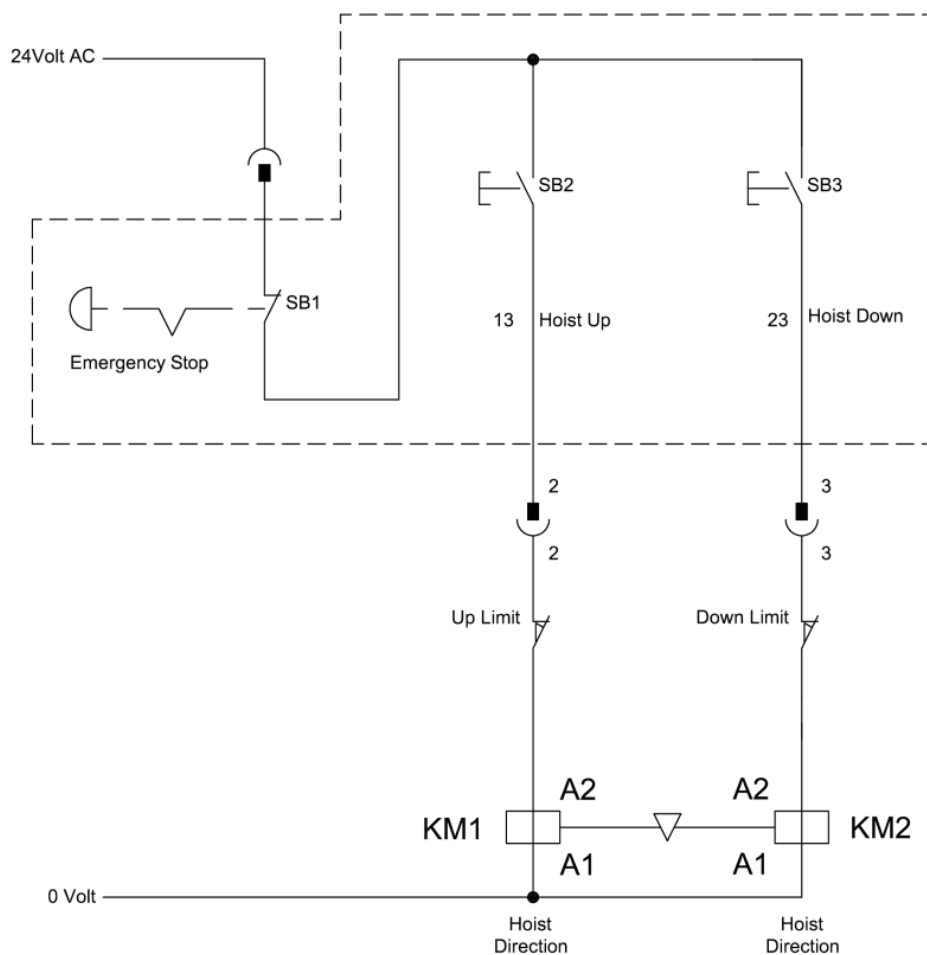
12.2.1 SMALL FRAME - POWER DIAGRAM

Medium Compact - Medium - Large Frame

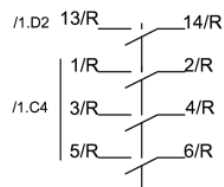
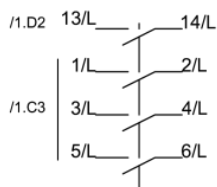


12.2.2 SMALL FRAME - CONTROL DIAGRAM

Medium Compact - Medium - Large Frame



LEGEND:
SB1 EMERGENCY BUTTON
SB2 BUTTON UP
SB3 BUTTON DOWN



13 DECLARATION OF CONFORMITY



DICHIARAZIONE DI CONFORMITÀ / DECLARATION OF CONFORMITY

ai sensi della Direttiva Macchine 2006/42/CE, allegato II parte 1 sezione A, pubblicata in GUUE n. L 157 il 09/06/2006
under the Machinery Directive 2006/42/EC, annex II part 1 section A, published in the OJEU on 09/06/2006

Il fabbricante / The Manufacturer:

RWM S.R.L. Via Bartolomeo Colleoni 80/7, 36034 Malo (VI) – ITA Tel. +39 0445 637002

dichiara nella persona di **Vilmino Rebeschin** che la macchina
declares in the name of **Vilmino Rebeschin** that the machinery:

Descrizione / Description:	Chain Hoist for Entertainment
Modello / Model:	EXE RISE Chain Hoist 2000 kg D8+ LVC
Tipo / Type:	Low Voltage Control
Portata / Capacity:	2000 kg
Numero di Serie Serial Number:	DC000000
Anno di costruzione Year of construction:	20xx

è conforme alle disposizioni pertinenti alle seguenti Direttive Europee
complies with the relevant provisions of the following European Directives:

- Direttiva Macchine 2006/42/CE / Machinery Directive 2006/42/EC
- Direttiva Compatibilità Elettromagnetica 2014/30/CE / Electromagnetic Compatibility Directive 2014/30/EC

e che sono state applicate le seguenti norme tecniche armonizzate
and that the following harmonized technical standards have been applied:

- EN 12100 : 2010
- EN 60204-1 2016
- EN 818-7:2008
- UNI EN 14492-2

e che sono state applicate le seguenti norme e specifiche tecniche
and that the following standards and technical specifications have been applied:

- prEN 17206:2018

Il fabbricante dichiara inoltre che il fascicolo tecnico della macchina è costituito e custodito presso RWM S.R.L.
(responsabile del fascicolo tecnico Vilmino Rebeschin) e custodito presso il mandatario
The manufacturer also declares that the technical file of the machine is made and kept at RWM S.R.L. (Vilmino
Rebeschin responsible for technical file) and kept by the authorized representative:

AREA FOUR INDUSTRIES ITALIA S.R.L. Via Martin Luther King 70, 31032 Casale sul Sile (TV) – ITA
Tel. +39 0422 997300

Legale Rappresentante / Legal Representative
Rebeschin Vilmino

Malo , xx/xx/20xx

Firma _____





Via Martin Luther King, 70

Casale sul Sile (TV) | Italy

info@exetechnology.com | www.exetechnology.com

Tel.: +39 0422 997300