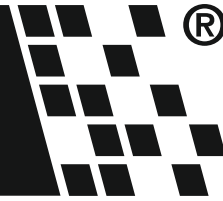


LoadGuard®



INSTRUCTION MANUAL

Electric chain hoist LG25 - LG50 - LG10 - LG16 - LG20 - LG250



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Spare parts / Ordering spare parts

The correct order numbers for original spare parts can be obtained from the relevant spare parts list. Please ensure that you have the following data on your chain hoist to hand. This will enable the correct spare parts to be supplied without delay.

Electric chain hoist type :
Manufacture number :
Year of manufacture :
Load capacity :

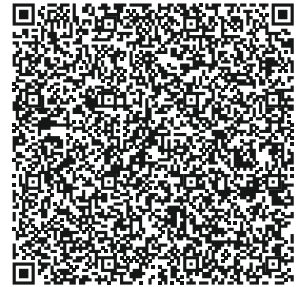
Original spare parts for the electric chain hoist can be acquired from the following addresses:

1. Manufacturer

Lift Turn Move Ltd
Unit 2 Stadium Court
Plantation Road
Bromborough
Merseyside
CH62 3QG UK

Tel. +44 (0)151 649 0467
Fax +44 (0)151 649 0099

info@loadguard.com
www.loadguard.com



2. Agent/Reseller

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.....
.....
.....
.....
.....
.....

3. Liability

This version of the manual supersedes all previous versions of this document. The latest copy is always available on request

This document should always be read in conjunction with the following statutory regulations and adhered to.

- The Lifting Operation and Lifting Equipment Regulations (LOLER) 1998 [3];
- The Provision and Use of Work Equipment Regulations (PUWER) 1998 [8];
- The Supply of Machinery (Safety) Regulations 1992 as amended [5];
- The Management of Health and Safety at Work Regulations 1999 [6];
- The Manual Handling Operations Regulations 1992 [7].

Definitions:

- LoadGuard® and "we" means Lift Turn Move Ltd ("LTM"), any of its group companies ("LTM") and LTM's employees, suppliers and sub contractors.
- "you" and "your" means the customer/company purchasing the goods and/or integrating the systems, and the user/s.

Conditions:

LoadGuard® offers no responsibility as to the suitability of components or machines to be used as part of a lifting system. You are responsible for the correct application of machines and the legal obligations in incorporating components and machines into complete lifting systems. It is always assumed that you have carried out (in advance) a suitable risk assessment for the lifting components and / or machines to be supplied. When components or machines are incorporated as part of a lifting system, the lifting system as a whole shall be checked, inspected and tested (if required) and marked with its final Safe Working Load. We cannot be held responsible for the structural condition of the building and/or the supporting structure. It will always be assumed that the you have checked with a structural engineer to ensure the building and/or supporting structure has been inspected and rated to accept the applied static and / or dynamic loads. We accept no responsibility, and compliance with any standard does not imply your immunity from any legal obligations.

0 General information

The following symbols and terms are used in this instruction manual for safety and hazard instructions:

0.1 General safety information

0.1.1 Safety and hazard precautions



DANGER !

Non-compliance, either in part or full, with operating instructions marked with this symbol can result in serious personal injury or even death. Danger notices must be **strictly** complied with.



CAUTION !

Non-compliance, either in part or full, with operating instructions marked with this symbol can result in major damage to machinery, property or material. Cautionary notices must be **strictly** adhered to.



NOTE

Following the instructions marked by this symbol will lead to more effective and straightforward operation. "Note" directions make work easier.

0.2 General safety specifications and procedures

The instruction manual for the electric chain hoist must always be available within the operating area of the hoist. The instructions mentioned in this manual must be strictly adhered to. Furthermore, supplementary to the instruction manual, the statutory regulations governing general accident prevention and environmental protection are to be enforced.

Operating and service personnel must have read and understood the operating instructions, in particular the safety instructions, before commencing work. Protective equipment must be made available for operation and service personnel and worn at all times.

The operator or his representative is responsible for supervising operation personnel and ensuring they are aware of the hazards and safety implications of working with the electric hoist.

0.2.1 Warning paint / Marking / Danger Signs

- Lubricate chain figure 0-1
- CE symbol figure 0-2
- Model plate figure 0-3
- Data plate figure 0-4
- Voltage figure 0-5

Figure 0-1

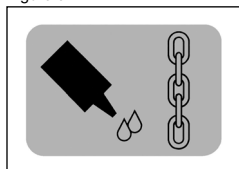


Figure 0-2



Figure 0-3



Figure 0-4

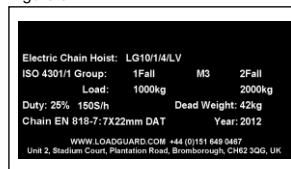
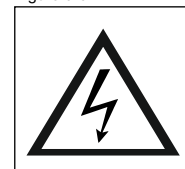


Figure 0-5



0.3 Special safety directions

Transport and assembly:

- Electric chain hoists, single parts and large components should be carefully affixed to suitable and technically acceptable hoisting apparatus / load lifting members

Connection:

- Connection work is only to be performed by personnel specifically designated and trained for the job

Start-up / operation:

- Before initial start-up, as well as daily start-up, carry out a visual check and carry out the predefined user-checks routine
 - Only operate the electric chain hoist if the protective and safety equipment provided is ready and working
 - Damage to the electric chain hoist and changes in its operational characteristics must be reported immediately to the person responsible
 - After use, or when in a non-operational mode, the chain hoist should be secured against unauthorised and unintentional use
 - Refrain from hazardous procedures
- See also operational parameters (chapter 0.6)

Cleaning / service / repair / maintenance / refitting:

- Use the working platforms and ladders provided for assembly work above body height
- Do not use machine parts for this purpose
- Check electrical cables for damage or wear
- Ensure any oils or other agents used are discharged, collected and disposed of safely and in an environmentally sound manner
- Reassemble and check safety apparatus that has been disassembled for servicing or repairing the hoist once service and repair work has been completed
- Adhere to the predefined testing and service intervals specified in the instruction manual
- Follow the directions in the instruction manual regarding exchanging parts
- Operating personnel should be informed before commencing special or refitting work
- Secure the repair working area
- Prevent the electric chain hoist from being inadvertently switched on during service or repair work
- Erect warning signs
- Disconnect the power cable and ensure it cannot be inadvertently switched on again
- Retighten screw connections that have been loosened for repair or service work
- Replace parts that are not reusable, such as O-rings, gaskets, self-locking nuts, split-oins and washers

Shut down / storage:

- Clean and preserve (lubricate/grease) the chain hoist before long periods of inactivity or storage

0.4 Notes on hazard protection

Hazardous areas must be clearly marked by warning signs and cordoned off. It must be ensured that warnings regarding hazardous areas are given due attention

Hazards can stem from:

- Incorrect application
- Not following safety directions properly
- Not carrying out test and service work thoroughly

0.4.1 Hazards caused by mechanical influences

Physical injury:



DANGER !

Unconsciousness and injury through:

- Crushing, shearing, cutting and twisting
- Drawing in, ramming, piercing and rubbing
- Slipping, stumbling and falling

Causes:

- Crush, shear and twist area
- parts rupturing or bursting

Safety options:

- Keep floor, equipment and machinery clean
- Eliminate leakages
- Observe the required safety distance

0.4.2 Hazards caused by electrical energy / power supply

Work on electrical apparatus or machinery may only be performed by qualified electricians or persons under the supervision and guidance of qualified electricians, in accordance with predefined electrotechnical regulations.

Physical injury:



DANGER !

Death from electrical shock, injury and burns through:

- Contact
- Faulty insulation
- Faulty servicing or repair work
- Short circuit

Causes:

- Contact with, touching or standing too close to uninsulated power and voltage supply terminals
- Use of uninsulated tools
- Exposed electricity supply terminals following insulation failure
- Inadequate safety checks following repair work
- Incorrect fusing

Safety options:

- Isolate machinery and equipment designated for repair or service work before commencing such work
- First check isolated parts for voltage
- Regularly check electrical fittings
- Replace loose or damaged cables immediately
- Always replace blown fuses with fuses of the correct value
- Avoid contact with or touching live terminals
- Only use insulated tools

0.4.3 Sound level (SPL)

Tests on the chain hoist sound level are performed at a range of 1, 2, 4, 8 and 16 metres from the centre of the chain hoist motor to the measuring device.

Measurement of SPL according to DIN 45 635

The SPL was measured in an upright position:

- a) during operation of electric chain hoists on factory site
- b) during open-air operation

Table 0-1 Sound level

| Types | Measuring distance | 1 m | 2 m | 4 m | 8 m | 16 m |
|---------------------|--------------------|-----------------|-----|-----|-----|------|
| | | Measurement dBA | | | | |
| LG25 / LG50 | a) | 75 | 72 | 69 | 66 | 63 |
| | b) | 75 | 69 | 63 | 57 | 51 |
| LG10 | a) | 72 | 69 | 66 | 63 | 60 |
| | b) | 72 | 66 | 60 | 54 | 48 |
| LG16 / LG20 / LG250 | a) | 75 | 72 | 69 | 66 | 63 |
| | b) | 75 | 69 | 63 | 57 | 51 |

0.5 Technical status

The present document was written in 2014. It corresponds to directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006

0.5.1 Technical data

- 0.5.1.1 Models BGV-D8.....table 0-3, page 19
- 0.5.1.2 Models BS7906 Cat A.....table 0-4, page 20
- 0.5.1.3 Models BGV-D8+.....table 0-5, page 21
- 0.5.1.4 Models BGV-C1.....table 0-6, page 22

LoadGuard® models are designed with a shock factor of 1.40 in operation, in accordance with DIN EN 818-7.

Incidents investigated by the Employers Liability Insurance Association generate lower shock factors than those occurring in normal operation.

0.5.2 Recurrent checks

Each device/unit operator should adequately note all checks, maintenance and inspections performed in the log book, and have these confirmed by the competent person in charge. Incorrect or missing entries will lead to forfeiture of the manufacturer's warranty.

CAUTION !



Equipment and cranes should be periodically tested by a competent lifting engineer. Basic visual and functional checks should be performed to determine the condition of components as regards damage, wear, corrosion or other modifications. In addition, safety equipment is assessed for completeness and efficiency. It may be necessary to dismantle the equipment under inspection to correctly assess expendable parts.

CAUTION !



Suspension apparatus must be inspected over its entire length, including covered or hidden parts.

CAUTION !



All periodical inspections should be arranged by the operator.

0.5.3 Warranty

- The warranty is void if the installation, operation, testing or maintenance is not carried out according to these instructions
- Troubleshooting and repair under warranty may only be carried out by qualified persons and only after consultation and agreement with the manufacturer / supplier. Any modifications to the product or the use of non-original replacement parts will void the warranty

0.6 Operational parameters

Electric chain hoists in the LoadGuard® series are hoists of differing load capacities. They can be installed as stationary or mobile units. Electric chain hoists are manufactured in accordance with the latest technical developments and recognised safety standards, and are tested for safe operation by the manufacturer.

Electric chain hoists of the above series may only be used when in an acceptable technical condition, in accordance with their operating parameters, by trained personnel in a safe and responsible manner.

The LoadGuard® series of electric chain hoists are intended for use in permanent installs or setting up events.

Events include such types as concerts, shows, conferences, meetings, exhibitions, presentations, demonstrations, film or television shoots and similar. The location of such events include, amongst other places, theatres, multipurpose halls, studios, film sets, television and radio broadcasting, concert halls, conference centres, schools, exhibitions, fairs, museums, discotheques, recreational parks, sports facilities, open air theatres and meetings.

This standard differentiates between four types of electric chain hoists:

D8 Hoist

Electric chain hoist according to BGV-D8 "Winches, lifting and pulling devices" for use as a chain hoist for lifting loads during rigging erection.

BS (Cat A) Hoist

Electric chain hoist according to BS7906-1: 2005 Cat A "Use of lifting equipment for performance, broadcast and similar applications" for holding loads above personnel.

D8+ Hoist

Electric chain hoist according to BGV-D8+ "Winches, lifting and pulling devices" for use as a chain hoist for lifting loads during rigging erection with the special characteristic of being able to hold loads statically above personnel, without the use of secondary safety devices.

C1 Hoist (scenery hoist)

Electric chain hoist according to BGV-C1 "Staging and production facilities for the entertainment industry" for holding and moving loads above personnel.

The types of electric chain hoists specified above can be operated both individually and in groups.

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

The choice of the type of electric chain hoist depends on the operating conditions:

Table 0-2 Suspending loads matrix

| | Standard Rigging Hoist BGV-D8 / BS7905-1:2001 Category B | BS "Cat A" Rigging Hoist BS7906-1:2005 Category A | Standard Rigging Hoist BGV-D8 with Secondary / BS7905-1:2001 Category B with Secondary Safety | BGV-D8+ | BGV-C1 |
|--|--|---|--|----------------------|-----------|
| | | | Use According to BGV Regulations | | |
| | When people are present below the load | | | | |
| Origin of Regulation | Europe | UK | Germany | Germany | Germany |
| Erection/dismantling, rigging operations | <u>NOT</u> Permitted | Permitted | <u>NOT</u> Permitted | <u>NOT</u> Permitted | Permitted |
| Holding Loads | <u>NOT</u> Permitted | Permitted | Permitted | Permitted | Permitted |
| Staging processes including scene movement | <u>NOT</u> Permitted | *Permitted | <u>NOT</u> Permitted | <u>NOT</u> Permitted | Permitted |

*additional sensors advised and/or specific application related risk assessment required

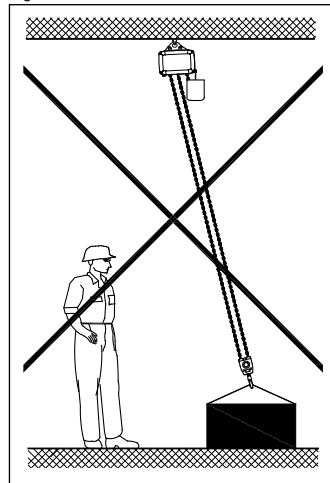
The operational parameters of the electric chain hoist also encompass compliance with the pre-defined operating, service and maintenance requirements laid down by the manufacturer.

The operational parameters do not include:

- Exceeding the defined load capacity
- Pulling the load diagonally (see figure 0-5)
- Heaving, pulling or dragging the load
- Transporting persons (man riding), or be incorporated into a man riding system
- Transporting excessive loads
- Pulling on the power/control cables
- Failing to observe the load hook constantly
- Running the chain over edges
- Failing to observe the load constantly
- Allowing the load to fall due to a slack chain
- Use at an ambient temperature below -10°C or above $+40^{\circ}\text{C}$
- Use in an explosive environment

See also chapter 0.3

Figure 0.5



CAUTION !

Inching operations (bumping), ground mooring and driving against the limit switches should be avoided. The manufacturer accepts no responsibility for damage to equipment, persons and third party ensuing from such action.

0.6.1 Directions for using the instruction manual

This instruction manual includes the following chapters:

- 0 General information
- 1 Description
- 2 Start-up
- 3 Service and maintenance
- 4 Measures for obtaining a safe period of operation
- 5 Appendix

Supplementary to the instruction manual, the following documentation from the operator must be noted (If applicable):

- Declaration of incorporation and/or Declaration of conformity
- Log book
- Spare parts list(s)
- Circuit diagrams

Page and figure numeration:

The pages are consecutively numbered. Blank pages are not numbered, however are calculated together with the consecutively by chapter.

Example:

Figure 3-1 means: in chapter 3, figure 1

1 Description

General:

The LoadGuard® series currently consists of the following models: LG25, LG50, LG10, LG16, LG20 and LG250

1.1 Operating conditions

Classification according to application requirements:

Electric chain hoists and electric travel trolleys are classified according to the following regulations into ISO Groups:

- DIN EN 14492-2
- DIN 15400 (load hook)
- FEM calculation regulations for series lifting equipment (chain drive, motor, full load-life span)
- ISO 4301-1: D (M3) = 400 h
- Remarks about general revision (see chapter 4)

There is differing coefficient data for the ISO Groups that must be adhered to in operation.



CAUTION !

If fitted, the electric travel trolley is always classified as the same ISO Group as the corresponding electric chain hoist.



NOTE

The ISO Group registration number of the electric chain hoist can be found on the data plate.

The manufacturer will only guarantee the safety and lasting operation of the electric chain hoist when used for applications that fall within its valid ISO Group coefficient data.

Before the first start-up, the user must estimate according to the features in table 1-1, which of the four types of load is applicable to the use of the electric chain hoist during its whole service life. Table 1-2 shows standard values for the operating conditions of the ISO Groups depending on the type of load and time of operation.

Ascertaining the correct type of application for an electric chain hoist:

Either the running time or expected type of load can be used as a basis for ascertaining the correct type of application for the electric chain hoist.



CAUTION !

Before starting up the electric chain hoist for the first time, it must be determined with which of the load types shown in table 1-1 the electric chain hoist is to operate. Assignment to a load type or a load collective (k) applies for the entire operational life of the equipment and may not be altered for operational safety reasons.

Example 1: Ascertaining permissible running time of the electric chain hoist:

An electric chain hoist of the ISO Group M4 is to be used for medium stress load tasks throughout its entire service life. This corresponds to load type <3 heavy> (see table 1-1). According to the values in table 1-2, the electric chain hoist should not be used for longer than 0.5 - 1 hour per working day.

Example 2: Ascertaining permissible load type:

An electric chain hoist of the ISO Group M5 is to be used for approximately 6 hours per working day, throughout its complete service life. Consequently the electric chain hoist should be operated in accordance with the characteristics of the load type <1 light> (see table 1-1).

Table 1-1 Load collectives

| Load type 1 light $k < 0.50$ $k = 0.50$ | Load type 2 medium $0.50 < k < 0.63$ $k = 0.63$ | Load type 3 heavy $0.63 < k < 0.80$ $k = 0.80$ | Load type 4 very heavy $0.80 < k < 1.00$ $k = 1.00$ |
|---|---|--|---|
| <p>% of bearing capacity</p> <p>% of running time</p> <p>Full load by way of an exception, however, predominantly low loads</p> | <p>% of bearing capacity</p> <p>% of running time</p> <p>Frequently fully loaded, however continuously light loaded</p> | <p>% of bearing capacity</p> <p>% of running time</p> <p>Frequently fully loaded, continuous average loading</p> | <p>% of bearing capacity</p> <p>% of running time</p> <p>Regularly fully loaded</p> |

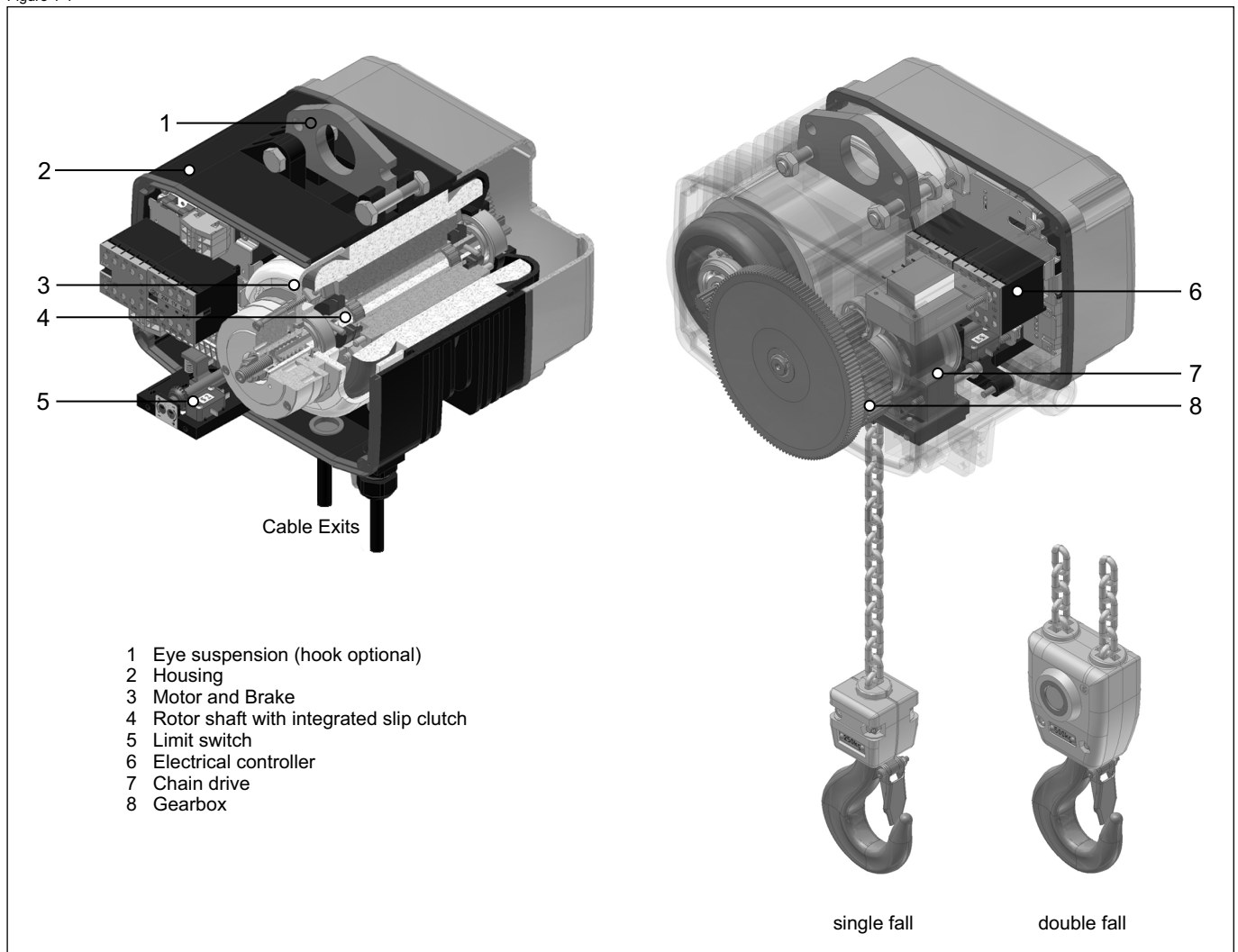
k = Load collective (type of load)

Table 1-2 Operating conditions

| ISO Group according to ISO 4301-1 | M3 | M4 | M5 | M6 | M7 |
|-------------------------------------|--|-----------|---------|--------|---------|
| Load collective | Average running time per working day [h] | | | | |
| 1 - light $k < 0.50$ | up to 2 | 2 - 4 | 4 - 8 | 8 - 16 | over 16 |
| 2 - medium $0.50 < k < 0.63$ | up to 1 | 1 - 2 | 2 - 4 | 4 - 8 | 8 - 16 |
| 3 - heavy $0.63 < k < 0.80$ | up to 0.5 | 0.5 - 1 | 1 - 2 | 2 - 4 | 4 - 8 |
| 4 - very heavy $0.80 < k < 1.00$ | up to 0.25 | up to 0.5 | 0.5 - 1 | 1 - 2 | 2 - 4 |

1.2 General description

Figure 1-1



The electric chain hoist meets the requirements of the EC Machinery Directive and the relevant EN and FEM standards.

Housing and cover are made of sturdy aluminium die casting. Fins on the motor ensure optimum cooling. The chain bag can be attached to the compactly constructed housing. Cable glands are provided for both the power supply and control cable. The lugs, or optionally the suspension hooks, are attached to the flange ring.

LoadGuard® electric chain hoists are driven by asynchronous motors. For two-speed models a pole switching version of the motor is fitted.

The braking system consists of a DC-operated spring loaded brake. When there is no current, the pressure spring generates the braking torque.

For functional reasons, the slip clutch is installed in front of the brake system and integrated into the rotor shaft. It protects the hoist from overload and takes on the function of an emergency end stop for the highest and lowest hook positions.

With LV Models, a gear-type limit switch is fitted to limit the highest and lowest hook position as well as 42V contactor control as standard. As an option, emergency stop contacts with positive separation can be retrofitted downstream.

The emergency stop contactor that is usually installed separates all three mains power phases when the red button is pressed.

The high-strength round steel chain meets the requirements of grade DAT (8SS) to DIN EN 818-7. Sprocket and pulley are hardened. The load hook, which complies with DIN 15400, is fitted with a safety latch. Locking latch hooks are available as an option.

The two- or three-stage, closed spur gear units are usually helically cut. The gears are mounted on roller bearings and run greased.

When the equipment is commissioned, and periodically thereafter, the functionality of both brake(s) must be examined. The periodic examination should be carried out by competent personnel annually.

A circuit diagram can be found at the back of this manual or can be obtained from LoadGuard®

2 Start-up



DANGER !

Mechanical adjustments may only be performed by authorised specialists



CAUTION !

Operating staff must carefully read the operating instructions of the electric chain hoists before its initial operation and carry out all checks. Only when safe operation has been established may the device be put into operation. Unauthorised persons may not operate the device or carry out work on/with it.



CAUTION !

The operator must create an inspection log book when start-up the electric chain hoist. The inspection log book is to contain all the technical data and the date of start-up. It provides a record of all servicing and maintenance work.

2.1 Transport and assembly

The safety directions for handling with loads should be followed (see chapter 0.3) when transporting and assembling the electric chain hoist. Electric chain hoists must be assembled by qualified staff, always bearing in mind the accident prevention directions in chapter 0.2. Before assembly the electric chain hoist must be stored in a covered area and not left out in the elements. Should the electric chain hoist be destined for operation outdoors, then it is recommended that a protection cover is provided to shield it from the effects of the weather as a minimum. Other weather proofing options can be added to further protect the hoist.

Wherever possible, the electric chain hoist should be transported in a suitable flight case or its original packaging. The goods delivered should be checked for completeness and the packaging disposed of in an environmentally sound manner. It is recommended that the electric chain hoist is assembled and connected on-site by a qualified lifting engineer

Check the label and identification plate as to whether the chain hoist corresponds to the type ordered (D8, BS, D8+, C1)

The chain hoist must display one of the following markings:

- D8 : Triangle
- BS : "BS7906 Cat A"
- D8+ : Square
- C1 : Circle

2.2 Connection

2.2.1 Electrical connection



DANGER !

Electrical adjustments may only be performed by authorised engineers.

If permanently installing, the mains connection cable, the mains connection fuse and main switch for connecting the electric chain hoist to the mains power supply must be installed beforehand by the customer.

A 4-wire cable with a PE protective conductor is needed to provide the power supply for three-phase models. A 3-wire cable with a protective conductor is adequate for single-phase models. The length and cross-section must be appropriate for the power consumption of the electric chain hoist.

- Before connecting the electric chain hoist, check whether the operating voltage and frequency that are specified on the name plate correspond to the available power supply
- Remove cover on electrical side
- Insert connecting cable with M25 x 1.5 screwed cable connection into hole on top of the housing and connect to terminals L1, L2, L3 and Earth in accordance with supplied circuit diagram (see figure 2-1)
- Insert control cable with M20 x 1.5 screwed cable connection through hole on top of the housing and connect to terminals 1, 2, 3, 4 and 10 (see figure 2-2)

Figure 2-1

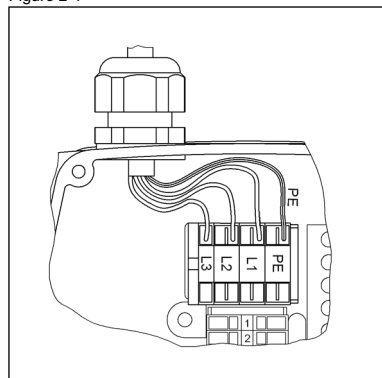


Figure 2-2

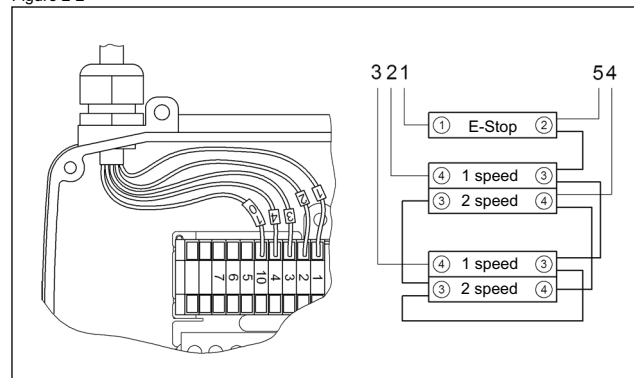
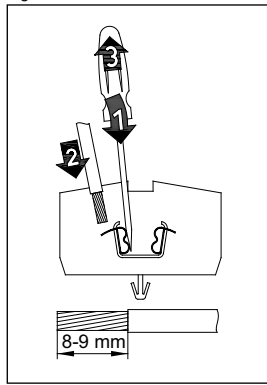


Figure 2-4



DANGER !

The protective conductor should not carry any power. With motor carriage operation, the power supply is enclosed in a terminal box of the drive motor. With the installation of a motor protector, the load plate voltage of the electric chain hoist must be observed.



CAUTION !

- Checking direction or rotation: If the direction of rotation does not correspond to the button symbols on the control switch, power supply wires L1 and L2 must be swapped round
- Inching operations (bumping) on single-phase models can cause interference



NOTE

Open the terminal that is used in accordance with figure 2-4.

The appropriate electrical diagram can be found in the cover of the electric chain hoist. In the case of the D8+ and C1 chain hoists, once the device is in position the power must be disconnected using a lockable switch. To commission the mechanically tested chain hoist as a C1 hoist, the control system and the electrical assessment of the load measuring device must likewise be approved by a certified inspection body as a C1 system (in accordance with BGV-C1). The principles laid out in BGG 912 are to be used. An inspection and test log book is to be set up, consisting of the equipment documentation provided by the manufacturer and the test reports. Plans and descriptions of the electrical system are to be supplemented by the appropriate control engineer on a project-specific basis.

2.2.2 Load chain



CAUTION !

- Only use original LoadGuard® approved chains
- Welded seam of the chain links must face inward on the chain wheel (see figure 2-5)
- The gearbox limit switch (LV models only) must be mechanically disabled in order to pull in the chain, see chapter 2.2.3

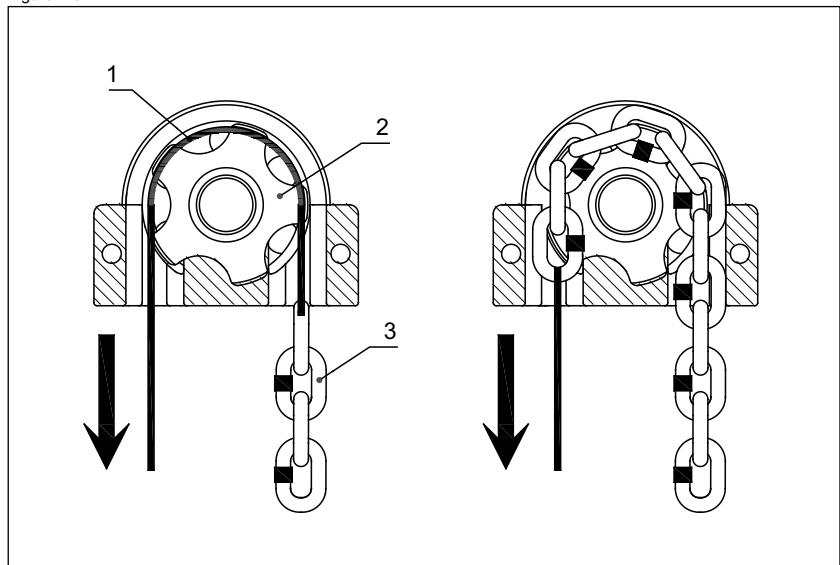
Before start-up and during operation the load chain must be oiled along its full length. Oil must constantly be present on the internal, contacting and rubbing surfaces of the chain links. Lubrication is carried out by submersion or with an oil can, using a creeping gear oil. The end of the chain should be attached to a flexible piece of wire (1) and fed through the chain wheel (2) of the electric chain hoist. Through short switching impulses, the chain (3) will be housed correctly in accordance with figure 2-5. The lifting height must be adjusted such that the hook fittings lie on the ground in the lowest hook position.



CAUTION !

- Never operate the hoist with dry chain
- Only use LoadGuard® approved chain oil
- Apply oil to the whole length of the chain, in between the links and externally
- Dry chain causes premature wear and also can cause the chain to climb out of its container. It will also result in excessive noise when running.

Figure 2-5



Single fall operation: The load hook (1) is connected to the chain using a shim (2). Bolt (3) installation is important for power transmission (see figure 2-6).



CAUTION !

Pay attention to correct arrangement of suspension (see figure 2-7)!
Grease the bearings thoroughly

Figure 2-6

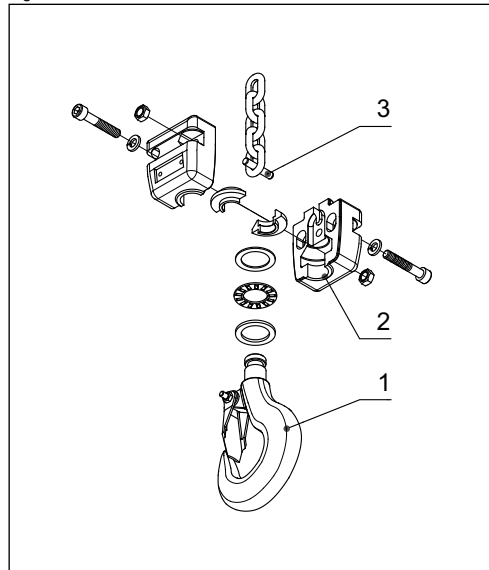


Figure 2-7

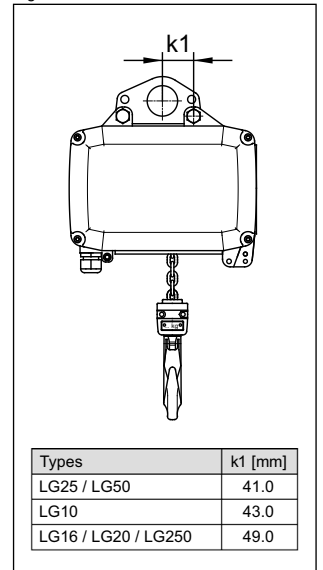
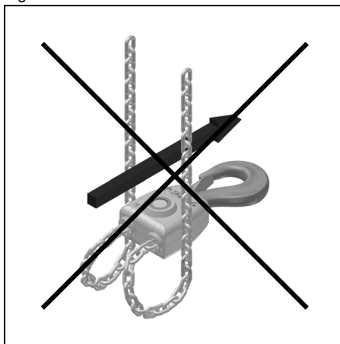


Figure 2-8



CAUTION !

Pay attention to correct alignment of the chain. It must follow a straight path throughout!
Do not capsize the hook (see figure 2-8) twisting the chain lengthwise (see figure 2-9)!
Grease the bearings thoroughly.

Figure 2-9

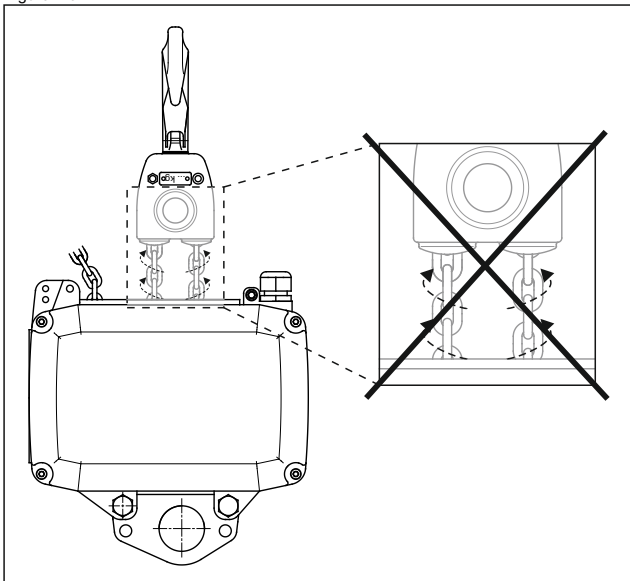
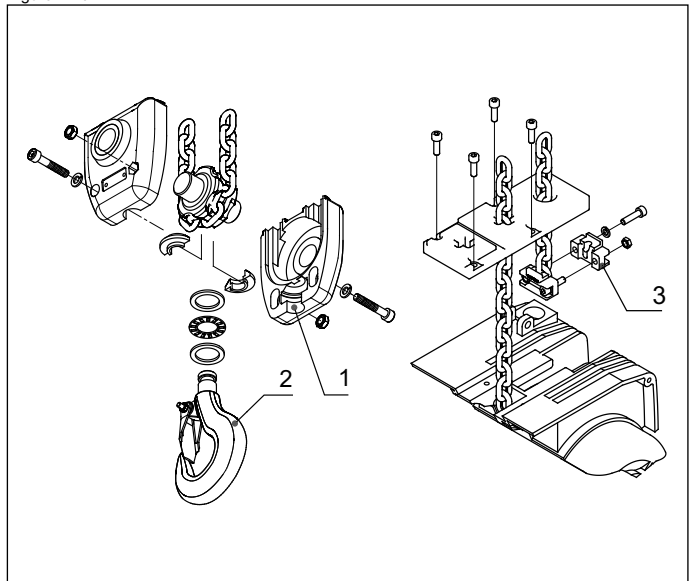


Figure 2-10





CAUTION !

Pay attention to correct arrangement of suspension using double fall (see figure 2-11)!

Figure 2-11

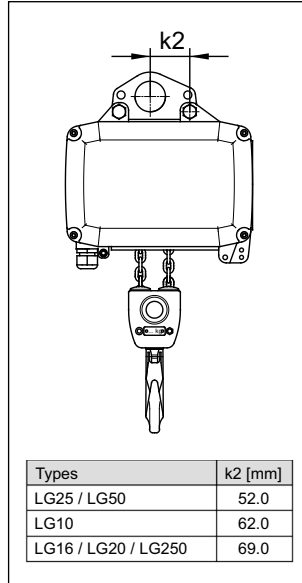
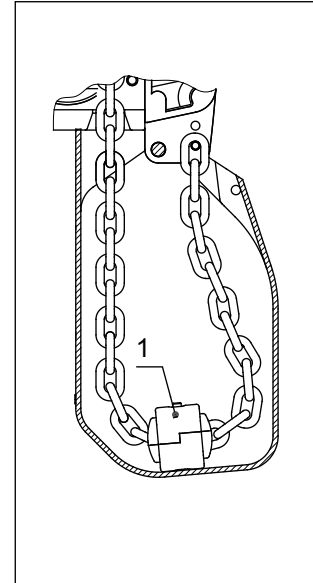


Figure 2-12



Chain end: The chain end must be attached to the housing/bracket in accordance with figure 2-11.

The section of chain after the end stop (1) must be adjusted to the height of the chain bag at a minimum of 12 links. The length of the section of chain must be selected so that the end stop lies on the floor of the bag when the chain runs into it (see figure 2-11).

2.2.3 Working limit switches

On LV models, the electric chain hoist is equipped with a gearbox limit switch as standard. This is also suitable for normal limit switch operation with a high degree of accuracy. The operation of the limit switches (highest and lowest hook position) must be checked during start-up.

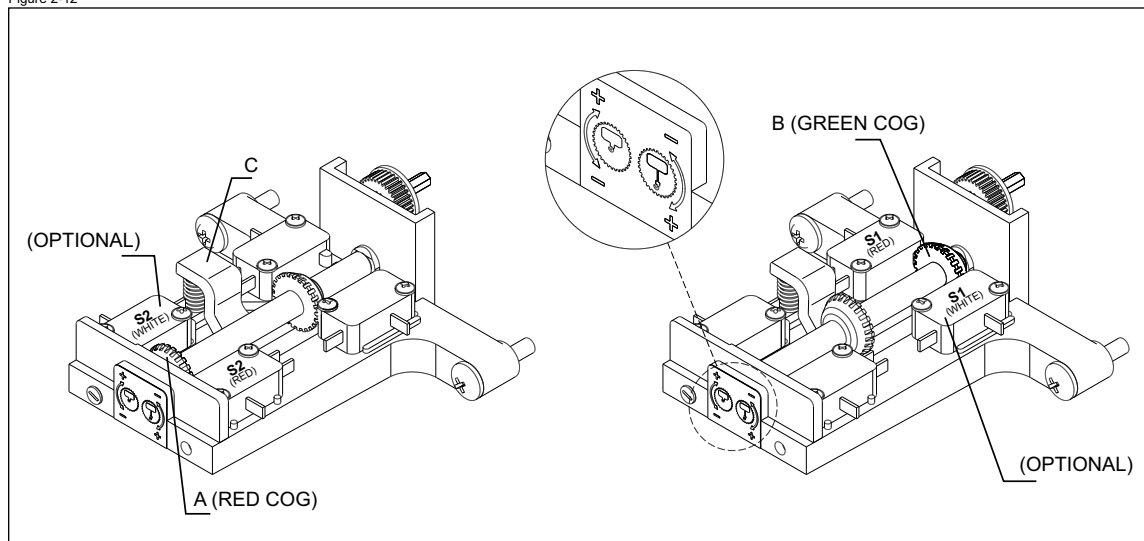
Three different transmissions are available that are adapted to the lift:

| LG25 / LG50 | | | |
|--------------|--------|----------------------|----------------------|
| Transmission | Colour | Single fall lift [m] | Double fall lift [m] |
| i = 1:1 | black | 20 | 10 |
| i = 1:3 | yellow | 60 | 30 |
| i = 1:6 | blue | 120 | 60 |

| LG10 | | | |
|--------------|--------|----------------------|----------------------|
| Transmission | Colour | Single fall lift [m] | Double fall lift [m] |
| i = 1:1 | black | 30 | 15 |
| i = 1:3 | yellow | 80 | 40 |
| i = 1:6 | blue | 160 | 90 |

| LG16 / LG20 / LG250 | | | |
|---------------------|--------|----------------------|----------------------|
| Transmission | Colour | Single fall lift [m] | Double fall lift [m] |
| i = 1:1 | black | 36 | 18 |
| i = 1:3 | yellow | 110 | 55 |
| i = 1:6 | blue | 220 | 110 |

Figure 2-12



Description of settings (see figure 2-12):

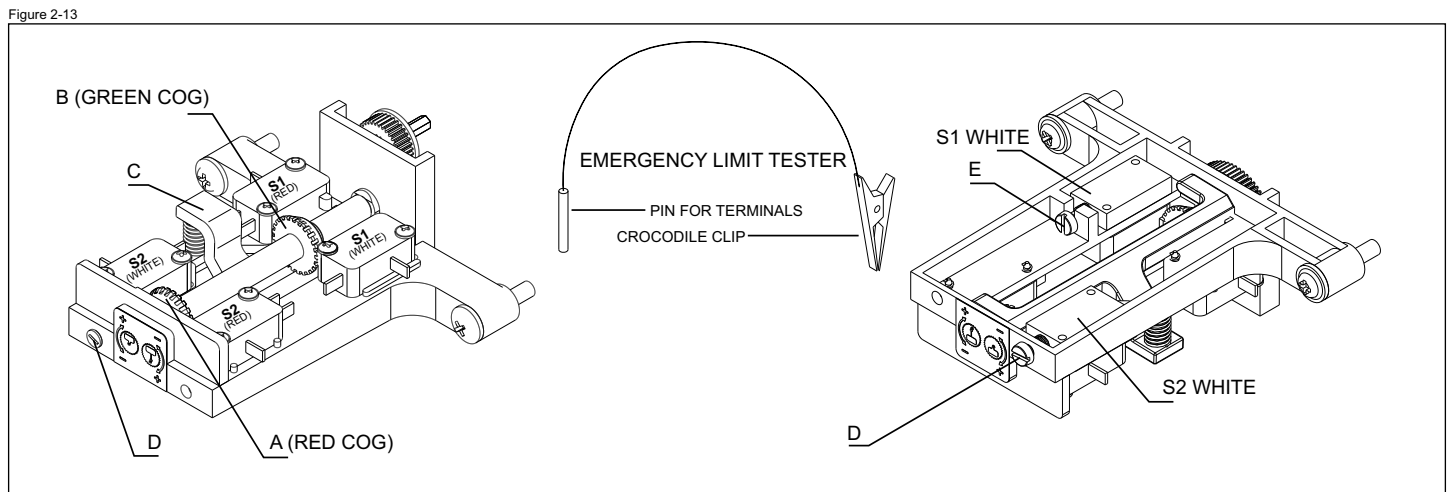
- Before pulling in the chain or changing the chain, the gearbox limit switch must be mechanically disabled by securing the rocker (C)
- Pull in the chain
- Move to the highest position, rotate red cog wheel (front) (A) to switching cam of top limit switch (S2 RED); (rotate clockwise for higher hook position and anticlockwise for lower hook position)
- Activate rocker, move to lowest hook position, rotate green cog wheel (rear) (B) to switching cam of bottom limit switch (S1 RED); (rotate anticlockwise for higher hook position and clockwise for lower hook position)
- Activate rocker (must engage in switch wheel)
- Check operation of limit switch; the end stop and the hook fittings must not touch the housing
- WORKING TOP LIMIT - We recommend 7 and no less than a minimum of 3 links
- WORKING BOTTOM LIMIT - We recommend 12 and no less than a minimum of 4 links from the physical chain stop
- If fitted, the emergency top limit switch (S2 WHITE) is set behind the working top limit switch (S2 RED), and vice versa for the emergency bottom limit switch (S1 WHITE) behind the working bottom limit switch (S1 RED). These top limits are usually set at the point of manufacture, and should not need resetting unless changing the hoist lift height. They are designed to permanently shut down the hoist before the very end of the chain runs through the hoist

2.2.4 Emergency limit switches



DANGER !

Any work carried out on the emergency limits and settings should only be undertaken by qualified and trained personnel. The hoist needs to have a live mains supply at all times, so extreme care should be taken when working inside the hoist. As part of the setting/resting procedure, the hoist will move without pendant/external control. Do not allow the Emergency Limit Tester to come into contact with the hoist casing, other components or terminals other than as instructed below. Read carefully and fully understand the instructions and procedure before carrying out any work.



Description of emergency limit settings (see figure 2-13):

Setting/Testing Emergency Top Limit

- Remove the end cover, extension cover and ensure the hoist is live
- Set working top limit switch (S2 RED) at a minimum of 10-13 links as described in 2.2.3
- When the red cog wheel (A) activates the switching cam of top limit switch (S2 RED), slacken off the screw (D) that sits above the emergency top limit switch (S2 WHITE)
- Lightly tap the screw head (D) until you hear the emergency stop contactor (labelled K5 on the main contactor assembly) de-energise
- When the K5 contactor is de-energised, tighten the screw (D) gently until you hear the K5 contactor re-energise. Stop tightening immediately when the K5 contactor energises. Then give the screw (D) a further quarter turn
- Run the hoist **DOWN** for approximately 2m and stop. Then run the hoist back **UP** and the working top limit (S2 RED) should activate
- Fit the crocodile clip from the Emergency Limit Tester onto the outside exposed terminal of emergency top limit switch (S2 WHITE)
- Place the pin from the other side of the Emergency Limit Tester into the terminal marked 6 on the main contactor assembly. The hoist will move!
- The chain will start to run **UP** and the emergency top limit switch (S2 WHITE) should now activate, de-energising the K5 contactor. If the hook clamp on the chain strikes the hoist before the emergency top limit switch (S2 WHITE) activates, pull out the pin from terminal 6 immediately and repeat the process from the beginning until there is adequate clearance between the hoist body and the hook. This should be 3 links minimum or higher (depending on the limit gear ratio - if in doubt ask!)
- To release the hoist from the emergency top limit switch (S2 WHITE), remove the pin from Emergency Limit Tester in the terminal marked 6 and place it into terminal 11 on the main contactor assembly. This will now bypass the emergency top limit switch (S2 WHITE) and re-energise the K5 contactor
- Using a controller, run the hoist **DOWN** for approximately 1m. Remove both ends of the Emergency Limit Tester from the hoist

Setting/Testing Emergency Bottom Limit

- Remove the end cover, extension cover and ensure the hoist is live
- Set working bottom limit switch (S1 RED) at a minimum of 12 links as described in 2.2.3
- When the green cog wheel (rear) (B) activates the switching cam of bottom limit switch (S1 RED), fit the crocodile clip from the Emergency Limit Tester onto the outside exposed terminal of emergency top limit switch (S2 WHITE)
- Place the pin from the other side of the Emergency Limit Tester into the terminal marked 5 on the main contactor assembly. The hoist will move!
- Allow the hoists chain to run to 4 links minimum or higher between the end stop and the hoist (depending on the limit gear ratio - if in doubt ask!)
- Remove the pin from Emergency Limit Tester in the terminal marked 5 when at the required position. Then remove the crocodile clip end so that the Emergency Limit Tester is removed
- Tighten the screw (E) until you hear the emergency stop contactor (labelled K5 on the main contactor assembly) de-energise. Stop tightening immediately. The emergency bottom limit (S1 WHITE) is now activated
- To release the hoist from the emergency bottom limit switch (S1 WHITE), refit the crocodile clip from the Emergency Limit Tester onto the outside exposed terminal of emergency top limit switch (S2 WHITE). Place the pin from the other side of the Emergency Limit Tester into the terminal marked 11 on the main contactor assembly. This will now bypass the emergency bottom limit switch (S1 WHITE) and re-energise the K5 contactor
- Using a controller, run the hoist UP for approximately 0.5m and near simultaneously remove both ends of the Emergency Limit Tester from the hoist. Continue to run the hoist UP for approximately 2m
- Run the hoist DOWN and until the green cog wheel (rear) (B) has activated the switching cam of bottom limit switch (S1 RED). Refit the crocodile clip from the Emergency Limit Tester onto the outside exposed terminal of emergency top limit switch (S2 WHITE)
- Place the pin from the other side of the Emergency Limit Tester into the terminal marked 5 on the main contactor assembly to bypass the bottom limit switch (S1 RED). The hoist will move!
- Allow the hoist to run DOWN until the emergency bottom limit (S1 WHITE) activates
- To release the hoist from the emergency bottom limit switch (S1 WHITE), refit the crocodile clip from the Emergency Limit Tester onto the outside exposed terminal of emergency top limit switch (S2 WHITE). Place the pin from the other side of the Emergency Limit Tester into the terminal marked 11 on the main contactor assembly. This will now bypass the emergency bottom limit switch (S1 WHITE) and re-energise the K5 contactor
- Using a controller, run the hoist UP for approximately 0.5m. Remove both ends of the Emergency Limit Tester from the hoist. Continue to run the hoist UP for approximately 2m

Adjusting the Emergency Limit if activating before the working limit

Emergency top limit (S2 WHITE)

- Tighten screw (D) until the K5 contactor re-energises
- Reset the emergency limit as per instructions above

Emergency bottom limit (S1 WHITE)

- Slacken off the screw (E)
- Lightly tap the now slackened screw head (E) until the K5 contactor re-energises
- Reset the emergency limit as per instructions above

If the hoist is mis-phased and has run onto the Emergency Limit

If a hoist is mis-phased (e.g. hoist runs up when the down button is pressed), the working limits will not activate in the desired direction. Therefore, it is possible for the limit cog wheel to run past the working limits, and make contact with the Emergency Limits.

- To rectify the problem in either direction, neither limit (Working or Emergency) need be reset.
- Ensure your mains supply phase sequence to the hoist is corrected
 - Fit the crocodile clip from the Emergency Limit Tester onto the outside exposed terminal of emergency top limit switch (S2 WHITE)
 - Place the pin from the other side of the Emergency Limit Tester into the terminal marked 11 on the main contactor assembly. This will bypass the emergency limit switch (S1/S2 WHITE) and re-energise the K5 contactor.
 - Provided the hoist is phased correctly, the hoist should be now be allowed to continue to run away from the Emergency limits for approximately 0.5m using a controller. Then remove both ends of the Emergency Limit Tester from the hoist. Once the cog wheel is off both limits, it will allow you to continue using the hoist as normal.

NOTE



If the hoist limits are still not performing correctly, there is the possibility that damage has been caused to the limit gearing located underneath the limit assembly (linking the load wheel shaft). Contact LoadGuard® for technical advice.

2.2.5 Chain Bucket (Optional)

- Move chain out of load side until limit switch is activated
- Attach free end of chain to housing (see chapter 2.2.2)
- Attach chain bucket and allow chain to run in (see figure 2-14)



DANGER !

All steel plate chain buckets must be equipped with an additional wire cable with a minimum diameter of 2mm (see figure 2-15).



NOTE

If fitting a chain bucket to the hoist, the wear plate may also need to be converted to a lower profile part (depending on the original specification). Contact LoadGuard® for advice.

Figure 2-14

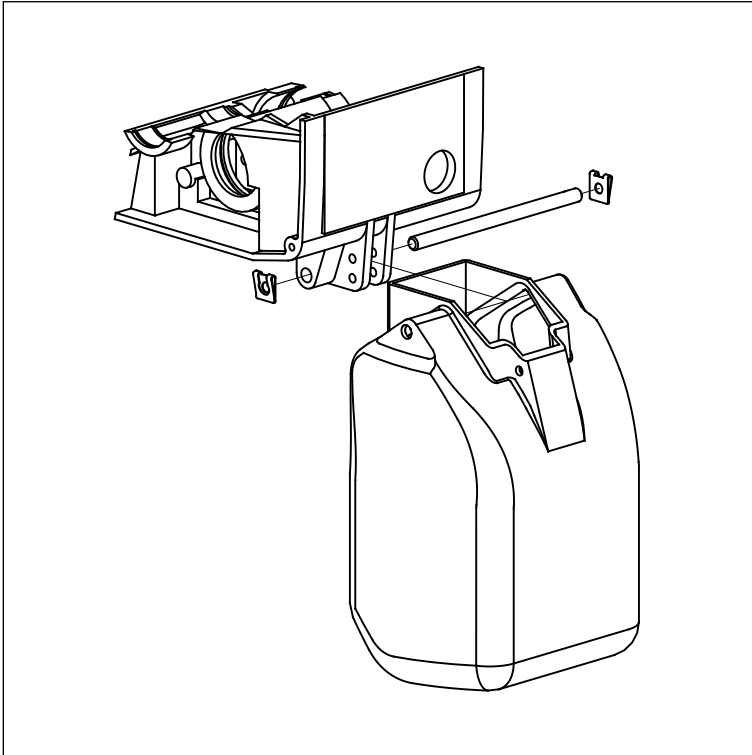
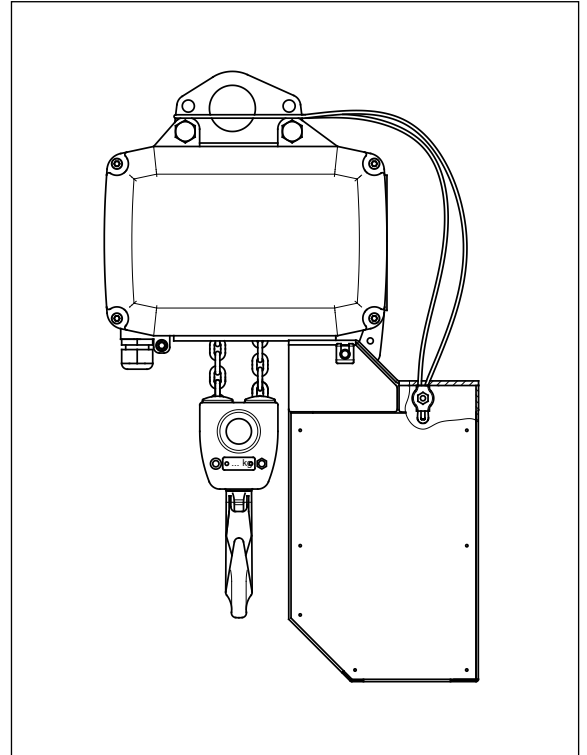


Figure 2-15



3 Service and maintenance

Operating failures in electric chain hoists affecting the safe operation of the device should be remedied immediately, or removed from service until assessed by a authorised lifting engineer.

3.1 General regulations for service and maintenance work



CAUTION !

Maintenance and repair work on the electric chain hoist may only be carried out by qualified and trained personnel.



CAUTION !

If the operator performs maintenance work on an electric chain hoist on his own account, the type of maintenance performed together with the date carried out must be entered in the log book.

Alterations to, as well as modifications and supplements to electric chain hoists which may affect safety must be authorised by the manufacturer in advance. Structural alterations to chain hoists not authorised by the manufacturer exempt the manufacturer from liability in case of damage.

Material warranty claims will only be recognised if solely manufacturer's genuine spare parts have been used.

We explicitly wish to point out that those original parts and accessories not supplied on our behalf cannot be inspected or released by us.

General:

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

Service and maintenance work should be carried out at the predefined time intervals, in accordance with the instruction manual (table 3-1 and 3-2).

During and service and maintenance work, general accident prevention directions, special safety directions (chapter 0.3) as well as hazard protection instructions (chapter 0.4) should be followed.



DANGER !

Service and maintenance work should only be performed on unloaded electric chain hoists. The main switch must be off. The lower sheave or hook fittings must be lying on the floor or a maintenance platform.

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



CAUTION !

Used operating materials (oil, lubricants, etc.) should be safely collected and disposed of in an environmentally friendly manner.

Service and maintenance intervals are defined as follows:

- Daily
- Quarterly (3 months)
- Annually

The predefined service and maintenance intervals should be reduced when the loading of the electric chain hoist is exceptionally large and when frequently operated in adverse conditions (dust, heat, humidity, steam, etc.).

3.2 Service and maintenance

3.2.1 Maintenance overview

See table 3-1.

Table 3-1 Maintenance overview

| Term | DAILY | QUARTERLY | ANNUAL | Activity | Note |
|---|-------|-----------|--------|---|-------------------|
| 1. Load chain | X | | | visual check clean and lubricate as needed | see chapter 2.2.2 |
| 2. Hoist and carriage | X | | | abnormal noise check seal check | |
| 3. Power supply cable | X | | | visual check | |
| 4. Limit switch | X | | | function check | see chapter 2.2.3 |
| 5. Seal | | X | | visual check | |
| 6. Cable discharging device control cable | X | | | visual check | |

3.2.2 Service overview

See table 3-2.

Table 3-2 Service overview

| Term | DAILY | QUARTERLY | ANNUAL | Activity | Note |
|---|-------|-----------|--------|--|---------------------------|
| 1. Load chain | | X | X | lubricate measure wear | see chapter 2.2.2 / 3.2.4 |
| 2. Brake system | X | | X | function check with load | see chapter 3.2.3 |
| 3. Electrical fittings | | | X | function check | |
| 4. Securing screws on suspending parts and load hook with accessories | | | X | check for cracks check screw movement | see chapter 3.2.8 |
| 5. Gearing | | | X | visual check wear | see chapter 3.2.6 |
| 6. Limit Switch | | | X | check switching elements | see chapter 2.2.3 |
| 7. Slip clutch | | | X | function check | see chapter 3.2.7 |

3.2.3 DC Brake system V2



NOTE

All new hoists are equipped with DC brakes as standard. Hoists fitted with DC brakes can be identified by the serial number suffix XXXXX-20

The spring-loaded brake is a solenoid operated single disk brake with two friction surfaces. The braking force is applied by compression springs. The braking torque is generated when no current is applied. The ventilation is electromagnetic. The brake operates with DC current. The brake must be able to hold the nominal load in power free mode without any problems.

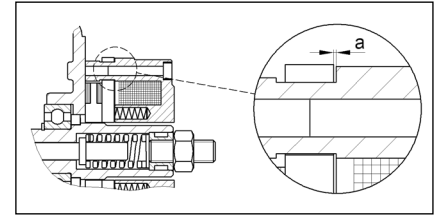
**NOTE**

The brake has no air gap adjustment. If the air gap (a_{max} , table 3-3 and figure 3-1) reaches maximal value, the brake pad needs changing.

Table 3-3 Air gap (DC type brake)

| | LG25 / LG50 | LG10 | LG16 / LG20 / LG250 |
|----------------------|-------------|------|---------------------|
| Air gap (a) [mm] | +0.15 | +0.2 | +0.2 |
| | 0.4 | 0.5 | 0.5 |
| | 0 | 0 | 0 |
| Air gap (a max) [mm] | 0.7 | 0.9 | 0.9 |
| Torque value [Nm] | 3 | 10 | 10 |

Figure 3-1



3.2.4 AC Brake system V1

**NOTE**

AC brakes were previously fitted to our older model versions. Hoists fitted with AC brakes can be identified by the serial number suffix XXXXX-10. Where a second brake is fitted, it is a DC type brake (see 3.2.3)

In the power free mode, the brake must be able to hold the nominal load without any problems or slipping. It will have been operationally adjusted before initial delivery.

**CAUTION !**

The setting of the air gap(s) on the AC brake is of 1.0mm. The wearing of the disc may cause a reduction of the gap. A new setting should be made at a minimum air gap of 0.3mm (figure 3-1 and table 3-4)

**CAUTION !**

If the lifting speed is only reached slowly or the load drops a little further after it has been lowered, this is a sign of oily or sticky brake discs (1) or the closing of the disc guidance (2) (see figure 3-3). Dismantle brake discs, clean and de-grease. Disc guidance to be replaced if damaged.

**NOTE**

By releasing the disc brake (carefully pull on the brake arm (2) in accordance with figure 3-2) the load can be lowered in a manual mode.

Follow the correct installation procedure for the brake discs (see figure 3-3).

Table 3-4 Air gap (AC type brake)

| Brake type | Air gap (s) [mm] | Number of Discs | |
|---------------------|------------------|-----------------|----------|
| | | Internal | External |
| LG25 / LG50 | 0.3 - 1.0 | 5 | 5 |
| LG10 | 0.3 - 1.1 | 7 | 7 |
| LG16 / LG20 / LG250 | 0.3 - 1.2 | 7 | 7 |

Figure 3-2

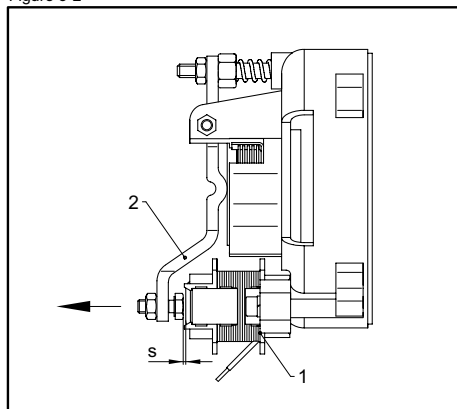
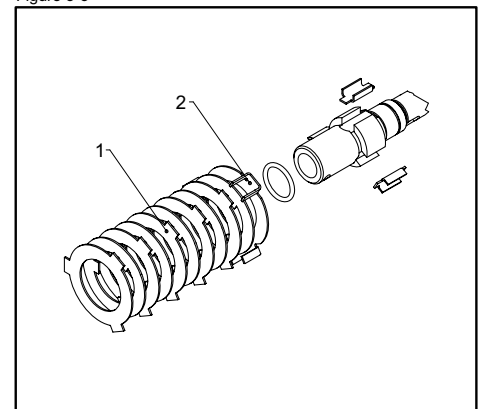
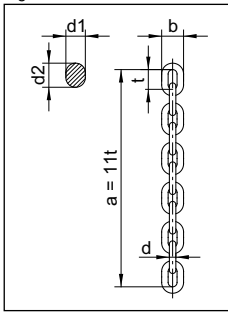


Figure 3-3



3.2.5 Load chain

Figure 3-4



The load chain should be periodically checked for abrasion. The check is based upon three measurements: see accepted wear factors (table 3-5) and measurement points (figure 3-4).



CAUTION !

The chain should be replaced when the measurements exceed or fall short of those defined in the table. The chain wheel and chain guide should be checked for wear at the same time and, where necessary, be replaced. Only use original LoadGuard® approved chains. The chain links should not be welded.

The new chain is installed in accordance with chapter 2.2.2.



NOTE

For ease of installation, the old chain and new chain can be connected by a piece of flexible wire.

Table 3-5 Wear factors load chain

| | LG25 | LG50 | LG10 | LG16 | LG20 / LG250 |
|--|----------|----------|--------|--------|--------------|
| Chain type d x t [mm] | 4 x 12.3 | 5 x 15.3 | 7 x 22 | 9 x 27 | 10 x 28 |
| Tolerances in accordance with DIN685, Part 5 | | | | | |
| DIN EN 818-7 [mm] | 138.0 | 171.6 | 246.8 | 302.9 | 314.2 |
| 1. Measurement over 11 chain links; a = 11t | | | | | |
| 2. Measurement over 11 chain link 't' [mm] | 12.90 | 16.0 | 23.1 | 28.35 | 29.4 |
| 3. Measurement of the chain link diameter | | | | | |
| d1 + d2 | | | | | |
| dm = ----- ; (dm min. = 0.9 x d) | 3.6 | 4.5 | 6.3 | 8.1 | 9.0 |
| 2 | | | | | |

3.2.6 Limit stop assembly



CAUTION !

A damaged/worn buffer (wear) plate must always be replaced to prevent further damage

Screw connections at the limit stop and shims or lower sheaves should be checked and, where necessary, tightened to the right torque. For coefficient data see chapter 3.2.9.

3.2.7 Gearbox

The gearing has continual lubrication.

Lubricant:

Strub N1424

Can be mixed and is compatible with all other similar brand name grease (DIN 51503: GP OM-20)

Lubricant quantity:

LG25 / LG50 0.4 kg

LG10 1.0 kg

LG16 / LG20 / LG250 1.8 kg

3.2.8 Slip clutch

The slip clutch is set at 125% at the factory and can be relied on to prevent the chain hoist from being overloaded (the force limiting factor according to DIN EN 14492-2 is = Φ_{DAL} 1.4). The coating is wear resistant.



DANGER !

Never adjust the slip clutch whilst the hoist is under load/tension. Always lower the load first



CAUTION !

Adjustment and testing of the slip clutch may only be carried out by authorized personnel and must be recorded locally in accordance with local legislation as well as the log book. Never test the hoist using a static pulling test rig, this puts undue stress on the mechanical components. We only recommend testing using a dynamic live load test.

Setting/testing the slip clutch

Clutch adjustment is performed at the top of the rotor. Other than the end cover, no additional parts need to be removed or bypassed in order to set the clutch.

To set/test the clutch correctly, put the hoist on a dynamic test rig and set the load to 125%. Under normal temperate conditions, the aim is so the hoist should only just be able to lift the load at a creep. If not, then safely lower the load first and then loosen the clutch (using the procedure outlined further on in this section) until it can no longer lift the load. Then start the procedure to tighten the clutch (using the procedure outlined further on in this section). Repeat the process until the hoist can only just to lift the 125% load at a creep. The slip clutch is now set correctly.

NOTE



The methods for clutch adjustment differ between V1 hoists (AC Brake) and V2 / V3 hoists (DC Brake). All new hoists are equipped with DC brakes as standard. Hoists fitted with AC brakes can be identified by the serial number suffix XXXXX-10. Hoists fitted with DC brakes can be identified by the serial number suffix XXXXX-20. See chapter 3.2.3 and 3.2.4 accordingly.

Slip Clutch Adjustment

V2 / V3 type - DC Brake

Adjustment is via a grub screw on top of the rotor, and is secured with a nut.

To loosen the clutch, loosen off the nut, taking care not to loosen too far beyond the thread of the grub screw itself. Then use a hex key to turn the top grub screw ANTI-CLOCKWISE using 1/4 turn increments. Turning anti-clockwise decreases the tension on the spring located directly below the grub screw.



CAUTION !

Use care not to over loosen the grub screw. Doing so may decrease the clutch slipping point causing the load to slip, be uncontrolled whilst underway or not lift correctly.

Once the clutch is set at the desired position, tighten up the nut fully (whilst) preventing the grub screw from spinning.

To tighten the clutch, loosen off the nut, taking care not to loosen too far beyond the thread of the grub screw itself. Then use a hex key to turn the top grub screw CLOCKWISE using 1/4 turn increments. Turning clockwise places more tension on the spring located directly below the grub screw.



CAUTION !

Use care not to over tighten the grub screw. Doing so may increase the clutch slipping point beyond the recommended 125% causing mechanical damage, effectively bypass the clutch mechanism, induce overheating and premature motor wear.

Once the clutch is set at the desired position, tighten up the nut fully (whilst) preventing the grub screw from spinning.

NOTE



For ease of maintenance, we have created a simple but effective tool for setting clutches called 'Clutch Adjustment Tool'. Contact LoadGuard® or your local reseller for more information.

V1 type - AC Brake

There are two grub screw at the top end of the rotor. Once directly off the top that screws into the rotor itself. The second is located on the side of the rotor, and is used to lock the top grub screw in place.

To loosen the clutch, loosen off the side grub screw, taking care not to loosen so far that the grub screw falls out of it's hole. Then use a hex key to turn the top grub screw ANTI-CLOCKWISE using 1/4 turn increments. Turning anti-clockwise decreases the tension on the spring located directly below the grub screw.



CAUTION !

Use care not to over loosen the top grub screw. Doing so may decrease the clutch slipping point causing the load to slip, be uncontrolled whilst underway or not lift correctly.

Once the clutch is set at the desired position, tighten up the side grub screw to lock the top grub screw in place.

To tighten the clutch, loosen off the side grub screw, taking care not to loosen so far that the grub screw falls out of it's hole. Then use a hex key to turn the top grub screw CLOCKWISE using 1/4 turn increments. Turning clockwise increases the tension on the spring located directly below the grub screw.



CAUTION !

Use care not to over tighten the top grub screw. Doing so may increase the clutch slipping point beyond the recommended 125% causing mechanical damage, effectively bypass the clutch mechanism, induce overheating and premature motor wear.

Once the clutch is set at the desired position, tighten up the side grub screw to lock the top grub screw in place.

3.2.9 Suspension parts

All statically loaded parts are considered suspension parts. The bearing surfaces of the slewing suspension parts must be periodically greased.
Torque values for screws or property class 88 according to DIN ISO 898:

| | | | | |
|------|-------|-------|-------|-------|
| M 5 | M 6 | M 8 | M 10 | M 12 |
| 6 Nm | 10 Nm | 24 Nm | 48 Nm | 83 Nm |

3.3 Ordering spare parts

Information on how to order spare parts can be found on page 3. The appropriate assembly diagram is considered to be a supplement to the parts catalogue.

4 Measures for obtaining a safe period of operation

The statutory and health requirements of the EU regulations stipulate that specific dangers which may arise from fatigue or ageing must be prevented. Accordingly, operators of standard hoist gear are obliged to determine the actual utilisation. The actual utilisation period is determined and recorded as part of the annual inspection by customer service engineers. A general overhaul must be carried out when the theoretical utilisation limit is reached, or after no more than 10 years. All checking and the general overhaul itself must be arranged by the operator of the hoist gear. The following theoretical utilisation periods apply to electric chain hoists that are categorised according to ISO 4301-1 (converted into full-load hours):

| | | | | |
|-------|-------|--------|--------|--------|
| M 3 | M 4 | M 5 | M 6 | M 7 |
| 400 h | 800 h | 1600 h | 3200 h | 6300 h |

4.1 Determining the actual utilisation periods

The actual utilisation period depends on the daily operating time and the load collective. Running time is determined from information provided by the operator or recorded using a meter that counts the number of operating hours. The load collective is determined in accordance with table 1-1, page 9. These two items of information are used to calculate the annual utilisation period from table 4-1.

If an operating data acquisition system (BDE) is used, the actual utilisation can be read out directly by our experts during the annual inspection.



CAUTION !

The values periodically calculated or read-off must be recorded in the log book.

4.2 General overhaul

On reaching the theoretical service life (no later than 10 years for recording without BDE), a general overhaul should be performed. This enables the equipment to continue operating safely for a further period of utilisation (service life). Components must be inspected and/or replaced in this overhaul accordingly to table 4-2. Inspection and approval for further use must be performed either by a specialist company authorised by the manufacturer, or by the manufacturer personally.

The inspector determines:

- The new theoretical utilisation possible
- The maximum period until the next general overhaul

This date should be recorded in the log book.

Table 4-1 Annual Service Life

| Utilisation per day [h] | ≤0.25 (0.16) | ≤0.50 (0.32) | ≤1.0 (0.64) | ≤2.0 (1.28) | ≤4.0 (2.56) | ≤8.0 (5.12) | ≤16.0 (10.24) | > 16.0 (20.48) |
|-------------------------|-------------------------|-----------------|----------------|----------------|----------------|----------------|------------------|-------------------|
| Load Collective | Annual service life [h] | | | | | | | |
| k = 0.50 | 6 | 12 | 24 | 48 | 96 | 192 | 384 | 768 |
| k = 0.63 | 12 | 24 | 48 | 96 | 192 | 384 | 768 | 1536 |
| k = 0.80 | 24 | 48 | 96 | 192 | 384 | 768 | 1536 | 3072 |
| k = 1.00 | 48 | 96 | 192 | 384 | 768 | 1536 | 3072 | 6144 |

Table 4-2 General Overhaul

| Components of ALL LoadGuard models | Check for wear * | Replace |
|------------------------------------|------------------|---------|
| Brake | x | 1600 h |
| Motorshaft | x | |
| Gear teeth | | x |
| Antifriction bearing | | x |
| Washers | | x |
| Chain | x ** | |
| Chain wheel / Guide | x | |
| Deflection wheels | x | |
| suspension | x | |
| Load hook | | x |
| Traveling gear, running wheel | x | |
| Contactors, limit switch | x | |

* replace when worn

** replace no later than at general overhaul

5 Appendix

5.1 Technical data

Table 0-3 BGV-D8

| Type | Lifting capacity (kg) | Nominal Lifting speed (m/min) | Motor power (kW) | 3x400V 50Hz (A) | No. of chain falls | Chain dimensions (mm) | Chain safety factor | Weight body only (kg) | Weight per metre lift (kg) |
|-----------------|--------------------------|----------------------------------|---------------------|--------------------|--------------------|--------------------------|---------------------|--------------------------|-------------------------------|
| LG25/1/4 | 250 | 4 | 0.18 | 1.4 | 1 | 4x12.3 | 8.2 | 18 | 0.32 |
| LG25/1/8 | 250 | 8 | 0.36 | 1.3 | 1 | 4x12.3 | 8.2 | 18 | 0.32 |
| LG25/1/8&2 | 250 | 8/2 | 0.36/0.09 | 1.8/1.7 | 1 | 4x12.3 | 8.2 | 18 | 0.32 |
| LG25/2/2 | 500 | 2 | 0.18 | 1.4 | 2 | 4x12.3 | 8.2 | 20.5 | 0.64 |
| LG25/2/4 | 500 | 4 | 0.36 | 1.3 | 2 | 4x12.3 | 8.2 | 20.5 | 0.64 |
| LG25/2/4&1 | 500 | 4/1 | 0.36/0.09 | 1.8/1.7 | 2 | 4x12.3 | 8.2 | 20.5 | 0.64 |
| LG50/1/4 | 500 | 4 | 0.36 | 2.3 | 1 | 5x15.3 | 6.4 | 18.5 | 0.52 |
| LG50/1/8 | 500 | 8 | 0.72 | 1.9 | 1 | 5x15.3 | 6.4 | 18.5 | 0.52 |
| LG50/1/8&2 | 500 | 8/2 | 0.72/0.18 | 2.3/1.8 | 1 | 5x15.3 | 6.4 | 18.5 | 0.52 |
| LG50/2/2 | 1000 | 2 | 0.36 | 2.3 | 2 | 5x15.3 | 6.4 | 21.5 | 1.04 |
| LG50/2/4 | 1000 | 4 | 0.72 | 1.9 | 2 | 5x15.3 | 6.4 | 21.5 | 1.04 |
| LG50/2/4&1 | 1000 | 4/1 | 0.72/0.18 | 2.3/1.8 | 1 | 5x15.3 | 6.4 | 21.5 | 1.04 |
| LG10/1/4 | 1000 | 4 | 0.73 | 3.5 | 1 | 7x22 | 6.28 | 42 | 1.04 |
| LG10/1/8 | 1000 | 8 | 1.45 | 4.3 | 1 | 7x22 | 6.28 | 42 | 1.04 |
| LG10/1/8&2 | 1000 | 8/2 | 4.0/2.8 | 4.3/3.8 | 1 | 7x22 | 6.28 | 42 | 1.04 |
| LG10/2/2 | 2000 | 2 | 0.72 | 3.5 | 2 | 7x22 | 6.28 | 44 | 2.08 |
| LG10/2/4 | 2000 | 4 | 1.45 | 4.3 | 2 | 7x22 | 6.28 | 44 | 2.08 |
| LG10/2/4&1 | 2000 | 4/1 | 4.0/2.8 | 4.3/3.8 | 2 | 7x22 | 6.28 | 44 | 2.08 |
| LG16/1/4 | 1600 | 4 | 1.22 | 4.5 | 1 | 9x27 | 6.48 | 58 | 1.75 |
| LG16/1/8 | 1600 | 8 | 2.44 | 6.8 | 1 | 9x27 | 6.48 | 58 | 1.75 |
| LG16/1/8&2 | 1600 | 8/2 | 2.44/0.61 | 7.3/6.2 | 1 | 9x27 | 6.48 | 58 | 1.75 |
| LG16/2/2 | 3200 | 2 | 1.22 | 4.5 | 2 | 9x27 | 6.48 | 62.5 | 3.5 |
| LG16/2/4 | 3200 | 4 | 2.44 | 6.8 | 2 | 9x27 | 6.48 | 62.5 | 3.5 |
| LG16/2/4&1 | 3200 | 4/1 | 2.44/0.61 | 7.3/6.2 | 2 | 9x27 | 6.48 | 62.5 | 3.5 |
| LG20/1/4 | 2000 | 4 | 1.53 | 4.8 | 1 | 10x28 | 6.4 | 58 | 2.25 |
| LG20/1/8 | 2000 | 8 | 3.06 | 7.3 | 1 | 10x28 | 6.4 | 58 | 2.25 |
| LG20/1/8&2 | 2000 | 8/2 | 3.06/0.77 | 8.5/6.6 | 1 | 10x28 | 6.4 | 58 | 2.25 |
| LG20/2/2 | 4000 | 2 | 1.53 | 4.8 | 2 | 10x28 | 6.4 | 62.5 | 4.5 |
| LG20/2/4 | 4000 | 4 | 3.06 | 7.3 | 2 | 10x28 | 6.4 | 62.5 | 4.5 |
| LG20/2/4&1 | 4000 | 4/1 | 3.06/0.77 | 8.5/6.6 | 2 | 10x28 | 6.4 | 62.5 | 4.5 |
| LG250/1/3.2 | 2500 | 3.2 | 1.53 | 4.8 | 1 | 10x28 | 5.12 | 58 | 2.25 |
| LG250/1/6.4 | 2500 | 6.4 | 3.06 | 7.3 | 1 | 10x28 | 5.12 | 58 | 2.25 |
| LG250/1/6.4&1.6 | 2500 | 6.4/1.6 | 3.06/0.77 | 8.5/6.6 | 1 | 10x28 | 5.12 | 58 | 2.25 |
| LG250/2/1.6 | 5000 | 1.6 | 1.53 | 4.8 | 2 | 10x28 | 5.12 | 62.5 | 4.5 |
| LG250/2/3.2 | 5000 | 3.2 | 3.06 | 7.3 | 2 | 10x28 | 5.12 | 62.5 | 4.5 |
| LG250/2/3.2&0.8 | 5000 | 3.2/0.8 | 3.06/0.77 | 8.5/6.6 | 2 | 10x28 | 5.12 | 62.5 | 4.5 |

Table 0-4 BS7906 Cat A

| Type | Lifting capacity (kg) | Nominal Lifting speed (m/min) | Motor power (kW) | 3x400V 50Hz (A) | No. of chain falls | Chain dimensions (mm) | Chain safety factor | Weight body only (kg) | Weight per metre lift (kg) |
|------------|--------------------------|----------------------------------|---------------------|--------------------|--------------------|--------------------------|---------------------|--------------------------|-------------------------------|
| LG25/1/4 | 200 | 4 | 0.18 | 1.4 | 1 | 4x12.3 | 10.25 | 18 | 0.32 |
| LG25/1/8 | 200 | 8 | 0.36 | 1.3 | 1 | 4x12.3 | 10.25 | 18 | 0.32 |
| LG25/1/8&2 | 200 | 8/2 | 0.36/0.09 | 1.8/1.7 | 1 | 4x12.3 | 10.25 | 18 | 0.32 |
| LG25/2/2 | 400 | 2 | 0.18 | 1.4 | 2 | 4x12.3 | 10.25 | 20.5 | 0.64 |
| LG25/2/4 | 400 | 4 | 0.36 | 1.3 | 2 | 4x12.3 | 10.25 | 20.5 | 0.64 |
| LG25/2/4&1 | 400 | 4/1 | 0.36/0.09 | 1.8/1.7 | 2 | 4x12.3 | 10.25 | 20.5 | 0.64 |
| LG50/1/4 | 400 | 4 | 0.36 | 2.3 | 1 | 5x15.3 | 8.01 | 18.5 | 0.52 |
| LG50/1/8 | 400 | 8 | 0.72 | 1.9 | 1 | 5x15.3 | 8.01 | 18.5 | 0.52 |
| LG50/1/8&2 | 400 | 8/2 | 0.72/0.18 | 2.3/1.8 | 1 | 5x15.3 | 8.01 | 18.5 | 0.52 |
| LG50/2/2 | 800 | 2 | 0.36 | 2.3 | 2 | 5x15.3 | 8.01 | 21.5 | 1.04 |
| LG50/2/4 | 800 | 4 | 0.72 | 1.9 | 2 | 5x15.3 | 8.01 | 21.5 | 1.04 |
| LG50/2/4&1 | 800 | 4/1 | 0.72/0.18 | 2.3/1.8 | 1 | 5x15.3 | 8.01 | 21.5 | 1.04 |
| LG10/1/4 | 800 | 4 | 0.73 | 3.5 | 1 | 7x22 | 7.85 | 42 | 1.04 |
| LG10/1/8 | 800 | 8 | 1.45 | 4.3 | 1 | 7x22 | 7.85 | 42 | 1.04 |
| LG10/1/8&2 | 800 | 8/2 | 4.0/2.8 | 4.3/3.8 | 1 | 7x22 | 7.85 | 42 | 1.04 |
| LG10/2/2 | 1600 | 2 | 0.72 | 3.5 | 2 | 7x22 | 7.85 | 44 | 2.08 |
| LG10/2/4 | 1600 | 4 | 1.45 | 4.3 | 2 | 7x22 | 7.85 | 44 | 2.08 |
| LG10/2/4&1 | 1600 | 4/1 | 4.0/2.8 | 4.3/3.8 | 2 | 7x22 | 7.85 | 44 | 2.08 |
| LG16/1/4 | 1250 | 4 | 1.22 | 4.5 | 1 | 9x27 | 8.3 | 58 | 1.75 |
| LG16/1/8 | 1250 | 8 | 2.44 | 6.8 | 1 | 9x27 | 8.3 | 58 | 1.75 |
| LG16/1/8&2 | 1250 | 8/2 | 2.44/0.61 | 7.3/6.2 | 1 | 9x27 | 8.3 | 58 | 1.75 |
| LG16/2/2 | 2500 | 2 | 1.22 | 4.5 | 2 | 9x27 | 8.3 | 62.5 | 3.5 |
| LG16/2/4 | 2500 | 4 | 2.44 | 6.8 | 2 | 9x27 | 8.3 | 62.5 | 3.5 |
| LG16/2/4&1 | 2500 | 4/1 | 2.44/0.61 | 7.3/6.2 | 2 | 9x27 | 8.3 | 62.5 | 3.5 |
| LG20/1/4 | 1600 | 4 | 1.53 | 4.8 | 1 | 10x28 | 8.01 | 58 | 2.25 |
| LG20/1/8 | 1600 | 8 | 3.06 | 7.3 | 1 | 10x28 | 8.01 | 58 | 2.25 |
| LG20/1/8&2 | 1600 | 8/2 | 3.06/0.77 | 8.5/6.6 | 1 | 10x28 | 8.01 | 58 | 2.25 |
| LG20/2/2 | 3200 | 2 | 1.53 | 4.8 | 2 | 10x28 | 8.01 | 62.5 | 4.5 |
| LG20/2/4 | 3200 | 4 | 3.06 | 7.3 | 2 | 10x28 | 8.01 | 62.5 | 4.5 |
| LG20/2/4&1 | 3200 | 4/1 | 3.06/0.77 | 8.5/6.6 | 2 | 10x28 | 8.01 | 62.5 | 4.5 |

Table 0-5 BGV-D8+

| Type | Lifting capacity (kg) | Nominal Lifting speed (m/min) | Motor power (kW) | 3x400V 50Hz (A) | No. of chain falls | Chain dimensions (mm) | Chain safety factor | Weight body only (kg) | Weight per metre lift (kg) |
|------------|--------------------------|----------------------------------|---------------------|--------------------|--------------------|--------------------------|---------------------|--------------------------|-------------------------------|
| LG25/1/4 | 160 | 4 | 0.12 | 1.4 | 1 | 4x12.3 | 12.81 | 18 | 0.32 |
| LG25/1/8 | 160 | 8 | 0.23 | 1.3 | 1 | 4x12.3 | 12.81 | 18 | 0.32 |
| LG25/1/8&2 | 160 | 8/2 | 0.23/0.06 | 1.8/1.7 | 1 | 4x12.3 | 12.81 | 18 | 0.32 |
| LG25/2/2 | 320 | 2 | 0.12 | 1.4 | 2 | 4x12.3 | 12.81 | 20.5 | 0.64 |
| LG25/2/4 | 320 | 4 | 0.23 | 1.3 | 2 | 4x12.3 | 12.81 | 20.5 | 0.64 |
| LG25/2/4&1 | 320 | 4/1 | 0.23/0.06 | 1.8/1.7 | 2 | 4x12.3 | 12.81 | 20.5 | 0.64 |
| | | | | | | | | | |
| LG50/1/4 | 250 | 4 | 0.18 | 2.3 | 1 | 5x15.3 | 12.81 | 18.5 | 0.52 |
| LG50/1/8 | 250 | 8 | 0.36 | 1.9 | 1 | 5x15.3 | 12.81 | 18.5 | 0.52 |
| LG50/1/8&2 | 250 | 8/2 | 0.36/0.09 | 2.3/1.8 | 1 | 5x15.3 | 12.81 | 18.5 | 0.52 |
| LG50/2/2 | 500 | 2 | 0.18 | 2.3 | 2 | 5x15.3 | 12.81 | 21.5 | 1.04 |
| LG50/2/4 | 500 | 4 | 0.36 | 1.9 | 2 | 5x15.3 | 12.81 | 21.5 | 1.04 |
| LG50/2/4&1 | 500 | 4/1 | 0.36/0.09 | 2.3/1.8 | 1 | 5x15.3 | 12.81 | 21.5 | 1.04 |
| | | | | | | | | | |
| LG10/1/4 | 500 | 4 | 0.36 | 3.5 | 1 | 7x22 | 12.55 | 42 | 1.04 |
| LG10/1/8 | 500 | 8 | 0.72 | 4.3 | 1 | 7x22 | 12.55 | 42 | 1.04 |
| LG10/1/8&2 | 500 | 8/2 | 0.72/0.18 | 4.3/3.8 | 1 | 7x22 | 12.55 | 42 | 1.04 |
| LG10/2/2 | 1000 | 2 | 0.36 | 3.5 | 2 | 7x22 | 12.55 | 44 | 2.08 |
| LG10/2/4 | 1000 | 4 | 0.72 | 4.3 | 2 | 7x22 | 12.55 | 44 | 2.08 |
| LG10/2/4&1 | 1000 | 4/1 | 0.72/0.18 | 4.3/3.8 | 2 | 7x22 | 12.55 | 44 | 2.08 |
| | | | | | | | | | |
| LG16/1/4 | 800 | 4 | 0.58 | 4.5 | 1 | 9x27 | 12.97 | 58 | 1.75 |
| LG16/1/8 | 800 | 8 | 1.16 | 6.8 | 1 | 9x27 | 12.97 | 58 | 1.75 |
| LG16/1/8&2 | 800 | 8/2 | 1.16/0.29 | 7.3/6.2 | 1 | 9x27 | 12.97 | 58 | 1.75 |
| LG16/2/2 | 1600 | 2 | 0.58 | 4.5 | 2 | 9x27 | 12.97 | 62.5 | 3.5 |
| LG16/2/4 | 1600 | 4 | 1.16 | 6.8 | 2 | 9x27 | 12.97 | 62.5 | 3.5 |
| LG16/2/4&1 | 1600 | 4/1 | 1.16/0.29 | 7.3/6.2 | 2 | 9x27 | 12.97 | 62.5 | 3.5 |
| | | | | | | | | | |
| LG20/1/4 | 1000 | 4 | 0.76 | 4.8 | 1 | 10x28 | 12.81 | 58 | 2.25 |
| LG20/1/8 | 1000 | 8 | 1.53 | 7.3 | 1 | 10x28 | 12.81 | 58 | 2.25 |
| LG20/1/8&2 | 1000 | 8/2 | 1.53/0.38 | 8.5/6.6 | 1 | 10x28 | 12.81 | 58 | 2.25 |
| LG20/2/2 | 2000 | 2 | 0.76 | 4.8 | 2 | 10x28 | 12.81 | 62.5 | 4.5 |
| LG20/2/4 | 2000 | 4 | 1.53 | 7.3 | 2 | 10x28 | 12.81 | 62.5 | 4.5 |
| LG20/2/4&1 | 2000 | 4/1 | 1.53/0.38 | 8.5/6.6 | 2 | 10x28 | 12.81 | 62.5 | 4.5 |

Table 0-6 BGV-C1

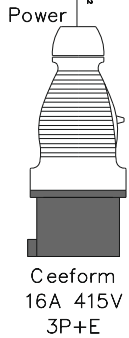
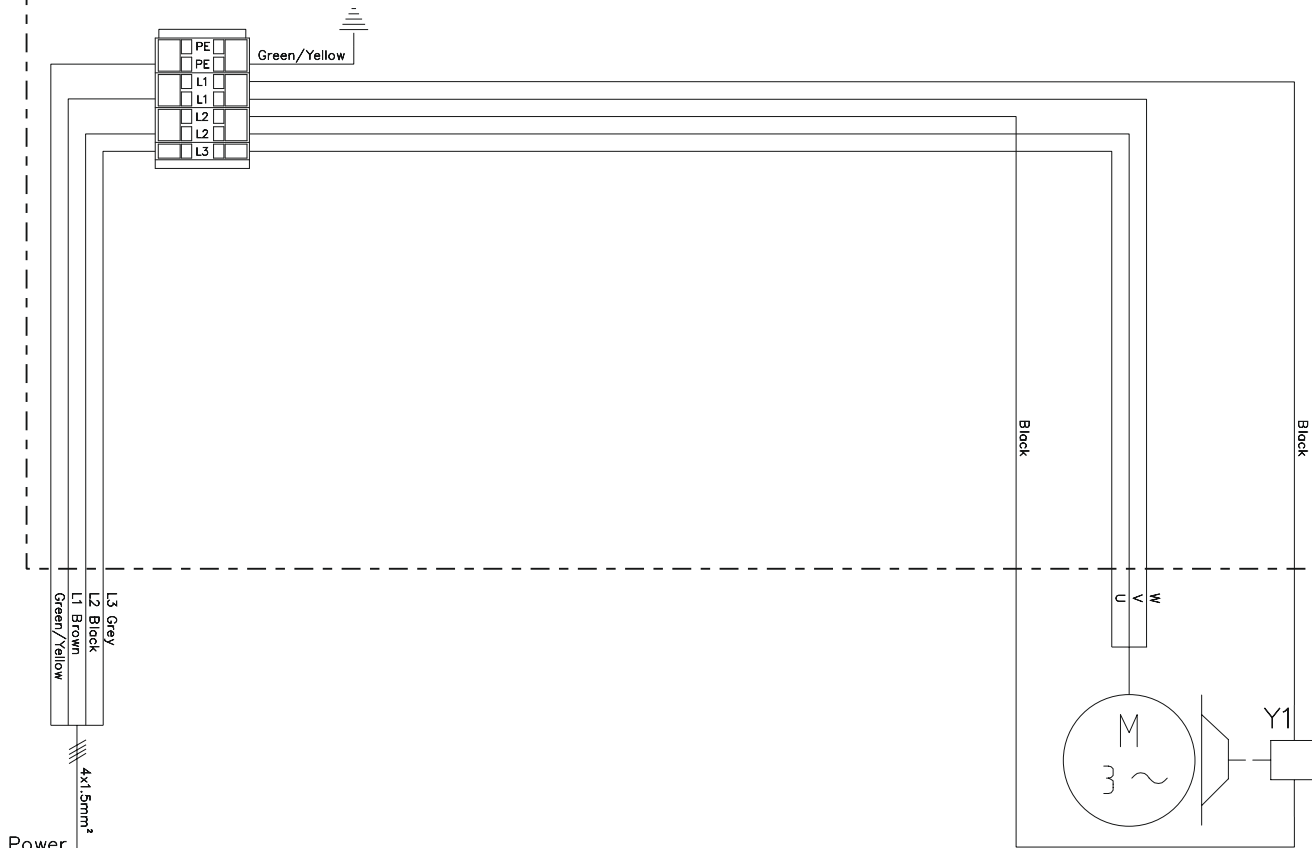
| Type | Lifting capacity (kg) | Nominal Lifting speed (m/min) | Motor power (kW) | 3x400V 50Hz (A) | No. of chain falls | Chain dimensions (mm) | Chain safety factor | Weight body only (kg) | Weight per metre lift (kg) |
|------------|--------------------------|----------------------------------|---------------------|--------------------|--------------------|--------------------------|---------------------|--------------------------|-------------------------------|
| LG25/1/4 | 160 | 4 | 0.12 | 14 | 1 | 4x12.3 | 12.81 | 18 | 0.32 |
| LG25/1/8 | 160 | 8 | 0.23 | 13 | 1 | 4x12.3 | 12.81 | 18 | 0.32 |
| LG25/1/8&2 | 160 | 8/2 | 0.23/0.06 | 18/17 | 1 | 4x12.3 | 12.81 | 18 | 0.32 |
| LG25/2/2 | 320 | 2 | 0.12 | 14 | 2 | 4x12.3 | 12.81 | 20.5 | 0.64 |
| LG25/2/4 | 320 | 4 | 0.23 | 13 | 2 | 4x12.3 | 12.81 | 20.5 | 0.64 |
| LG25/2/4&1 | 320 | 4/1 | 0.23/0.06 | 18/17 | 2 | 4x12.3 | 12.81 | 20.5 | 0.64 |
| LG50/1/4 | 250 | 4 | 0.18 | 2.3 | 1 | 5x15.3 | 12.81 | 18.5 | 0.52 |
| LG50/1/8 | 250 | 8 | 0.36 | 19 | 1 | 5x15.3 | 12.81 | 18.5 | 0.52 |
| LG50/1/8&2 | 250 | 8/2 | 0.36/0.09 | 2.3/18 | 1 | 5x15.3 | 12.81 | 18.5 | 0.52 |
| LG50/2/2 | 500 | 2 | 0.18 | 2.3 | 2 | 5x15.3 | 12.81 | 21.5 | 1.04 |
| LG50/2/4 | 500 | 4 | 0.36 | 19 | 2 | 5x15.3 | 12.81 | 21.5 | 1.04 |
| LG50/2/4&1 | 500 | 4/1 | 0.36/0.09 | 2.3/18 | 1 | 5x15.3 | 12.81 | 21.5 | 1.04 |
| LG10/1/4 | 500 | 4 | 0.36 | 3.5 | 1 | 7x22 | 12.55 | 42 | 1.04 |
| LG10/1/8 | 500 | 8 | 0.72 | 4.3 | 1 | 7x22 | 12.55 | 42 | 1.04 |
| LG10/1/8&2 | 500 | 8/2 | 0.72/0.18 | 4.3/3.8 | 1 | 7x22 | 12.55 | 42 | 1.04 |
| LG10/2/2 | 1000 | 2 | 0.36 | 3.5 | 2 | 7x22 | 12.55 | 44 | 2.08 |
| LG10/2/4 | 1000 | 4 | 0.72 | 4.3 | 2 | 7x22 | 12.55 | 44 | 2.08 |
| LG10/2/4&1 | 1000 | 4/1 | 0.72/0.18 | 4.3/3.8 | 2 | 7x22 | 12.55 | 44 | 2.08 |
| LG16/1/4 | 800 | 4 | 0.58 | 4.5 | 1 | 9x27 | 12.97 | 58 | 1.75 |
| LG16/1/8 | 800 | 8 | 1.16 | 6.8 | 1 | 9x27 | 12.97 | 58 | 1.75 |
| LG16/1/8&2 | 800 | 8/2 | 1.16/0.29 | 7.3/6.2 | 1 | 9x27 | 12.97 | 58 | 1.75 |
| LG16/2/2 | 1600 | 2 | 0.58 | 4.5 | 2 | 9x27 | 12.97 | 62.5 | 3.5 |
| LG16/2/4 | 1600 | 4 | 1.16 | 6.8 | 2 | 9x27 | 12.97 | 62.5 | 3.5 |
| LG16/2/4&1 | 1600 | 4/1 | 1.16/0.29 | 7.3/6.2 | 2 | 9x27 | 12.97 | 62.5 | 3.5 |
| LG20/1/4 | 1000 | 4 | 0.76 | 4.8 | 1 | 10x28 | 12.81 | 58 | 2.25 |
| LG20/1/8 | 1000 | 8 | 1.53 | 7.3 | 1 | 10x28 | 12.81 | 58 | 2.25 |
| LG20/1/8&2 | 1000 | 8/2 | 1.53/0.38 | 8.5/6.6 | 1 | 10x28 | 12.81 | 58 | 2.25 |
| LG20/2/2 | 2000 | 2 | 0.76 | 4.8 | 2 | 10x28 | 12.81 | 62.5 | 4.5 |
| LG20/2/4 | 2000 | 4 | 1.53 | 7.3 | 2 | 10x28 | 12.81 | 62.5 | 4.5 |
| LG20/2/4&1 | 2000 | 4/1 | 1.53/0.38 | 8.5/6.6 | 2 | 10x28 | 12.81 | 62.5 | 4.5 |

5.2 Circuit diagrams

Figure 5-1

Control Assembly

Legend
Y1-Brake 1



DRAWING REV. V1.0

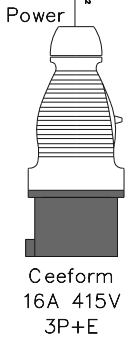
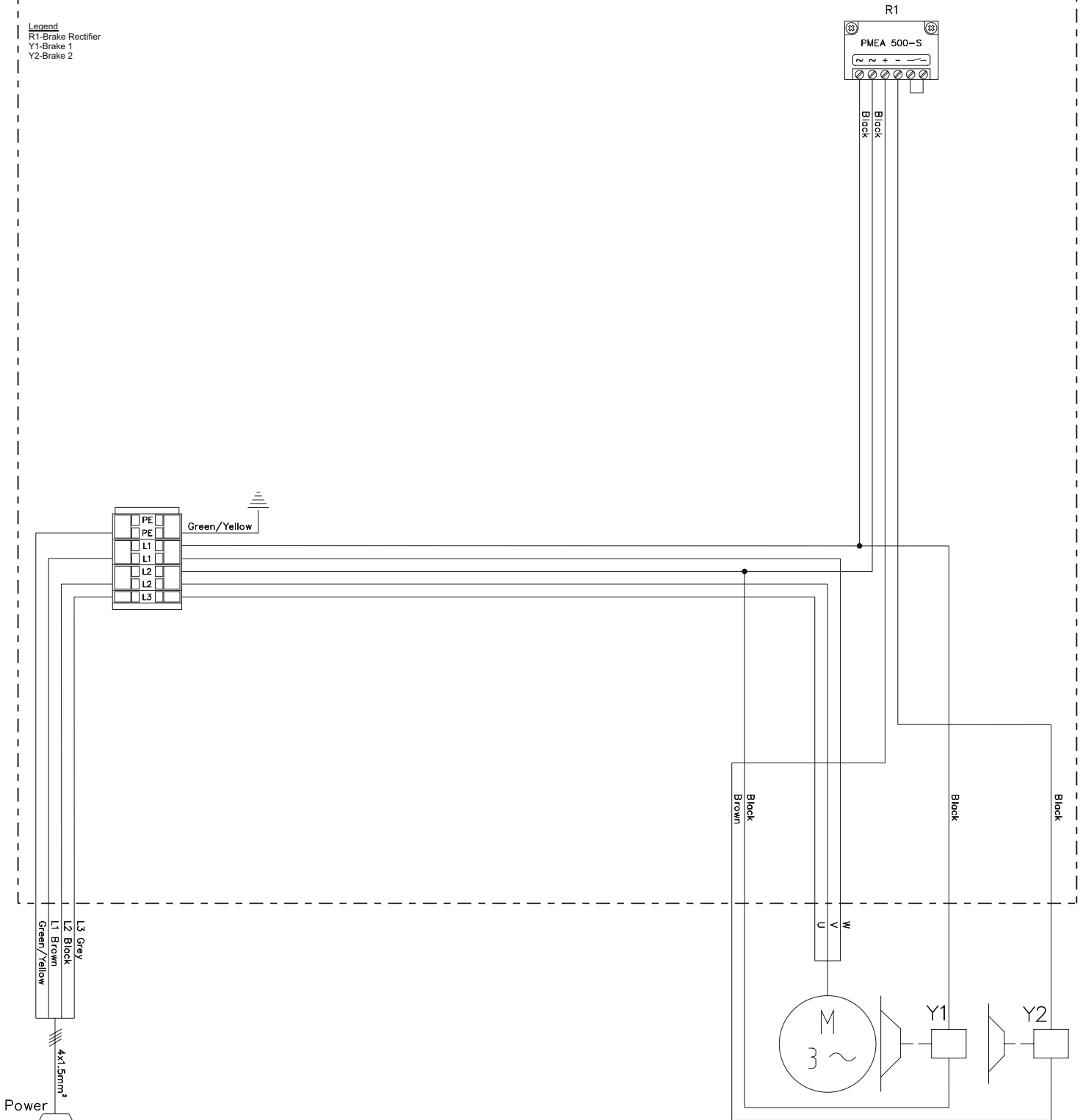


| Hoist Type | |
|------------------|----------------|
| CONTROL | Direct Control |
| VERSION | V1 |
| BRAKE | 1 x AC |
| SPEED | 1 Speed |
| CONTACTOR TYPE | N/A |
| WORKING LIMITS | No |
| EMERGENCY LIMITS | No |

Figure 5-2

Control Assembly

Legend
 R1-Brake Rectifier
 Y1-Brake 1
 Y2-Brake 2



DRAWING REV. V1.0

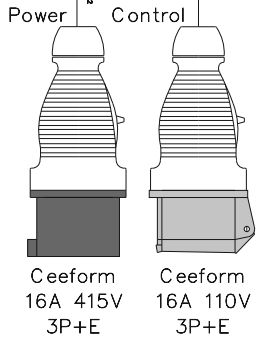
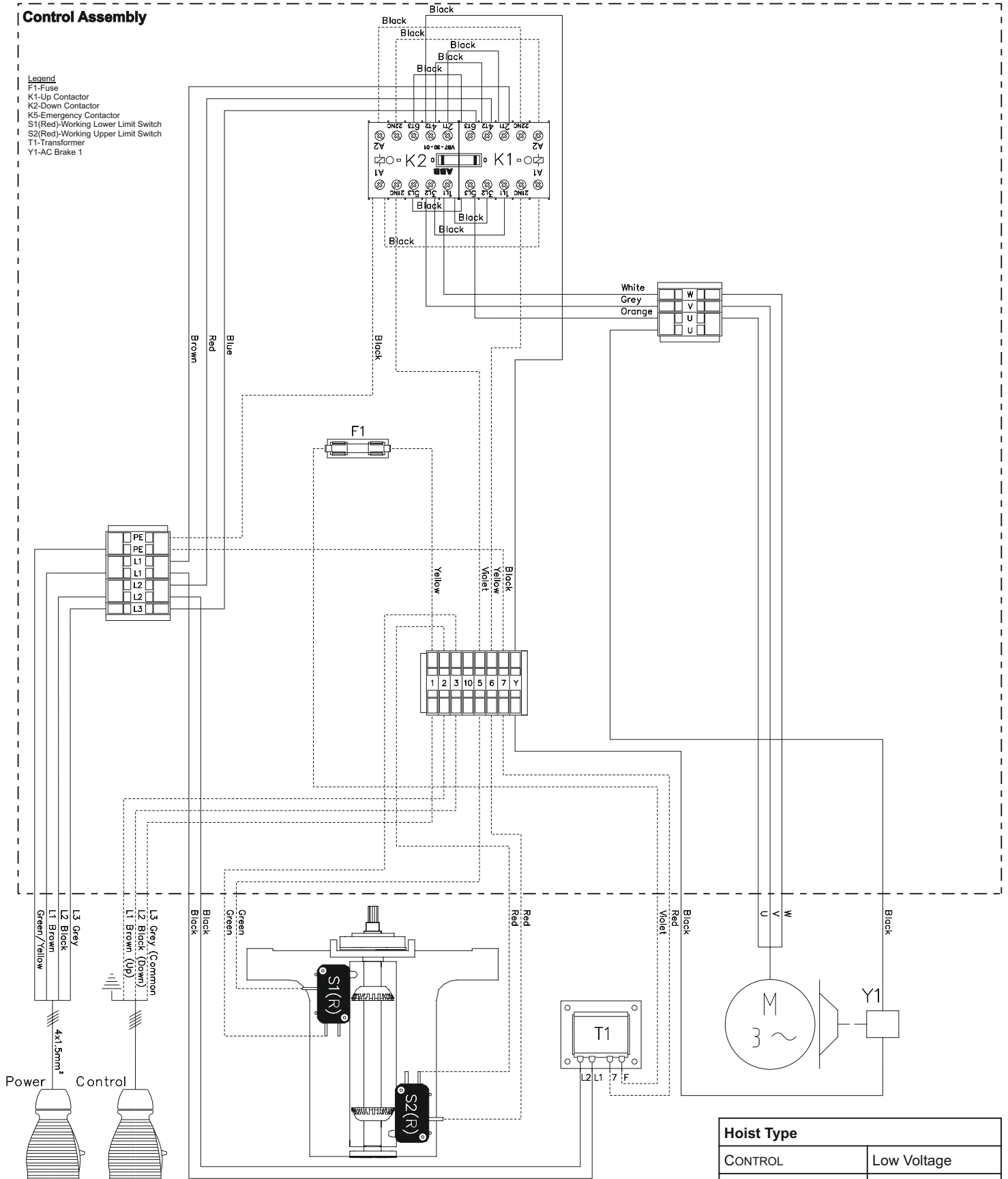


| Hoist Type | |
|------------------|----------------|
| CONTROL | Direct Control |
| VERSION | V1 |
| BRAKE | 1 x AC, 1 x DC |
| SPEED | 1 Speed |
| CONTACTOR TYPE | N/A |
| WORKING LIMITS | No |
| EMERGENCY LIMITS | No |

Figure 5-3

Control Assembly

- Legend**
 F1-Fuse
 K1-Up Contactor
 K2-Down Contactor
 K3-Emergency Contactor
 S1(Red)-Working Lower Limit Switch
 S2(Red)-Working Upper Limit Switch
 T1-Transformer
 Y1-AC Brake 1



DRAWING REV. V1.0

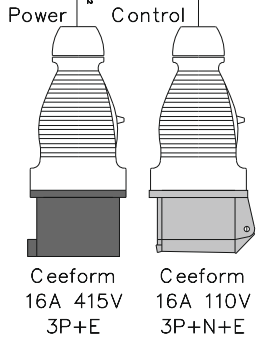
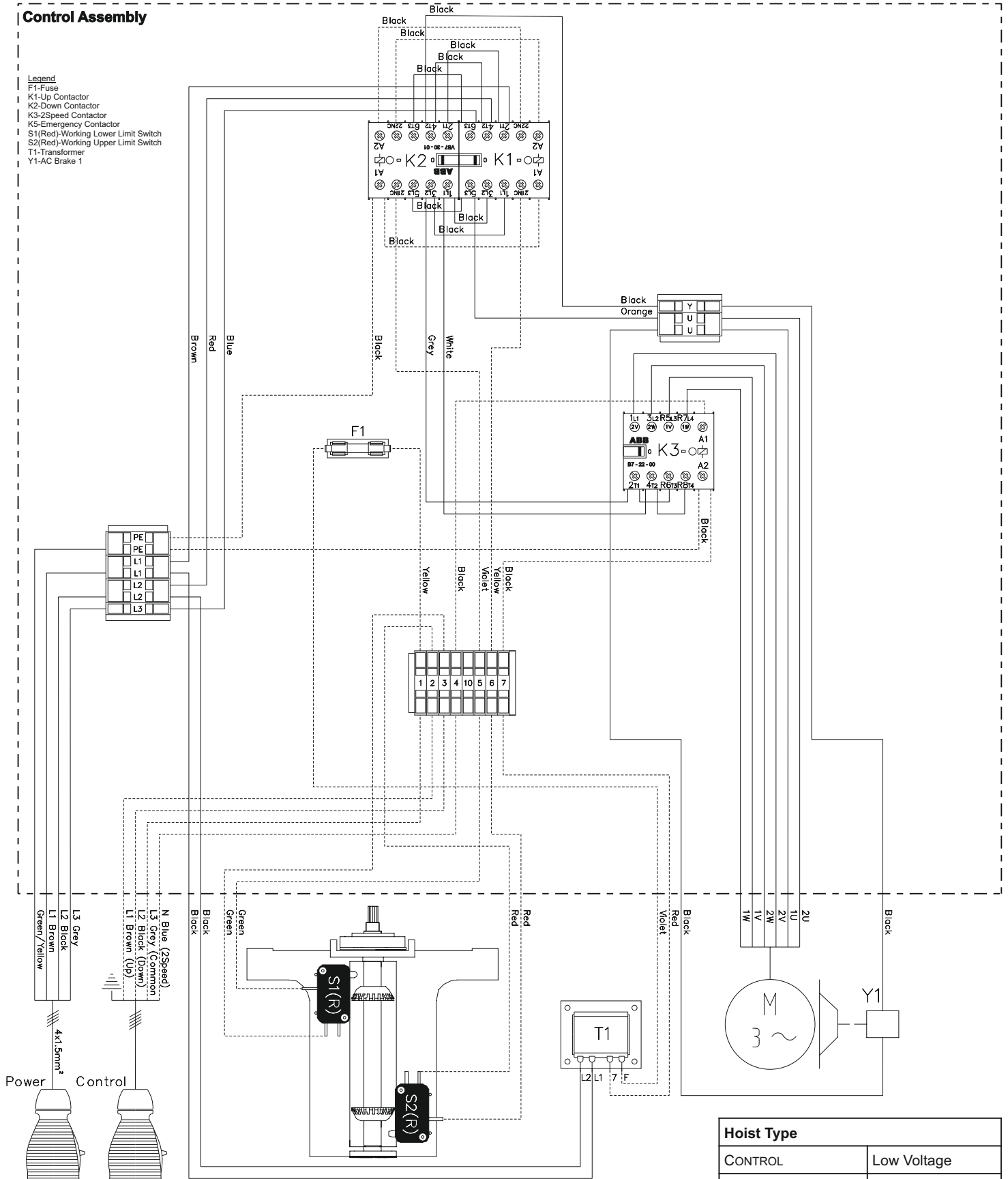


| Hoist Type | |
|------------------|-------------|
| CONTROL | Low Voltage |
| VERSION | V1 |
| BRAKE | 1 x AC |
| SPEED | 1 Speed |
| CONTACTOR TYPE | ABB |
| WORKING LIMITS | Yes |
| EMERGENCY LIMITS | No |

Figure 5-4

Control Assembly

- Legend**
 F1-Fuse
 K1-Up Contactor
 K2-Down Contactor
 K3-Speed Contactor
 K5-Emergency Contactor
 S1(Red)-Working Lower Limit Switch
 S2(Red)-Working Upper Limit Switch
 T1-Transformer
 Y1-AC Brake 1



DRAWING REV. V1.0



| Hoist Type | |
|------------------|-------------|
| CONTROL | Low Voltage |
| VERSION | V1 |
| BRAKE | 1 x AC |
| SPEED | 2 Speed |
| CONTACTOR TYPE | ABB |
| WORKING LIMITS | Yes |
| EMERGENCY LIMITS | No |

Figure 5-5

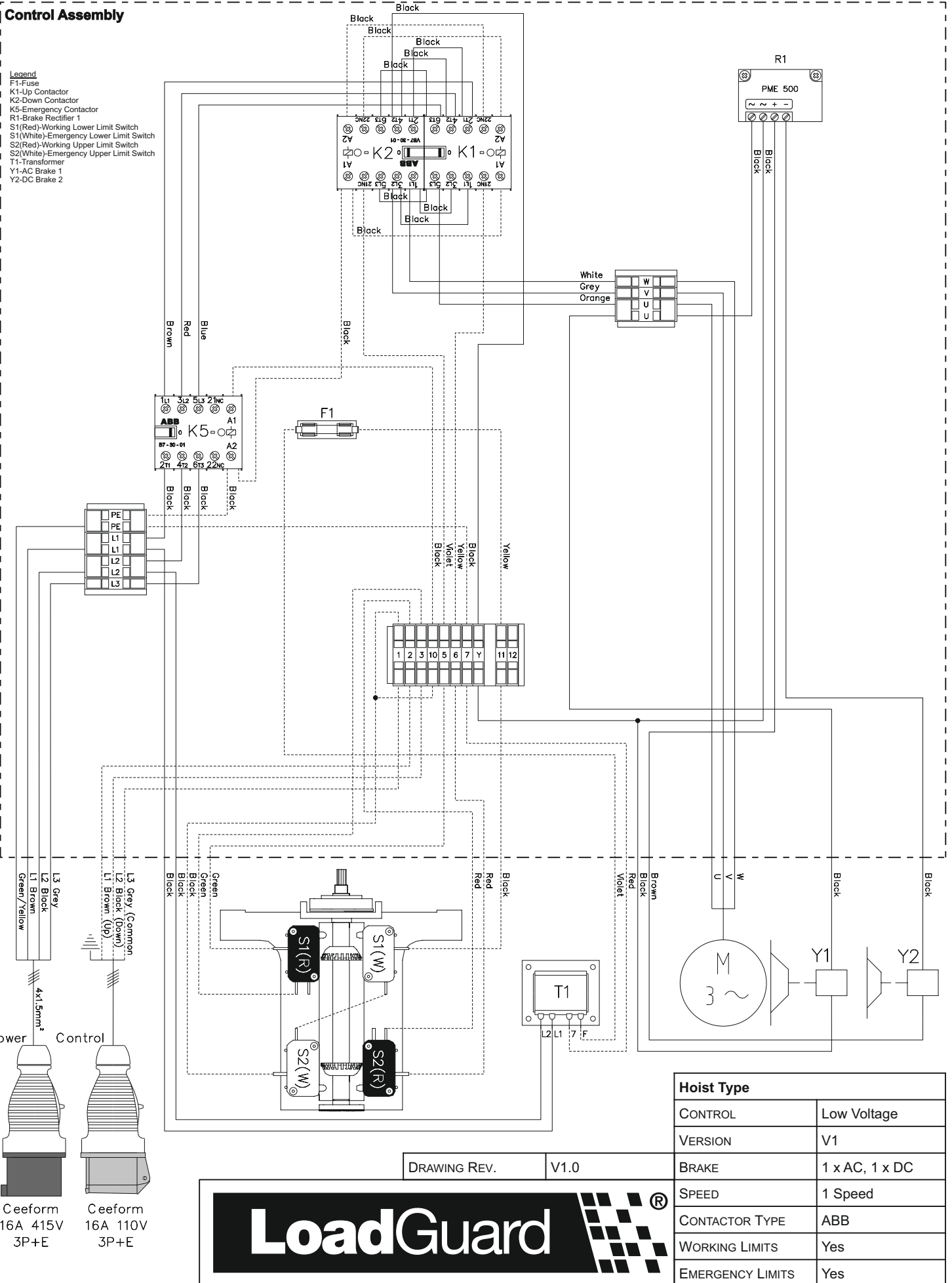
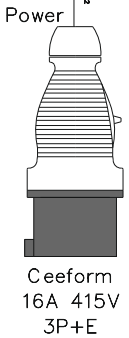
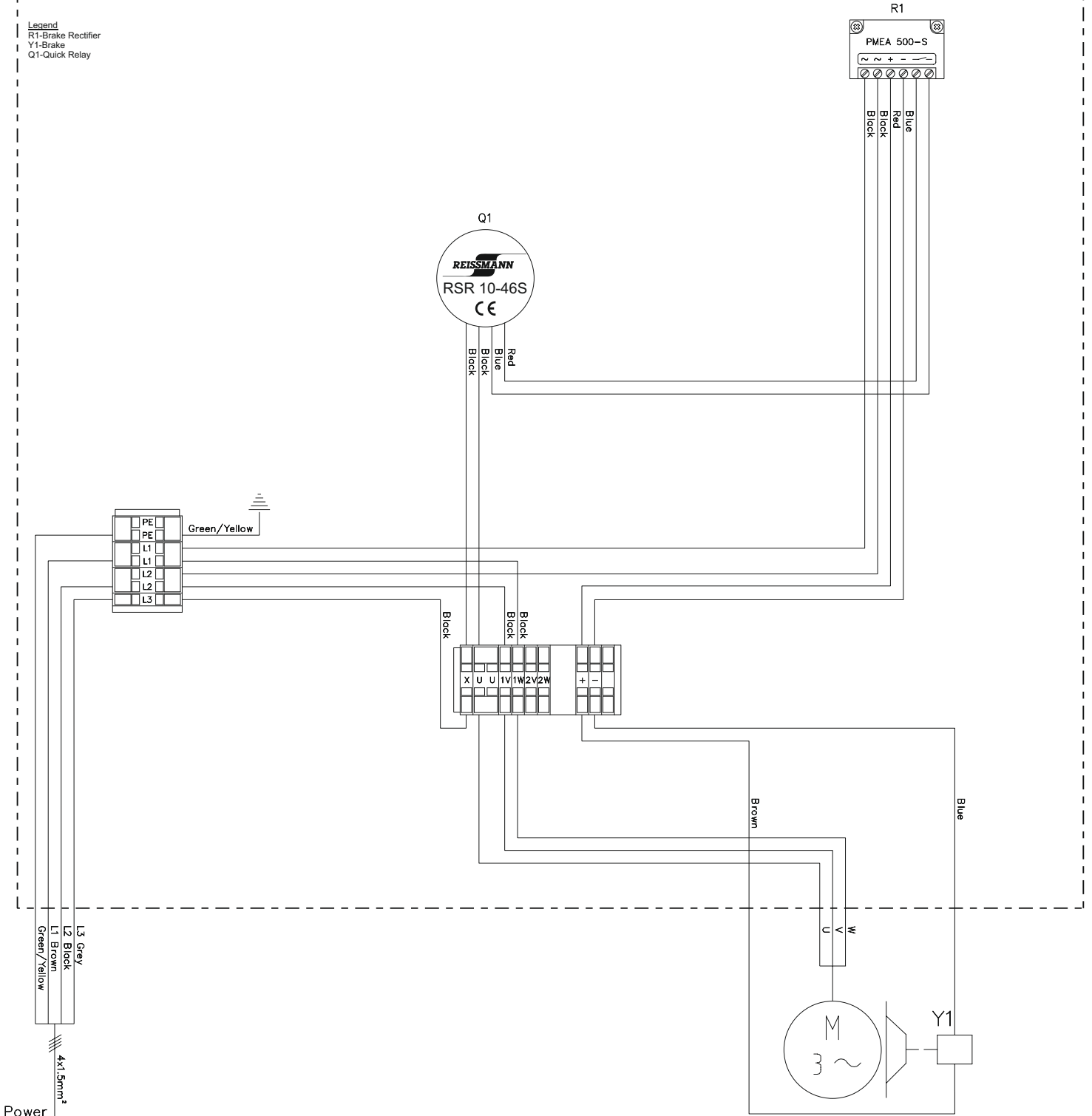


Figure 5-7

Control Assembly

- Legend**
 R1-Brake Rectifier
 Y1-Brake
 Q1-Quick Relay



DRAWING REV. V1.0

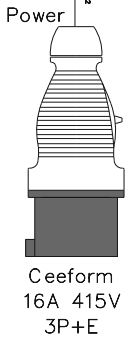
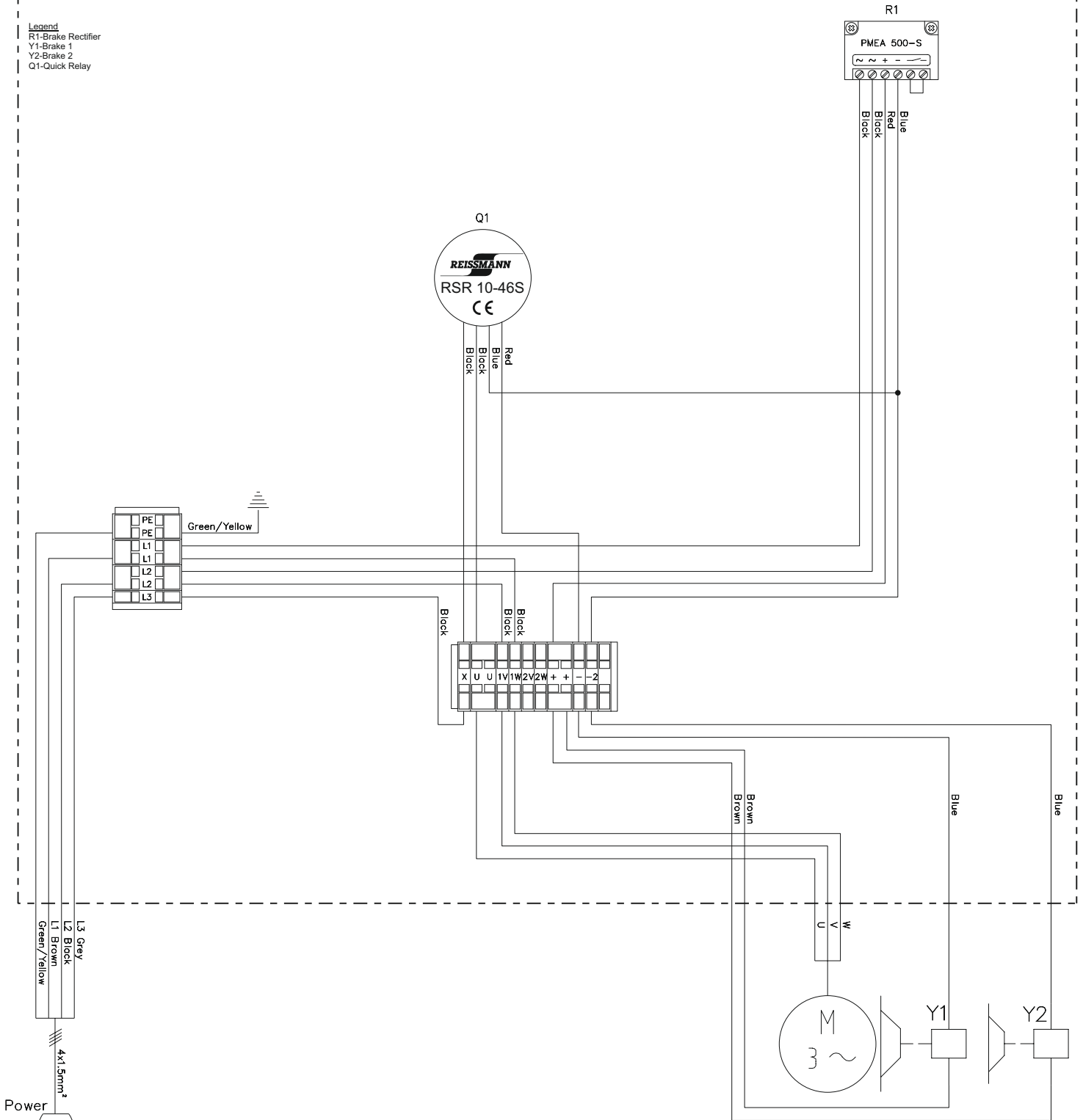


| Hoist Type | |
|------------------|----------------|
| CONTROL | Direct Control |
| VERSION | V2 |
| BRAKE | 1 x DC |
| SPEED | 1 Speed |
| CONTACTOR TYPE | N/A |
| WORKING LIMITS | No |
| EMERGENCY LIMITS | No |

Figure 5-8

Control Assembly

- Legend**
 R1-Brake Rectifier
 Y1-Brake 1
 Y2-Brake 2
 Q1-Quick Relay



DRAWING REV. V1.0

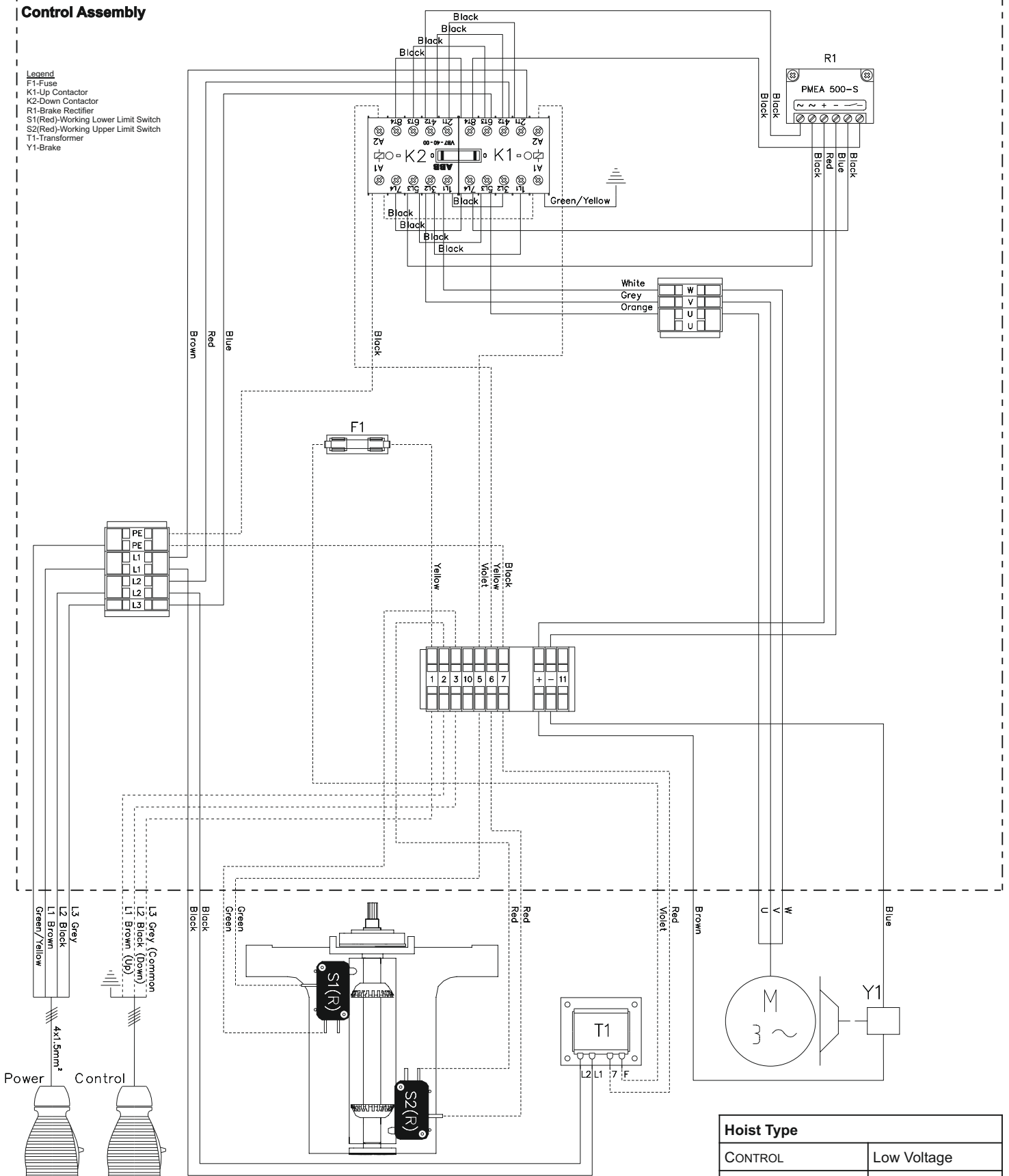


| Hoist Type | |
|------------------|----------------|
| CONTROL | Direct Control |
| VERSION | V2 |
| BRAKE | 2 x DC |
| SPEED | 1 Speed |
| CONTACTOR TYPE | N/A |
| WORKING LIMITS | No |
| EMERGENCY LIMITS | No |

Figure 5-9

Control Assembly

- Legend**
 F1-Fuse
 K1-Up Contactor
 K2-Down Contactor
 R1-Brake Rectifier
 S1(Red)-Working Lower Limit Switch
 S2(Red)-Working Upper Limit Switch
 T1-Transformer
 Y1-Brake



DRAWING REV. V1.0



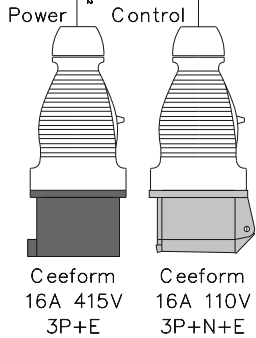
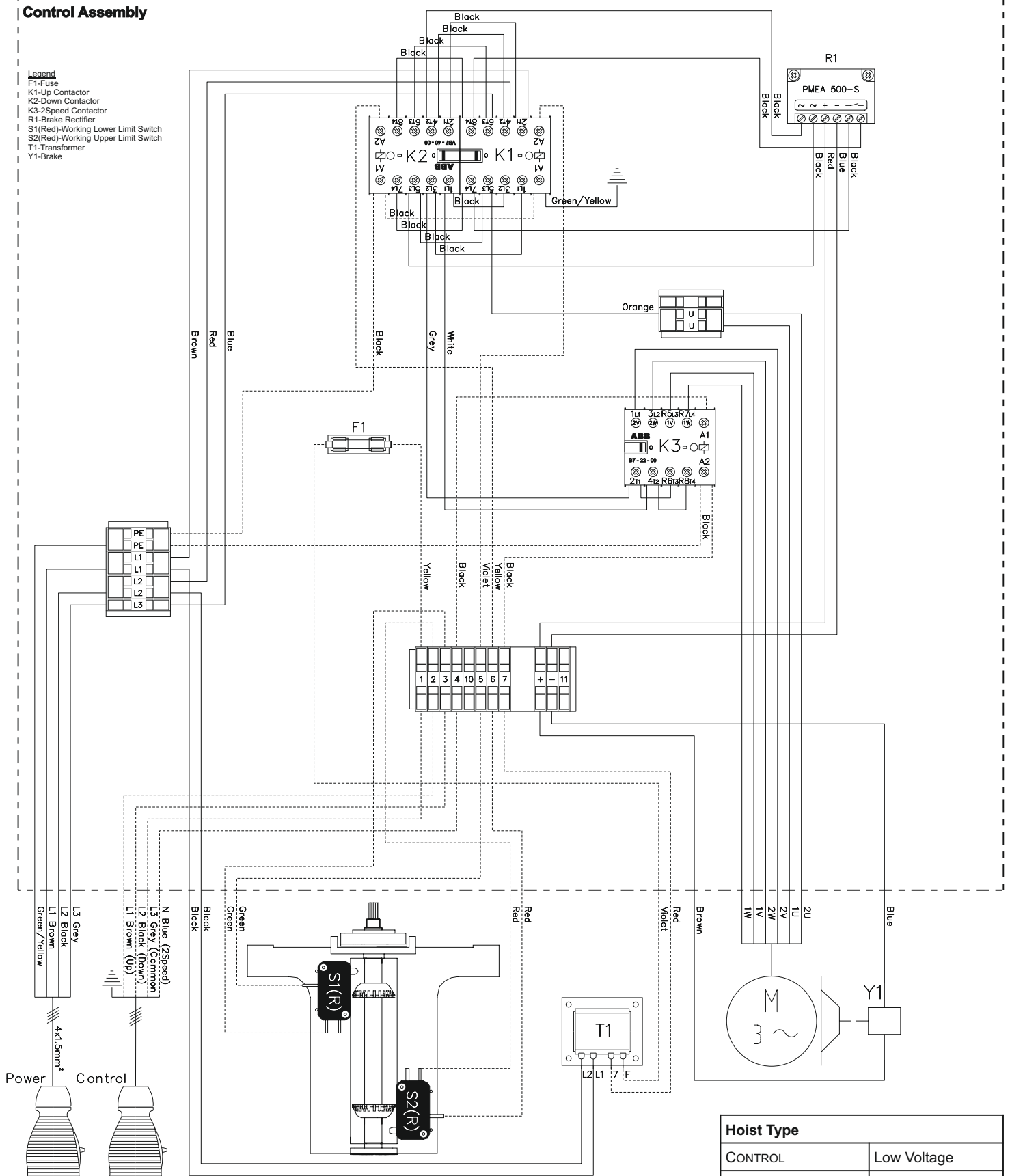
| Hoist Type | |
|------------------|-------------|
| CONTROL | Low Voltage |
| VERSION | V2 |
| BRAKE | 1 x DC |
| SPEED | 1 Speed |
| CONTACTOR TYPE | ABB |
| WORKING LIMITS | Yes |
| EMERGENCY LIMITS | No |

Ceeform 16A 415V 3P+E
 Ceeform 16A 110V 3P+E

Figure 5-10

Control Assembly

- Legend**
 F1-Fuse
 K1-Up Contactor
 K2-Down Contactor
 K3-Speed Contactor
 R1-Brake Rectifier
 S1(Red)-Working Lower Limit Switch
 S2(Red)-Working Upper Limit Switch
 T1-Transformer
 Y1-Brake



DRAWING REV. V1.0



| Hoist Type | |
|------------------|-------------|
| CONTROL | Low Voltage |
| VERSION | V2 |
| BRAKE | 1 x DC |
| SPEED | 2 Speed |
| CONTACTOR TYPE | ABB |
| WORKING LIMITS | Yes |
| EMERGENCY LIMITS | No |

Figure 5-11

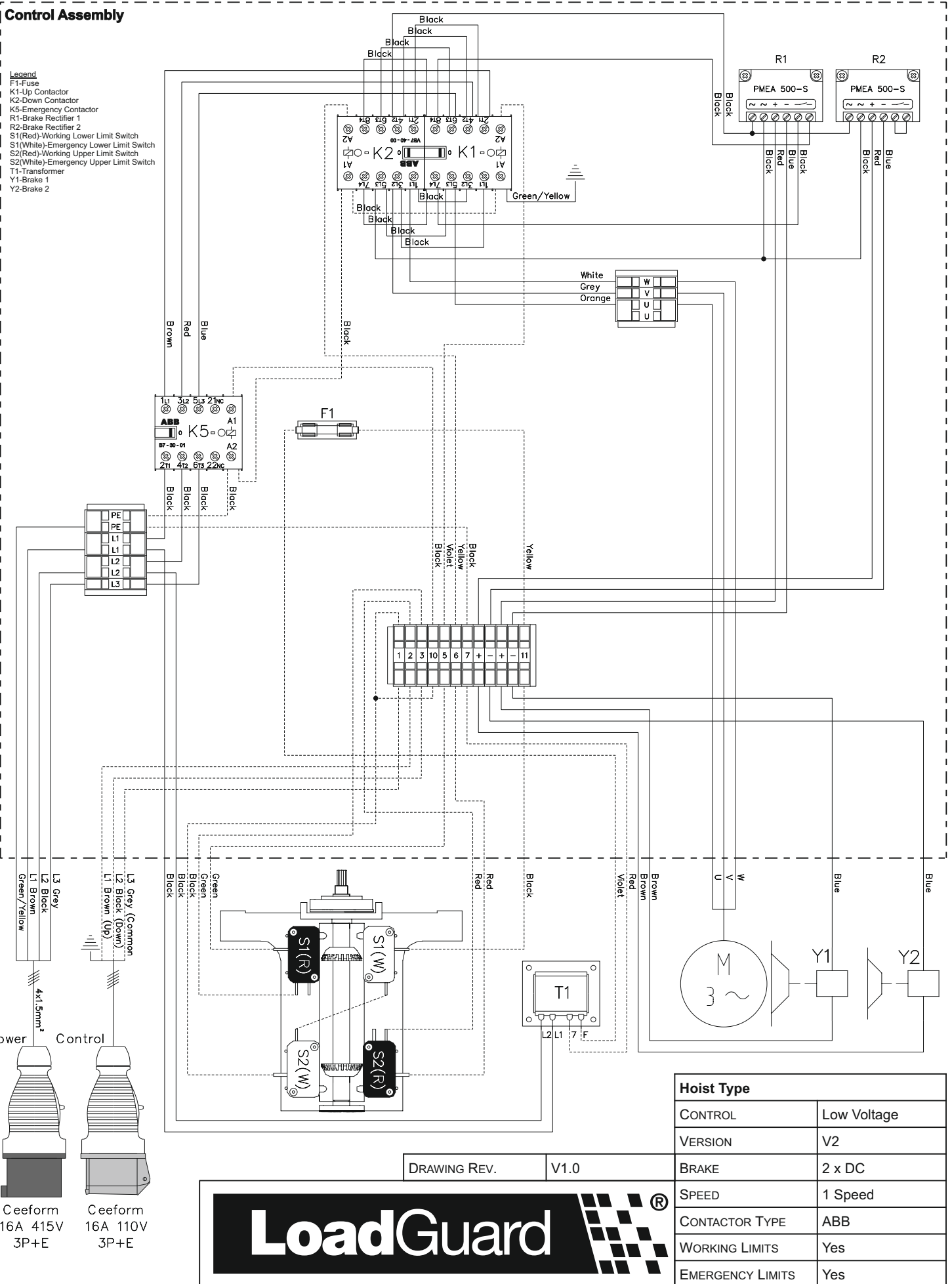
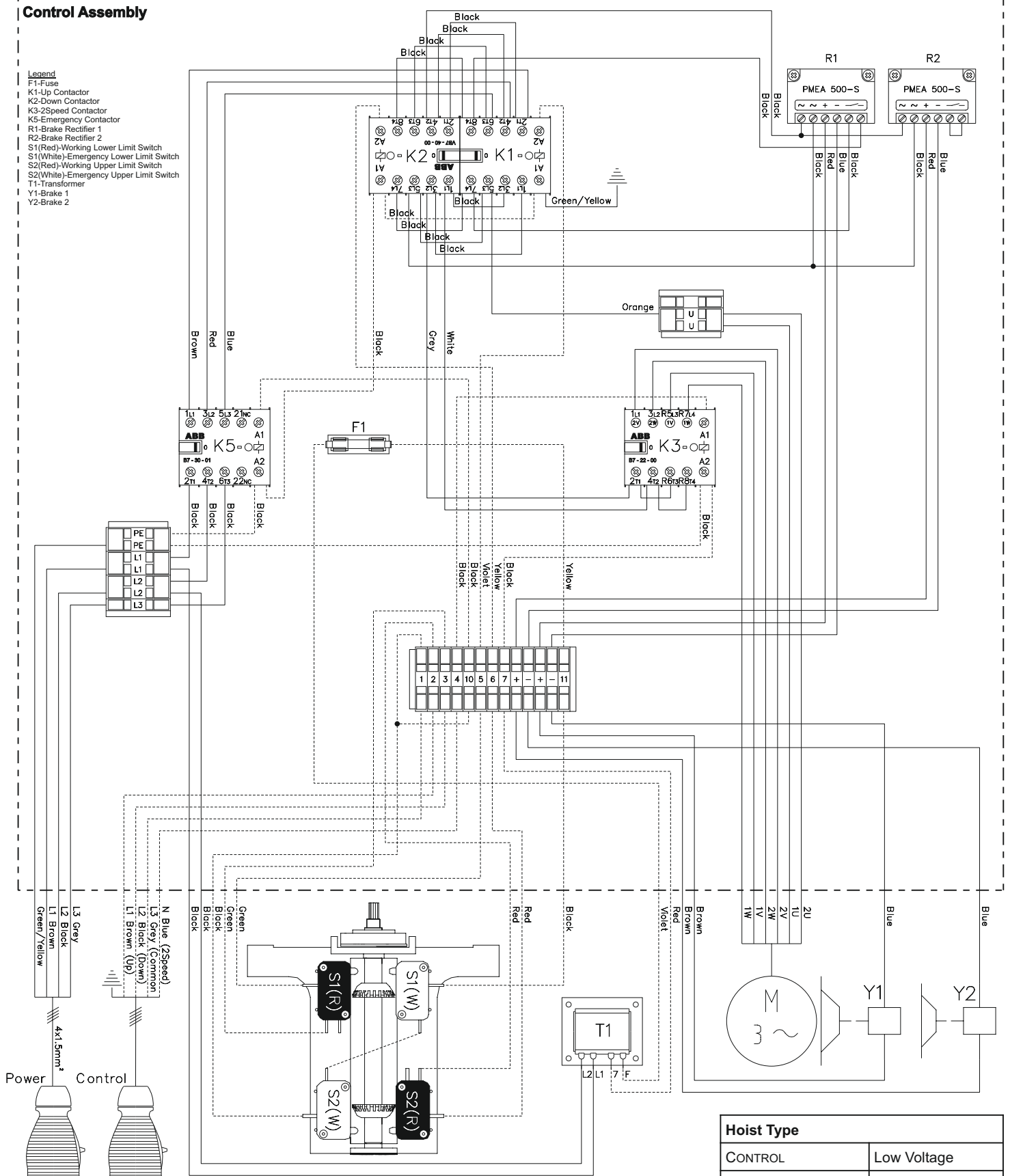


Figure 5-12

Control Assembly

- Legend**
 F1-Fuse
 K1-Up Contactor
 K2-Down Contactor
 K3-Speed Contactor
 K5-Emergency Contactor
 R1-Brake Rectifier 1
 R2-Brake Rectifier 2
 S1(White)-Emergency Lower Limit Switch
 S1(Red)-Working Lower Limit Switch
 S2(Red)-Working Upper Limit Switch
 S2(White)-Emergency Upper Limit Switch
 T1-Transformer
 Y1-Brake 1
 Y2-Brake 2



| Hoist Type | |
|------------------|-------------|
| CONTROL | Low Voltage |
| VERSION | V2 |
| BRAKE | 2 x DC |
| SPEED | 2 Speed |
| CONTACTOR TYPE | ABB |
| WORKING LIMITS | Yes |
| EMERGENCY LIMITS | Yes |

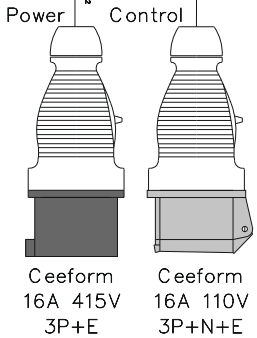
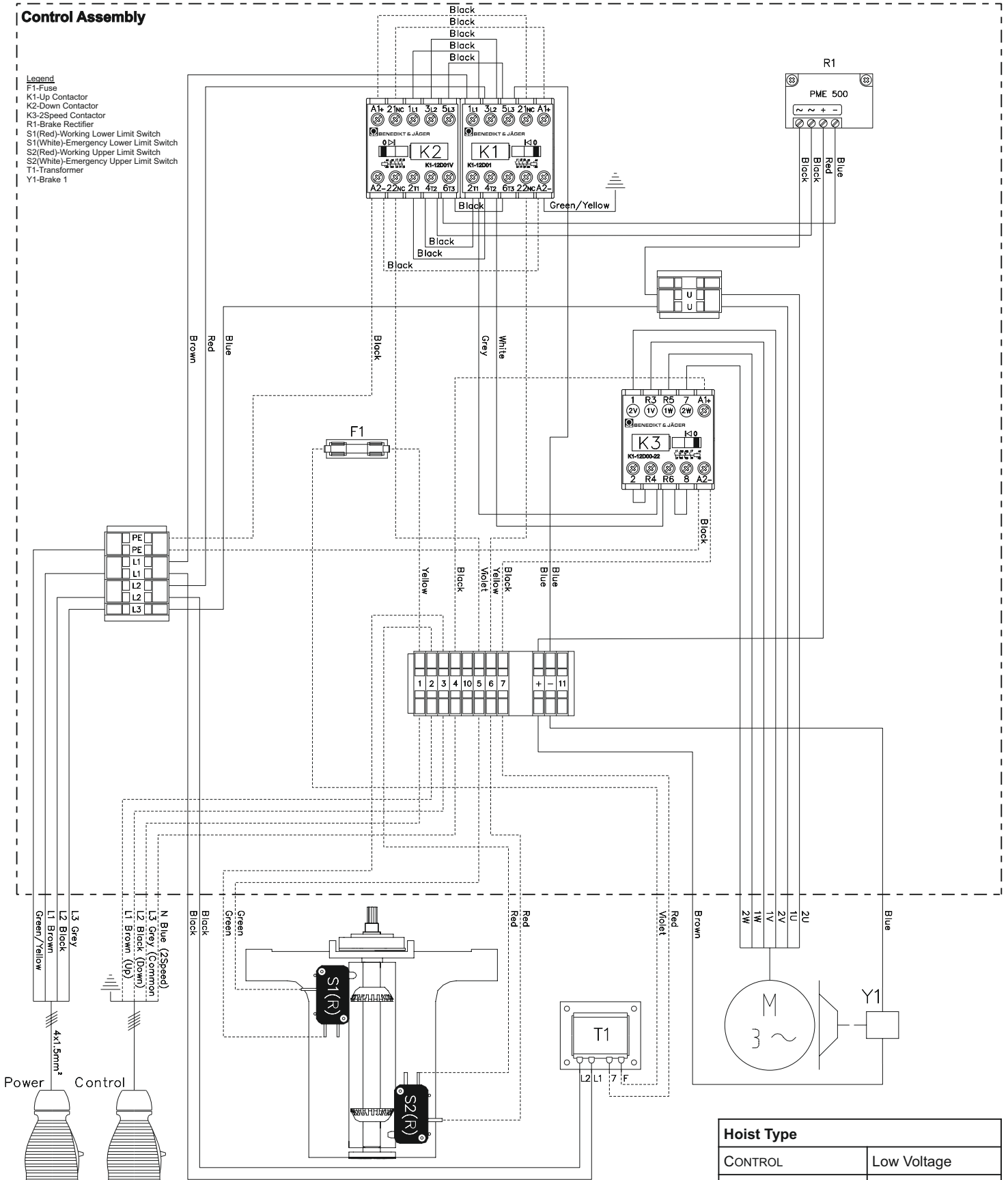
DRAWING REV. V1.0



Figure 5-13

Control Assembly

- Legend**
 F1-Fuse
 K1-Up Contactor
 K2-Down Contactor
 K3-Speed Contactor
 R1-Brake Rectifier
 S1(Red)-Working Lower Limit Switch
 S1(White)-Emergency Lower Limit Switch
 S2(Red)-Working Upper Limit Switch
 S2(White)-Emergency Upper Limit Switch
 T1-Transformer
 Y1-Brake 1



DRAWING REV. V1.0

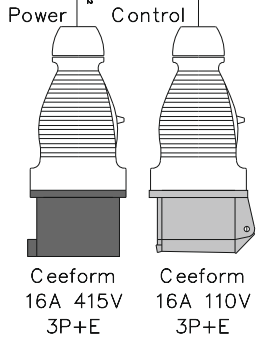
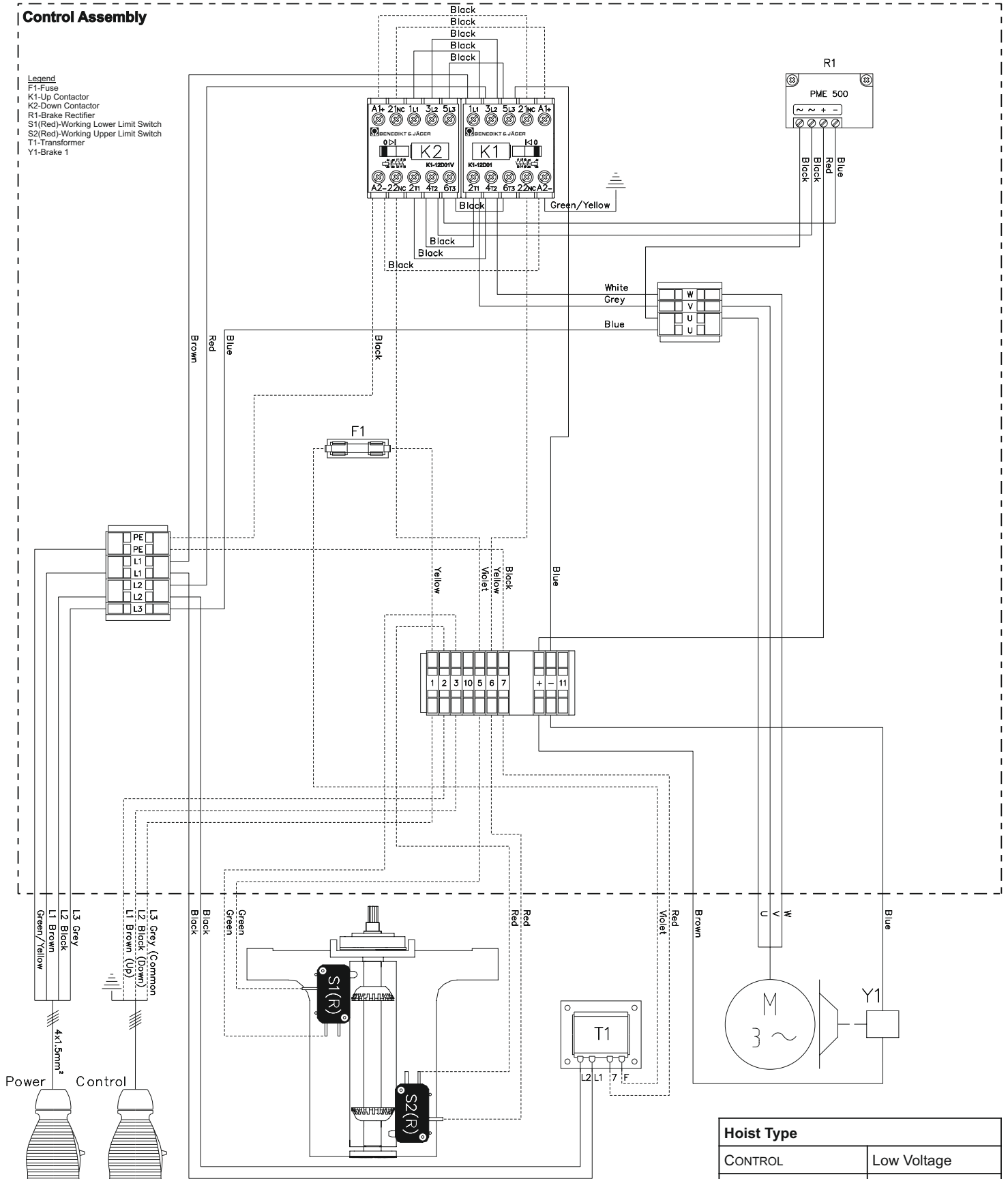


| Hoist Type | |
|------------------|-------------|
| CONTROL | Low Voltage |
| VERSION | V2 |
| BRAKE | 1 x DC |
| SPEED | 2 Speed |
| CONTACTOR TYPE | Benedikt |
| WORKING LIMITS | Yes |
| EMERGENCY LIMITS | No |

Figure 5-14

Control Assembly

- Legend**
 F1-Fuse
 K1-Up Contactor
 K2-Down Contactor
 R1-Brake Rectifier
 S1(Red)-Working Lower Limit Switch
 S2(Red)-Working Upper Limit Switch
 T1-Transformer
 Y1-Brake 1



DRAWING REV. V1.0



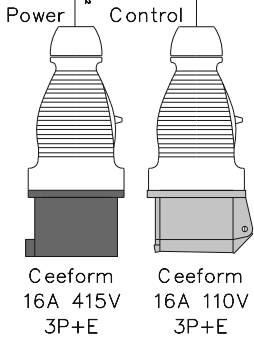
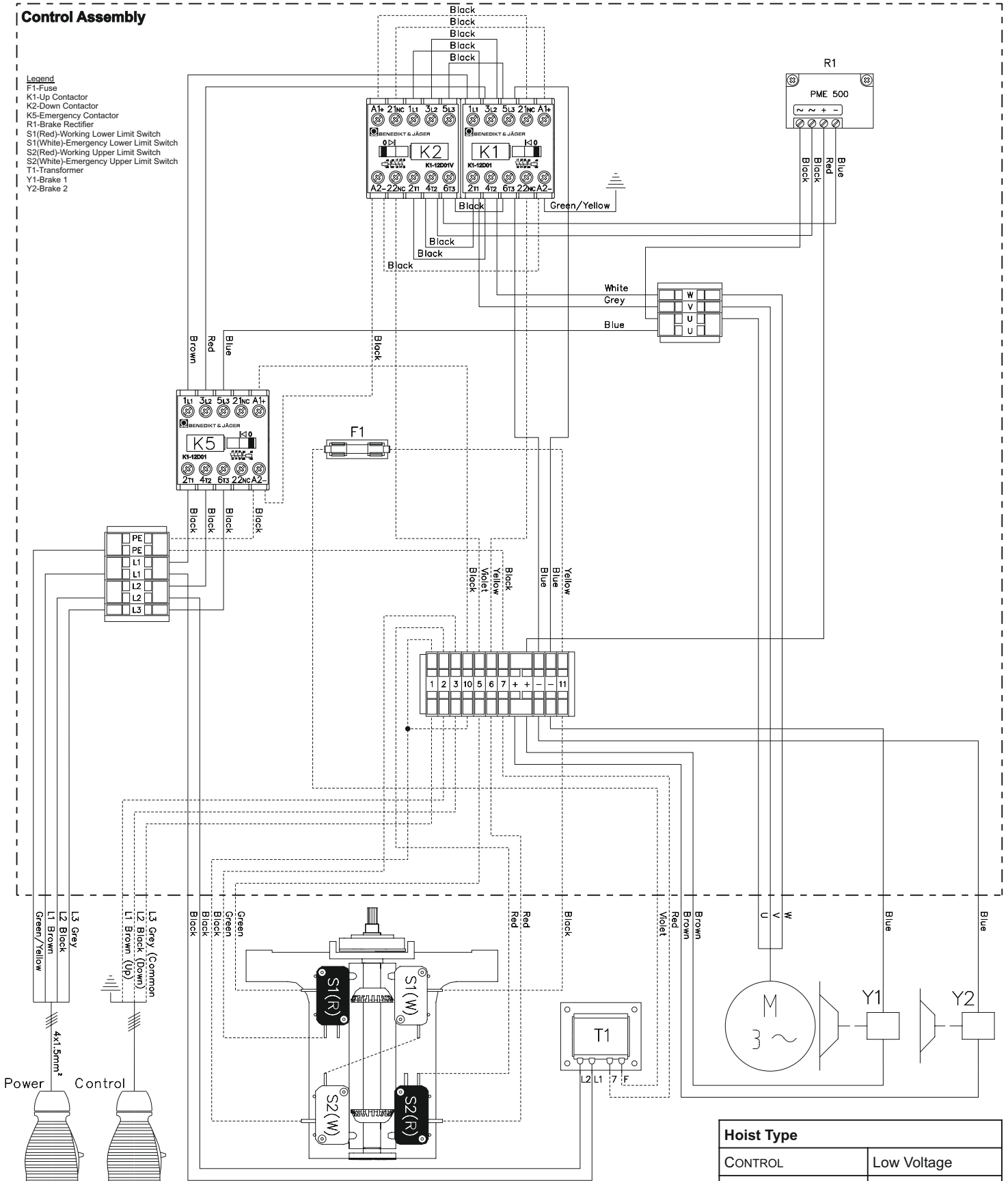
| Hoist Type | |
|------------------|-------------|
| CONTROL | Low Voltage |
| VERSION | V2 |
| BRAKE | 1 x DC |
| SPEED | 1 Speed |
| CONTACTOR TYPE | Benedikt |
| WORKING LIMITS | Yes |
| EMERGENCY LIMITS | No |

Figure 5-15

Control Assembly

Legend

- F1-Fuse
- K1-Up Contactor
- K2-Down Contactor
- K5-Emergency Contactor
- R1-Brake Rectifier
- S1(Red)-Working Lower Limit Switch
- S1(White)-Emergency Lower Limit Switch
- S2(Red)-Working Upper Limit Switch
- S2(White)-Emergency Upper Limit Switch
- T1-Transformer
- Y1-Brake 1
- Y2-Brake 2

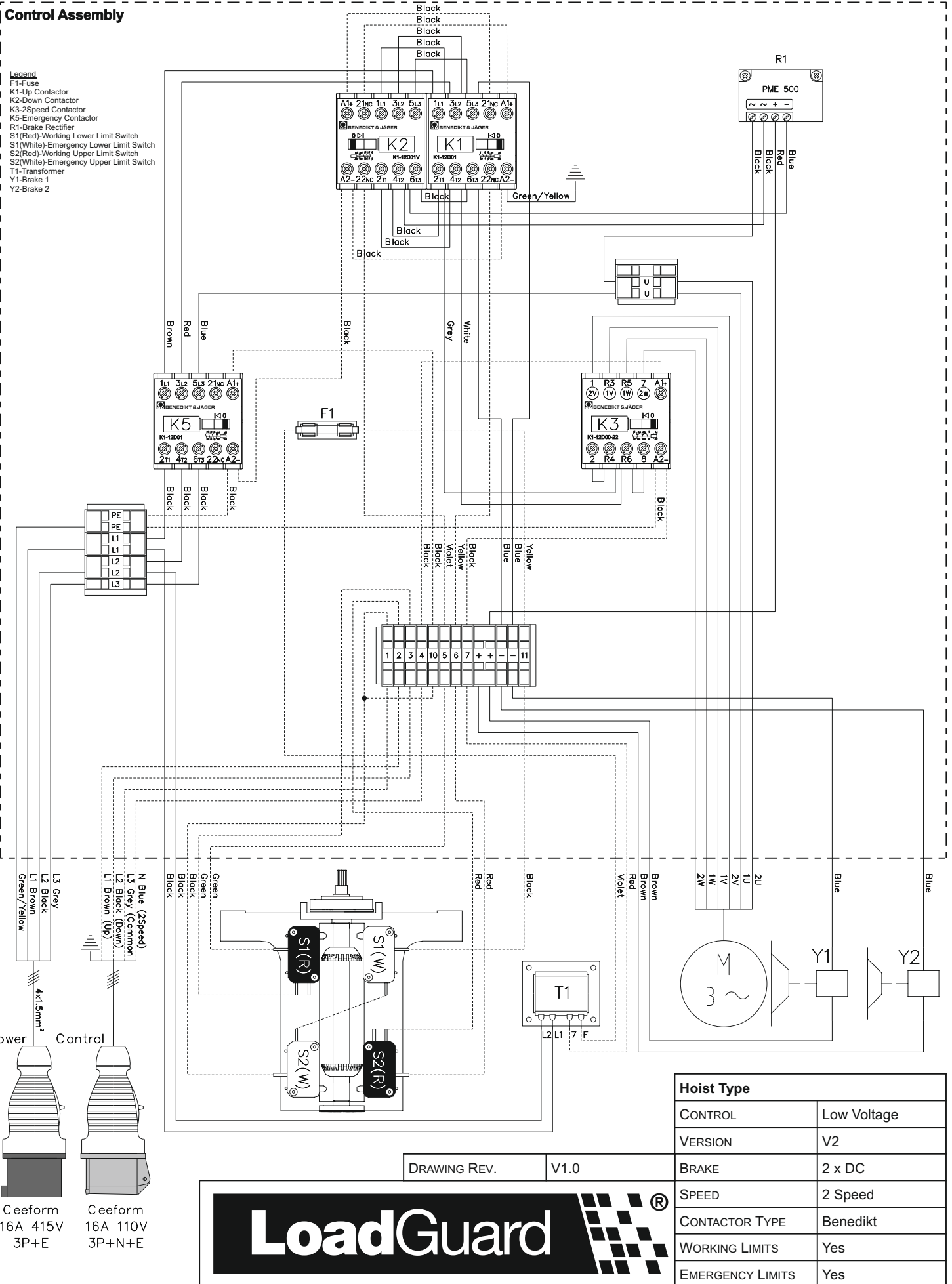


DRAWING REV. V1.0



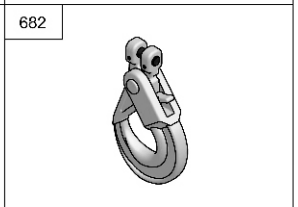
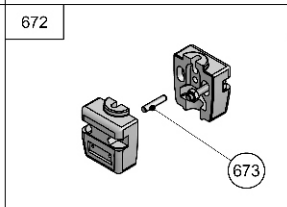
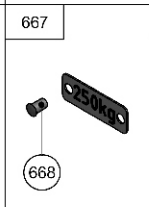
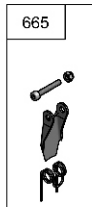
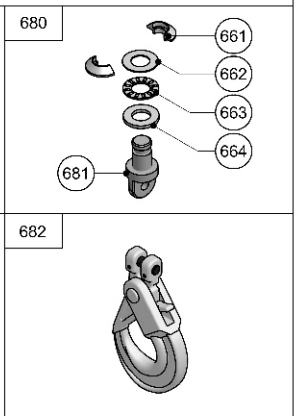
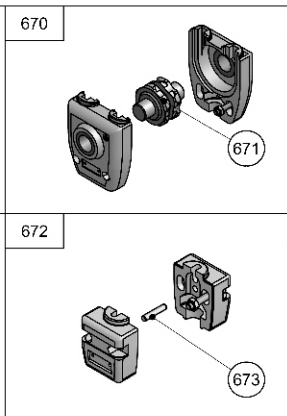
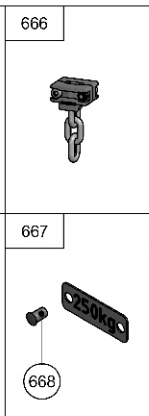
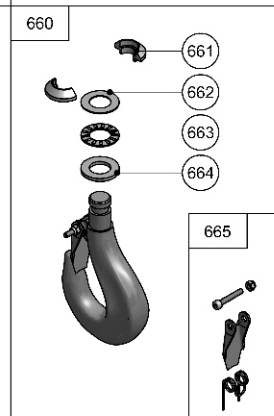
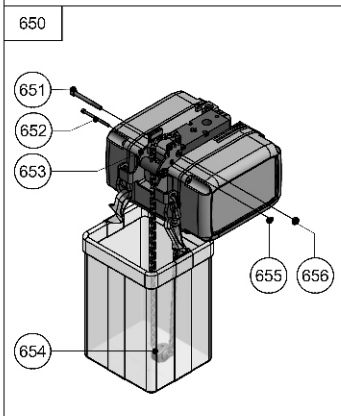
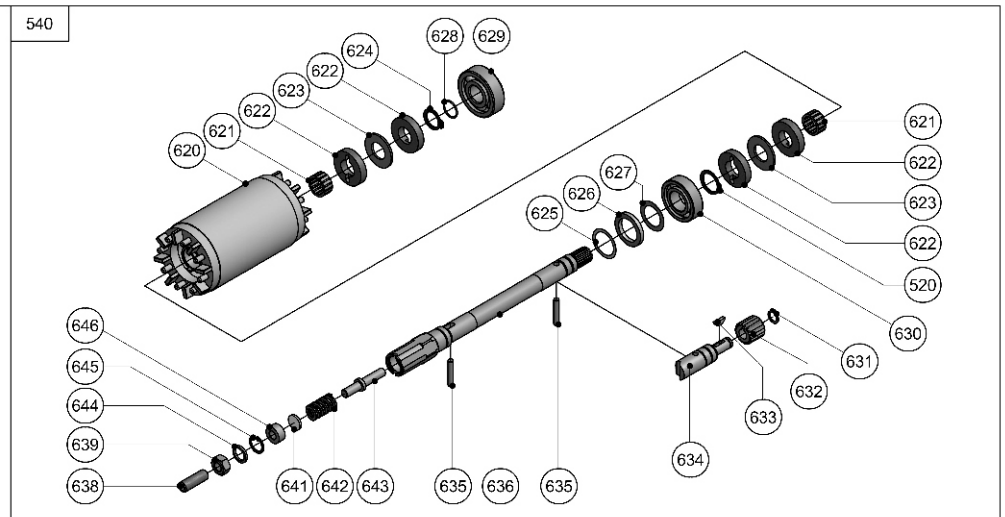
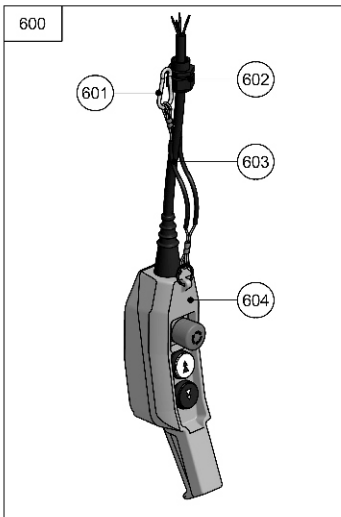
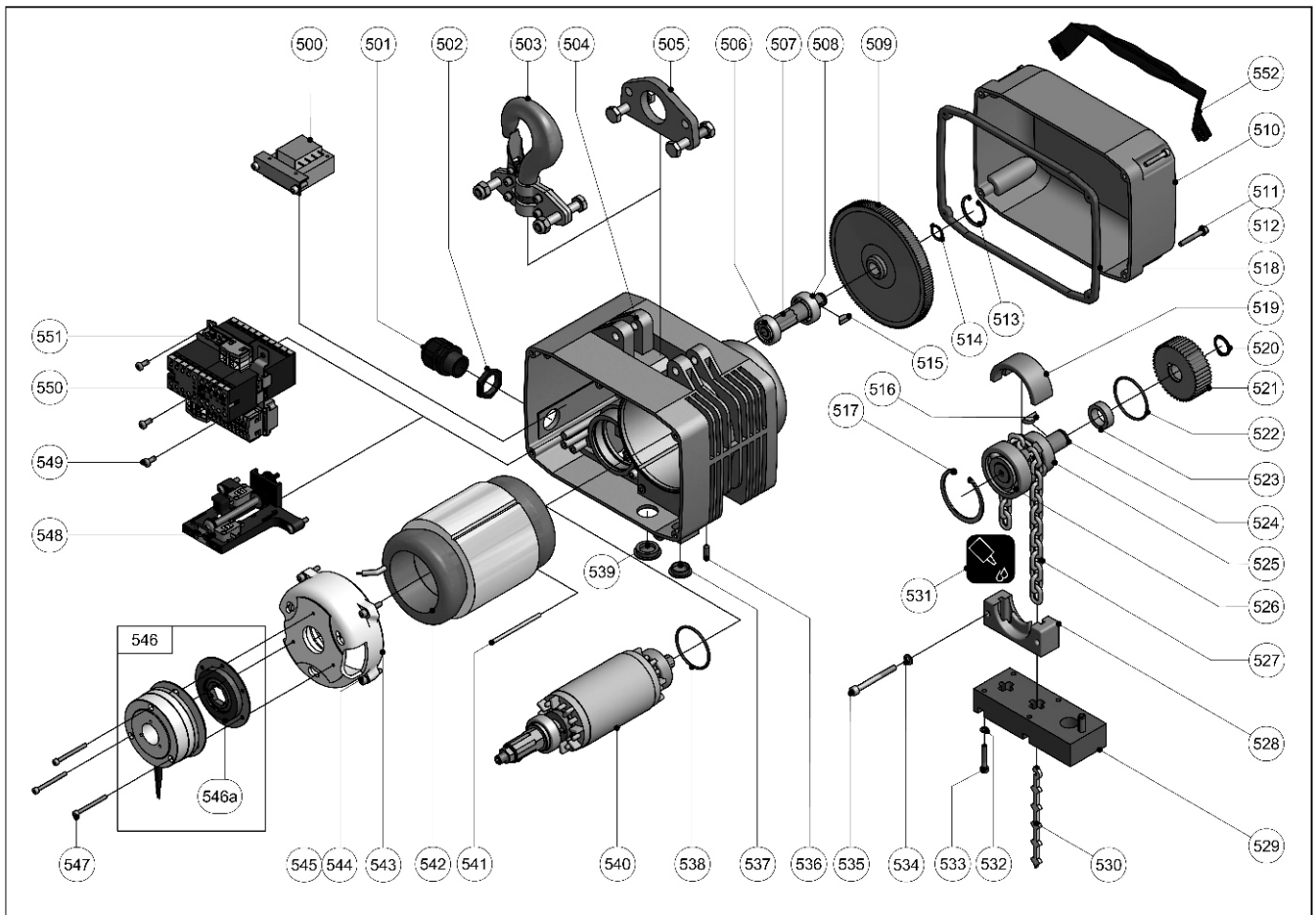
| Hoist Type | |
|------------------|-------------|
| CONTROL | Low Voltage |
| VERSION | V2 |
| BRAKE | 2 x DC |
| SPEED | 1 Speed |
| CONTACTOR TYPE | Benedikt |
| WORKING LIMITS | Yes |
| EMERGENCY LIMITS | Yes |

Figure 5-16



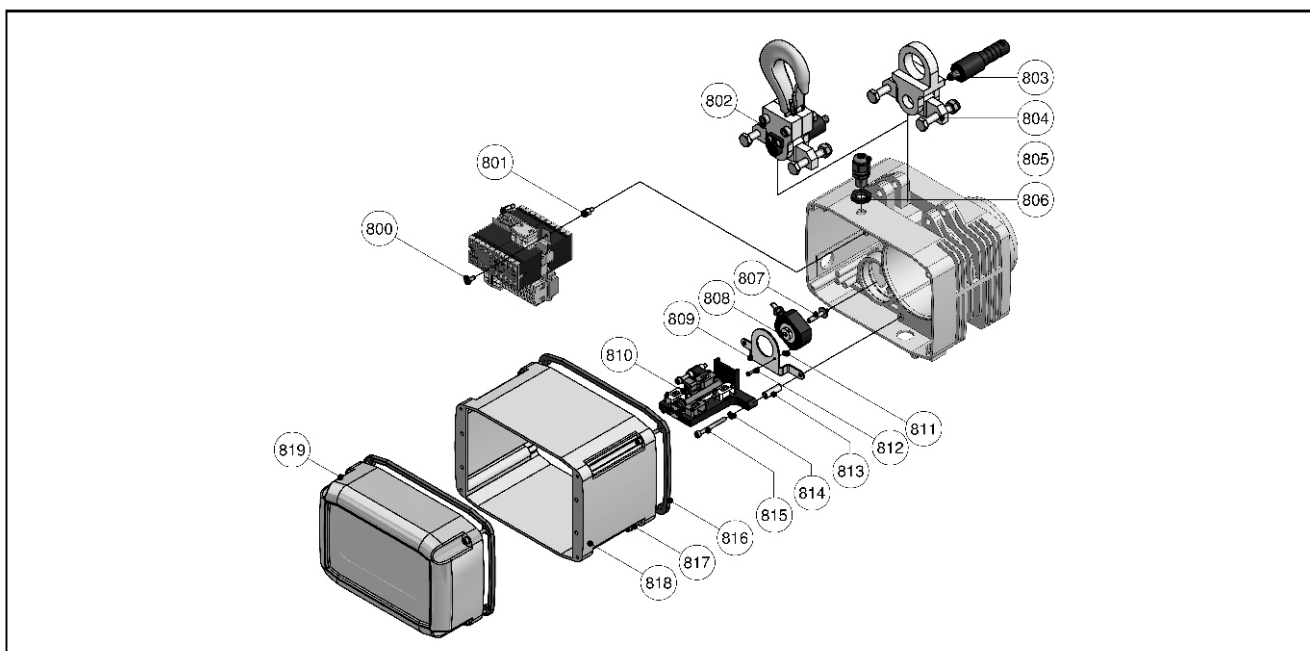
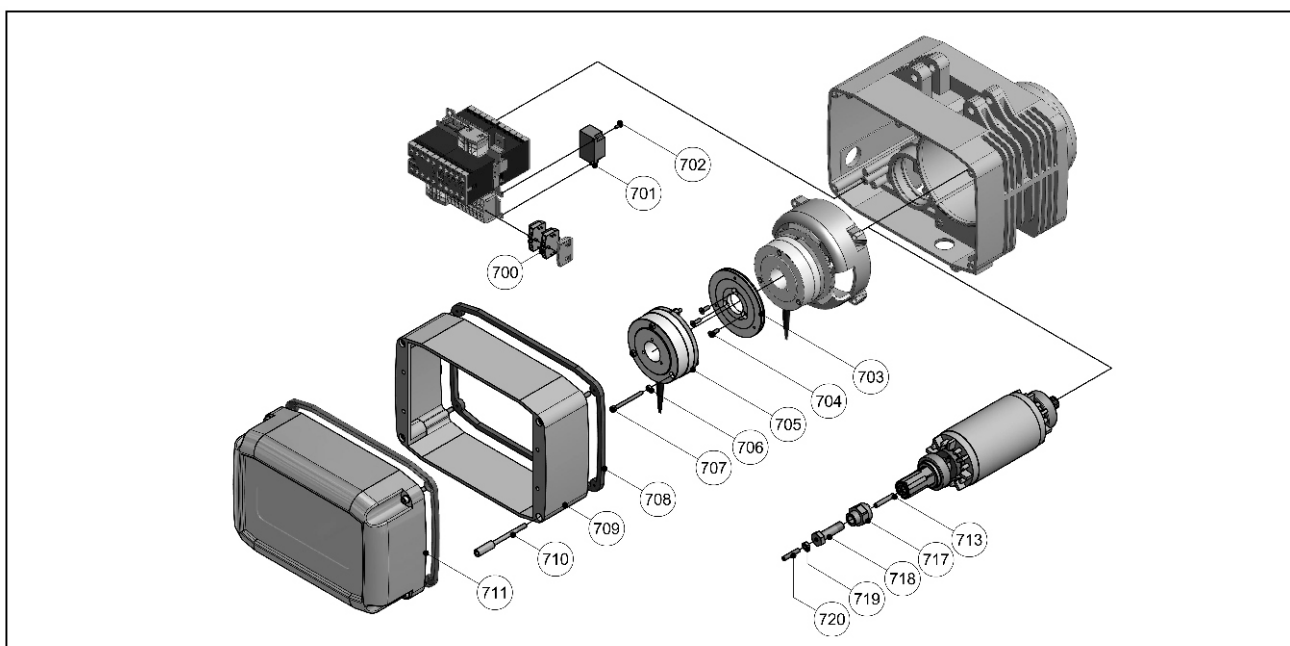
5.3 Spare parts diagrams

Spare parts LG25 - LG50 V3



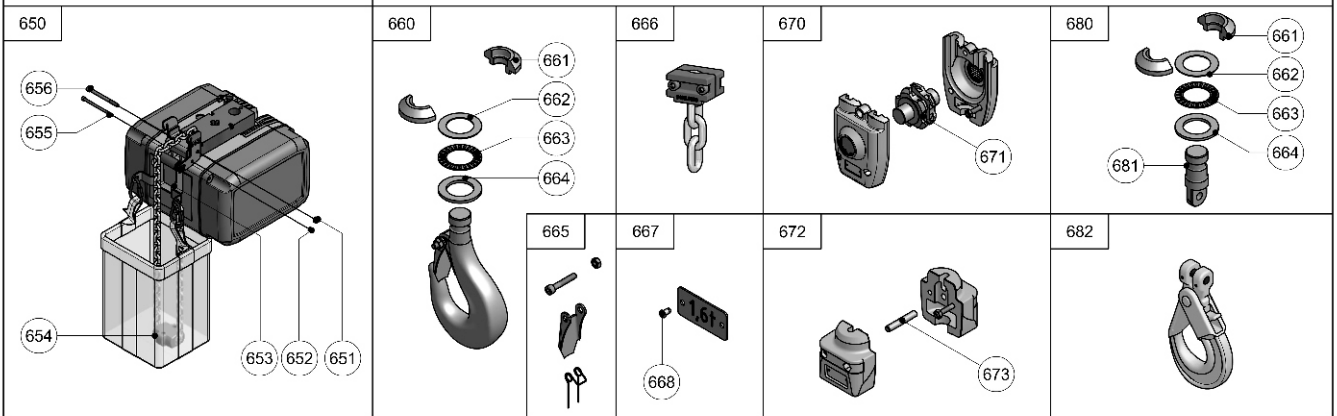
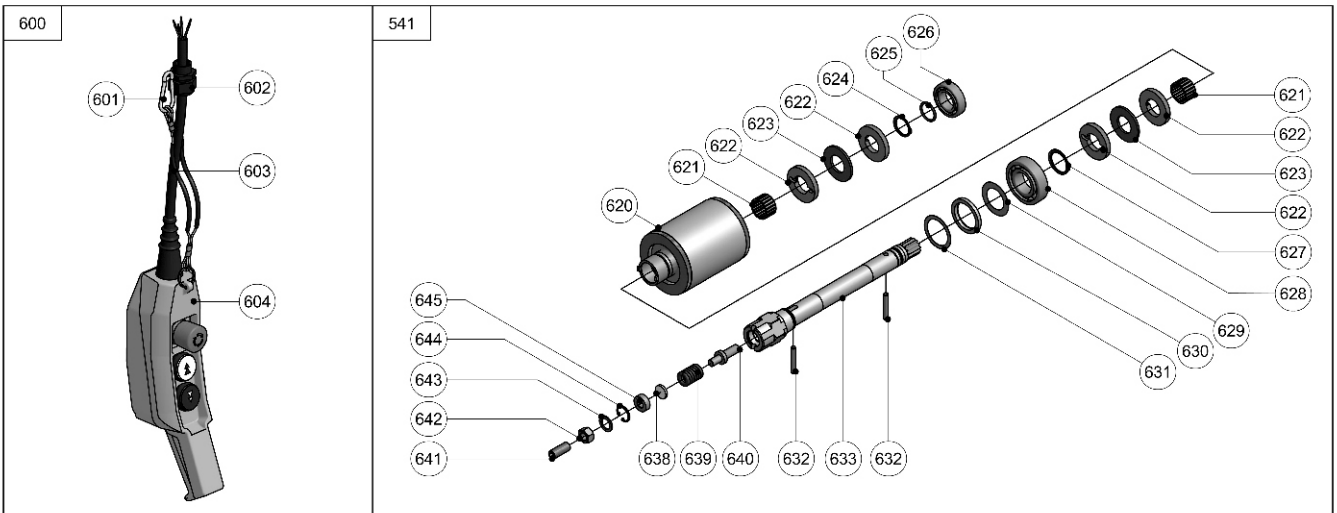
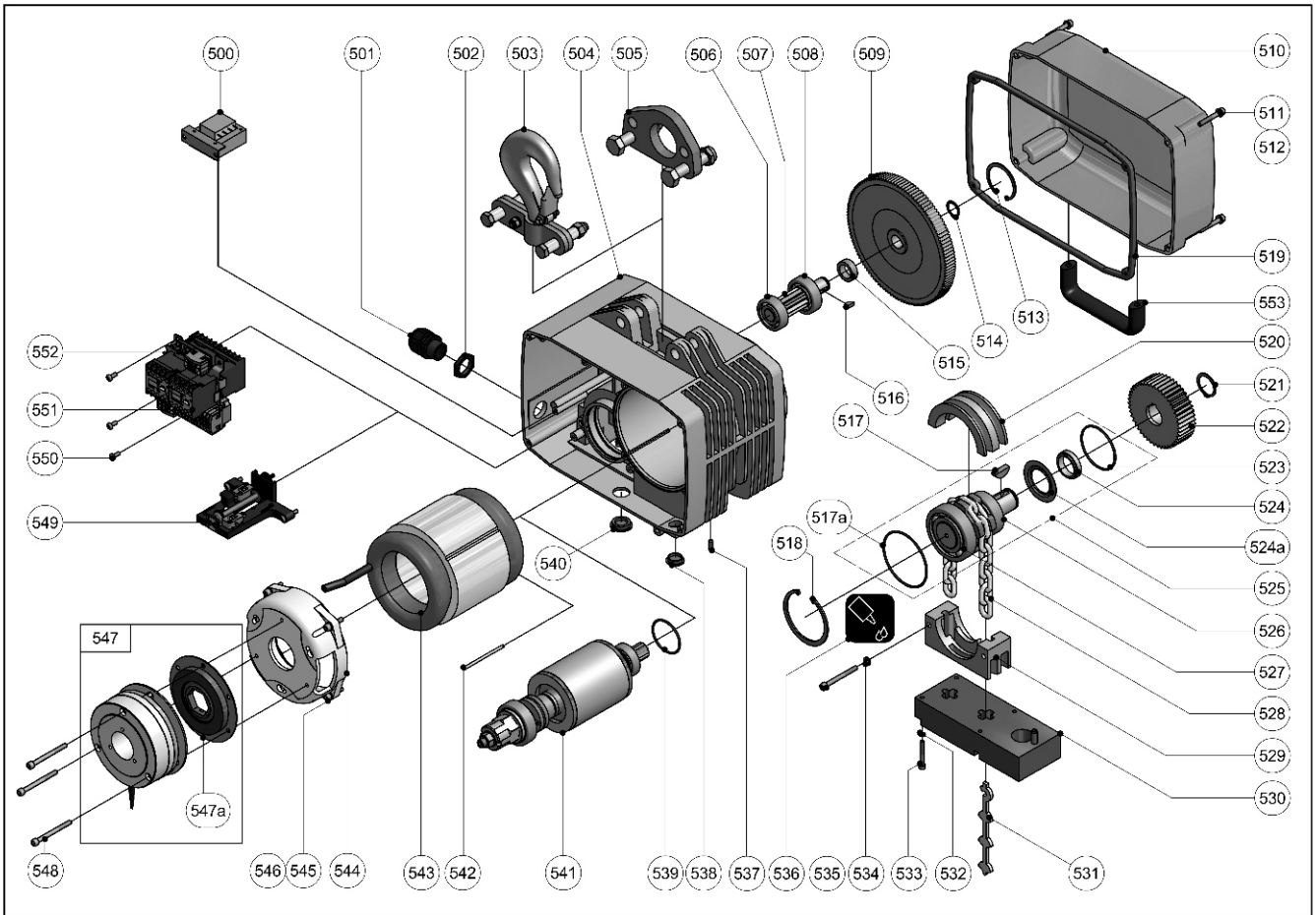
| V3 | | LG25 | LG50 |
|------|-------------------------------------|-------------|-------------|
| 500 | 230/42V 50/60Hz | 9056.4500.4 | 9056.4500.4 |
| | 400/42V 50/60Hz | 9056.4501.4 | 9056.4501.4 |
| 501 | M25 x 1.5 | 9055.3103 | 9055.3103 |
| 502 | M25 x 1.5 | 9055.4013 | 9055.4013 |
| 503 | 115 x 145.06 | 9401.3089.3 | 9401.3089.3 |
| 504 | 246 x 213 x 180.5 | 9400.3000.0 | 9400.3000.0 |
| 505 | 62/10 x 115 | 9400.3055.4 | 9400.3055.4 |
| 506 | 7201, 12/32 x 10 | 9038.0026 | 9038.0026 |
| 507 | ø18.98 x 90.6 | 9400.3043.4 | 9400.3043.4 |
| 508 | 6202, 15/35 x 11 | 9038.0016 | 9038.0016 |
| 509 | ø149 z=142, -N/-NF/-NL | 9400.3074.3 | 9400.3074.3 |
| | ø143 z=136, -SF/-SL | 9400.3075.3 | 9400.3075.3 |
| | ø133 z=127, -HF/-HL | 9400.3076.3 | 9400.3076.3 |
| 510 | 246 x 164 x 80 | 9401.4513.3 | 9401.4513.3 |
| 511 | M5 x 35, In-6kt | 9030.0267 | 9030.0267 |
| 512 | M5, Polyamid | 9031.3703 | 9031.3703 |
| 513 | I 35 x 1.5 | 9031.2214 | 9031.2214 |
| 514 | A 15 x 1 | 0031.1009 | 0031.1009 |
| 515 | 5 x 6.5 x 15.72 | 9036.0605 | 9036.0605 |
| 516 | 6 x 7.5 x 18.57 | 9036.0600 | 9036.0600 |
| 517 | I 62 x 2 | 0031.1127 | 0031.1127 |
| 518 | 248 x 166 x 6 | 9400.3002.3 | 9400.3002.3 |
| 519 | 70 x 35 x 28 | 9400.3004.4 | 9401.3004.4 |
| 520 | A 20 x 2 | 0031.1013 | 0031.1013 |
| 521 | ø68.8 z=45 | 9400.3073.4 | 9400.3073.4 |
| 522 | ø47 x 2.5 | 9035.0015 | 9035.0015 |
| 523 | ø30/21 x 9.5 | 9400.3029.4 | 9400.3029.4 |
| 524 | ø52 x 96, 6T | 9400.3037.2 | |
| | ø55 x 96, 5T | | 9401.3037.2 |
| 525 | 6204 LLUA, 20/47 x 14 | 9038.0017 | 9038.0017 |
| 526 | 6305 LLU, 25/62 x 17 | 0038.1218 | 0038.1218 |
| 527 | 4 x 12.3 | 9039.0021 | |
| | 5 x 15.3 | | 9039.0022 |
| 528 | 89 x 34 x 28 | 9400.3003.4 | 9401.3003.4 |
| 529 | 56/30 x 146 (4mm) | 9400.3034.3 | |
| | 56/30 x 146 (5mm) | | 9401.3058.3 |
| 530 | 160 x 13 x 4 (4mm) | 9041.6020 | |
| | 200 x 15.5 x 5 (5mm) | | 9041.6021 |
| 531 | 0.25 I | 9041.0007 | 9041.0007 |
| 532 | M5 | 9031.3902 | 9031.3902 |
| 533 | M5 x 30 | 9030.0266 | 9030.0266 |
| 534 | M6 | 9031.3903 | 9031.3903 |
| 535 | M6 x 50 | 9030.0281 | 9030.0281 |
| 536 | DIN 916 M6 x 16 | 9030.2013 | 9030.2013 |
| 537 | M20 x 1.5 | 9055.3512 | 9055.3512 |
| 538 | ø47 x 2.5 | 9035.0015 | 9035.0015 |
| 539 | M25 x 1.5 | 9055.3513 | 9055.3513 |
| 540 | 1-t ø61.4 x 50, 8 m/min | 9400.3141.3 | 9400.3141.3 |
| | 2-t ø69.4 x 100, 8 m/min | 9400.3144.3 | 9400.3144.3 |
| | 2-t ø69.4 x 100, 12.5 m/min | 9400.3145.3 | 9400.3145.3 |
| | 2-t ø69.4 x 100, 16 m/min | 9400.3151.3 | 9400.3151.3 |
| | 2-t ø69.4 x 100, 20 m/min | 9400.3146.3 | 9400.3146.3 |
| 541 | ø4 x 75 | 9230.3097.4 | 9230.3097.4 |
| 542 | L=50, 3Ph 230/400V 50Hz, -N | 9402.0100.3 | 9402.0100.3 |
| | L=100, 3Ph 400V 50Hz, -NF, -SF, -HF | 9402.0300.3 | 9402.0300.3 |
| | L=100, 3Ph 400V 50Hz, -NL, -SL, -HL | 9402.0400.3 | 9402.0400.3 |
| 543 | ø123 x 49 | 9400.3147.2 | 9400.3147.2 |
| 544 | M5 x 25 | 9030.0265 | 9030.0265 |
| 545 | M5 | 9031.3902 | 9031.3902 |
| 546 | 6 Nm 100-125 VAC | 9050.4055 | 9050.4055 |
| | 6 Nm 200-240 VAC | 9050.4056 | 9050.4056 |
| | 6 Nm 360-420 VAC | 9050.4057 | 9050.4057 |
| | 6 Nm 440-480 VAC | 9050.4058 | 9050.4058 |
| | 6 Nm 500-575 VAC | 9050.4059 | 9050.4059 |
| 546a | ø84 x 9 | 9400.3156.4 | 9400.3156.4 |
| 547 | M4 x 45 | 0030.9287 | 0030.9287 |
| 548 | 119 x 103.5, kompl. | 9401.3015.3 | 9401.3015.3 |
| | 119 x 103.5, NA kompl. | 9401.3018.3 | 9401.3018.3 |
| 549 | M5 x 12 | 0030.3468 | 0030.3468 |
| 550 | 1-t NA 100-480/42V | 9402.1550.2 | 9402.1550.2 |
| | 1-t NA 500-690/42V UL | 9402.1551.2 | 9402.1551.2 |
| | 2-t NA 100-480/42V | 9402.1650.2 | 9402.1650.2 |
| | 2-t NA 500-690/42V UL | 9402.1651.2 | 9402.1651.2 |
| | WAGO 100-480V | 9402.1260.4 | 9402.1260.4 |
| | WAGO 100-480V PMS | 9402.1264.3 | 9402.1264.3 |
| 551 | 1.6A | 9052.0012 | 9052.0012 |
| 552 | L=300 | 9401.3077.4 | 9401.3077.4 |

| V3 | | LG25 | LG50 |
|-----|---------------------------------------|-------------|-------------|
| 600 | 2K NA 3 m | 9290.1086.3 | 9290.1086.3 |
| | 2K NA 4 m | 9290.1087.3 | 9290.1087.3 |
| | 2K NA 5 m | 9290.1088.3 | 9290.1088.3 |
| | 2K NA 6 m | 9290.1089.3 | 9290.1089.3 |
| | 2K NA 8 m | 9290.1090.3 | 9290.1090.3 |
| | 2K NA 10 m | 9290.1091.3 | 9290.1091.3 |
| | 2K NA 12 m | 9290.1092.3 | 9290.1092.3 |
| | 2K NA 15 m | 9290.1093.3 | 9290.1093.3 |
| | 2K NA 20 m | 9290.1094.3 | 9290.1094.3 |
| 601 | L=50 | 9031.8004 | 9031.8004 |
| 602 | M20 x 1.5 | 9055.3102 | 9055.3102 |
| 603 | 5 x 0.75 mm ² , L= | 9055.0110 | 9055.0110 |
| 604 | 2K NA | 9290.1084.3 | 9290.1084.3 |
| 620 | 1-t ø61.4 x 50 | 9400.3030.3 | 9400.3030.3 |
| | 2-t ø69.4 x 100 | 9400.3032.3 | 9400.3032.3 |
| 621 | 17/21 x 10 | 9038.0259 | 9038.0259 |
| 622 | ø35 x 7 | 9400.3046.4 | 9400.3046.4 |
| 623 | ø34/17.5 x 2 | 9400.3047.4 | 9400.3047.4 |
| 624 | A 17 x 1.5 | 9031.2011 | 9031.2011 |
| 625 | ø30/23.8 x 0.2 | 9400.3045.4 | 9400.3045.4 |
| 626 | ø30/24 x 4 | 9210.3075.4 | 9210.3075.4 |
| 627 | ø30/21 x 0.2 | 9400.3168.4 | 9400.3168.4 |
| 628 | ø15.5 x 1.3 | 9035.0023 | 9035.0023 |
| 629 | 6303 LLUA, 17/47 x 14 | 9038.0014 | 9038.0014 |
| 630 | 6004 LLUA, 20/42 x 12 | 9038.0002 | 9038.0002 |
| 631 | A 10 x 1 | 0031.1006 | 0031.1006 |
| 632 | z=18, -SF | 9400.3071.4 | 9400.3071.4 |
| | z=22, -HF 16 m/min | 9400.3123.4 | 9400.3123.4 |
| | z=27, -HF 20 m/min | 9400.3072.4 | 9400.3072.4 |
| 633 | 3 x 5 x 12.65 | 9036.0604 | 9036.0604 |
| 634 | ø23 x 254.5, -SF/-HF | 9400.3140.3 | 9400.3140.3 |
| 635 | ø5 x 28 | 9031.5856 | 9031.5856 |
| 636 | ø23 x 250, -N/-NF | 9400.3139.3 | 9400.3139.3 |
| 638 | M10 x 30 | 9030.2014 | 9030.2014 |
| 639 | M10 | 0031.0009 | 0031.0009 |
| 641 | ø15 x 2 | 9400.3142.4 | 9400.3142.4 |
| 642 | ø16/8.7 x 25.4 | 9034.1009 | 9034.1009 |
| 643 | ø12 x 51 | 9400.3143.4 | 9400.3143.4 |
| 644 | ø13/17 x 2 | 9031.3238 | 9031.3238 |
| 645 | I 17 x 1 | 9031.2221 | 9031.2221 |
| 646 | ø17/M10 x 7.9 | 9400.3230.4 | 9400.3230.4 |
| 650 | 212 x 192 x 320, 250/30, 500/20, XS | 9401.3180.3 | 9401.3180.3 |
| | 212 x 192 x 420, 250/70, 500/40, S | 9401.3181.3 | 9401.3181.3 |
| | 212 x 192 x 590, 250/100, 500/67, M | 9401.3182.3 | 9401.3182.3 |
| | 212 x 192 x 940, 250/200, 500/130, XL | 9401.3183.3 | 9401.3183.3 |
| 651 | M8 x 80/28 | 9030.0309 | 9030.0309 |
| 652 | M5 x 75/22 | 9030.0327 | 9030.0327 |
| 653 | 150.5 x 119 x 89 | 9401.3178.3 | 9401.3178.3 |
| 654 | 44 x 36 x 32 | 9215.3021.4 | |
| | 46 x 38 x 38 | | 9216.3021.3 |
| 655 | M5, Nylon | 9031.1275 | 9031.1275 |
| 656 | M8, Nylon | 9031.1277 | 9031.1277 |
| 660 | 127.8 x 84 | 9400.3188.4 | |
| | 133 x 84 | | 9401.3168.4 |
| 661 | ø27 x 9 | 9215.3134.4 | |
| | ø29 x 11 | | 9216.3134.4 |
| 662 | ø28/15 x 1 | 9038.1754 | |
| | ø30/17 x 1 | | 0038.3133 |
| 663 | ø28/15 x 2 | 9038.0258 | |
| | ø30/17 x 2 | | 9038.0250 |
| 664 | ø28/15 x 2.75 | 9038.1753 | |
| | ø30/17 x 2.75 | | 9038.1755 |
| 665 | s=1.5 | 9400.3065.4 | 9400.3065.4 |
| 666 | 34.5 x 26 x 21.2 | 9400.3015.4 | 9400.3015.4 |
| 667 | 100 kg | 9210.3717.4 | 9210.3717.4 |
| | 125 kg | 9210.3718.4 | 9210.3718.4 |
| | 160 kg | 9210.3719.4 | 9210.3719.4 |
| | 200 kg | 9210.3720.4 | 9210.3720.4 |
| | 250 kg | 9210.3721.4 | 9210.3721.4 |
| | 320 kg | 9210.3722.4 | 9210.3722.4 |
| | 400 kg | 9210.3723.4 | 9210.3723.4 |
| | 500 kg | 9211.3340.4 | 9211.3340.4 |
| | 630 kg | | 9211.3341.4 |
| | 800 kg | | 9211.3342.4 |
| | 1000 kg | | 9216.3041.4 |
| 668 | 3 x 5 | 9031.6604 | 9031.6604 |
| 670 | 68 x 54 x 81.5 | 9400.3079.3 | |
| | 78 x 62 x 98.5 | | 9401.3084.3 |
| 671 | ø42 x 54 | 9210.3045.4 | |
| | ø48 x 60 | | 9211.3045.4 |
| 672 | 40 x 40 x 47.5 | 9400.3068.3 | |
| | 48 x 48 x 57 | | 9401.3083.3 |
| 673 | ø4.7 x 28 | 9215.3033.4 | |
| | ø5.8 x 30 | | 9216.3033.4 |
| 680 | ø28 x 54 | 9400.3131.4 | |
| | ø30 x 57 | | 9401.3141.4 |
| 681 | ø25 x 54 | 9400.3130.4 | |
| | ø25 x 57 | | 9401.3140.4 |
| 682 | 125 x 75.25 x 27, A600 | 9401.3144.4 | 9401.3144.4 |



| V3 | LG25 | LG50 |
|-----|----------------------|-------------------------|
| 700 | 32 x 22.5 x 6 | 9058.0041 9058.0041 |
| 701 | PMEA 500-S, 100-480V | 9400.3181.4 9400.3181.4 |
| 702 | M3 x 8 | 9030.8030 9030.8030 |
| 703 | ø85 x 6 | 9400.3154.4 9400.3154.4 |
| 704 | M4 x 12 | 0030.1004 0030.1004 |
| 705 | 6 Nm 200-240 VAC | 9050.4056 9050.4056 |
| | 6 Nm 360-420 VAC | 9050.4057 9050.4057 |
| 706 | ø7/4.2 x 3 | 9400.3176.4 9400.3176.4 |
| 707 | M4 x 45 | 0030.9287 0030.9287 |
| 708 | 248 x 166 x 6 | 9400.3002.3 9400.3002.3 |
| 709 | 246 x 164 x 70 | 9400.3112.3 9400.3112.3 |
| 710 | M5 x 80 | 9400.3114.4 9400.3114.4 |
| 711 | 246 x 164 x 80 | 9401.4513.3 9401.4513.3 |
| 713 | M6 x 30 | 9031.5860 9031.5860 |
| 717 | 6kt, ø22 x 25.5 | 9400.3228.4 9400.3228.4 |
| 718 | M10 x 35 | 9400.3229.4 9400.3229.4 |
| 719 | M5 | 0031.0036 0031.0036 |
| 720 | M5 x 25 | 0030.1719 0030.1719 |

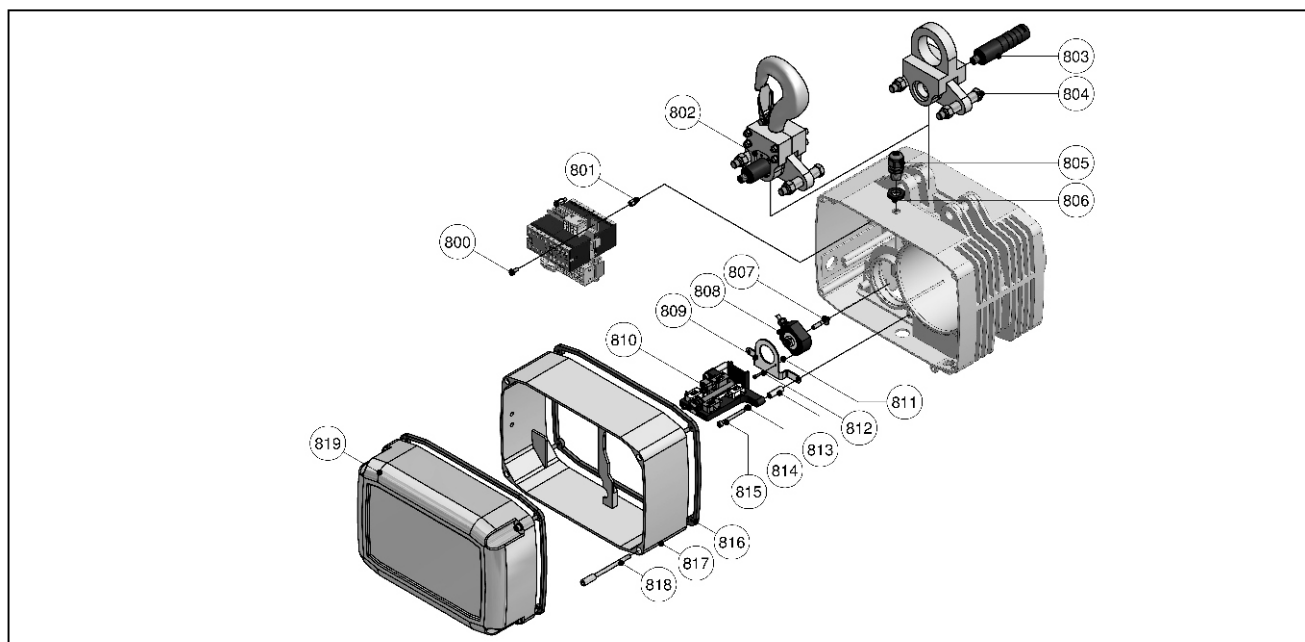
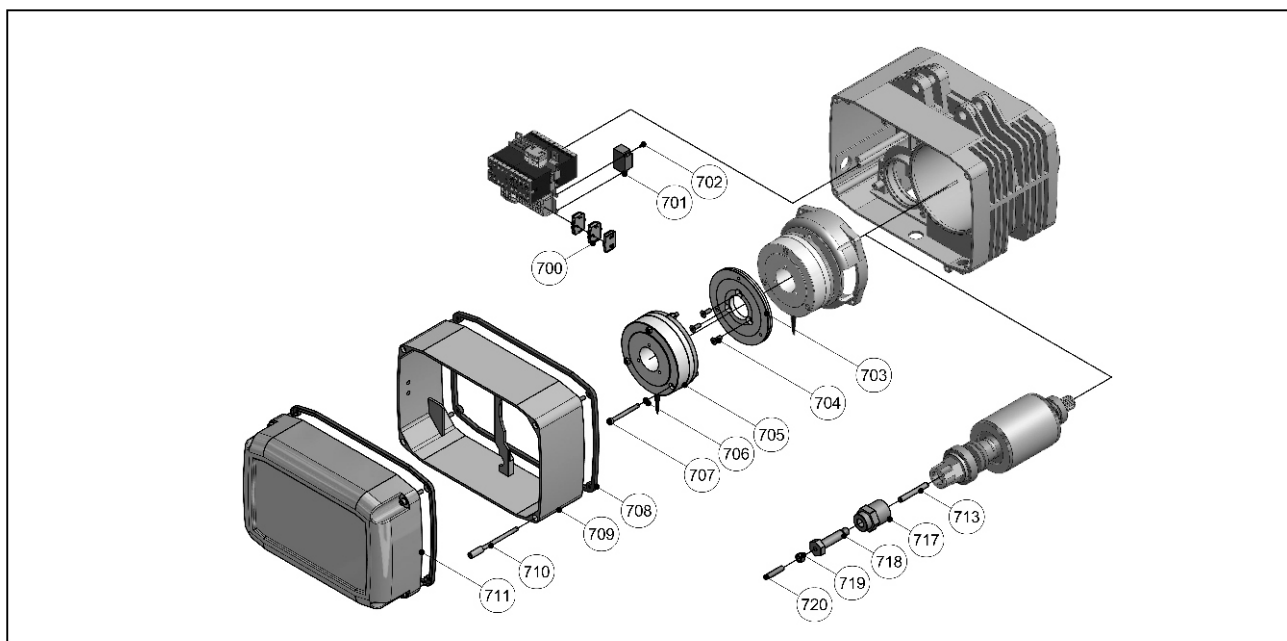
| V3 | LG25 | LG50 |
|-----|------------------------|-------------------------|
| 800 | M5 x 12 | 0030.3468 0030.3468 |
| 801 | M5 x 20 | 9058.0608 9058.0608 |
| 802 | 179 x 113 x 40.5 | 9401.3062.3 9401.3062.3 |
| 803 | ø27 x 105, 0-10V | 9401.3068.4 9401.3068.4 |
| 804 | 102.5 x 113 x 40 | 9401.3063.3 9401.3063.3 |
| 805 | M16 x 1.5 | 9055.3120 9055.3120 |
| 806 | M16 x 1.5 | 9055.4011 9055.4011 |
| 807 | ø10 x 36 | 9401.3072.4 9401.3072.4 |
| 808 | ICH510-060-R33-1000 | 9053.0009 9053.0009 |
| 809 | 119 x 59.75 x 16 | 9401.3069.4 9401.3069.4 |
| 810 | 119 x 103.5, kompl. | 9401.3015.3 9401.3015.3 |
| | 119 x 103.5, NA kompl. | 9401.3018.3 9401.3018.3 |
| 811 | M3 | 0031.0034 0031.0034 |
| 812 | M3 x 18 | 9030.9134 9030.9134 |
| 813 | ø9/1.5 x 27.5 | 9401.3075.4 9401.3075.4 |
| 814 | M5 | 9031.3902 9031.3902 |
| 815 | M5 x 50/22 | 9030.0270 9030.0270 |
| 816 | 248 x 166 x 6 | 9400.3002.3 9400.3002.3 |
| 817 | M5 x 35, In-6kt | 9030.0267 9030.0267 |
| 818 | 246 x 164 x 140 | 9400.3098.3 9400.3098.3 |
| 819 | 246 x 164 x 80 | 9401.4513.3 9401.4513.3 |



Spare parts LG10 V3

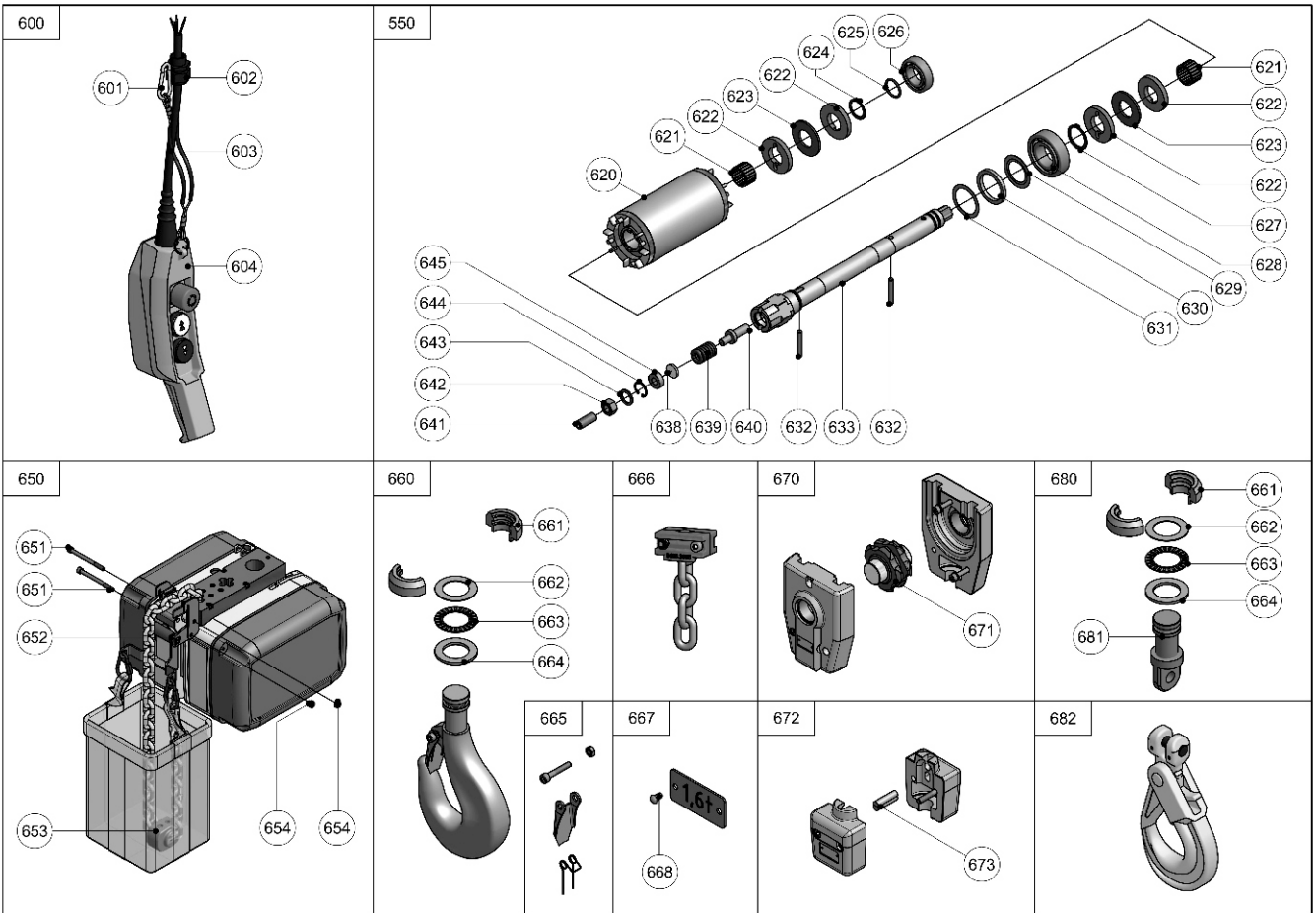
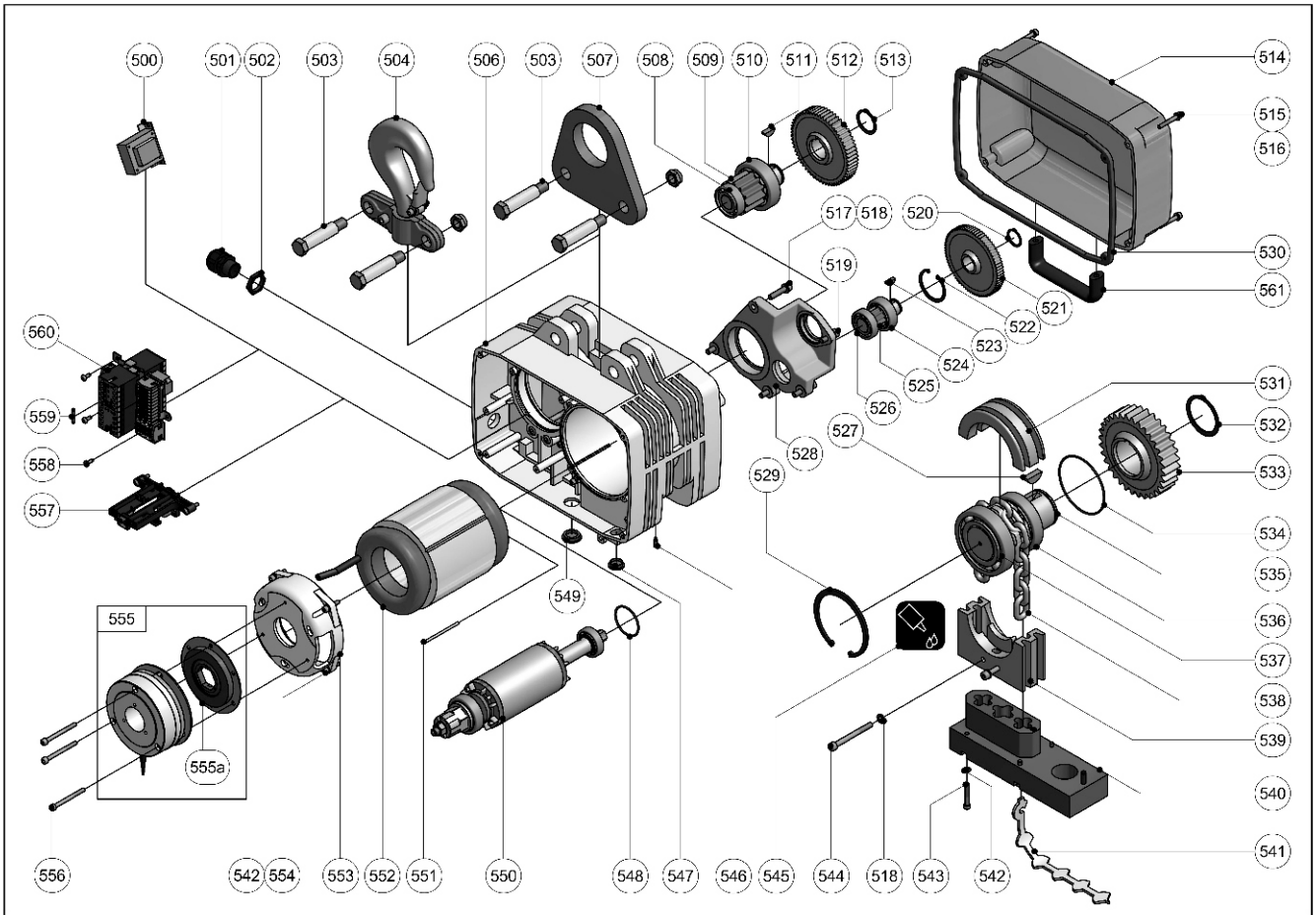
| V3 | LG10 | |
|------|-----------------------------|-------------|
| 500 | 230/42V 50/60Hz | 9056.4500.4 |
| | 400/42V 50/60Hz | 9056.4501.4 |
| 501 | M25 x 1.5 | 9055.3103 |
| 502 | M25 x 1.5 | 9055.4013 |
| 503 | 137 x 174 | 9405.3093.3 |
| 504 | 321 x 283 x 213.5 | 9405.3000.0 |
| 505 | 86/15 x 137 | 9405.3039.4 |
| 506 | 6204, 20/47 x 14 | 9038.0018 |
| 507 | ø30.55 x 107.5 | 9405.3025.3 |
| 508 | 6304, 20/52 x 15 | 9038.0021 |
| 509 | ø191 z=129 | 9405.3022.3 |
| 510 | 321 x 214 x 90 | 9405.4502.3 |
| 511 | M6 x 40, In-6kt | 9030.0279 |
| 512 | M6, Polyamid | 9031.3704 |
| 513 | I 52 x 2 | 9031.2206 |
| 514 | A 20 x 1.2 | 0031.1013 |
| 515 | 30/4.5 x 9.5 | 9400.3029.4 |
| 516 | 5 x 7.5 x 18.57 | 9036.0605 |
| 517 | 8 x 11 x 27.35 | 9036.0602 |
| 517a | ø80 x 2.5 | 9035.0025 |
| 518 | I 80 x 2.5 | 0031.1132 |
| 519 | 323 x 216 x 6 | 9405.3002.3 |
| 520 | 108 x 54 x 44 | 9405.3011.3 |
| 521 | A 30 x 1.5 | 0031.1018 |
| 522 | ø99.55 z=46 | 9405.3023.4 |
| 523 | ø62 x 2.5 | 9035.0016 |
| 524 | ø40/30.5 x 9.5 | 9405.3032.4 |
| 524a | 6206 ZJV, 36.3/62 x 2.5 | 9038.3201 |
| 525 | ø79 x 124.5, 5T | 9405.3305.4 |
| 526 | 6206-2DVH, 30/62 x 16 | 0038.1149 |
| 527 | 6208-2RS1, 40/80 x 18 | 0038.1151 |
| 528 | 7 x 22 | 9039.0023 |
| 529 | 121 x 50 x 44 | 9405.3012.3 |
| 530 | 80/40 x 200 | 9405.3058.4 |
| 531 | 236 x 23 x 5 (7mm) | 9401.6022 |
| 532 | M5 | 9031.3902 |
| 533 | M5 x 40 | 9030.0268 |
| 534 | M6 | 9031.3903 |
| 535 | M6 x 70 | 9030.0283 |
| 536 | 0.25 I | 9041.0007 |
| 537 | DIN 916 M6 x 16 | 9030.2013 |
| 538 | M20 x 1.5 | 9055.3512 |
| 539 | ø47 x 2.5 | 9035.0015 |
| 540 | M25 x 1.5 | 9055.3513 |
| 541 | 1-t ø102.4 x 110, 4 m/min | 9405.3291.3 |
| | 1-t ø79.4 x 90, 8 m/min | 9405.3266.3 |
| | 2-t ø89.2 x 100, 8/2 m/min | 9405.3240.3 |
| | 2-t ø79.2 x 130, 16/4 m/min | 9405.3241.3 |
| 542 | ø4 x 75 | 9230.3097.4 |
| 543 | L=90, 3Ph 230/400V 50Hz, -N | 9407.0200.3 |
| | L=110, 3Ph 400V 50Hz, -NL | 9407.0350.3 |
| | L=100, 3Ph 400V 50Hz, -NF | 9407.0500.3 |
| | L=130, 3Ph 400V 50Hz, -SF | 9407.0400.3 |
| 544 | ø156 x 52.5 | 9405.3232.2 |
| 545 | M6 x 25 | 9030.0276 |
| 546 | M6 | 9031.3903 |
| 547 | 20 Nm 100-125 VAC | 9050.4062 |
| | 20 Nm 200-240 VAC | 9050.4063 |
| | 20 Nm 360-420 VAC | 9050.4064 |
| | 20 Nm 440-480 VAC | 9050.4065 |
| | 20 Nm 500-575 VAC | 9050.4066 |
| | 20 Nm 690 VAC | 9050.4067 |
| 547a | ø128 x 11.8 | 9405.3286.4 |
| 548 | M6 x 65/24 | 9030.0011 |
| 549 | 119 x 103.5, kompl. | 9401.3015.3 |
| | 119 x 103.5, NA kompl. | 9401.3018.3 |
| 550 | M5 x 12 | 0030.3468 |
| 551 | 1-t NA 100-480/42V | 9402.1550.2 |
| | 1-t NA 500-690/42V UL | 9402.1551.2 |
| | 2-t NA 100-480/42V | 9402.1650.2 |
| | 2-t NA 500-690/42V UL | 9402.1651.2 |
| | WAGO 100-480V | 9402.1260.4 |
| | WAGO 100-480V PMS | 9402.1264.3 |
| 552 | 1.6A | 9052.0012 |
| 553 | 148 x 53 x 26 | 9405.3059.4 |

| V3 | LG10 | |
|-----|-------------------------------|-------------|
| 600 | 2K NA 3 m | 9290.1086.3 |
| | 2K NA 4 m | 9290.1087.3 |
| | 2K NA 5 m | 9290.1088.3 |
| | 2K NA 6 m | 9290.1089.3 |
| | 2K NA 8 m | 9290.1090.3 |
| | 2K NA 10 m | 9290.1091.3 |
| | 2K NA 12 m | 9290.1092.3 |
| | 2K NA 15 m | 9290.1093.3 |
| | 2K NA 20 m | 9290.1094.3 |
| 601 | L=50 | 9031.8004 |
| 602 | M20 x 1.5 | 9055.3102 |
| 603 | 5 x 0.75 mm ² , L= | 9055.0110 |
| 604 | 2K NA | 9290.1084.3 |
| 620 | 1-t ø79.4 x 90 | 9405.3035.3 |
| | 2-t ø89.2 x 100 | 9405.3036.3 |
| | 2-t ø79.2 x 130 | 9405.3037.3 |
| 621 | 25/29 x 17 | 9038.0261 |
| 622 | ø50 x 6.5 | 9405.3021.4 |
| 623 | ø50 x 3 | 9405.3013.4 |
| 624 | A 25 x 1.2 | 0031.1016 |
| 625 | ø19.5 x 2.5 | 9035.0024 |
| 626 | 6005 LLUA, 25/47 x 12 | 9038.0005 |
| 627 | A 30 x 1.5 | 0031.1018 |
| 628 | 6206 2RS, 30/62 x 16 | 0038.1149 |
| 629 | ø48/31 x 0.2 | 9405.3251.4 |
| 630 | ø49/39 x 5 | 9221.3177.4 |
| 631 | ø48/37.5 x 0.4 | 9405.3043.4 |
| 632 | ø6 x 40 | 9031.5857 |
| 633 | ø37 x 296.5 | 9405.3235.3 |
| 638 | ø19 x 3 | 9405.3230.4 |
| 639 | ø20/10 x 25 | 9034.1010 |
| 640 | ø18 x 48.5 | 9405.3231.4 |
| 641 | M12 x 30 | 9030.2017 |
| 642 | M12 | 0031.0040 |
| 643 | ø16/22 x 2 | 9031.3205 |
| 644 | I 22 x 1 | 9031.2222 |
| 645 | ø22/M12 x 7.7 | 9405.3311.4 |
| 650 | 212 x 192 x 320, 1000/15, XS | 9405.3298.3 |
| | 212 x 192 x 420, 1000/24, S | 9405.3299.3 |
| | 212 x 192 x 590, 1000/40, M | 9405.3300.3 |
| | 212 x 192 x 940, 1000/72, XL | 9405.3301.3 |
| 651 | M8, Nylon | 9031.1277 |
| 652 | M6, Nylon | 9031.1276 |
| 653 | 149.5 x 180 x 130 | 9405.3297.2 |
| 654 | 72 x 36 x 65 | 9225.3021.3 |
| 655 | M6 x 100/24 | 9030.0285 |
| 656 | M8 x 100/28 | 9030.0319 |
| 660 | 166.5 x 106.2 | 9405.3280.4 |
| 661 | ø47 x 18 | 9225.3096.4 |
| 662 | ø47/30 x 1 | 0038.3128 |
| 663 | ø47/30 x 2 | 9038.0252 |
| 664 | ø47/30 x 3 | 9038.1750 |
| 665 | s=2.0 | 9220.3482.4 |
| 666 | 44 x 35 x 27 | 9405.3003.3 |
| 667 | 0.4 t | 9220.3470.4 |
| | 0.5 t | 9220.3471.4 |
| | 0.63 t | 9220.3472.4 |
| | 0.8 t | 9220.3473.4 |
| | 1 t | 9220.3474.4 |
| | 1.25 t | 9220.3475.4 |
| | 1.6 t | 9220.3476.4 |
| | 2 t | 9221.3412.4 |
| 668 | 3 x 5 | 9031.6604 |
| 670 | 110 x 98 x 151 | 9405.3087.2 |
| 671 | ø78 x 85.6 | 9225.3041.4 |
| 672 | 72 x 72 x 77 | 9405.3086.2 |
| 673 | ø8 x 49 | 9220.3166.4 |
| 680 | ø47 x 70 | 9405.3144.4 |
| 681 | ø25 x 70 | 9405.3143.4 |
| 682 | 153.5 x 88.5 x 27, A601 | 9401.3145.4 |



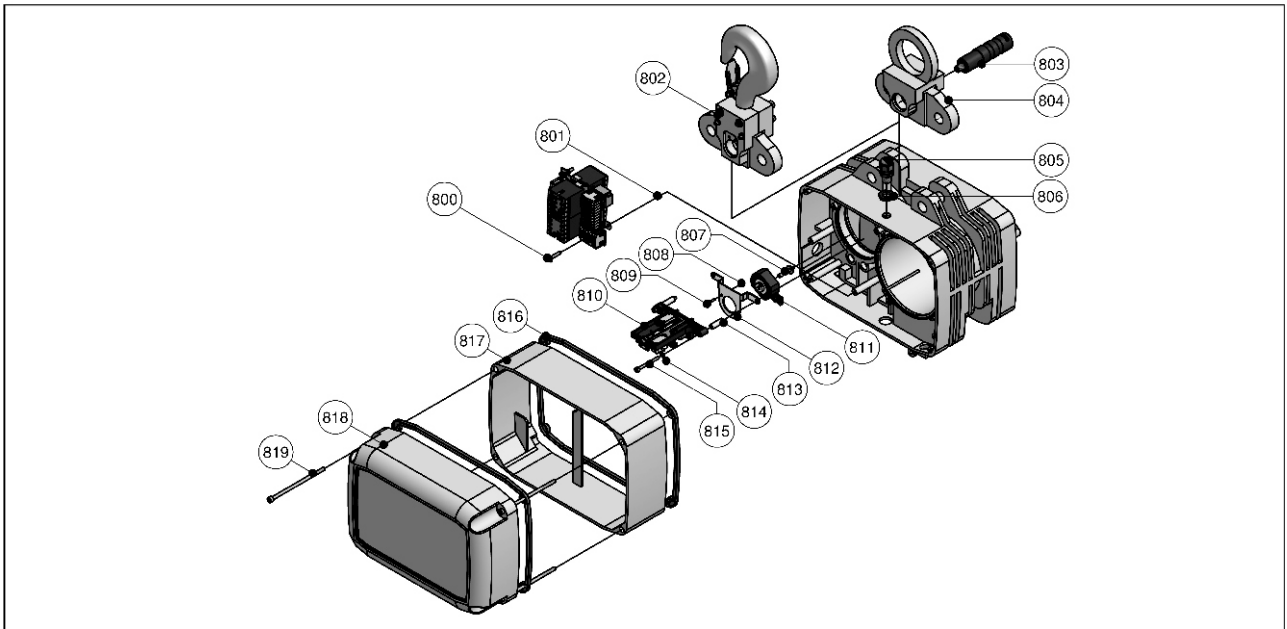
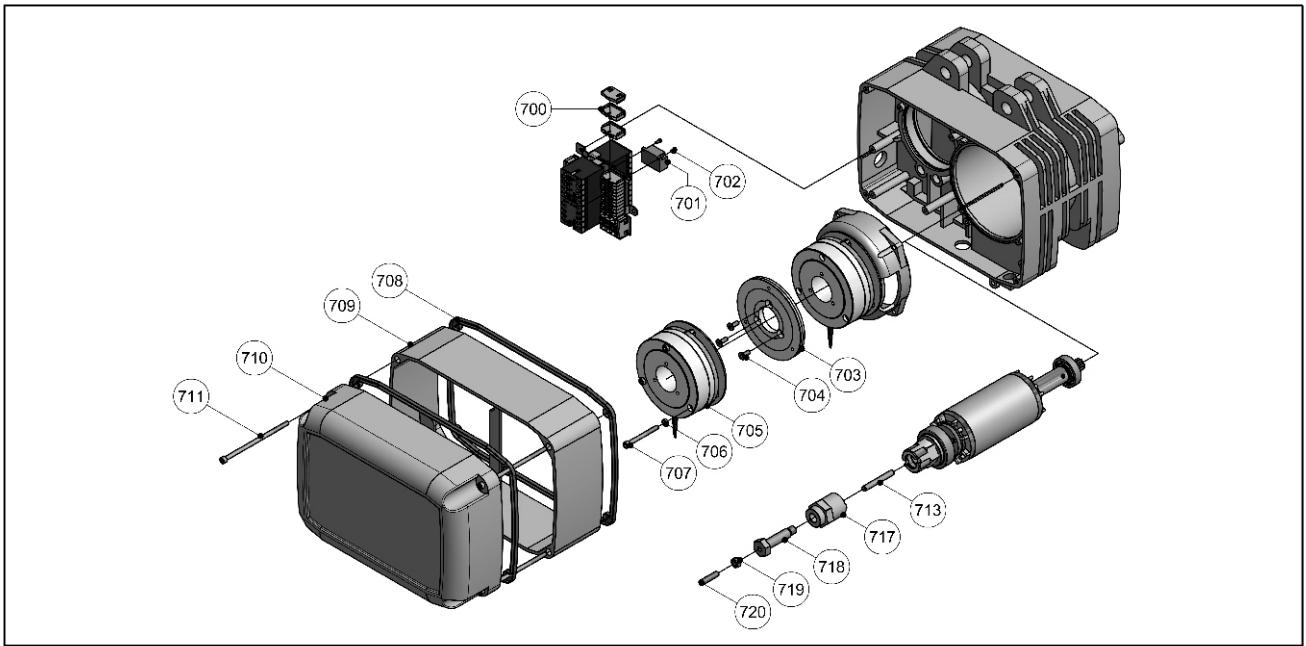
| V3 | | LG10 |
|-----|----------------------|-------------|
| 700 | 32 x 22.5 x 6 | 9058.0041 |
| 701 | PMEA 500-S, 100-480V | 9400.3181.4 |
| 702 | M3 x 8 | 9030.8030 |
| 703 | ø130 x 9 | 9405.3248.4 |
| 704 | M6 x 16 | 9030.1801 |
| 705 | 20 Nm 200-240 VAC | 9050.4063 |
| | 20 Nm 360-420 VAC | 9050.4064 |
| 706 | ø10/6.2 x 3 | 9405.3260.4 |
| 707 | M6 x 60 | 9030.0282 |
| 708 | 323 x 216 x 6 | 9405.3002.3 |
| 709 | 321 x 214 x 95 | 9405.3007.3 |
| 710 | M6 x 105 | 9408.3095.4 |
| 711 | 321 x 214 x 90 | 9405.4502.3 |
| 713 | M6 x 60 | 9031.5861 |
| 717 | 6kt, ø36 x 51.7 | 9405.3309.4 |
| 718 | M12 x 61 | 9405.3310.4 |
| 719 | M8 | 0031.0008 |
| 720 | M8 x 35 | 9030.2018 |

| V3 | | LG10 |
|-----|------------------------|-------------|
| 800 | M5 x 25 | 0030.3468 |
| 801 | M5 x 20 | 9058.0608 |
| 802 | 218 x 137 x 60 | 9405.3065.3 |
| 803 | ø27 x 115, 0-10V | 9405.3063.4 |
| 804 | 132 x 137 x 60 | 9405.3064.3 |
| 805 | M16 x 1.5 | 9055.3120 |
| 806 | M16 x 1.5 | 9055.4011 |
| 807 | ø10 x 36 | 9401.3072.4 |
| 808 | ICH510-060-R33-1000 | 9053.0009 |
| 809 | 119 x 59.75 x 16 | 9401.3069.4 |
| 810 | 119 x 103.5, kompl. | 9401.3015.3 |
| | 119 x 103.5, NA kompl. | 9401.3018.3 |
| 811 | M3 | 0031.0034 |
| 812 | M3 x 18 | 9030.9134 |
| 813 | ø9/1.5 x 27.5 | 9401.3075.4 |
| 814 | M5 | 9031.3902 |
| 815 | M5 x 50/22 | 9030.0270 |
| 816 | 323 x 216 x 6 | 9405.3002.3 |
| 817 | 321 x 214 x 95 | 9405.3007.3 |
| 818 | M6 x 105 | 9408.3095.4 |
| 819 | 321 x 214 x 90 | 9405.4502.3 |



| V3 | LG16 | LG20 | LG250 |
|------|----------------------------------|-------------|-------------|
| 500 | 230/42V 50/60Hz | 9056.4500.4 | 9056.4500.4 |
| | 400/42V 50/60Hz | 9056.4501.4 | 9056.4501.4 |
| 501 | M25 x 1.5 | 9055.3103 | 9055.3103 |
| 502 | M25 x 1.5 | 9055.4013 | 9055.4013 |
| 503 | M16 x 90 | 9408.3015.4 | 9408.3015.4 |
| 504 | 166 x 210 | 9408.3070.3 | 9408.3070.3 |
| 506 | 345 x 304.5 x 251.5 | 9408.3000.0 | 9408.3000.0 |
| 507 | 186 x 169.94 x 20 | 9408.3019.3 | 9408.3019.3 |
| 508 | NJ205, 25/52 x 15 | 0038.1824 | 0038.1824 |
| 509 | ø58.81 x 108 z=12 | 9408.3027.4 | 9408.3027.4 |
| | ø51.2 x 108 z=10 | | 9408.3028.4 |
| 510 | 6307, 35/80 x 21 | 9038.0022 | 9038.0022 |
| 511 | 8 x 9 x 21.63 | 9036.0601 | 9036.0601 |
| 512 | ø125.42 z=57 | 9408.3026.3 | 9408.3026.3 |
| 513 | A 35 x 1.5 | 0031.1020 | 0031.1020 |
| 514 | 345 x 230 x 95 | 9408.3071.2 | 9408.3071.2 |
| 515 | M6 x 40, In-6kt | 9030.0279 | 9030.0279 |
| 516 | M6, Polyamid | 9031.3704 | 9031.3704 |
| 517 | M8 x 35 | 9030.0289 | 9030.0289 |
| 518 | M8 | 9031.3904 | 9031.3904 |
| 519 | M8 x 25 | 9030.0287 | 9030.0287 |
| 520 | A 25 x 1.2 | 0031.1016 | 0031.1016 |
| 521 | ø115.92 z=78, -N/-NF | 9408.3023.3 | 9408.3023.3 |
| | ø109.5 z=73, -SF | 9408.3024.3 | 9408.3024.3 |
| 522 | I 52 x 2 | 9031.2206 | 9031.2206 |
| 523 | 6 x 7.5 xx 18.75 | 9036.0600 | 9036.0600 |
| 524 | 6205, 25/52 x 15 | 9038.0019 | 9038.0019 |
| 525 | ø33.67 x 74 z=13 | 9408.3025.4 | 9408.3025.4 |
| 526 | 6005, 25/47 x 12 | 0038.1036 | 0038.1036 |
| 527 | 10 x 13 x 31.43 | 9036.0603 | 9036.0603 |
| 528 | 213 x 164 x 62.5 | 9408.3002.1 | 9408.3002.1 |
| 529 | I 110 x 4 | 0031.1137 | 0031.1137 |
| 530 | 347 x 232 x 6 | 9408.3003.3 | 9408.3003.3 |
| 531 | 140 x 70 x 49 | 9408.3011.3 | 9408.3011.3 |
| 532 | A 60 x 2 | 0031.1028 | 0031.1028 |
| 533 | ø143.86 z=34 | 9408.3029.3 | 9408.3029.3 |
| | ø151.47 z=36 | | 9408.3030.3 |
| 534 | ø95 x 2.5 | 9035.0017 | 9035.0017 |
| 535 | ø97 x 140, 5T | 9408.3031.2 | |
| | ø101 x 140, 5T | | 9408.3032.2 |
| 536 | 6012 2RS, 60/95 x 18 | 0038.1085 | 0038.1085 |
| 537 | 6212 2RS, 60/110 x 22 | 9038.0024 | 9038.0024 |
| 538 | 9 x 27 | 9039.0024 | |
| | 10 x 28 | | 9039.0025 |
| 539 | 140 x 85 x 49 | 9408.3012.3 | 9408.3012.3 |
| 540 | 260 x 83 x 86 | 9408.3104.3 | 9408.3104.4 |
| 541 | 314 x 32.7 x 5 (9/10mm) | 9041.6024 | 9041.6024 |
| 542 | M6 | 9031.3903 | 9031.3903 |
| 543 | M6 x 40/24 | 9030.0279 | 9030.0279 |
| 544 | M8 x 80 | 9030.0309 | 9030.0309 |
| 545 | 0.25 I | 9041.0007 | 9041.0007 |
| 546 | DIN 916 M6 x 16 | 9030.2013 | 9030.2013 |
| 547 | M20 x 1.5 | 9055.3512 | 9055.3512 |
| 548 | ø47 x 2.5 | 9035.0015 | 9035.0015 |
| 549 | M25 x 1.5 | 9055.3513 | 9055.3513 |
| 550 | 1-t ø79.4 x 90, 8m/min | 9408.3145.3 | 9408.3145.3 |
| | 1-t ø79.4 x 90, 12.5 m/min | 9408.3116.3 | 9408.3116.3 |
| | 2-t ø79.2 x 130, 8/2 m/min | 9408.3146.3 | 9408.3146.3 |
| | 2-t ø79.2 x 130, 12.5/3.5 m/min | 9408.3147.3 | 9408.3147.3 |
| 551 | ø4 x 75 | 9230.3097.4 | 9230.3097.4 |
| 552 | L=90, 3Ph 230/400V 50Hz, -N | 9407.0100.3 | 9407.0100.3 |
| | L=90, 3Ph 230/400V 50Hz, -NL/-SL | 9407.0200.3 | 9407.0200.3 |
| | L=130, 3Ph 400V 50Hz, -NF/-SF | 9407.0400.3 | 9407.0400.3 |
| 553 | ø156 x 52.5 | 9405.3232.2 | 9405.3232.2 |
| 554 | M6 x 25 | 9030.0276 | 9030.0276 |
| 555 | 20 Nm 100-125 VAC | 9050.4062 | 9050.4062 |
| | 20 Nm 200-240 VAC | 9050.4063 | 9050.4063 |
| | 20 Nm 360-420 VAC | 9050.4064 | 9050.4064 |
| | 20 Nm 440-480 VAC | 9050.4065 | 9050.4065 |
| | 20 Nm 500-575 VAC | 9050.4066 | 9050.4066 |
| | 20 Nm 690 VAC | 9050.4067 | 9050.4067 |
| 555a | ø128 x 11.8 | 9405.3286.4 | 9405.3286.4 |
| 556 | M6 x 65/24 | 9030.0011 | 9030.0011 |
| 557 | 119 x 103.5, kompl. | 9401.3015.3 | 9401.3015.3 |
| | 119 x 103.5, NA kompl. | 9401.3018.3 | 9401.3018.3 |
| 558 | M5 x 12 | 0030.3468 | 0030.3468 |
| 559 | 1.6A | 9052.0012 | 9052.0012 |
| 560 | 1-t NA 100-480/42V | 9402.1550.2 | 9402.1550.2 |
| | 1-t NA 500-690/42V UL | 9402.1551.2 | 9402.1551.2 |
| | 2-t NA 100-480/42V | 9402.1650.2 | 9402.1650.2 |
| | 2-t NA 500-690/42V UL | 9402.1651.2 | 9402.1651.2 |
| | WAGO 100-480V | 9402.1260.4 | 9402.1260.4 |
| | WAGO 100-480V PMS | 9402.1264.3 | 9402.1264.3 |
| 561 | 148 x 53 x 26 | 9405.3059.4 | 9405.3059.4 |

| V3 | LG16 | LG20 | LG250 |
|-----|-------------------------------|--------------|-------------|
| 600 | 2K NA 3 m | 9290.1086.3 | 9290.1086.3 |
| | 2K NA 4 m | 9290.1087.3 | 9290.1087.3 |
| | 2K NA 5 m | 9290.1088.3 | 9290.1088.3 |
| | 2K NA 6 m | 9290.1089.3 | 9290.1089.3 |
| | 2K NA 8 m | 9290.1090.3 | 9290.1090.3 |
| | 2K NA 10 m | 9290.1091.3 | 9290.1091.3 |
| | 2K NA 12 m | 9290.1092.3 | 9290.1092.3 |
| | 2K NA 15 m | 9290.1093.3 | 9290.1093.3 |
| | 2K NA 20 m | 9290.1094.3 | 9290.1094.3 |
| 601 | L=50 | 9031.8004 | 9031.8004 |
| 602 | M20 x 1.5 | 9055.3102 | 9055.3102 |
| 603 | 5 x 0.75 mm ² , L= | 9055.0110 | 9055.0110 |
| 604 | 2K NA | 9290.1084.3 | 9290.1084.3 |
| 620 | 1-t ø79.4 x 90 | 9405.3035.3 | 9405.3035.3 |
| | 2-t ø79.2 x 130 | 9405.3037.3 | 9405.3037.3 |
| 621 | 25/29 x 17 | 9038.0261 | 9038.0261 |
| 622 | ø50 x 6.5 | 9405.3021.4 | 9405.3021.4 |
| 623 | ø50 x 3 | 9405.3013.4 | 9405.3013.4 |
| 624 | A 25 x 1.2 | 0031.1016 | 0031.1016 |
| 625 | ø19.5 x 2.5 | 9035.0024 | 9035.0024 |
| 626 | 6005 LLUA, 25/47 x 12 | 9038.0005 | 9038.0005 |
| 627 | A 30 x 1.5 | 0031.1018 | 0031.1018 |
| 628 | 6206 2RS, 30/62 x 16 | 0038.1149 | 0038.1149 |
| 629 | ø48/31 x 0.2 | 9405.3251.4 | 9405.3251.4 |
| 630 | ø49/39 x 5 | 9221.3177.4 | 9221.3177.4 |
| 631 | ø48/37.5 x 0.4 | 9405.3043.4 | 9405.3043.4 |
| 632 | ø6 x 40 | 9031.5857 | 9031.5857 |
| 633 | ø37 x 350, -N/-NF | 9408.3142.3 | 9408.3142.3 |
| | ø37 x 351, -SF | 9408.3143.3 | 9408.3143.3 |
| 638 | ø19 x 3 | 9408.3230.4 | 9408.3230.4 |
| 639 | ø20/10 x 25 | 9034.1010 | 9034.1010 |
| 640 | ø18 x 48.5 | 9405.3231.4 | 9405.3231.4 |
| 641 | M12 x 30 | 9030.2017 | 9030.2017 |
| 642 | M12 | 0031.0040 | 0031.0040 |
| 643 | ø16/22 x 2 | 9031.3205 | 9031.3205 |
| 644 | I 22 x 1 | 9031.2222 | 9031.2222 |
| 645 | ø22/M12 x 7.7 | 9405.3311.4 | 9405.3311.4 |
| 650 | 1600/9, 2000/8, 2500/8, XS | 9408.3185.3 | 9408.3185.3 |
| | 1600/19, 2000/14, 2500/14, S | 9408.3186.3 | 9408.3186.3 |
| | 1600/26, 2000/19, 2500/19, M | 9408.3187.3 | 9408.3187.3 |
| | 1600/47, 2000/36, 2500/36, XL | 9408.3188.3 | 9408.3188.3 |
| 651 | M8 x 100/28 | 9030.0319 | 9030.0319 |
| 652 | 149.5 x 180.5 x 126.5 | 9408.3183.2 | 9408.3183.2 |
| 653 | 75 x 57 x 55 | 9235.3111.3 | 9235.3111.3 |
| 654 | M8, Nylon | 9031.1277 | 9031.1277 |
| 660 | 209 x 127.71 | 9408.3161.4 | 9408.3161.4 |
| 661 | ø47 x 23.7 | 9235.3107.4 | 9235.3107.4 |
| 662 | ø47/30 x 1 | 0038.3128 | 0038.3128 |
| 663 | ø47/30 x 2 | 9038.0252 | 9038.0252 |
| 664 | ø47/30 x 3 | 9038.1750 | 9038.1750 |
| 665 | s=2.0 | 9220.3482.4 | 9220.3482.4 |
| 666 | 66 x 44 x 34 | 9408.3005.3 | 9408.3005.3 |
| 667 | 0.4 t | 9220.3470.4 | |
| | 0.5 t | 9220.3471.4 | |
| | 0.63 t | 9220.3472.4 | 9220.3472.4 |
| | 0.8 t | 9220.3473.34 | 9220.3473.4 |
| | 1 t | 9220.3474.4 | 9220.3474.4 |
| | 1.25 t | 9220.3475.4 | 9220.3475.4 |
| | 1.6 t | 9220.3476.4 | 9220.3476.4 |
| | 2 t | 9221.3412.4 | 9221.3412.4 |
| | 2.5 t | 9230.3226.4 | 9230.3226.4 |
| | 3.2 t | 9230.3227.4 | 9230.3227.4 |
| | 4.0 t | 9231.3196.4 | 9231.3196.4 |
| | 5.0 t | | 9235.3064.4 |
| 668 | 3 x 5 | 9031.6604 | 9031.6604 |
| 670 | 140 x 96 x 181.5 | 9408.3062.1 | 9408.3063.1 |
| 671 | ø88 x 76 | 9230.3059.4 | |
| | ø90 x 80 | | 9231.3059.4 |
| 672 | 80 x 80 x 100 | 9408.3061.3 | 9408.3061.3 |
| 673 | ø10 x 40 | 9235.3108.4 | 9235.3108.4 |
| 680 | ø47 x 95 | 9408.3118.4 | |
| | ø47 x 107 | | 9408.3120.4 |
| 681 | ø35 x 95 | 9408.3117.4 | |
| | ø45 x 107 | | 9408.3119.4 |
| 682 | 198 x 108.6 x 35, A602 | 9405.3208.4 | |
| | 247 x 138.1 x 43, A603 | | 9408.3130.4 |



| V3 | | LG16 | LG20 | LG250 |
|-----|--|------------------------|------------------------|------------------------|
| 700 | 32 x 22.5 x 6 | 9058.0041 | 9058.0041 | 9058.0041 |
| 701 | PMEA 500-S, 100-480V | 9400.3181.4 | 9400.3181.4 | 9400.3181.4 |
| 702 | M3 x 8 | 9030.8030 | 9030.8030 | 9030.8030 |
| 703 | ø130 x 9 | 9405.3248.4 | 9405.3248.4 | 9405.3248.4 |
| 704 | M6 x 16 | 9030.1801 | 9030.1801 | 9030.1801 |
| 705 | 20 Nm 200-240 VAC 20 Nm 360-420 VAC | 9050.4063 9050.4064 | 9050.4063 9050.4064 | 9050.4063 9050.4064 |
| 706 | ø10/6.2 x 3 | 9405.3260.4 | 9405.3260.4 | 9405.3260.4 |
| 707 | M6 x 60 | 9030.0282 | 9030.0282 | 9030.0282 |
| 708 | 347 x 232 x 6 | 9408.3003.3 | 9408.3003.3 | 9408.3003.3 |
| 709 | 345 x 230 x 95 | 9408.3007.3 | 9408.3007.3 | 9408.3007.3 |
| 710 | 345 x 230 x 95 | 9408.3071.2 | 9408.3071.2 | 9408.3071.2 |
| 711 | M6 x 130/32 | 9030.0019 | 9030.0019 | 9030.0019 |
| 713 | ø8 x 60 | 9031.5861 | 9031.5861 | 9031.5861 |
| 717 | 6kt, ø36 x 51.7 | 9405.3309.4 | 9405.3309.4 | 9405.3309.4 |
| 718 | M12 x 61 | 9405.3310.4 | 9405.3310.4 | 9405.3310.4 |
| 719 | M8 | 0031.0008 | 0031.0008 | 0031.0008 |
| 720 | M8 x 35 | 9030.2018 | 9030.2018 | 9030.2018 |

| V3 | | LG16 | LG20 | LG250 |
|-----|---|----------------------------|----------------------------|----------------------------|
| 800 | M5 x 25 | 9030.3259 | 9030.3259 | 9030.3259 |
| 801 | ø8/1.25 x 8 | 9401.3070.4 | 9401.3070.4 | 9401.3070.4 |
| 802 | 282 x 178 x 70 | 9408.3050.2 | 9408.3050.2 | 9408.3050.2 |
| 803 | ø30 x 125, 0-10V | 9408.3048.4 | 9408.3048.4 | 9408.3048.4 |
| 804 | 176.5 x 178 x 70 | 9408.3049.2 | 9408.3049.2 | 9408.3049.2 |
| 805 | M16 x 1.5 | 9055.3120 | 9055.3120 | 9055.3120 |
| 806 | M16 x 1.5 | 9055.4011 | 9055.4011 | 9055.4011 |
| 807 | ø10 x 36 | 9401.3072.4 | 9401.3072.4 | 9401.3072.4 |
| 808 | M3 | 0031.0034 | 0031.0034 | 0031.0034 |
| 809 | M3 x 18 | 9030.9134 | 9030.9134 | 9030.9134 |
| 810 | 119 x 103.5, kompl. 119 x 103.5, NA kompl. | 9401.3015.3 9401.3018.3 | 9401.3015.3 9401.3018.3 | 9401.3015.3 9401.3018.3 |
| 811 | ICH510-060-R33-1000 | 9053.0009 | 9053.0009 | 9053.0009 |
| 812 | 119 x 59.75 x 16 | 9401.3069.4 | 9401.3069.4 | 9401.3069.4 |
| 813 | ø9/1.5 x 27.5 | 9401.3075.4 | 9401.3075.4 | 9401.3075.4 |
| 814 | M5 | 9031.3902 | 9031.3902 | 9031.3902 |
| 815 | M5 x 50/22 | 9030.0270 | 9030.0270 | 9030.0270 |
| 816 | 347 x 232 x 6 | 9408.3003.3 | 9408.3003.3 | 9408.3003.3 |
| 817 | 345 x 230 x 95 | 9408.3007.3 | 9408.3007.3 | 9408.3007.3 |
| 818 | 345 x 230 x 95 | 9408.3071.2 | 9408.3071.2 | 9408.3071.2 |
| 819 | M6 x 130/32 | 9030.0019 | 9030.0019 | 9030.0019 |



EC Declaration of Incorporation - LoadGuard Hoists

Manufacturer: Lift Turn Move Ltd
 Address: Unit 2 Stadium Court,
 Plantation Road,
 Wirral International Business Park,
 Bromborough, CH62 3QG, UK
 Machine Name: LoadGuard - LG25 / LG50 / LG10 / LG16 / LG20 / LG250
 Type: Electric Chain Hoist - series
 Safe Working Load: 100kg - 5000kg



Declare that the product described above (in conjunction with specifics detailed on the delivery note) meets the essential requirements of the following EC directives, as applicable to the scope of the delivery:

Machinery Directive 06/42/EC
Low Voltage Directive 06/95/EC
EMC Directive 04/108/EC

We also declare that the technical documentation has been compiled in accordance with Annex VII, Part B of Directive 2006/42/EC. We undertake to submit the specific documents relating to the lifting mechanism to national authorities on receipt of a reasonable request. The information will be supplied by electronic means.

This declaration only refers to the lifting mechanism. Commissioning is prohibited until it has been firmly ascertained that the complete lifting system, in which the hoist mechanism is installed, complies with the provisions of the above EC directives.

The product has been tested and assessed by application of the following standards or specifications, and the National Laws and Regulations adopting these directives. The details of which are contained in the Technical File **SDA11TF9010**

| Standard / Year | Description |
|--------------------------|---|
| BS EN ISO 12100-1:2003 : | Safety of machinery. Basic concepts, general principles for design. Basic terminology, methodology |
| BS EN ISO 12100-2:2003 : | Safety of machinery. Basic concepts, general principles for design. Technical principles |
| BS EN 60204-1:1993 : | Safety of machinery. Electrical equipment of machines. Specification for general requirements |
| BS EN 418:1992 : | Safety of machinery. Emergency stop equipment, functional aspects. Principles for design |
| BS EN 954-1:1997 : | Safety of machinery. Safety related parts of control systems. General principles for design |
| BS EN 1050:1997 : | Safety of machinery. Principles for risk assessment |
| BS EN 1088:1996 : | Safety of machinery. Interlocking devices associated with guards. Principles for design and selection |
| BS EN 1037:1996 : | Safety of machinery. Prevention of unexpected start-up |
| BS EN 574:1997 : | Safety of machinery. Two-hand control devices. Functional aspects. Principles for design |
| BS EN 842:1996 : | Safety of machinery. Visual danger signals. General requirements, design and testing |
| BS IEC 61000-5-1:1996 : | Electromagnetic compatibility (EMC). Installation and mitigation guidelines. General considerations. |
| BS IEC 61000-5-2:1997 : | Electromagnetic compatibility (EMC). Installation and mitigation guidelines. Earthing and cabling |
| BS EN 61000-6-4:2001 : | Electromagnetic compatibility (EMC). Generic standards. Emission standard for industrial environments |
| BS EN 61000-2-4:2002 : | Electromagnetic compatibility (EMC). Environment. Compatibility levels in industrial plants for low-frequency conducted disturbances |
| BS EN 61000-5-7:2001 : | Electromagnetic compatibility (EMC). Installation and mitigation guidelines. Installation and mitigation guidelines. Degrees of protection by enclosures against electromagnetic disturbances (EM code) |
| BS EN 61000-6-2:2001 : | Electromagnetic compatibility (EMC). Generic standards. Immunity standard for industrial environments |
| BS IEC 61000-2-7:1998 : | Electromagnetic compatibility (EMC). Environment. Low frequency magnetic fields in various environments |
| PD 5304:2000 : | Safe use of machinery |

| | | |
|----------------------------|--------------------|--------------------|
| Certificate of Assurance : | MD11P9010 | Dated : 10/11/2011 |
| Assessment Report : | SDA11A9010 | Dated : 10/11/2011 |
| Responsible Person : | David Richard Ward | Dated : 10/11/2011 |
| Position in Company : | Technical Manager | Lift Turn Move Ltd |

Compliance with the Harmonised European Standards listed here gives a presumption of conformity to the relevant EU Directives noted in the Technical File, SDA11TF9010 for this product held by the Manufacturer and their Authorised Representative.