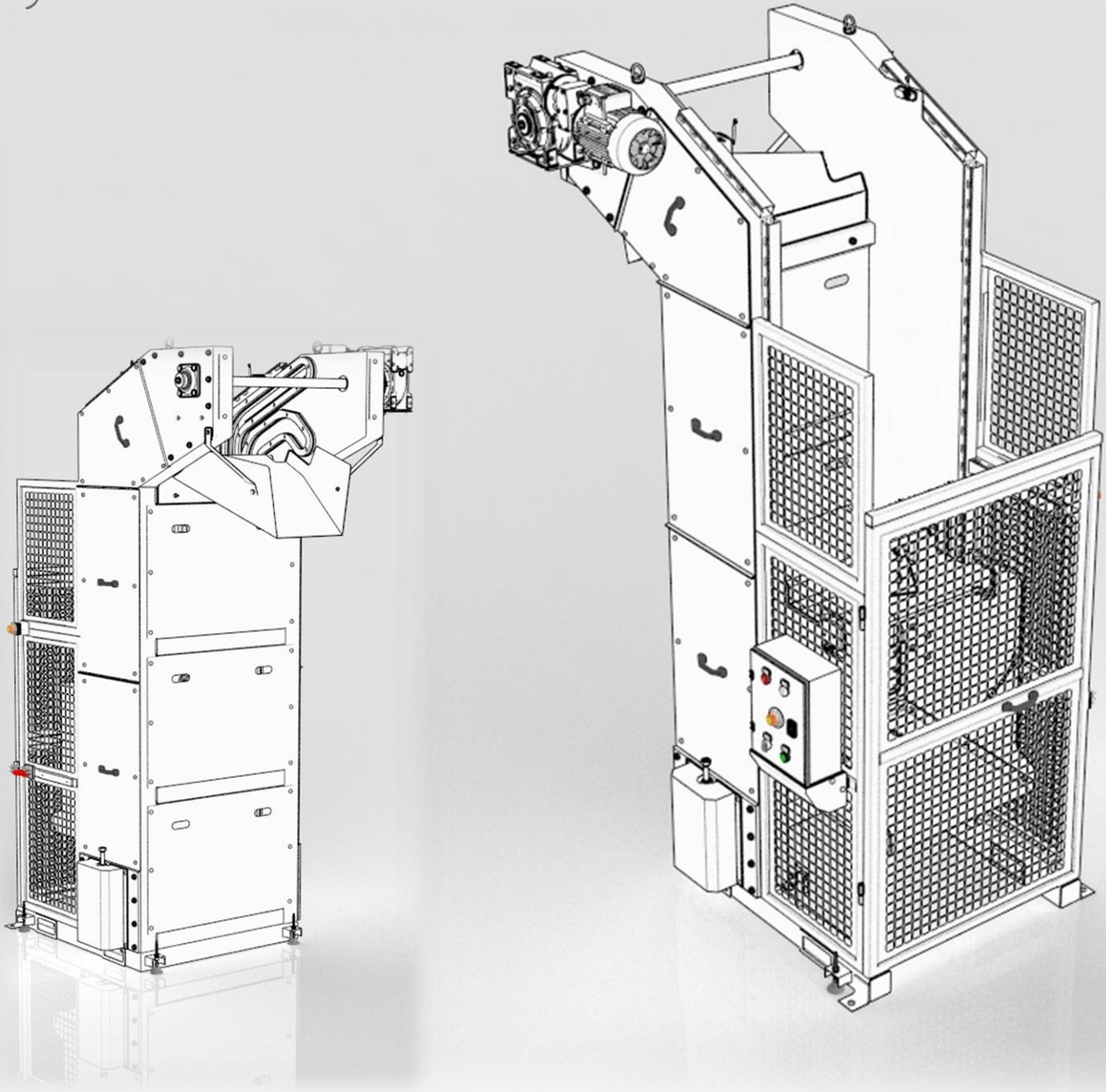


**SARIGÖL®**  
conveyor systems

*design & make it.*



## **CHAIN DRIVEN ELEVATOR (SKIP HOIST)**

User Manual

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## Health and Safety

This manual contains instructions for the daily operation of the equipment. It should always be accessible to those working with the equipment. It is important to ensure that:

- The manual and other relevant documents are stored for the entire service life of the equipment.
- The manual and other relevant documents remain with the equipment at all times.
- This manual is passed on to other users of the equipment.
- This manual is updated whenever additions or changes are made to the equipment.
- This manual describes the methods used when operating the equipment.

## Safety Code

- Please read the relevant sections of the manual before using the equipment or performing maintenance or service operations.
- Assume all electrical equipment is live.
- Assume all hoses and pipelines are under pressure.
- When servicing and maintaining the equipment or machine, ensure the power supply is turned off, disconnected, and that the pressure in the pipes and hoses is released in a controlled manner.
- Service and maintenance operations must be performed by authorized personnel only.
- Use only spare parts approved by Sarigöl Konveyör Sistemleri.
- Ensure that the machine is securely mounted and installed according to the instructions before startup.
- Use the machine only as intended.
- In case of abnormal vibration or noise, stop the machine and refer to the manual.
- Electrical installation should only be carried out by a qualified electrician.

The coolant in the tanks must be drained before any lifting operations are performed.

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## General Description

Elevators are used to load chips from machine tools into existing containers or silos using chip carts. The chain-driven elevator features a steel construction body, and its dimensions can be customized to meet specific requirements.

These elevators provide the fastest method for transferring chips produced during manufacturing to the scrapyard. They allow for the efficient transfer of chips from chip carts into conveyors, silos, or containers without the need for a forklift or crane, ensuring a process that is both safe and efficient.

For optimal performance and longevity, it is important that the chip carts meet certain standards. With regular maintenance, these elevators can operate for a long time without issues.

# 1 General Description of the Machine and Safety

## 1.1 Introduction

Pay attention to all the safety and operating warnings in this manual, as they will reduce the likelihood of accidents and extend the machine's lifespan.

Before the installation, operation, and maintenance of the machine, ensure that all relevant personnel (operators, maintenance staff, etc.) have read and understood this user manual. It is dangerous for unauthorized individuals from outside the workplace to interfere with the device.

Failure to comply with the directives, procedures, or safety warnings in this manual may result in accidents, damage, and injuries.

## 1.2 General Warning

The system is designed to guard against electrical leakage, component failure, and foreign material ingress. Despite the machine's integrated safety mechanisms, it is essential to adhere to the warning and operating labels affixed to it. Compliance with these labels is required to ensure proper and safe operation.



**In addition to the company label containing elevator information, various warning and caution labels are present on the elevator. These labels are intended to guide users on proper behavior and maintenance procedures, highlight potential risks, and alert individuals to potential hazards. It is imperative that these labels remain intact and are not removed under any circumstances.**



Safety labels are crucial for ensuring the safe and effective operation of both you and your machinery. If any labels are removed or become detached for any reason, please contact the manufacturer to request replacements. It is essential to adhere to all warning instructions provided.



## 1.3 Electricity

The drive box is made according to IP 54 protection class. The drive power connection cables are protected by rubber coating steel spiral. Thus, the system, which does not receive dust or water, is protected from external factors. It will prevent the spiral cables protecting the power cables from being cut and broken. Do not use worn, crushed cables, replace them.



**When motors or gear motors are in operation, voltage-bearing components, exposed (open plug/terminal block boxes), and moving or rotating parts present significant risks of life-threatening or serious injuries. All relevant documentation must be strictly followed. In the event of a malfunction, the machine should not be restarted, and technical support should be obtained from the manufacturer.**

## 1.4 Driving System

The drive system of the machine, including the motor, reducer, shaft, and chain, is securely enclosed. This ensures that the moving parts do not come into contact with any working components. Additionally, potential risks from the machine's rotating parts have been eliminated, and users have been informed with the necessary caution and warning labels.

## 1.5 Tow Hitch

For domestic shipments, elevators are lifted from designated slots where forklift blades can enter, and loading or unloading is performed according to the prescribed procedures. The elevators are equipped with lifting points at two locations to facilitate transportation within the factory. Lifting ropes are attached to these points and connected to the overhead crane for safe and efficient transportation.



**Maintain a safe distance from the load during loading and unloading operations. Only authorized personnel should be involved in these activities.**

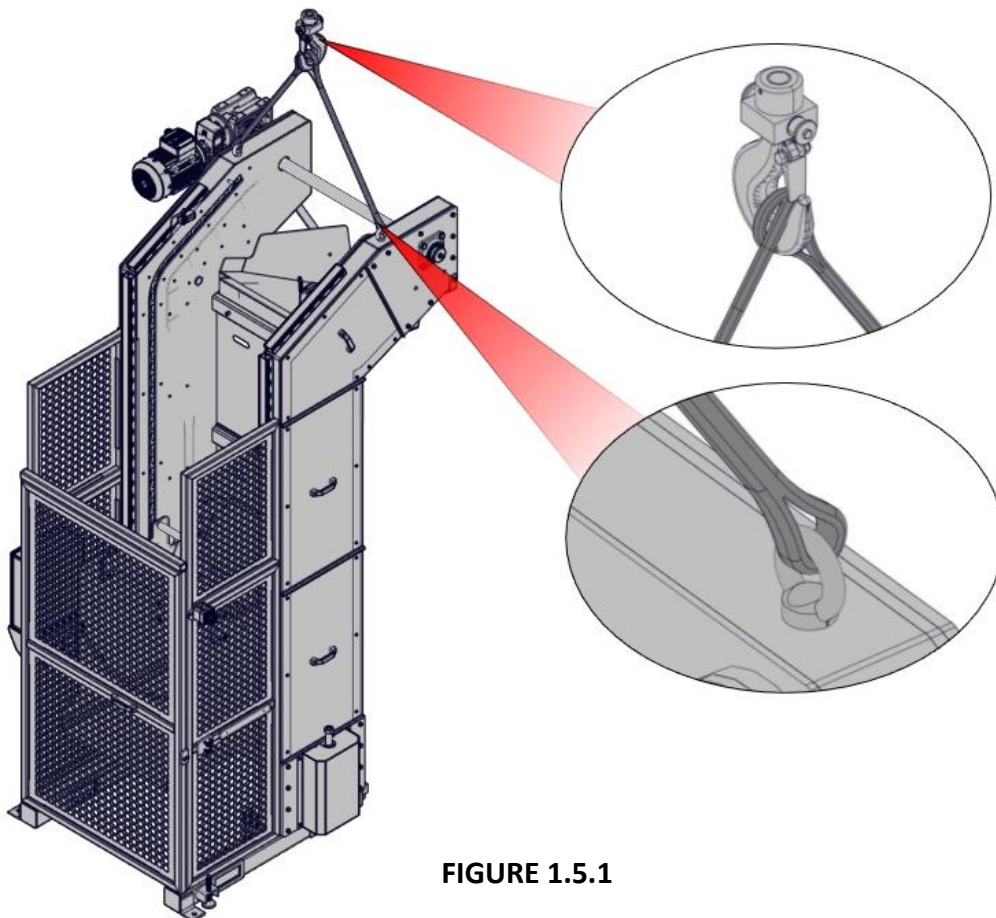


FIGURE 1.5.1























## 2 Chain Driven Elevator Description and Components

Elevators are used to load long, short, and spiral chips from CNC machines into scrap containers, as well as to transfer scrap metal sheets from presses. These elevators generally consist of three main units: the cabin, the elevator chassis, and the chip cart.

The chip cart, filled with either semi-finished products or chips, is placed into the elevator cabin. Once loaded, the chip cart must be securely locked with the safety chain located inside the cabin. Before operating the elevator, ensure that the surrounding area is safe. Afterward, lock the elevator cover and initiate the upward movement. The elevator will stop automatically at the maximum height using the safety switch, allowing for unloading at this point. After unloading, the elevator will move downward and stop at the minimum point, again using the safety switch.


The elevator is specifically designed to convey loads and should never be used to carry people. It is dangerous to approach the operating elevator with bare hands or any other body parts.

### 2.1 Suitable Chip Types

<u>Long</u>	<u>Short</u>	<u>Spiral</u>
		
		
		
		
		
		
		
		
		

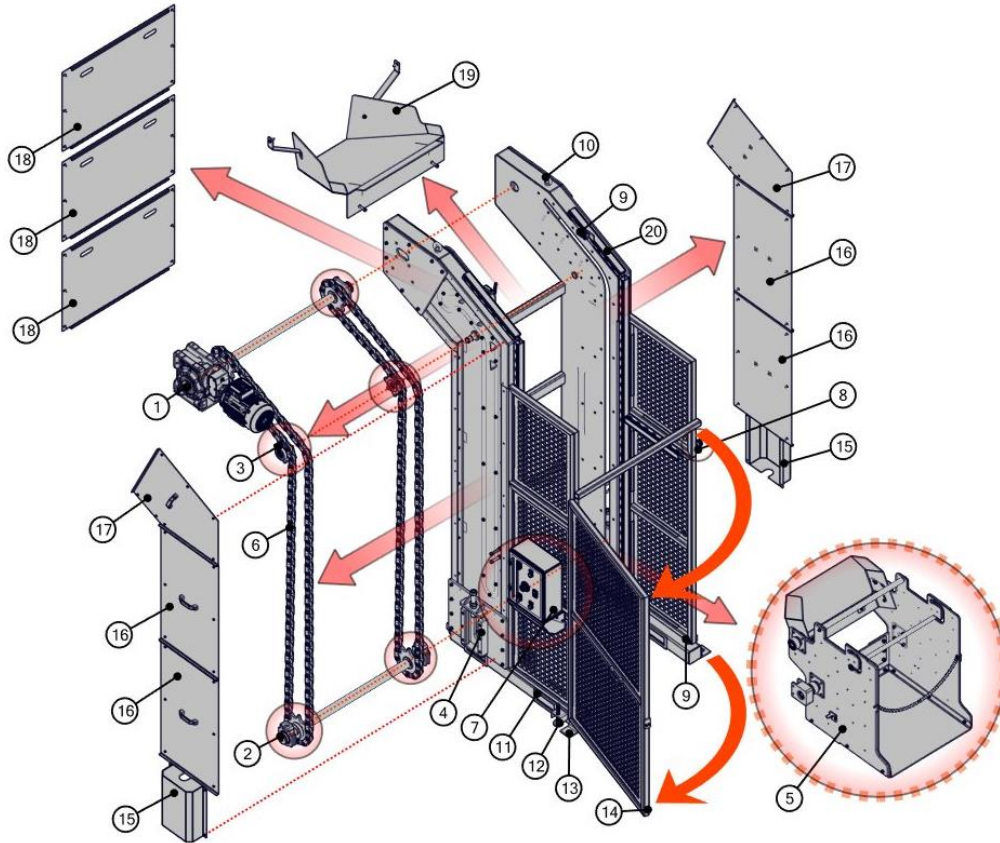
**Do not touch with bare hands!**

**Use personal protection!**





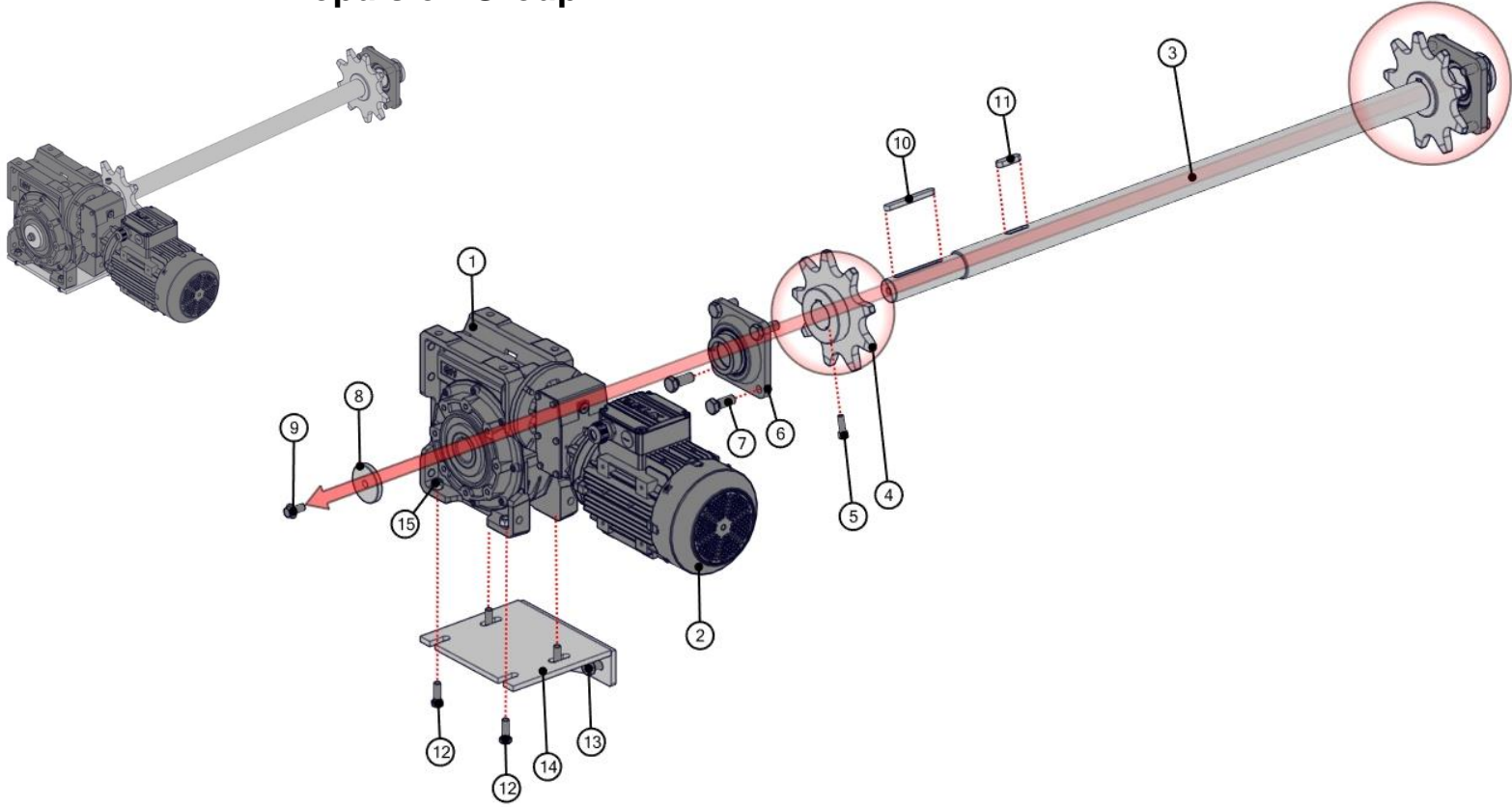
## 2.2 Chain Driven Elevator Components



BALLOON NO	GROUPS
1	Propulsion Group
2	Lower Idler Return Group
3	Upper Idler Return Group
4	Lower Idler Return Turnbuckle Group
5	Chip Cart Transport Cabin Group
6	Chain Group
7	Electricity Control Group
8	Emergency Stop Button
9	Movement Safety Switch Group
10	Lifting Eye Group
11	Forklift Transport Entry Group
12	Articulated Foot Group
13	Ground Connection Group
14	Cabin Entry-Exit Movable Cover Group
15	Lower Idler Return Turnbuckle Group Protection Cover
16	Side Body Protection Covers
17	Upper Body Protection Covers
18	Front Body Protection Covers
19	Chip-Particle Casting Runoff Group
20	Electrical Cable Duct Group

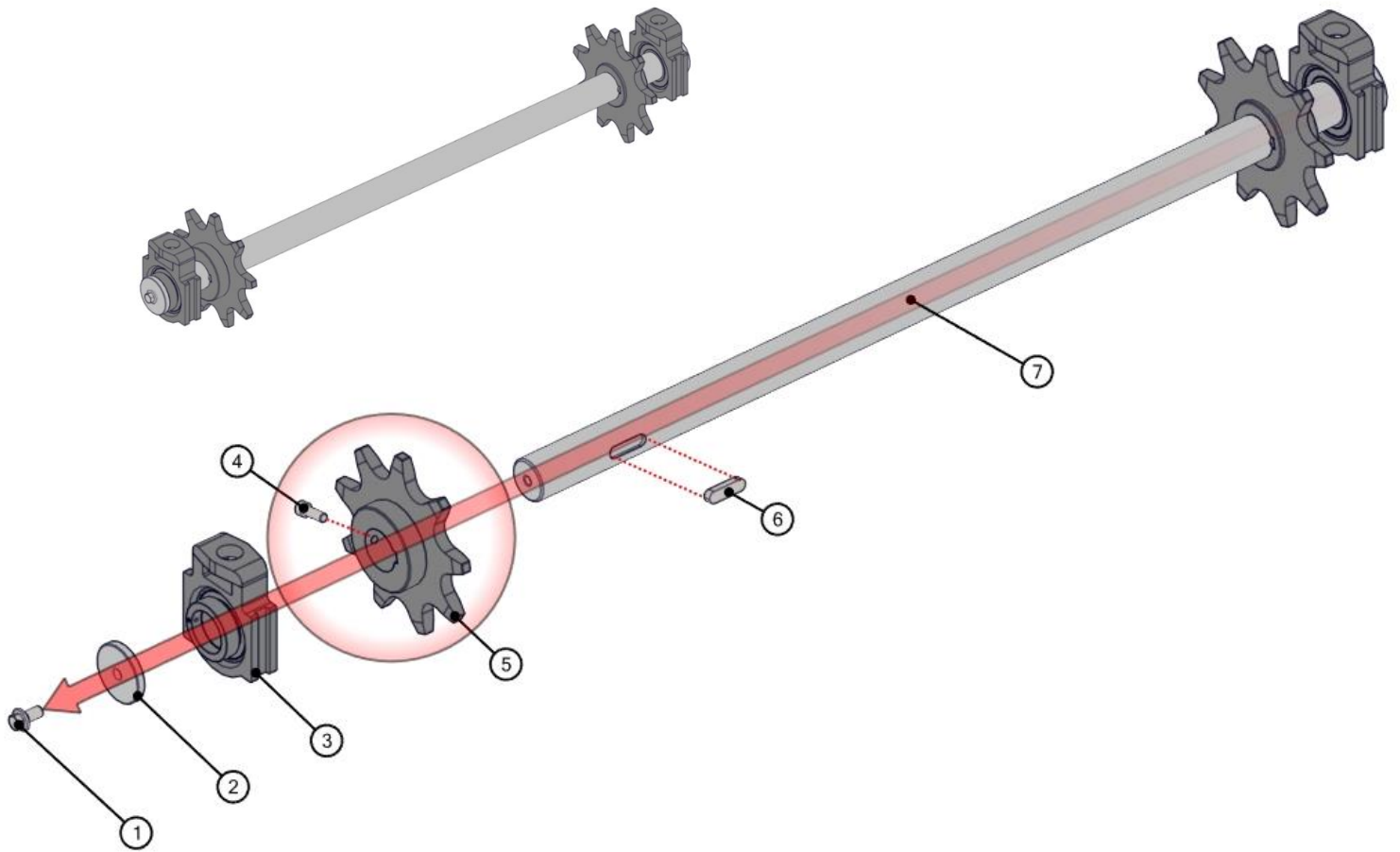


## 2.2.1 Propulsion Group



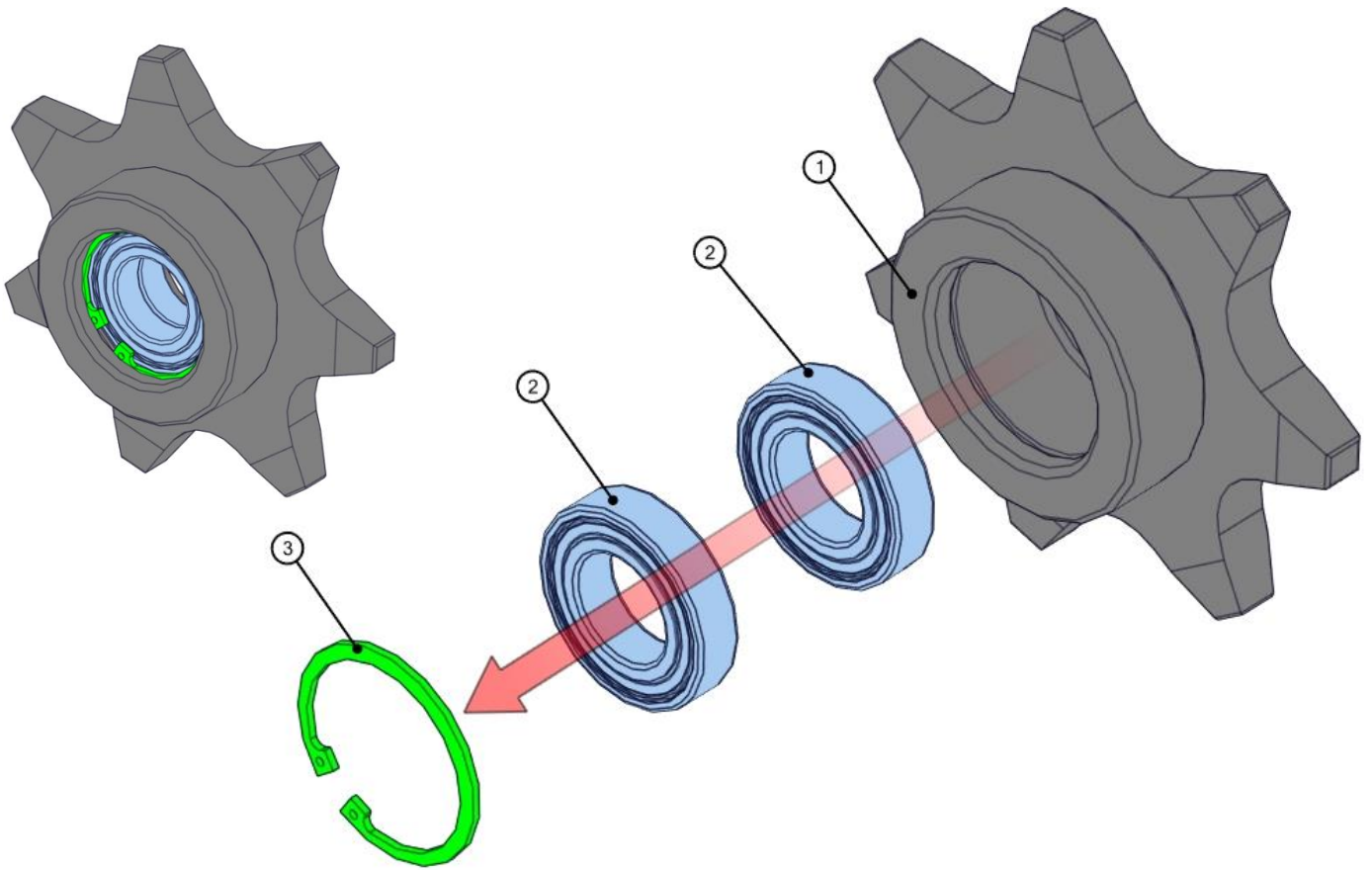
BALLOON NO	ITEM NO	DESCRIPTION	QUANTITY
1	150-01-2898	REDUCER	1
2	150-01-0086	MOTOR	1
3	150-01-0777	DRIVE SHAFT	1
4	151-01-0201	SPROCKET	2
5	150-01-0059	BOLT IMBUS FULL TEETH WHITE DIN912 (M10x30)	2
6	150-01-1552	BEARING	2
7	150-01-2689	BOLT HEXAGON FULL TEETH WHITE DIN933 ( M16x40 )	8
8	150-01-3091	STAMP	2
9	150-01-0046	BOLT FLANGE FULL TEETH WHITE DIN6921 (M12X25)	2
10	150-01-2963	FLAT WEDGE DIN 6885 form A (12x8x108 mm)	1
11	150-01-1734	FLAT WEDGE DIN6885 (14X9X50 mm)	2
12	150-01-2951	BOLT HEXAGON FULL TEETH WHITE DIN933 ( M12x35 )	4
13	150-01-0057	BOLT FULL TEETH WHITE DIN933 (M16X30)	2
14	150-01-0000	REDUCER MOTOR FOOT CONNECTION PIECE	1

## 2.2.2 Lower Idler Return Group



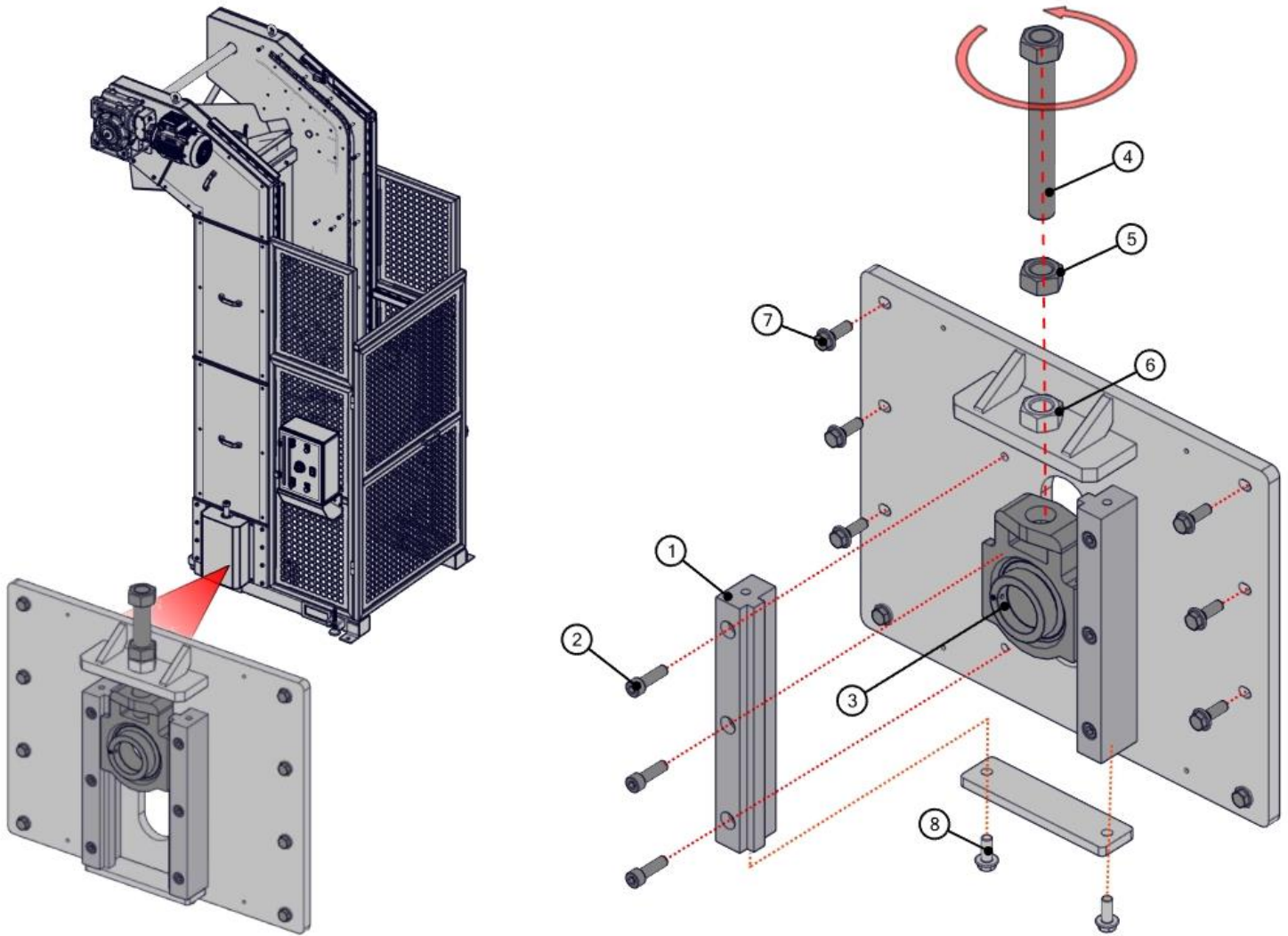
BALLOON NO	ITEM NO	DESCRIPTION	QUANTITY
1	150-01-0046	BOLT FLANGE FULL TEETH WHITE DIN6921 (M12X25)	2
2	150-01-3091	STAMP	2
3	150-01-2222	BEARING UNIT	2
4	150-01-0059	BOLT IMBUS FULL TEETH WHITE DIN912 (M10x30)	2
5	150-01-0201	SPROCKET	2
6	150-01-1734	FLAT WEGDE DIN6885 (14X9X50 mm)	2
7	150-01-0777	LOWER RETURN SHAFT	1

### 2.2.3 Upper Idler Return Group



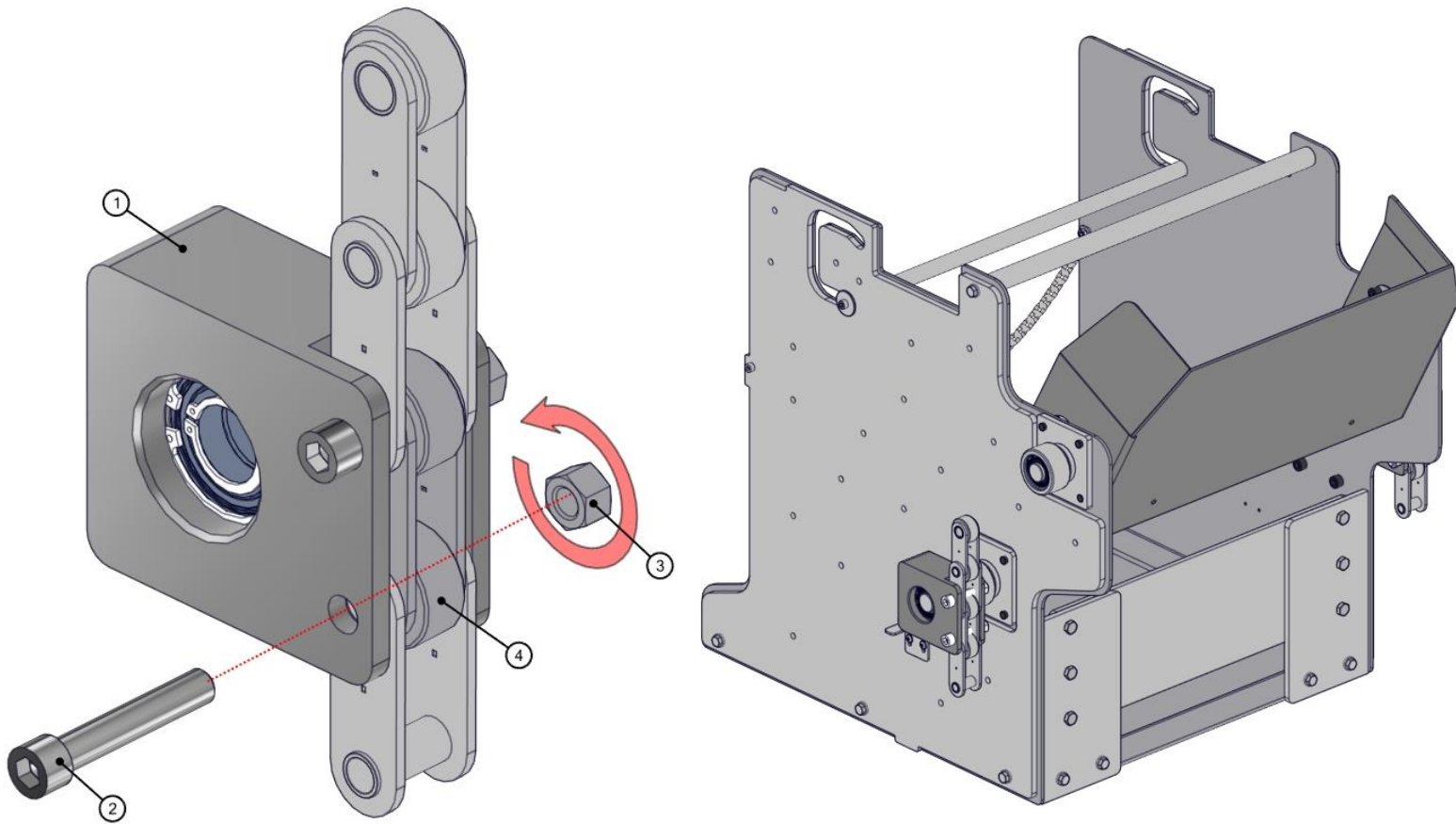
BALLOON NO	ITEM NO	DESCRIPTION	QUANTITY
1	151-01-0198	SPROCKET	2
2	150-01-0334	BEARING FIXED BALL	4
3	150-01-0155	INNER PISTON (DIN 472/55)	2

## 2.2.4 Lower Idler Return Turnbuckle Group



BALLOON NO	ITEM NO	DESCRIPTION	QUANTITY
1	151-01-0205	ELEVATOR BEARING SLIDE	4
2	150-01-0060	BOLT IMBUS FULL TEETH WHITE DIN912 (M10x35)	12
3	150-01-2222	BEARING UNIT	2
4	150-01-2644	GIJON PIN(M24X200mm)	2
5	150-01-2645	NUT WHITE DIN 934-6 QUALITY (M24)	4
6	150-01-2645	NUT WHITE DIN 934-6 QUALITY (M24)	2
7	150-01-0043	BOLT FLANGE FULL THREAD WHITE DIN6921 (M10X30)	16
8	150-01-0041	BOLT FLANGE FULL TEETH WHITE DIN 6921 M10X25	4

## 2.2.5 Chip Cart Transport Cabin Group



BALLOON NO	ITEM NO	DESCRIPTION	QUANTITY
1	151-01-0206	CHAIN AND CABIN CONNECTION MOUNTING HANDLE	2
2	150-01-0034	BOLT IMBUS FULL TEETH WHITE DIN912 (M12x70)	4
3	150-01-0378	NUT WHITE DIN 934-6 QUALITY (M12)	4
4	150-01-0064	CHAIN	1

## 3. INSTALLATION AND ASSEMBLY

### 3.1 Chain Driven Elevator Installation and Connections, Operating

If the elevator is to be transported to the installation area using a forklift, the forklift should lift the elevator by entering through the lifting slots at the bottom, after which the transportation is performed. If a crane is used for transportation, the elevator should be lifted by securing it with ropes attached to the lifting eyes, and then transported to the installation area.

The elevator is stabilized at the installation site. Once stabilized, it is secured to the ground by lowering it through the holes in the foot sections.

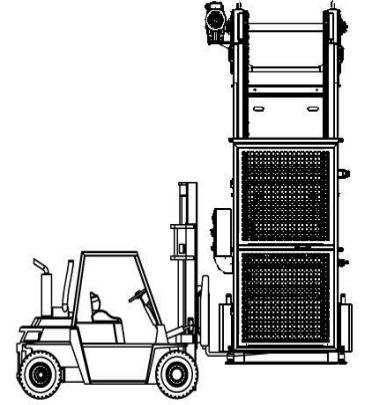
After the installation process, electricity must be supplied by properly connecting the power to the supply input linked to the control switch at the panel end. Before operating the elevator up and down in idle mode, the chain path must be lubricated with grease. To do this, open the side protection covers, apply grease to the chain, and then reattach the covers.

The elevator door must be closed before starting the elevator. If the door is open, the elevator will not operate. Additionally, if the elevator door is opened while the elevator is in operation, the engine will automatically stop.



There must be a grounding line in the elevator's working area. Do not supply power without proper grounding. Remember, grounding errors can lead to accidents and injuries. Only use yellow-green cables (the standard) for the grounding wire; do not use any other color.

Check the electrical connections and motor current, as loose connections are dangerous. Also, verify the working direction of the elevator.





### 3.2 Control Panel

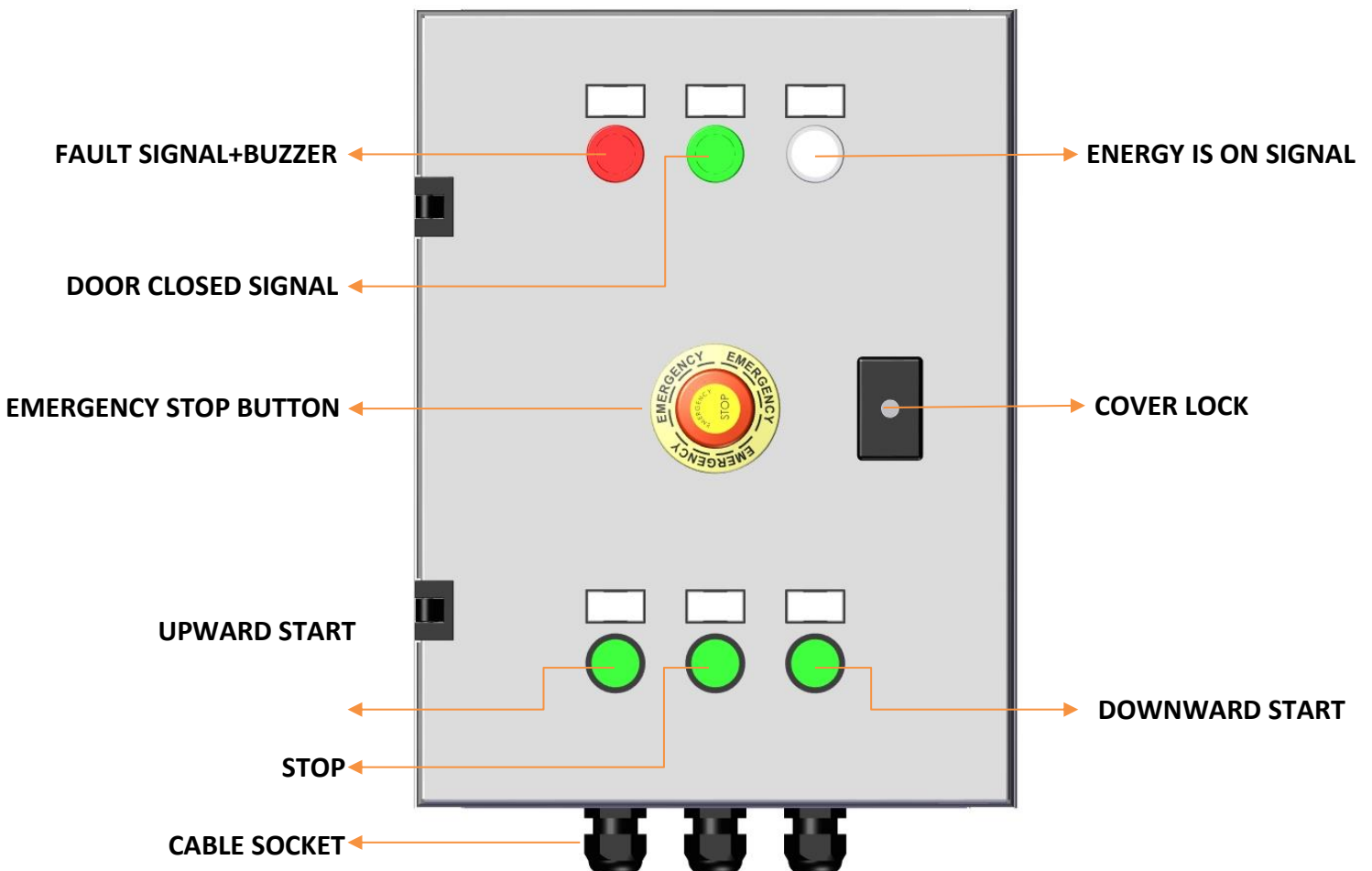
When the elevator panel is first energized, if the 'phase protection relay active' LED is lit, it indicates that the phase sequence is correct, and the electrical panel is ready to start.

If there are no fault signals on the electrical panel and the elevator door closed signal lamp is on, pressing the elevator's up start button will cause it to move upward. The elevator can be stopped at any point by pressing the stop button.

When the elevator car reaches the maximum point, the upper limit switch will be activated, causing the elevator to stop and wait for 10 seconds. After this waiting period, the elevator will automatically move to the down position. As the elevator car approaches the lower floor, the stop switch will be activated, and the cabin will stop at the loading position.

Supply voltage: 380V 50Hz

Control supply: 24V DC



### 3.3 Elevator Safety Check

During loading, the elevator door will be open, so the door closed signal lamp on the dashboard will not light up. After the installation is complete, ensure that the door is closed by checking the signal lamp. The elevator will not start until the door closed signal lamp is lit. There are two emergency stop buttons: one on the elevator body and one on the dashboard, to stop the elevator in case of an emergency.

If the elevator does not restart after loading and unloading, check the door closed signal lamp. If the door is closed but the signal lamp is not on, the elevator is in safety mode. In this case, you should:

- Check the emergency stop button.
- Inspect the elevator door.
- Verify the safety switches.

## 4. MAINTENANCE

### 4.1 Weekly Maintenance

- The maintenance period, apart from routine cleaning and weekly maintenance, varies based on operating conditions. Key parts requiring periodic maintenance in the elevator include the units, upper and lower level sensors, door safety sensors, and the cabin safety wedge connected to the chain.
- Ensure all oilers on the elevator are lubricated.
- Check the bolt connections.
- Verify the motor current before operating the machine.
- Confirm that all sensors on the elevator are functioning properly.

### 4.2 Monthly Maintenance

- Check the chain tensioners on both sides of the elevator. Access the tensioning rails by opening the protective cover at the bottom of the elevator. Loosen the lock nut on the Gijon pin connected to the bearing on the tensioning slides. Adjust the Gijon pin to the desired tension, then retighten the lock nut. Ensure the tension is even on both sides.
- Regularly inspect the bolt connections of the cabin safety wedge attached to the elevator chain, as it is continuously subjected to load. Tighten any loose bolts as needed.
- Verify the safety switches. Replace any switches that are not functioning properly with new ones.
- In the event of wear, breakage, or disconnection, notify and inform the manufacturer. Alternatively, you can contact our company to request service.

## 4.3 Troubleshooting

### WARNING!

Before performing any corrective actions, the unit must be turned off and electrically isolated. Electrical maintenance and repairs should be carried out by qualified personnel. Only electrical staff should perform these tasks.



Problem	Possible Reasons	What to Do
<p>5.4.1</p> <ul style="list-style-type: none"> <li>Elevator not operating at all</li> </ul>	<ul style="list-style-type: none"> <li>The motor with reducer may be fault</li> <li>The emergency stop button may be pressed</li> <li>The safety switches may be pressed or faulty.</li> <li>The door may be open</li> <li>The thermal overload protector may have tripped</li> <li>The machine may be overloaded</li> <li>There may be a short circuit in the machine body</li> <li>The bearing units may be faulty.</li> </ul>	<ul style="list-style-type: none"> <li>Energy should be checked.</li> <li>The motor with a reducer should be replaced.</li> <li>The emergency stop should be checked.</li> <li>Safety switches should be inspected and any faulty ones should be replaced.</li> <li>Ensure the door is in the closed position.</li> <li>The thermal overload protector should be checked.</li> <li>Verify that the loaded weight is within the specified maximum capacity range.</li> <li>Chips inside the cable channels should be cleaned.</li> <li>Bearing units should be lubricated with grease and any faulty units should be replaced.</li> </ul>
<p>5.4.2</p> <ul style="list-style-type: none"> <li>The switches are not working</li> </ul>	<ul style="list-style-type: none"> <li>The switches may be broken.</li> <li>Chips may have spilled onto the switches.</li> <li>The limit switch plates that the switches make contact with may not be installed.</li> </ul>	<ul style="list-style-type: none"> <li>Broken switches should be replaced.</li> <li>Chips and particles on the switches should be cleaned off.</li> <li>Check whether the limit switch plates that the switches make contact with are installed properly.</li> </ul>
<p>5.4.3</p> <ul style="list-style-type: none"> <li>No power</li> </ul>	<ul style="list-style-type: none"> <li>-The phase may be coming in reverse directions!</li> </ul>	<ul style="list-style-type: none"> <li>The phase directions should be checked.</li> </ul>

## 5 About Malfunctions

### 5.1 General Explanations

The information in this booklet is based on experiences gained from service studies and factory tests. The symptoms and causes of malfunctions are detailed according to notifications from our service companies and the results observed by service technicians.

Initially, a thorough visual inspection is useful for identifying problems. Proper monitoring of faults helps prevent potential damage during repairs.

Firstly:

- Check the electrical connections for any looseness.
- Inspect parts that might be affected by short circuits or heat.
- If the issue persists despite following the solutions outlined in this booklet, please contact our company.

For the best results in troubleshooting, maintenance, and repair, it is advisable to have these tasks performed by our company. Attempting repairs without proper knowledge can lead to incorrect results, unnecessary downtime, or costly damage to your equipment and business.



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