DELTA®

Electric chain hoist

DH.0.DEH/DED/DEY

Instruction manual

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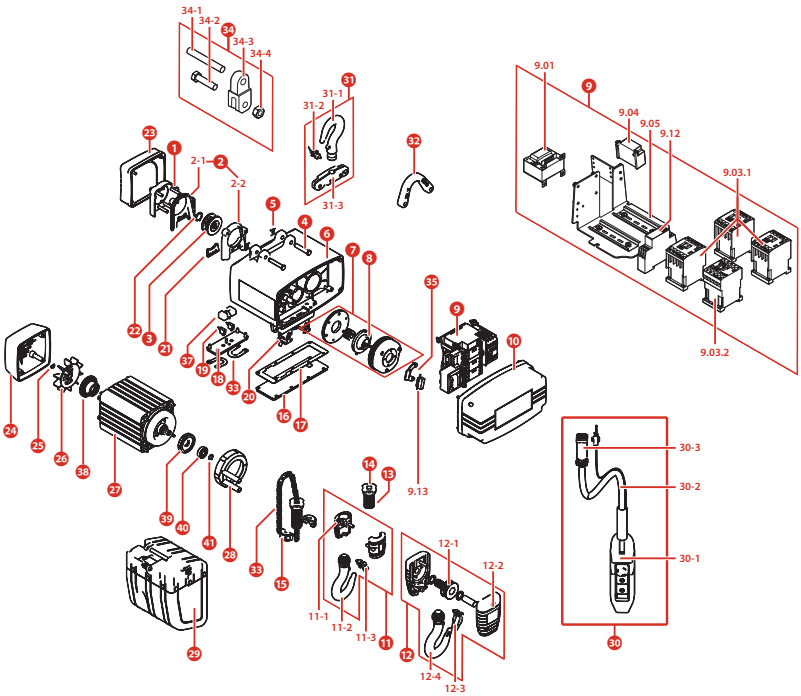
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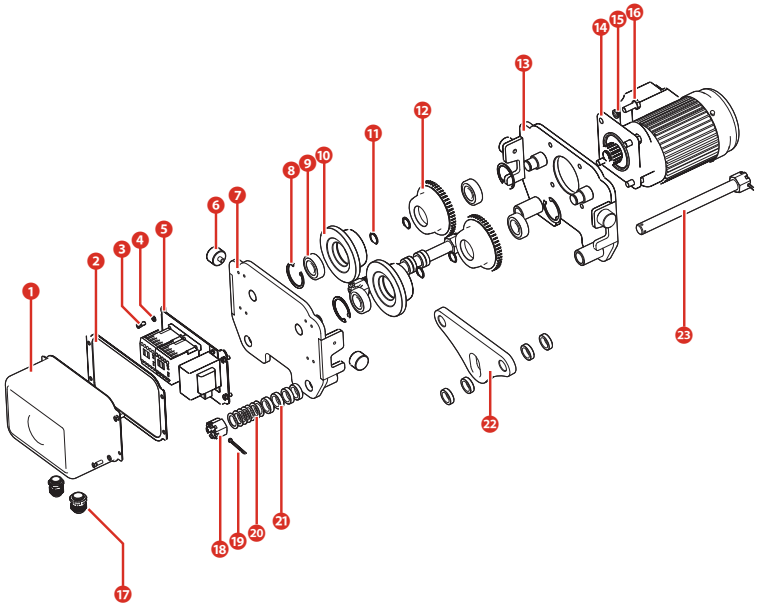
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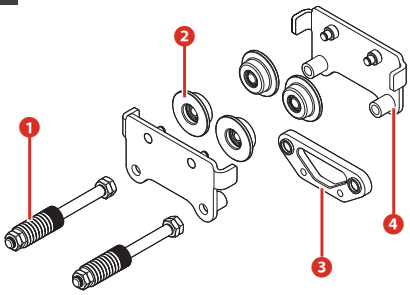

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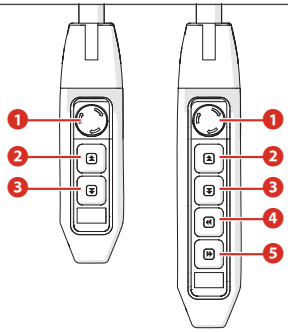

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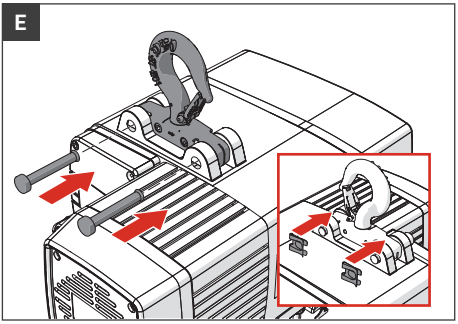

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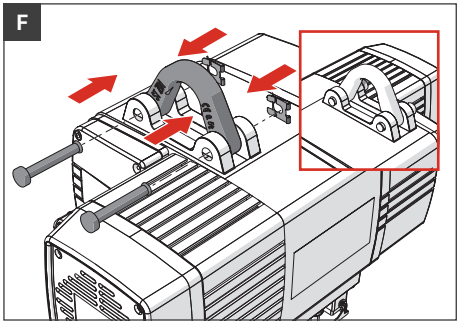

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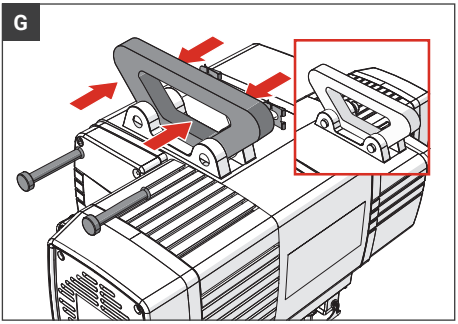

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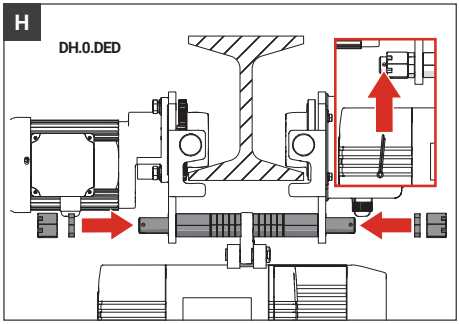

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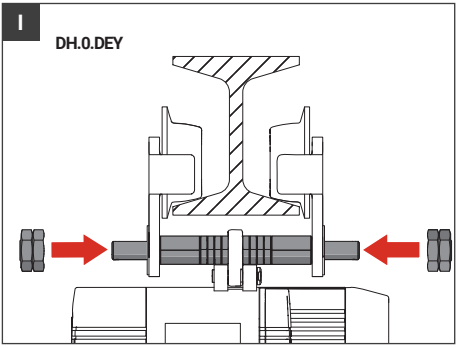

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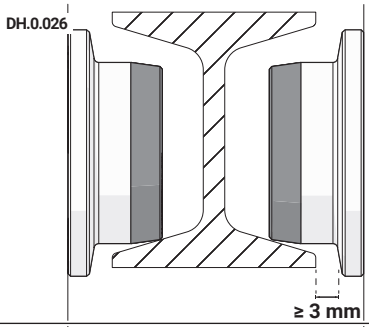

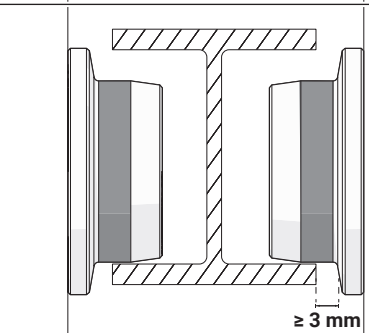

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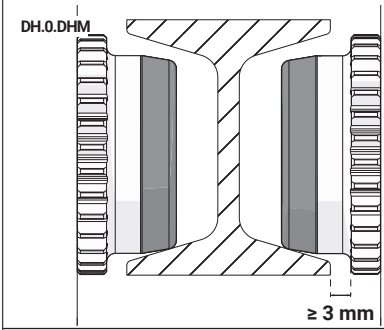

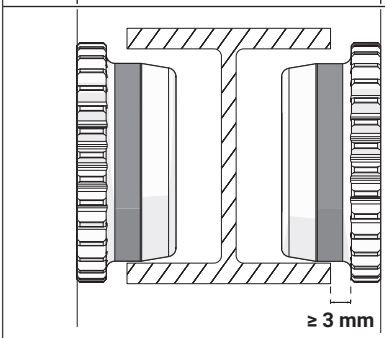

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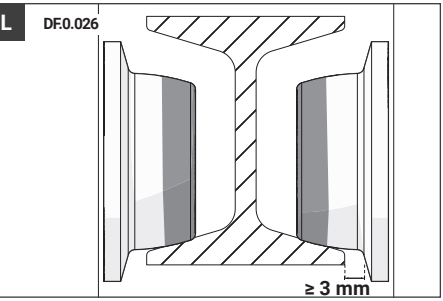

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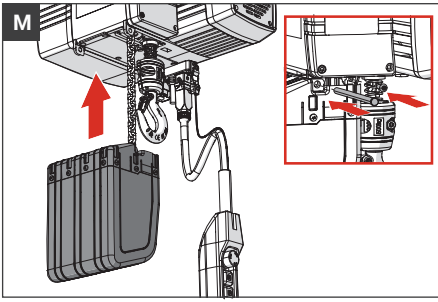

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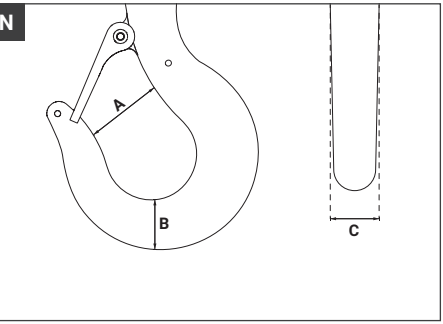

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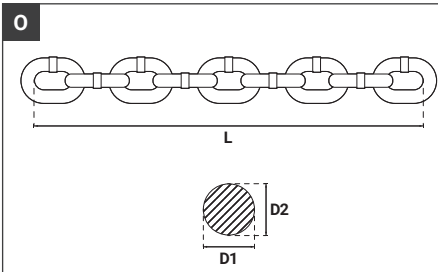

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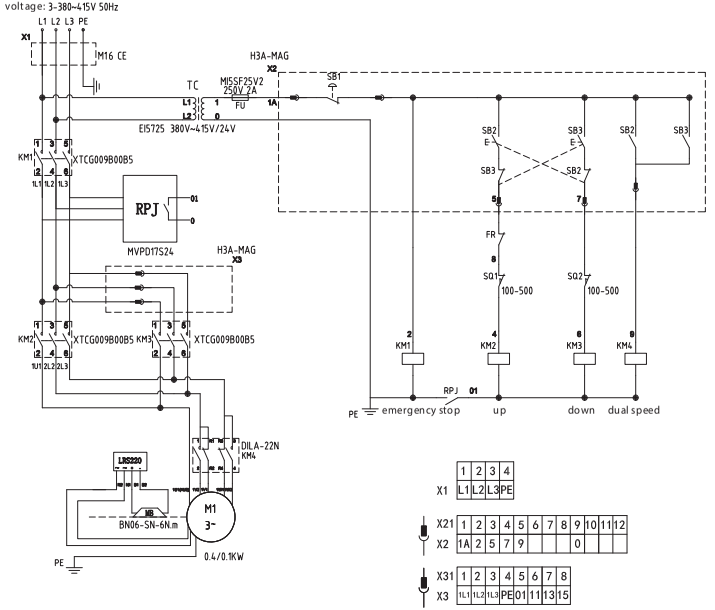

DH.0.DEH.0012503
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DH.0.DEH.00523

Electric components configuration table		
Part		Description
①	TC	transformer
②	FR	thermal protector
③	KM~	contactor
④	LRS220	rectifier
⑤	M1	hoist motor
⑥	SQ1	up limit switch
⑦	SQ2	down limit switch
⑧	SB~	button
⑨	X1	waterproof connector (power cable)
⑩	X2	heavy duty connector X2 (control pendant cable)
⑪	X3	heavy duty connector X3 (control cable)
⑫	RPJ	phase sequence protector
⑬	FU	fuse
⑭	MB	brake

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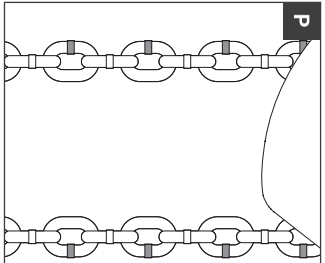

C-TYPE CONNECTING LINK

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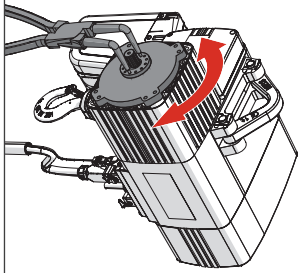

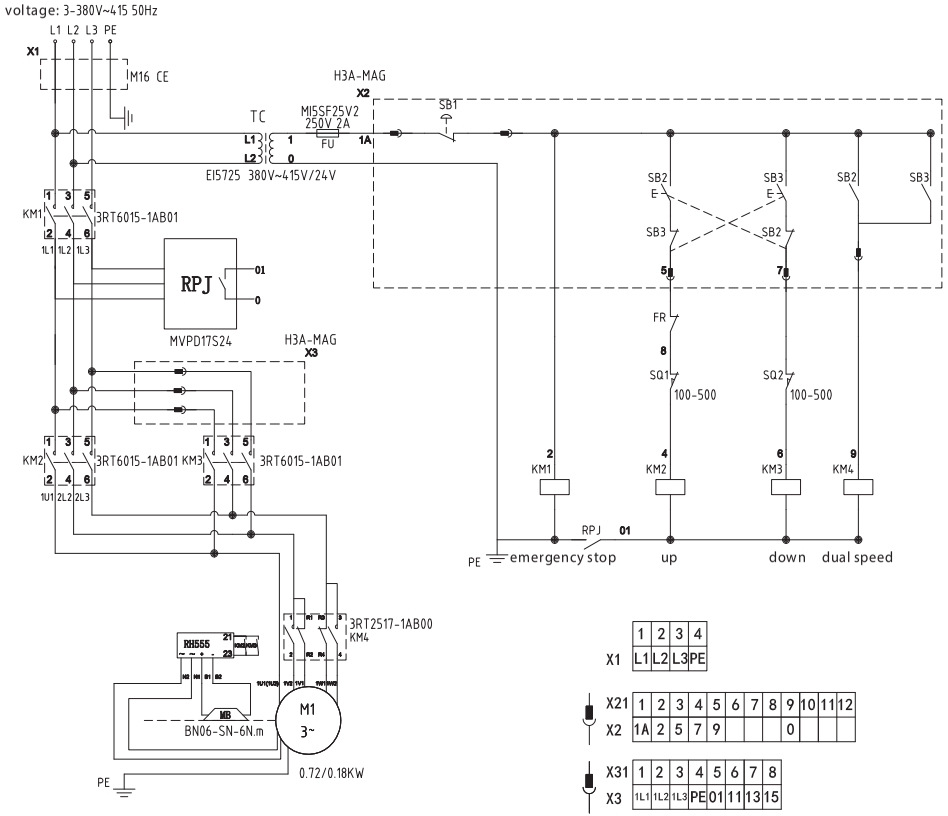

DH.0.DEH.00503
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Electric components configuration table		
Part		Description
①	TC	transformer
②	FR	thermal protector
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⑬	FU	fuse
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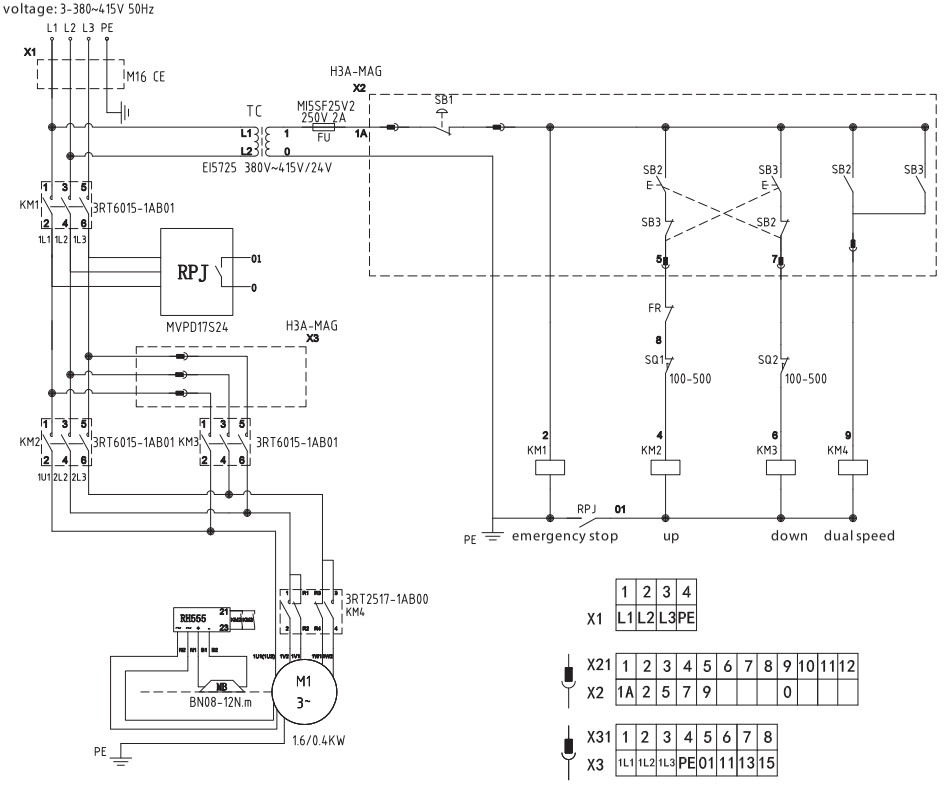


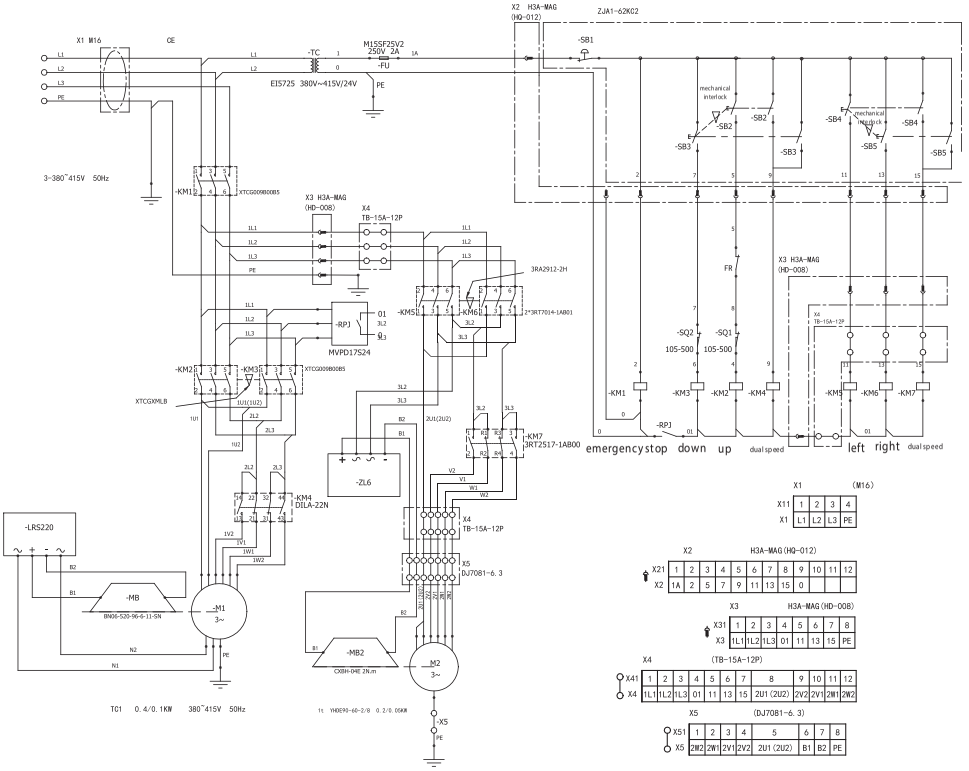
X1	1	2	3	4
	L1	L2	L3	PE

X21	1	2	3	4	5	6	7	8	9	10	11	12
X2	1A	2	5	7	9				0			

X31	1	2	3	4	5	6	7	8
X3	1L1	1L2	1L3	PE	01	11	13	15

DH.0.DEH.01003
DH.0.DEH.01503
DH.0.DEH.02003

Electric components configuration table		
Part		Description
①	TC	transformer
②	FR	thermal protector
③	KM~	contactor
④	LRS220	rectifier
⑤	M1	hoist motor
⑥	SQ1	up limit switch
⑦	SQ2	down limit switch
⑧	SB~	button
⑨	X1	waterproof connector (power cable)
⑩	X2	heavy duty connector X2 (control pendant cable)
⑪	X3	heavy duty connector X3 (control cable)
⑫	RPJ	phase sequence protector
⑬	FU	fuse
⑭	MB	brake



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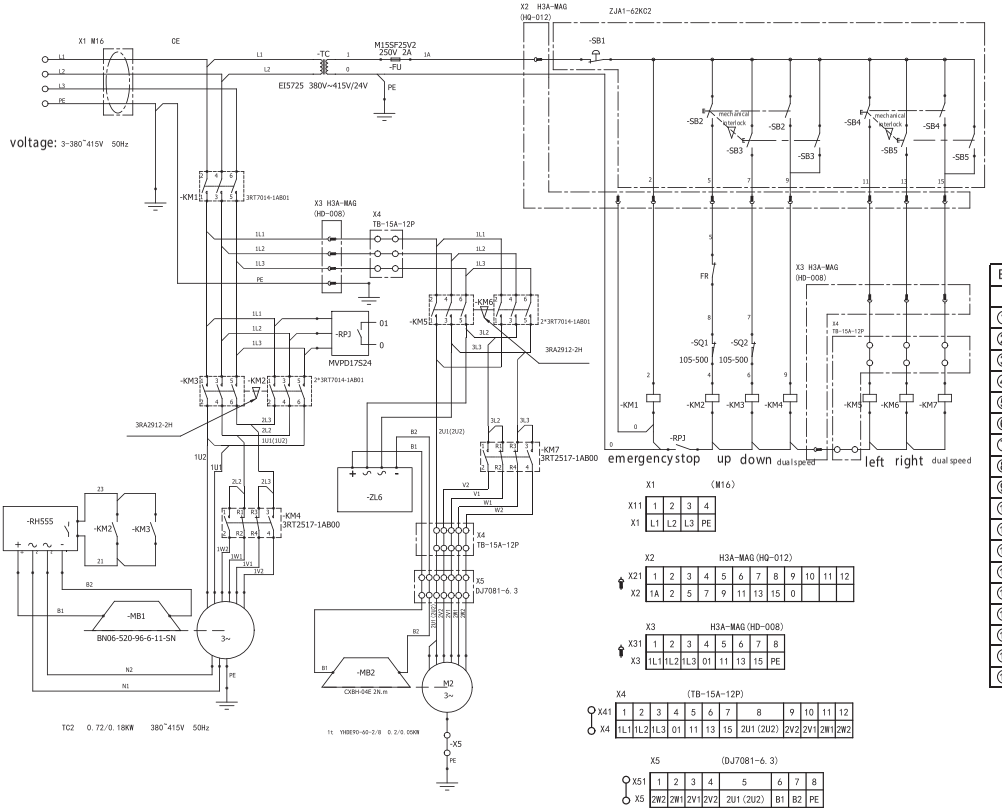
Electric components configuration table		
Part		Description
①	TC	transformer
②	FR	thermal protector
③	KM~	contactor
④	RH555	rectifier
⑤	M1	hoist motor
⑥	M2	trolley motor
⑦	SQ1	up limit switch
⑧	SQ2	down limit switch
⑨	SB~	button
⑩	X1	waterproof connector (power cable)
⑪	X2	heavy duty connector X2 (control pendant cable)
⑫	X3	heavy duty connector X3 (control cable)
⑬	X4	terminal connector X4
⑭	X5	terminal connector X5
⑮	RPJ	phase sequence protector
⑯	FU	fuse
⑰	MB	brake
⑱	ZL6	rectifier



DH.0.DED.00503
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Electric components configuration table		
Part		Description
①	TC	transformer
②	FR	thermal protector
③	KM~	contactor
④	RH555	rectifier
⑤	M1	hoist motor
⑥	M2	trolley motor
⑦	SQ1	up limit switch
⑧	SQ2	down limit switch
⑨	SB~	button
⑩	X1	waterproof connector (power cable)
⑪	X2	heavy duty connector X2 (control pendant cable)
⑫	X3	heavy duty connector X3 (control cable)
⑬	X4	terminal connector X4
⑭	X5	terminal connector X5
⑮	RPJ	phase sequence protector
⑯	FU	fuse
⑰	MB	brake
⑱	ZL6	rectifier

X1 (M16)

X11	1	2	3	4	
X1	L1	L2	L3	PE	

X2 H3A-MAG(HQ-012)

X21	1	2	3	4	5	6	7	8	9	10	11	12
X2	1A	2	5	7	9	11	13	15	0			

X3 H3A-MAG(HD-008)

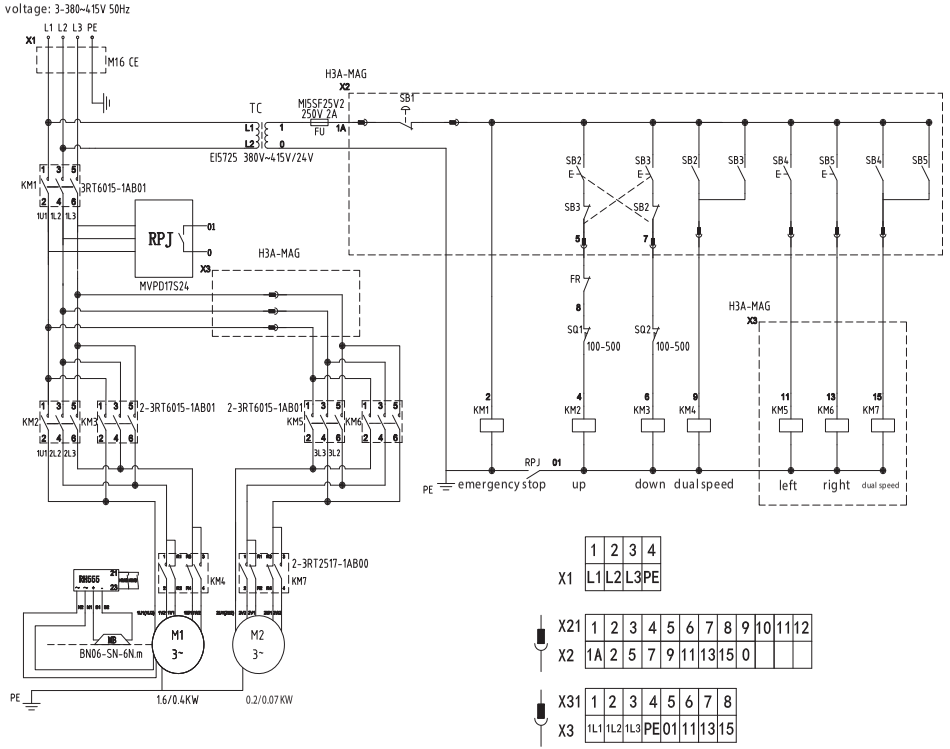
X31	1	2	3	4	5	6	7	8	
X3	1L1	1L2	1L3	01	11	13	15	PE	

X4 (TB-15A-12P)

X41	1	2	3	4	5	6	7	8	9	10	11	12
X4	1L1	1L2	1L3	01	11	13	15	2U1 (2U2)	2V2	2V1	2W1	2W2

X5 (DJ7081-6.3)

X51	1	2	3	4	5	6	7	8	
X5	2W2	2W1	2V1	2V2	2U1 (2U2)	B1	B2	PE	



DH.0.DED.01003
DH.0.DED.01503
DH.0.DED.02003

Electric components configuration table		
Part		Description
①	TC	transformer
②	FR	thermal protector
③	KM~	contactor
④	LRS220	rectifier
⑤	M1	hoist motor
⑥	SQ1	up limit switch
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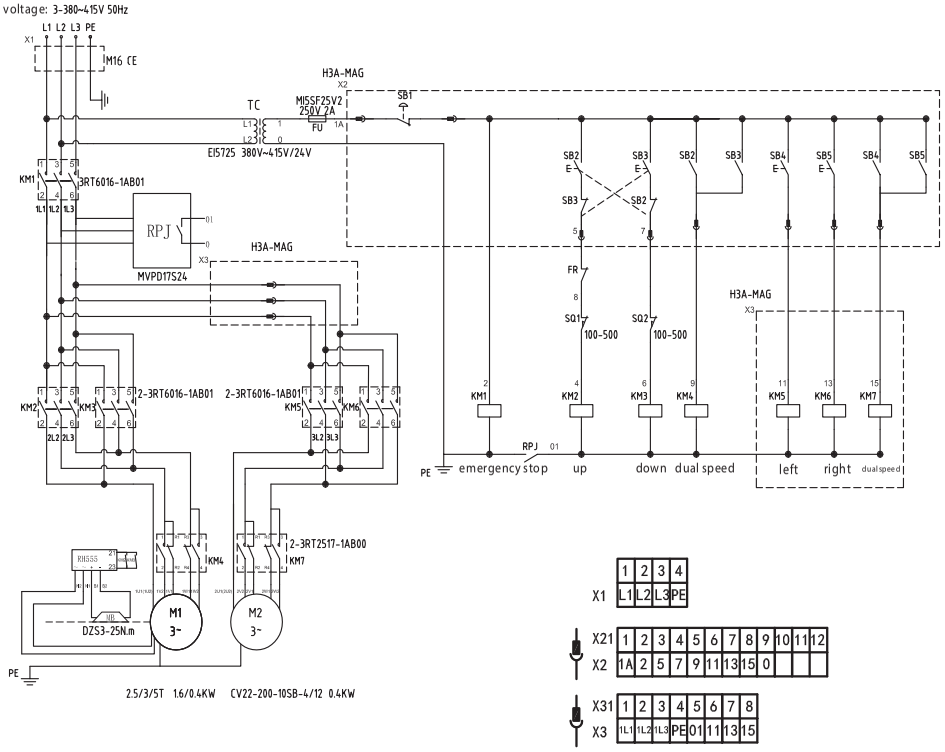

DH.0.DED.03003
DH.0.DED.05003

Electric components configuration table	
Part	Description
① TC	transformer
② FR	thermal protector
③ KM~	contactor
④ LRS220	rectifier
⑤ M1	hoist motor
⑥ SQ1	up limit switch
⑦ SQ2	down limit switch
⑧ SB~	button
⑨ X1	waterproof connector (power cable)
⑩ X2	heavy duty connector X2 (control pendant cable)
⑪ X3	heavy duty connector X3 (control cable)
⑫ RPJ	phase sequence protector
⑬ FU	fuse
⑭ MB	brake

Electric chain hoist

Instruction manual

Original instructions

This manual has been translated into multiple languages. The original manual is written in UK English. All other language versions are translations of the original manual.

Disclaimer of liability

The manufacturer cannot be held responsible for personal injury, damage to the machine, or property damage caused by incorrect use, foreseeable misuse, or failure to follow the instructions in this manual. This also applies to unauthorised modifications of the machine and the use of non-approved spare parts, tools, or accessories.

Contact details

For questions about the machine or this manual, please contact:

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Tel. +31 20 626 6666
E-mail: sales@deltahoist.com
Website: www.deltahoist.com

1. Introduction

1.1. About this document

This manual contains all instructions and safety information for installation, commissioning, operation, and maintenance of the machine.
This manual is intended for the following individuals:

- Personnel involved in the installation of the machine.
- Personnel involved in the operation of the machine.
- Personnel and qualified technicians involved in the maintenance of the machine.

Ensure you have fully read and understood the instructions in this manual before you transport, install, operate, or maintain the machine. Keep this manual near the machine for future reference.
Illustrations are for the general understanding and may differ from the actual machine.

1.2. Symbols in this manual

⚠ WARNING
Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION
Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE
Is used to address practices not related to physical injury.

2. Safety

2.1. Intended use and reasonably foreseeable misuse

The machine is intended for hoisting loads in a controlled and safe manner. The primary purpose of the machine is to facilitate material handling operations in various industrial and commercial settings.
The following is considered foreseeable misuse:

- Using the machine as heavy duty sling.
- Neglecting protection from any kind of moisture or water.
- Operating the machine in a manner that deviates from or exceeds the specified operating conditions.
- Failing to comply with the instructions provided in this manual.
- Neglecting to rectify faults, malfunctions, or defects of the machine that pose safety risks.
- Unauthorised removal or modification of machine parts.
- Using spare parts or accessories that have not been approved by the manufacturer.

2.2. Qualification of personnel

This machine may only be operated by personnel who:

- are 18 years of age or older;
- are in good physical and mental condition;
- are competent and qualified;
- have read and understood the instructions in this manual;
- will work in accordance with the instructions provided in this manual;
- have experience operating similar equipment;
- are aware of all potential hazards and act accordingly.

2.3. Personal protective equipment (PPE)

To prevent personal injury, the following personal protective equipment must be worn during the transportation, installation, operation, and maintenance of the machine:

Symbol	Description
	Wear head protection.
	Wear protective gloves.
	Wear foot protection.

2.4. Safety precautions

Despite the safe design and construction of the machine and the prescribed protective measures, residual risks still exist. The following safety precautions must be taken to reduce the residual risk to the minimum:

⚠ WARNING

Electric shock hazard: Never use the machine in a moist environment or in the rain. The protective cover is not waterproof; do not rely on the cover to protect the machine from water damage.

Falling hazard: Never use the machine to lift, support, or transport people.

Crushing hazard:

Never walk or stand under suspended load. Always stand clear of suspended load.

Never hoist any load that exceeds the rated capacity of the machine. Always ensure to calculate the weight of the load before hoisting.

Never lift load with multiple machines that differ in lifting capacity. Only lift load with multiple machines if the lifting capacity of the machines are the same. Always ensure that the load is horizontally level when lifting load with multiple machines.

Never knot or shorten the chain.

Never operate the machine with a damaged or cracked chain.

Never use the chain as a heavy duty sling.

Never place the load on the tip of the hook.

Never weld the hook and chain.

- Never operate a damaged or malfunctioning machine.
- Never exceed the rated capacity of the machine specified on the nameplate.
- Approval must be obtained from the manufacturer before using the machine in combination with other machines.
- Always ensure that the supporting structure and load attaching equipment are rated to support the weight of the machine and the load and are in good condition.
- Always ensure that the end stops are placed on the beam.
- Always ensure all fasteners are properly tightened after completing the installation.
- Never lift any load that exceeds the rated capacity of the machine. Always ensure to calculate the weight of the load before lifting.
- Always ensure that the chain is correctly installed and attached to the bottom hook.
- Always inform people when the lifting procedure is about to start.
- Always bring the hook into engagement with the load and make sure it is well seated before proceeding to lift the load.
- Never lift the load repeatedly quickly up and down.
- Always attach the load and hook in the centre of gravity.
- Never lift guided loads without additional protective devices.
- Never stand between fixed objects and the suspended load.
- Never place body parts or any objects between the machine and the load.
- Always ensure that the load is resting on solid ground and not under tension when you release the load.
- Never leave suspended load lifted unattended. Always lower the load onto a flat surface before leaving in unattended.
- Always perform a functional test after any maintenance activity.
- Never repair or replace the machine yourself. The machine may only be repaired or replaced by qualified personnel.

Chemical burn hazard: Never lift or transport loads which could cause widespread damage when being dropped.

Distraction hazard:
- Always maintain focus during operation and do not let distractions in your surroundings divert your attention.
- Never operate the machine under the influence of drugs, alcohol, or medication.

Electrical hazard:
- Ensure that the power grid and fuses are correct and sufficient for operating the machines.
- Proper fusing prevents overloads and potential hazards in industrial settings. Ensure the power grid is properly secured by using fuses that can handle the machine's or group's power consumption.
- Never touch the earth connection of the power cable after installation of the power plug. Only switch the fuses if necessary.

Explosion hazard: Never operate the machine in a fire risk, explosion risk, or corrosive gas environment.
Slipping hazard: Never wrap the chain around the load.
Swinging hazard:

Always ensure that the chain does not pass through or against obstacles.

Never perform any operations onto the load when the load is lifted.

Always ensure that the chain is not twisted in itself, especially when taking the machine out of the packaging and during use.

Risk of improper functioning of the machine: Always ensure the friction brake disc is clean and free of oil, grease, dirt, or water before operating the machine.

⚠ CAUTION

Mechanical hazard:
- Maintenance and repairs must only be performed by qualified personnel.
- Always switch off the machine before performing any maintenance activity.

Safety hazard:
- Always wear the necessary personal protective equipment.
- Never remove the nameplate, operating, and warning labels from the machine.

Snagging hazard: Never wear loose hair, loose clothing, or jewellery while operating the machine.
Tripping hazard: Never leave the machine haphazardly on the ground.
Risk of improper functioning of the machine:
- Always check the upper and bottom hook for deformations or loose components before operating the machine. Never operate the machine if any deformations or loose components are detected.
- Always ensure the beam is clean and free of debris when operating the machine with a trolley to minimise resistance.
- Never install the trolley on a beam with a ≤1:500 slope.
- Always ensure the machine is properly earthed.
- Never use spare parts or accessories that have not been approved by the manufacturer.

Risk of damaging the machine:

Never lift load at an angle. Lifting load at an angle will damage the chain and the chain guiding system.

- Never lift excessive load. Repeated attempts to lift an excessive load will cause the slip clutch to overheat and will result in permanent damage.
- Never use the overload limiting protection to routinely measure the maximum load lifting capacity.
- Never drop the machine and avoid bumping.
- Never overfill the gearbox. Overfilling the gearbox could potentially lead to further leaks or damage to the machine.

Water damage hazard: Never clean the machine with direct water jets. The force of a water jet can damage the machine.

2.5. Emergency situations

In case of an emergency, do the following:
1. Notify others in the vicinity about the emergency.
2. Instruct people to move to a safe distance.
3. Set up safety perimeter around the machine and directly underneath the load to prevent access by unauthorised people.
4. Contact the appropriate emergency services and provide them with all relevant information.
5. Follow any additional emergency procedures or protocols specified by your company or site.

3. Description of the machine

3.1. Design and function

The machine is designed for vertically lifting and transporting loads. The machine operates using an electric motor, providing controlled and precise movements. The lifting mechanism involves a chain that runs over a hoist block, making it suitable for handling various weights.

The machine is equipped with an emergency stop button which can be activated during a dangerous situation. Additionally, the machine is fitted with an electromagnetic spring pressure brake designed to hold the load in the event of a power failure.

3.2. Main parts

3.2.1. Electric chain hoist

See image A.

Part		Quantity
1	Chain guide cover protective sleeve	1×
2	Chain guide cover assembly	1×
2-1	Chain guide cover	1×
2-2	Chain guide cover	1×
3	Load sprocket	1×
4	Lever pin	2×
5	Shaft circlip	1×
6	Gearbox body	1×
7	Brake assembly	1×
8	Brake disc	1×
9	Electrical parts complete	1×
9.01	DELTA Transformer	1×
9.02	Thermal protector	1×
9.03.1	Contactor relais (up/down - left/right)	3×
9.0.3.2	Contact relais (dual speed (up/down - left/right)	1×
9.04	Rectifier	1×
9.05	Electrical parts plate	1×
9.12	Phase sequence protector	1×
9.13	Fuse	1×
10	Electrical control cover	1×
11	Bottom hook assembly	1×
11-1	Bottom hook housing assembly	1×
11-2	Bottom hook	1×
11-3	Safety latch assembly	1×
12	Bottom hook assembly	1×
12-1	Bottom hook housing assembly	1×
12-2	Loose roller	1×
12-3	Bottom hook	1×
12-4	Safety latch assembly	1×
13	Limit spring	1×
14	Limit abutment	1×
15	Chain limiting plate	1×
16	Gearbox cover	1×
17	Gasket	1×
18	Chain guide supporting plate	1×
19	Limit micro switch assembly	1×
20	Socket	1×
21	Chain guide protective plate	1×
22	A circlip for shaft	1×
23	Load sprocket cover	1×
24	Fan cover	1×
25	B circlip for shaft	1×
26	Fan	1×
27	Motor assembly	1×
28	Motor shield	1×
29	Load chain bucket assembly	1×
30	Control pendant assembly	1×
30-1	Control pendant	1×
30-2	Cable	1×
30-3	Plug	1×
31	Top hook assembly	1×
31-1	Top hook	1×
31-2	Safety latch assembly	1×
31-3	Top hook housing	1×
32	Bracket suspension plate	1×
33	Chain guide supporting plate	1×
34	Chain hanger assembly	1×
34-1	Fixed shaft	1×
34-2	Pin	1×
34-3	Chain hanger	1×
34-4	Nut	1×
35	Load-limiting controlling head seat	1×
37	Limit micro switch mounting seat	1×
38	Load limit adjustment nut	1×
39	Friction disc	1×
40	Deep groove ball bearing	1×
41	A circlip for shaft	1×

3.2.2. Electric trolley

See image B.

Part		Quantity (pc)			
		0.125 – 1t	2t	3t	5t
1	Electric control cover gasket	1	1	1	1
2	Gasket	1	1	1	1
3	Cross recessed hexagon bolts with indentation	4	4	4	4
4	Spring washer-1	8	8	8	8
5	Electric components	1	1	1	1
6	Buffer block	4	4	4	4
7	Driven wheel side plate	1	1	1	1
8	Circlip-1	4	4	4	4
9	Deep groove ball bearing	4	4	4	4
10	Driven wheel	2	2	2	2
11	Circlip-2	4	4	4	4

12	Driving wheel	2	2	2	2
13	Driving wheel side plate	1	1	1	1
14	Motor	1	1	1	1
15	Spring washer-2	4	4	4	4
16	Hexagon bolt	4	4	4	4
17	Water joint	1	1	1	1
18	Hexagon slotted nuts	4	4	4	4
19	Cotter pin	4	4	4	4
20	Thin washers	36	28	24	20
21	Thick washers	12	12	12	12
22	Suspension plate	1	1	1	1
23	Suspension shaft	2	2	2	2

3.2.3. Push trolley

See image C.

Part		Quantity
1	Suspension shaft assembly	1×
2	Driving wheel assembly	4×
3	Suspension plate	1×
4	Driven wheel side plate	2×

3.2.4. Controls

See image D.

Nr	Part
1	Emergency stop button
2	Up button • Light press: lift slowly • Deep press: lift quickly
3	Down button • Light press: lower slowly • Deep press: lower quickly
4*	Left button • Light press: move the load slowly • Deep press: move the load quickly
5*	Right button • Light press: move the load slowly • Deep press: move the load quickly

*Only applicable for the DH.0.DED series.

4. Transport and storage

4.1. Transport

1. Place the machine in the original packaging or container to protect the machine from damage during transport. Use suitable padding materials to prevent any impact or vibration.
2. Properly secure the machine within the transporting vehicle to prevent any movement while during transport.

4.2. Storage

Store the machine indoors in a clean and dry environment, on a flat and stable surface. Ensure the storage location has an ambient temperature within the specified range.
Store the machine without any load attached.

5. Installation

5.1. Checking the contents

1. Remove the packaging and padding materials from the machine.
2. Check if all parts are present and in good condition.

Quantity	Part
1×	Electric chain hoist including hooks
1×	Power cable without plug
1×	Control switch with cable and plug
1×	Chain bucket
1×	Chain lubricant
1×	Protection cover*
1×	Trolley*
1×	Electric trolley*
1×	Radio remote control*

*Only applicable when ordered with the machine.

3. Inspect the engine for any debris. Ensure the engine is clean and dry.

5.2. Connecting the control pendant

Insert the plug of the control pendant cable into the control outlet of the machine.

NOTICE Always check the orientation of the connector before plugging in the plug.

5.3. Mounting the machine

Check whether the beam meets the following requirements before installing the machine:

- The beam must be designed, tested, and marked with safe working load adequate for the total weight of the trolley, hoist and load to be suspended upon it.
- Found suitable for the desired application.
- Fitted with end stoppers.
- Levelled so that the trolley does not run away by gravity.

5.3.1. Mounting the machine with a top hook

This chapter is only applicable for DH.0.DEH.

See image E.

1. Insert the top hook assembly into the slot on top of the machine.

NOTICE Always check the orientation of the top hook assembly insertion.

2. Insert the two lever pins.
3. Fixate the top hook assembly with two shaft circlips.
4. Hang the machine with the hook onto the supporting structure/equipment.

NOTICE Ensure the safety latch is correctly closed.

5.3.2. Mounting the machine with an bracket suspension

This chapter is only applicable if a bracket suspension plate is included within the machine.
See image F.

1. Insert the bracket suspension plate into the slot on top of the machine.
2. Insert the two lever pins.
3. Fixate the suspension plate with two shaft circlips.

5.3.3. Mounting the machine suspension plate

This chapter is only applicable for DH.0.DEY/DED.
See image G to I.

1. Insert the suspension plate into the slot on top of the machine.
2. Insert the two lever pins.
3. Fixate the suspension plate with two shaft circlips.
4. Loosen the four hexagon socket head screws to release the two shafts of the trolley.
5. Remove the side plate, washers, and drive wheel side plate from the shaft.
6. Measure the width of the beam where the machine will be installed.
7. Decide the number of washers to place on both sides of the suspension plate to ensure the suspension plate is in the middle.
8. Place the washers on the shafts. Ensure that the amount of washers are the same on each shaft and are equally divided.
9. Insert the suspension plate in the two shafts. Ensure that the suspension plate is in the middle.

NOTICE

- Keep 3 mm clearance between wheel edge and the beam flange.
- The distance between the balance middle part and the bottom of the beam must be 1 mm.
- Ensure that the contact surface (beam to wheel) is clean of debris.

10. Slide the washers, drive wheel side plate, and side plate back onto the shaft.
11. Check the beam width in relation to the machine.
12. Lift the machine and trolley to the beam.
13. See chapter §5.3.4. for instructions on positioning the trolley wheels based on the beam flange type.
14. Install the trolley onto the beam:
    a. For the DED model: Tighten the two nuts on both sides of the suspension shaft with a wrench. Insert the split pin to fix the suspension shaft. *See image H.*
    b. For the DEY model: Tighten the two nuts on both sides of the suspension shaft with a wrench. Ensure that there is no gap between. *See image I.*

⚠ WARNING Risk of improper functioning of the machine. Never install the trolley on a beam with a ≤1:500 slope.

5.3.4. Trolley wheel positioning

This chapter is only applicable for DF.0.026 / DH.0.026/DHM.
See image J to L.

Images J to L illustrate the required contact surface between the trolley wheels and the beam, corresponding to each beam flange type.

- The DH.0.026 series is suitable for both tapered and parallel flange beams. *See image J.*
- The DH.0.DHM series is suitable for both tapered and parallel flange beams. *See image K.*
- The DF.0.026 series is designed primarily for tapered flange beams. *See image L.*

⚠ WARNING Risk of damaging the machine. If DF.0.026 series is used on parallel flange beam, wheel-to-beam contact is not optimal, which may cause increased wear. Frequent inspection is necessary to monitor for any signs of wear.

5.4. Installing the plug onto power cable

⚠ WARNING Electrical hazard: Proper fusing prevents overloads and potential hazards in industrial settings. Ensure the power grid is properly secured by using fuses that can handle the machine's or group's power consumption.

NOTICE The assembling of the power cable may only be performed by qualified personnel.

1. Switch off the power source for the machine.
2. Install a plug, corresponding to your power supply, onto the power cable. The power cable consists of 3 phase wires and 1 earth wire.

⚠ WARNING Electrical hazard: Never touch the earth connection of the power cable after installation of the power plug. Only switch the fuses if necessary.

NOTICE If the machine does not receive power after installing the power cable, it may be due to the 3-phase sequence protection being engaged. In such cases, swap the two phase wires in the power plug until the machine operates correctly. If the issue persists, please contact your supplier for further assistance.

3. Perform a functional test. See chapter §8.7. for more information.

5.5. Installing the chain bucket/bag

See image M.

5.5.1. For the 125/250/500/3000/5000 kg model

1. Press the down button until the limit micro switch is activated.
2. Put the end of the chain, including the safety block, limit spring, and limit abutment, into the chain bucket.
3. Insert the chain bucket into slot on the bottom of the machine.
4. Insert the chain bucket rod into the slot.
5. Fixate the rod with shaft circlips.
6. Insert the bolt in the middle between the chain bucket and the machine. Secure the bolt with the hex nut by using a hex key.

⚠ WARNING Crushing hazard: Always ensure all fasteners are properly tightened after completing the installation.

5.5.2. For the 1000/2000 kg model

1. Press the down button until the limit micro switch is activated.
2. Put the end of the chain, including the safety block, limit spring, and limit abutment, into the chain bucket.
3. Insert the chain bucket into slot on the bottom of the machine.
4. Insert the long bolt on the front side of the chain bucket. Secure the bolt with a hex nut by using a hex key.
5. Insert the short bolt on the back side of the chain bucket. Secure the bolt with a hex nut by using a hex key.
6. Insert the last bolt in the middle between the chain bucket and the machine. Secure the bolt with a hex nut by using a hex key.

⚠ WARNING Crushing hazard: Always ensure all fasteners are properly tightened after completing the installation.

6. Operation

6.1. Preparation

⚠ WARNING Crushing hazard: Never operate a damaged or malfunctioning machine.

- Check if all bolts and nuts are tightened.
- Check if the up and down button work properly.
- Check the chain for any kind of damage.
- Check the chain for dryness. If the chain is dry, add a little lubricant.
- Check if the chain is hanging in a straight line from the machine.

6.2. Handling load

1. Align the machine over the load. The machine should be centred and directly above the load.

⚠ WARNING

- Slipping hazard: Always ensure the chain is not wrapped around the load.
- Swinging hazard: Always ensure that the chain is not twisted during operation.

⚠ WARNING Risk of damaging the machine: Never lift load at an angle. Lifting load at an angle will damage the chain and the chain guiding system.

2. Bring the hook into engagement with the load.

NOTICE Ensure the hook is well positioned before proceeding to lift the load.

3. Press the up button to lift the load slightly.

⚠ WARNING

- Risk of improper functioning of the machine: Never press the control buttons simultaneously. Doing so may cause the machine to malfunction.
- Risk of damaging the machine: Avoid operating the control buttons too quickly in succession. Rapid button presses can harm the internal parts or damage the equipment.

4. Stop the lifting to check if the brake is properly functioning. Only continue operating the machine if the brake is properly functioning.
5. Press the up button to lift the load to the designated height.
6. Move the load to the designated area.
7. Press the down button to lower the load.

NOTICE Ensure the load is fully touching the surface before releasing the hook from the load.

8. Release the hook from the load.

6.3. Overload slip clutch protection

The machine is equipped with a factory-calibrated overload slip clutch designed to facilitate lifting loads within its rated capacity and prevent the lifting of excessive loads. If the load exceeds the lifting capability of the slip clutch, the machine will not lift the load, but the motor will continue to run as long as the up button is pressed.

⚠ CAUTION

Risk of damaging the machine:

- Never lift excessive load. Repeated attempts to lift an excessive load will cause the slip clutch to overheat and will result in permanent damage.
- Never use the overload limiting protection to routinely measure the maximum load lifting capacity.

6.4. Nominal and starting current

This chapter is only applicable for DH.0.DEH/DHM. The following tables provide specifications of the nominal and starting currents, ensuring proper understanding and adherence to electrical requirements during installation and operation.
If the electric chain hoist is equipped with an electric trolley, the starting current values correspond to those specified in the electric chain hoist table.

Electric hoist DH.0.DEH

Article code	Nominal current	Starting current
	A	A
DH.0.DEH.001253	1.6/1	8/5
DH.0.DEH.002503	1.6/1	8/5
DH.0.DEH.00503	2.4/1.1	12/5.5
DH.0.DEH.00523	1.6/1	8/5
DH.0.DEH.01003	4.5/3.3	22.5/16.5
DH.0.DEH.01023	2.4/1.1	12/5.5
DH.0.DEH.01503	4.5/3.3	22.5/16.5
DH.0.DEH.02003	4.5/3.3	22.5/16.5
DH.0.DEH.03003	8.5/4	42.5/20
DH.0.DEH.05003	8.5/4	42.5/20

Electric trolley DH.0.DHM		
Article code	**Nominal current**	**Starting current**
	A	**A**
DH.0.DHM.001253	1.2/0.9	4.8/3.6
DH.0.DHM.002503	1.2/0.9	4.8/3.6
DH.0.DHM.00503	1.2/0.9	4.8/3.6
DH.0.DHM.00523	1.2/0.9	4.8/3.6
DH.0.DHM.01003	1.2/0.9	4.8/3.6
DH.0.DHM.01023	1.2/0.9	4.8/3.6
DH.0.DHM.02003	1.2/0.9	4.8/3.6
DH.0.DHM.03003	2.4/1.6	9.6/6.4
DH.0.DHM.05003	2.4/1.6	9.6/6.4

7. Troubleshooting

Problem	Possible cause	Possible solution
The machine does not operate.	The machine is not connected to power.	Check and fasten the connection of the power cable to the power source.
	An electrical part is damaged.	Please contact your supplier.
The load drops after releasing the up or down button.	The brake disc is severely worn.	Let qualified personnel replace the brake disc. Please contact your supplier.
The chain makes an abnormal sound when running through the machine.	The chain is not lubricated.	Lubricate the full length of the chain, including the contacting parts with the wheel guiders.
	The load guider is defect.	Let qualified personnel replace the load guider. Please contact your supplier.
The machine does not reach its normal working speed.	The machine is not earthed.	Ensure the machine is properly earthed.
	The environment is too humid.	Stop operating the machine in an environment which exceeds 85% humidity.
	The electrical parts of the machine are dusty.	Clean the electrical parts with a soft, dry cloth.
The load slips during lifting.	The slip time of the slip clutch is set too high.	Adjust the clutch slip time to a shorter time. Follow the instruction in chapter §8.5..

8. Maintenance

8.1. Maintenance schedule

It is recommended to start a commissioning logbook from the first day of use. Check the logbook template provided at the end of this manual.
Users/owners must comply with local, national, and international safety guidelines, which require the machine to be professionally tested and recertified annually. Additionally, shorter recertification intervals may be necessary depending on the working environment.

Frequency	Activities	Instructions
Before operating	Check if the hook for debris, damage, and deformation.	§8.2.
	Check the chain for debris, damage, and deformation.	§8.3.
	Check the limit micro switch for debris, damage, and deformation.	§8.4.
	Check the chain for lubrication.	§8.6.
	Check the functionality of the emergency button.	§8.7.
	Check the functionality of the up and down buttons.	§8.7.
	Check the functionality of the brake.	§8.7.
	Check the functionality of the limit micro switch.	§8.7.
Periodically	Check the housing of the machine for damage and deformation.	–
	Check the legibility of the labels.	–
	Tighten the screws.	–
	Check that the hook engages properly.	–
	Check the run of the chain.	§8.3.
	Check that the load is lifted correctly towards the limiters.	§8.4.
	Check the slip and lifting capacity of the chain.	§8.5.
	Lubricate moving parts.	§8.6.
Annually	Inspection/re-certification lifting gear.	Please follow the according local guidelines for yearly inspection of the machine.

If dysfunctions are detected, please contact a certified professional.
If any abnormal situation occurs during any of the checks, immediately take the machine out of use and contact your dealer or a certified professional.

8.2. Hook inspection

See image N.

1. Clean the hook from any debris.
2. Inspect the hook for any damage or deformation.
3. Check whether the safety latch of the hook still functions properly.
4. Refer to the table below to check the hook opening and whether it is still safe to operate the machine.

Capacity	A	B		C	
Ton	mm	mm		mm	
	Standard	Standard	Rejected	Standard	Rejected
0.125	45	18	≤17.1	19.5	≤18.5
0.25	45	18	≤17.1	19.5	≤18.5
0.5	50	18	≤17.1	21	≤19.95
1	60	20	≤19.0	24	≤22.8
1.5	70	27	≤25.7	43	≤40.9
2	70	27	≤25.7	43	≤40.9
3	70	27	≤25.7	43	≤40.9
5	90	35	≤33.2	51	≤48.4

Stop operating the machine if the hook is damaged, deformed, or does not meet the requirements from the table.
If the safety latch is damaged, replace the safety latch before operating the machine:

1. Remove the socket head screw from the safety latch with a hex key.
2. Remove the safety latch from the hook.
3. Replace the safety latch on the hook.

If the hook itself is damaged, replace the hook before operating the machine:

1. Remove the socket head screw(s) from the hook with a hex key.
2. Remove the old hook from the chain.
3. Place the new hook on the chain.
4. Secure the socket head screw(s) on the hook with a hex key.

8.3. Chain inspection

See image O.

1. Clean the chain from any debris.
2. Inspect the chain for any damage or deformation.
3. Refer to the table below to check the chain and whether it is still safe to operate the machine.

Capacity	D = (D1 + D2/2)		C	
Ton	mm		mm	
	Stand-ard	Rejected	Stand-ard	Rejected
0.125	4	≤3.6	132	≥134
0.25	4	≤3.6	132	≥134
0.5	5	≤4.5	165	≥167.5
1	7	≤6.4	231	≥234.5
1.5	7	≤6.4	231	≥234.5
2	7	≤6.4	231	≥234.5
3	11.2	≤10.5	374	≥378
5	11.2	≤10.5	374	≥378

Stop operating the machine if the chain is damaged, deformed, or does not meet the requirements from the table. Replace the chain before operating the machine. See chapter §8.3.1. for more information.

8.3.1. Replacing the chain

See image P.

1. Press the up button to move the chain upward. Stop when the chain has reached a sufficient length for replacement.
2. Switch off the machine. Engage the emergency stop on the control, this will shut off any operation.
3. Remove the socket head screw(s) from the hook with a hex key.
4. Remove the hook from the chain.
5. Remove the end stop from the chain.
6. Attach a C-type connecting chain to the end of the old chain.
7. Attach the new chain to the C-type connecting link.

NOTICE

- Ensure the welding marks on the new chain are facing outward and same direction.*
- Ensure that the C-type connecting link matches the chain link in diameter.*

**See image Q.*

8. Reset the emergency stop and turn on the equipment.
9. Press the up button to feed the new chain into the machine until you run enough chain through.
10. Switch off the machine. Engage emergency stop on the control, this will shut off any operation.
11. Remove the old chain with the C-type connecting chain from the new chain.

⚠ WARNING Crushing hazard: Ensure you remove the C-type connecting link from the chain after replacing the chain.

12. Attach the end stop to the chain.
13. Transfer the bottom hook to the new chain. See chapter §8.2. for more information.

8.4. Limit micro switch inspection

1. Clean the chain from any debris.
2. Inspect the chain for any damage or deformation.
3. Perform a functional test to see if the limit micro switches still function properly. See chapter §8.7. for more information.

Stop operating the machine if the hook exceeds the lifting limit and/or the chain does not move in opposite directions when the limit is reached.
Replace the limit micro switches before operating the machine. The limit micro switches may only be replaced by qualified personnel. Please contact your supplier.

8.5. Adjusting the overload slip clutch

See image R.

1. Hang the machine to a crane scale.
2. Loosen the socket head screws of the load sprocket cover with a hex key and remove.
3. Read the measured lifting weight on the crane scale.
4. Adjust the limit of the brake disc with pliers to adjust the nut.

NOTICE

- Adjust the nut so that the measured lifting weight is 1.3 to 1.6 times higher than the previous measured lifting weight to minimize slip time.
- Rotate the nut clockwise to increase the slip limit. The lifting weight is increased.
- Rotate the nut counter clockwise to decrease the slip limit. The lifting weight is decreased.

5. Place the load sprocket cover and socket head screws back onto the machine.
6. Tighten the socket head screw with a hex key.

8.6. Lubricating the machine

Proper lubrication of the machine is necessary for proper and long functioning of the machine.

8.6.1. Lubricating the chain

1. Clean the chain with a non acid and non-caustic solvent.
2. Lubricate the chain with STABYLAN 2001, especially the joints between the links.
3. Wipe away any excess lubricant to avoid dripping.

8.7. Performing a functional test

The functional testing of the machine ensures that the machine operates correctly and safely.

NOTICE Do not yet attach any load to the hook until further instructions.

1. Press the up button and verify that the hooks stops at the bottom of the machine without making any unusual noises.
2. Press the down button and verify that the hook reaches the maximum lift length without making any unusual noises.
3. Press the emergency button and verify that the emergency stop is properly functioning.
4. Attach a small load onto the hook.
5. Press the up button to lift the load slightly.

6. Stop the lifting to check if the brake is properly functioning.
7. Press the down button to lower the load.

NOTICE Ensure the load is fully touching the surface before releasing the hook from the load.

8. Release the hook from the load.

8.8. In case of a leaking gearbox

1. Inspect the gearbox for any damages or deformation.
2. Stop operating the machine if the gearbox is damaged or deformed.
3. Stop operating the machine if the gearbox is damaged or deformed. If the gearbox is damaged, replace the part(s) of the gearbox before operating the machine:
4. Power off the machine and discontinue use. Open the hoist to locate the leak point.
5. Drain the oil and thoroughly clean all oil-stained components.
6. Replace the damaged seals.
7. Refill the oil with standard-grade oil (Great Wall #320 or equivalent). Use the following injection quantities:

- 125/250 kg: 200ml
- 500 kg: 450ml
- 1000/2000 kg: 700ml
- 3000/5000 kg: 2200ml

8. Inspect the machine carefully to ensure the issue is resolved before powering it back on.

⚠ CAUTION

Risk of improper functioning of the machine: Always ensure the friction brake disc is clean and free of oil, grease, dirt, or water before operating the machine.
Risk of damaging the machine: Never overfill the gearbox. Overfilling the gearbox could potentially lead to further leaks or damage to the machine.

8.9. Other maintenance

Maintenance activities that are not described in this chapter may only be performed by qualified personnel. Please contact your supplier.

9. Disposal

9.1. Disposal of packaging waste

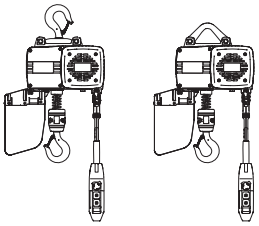
Dispose the packaging material in accordance with the local regulations.

9.2. Disposal of machine parts

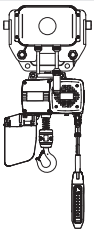
If the machine is defective, please contact your supplier. It may still be possible to repair the machine. If you still need to dispose the product, separate, and dispose the components of the machine into the applicable waste streams based on their material, in accordance with the local regulations.

10. Technical data

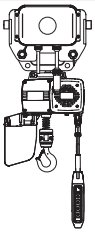
10.1. Capacity per model



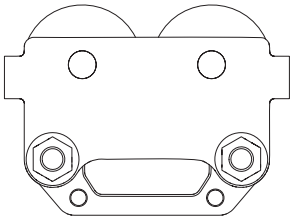
Electric hoist with hook suspension	Capacity
Article code	Ton
DH.0.DEH.001253	0.125
DH.0.DEH.002503	0.25
DH.0.DEH.00503	0.5
DH.0.DEH.00523	0,5
DH.0.DEH.01003	1
DH.0.DEH.01023	1
DH.0.DEH.01503	1,5
DH.0.DEH.02003	2
DH.0.DEH.03003	3
DH.0.DEH.05003	5



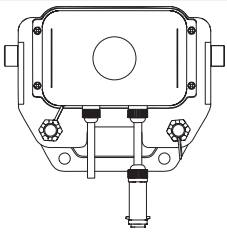
Electric hoist with push trolley	Capacity
Article code	Ton
DH.0.DEY.001253	0.125
DH.0.DEY.002503	0.25
DH.0.DEY.00503	0.5
DH.0.DEY.00523	0,5
DH.0.DEY.01003	1
DH.0.DEY.01023	1
DH.0.DEY.01503	1,5
DH.0.DEY.02003	2
DH.0.DEY.03003	3
DH.0.DEY.05003	5



Electric hoist with electric trolley	Capacity
Article code	Ton
DH.0.DED.001253	0.125
DH.0.DED.002503	0.25
DH.0.DED.00503	0.5
DH.0.DED.00523	0,5
DH.0.DED.01003	1
DH.0.DED.01023	1
DH.0.DED.01503	1,5
DH.0.DED.02003	2
DH.0.DED.03003	3
DH.0.DED.05003	5



Push trolley	Capacity
Article code	Ton
DF.0.02600125 / DH.0.02600125	0.125
DF.0.02600250 / DH.0.02600250	0.25
DF.0.02600500 / DH.0.02600500	0.5
DF.0.02600520 / DH.0.02600520	0,5
DF.0.02601000 / DH.0.02601000	1
DF.0.02601020 / DH.0.02601020	1
DF.0.02602000 / DH.0.02602000	2
DF.0.02603000 / DH.0.02603000	3
DF.0.02605000 / DH.0.02605000	5



Electric trolley	Capacity
Article code	Ton
DH.0.DHM.001253	0.125
DH.0.DHM.002503	0.25
DH.0.DHM.00503	0.5
DH.0.DHM.00523	0,5
DH.0.DHM.01003	1
DH.0.DHM.01023	1
DH.0.DHM.02003	2
DH.0.DHM.03003	3
DH.0.DHM.05003	5

10.2. Main dimensions

For a complete overview of the main dimensions of the machine and other data, please visit www.deltahoist.com for more information.

10.3. Rating plate

The rating plate is located on the machine. The following information can be found on the rating plate:

- Company name
- Type/model
- Serial number
- Manufacturing year
- Power
- Class
- Speed
- Chain
- Chain grade
- Lift
- Capacity
- Company website

10.4. Electric scheme for models without a trolley/ with a push trolley

10.4.1. 0.125 & 0.25 & 0,5 ton (2 chain falls)

See image S.

Applicable for:

- DH.0.DEH.001253
- DH.0.DEH.002503
- DH.0.DEH.00523
- DH.0.DEY.001253
- DH.0.DEY.002503
- DH.0.DEY.00523

10.4.2.0.5 & 1 (double chain fall) ton
See image T.
Applicable for:
- DH.0.DEH.00503
- DH.0.DEH.01023
- DH.0.DEY.00503
- DH.0.DEY.01023

10.4.3.1, 1.5, & 2 ton
See image U.
Applicable for:
- DH.0.DEH.01003
- DH.0.DEH.01503
- DH.0.DEH.02003
- DH.0.DEY.01003
- DH.0.DEY.01503
- DH.0.DEY.02003

10.5. Electric scheme for models with an electric trolley

10.5.1.0.125 & 0.25 & 0,5 ton (double chain fall)
See image V.
Applicable for:
- DH.0.DED.001253
- DH.0.DED.002503
- DH.0.DED.00523

10.5.2.0.5 & 1 ton (double chain fall)
See image W.
Applicable for:
- DH.0.DED.00503
- DH.0.DED.01023

10.5.3.1, 1.5, & 2 ton (one chain fall)
See image X.
Applicable for:
- DH.0.DED.01003
- DH.0.DED.01503
- DH.0.DED.02003

10.5.4.3 & 5 ton (one chain fall)
See image Y.
Applicable for:
DH.0.DED.03003
DH.0.DED.05003

11. Machine classification

Identify the normal use of the machine in order to ensure the safety and service life. This machine is suitable for the ISO/JIS and FEM classification.

11.1. ISO/JIS classification

Load spectrum	Cubic mean value	Average daily operating time (hour)							
		≤0.12	≤0.25	≤0.5	≤1	≤2	≤4	≤8	≤16
Light	K≤0.125	–	–	M1	M2	M3	M4	M5	M6
Moderate	0.125< K ≤0.25	–	M1	M2	M3	M4	M5	M6	–
Heavy	0.25< K ≤0.5	M1	M2	M3	M4	M5	M6	–	1
Very heavy	0.5< K ≤1	M2	M3	M4	M5	M6	–	1	1

11.2. FEM classification

Load spectrum	Cubic mean value	Average daily operating time (hour)							
		≤0.12	≤0.25	≤0.5	≤1	≤2	≤4	≤8	≤16
L1	K≤0.5	–	–	1Dm	1Cm	1Bm	1Am	2m	3m
L2	0.5< K ≤0.63	–	1Dm	1Cm	1Bm	1Am	2m	3m	4m
L3	0.63< K ≤0.8	1Dm	1Cm	1Bm	1Am	2m	3m	4m	5m
L4	0.8< K ≤1	1Cm	1Bm	1Am	2m	3m	4m	5m	–

EN

12. Declaration of conformity

Hereby the manufacturer:

DELTA Hoisting Equipment
Uiterdijk 6, 1505 GW, Zaandam, Netherlands

declares that this product complies with all applicable provisions of the Machinery Directive 2006/42/EC and the electromagnetic compatibility directive 2014/30/EU.

Additionally, this product has been thoroughly inspected and tested. The data is in compliance with the technical requirements, which is gathered in our documentation.

Description: DELTA – Electric Chain Hoist

Type:

DH.0.DEH.001253	DH.0.DED.001253	DH.0.DEY.001253
DH.0.DEH.002503	DH.0.DED.002503	DH.0.DEY.002503
DH.0.DEH.00503	DH.0.DED.00503	DH.0.DEY.00503
DH.0.DEH.00523	DH.0.DED.00523	DH.0.DEY.00523
DH.0.DEH.01003	DH.0.DED.01003	DH.0.DEY.01003
DH.0.DEH.01023	DH.0.DED.01023	DH.0.DEY.01023
DH.0.DEH.01503	DH.0.DED.01503	DH.0.DEY.01503
DH.0.DEH.02003	DH.0.DED.02003	DH.0.DEY.02003
DH.0.DEH.03003	DH.0.DED.03003	DH.0.DEY.03003
DH.0.DEH.05003	DH.0.DED.05003	DH.0.DEY.05003

The following harmonized standards have been applied:
EN ISO 12100:2010
EN 14492-2:2006+A1:2009
EN 14492-2 :2006 :2009/AC:2010
EN 818-1:1996 + A1:2008
EN 818-7:2002 + A1:2008
EN 60204-32:2008

Authorized person:

Name: M.F. Stam
Position: Director
Date: 18/11/2023
Place: DELTA Hoisting Equipment, Uiterdijk 6, 1505 GW Zaandam, Netherlands
Signature:

Logbook / Commissioning Log

Company name:	Article:
	Model:
	Serial number:
	First use*:
	Last inspection:

* Please make sure that you perform the required / mandatory annual inspection based on this date.

Before use / Periodically

Type of inspection	Date	Performed by

Annually

Type of inspection	Date	Performed by

After successful inspection and when put in use again, please start the logbook again from the inspection date. Use last inspection as reference date for the next annual inspection.
Always keep inspection certificates together with the logbook for own administration.

If you have any malfunctions, put the equipment out of use, contact a certified professional.

DELTA Hoisting Equipment
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E sales@deltahoist.com

EN – Original instructions
V1.0 – April 2025