Yale®

Electric chain hoist

Model CPE/F

Load carrying capacity 1,600 kg – 10,000 kg

Original operating and maintenance instructions

Spare parts catalogue

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COLUMBUS McKINNON

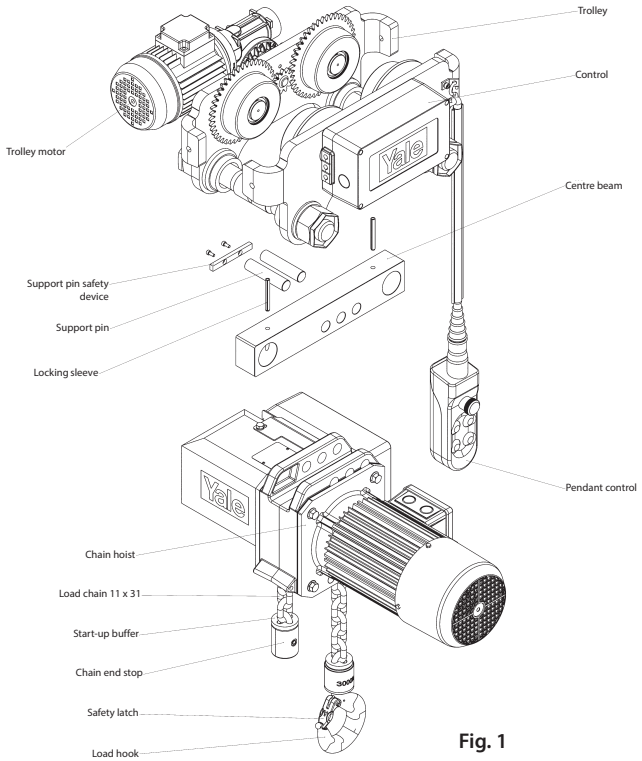

Fig. 1

Technical data for electric chain hoist – 400 V, 3 Ph, 50 Hz							Technical specifications for electric trolleys				
Model	Support capability [kg]	Number Load strands	Duty cycle ED [%]	Motor [kW]	Lifting speed [m/min]	FEM group	Adjustment range [mm]	Curve radius min. [mm]	Travel speed [m/min]	Motor [kW]	Adjustment duration ED [%]
CPE 16-8 **CPE F 16-8**	1,600	1	40 40 / 20	2.3 2.3 / 0.58	7.2 7.2 / 1.8	1 A_m	98 – 180 or 180 – 300	1800 or 2000	11 11 / 2.8	0.37 0.3 / 0.09	40 40 / 20
CPE 20-8 **CPE F 20-8**	2,000	1	25 25 / 15	2.8 2.8 / 0.7	7.2 7.2 / 1.8	1 B_m	98 – 180 or 180 – 300	1800 or 2000	11 11 / 2.8	0.37 0.3 / 0.09	40 40 / 20
CPE 25-5 **CPE F 25-5**	2,500	1	40 40 / 20	2.3 2.3 / 0.58	4.5 4.5 / 1.13	1 A_m	98 – 180 or 180 – 300	1800 or 2000	11 11 / 2.8	0.37 0.3 / 0.09	40 40 / 20
CPE 30-5 **CPE F 30-5**	3,000	1	25 25 / 15	2.8 2.8 / 0.7	4.5 4.5 / 1.13	1 B_m	98 – 180 or 180 – 300	1800 or 2000	11 11 / 2.8	0.37 0.3 / 0.09	40 40 / 20
CPE 32-4 **CPE F 32-4**	3,200	2	40 40 / 20	2.3 2.3 / 0.58	3.6 3.6 / 0.9	1 A_m	98 – 180 or 180 – 300	1800 or 2000	11 11 / 2.8	0.37 0.3 / 0.09	40 40 / 20
CPE 40-4 **CPE F 40-4**	4,000	2	25 25 / 15	2.8 2.8 / 0.7	3.6 3.6 / 0.9	1 B_m	98 – 180 or 180 – 300	1800 or 2000	11 11 / 2.8	0.37 0.3 / 0.09	40 40 / 20
CPE 50-2 **CPE F 50-2**	5,000	2	40 40 / 20	2.3 2.3 / 0.58	2.25 2.25 / 0.54	1 A_m	98 – 180 or 180 – 300	1800 or 2000	11 11 / 2.8	0.37 0.3 / 0.09	40 40 / 20
CPE 75-1.6 **CPE F 75-1.6**	7,500	3	40 40 / 20	2.8 2.8 / 0.58	1.44 1.44 / 0.36	1 A_m	125 – 310	1800	5 5 / 1.25	0.55 0.55 / 0.12	40 40 / 20
CPE 100-2 **CPE F 100-2**	10,000	4	40 40 / 20	2 x 2.3 2 x 2.3 / 0.58	2.25 2.25 / 0.54	1 A_m	125 – 310	1800	5 5 / 1.25	0.55 0.55 / 0.12	40 40 / 20

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1. GENERAL REMARKS

Products of CMCO Industrial Products GmbH have been built in accordance with the current level of technology (state-of-the-art) and generally accepted engineering standards. Nonetheless, incorrect handling when using the products may cause danger to life and limb of the user or third parties and/or damage to the lifting unit or other property.

The operating company is responsible for the proper and professional instruction of the operating personnel. For this purpose, all operators must read these operating instructions carefully prior to the initial operation.

These operating instructions are intended to acquaint the user with the product and enable the user to utilise it to the full extent of its intended capabilities. The operating instructions contain important information on how to operate the product in a safe, correct and economic way. Acting in accordance with these instructions helps to avoid dangers, reduce repair costs and downtime, as well as to increase the reliability and lifetime of the product. The operating instructions must always be available at the place where the product is operated. In addition to the operating instructions and the binding accident prevention regulations applicable in the country of use and at the place of use, the recognised rules for safe and professional work must also be observed. The personnel for operation, maintenance or repair of the product must read, understand and follow the instructions in these operating instructions.

The indicated protective measures will only provide the necessary safety, if the product is operated correctly and installed and/or maintained in accordance with the instructions. The operating company is obliged to ensure safe and trouble-free operation of the product.

Continuous sound pressure level

The equivalent continuous sound pressure level at the workplace of the operating staff is ≤ 73 dB. It was determined with the use of the measurement surface sound pressure level method (distance from electric chain hoist 1 m, 9 measuring points, precision class 2 DIN 45635).

Identification

In order to clearly identify the product, the rating plate with all important data can be found on the unit.

Theoretical service life (SWP)

The Yale electric chain hoist CPE/F is classified in accordance with FEM 9.511 in the FEM Group 1 Am or 1 Bm. This theoretically results in a service life of 800 or 400 operating hours under full load.

Basic principles for the calculation of the theoretical remaining service life are given in German Social Accident Insurance (DGUV) regulation 54. When the theoretical remaining service life has been reached, the unit should be subjected to a general overhaul (→ **8. Inspection, Service and Repair**).

Regulations

Before the initial operation, a check must be performed by a competent person as per the mandatory accident prevention rules applicable in the user's country, as well as in accordance with the recognised rules for safety and proper working. In Germany, these are the accident prevention regulations of the employers' liability insurance association DGUV regulation 52, DGUV regulation 54, DGUV rule 500-100 and VDE 0113-32/EN 60204-32:2008.

2. INTENDED USE

- The Yale CPE/F electric chain hoist production series has been designed to lift and lower loads up to the rated capacity. In combination with a trolley, the unit is also ideal for the horizontal movement of overhead loads.

  Any use that is different or goes beyond this is considered improper use. Columbus McKinnon Industrial Products GmbH will not accept any liability for damage resulting from such use. The risk is borne by the user and/or the operating company alone.
- The load carrying capacity (rated load capacity) indicated on the unit is the maximum safe working load which must not be exceeded.

ATTENTION: *The unit may be used only in situations in which the load carrying capacity of the unit and/or the supporting structure does not change with the load position.*

ATTENTION: *Note that depending on the type of load, the lifting height may be reduced for models with a chain box!*

- The attachment point and its supporting structure must be designed for the maximum loads to be expected.
- The selection and calculation of the appropriate supporting structure are the responsibility of the operating company.
- The suspension hook (or the optional trolley) as well as the load hook of the unit must be in a vertical line above the load centre of gravity (S) when the load is lifted, so that load sway can be avoided during the lifting process (Fig. 2).

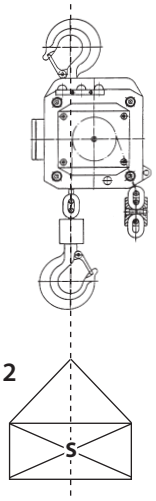


Fig. 2

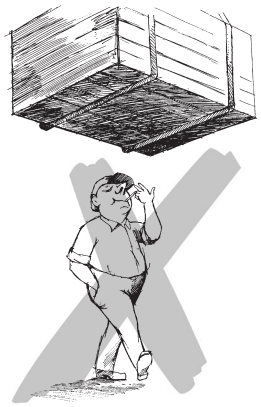


Fig. 3

The following are applicable to units in a trolley:

- The lifting unit is suitable for a wide range of track beams as well as various profiles (e.g. INP, IPE, IPB, etc.) with a maximum inclination of the track beam flange not exceeding 14°.
- The track must only have a deflection of maximum 1/500 of the span even under maximum load.
- The longitudinal gradient of the travel path surface may not exceed 0.3 %.
- Always transport loads in the horizontal direction slowly, carefully and close to the ground.
- In the case of manual trolleys without a reel drive, the suspended load must be pushed. It must not be pulled.
- If the area in front of the load is not sufficiently visible, the operator must make sure that he is given help.
- Do not allow personnel to pass under a suspended load (see Fig. 3).
- After lifting or tensioning, a load must not be left unattended or remain lifted for a longer period of time.
- The operator may start moving the load only after it has been attached correctly and all persons are clear of the danger zone.
- The operator must ensure that the lifting unit is attached in a manner that does not expose himself or other personnel to danger by the hoist, trolley, chain(s) or the load.
- The lifting unit can be operated in ambient temperatures between -20 °C and +50 °C. Consult the manufacturer in the case of extreme working conditions.

ATTENTION: *Before using the device at ambient temperatures of less than 0 °C, make sure that the brake is not frozen by lifting and lowering a small load 2–3 times.*

- Prior to operation of the lifting unit in special atmospheres (high humidity, salty, caustic, alkaline) or handling hazardous goods (e.g. molten compounds, radioactive materials) consult the manufacturer for advice.
- When the unit is not in use, position the suspension above the normal head height, if possible.
- Only use safety hooks with safety latches.
- If the lifting unit is used in a noise-intensive environment, it is recommended that the operator as well as maintenance staff wear ear protection.
- In order to ensure correct operation, not only the operating instructions, but also the conditions for inspection and maintenance must be complied with.
- If defects are found or abnormal noise can be heard, stop using the lifting unit **immediately**.

ATTENTION: *Disconnect the power supply without fail before performing repair and maintenance work unless the nature of the inspection precludes this!*

- Maintenance work and the annual inspection of the units must **not** be carried out in explosive environments.

3. INCORRECT OPERATION

(List is not complete)

- Do not exceed the rated load capacity (nominal load) of the trolley (if applicable) as well as the load of the supporting structure.
- The unit must not be used for pulling free stuck or jammed loads. It is also prohibited to allow loads to drop when the chain is in a slack condition (danger of chain breakage).
- The lifting unit must not be used for pulling loads at an angle.
- The removal or covering of labelling, warning notices or the rating plate (e.g. by pasting over) is prohibited. Removed or illegible labels and instructions must be immediately replaced.
- When transporting loads ensure that the load does not swing or come into contact with other objects.
- Excessive inching operation by short and frequent actuation of the control switch must be avoided.
- Do not use the lifting unit for the transportation of people (Fig. 4).

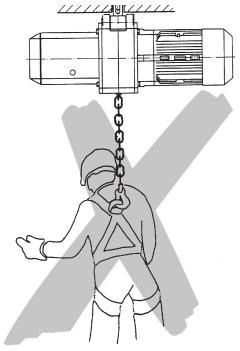


Fig. 4

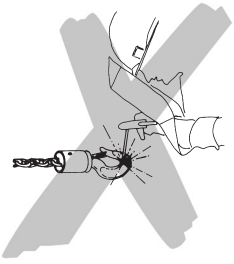


Fig. 5

- Welding on the optional trolley, hook and load chain is strictly prohibited. The load chain must never be used as a ground connection during welding (Fig. 5).
- Side pull, i. e. lateral loads on the suspension hook (or the trolley for models with trolley), the housing or the bottom block (Fig. 6) is prohibited. The optional trolley must be perpendicular to the load at any time.

- The load chain must not be used as a chain sling (Fig. 7).

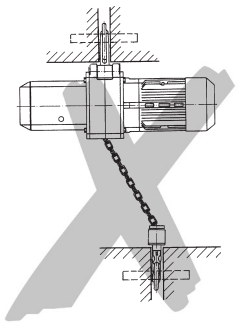


Fig. 6

Fig. 7

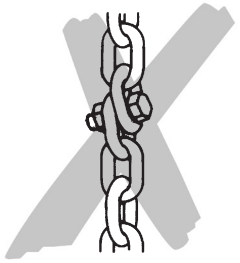


Fig. 8

Fig. 9

- Do not knot or shorten the load chain by using bolts, screws, screwdrivers or other devices (Fig. 8). Load chains that are integral part of the lifting unit are not allowed to be repaired.
- It is prohibited to remove the safety latch from the suspension hook or load hook (Fig. 9).
- Do not use the hoist limiting pieces (chain end stop) as an operational hoist limiting device (Fig. 1 – chain end stop).
- The load must not be moved into areas which are not visible to the operator. If necessary, the operator must seek help.

  The following are applicable to units in a trolley:
  - The longitudinal downward slope of the track must not exceed 0.3%.
  - The adjustment of the trolley width must not be extended in order to e.g., obtain a smaller radius curvature – this is prohibited.

- Any modification of the lifting unit is prohibited. A unit modified without consulting the manufacturer must not be used.
- Never attach the load to the tip of the hook (Fig. 14). The lifting tackle must always be seated in the saddle of the hook.
- Turning of loads under normal operating conditions is not permitted, as the bottom blocks of the units are not designed for this purpose. If loads must be turned in normal operation, an anti-twist swivel must be used or the manufacturer must be consulted.
- Do not drop lifting unit from a great height. Always place the unit properly on the ground.
- Never reach into moving parts.
- Only one load lifting attachment may be suspended in the load hook of the lifting unit.
- The unit must **not** be operated in potentially explosive atmospheres.

4. INSTALLATION

Installation and maintenance of the unit is to be entrusted only to persons who are trained in the field in question and have been commissioned by the operating company to install and service the unit. These persons must know the common accident prevention rules, e.g. "Winches, lifting and hoisting devices (DGUV regulation 54)", "Cranes – power driven winches (EN14492-1)" etc. and must be appropriately trained. They should also be familiar with the operating and installation instructions drafted by the manufacturer.

4.1 TESTS BEFORE INSTALLATION

- Check for transport damage
- Check for completeness
- Check that the capacity indication on the unit and the bottom block match.

4.2 ELECTRIC CHAIN HOIST WITH SUSPENSION BRACKET (Standard version)

The standard version of the Yale electric chain hoist is provided with a suspension hook. The hook is connected with the housing of the chain hoist by means of two bolts. Make sure that the load hook – irrespective of the reeving – is always positioned vertically under the suspension hook.

In the 1-strand configuration, the suspension hook is to be installed centred on the marking "1/1" on the supporting structure, in 2-strand configuration centred on the marking "2/1". In 3-strand and 4-strand configuration the suspension hook is to be installed centred on the marking "1/1" on the supporting structure.

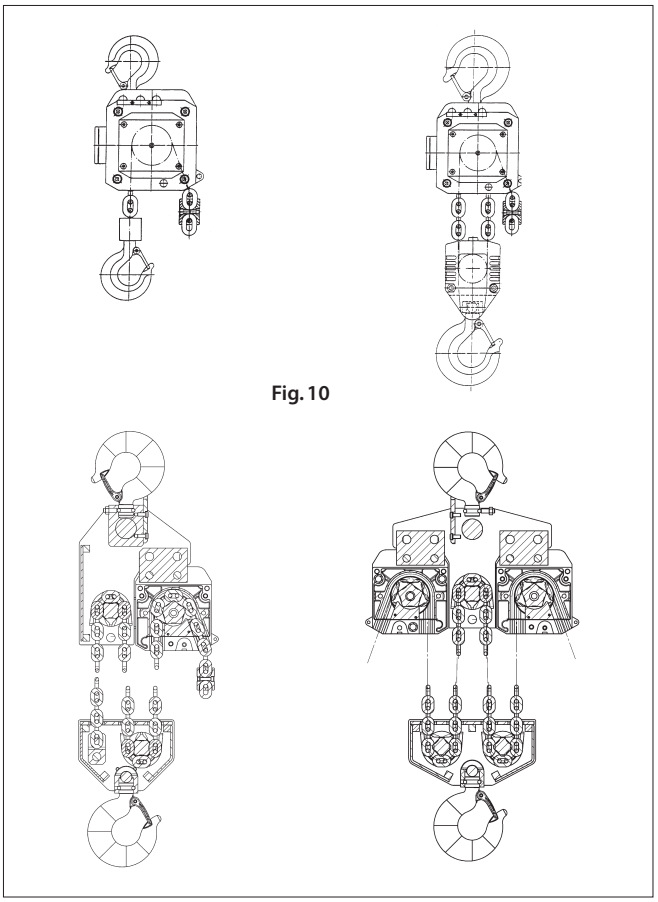


Fig. 10

ATTENTION: *Screw the locking plate back on tightly after mounting the hook.*

The supporting structure must be dimensioned in such a way that the total operating forces can be safely absorbed.

4.3 ELECTRIC CHAIN HOIST WITH TROLLEY

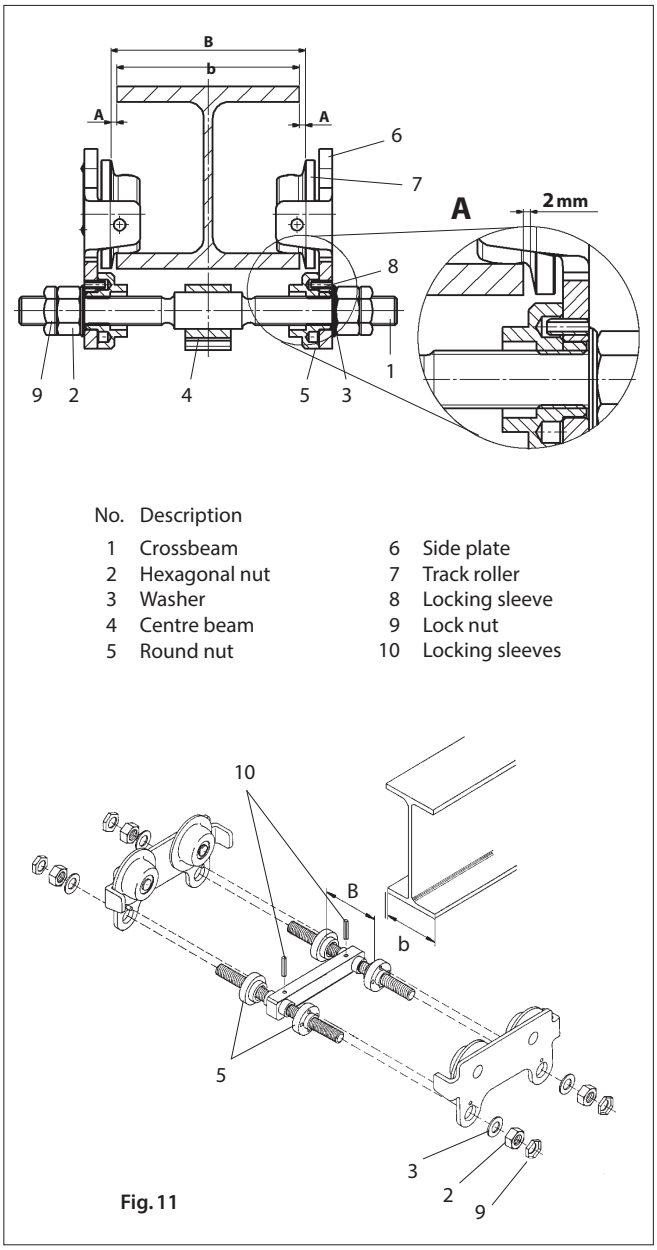
The units are delivered as pre-assembled and are designed for the track beam area A or B specified on the rating plate. Before installing the chain hoist, make sure that the width of the track beam is within the adjustment range of the delivered trolley (see Tab. 1).

Load carrying capacity [kg]	Track beam area	Flange width [mm]		Flange thickness [mm]
		from	to	max.
1,600 – 5,000	A	98	180	27
1,600 – 7,000	B	180	300	27
7,500 – 10,000	B	125	310	40

Tab. 1

Installing the trolley 1,600 – 5,000 kg (Fig. 11)

1. Unscrew the locking nuts (item 9) and hexagonal nuts (item 2) from the crossbeams (item 1) and remove both side plates (item 6) from the trolley.
2. Measure the flange width of the track beam – measurement "b".
3. Adjust/preset measurement "B" between the shoulders of the round nuts (item 5) on the threaded crossbeams (item 1):
   Ensure that the four holes in the round nuts face towards the outside. The distance "B" between the shoulders of the round nuts on the crossbeams should be selected so that it corresponds to the measurement "B" of the flange width "b" plus 4 mm lateral clearance (measurement "A" on each side is 2 mm). Ensure that the centre beam is centred between the round nuts.
4. Replace one side plate (item 6):
   Replace one side plate ensuring that the locking sleeves (item 8) engage into one of the four holes in the round nuts (item 5). To achieve this it may be necessary to rotate/adjust the round nuts slightly.
5. Replace the washers (item 3) and tighten the hexagonal nuts (item 2). Screw on the locknuts (item 9) finger-tight and tighten a further ¼ to ½ turn.
   ATTENTION: *The locknuts must always be fitted!*
6. Loosely replace the second side plate (item 6) on the crossbeams (item 1):
   The washers (item 3), hexagonal nuts (item 2) and locknuts (item 9) can be fitted loosely.
7. Placing the entire pre-assembled unit onto the track beam.
   ATTENTION: *Pay attention to the position of the drive (manual or electric as an option)!*
8. Fixing the second side plate:
   Here, the locking sleeves punched into the side plate must meet up with one of the existing four holes in the round nuts. To achieve this it may be necessary to rotate/adjust the round nuts slightly.
9. Tighten the hexagonal nuts on the second side plate:
   Tighten the locknuts finger-tight and then a further ¼ to ½ turn.
   ATTENTION: *The locknuts must always be fitted!*
10. Then, by moving the entire assembled unit, check the following:
    - Is the specified lateral clearance (see Fig. 11) of 2 mm on each side between the trolley wheel flanges and the track beam outer edge maintained for all trolleys?
    - Is the centre beam and consequently the lifting unit centred below the track beam?
    - Are all four locknuts fitted?
    - Are the side plates parallel?
    - Do all wheels roll freely and make good contact with the track beam?
    - Are there are any obstacles on the track beam flange?
    - Are the fastening and the position of the end stops correct?



No.	Description	No.	Description
1	Crossbeam	6	Side plate
2	Hexagonal nut	7	Track roller
3	Washer	8	Locking sleeve
4	Centre beam	9	Lock nut
5	Round nut	10	Locking sleeves

Fig. 11

Installation of the trolley 7,500 – 10,000 kg (Fig. 12 and 13)

1. Measure the flange width of the track beam.
2. Evenly distribute the spacer sleeves and spacer washers on both sides of the crossbeam.

A clearance of 2 mm between the wheel flange and the track beam flange must be maintained (inner dimension = flange width + 4 mm).

ATTENTION: *When installing the crossbeam ensure that the spacer sleeve for the support frame is present (Fig. 12 and 13).*

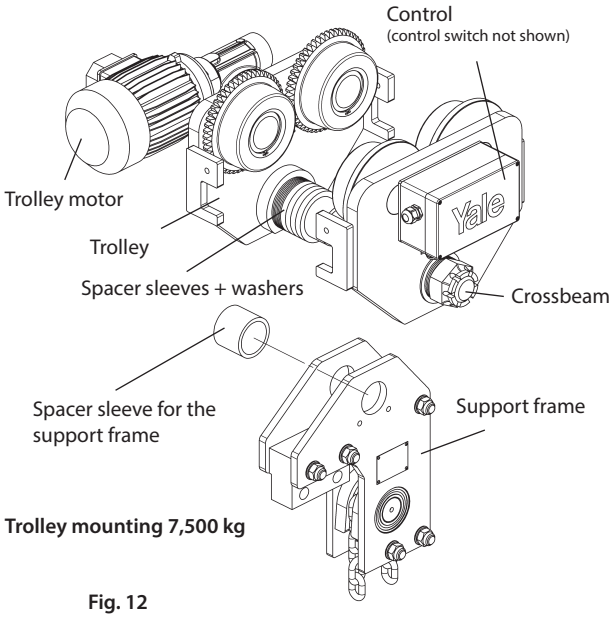


Fig. 12

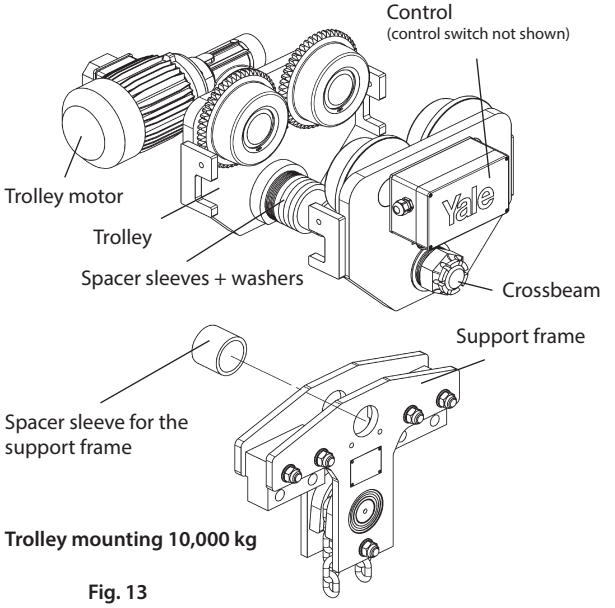


Fig. 13

3. After adjustment of the inner dimension, evenly distribute the remaining spacer washers on the outside of the side plates on the crossbeam. There must be at least three small washers (3 mm) and one large washer (3 mm) between the side plate and the castellated nut.

   Tip: *For easier mounting, screw one side plate tightly. Pay attention to the desired position of the drive side. The other side plate is attached loosely.*
4. Then lift the entire unit on to the track beam and tighten all castellated nuts.
5. Secure all castellated nuts with cotter pins.
6. Then, by moving the entire assembled unit, check the following:
   - Is a clearance of 2 mm (measurement "A") maintained on each side between the track roller flanges and the track beam's outer edge?
   - Is the centre beam and consequently the lifting unit centred below the track beam?
   - Are both castellated nuts fitted and secured with cotter pins?
   - Are at least one large and three small spacer washers mounted between the side plate and castellated nut?
   - Are the side plates parallel?
   - Do all wheels roll freely and make good contact with the track beam?
   - Are there are any obstacles on the track beam flange?
   - Are the fastening and the position of the end stops correct?

Mounting the hand chain

(only trolleys with reel drive)

To fit the hand chain position the slot on the outer edge of the hand chain wheel below the hand chain guide.

Place any one link of the endless hand chain vertically into the slot and turn the hand chain wheel until the link has passed the chain guides on both sides.

ATTENTION: *Do not twist the hand chain when fitting!*

Reel trolleys are moved by pulling the hand chain belonging to the reel trolley.

Shortening or lengthening the hand chain

(only trolleys with reel drive)

The length of the hand chain should be adjusted so that the distance to the floor is 500 – 1,000 mm.

NOTE: *For safety reasons, hand chain links may only be used once.*

- Look for the non-welded link of the hand chain, bend to open and discard it.
- Shorten or extend the chain to the required length.

  ATTENTION: *Always remove or add an even number of chain links.*
- Use a new link to close the loose chain ends by bending it (for extending the hand chain, two new chain links are required).

  ATTENTION: *Make sure that the hand chain is not twisted during installation.*

Installation of the chain end stop

The chain hoist is delivered with a correctly installed chain end stop. The chain end stop must be installed on the idle strand of the load chain so that there is at least one full free chain link under it.

Adjustment of the gear limit switch (optional)

To set the limit switch, dismantle the housing lid of the switch. Move the suspension hook to the desired position. Finally, loosen the screw at the centre of the actuation cam block and turn the screws 1 and 2 to displace the position of the cam until the micro switch is actuated. Finally, retighten the screw in the centre of the actuation cam block. Approach the second position and adjust the other cam as described earlier. Then install the housing lid of the limit switch.

NOTE: *Depending on the customer's request, gear limit switches with up to six other actuation cams can be delivered.*

Installation of the chain box

In the central part of the device, there are two brackets on the outlet side of the idle strand which serve as lifting points for the optional chain box. Before installation, the load hook must be brought to the lowest possible position so that the chain end stop is moved towards the housing. Finally, the delivered chain box with the long screw and

self-locking nuts is fixed to the housing so that the smaller chain box opening is positioned below the chain hoist housing.

ATTENTION: *If the electric chain hoist is equipped with limit switches, a lug must be installed between the supports on the chain hoist housing and the suspension lugs of the chain box.*
The holding capacity of the chain box to be installed should never be smaller than the load chain length of the unit on which it is to be placed. Risk of the chain breaking! This specification is applicable even if the unit is used exclusively to lift loads to lower heights.

NOTE: *In multiple strand devices, the load chain length is a multiple of the possible lifting height!*

Make sure that the two self-locking nuts are turned on the screws at least so wide that 1½ screw threads project over the nuts.
After installation, check that the chain box works properly: To do so, lift the load hook over the entire load chain length so that the bottom block triggers the optional limit switch or is driven against the chain hoist housing. During the lifting operation, check the smooth entry of the load chain into the chain box.

If the chain hoist is equipped with a large chain box, the suspension must be provided with additional strain relief. To do so, a strap must be fastened on the central part to the housing screw (motor side, against the fastening of the tension relief of the control switch). A short link chain can be placed between this strap and the chain container frame.

4.4 ELECTRICAL CONNECTION

ATTENTION: *Work on electrical installations may only be carried out by electrical experts or a lifting unit workshop authorised by the manufacturer. Local regulations such as EN 60204-1 or EN 60204-32 / VDE 0113 apply.*

Preparations

- Before working on the electrical system, the unit must be de-energised. For this purpose, the mains switch (crane switch) must be switched off and secured against being accidentally switched on again or the mains plug must be pulled out.
- Before connecting the chain hoist ensure that the electrical data on the rating plate match the local supply specifications.
- The mains supply cable must be an insulated cable with four flexible wires. The ground (earth) wire must be longer than the live wires. The cross-sections and the fusing of the various models can be found in Table 2. In addition, the cable ends must be fitted with wire end ferrules.
- The length of the pendant control cable is determined by working conditions. Attach the tension relief wire in a manner that the pendant control cable hangs without any load.
- Wiring and terminal connecting diagrams are included with the unit.

Model	P_n [kW]	ED [%]	I_a/I_n	I_n [A]	Fuse (inert) [A]	Cable cross section in mm² for supply line length		
						0 – 50 m	50 – 100 m	100 – 150 m
CPE 16-8 CPE 25-5 CPE 32-4 CPE 50-2	2.3	40	4.7	5.3	16*	1.5	1.5	2.5
CPE 100-2	2 x 2.3	40	4.7	6.4	16*	2.5	2.5	—
CPE 20-8 CPE 30-5 CPE 40-4 CPE 75-1.6	2.8	25	4.7	6.4	16*	2.5	2.5	—

Model	P_n [kW]	ED [%]	I_a/I_n	I_n [A]	Fuse (inert) [A]	Cable cross section in mm² for supply line length		
						0 – 50 m	50 – 100 m	100 – 150 m
CPE F 16-8 CPE F 25-5 CPE F 32-4 CPE F 50-2	0.58/2.3	20/40	1.8/4.4	3.3/5.5	16*	1.5	2.5	2.5
CPE F 100-2	2 x 0.58/2.3	20/40	1.8/4.4	4.0/6.8	16*	2.5	2.5	—
CPE F 20-8 CPE F 30-5 CPE F 40-4 CPE F 75-1.6	0.7/2.8	15/25	1.8/4.4	4.0/6.8	16*	2.5	2.5	—

all data for 400 V, 3-phase, 50 Hz – *for direct control, with contactor control 10 A

Mains connection

1. The mains supply cable must be connected to the electric chain hoist before it is connected to the mains supply.
2. On units with an electric trolley (CPE-VTE) the three phases of the mains supply are to be connected to the terminal strip within the terminal box on the trolley. The ground/earth wire is to be connected to the special ground/earth connection within the terminal box of the chain hoist.
3. On units without an electric trolley, the mains supply cable is connected to the terminal strip and protective conductor terminal in the terminal box of the lifting unit.
4. After removing the housing cover, connect the wiring as shown on the wiring diagram label inside the terminal box cover.
   ATTENTION: *On units with direct control, the neutral wire should always be connected according to the wiring diagram. If there is no neutral wire on the mains side, the manufacturer must be consulted.*
5. After closing the terminal box cover, connect the other end of the connecting cable to the deactivated circuit breaker or to the mains supply line.
6. Check the motor's direction of rotation
   The wiring diagram included has been drawn for a normal, clockwise rotating installation. Should the user's mains supply not fulfil this standard, and if, after activating the circuit breaker or power supply line, a lowering takes place on pressing the ▲ button on the control switch, deactivate the unit immediately and swap two of the three phase connections in the control box.
   ATTENTION: *Under no circumstances may the wiring in the pendant control be altered!*

5. FUNCTION CHECK AFTER INSTALLATION

Prior to operating the hoist, grease the trolley gear wheels (optional, manual geared and electric trolleys) and lubricate the load chain when it is not under load (see table 3).

Before the chain hoist is put into regular service, following additional inspections must be made:

- Are all screwed connections on lifting unit and trolley (optional) tight and are all locking devices in place and secure?
- Are the end stops on the trolley track in place and secure?
- Is the chain drive correctly reeved?
- The chain end stop must be connected to the free (idle) chain strand (see Fig. 1 – chain end stop).
- All units equipped with two or more chain strands must be inspected before each initial operation to ensure that the load chain is not twisted or kinked. The chains of 2-strand hoists may become twisted if the bottom block is turned over, for instance.
- Perform an operation cycle without load. The chain should move in a steady, smooth way.

  For models without a limit switch:
  - Check the function of the sliding clutch by moving the bottom block against the housing (max. 5 seconds).

  For models with a limit switch:
  - Check the sliding clutch with a test weight (min. 125 % of the rated capacity).
- Check the brake function when lifting and lowering with rated load.
- Pass trolleys through the entire length of the run without a load. The lateral clearance between the track roller and the track beam flange must comply with the specifications. Check that beam end stops are positioned correctly and secure.

6. INITIAL OPERATION

Inspection before initial operation

According to national and international accident prevention and safety regulations, lifting units must be inspected

- in accordance with the risk assessment of the operating company,
- prior to initial operation,
- before the unit is put into service again following a shutdown,
- after substantial changes,
- but at least once per year

by a competent person. Actual operating conditions (e.g. operation in galvanizing facilities) can dictate shorter inspection intervals.

The checks are essentially visual and functional, which should guarantee that the unit is in a safe condition and if necessary, faults and damages caused by improper transport or storage for example, can be identified and remedied.

The condition of components with regard to damage, wear, corrosion or other changes must be assessed and the completeness and effectiveness of the safety devices must be determined.

Competent persons may be, for example, the maintenance engineers of the manufacturer or the supplier. However, the company may also entrust the inspection to its own appropriately trained specialist personnel. The inspections have to be initiated by the operating company.

Initial operation and recurring inspections must be documented (e.g. in the CMCO works certificate of compliance).

Paint damage should be touched up in order to avoid corrosion. All joints and sliding surfaces should be lightly lubricated. In case of heavy contamination, the unit must be cleaned.

Inspection by a crane expert

If the lifting unit is used as a crane, it has to be inspected and approved by a crane expert before initial operation. This inspection has to be registered in the crane inspection book. The inspection by the crane expert has to be instigated by the operating company.

7. OPERATION

Installation, service and operation

Only persons who are familiar with the units may be entrusted with the installation, maintenance or independent operation of the lifting units. They must be authorised by the company for installing, maintaining or operating the equipment. In addition, the operator must be familiar with the accident prevention regulations.

Inspection before starting work

Before starting work each time, the unit, including the suspension elements, equipment and supporting structure must be checked for visible defects or faults. In addition, also test the brake and check that the hoist and the load are correctly attached. To do this, use the unit to lift a load and lower it again only over a short distance. Selection and calculation of a supporting structure are the responsibility of the operating company.

Inspection of the load chain

Inspect the load chain for sufficient lubrication and check for external defects, deformations, superficial cracks, wear and corrosion marks.

Inspection of chain end stop

The chain end stop must be connected to the free (idle) chain strand (see Fig. 1 – chain end stop).

Inspection of the chain reeving
All units equipped with two or more chain strands must be inspected before each initial operation to ensure that the load chain is not twisted or kinked. The chains of 2-strand units may become twisted if the bottom block has been rolled over (Fig. 15).

Fig. 14

Fig. 15

Inspection of the suspension and load hooks
Check the suspension and the load hooks for deformations, cracks, damages, abrasion and signs of corrosion.

Checking the limit switch
If the load hook is moved against the lifting device, the limit switch must stop the lifting operation immediately and shut down the motor. The load hook can only be lowered then.
The lowering movement must also be automatically stopped exactly the same way as soon as the load hook reaches the lowest possible position allowed by the load hook length. The load hook can then be raised.

Suspending the load
The load must always be seated in the centre of the hook. Never attach the load to the tip of the hook (Fig. 14). This also applies to the support hook.

Inspect the crossbeam (for trolleys)
Inspect the crossbeam for correct assembly and visually check for external defects, deformations, superficial cracks, wear or signs of corrosion.
Especially make sure that the locking sleeves are properly fitted to the centre beam (see page 6, Fig. 11).

Inspection of the adjustment of the trolley width
On chain hoists with a trolley check that the clearance between the trolley wheel flange and the beam outer edge is equal on both sides and within the tolerances given (see page 6, Fig. 11).
Enlarging the clearances, e.g. to enable the trolley to negotiate tighter curves, is not permitted.

Course of the lifting unit

Push trolley:
By pushing on the suspended unit (e.g. lifting unit) or the attached load.
ATTENTION: Never pull on the control cable. Suspended loads may only be pushed.

Geared trolley:
By operating the geared trolley hand chain.

Electric trolley:
By operating the ▶ or ◀ button on the control switch.

For units with two speeds: the first stage of pressing the button activates the slow speed, and further pressing activates the faster speed. Use the slow speed for short distances only.
When moving the trolley, consider the stopping distance. Do not use the beam end stops as operational limit devices.

Attaching the load
Attach the load to the hoist using only approved and certified slings or lashing devices. Never use the load chain as sling chain. The load must always be seated in the saddle of the hook. Never attach the load to the tip of the hook. Do not remove the safety latch from the load hook.

Lifting/lowering the load
The load is lifted by pressing the ▲ button, and it is lowered by pressing the ▼ button. For units with two speeds: the first stage of pressing the button activates the slow speed, further pressing activates the faster speed. Use the slow speed for short distances only.
In order to raise the load, always use the lowest available lifting speed. The chain must be loaded at this speed and may not lie slack on the floor. The chain end stop may not be used as an operational limit switch (see Fig. 1).

Emergency stop
In the event of an emergency, all movement can be immediately halted by pressing the red button.
ATTENTION: *The unit still has power in it following this!*
To release the unit, turn the button in the clockwise direction.

8. INSPECTION, SERVICE AND REPAIR

- Service and inspections may only be carried out by a competent person.
- The inspection must determine that all safety devices are present and fully operational and covers the condition of the unit, lifting gear, accessories and supporting structure.
- The service intervals and inspections noted are for normal working conditions. Adverse working conditions, for example, heat or chemical environments, can dictate shorter periods.
- The Yale electric chain hoist CPE/F conforms to FEM group $1A_m$/M4 and $1B_m$/M3 in accordance with FEM 9.511. This theoretically results in a service life of 800 or 400 operating hours under full load. This is equivalent to 10 years under normal operating conditions. After this period the hoist requires a general overhaul. More information can be found in BGV D6 or FEM 9.755.

ATTENTION: *Maintenance work requires subsequent function testing with rated load capacity.*

8.1 DAILY CHECKS

1. Visual inspection for mechanical damage to the control switch and the cable
2. Function check of the brakes (incl. triggering the EMERGENCY STOP button)
3. Function check of the limit switches (optional)
4. Function check of the overload protection
5. Electric chain hoists with trolley:
   - Check that the trolley track is free from obstructions
   - Check that the end stops on the trolley track are fitted and secure

8.2 REGULAR INSPECTIONS, SERVICE AND TESTING

According to national and international accident prevention and safety regulations, lifting units must be inspected

- in accordance with the risk assessment of the operating company,
- prior to initial operation,
- before the unit is put into service again following a shutdown
- after substantial changes,
- however, at least once per year, by a competent person. The respective conditions of use conditions (e.g. operation in galvanizing facilities) can dictate shorter inspection intervals.

Repair work may only be carried out by a specialist workshop that uses original Yale spare parts. The inspection (mainly consisting of a visual inspection and a function check) must determine that all safety devices are complete and fully operational and cover the condition of the unit, suspension elements, equipment and supporting structure with regard to damage, wear, corrosion or any other alterations.

Initial operation and recurring inspections must be documented (e.g. in the CMCO works certificate of compliance). See also the maintenance and inspection intervals in Tab. 3.

If required by the trade association, the results of inspections and appropriate repairs must be verified.

If the lifting unit (from 1,000 kg lifting weight) is fitted on or in a trolley, or if the lifting unit is used to move a lifted load in one or several directions, the installation is considered to be a crane and the further inspections must be carried out, in accordance with BGV D6 Cranes.

Paint damage should be touched up in order to avoid corrosion. All joints and sliding surfaces should be lightly lubricated. In case of heavy contamination, the unit must be cleaned.

ATTENTION: *Power supply must be disconnected while inspecting the device unless the type of the examination precludes this!*

8.3 MAINTENANCE OF LOAD CHAINS

The load chains are case-hardened and carry the designations 11 x 31 DAT.

The CPE/F electric hoists are specially designed to use this type of chain. For this reason, only chains that have been approved by the manufacturer may be used.

Non-compliance with this specification will render the legal warranty or guarantee void of CMCO Industrial Products GmbH with immediate effect.

Lubricating the load chain

The load chain must be lubricated before the first start-up and every month, however after 50 hours of operation at the latest. Under some extreme conditions such as an increased dust effect or a particularly heavy-duty use, the intervals are to be shortened appropriately.

The service life of the load chain can be increased through careful lubrication to 20–30 times compared with a chain that is not serviced.

- The chain must be cleaned before lubrication. Burning off is not permissible. Use cleaning methods that do not attack the chain material (e.g. steam degreasing, alkaline dip degreasing).
  Cleaning methods that can cause hydrogen embrittlement, e.g. pickling or dipping in acid solutions, as well as surface treatments, which can hide cracks or damages, are to be avoided.
- The chain must be lubricated in a tension-free condition so that a lubrication film can form at the joints. This can happen, for example, through dipping in oil.
- Make sure that the load chain is lubricated over its entire length, also including the part of the chain in the housing of the lifting unit.
- With a constant lifting path of the chain, the change-over area from lifting to lowering movement must be checked in particular.
- Engine oil of viscosity class VG 100, such as SHELL Tonna T68, can be used as lubricant. A dry film lubricant, for example, PTFE spray, should be used in environments where abrasives like sand etc. promote wear.
- When lubricating the chain, also check the chain for wear.

Inspection and maintenance work	Initial inspection			Periodic inspection		
	upon initial operation	after 50 operating hours	after 200 operating hours	Daily	after 200 operating hours	Annually
Lubricating the load chain	•	•	•		•	
Pendant control and tension relief	•	•		•		
Function check of the brakes	•			•		
Function check of the overload protection	•					•
Electrical equipment and power supply	•					•
Check for wear and tear on the chain drive		•	•		•	
Check the chain pin for cracks		•				•
Check suspension and load hooks for cracks and deformations		•				•
Check screw connections for tightness		•				•
Check trolley parts for cracks and deformations		•				•
Testing the motor of the chain hoist						•
Testing the trolley motor						•
Adjustment of the overload protection						•
Grease the drive transmission						•

Checking for wear

Load chains must be inspected for mechanical damage once every three months and after 200 hours of operation at the latest.

Visual check: There should be no cracks, deformities, bends etc., along the entire length of the chain.

Round-section steel chains must be replaced when the original nominal thickness "d" on the chain link with the worst wear has been reduced by more than 10% or if the chain has elongated over one pitch "pn" by 5 % or over 11 pitches (11 x pn) by 2 % (Fig. 16). The nominal values and wear limits are shown in Table 4 below.

The load chain must be replaced if one of the limit values is exceeded.

Round steel chain 11 x 31 DAT			
Inspection	Measurement [mm]	Nominal value [mm]	Limit value [mm]
Elongation over 11 pitches	11 x pn	341	347
Elongation over 1 pitch	pn	31	32
Diameter	d	11.3	
Average link thickness	$\frac{d_1 + d_2}{2}$	11.3	10.2

Tab. 4

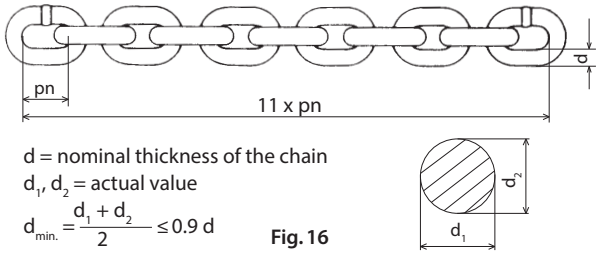


Fig. 16

Replacing the load chain

To replace a load chain, it must be suspended and connected to a power source.

A load chain to be discarded may only be replaced by an authorised specialist workshop.

NOTE: *Replacement of a load chain must be documented!*

1-strand design

1. Disassemble bottom block
   Remove the locking ring with suitable pliers. Then pull the tube upwards. Thereafter, the chain pin can be removed using a drift punch.
   ATTENTION: *Do not damage the bolt bore.*
2. Dismantling the chain end stop
   Remove the two screws. The chain is now free.
3. Fitting the new chain
   Disconnect the second to last link on the idle strand of the old chain in a c-shape. The length of the cut section must at least correspond to the thickness of the link. Then, remove the last link and suspend the new chain in the C-shaped chain link. The welded seams of the chain links placed on top of the load chain point towards the chain guide in the housing. The chain can then be retracted at the lowest possible speed by pressing the▼ button.
   ATTENTION: *The c-shaped chain link must not differ from a closed link in external shape and dimensions. Otherwise, it cannot pass through the lifting unit properly when the chain is subsequently pulled in. Risk of damage to lifting unit! Risk of the chain breaking!*
4. Install the chain end stop and the bottom block
   As soon as the c-shaped chain link passes through the lifting unit, the old load chain can be hung out and discarded along with the c-shaped auxiliary link. Move the buffer to the ends of the new load chain before installing the chain end stop or the bottom block. The hook head must be re-lubricated while assembling the bottom block.
   The chain end stop must be positioned in such a way that after the installation at least one chain link remains (See Fig. 1).
   ATTENTION: *Use new hexagonal nuts with a clamping section.*
5. Before the initial operation lubricate the load chain and test all hoist functions under no-load condition.

Multistrand design

Before starting work, please make sure that the bottom block is fully tension-free.

1. Disassembling the chain pin
   The chain pin is situated on the underside of the chain hoist body. With an Allen key, remove the grub screw that serves as a locking device. Tap out the chain anchor pin with a drift punch from the other side through the hole in the electric hoist housing.
   ATTENTION: *Do not damage the bolt or the bore.*
2. Dismantling the chain end stop
   Remove the two screws. The chain is now free. Pull off any start-up buffers that may be present.
3. Fitting the new chain
   Disconnect the second to last link on the idle strand of the old chain in a c-shape. The length of the cut section must at least correspond to the thickness of the link. Then, remove the last link and suspend the new chain in the c-shaped chain link. The welded seams of the new load chain must align with those of the load chain to be replaced! The chain can then be retracted at the lowest possible speed by pressing the▼ button. The load strand end of the old load chain must be kept somewhat stretched continuously to ensure a smooth and upright reeving in the lifting unit and the bottom block.
   ATTENTION: *The c-shaped chain link must not differ from a closed link in external shape and dimensions. Otherwise, it cannot pass through the lifting unit properly when the chain is subsequently pulled in. Risk of damage to lifting unit! Risk of the chain breaking!*
4. Install the chain end stop and the bottom block
   As soon as the c-shaped chain link passes through the lifting unit and the bottom block, the old load chain can be hung out and discarded along with the c-shaped auxiliary link. Before installing the chain end stop, push the buffer to the end of the idle strand of the new load chain.
   The chain end stop must be positioned in such a way that after the installation at least one chain link remains (See Fig. 1).
   ATTENTION: *Use new hexagonal nuts with a clamping section.*
5. Fitting the chain pin
   Before installing, check the chain pin for possible cracks. Enter the last link of the other load chain end into the slot in the underside of the electric hoist housing.
   ATTENTION: *The chain should never be installed if it is twisted.*
   The chain pin must be driven through the lateral hole of the hoist body using a drift punch.
   ATTENTION: *The chain must remain mobile during the entry so that it is not damaged or clamped by the pin.*
   The pin must finally be locked with the grub screw.

6. Function check
   All units equipped with two or more chain strands must be inspected before each initial operation to ensure that the load chain is not twisted or kinked. Chains on 2-strand units may become twisted if the bottom block is rolled over. If a strand is twisted disconnect it from the unit and rethread it correctly. In some cases it may be necessary to remove the last chain link.
7. Before the initial operation lubricate the load chain and test all hoist functions under no-load condition.

8.4 MAINTENANCE OF SUSPENSION AND LOAD HOOKS

Inspect the load and suspension hooks for deformation, damage, surface cracks, wear and signs of corrosion as required but at least annually. Actual operating conditions may also dictate shorter inspection intervals. Hooks that are rejected during the check must be immediately replaced with new ones. Welding on hooks, for example, to compensate for wear is not permitted.

Hooks must be replaced when the mouth of the hook has opened more than 10% (Fig. 17) or when the nominal dimensions are reduced by 5% as a result of wear. Nominal dimensions and wear limits are shown in table 5 below. If the limit values are exceeded, immediately replace the components.

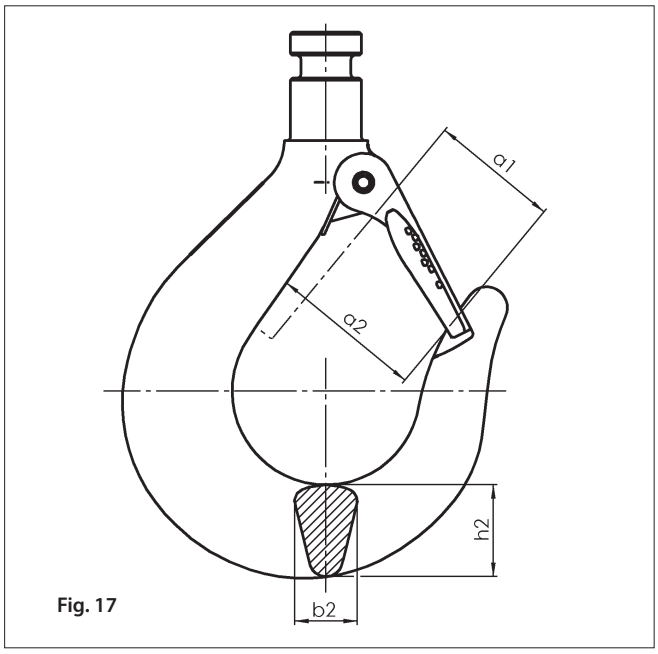


Fig. 17

Inspection	Measurement	CPE/F 16 / 20 CPE/F 25 / 30		CPE/F 32 / 40 / 50 CPE/F 75 / 100	
		Nominal Measurement mm	min. Measurement mm	Nominal Measurement mm	min. Measurement mm
Rear of the hook	b_2	24	22.8	29.5	28
Saddle of the hook	h_2	35	33.2	44.5	42.3
Opening of the hook	a_2	43	47.3	54	59.4
Free gap	a_1	37	40.7	46	50.6

Tab. 5

Axial clearance Δ of the load hook in the direction of force in the bottom block or in the top hook assembly (see Fig. 18) has to be determined additionally at every inspection.

If the measurement is larger than 1 mm, a special maintenance service is required for the hook head, the balls and the bottom block or the top hook assembly, respectively.

The following lower limits are necessary:

Inspection	Measurement	CPE/F 16 / 20 CPE/F 25 / 30	CPE/F 32 / 40 / 50 CPE/F 75 / 100
		min. measurement in mm	min. measurement in mm
Ball diameter		4.75	5.7
Hook head	α	6.3	7.9
Bottom block	β	8	9.2
Axial clearance	Δ	1	1

Tab. 6

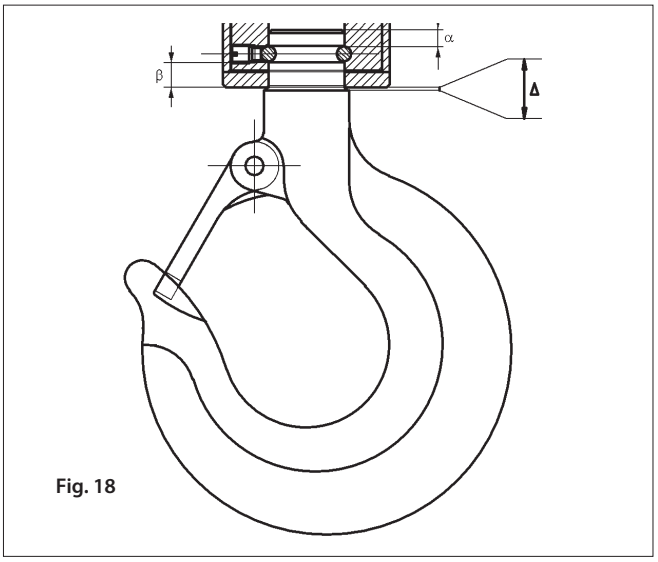


Fig. 18

8.5 MAINTENANCE OF THE TROLLEY (optional)

The following parts must be checked in particular:

- Side plate: for cracks or deformation in particular around the areas of screwed connections.
- Track rollers: visual inspection for cracks. Wear and tear on trolley wheel flanges. Grease the transmission.
- Crossbeams: in particular around threaded areas for cracks and deformations.
- Fastening nuts: check that bolts, nuts, and locking devices are fitted correctly and tight.

8.6 MAINTENANCE OF THE OVERLOAD PROTECTION

The unit is equipped with an overload protection device as standard. This device is factory set to 125% ± 10% of the rated capacity and reliably prevents overloading the hoist during load lifting. Adjustment and testing of the overload protection may only be carried out by authorised competent persons.

The force limiting factor, in accordance with EN 14492-2:2010 is $Ø_{DAL}$=1.35.

The maximum force that occurs on activation of the overload protection is calculated depending on the total load:

$F_{LIM} = (Ø_{DAL} \times m_{RC} + m_H - m_{RC}) \times g$

$Ø_{DAL} = 1.35$

m_{RC} = load-carrying capacity of the lifting unit [kg]

m_H = lifting unit load [kg]

lifting unit load m_H: Load, which includes all the masses of a load equal to the load carrying capacity of the lifting device, the hoist medium and the fixed load lifting attachments, e.g. hooks, grabs, magnets, lifting beams, vacuum lifters.

g = acceleration due to gravity (9.81) [m/s^2]

Adjustment of the overload protection (Fig. 27)

ATTENTION: *Setting of the overload protection may only be carried out by a competent person.*

ATTENTION: *the unit is ready for operation during this activity and there is a risk of physical injury caused by rotating parts.*

- Loosen the cheese-head screws (item 52) holding the gear box cover (item 51).
- Loosen the grub screw (item 47) which presses the ball (item 46) onto the housing to secure the clamping screw.
- Check the adjustment with a suitable load (min. 125% of the rated capacity).
- Increase the moment of friction by turning the clamping screw (42) in clockwise direction until the load is raised.

ATTENTION: *The max. operating time of the overload protection is 60 seconds. Then, the unit has to cool down to a room temperature min. 20 minutes).*

- Screw in the grub screw (47) with Loctite® 243.
- Screw on the gearbox cover (item 51) using the cheese-head screws (item 52).

ATTENTION: *The result of the check of the overload protection must be recorded in the test log of the unit!*

8.7 MAINTENANCE OF THE MOTOR OR THE BRAKE

Under normal conditions the motor is maintenance-free.

When servicing the engine brake, proceed as follows:

1. Disconnect the drive from the power supply and secure it against being switched on again.
2. Unscrew the bolt of the manual release (10).
3. Lift off the fan cover (20) after loosening the fixing screws.
4. Pull the dust protection ring (19), if present, out of the groove in the magnet body (2) and put it over the end shield.
5. Remove the abrasion dust by means of compressed air.
6. Remove the circlip (22).
7. Pull off the fan (23).
8. Remove the key (21).
9. Loosen the electrical plug connections on the magnet body (2).
10. Loosen the hexagon head screws (7). If there are copper washers under the screw heads, these must be replaced during assembly.
11. Take the assembly group magnet body (2) complete with
- anchor plate assembly (3),
- o-ring (16),
- banjo bolts (6),
- compression springs (5),
- adjustment ring (9) and
- manual release bracket (10)

from the end shield.

12. Pull the brake rotor assembly (4) off the hub (8). The gearing must not be damaged in the process.
13. Check the minimum thickness of the brake disc. If the thickness falls below the specified minimum, the brake disc must be replaced.
14. Loosen the cheese-head screws (18) from the end shield.
15. Remove the friction disc (17).
16. Remove the circlip (12).
17. Remove the support or shim washer (14) and pull the hub (8) off the rotor shaft using a suitable tool (the sequence depends on the version).
18. Remove the key (11).

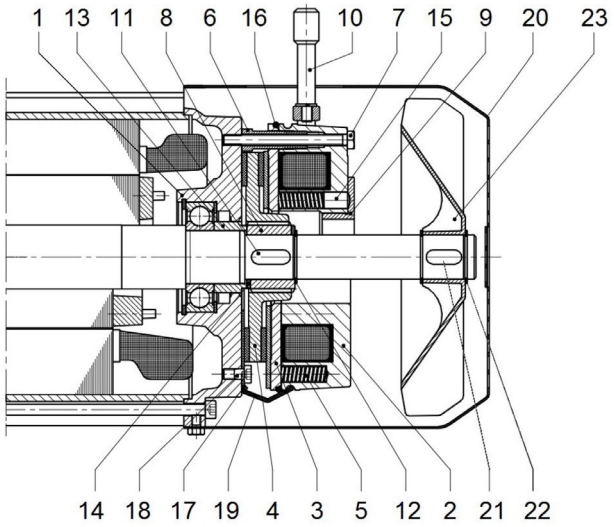


Fig. 19a

1 Brake end shield
2 Magnet bodies
3 Anchor plate
4 Brake rotor with brake pads
5 Pressure spring
6 Banjo bolt
7 Fixing bolt/brake
8 Rear brake hub
9 Adjustment ring
10 Manual release (lever and bracket)
11 Key
12 Circlip
13 Spacer bushing
14 Shims/ support discs
15 Pressure pieces
16 O-ring
17 Friction disc
18 Anchor plate/ Friction disc
19 Dust protection ring
20 Fan cover
21 Key
22 Circlip
23 Fan

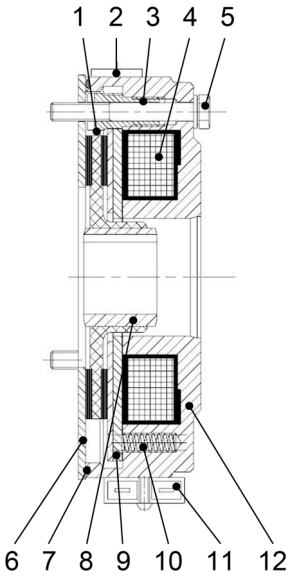


Fig. 19b

1 Brake rotor with brake pads
2 Sealing plug
3 Banjo bolt
4 Brake coil
5 Fastening screw
6 Flange
13 O-ring
14 Hub
15 Anchor plate
16 Pressure spring
17 Flat plug (ZFL only)
18 Magnet body

Type	Nominal braking torque	Air gap max. mm	Tightening torque Screw B14	Tightening torque Screw B6
ZFL	25 Nm	0.5	7 - 9 Nm	7 + 0.5 Nm

8.8 ELECTRIC CHAIN HOIST MAINTENANCE IN GENERAL

The following parts must be checked in particular:

- Threaded connections in general
  Check all nuts, screws and locking devices for tightness.
- Chain box (optional)
  Ensure the chain box is securely fastened. Check for cracks or wear (including the mounting).
- Support pin (connection between hoist and suspension hook or trolley)
  Check for cracks and wear, as well as that the fuse is firmly in place.

Repairs may only be carried out by authorised specialist workshops that use original Yale spare parts.
CMCO Industrial Products does not accept liability for damages resulting from the use of non-original parts or alterations and modifications made to the devices delivered by CMCO Industrial Products.
What is more, CMCO Industrial Products GmbH does not accept any liability and warranty for damages and operational faults that occur due to the non-observance of this operating instructions manual.

8.9. TRANSPORT, STORAGE, DECOMMISSIONING AND DISPOSAL

Observe the following for transporting the unit:

- Do not drop or throw the unit, always deposit it carefully.
- Load and hand chains (only for models with reel trolley) must be transported in such a way that knotting and formation of loops are avoided.
- Do not bend control switch cables and power supply cables.
- Use suitable transport means. This depend on the local conditions.

Observe the following for storing or temporarily taking the unit out of service:

- Store the unit in a clean and dry place.
- Protect the unit including all accessories against contamination, humidity and damage by means of a suitable cover.
- Protect hooks against corrosion.
- A light lubricant film should be applied to the chain(s).
- Do not bend control switch cables and power supply cables.
- In the case of models with an integral trolley, grease the crossbeam as well as both threaded rods to protect them against corrosion.
- If the unit is to be used again after it has been taken out of service, it must first be inspected again by a competent person.

Disposal

After taking the unit out of service, recycle or dispose of the parts of the unit in accordance with the legal regulations.

Further information and operating instructions for download can be found at www.cmco.eu!

Structure of the old version of the middle section (chain guide). Please use a new part as a replacement.

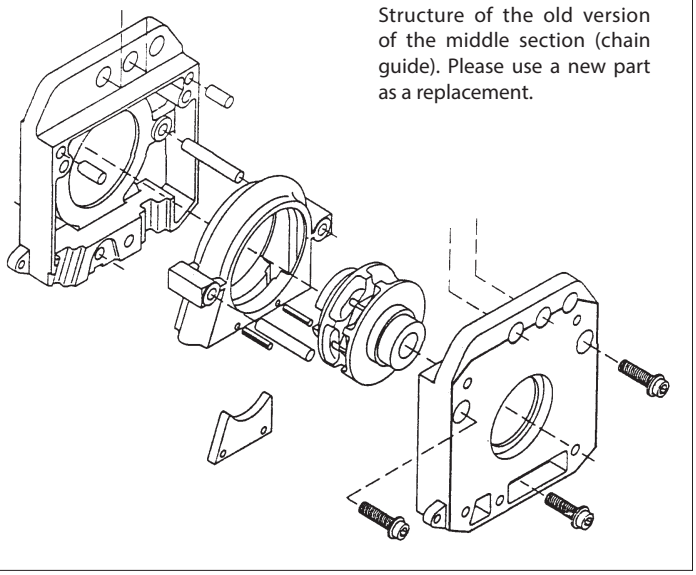


Fig. 20: Lifting unit

No.	Description	Piece	CPE/F 16	CPE/F 20	CPE/F 25	CPE/F 30	CPE/F 32	CPE/F 40	CPE/F 50	CPE/F 75	CPE/F 100
1	Hexagonal screw	8	09101660	09101660	09101660	09101660	09101660	09101660	09101660	09101660	09101660
2	Gearbox	1	00600231	00600231	00600230	00600230	00600231	00600231	00600230	00600230	00600230
3	Rating plate 1-speed	1	00600141	00600142	00600141	00600142	00600141	00600142	00600141	00600375	00600051
	Rating plate 2-speed	1	00600143	00600144	00600143	00600144	00600143	00600144	00600143	00600375	00600051
4	Blind rivet	2	09126072	09126072	09126072	09126072	09126072	09126072	09126072	09126072	09126072
5	Sealing plug	2	09192003	09192003	09192003	09192003	09192003	09192003	09192003	09192003	09192003
6	Screw plug	1	09110007	09110007	09110007	09110007	09110007	09110007	09110007	09110007	09110007
7	Cheese-head screw	2	09102150	09102150	09102150	09102150	09102150	09102150	09102150	09102150	09102150
8	Support pin safety device	1	00609448	00609448	00609448	00609448	00609448	00609448	00609448	00609448	00609448
9–11, 13, 16, 20	**Chain guide cpl.***	**1**	**N00600618**	**N00600618**	**N00600618**	**N00600618**	**N00600618**	**N00600618**	**N00600618**	**N00600618**	**N00600618**
9	Housing half gearbox side	1	00600482	00600482	00600482	00600482	00600482	00600482	00600482	00600482	00600482
10	Clamping pin	2	09134001	09134001	09134001	09134001	09134001	09134001	09134001	09134001	09134001
11	Chain stripper	1	00608978	00608978	00608978	00608978	00608978	00608978	00608978	00608978	00608978
13	Dowel pin	2	09124111	09124111	09124111	09124111	09124111	09124111	09124111	09124111	09124111
16	Housing half motor side	1	00600484	00600484	00600484	00600484	00600484	00600484	00600484	00600484	00600484
20	Hexagonal screw	3	09101713	09101713	09101713	09101713	09101713	09101713	09101713	09101713	09101713
12	Load sheave	1	00609374	00609374	00609374	00609374	00609374	00609374	00609374	00609374	00609374
14	Deep groove ball bearing	1	09151106	09151106	09151106	09151106	09151106	09151106	09151106	09151106	09151106
15	Chain pin	1	-	-	-	-	00608855	00608855	00608855	00600371	00600371
17	Support pin	2	00609388	00609388	00609388	00609388	00609388	00609388	00609388	00609388	00609388
18	Safety latch kit	1	00408671	00408671	00408671	00408671	00408672	00408672	00408672	00408769	00408769
18-19	Suspension hook cpl.	1	00609393	00609393	00609393	00609393	00609517	00609517	00609517	00600368	00620031
21	Brake motor	1	See page 26								

*Please order parts of the chain guide as a set "Chain guide cpl".

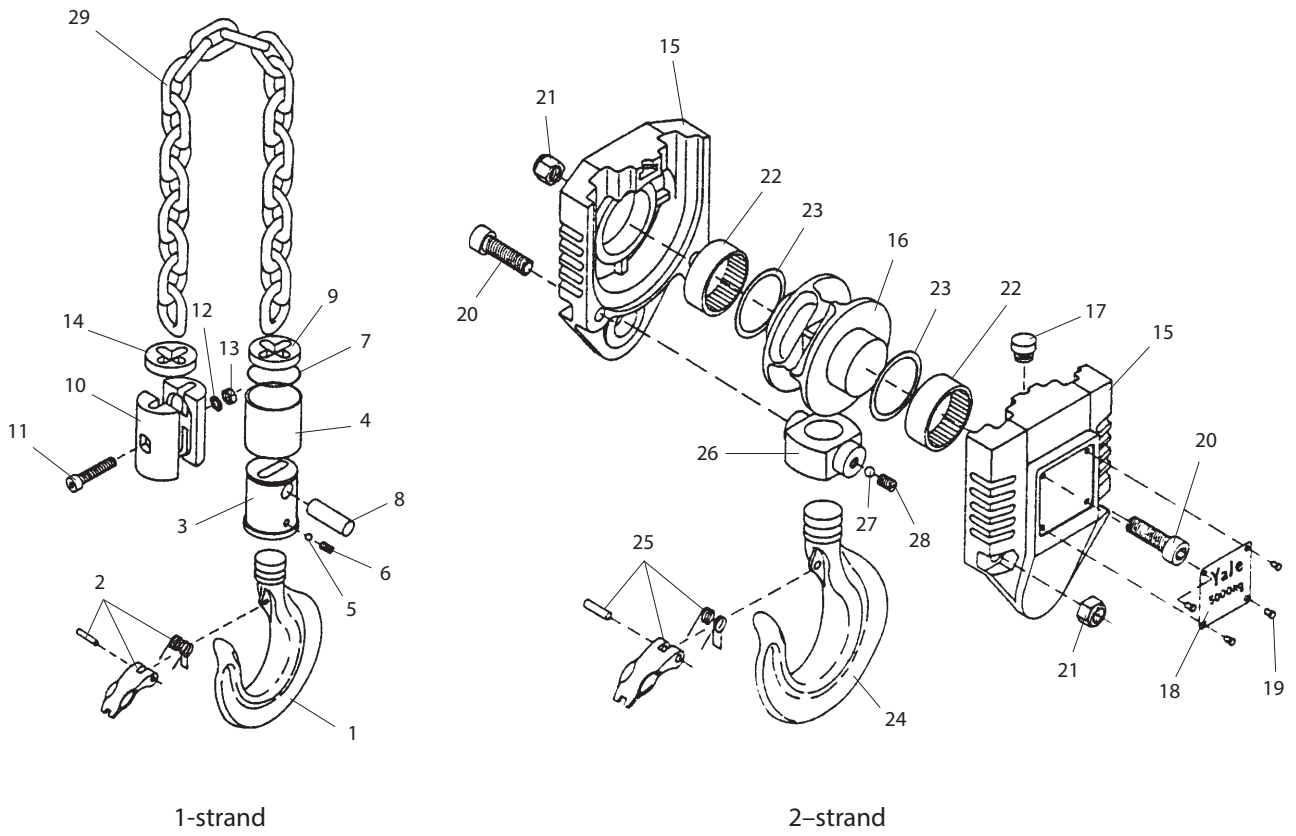


Fig. 21: Bottom blocks (CPE/F 1,600 – 5,000kg)

No.	Description	Piece	Item no.			
			CPE/F 16	CPE/F 20	CPE/F 25	CPE/F 30
1 - 8	**Bottom block cpl.***	**1**	**00609684**	**00609993**	**00609677**	**00609909**
1 - 2	**Load hook cpl.***	**1**	**00600642**	**00600642**	**00600642**	**00600642**
2	Safety latch kit	1	00408671	00408671	00408671	00408671
3	Load hook coupling	1	00608851	00608851	00608851	00608851
4	Coupling pipe	1	00609683	00600003	00609399	00609908
5	Ball set (15 pcs. at ø 5 mm)	1	00404767	00404767	00404767	00404767
6	Grub screw	1	09114030	09114030	09114030	09114030
7	Circlip	1	09139020	09139020	09139020	09139020
8	Chain pin	1	00608855	00608855	00608855	00608855
9	Buffer	1	00609734	00609734	00609734	00609734
10 - 14	**Chain end piece cpl.***	**1**	**00609995**	**00609995**	**00609995**	**00609995**
10	Chain end piece – half	2	00608867	00608867	00608867	00608867
11	Cheese-head screw	1	09102019	09102019	09102019	09102019
12	Spring washer	1	09122032	09122032	09122032	09122032
13	Hexagonal nut	1	09115014	09115014	09115014	09115014
14	Buffer	1	00609734	00609734	00609734	00609734

*To be ordered as sets. Subitems cannot be ordered individually. **Specify length

No.	Description	Piece	Item no.		
			CPE/F 32	CPE/F 40	CPE/F 50
15 - 28	**Bottom block cpl.***	**1**	**00609681**	**00609994**	**00609510**
15	Coupling half	2	00609495	00609495	00609495
16	Load roller	1	00609505	00609505	00609505
17	Buffer	1	00601704	00601704	00601704
18	Load capacity plate	2	00609682	00600001	00609511
19	Blind rivet (ø 3 x 4.5)	8	09126072	09126072	09126072
20	Cheese-head screw	2	09102053	09102053	09102053
21	Hexagonal nut	2	09115118	09115118	09115118
22	Needle bush	2	09153083	09153083	09153083
23	Shim	2	09121218	09121218	09121218
24 - 25	**Load hook cpl.***	**1**	**00600644**	**00600644**	**00600644**
25	Safety latch kit	1	00408672	00408672	00408672
26 - 28	Hook connector	1	00404850	00404850	00404850
27	Ball set (16 pieces at ø 6 mm)	1	00404799	00404799	00404799
28	Grub screw	1	09114184	09114184	09114184
29	Chain (for all units)**	1	06109488		
	Niro chain (for all units)**	1	06100001		

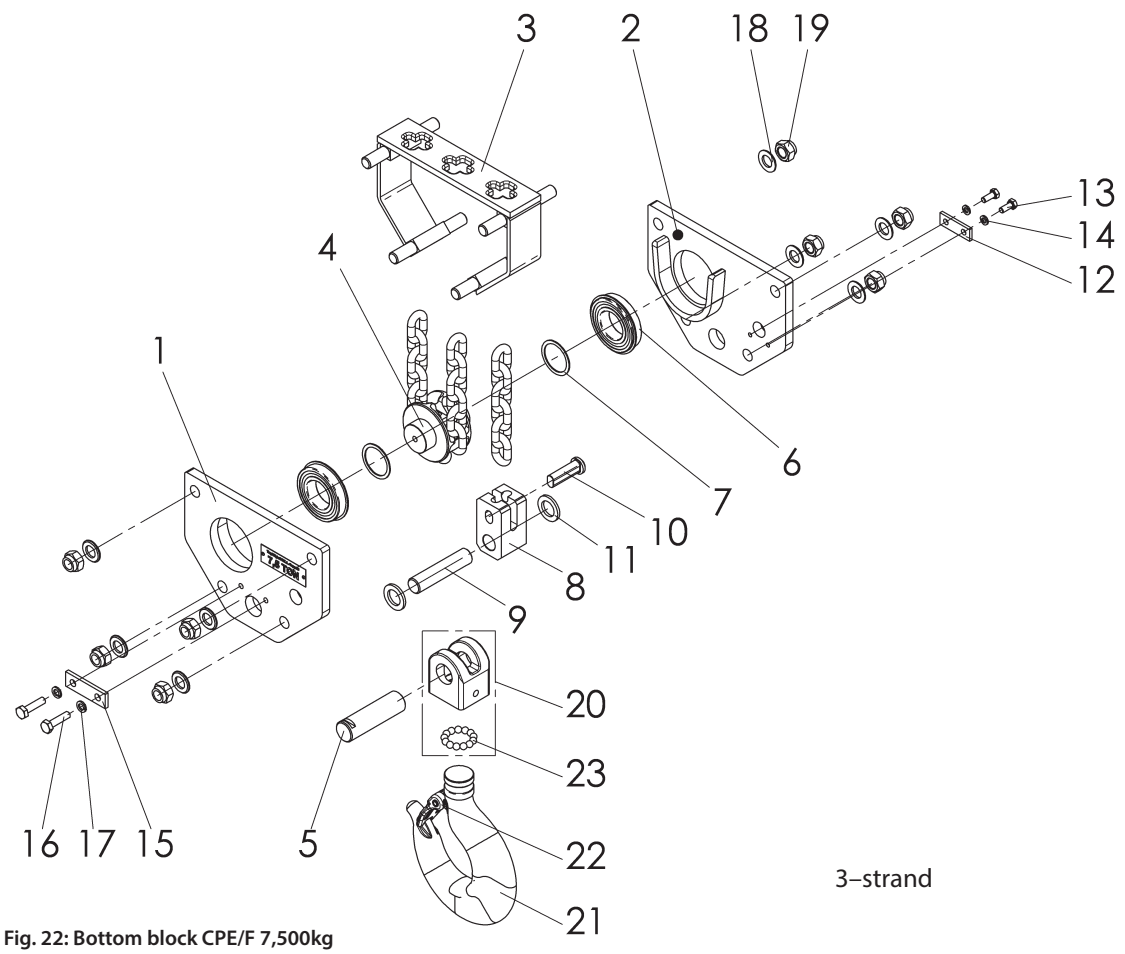


Fig. 22: Bottom block CPE/F 7,500kg

No.	Description	Piece	Item no. CPE/F 75-1.6
1 – 19	**Bottom block, cpl. without hook***	**1**	**00600374**
1	Side plate, right	1	00600359
2	Side plate, left	1	00600358
3	Chain guide, cpl.	1	00600362
4	Load roller	1	00609505
5	Load hook pin	1	00620015
6	Deep groove ball bearing	2	09151113
7	Shim ring	2	09121221
8	Chain anchor	1	00108301
9	Support pin	1	00600365
10	Hinge pin	1	00600371
11	Washer	2	09121008

*To be ordered as sets. Subitems cannot be ordered individually.

No.	Description	Piece	Item no. CPE/F 75-1.6
12	Axle holder	1	09141001
13	Hexagonal screw	2	09101013
14	Spring washer	2	09122016
15	Axle holder	1	00620016
16	Hexagonal screw	2	09101016
17	Spring washer	2	09122013
18	Washer	8	N09121224
19	Hexagonal nut	8	09115158
20	Support hook connector, cpl.	1	00407792
21	**Hook, cpl. with safety latch kit***	**1**	**00401050**
22	Safety latch kit	1	00408769
23	Ball set, 13 pieces	1	00407790

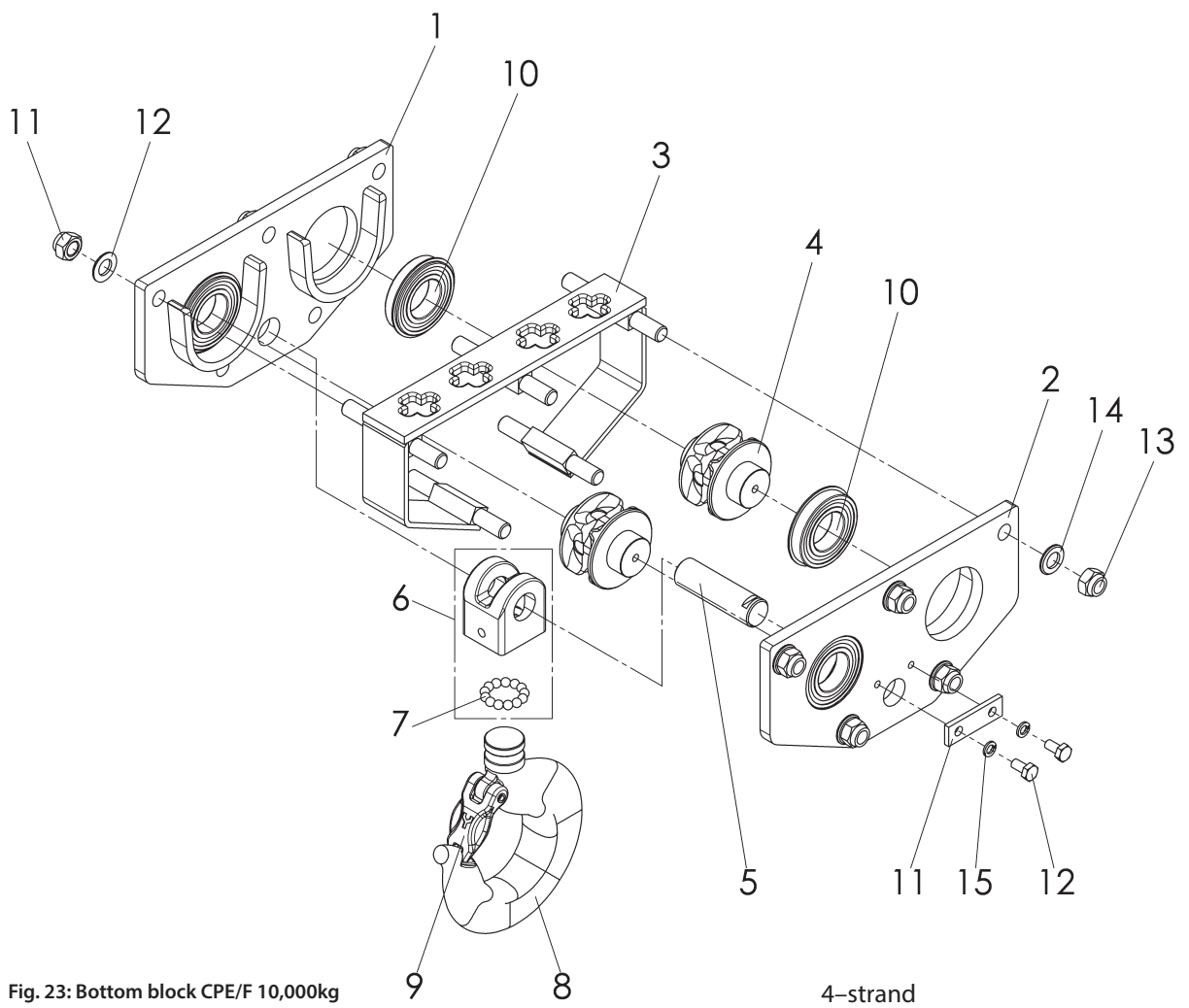


Fig. 23: Bottom block CPE/F 10,000kg

No.	Description	Piece	Item no. CPE/F 100-2
1 – 15	**Bottom block, cpl.***	**1**	**00620014**
1	Side plate, right	1	00620009
2	Side plate, left	1	00620006
3	Chain guide, cpl.	1	00620013
4	Load roller	2	00609505
5	Load hook pin	1	00620015
6	Hook connector, cpl.	1	00407792
7	Ball set, 13 pieces	1	00407790

*To be ordered as sets. Subitems cannot be ordered individually.

No.	Description	Piece	Item no. CPE/F 100-2
8	**Hook, cpl.***	**1**	**00401580**
9	**Safety latch kit***	**1**	**00408769**
10	Deep groove ball bearing	4	09151113
11	Axle holder	1	00620016
12	Hexagonal screw	2	09101016
13	Hexagonal nut	10	09115158
14	Washer	10	09121224
15	Spring washer	2	09122005

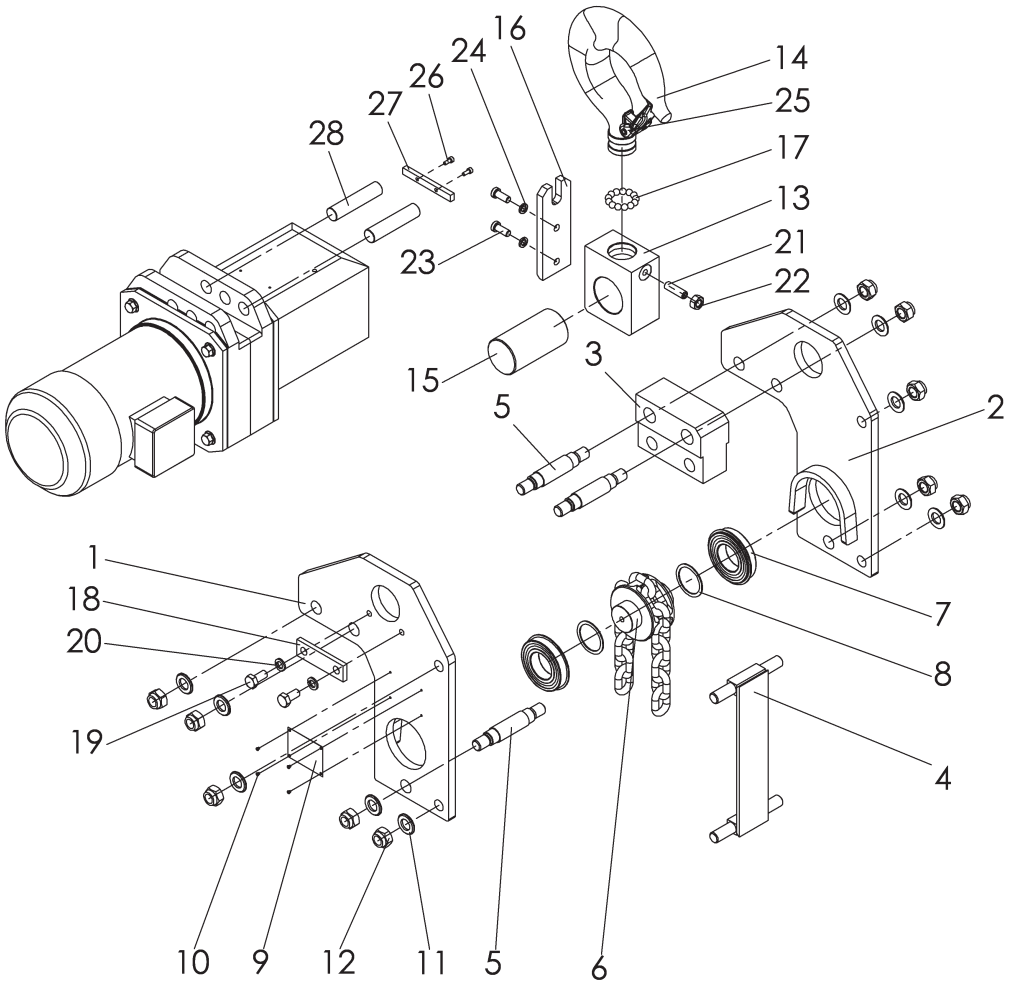


Fig. 24: Support frame CPE/F 7,500kg

No.	Description	Piece	Item no. CPE/F 75-1.6
1 – 12	Support frame, cpl. without hooks	1	00600373
1	Support frame, right	1	00600370
2	Support frame, left	1	00600369
3	Plate	1	00600379
4	Cover, cpl.	1	00600377
5	Bolt	2	00620002
6	Load roller	1	00609505
7	Deep groove ball bearing	2	09151113
8	Shim	2	09121221
9	Rating plate	1	00600375
10	Blind rivet	4	09126072
11	Washer	10	09121224
12	Hexagonal nut	10	09115158
13 – 24	Support hook, cpl.	1	00600368
13	Support hook connector	1	00620017

*To be ordered as sets. Subitems cannot be ordered individually.

No.	Description	Piece	Item no. CPE/F 75-1.6
14	Hook, cpl.	1	00401050
15	Support hook pin	1	00620029
16	Fuse plate	1	00620019
17	Ball set, 13 pieces	1	00407790
18	Axle holder	1	00620030
19	Hexagonal screw	2	09101007
20	Spring washer	2	09122017
21	Grub screw	1	09114091
22	Hexagonal nut	1	09115029
23	Cheese-head screw	2	09102036
24	Spring washer	2	09122033
25	Safety latch kit	1	00408769
26	Support pin safety device	1	00609448
27	Support pin	2	00609388
28	Cheese-head screw	2	09102150

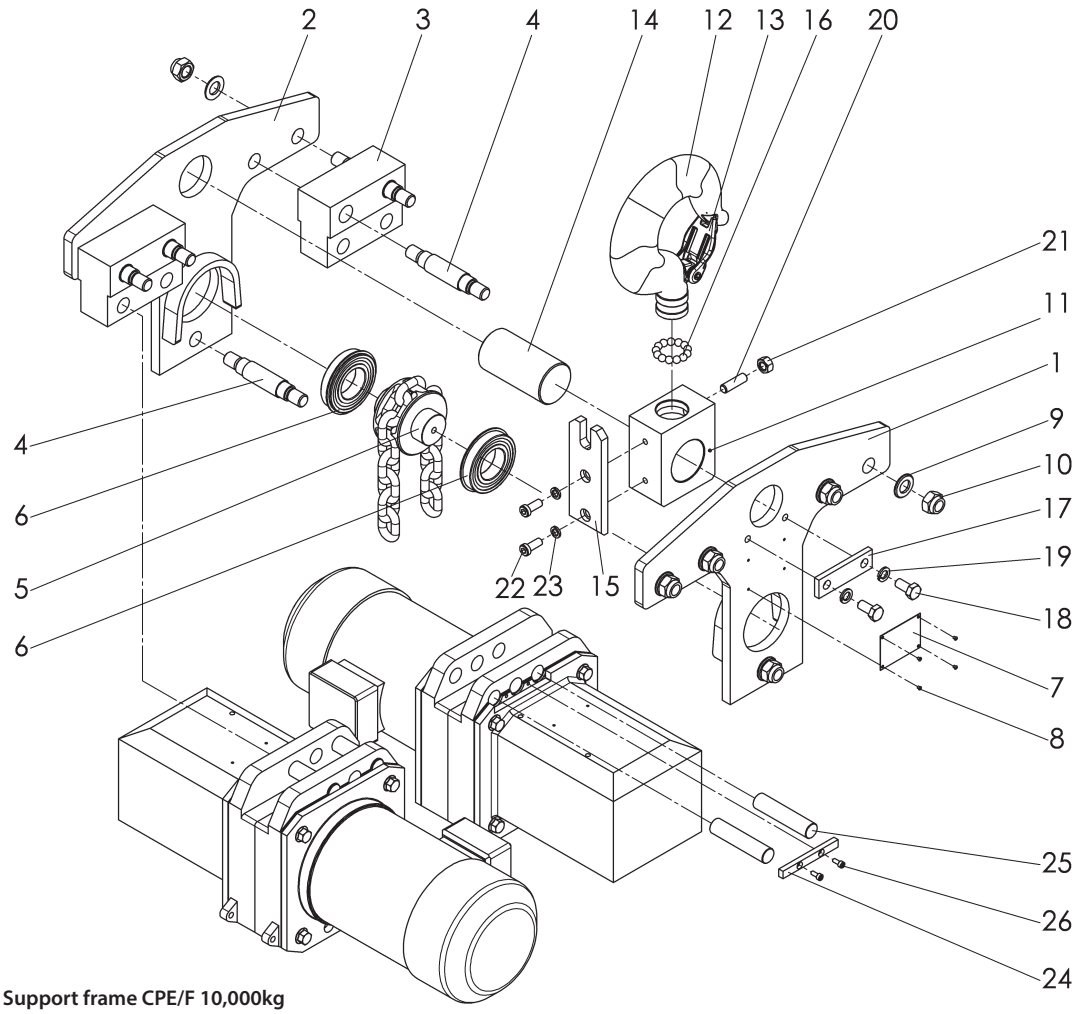


Fig. 25: Support frame CPE/F 10,000kg

No.	Description	Piece	Item no. CPE/F 100-2
1 – 10	**Support frame, cpl.***	**1**	**00620020**
1	Support frame, right	1	00620021
2	Support frame, left	1	00620001
3	Plate	2	00600379
4	Bolt	5	00620002
5	Load roller	1	00609505
6	Deep groove ball bearing	2	09151113
7	Rating plate	1	00600051
8	Blind rivet	4	09126072
9	Washer	10	09121224
10	Hexagonal nut	10	09115158
11 – 23	**Support hook, cpl.***	**1**	**00620031**
11	Support hook connector	1	00620017
12	Hook, cpl.	1	00401580

*To be ordered as sets. Subitems cannot be ordered individually.

No.	Description	Piece	Item no. CPE/F 100-2
13	Safety latch kit	1	00408769
14	Support hook pin	1	00620029
15	Fuse plate	1	00620019
16	Ball set, 13 pieces	1	00407790
17	Axle holder	1	00620030
18	Hexagonal screw	2	09101007
19	Spring washer	2	09122017
20	Grub screw	1	09114091
21	Hexagonal nut	1	09115029
22	Cheese-head screw	2	09102036
23	Spring washer	2	09122033
24	Support pin safety device	1	00609448
25	Support pin	2	00609388
26	Cheese-head screw	2	09102150

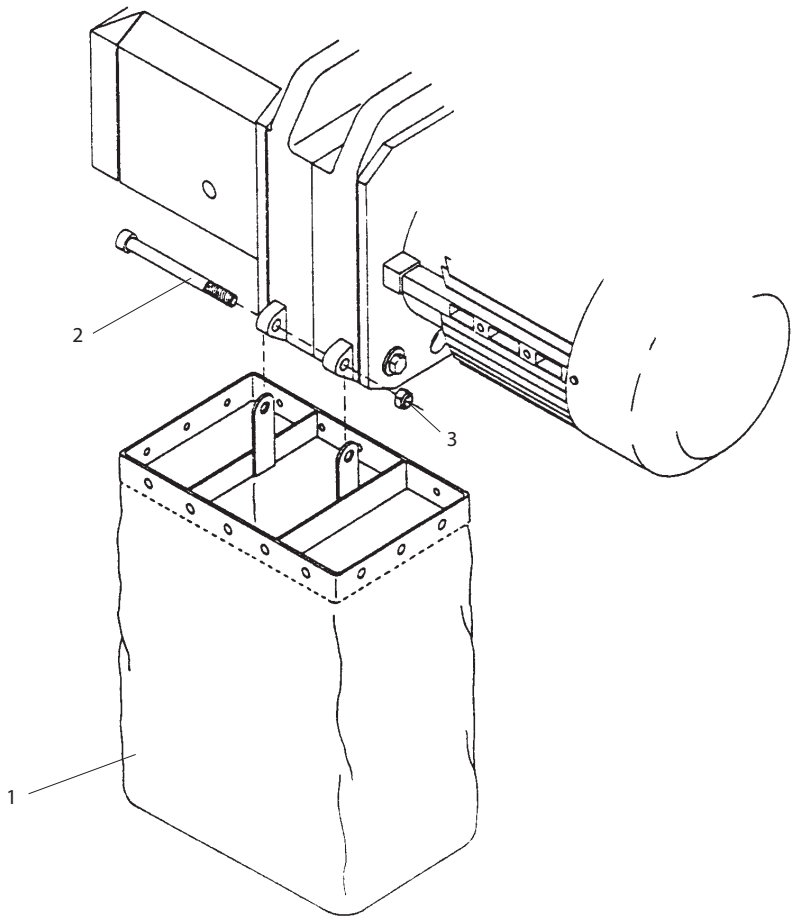


Fig. 26: Chain box

No.	Description	Piece	Item no. **for all devices**
1	Chain box cpl. for 13 m chain	1	06109467
1	Chain box cpl. for 21 m chain	1	06109468
1	Chain box cpl. for 25 m chain	1	06109952
1	Chain box cpl. for 30 m chain	1	192053187
2	Cheese-head screw	1	09102255
3	Hexagonal nut	1	09115098

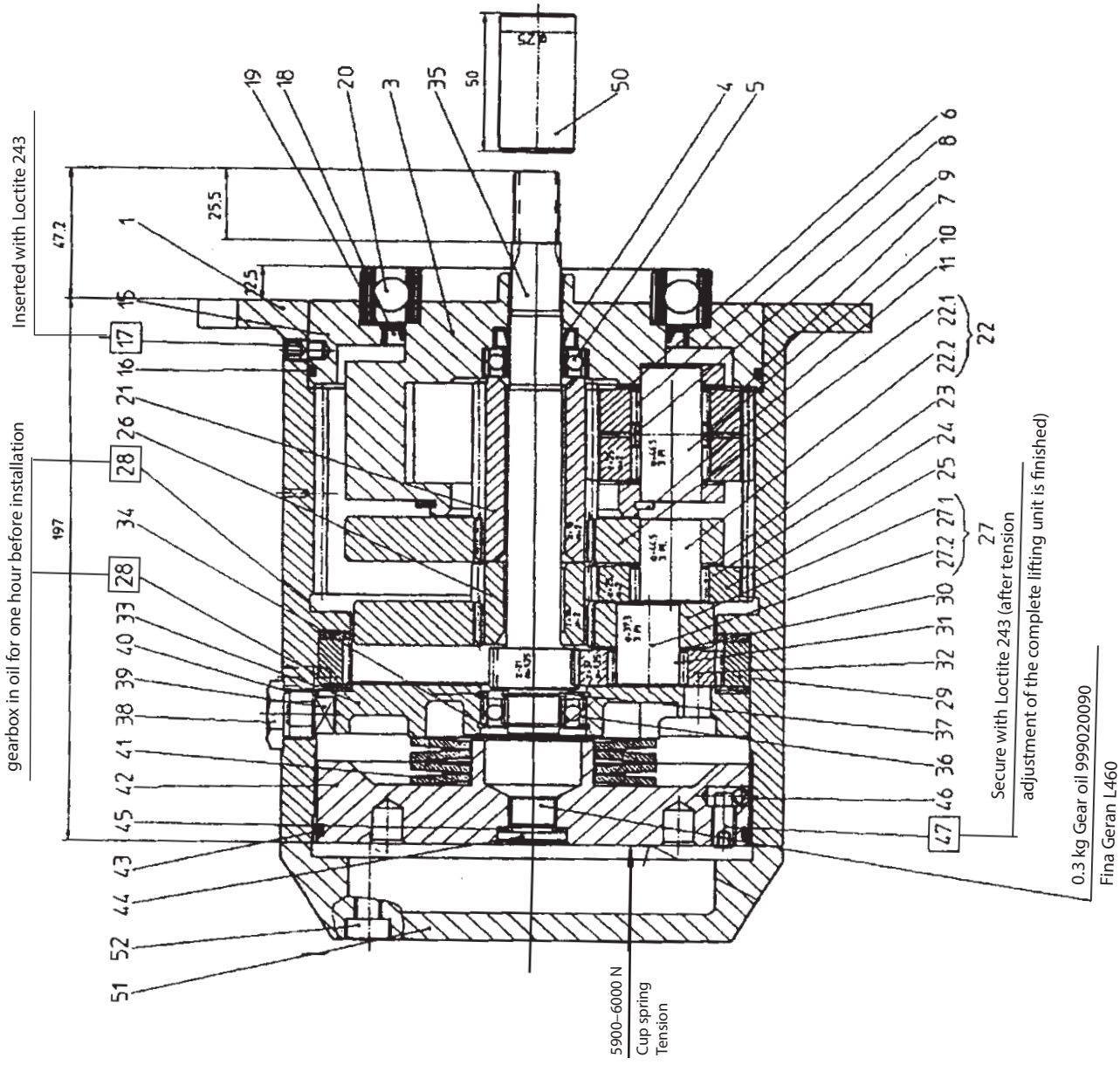

Inserted with Loctite 243
gearbox in oil for one hour before installation
5900–6000 N
Cup spring
Tension
Secure with Loctite 243 (after tension
adjustment of the complete lifting unit is finished)
0.3 kg Gear oil 999020090
Fina Geran L460

Fig. 27: Soak

			Item no.	Item no.
No.	Description	Piece	**CPE/F 16 / 20 32 / 40**	**CPE/F 25 / 30 / 50 75 / 100**
	Planetary gear, cpl.	**1**	**00600231**	**00600230**
1	Gearbox housing	1	00600237	00600237
2	Ring	1	00600238	00600238
3	Planetary gear carrier	1	00600239	00600239
4	Rotary shaft seal	1	09172110	09172110
5	Deep groove ball bearing	1	09150043	09150043
6	Thrust washer	6	09153043	09153043
7	Planetary wheel	3	00600240	00600240
8	Needle cage	6	09153090	09153090
9	Spacer ring	3	00600241	00600241
10	Planetary wheel pin	3	00600242	00600242
11	Circlip	1	09129070	09129070
13	Ring	1	00600243	00600243
14	Circlip	1	09129071	09129071
15	Bearing ring	1	00600244	00600244
16	O-ring	1	09171352	09171352
17	Grub screw	1	09114134	09114134
18	Rotary shaft seal	1	09172111	09172111
19	Shim	1	09121234	09121234
20	Deep groove ball bearing	1	09151101	09151101
21	Insertion pinion	1	00600245	00600245
22	Planetary gear carrier, cpl.	1	00600246	00600246
22.1	Carrier disc	1	00600247	00600247
22.2	Planetary wheel pin	3	00600248	00600248
23	Thrust washer	3	09153043	09153043
24	Needle cage	3	09153090	09153090
25	Planetary wheel	3	00600249	00600249
26	Insertion pinion	1	00600250	00600250
27	Planetary gear carrier, cpl.	1	00600263	00600251
27.1	Carrier disc	1	00600264	00600252
27.2	Planetary wheel pin	3	00600253	00600253
28	Friction disc	2	00600254	00600254
29	Gear rim	1	00600255	00600255
30	Thrust washer	3	09153043	09153043
31	Needle cage	3	09153090	09153090
32	Planetary wheel	3	00600265	00600171
33	Bearing washer	1	00600256	00600256
34	Circlip	2	09130034	09130034
35	Gear shaft	1	00600266	00600257
36	Deep groove ball bearing	1	09150043	09150043
37	Circlip	2	09129029	09129029
38	Locking screw	1	00600258	00600258
39	Locking pin	1	00600259	00600259
40	O-ring	1	09171169	09171169
41	Cup spring	4	09120041	09120041
42	Clamping screw	1	00600260	00600260
43	O-ring	1	09171170	09171170
44	Screw plug	1	09110052	09110052
45	Sealing ring	1	09179004	09179004
46	Ball	1	09159011	09159011
47	Grub screw	1	09114136	09114136
48	Shim	1	09121056	09121056
50	Coupling	1	00608879	00608879
51	Gearbox cover	1	00600262	00600262
52	Cheese-head screw	4	09102019	09102019

ATTENTION: The gearbox must be ordered as a complete unit. The subheadings are given for reference purposes.

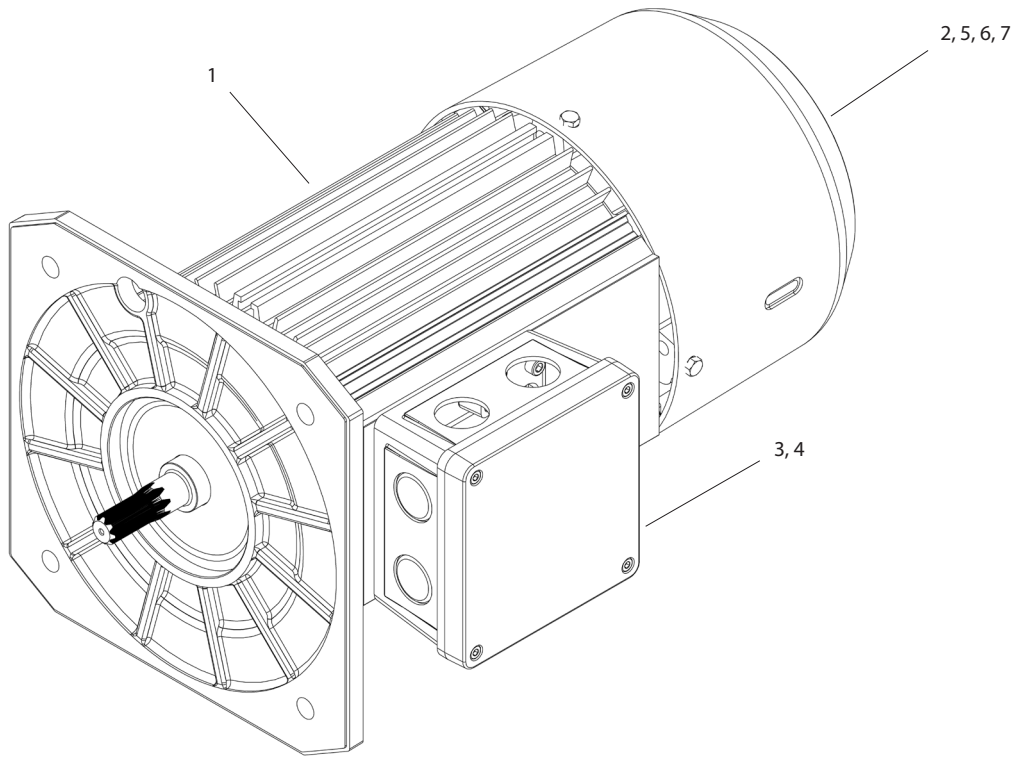


Fig. 28: Motor

No.	Description	Item no. **CPE** (1-speed)	Item no. **CPEF** (2-speeds)
1	Brake motor 400 V, 3 Ph, 50 Hz IP54	00608871	00608875
	Brake motor 400 V, 3 Ph, 50 Hz IP55	00600302	00600303
	Brake motor 400 V, 3 Ph, 50 Hz IP55/T2	00600704	00600466
	Brake motor 400 V, 3 Ph, 60 Hz IP55	-	00600323
	Brake motor 500 V, 3 Ph, 50 Hz IP55	00600311	00600399
	Brake motor 525 V, 3 Ph, 50 Hz IP55	00600162	-
	Brake motor 690 V, 3 Ph, 60 Hz IP55	00600346	00600349
2	Plastic fan cover	00600655	00600655
	Sheet metal fan guard (optional)	00600189	00600189
3	Terminal box housing (empty)	00600190	00600190
4	Brake rectifier B40	00650709	00650709
	Brake rectifier G30 (old version)	00600110	00600110
5	Brake cpl. ZFL30	00600715	00600715
	Brake cpl. EFB3 (old version), consisting of:		
	- End shield B-sided	00600114	00600114
	- Small parts cpl.	00600194	00600194
	- Brake fan	00600112	00600112
	- Anchor plate, stainless steel	00600092	00600092
6	Brake fan ZFL30 (optional)	192035670	192035670
7	End shield B-side ZFL30	192036832	192036832

ATTENTION: When ordering spare parts, be sure to state the serial number and year of manufacture of the motor!

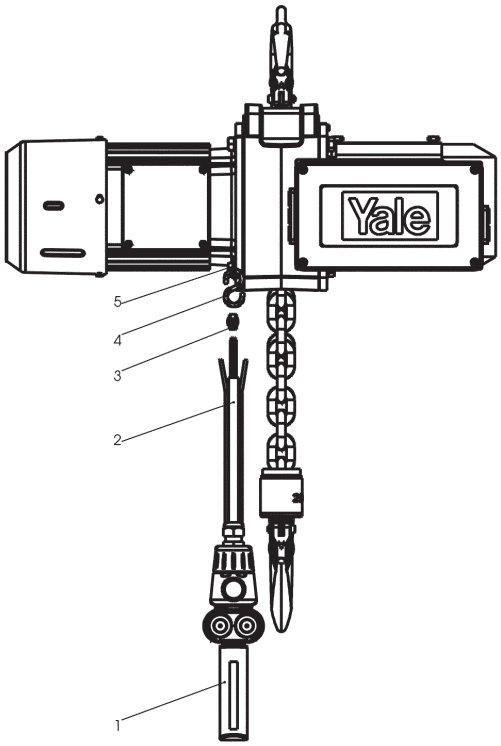


Fig. 29a: Contactor control

No.	Description	Piece	Item no. **CPE** (1-speed)	Item no. **CPE** (2-speeds)
1	Control switch with emergency stop	1	N00670298	N00670299
2	Control cable with integrated strain relief	*	N00670603	N00670603
3	Cable clamps	2	N00670580	N00670580
4	S-hook	1	N00717029	N00717029
5	Lifting key	1	N00608882	N00608882

*Piece goods

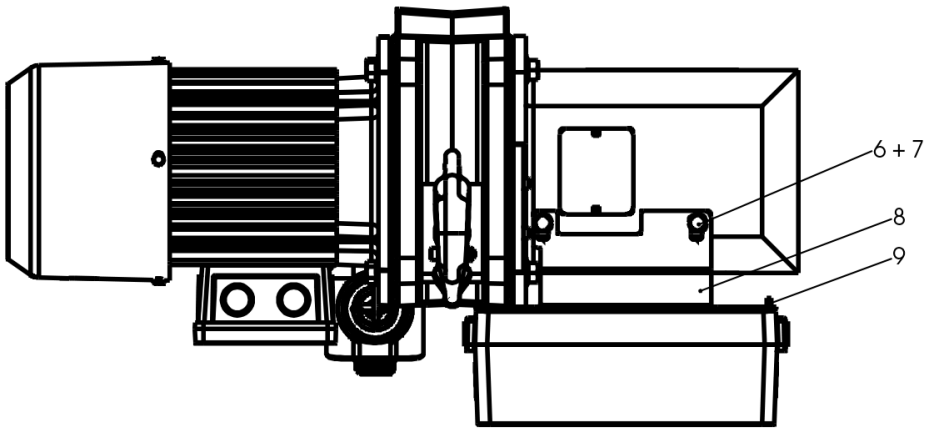


Fig. 29b: Contactor control

No.	Description	Piece	Item no.	
			CPE	**CPEF**
6	Hexagonal screw	2	N09101091	N09101091
7	Spring washer	2	N09122004	N09122004
8	Mounting plate contactor control	1	N00600529	N00600529
9	Flat-head screw	4	N09107023	N09107023

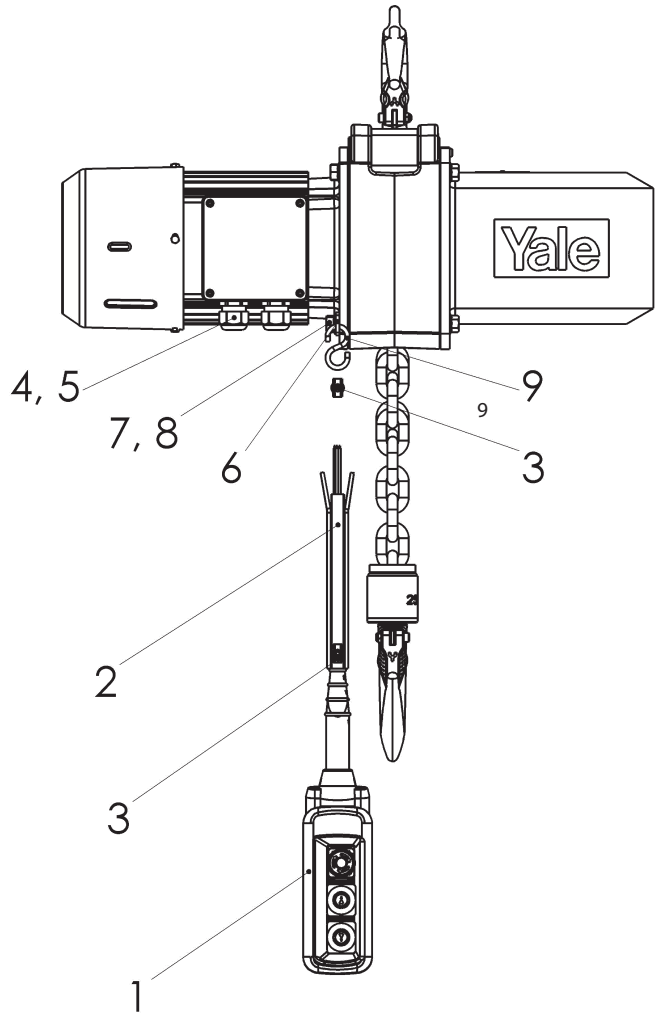


Fig. 30: Direct control for lifting unit

No.	Description	Piece	Item No	
			CPE	**CPEF**
1	Control switch with emergency stop	1	00609454	00605455
2	Control cable with integrated strain relief	*	00670603	00670603
3	Cable clamps	2	00670580	00670580
4	Screw connection M25	2	09184102	09184102
5	Locknut M25	2	09184107	09184107
6	Lifting key	1	00608882	00608882
7	Hexagonal nut	1	09101661	09101661
8	Washer	1	09121006	09121006
9	S-hook	1	00717029	00717029

*Piece goods

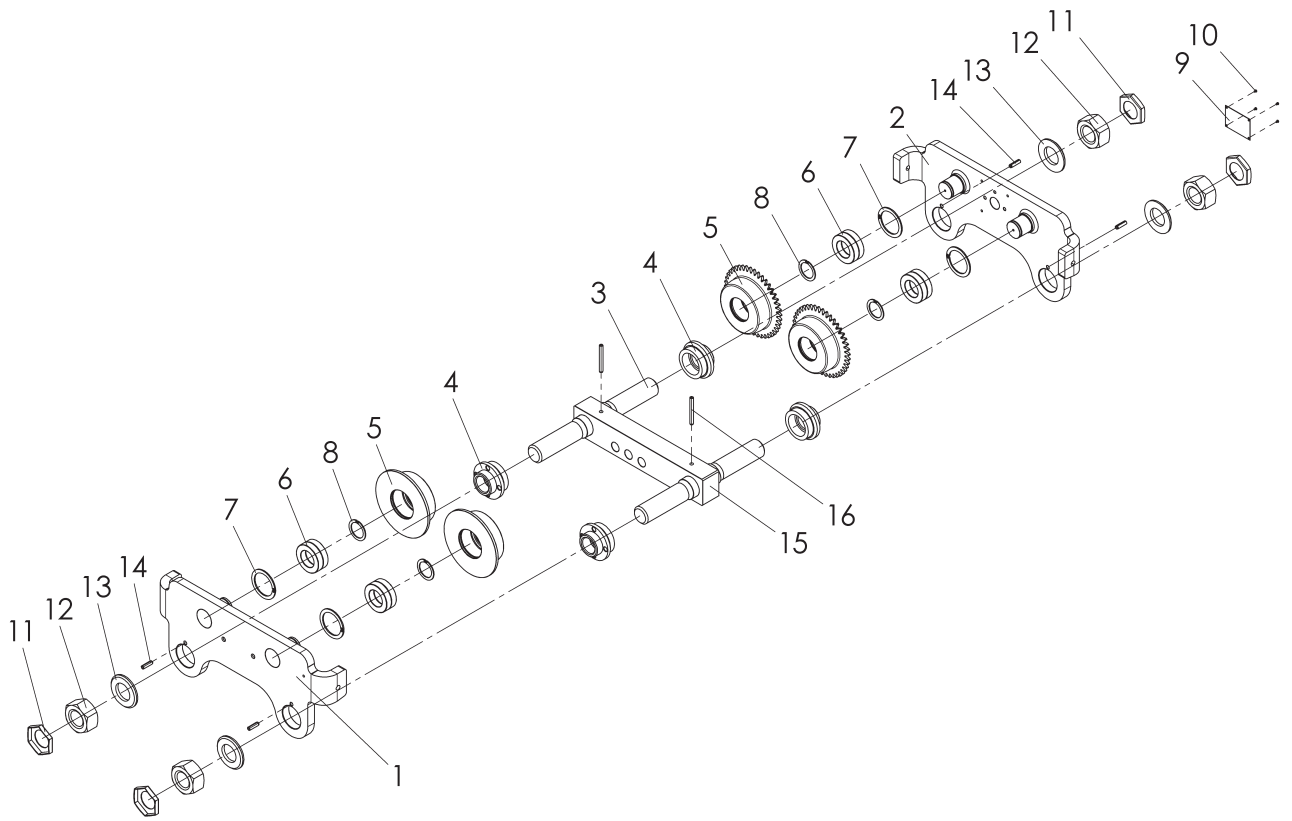


Fig. 31: Push trolley

No.	Description	Piece	Item no. for CPE(F) up to 5,000 kg
	Push trolley VTP-A cpl. CPE* Flange width 98–180 mm	**1**	**05809768**
	Push trolley VTP-B cpl. CPE* Flange width 180–300 mm	**1**	**05809769**
1	Side plate	1	00550149
2	Side plate	1	00550151
3	Crossbeam (track beam area A)	2	00552008
	Crossbeam (track beam area B)	2	00552009
4	Round nut	4	00559168
5	Track roller, untoothed	4	00552018
6	Deep groove ball bearing	8	09151079

No.	Description	Piece	Item no. for CPE(F) up to 5,000 kg
7	Circlip	4	09130060
8	Circlip	4	09129003
9	Rating plate	1	00550259
10	Half-round grooved nail	4	09128004
11	Lock nut	4	09115155
12	Hexagonal nut	4	09115156
13	Washer	4	09121213
14	Locking sleeve	4	09134120
15	Centre beam	1	00550231
16	Locking sleeve	2	09134002

*The push trolley must be ordered as a complete unit. The subheadings are given for reference purposes.

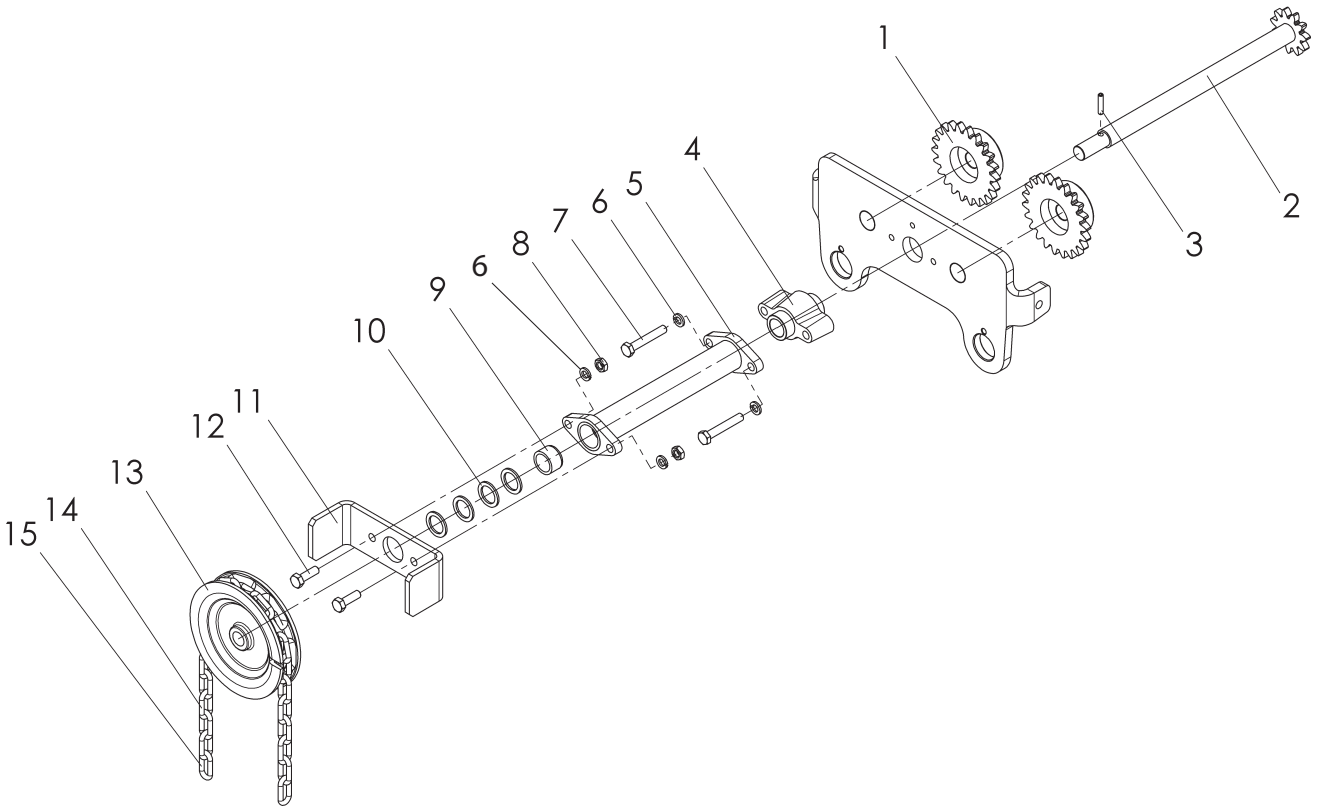


Fig. 32: Reel drive for trolley CPE/F 1,600 –- 5,000kg (other parts see push trolley)

No.	Description	Piece	Item no. CPE/F 16-8 – 50-2
	Reel trolley VTG-A cpl. CPE* Flange width 98–180 mm	**1**	**05909770**
	Reel trolley VTG-B cpl. CPE* Flange width 180–300 mm	**1**	**05909771**
1	Track roller, toothed	2	00552023
2	Drive shaft	1	00719671
3	Locking sleeve	1	09134052
4	Bearing block	1	00508229
5	Guide tube	1	00719111
6	Washer	4	09121001

No.	Description	Piece	Item no. CPE/F 16-8 – 50-2
7	Hexagonal screw	2	09101050
8	Hexagonal nut	2	09115098
9	Socket	1	09102503
10	Shim ring	4	09121205
11	Hand chain guide	1	00558062
12	Hexagonal screw	2	09101014
13	Hand chain sprocket	1	00558061
14	Hand chain	5 m	04307654
15	Hand chain connector	1	00404733

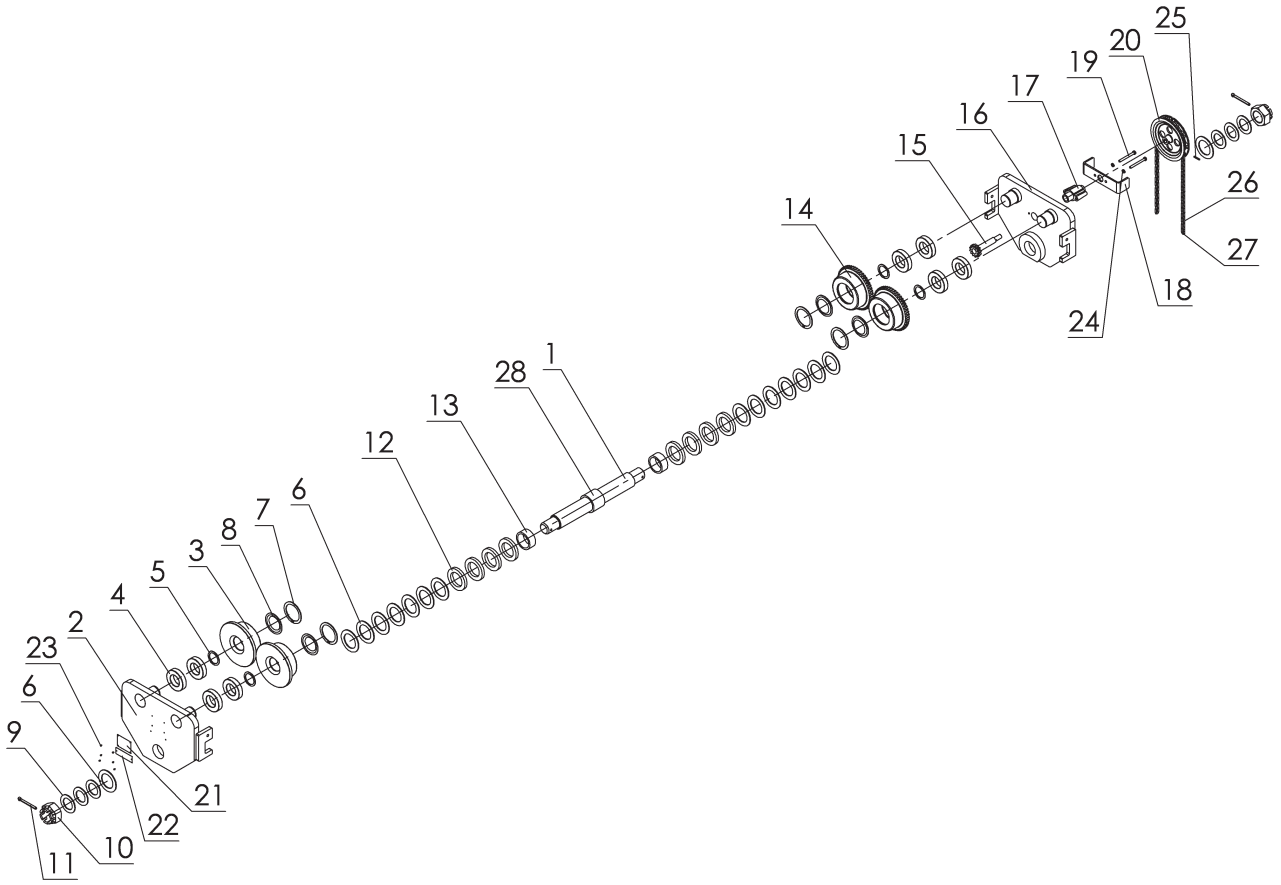


Fig. 33: Reel drive for trolley CPE/F 7,500 – 10,000kg

No.	Description	Piece	Item no. CPE/F 75 + 100
	Reel trolley cpl. HTG (VTG) CPE 75/100 Block width 125–310 mm	**1**	**05300003**
1	Crossbeam	1	00530009
2	Side plate, cpl.	1	00530004
3	Track roller, toothed	2	00530006
4	Deep groove ball bearing	8	09150020
5	Circlip	4	09129010
6	Washer	16	00530012
7	Circlip	4	00530018
8	Cap	4	09130008
9	Washer	6	00530013
10	Castellated nut	2	00530014
11	Split pin	2	09125035
12	Washer	8	00530011
13	Spacer sleeve	2	00530044

No.	Description	Piece	Item no. CPE/F 75 + 100
14	Track roller, toothed	2	00530007
15	Drive shaft, cpl.	1	00530016
16	Side plate drive side, cpl.	1	00530005
17	Bearing block	1	00530015
18	Hand chain guide	1	00558062
19	Hexagonal screw	2	09101038
20	Hand chain sprocket	1	00558061
21	Rating plate	1	00508228
22	Load capacity plate	1	00407702
23	Grooved pin	4	09128004
24	Spring washer	2	09122016
25	Clamping pin	1	09134082
26	Hand chain	5 m	04307654
27	Hand chain connector	1	00404733
28	Spacer sleeve	1	00620032

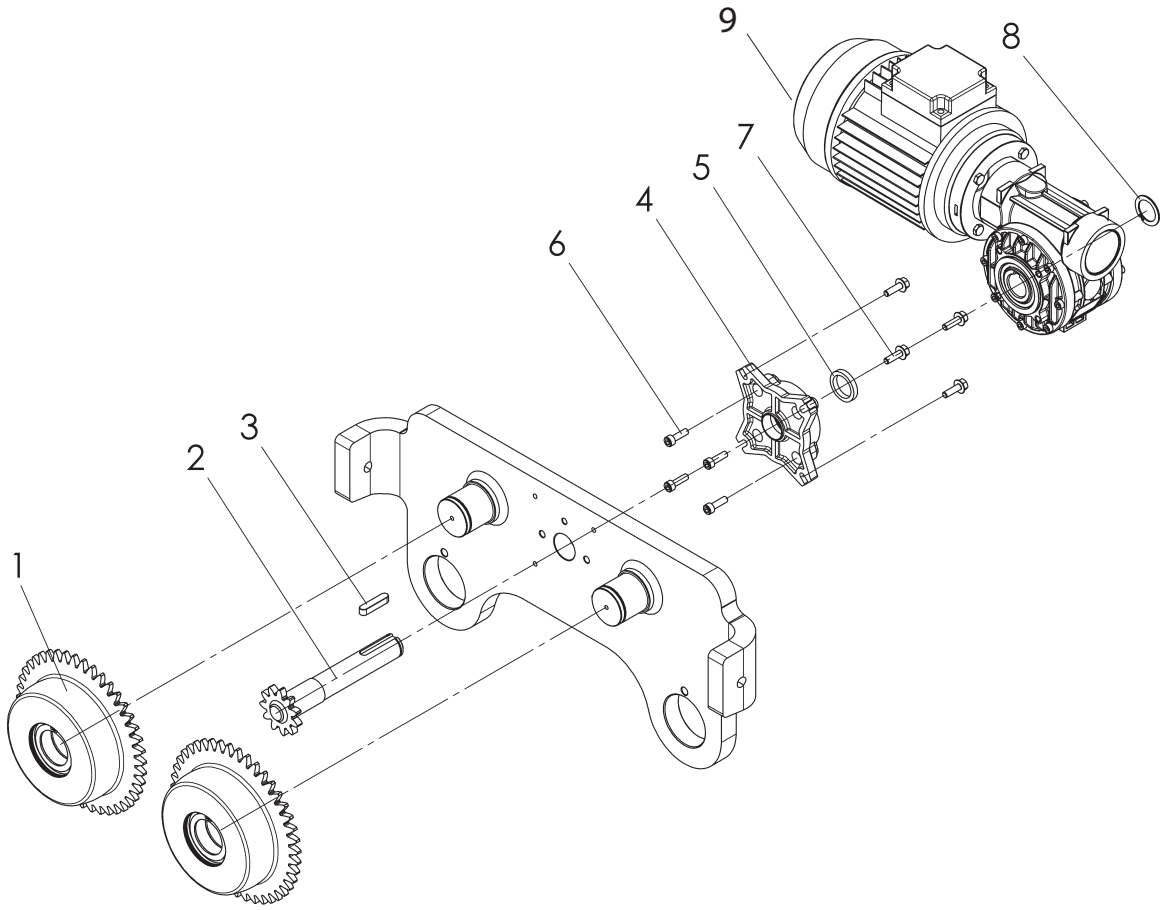


Fig. 34: Electric drive for trolley CPE/F 1,600 – 5,000kg (other parts see push trolley)

No.	Description	Piece	Item no.	
			CPE/F 16-8 – 50-2	
1	Track roller, toothed	2	00508214	
2	Drive shaft	1	00550209	
3	Key	1	09131047	
4	Flange	1	00550211	
5	Spacer washer	1	00550212	
6	Cheese-head screw	4	09102146	
7	Hexagonal screw	4	09101700	
8	Circlip	1	09129016	
			VTE	**VTEF**
9	Drive unit 400 V, 3 Ph, 50 Hz, IP55	1	00710007	00710008
	Drive unit 400 V, 3 Ph, 50 Hz, IP55/T2	1	00710353	192034910
	Drive unit 500V, 3 Ph, 50 Hz, IP55	1	00710305	00710306
	Drive unit 220V, 3 Ph, 60 Hz, IP55	1	-	00710298

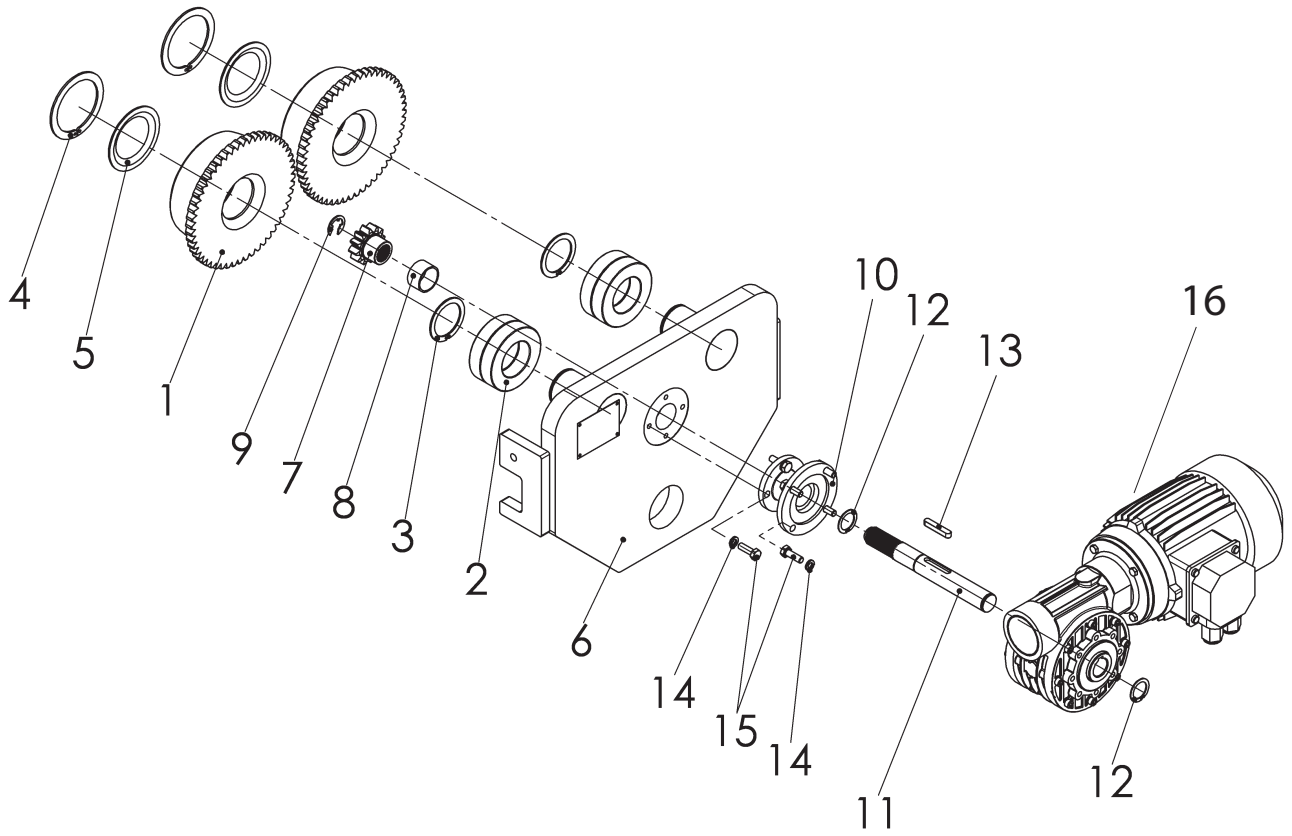


Fig. 35: Electric drive for trolley CPE/F 7,500 – 10,000kg (other parts see push trolley)

No.	Description	Piece	Item no. CPE/F 75 – 100
1	Track roller, toothed	2	00530007
2	Deep groove ball bearing	4	09150020
3	Circlip	2	00530038
4	Circlip	2	00530018
5	Cap	2	00530008
6	Side plate drive side, cpl.	1	00620038
7	Pinion	1	00620022
8	Socket	1	09153089
9	Lock washer	1	09123027
10	Flange	1	00620024

No.	Description	Piece	Item no. CPE/F 75 – 100	
11	Drive shaft	1	00620023	
12	Circlip	1	09129001	
13	Key	1	09131072	
14	Spring washer	8	09122004	
15	Hexagonal screw	8	09101014	
			VTE	**VTEF**
16	Drive unit 400 V, 3 Ph, 50 Hz, IP55	1	00620044	00620043
	Drive unit 220 V, 3 Ph, 60 Hz, IP55	1	-	00620054
	Drive unit 400 V, 3 Ph, 50 Hz, IP55/T2	1	00710422	-

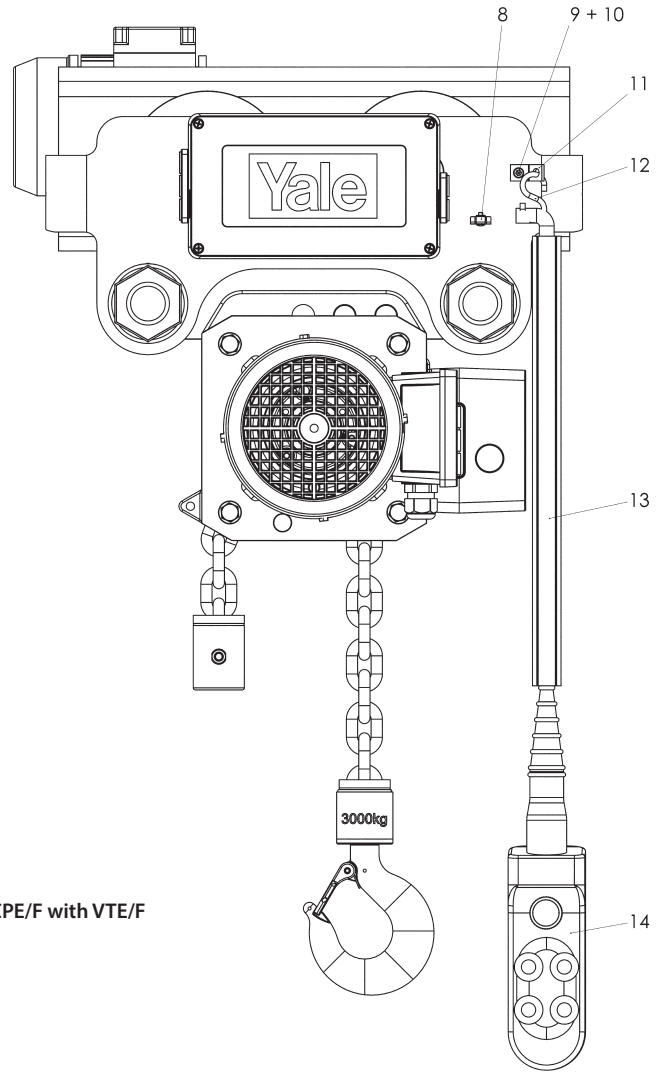


Fig. 36a: Contactor control CPE/F with VTE/F

No.	Description	Piece	Item no.			
			CPE + VTE	**CPEF+ VTE**	**CPE + VTEF**	**CPEF + VTEF**
8	Cable clamp	2	00670580	00670580	00670580	00670580
9	Cheese-head screw	1	09102026	09102026	09102026	09102026
10	Spring washer	1	09122031	09122031	09122031	09122031
11	Lifting key	1	00719742	00719742	00719742	00719742
12	S-hook	1	00717029	00717029	00717029	00717029
	Control line direct control	1	00600222	00600222	00600222	00600222
13	Control line contactor control	1	07318271	07318271	07318271	07318271
14	Control switch direct control	1	00609610	00609832	00609833	00609611
14	Control switch contactor control	1	00670368	00670369	00670370	00670371

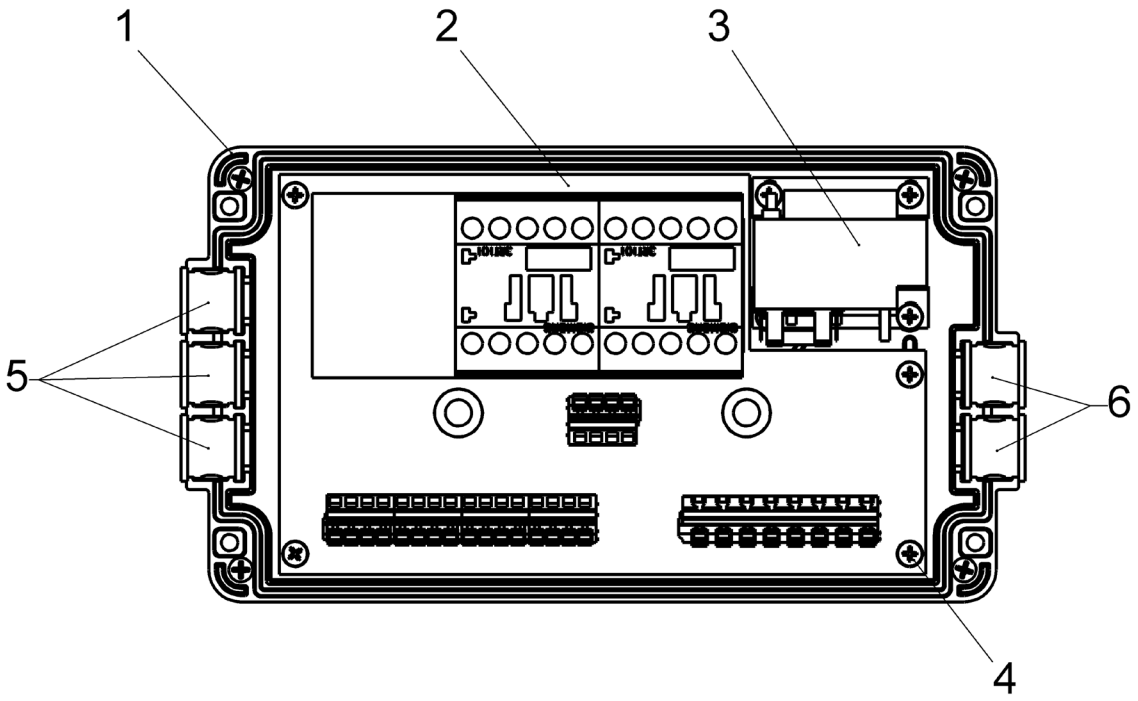


Fig. 36b: Trolley contactor control (1-speed) VTE

No.	Description	Piece	Item no.
	Contactor control VTE cpl. for Δ 230 V/Y 400 V	1	00670685
1	Housing	1	00670862
2	Control board	1	00670478
3	Transformer	1	00719737
4	Self-tapping thread cutting screw	8	09108054
5	Cable grommet	3	00670687
6	Cable grommet	2	00670213

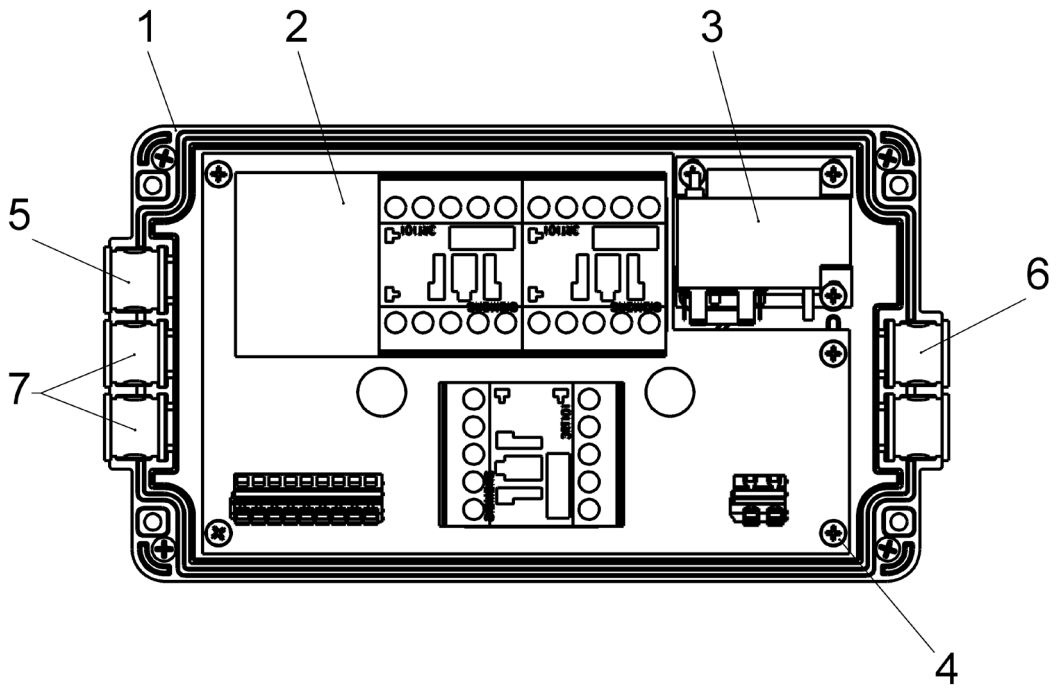


Fig. 36c: Lifting unit contactor control (1–speed) CPE

No.	Description	Piece	Item no.
	Contactor control CPE cpl. for Δ 230 V/Y 400 V	1	00670683
1	Housing	1	00670862
2	Control board	1	00670601
3	Transformer	1	00719737
4	Self-tapping thread cutting screw	8	09108054
5	Cable grommet	2	00670687
6	Cable grommet	1	00670213
7	Cable grommet	2	00670515

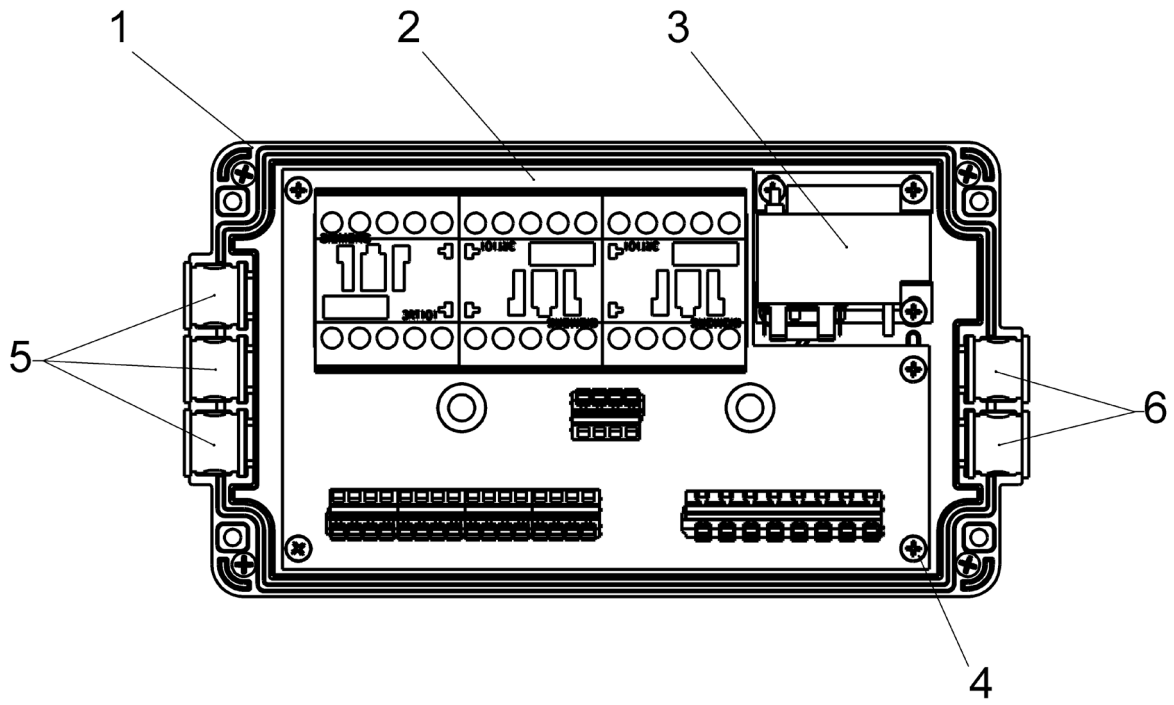


Fig. 36d: Contactor control trolley (2–speed) VTEF

No.	Description	Piece	Item no.
	Contactor control VTEF cpl. for Δ 230 V/Y 400 V	1	00670686
1	Housing	1	00670862
2	Control board	1	00670664
3	Transformer	1	00719737
4	Self-tapping thread cutting screw	8	09108054
5	Cable grommet	3	00670687
6	Cable grommet	2	00670213

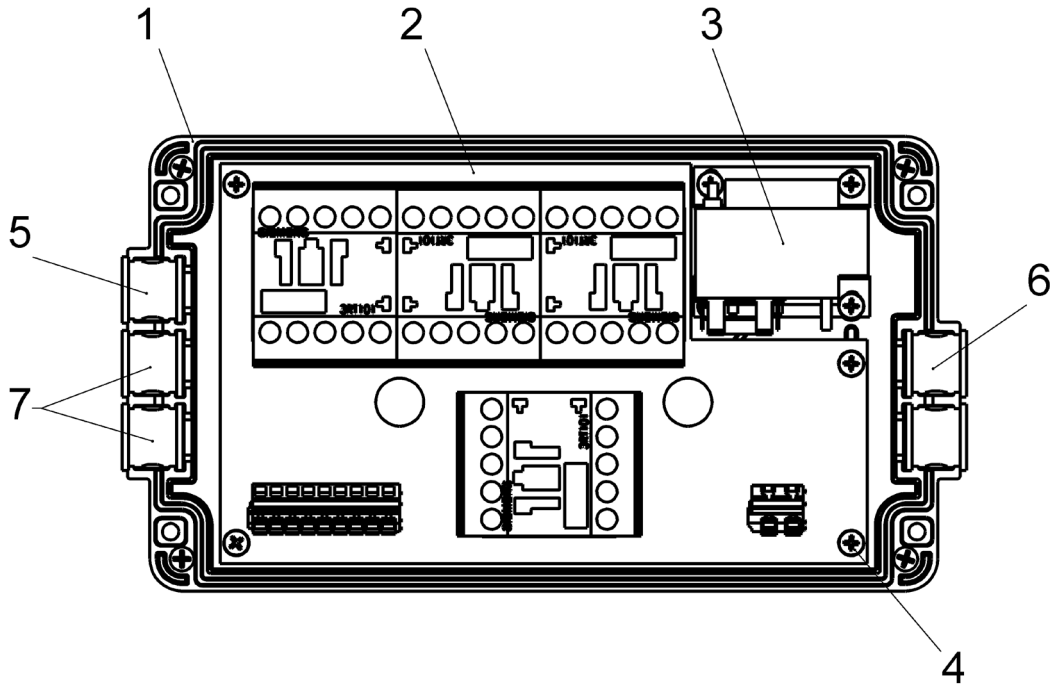


Fig. 36e: Contactor control hoist (2 speeds) CPEF

No.	Description	Piece	Item no.
	Contactor control CPEF cpl. for Δ 230 V/Y 400 V	1	00670684
1	Housing	1	00670862
2	Control board	1	00670665
3	Transformer	1	00719737
4	Self-tapping thread cutting screw	8	09108054
5	Cable grommet	2	00670687
6	Cable grommet	1	00670213
7	Cable grommet	2	00670515

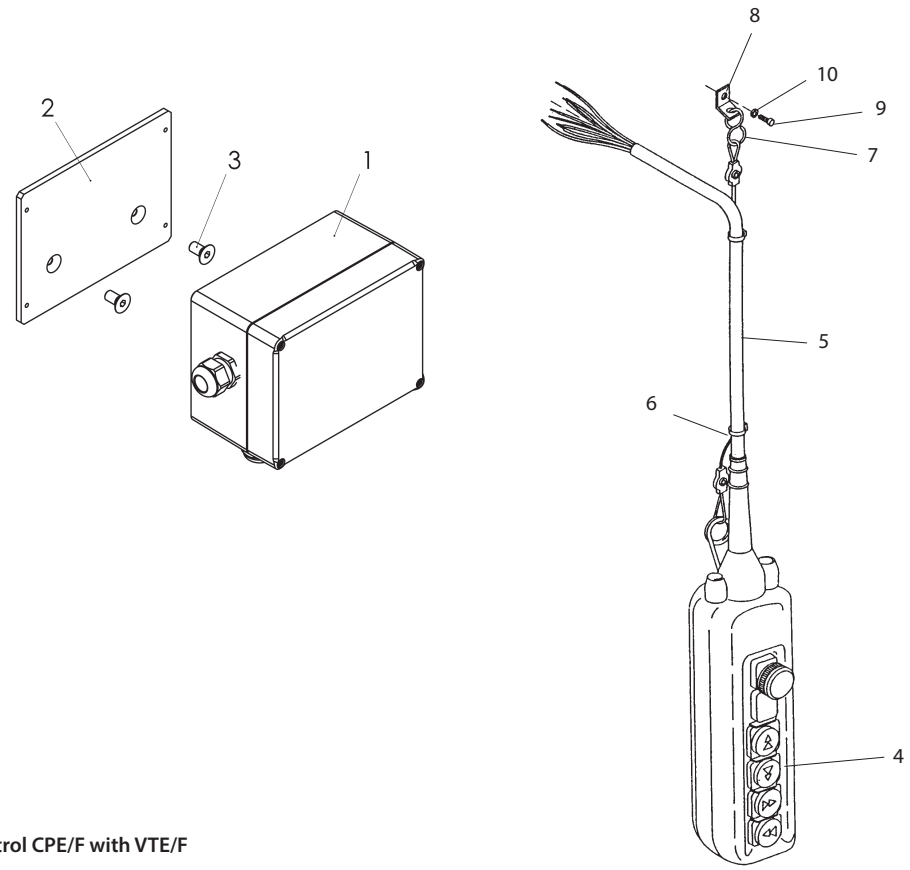


Fig. 37: Direct control CPE/F with VTE/F

No.	Description	Piece	Item no.			
			CPE + VTE	**CPEF + VTE**	**CPE + VTEF**	**CPEF + VTEF**
1	Direct control (incl. items 2+3)	1	06100058	06100059	06100060	06100061
2	Mounting plate	1	00719741	00719741	00719741	00719741
3	Hexagonal screw	2	09103005	09103005	09103005	09103005
4	Pendant control	1	00609610	00609832	00609833	00609611
5	Control line	*	00670603	00600222	00600222	00600222
6	Cable	*	-	00610107	00610107	00610107
7	S-hook	1	00670580	00717029	00717029	00717029
8	Lifting key	1	00608882	00608882	00608882	00608882
9	Cheese-head screw	1	09102026	09102026	09102026	09102026
10	Spring washer	1	09102026	09102026	09102026	09102026

*Piece goods

Inspection Notes

Inspection before initial operation on: _____

By: _____

Date of commissioning: _____

Recurring inspections

Date	Findings	Repair	Test	
			On	By*

*Competent person

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** QUALITY SYSTEM CERTIFICATION DNV·GL ISO 9001:2015

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