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## TECHNICAL DATA

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### CHAIN HOIST EUROCHAIN VX

en-US / A / 07 Nov 2019 /



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## 1 UPDATE HISTORY

[illegible]

## 2 INTRODUCTION

### 2.1 About these instructions

#### 2.1.1 Use of these instructions

This manual presents the product range, features, and functional description of an electrical chain hoist, the EUROCHAIN VX version.

This manual helps to provide the following:

- Range of use of the different hoist types, loads, and hoisting speeds
- Standards considered in the design of the product
- List of features available for the range of these hoists
- Technical details about the product

### 2.2 About this product

#### 2.2.1 Design overview of the electrical chain hoist

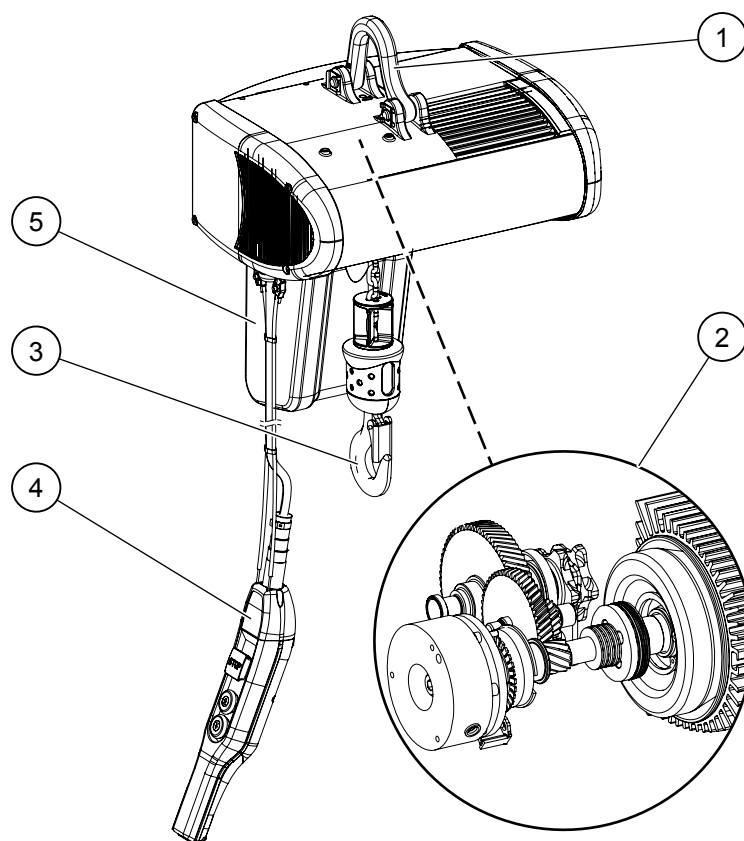


Figure 1. Main components of the electrical chain hoist

- |                                                                                                    |                                                   |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------|
| 1. Suspension bracket                                                                              | 3. Hook                                           |
| 2. Hoisting machinery (consists of hoist frame, hoisting motor, hoisting gear, and hoisting brake) | 4. Controller (pendant controller in the example) |
|                                                                                                    | 5. Chain bucket                                   |

## 2.2.2 Identification of the product

### Product code example for chain hoist

|     |              |         |               |               |                |              |              |       |                |              |                         |                |
|-----|--------------|---------|---------------|---------------|----------------|--------------|--------------|-------|----------------|--------------|-------------------------|----------------|
| VX  | 05<br>(GE09) | (empty) | 08<br>(SPD03) | 01<br>(DES27) | 050<br>(LOA01) | 5<br>(DIM01) | N<br>(DES01) | 120   | 405<br>(ELE01) | E<br>(ELE04) | A<br>(ELE02)/<br>(EL05) | 080<br>(DIM02) |
| 1-3 | 4, 5         | 6       | 7, 8          | 9, 10         | 11-13          | 14           | 15           | 16-18 | 19-21          | 22           | 23                      | 24-26          |

| Pos.  | Code | Feature code       | Feature                                                         | Available properties                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |  |  |  |  |  |  |  |
|-------|------|--------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|
| 1-3   |      |                    | Short product name                                              | EUROCHAIN VX Verlinde                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |  |  |  |  |  |  |
| 4, 5  | 05   | (GE09)             | Frame size                                                      | <div> <div>GE09 value</div> <div>02 VX02</div> <div>05 VX05</div> <div>10 VX10</div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |  |  |  |  |
| 6     |      |                    |                                                                 | Empty space                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |  |  |  |  |
| 7, 8  | 08   | (SPD03)            | Hoisting speed (high)                                           | <div> <div>SPD03 value</div> <div>04 4 m/min</div> <div>06 6 m/min</div> <div>08 8 m/min</div> </div> <div> <div>SPD03 value</div> <div>4</div> <div>6</div> <div>8</div> </div> <div> <div>12 12 m/min</div> <div>16 16</div> <div>24 24 m/min</div> </div> <div> <div>SPD03 value</div> <div>12</div> <div>16</div> <div>24</div> </div>                                                                                                                                                                                                                                                                                                                                           |  |  |  |  |  |  |  |  |
| 9, 10 | 01   | (DES27)            | Reeving system                                                  | <div> <div>DES27 value</div> <div>01 1 x 1 falls, normal reeving</div> <div>02 1 x 2 falls, normal reeving</div> </div> <div> <div>DES27 value</div> <div>01</div> <div>02</div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |  |  |
| 11-13 | 050  | (LOA01)            | Load                                                            | <div> <div>LOA01 value</div> <div>006 60 kg</div> <div>012 125 kg</div> <div>025 250 kg</div> <div>032 320 kg</div> <div>050 500 kg</div> <div>080 800 kg</div> <div>100 1,000 kg</div> </div> <div> <div>LOA01 value</div> <div>60</div> <div>125</div> <div>250</div> <div>320</div> <div>500</div> <div>800</div> <div>1000</div> </div> <div> <div>125 1,250 kg</div> <div>160 1,600 kg</div> <div>200 2,000 kg</div> <div>250 2,500 kg</div> <div>320 3,200 kg</div> <div>400 4,000 kg</div> <div>500 5,000 kg</div> </div> <div> <div>LOA01 value</div> <div>1250</div> <div>1600</div> <div>2000</div> <div>2500</div> <div>3200</div> <div>4000</div> <div>5000</div> </div> |  |  |  |  |  |  |  |  |
| 14    | 5    | (DIM01)            | Hoist duty group                                                | <div> <div>DIM01 value</div> <div>4 ISO M4</div> <div>5 ISO M5</div> <div>6 ISO M6</div> <div>7 ISO M7</div> </div> <div> <div>DIM01 value</div> <div>M4</div> <div>M5</div> <div>M6</div> <div>M7</div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |
| 15    | N    | (DES01)            | Trolley type                                                    | <div> <div>DES01 value</div> <div>N Normal headroom trolley</div> <div>L Low headroom trolley</div> <div>F Fixed hoist</div> <div>Q Hand chain trolley</div> <div>Y Push trolley</div> </div> <div> <div>DES01 value</div> <div>N</div> <div>L</div> <div>F</div> <div>Q</div> <div>Y</div> </div>                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |
| 16-18 | 120  |                    | Beam width rating                                               | Beam width in mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |
| 19-21 | 405  | (ELE01)            | Main voltage (voltage 1)                                        | <div> <div>ELE01 value</div> <div>235 230 V</div> <div>405 400 V</div> </div> <div> <div>ELE01 value</div> <div>230</div> <div>400</div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |
| 22    | E    | (ELE04)            | Electric norm                                                   | <div> <div>ELE04 value</div> <div>E IEC</div> <div>C CSA</div> </div> <div> <div>ELE04 value</div> <div>IEC</div> <div>CSA</div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |  |  |
| 23    | A    | (ELE02)/<br>(EL05) | Control voltage (voltage 2) (ELE02) / Electric provision (EL05) | <div> <div>ELE02 value</div> <div>A 48 V AC</div> <div>B 115 V AC</div> <div>C 230 V AC</div> </div> <div> <div>ELE02 value</div> <div>48</div> <div>115</div> <div>230</div> </div> <div> <div>D ACF</div> <div>CRANE</div> <div>SOLO</div> </div> <div> <div>ELE05 value</div> <div>ACF</div> <div>CRANE</div> <div>SOLO</div> </div>                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |  |  |
| 24-26 | 080  | (DIM02)            | Height of lift                                                  | <div> <div>DIM02 value</div> <div>060 6 m</div> <div>080 8 m</div> <div>120 12 m</div> <div>150 15 m</div> </div> <div> <div>DIM02 value</div> <div>6</div> <div>8</div> <div>12</div> <div>15</div> </div> <div> <div>160 16 m</div> <div>300 30 m</div> <div>500 50 m</div> </div> <div> <div>DIM02 value</div> <div>16</div> <div>30</div> <div>50</div> </div>                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |

## 2.2.3 Standards and directives

### Certifications, standards and other technical documents

The product fulfills the requirements of the following standards: Machine directive EC, ASME HST-1, ASME B30.16, and EN14492/2.

### This product

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- is in conformity with the relevant provisions of the Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC
- has ASME duty rating up to H4 (ISO M4 – M6), depending on hoist type and hoisting speed <sup>1)</sup>  
For information about ASME Hoist Duty Service Classification, see ASME publication catalog ASME HST-1M and ASME B30.16 (latest edition) for electric chain hoists
- is external sound level tested
- is RoHS compliant

<sup>1)</sup> For 60 Hz motors.

### 3 PRODUCT DESCRIPTION

#### 3.1 Technical data of the chain hoist

##### 3.1.1 Load range and duty classes

###### Hoist classifications

The mechanism group – M4, M5, M6 or M7 – of an electric chain hoist depends on the operating time per working day and on the class of load spectrum.

The hoist operating time (Ot) can be calculated by using the following formula:

$$O_t = \frac{2 \times \text{HOL(m)} \times \text{No. of cycles} \left(\frac{1}{h}\right) \times \text{working time} \left(\frac{h}{\text{day}}\right)}{60 \left(\frac{\text{min}}{h}\right) \times \text{lifting speed} \left(\frac{m}{\text{min}}\right) 60}$$

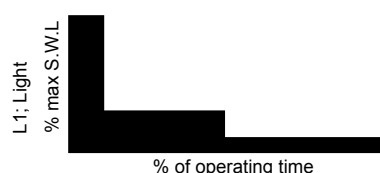
Figure 2. Hoist operating time (Ot) calculation

The actual load spectrum factor can be calculated using the following schema:

| Load % | Lifting time %       |   | Factor k <sup>3</sup>     |       | Load spectrum factor |
|--------|----------------------|---|---------------------------|-------|----------------------|
| 100%   | <input type="text"/> | * | 1                         | =     | <input type="text"/> |
|        | +                    |   |                           |       |                      |
| 80%    | <input type="text"/> | * | 0.51                      | =     | <input type="text"/> |
|        | +                    |   |                           |       |                      |
| 60%    | <input type="text"/> | * | 0.22                      | =     | <input type="text"/> |
|        | +                    |   |                           |       |                      |
| 40%    | <input type="text"/> | * | 0.06                      | =     | <input type="text"/> |
|        | +                    |   |                           |       |                      |
| 20%    | <input type="text"/> | * | 0.01                      | =     | <input type="text"/> |
|        | +                    |   |                           |       |                      |
| 0 %    | <input type="text"/> | * | 0                         | =     | <input type="text"/> |
|        | =                    |   |                           |       |                      |
| Sum:   | 100%                 |   |                           | Sum : | <input type="text"/> |
|        |                      |   | Divide by 100:            |       | /100 =               |
|        |                      |   | Load spectrum factor, km: |       | <input type="text"/> |

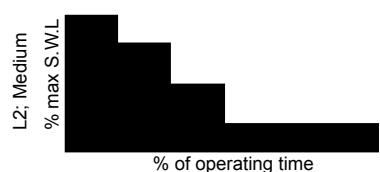
| Class of load spectrum | Load spectrum $k_m$      |
|------------------------|--------------------------|
| <b>L1</b>              | $k_m \leq 0.125$         |
| <b>L2</b>              | $0.125 < k_m \leq 0.250$ |
| <b>L3</b>              | $0.250 < k_m \leq 0.500$ |
| <b>L4</b>              | $0.500 < k_m \leq 1$     |

### Load spectrum classes



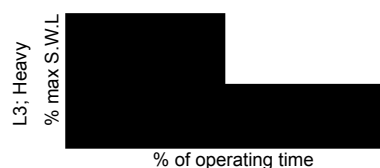
#### L1 Light

Mainly operated at very low loads and in exceptional cases at maximum loads.



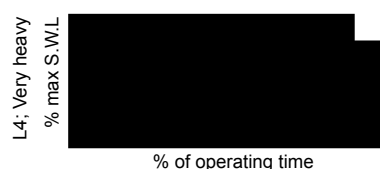
#### L2 Medium

Operated continually at low loads and frequently at maximum loads.



#### L3 Heavy

Operated continually at medium loads and frequently at maximum loads.



#### L4 Very heavy

Operated regularly at maximum and at almost maximum loads.

| Load spectrum         |            | Average operating time ( $O_t$ ) per working day [hrs] |                       |                    |                   |
|-----------------------|------------|--------------------------------------------------------|-----------------------|--------------------|-------------------|
| <b>L1</b>             | Light      | $1 < O_t \leq 2$                                       | $2 < O_t \leq 4$      | $4 < O_t \leq 8$   | $8 < O_t \leq 16$ |
| <b>L2</b>             | Medium     | $0.5 < O_t \leq 1$                                     | $1 < O_t \leq 2$      | $2 < O_t \leq 4$   | $4 < O_t \leq 8$  |
| <b>L3</b>             | Heavy      | $0.25 < O_t \leq 0.5$                                  | $0.5 < O_t \leq 1$    | $1 < O_t \leq 2$   | $2 < O_t \leq 4$  |
| <b>L4</b>             | Very heavy | $0.12 < O_t \leq 0.25$                                 | $0.25 < O_t \leq 0.5$ | $0.5 < O_t \leq 1$ | $1 < O_t \leq 2$  |
| <b>FEM/ISO rating</b> |            | <b>1Bm / M3</b>                                        | <b>1Am / M4</b>       | <b>2m / M5</b>     | <b>3m / M6</b>    |

The following table shows the theoretical service lifetime for ISO ratings M3, M4, M5, and M6.

| Load spectrum         |            | Theoretical service life [hrs] |                 |                |                |
|-----------------------|------------|--------------------------------|-----------------|----------------|----------------|
| <b>L1</b>             | Light      | 3150                           | 6300            | 12500          | 25000          |
| <b>L2</b>             | Medium     | 1600                           | 3200            | 6300           | 12500          |
| <b>L3</b>             | Heavy      | 800                            | 1600            | 3200           | 6300           |
| <b>L4</b>             | Very heavy | 400                            | 800             | 1600           | 3200           |
| <b>FEM/ISO rating</b> |            | <b>1Bm / M3</b>                | <b>1Am / M4</b> | <b>2m / M5</b> | <b>3m / M6</b> |

### 3.1.2 Product range

| Load [kg] | Frame size | Falls | Duty group ISO | Chain size | Motor type | Power HS [kW] | Speed [m/min.] HS/LS |   | Max. amb. temp [°C] <sup>1), 2)</sup> |    | ED% <sup>3)</sup> | St/h |
|-----------|------------|-------|----------------|------------|------------|---------------|----------------------|---|---------------------------------------|----|-------------------|------|
| 63        | VX02       | 1     | M6             | 4.1 x 12.1 | MT06MB104  | 0.36          | 8                    | 2 | 40                                    | 1) | 60                | 300  |
|           | VX02       | 1     | M6             | 4.1 x 12.1 | MT06MB104  | 0.36          | 12                   | 3 | 40                                    | 1) | 60                | 300  |
|           | VX02       | 1     | M6             | 4.1 x 12.1 | MT06MB104  | 0.36          | 16                   | 4 | 40                                    | 1) | 60                | 300  |
|           | VX02       | 1     | M6             | 4.1 x 12.1 | MT06MB104  | 0.36          | 24                   | 6 | 40                                    | 1) | 60                | 300  |
| 125       | VX02       | 1     | M6             | 4.1 x 12.1 | MT06MB104  | 0.36          | 8                    | 2 | 40                                    | 1) | 60                | 300  |
|           | VX02       | 1     | M6             | 4.1 x 12.1 | MT06MB104  | 0.36          | 12                   | 3 | 40                                    | 1) | 60                | 300  |
|           | VX02       | 1     | M5             | 4.1 x 12.1 | MT06MB104  | 0.36          | 16                   | 4 | 50                                    | 1) | 60                | 300  |
| 160       | VX02       | 1     | M6             | 4.1 x 12.1 | MT06MB104  | 0.36          | 8                    | 2 | 40                                    | 1) | 60                | 300  |
|           | VX02       | 1     | M6             | 4.1 x 12.1 | MT06MB104  | 0.36          | 12                   | 3 | 40                                    | 1) | 60                | 300  |
|           | VX05       | 1     | M5             | 5.1 x 15.1 | MT08MB104  | 0.72          | 16                   | 4 | 40                                    | 1) | 60                | 300  |
| 250       | VX02       | 1     | M5             | 4.1 x 12.1 | MT06MB104  | 0.36          | 8                    | 2 | 50                                    | 1) | 60                | 300  |
|           | VX05       | 1     | M4             | 5.1 x 15.1 | MT08MB104  | 0.72          | 12                   | 3 | 40                                    | 1) | 60                | 300  |
|           | VX05       | 1     | M6             | 5.1 x 15.1 | MT08MB104  | 0.72          | 4                    | 1 | 40                                    | 1) | 60                | 300  |
|           | VX05       | 1     | M6             | 5.1 x 15.1 | MT08MB104  | 0.72          | 8                    | 2 | 40                                    | 1) | 60                | 300  |
|           | VX05       | 1     | M5             | 5.1 x 15.1 | MT08MB104  | 0.72          | 16                   | 4 | 50                                    | 1) | 60                | 300  |
| 320       | VX05       | 1     | M5             | 5.1 x 15.1 | MT08MB104  | 0.72          | 8                    | 2 | 40                                    | 1) | 60                | 300  |
| 500       | VX02       | 2     | M5             | 4.1 x 12.1 | MT06MB104  | 0.36          | 4                    | 1 | 40                                    | 1) | 60                | 300  |
|           | VX05       | 1     | M5             | 5.1 x 15.1 | MT08MB104  | 0.72          | 4                    | 1 | 50                                    | 1) | 60                | 300  |
|           | VX05       | 1     | M5             | 5.1 x 15.1 | MT08MB104  | 0.72          | 8                    | 2 | 50                                    | 1) | 60                | 300  |
|           | VX10       | 1     | M6             | 7.2 x 21.1 | MT10MA104  | 1.80          | 4                    | 1 | 40                                    | 1) | 60                | 300  |
|           | VX10       | 1     | M6             | 7.2 x 21.1 | MT10MA104  | 1.80          | 8                    | 2 | 40                                    | 1) | 60                | 300  |
|           | VX10       | 1     | M5             | 7.2 x 21.1 | MT10MA104  | 1.80          | 16                   | 4 | 50                                    | 1) | 60                | 300  |
| 630       | VX10       | 2     | M5             | 5.1 x 15.1 | MT08MB104  | 0.72          | 4                    | 1 | 40                                    | 1) | 60                | 300  |
|           | VX10       | 1     | M4             | 7.2 x 21.1 | MT10MA104  | 1.80          | 16                   | 4 | 40                                    | 1) | 60                | 300  |
| 1000      | VX10       | 2     | M5             | 5.1 x 15.1 | MT08MB104  | 0.72          | 4                    | 1 | 50                                    | 1) | 60                | 300  |
|           | VX10       | 1     | M5             | 7.2 x 21.1 | MT10MA104  | 1.80          | 4                    | 1 | 50                                    | 1) | 60                | 300  |
|           | VX10       | 1     | M5             | 7.2 x 21.1 | MT10MA104  | 1.80          | 8                    | 2 | 50                                    | 1) | 60                | 300  |
| 1250      | VX10       | 1     | M4             | 7.2 x 21.1 | MT10MA104  | 1.80          | 4                    | 1 | 40                                    | 1) | 60                | 300  |
|           | VX10       | 1     | M4             | 7.2 x 21.1 | MT10MA104  | 1.80          | 8                    | 2 | 40                                    | 1) | 60                | 300  |
|           | VX10       | 2     | M5             | 7.2 x 21.1 | MT10MA104  | 1.80          | 4                    | 1 | 40                                    | 1) | 60                | 300  |
| 1600      | VX10       | 2     | M5             | 7.2 x 21.1 | MT10MA104  | 1.80          | 4                    | 1 | 50                                    | 1) | 60                | 300  |
| 2000      | VX10       | 2     | M5             | 7.2 x 21.1 | MT10MA104  | 1.80          | 4                    | 1 | 50                                    | 1) | 60                | 300  |
| 2500      | VX10       | 2     | M4             | 7.2 x 21.1 | MT10MA104  | 1.80          | 4                    | 1 | 40                                    | 1) | 60                | 300  |

### 3.1.3 Product features

#### Standard features

| Mechanics                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No                                                                     | Option                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1                                                                      | Mechanical overload device (slipping clutch)                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2                                                                      | Disc brake that is located on a separate load path after the motor and the slipping clutch. The brake is linked directly to the load, and holds the load even if the motor or the slipping clutch fails.                                                                                                                                                                                                                                                                                              |
| 3                                                                      | 2-step (frame sizes VX02-VX05) or 3-step (frame size VX10) helical gear                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 4                                                                      | Sprocket on output shaft in cantilever position                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5                                                                      | Hoist body with epoxy powder paint of 70 µm thickness, C2-M according to EN12944-2 and EN12944-5                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6                                                                      | Lower hook according to DIN classification                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 7                                                                      | Zinc plated and quenched tempered chain (class T)                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 8                                                                      | <p>Selection of trolleys:</p> <ul style="list-style-type: none"> <li>Trolley types: normal headroom trolley, low headroom trolley <sup>1)</sup>, swiveling trolley <sup>1)</sup>, and trolley for LCS (push trolley inside hollow profile)</li> <li>Trolley drive types: motorized <sup>1)</sup>, manual / push, and hand-gear</li> </ul> <p>Inclusive:</p> <ul style="list-style-type: none"> <li>Rubber buffers on trolleys</li> <li>Integrated wheel catch and trolley retaining device</li> </ul> |
| <sup>1)</sup> Not available for the 1-phase chain hoist configuration. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Electrics |                                                                                                                                                                                     |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No        | Option                                                                                                                                                                              |
| 1         | Dual speed motors <sup>1)</sup> with 4:1 ratio for frame sizes VX02-VX10                                                                                                            |
| 2         | Motor thermal protection with bi-metal switch                                                                                                                                       |
| 3         | Motors with TEFC classification and insulation class H                                                                                                                              |
| 4         | All components connected by plugs                                                                                                                                                   |
| 5         | Low voltage control <sup>2)</sup>                                                                                                                                                   |
| 6         | Emergency stop with main contactor                                                                                                                                                  |
| 7         | Separate brake rectifier that is connected to the contactor (frame sizes VX02-VX10)                                                                                                 |
| 8         | Frequency converter controlled trolley traveling <sup>1)</sup> with electronic potentiometer (EP) or multi-step mode (MS) – trolley movement with frequency converter or contactors |
| 9         | Mechanical upper and lower limit switches                                                                                                                                           |
| 10        | IP55 protection                                                                                                                                                                     |
| 11        | Operation temperature with rated load and speed: -20°C to +40°C (+50°C) <sup>3)</sup>                                                                                               |

| Electrics |                                                                                                                                                                                                                                                                                                                     |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No        | Option                                                                                                                                                                                                                                                                                                              |
| 1)        | Not available for the 1-phase chain hoist configuration.                                                                                                                                                                                                                                                            |
| 2)        | Not available for the 1-phase 60 Hz chain hoist configuration.                                                                                                                                                                                                                                                      |
| 3)        | The operation temperature is +50°C for all hoists with the duty class M5, and for hoists with the duty class M6, if they are used in the duty class M5.<br>If the hoist is equipped with a frequency converter driven trolley <sup>1)</sup> , the ambient temperature range is -10°C to +40°C for the whole system. |

### Optional features

| Mechanics |                                                               |                                                                                                                                                                                          |
|-----------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No        | Option                                                        | Description                                                                                                                                                                              |
| 1         | Secondary brake <sup>1)</sup>                                 | The hoist has two brakes. The one closer to the hoist body acts as the operational brake, if the main brake fails.                                                                       |
| 2         | 2- or 4-step rotating geared limit switch (GLS) <sup>1)</sup> | The limit switch is available for solutions that need 2 or 4 adjustable stops.                                                                                                           |
| 3         | Self-locking hook                                             | A hook which cannot be opened, if there is a load in the hook                                                                                                                            |
| 4         | Stainless steel hook block                                    | The material of the stainless steel hook block is AISI316.                                                                                                                               |
| 5         | Stainless steel chain                                         | The stainless steel available as an option instead of the standard electro-galvanized chain. The material of the stainless steel chain is AISI316.                                       |
| 6         | DAT chain                                                     | The DAT chain has a more robust outer surface due to the case hardening treatment. The DAT chain has a much higher lifetime than the standard chain in case of insufficient lubrication. |
| 7         | Manual brake release                                          | The brake can be released manually and the load lowered to the ground level. The brake is released using the specially designed manual brake release lever.                              |
| 8         | Hand control on hook <sup>1)</sup>                            | In the hand control on hook solution, the controls for lowering and lifting the load are implemented onto the load hook.                                                                 |
| 9         | IP66                                                          | A higher protection class that is available as an option                                                                                                                                 |
| 10        | Bracket suspension                                            | The standard bracket suspension can be replaced alternatively by the hook suspension type.                                                                                               |
| 11        | Rain cover                                                    | The rain cover for hoist helps to avoid direct contact of the hoist with rain.                                                                                                           |

| Mechanics                                                   |                       |                                                           |
|-------------------------------------------------------------|-----------------------|-----------------------------------------------------------|
| No                                                          | Option                | Description                                               |
| 12                                                          | Food safety lubricant | Lubricant for lifting chain or gear that is NSF H1 listed |
| 1) Not available for the 1-phase chain hoist configuration. |                       |                                                           |

| Electrics                                                   |                                                               |                                                                                                                                                                                                                               |
|-------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No                                                          | Option                                                        | Description                                                                                                                                                                                                                   |
| 1                                                           | 4-button pendant controller 1)                                | A pendant controller for applications that need two motions                                                                                                                                                                   |
| 2                                                           | 6-button pendant controller 1)                                | A pendant controller for applications that need three motions                                                                                                                                                                 |
| 3                                                           | Key switch on the E/S button on pendant controller            | A 2-button pendant controller that is equipped with a key switch on the emergency stop button                                                                                                                                 |
| 4                                                           | Magnet on pendant controller                                  | The pendant controller can be equipped with a magnet that is located on the back of the pendant controller.                                                                                                                   |
| 5                                                           | Optional pendant controller                                   | The pendant controller can be replaced with an older version (Schneider/XAC type).                                                                                                                                            |
| 6                                                           | ACF card 1)                                                   | The ACF card uses the main voltage to control the brake, and it has a low voltage control. The hoist does not have any limit switches. If the switches are needed, they need to be adapted to the available controls on site. |
| 7                                                           | External power plug 1)                                        | A special plug for the power feeding                                                                                                                                                                                          |
| 8                                                           | Flat cable gland                                              | Flat cable gland instead of round cable                                                                                                                                                                                       |
| 9                                                           | Time meter / hour counter 1)                                  | A device which counts the lifting time                                                                                                                                                                                        |
| 10                                                          | Hard wired controls 1)                                        | The connections of the electrical parts are created by using wires instead of a printed circuit board.                                                                                                                        |
| 11                                                          | Radio remote control 1)                                       | The control of the hoist(s) is done by using a remote control device.                                                                                                                                                         |
| 12                                                          | Non-supply of pendant controller and pendant controller cable | The hoist is delivered without a pendant controller and pendant controller cable.                                                                                                                                             |
| 1) Not available for the 1-phase chain hoist configuration. |                                                               |                                                                                                                                                                                                                               |

### 3.1.4 Sound pressure level

For the size VX02–VX10 electrical chain hoists, the maximum noise level (of the chain hoist) does not exceed 70 dB at 1 m height.

### 3.1.5 Chain hoist weights

| Frame size                                                                                                                                                                                | Falls | Hoist weight [kg] <sup>1)</sup> |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------------------------|--------------|
|                                                                                                                                                                                           |       | Without chain <sup>2), 3)</sup> | Chain [kg/m] |
| VX02                                                                                                                                                                                      | 1/1   | 23                              | 0.38         |
| VX02                                                                                                                                                                                      | 2/1   | 23                              | 0.38         |
| VX05                                                                                                                                                                                      | 1/1   | 32                              | 0.62         |
| VX05                                                                                                                                                                                      | 2/1   | 27                              | 0.62         |
| VX10                                                                                                                                                                                      | 1/1   | 58                              | 1.20         |
| VX10                                                                                                                                                                                      | 2/1   | 53                              | 1.20         |
| <sup>1)</sup> The weight values are valid for the standard configuration of the chain hoist. Optional features (such as GLS, frequency converter, or double brake) are not included here. |       |                                 |              |
| <sup>2)</sup> For the chain hoist frame sizes 02–10, the 1-fall hoist weight includes the counterweight.                                                                                  |       |                                 |              |
| <sup>3)</sup> The weights are calculated for the lifting height (HOL) of 3 m.                                                                                                             |       |                                 |              |

### 3.1.6 Materials and coatings

| Materials               |                                            |                     |                    |
|-------------------------|--------------------------------------------|---------------------|--------------------|
| Part                    | Fabrication                                | Material type       | Norm               |
| Frame                   | Pressure die cast aluminum alloy           | GD-AISI9CU3         | EN AC – AISi9Cu3   |
| Bracket suspension hook | Forged steel                               | 34CrNiMo6 34 CrMo4  | EN10250-3 EN 10083 |
| Covers                  | Pressure die cast aluminum alloy           | GD-AISI9CU3         | EN AC – AISi9Cu3   |
| Profiles                | Extruded aluminum alloy                    | AlMg0.7Si           | EN AW - 6063       |
| Gear wheels             | Alloy steel                                | 20NiCrMo2-2/16MNCr5 | EN 10060           |
| Chain bucket            | High-density polyethylene or polypropylene | PEHD BLACK/PP-C     |                    |
| Hooks                   | Forged steel                               | 34CrMo4             | EN 10083           |
| Hook blocks             | Pressure die cast aluminum                 | GD-AISI9CU3         | EN AC – AISi9Cu3   |
| Chains                  | Bent and welded alloy steel                | Special steel       | EN 818-7           |
| Rubber parts            | Molded neoprene                            | Santoprene/Geolast  |                    |
| Wheels                  | Forged steel, cast iron                    | C40 and GJS-700-2   | EN 10060           |

| Coatings                  |                                              |
|---------------------------|----------------------------------------------|
| Component                 | Coating                                      |
| Aluminum alloy components | Epoxy polyester powder painting (60–80 µm)   |
| Steel components          | Zinc phosphating                             |
| Chain                     | Galvanized with additional surface treatment |

| Color codes   |            |
|---------------|------------|
| Component     | Color code |
| Body          | RAL 7021   |
| Frame cover   | DZ2369     |
| Hook          | RAL 1021   |
| Upper bracket | RAL 9005   |

### 3.2 Functional description of the chain hoist

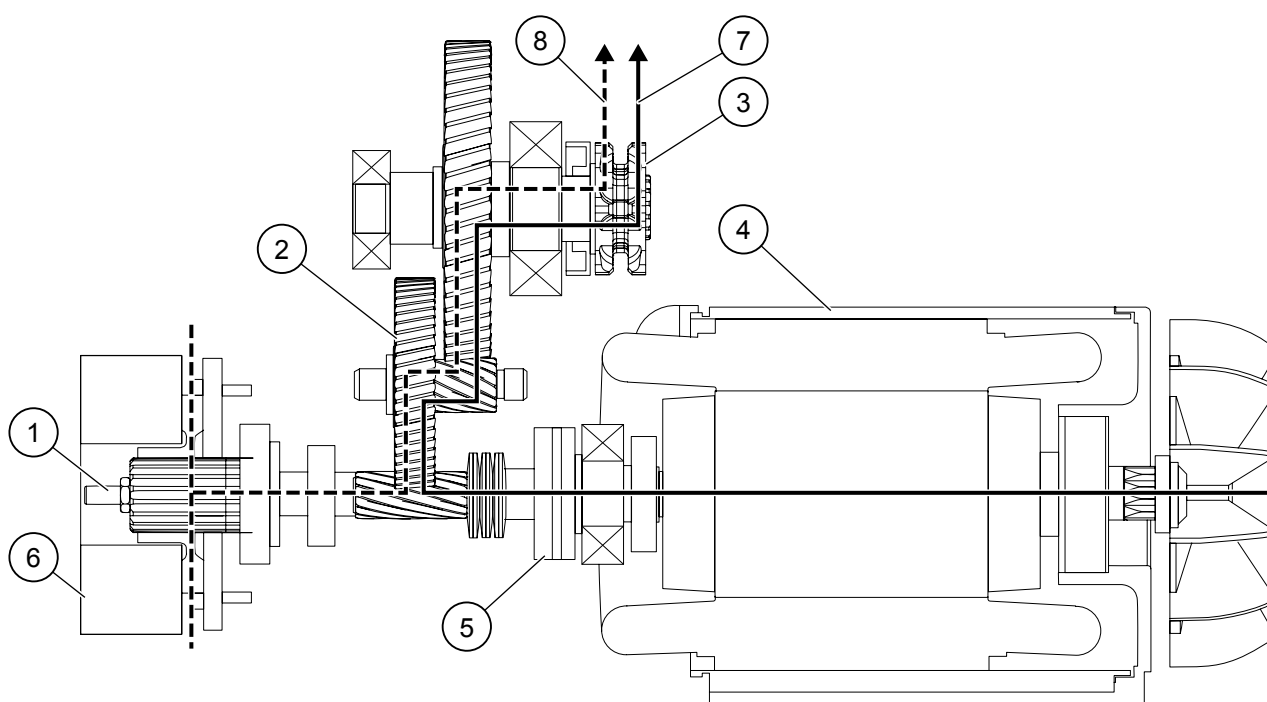


Figure 3. Kinematic chain of the electrical chain hoist

- |                     |                    |
|---------------------|--------------------|
| 1. Adjustment screw | 5. Slipping clutch |
| 2. Hoisting gear    | 6. Hoisting brake  |
| 3. Chain sprocket   | 7. Motor torque    |
| 4. Hoisting motor   | 8. Brake torque    |

## 4 MAIN COMPONENTS

### 4.1 Hoisting motor of the chain hoist

The hoisting motor is specially designed for hoisting purposes with good efficiency. The motor is classified as a TEFC motor – totally enclosed fan-cooled motor. This includes an aluminum frame with cooling ribs for efficient cooling, and a cooling fan for the motor.

| 50 Hz      |            |           |              |      |               |     |            |       |      |                                                |     |                |      |                 |      |                                            |
|------------|------------|-----------|--------------|------|---------------|-----|------------|-------|------|------------------------------------------------|-----|----------------|------|-----------------|------|--------------------------------------------|
| Motor type | Frame size | Spd ratio | Power N [kW] |      | Speed [n/rpm] |     | Torq. [NM] | Cos φ |      | Nominal voltage <sup>1)</sup> 380-415 V – Amps |     |                |      |                 |      | JMOT [kgm <sup>2</sup> .10 <sup>-3</sup> ] |
|            |            |           | HS           | LS   | HS            | LS  |            |       |      | I <sub>0</sub>                                 |     | I <sub>n</sub> |      | I <sub>st</sub> |      |                                            |
|            |            |           |              |      |               |     |            | HS    | LS   | HS                                             | LS  | HS             | LS   | HS              | LS   |                                            |
| MT06MB104  | VX02       | 1/4       | 0.36         | 0.09 | 2820          | 650 | 1.3        | 0.67  | 0.76 | 1.3                                            | 1.2 | 1.60           | 1.20 | 4.64            | 1.32 | 0.5                                        |
| MT08MB104  | VX05       | 1/4       | 0.72         | 0.18 | 2745          | 665 | 2.58       | 0.77  | 0.51 | 2.1                                            | 1.4 | 2.4            | 1.6  | 7.2             | 2.35 | 1.67                                       |
| MT10MA104  | VX10       | 1/4       | 1.80         | 0.45 | 2790          | 695 | 6.2        | 0.8   | 0.5  | 3                                              | 3.2 | 4.9            | 3.1  | 20.09           | 6.51 | 2.65                                       |

<sup>1)</sup> The voltage values are considered as +/-5% of the nominal voltage range.

| 50 Hz      |            |           |              |      |               |     |            |       |      |                                                |     |                |      |                 |      |                                            |
|------------|------------|-----------|--------------|------|---------------|-----|------------|-------|------|------------------------------------------------|-----|----------------|------|-----------------|------|--------------------------------------------|
| Motor type | Frame size | Spd ratio | Power N [kW] |      | Speed [n/rpm] |     | Torq. [NM] | Cos φ |      | Nominal voltage <sup>1)</sup> 220-240 V – Amps |     |                |      |                 |      | JMOT [kgm <sup>2</sup> .10 <sup>-3</sup> ] |
|            |            |           | HS           | LS   | HS            | LS  |            | HS    | LS   | I <sub>0</sub>                                 |     | I <sub>n</sub> |      | I <sub>st</sub> |      |                                            |
|            |            |           |              |      |               |     |            |       |      | HS                                             | LS  | HS             | LS   | HS              | LS   |                                            |
| MT06MB104  | VX02       | 1/4       | 0.36         | 0.09 | 2820          | 650 | 1.3        | 0.67  | 0.76 | 2.2                                            | 2.1 | 2.90           | 2.20 | 8.12            | 2.42 | 0.5                                        |
| MT08MB104  | VX05       | 1/4       | 0.72         | 0.18 | 2745          | 665 | 2.58       | 0.77  | 0.51 | 3.7                                            | 2.5 | 4.2            | 2.8  | 12.6            | 4.06 | 1.67                                       |
| MT10MA104  | VX10       | 1/4       | 1.80         | 0.45 |               |     |            |       |      |                                                |     |                |      |                 |      | 2.65                                       |

<sup>1)</sup> The voltage values are considered as +/-5% of the nominal voltage range.

| 50 Hz      |            |           |              |      |               |     |            |       |      |                                                |     |                |      |                 |      |                                            |
|------------|------------|-----------|--------------|------|---------------|-----|------------|-------|------|------------------------------------------------|-----|----------------|------|-----------------|------|--------------------------------------------|
| Motor type | Frame size | Spd ratio | Power N [kW] |      | Speed [n/rpm] |     | Torq. [NM] | Cos φ |      | Nominal voltage <sup>1)</sup> 500-525 V – Amps |     |                |      |                 |      | JMOT [kgm <sup>2</sup> .10 <sup>-3</sup> ] |
|            |            |           | HS           | LS   | HS            | LS  |            | HS    | LS   | I <sub>0</sub>                                 |     | I <sub>n</sub> |      | I <sub>st</sub> |      |                                            |
|            |            |           |              |      |               |     |            |       |      | HS                                             | LS  | HS             | LS   | HS              | LS   |                                            |
| MT06MB104  | VX02       | 1/4       | 0.36         | 0.09 | 2820          | 650 | 1.3        | 0.67  | 0.76 | 1.0                                            | 1.0 | 1.30           | 0.95 | 4.55            | 1.33 | 0.5                                        |
| MT08MB104  | VX05       | 1/4       | 0.72         | 0.18 | 2745          | 665 | 2.58       | 0.77  | 0.51 | 1.7                                            | 1.1 | 1.9            | 1.25 | 5.7             | 1.81 | 1.67                                       |
| MT10MA104  | VX10       | 1/4       | 1.80         | 0.45 |               |     |            |       |      |                                                |     |                |      |                 |      | 2.65                                       |

<sup>1)</sup> The voltage values are considered as +/-5% of the nominal voltage range.

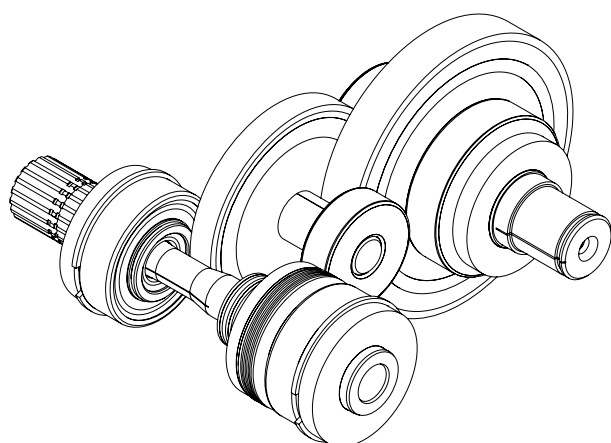
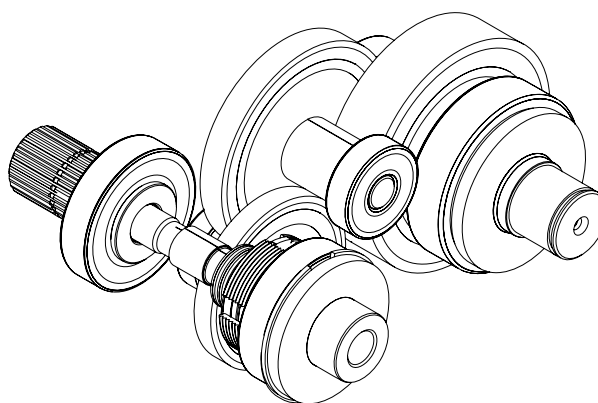
#### NOTE

*The size of the main fuse for the hoist power supply is 10A. For more information, contact the manufacturer.*

| Abbreviations   |                      |
|-----------------|----------------------|
| HS              | High speed           |
| LS              | Low speed            |
| I <sub>0</sub>  | Current without load |
| I <sub>n</sub>  | Nominal current      |
| I <sub>st</sub> | Starting current     |

### 4.2 Hoisting gear of the chain hoist

The hoisting gear of the chain hoist is specially developed for hoisting appliances and has two or three helical steps. The gear is lubricated with oil so that the lubrication lasts for the design working period of the hoist.

**2-step gear****3-step gear**

| Frame size  | Main hoisting speed [m/min.] <sup>1)</sup> | Gear type | Gear ratio |
|-------------|--------------------------------------------|-----------|------------|
| <b>VX02</b> | 8                                          | 2-step    | 54.9       |
|             | 12                                         | 2-step    | 34.7       |
|             | 16                                         | 2-step    | 27.3       |
|             | 24                                         | 2-step    | 17.2       |
| <b>VX05</b> | 4                                          | 2-step    | 96.6       |
|             | 8                                          | 2-step    | 54.6       |
|             | 12                                         | 2-step    | 35.1       |
|             | 16                                         | 2-step    | 28.2       |
| <b>VX10</b> | 4                                          | 3-step    | 141.0      |
|             | 6                                          | 3-step    | 100.2      |
|             | 8                                          | 3-step    | 75.7       |
|             | 12                                         | 3-step    | 53.1       |
|             | 16                                         | 3-step    | 34.6       |

<sup>1)</sup> Valid for the 1-fall chain hoist configurations.

## 4.3 Brakes of the chain hoist

### 4.3.1 Single brake

The chain hoist is equipped with a disc brake which includes a rotating disc with two friction linings. The brake coil is energized by a DC voltage coming from the brake rectifier. The brake rectifier converts the AC voltage into a DC voltage. To ensure the self-cleaning function, the rotating parts of the brake are not enclosed.

The brake is designed so that it lasts for the design working period of the chain hoist. The brake wear can be checked at the brake coil, through an inspection hole. The brake lining wear criteria is indicated on a sticker that can be found on the brake, next to the brake wear measurement hole. If the brake wear exceeds the allowed measurement criteria, the brake must be replaced.

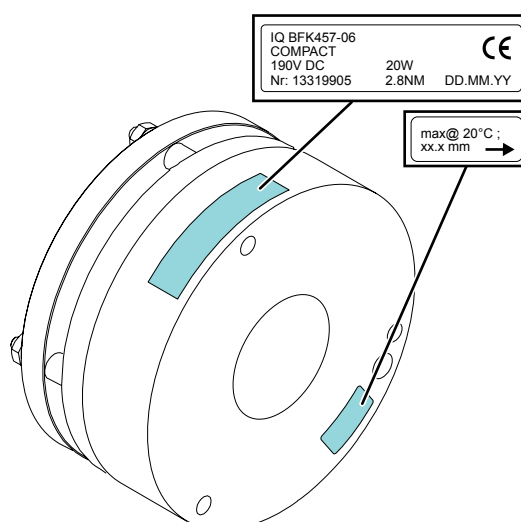


Figure 4. Single brake

### Brake characteristics

| Frame size | Brake torque |          | Brake measurement [20°C] [mm] <sup>1)</sup> |
|------------|--------------|----------|---------------------------------------------|
|            | [Nm]         | [lbf.ft] |                                             |
| VX02       | 2.8          | 2.1      | 25.3                                        |
| VX05       | 6.8          | 5.0      | 25.3                                        |
| VX10       | 14           | 10.3     | 30                                          |

<sup>1)</sup> The brake measurement value that is given in the table is only a theoretical value. The value varies according to manufacturer and brake series. For each case, the maximum value that must not be exceeded is indicated on the sticker that can be found on the brake.

### 4.3.2 Double brake (option)

The double brake assembly consists of the main brake (single brake) and the secondary brake (double brake) that are assembled on the same brake hub. During the hoisting motion, the brake board energizes both brakes simultaneously. When the hoisting motion stops, the main brake switches off immediately. The motor inductive effect keeps the secondary brake energized still for a few milliseconds.

The main brake holds the first position (located 'on the top') in the double brake assembly, which makes checking of the brake wear easier.

The secondary brake is a holding brake that works as a back-up for the main brake. The secondary brake is the functional brake only if the main brake is damaged and cannot hold the load. If the main brake operates normally, you do not need to check the wear on the secondary brake.

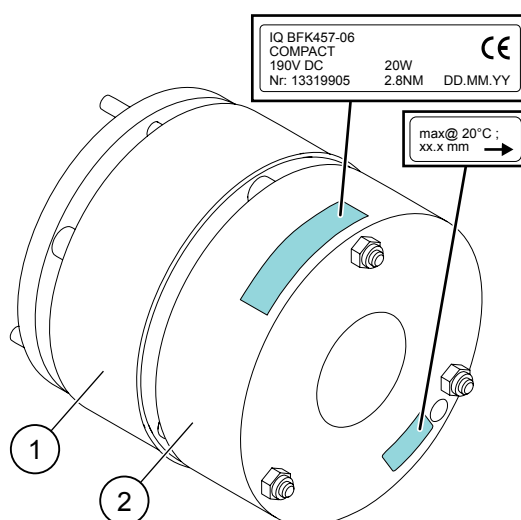


Figure 5. Double brake

1. Main brake
2. Secondary brake

### Brake characteristics

| Frame size                                                                                                                                                                                                                                                                  | Brake (pcs)     |                 | Brake torque |          |                               |          | Brake measurement<br>[20°C] [mm] <sup>2)</sup> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------|----------|-------------------------------|----------|------------------------------------------------|
|                                                                                                                                                                                                                                                                             | Single<br>brake | Double<br>brake | Main brake   |          | Secondary brake <sup>1)</sup> |          |                                                |
|                                                                                                                                                                                                                                                                             |                 |                 | [Nm]         | [lbf.ft] | [Nm]                          | [lbf.ft] |                                                |
| VX02                                                                                                                                                                                                                                                                        | 1               | 2               | 2.8          | 2.1      | 2.8                           | 2.1      | 25.3                                           |
| VX05                                                                                                                                                                                                                                                                        | 1               | 2               | 6.8          | 5.0      | 6.8                           | 5.0      | 25.3                                           |
| VX10                                                                                                                                                                                                                                                                        | 1               | 2               | 14           | 10.3     | 14                            | 10.3     | 30                                             |
| 1) If the hoisting brake operates normally, you do not need to check the wear on the back-up brake.                                                                                                                                                                         |                 |                 |              |          |                               |          |                                                |
| 2) The brake measurement value that is given in the table is only a theoretical value. The value varies according to manufacturer and brake series. For each case, the maximum value that is not to be exceeded is indicated on the sticker that can be found on the brake. |                 |                 |              |          |                               |          |                                                |

## 4.3.3 Brake coil voltages and resistance

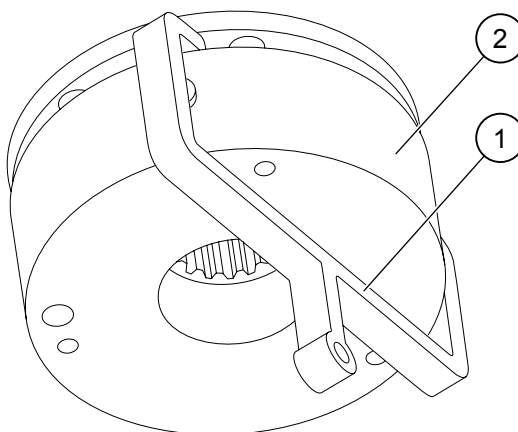
### Brake coil voltage

| Motor voltage [V AC]             |     | Frequency [Hz] | Brake voltage [V DC] |
|----------------------------------|-----|----------------|----------------------|
| 208 V                            | 103 | 60             | 103                  |
| 220–240 V                        | 103 | 50             | 103                  |
| 208–230 V/460 V<br>reconnectable | 190 | 60             | 190                  |
| 380–415 V                        | 190 | 50/60          | 190                  |
| 440–480 V                        | 190 | 60             | 190                  |
| 500–525 V                        | 255 | 50             | 255                  |
| 575 V                            | 320 | 50             | 320                  |

### Brake coil resistance

| Frame size | Brake type<br>[single brake] | Brake torque |          | Rated voltage<br>[V] | Coil resistance [20°C] |          |
|------------|------------------------------|--------------|----------|----------------------|------------------------|----------|
|            |                              | [Nm]         | [lbf.ft] |                      | Min. [Ω]               | Max. [Ω] |
| VX02       | BFK457-06                    | 2.8          | 2.1      | 103                  | 496.6                  | 564.9    |
| VX02       | BFK457-06                    | 2.8          | 2.1      | 190                  | 1661                   | 1949     |
| VX02       | BFK457-06                    | 2.8          | 2.1      | 255                  | 2439                   | 2816     |
| VX02       | BFK457-06                    | 2.8          | 2.1      | 320                  | 4736                   | 5548     |
| VX05       | BFK457-06                    | 6.8          | 5.0      | 104                  | 496.6                  | 564.9    |
| VX05       | BFK457-06                    | 6.8          | 5.0      | 180                  | 1661                   | 1949     |
| VX05       | BFK457-06                    | 6.8          | 5.0      | 216                  | 2439                   | 2816     |
| VX05       | BFK457-06                    | 6.8          | 5.0      | 258                  | 4736                   | 5548     |
| VX10       | BFK457-08                    | 14           | 10.3     | 103                  | 398.9                  | 449.8    |
| VX10       | BFK457-08                    | 14           | 10.3     | 190                  | 1366                   | 1552     |
| VX10       | BFK457-08                    | 14           | 10.3     | 255                  | 2167                   | 2454     |
| VX10       | BFK457-08                    | 14           | 10.3     | 320                  | 3418                   | 3921     |

#### 4.3.4 Manual brake release (option)



1. Manual brake release lever
2. Hoisting brake

The manual brake release feature is available as an option for the single brake assembly. This feature allows you to release the brake by hand in situations where you must lower the load manually.

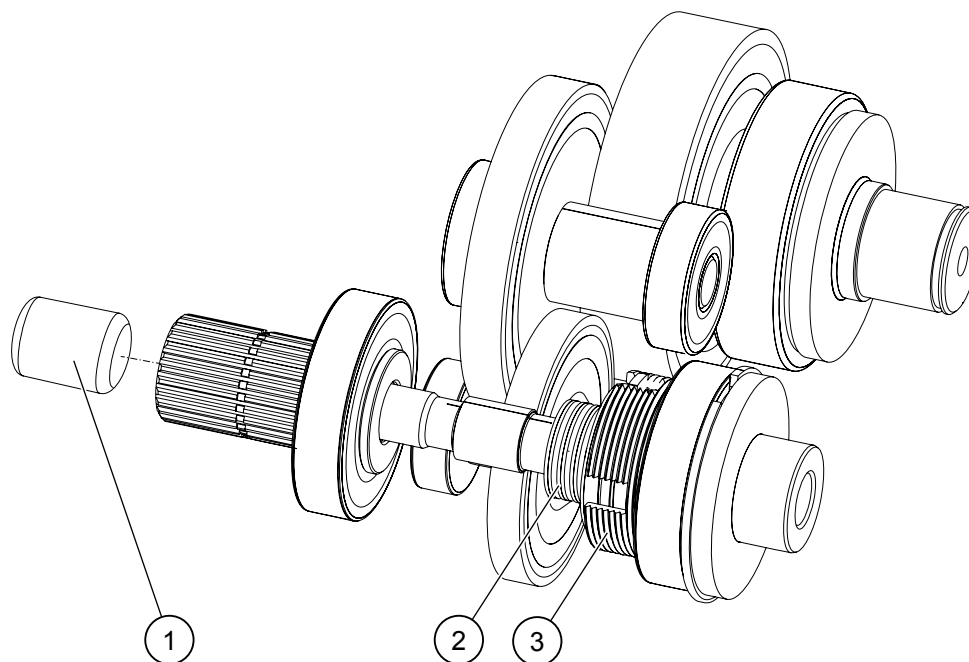
The manual brake release should only be used in emergency situations where the brake cannot be released normally. Extensive use of the manual brake release and high lowering speed can result in immediate wear-out of the brake lining.

#### 4.4 Slipping clutch

The overload protection of the hoisting unit is ensured through a direct acting limiting device, the slipping clutch. The slipping clutch meets the requirements of the EN14492-2 standard that are set for this type of hoisting units.

The setting of the slipping clutch allows the hoist to lift a load that corresponds to the dynamic test load of 110% (EUR) and 125% (US) of the SWL (safe working load). The slipping clutch function prevents the hoist from lifting a load of 160% of the SWL. The slipping clutch enables the brake to hold the load without any interaction with the slipping clutch.

The construction of the slipping clutch assembly varies according to the hoist frame size. The chain hoist frame sizes VX02–VX10 use the same kind of slipping clutch construction that has only one clutch disc.

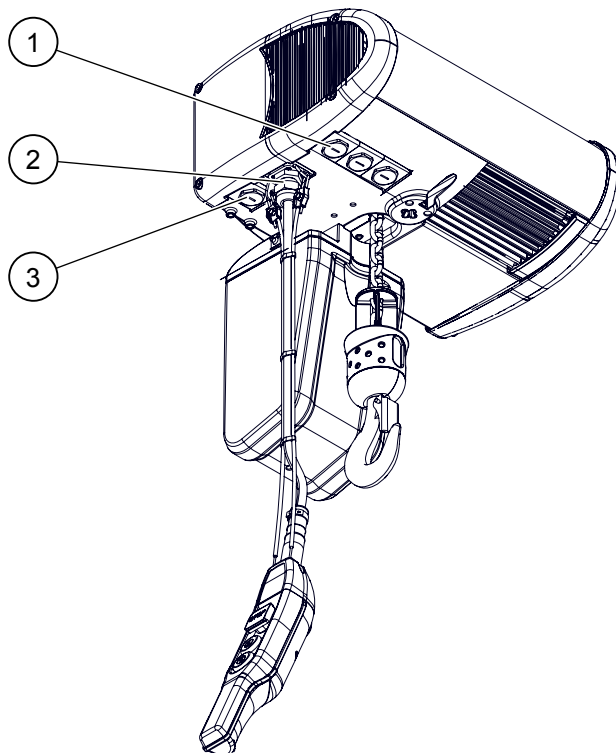


*Figure 6. Slipping clutch construction with one clutch disc*

- |                       |                                    |
|-----------------------|------------------------------------|
| 1. Setting screw      | 3. Torque limiter disc with lining |
| 2. Belleville washers |                                    |

## 4.5 Electrics of the chain hoist

### 4.5.1 Cable gland positions on the hoist



*Figure 7. Cable gland positions of the chain hoist*

- |                                |                       |
|--------------------------------|-----------------------|
| 1. Trolley connection to hoist | 3. Hoist power supply |
| 2. Pendant controller          |                       |

### 4.5.2 Wiring principle

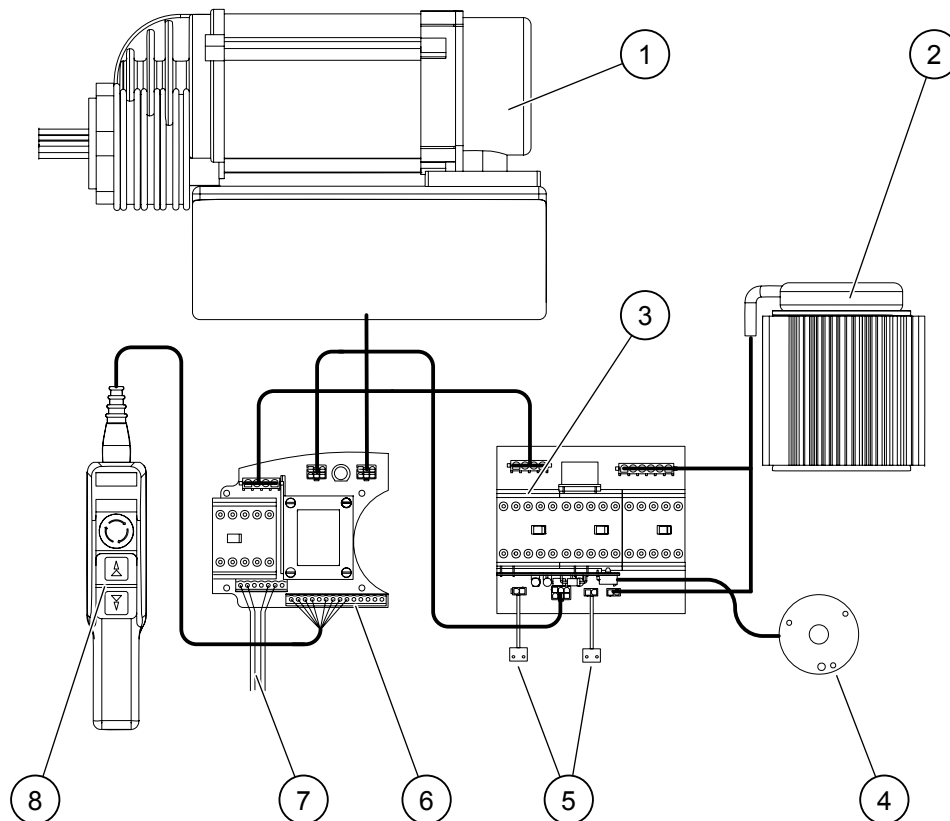


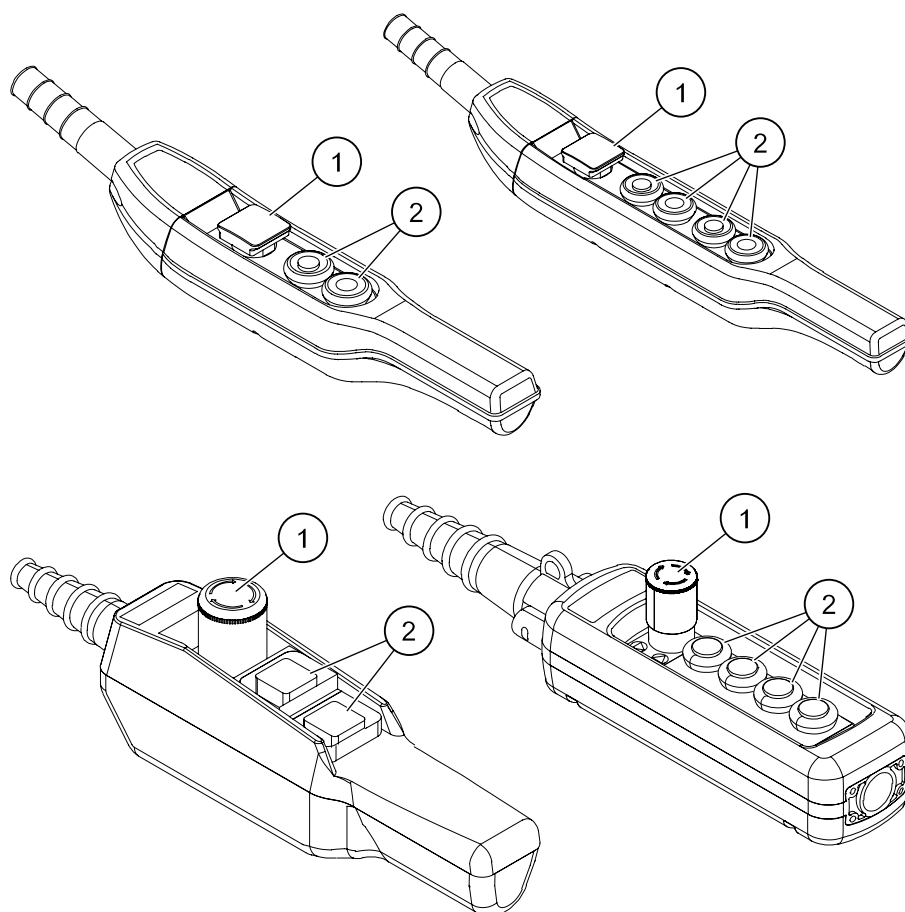
Figure 8. Wiring principle of the electrical chain hoist

- |                                                  |                                                 |
|--------------------------------------------------|-------------------------------------------------|
| 1. Traveling motor unit with integrated inverter | 6. Power board (main contactor and transformer) |
| 2. Hoisting motor + bimetal switches             | 7. Power supply                                 |
| 3. Motor control board                           | 8. Pendant controller                           |
| 4. Brake                                         |                                                 |
| 5. Lifting limit switches                        |                                                 |

## 4.6 Controller

### 4.6.1 Pendant controller

You can control the chain hoist lifting and trolley traveling by using a pendant controller which is connected to the chain hoist with a control cable.

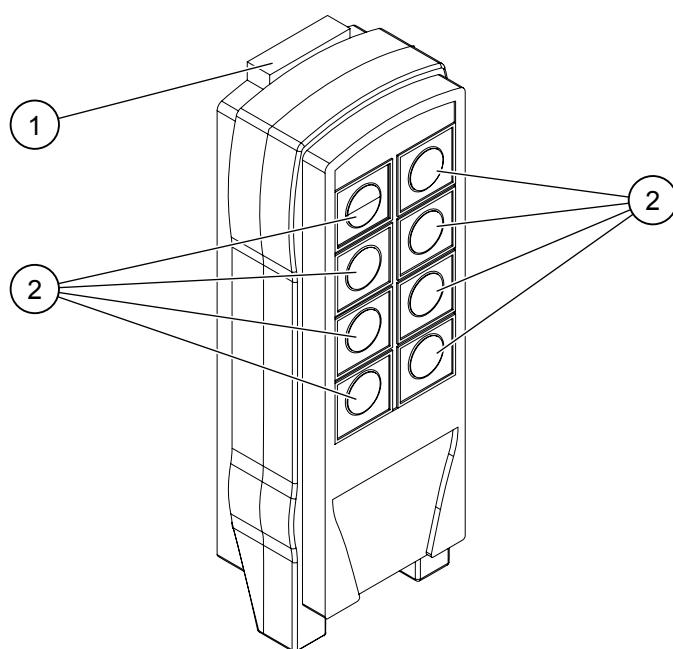


*Figure 9. Examples of pendant controller types*

1. Emergency stop
2. Direction controls

As an option, the pendant controller can have a magnet on the opposite side of the buttons. With the magnet, you can pull aside the pendant controller and its cable and attach it to magnetic material, for example, a steel shelf.

### 4.6.2 Radio controller



*Figure 10. Radio controller*

1. Emergency stop
2. Direction controls

### 4.6.3 Hand control on hook (option)

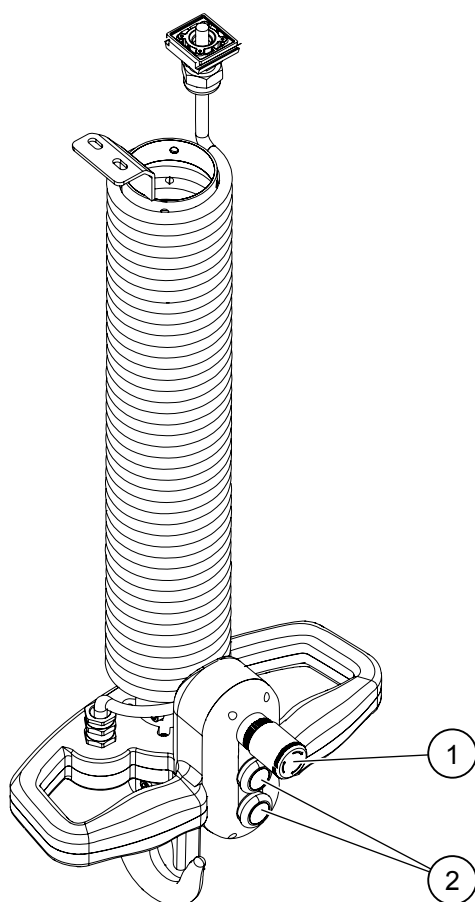


Figure 11. Hand control on hook

1. Emergency stop
2. Direction controls

| Frame size | Max. load [kg] | Max. HOL [m] | C-dimension [mm] |               |
|------------|----------------|--------------|------------------|---------------|
|            |                |              | Long bracket     | Short bracket |
| VX02       | 320            | 5            | 906              | 868           |
| VX05       | 500            | 5            | 906              | 868           |
| VX10       | 1)             |              |                  |               |

1) Configuration not available.

#### Operating conditions

|                      |                                   |
|----------------------|-----------------------------------|
| Ambient temperature  | -20°C to +40°C                    |
| Protection class     | IP55 as standard                  |
| Side pulling angle   | 3 degrees maximum                 |
| Sound pressure level | 70 dB (impact on the environment) |

#### Technical characteristics

|                                           |            |
|-------------------------------------------|------------|
| Rated capacity                            | 125–500 kg |
| Maximum lifting height (HOL)              | 5 m        |
| Control cable length (pendant controller) | 3 m        |
| Hook                                      | Movable    |
| Low voltage control                       | 48 V       |

## 4.7 Suspension types of the chain hoist

### 4.7.1 Suspension bracket

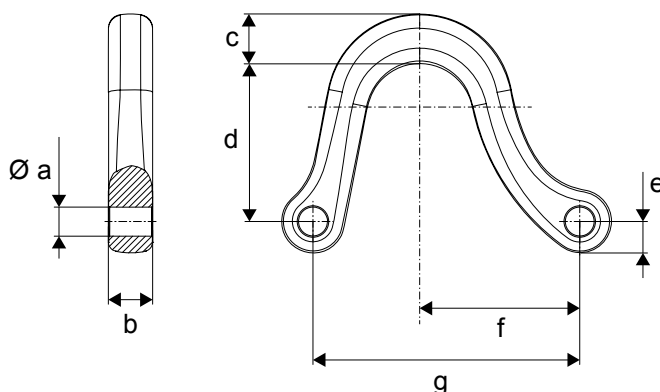


Figure 12. Dimensions of the suspension bracket

| Dimensions [mm] |      |    |      |              |               |      |     |     |
|-----------------|------|----|------|--------------|---------------|------|-----|-----|
| Frame size      | Ø a  | b  | c    | Bracket long | Bracket short | e    | f   | g   |
|                 |      |    |      | d            |               |      |     |     |
| VX02            | 12.5 | 19 | 21.5 | 68           | 30            | 13.5 | 69  | 115 |
| VX05            | 12.5 | 19 | 21.5 | 68           | 30            | 13.5 | 69  | 115 |
| VX10            | 20   | 26 | 26   | 81           | -             | 18   | 102 | 170 |

#### NOTE

The bracket has markings “I” and “II” according to the reeving (1-fall or 2-falls). The markings must match with the markings on the chain hoist body.

### 4.7.2 Suspension eye

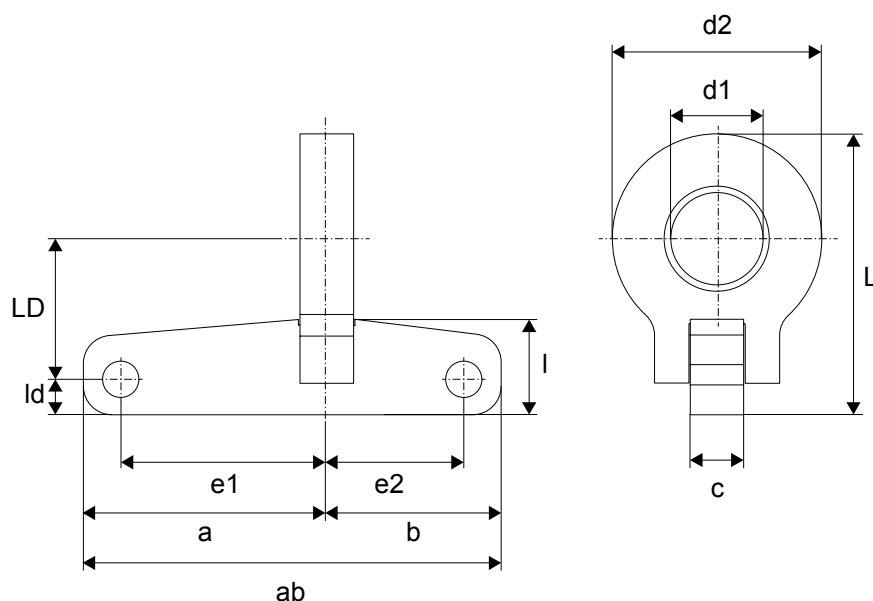


Figure 13. Dimensions of the suspension eye

| Frame size | Dimensions [mm] |     |      |    |    |      |     |    |    |    |     |      |
|------------|-----------------|-----|------|----|----|------|-----|----|----|----|-----|------|
|            | a               | ab  | b    | c  | d1 | d2   | e1  | e2 | l  | ld | L   | LD   |
| VX02       | 81.5            | 140 | 58.5 | 18 | 31 | 70   | 69  | 46 | 32 | 12 | 94  | 47   |
| VX05       | 81.5            | 140 | 58.5 | 18 | 31 | 70   | 69  | 46 | 32 | 12 | 94  | 47   |
| VX10       | 120             | 210 | 90   | 22 | 53 | 98.1 | 100 | 70 | 58 | 17 | 161 | 90.5 |

### 4.7.3 Suspension hook

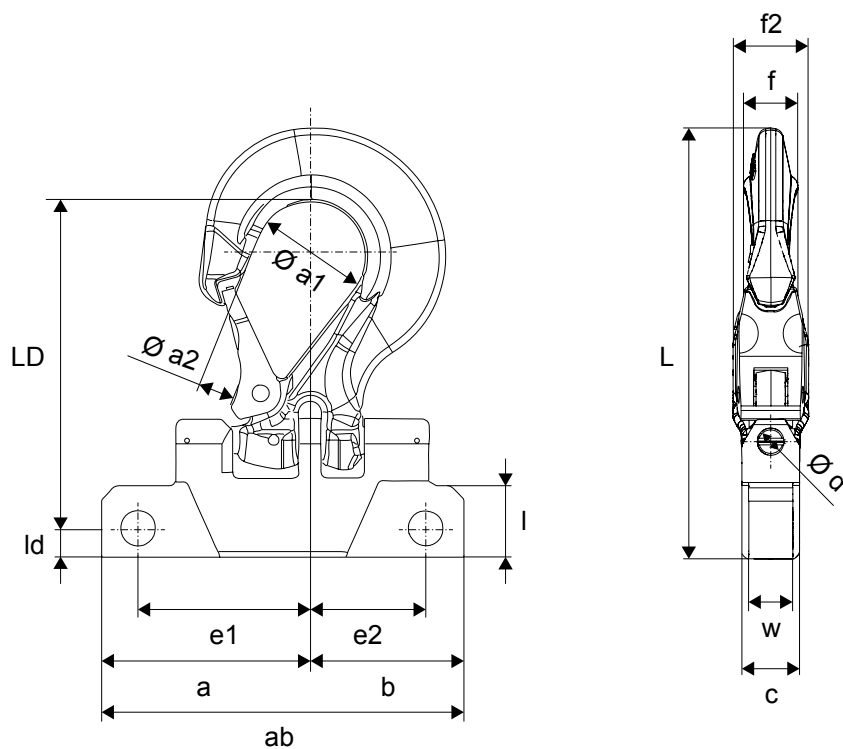


Figure 14. Dimensions of the foldable suspension hook

| Frame size | Hook       | Dimensions [mm] |     |    |    |      |    |      |     |    |    |    |    |    |     |     |    |
|------------|------------|-----------------|-----|----|----|------|----|------|-----|----|----|----|----|----|-----|-----|----|
|            |            | a               | ab  | a1 | a2 | b    | c  | d    | e1  | e2 | f  | f2 | l  | ld | L   | LD  | w  |
| VX02       | RUD GSH 8  | 88              | 153 | 42 | 30 | 65   | 22 | 12.3 | 69  | 46 | 20 | 28 | 30 | 13 | 170 | 130 | 19 |
| VX05       | RUD GSH 8  | 88              | 153 | 42 | 30 | 65   | 22 | 12.3 | 69  | 46 | 20 | 28 | 30 | 13 | 170 | 130 | 19 |
| VX10       | RUD GCH 13 | 123.5           | 214 | 65 | 40 | 90.5 | 34 | 16   | 102 | 68 | 30 | 46 | 41 | 17 | 253 | 193 | 26 |

**NOTE** *1-fall chain hoists: The hook opens towards the back of the chain hoist. 2-fall chain hoists: The hook opens towards the front of the chain hoist. This is marked with markings 'I' and 'II' on the top of the chain hoist body.*

#### 4.7.4 Fixed suspension (option)

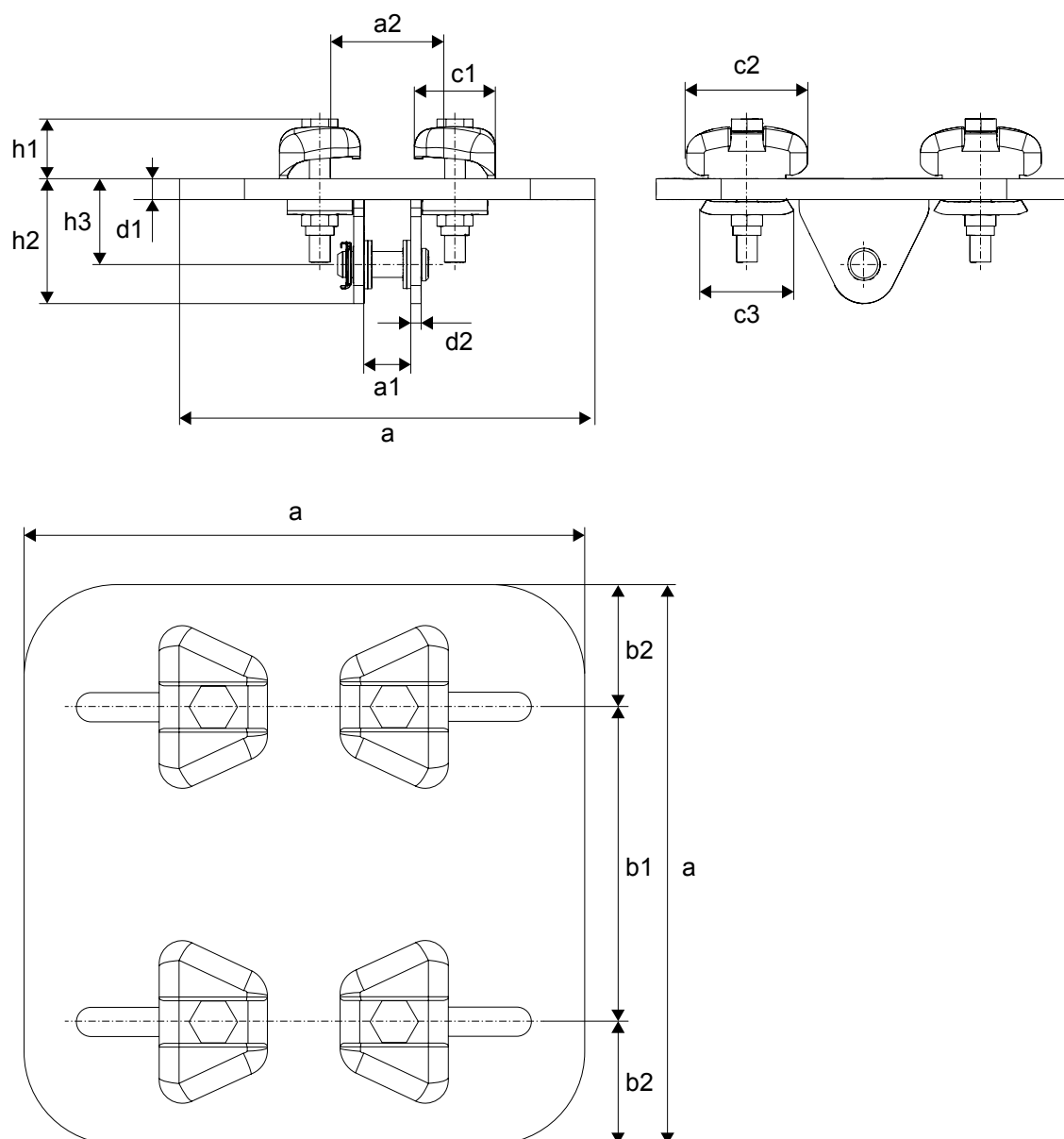


Figure 15. Dimensions of the fixed suspension

| Frame size | Dimensions [mm] |    |        |     |    |    |    |    |    |    |    |    |    |
|------------|-----------------|----|--------|-----|----|----|----|----|----|----|----|----|----|
|            | a               | a1 | a2     | b1  | b2 | c1 | c2 | c3 | d1 | d2 | h1 | h2 | h3 |
| VX02       | 320             | 36 | 58-200 | 180 | 70 | 62 | 93 | 72 | 16 | 8  | 46 | 96 | 66 |
| VX05       | 320             | 36 | 58-200 | 180 | 70 | 62 | 93 | 72 | 16 | 8  | 46 | 96 | 66 |
| VX10       | 1)              |    |        |     |    |    |    |    |    |    |    |    |    |

1) Data not available yet.

## 4.8 Chain drive

The chain drive of the electrical chain hoist includes the following components:

- Chain guide
- Chain sprocket
- Return sprocket (in 2-fall hoist versions)
- Chain.

### 4.8.1 Chain sprocket

The chain sprocket of the electrical chain hoist has six pockets in the chain hoist frame size 02, and five pockets in the chain hoist frame sizes 05 and 10.

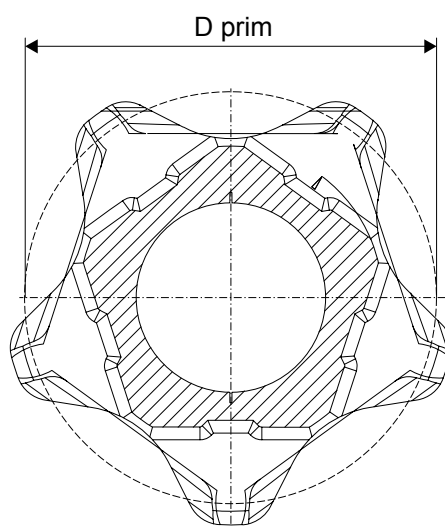


Figure 16. Dimensions of the chain sprocket

| Dimensions [mm] |                |            |                |             |
|-----------------|----------------|------------|----------------|-------------|
| Frame size      | Chain sprocket | Chain      | Nbr of pockets | D prim [mm] |
| VX02            | SINGLE         | 4.1 x 12.1 | 6              | 46.4        |
| VX05            | SINGLE         | 5.1 x 15.1 | 5              | 48.88       |
| VX10            | SINGLE         | 7.2 x 21.1 | 5              | 68.71       |

### 4.8.2 Return sprocket

The return sprocket is included only in the 2-fall chain hoist configurations.

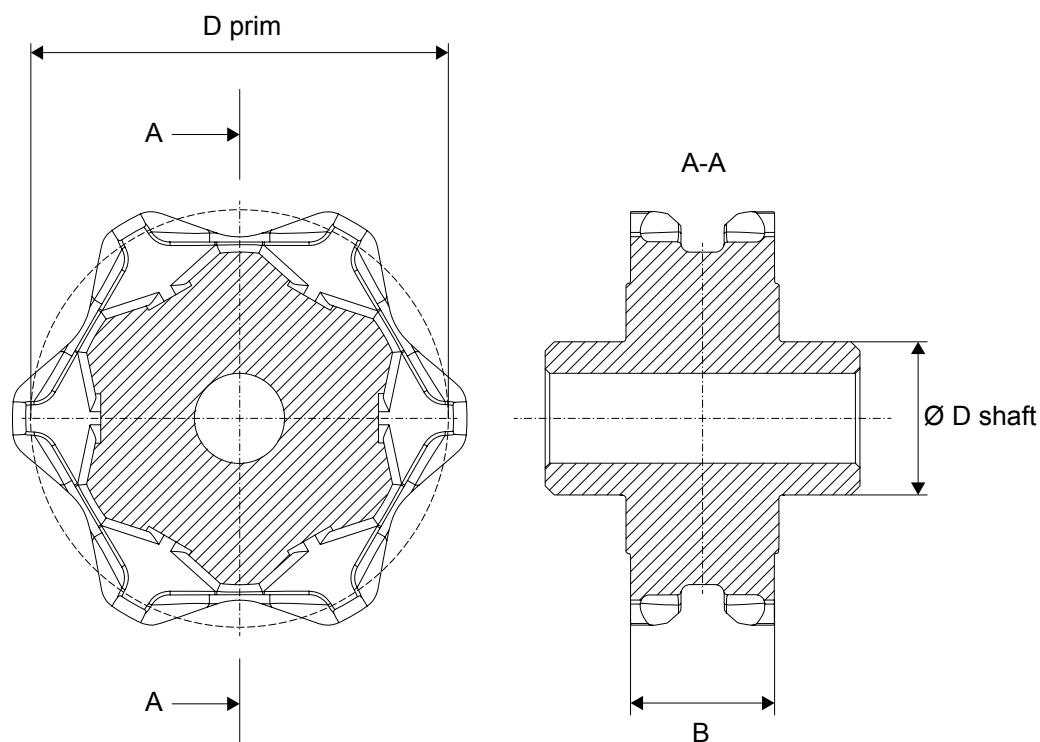


Figure 17. Dimensions of the return sprocket

| Dimensions [mm] |                |            |         |        |             |      |        |
|-----------------|----------------|------------|---------|--------|-------------|------|--------|
| Frame size      | Chain sprocket | Chain      | Pockets | D prim | D shaft [Ø] | B    |        |
| VX02            | SINGLE         | 4.1 x 12.1 | 6       | 46.4   | 16H7        | 17.0 | -0.1   |
| VX05            | SINGLE         | 5.1 x 15.1 | 5       | 48.88  | 25J7        | 21.0 | ±0.1   |
| VX10            | SINGLE         | 7.2 x 21.1 | 5       | 68.71  | 32H7        | 27.0 | 0/-0.2 |

### 4.8.3 Chain - standard chain, stainless steel chain, and DAT chain

#### Safety factors of the chain

| Frame size | T-grade chain |                      | Stainless steel chain |                      |
|------------|---------------|----------------------|-----------------------|----------------------|
|            | Max. load     | Static safety factor | Max. load             | Static safety factor |
| VX02       | 250           | 8.8                  | 160                   | 10                   |
| VX05       | 500           | 7                    | 320                   | 7.8                  |
| VX10       | 1250          | 5.6                  | 630                   | 7.9                  |

#### Technical data of the chain

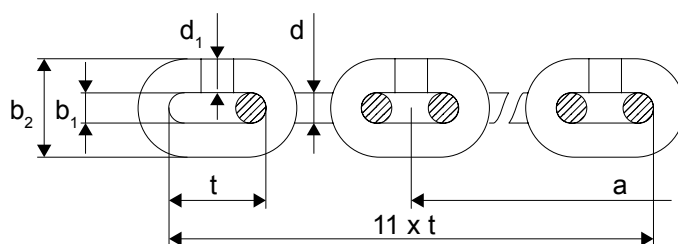


Figure 18. Chain dimensions

| Dimensions and weight                  |               |            |            |            |
|----------------------------------------|---------------|------------|------------|------------|
| Feature                                | Unit          | Frame size |            |            |
|                                        |               | VX02       | VX05       | VX10       |
| Chain size                             | t x d         | 4.1 x 12.1 | 5.1 x 15.1 | 7.2 x 21.1 |
| Diameter                               | d [mm]        | 4.1        | 5.1        | 7.2        |
| Pitch                                  | t [mm]        | 12.1       | 15.1       | 21.1       |
| Control length                         | 11 × t [mm]   | 134.2      | 167.2      | 233.2      |
| Weld seam                              | d1 [mm], max. | 4.4        | 5.6        | 7.8        |
| Internal width                         | b1 [mm], min. | 4.8        | 5.8        | 8.2        |
| External width                         | b2 [mm], max. | 13.7       | 16.9       | 23.7       |
| Label spacing <sup>1)</sup>            | A [m], min.   | 0.12       | 0.15       | 0.22       |
| Label mark height <sup>1)</sup>        | [mm]          | 1.5        | 1.8        | 2          |
| Chain weight                           | G [kg/m]      | 0.38       | 0.62       | 1.20       |
| <sup>1)</sup> Not valid for DAT chain. |               |            |            |            |

| Technical characteristics                                                                                                                                                                                                                  |                      |            |                   |                   |            |                   |                   |            |                   |                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|-------------------|-------------------|------------|-------------------|-------------------|------------|-------------------|--------------------|
|                                                                                                                                                                                                                                            | Unit                 | Frame size |                   |                   |            |                   |                   |            |                   |                    |
|                                                                                                                                                                                                                                            |                      | VX02       |                   |                   | VX05       |                   |                   | VX10       |                   |                    |
| Chain size                                                                                                                                                                                                                                 | t x d                | 4.1 x 12.1 |                   |                   | 5.1 x 15.1 |                   |                   | 7.2 x 21.1 |                   |                    |
| Chain type                                                                                                                                                                                                                                 | Std/<br>Stainl.      | Std        | SS                | DAT               | Std        | SS                | DAT               | Std        | SS                | DAT                |
| Cross section                                                                                                                                                                                                                              | A [mm <sup>2</sup> ] | 26.4       | 26.4              | 26.4              | 40.9       | 40.9              | 40.9              | 81.4       | 81.4              | 81.4               |
| Max. working load                                                                                                                                                                                                                          | mSWP [kg]            | 250        | 160 <sup>1)</sup> | 250 <sup>4)</sup> | 500        | 320 <sup>1)</sup> | 500 <sup>4)</sup> | 1250       | 630 <sup>1)</sup> | 1250 <sup>5)</sup> |
| Stress at max. working load                                                                                                                                                                                                                | σ [MPa]              | 93         | 59.4              | 93                | 120        | 76.8              | 120               | 150        | 75.9              | 150                |
| Test force                                                                                                                                                                                                                                 | Fm [kN]              | 13.8       | 10                | 13.8              | 22         | 16                | 22                | 43         | 32                | 43                 |
| Min. breaking force                                                                                                                                                                                                                        | FB [kN]              | 22         | 16                | 22                | 35         | 25                | 35                | 70         | 50                | 70                 |
| Min. breaking elongation                                                                                                                                                                                                                   | A [%]                | 10         | 15                | 10                | 10         | 15                | 10                | 10         | 15                | 10                 |
| Min. surface hardness                                                                                                                                                                                                                      | [HV]                 | 380HV10    | 250HV5            | 570HV5            | 380HV10    | 250HV5            | 570HV5            | 380HV10    | 250HV5            | 570HV5             |
| Corrosion protection                                                                                                                                                                                                                       |                      | 2)         | 3)                | 2)                | 2)         | 3)                | 2)                | 2)         | 3)                | 2)                 |
| Grade                                                                                                                                                                                                                                      |                      | 80         | 60                | 80                | 80         | 60                | 80                | 80         | 60                | 80                 |
| Class                                                                                                                                                                                                                                      |                      | T          | S                 | DAT               | T          | S                 | DAT               | T          | S                 | DAT                |
| <sup>1)</sup> The lifetime of the stainless steel chain is shortened significantly when the chain is used with high loads. Recommendation for usage is: 70% of max. load: 25-50 cycles per day; 100% of max. load: max. 10 cycles per day. |                      |            |                   |                   |            |                   |                   |            |                   |                    |
| <sup>2)</sup> Galvanized, with additional surface treatment.                                                                                                                                                                               |                      |            |                   |                   |            |                   |                   |            |                   |                    |
| <sup>3)</sup> Non-rusting, bright.                                                                                                                                                                                                         |                      |            |                   |                   |            |                   |                   |            |                   |                    |
| <sup>4)</sup> Group of mechanism M5.                                                                                                                                                                                                       |                      |            |                   |                   |            |                   |                   |            |                   |                    |
| <sup>5)</sup> Group of mechanism M4.                                                                                                                                                                                                       |                      |            |                   |                   |            |                   |                   |            |                   |                    |

## 4.8.4 Chain bucket

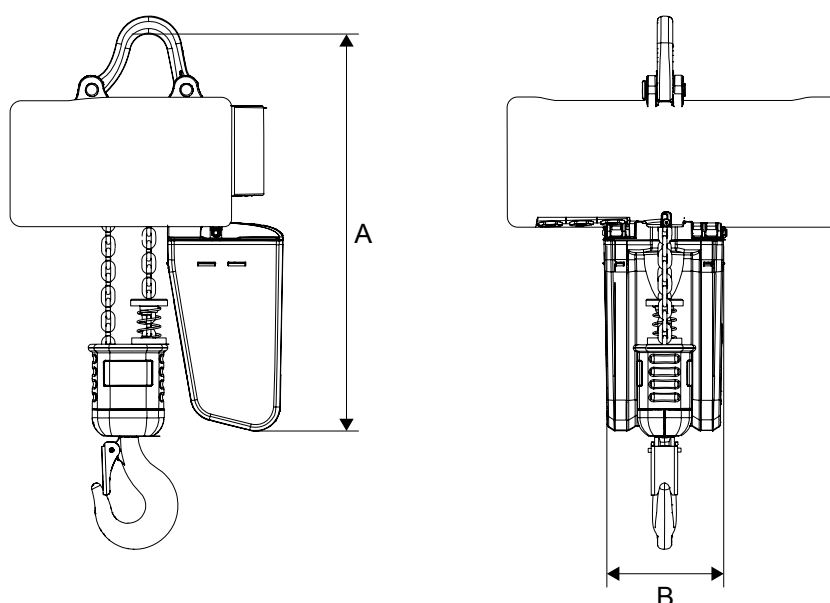


Figure 19. Chain bucket dimensions

| Dimensions [mm] |                       |      |            |              |                             |     |
|-----------------|-----------------------|------|------------|--------------|-----------------------------|-----|
| Frame size      | Chain bucket capacity |      | Chain size | Long bracket | Short bracket <sup>1)</sup> | B   |
|                 | [m]                   | [ft] |            | A            |                             |     |
| VX02            | 6                     | 19   | 4.1 x 12.1 | 469          | 431                         | 145 |
| VX02            | 16                    | 52   | 4.1 x 12.1 | 571          | 533                         | 145 |
| VX05            | 6                     | 19   | 5.1 x 15.1 | 483          | 445                         | 145 |
| VX05            | 16                    | 52   | 5.1 x 15.1 | 584          | 546                         | 145 |
| VX10            | 6                     | 19   | 7.2 x 21.1 | 483          | -                           | 201 |
| VX10            | 16                    | 52   | 7.2 x 21.1 | 584          | -                           | 201 |

<sup>1)</sup> The chain bucket with the A dimension for the short suspension bracket is not available with all chain hoist trolley configurations.

**NOTE** *The dimensions of the chain bucket that are given in the table are valid for the 1-fall chain hoist configurations.*

| Technical characteristics |                                  |
|---------------------------|----------------------------------|
| Material                  | High-density polyethylene / PP-C |
| Weight                    | 0.93-0.97 g/cm <sup>3</sup>      |
| Wall thickness            | 3 mm                             |
| Max. temperature          | 110°C                            |
| Color                     | Black                            |

## 4.9 Hooks and hook blocks of the chain hoist

### 4.9.1 Standard hook

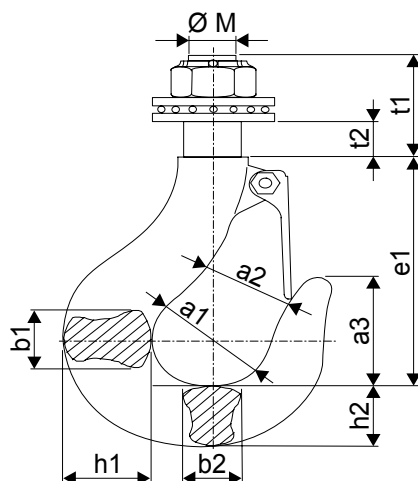


Figure 20. Dimensions of the standard hook

The standard hook of the chain hoist is designed according to the requirements of the DIN15401. The material of the hook is 34 CrMo 4.

| Frame size | Falls | Hook size [RSN] | Dimensions [mm] |    |                  |    |    |    |     |    |    |    |      |
|------------|-------|-----------------|-----------------|----|------------------|----|----|----|-----|----|----|----|------|
|            |       |                 | M [Ø]           | a1 | a2 <sup>1)</sup> | a3 | b1 | b2 | e1  | h1 | h2 | t1 | t2   |
| VX02       | 1/1   | 012T            | 12              | 30 | 22               | 34 | 19 | 15 | 71  | 22 | 19 | 32 | 10.5 |
| VX02       | 2/1   | 020T            | 16              | 34 | 25               | 39 | 21 | 18 | 81  | 26 | 22 | 36 | 13.5 |
| VX05       | 1/1   | 020T            | 16              | 34 | 25               | 39 | 21 | 18 | 81  | 26 | 22 | 36 | 13.5 |
| VX05       | 2/1   | 05T             | 20              | 43 | 32               | 49 | 29 | 24 | 102 | 37 | 31 | 39 | 14.5 |
| VX10       | 1/1   | 05T             | 20              | 43 | 32               | 49 | 29 | 24 | 102 | 37 | 31 | 39 | 14.5 |
|            | 2/1   | 08              | 24              | 48 | 38               | 54 | 35 | 29 | 115 | 44 | 37 | 55 | 20.5 |

<sup>1)</sup> The dimension a2 is given with the hook latch opened.

## 4.9.2 Stainless steel hook

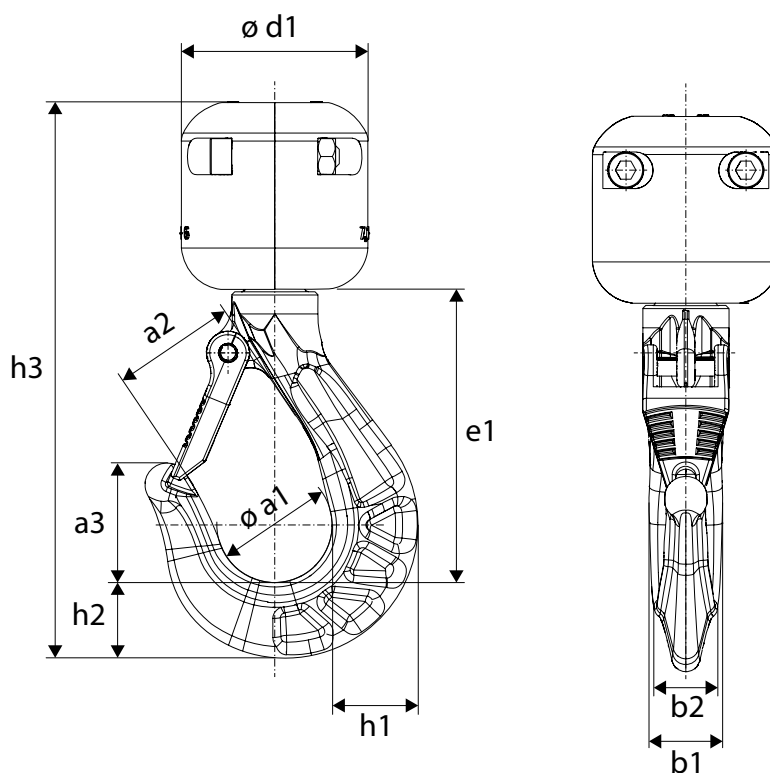


Figure 21. Dimensions of the 1-fall stainless steel hook and hook block

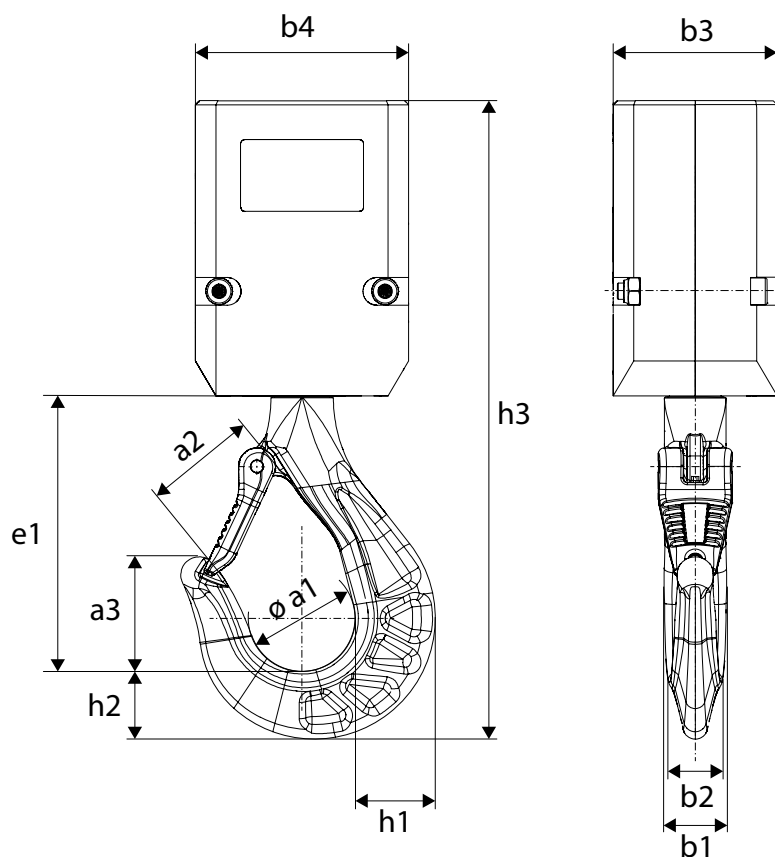


Figure 22. Dimensions of the 2-fall stainless steel hook and hook block

| Frame size | Falls | Hook size | Max. load [kg] | Dimensions (mm) |      |      |      |      |      |       |      |       |      |      |       |
|------------|-------|-----------|----------------|-----------------|------|------|------|------|------|-------|------|-------|------|------|-------|
|            |       |           |                | a1              | a2   | a3   | b1   | b2   | b3   | b4    | d1   | e1    | h1   | h2   | h3    |
| VX02       | 1/1   | CWHF 40   | 160            | 23.0            | 26.7 | 22.6 | 15.9 | 12.9 | -    | -     | 37.0 | 61.5  | 18.5 | 15.5 | 115.4 |
| VX05       | 1/1   | CWHF 50   | 320            | 23.0            | 26.7 | 22.6 | 15.9 | 12.9 | -    | -     | 37.0 | 61.5  | 18.5 | 15.5 | 115.4 |
| VX10       | 1/1   | CWHF 71   | 630            | 32.0            | 34.8 | 33.3 | 19.7 | 17.6 | -    | -     | 52.0 | 81.0  | 24.0 | 21.0 | 154.7 |
| VX10       | 2/1   | CWHF 90   | 1250           | 52.0            | 53.7 | 56.0 | 30.0 | 25.9 | 80.0 | 104.0 | -    | 134.0 | 39.0 | 33.0 | 311.5 |

### 4.9.3 Safety hook (option)

The safety hook is a self-locking version of the hook. It is available as an option.

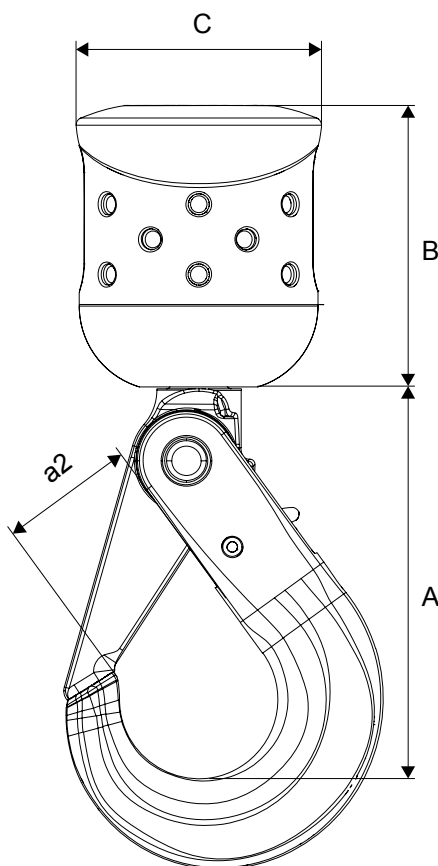


Figure 23. Dimensions of the 1-fall safety hook and hook block

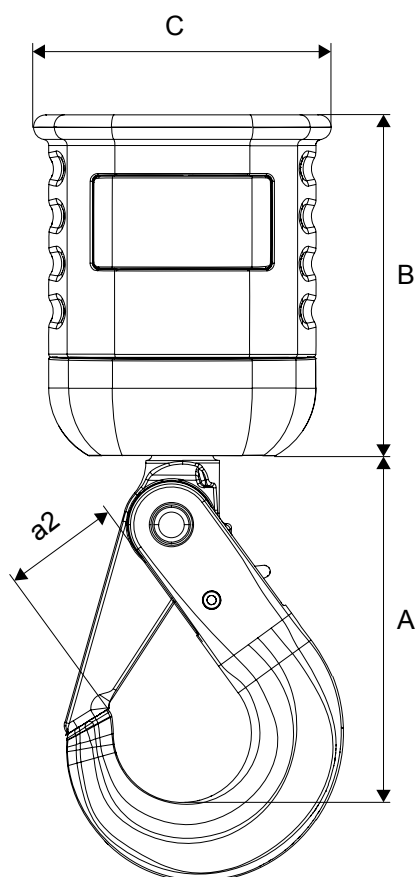
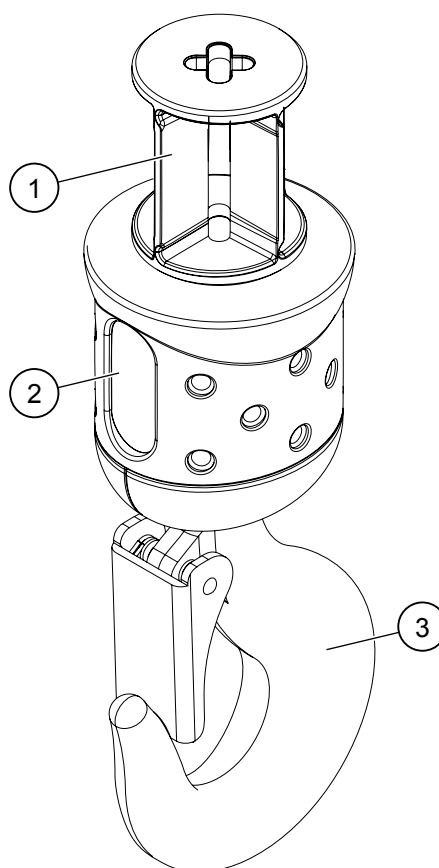


Figure 24. Dimensions of the 2-fall safety hook and hook block

| Frame size | Falls | Hook type  | Dimensions [mm] |    |     |     | Influence to C-dimension [+mm] |
|------------|-------|------------|-----------------|----|-----|-----|--------------------------------|
|            |       |            | A               | a2 | B   | C   |                                |
| VX02       | 1/1   | BKT 7/8-10 | 112             | 36 | 67  | 58  | 43                             |
| VX02       | 2/1   | BKT 7/8-10 | 112             | 36 | 102 | 76  | 26                             |
| VX05       | 1/1   | BKT 7/8-10 | 112             | 36 | 80  | 70  | 27                             |
| VX05       | 2/1   | BKT 7/8-10 | 112             | 36 | 115 | 86  | 7                              |
| VX10       | 1/1   | BKT 7/8-10 | 112             | 36 | 97  | 82  | 7                              |
| VX10       | 2/1   | BKT 13-10  | 172             | 44 | 160 | 126 | 56                             |

#### 4.9.4 Single fall hook blocks

The material of the hook block rubber part is Santoprene-8221.65.



*Figure 25. Single fall hook block*

- |                           |                                                           |
|---------------------------|-----------------------------------------------------------|
| 1. Limit switch activator | 3. Turnable hook with safety latch, axial needle bearings |
| 2. Grip area              |                                                           |

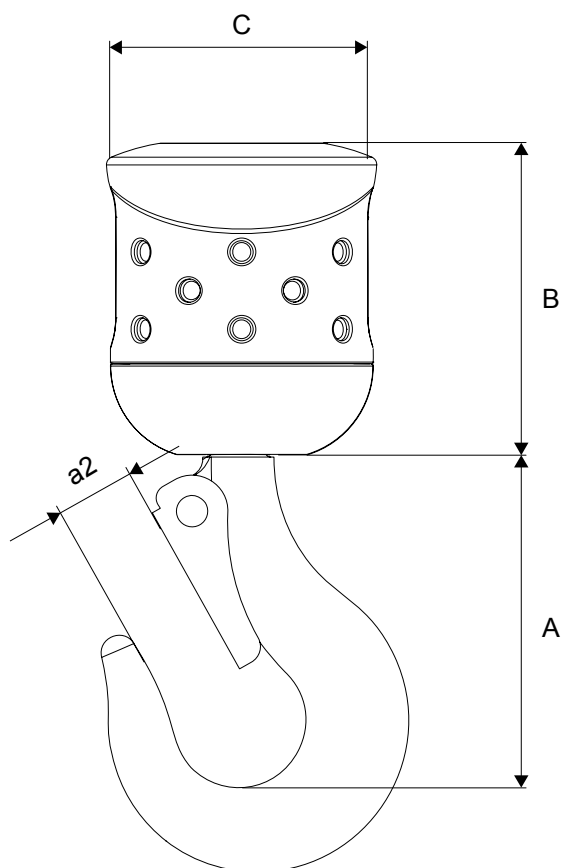


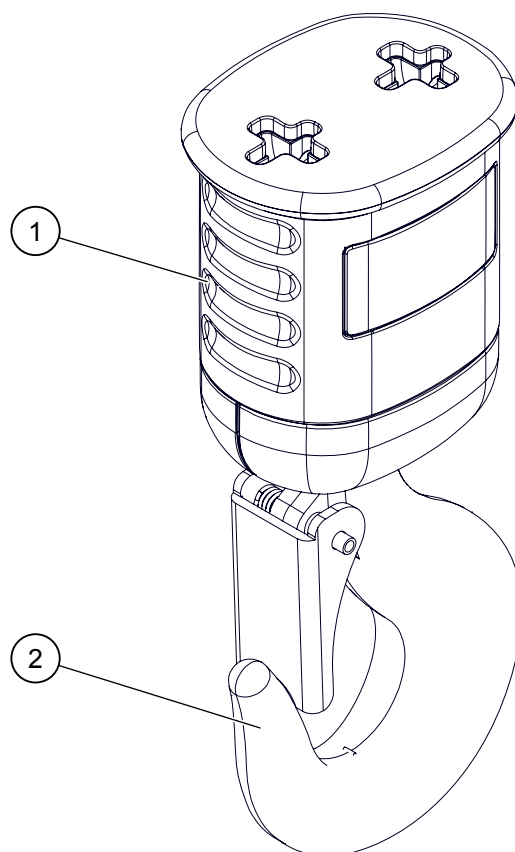
Figure 26. Dimensions of the single fall hook block

| Frame size | Reeving | Dimensions [mm] |    |    |                  |
|------------|---------|-----------------|----|----|------------------|
|            |         | A               | B  | C  | a2 <sup>1)</sup> |
| VX02       | 2/1     | 75              | 67 | 58 | 19               |
| VX05       | 2/1     | 85              | 81 | 70 | 21               |
| VX10       | 2/1     | 106             | 97 | 82 | 27               |

<sup>1)</sup> The dimension a2 is given with the hook latch opened.

#### 4.9.5 Two-fall hook blocks

The material of the hook block rubber part is Santoprene-8221.65.



*Figure 27. Two-fall hook block*

1. Grip area
2. Turnable hook with safety latch, axial needle bearings

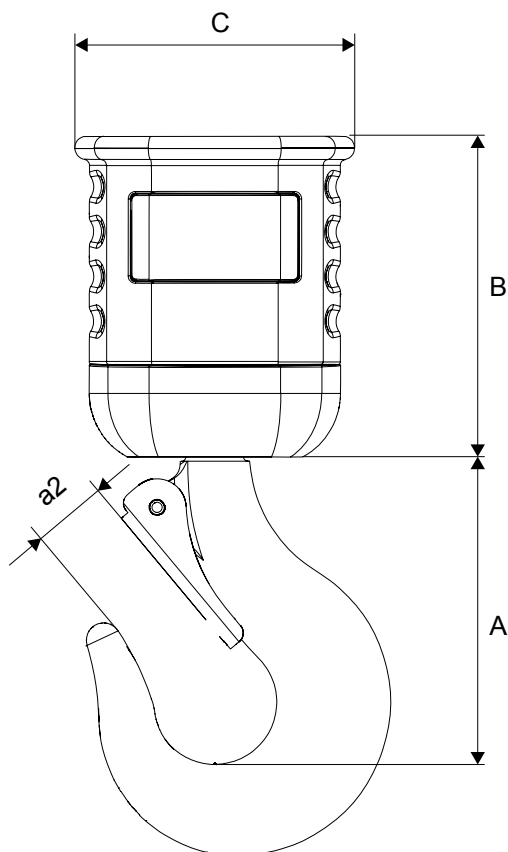


Figure 28. Dimensions of the two-fall hook block

| Frame size                                                          | Reeving | Dimensions [mm] |     |     |                  |
|---------------------------------------------------------------------|---------|-----------------|-----|-----|------------------|
|                                                                     |         | A               | B   | C   | a2 <sup>1)</sup> |
| VX02                                                                | 2/1     | 86              | 106 | 97  | 21               |
| VX05                                                                | 2/1     | 106             | 112 | 97  | 27               |
| VX10                                                                | 2/1     | 117             | 160 | 126 | 25               |
| <sup>1)</sup> The dimension a2 is given with the hook latch opened. |         |                 |     |     |                  |

#### 4.10 Rotating geared limit switch (GLS)

The rotating geared limit switch is available as a 2- or 4-step version.

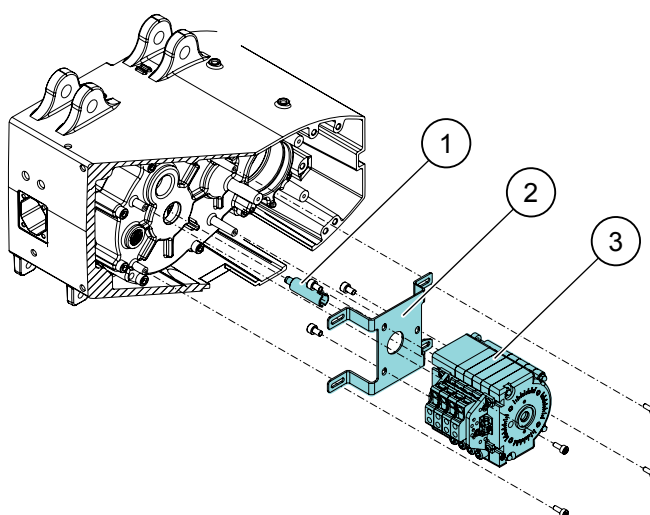


Figure 29. 4-step rotating geared limit switch

- |                 |                                 |
|-----------------|---------------------------------|
| 1. Coupling     | 3. Rotating geared limit switch |
| 2. Fixing plate |                                 |

#### 4.10.1 Rotating geared limit switch types

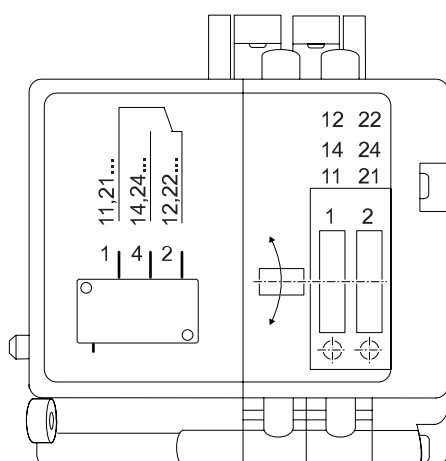


Figure 30. 2-step rotating geared limit switch

The 2-step rotating geared limit switch works together with the internal controls as an adjustable upper and lower stop limit. It is mechanically connected to the hoisting gear and counts the revolutions of the chain sprocket. The internal gear ratio of the geared limit switch must be designed according to the total stroke of the chain hoist.

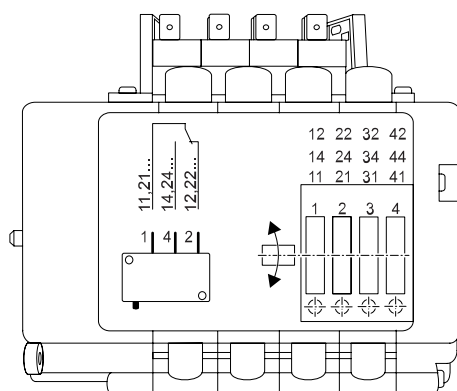


Figure 31. 4-step rotating geared limit switch

The 4-step rotating geared limit switch has a similar operating function as the 2-step geared limit switch, but provides four separately adjustable switching units. There are several configuration possibilities for this feature, but the configuration 1 (see table 4-step geared limit switch) is the standard configuration.

#### 4.10.2 Rotating geared limit switch configurations

##### 2-step geared limit switch

| Config. | GLS type                                   | Description                    | Switch unit              |
|---------|--------------------------------------------|--------------------------------|--------------------------|
| 1       | 2-step GLS + microswitch <sup>1), 2)</sup> | Limit switch safety UP stop    | Switch X3A <sup>3)</sup> |
|         |                                            | Limit switch safety DOWN stop  | Switch X4A <sup>3)</sup> |
|         |                                            | Limit switch working UP stop   | GLS UP 1                 |
|         |                                            | Limit switch working DOWN stop | GLS DOWN 1               |
| 2       | 2-step GLS + microswitch                   | Limit switch UP stop           | Switch X3A <sup>3)</sup> |
|         |                                            | Limit switch DOWN stop         | Switch X4A <sup>3)</sup> |
|         |                                            | Slow speed UP                  | GLS UP 1                 |
|         |                                            | Slow speed DOWN                | GLS DOWN 1               |

<sup>1)</sup> Standard configuration.

<sup>2)</sup> Only for chain hoist frame sizes VX02-VX10.

<sup>3)</sup> The switches X3A and X4A are electro-mechanical limit switches that are installed on the chain guide. They are activated mechanically when touched by the buffer of the hook.

##### 4-step geared limit switch

| Config.                                                                                                                                                                          | GLS type                                   | Description                    | Switch unit              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------------------|--------------------------|
| 1                                                                                                                                                                                | 4-step GLS + microswitch <sup>1), 2)</sup> | Limit switch safety UP stop    | Switch X3A <sup>3)</sup> |
|                                                                                                                                                                                  |                                            | Limit switch safety DOWN stop  | Switch X4A <sup>3)</sup> |
|                                                                                                                                                                                  |                                            | Limit switch working UP stop   | GLS UP 1                 |
|                                                                                                                                                                                  |                                            | Limit switch working DOWN stop | GLS DOWN 1               |
|                                                                                                                                                                                  |                                            | Slow speed UP                  | GLS UP 2                 |
|                                                                                                                                                                                  |                                            | Slow speed DOWN                | GLS DOWN 2               |
| 2                                                                                                                                                                                | 4-step GLS + microswitch                   | Limit switch safety UP stop    | Switch X3A <sup>3)</sup> |
|                                                                                                                                                                                  |                                            | Limit switch safety DOWN stop  | Switch X4A <sup>3)</sup> |
|                                                                                                                                                                                  |                                            | Limit switch working UP stop   | GLS UP 1                 |
|                                                                                                                                                                                  |                                            | Limit switch working DOWN stop | GLS DOWN 1               |
|                                                                                                                                                                                  |                                            | Free for customer use          | GLS UP 2                 |
|                                                                                                                                                                                  |                                            | Free for customer use          | GLS DOWN 2               |
| 3                                                                                                                                                                                | 4-step GLS + microswitch                   | Limit switch UP stop           | Switch X3A <sup>3)</sup> |
|                                                                                                                                                                                  |                                            | Limit switch DOWN stop         | Switch X4A <sup>3)</sup> |
|                                                                                                                                                                                  |                                            | Slow speed UP                  | GLS UP 1                 |
|                                                                                                                                                                                  |                                            | Slow speed DOWN                | GLS DOWN 1               |
|                                                                                                                                                                                  |                                            | Free for customer use          | GLS UP 2                 |
|                                                                                                                                                                                  |                                            | Free for customer use          | GLS DOWN 2               |
| 1) Standard configuration.                                                                                                                                                       |                                            |                                |                          |
| 2) Only for chain hoist frame sizes VX02-VX10.                                                                                                                                   |                                            |                                |                          |
| 3) The switches X3A and X4A are electro-mechanical limit switches that are installed on the chain guide. They are activated mechanically when touched by the buffer of the hook. |                                            |                                |                          |

### 4.10.3 Functional description of the rotating geared limit switch

If the hoist is equipped with a rotating geared limit switch, adjust the cutting points (upper and lower limits) of the geared limit switch before starting to operate the hoist. Instructions on how to set the limits in the different geared limit switch configurations can be found on a sticker. The sticker is placed on the hoist profile, next to the geared limit switch adjustment holes.

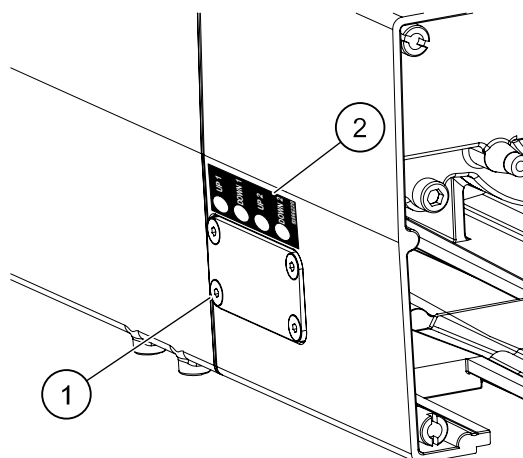


Figure 32. Location of the cover plate and adjustment sticker of the GLS on the hoist profile

1. Cover plate
2. Sticker for GLS adjustment instructions

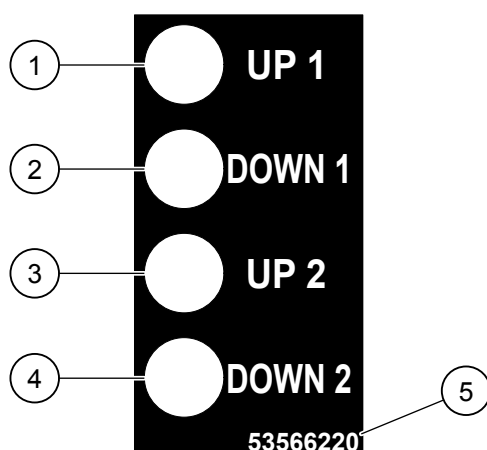


Figure 33. Sticker for GLS adjustment (example of a 4-step GLS)

- |                         |                          |
|-------------------------|--------------------------|
| 1. Upper (UP) limit 1   | 4. Lower (DOWN) limit 2  |
| 2. Lower (DOWN) limit 1 | 5. Identification number |
| 3. Upper (UP) limit 2   |                          |

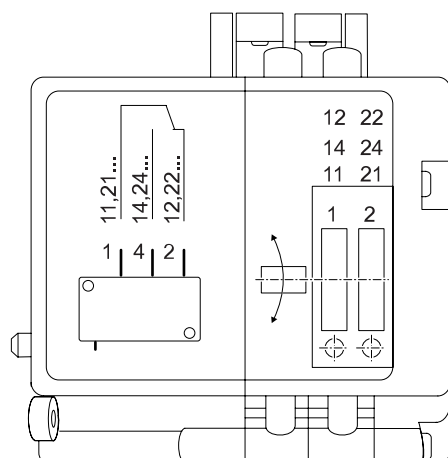


Figure 34. 2-step rotating geared limit switch

The set screw 1 is the upper limit and the set screw 2 is the lower limit.

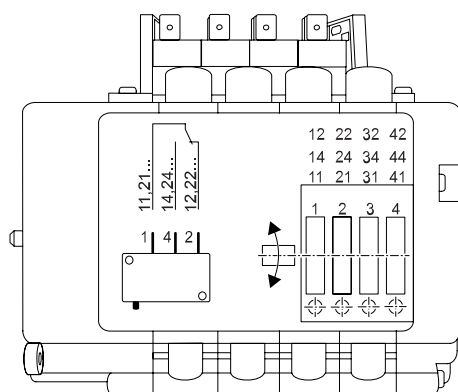


Figure 35. 4-step rotating geared limit switch

The set screw 1 is the upper limit 1 and the set screw 2 is the lower limit 1.

The set screw 3 is the upper limit 2 and the set screw 4 is the lower limit 2.

#### 4.10.4 Rotating geared limit switch operational limits

The operational limits for a standard rotating limit switch are shown in the following table.

| Frame size | Max. HOL [m] |         |           |         |
|------------|--------------|---------|-----------|---------|
|            | Ratio 180    |         | Ratio 280 |         |
|            | 1-fall       | 2-falls | 1-fall    | 2-falls |
| VX02       | 25           | 12.5    | 38        | 19      |
| VX05       | 25           | 12.5    | 40        | 20      |
| VX10       | 36           | 18      | 56        | 28      |

#### 4.11 Extension profile

The following optional features extend the hoist length through an extension profile part on the hoist frame:

- Double brake
- Geared limit switch (+ double brake)
- Stand-by heating.

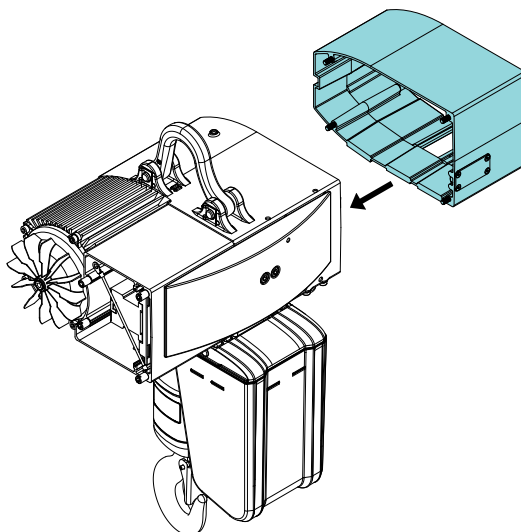


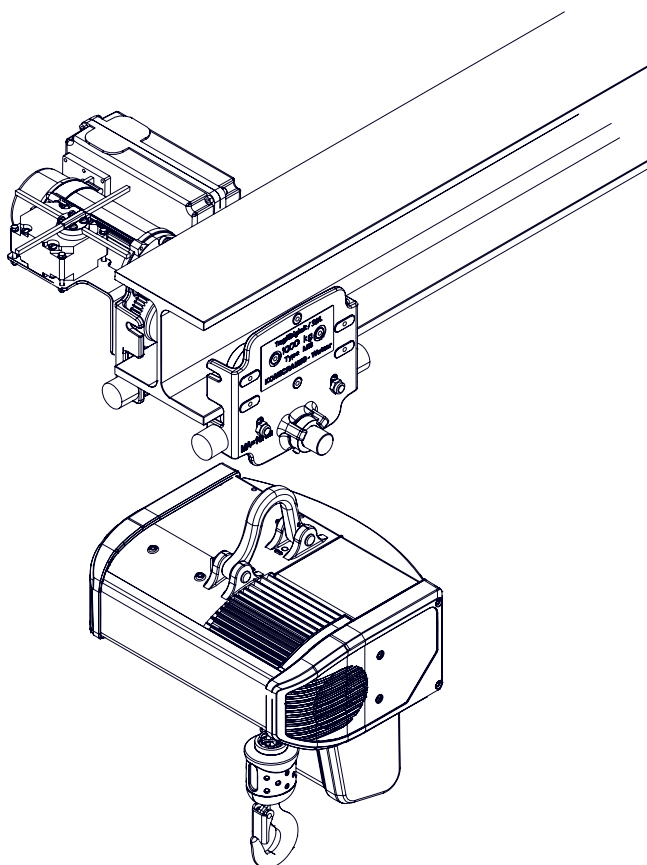
Figure 36. Chain hoist with extension profile

| Frame size  | Extension profile [mm] <sup>1)</sup> |
|-------------|--------------------------------------|
| <b>VX02</b> | 116                                  |
| <b>VX05</b> | 132                                  |
| <b>VX10</b> | 132                                  |

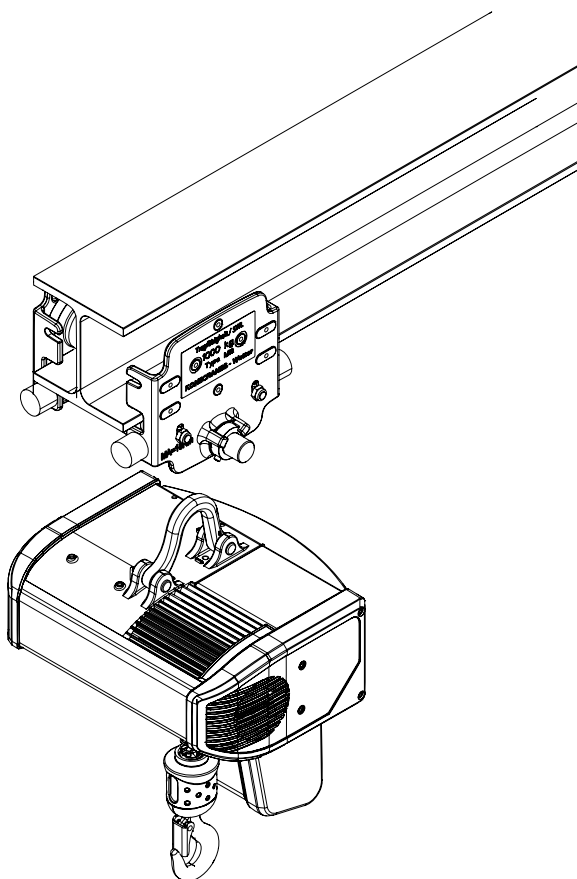
<sup>1)</sup> The extension profile length includes the seal.

## 4.12 Chain hoist trolleys

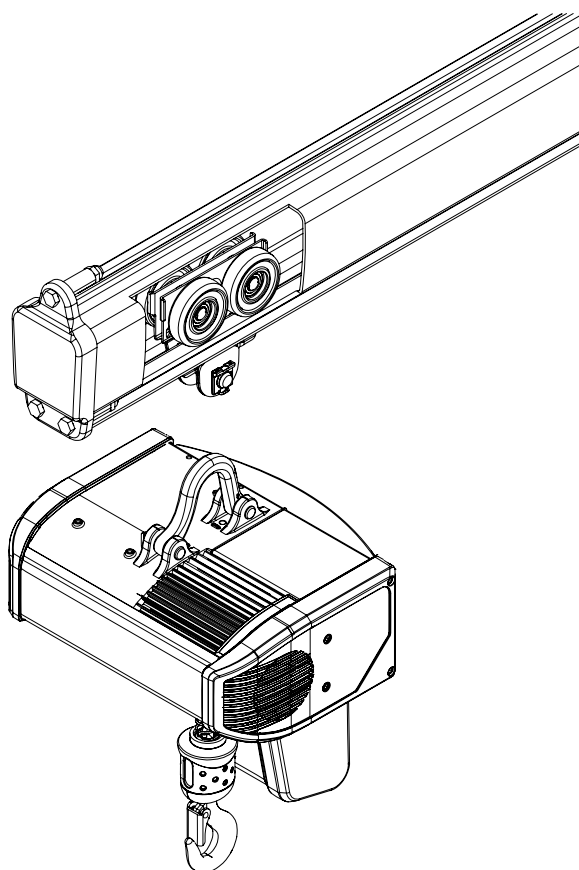
The electrical chain hoist can be combined with a variety of chain hoist trolleys. The EUROCHAIN VX electrical chain hoist is compatible with both C- and M-trolleys of the chain hoist.



*Figure 37. Motorized trolley (normal headroom trolley)*



*Figure 38. Push trolley*



*Figure 39. Push trolley inside LCS profile*

## 5 LUBRICATION

### 5.1 Lubrication points of the chain hoist

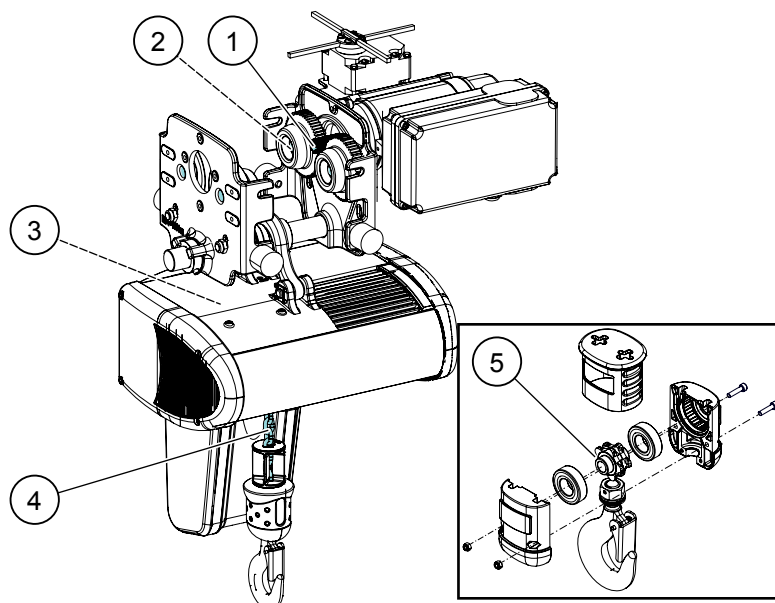


Figure 40. Lubrication points of the chain hoist and chain hoist trolley

| Pos. | Component                        | Lubrication interval                                    |
|------|----------------------------------|---------------------------------------------------------|
| 1    | Secondary shaft (traveling gear) | Annual (depending on the usage)                         |
| 2    | Trolley wheel bearings           | Lubricated for the design working period of the product |
| 3    | Hoisting gear                    | Lubricated for the design working period of the product |
| 4    | Chain                            | From 1 week up to a year (depending on the usage)       |

### 5.2 Lubricants for the chain hoist

#### 1. Traveling gear (secondary shaft)

| Installation      | Trade name and number | Quantity [l] | Quantity [pt] |
|-------------------|-----------------------|--------------|---------------|
| Factory installed | MOBILITH SHC 460      | 0.075        | 0.16          |

Available as an option: Food industry lubricant (grease)

| Installation      | Trade name and number  | Quantity [l] | Quantity [pt] |
|-------------------|------------------------|--------------|---------------|
| Factory installed | Klübersynth UH1 14-151 | 0.075        | 0.16          |

#### 2. Hoisting gear

Lubricated with oil. Lubrication lasts for the design working period of the hoist.

**Standard lubricant**

| Installation      | Trade name and number | Quantity                                                    |
|-------------------|-----------------------|-------------------------------------------------------------|
| Factory installed | Dexron III            | Lubricated for the design working period of the chain hoist |

If you must add lubricant for the hoisting gear, see the following table for the correct fill amount.

| Frame size  | Quantity [l] | Quantity [pt] |
|-------------|--------------|---------------|
| <b>VX02</b> | 0.25         | 0.53          |
| <b>VX05</b> | 0.3          | 0.63          |
| <b>VX10</b> | 0.6          | 1.27          |

**Available as an option: Food safety lubricant (oil)**

| Installation      | Trade name and number  | Quantity  |
|-------------------|------------------------|-----------|
| Factory installed | Klüberoil 4 UH1- 220 N | See table |

| Frame size  | Quantity [l] | Quantity [pt] |
|-------------|--------------|---------------|
| <b>VX02</b> | 0.25         | 0.53          |
| <b>VX05</b> | 0.3          | 0.69          |
| <b>VX10</b> | 0.6          | 1.27          |

**3. Chain**

- Lubricate the chain carefully before the first run (commissioning).
- To extend the chain lifetime, continue to lubricate the chain within regular intervals.
- Chain lubrication interval varies from a minimum of one week to one year, depending on the usage.

**Standard lubricant: Grease lubricant**

| Installation               | Trade name and number                 | Quantity    |
|----------------------------|---------------------------------------|-------------|
| Lubricate before first run | RENOLIT special chain grease 55395066 | As required |

**Available as an option: Food safety lubricant (oil)**

| Installation               | Trade name and number  | Quantity    |
|----------------------------|------------------------|-------------|
| Lubricate before first run | Klüberoil 4 UH1- 220 N | As required |



