

# Cow Brushes

## User Manual



## **Congratulations on your new cow brush.**

We are confident that this brush will meet your expectations.

It is easy for the animals to use – it is maneuverable – and it provides a gentle massage. It is important to read this manual carefully before using the brush. Follow the instructions to get the full and lasting benefits from your new cow brush. The brush complies with the requirements of the EU Machinery Directive and is therefore CE marked.

**Machine type:** Cow Brush

**Model number:** Karoline / Molly

**Serial number:**

**Manufacturer:** Kvia ApS

**Address:** Kausager 6, 6200 Aabenraa

**Phone:** +45 40 54 54 58

**E-mail:** info@kvia.com

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Electrical Diagram (Wiring Diagram)

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## PRODUCT DESCRIPTION

The Karoline and Molly cow brushes are designed to provide maximum wellness in a gentle and comfortable way for the cows.

Karoline and Molly are specially designed for cows and heifers of all sizes. The Karoline brush is primarily used for adult animals.

The brushes are used for grooming mainly dairy cattle and are mounted in free-stall barns.

The brush works by means of a brushing system mounted on a vertically positioned shaft, which is rotated using a gear motor. The brushing unit is a single piece with stiff nylon bristles, containing several thousand plastic/nylon hairs.

The brush and gear motor are combined into one unit, mounted on a fixed motor flange on the wall arm. The brush swings over a universal joint to allow maximum movement, which is mounted below the gear motor.

The brush starts when the cow pushes against it. If the brush tilts beyond 70 degrees, the rotation will stop.

The Karoline and Molly brushes reverse rotation direction every time they start. A tail guard tube is mounted between the universal joint and the brush to prevent the cow from getting its tail around the drive shaft

## **WARNINGS**

- A safety switch must always be installed on the fixed installation to disconnect power to the brush's electrical system.
- Always disconnect the power at the switch before working on the brush/machine.
- Connect the cow brush only to an approved electrical installation with additional protection (AC/DC relay).
- Check voltage, fuses, cables, and any junction boxes before connecting the cow brush.
- Do not touch plugs or sockets with wet hands.
- Immediately replace damaged cables.
- The cow brush bolts must be inspected every 6 months and tightened as needed.
- Incorrect connection of the cow brush may cause life-threatening electric shock.

## SETUP / INSTALLATION

Carefully unpack the cow brush and inspect it for any transport damage.

The cow brush must be installed in a safe and secure manner — use a hoist or forklift if necessary.

Use the supplied bolts to mount the wall bracket and stand. Remove the rubber plug/hose from the gearbox vent plug. Before connecting the power, check the voltage, fuses, cables, and emergency stop button.

**Important:** The cow brush must be connected while the power is switched off. Always install a safety switch between the main power and the brush's electrical system.

Only connect the cow brush to an approved electrical installation with additional protection (e.g. AC/DC relay).

All cow brushes operate using a frequency converter.

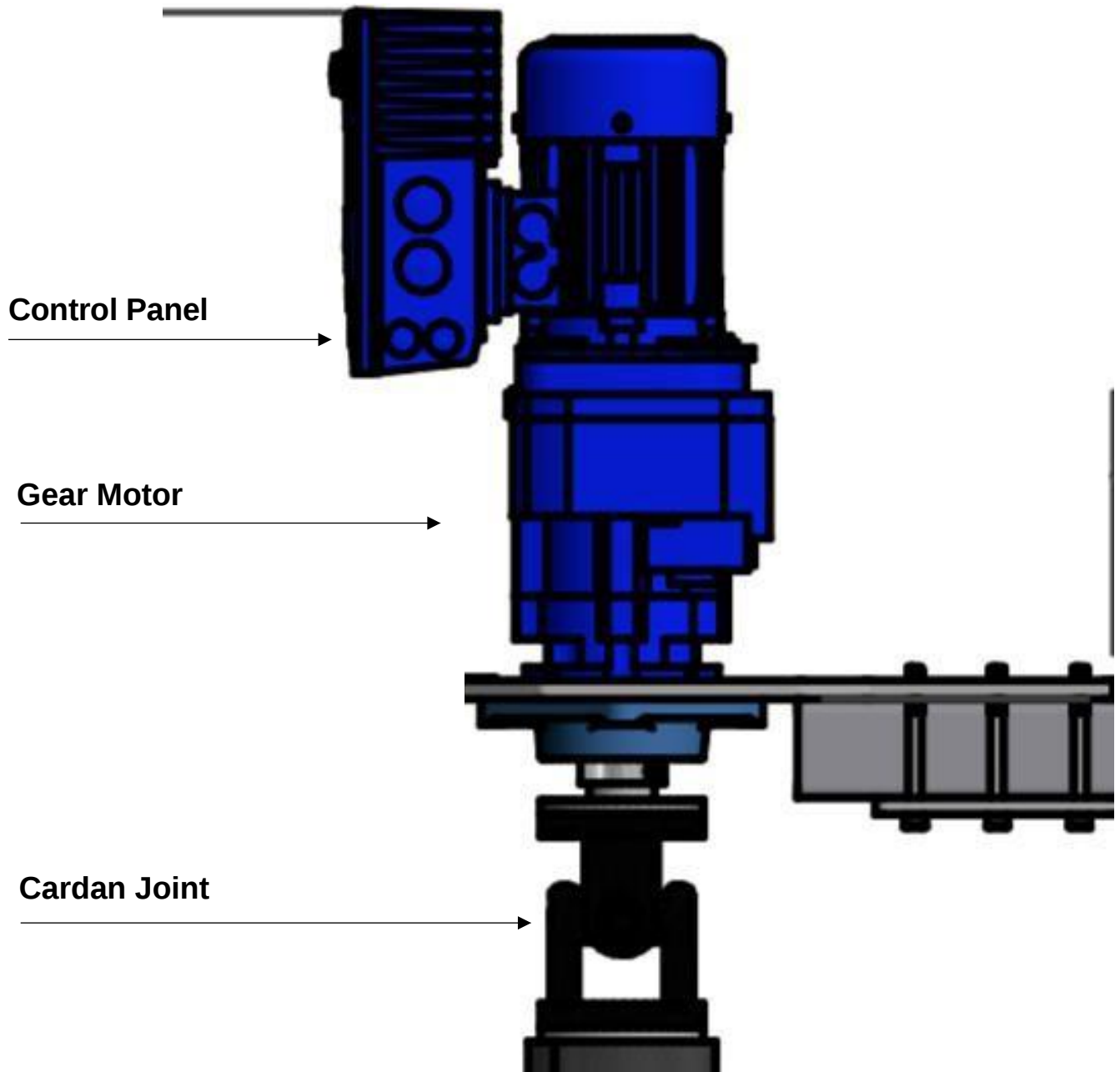
If multiple brushes are connected to the same circuit, an AC-DC residual current device is recommended.

**If you are unsure about the installation, contact a qualified electrician.**

## STARTUP / OPERATION

- Connect the cow brush as described in the section: “Setup / Installation.”
- Tighten all bolts and screws before commissioning.
- Make sure to remove the rubber plug/hose from the gearbox vent plug.
- Check that the tail guard tube/shield is correctly mounted.
- Before switching on the power, check that the brush moves freely by pushing it in all directions.
- If the cow brush is mounted on a wall bracket, ensure that it cannot swing over any low wall that may damage the brush.
- Connect the power and turn on the switch.
- The cow brush is activated by a motion sensor.
- The brush starts when the cow pushes against it. If the brush tilts beyond 70 degrees, rotation will automatically stop.
- The brush changes its direction of rotation each time it star

## CONTROL MOUNT



## **MAINTENANCE**

The cow brush has a direct drive from the motor to the gearbox and then to the brush shaft. Combined with a lifetime-lubricated gearbox, this means the transmission is maintenance-free.

### **SEMI-ANNUAL MAINTENANCE**

- Grease the grease nipple on the universal joint with multi-purpose grease.
- Lubricate the brush bearing with multi-purpose grease.
- Check the brush module for dirt and debris. Clean if necessary.

The brush module will gradually wear, and some parts may wear faster than others. Modules should be replaced when the bristles no longer clean effectively.

## TROUBLESHOOTING

| Symptom                        | Cause                    | Solution                                        |
|--------------------------------|--------------------------|-------------------------------------------------|
| Brush motor stops              | Emergency stop activated | Release the emergency stop button               |
| Brush motor stops              | Cable break              | Power off the brush and replace the cable       |
| Machine makes noise or squeaks | Lack of lubrication      | Lubricate grease nipples according to schedule  |
| Continuous rotation            | Sensor issue             | Open the cover and rotate the sensor 180°       |
| Does not stop or start         | Sensor issue             | Open the cover and turn the sensor a half turn. |



## **REPAIR / REMOVAL**

As far as possible, all standard repairs and part replacements should be carried out by a qualified technician or maintenance personnel.

Any repair beyond what is described in the section “Troubleshooting” must be performed by a service technician sent or approved by Kvia ApS. If the issue appears to be electrical in nature, a certified electrician must be used.

If unauthorized personnel attempt to repair the equipment, the warranty will be void. The same applies to the use of non-original spare parts.

When dismantling or disposing of the cow brush, the following procedure should be followed:

- Remove the brush modules, tail guard, and other plastic parts, and dispose of them separately.
- Remove the gearbox, motor, bearing, and electrical control unit with cables.
- The remaining parts can be sent for scrap. As they are made of stainless steel, they will yield a higher scrap value.

In case of resale to a third party, it is the seller’s responsibility to ensure that the machine is in a safe condition and that the buyer receives a complete manual

## WARRANTY / PRODUCT LIABILITY

The enclosed EU Declaration of Conformity also serves as your warranty certificate.

The warranty is valid for five calendar years from the date of signature.

### THE WARRANTY COVERS:

- All mechanical and electrical defects of the cow brush, including:
  - Component failures
  - Design flaws
  - Manufacturing defects
- Labor and materials
- Liability only applies if the defect originates from the factory.

### WARRANTY LIMITATIONS

The warranty may be reduced or void if the user fails to follow the maintenance instructions or uses unauthorized spare parts not approved by Kvia ApS.

The warranty does **not** cover the following:

- Repairs attempted by unauthorized personnel
- Damage due to misuse, impact, frost, transport damage, or other inappropriate handling
- Defects caused by installation errors
- Wear parts, such as bearings, seals, brushes, etc.

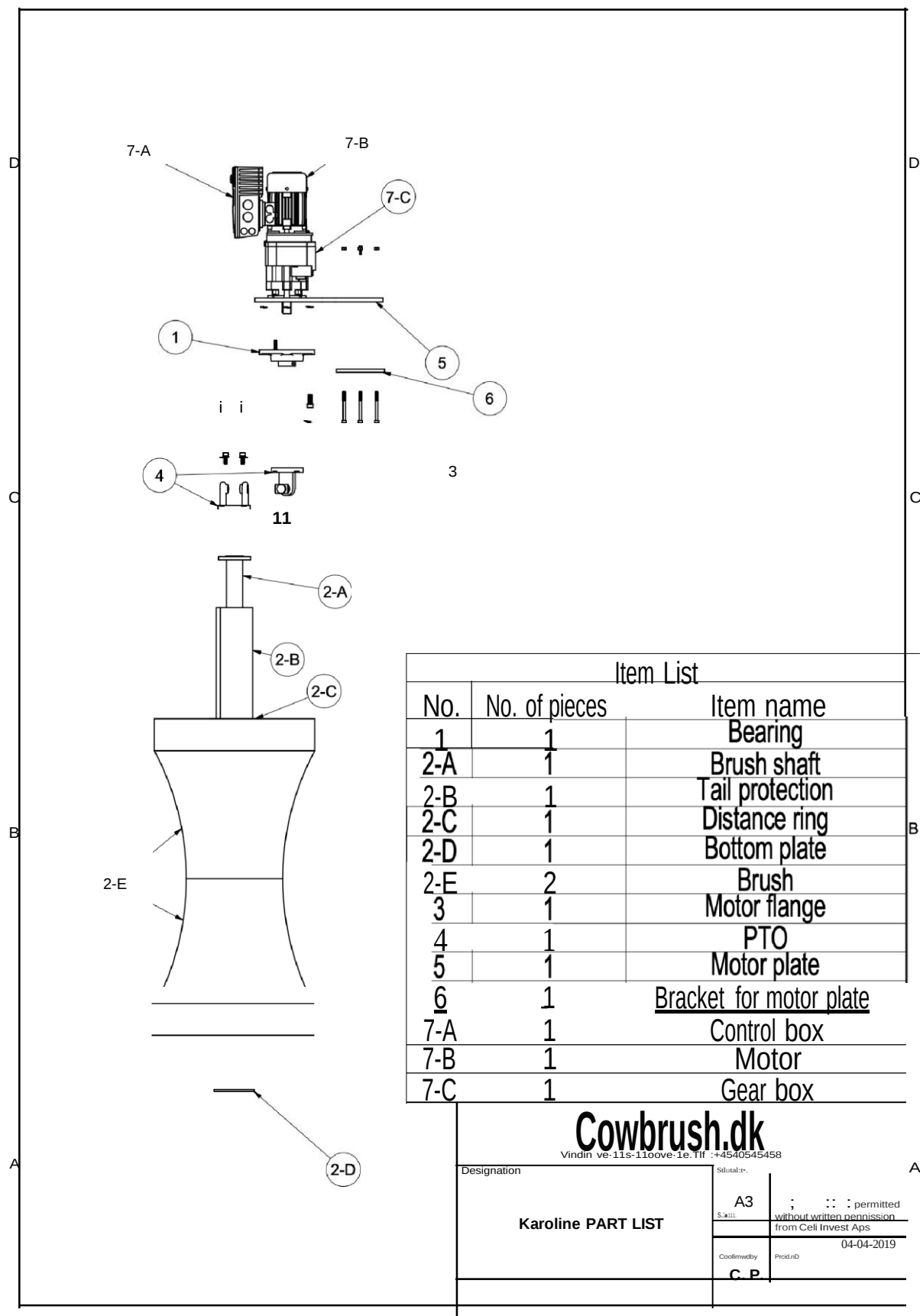
## NOT COVERED BY WARRANTY:

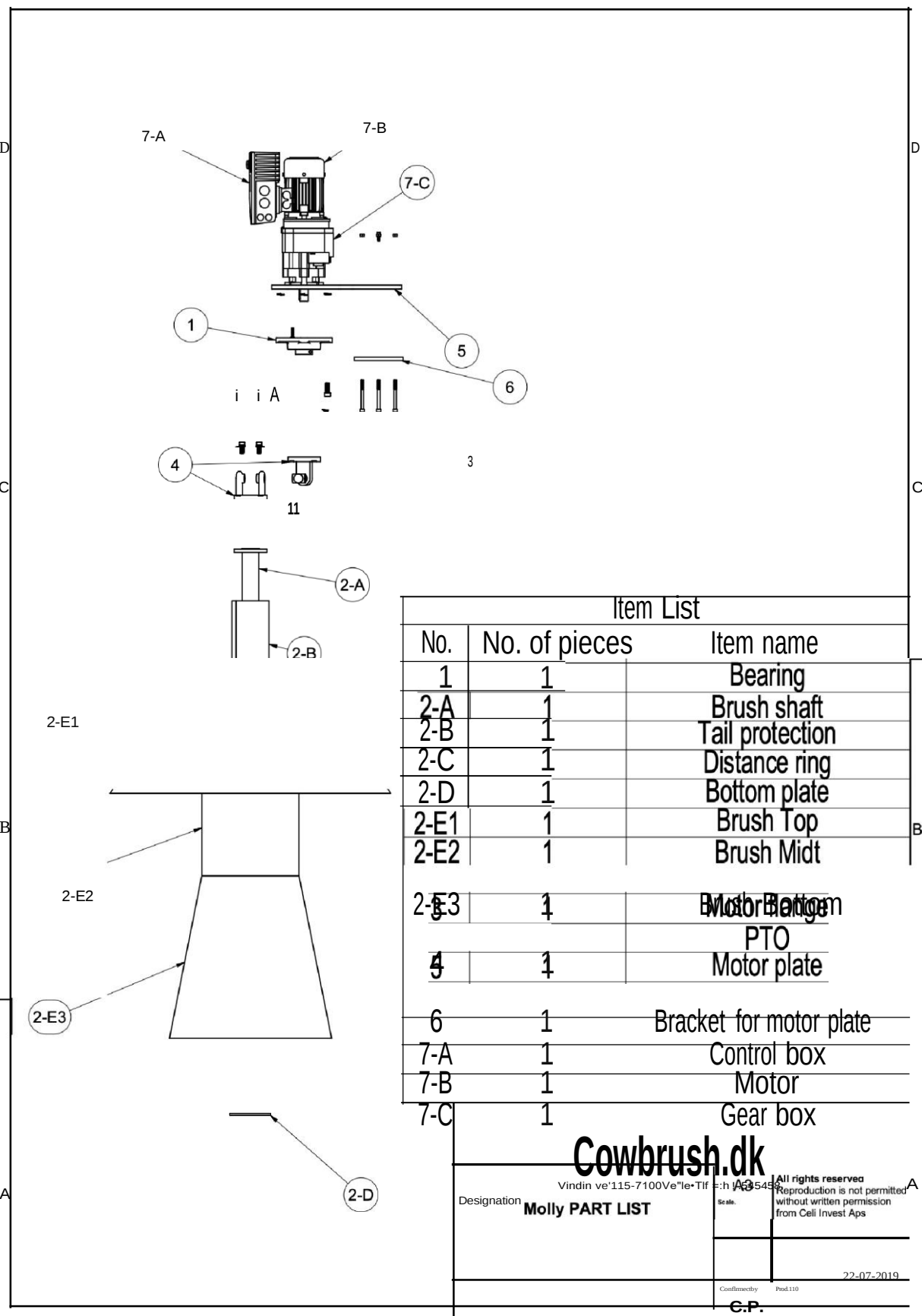
- Normal brush wear

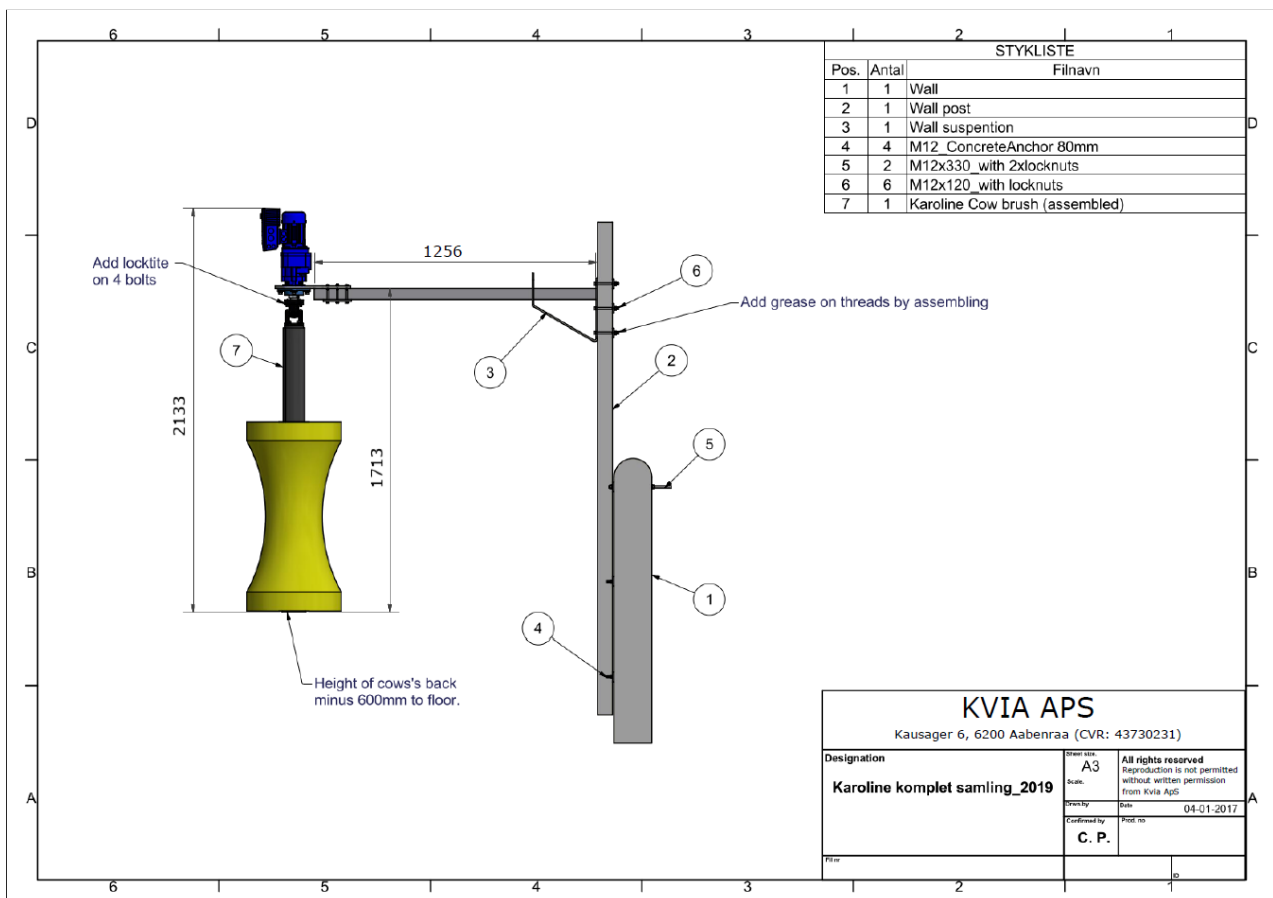
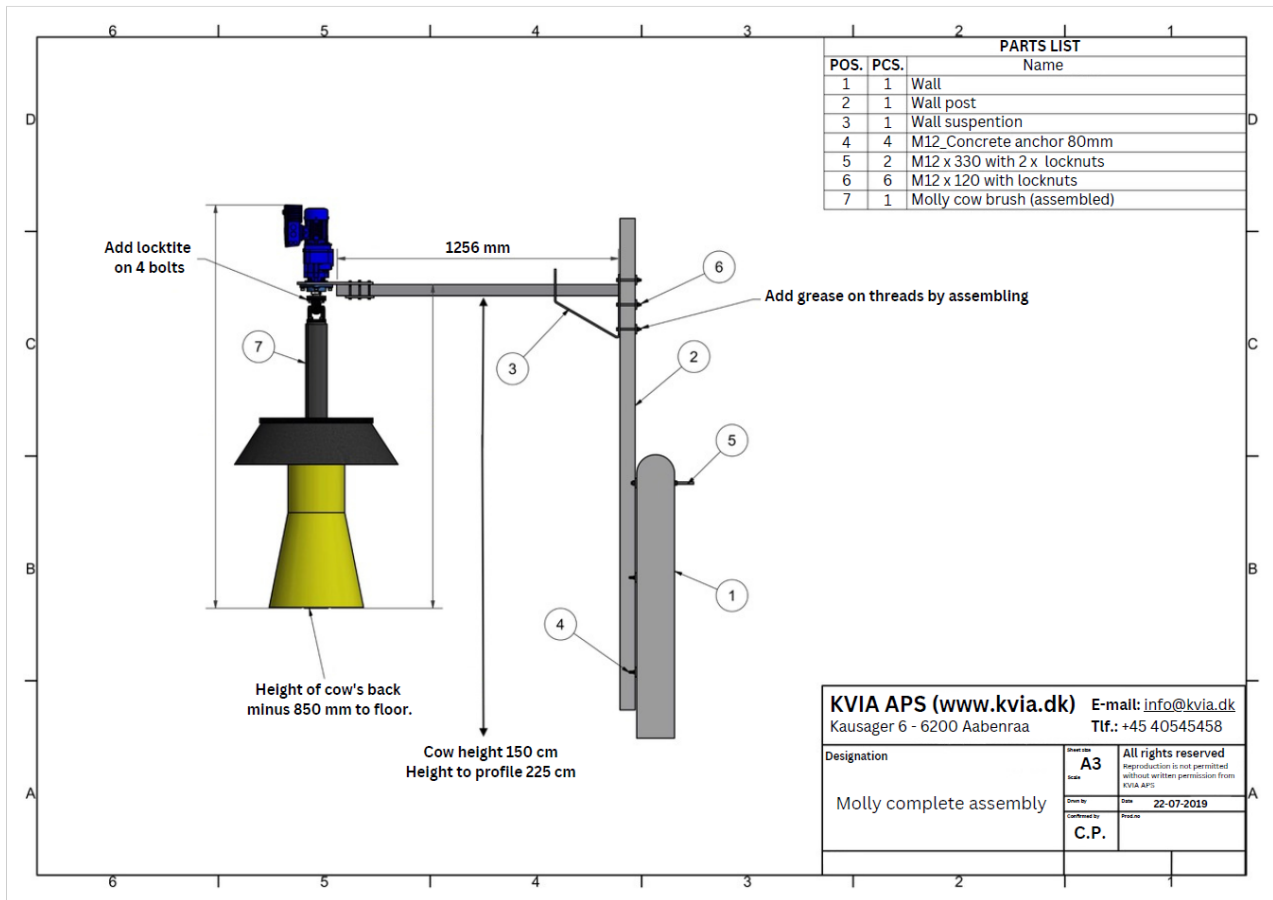
Kvia ApS assumes no responsibility for indirect damage. If the cow brush is part of a larger system, it is the responsibility of the company performing the final assembly to provide the necessary documentation in accordance with the EU Machinery Directive.

## TECHNICAL DATA

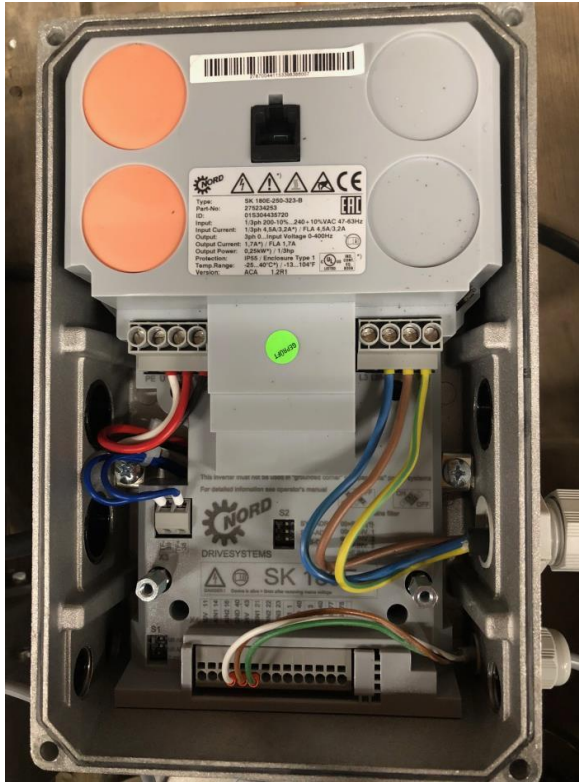
| Model                              | Karoline    | Molly                          | Nora        |
|------------------------------------|-------------|--------------------------------|-------------|
| Height from floor to brush section | 600-800 mm. | 600-800 mm                     | 600-800 mm  |
| Brush length                       | 340 / 200   | 340                            | 340 / 200   |
| Brush Diameter                     | 500 conical | 500 conical<br>400 cylindrical | 500 conical |
| Distance from wall                 | 1150        | 1150                           |             |
| Power Consumption                  | 0,25 kW     | 0,25 kW                        |             |
| Weight                             | 50          | 58                             | 28          |
| Noise Level.                       | <50         | <50                            | 0           |





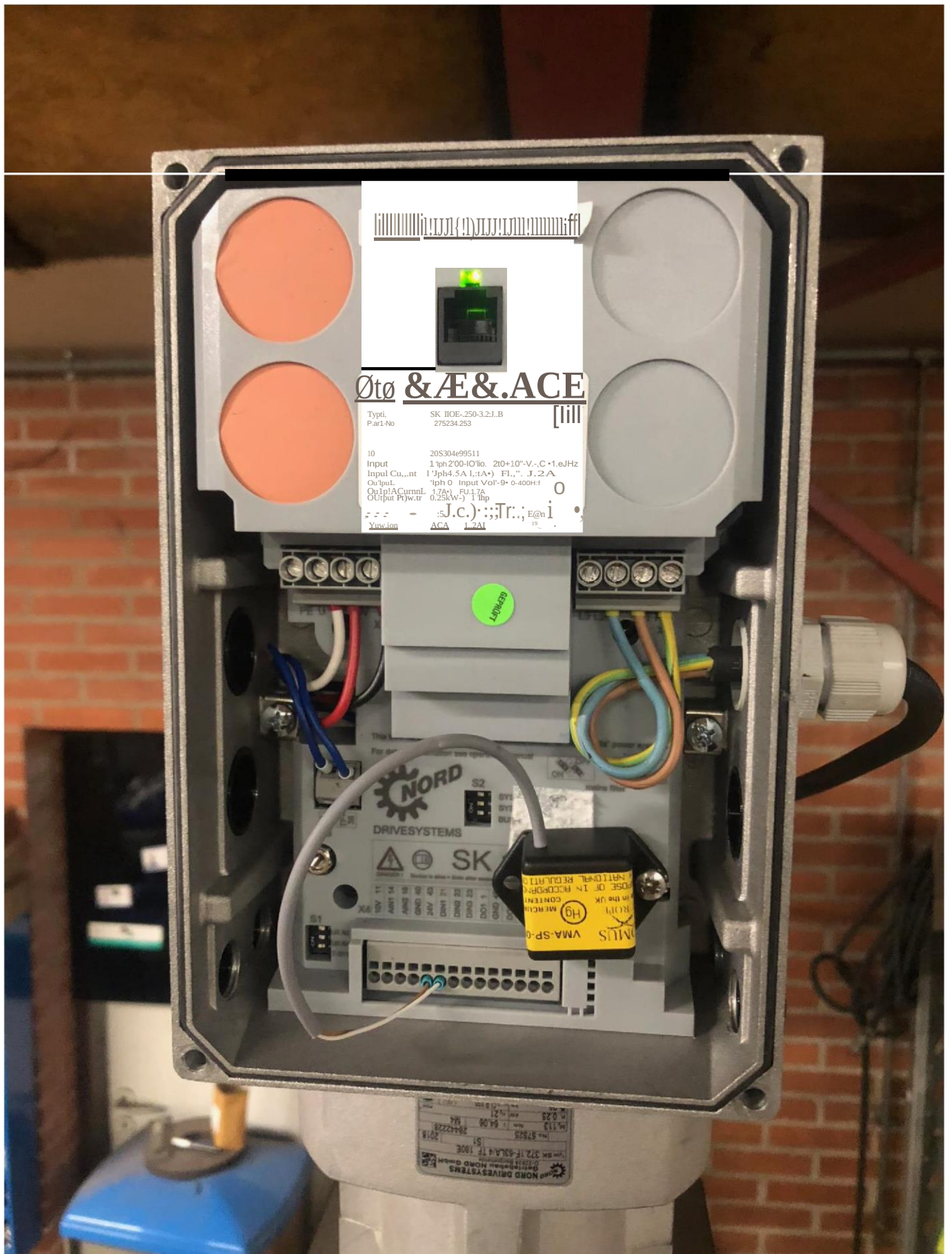


## KVIA.DK



Blue = Neutral  
Brown = Phase  
Yellow/Green = Earth  
0.25 kW 230V 50Hz

Brown = +24VDC  
White = -24VDC  
Green = Signal wire



## EU Declaration of Conformity

In the meaning of the directive 2014/35/EU Annex IV, 2014/30/EU Annex II and 2011/65/EU Annex VI

Getriebebau NORD GmbH & Co. KG as manufacturer in sole responsibility hereby declares,  
that the variable speed drives from the product series

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- SK 180E-xxx-123-B-.. , SK ISOE-><)(•323-B-.. , SK ISOE-xxx-340-B-..
- SK 190E•X)(•123-B-.. , SK 190E-xxx-323-B-.. , SK 190E•)(,C•340-B-..  
(xxx= 250, 370, 550, 750, 111, 151, 221)

and the further options/accessories:

SK CU4-... , SK TU4-... , SK TI4-... , SK TIE4-... , SK BRI4-... , SK BRE4-... ,  
SK PAR-3 , SK CSX-3 , SK SSX-3A, SK POTI-., SK TIES-BT-STICK

comply with the following regulations:

|                                |                   |                                   |
|--------------------------------|-------------------|-----------------------------------|
| <b>Low Voltage Directive</b>   | <b>2014/35/EU</b> | OJ. L 96 of 29.3.2014, p. 357-374 |
| <b>EMC Directive</b>           | <b>2014/30/EU</b> | OJ. L 96 of 29.3.2014, p. 79--106 |
| <b>RoHS Directive</b>          | <b>2011/65/EU</b> | OJ. L 174 of 1.7.2011, p. 88-11   |
| <b>Delegated Directive(EU)</b> | <b>2015/863</b>   | OJ. L 137 of 4.6.2015, p. 10-12   |

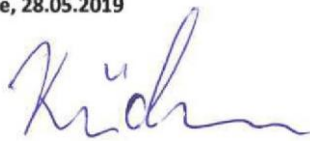
### Applied standards:

|                                       |                                 |                   |
|---------------------------------------|---------------------------------|-------------------|
| EN 61800-5-1:2007+AI:2017             | EN 61800-3:2004+AI:2012+AC:2014 | EN 61800-9-1:2017 |
| EN 60529:1991+AI:2000+A2:2013+AC:2016 | EN 50581:2012                   | EN 61800-9-2:2017 |

It is necessary to notice the data in the operating manual to meet the regulations of the EMC-Directive.  
Specially take care about correct EMC installation and cabling, differences in the field of applications and if  
necessary original accessories.

First marking was carried out in 2014.

Bargteheide, 28.05.2019



U. Kiichenmeister  
Managing Director



pp F. Wiedemann  
Head of Inverter Division

# GETRIEBEBAU NORD

Member of the NORD DRIVESYSTEMS Group

Ø" P,  
DRIVESYSTEMS

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## EU Declaration of Conformity

In the meaning of the directive 2014/35/EU Annex IV, 2014/30/EU Annex II, 2009/125/EC Annex IV, 2011/65/EU Annex VI

Getriebebau NORD GmbH & Co. KG as manufacturer in sole responsibility hereby declares,  
that the single- and three-phase asynchronous motors from the product series

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• **SK 63-0.11<sub>1</sub> to SK 3ts-0.1<sub>1</sub>**

O) Frame sizes: 63, 71, 80, 90, 100, 112, 132, 160, 180, 200, 225, 250, 280, 315

1) Power code: S, SA, SX, M, MA, MB, MX, L, LA, LB, LX, R, X, V, A, W -optionally supplemented by: H, P, Q

2) Number of poles: 2, 4, 6, 8, ...

1) Additional options (e.g. HMTF)

comply with the following regulations:

|                                 |                                      |                                                                 |
|---------------------------------|--------------------------------------|-----------------------------------------------------------------|
| <b>Low Voltage Directive</b>    | <b>2014/35/EU</b>                    | OJ. L 96 of 29 <sup>th</sup> March 2014, P. 357-374             |
| <b>Eco-design Directive</b>     | <b>2009/125/EC (VO No. 640/2009)</b> | OJ. L 285 of 31 <sup>st</sup> October 2009, P. 10-35 <b>EMC</b> |
| <b>Directive</b>                | <b>2014/30/EU</b>                    | OJ. L 96 of 29 <sup>th</sup> March 2014, P. 79-106              |
| <b>RoHS Directive</b>           | <b>2011/65/EU</b>                    | OJ. L 174 of 1 <sup>st</sup> July 2011, P. 88-110               |
| <b>Delegated Directive (EU)</b> | <b>2015/863</b>                      | OJ L137 of 4 <sup>th</sup> June 2015, P. 10-12                  |

**Applied standards:**

|                           |                         |                                   |
|---------------------------|-------------------------|-----------------------------------|
| EN 60034-1:2010+AC:2010   | EN 60034-2-1:2014       | EN 60034-5:2001+AI:2007           |
| EN 60034-6:1993           | EN 60034-7:1993+AI:2001 | EN 60034-8:2007+AI:2014           |
| EN 60034-9:2005+AI:2007   | EN 60034-11:2004        | EN 60034-14:2018                  |
| EN 60034-30-1:2014        | EN 55011:2016+AI:2017   | EN 61000-6-3:2007+AI:2011+AC:2012 |
| EN 61000-6-4:2007+AI:2011 | EN 60204-1:2018         | EN IEC 63000:2018                 |

First marking was carried out in 1996.

Bargteheide, 22.07.2019



U. KUchenmeister  
Managing Director



Dr. O. Sadi  
Technical Director