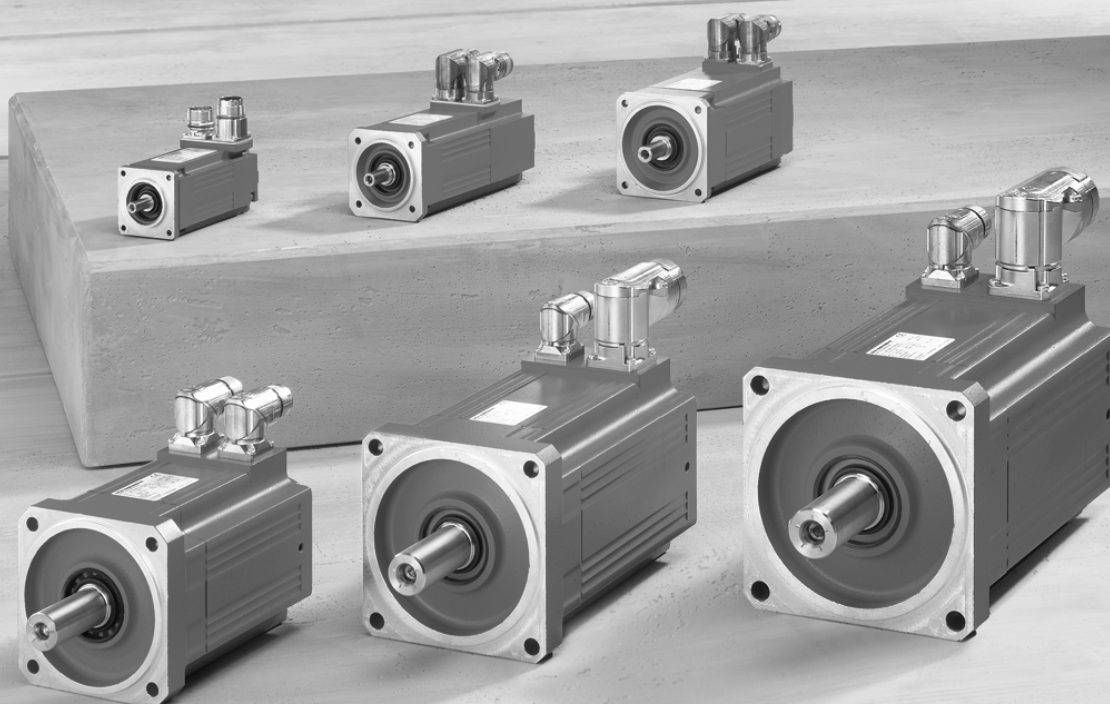




SEW
EURODRIVE

Operating Instructions



Explosion-Protected Servomotors
CMP40 – 63, CMP.71 – 100
ATEX and IECEx



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1 General Information

1.1 About this documentation

The documentation at hand is the original.

This documentation is an integral part of the product. The documentation is intended for all employees who perform work on the product.

Make sure this documentation is accessible and legible. Ensure that persons responsible for the systems and their operation as well as persons who work on the product independently have read through the documentation carefully and understood it. If you are unclear about any of the information in this documentation or if you require further information, contact SEW-EURODRIVE.

1.2 Structure of the safety notes

1.2.1 Meaning of signal words

The following table shows the graduation and meaning of the signal words for safety notes.

| Signal word | Meaning | Consequences if disregarded |
|--------------------------------------------|----------------------------------------------------------------|------------------------------------------|
| ▲ DANGER | Imminent hazard | Severe or fatal injuries |
| ▲ WARNING | Possible dangerous situation | Severe or fatal injuries |
| ▲ CAUTION | Possible dangerous situation | Minor injuries |
| NOTICE | Possible damage to property | Damage to the product or its environment |
| INFORMATION ON EXPLOSION PROTECTION | Important information about explosion protection | |
| INFORMATION | Useful information or tip: Simplifies handling of the product. | |

1.2.2 Structure of section-related safety notes

Section-related safety notes do not apply to a specific action but to several actions pertaining to one subject. The hazard symbols used either indicate a general hazard or a specific hazard.

This is the formal structure of a safety note for a specific section:



SIGNAL WORD






Type and source of hazard.

Possible consequence(s) if disregarded.

- Measure(s) to prevent the hazard.

Meaning of the hazard symbols

The hazard symbols in the safety notes have the following meaning:

| Hazard symbol | Meaning |
|------------------------------------------------------------------------------------|-----------------------------------------|
|  | General hazard |
|  | Warning of dangerous electrical voltage |
|  | Warning of hot surfaces |
|  | Note on explosion protection |
|  | Warning of explosions |

1.2.3 Structure of embedded safety notes

Embedded safety notes are directly integrated into the instructions just before the description of the dangerous action.

This is the formal structure of an embedded safety note:

⚠ SIGNAL WORD! Type and source of hazard. Possible consequence(s) if disregarded. Measure(s) to prevent the hazard.

1.3 Decimal separator in numerical values

In this document, a period is used to indicate the decimal separator.

Example: 30.5 kg

1.4 Motor type notation

These operating instructions cover the motor types CMP and CMPZ.

If information refers to both CMP and CMPZ motors, the notation CMP. motors is used.

If information refers to either CMP or CMPZ motors, the motor type is stated explicitly.

1.5 Rights to claim under limited warranty

Read the information in this documentation. This is essential for fault-free operation and fulfillment of any rights to claim under limited warranty. Read the documentation before you start working with the product.

1.6 Product names and trademarks

The brands and product names in this documentation are trademarks or registered trademarks of their respective titleholders.

1.7 Copyright notice

© 2020 SEW-EURODRIVE. All rights reserved. Unauthorized reproduction, modification, distribution or any other use of the whole or any part of this documentation is strictly prohibited.

2 Safety notes

The following basic safety notes must be read carefully to prevent injury to persons and damage to property. The user must ensure that the basic safety notes are read and observed. Make sure that persons responsible for the system and its operation, as well as persons who work independently on the unit, have read through the operating instructions carefully and understood them. If you are unclear about any of the information in this documentation, or if you require further information, please contact SEW-EURODRIVE.

2.1 Preliminary information

The following safety notes are primarily concerned with the use of CMP.. servomotors. If you use gearmotors, also refer to the safety notes in the corresponding operating instructions for gear units.

Please also observe the supplementary safety notes in the individual chapters of this documentation.

2.2 General information



⚠ WARNING

During operation, the motors or gearmotors can have live, bare (in the event of open connectors/terminal boxes) and movable or rotating parts as well as hot surfaces, depending on their degree of protection.

Severe or fatal injuries.

- All work related to transportation, storage, installation, assembly, connection, startup, maintenance and repair may only be carried out by qualified personnel, in strict observance of the following points:
 - Applicable detailed documentation(s)
 - Warning and safety signs on the motor/gearmotor
 - All the project planning documents, startup instructions and wiring diagrams related to the drive
 - System-specific regulations and requirements
 - National/regional safety and accident prevention regulations.
- Never install damaged drives.
- Report any damage to the shipping company immediately.

Removing required covers without authorization, improper use or incorrect installation and operation may result in severe injury to persons, or damage to machinery.

Refer to the following chapters for more information.

2.3 Target group

| | |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Specialist for mechanical work | <p>Any mechanical work may be performed only by adequately qualified specialists. Specialists in the context of this documentation are persons who are familiar with the design, mechanical installation, troubleshooting, and maintenance of the product who possess the following qualifications:</p> <ul style="list-style-type: none"> • Qualifications in the field of mechanics in accordance with the national regulations • Familiarity with this documentation |
| Specialist for electrotechnical work | <p>Any electrotechnical work may be performed only by electrically skilled persons with a suitable education. Electrically skilled persons in the context of this documentation are persons who are familiar with electrical installation, startup, troubleshooting, and maintenance of the product who possess the following qualifications:</p> <ul style="list-style-type: none"> • Qualifications in the field of electrical engineering in accordance with the national regulations • Familiarity with this documentation |
| Additional qualifications | <p>In addition to that, these persons must be familiar with the valid safety regulations and laws, as well as with the requirements of the standards, directives, and laws specified in this documentation.</p> <p>The persons must have the express authorization of the company to operate, program, parameterize, label, and ground devices, systems, and circuits in accordance with the standards of safety technology.</p> |
| Instructed persons | <p>All work in the areas of transportation, storage, operation and waste disposal must be carried out by persons who are trained appropriately. The purpose of the training is to give persons the ability to perform the required tasks and work steps in a safe and correct manner.</p> |

2.4 Designated use

The explosion-protected electric motors are intended for industrial systems.

When installed in machines, startup (i.e. start of designated operation) of the motors is prohibited until it is determined that the machine complies with the local laws and directives applicable in the country of use.

INFORMATION



- The motor may be operated only under the conditions described in chapter "Start-up".
- The motor may be operated on a frequency inverter only within the motor's torque/speed limits.
- Make sure that there are no aggressive substances in the vicinity that could damage the paint and seals.
- The motors must not be operated in areas or applications where strongly ionizing radiation occurs. The radiation may lead to the premature aging of insulation material.
- The motors must not be operated in areas or applications that lead to processes that produce strong charges on the motor housing. Examples of processes that produce strong charges: fast movement of particles, hydraulic conveying of liquid and droplets, pneumatic conveying of dust and bulk materials, spraying of charged particles during electrostatic coating processes.

Air-cooled versions are designed for ambient temperatures of -20 °C to +40 °C and installation altitudes ≤ 1000 m above sea level. Any differing specifications on the nameplate must be observed. The ambient conditions must comply with all the specifications on the nameplate.

2.5 Standards and regulations

The explosion-protected CMP. synchronous servomotors comply with the applicable standards and regulations:

- EN/IEC 60079-0: Electrical apparatus for potentially explosive atmospheres: General requirements
- EN/IEC 60079-7: Equipment protection by increased safety "e"
- EN/IEC 60079-31: Electrical apparatus for use in atmospheres containing combustible dust, protected by "t" housing
- EN/IEC 60034: Rotating electrical machines

Technical data and information on the permitted conditions are given on the nameplate and in the documentation; they have to be observed under all circumstances.

2.6 Other applicable documentation

2.6.1 CMP..

The following publications and documents have to be observed as well:

- Wiring diagrams provided with the motor
- Assembly and operating instructions for "Explosion-Protected Gear Unit Series R..7, F..7, K..7, K..9, S..7, SPIROPLAN® W" for gearmotors
- Assembly and operating instructions for "Explosion-Protected Gear Unit Series BS.F.. and PS.F.."
- Catalog "Synchronous Servomotors" and/or
- "Synchronous Servo Gearmotors" catalog

2.7 Transport/storage

Inspect the shipment for damage as soon as you receive the delivery. Inform the shipping company immediately about any damage. It may be necessary to suspend start-up.

Tighten the eyebolts securely. They are only designed for the weight of the motor/gearmotor; do not attach any additional loads.

The installed eyebolts are in accordance with DIN 580. The loads and regulations specified in that document must always be observed. If the gearmotor is equipped with 2 eyebolts, then both of these should be used for transportation. In this case, the tension force vector of the slings must not exceed a 45° angle in accordance with DIN 580.

Use suitable, sufficiently rated handling equipment if necessary. Reuse these in case of further transportation.

Store the motor/gearmotor in a dry, dust-free environment if it is not to be installed straight away. Do not store the motor/gearmotor in the open. The motor/gearmotor can be stored for up to 9 months without requiring any special measures before start-up.

2.8 Setup

Make sure that the supports are even, the foot and flange mounting is correct and, if there is direct coupling, align with precision. Avoid resonances between the rotational frequency and the double line frequency caused by the structure. Release the brake (if installed), turn the rotor manually, and check for unusual grinding noise. Check the direction of rotation in decoupled state.

Install or remove belt pulleys and couplings only using suitable devices (heat up) and cover with a touch guard. Avoid improper belt tension.

Observe the notes in chapter "Mechanical installation" (→ 24).

2.9 Safety notes on the motor








⚠ CAUTION

Safety notes or signs can become dirty or illegible over time.

Risk of injury due to illegible symbols.

- Always make sure that safety, warning, and operating notes are legible.
- Replace damaged safety notes and signs.

The safety notes on the motor must be observed. They have the following meaning:

| Safety note | Meaning |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   1361 527 1 | You may use only cable entries and cables that are suitable for temperatures $\geq 80^{\circ}\text{C}$. The cables must be selected regarding their temperature resistance in accordance with standard requirements and operating conditions. |
|   | <p>Risk of electric shock – connect or disconnect the plug connectors only in de-energized state and with the motor at a standstill.</p> <p>Risk of explosion – in potentially explosive atmospheres, there is a risk of ignition due to sparks when connecting or disconnecting live plug-in connections.</p> |
|  17123852 | It is essential that you observe the correct polarity of the BK brake supply. Check the polarity when replacing the brake. |

2.10 Electrical connection

All work may be carried out only by qualified personnel. During work, the low-voltage machine must be at a standstill, de-energized, and safeguarded against accidental re-start. This also applies to auxiliary circuits (e.g. anti-condensation heating or forced cooling fan).

Check that no voltage is applied.

Exceeding the tolerances in EN IEC 60034-1 (VDE 0530, Part 1) – voltage $\pm 5\%$, frequency $\pm 2\%$, curve shape, symmetry – increases the heating and influences electromagnetic compatibility.

In addition to the generally applicable installation regulations for low-voltage electrical equipment, it is also necessary to comply with the special regulations for setting up electrical machinery in potentially explosive atmospheres (operating safety regulations in Germany: EN IEC 60079-14 and system-specific regulations).

Note any differing specifications on the nameplate as well as the wiring diagram in the terminal box.

The connection must be a permanently secure electrical connection (no protruding wire ends). Use the corresponding cable end equipment. Establish a safe PE connection. When the motor is connected, the distances between live and conductive parts must not be shorter than the minimum values in accordance with EN IEC 60079-7 and the national regulations. The minimum values according to the respective standards must be observed; see the following table:

| Category | Protection level | Standard | Minimum distance at nominal voltage U_N ≤ 500 V |
|----------|------------------|----------------------|-----------------------------------------------------------|
| 3 | ec | EN/IEC 60079-7:2015 | 5 mm |
| | N/A | EN/IEC 60079-15:2010 | |

The connection box must be free from foreign objects, dirt, and humidity. Seal the box and unused cable entries against dust and humidity. Secure the key(s) for the test run without output elements. Prior to startup, check the unit for proper function.

Observe the notes in chapter "Electrical installation" (→ 29).

2.11 Startup/operation

Whenever changes to normal operation occur, such as increased temperatures, noise, vibrations, etc., you should determine the cause. Consult the manufacturer if required. Never deactivate protection devices, even in test mode. Switch off the motor if you are not sure.

Regularly clean the surface in dirty environments.

2.11.1 Temperature of touchable surfaces during operation

Servomotors/brakemotors get very hot during operation.

Touching the servomotor/brakemotor when it has not cooled down could result in burns. The servomotor can have a surface temperature of more than 100 °C during operation.

Never touch the servomotor/brakemotor during operation or in the cool down phase after it has been switched off.

2.11.2 Regenerative operation



⚠ WARNING

Risk of explosion with regenerative operation. Moving the output element generates a voltage at the male contacts of the plug connectors. If the male contacts of the plug connector are then touched or jumpered (e.g. with a tool), there is a danger of ignition due to sparks.

Severe or fatal injuries.

- Do not touch or jumper the male contacts in the plug connector.
- Install a touch guard at the plug connector if no mating connector is plugged in.



⚠ WARNING

Electric shock due to regenerative operation. Moving the output element generates a voltage at the male contacts of the plug connectors.

Severe or fatal injuries.

- Do not touch the male contacts in the plug connector.
- Install a touch guard at the plug connector if no mating connector is plugged in.

2.12 Painting

SEW-EURODRIVE delivers the drives with painting that complies with the requirements for preventing electrostatic charging in accordance with IEC 60079-0.



⚠ WARNING

Electrostatic charge due to improper painting.

Explosion due to sparks caused by electrical discharge.

- During repainting work on the motors, observe the requirements for painting to avoid electrostatic charging in accordance with EN/IEC 60079-0.

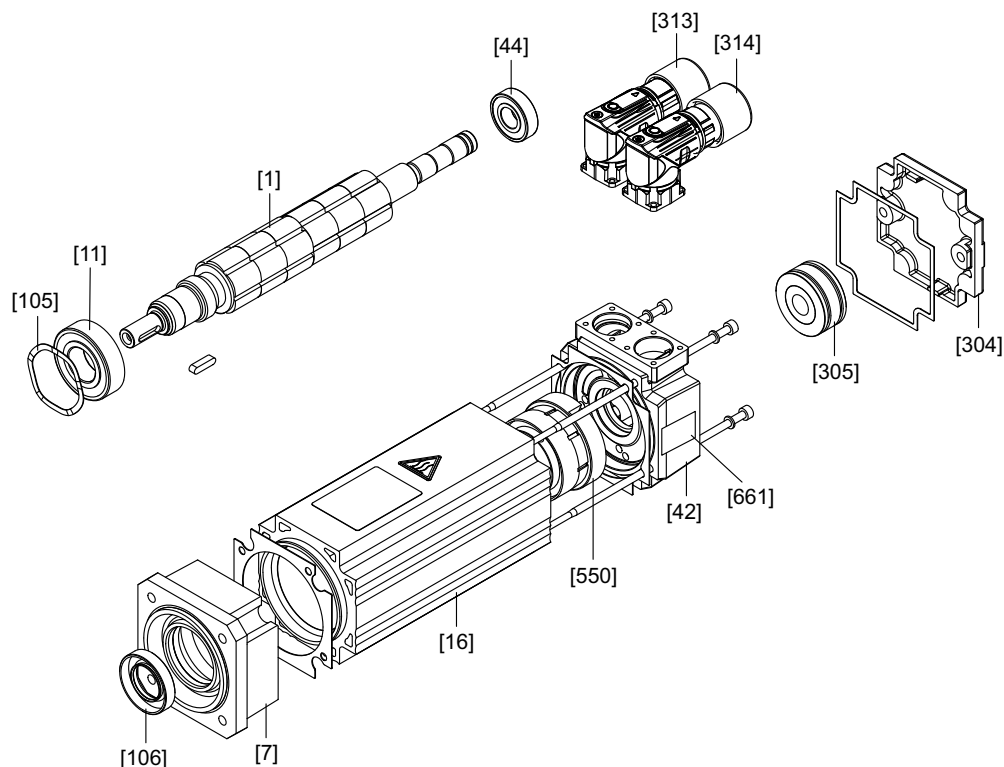
3 Motor structure

INFORMATION



The following figures are block diagrams. They are to facilitate the assignment of components to the spare parts list. Motor size and design may cause deviations.

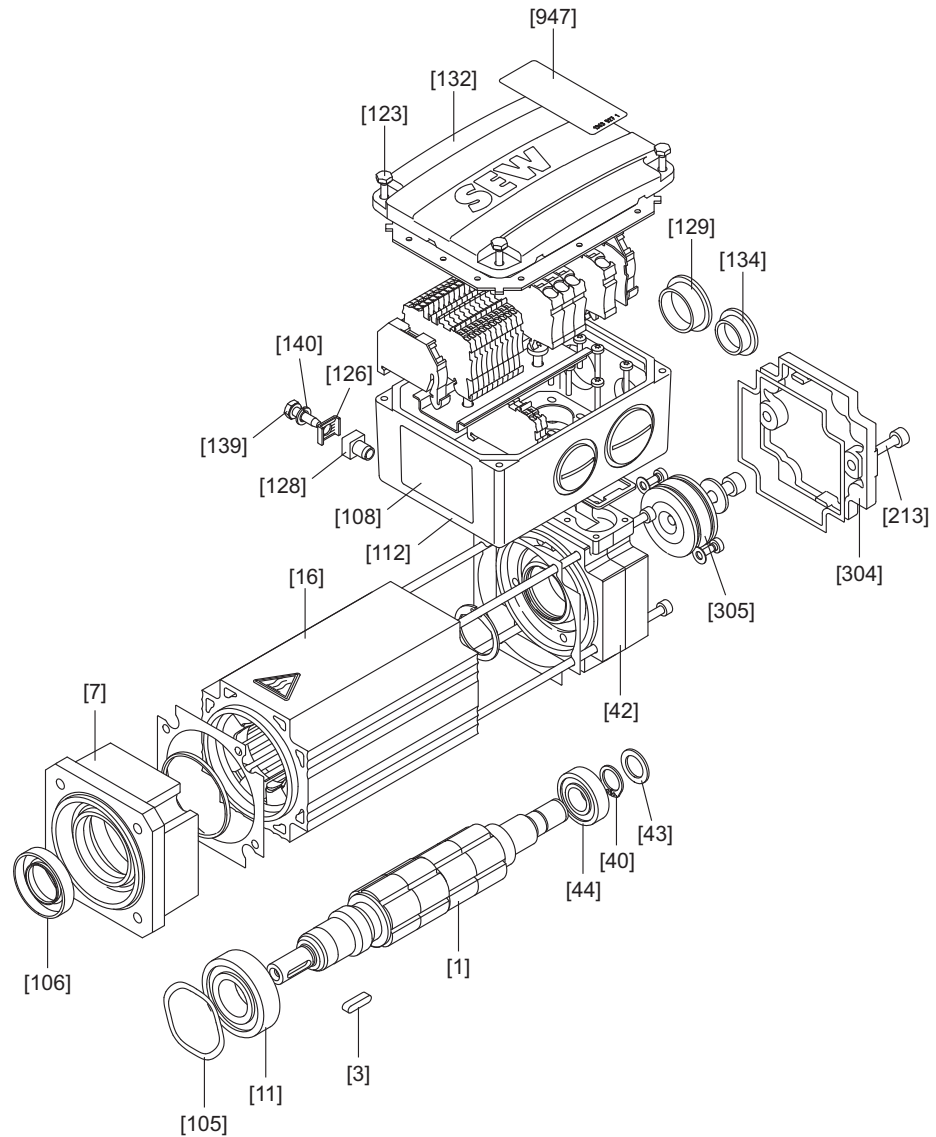
3.1 Basic structure of CMP40 – CMP63 /BK



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| | | | |
|-------|--------------------------|-------|-----------------------------|
| [1] | Rotor | [106] | Oil seal |
| [7] | Flange | [304] | Housing cover |
| [11] | Deep groove ball bearing | [305] | Resolver |
| [16] | Stator | [313] | SM/SB signal plug connector |
| [42] | Brake endshield | [314] | SM/SB power plug connector |
| [44] | Deep groove ball bearing | [550] | BK permanent magnet brake |
| [105] | Equalizing ring | [661] | Label |

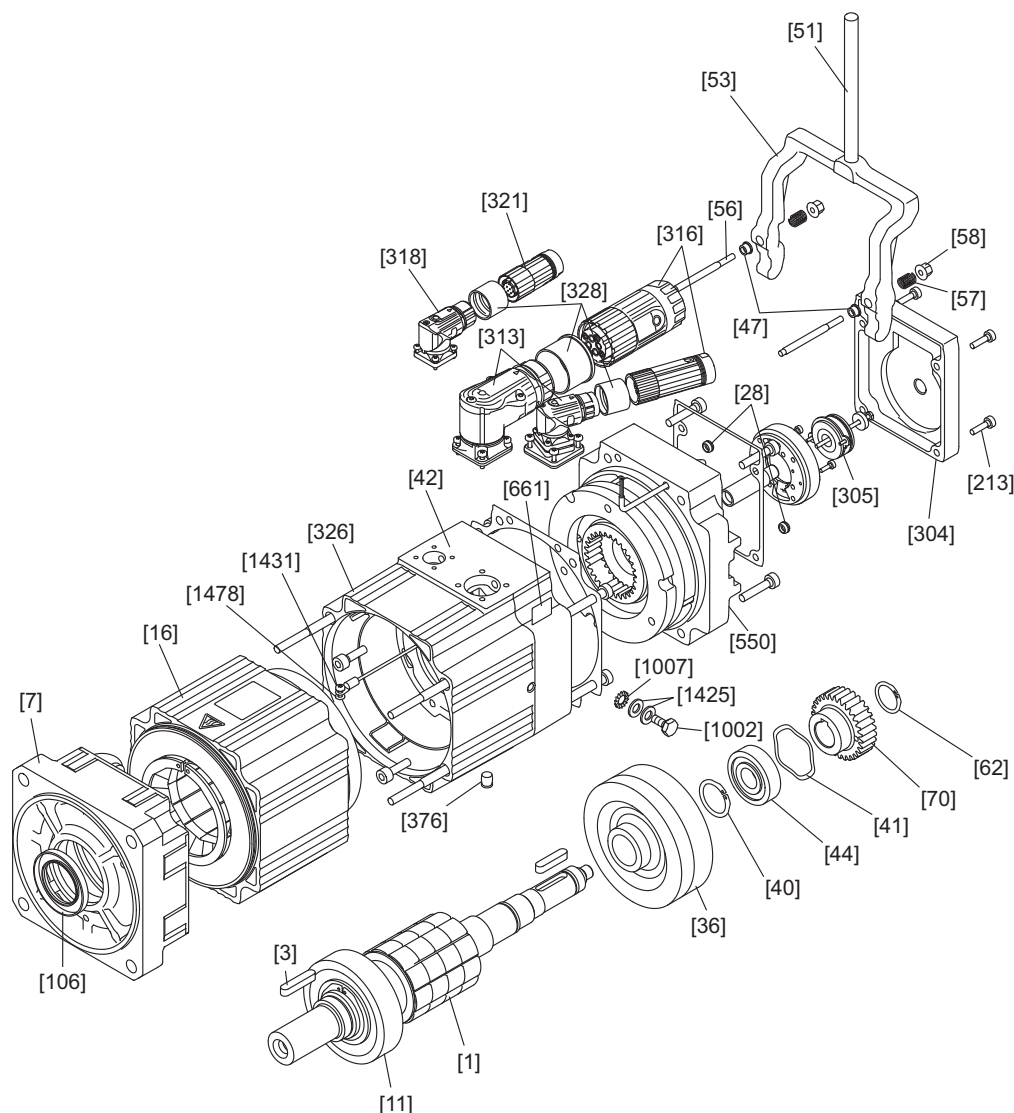
3.2 Basic structure of CMP50 – CMP63 /KK



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| | | | | | |
|------|--------------------------|-------|-------------------------|-------|-------------------|
| [1] | Rotor | [105] | Shim | [134] | Screw plug |
| [3] | Key | [106] | Oil seal | [139] | Screw |
| [7] | Flanged endshield | [108] | Nameplate | [140] | Lock washer |
| [11] | Deep groove ball bearing | [112] | Terminal box lower part | [213] | Cap screw |
| [16] | Stator | [123] | Screw | [304] | Housing cover |
| [40] | Retaining ring | [126] | Terminal clip | [305] | Resolver |
| [42] | B-side endshield | [128] | Grounding terminal | [947] | Information label |
| [43] | Supporting ring | [129] | Screw plug | | |
| [44] | Deep groove ball bearing | [132] | Terminal box cover | | |

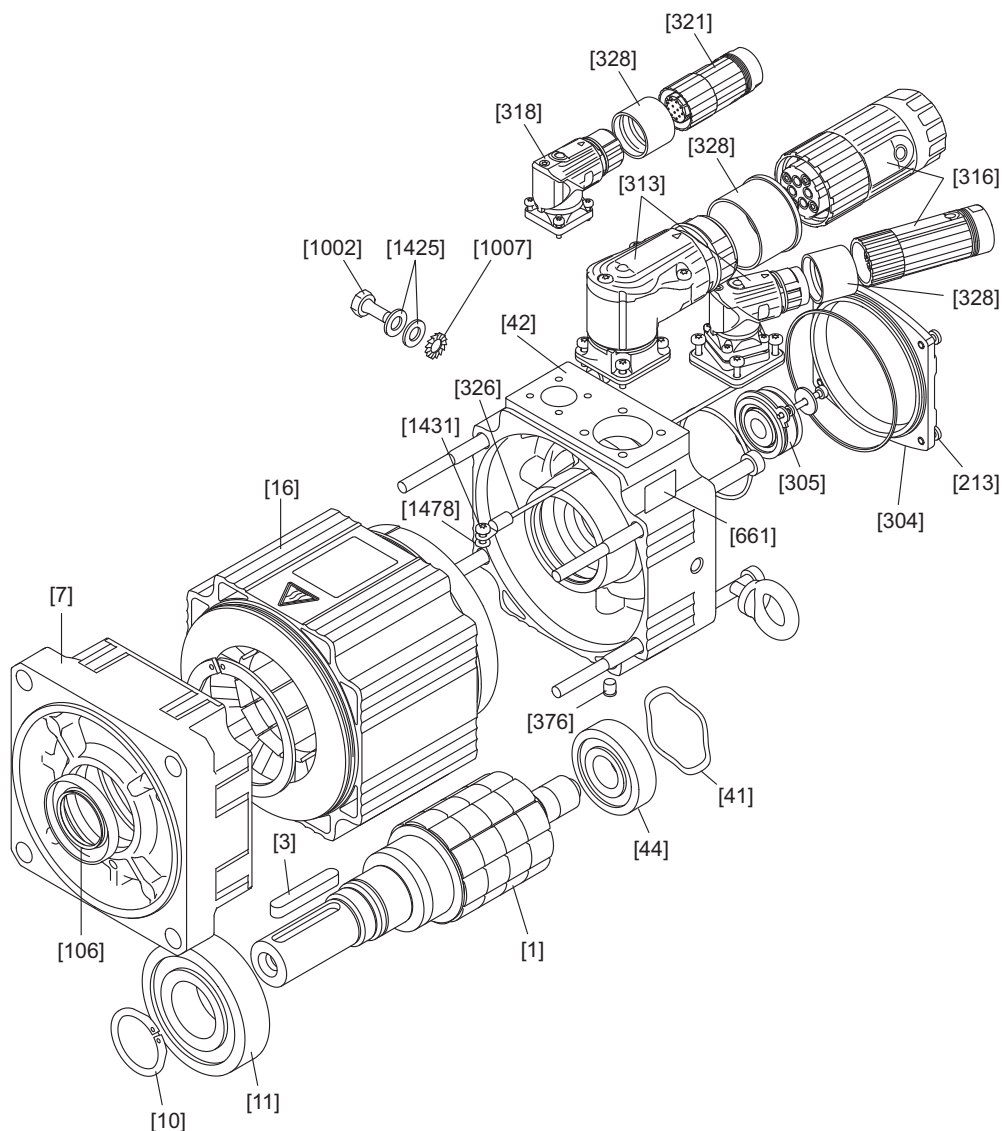
3.3 Basic structure of CMPZ71 – CMPZ100 /BY



9727674635

| | | |
|-------------------------------|-------------------------------|-------------------------------|
| [1] Rotor | [53] Releasing lever | [321] Complete plug connector |
| [3] Key | [56] Stud | [326] Cable |
| [7] Flanged endshield | [57] Tension spring | [328] Protection cap |
| [11] Deep groove ball bearing | [58] Hex nut | [376] Closing plug |
| [16] Stator | [62] Retaining ring | [550] Disk brake |
| [28] Closing cap | [70] Driver | [661] Label |
| [36] Flywheel | [106] Oil seal | [1002] Screw |
| [40] Retaining ring | [213] Cap screw | [1007] Serrated lock washer |
| [41] Equalizing ring | [305] Resolver | [1425] Washer |
| [42] Rear endshield | [313] Flange socket | [1431] Screw |
| [44] Deep groove ball bearing | [318] Flange socket | [1478] Washer |
| [47] Sealing element | [316] Complete plug connector | |
| [51] Hand lever | | |

3.4 Basic structure of CMP71 – CMP100



9727676555

| | | |
|-------------------------------|--------------------------|-----------------------------|
| [1] Rotor | [213] Cap screw | [376] Closing plug |
| [3] Key | [304] Housing cover | [661] Label |
| [7] Flanged endshield | [305] Resolver | [1002] Hex head screw |
| [10] Retaining ring | [313] Flange socket | [1007] Serrated lock washer |
| [11] Deep groove ball bearing | [318] Flange socket | [1425] Washer |
| [16] Stator | [316] Complete connector | [1431] Screw |
| [42] B-side endshield | [321] Complete connector | [1478] Washer |
| [41] Shim | [326] Cable | |
| [44] Deep groove ball bearing | [328] Protection cap | |
| [106] Oil seal | | |

3.5 Nameplate and type designation

3.5.1 Nameplates on the servomotor

The servomotor possesses two nameplates. Below, you will find sample nameplates for drives that are approved in accordance with ATEX and/or IECEx.

ATEX:

| | | | | | | | | | |
|---------------------------------------------|-------------------------------------|-------|----|----------------|---------|-------|--------|--------|----|
| SEW-EURODRIVE | | | | | | | | | |
| 76646 Bruchsal/Germany | | | | | | | | | |
| KHF37 / R / II2GD CMP63M / KY/RH1M/SM1/II3D | | | | | | | | | |
| Jahr 2020 | | | | | | | | | |
| [1] | 01.0123456789.0001.20 | | | | | | | | |
| [2] | | | | | | | | | |
| [3] | M ₀ | 5.1 | Nm | VT nC | 0-3000 | r/min | IM | M1B | |
| [4] | M _{pk} | 13.6 | Nm | n max | 3000 | r/min | IP | 65 | |
| [5] | I ₀ | 3.47 | A | U _p | 300 | V | kg | 21.000 | |
| [6] | I _{max} | 10.4 | A | T _a | -20..40 | °C | Th.Kl. | F | |
| [7] | U _{sys} | 400 | V | | | | TENV | | |
| [8] | | | | | | | | | |
| [9] | i | 24.99 | | ne pk | 4500 | r/min | Ma pk | 240 | Nm |
| [10] | CLP HC 220 Synth.Öl/0.30l | | | | | | | | |
| [11] | 3~IEC60034 22935908 Made in Germany | | | | | | | | |

IECEx:

| | | | | | | | | | |
|--------------------------------------|-------------------------------------|-------|----|----------------|---------|-------|--------|--------|----|
| SEW-EURODRIVE | | | | | | | | | |
| 76646 Bruchsal/Germany | | | | | | | | | |
| R37/II2GD CMP50M/BK/KY/AK1H/SB1/3D-c | | | | | | | | | |
| Jahr 2020 | | | | | | | | | |
| [1] | 01.0123456789.0001.20 | | | | | | | | |
| [2] | | | | | | | | | |
| [3] | M ₀ | 2.3 | Nm | VT nC | 0-3000 | r/min | IM | M1 | |
| [4] | M _{pk} | 6.30 | Nm | n max | 3000 | r/min | IP | 65 | |
| [5] | I ₀ | 1.61 | A | U _p | 271 | V | kg | 13.972 | |
| [6] | I _{max} | 4.80 | A | T _a | -20..40 | °C | Th.Kl. | F | |
| [7] | U _{sys} | 400 | V | | | | TENV | | |
| [8] | | | | | | | | | |
| [9] | i | 24.42 | | ne pk | 4500 | r/min | Ma pk | 205 | Nm |
| [10] | CLP HC 220 Synth.Öl/0.30l | | | | | | | | |
| [11] | 3~IEC60034 22935908 Made in Germany | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| SEW-EURODRIVE | | | | | | | | | | | | | | | | | | |
| 76646 Bruchsal/Germany | | | | | | | | | | | | | | | | | | |
| KHF37/R/II2GD CMP63M/KY/RH1M/SM1/II3D | | | | | | | | | | | | | | | | | | |
| 01.0123456789.0001.20 | | | | | | | | | | | | | | | | | | |
| II3D Ex tc T150°C Dc X | | | | | | | | | | | | | | | | | | |
| [12] | | | | | | | | | | | | | | | | | | |
| [13] |    | | | | | | | | | | | | | | | | | |
| nur Umrichterbetrieb | | | | | | | | | | | | | | | | | | |
| 22936149 | | | | | | | | | | | | | | | | | | |

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| | | | | | | | | | | | | | | | | | | |
|--------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| SEW-EURODRIVE | | | | | | | | | | | | | | | | | | |
| 76646 Bruchsal/Germany | | | | | | | | | | | | | | | | | | |
| R37/II2GD CMP50M/BK/KY/AH1K/SB1/3D-c | | | | | | | | | | | | | | | | | | |
| 01.0123456789.0001.20 | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| IECEx PTB 16.1234/00X | | | | | | | | | | | | | | | | | | |
| [12] | | | | | | | | | | | | | | | | | | |
| [13] | | | | | | | | | | | | | | | | | | |
| nur Umrichterbetrieb | | | | | | | | | | | | | | | | | | |
| 22936149 | | | | | | | | | | | | | | | | | | |





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| Line | Information |
|------|--------------------------------------------------------------------------------------------------------------------------|
| [1] | • Type designation |
| [2] | • Serial number |
| [3] | • Standstill torque • Variable torque • Mounting position |
| [4] | • Dynamic limit torque of the servomotor • Maximum permitted speed • Degree of protection according to IEC 60034-5 |
| [5] | • Standstill current • No-load voltage at the open terminals of the motor at rated speed • Mass |
| [6] | • Maximum permitted current • Ambient temperature • Thermal class |

| Line | Information |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [7] | <ul style="list-style-type: none"> System voltage, voltage of the supplying inverter Braking torque¹⁾ TENV (Totally Enclosed Non-Ventilated) |
| [8] | <ul style="list-style-type: none"> Brake voltage¹⁾ |
| [9] | <ul style="list-style-type: none"> Gear ratio Maximum permitted input speed for short-time duty Maximum permitted torque for short-time duty |
| [10] | <ul style="list-style-type: none"> Oil type and oil fill volume |
| [11] | <ul style="list-style-type: none"> Number of phases and underlying rating and performance standard Part number nameplate Country of manufacture |
| [12] | <ul style="list-style-type: none"> ATEX and/or IECEx explosion protection identification |
| [13] | <ul style="list-style-type: none"> ATEX and/or IECEx explosion protection label |

1) In brakemotors only.

Other possible labels on the nameplates:

| | |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Motors and accessories may fall within the scope of the country-specific application of the WEEE Directive. Dispose of the product and of its accessories according to the national regulations of your country. |
|  | Product label with QR code. The QR code can be scanned. You will be redirected to the digital services of SEW-EURODRIVE. There, you have access to product-specific data, documents and further services. |
|  | CE mark to state compliance with European guidelines, such as the Low Voltage Directive. |
|  | FS logo with 2-digit number for identification of installed functional safety motor options |

3.5.2 Labels

X identification

INFORMATION



In some applications, SEW-EURODRIVE motors/gearmotors must be operated only in compliance with special measures. For these cases, there is a special indication "X" at the end of the certificate number.

In the case of an X identification on explosion-protected motors, the plug-in connections must be protected against horizontal and vertical impacts. Use a suitable cover to provide this protection. The cover must be able to absorb an impact energy of 7 J (in accordance with IEC 60079-0).

Special measures for explosion-protected gear units in combination with CMP.. motors

In the case of an X identification on explosion-protected servo gearmotors, the maximum and effective values of the project planning must be observed during startup and operation. The data is given to the buyer on the order confirmation and the buyer is obliged to provide this data to the operator of the system.

3.5.3 Example type designation of an explosion-protected servomotor

The following figure shows the example of a type designation:

| Example: CMP50M/BK/KY/AK1H/KK/3D-c | | |
|-------------------------------------------|-------|-------------------------------|
| Synchronous servomotor | CMP50 | Flange-mounted motor size 50 |
| Length | M | Medium |
| Mechanical attachments | /BK | BK holding brake |
| Standard equipment temperature sensor | /KY | KY temperature sensor |
| Encoder motor option | /AK1H | Encoder |
| Terminal box motor option | /KK | Terminal box |
| Explosion protection motor option | 3D-c | Category explosion protection |

3.5.4 Example of a serial number for a servomotor

The following table shows the example of a serial number:

| Example: 01.0123456789 01. 0001. 20 | |
|--------------------------------------------|--------------------------------------------------|
| 01. | Sales organization |
| 0123456789 | Order number (10 digits) |
| 01. | Order item (2 digits) |
| 0001 | Quantity (4 digits) |
| 20 | End digits of the year of manufacture (2 digits) |

3.6 Designs and options

3.6.1 Mechanical attachments

| Designation | Design | Description |
|-------------|------------|-----------------------------------------------------------------------------------|
| /BK | 3D-c 3D | Holding brake for CMP40 – 63 |
| /BY | | Working brake for CMPZ71 – 100 |
| /HR | | BY manual brake release for CMPZ71 – 100, re-engaging independently ¹⁾ |

1) In preparation

3.6.2 Temperature sensor / temperature detection

| Designation | Design | Description |
|-------------|---------|---------------------------|
| /KY | 3D-c | KTY temperature sensor |
| /PK | 3GD, 3D | PT1000 temperature sensor |

3.6.3 Encoders

| Designation | Design | Description |
|-------------|------------------|-------------------------------------------------------------------------------------------|
| /RH1M | 3D-c, 3D, 3GD | Resolver (standard) |
| /EK0H | 3D-c 3D | Single-turn HIPERFACE® encoder, cone shaft, for CMP40 |
| /AK0H | 3D-c 3D | Multi-turn HIPERFACE® encoder, cone shaft, CMP40 – 63, CMP.71 – 100 |
| /EK1H | 3D-c 3D | Single-turn HIPERFACE® encoder, cone shaft, high resolution, for CMP50 – 63, CMP.71 – 100 |
| /AK1H | 3D-c 3D | Multi-turn HIPERFACE® encoder, cone shaft, high resolution, for CMP50 – 63, CMP.71 – 100 |

3.6.4 Connection variants

| Designation | Design | Description |
|-------------|------------------|---------------------------------------------------------------------------------------------------------|
| /SM1 | 3D-c, 3D, 3GD | M23 motor plug connector, socket on motor side only, plug-gable motor and encoder cables (standard) |
| /SMB | 3D-c, 3D, 3GD | M40 motor plug connector, socket on motor side only, plug-gable motor and encoder cables (standard) |
| /SB1 | 3D-c 3D | M23 brakemotor plug connector, socket on motor side only, pluggable motor and encoder cables (standard) |
| /SBB | 3D-c 3D | M40 brakemotor plug connector, socket on motor side only, pluggable motor and encoder cables (standard) |

| Designation | Design | Description |
|-------------|------------------|--------------------------------------------------------------|
| /KK | 3D-c, 3D, 3GD | Terminal box for CMP50/63, pluggable motor and encoder cable |

4 Mechanical installation

INFORMATION



Observe the safety notes in chapter 2 of these operating instructions for mechanical installation.

4.1 Required tools/resources

- Standard tools
- Mounting device
- Operation with conductor end sleeves: Crimping tool and conductor end sleeves
- Crimping pliers for plug connectors in case customers want to assemble cables themselves
- Removal tool

4.2 Before you start

Install the servomotor only if the following conditions are met:

- The information on the servomotor's nameplate must match the output voltage of the servo inverter.
- The drive is undamaged (no damage caused by transportation or storage).
- The ambient temperature corresponds to the information on the nameplate and on the order confirmation.
- The surrounding area is free from oils, acids, gases, vapors, (ionizing) radiation, etc.

4.3 Preliminary work

Thoroughly clean the shaft ends and make sure that they are free from anti-corrosion agent, dirt or the like. Use a commercially available solvent. Make sure that the solvent does not come into contact with the bearing or sealing rings as it may damage the material.

NOTICE

Solvents can damage the bearing and the sealing rings.

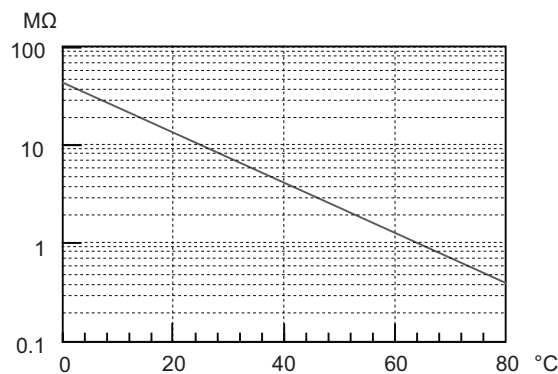
Device damage.

- During cleaning work, protect the bearing and the sealing rings against contact with solvents.

4.3.1 Extended storage of motors

- The service life of the ball bearing grease is reduced after storage periods exceeding 1 year.
- Check whether the motor has absorbed moisture as a result of being stored for a long time. Measure the insulation resistance for this purpose (measuring voltage 500 V).

The insulation resistance (see following figure) varies greatly depending on the temperature. The motor must be dried if the insulation resistance is not adequate.



18014398682805003

If the measured resistance is within the range of the limit characteristic curve (depending on the ambient temperature), the insulation resistance is sufficient. If the value is below the limit characteristic curve, dry the motor.


4.4 Mounting the servomotor

4.4.1 Aligning the motor shaft

NOTICE

Improper installation may result in damages to the servomotor.

Possible damage to property.

- Install the servomotor only in the specified mounting position on a level, vibration-free, and torsionally rigid support structure.
- Align the servomotor and the driven machine carefully to avoid placing any unacceptable strain on the output shafts.
- Observe the permitted overhung and axial forces; see chapter "Overhung and axial loads" (→  112).
- Do not jolt or hammer the shaft end.

INFORMATION



Components with a keyway to be mounted belatedly on the shaft must be balanced using a half key. Motor shafts with a keyway are balanced with a half key.

4.4.2 Use of belt pulleys/toothed belt pulleys


If you use the belt pulleys/toothed belt pulleys, special requirements must be met.



⚠ WARNING

Electrostatic charging due to belts without sufficient electrical leakage resistance.

Explosion due to sparks caused by electrical discharge.

- Only use belts with electrical leakage resistance $< 10^9 \Omega$.
 - The installed belts must meet the requirements specified in IEC 60695-11-10, category FV-0.
 - Make sure the mounted transmission elements are balanced. They must not give rise to any impermissible radial or axial forces; see chapter "Overhung and axial loads" (→  112).
-

4.4.3 Installation in damp locations or outdoors

- Try to arrange the motor and encoder connection so that the connector cables do not point upwards.
- Coat the threads of the cable glands and filler plugs with sealing compound and tighten them properly. Then coat them again.
- Clean the sealing surfaces of the connector (motor and/or encoder connection) before reassembly.
- Replace any brittle seals.
- If necessary, restore the corrosion protection coat.
- Check the validity of the degree of protection according to the nameplate.
- If necessary, attach covers (protection canopy).

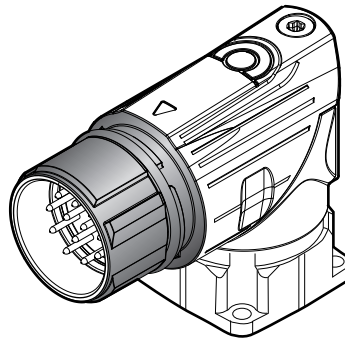
4.4.4 Installation in environments with a relative humidity of $\geq 60\%$

When you install the drive in environments with a relative humidity of $\geq 60\%$, you must protect the parts of the plug connector system against corrosion.

The area around the flange socket thread and the O-ring as far as the flange surface must be coated with a thin layer of the supplied NOCO® fluid anti-corrosion agent and lubricant (part no. 09107819).

All surfaces, especially the thread root, must be covered completely. The compound may not come into contact with the pins and the inside of the housing.

You have to coat the area again each time you re-plug the connector.



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INFORMATION



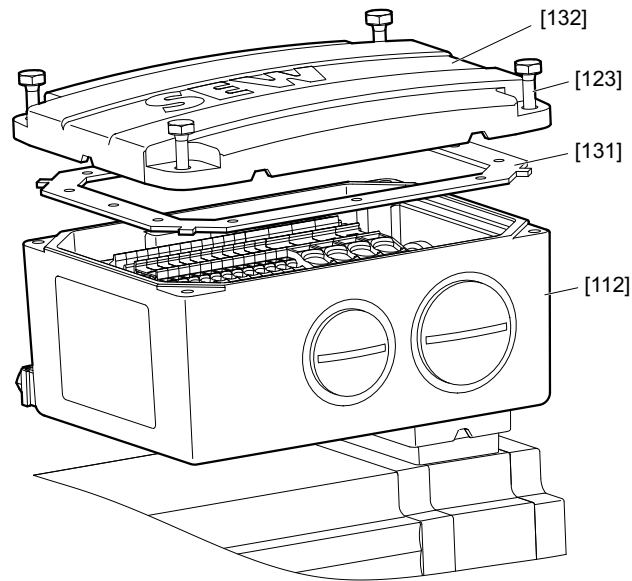
You can order NOCO® fluid from SEW-EURODRIVE in larger packaging units.

4.5 Installation tolerances

| Shaft end | Flanges |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Diameter tolerance according to EN 50347 <ul style="list-style-type: none"> • ISO k6 • Center hole according to DIN 332, shape DR | Centering shoulder tolerance according to EN 50347 <ul style="list-style-type: none"> • ISO j6 |

4.6 Terminal box

For example, the following figure shows the CMP50 and CMP63 motors in the design with terminal box:



18152131723

- [112] Terminal box lower part
- [123] Screw
- [131] Gasket
- [132] Terminal box cover

4.6.1 Tightening torques of the terminal box

Tighten the retaining screws [123] of the terminal box cover [132] with a tightening torque of 3.3 Nm.

4.7 Plug connection, special conditions



⚠ WARNING

Short circuit due to damage to the connector.

Explosion due to sparks caused by short circuit.

- Protect the connectors from horizontal and vertical impacts by fitting a suitable cover. The cover must be able to absorb an impact energy of 7 J (in accordance with EN/IEC 60079-0).

See chapter "X identification" (→ 19).

5 Electrical installation

5.1 General information



⚠ DANGER

Risk of injury due to electric shock.

Severe or fatal injuries.

- Adhere to the safety instructions in chapter 2 without fail during installation.
- Use switch contacts in utilization category AC-3 to EN/IEC 60947-4-1 to connect the servomotor and brake.
- Observe the wiring instructions of the inverter manufacturer.
- Observe the operating instructions for the inverter.
- Do not connect or disconnect the connector when voltage is applied.
- Connect or disconnect the connectors only when the motor is at a standstill.

NOTICE

Damage to the BK brake.

Possible damage to property.

- It is essential that you observe the correct polarity of the BK brake supply. Check the polarity when replacing the brake.



INFORMATION

A bag containing the safety notes and wiring diagrams is attached to the servomotor. Observe the enclosed notes.

5.2 Additional regulations for potentially explosive atmospheres



⚠ WARNING

Risk of explosion due to sparks when connecting or disconnecting plug-in connections that are live.

Severe or fatal injuries.

- Connect or disconnect plug-in connections only in de-energized state.
- Connect or disconnect the plug-in connections only when the motor is at a complete standstill.



INFORMATION

In addition to the generally applicable installation regulations for low-voltage electrical equipment (e.g. in Germany: DIN VDE 0100, DIN VDE 0105), it is also necessary to comply with the special provisions on setting up electrical machinery in potentially explosive atmospheres (operating safety regulations in Germany; EN/IEC 60079-14 and specific provisions for the machine).

INFORMATION



Observe the information regarding the thermal motor protection in chapter "Thermal motor protection" (→ 56).

5.3 Ambient conditions during operation

5.3.1 Ambient temperature

The temperature range of -20 °C to +40 °C must be ensured unless specified otherwise on the nameplate.

5.3.2 Hazardous radiation

Motors must not be exposed to hazardous radiation (such as ionizing radiation). Contact SEW-EURODRIVE if necessary.

5.3.3 Hazardous gases, vapors and dusts

If used according to their designated use, explosion-protected servomotors are incapable of igniting explosive gases, vapors or dusts. However, explosion-protected motors may not be subjected to gases, vapors or dusts that endanger operational safety, for example through

- Corrosion
 - Damage to the protective coating
 - Damage to the sealing material
- etc.

5.3.4 General information on explosion protection

The explosion-protected CMP. synchronous servomotors are intended for the following application zones.

| Motor design in IECEx | Area of operation |
|-----------------------|--------------------------|
| 3D-c | Use in zone 22 |
| Motor design in ATEX | Area of operation |
| 3D | Use in zone 22 |
| 3GD | Use in zone 2 or zone 22 |

5.3.5 Degree of protection IP65

In delivery state, explosion-protected servomotors from SEW-EURODRIVE possess degree of protection IP65.

5.3.6 Temperature class / surface temperature

The servomotors are designed for temperature class T3. The maximum surface temperature is 150 °C.

5.3.7 Protection against impermissibly high surface temperatures



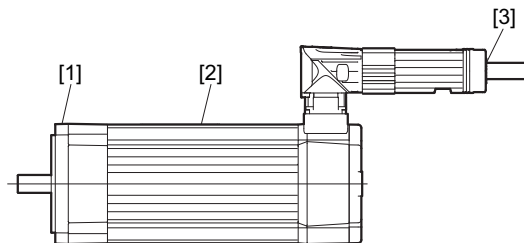
NOTICE

Due to the low thermal time constants of the winding, the thermal motor protection is only effective when a current monitoring device (I^2t , rms current monitoring) and a motor model for thermal protection, as installed in servo systems by SEW-EURODRIVE, is activated in addition to a temperature sensor.

Complete motor protection at full motor utilization is only ensured if the signals are evaluated by SEW-EURODRIVE inverters.

Explosion-protected servomotors in design 3...-c ensure safe operation under normal operating conditions. The servomotor must be disconnected safely in the event of overload to avoid the risk of impermissibly high surface temperatures.

The following graphic shows the measuring points and the corresponding maximum permitted surface temperatures.



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- [1] Measuring point on drive-end endshield: Maximum permitted surface temperature $\leq 120\text{ }^{\circ}\text{C}$
- [2] Measuring point on motor housing (center): Maximum permitted surface temperature $\leq 120\text{ }^{\circ}\text{C}$
- [3] Measuring point at connector or terminal box cable entry: Maximum permitted surface temperature $\leq 80\text{ }^{\circ}\text{C}$

5.4 Connection with SM./SB. connector system



⚠ WARNING

Risk of explosion due to sparks when connecting or disconnecting plug-in connections that are live.

Severe or fatal injuries.

- Connect or disconnect plug-in connections only in de-energized state.
- Connect or disconnect the plug-in connections only when the motor is at a complete standstill.

5.4.1 Procedure

- Connect the servomotor according to the enclosed wiring diagram.
- Check whether the cable cross sections comply with:
 - Nominal motor current
 - The applicable installation instructions
 - The requirements of the place of installation

5.4.2 Wiring diagrams of plug connectors



INFORMATION

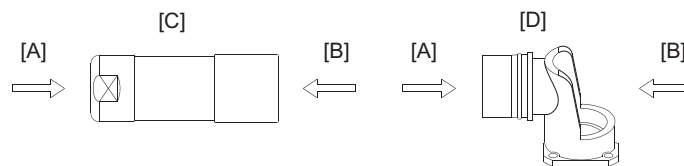
Connect the standard servomotor as shown in the following wiring diagram, which is included with the servomotor.



INFORMATION

Observe any differing, customer-specific wiring diagrams, if applicable.

Key

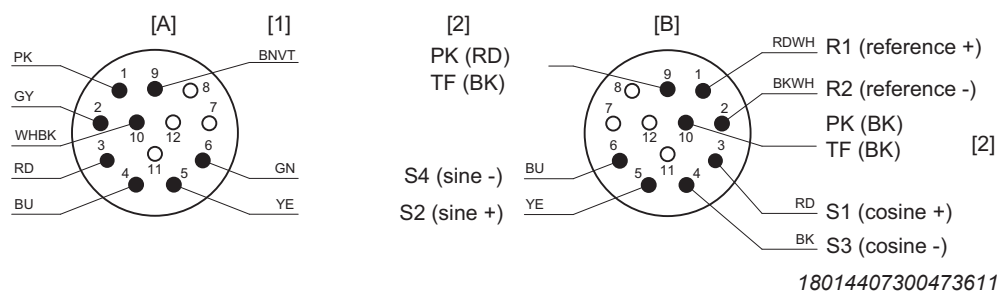


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- [A] View A
- [B] View B
- [C] Customer connector with socket contacts
- [D] Flange socket with pin contacts installed at the factory

Wiring diagram for RH1M resolver signal plug connectors

Wiring diagram



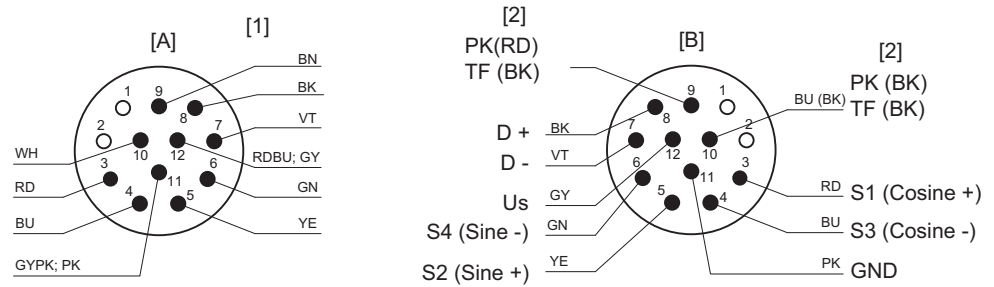
- [1] Shield connected to the metal housing of the connector. Color code according to SEW-EURODRIVE cables
- [2] PK (RD/BK), optional TF (BK)

Pin assignment of plug connector lower part [B]

| Contact | Color code | Connection |
|---------|------------|------------------|
| 1 | RD/WH | R1 (reference +) |
| 2 | BK/WH | R2 (reference -) |
| 3 | RD | S1 (cosine +) |
| 4 | BK | S3 (cosine -) |
| 5 | YE | S2 (sine +) |
| 6 | BU | S4 (sine -) |
| 7 | — | — |
| 8 | — | — |
| 9 | BK | PK/TF |
| 10 | BK | PK/TF |
| 11 | — | — |
| 12 | — | — |

Connection of signal plug connector encoder AK0H, EK0H, AK1H, EK1H

Wiring diagram



18014407300475531

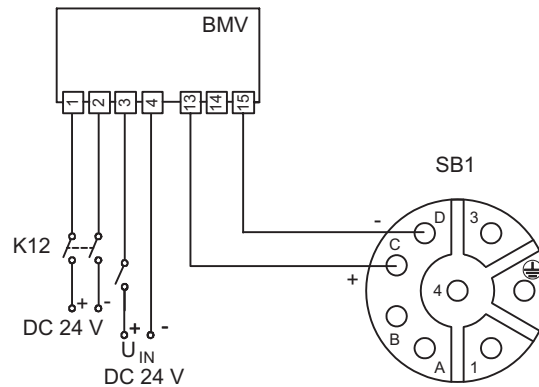
- [1] Shield connected to the metal housing of the connector. Color code according to SEW-EURODRIVE cable
 [2] PK (RD/BK)

Pin assignment of plug connector lower part [B]

| Contact | Color code | Connection |
|---------|------------|-------------------------|
| 1 | — | — |
| 2 | — | — |
| 3 | RD | S1 (cosine +) |
| 4 | BU | S3 (cosine -) |
| 5 | YE | S2 (sine +) |
| 6 | GN | S4 (sine -) |
| 7 | VT | D - |
| 8 | BK | D + |
| 9 | BK | PK/TF |
| 10 | BK | PK/TF |
| 11 | PK | Voltage reference (GND) |
| 12 | GY | Supply voltage Vs |

Wiring diagrams of the brake control for BP/BK brake

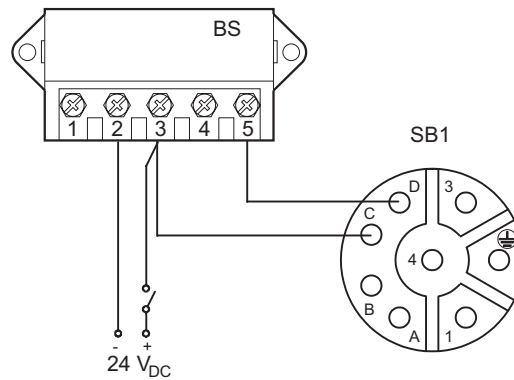
BMV brake controller



9007212241295115

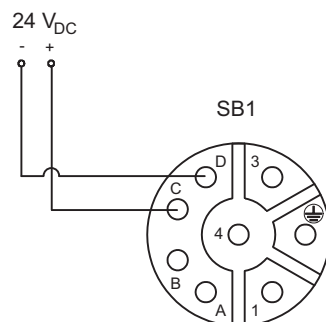
Connection 1, 2 Power supply
Connection 3, 4 Signal (inverter)

BS brake contactor



12986690059

Direct 24 V brake supply



12986696203

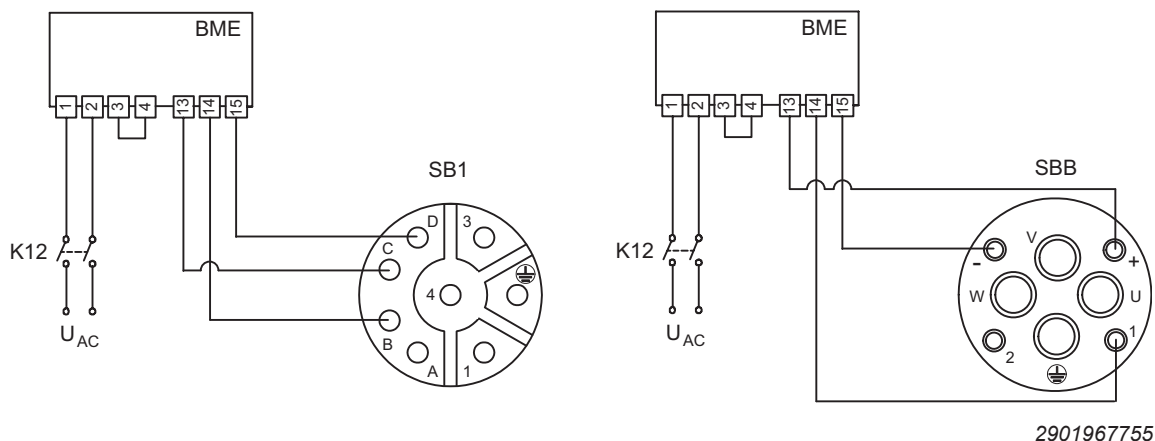
In the following cases, the brake must be protected from overvoltage, e.g. via a varistor protection circuit:

- Operation on non-SEW inverters,
- If the brake is not directly supplied from the SEW-EURODRIVE inverter.

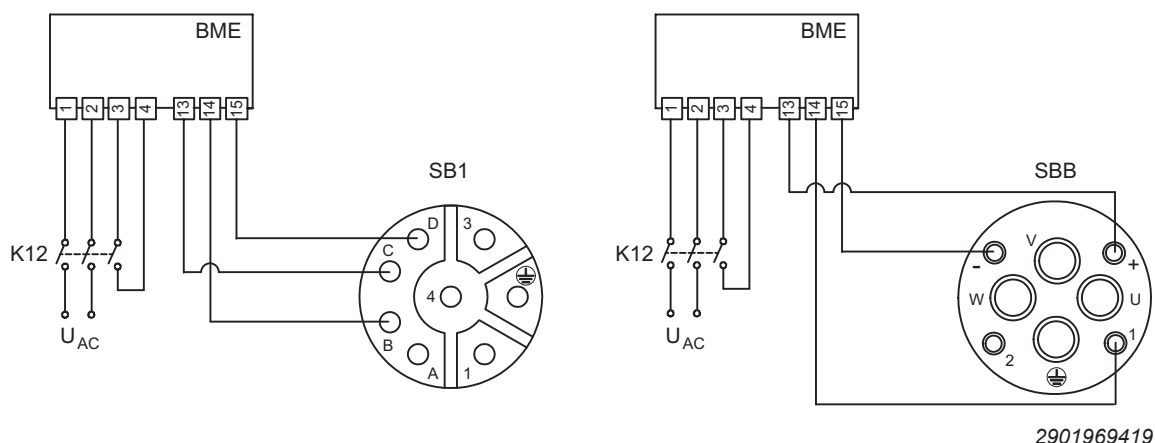
Wiring diagrams of the brake control – BY brake

BME brake rectifier

Cut-off in the AC circuit / standard application of the brake with SB1, SBB

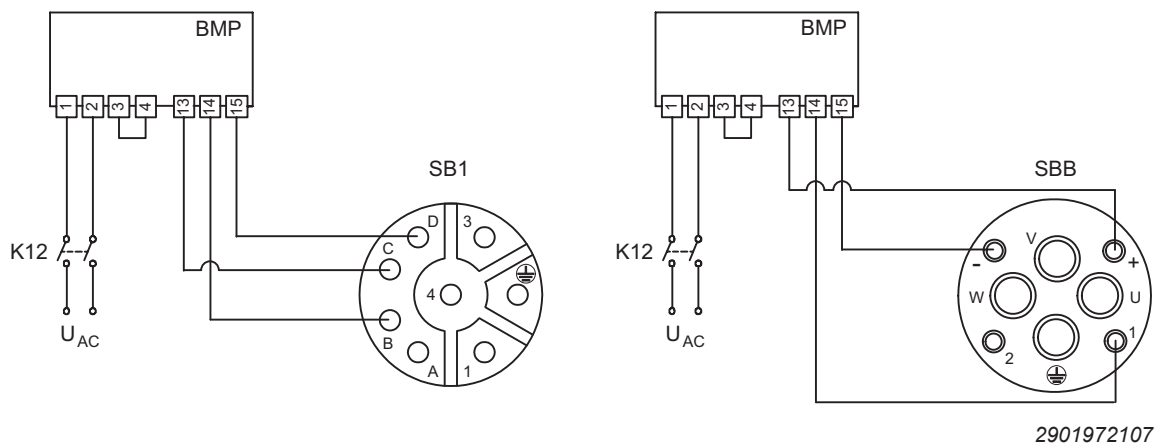


Cut-off in the DC and AC circuits / rapid application of the brake with SB1, SBB



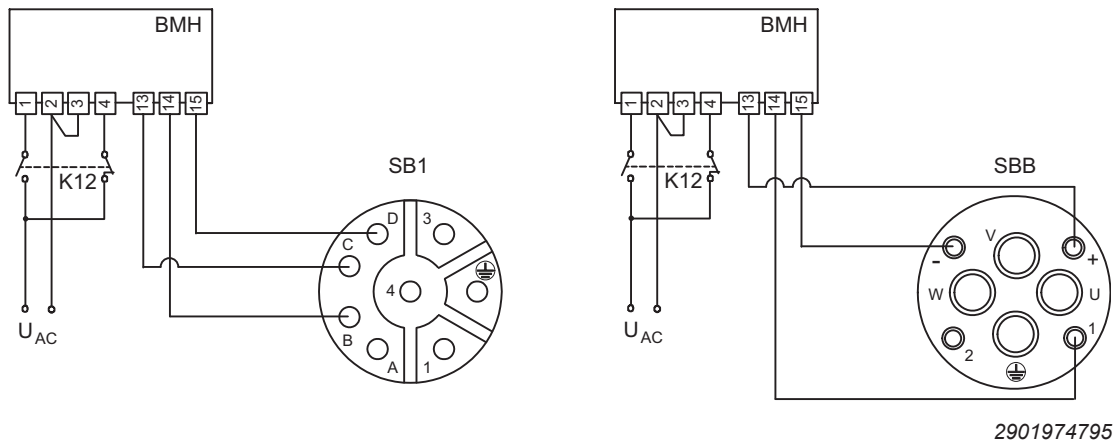
BMP brake rectifier

Cut-off in the DC and AC circuits / rapid application of the brake / integrated voltage relay with SBB

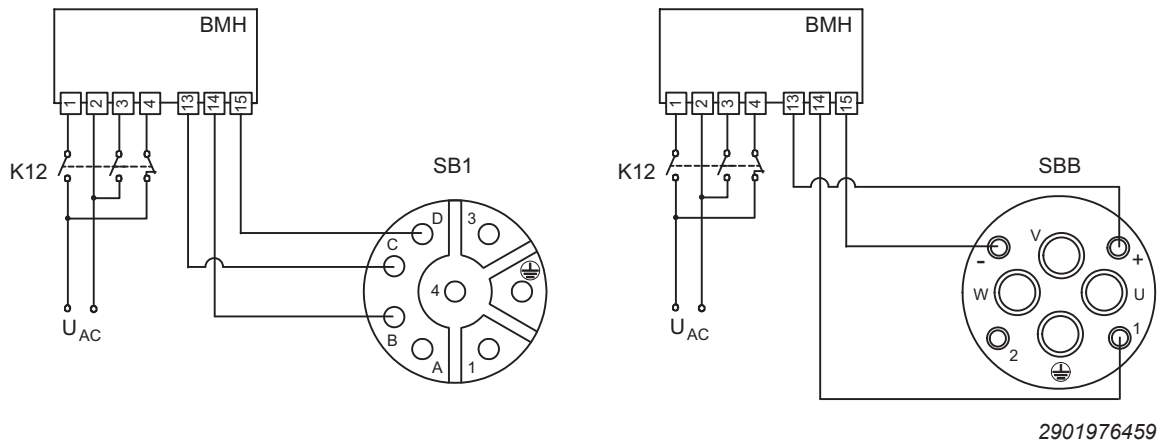


BMH brake rectifier

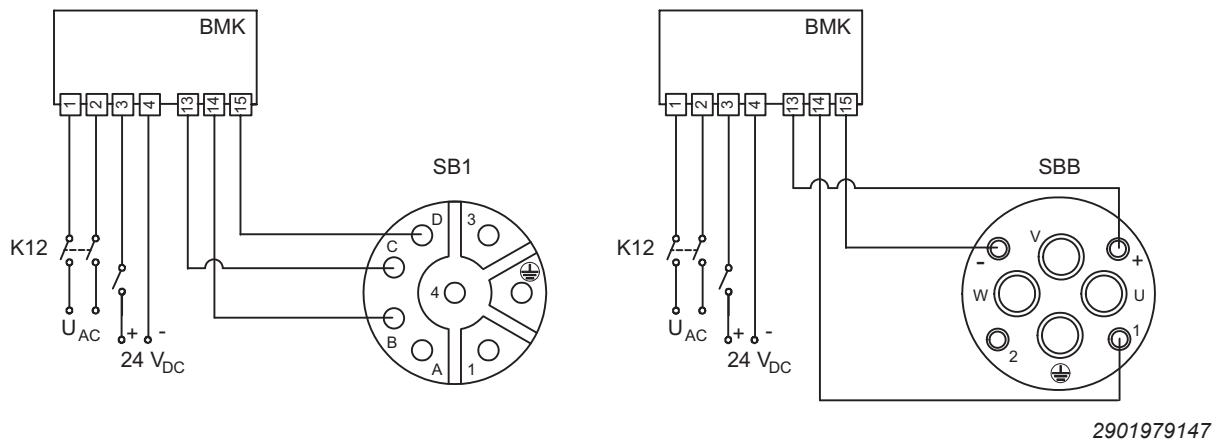
Cut-off in the AC circuit / standard application of the brake with SBB



Cut-off in the DC and AC circuits / rapid application of the brake with SBB

*BMK brake controller*

Cut-off in the DC and AC circuits / rapid application of the brake / integrated voltage relay / DC 24 V control input integrated with SBB

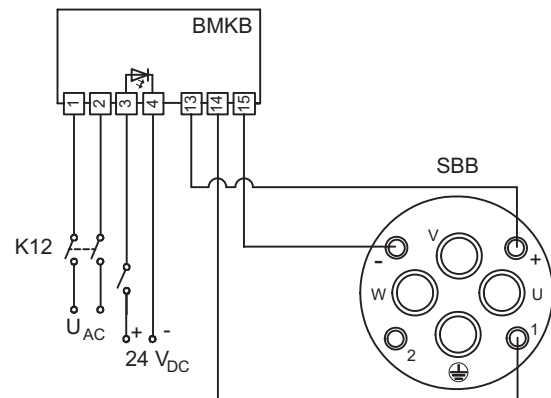
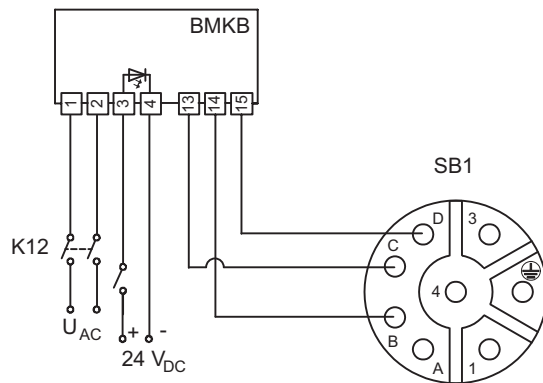


Connection 1, 2
Connection 3, 4

Energy supply
Signal (inverter)

BMKB brake controller

Cut-off in the DC and AC circuits / rapid application of the brake / integrated voltage relay / DC 24 V control input integrated / LED ready for operation display with SBB



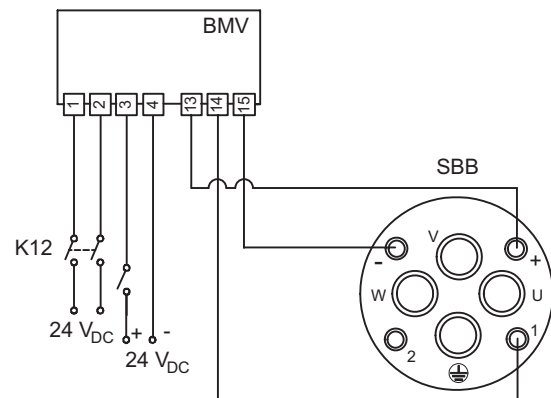
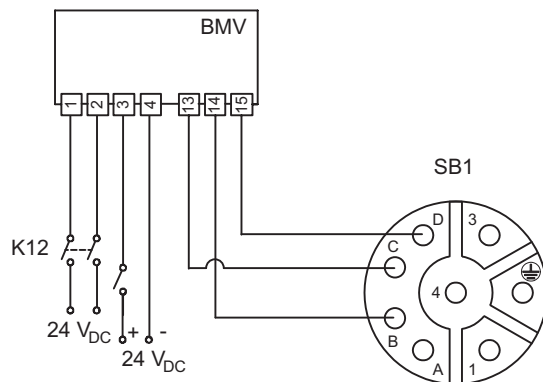
2901981835

Connection 1, 2
Connection 3, 4

Energy supply
Signal (inverter)

BMV brake controller

Cut-off in the DC and AC circuits / rapid application of the brake / DC 24 V control input integrated with SBB



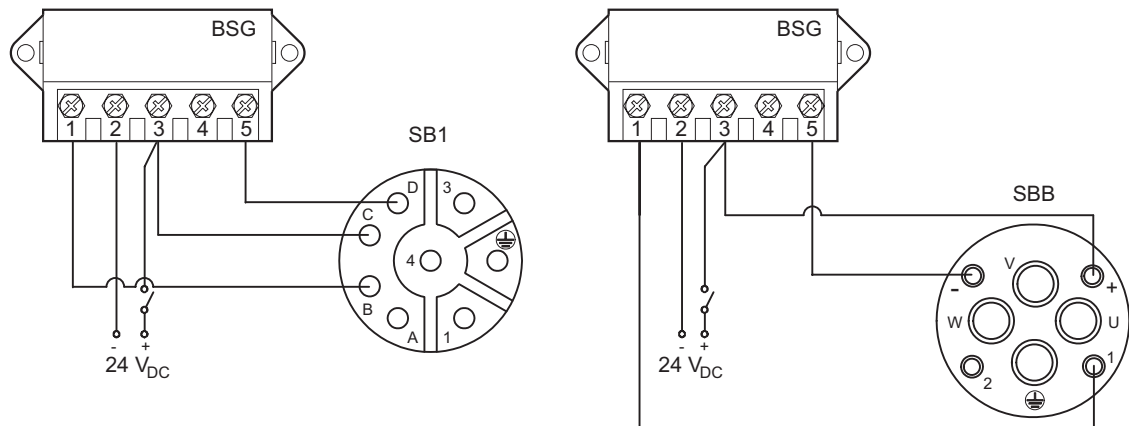
2901984523

Connection 1, 2
Connection 3, 4

Energy supply
Signal (inverter)

BSG brake control unit

For DC 24 V supply with SBB



2901987211

5.4.3 Signal plug connector connection

The following notes must be observed when connecting the encoder/resolver:

- Use only shielded cables with twisted pair cores.
- Connect the shield to the PE potential on both ends over a large surface area.
- Route the signal cables separately from the power cables (min. distance 200 mm).

**⚠ WARNING**

Risk of explosion due to sparks when connecting or disconnecting plug-in connections that are live.

Severe or fatal injuries.

- Connect or disconnect plug-in connections only in de-energized state.
- Connect or disconnect the plug-in connections only when the motor is at a complete standstill.

5.5 Connector assembly

As standard, power and signal cables enter the unit via adjustable right-angle connectors. Once the mating connector has been plugged in, the right-angle connector can be adjusted as required without using additional tools. A torque of approximately 10 Nm is required to adjust the connector.

Tighten the plug connectors with a torque wrench on the socket.

| Plug connector | Torque Nm |
|----------------|--------------|
| SM1/SB1 | 3 |
| SMB/SBB | 5 |

NOTICE

If the connector is tightened when it is installed in the wrong position, this may cause irreparable damage to the insulator.

Possible damage to property.

- Observe the correct installation position.
- Check that the detent on the connector is positioned correctly.
- Make sure that the connector lock can be turned without having to apply too much force.

5.5.1 Connector positions

An "adjustable" position has been defined for right-angle, rotatable connectors. This is the standard connector position. It corresponds to connector position "3".

INFORMATION



Comply with the permitted bending radii of the cables.

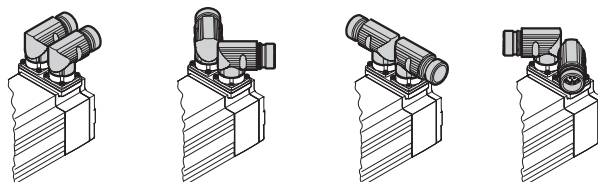
The right-angle connectors can be rotated to achieve the required position.

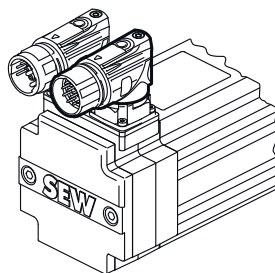
INFORMATION



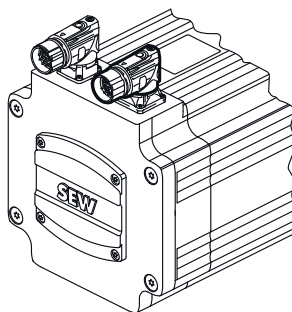
The connector should only be rotated to install and connect the servomotor. Do not turn the connector frequently once it has been installed.

Adjustable plug connectors (examples)

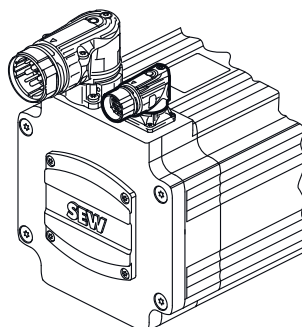


CMP40 – CMP63: SM1/SB1 plug connector

24870384139

CMP.71 – CMP.100: SM1/SB1 plug connector

24870558347

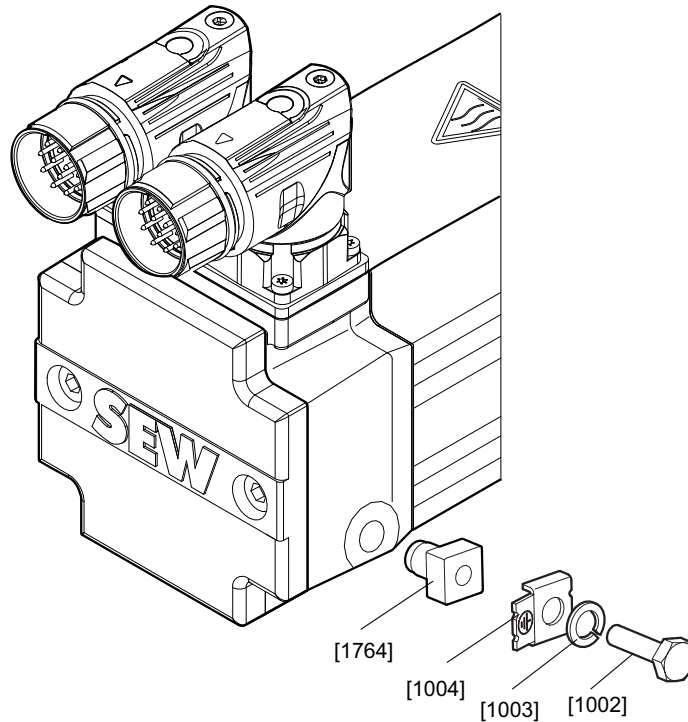
CMP.71 – CMP.100: SMB/SBB plug connector

24870578955

5.6 Equipotential bonding

In accordance with EN/IEC 60079-14, the unit must be connected to an earth-loop current bonding system.

5.6.1 CMSB50 – 63 with plug connector option

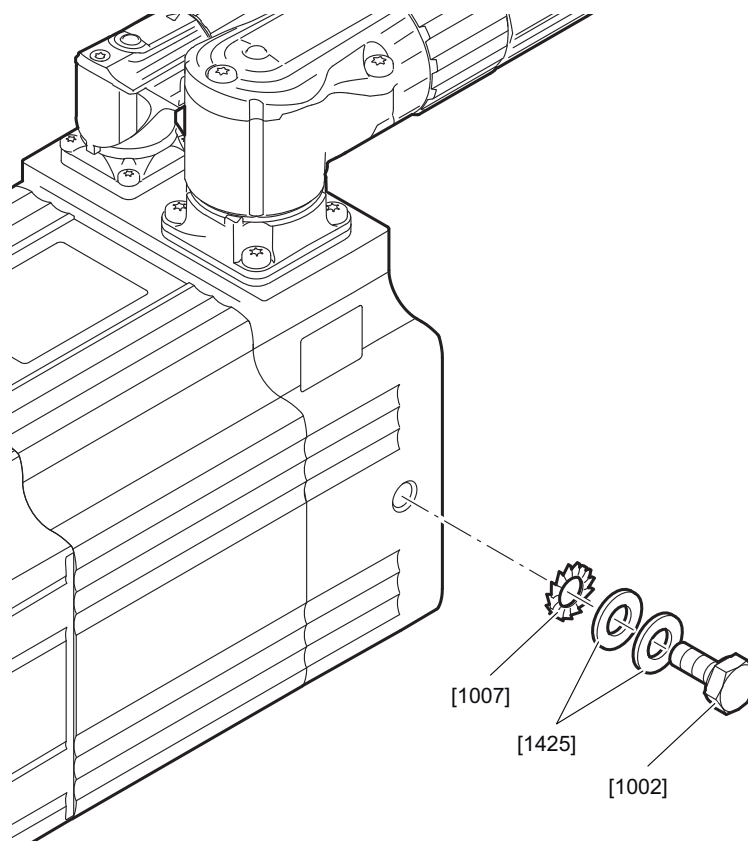


14201906187

- [1002] Screw
- [1003] Lock washer
- [1004] Terminal clip
- [1764] Grounding terminal

Tighten the screw [1002] with a tightening torque of 1.5 Nm.

5.6.2 CMP.71 – 100 with plug connector option



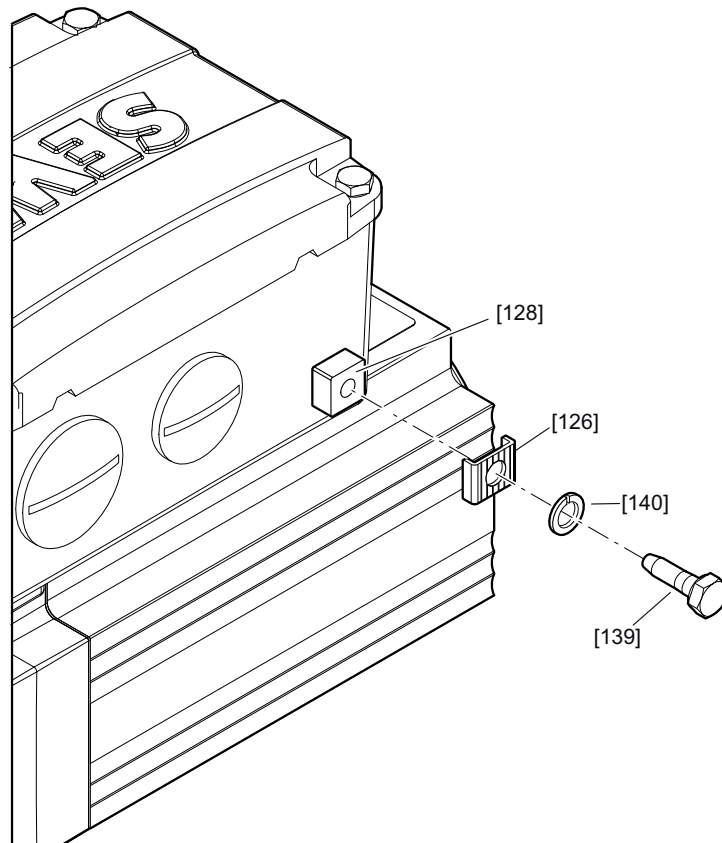
9777576331

- [1002] Hex head screw
[1007] Serrated lock washer
[1425] Washer

Tighten the screw [1002] with the following tightening torque:

- CMP.71: 4.1 Nm
- CMP.80 – 100: 10 Nm

5.6.3 CMP40 – 63 with terminal box option

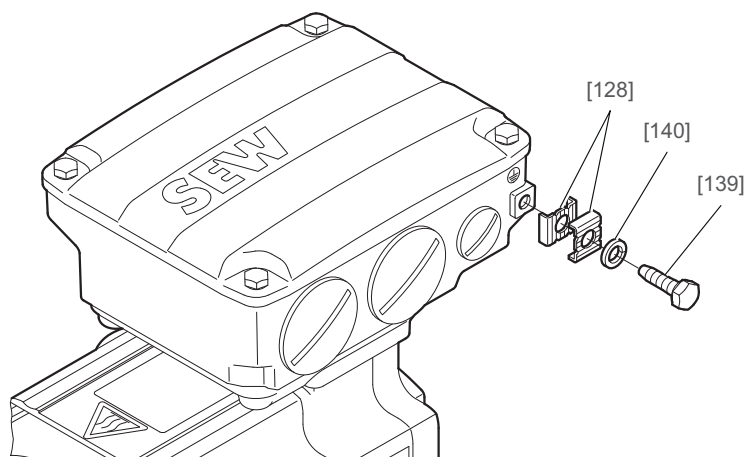


9007205631510155

- [126] Terminal clip
- [128] Grounding terminal
- [139] Screw
- [140] Lock washer

Tighten the screw [139] with a tightening torque of 2 Nm.

5.6.4 CMP.71 – 80 with optional terminal box



31139528203

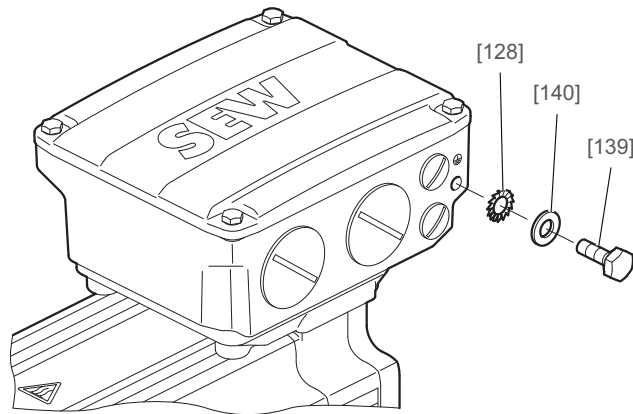
[128] Terminal clip

[139] Screw

[140] Lock washer

Tighten the screw [139] with a tightening torque of 4 Nm.

5.6.5 CMP100 with optional terminal box



31139525771

- [128] Serrated lock washer
- [139] Screw
- [140] Washer

Tighten the screw [139] with a tightening torque of 10 Nm.

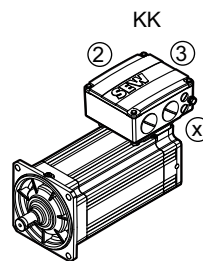
5.7 Terminal box connection

5.7.1 Notes regarding the connection of power and signal cables via terminal box

Optionally, you can connect the power and signal cables via a terminal box.

- Option /KK: Connection of the power and signal cable via conductor end sleeves in the terminal box.

The cable entry position is specified with x, 2, 3.



6015540491

For motor sizes CMP50 and 63 in a fixed mounting position "x", the cable entry is possible from 3 sides.

Cable entries



INFORMATION

The terminal boxes possess a metric thread in accordance with ISO 261 or an NPT thread in accordance with ANSI B1.20.1-1983. The screw plugs installed in the tapped holes in delivery state are an integral component of the EX certificate IECEx PTB 18.0035X/01.

Observe the following points to ensure a correct cable entry:

- Maintain the operating temperature range of -40 – +120 °C for the screw fittings.

- Use Ex cable glands with strain relief.
- Select the cable glands according to the outer diameter of the respective cable.
- You can find the tightening torque for the cable entry in the operating/installation instructions or the EU type examination certificate for the cable gland.
- The IP degree of protection of the cable entry must be at least as high as the IP degree of protection of the motor.

5.7.2 Connecting the motor and encoder system via KK terminal box

- Check the cable cross sections.
- Stripping the cable ends:
 - Power cable: Strip 10 – 12 mm of insulation
 - Signal or brake cable: 9 – 11 mm

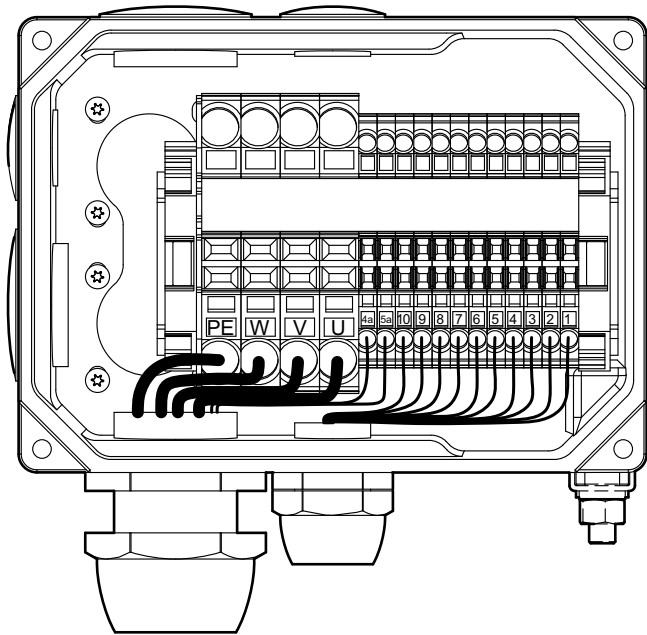
Use conductor end sleeves on the cable ends of fine and extremely fine conductors.
- Insert the prepared conductor ends fully into the corresponding plug-in terminals.
Can be connected directly, without any actuation tools:
 - Power cable; fine conductor with conductor end sleeve with a diameter $\geq 0.75 \text{ mm}^2$ (18 AWG)
 - Power cable; single-wire conductor with a diameter of $0.75 - 4 \text{ mm}^2$ (18 – 12 AWG)
 - Signal or brake cable; fine conductor with conductor end sleeve with a diameter $\geq 0.5 \text{ mm}^2$ (20 AWG)
 - Signal or brake cable; single-wire conductor with conductor end sleeve with a diameter of $0.5 - 1.5 \text{ mm}^2$ (18 – 12 AWG)

Use an actuation tool if the corresponding cable diameters are smaller.
- Pull slightly on the conductor to check whether the cage clamp terminal has locked off properly.

Connection cross section

| Motor type | Power connection | | | Encoder / resolver / thermal motor protection | |
|--------------|------------------|----------------------------------|-------------|-----------------------------------------------|-------------|
| | Connection | Maximum connection cross section | Cable entry | Connection | Cable entry |
| CMP50, CMP63 | Spring terminals | 4 mm^2 | M25 | Spring terminals | M20 |

Connection of CMP50 and CMP63



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Power

| Pin | Core identification | Connection |
|-----|------------------------------------|--------------|
| U | (BK/WH) | U |
| V | Black with white lettering U, V, W | V |
| W | | W |
| PE | (GN/YE) Green/yellow | PE conductor |

BP/BK brake

| Auxiliary terminal contacts | Core identification | | BMV brake rectifier connection | BS brake control unit connection |
|-----------------------------|---------------------|-----------------------------------|--------------------------------|----------------------------------|
| | BK | BP | | |
| 4a (RD) | + | (BK/WH) | 13 | 3 |
| | (RD) Red | Black with white labeling 1, 2, 3 | | |
| 5a (BU) | – | | 15 | 5 |
| | (BU) Blue | | | |

The brake has a standard connection voltage of DC 24 V.

NOTICE

Damage to the BK brake.

Possible damage to property.

- It is essential that you observe the correct polarity of the BK brake supply. Check the polarity when replacing the brake.

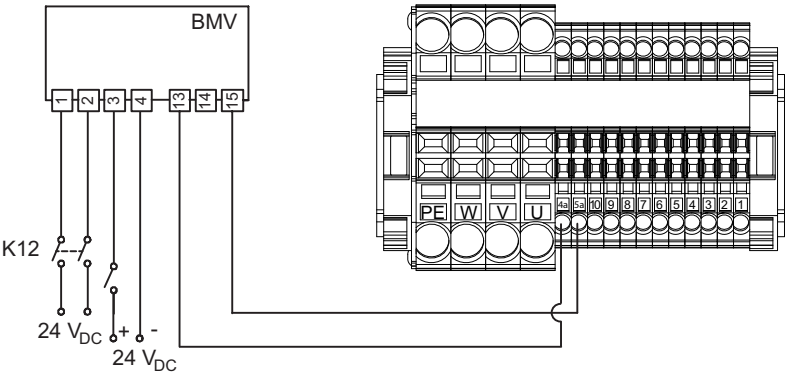
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Signal

| Resolver | | | Encoder | | |
|----------|--------|------------------|---------|---------|------------------|
| 1 | ref + | Reference | 1 | cos + | Cosine |
| 2 | ref - | | 2 | ref cos | Reference |
| 3 | cos + | Cosine | 3 | sin + | Sine |
| 4 | cos - | | 4 | ref sin | Reference |
| 5 | sin + | Sine | 5 | D - | DATA |
| 6 | sin - | | 6 | D + | DATA |
| 7 | – | – | 7 | GND | Ground |
| 8 | – | – | 8 | Us | Supply voltage |
| 9 | PK+/TF | Motor protection | 9 | PK+/TF | Motor protection |
| 10 | PK-/TF | | 10 | PK-/TF | |

5.7.3 Wiring diagrams

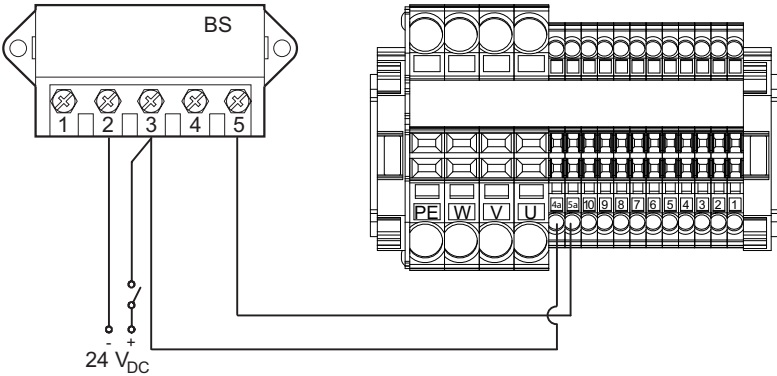
BMV brake controller – CMP50, CMP63



9007202156696971

Connection 1, 2 Energy supply
 Connection 3, 4 Signal (inverter)

BS brake contactor – CMP50, CMP63



9007202156702347

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5.8 Wiring notes

5.8.1 Protecting the brake control system against interference

To protect the brake control system against interference, do not route unshielded brake cables together with switched-mode power cables.

Switched-mode power cables include in particular:

- Output cables of frequency inverters
- Supply cables to braking resistors and similar.

5.8.2 Thermal motor protection

Install the connecting lead of the temperature sensor /KTY or /PK separately from other power cables, maintaining a distance of at least 200 mm.

Shared routing is permitted only if either the cable of the temperature sensor or the power cable is shielded.

5.8.3 Special aspects for operation with servo inverters

In the case of servomotors, also observe the wiring instructions issued by the inverter manufacturer. It is essential that you observe the operating instructions for the inverter.

5.8.4 Cable carrier

If you route the power and signal cables in a cable carrier, you must provide strain relief on the motor connection side. Observe the restrictions of the permitted operating temperature of the cables in the area of the cable carrier (see manufacturer specification for the cable).

5.9 Connecting the servomotor and encoder system using SM./SB. plug connectors

The CMP.. synchronous servomotors are supplied with the SM./SB. plug connector system. In the basic design, SEW-EURODRIVE delivers CMP.. synchronous servomotors with a flange socket on the motor side and without a mating connector. The encoder system is connected using a separate 12-pin round plug connector.

The mating connectors can be ordered separately.



⚠ WARNING

Risk of explosion due to incorrect mating connector.

Fatal and serious injuries.

- Use only mating connectors that are supplied by SEW-EURODRIVE or that are certified to IECEx.
 - Install and uninstall mating connectors only with tools.
 - Always adhere to the specified tightening torques.
-



INFORMATION

Route the signal cables separately from the power cables with a minimum distance of 200 mm. The cables can only be routed together if either the feedback cable or the power cable is shielded.

5.9.1 Prefabricated cables

INFORMATION



When selecting suitable motor cables, ensure that they have temperature resistance of at least 80 °C.

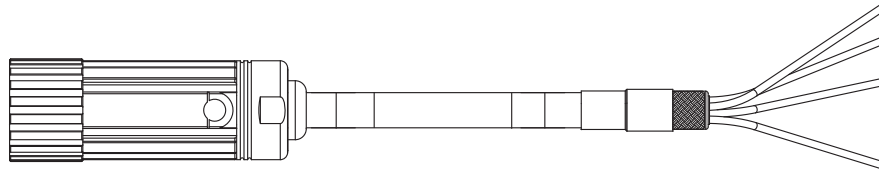
INFORMATION



If you use cables from SEW-EURODRIVE, make sure that the maximum cable temperature of 80 °C is not exceeded under any circumstances. Take all external heat sources in account.

CMP.. motor cables

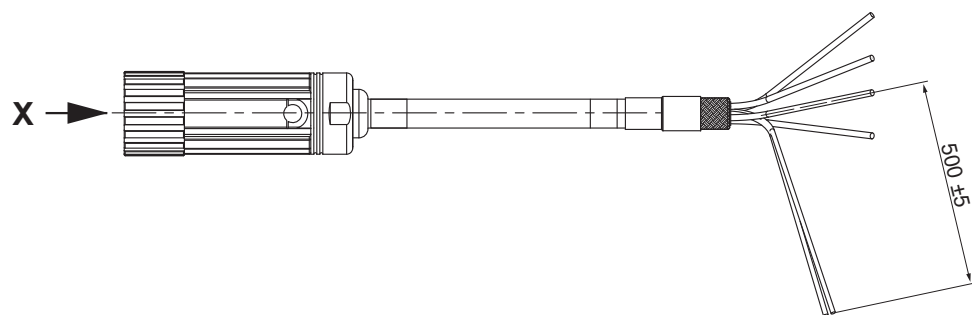
Prefabricated cables are available from SEW-EURODRIVE for connecting the SM. plug connector system; you can see them in the following table:



| Plug connector | Number of cores and cable cross section | Part number | Installation type |
|----------------|-----------------------------------------|-------------|--------------------|
| SM11 | 4 × 1.5 mm ² | 05904544 | Fixed installation |
| SM12 | 4 × 2.5 mm ² | 05904552 | |
| SM14 | 4 × 4 mm ² | 05904560 | |
| SMB6 | 4 × 6 mm ² | 13350269 | |

CMP.. brakemotor cables, BP/BK brake

Prefabricated cables are available from SEW-EURODRIVE for connecting the SB. plug connector system; you can see them in the following table:

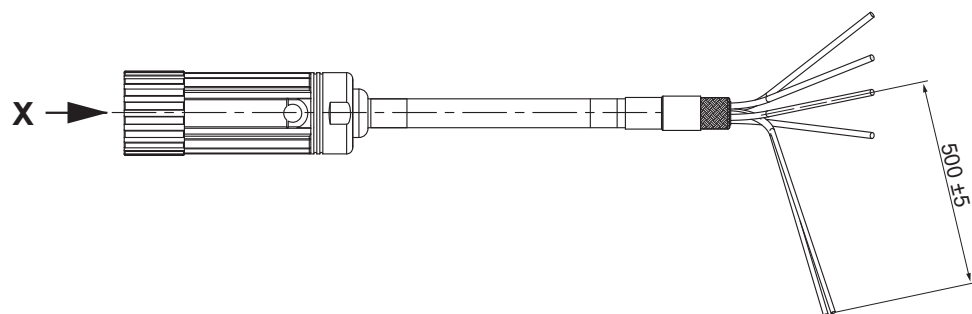


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| Plug connector | Number of cores and cable cross section | Part number | Installation type |
|----------------|-------------------------------------------------------|-------------|--------------------|
| SB11 | $4 \times 1.5 \text{ mm}^2 + 3 \times 1 \text{ mm}^2$ | 13354345 | Fixed installation |
| SB12 | $4 \times 2.5 \text{ mm}^2 + 3 \times 1 \text{ mm}^2$ | 13354353 | |
| SB14 | $4 \times 4 \text{ mm}^2 + 3 \times 1 \text{ mm}^2$ | 13354361 | |

CMP.. brakemotor cables, BY brake

Prefabricated cables are available from SEW-EURODRIVE for connecting the SB. plug connector system; you can see them in the following table:



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| Plug connector | Number of cores and cable cross section | Part number | Installation type |
|---------------------|--------------------------------------------------------|-------------|--------------------|
| SB11 | $4 \times 1.5 \text{ mm}^2 + 3 \times 1 \text{ mm}^2$ | 13354272 | Fixed installation |
| SB12 | $4 \times 2.5 \text{ mm}^2 + 3 \times 1 \text{ mm}^2$ | 13354280 | |
| SB14 | $4 \times 4 \text{ mm}^2 + 3 \times 1 \text{ mm}^2$ | 13354299 | |
| SBB16 ¹⁾ | $4 \times 16 \text{ mm}^2 + 3 \times 1.5 \text{ mm}^2$ | 13350188 | |

1) Despite its cable carrier capacity, use this cable only in a fixed installation.

Encoder cables for connection variant with /KKS plug connector

The following prefabricated cables are available from SEW-EURODRIVE to connect encoders using plug connectors:

| Encoder | Connection to | | Cable part number | |
|--------------------------|---------------|-----------|--------------------|-----------------|
| | MOVIDRIVE® | MOVIAXIS® | Fixed installation | Fixed extension |
| RH1M | X15 | | 01994875 | 01995421 |
| | | X13 | 13327429 | |
| AK1H, EK1H AK0H, EK0H | X15 | X13 | 13324535 | 01995391 |

Encoder cables for connection variant with /KK terminal box

The following prefabricated cables are available from SEW-EURODRIVE for connecting encoders using terminal boxes:

| Encoder | Connection to | | Cable part number |
|--------------------|---------------|-----------|--------------------|
| | MOVIDRIVE® | MOVIAXIS® | Fixed installation |
| RH1M | X15 | | 13356259 |
| | | X13 | 13356356 |
| AK1H, EK1H AK0H | X15 | X13 | 13356291 |

For information on the mating connectors with matching crimp contacts 1.5 mm², 2.5 mm², and 4 mm², refer to the "Assembly of Cables" manual (19301626).

Assembling the cables:

Observe the following notes if you want to assemble the cables yourself:

- Follow the instructions in the "Assembly of Cables" manual (part number 19301626).
- The socket contacts for the motor connection are designed as crimp contacts. Use only the specified tools for crimping.
- Use suitable removal tools to remove incorrectly installed socket contacts.
- Install the insulator in the signal connectors on the motor end at "zero" degrees (center position). Observe this coding on the cable end.
- Cable relief in accordance with EN IEC 61984 and EN IEC 60529 is influenced by the tightening torque of the screw fitting. The tightening torque must be matched to the cable.

5.10 Thermal motor protection



NOTICE

Due to the low thermal time constants of the winding, the thermal motor protection is only effective when a current monitoring device (I^2t , rms current monitoring) and a motor model for thermal protection, as installed in servo systems by SEW-EURODRIVE, is activated in addition to a temperature sensor.

Complete motor protection at full motor utilization is only ensured if the signals are evaluated by SEW-EURODRIVE inverters.

5.10.1 KTY temperature sensor

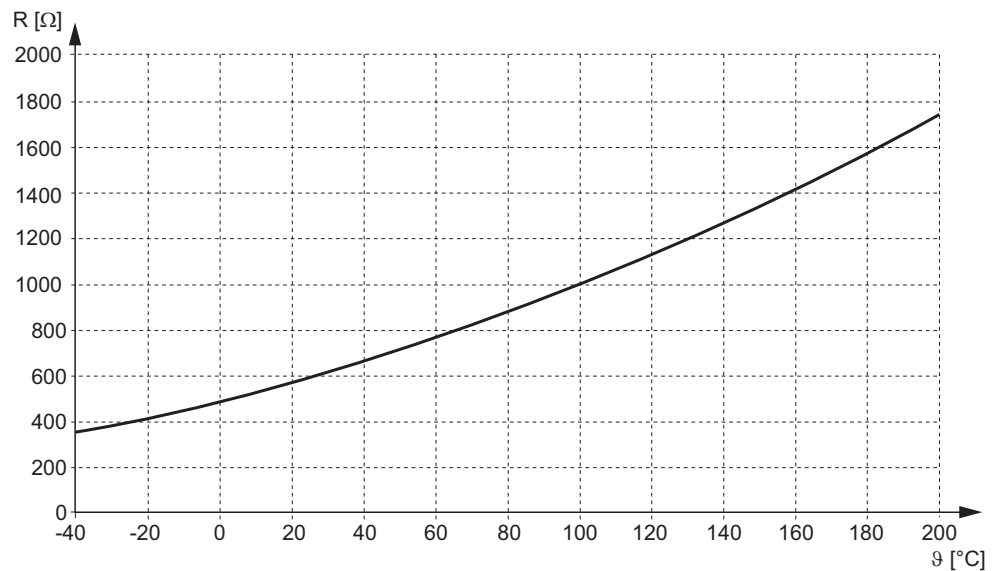
NOTICE

Excessive self-heating of the temperature sensor can damage the insulation of the temperature sensor as well as the motor winding.

Potential damage to property.

- Avoid currents > 4 mA in the KTY circuit.
- Do not route any unshielded KTY cables near power cables.
- Observe the correct connection of the KTY to ensure correct evaluation of the temperature sensor.

The following figure shows the resistance of the KTY sensor subject to the motor temperature. The characteristic curve shows the resistance curve with a measuring current of 2 mA and correct pole connection.



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For detailed information on connecting the KTY, refer to the contact assignments of the resolver/encoder cables. Observe the correct polarity.

5.10.2 PT1000 thermal motor protection

Type designation

/PK

Description

Thermal motor protection in combination with the corresponding evaluation electronics prevents the motor from overheating and consequently from being damaged. A temperature sensor provides only indirect protection as only one sensor value is determined.

The /PK option consists of a PT1000 platinum sensor, which is installed in one of the 3 motor windings. Unlike the /KY semiconductor sensor, the platinum sensor has an almost linear characteristic curve and is more accurate. In combination with a frequency inverter containing the thermal model of the motor, the frequency inverter can also provide a motor protection function because of the /PK.

Technical data

The PT1000 temperature sensor continuously detects the motor temperature.

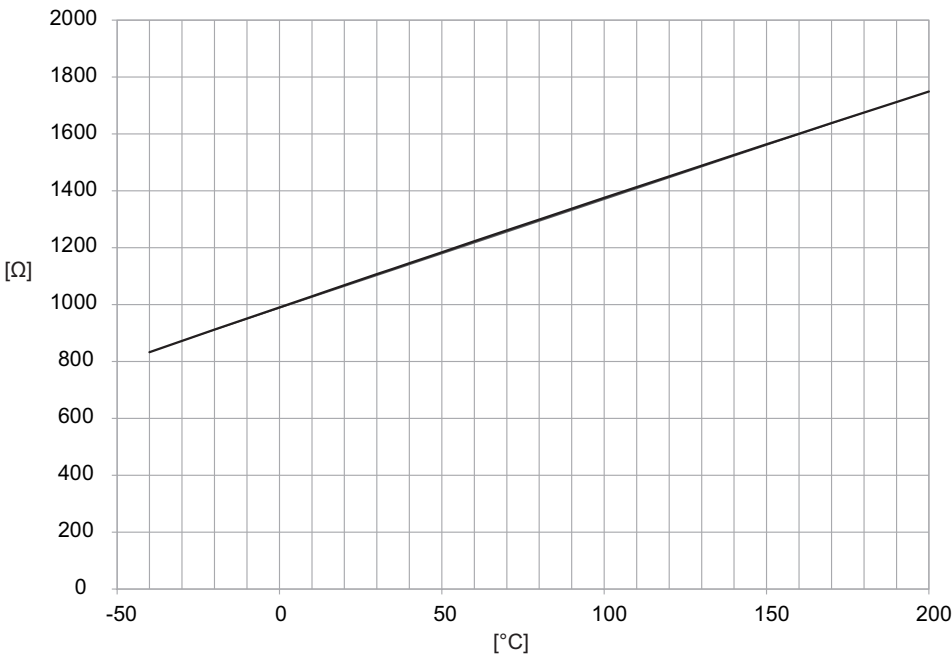
| | PT1000 |
|--------------------------------|---------------------|
| Connection | Red – black |
| Total resistance at 20 – 25 °C | 1050 Ω < R < 1150 Ω |
| Test current | < 3 mA |

INFORMATION



The temperature sensor is unipolar which means that interchanging the incoming cables does not change the measurement result.

Typical characteristic curve of PT1000



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6 Startup



⚠ WARNING

Risk of explosion due to multiple acknowledgments of a motor protection fault.

Severe or fatal injuries.

- First, determine and eliminate the cause of the fault before acknowledging a motor protection fault.
- Do not acknowledge a motor protection fault more than once.



⚠ DANGER

Risk of injury due to electric shock.

Severe or fatal injuries.

- It is essential to comply with the safety notes in chapter 2 during startup.
- Use switch contacts in utilization category AC-3 to EN/IEC 60947-4-1 to connect the servomotor and brake.
- Observe the wiring instructions of the inverter manufacturer.
- Observe the operating instructions for the servo inverter.

NOTICE

Destruction of the motor due to multiple acknowledgments of a motor protection fault.

Damage to property; damage to the motor.

- Do not acknowledge a motor protection fault more than once. If an acknowledged motor protection fault occurs again shortly after the acknowledgment, you must first determine the cause for the fault and remedy it.

6.1 Before startup



INFORMATION

Before starting up the unit for the first time, make sure that:

- The plug-in connections have been established correctly.
- The plug connectors are protected against inadvertent disconnection.
- For terminal box option (/KK): The conductors are clamped securely.
- The motors may be operated only in combination with frequency inverters.
- Before the first startup, the frequency inverters must be configured using the MOVITOOLS® MotionStudio software.
- A suitable frequency inverter is chosen during project planning. For further information on project planning, refer to the "Synchronous Servomotors" catalog.
- The motor must be undamaged.
- The motor must not be blocked.

- The measures stipulated in chapter "Preliminary work" (→ 25) must be performed after extended storage periods.
- All connections have to be made correctly; see chapter "Electrical installation" (→ 29).
- The direction of rotation of the motor must be correct.
- All protective covers must be fitted correctly.
- All motor protection devices must be active.
- There must be no other sources of danger present.
- The surface of the motor must not be covered by heat-sensitive or insulating materials.

6.2 3GD and 3D(-c) designs

6.2.1 Safe operation of synchronous servomotors in category 3/EPL .c

Project planning is the basic requirement for safe operation of explosion-protected motors. The following points have to be considered:

- Permitted torques
- Maximum speed
- Permitted combination of motor and frequency inverter
- Permitted braking work
- Overhung load and axial load
- For servo gearmotors, the limit values of the gear unit must be observed as well.

Maximum permitted torques

The thermal torque limit characteristic curve specifies the maximum permitted torque (M_{st}) for continuous operation of the motor.

The values may be exceeded for brief periods if the effective operating point lies below the thermal limit characteristic curve; see "Dynamic and thermal limit characteristic curves" (→ 87).

The maximum limit torque M_{pk} must not be exceeded.

Maximum permitted speeds

Maximum speed must not be exceeded. For this value, refer to chapter "Dynamic and thermal limit characteristic curves" (→ 87).

Inverter assignment

The required maximum motor torque determines the output current of the frequency inverter. Inverter allocation tables for MOVIDRIVE® B and MOVIAXIS® are available in the respective inverter documentation to aid the selection of the suitable frequency inverter.

Maximum permitted braking work

To avoid the brake from reaching impermissible temperatures, observe the maximum permitted braking work. Depending on the brake type, check the braking work per switching operation or for an emergency stop; see chapter "Technical data" (→ 69).

Overhung and axial load

If you use servomotors without gear unit, check the overhung and axial loads based on the motor shaft; see chapter Overhung and axial loads.

Gear unit

If you use servo gearmotors, also observe the limit values for the gear unit M_{apk} and n_{apk} in addition.

6.3 Parameter setting on the servo inverter

6.3.1 General information

INFORMATION



Install the servo inverter outside the potentially explosive atmosphere.

When starting up the servo inverters, follow the corresponding operating instructions.

INFORMATION

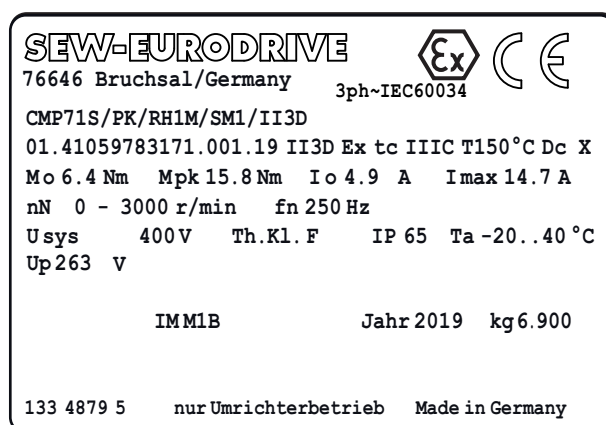


Use the guided startup procedure in the current MOVITOOLS® MotionStudio or MOVITOOLS® software. Check the limiting of the maximum currents after every guided startup procedure. Reset the limiting, if necessary.

6.3.2 Motor selection

When selecting the right ATEX or IECEx motor type, please note the following examples.

ATEX nameplate:



31431069835

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IECEEx nameplate:

| | | |
|---------------------------------------------------|--|--|
| SEW-EURODRIVE | | |
| IECEEx PTB 16.1234X/00 | | |
| 76646 Bruchsal/Germany | | |
| 3~IEC60034 | | |
| CMP71S/PK/RH1M/SM1/3D-c | | |
| 01.41059783103.0001.16 | | |
| Ex tc IIIC T150°C Dc | | |
| Mo 6.4 Nm Mpk 15.8 Nm Io 4,9 A Imax 14.7 A | | |
| nN 0 - 3000 r/min fn 250 Hz | | |
| U _{sys} 400 V Th.K1.F IP 65 Ta-20...40°C | | |
| Up 263 V | | |
| IM B5 Jahr 2019 kg 6.927 | | |
| 1334 879 5 nur Umrichterbetrieb Made in Germany | | |

19318028555

| Motor type according to the nameplate | Motor type in the startup software |
|---------------------------------------|------------------------------------|
| CMP71S.../3..(-c) | CMP71S.../II3 |

The other values such as the nominal motor voltage, the nominal motor speed, etc. can be found on the nameplate.

Motors with reduced limit torque

The motors CMP80S.../3GD. CMP80S.../3D(-c) and CMP80M.../3GD. CMP80M.../3D(-c) are each available in two different versions, which differ only with regard to the maximum torque (M_{pk}):

| Motor designation according to the nameplate | Peak torque M_{pk} Nm | Selection of the motor type in the startup software |
|----------------------------------------------|----------------------------|-----------------------------------------------------|
| CMP80S.../3..(-c) | 27.5 | CMP80S.../II3 (27.5 Nm) |
| CMP80S.../3..(-c) | 34.5 | CMP80S.../II3 (34.5 Nm) |
| CMP80M.../3..(-c) | 42.5 | CMP80M.../II3 (42.5 Nm) |
| CMP80M.../3..(-c) | 49 | CMP80M.../II3 (49 Nm) |

6.3.3 Setting the maximum speed

The maximum motor speed is limited by the motor itself and, if applicable, by a gear unit and other possible external components.

When setting the maximum motor speed in the frequency inverter, observe the rated speed n_N , the gear unit limit value n_{epk} , and the max. permitted speed of external components, if applicable. This data is listed on the nameplate; see chapter "Nameplates on the servomotor" (→ 18).

6.3.4 Setting the torque limit and the current limit

The parameter "Torque limit" of the frequency inverter limits the maximum torque of the motor. In general, the torque limit setting depends on the actually required torque of the servomotor. The setting of the parameter current limit depends on the setting of the torque limit. The following condition applies: Current limit \geq Torque limit.

In the case of direct drives, the torque limit and current limit are determined only by the permitted maximum current of the motor I_{\max} . In servo gearmotors, the gear unit limit value M_{apk} is also considered as a limiting factor.

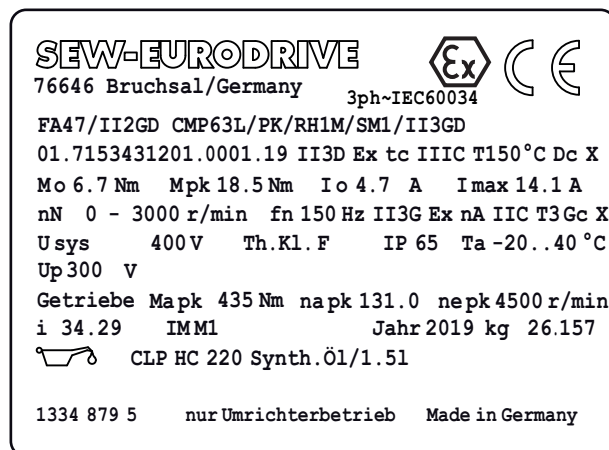
During startup, the MOVITOOLS® MotionStudio startup software calculates a value for the setting of the torque limit and the current limit. If no project planning is available at startup, this value must be adopted. The suggested value for setting the torque and current limits is based on the standstill current I_0 of the motor. As a check, you can find this value on the Nameplate on the servomotor. See also "Example without project planning" (→ 63).

If project planning was carried out in advance (see "Example: Project planning" (→ 62)), both limits are set for the motor current that is required for the maximum application torque. The correlation between torque and current are described in chapter "Torque-current characteristics" (→ 109).

Example: Project planning

The servo gearmotor with the type code FA47/II2GD CMP63L/PK/RH1M/SM1/3GD is operated on a frequency inverter type MOVIDRIVE® MDX61B0014-5A3-4-00. According to project planning for acceleration, the motor must generate a torque of 8.95 Nm.

ATEX nameplate:



18014414049683339

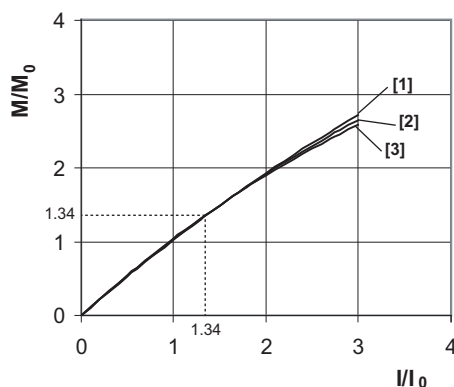
Calculating the torque-current limit:

Nominal output current of inverter = 4 A

Standstill current $I_0 = 4.7$ A

Factor maximum torque/standstill torque

$M_{\max} / M_0 = 8.95 \text{ Nm} / 6.7 \text{ Nm} = 1.34$



Torque-current characteristic curve CMP63S/M/L

18014403309920139

- [1] CMP63L
- [2] CMP63M
- [3] CMP63S

Current for the maximum torque $I_{Mmax} = \text{approx. } 1.34 \cdot I_0 = 1.34 \cdot 4.7 \text{ A} = 6.3 \text{ A}$

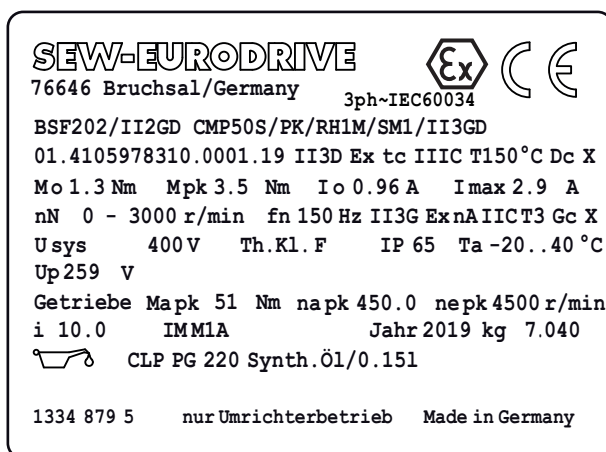
Torque limit / current limit in % $I_{N_FU} = I_{Mmax} \cdot 100\% / I_{N_FU} = 6.3 \text{ A} \cdot 100 / 4 \text{ A} = 158\%$

Example without project planning

If no project planning was performed, take the standstill current I_0 (see nameplate) for the torque limit and current limit.

A servo gearmotor with the type code BSF202/II2GD CMP50S/PK/RH1M/SM1/3GD is operated on a frequency inverter of the type MOVIDRIVE® MDX61B0005-5A3-4-00.

ATEX nameplate



18014414049685771

Calculating the torque/current limit:

Nominal output current of inverter $I_{N_FU} = 2 \text{ A}$

Standstill current $I_0 = 0.96 \text{ A}$

Torque limit / current limit in % $I_{N_FU} = I_0 \cdot 100\% / I_{N_FU} = 0.96 \text{ A} \cdot 100 / 2 \text{ A} = 48\%$

6.3.5 Setting the temperature protection parameters

During setup, set which motor contactor is embedded in the motor winding (MOVIDRIVE® B: Parameter 530 Sensor type 1).

- Select KTY if the motor designation contains the option /KY.
- Select PK if the motor designation contains the option /PK.

In MOVIDRIVE® B, the parameter 340 motor protection 1 must be activated (= one servomotor).

It is necessary to check these settings after every new startup.

INFORMATION



The necessary temperature model is stored only in the MOVIDRIVE® and MOVIAXIS® inverters from SEW-EURODRIVE. In addition to the stored temperature model, the current actual temperature must be evaluated constantly.

7 Inspection/maintenance

Only SEW-EURODRIVE service staff, repair workshops, and plants that have the necessary expertise may repair or modify the servomotor.

INFORMATION



- Use only original spare parts from the relevant and valid spare parts lists; otherwise, the ATEX or IECEx approval of the motor will become void.
- The routine test must be repeated whenever motor parts relating to explosion protection are replaced.
- Servomotors can become very hot during operation – danger of burns!
- Isolate the servomotor and brake from the power supply before starting work, safeguarding them against unintentional restart!
- Shut down the drive securely for the duration of the maintenance work, since rotation will energize the motor terminals.
- Ensure that the servomotor is assembled correctly and all openings have been plugged after service and maintenance work.
- Clean servomotors in explosion-protected areas regularly. Prevent dust from building up higher than 5 mm.
- Explosion protection is largely dependent on the compliance with the IP degree of protection. Therefore, always check that the seals are fitted correctly and in perfect condition when performing any work on the machine.
- Apply grease with a grease depot (Fuchs Renolit CX-TOM 15) to the lip of the oil seals before assembly.
- Always perform safety and functional tests following all maintenance and repair work (thermal protection, brake).
- Explosion protection can only be ensured if the servomotors and brakes are serviced and maintained correctly.
- If you repaint the motors or gearmotors, you must observe the requirements regarding the prevention of electrostatic charge in accordance with EN/IEC 60079-0; see chapter "Painting" (→ 13).

⚠ WARNING



The surface temperature of the servomotor can exceed 100 °C during operation.

Risk of burns.

- Never touch the servomotor during operation or in the cooldown phase once it has been switched off.
- Let the motor cool down before you start working on it.
- Wear suitable protective gloves.



⚠ WARNING

Electric shock from live components during operation and as long as the rotor is turning.

Severe or fatal injuries.

- Do not perform any maintenance on running machines.
- Disconnect all the power, brake, and signal cables before removing the power or signal connector.
- Secure the motor against unintended power-up.
- Secure the motor against unintended rotation.

NOTICE

The motor must be largely disassembled when replacing the brake which cannot be adjusted.

Possible damage to the motor and brake.

- Only service engineers from SEW-EURODRIVE can perform maintenance on the brake because the encoder or resolver has to be reset each time the system is disassembled.

Repairs

If you repair explosion-protected units, strictly observe the country-specific standards. In Germany, the operating safety regulations (BetrSichV) and the Product Safety Act (ProdSG) apply.

In the event of repairs, observe important information on checks and the maintenance of electrical systems and repairs and maintenance of electrical devices in the standards EN/IEC 60079-17 and EN/IEC 60079-19. Only SEW-EURODRIVE Service or repair workshops that have the necessary expertise may repair the motor.

7.1 Inspection and maintenance intervals

The amount of wear depends on many factors and may be high. Inspection intervals of the system and its components must be determined and documented by the operator during startup.

INFORMATION



Take the machine manufacturer's data into account in the maintenance schedule.

| Unit / part of unit | Time interval | What to do? |
|---------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Servomotor | <ul style="list-style-type: none"> • Every 10 000 operating hours¹⁾ | Inspect the servomotor: <ul style="list-style-type: none"> • Check ball bearings and change if necessary • Change the oil seal • Clean the cooling air ducts |

| Unit / part of unit | Time interval | What to do? |
|----------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Drive | <ul style="list-style-type: none"> Varies (depending on external factors) | <ul style="list-style-type: none"> Touch up or renew the surface protection/anti-corrosion coating |
| BK, BY brake | <ul style="list-style-type: none"> Every 0.5 to 2 years, depending on the load conditions | <p>Inspect the brake:</p> <ul style="list-style-type: none"> Connect the brake to a regulated power supply unit. Determine the opening voltage (clicking of the brake) by increasing the voltage from 10 to 24 V. Consult SEW-EURODRIVE for further information Contact SEW-EURODRIVE Service when maintenance is required |
| Servomotor surfaces | <ul style="list-style-type: none"> Varies (depending on external factors) | <ul style="list-style-type: none"> Clean surfaces |

1) The periods of wear are affected by many factors and may be shorter than the recommendation above.

7.1.1 Cleaning

Excessive dirt, dust or chips can have a negative impact on the function of servomotors; in extreme cases these factors can cause the servomotor to break down.

Therefore, you must clean the servomotors at regular intervals (after one year at the latest) to ensure a sufficiently large area for heat emission.

Insufficient heat emission can have unwanted consequences. The bearing service life is reduced through operation at impermissibly high temperatures (bearing grease degrades).

7.1.2 Connection cable

Check the connection cable for damage at regular intervals and replace it, if need be.



⚠ WARNING

Electric shock from live components during operation and as long as the rotor is turning.

Severe or fatal injuries.

- De-energize all power, brake cables, and signal cables before unplugging the power or signal plug connector.
- Secure the motor against unintended power-up.
- Do not perform temporary repairs on the connection cables. If there is even the slightest defect in the cable jacket, take the unit out of operation immediately and replace the faulty cable.

7.2 Notes on the BY brake

NOTICE

Insufficient brake maintenance may result in damage to the encoder.

Destruction of the encoder.

- Inspect and maintain the BY brake designed as the working brake at least every 3000 hours of operation, depending on the load conditions.
-

8 Technical data

8.1 Boundary conditions

The technical data of the CMP.. servomotors apply under the following boundary conditions:

- Maximum ambient temperature 40 °C
- System voltage 400 V
- Pulse width modulation frequency (PWM frequency) at least 8 kHz
- Dimensions of flange surface (aluminum, black painted):
 - CMP40 – 50: 285 mm × 285 mm × 10 mm
 - CMP63 – 100, CMPZ63 – 100: 375 mm × 375 mm × 12 mm
- Maximum housing temperature 120 °C
- Housing is painted
- Maximum winding temperature 145 °C
- Angled connector oriented away from the motor; see chapter "Connector positions" (→ 41). If you use a radial connector instead of an angled connector, you must reduce the nominal torque (M_0) and the M1 characteristic curve for the motors (see chapter "Reduction of the nominal torque for SM1/SMB radial connectors" (→ 74)).
- Motor mounting position IM B5 in accordance with EN/IEC 60034-7 or mounting position M1 in accordance with the SEW-EURODRIVE definition for gearmotors

8.2 Motor data of explosion-protected CMP. synchronous servomotors

Key

| | |
|-----------------------|-------------------------------------------------------------|
| n_N | Rated speed |
| M_0 | Standstill torque (thermal continuous torque at low speeds) |
| I_0 | Standstill current |
| M_{pk} | Maximum limit torque of the servomotor |
| I_{max} | Maximum permitted motor current |
| L_1 | Inductance of the winding |
| R_1 | Ohmic resistance of the winding |
| $V_{p0 \text{ cold}}$ | Internal voltage at 1000 min ⁻¹ |
| J_{mot} | Mass moment of inertia of the motor |
| J_{bmot} | Mass moment of inertia of the brakemotor |
| m | Weight |
| m_{bmot} | Mass of the brakemotor |

8.2.1 CMP40 – 63

Information on motors

| n_N min ⁻¹ | Motor | M_0 Nm | I_0 A | M_{pk} Nm | I_{max} A | m_{Mot} kg | J_{mot} 10 ⁻⁴ kgm ² | L_1 mH | R_1 Ω | U_{p0} cold V | Number of poles |
|----------------------------|--------|-------------|------------|----------------|----------------|-----------------|------------------------------------------------|-------------|------------|--------------------|--------------------|
| 3000 | CMP40S | 0.49 | 1.18 | 1.33 | 3.5 | 1.3 | 0.1 | 23 | 11.9 | 27.5 | 6 |
| | CMP40M | 0.8 | 0.95 | 2.25 | 2.9 | 1.6 | 0.15 | 45.9 | 19.9 | 56.3 | 6 |
| | CMP50S | 1.3 | 0.96 | 3.5 | 2.9 | 2.3 | 0.42 | 71.2 | 22.5 | 86.3 | 6 |
| | CMP50M | 2.3 | 1.61 | 6.3 | 4.8 | 3.3 | 0.67 | 38.3 | 9.96 | 90.3 | 6 |
| | CMP50L | 3 | 2 | 9.2 | 6.6 | 4.1 | 0.92 | 30.4 | 7.42 | 98.2 | 6 |
| | CMP63S | 2.78 | 2.06 | 7.3 | 6.2 | 4 | 1.15 | 36.4 | 6.8 | 90.1 | 6 |
| | CMP63M | 5.11 | 3.47 | 13.62 | 10.4 | 5.7 | 1.92 | 21.8 | 3.56 | 100 | 6 |
| | CMP63L | 6.74 | 4.7 | 18.5 | 14.1 | 7.5 | 2.69 | 14.2 | 2.07 | 99.9 | 6 |
| 4500 | CMP40S | 0.49 | 1.18 | 1.33 | 3.5 | 1.3 | 0.1 | 23 | 11.9 | 27.5 | 6 |
| | CMP40M | 0.8 | 0.95 | 2.25 | 2.9 | 1.6 | 0.15 | 45.9 | 19.9 | 56.3 | 6 |
| | CMP50S | 1.3 | 1.32 | 3.5 | 4 | 2.3 | 0.42 | 37.2 | 11.6 | 62.4 | 6 |
| | CMP50M | 2.3 | 2.2 | 6.3 | 6.6 | 3.3 | 0.67 | 20.7 | 5.29 | 66.3 | 6 |
| | CMP50L | 3 | 2.86 | 9.2 | 9.5 | 4.1 | 0.92 | 14.6 | 3.57 | 68 | 6 |
| | CMP63S | 2.78 | 2.92 | 7.3 | 8.8 | 4 | 1.15 | 18.3 | 3.35 | 63.9 | 6 |
| | CMP63M | 5.11 | 5.21 | 13.62 | 15.6 | 5.7 | 1.92 | 9.79 | 1.48 | 67 | 6 |
| | CMP63L | 6.74 | 6.55 | 18.5 | 19.7 | 7.5 | 2.69 | 7.21 | 1.07 | 71.1 | 6 |

Information on brakemotors

| n_N min ⁻¹ | Motor | M_0 Nm | M_{pk} Nm | Brake | m_{BMot} kg | J_{BMot} 10 ⁻⁴ kgm ² | $M_{2,20\text{ °C}}$ Nm | $M_{4,100\text{ °C}}$ Nm | $M_{1m,100\text{ °C}}$ Nm | M_{1max} Nm |
|----------------------------|--------|-------------|----------------|-------|------------------|-------------------------------------------------|----------------------------|-----------------------------|------------------------------|------------------|
| 3000 | CMP40S | 0.49 | 1.33 | BK01 | 1.6 | 0.19 | – | 1.9 | 1.4 | 3.4 |
| | CMP40M | 0.8 | 2.25 | BK01 | 1.9 | 0.24 | – | 1.9 | 1.4 | 3.4 |
| | CMP50S | 1.3 | 3.5 | BK02 | 2.7 | 0.53 | – | 2.4 | 1.9 | 5.3 |
| | CMP50M | 2.3 | 6.3 | BK02 | 3.7 | 0.78 | – | 2.4 | 1.9 | 5.3 |
| | CMP50L | 3 | 9.2 | BK04 | 4.6 | 1.33 | – | 3.9 | 2.4 | 7 |
| | CMP63S | 2.78 | 7.3 | BK03 | 4.6 | 1.54 | – | 3.8 | 2 | 7.9 |
| | CMP63M | 5.11 | 13.62 | BK07 | 6.5 | 2.49 | – | 7.1 | 3.9 | 12.8 |
| | CMP63L | 6.74 | 18.5 | BK07 | 8.3 | 3.26 | – | 7.1 | 3.9 | 12.8 |
| 4500 | CMP40S | 0.49 | 1.33 | BK01 | 1.6 | 0.19 | – | 1.9 | 1.4 | 3.4 |
| | CMP40M | 0.8 | 2.25 | BK01 | 1.9 | 0.24 | – | 1.9 | 1.4 | 3.4 |
| | CMP50S | 1.3 | 3.5 | BK02 | 2.7 | 0.53 | – | 2.4 | 1.9 | 5.3 |
| | CMP50M | 2.3 | 6.3 | BK02 | 3.7 | 0.78 | – | 2.4 | 1.9 | 5.3 |
| | CMP50L | 3 | 9.2 | BK04 | 4.6 | 1.33 | – | 3.9 | 2.4 | 7 |
| | CMP63S | 2.78 | 7.3 | BK03 | 4.6 | 1.54 | – | 3.8 | 2 | 7.9 |
| | CMP63M | 5.11 | 13.62 | BK07 | 6.5 | 2.49 | – | 7.1 | 3.9 | 12.8 |
| | CMP63L | 6.74 | 18.5 | BK07 | 8.3 | 3.26 | – | 7.1 | 3.9 | 12.8 |

8.2.2 CMP71 – 100

Information on motors

| n_N min ⁻¹ | Motor | M_0 Nm | I_0 A | M_{pk} Nm | I_{max} A | m_{Mot} kg | J_{mot} 10 ⁻⁴ kgm ² | L_1 mH | R_1 Ω | U_{p0} cold V | Number of poles |
|----------------------------|---------|-------------|------------|----------------|----------------|-----------------|------------------------------------------------|-------------|------------|--------------------|--------------------|
| 2000 | CMP71S | 6.4 | 3.4 | 15.8 | 10.2 | 7 | 3.13 | 33.5 | 3.28 | 128 | 10 |
| | CMP71M | 9.4 | 5 | 23.5 | 15 | 8.4 | 4.17 | 21.6 | 1.83 | 127 | 10 |
| | CMP71L | 13.1 | 6.3 | 34.5 | 18.9 | 11.4 | 6.27 | 16.2 | 1.2 | 142 | 10 |
| | CMP80S | 13.4 | 6.9 | 34.5 | 20.5 | 12.8 | 9 | 15.3 | 1.03 | 133 | 10 |
| | CMP80M | 18.7 | 9.3 | 49 | 28 | 16.5 | 12.1 | 10.5 | 0.653 | 136 | 10 |
| | CMP80L | 27.5 | 12.5 | 73 | 37.5 | 21.4 | 18.3 | 7.58 | 0.427 | 149 | 10 |
| | CMP100S | 25.5 | 13.3 | 62 | 40 | 19.8 | 20.3 | 8.51 | 0.398 | 130 | 10 |
| | CMP100M | 31 | 14.7 | 84 | 44 | 24.8 | 27.2 | 6.63 | 0.285 | 141 | 10 |
| 3000 | CMP100L | 47 | 21.8 | 129 | 65 | 34.6 | 40.9 | 4.17 | 0.165 | 145 | 10 |
| | CMP71S | 6.4 | 4.9 | 15.8 | 14.7 | 7 | 3.13 | 15.7 | 1.48 | 87.5 | 10 |
| | CMP71M | 9.4 | 7.5 | 23.5 | 22.5 | 8.4 | 4.17 | 9.72 | 0.809 | 85.3 | 10 |
| | CMP71L | 13.1 | 9.4 | 34.5 | 28 | 11.4 | 6.27 | 7.34 | 0.559 | 95.7 | 10 |
| | CMP80S | 13.4 | 10 | 34.5 | 30 | 12.8 | 9 | 7.2 | 0.544 | 91.1 | 10 |
| | CMP80M | 18.7 | 13.4 | 49 | 40 | 16.5 | 12.1 | 5.03 | 0.344 | 94.3 | 10 |
| | CMP80L | 27.5 | 18.7 | 73 | 56 | 21.4 | 18.3 | 3.37 | 0.21 | 99.2 | 10 |
| | CMP100S | 25.5 | 19.6 | 62 | 59 | 19.8 | 20.3 | 3.91 | 0.214 | 88 | 10 |
| 4500 | CMP100M | 31 | 21.8 | 84 | 65 | 24.8 | 27.2 | 3.04 | 0.142 | 95.5 | 10 |
| | CMP100L | 47 | 32.3 | 129 | 97 | 34.6 | 40.9 | 1.9 | 0.0809 | 98 | 10 |
| | CMP71S | 6.4 | 7.3 | 15.8 | 22 | 7 | 3.13 | 7.07 | 0.719 | 58.7 | 10 |
| | CMP71M | 9.4 | 10.9 | 23.5 | 32.5 | 8.4 | 4.17 | 4.54 | 0.384 | 58.3 | 10 |
| | CMP71L | 13.1 | 14.1 | 34.5 | 42.5 | 11.4 | 6.27 | 3.26 | 0.241 | 63.8 | 10 |
| | CMP80S | 13.4 | 15.3 | 34.5 | 46 | 12.8 | 9 | 3.06 | 0.221 | 59.4 | 10 |
| | CMP80M | 18.7 | 20.1 | 49 | 60 | 16.5 | 12.1 | 2.24 | 0.148 | 62.9 | 10 |
| | CMP80L | 27.5 | 27.8 | 73 | 83 | 21.4 | 18.3 | 1.54 | 0.0855 | 67 | 10 |
| | CMP100S | 25.5 | 30 | 62 | 90 | 19.8 | 20.3 | 1.68 | 0.0857 | 57.7 | 10 |
| | CMP100M | 31 | 33.1 | 84 | 99 | 24.8 | 27.2 | 1.32 | 0.065 | 62.9 | 10 |
| | CMP100L | 47 | 48.4 | 129 | 145 | 34.6 | 40.9 | 0.844 | 0.038 | 65.3 | 10 |

8.2.3 CMPZ71 – 100

Information on motors

| n_N min ⁻¹ | Motor | M_0 Nm | I_0 A | M_{pk} Nm | I_{max} A | m_{Mot} kg | J_{mot} 10 ⁻⁴ kgm ² | L_1 mH | R_1 Ω | U_{p0} cold V | Number of poles | delta LB ¹⁾ mm |
|----------------------------|----------|-------------|------------|----------------|----------------|-----------------|------------------------------------------------|-------------|------------|--------------------|--------------------|---------------------------------|
| 2000 | CMPZ71S | 6.4 | 3.4 | 15.8 | 10.2 | 8.6 | 9.32 | 33.5 | 3.28 | 128 | 10 | 62.6 |
| | CMPZ71M | 9.4 | 5 | 23.5 | 15 | 10 | 10.4 | 21.6 | 1.83 | 127 | 10 | 62.6 |
| | CMPZ71L | 13.1 | 6.3 | 34.5 | 18.9 | 13 | 12.5 | 16.2 | 1.2 | 142 | 10 | 62.6 |
| | CMPZ80S | 13.4 | 6.9 | 34.5 | 20.5 | 15.8 | 27.2 | 15.3 | 1.03 | 133 | 10 | 75.3 |
| | CMPZ80M | 18.7 | 9.3 | 49 | 28 | 19.5 | 30.3 | 10.5 | 0.653 | 136 | 10 | 75.3 |
| | CMPZ80L | 27.5 | 12.5 | 73 | 37.5 | 24.4 | 36.5 | 7.58 | 0.427 | 149 | 10 | 75.3 |
| | CMPZ100S | 25.5 | 13.3 | 62 | 40 | 24.2 | 79.8 | 8.51 | 0.398 | 130 | 10 | 96.2 |
| | CMPZ100M | 31 | 14.7 | 84 | 44 | 29.2 | 86.7 | 6.63 | 0.285 | 141 | 10 | 96.2 |
| 3000 | CMPZ100L | 47 | 21.8 | 129 | 65 | 39 | 100 | 4.17 | 0.165 | 145 | 10 | 96.2 |
| | CMPZ71S | 6.4 | 4.9 | 15.8 | 14.7 | 8.6 | 9.32 | 15.7 | 1.48 | 87.5 | 10 | 62.6 |
| | CMPZ71M | 9.4 | 7.5 | 23.5 | 22.5 | 10 | 10.4 | 9.72 | 0.809 | 85.3 | 10 | 62.6 |
| | CMPZ71L | 13.1 | 9.4 | 34.5 | 28 | 13 | 12.5 | 7.34 | 0.559 | 95.7 | 10 | 62.6 |
| | CMPZ80S | 13.4 | 10 | 34.5 | 30 | 15.8 | 27.2 | 7.2 | 0.544 | 91.1 | 10 | 75.3 |
| | CMPZ80M | 18.7 | 13.4 | 49 | 40 | 19.5 | 30.3 | 5.03 | 0.344 | 94.3 | 10 | 75.3 |
| | CMPZ80L | 27.5 | 18.7 | 73 | 56 | 24.4 | 36.5 | 3.37 | 0.21 | 99.2 | 10 | 75.3 |
| | CMPZ100S | 25.5 | 19.6 | 62 | 59 | 24.2 | 79.8 | 3.91 | 0.214 | 88 | 10 | 96.2 |
| 4500 | CMPZ100M | 31 | 21.8 | 84 | 65 | 29.2 | 86.7 | 3.04 | 0.142 | 95.5 | 10 | 96.2 |
| | CMPZ100L | 47 | 32.3 | 129 | 97 | 39 | 100 | 1.9 | 0.0809 | 98 | 10 | 96.2 |
| | CMPZ71S | 6.4 | 7.3 | 15.8 | 22 | 8.6 | 9.32 | 7.07 | 0.719 | 58.7 | 10 | 62.6 |
| | CMPZ71M | 9.4 | 10.9 | 23.5 | 32.5 | 10 | 10.4 | 4.54 | 0.384 | 58.3 | 10 | 62.6 |
| | CMPZ71L | 13.1 | 14.1 | 34.5 | 42.5 | 13 | 12.5 | 3.26 | 0.241 | 63.8 | 10 | 62.6 |
| | CMPZ80S | 13.4 | 15.3 | 34.5 | 46 | 15.8 | 27.2 | 3.06 | 0.221 | 59.4 | 10 | 75.3 |
| | CMPZ80M | 18.7 | 20.1 | 49 | 60 | 19.5 | 30.3 | 2.24 | 0.148 | 62.9 | 10 | 75.3 |
| | CMPZ80L | 27.5 | 27.8 | 73 | 83 | 24.4 | 36.5 | 1.54 | 0.0855 | 67 | 10 | 75.3 |
| | CMPZ100S | 25.5 | 30 | 62 | 90 | 24.2 | 79.8 | 1.68 | 0.0857 | 57.7 | 10 | 96.2 |
| | CMPZ100M | 31 | 33.1 | 84 | 99 | 29.2 | 86.7 | 1.32 | 0.065 | 62.9 | 10 | 96.2 |
| | CMPZ100L | 47 | 48.4 | 129 | 145 | 39 | 100 | 0.844 | 0.038 | 65.3 | 10 | 96.2 |

Information on brakemotors

| n_N min ⁻¹ | Motor | M_0 Nm | M_{pk} Nm | Brake | m_{BMot} kg | J_{BMot} 10 ⁻⁴ kgm ² | $M_{2,20\text{ °C}}$ Nm | $M_{4,100\text{ °C}}$ Nm | $M_{1m,100\text{ °C}}$ Nm | LBS ¹⁾ mm |
|----------------------------|----------|-------------|----------------|-------|------------------|-------------------------------------------------|----------------------------|-----------------------------|------------------------------|-------------------------|
| 2000 | CMPZ71S | 6.4 | 15.8 | BY2 | 11.2 | 11 | 14 | 8.4 | 9.8 | 58.8 |
| | CMPZ71M | 9.4 | 23.5 | BY2 | 12.6 | 12.1 | 20 | 12 | 14 | 58.8 |
| | CMPZ71L | 13.1 | 34.5 | BY2 | 15.6 | 14.2 | 20 | 12 | 14 | 58.8 |
| | CMPZ80S | 13.4 | 34.5 | BY4 | 20.8 | 31 | 28 | 16.8 | 19.6 | 62.4 |
| | CMPZ80M | 18.7 | 49 | BY4 | 24.5 | 34.1 | 40 | 24 | 28 | 62.4 |
| | CMPZ80L | 27.5 | 73 | BY4 | 29.4 | 40.3 | 40 | 24 | 28 | 62.4 |
| | CMPZ100S | 25.5 | 62 | BY8 | 34.7 | 84.2 | 55 | 33 | 38.5 | 61.1 |
| | CMPZ100M | 31 | 84 | BY8 | 39.7 | 91.1 | 80 | 48 | 56 | 61.1 |
| 3000 | CMPZ100L | 47 | 129 | BY8 | 49.5 | 105 | 80 | 48 | 56 | 61.1 |
| | CMPZ71S | 6.4 | 15.8 | BY2 | 11.2 | 11 | 14 | 8.4 | 9.8 | 58.8 |
| | CMPZ71M | 9.4 | 23.5 | BY2 | 12.6 | 12.1 | 20 | 12 | 14 | 58.8 |
| | CMPZ71L | 13.1 | 34.5 | BY2 | 15.6 | 14.2 | 20 | 12 | 14 | 58.8 |
| | CMPZ80S | 13.4 | 34.5 | BY4 | 20.8 | 31 | 28 | 16.8 | 19.6 | 62.4 |
| | CMPZ80M | 18.7 | 49 | BY4 | 24.5 | 34.1 | 40 | 24 | 28 | 62.4 |
| | CMPZ80L | 27.5 | 73 | BY4 | 29.4 | 40.3 | 40 | 24 | 28 | 62.4 |
| | CMPZ100S | 25.5 | 62 | BY8 | 34.7 | 84.2 | 55 | 33 | 38.5 | 61.1 |
| | CMPZ100M | 31 | 84 | BY8 | 39.7 | 91.1 | 80 | 48 | 56 | 61.1 |
| | CMPZ100L | 47 | 129 | BY8 | 49.5 | 105 | 80 | 48 | 56 | 61.1 |

| n_N min ⁻¹ | Motor | M_0 Nm | M_{pk} Nm | Brake | m_{BMot} kg | J_{BMot} 10 ⁻⁴ kgm ² | $M_{2,20\text{ °C}}$ Nm | $M_{4,100\text{ °C}}$ Nm | $M_{1m,100\text{ °C}}$ Nm | LBS ¹⁾ mm |
|----------------------------|----------|-------------|----------------|-------|------------------|-------------------------------------------------|----------------------------|-----------------------------|------------------------------|-------------------------|
| 4500 | CMPZ71S | 6.4 | 15.8 | BY2 | 11.2 | 11 | 14 | 8.4 | 9.8 | 58.8 |
| | CMPZ71M | 9.4 | 23.5 | BY2 | 12.6 | 12.1 | 20 | 12 | 14 | 58.8 |
| | CMPZ71L | 13.1 | 34.5 | BY2 | 15.6 | 14.2 | 20 | 12 | 14 | 58.8 |
| | CMPZ80S | 13.4 | 34.5 | BY4 | 20.8 | 31 | 28 | 16.8 | 19.6 | 62.4 |
| | CMPZ80M | 18.7 | 49 | BY4 | 24.5 | 34.1 | 40 | 24 | 28 | 62.4 |
| | CMPZ80L | 27.5 | 73 | BY4 | 29.4 | 40.3 | 40 | 24 | 28 | 62.4 |
| | CMPZ100S | 25.5 | 62 | BY8 | 34.7 | 84.2 | 55 | 33 | 38.5 | 61.1 |
| | CMPZ100M | 31 | 84 | BY8 | 39.7 | 91.1 | 80 | 48 | 56 | 61.1 |
| | CMPZ100L | 47 | 129 | BY8 | 49.5 | 105 | 80 | 48 | 56 | 61.1 |

8.3 Reduction of the nominal torque for SM1/SMB radial connectors

If you use an SM1 or SMB radial connector, you must reduce the nominal torque of the motor by the value specified in the table.

Reduction for SM1 radial connector

| Motor | CMP40 | | CMP50 | | | CMP63 | | |
|-----------------|--------|--------|-------|--------|--------|-------|--------|--------|
| Length | S | M | S | M | L | S | M | L |
| Reduction in Nm | - 0.02 | - 0.02 | 0.00 | - 0.10 | - 0.20 | 0.00 | - 0.30 | - 0.40 |

| Motor | CMP71 | | | CMP80 | | | CMP100 | | |
|-----------------|-------|--------|--------|--------|--------|--------|--------|--------|------|
| Length | S | M | L | S | M | L | S | M | L |
| Reduction in Nm | 0.00 | - 0.60 | - 1.50 | - 0.90 | - 2.70 | - 3.80 | - 2.50 | - 4.80 | 0.00 |

Reduction with SMB radial connector

| Motor | CMP80 | | | CMP100 | | |
|-----------------|-------|--------|--------|--------|--------|--------|
| Length | S | M | L | S | M | L |
| Reduction in Nm | 0.00 | - 0.90 | - 2.10 | - 1.00 | - 2.90 | - 3.50 |

8.4 Technical data of the BK.. brake

The following table shows the technical data of the BK.. brakes. These operate with a defined braking torque for each brake size.

The brake must be maintained after 2000 braking operations at rated speed.

| Brake | $M_{4, 100\text{ °C}}$ Nm | W_1 kJ | W_2 kJ | P W | t_1 ms | t_2 ms |
|-------|------------------------------|-------------|-------------|--------|-------------|-------------|
| BK05 | 3.8 | 0.371 | 3.71 | 13.4 | 50 | 30 |
| BK06 | 7.1 | 0.74 | 7.4 | 15 | 70 | 30 |
| BK08 | 7.8 | 0.371 | 3.71 | 14.1 | 90 | 30 |
| BK1 | 16 | 0.55 | 5.5 | 18 | 100 | 50 |
| BK2 | 18 | 0.85 | 8.5 | 19.2 | 100 | 40 |
| BK3 | 30 | 1.2 | 12 | 22.5 | 200 | 60 |
| BK4 | 30 | 1.2 | 12 | 22.5 | 200 | 60 |
| BK6 | 46 | 2.7 | 27 | 24 | 220 | 60 |

$M_{4, 100\text{ °C}}$ Minimum static braking torque (holding torque) at 100 °C

W_1 Permitted braking work per braking operation

W_2 Permitted braking work per hour

P Power consumption of the coil

t_1 Brake response time

t_2 Brake application time

INFORMATION



Response and application times are approximate values.

Possible response times of switching elements or controllers were not taken into account.

8.4.1 Motor assignment

The BK brake can be used for the following rated speeds and braking torques depending on the motor size:

| Motor type | Brake type | $M_{4, 100\text{ °C}}$ Nm | Speed class |
|------------|------------|------------------------------|-------------|
| CMP40S/M | BK01 | 1.9 | 3000/4500 |
| CMP50S/M | BK02 | 2.4 | |
| CMP63S | BK03 | 3.8 | |
| CMP50L | BK04 | 3.9 | |
| CMP63M/L | BK07 | 7.1 | |

$M_{4, 100\text{ °C}}$ Minimum static braking torque (holding torque) at 100 °C

8.4.2 Operating currents for BK.. brakes

| | BK05 | BK06 | BK08 | BK1 |
|------------------------------------------------------------------------|------|------|------|------|
| Braking torque $M_{4, 100\text{ °C}}$ in Nm | 3.8 | 7.1 | 7.8 | 16 |
| Braking power in W | 13.4 | 15 | 14.1 | 18 |
| Operating current in A $U_N = \text{DC } 24\text{ (21.6 – 26.4) V}$ | 0.56 | 0.63 | 0.59 | 0.75 |

| | BK2 | BK3 | BK4 | BK6 |
|------------------------------------------------------------------------|------|------|------|-----|
| Braking torque $M_{4, 100\text{ °C}}$ in Nm | 18 | 30 | 30 | 46 |
| Braking power in W | 19.2 | 22.5 | 22.5 | 24 |
| Operating current in A $U_N = \text{DC } 24\text{ (21.6 – 26.4) V}$ | 0.8 | 0.94 | 0.94 | 1.0 |

$M_{4, 100\text{ °C}}$ Minimum static braking torque (holding torque) at 100 °C

U_N Rated voltage (rated voltage range)

When dimensioning the 24 V supply, it is not necessary to consider a current reserve for releasing the brake, i.e. the ratio of inrush current to operating current is 1.

8.4.3 Resistance values of BK.. brake coils

| | BK05 | BK06 | BK08 | BK1 |
|----------------------------------------------------------------------------------------|------|------|------|-----|
| Braking torque $M_{4, 100\text{ °C}}$ in Nm | 3.8 | 7.1 | 7.8 | 16 |
| Braking power in W | 13.4 | 15 | 14.1 | 18 |
| Coil resistance R at 20 °C in Ω $U_N = \text{DC } 24\text{ (21.6 – 26.4) V}$ | 43 | 38 | 41 | 32 |

| | BK2 | BK3 | BK4 | BK6 |
|----------------------------------------------------------------------------------------|------|------|------|-----|
| Braking torque $M_{4, 100\text{ °C}}$ in Nm | 18 | 30 | 30 | 46 |
| Braking power in W | 19.2 | 22.5 | 22.5 | 24 |
| Coil resistance R at 20 °C in Ω $U_N = \text{DC } 24\text{ (21.6 – 26.4) V}$ | 30 | 26 | 26 | 24 |

$M_{4, 100\text{ °C}}$ Minimum static braking torque (holding torque) at 100 °C

R Coil resistance at 20 °C

U_N Nominal voltage (rated voltage range)

8.4.4 Project planning – BK.. brake

Hold function

The selected braking torque $M_{4, 100\text{ °C}}$ must at least be higher than the highest static load torque of the application.

$$M_{4,100\text{ °C}} > M_L$$

Emergency off function for lifting applications

To ensure a deceleration of the load, for lifting applications, the lowest averaged dynamic braking torque $M_{1m, 100\text{ °C}}$ must be higher than the highest static load torque of the application.

$$M_{1m,100\text{ °C}} > M_L$$

Speed difference during brake application

Due to the response time, signal transmit time, and the brake application time, as well as the gravitational acceleration, it is possible that the hoist is in "free fall" for a short time resulting in a motor speed increased by n_D (hoist downwards) or reduced by n_D (travel unit and hoist upwards).

Calculation of the emergency stop speed (hoist downwards):

$$n_{m,EmergencyStop} = n_m + n_D$$

Calculation of the emergency stop speed (travel drive and hoist upwards):

$$n_{m,EmergencyStop} = n_m - n_D$$

$$n_D = \frac{9,55 \times M_L \times (t_r + t_2)}{J_{Mot} + J_{ext} \times \eta_G}$$

Working capacity in case of emergency stop

Braking work per braking cycle in the event of emergency stop:

$$W_1 = \frac{(J_{Mot} + J_{ext} \times \eta_G) \times n_{m,EmergStop}^2 \times M_{1m,100\text{ °C}}}{182.4 \times (M_{1m,100\text{ °C}} \pm M_L)}$$

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Observe the sign of the highest static load torque M_L in the formula. Use:

- + For vertical upward and horizontal movement
- For vertical downward movement

The braking work calculated here, W_1 , is checked against the permitted braking work per braking operation W_1 for the BK brake (see "Technical data of the BK.. brake" (→ 75)).

According to the possible number of emergency stop braking operations, the validation must also be performed against the permitted braking work per hour W_2 of the BK.. brake (see "Technical data of the BK.. brake" (→ 75)).

$$W_{1(BKbrake)} > W_{1(calculated)}$$

12985107211

The following maximum permitted mass inertia ratios apply here:

| Motor | Brake | Permitted J_{ext} / J_{Mot} |
|----------|-------|-------------------------------|
| CMP40S/M | BK01 | No limitation |
| CMP50S/M | BK02 | |
| CMP63S | BK03 | $J_{ext}/J_{Mot} \leq 30$ |
| CMP50L | BK04 | |
| CMP63M/L | BK07 | $J_{ext}/J_{Mot} \leq 20$ |

J_{ext} External mass moment of inertia in kgm^2

J_{mot} Mass moment of inertia of the motor in kgm^2

Braking time/stopping distance

Braking time for hoist downward:

$$t_B = \frac{(J_{Mot} + J_{ext} \times \eta_G) \times \eta_{m, \text{EmergStop}}}{9.55 \times (M_{1m, 100^\circ C} - M_L)}$$

12982655627

Braking time for horizontal drive, hoist upward:

$$t_B = \frac{(J_{Mot} + J_{ext} \times \eta_G) \times \eta_{m, \text{EmergStop}}}{9.55 \times (M_{1m, 100^\circ C} + M_L)}$$

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Stopping distance:

$$s_b = v \times 1000 \times (t_2 + t_r + \frac{1}{2} \times t_B)$$

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Permitted gear unit load in case of emergency stop

In the event of an emergency stop, the maximum dynamic braking torque M_{1max} of a gearmotor (see "Technical data of the BK.. brake" (→ 75)) must not exceed the maximum permitted emergency stop torque $M_{aEmergencyStop}$ of the gear unit.

The value of the maximum permitted emergency stop torque $M_{aEmergencyStop}$ of the gear unit is specified in the "Synchronous Servo Gearmotors" catalog.

The following condition is used to allow a simplified and quick check of the gear unit in the event of an emergency stop.

$$M_{aEmergencyStop} \geq \frac{M_{1max} \times i}{\eta_G}$$

8.5 Technical data of the BY brake

The following tables list the technical data of the brakes. The type and number of brake springs used determine the level of the braking torque. Unless specified otherwise in the order, brakemotors are delivered with the braking torques marked in gray.

| Motor type | Brake type | M _{2, 20 °C} Nm | M _{4, 100 °C} Nm | M _{1m, 100 °C} Nm | P W | t ₁ ms | t ₂ ms | t ₃ ms |
|------------|------------|-----------------------------|------------------------------|-------------------------------|--------|----------------------|----------------------|----------------------|
| CMPZ71S | BY2 | 7 | 4.2 | 4.9 | 27 | 25 | 23 | 130 |
| | | 10 | 6 | 7 | | | | |
| | | 14 | 8.4 | 9.8 | | | | |
| | | 20 | 12 | 14 | | | | |
| CMPZ71M/L | BY2 | 7 | 4.2 | 4.9 | 27 | 25 | 23 | 130 |
| | | 10 | 6 | 7 | | | | |
| | | 14 | 8.4 | 9.8 | | | | |
| | | 20 | 12 | 14 | | | | |
| CMPZ80S | BY4 | 14 | 8.4 | 9.8 | 38 | 30 | 17 | 110 |
| | | 20 | 12 | 14 | | | | |
| | | 28 | 16.8 | 19.6 | | | | |
| | | 40 | 24 | 28 | | | | |
| CMPZ80M/L | BY4 | 14 | 8.4 | 9.8 | 38 | 30 | 17 | 110 |
| | | 20 | 12 | 14 | | | | |
| | | 28 | 16.8 | 19.6 | | | | |
| | | 40 | 24 | 28 | | | | |
| CMPZ100S | BY8 | 28 | 16.8 | 19.6 | 45 | 55 | 25 | 210 |
| | | 40 | 24 | 28 | | | | |
| | | 55 | 33 | 38.5 | | | | |
| | | 80 | 48 | 56 | | | | |
| CMPZ100M/L | BY8 | 28 | 16.8 | 19.6 | 45 | 55 | 25 | 210 |
| | | 40 | 24 | 28 | | | | |
| | | 55 | 33 | 38.5 | | | | |
| | | 80 | 48 | 56 | | | | |

Standard braking torque

Optional braking torque

M_{2, 20 °C} Nominal torque for slipping brake lining carrier (relative speed between brake lining carrier and friction surface: 1 m/s) at 20 °C

M_{4, 100 °C} Minimum static braking torque (holding torque) at 100 °C

M_{1m, 100 °C} Minimal averaged dynamic braking torque in the event of emergency stop at 100 °C

P Power consumption of the coil

t₁ Brake response time

t₂ Brake application time AC/DC

t₃ Brake application time AC

INFORMATION



Response and application times are approximate values.

Possible response times of switching elements or controllers were not taken into account.

The following table lists the permitted friction work from which the braking procedure is triggered, depending on the start speed. The lower the speed, the higher the permitted braking work.

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If you do not stop the motor in an inverter-controlled manner but use the brake for mechanical deceleration, you must check whether the brake can supply the brake application speed required for the braking operation in an emergency stop situation.

8.5.1 Permitted braking work of BY brake

| Rated speed min ⁻¹ | Brake type | M _{2, 20 °C} Nm | W ₁ for all applications kJ | W ₁ for horizontal drive applications only kJ | W _{insp} 10 ³ kJ |
|----------------------------------|------------|-----------------------------|----------------------------------------------|-------------------------------------------------------------------|-----------------------------------------|
| 2000 | BY2 | 7 | 20 | 40 | 35 |
| | | 10 | 18 | 36 | |
| | | 14 | 15 | 30 | |
| | | 20 | 12 | 24 | |
| | BY4 | 14 | 24 | 48 | 50 |
| | | 20 | 19.5 | 39 | |
| | | 28 | 17 | 34 | |
| | | 40 | 10.5 | 21 | |
| | BY8 | 28 | 48 | 96 | 60 |
| | | 40 | 44 | 88 | |
| | | 55 | 32 | 64 | |
| | | 80 | 18 | 36 | |
| 3000 | BY2 | 7 | 20 | 40 | 35 |
| | | 10 | 18 | 36 | |
| | | 14 | 14 | 28 | |
| | | 20 | 11 | 22 | |
| | BY4 | 14 | 20 | 40 | 50 |
| | | 20 | 15 | 30 | |
| | | 28 | 10 | 20 | |
| | | 40 | 4.5 | 9 | |
| | BY8 | 28 | 36 | 72 | 60 |
| | | 40 | 32 | 64 | |
| | | 55 | 18 | 36 | |
| | | 80 | 7 | 14 | |

| Rated speed min ⁻¹ | Brake type | M _{2, 20 °C} Nm | W ₁ for all applications kJ | W ₁ for horizontal drive applications only kJ | W _{insp} 10 ³ kJ |
|----------------------------------|------------|-----------------------------|----------------------------------------------|-------------------------------------------------------------------|-----------------------------------------|
| 4500 | BY2 | 7 | 16 | 32 | 35 |
| | | 10 | 14 | 28 | |
| | | 14 | 10 | 20 | |
| | | 20 | 6 | 12 | |
| | BY4 | 14 | 15 | 30 | 50 |
| | | 20 | 9 | 18 | |
| | | 28 | 5 | 10 | |
| | | 40 | 3 | 6 | |
| | BY8 | 28 | 22 | 44 | 60 |
| | | 40 | 18 | 36 | |
| | | 55 | 11 | 22 | |
| | | 80 | 4 | 8 | |

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If the braking work W₁ (values in column "for all applications") is exceeded, the increased braking work W₁ (values in column "for horizontal drive applications only") are applied in the case of horizontal drive applications.

8.5.2 Motor assignment

The BY brake can be used for the following rated speeds and braking torques depending on the motor size:

| Motor type | Brake type | M _{2, 20 °C} Nm | | | | Speed class |
|------------|------------|-----------------------------|----|----|----|----------------|
| CMPZ71S | BY2 | 7 | 10 | 14 | 20 | 2000/3000/4500 |
| CMP71ZM/L | | 7 | 10 | 14 | 20 | |
| CMPZ80S | BY4 | 14 | 20 | 28 | 40 | 2000/3000/4500 |
| CMP80ZM/L | | 14 | 20 | 28 | 40 | |
| CMPZ100S | BY8 | 28 | 40 | 55 | 80 | 2000/3000/4500 |
| CMPZ100M/L | | 28 | 40 | 55 | 80 | |

M_{2, 20 °C}

Nominal torque for slipping brake disk (relative speed between brake disk and friction surface: 1 m/s) at 20 °C

Standard braking torque

Optional braking torque

8.5.3 No-load starting frequency

The following no-load starting frequency Z_0 must not be exceeded in order to prevent the BY brake from heating up.

| Brake type | No-load starting frequency |
|------------|----------------------------|
| BY2 | 7200 1/h |
| BY4 | 5400 1/h |
| BY8 | 3600 1/h |

8.5.4 BY brake – operating currents

The following tables list the operating currents of the brakes at different voltages. The following values are specified:

- Inrush current ratio I_B/I_H ; I_B = acceleration current, I_H = holding current
- Holding current I_H
- Nominal voltage V_N

The acceleration current I_B (= inrush current) only flows for a short time (ca. 150 ms) when the brake is released or during voltage dips below 70% of nominal voltage.

The values for the holding currents I_H are r.m.s. values (with DC 24 V arithmetic mean value). Use suitable measuring instruments for current measurements.

| | BY2 | BY4 | BY8 |
|------------------------------------------------|-----|-----|-----|
| Braking torque $M_{2, 20\text{ °C}}$ in Nm | 20 | 40 | 80 |
| Braking power in W | 27 | 38 | 45 |
| Inrush current ratio I_B/I_H or I_B/I_G | 5 | 4 | 4 |

| Nominal voltage V_N | | I_H | I_G | I_H | I_G | I_H | I_G |
|---------------------------|----------------------------|----------|----------|----------|----------|----------|----------|
| V_{AC} | V_{DC} | A_{AC} | A_{DC} | A_{AC} | A_{DC} | A_{AC} | A_{DC} |
| | 24 (21.6 – 26.4) | – | 1.05 | – | 1.4 | – | 1.6 |
| 110 (99 – 121) | | 0.425 | – | 0.58 | – | 0.69 | – |
| 230 (218 – 243) | | 0.19 | – | 0.26 | – | 0.305 | – |
| 400 (380 – 431) | | 0.107 | – | 0.147 | – | 0.172 | – |
| 460 (432 – 484) | | 0.095 | – | 0.131 | – | 0.154 | – |

$M_{2, 20\text{ °C}}$ Nominal torque for slipping brake disk (relative speed between brake disk and friction surface: 1 m/s) at 20 °C

I_H Holding current, r.m.s. value in the supply cable to the SEW-EURODRIVE brake rectifier

I_G Direct current with direct DC voltage supply

V_N Nominal voltage (nominal voltage range)

8.5.5 Resistance values of BY brake coils

| | | BY2 | BY4 | BY8 |
|--------------------------------------------|--|-----|-----|-----|
| Braking torque $M_{2, 20\text{ °C}}$ in Nm | | 20 | 40 | 80 |
| Braking power in W | | 27 | 38 | 45 |

| Nominal voltage V_N | | R_B | R_T | R_B | R_T | R_B | R_T |
|---------------------------|----------------------------|----------|----------|----------|----------|----------|----------|
| V_{AC} | V_{DC} | Ω | Ω | Ω | Ω | Ω | Ω |
| | 24 (21.6 – 26.4) | 5.2 | 20 | 4.3 | 13.3 | 3.8 | 11.2 |
| 110 (99 – 121) | | 16.3 | 64 | 13.7 | 42 | 12 | 35.5 |
| 230 (218 – 243) | | 82 | 320 | 69 | 210 | 60 | 177 |
| 400 (380 – 431) | | 260 | 1010 | 215 | 670 | 191 | 560 |
| 460 (432 – 484) | | 325 | 1270 | 275 | 840 | 240 | 700 |

$M_{2, 20\text{ °C}}$ Nominal torque for slipping brake disk (relative speed between brake disk and friction surface: 1 m/s) at 20 °C

R_B Accelerator coil resistance at 20 °C

R_T Coil section resistance at 20 °C

V_N Nominal voltage (nominal voltage range)

8.5.6 Project planning – BY.. brake

Emergency off function for lifting applications

To ensure a deceleration of the load, for lifting applications, the lowest averaged dynamic braking torque $M_{1m, 100^\circ\text{C}}$ must be higher than the highest static load torque of the application.

$$M_{1m, 100^\circ\text{C}} > M_L \times 1.4$$

Working capacity in case of emergency off

The working capacity of the brake is defined by the permitted braking work done W_1 per braking operation and the total permitted braking work W_{insp} until maintenance of the brake.

Permitted number of braking operations until maintenance of the brake:

$$NB = \frac{W_{\text{insp}}}{W_1}$$

Braking work per braking operation:

$$W_1 = \frac{(J_{\text{Mot}} + J_{\text{ext}} \times \eta_G) \times n_{m, \text{EmergStop}}^2 \times M_{1m, 100^\circ\text{C}}}{182.4 \times (M_{1m, 100^\circ\text{C}} \pm M_L)}$$

The braking work calculated here, W_1 , is checked against the permitted braking work per braking operation W_1 for the BY.. brake, depending on the particular application (hoist/horizontal drive; see Technical data of BY brakes).

$$W_{1(\text{BYbrake})} > W_{1(\text{calculated})}$$

Emergency stop features

The limits of the permitted maximum braking work must not be exceeded, not even for an emergency stop.

The emergency stop properties are based on the directions of movement.

1. Braking in vertical direction of movement

In lifting applications, the limits of the permitted maximum braking work (including emergency stops) must not be exceeded.

Consult SEW-EURODRIVE if you need values for increased emergency stop braking work in lifting applications.

2. Braking in horizontal direction of movement

For horizontal movement as in horizontal drive applications, higher braking work may be permitted per cycle in emergency stop situations under the following conditions.

- Selected braking torque
All braking torques are permitted (in contrast to the BE.. brake in DR.. series AC motors).
- Brake wear
The specific wear of the brake lining increases significantly in the event of an emergency stop. It can reach a factor of 100 under certain circumstances.

This additional wear must be taken into account when determining the maintenance cycle.

- Braking speed

Consult SEW-EURODRIVE if you need values for increased emergency stop braking work in horizontal travel applications, deviating from the technical data of the BY.. brake in this document.

3. Braking in inclined direction of movement

Because inclined movement has a vertical and a horizontal component, the permitted emergency stop braking work is predominantly determined in accordance with point 1.

If you cannot clearly classify the direction of movement as horizontal or vertical, consult SEW-EURODRIVE.

Braking time/stopping distance

Braking time for hoist downward:

$$t_B = \frac{(J_{Mot} + J_{ext} \times \eta_G) \times n_{m, EmergencyStop}}{9.55 \times (M_{1m, 100^\circ C} - M_L)}$$

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Braking time for horizontal drive, hoist upward:

$$t_B = \frac{(J_{Mot} + J_{ext} \times \eta_G) \times n_{m, EmergencyStop}}{9.55 \times (M_{1m, 100^\circ C} + M_L)}$$

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Stopping distance:

$$s_b = v \times 1000 \times (t_2 + t_r + \frac{1}{2} \times t_B)$$

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Permitted gear unit load in case of emergency stop

In the event of an emergency stop, the maximum dynamic braking torque M_{1max} of a gearmotor (see Technical data of BY brakes) must not exceed the maximum permitted emergency stop torque $M_{aEmergencyStop}$ of the gear unit.

The value of the maximum permitted emergency stop torque $M_{aEmergencyStop}$ is specified in the "Synchronous Servo Gearmotors" catalog.

$$M_{aEmergencyOff} \geq M_{2, 20^\circ C} \times i \times \eta_G$$

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8.6 Dynamic and thermal limit characteristic curves

INFORMATION



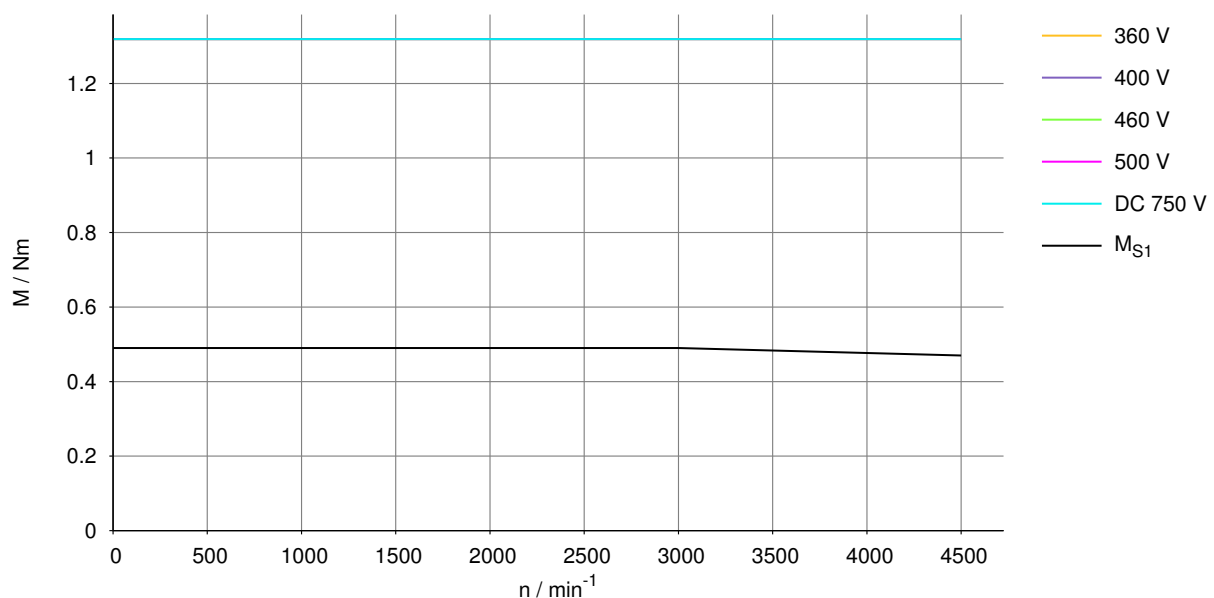
The maximum permitted rotational speed is $n_{\max} = 4500 \text{ min}^{-1}$. Operation of the motors with higher speeds is not permitted.

INFORMATION

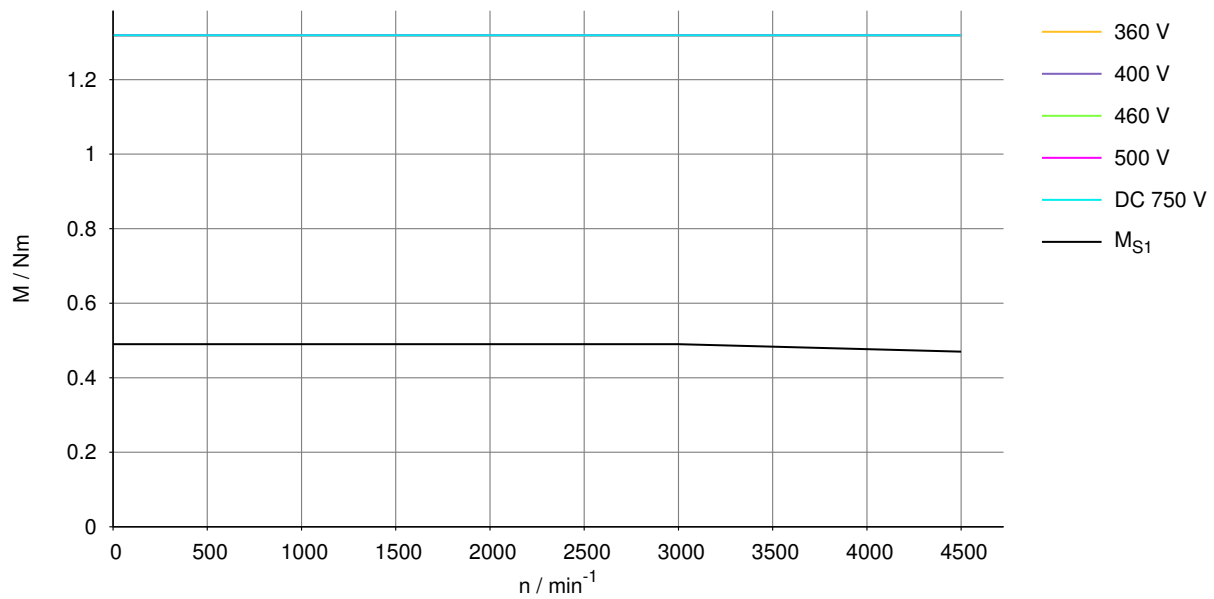


The thermal limit characteristic curve M_{S1} is valid only if the motor is attached to thermally conductive material (e.g. aluminum, steel, etc.). Note that no heat flow is permitted from the components attached to the motor towards the motor.

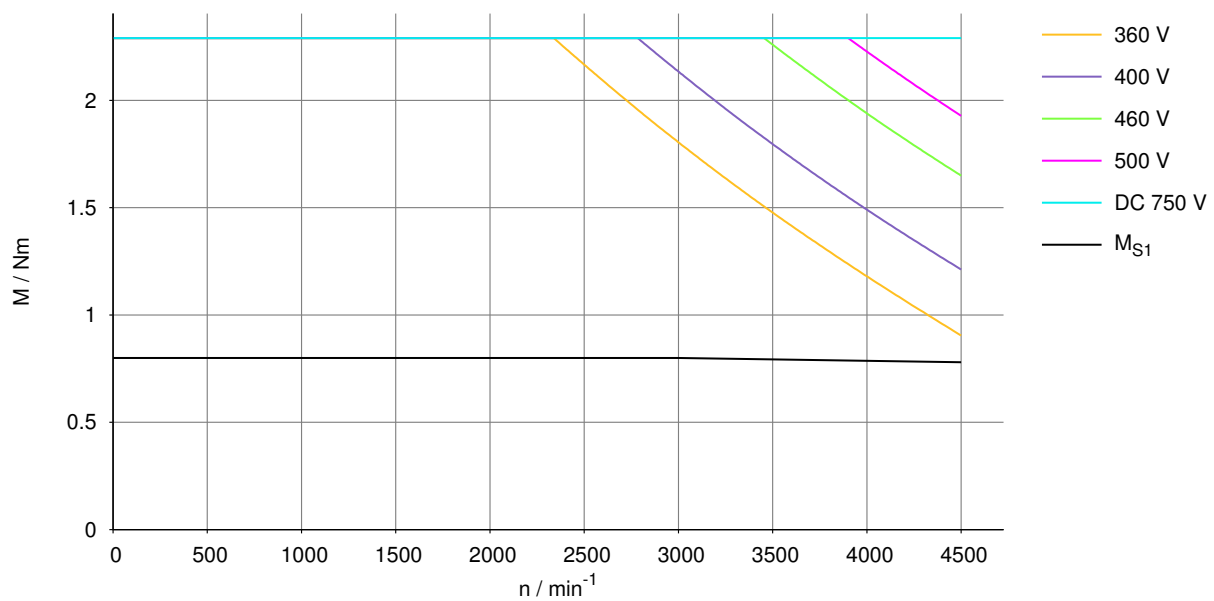
8.6.1 CMP40S $n = 3000 \text{ min}^{-1}$



9007209062117003

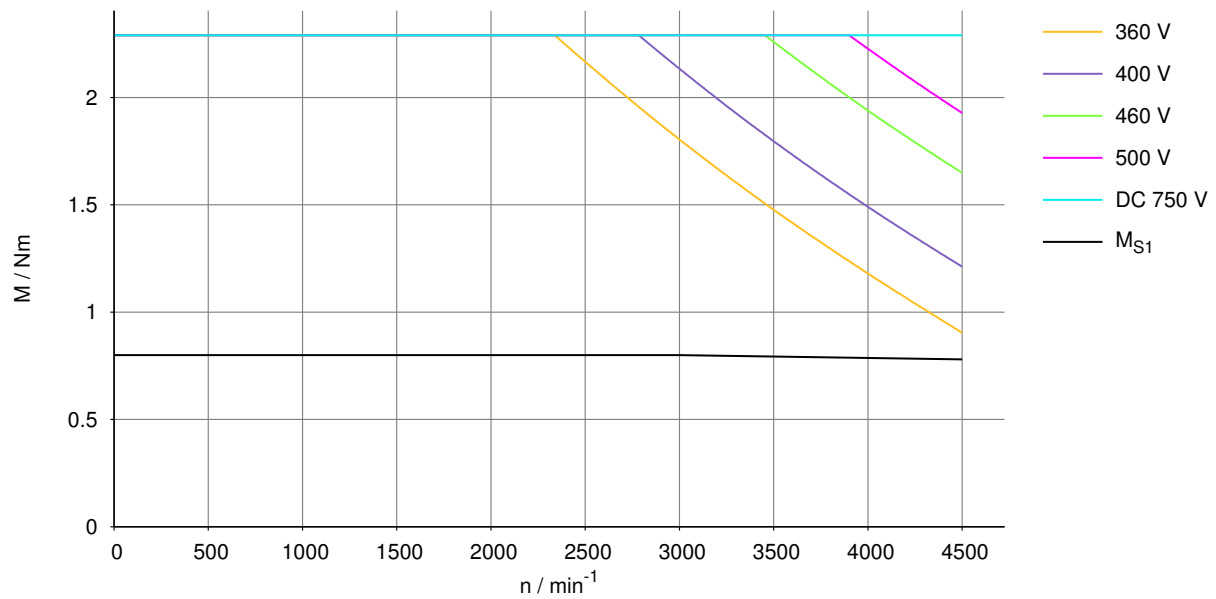
8.6.2 CMP40S $n = 4500 \text{ min}^{-1}$ 

9007209062118923

8.6.3 CMP40M $n = 3000 \text{ min}^{-1}$ 

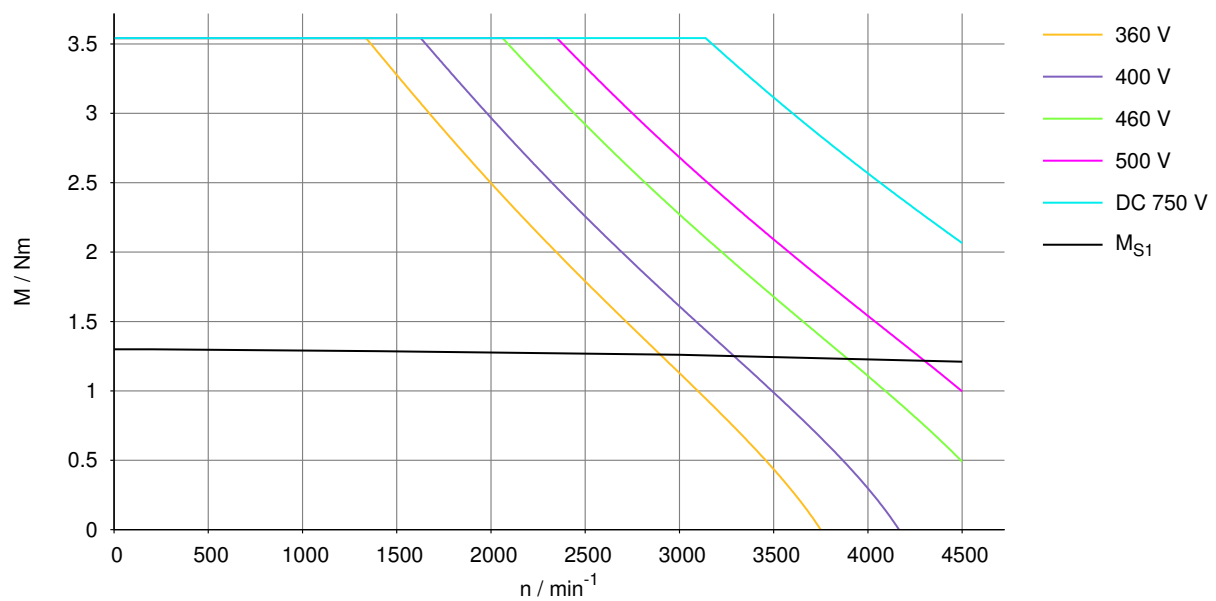
9007209060461963

8.6.4 CMP40M $n = 4500 \text{ min}^{-1}$

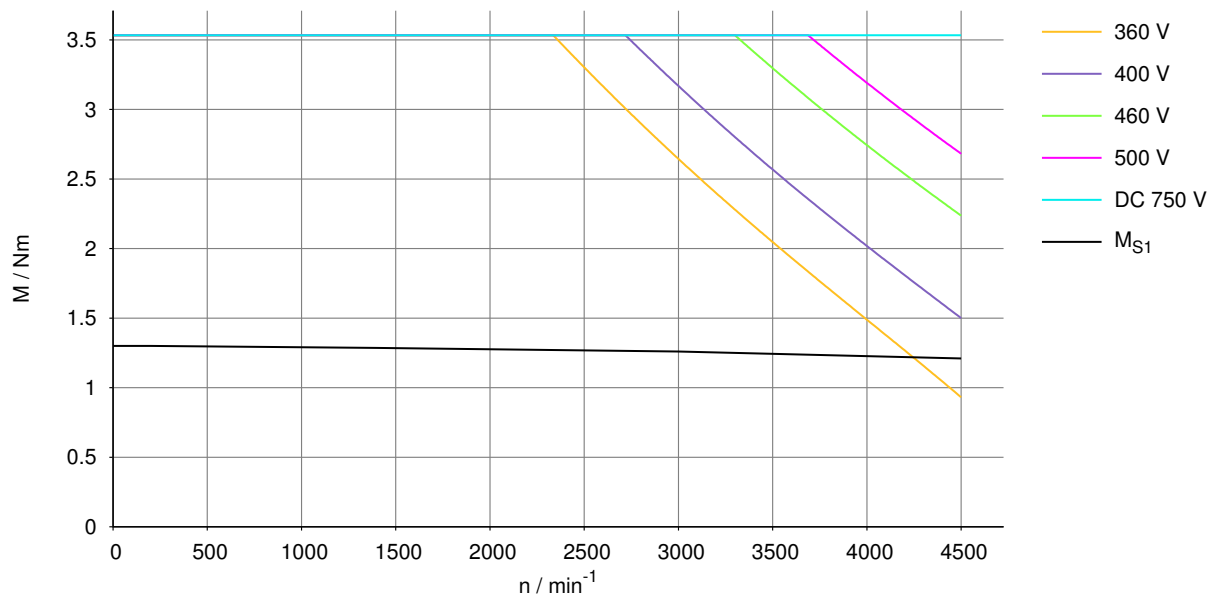


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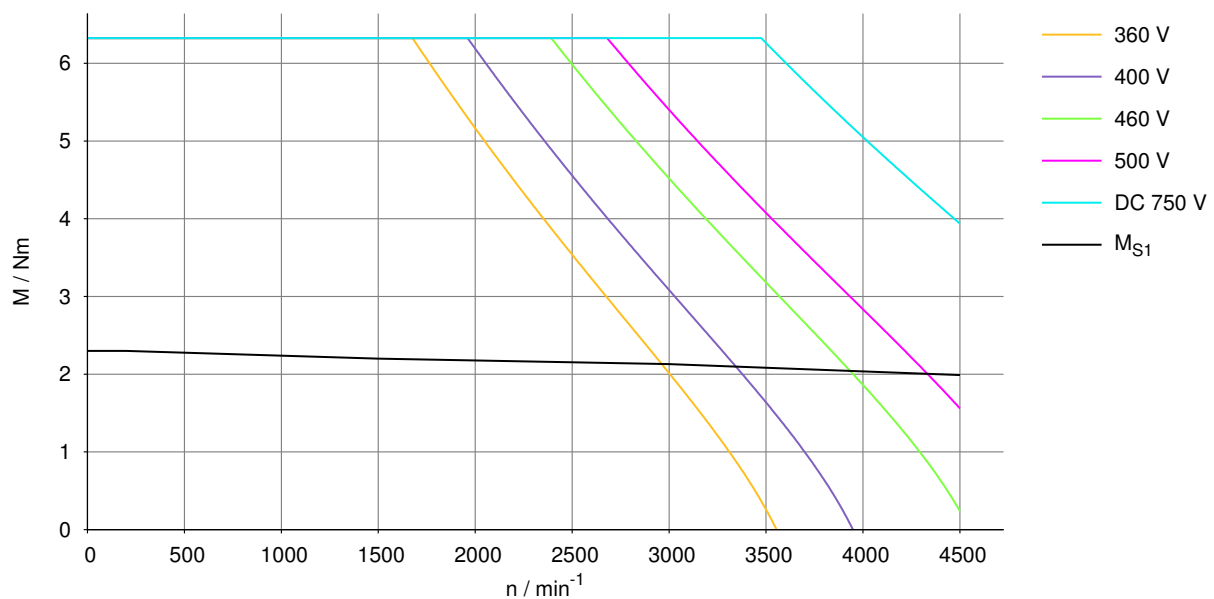
8.6.5 CMP50S $n = 3000 \text{ min}^{-1}$



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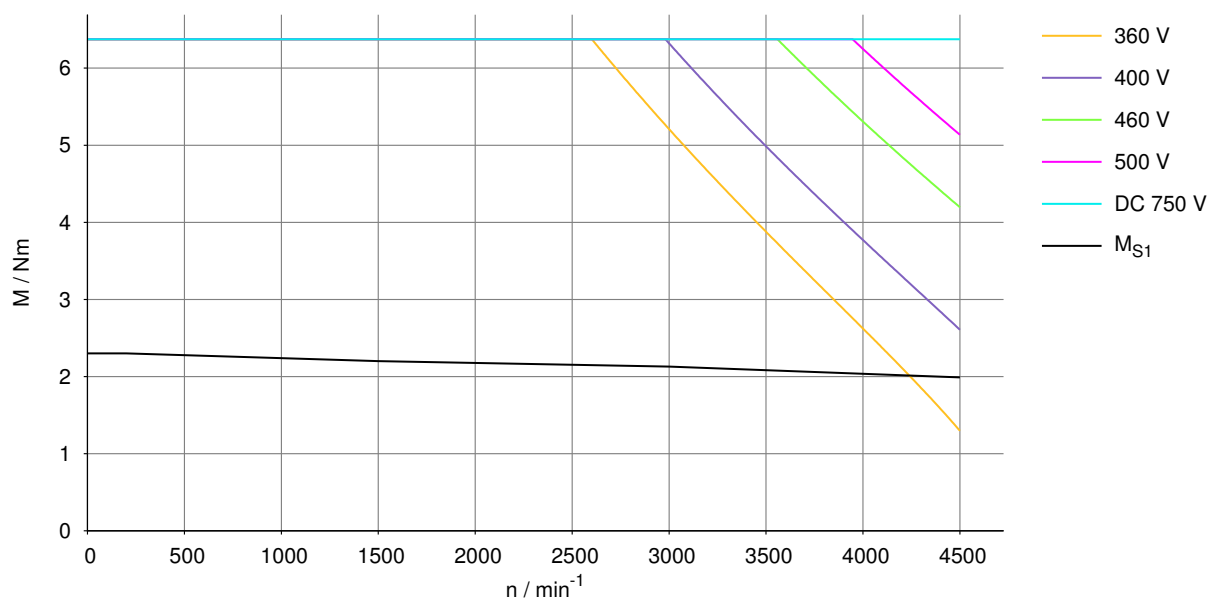
8.6.6 CMP50S $n = 4500 \text{ min}^{-1}$ 

9007209062130443

8.6.7 CMP50M $n = 3000 \text{ min}^{-1}$ 

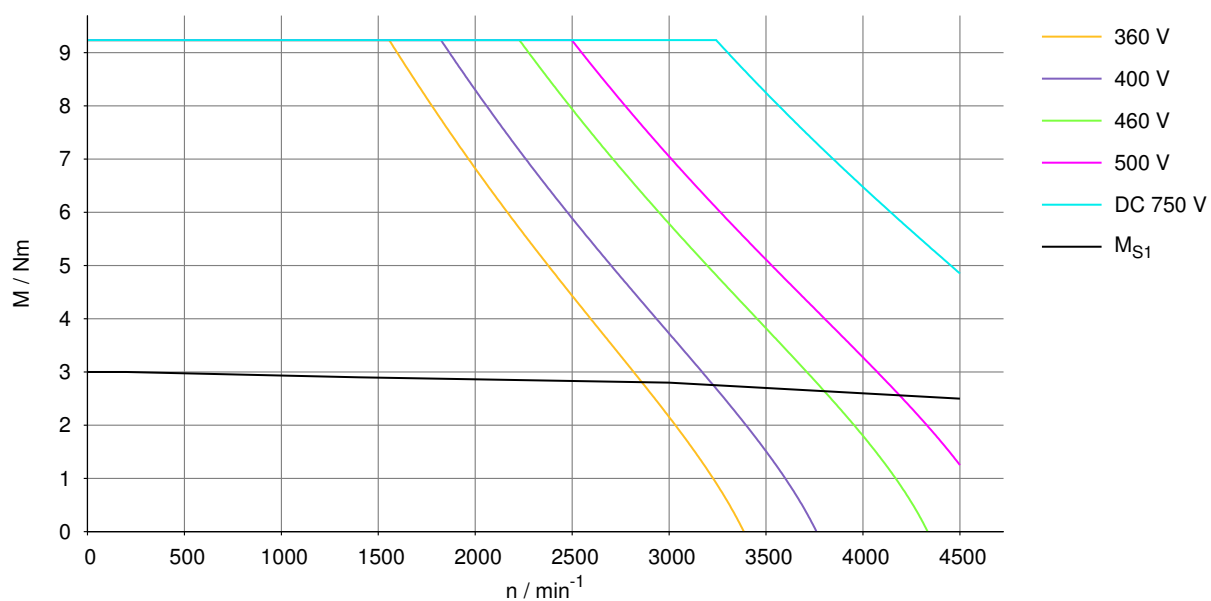
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8.6.8 CMP50M $n = 4500 \text{ min}^{-1}$

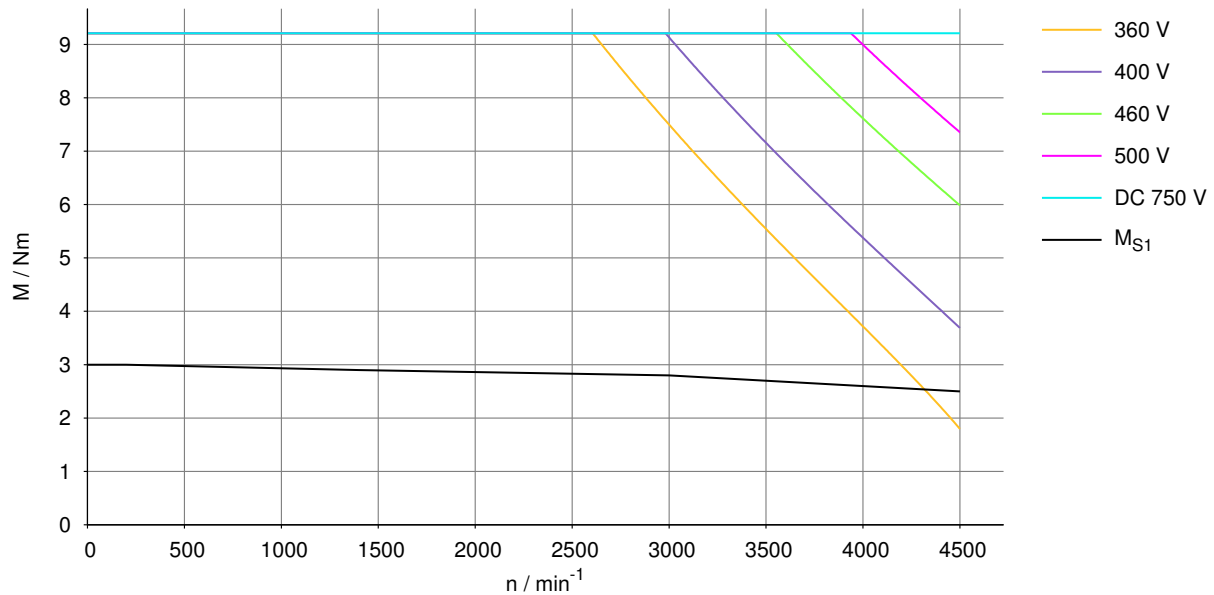


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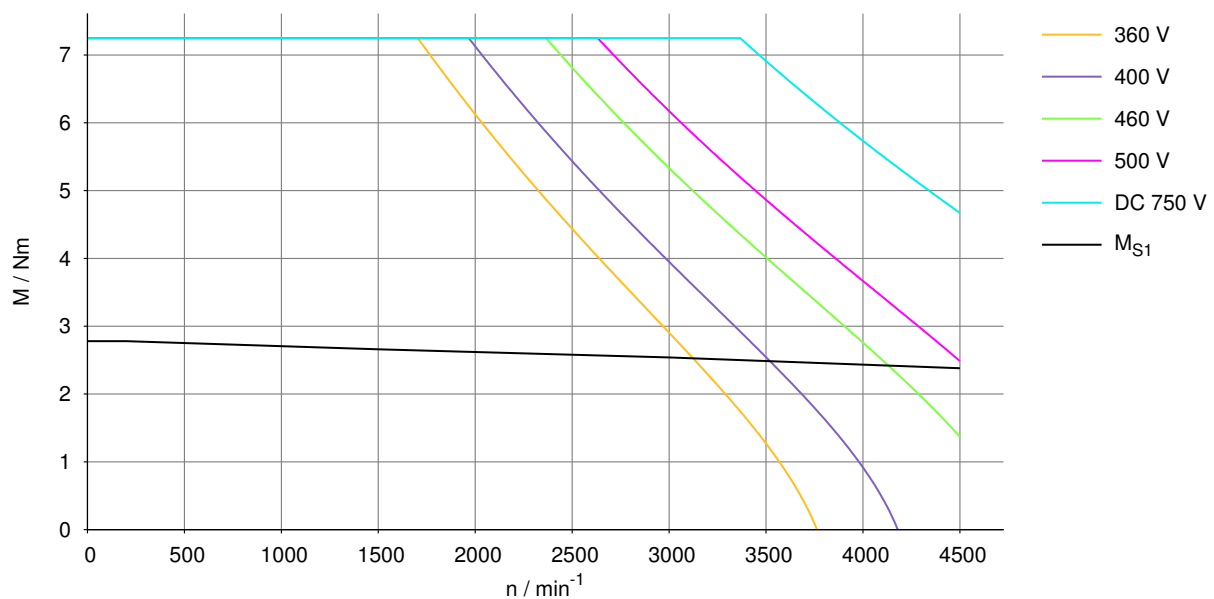
8.6.9 CMP50L $n = 3000 \text{ min}^{-1}$



9007209062120843

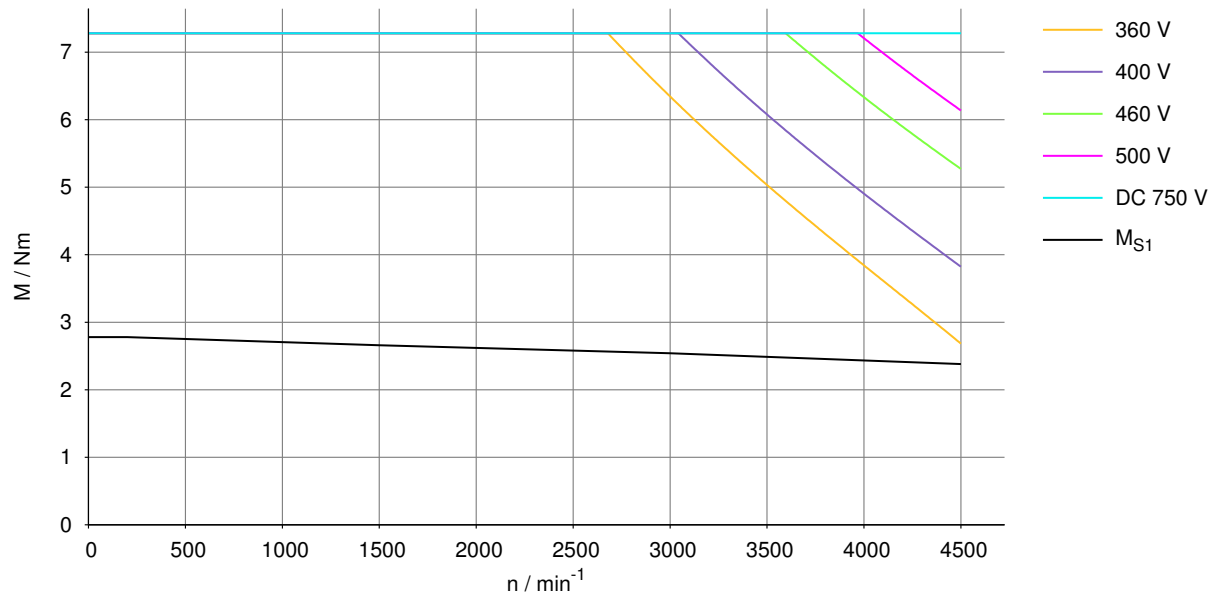
8.6.10 CMP50L $n = 4500 \text{ min}^{-1}$ 

9007209062122763

8.6.11 CMP63S $n = 3000 \text{ min}^{-1}$ 

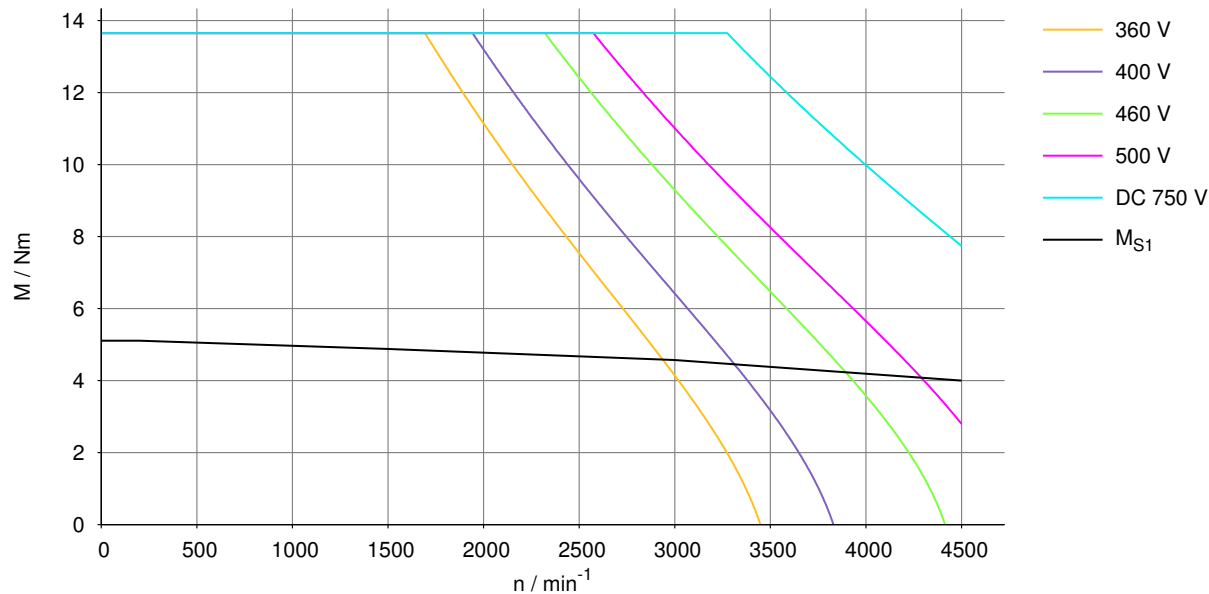
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8.6.12 CMP63S $n = 4500 \text{ min}^{-1}$

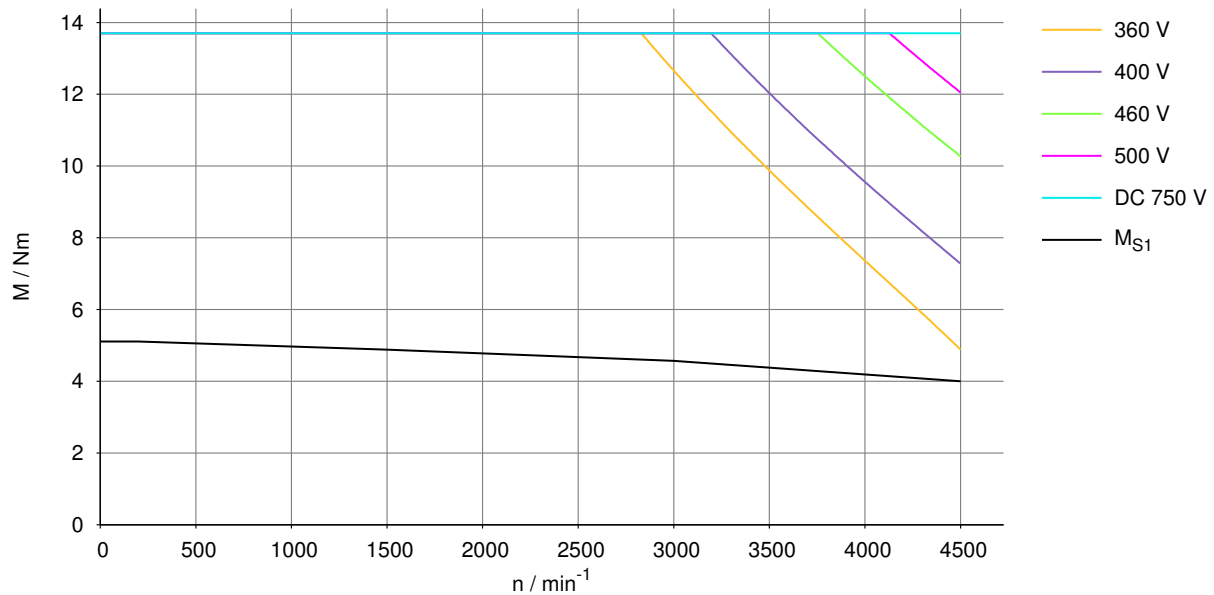


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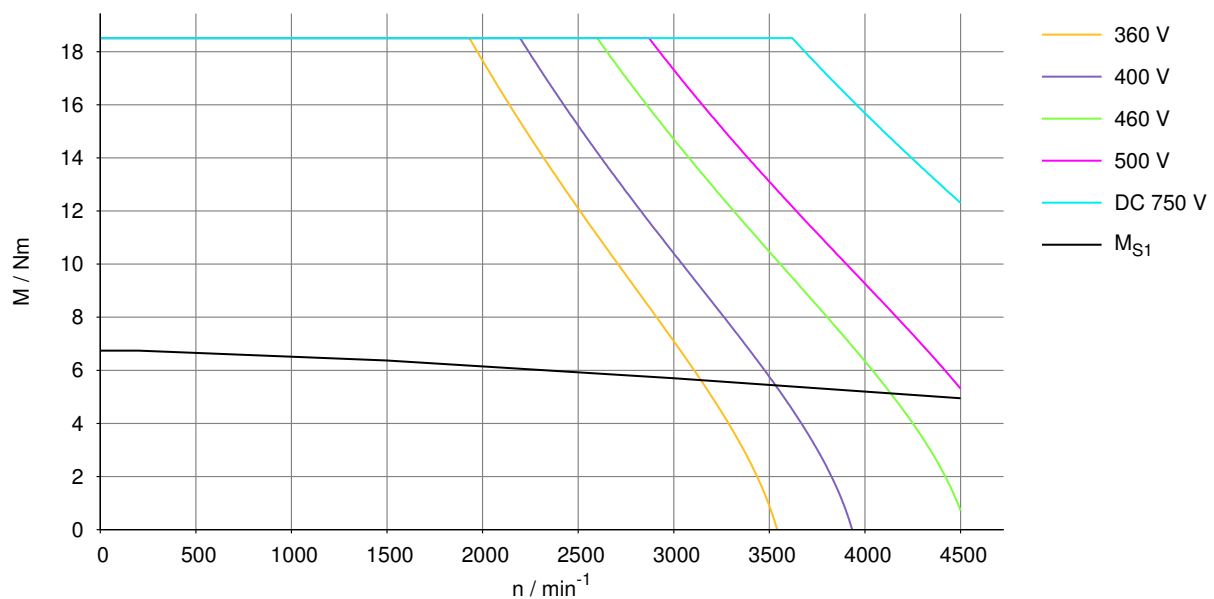
8.6.13 CMP63M $n = 3000 \text{ min}^{-1}$



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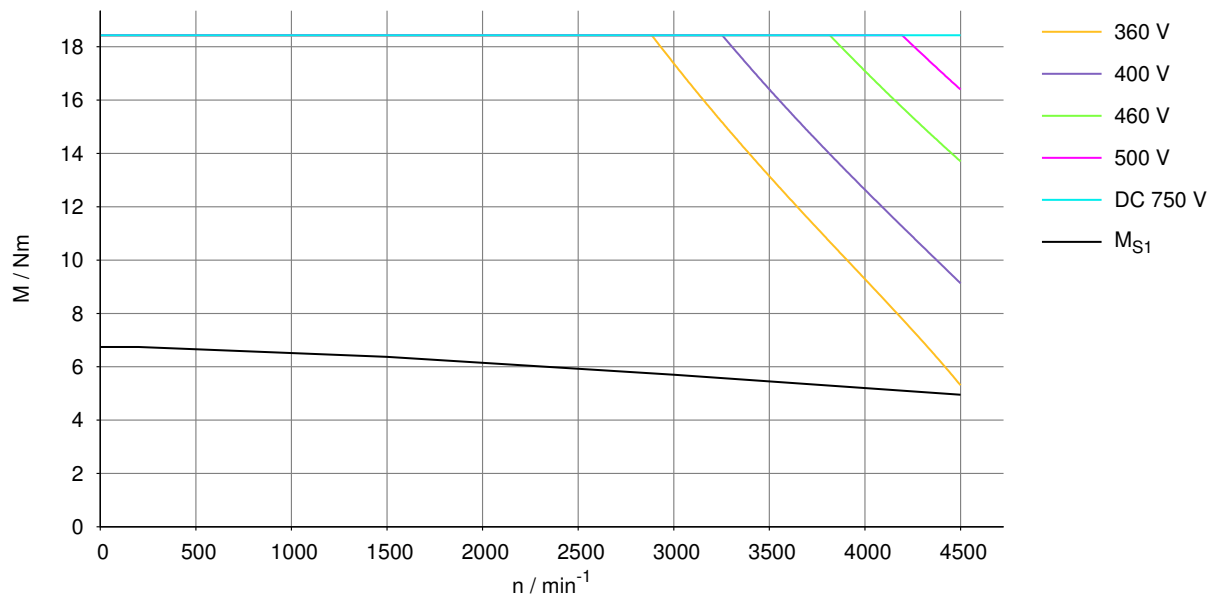
8.6.14 CMP63M $n = 4500 \text{ min}^{-1}$ 

9007209062138123

8.6.15 CMP63L $n = 3000 \text{ min}^{-1}$ 

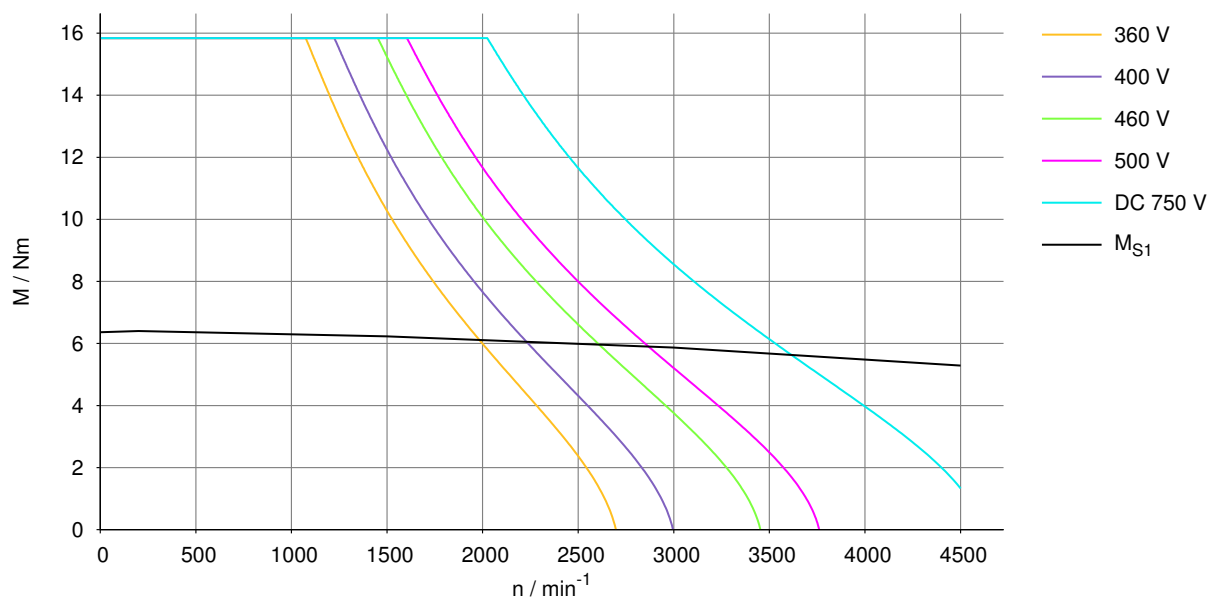
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8.6.16 CMP63L $n = 4500 \text{ min}^{-1}$

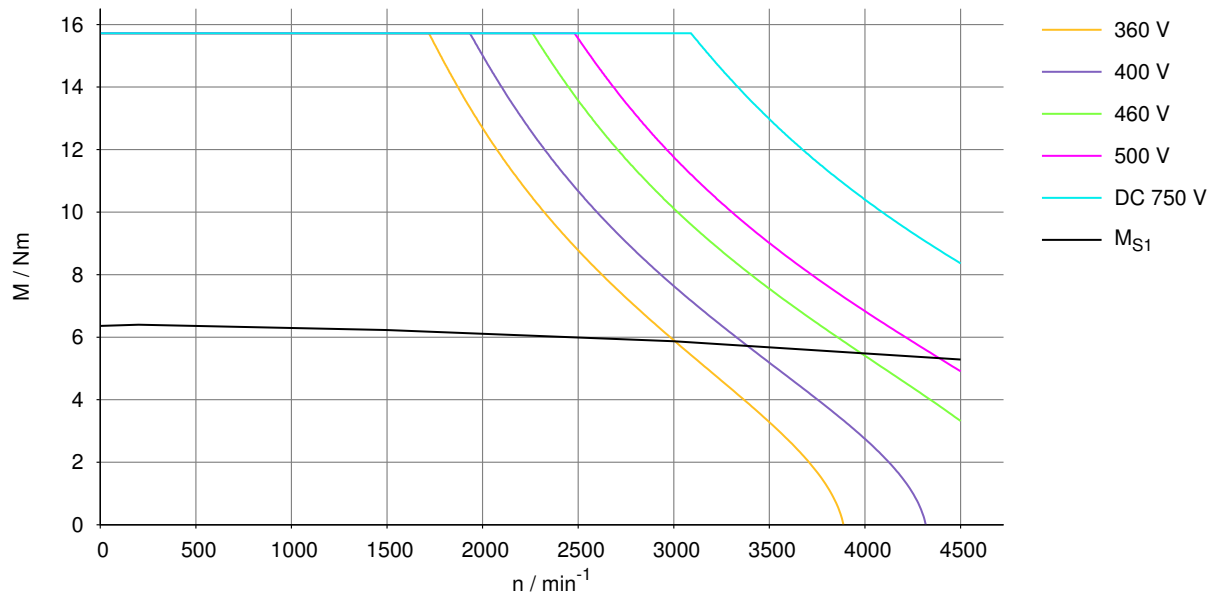


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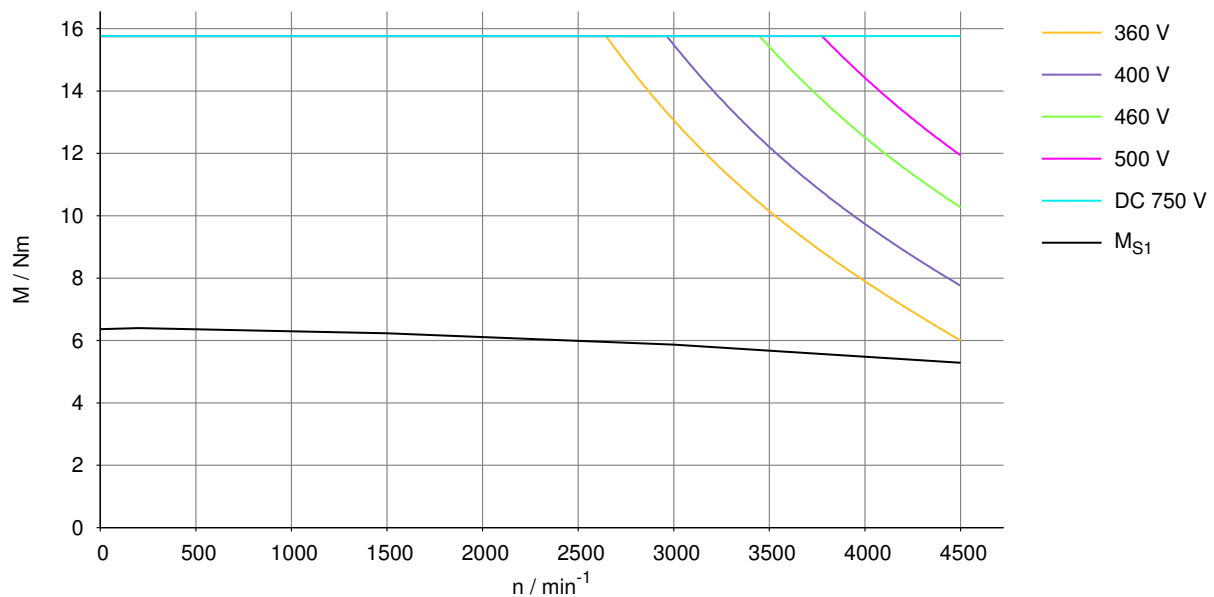
8.6.17 CMP.71S $n = 2000 \text{ min}^{-1}$



9007209062155403

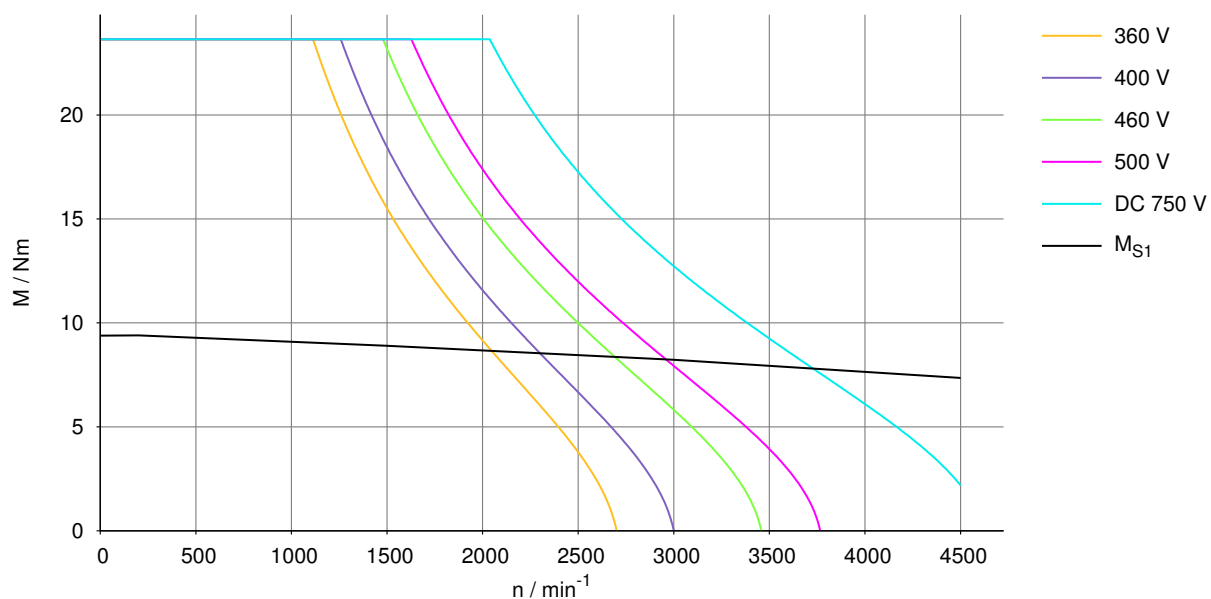
8.6.18 CMP.71S $n = 3000 \text{ min}^{-1}$ 

9007209062157323

8.6.19 CMP.71S $n = 4500 \text{ min}^{-1}$ 

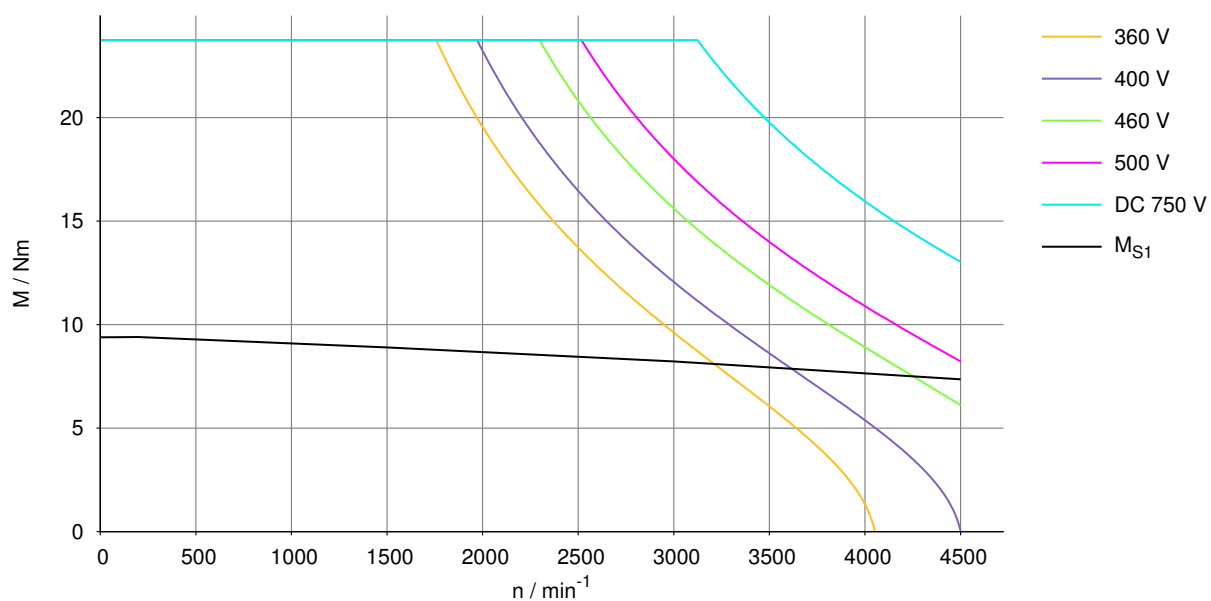
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8.6.20 CMP.71M $n = 2000 \text{ min}^{-1}$

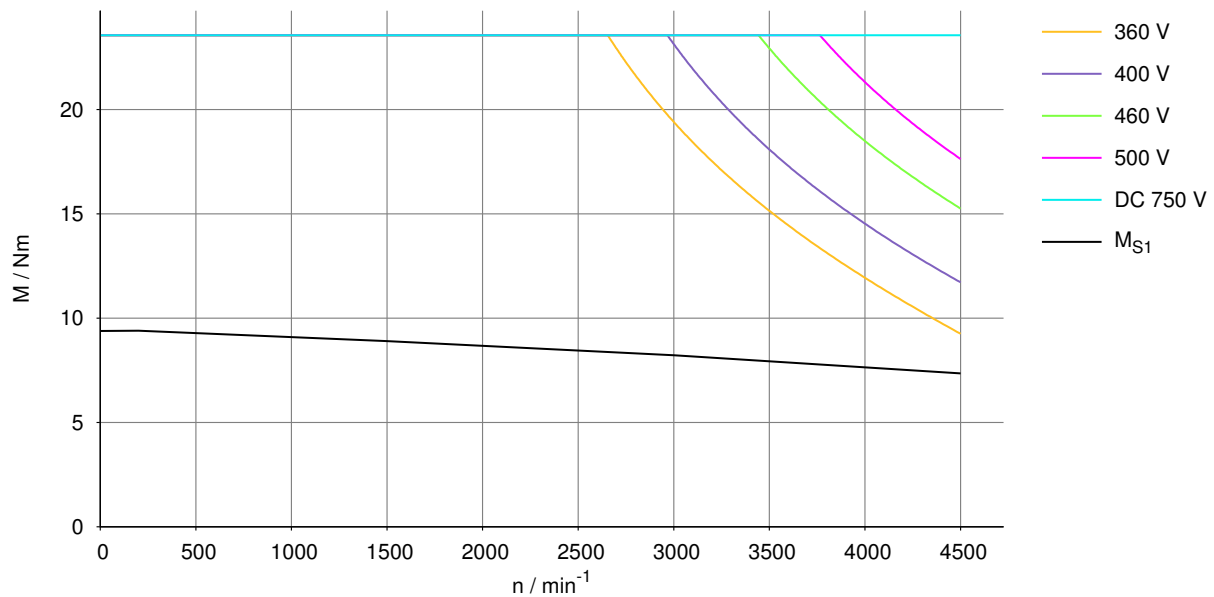


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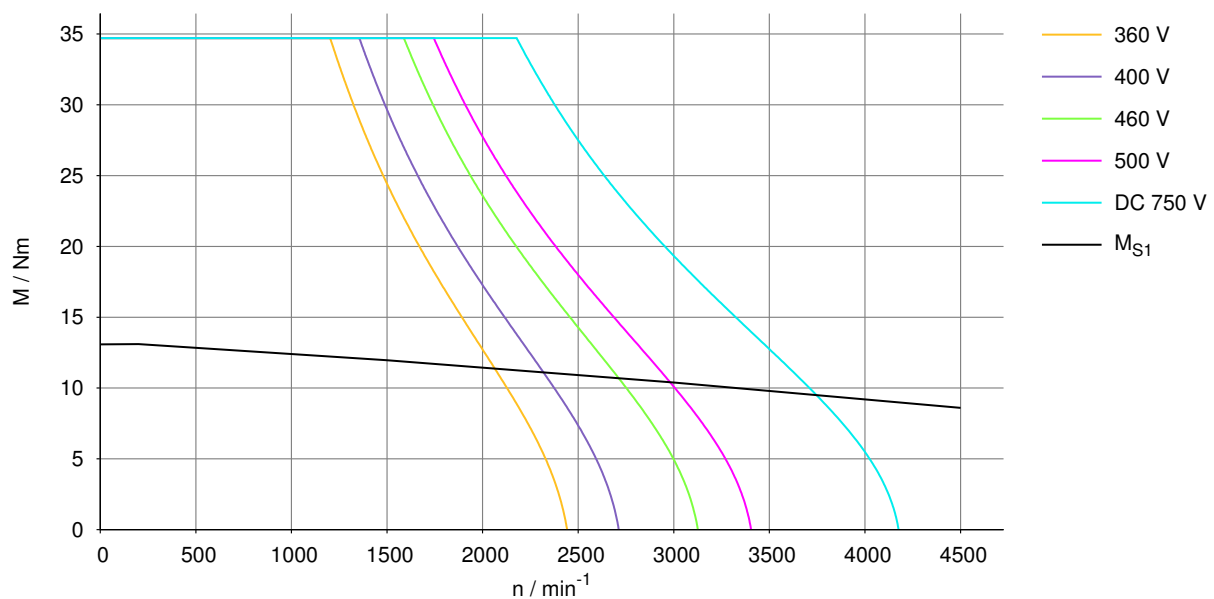
8.6.21 CMP.71M $n = 3000 \text{ min}^{-1}$



9007209062151563

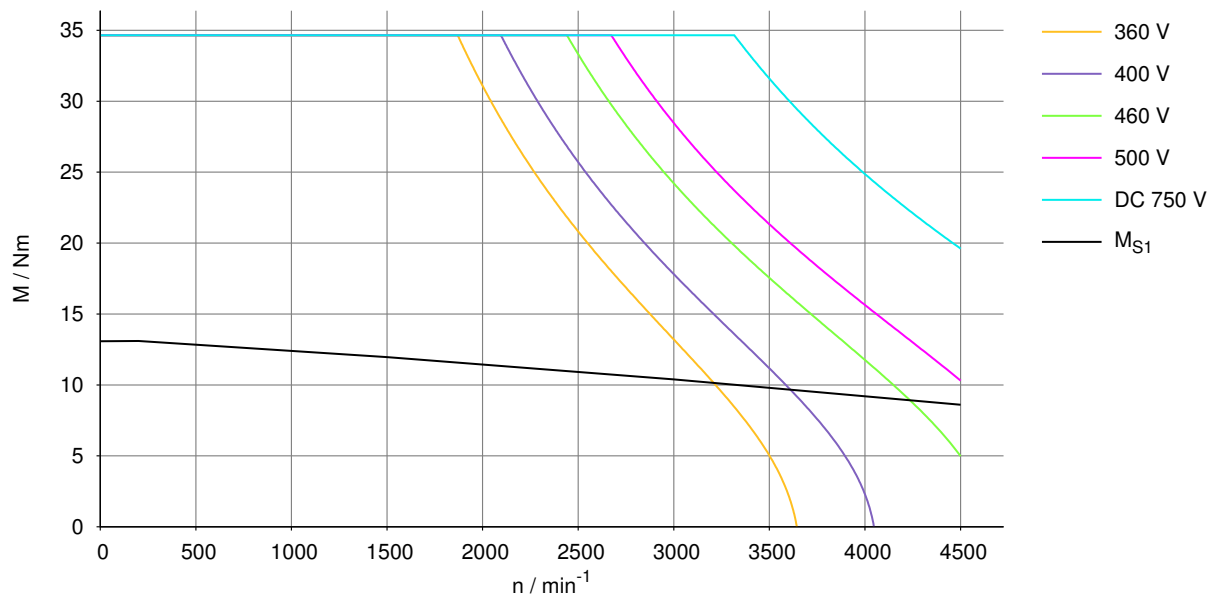
8.6.22 CMP.71M $n = 4500 \text{ min}^{-1}$ 

9007209062153483

8.6.23 CMP.71L $n = 2000 \text{ min}^{-1}$ 

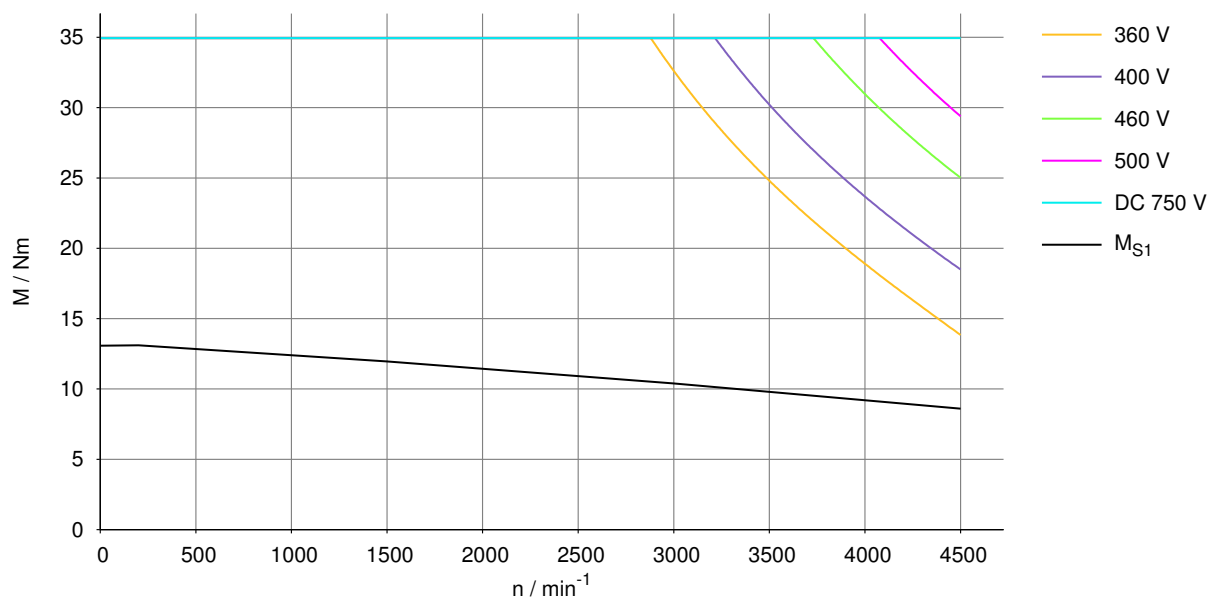
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8.6.24 CMP.71L $n = 3000 \text{ min}^{-1}$

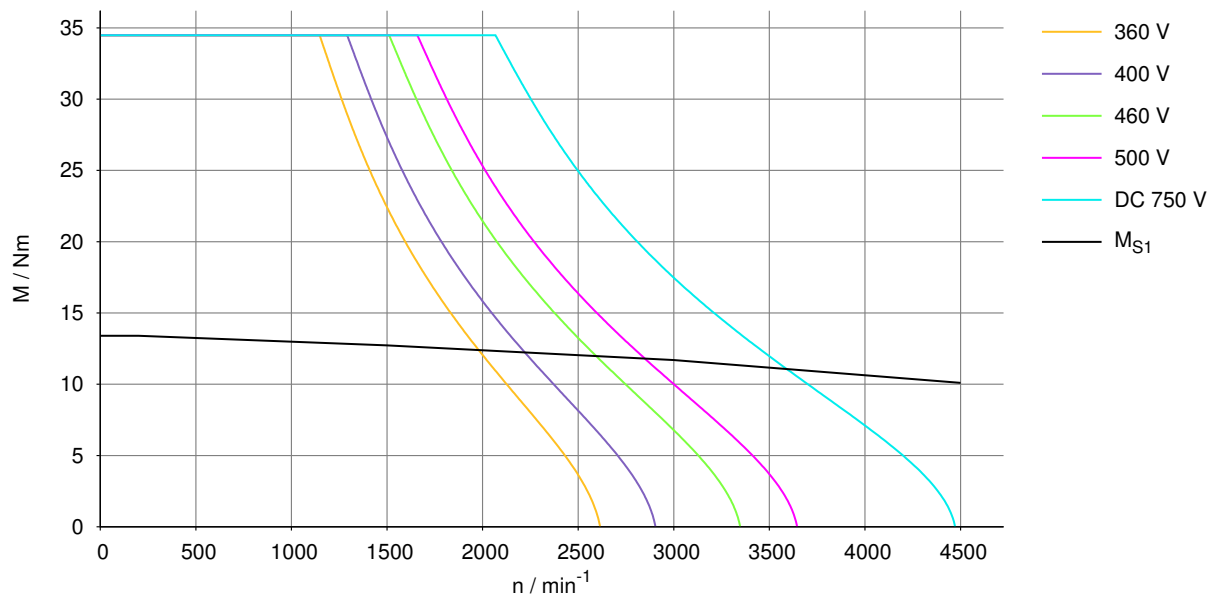


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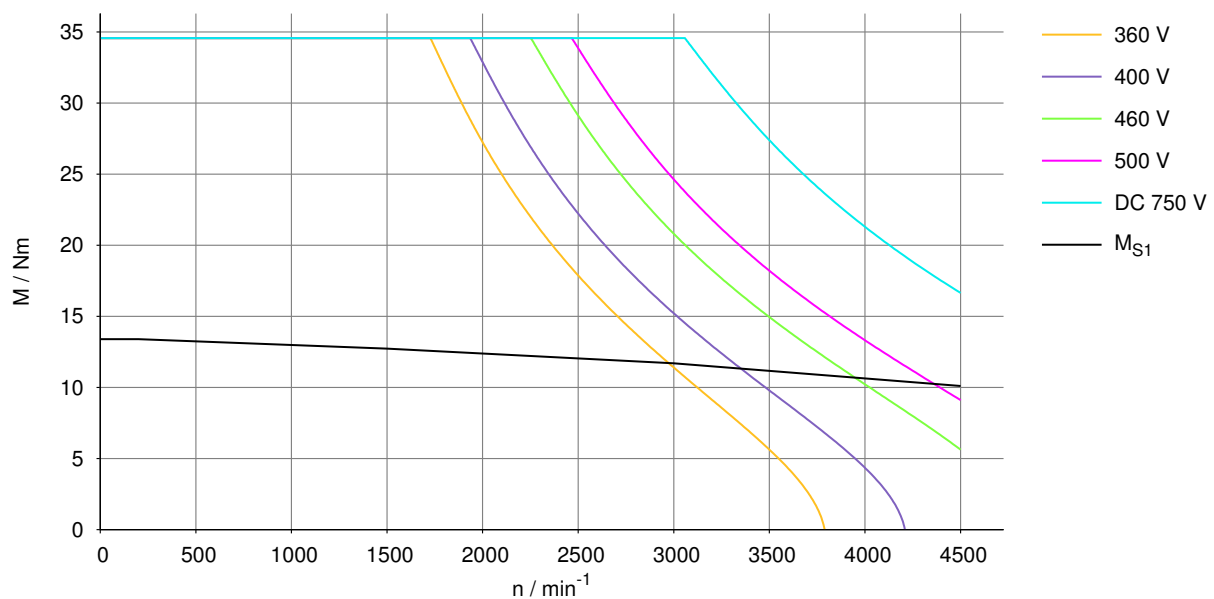
8.6.25 CMP.71L $n = 4500 \text{ min}^{-1}$



9007209062147723

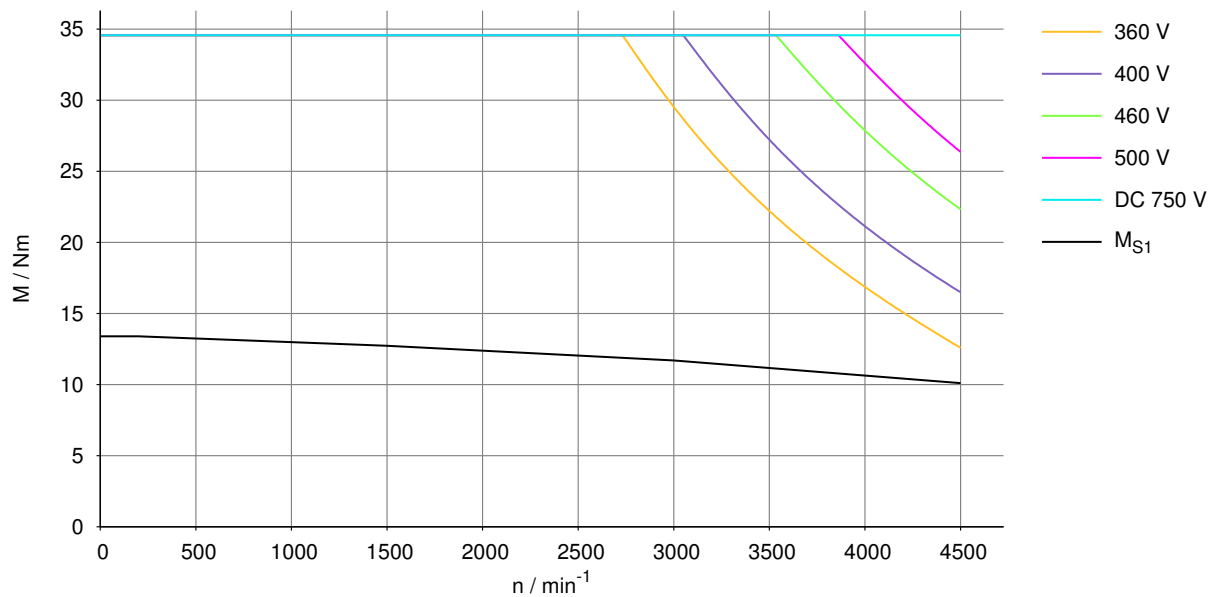
8.6.26 CMP.80S $n = 2000 \text{ min}^{-1}$ 

9007209062185483

8.6.27 CMP.80S $n = 3000 \text{ min}^{-1}$ 

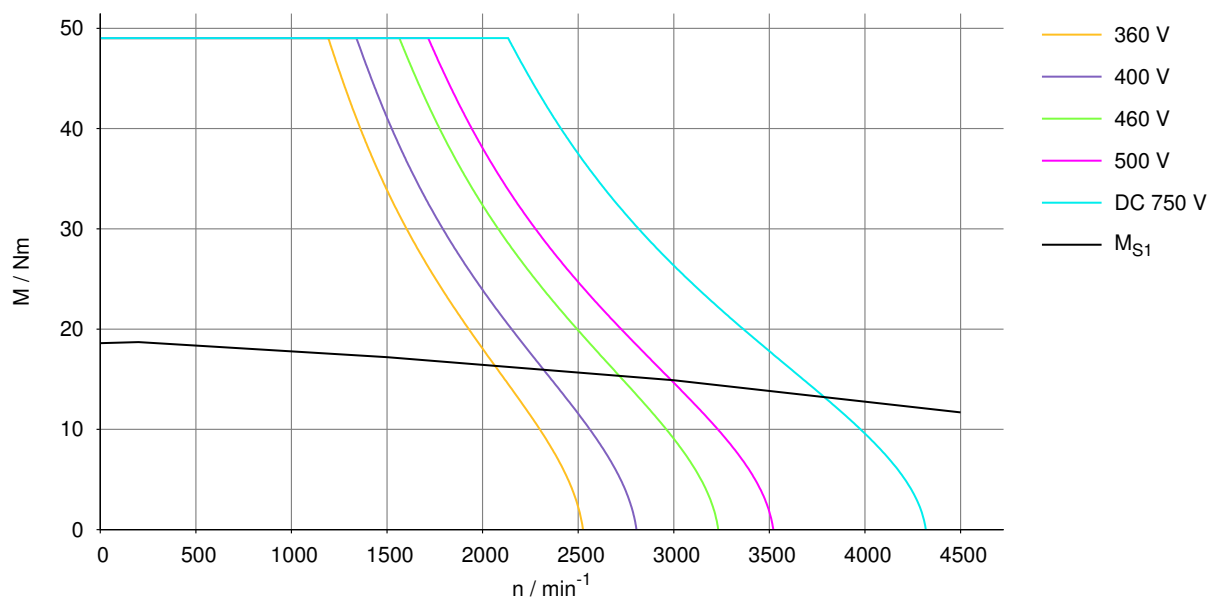
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8.6.28 CMP.80S $n = 4500 \text{ min}^{-1}$

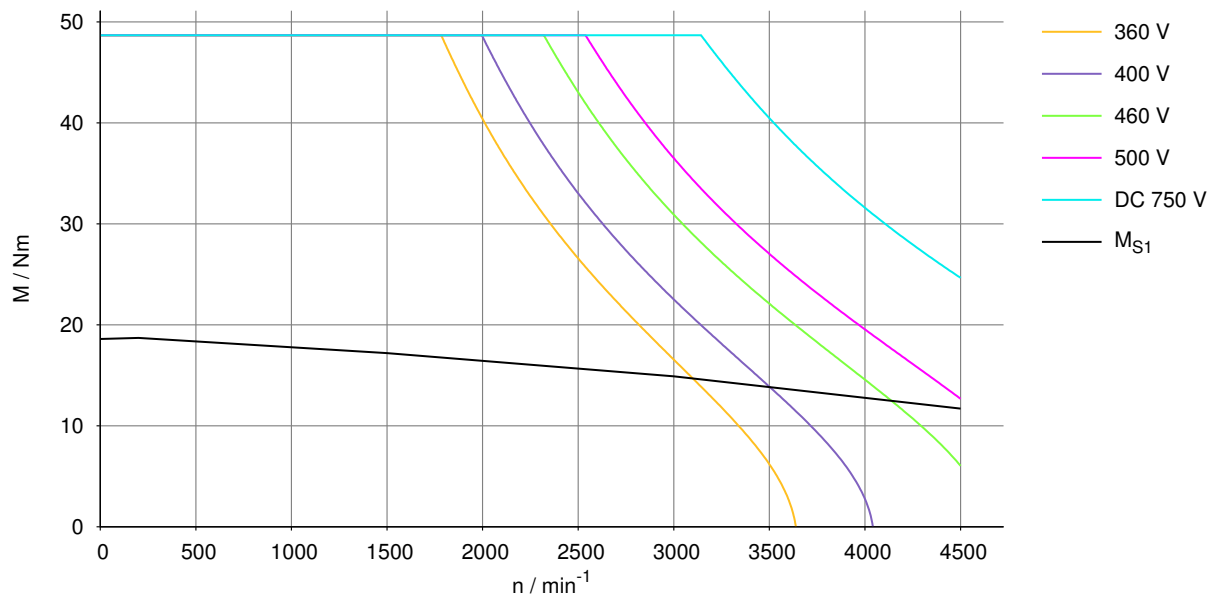


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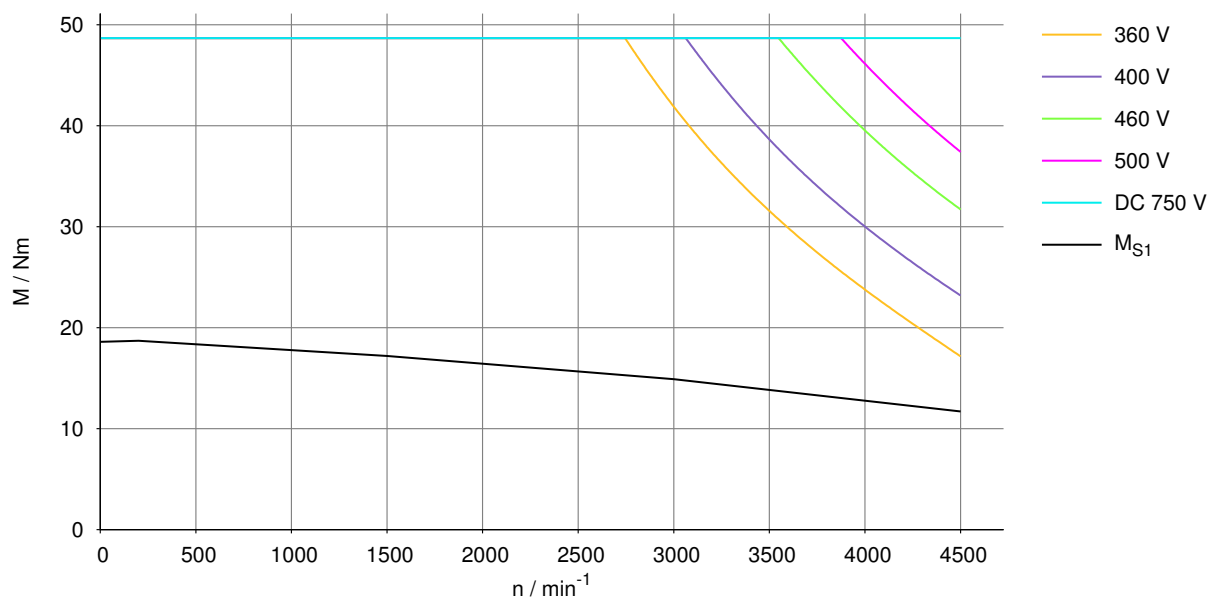
8.6.29 CMP.80M $n = 2000 \text{ min}^{-1}$



9007209062179723

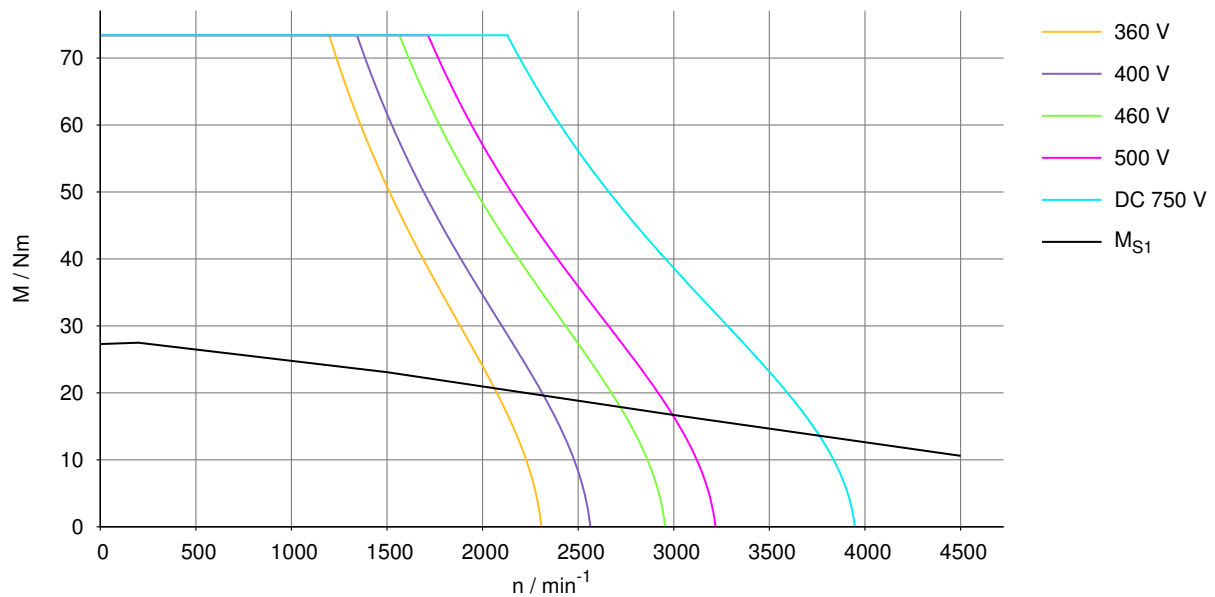
8.6.30 CMP.80M $n = 3000 \text{ min}^{-1}$ 

9007209062181643

8.6.31 CMP.80M $n = 4500 \text{ min}^{-1}$ 

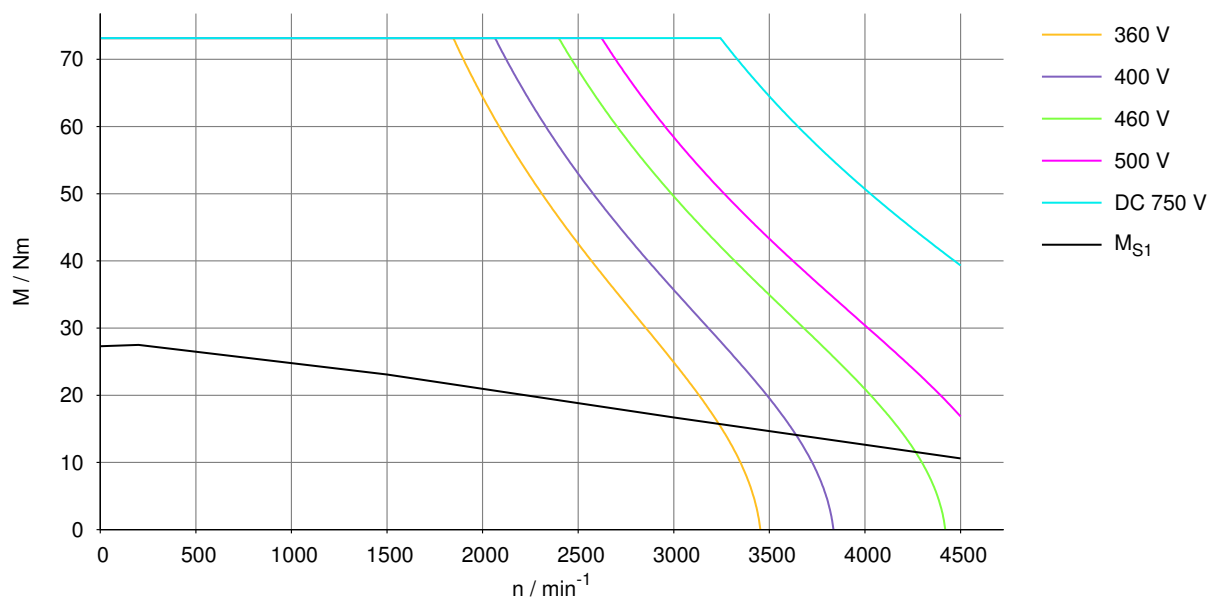
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8.6.32 CMP.80L $n = 2000 \text{ min}^{-1}$

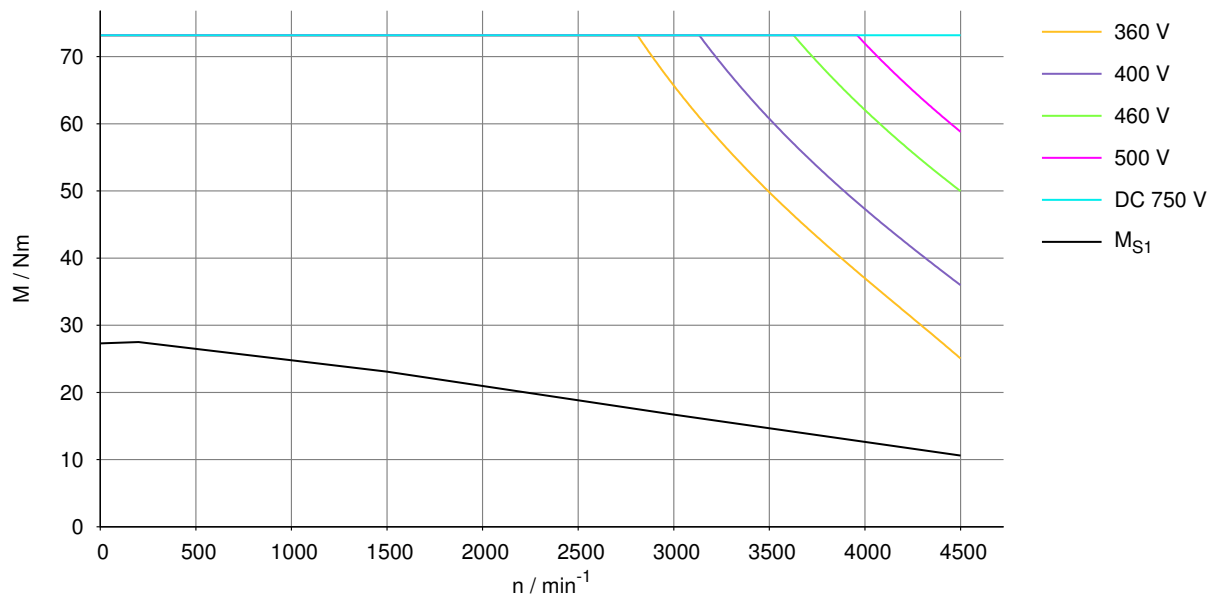


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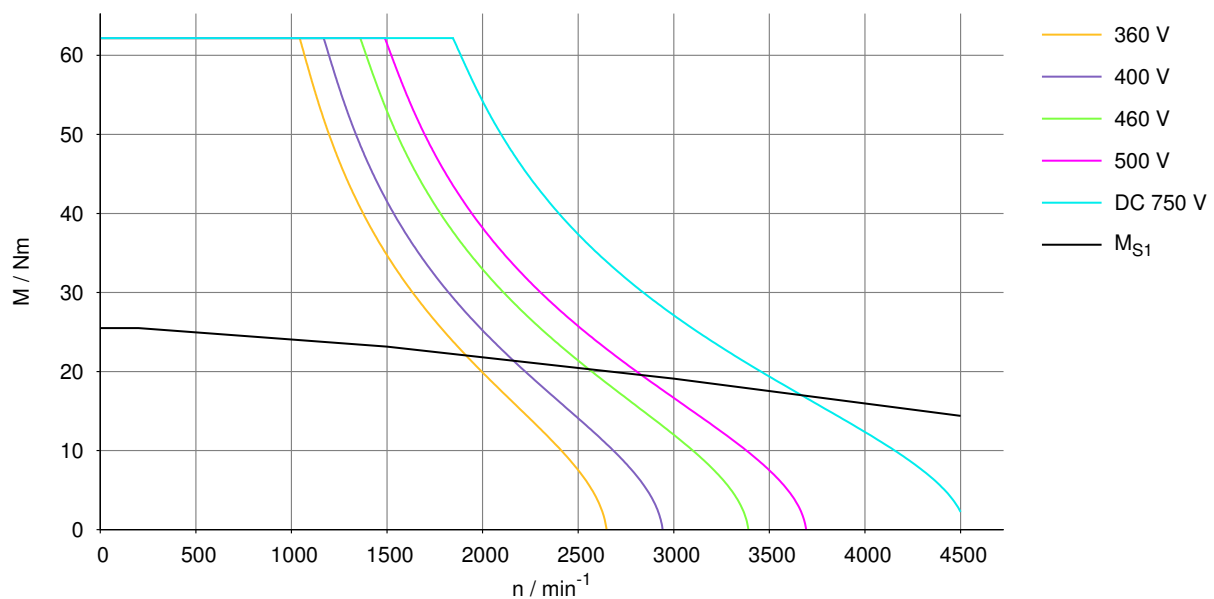
8.6.33 CMP.80L $n = 3000 \text{ min}^{-1}$



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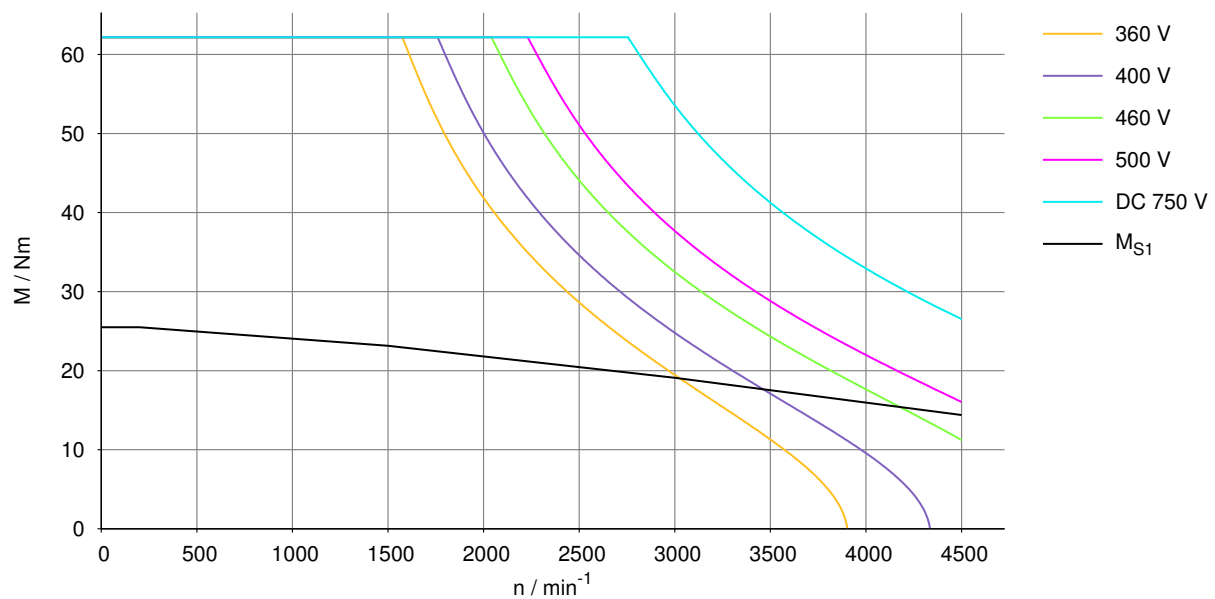
8.6.34 CMP.80L $n = 4500 \text{ min}^{-1}$ 

9007209062177803

8.6.35 CMP.100S $n = 2000 \text{ min}^{-1}$ 

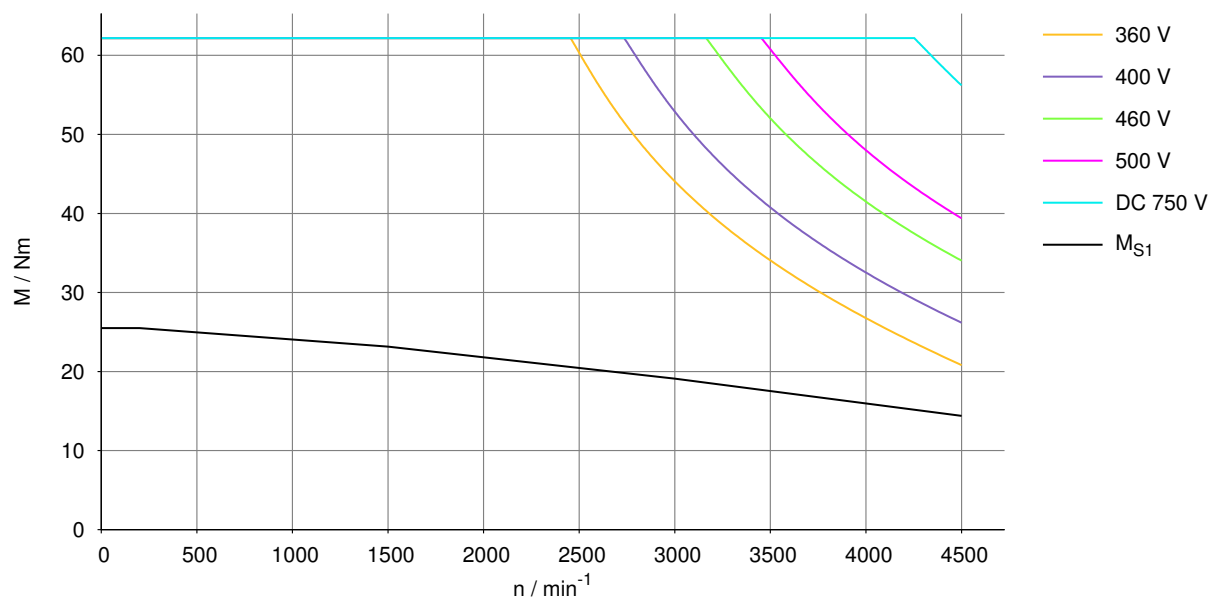
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8.6.36 CMP.100S $n = 3000 \text{ min}^{-1}$

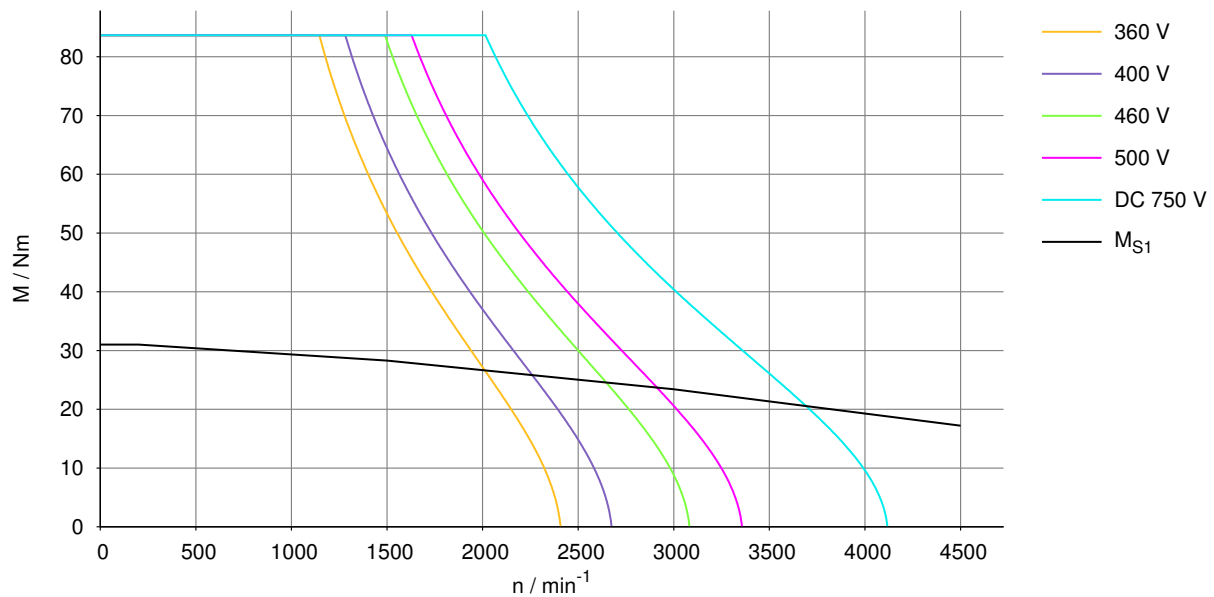


9007209062204683

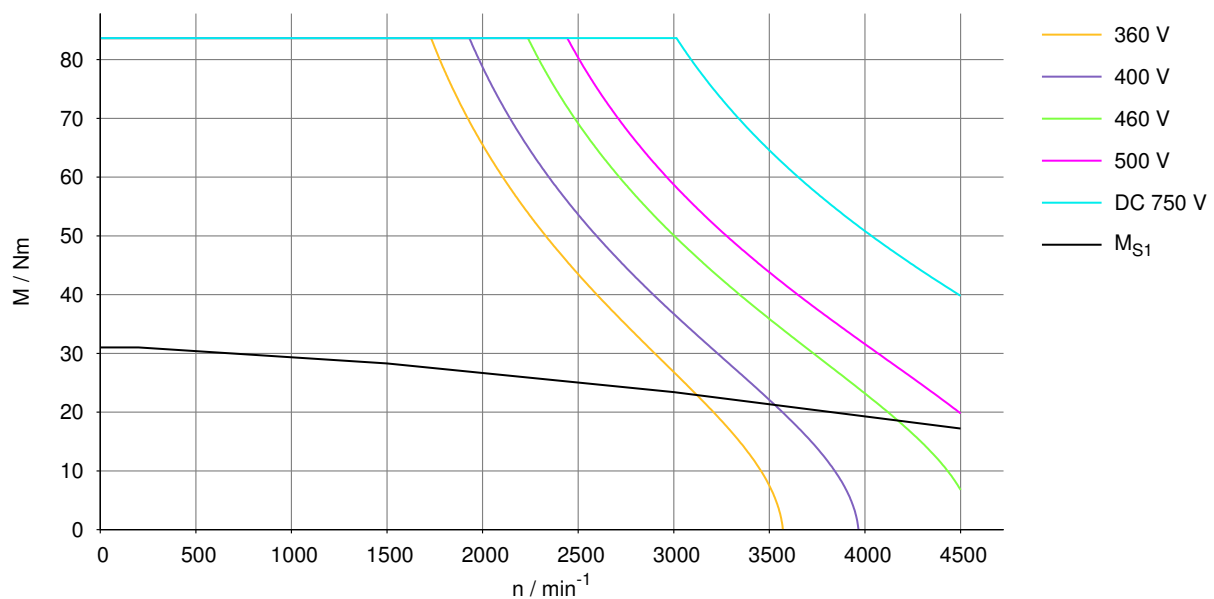
8.6.37 CMP.100S $n = 4500 \text{ min}^{-1}$



9007209062206603

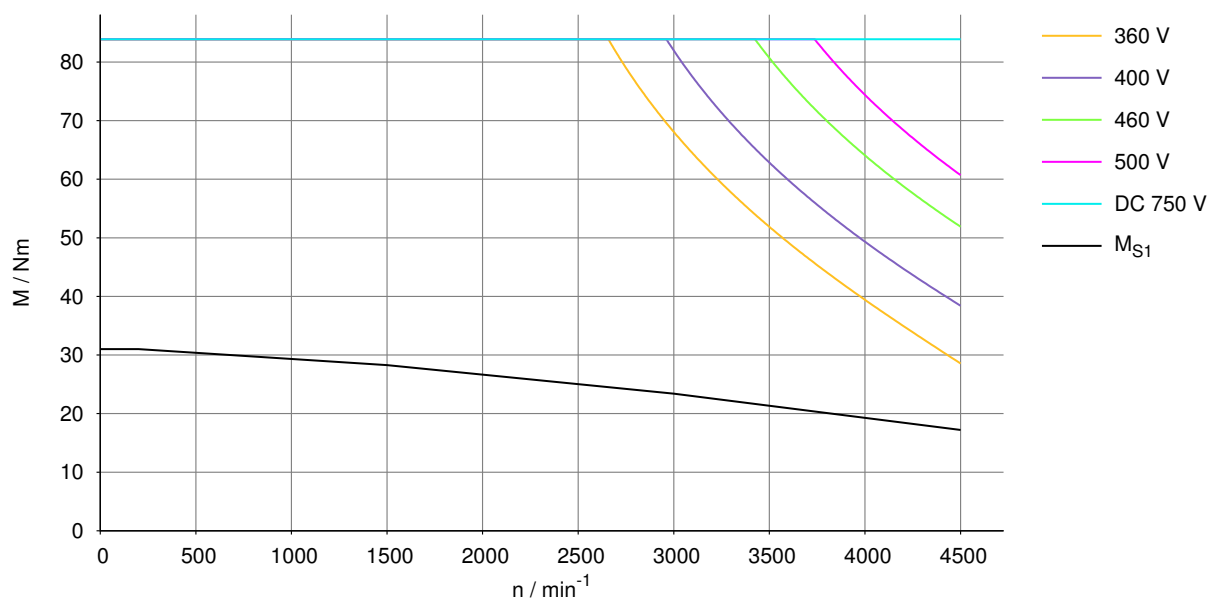
8.6.38 CMP.100M $n = 2000 \text{ min}^{-1}$ 

9007209062197003

8.6.39 CMP.100M $n = 3000 \text{ min}^{-1}$ 

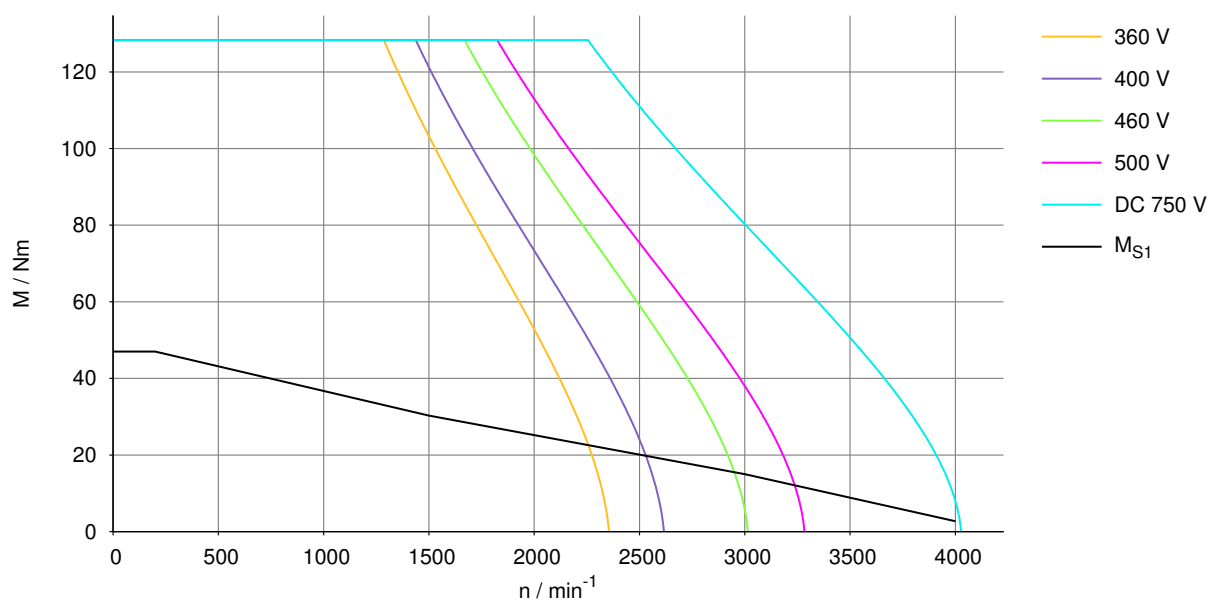
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8.6.40 CMP.100M $n = 4500 \text{ min}^{-1}$

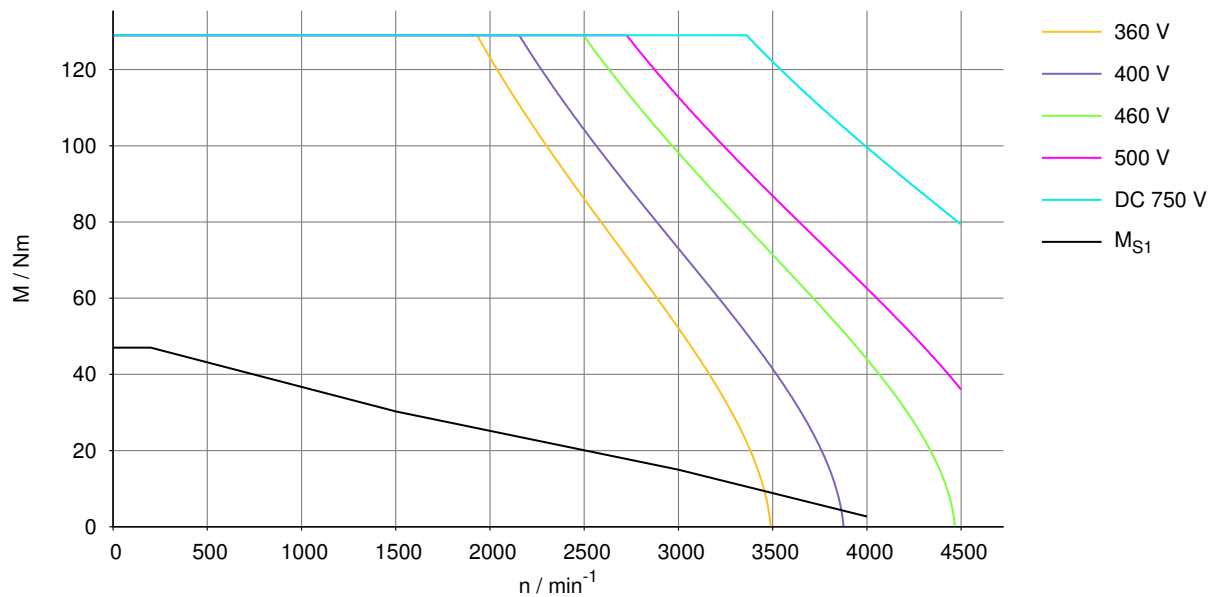


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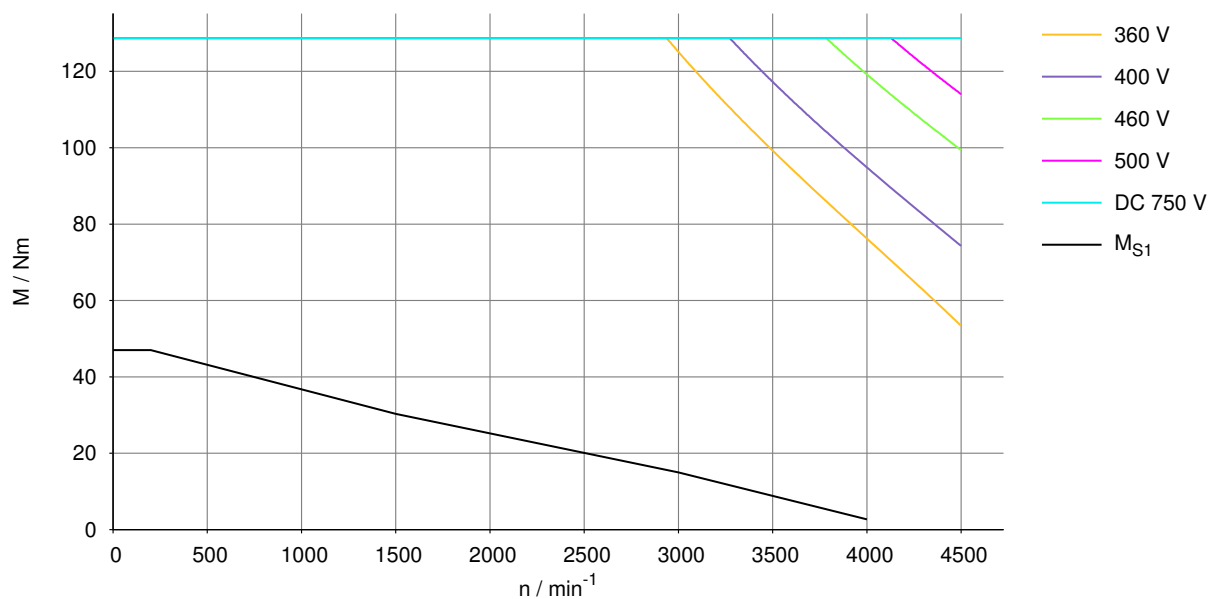
8.6.41 CMP.100L $n = 2000 \text{ min}^{-1}$



9007209062191243

8.6.42 CMP.100L $n = 3000 \text{ min}^{-1}$ 

9007209062193163

8.6.43 CMP.100L $n = 4500 \text{ min}^{-1}$ 

9007209062195083

8.7 Torque-current characteristics

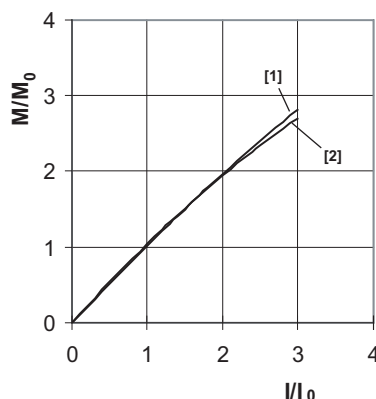
INFORMATION



The maximum permitted current I_{\max} of the motor must not exceed three times the standstill current I_0 ($I_{\max} \leq 3 \times I_0$).

For gearmotors, the limit M_{apk} must be considered when setting the current limit; see chapter "Setting the torque limit and the current limit" (\rightarrow 61).

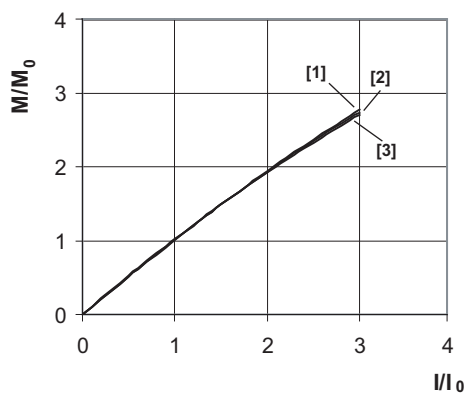
8.7.1 CMP40S/M



9007204055173771

[1] CMP40M
[2] CMP40S

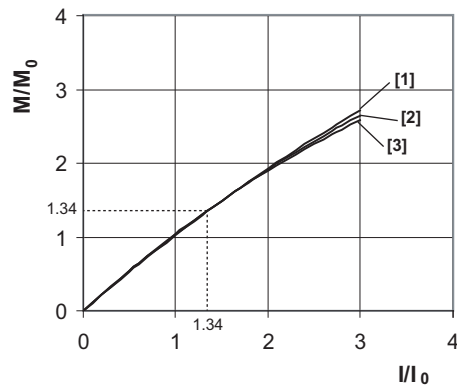
8.7.2 CMP50S/M/L



9007204055176459

[1] CMP50L
[2] CMP50M
[3] CMP50S

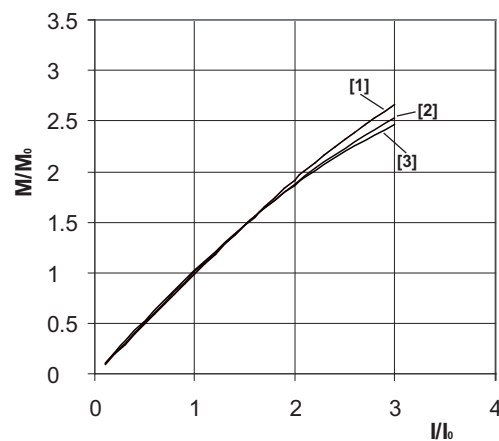
8.7.3 CMP63S/M/L



18014403309920139

| | |
|-----|--------|
| [1] | CMP63L |
| [2] | CMP63M |
| [3] | CMP63S |

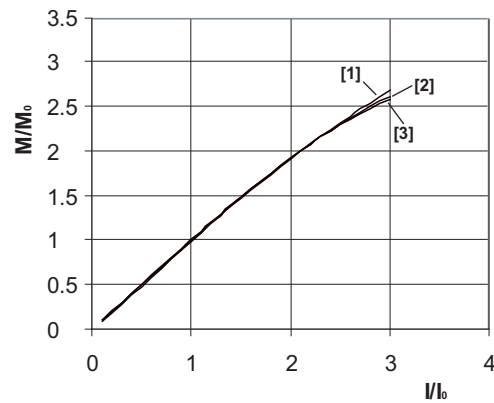
8.7.4 CMP71S/M/L



18014403311561227

| | |
|-----|----------|
| [1] | CMP..71L |
| [2] | CMP..71M |
| [3] | CMP..71S |

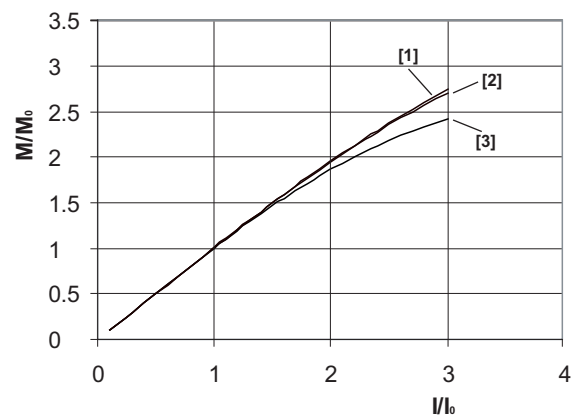
8.7.5 CMP80S/M/L



18014403311563915

| | |
|-----|----------|
| [1] | CMP..80L |
| [2] | CMP..80M |
| [3] | CMP..80S |

8.7.6 CMP100S/M/L



18014403311566603

| | |
|-----|-----------|
| [1] | CMP..100L |
| [2] | CMP..100M |
| [3] | CMP..100S |

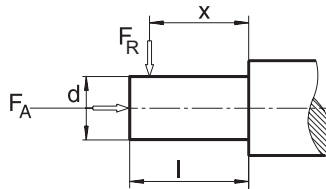
8.8 Overhung and axial loads

The following overhung loads are determined by subjecting the shaft to a load with the nominal torque (rated torque).

The permitted overhung loads F_R at point x are determined via the following diagrams. "x" is the distance between the shaft shoulder and the force application.

The diagrams are based on the following nominal bearing service life:

| Motor type | Nominal bearing service life |
|------------|------------------------------|
| CMP40 | $L_{10h} = 25000 \text{ h}$ |
| CMP50 | $L_{10h} = 25000 \text{ h}$ |
| CMP63 | $L_{10h} = 20000 \text{ h}$ |
| CMP.71 | $L_{10h} = 25000 \text{ h}$ |
| CMP.80 | $L_{10h} = 25000 \text{ h}$ |
| CMP.100 | $L_{10h} = 25000 \text{ h}$ |



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8.8.1 Permitted overhung and axial loads

CMP40 – 63

| Motor type | $F_{R \max}$ in N | Mean speed ¹⁾ In min ⁻¹ | | | |
|------------|-------------------|-----------------------------------------------|------|------|------|
| | F_A in N | 1500 | 3000 | 4500 | 6000 |
| CMP40S | $F_{R \max}$ | 330 | 260 | 225 | 205 |
| | F_A | 109 | 86 | 74 | 68 |
| CMP40M | $F_{R \max}$ | 350 | 280 | 245 | 220 |
| | F_A | 116 | 92 | 81 | 73 |
| CMP50S | $F_{R \max}$ | 475 | 315 | 250 | 200 |
| | F_A | 157 | 104 | 83 | 66 |
| CMP50M | $F_{R \max}$ | 510 | 355 | 275 | 220 |
| | F_A | 168 | 117 | 91 | 73 |
| CMP50L | $F_{R \max}$ | 550 | 370 | 280 | 225 |
| | F_A | 182 | 122 | 92 | 74 |
| CMP63S | $F_{R \max}$ | 680 | 460 | 360 | 290 |
| | F_A | 224 | 152 | 119 | 96 |
| CMP63M | $F_{R \max}$ | 750 | 500 | 380 | 300 |
| | F_A | 248 | 165 | 125 | 99 |
| CMP63L | $F_{R \max}$ | 830 | 560 | 445 | 360 |
| | F_A | 274 | 185 | 147 | 119 |

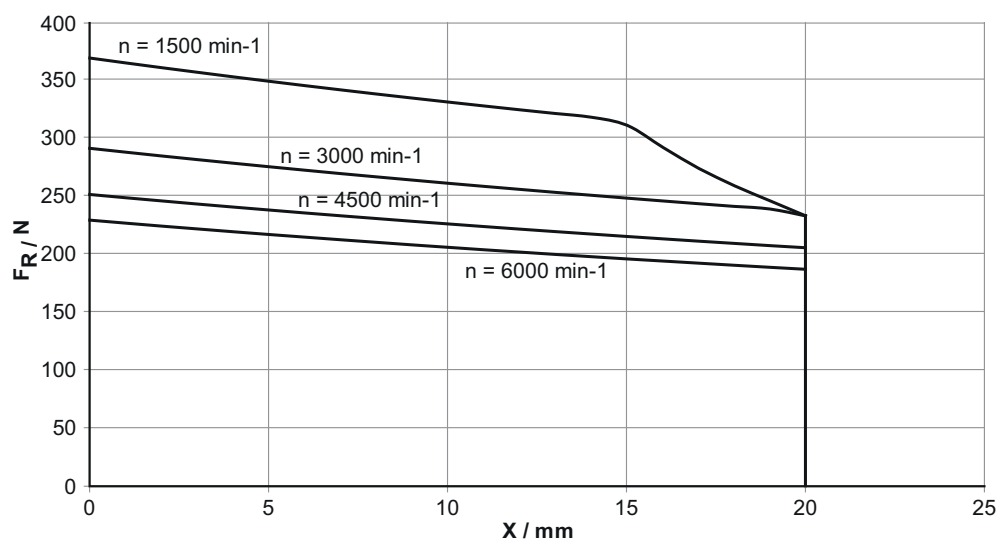
1) The mean speed must be determined, for example, from the travel diagram.

CMP.71 – CMP.100, CMP112

| Motor type | $F_{R \max}$ in N | Mean speed ¹⁾ in min ⁻¹ | | | |
|------------|-------------------|-----------------------------------------------|------|------|------|
| | F_A in N | 2000 | 3000 | 4500 | 6000 |
| CMP.71S | $F_{R \max}$ | 953 | 832 | 724 | 636 |
| | F_A | 318 | 277 | 240 | 212 |
| CMP.71M | $F_{R \max}$ | 1018 | 888 | 747 | 659 |
| | F_A | 340 | 296 | 250 | 219 |
| CMP.71L | $F_{R \max}$ | 1101 | 928 | 777 | 681 |
| | F_A | 367 | 309 | 258 | 227 |
| CMP.80S | $F_{R \max}$ | 1666 | 1454 | 1270 | 1132 |
| | F_A | 555 | 485 | 423 | 377 |
| CMP.80M | $F_{R \max}$ | 1782 | 1555 | 1325 | 1169 |
| | F_A | 594 | 518 | 442 | 390 |
| CMP.80L | $F_{R \max}$ | 1928 | 1635 | 1372 | 1208 |
| | F_A | 643 | 544 | 457 | 402 |
| CMP.100S | $F_{R \max}$ | 2708 | 2364 | 2064 | – |
| | F_A | 903 | 788 | 688 | – |
| CMP.100M | $F_{R \max}$ | 2882 | 2515 | 2195 | – |
| | F_A | 961 | 838 | 732 | – |
| CMP.100L | $F_{R \max}$ | 3099 | 2694 | 2278 | – |
| | F_A | 1033 | 897 | 759 | – |

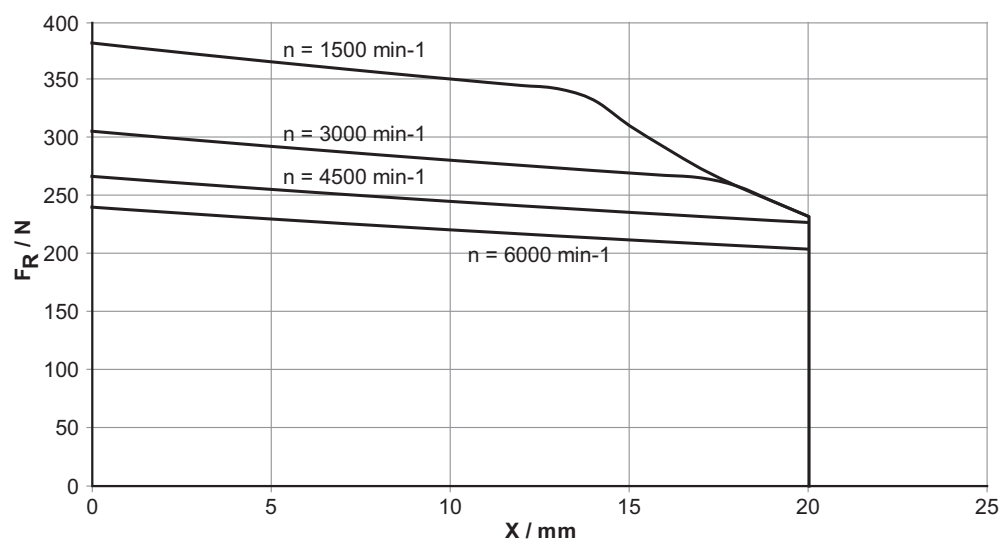
1) The mean speed must be determined, for example, from the travel diagram.

Permitted overhung load for CMP40S

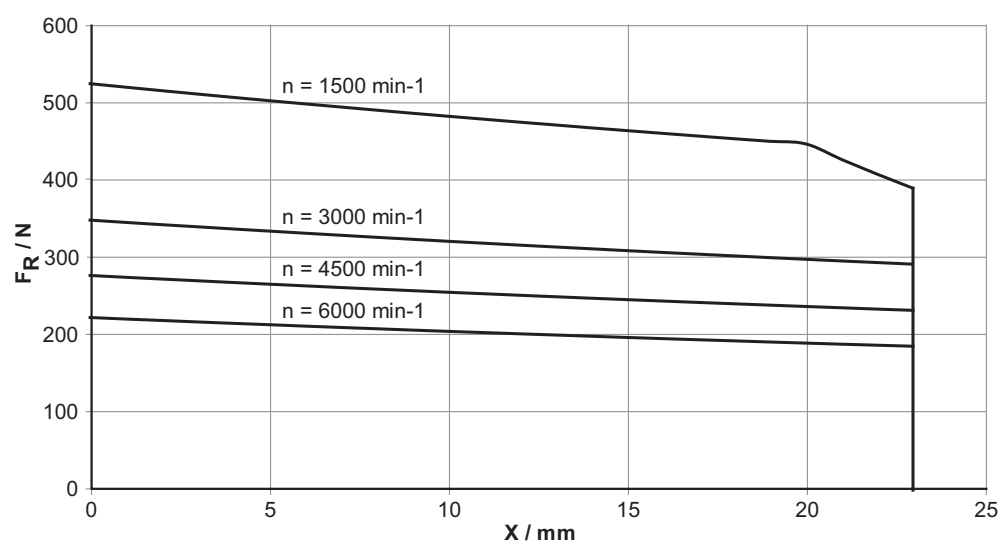


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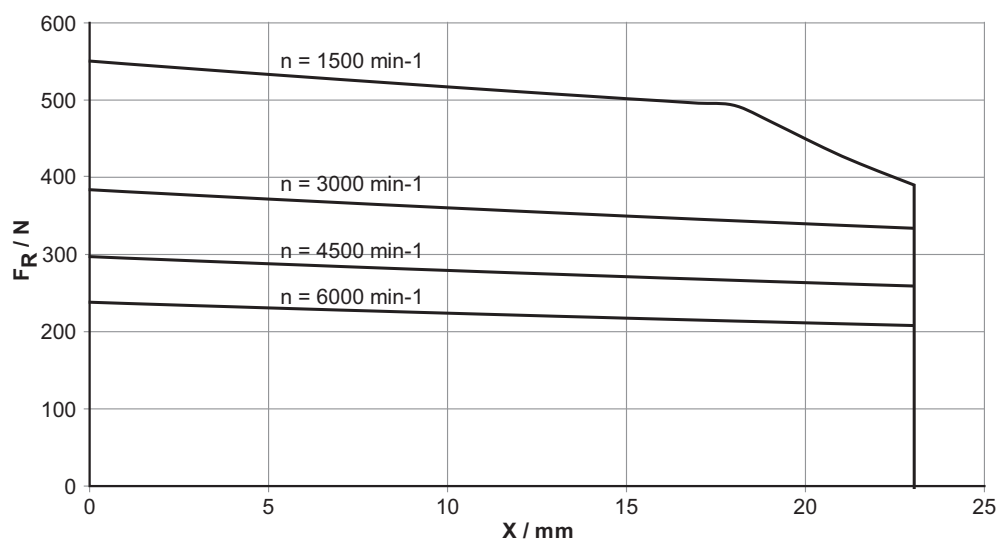
Permitted overhung load for CMP40M



Permitted overhung load for CMP50S

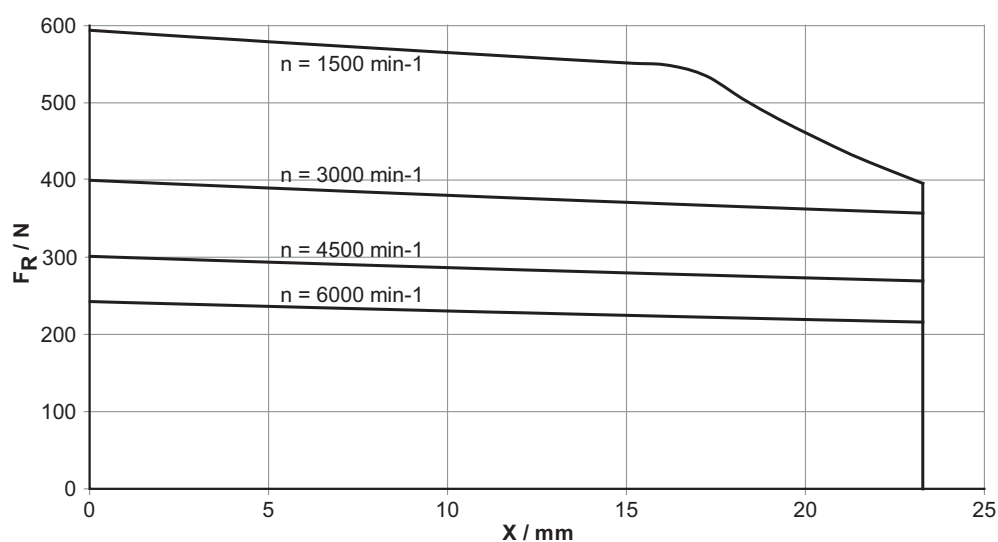


Permitted overhung load for CMP50M



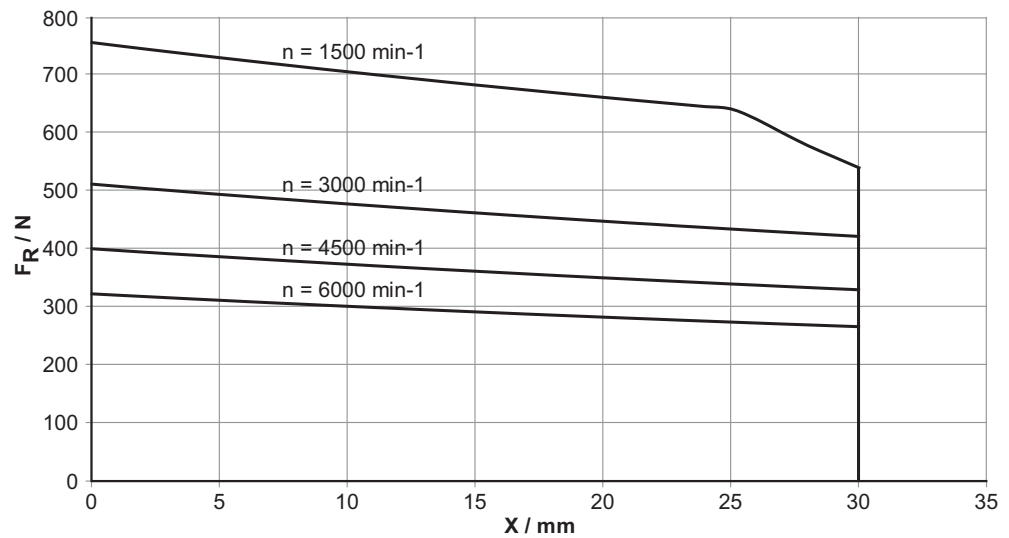
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Permitted overhung load for CMP50L



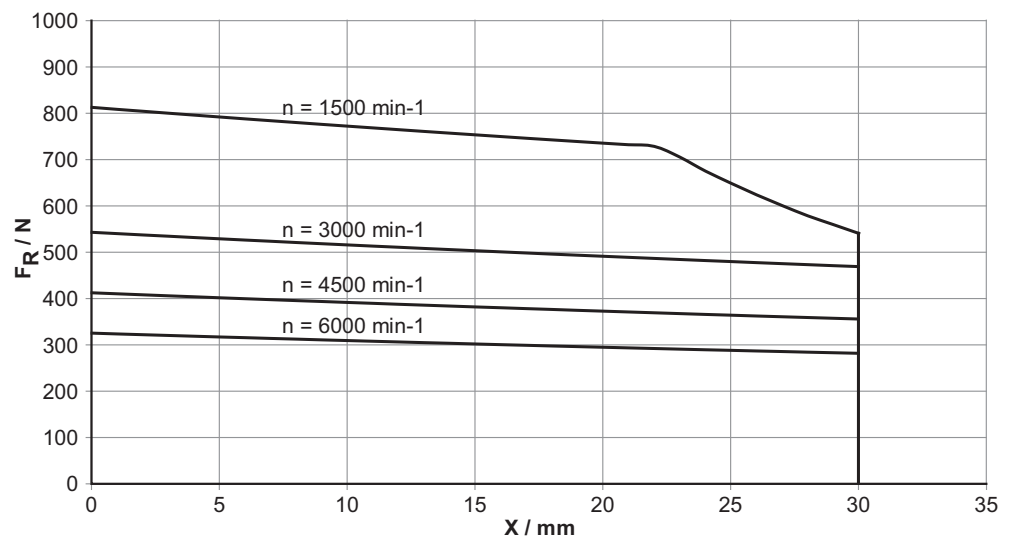
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Permitted overhung load for CMP63S



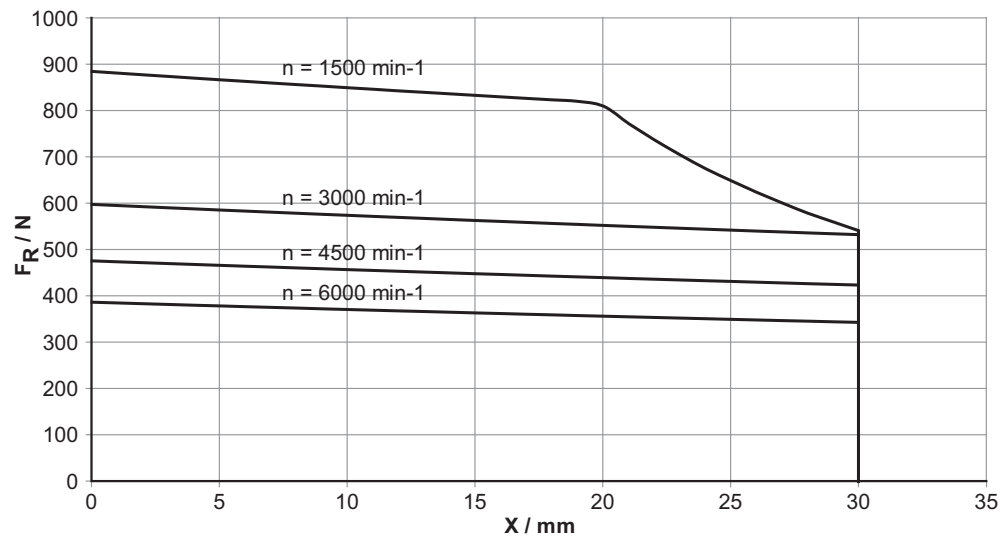
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Permitted overhung load for CMP63M



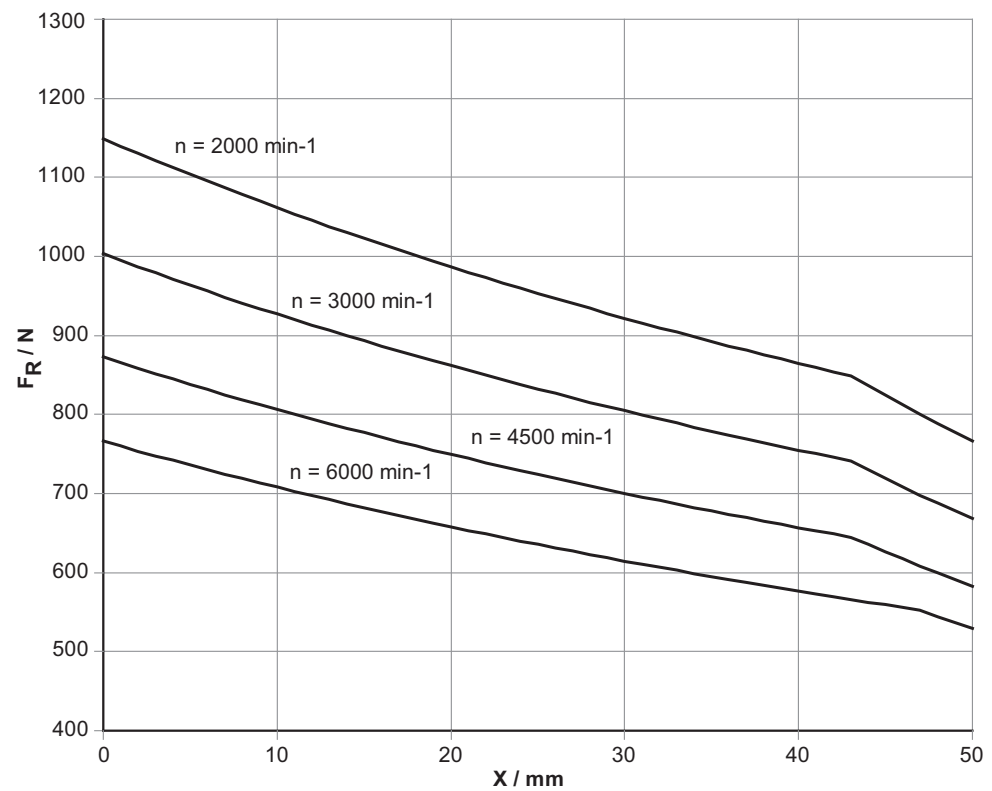
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Permitted overhung load for CMP63L



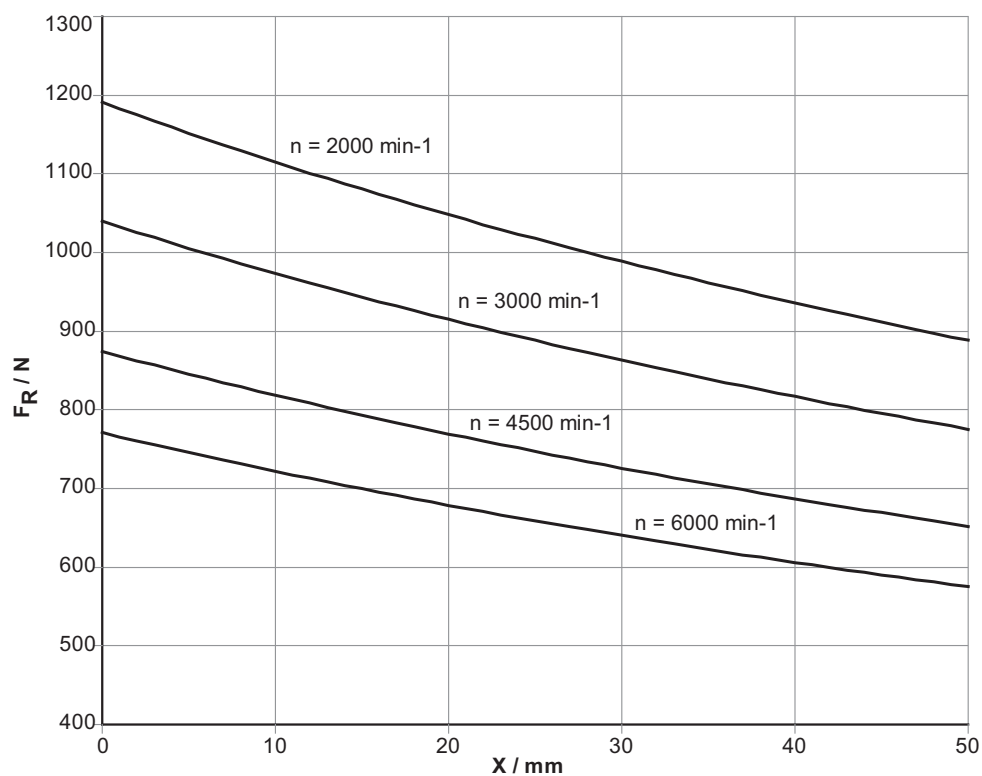
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Permitted overhung load for CMP71S



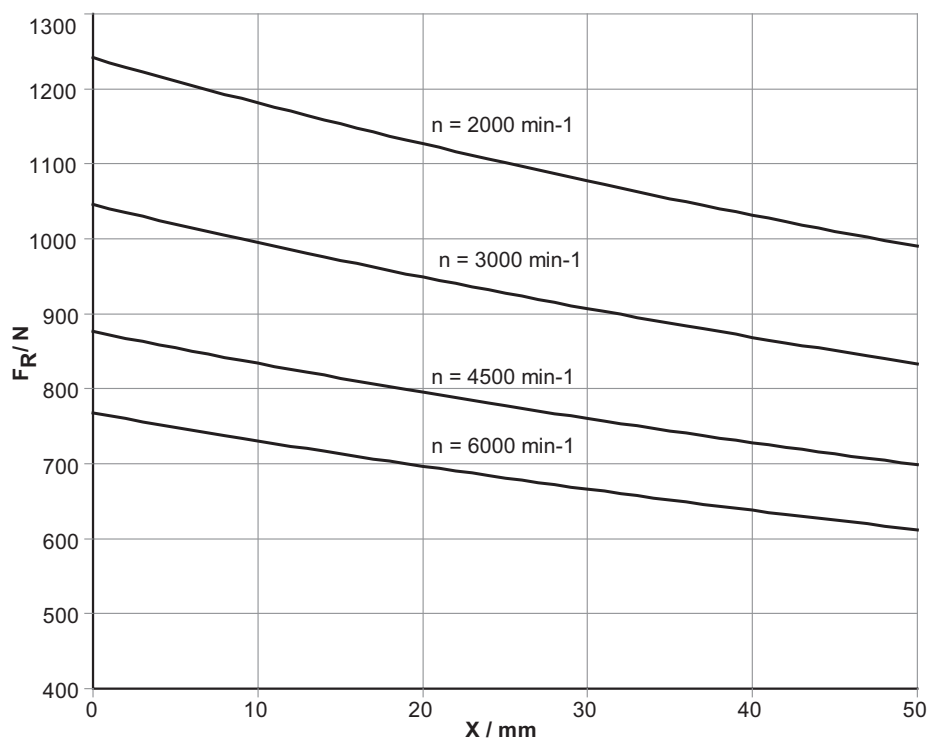
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Permitted overhung load for CMP71M



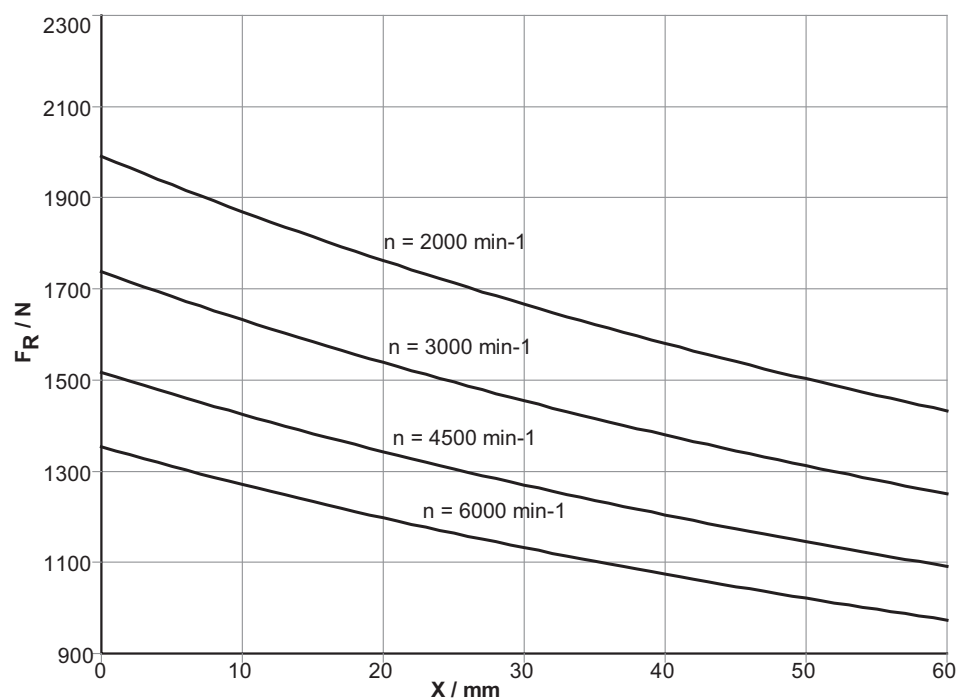
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Permitted overhung load for CMP71L



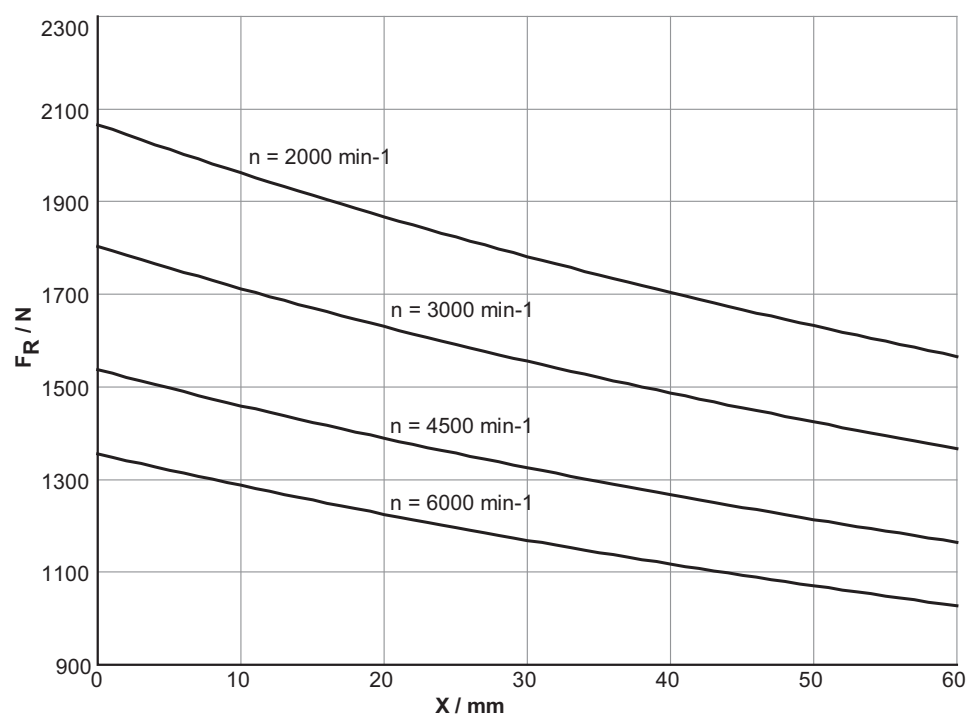
18014403305481739

Permitted overhung load for CMP80S



18014403305484427

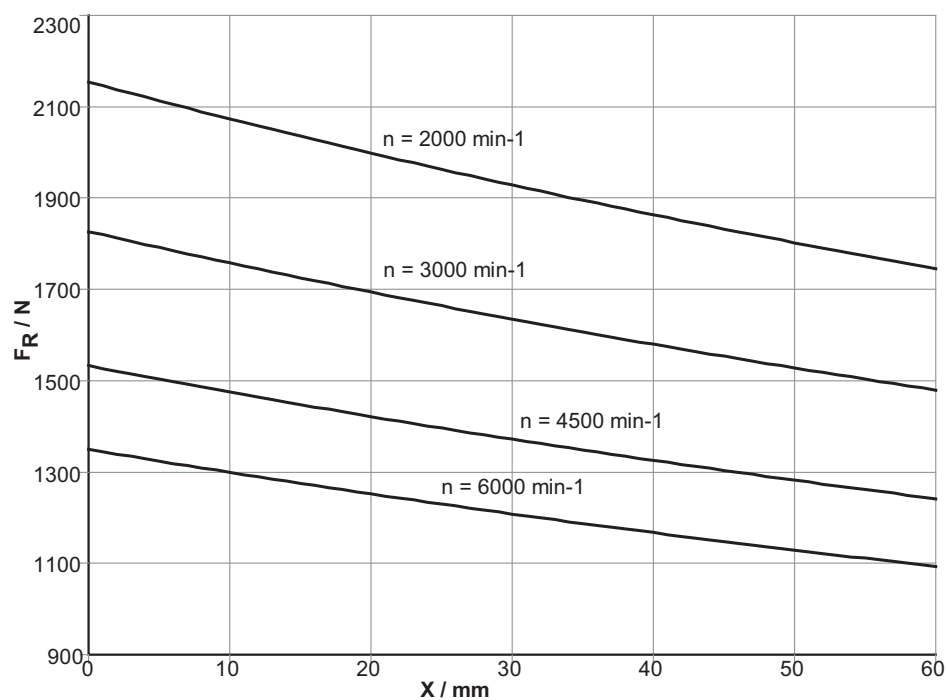
Permitted overhung load for CMP80M



18014403305487115

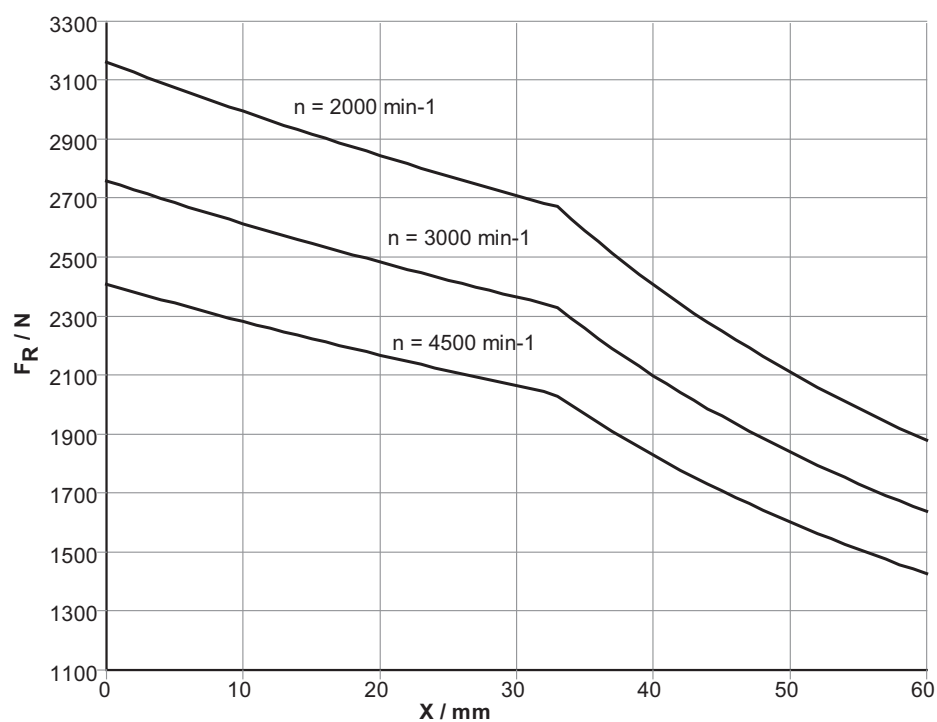
22864059/EN – 04/2020

Permitted overhung load for CMP80L



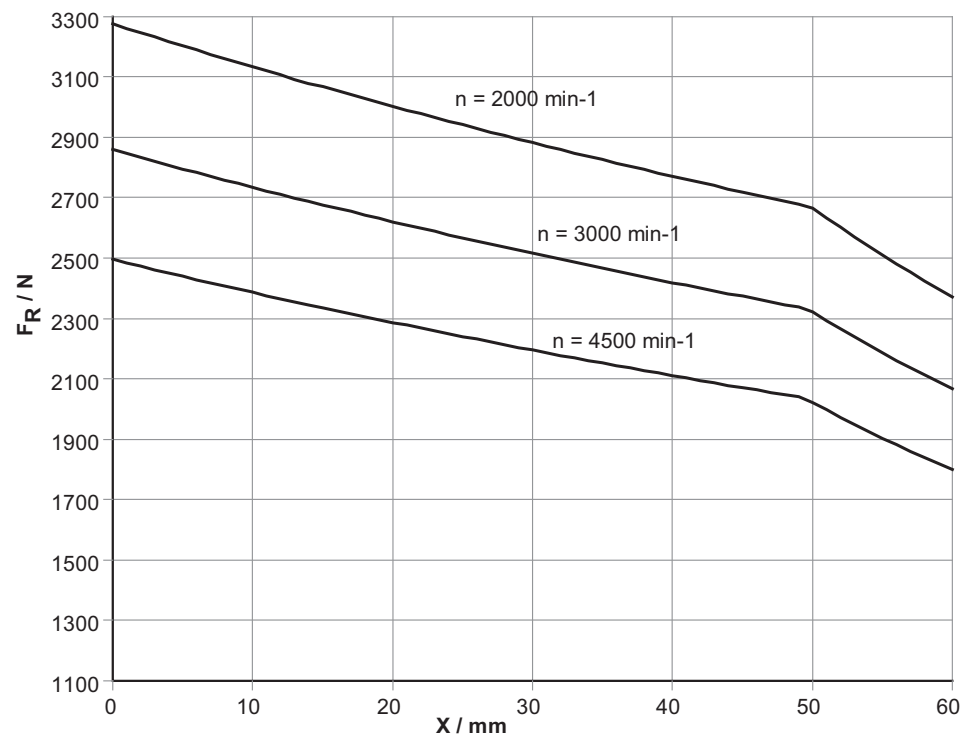
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Permitted overhung load for CMP100S



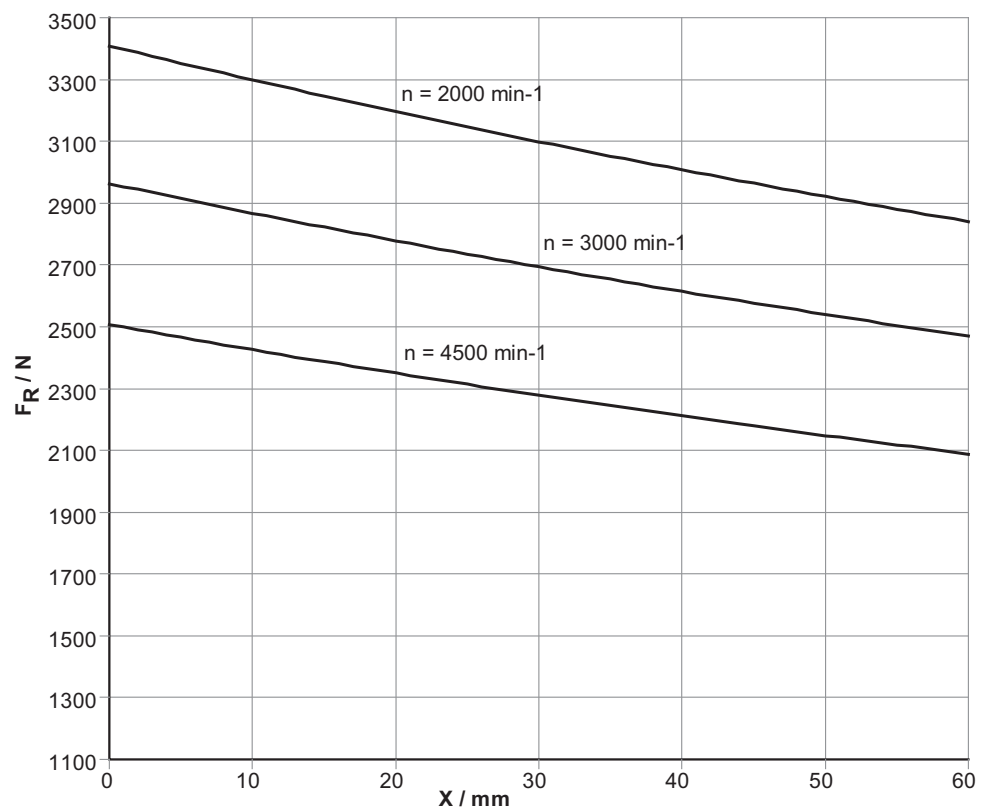
18014403305492491

Permitted overhung load for CMP100M



18014403305495179

Permitted overhung load for CMP100L



18014403305497867

22864059/EN – 04/2020

8.9 Used ball bearing types (standard)

The following table shows the used ball bearing types:

| Motor type | A-side bearing | B-side bearing |
|---------------------|----------------|----------------|
| CMP40 | 6002-2Z-C3 | 6001-2Z-C3 |
| CMP50 | 6004-2Z-C3 | 6001-2Z-C3 |
| CMP63 | 6005-2Z-C3 | 6003-2Z-C3 |
| CMP.71 | 6206-2Z-C3 | 6202-2Z-C3 |
| CMP.80 | 6307-2Z-C3 | 6304-2Z-C3 |
| CMP100 | 6309-2Z-C3 | 6304-2Z-C3 |
| CMPZ100, CMP100 /BP | 6309-2Z-C3 | 6205-2Z-C3 |

The grease fill and the bearing sealing can vary depending on the operational environment.

9 Malfunctions



⚠ WARNING

Risk of explosion due to multiple acknowledgments of a motor protection fault.

Severe or fatal injuries.

- First, determine and eliminate the cause of the fault before acknowledging a motor protection fault.
- Do not acknowledge a motor protection fault more than once.

NOTICE

Destruction of the motor due to multiple acknowledgements of a motor protection fault.

Damage to property, damage to the motor.

- First, determine the cause of the fault before acknowledging a motor protection fault.
- Do not acknowledge a motor protection fault more than once.

9.1 Motor malfunctions

| Fault | Possible cause | Measure |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Motor does not start up | Supply cable interrupted | Check connections, correct if necessary |
| | Fuse blown | Replace fuse |
| | Motor protection tripped | Check motor protection for correct setting, correct fault if necessary |
| | Servo inverter faulty, overloaded, incorrectly wired or incorrectly set | Check servo inverter, check wiring |
| Incorrect direction of rotation | Servomotor connected incorrectly | Check servo inverter, check setpoints |
| Servomotor hums and has high current consumption | Drive is blocked | Check drive |
| | Brake does not release | See chapter "Brake malfunctions". |
| | Encoder cable malfunction | Check encoder cable |
| | Servo inverter setting incorrect | Check servo inverter |
| Servomotor heats up excessively (measure temperature, significantly higher than 110 °C) | Overload | Measure power, use larger servomotor or reduce load if necessary, check travel profile |
| | Ambient temperature too high | Observe permitted temperature range |
| | Insufficient cooling | Correct cooling air supply or clear cooling air passages |
| | Nominal duty cycle (S1 to S10, EN 60034) exceeded, e.g. caused by excessive effective torque | Adjust the rated operating mode of the servomotor to the operating conditions; consult an expert to determine the correct drive if need be |
| | Servo inverter not optimized | Check servo inverter |

| Fault | Possible cause | Measure |
|------------------------|-----------------------------|-----------------------------------|
| Running noise on motor | Bearing damage | Contact SEW-EURODRIVE |
| | | Replace the servomotor |
| | Vibration of rotating parts | Rectify cause, possible imbalance |

9.2 Brake malfunctions

9.2.1 BK brake

| Fault | Possible cause | Measure |
|--------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Brake does not re-lease | Brake connected incorrectly | Check brake connection |
| | Max. permitted working air gap exceeded because brake lining worn down | Contact SEW-EURODRIVE |
| | | Motor/brake replacement by SEW-EURODRIVE |
| | Incorrect voltage at brake control unit, e.g. voltage drop in the supply cable > 10% | Check voltage at motor connection: Ensure correct connection voltage; check cable cross section |
| | Brake coil has interturn short circuit or a short circuit to frame | Contact SEW-EURODRIVE |
| | Brake lining worn | Contact SEW-EURODRIVE |
| | | Motor/brake replacement by SEW-EURODRIVE |
| Motor does not brake/stop. | Incorrect braking torque | Contact SEW-EURODRIVE |
| | | Motor/brake replacement by SEW-EURODRIVE |
| Noise/squeaking near the brake | Brake parameters set incorrectly in the inverter | Check brake release and application times |

9.2.2 BY brake

| Fault | Possible cause | Measure |
|-------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Brake does not re-lease | Brake control unit failed | Install a new brake control system, check internal resistance and insulation of brake coil, check switchgear |
| | Brake connected incorrectly | Check brake connection |
| | Max. permitted working air gap exceeded because brake lining worn down | Contact SEW-EURODRIVE |
| | Brake coil has interturn short circuit or a short circuit to frame | Check switchgear |
| | | Complete brake with brake control must be replaced. Contact SEW-EURODRIVE |
| | Brake lining worn | Contact SEW-EURODRIVE |

| Fault | Possible cause | Measure |
|--------------------------------|--------------------------------------------------|------------------------------------------------------------------|
| Motor does not brake/stop. | Brake spring replacement | Contact SEW-EURODRIVE |
| | Manual brake release device not set correctly | Set the setting nuts correctly |
| Brake is applied with time lag | Brake is switched on AC voltage side | Switch both, the DC and AC voltage sides; observe wiring diagram |
| Noise/squeaking near the brake | Brake parameters set incorrectly in the inverter | Check brake release and application times |

9.3 Malfunctions when operating with a frequency inverter



INFORMATION

The symptoms described in chapter "Motor malfunctions" may also occur when the motor is operated with a frequency inverter. Please refer to the inverter operating instructions for the meaning of the problems that occur and to find information about rectifying the problems.

Have the following information available if you require assistance from SEW-EURODRIVE Service:

- Complete nameplate data.
- Type and extent of the failure.
- Time the failure occurred and any accompanying circumstances.
- Assumed cause.

9.4 SEW-EURODRIVE service

If you are unable to rectify a fault, contact SEW-EURODRIVE service. For the addresses, refer to www.sew-eurodrive.com.

When contacting the SEW-EURODRIVE service, always specify the following information so that our service personnel can assist you more effectively:

- Information on the device type on the nameplate (e.g. type designation, serial number, part number, product key, purchase order number)
- Brief description of the application
- Nature of the fault
- Accompanying circumstances
- Any unusual events preceding the problem

9.5 Electronics Service by SEW-EURODRIVE

If you are unable to rectify a fault, contact SEW-EURODRIVE Service. For the addresses, refer to www.sew-eurodrive.com.

When contacting SEW-EURODRIVE Service, always specify the following information so that our service personnel can assist you more effectively:

- Information on the device type on the nameplate (e.g. type designation, serial number, part number, product key, purchase order number)
- Brief description of the application
- Fault message on the status display
- Nature of the fault
- Accompanying circumstances
- Any unusual events preceding the problem

10 Waste disposal

Dispose of the product and all parts separately in accordance with their material structure and the national regulations. Put the product through a recycling process or contact a specialist waste disposal company. If possible, divide the product into the following categories:

- Iron, steel or cast iron
- Stainless steel
- Magnets
- Aluminum
- Copper
- Electronic parts
- Plastics

The following materials are hazardous to health and the environment. These materials must be collected and disposed of separately.

- Oil and grease

Collect used oil and grease separately according to type. Ensure that the used oil is not mixed with solvent. Dispose of used oil and grease correctly.

- Screens
- Capacitors



Waste disposal according to WEEE Directive 2012/19/EU

This product and its accessories may fall within the scope of the country-specific application of the WEEE Directive. Dispose of the product and its accessories according to the national regulations of your country.

For further information, contact the responsible SEW-EURODRIVE branch or an authorized partner of SEW-EURODRIVE.

11 Appendix

11.1 Key project planning for brakes

The data of the application must be known for selecting a suitable brake. The abbreviations used for project planning are summarized in the following table:

| Designation | Meaning | Unit |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| η_G | Efficiency of the gear unit | |
| J_{ext} | External mass moment of inertia (in relation to motor shaft) | kgm^2 |
| J_{mot} | Mass moment of inertia of the motor | kgm^2 |
| $M_{1\text{max}}$ | Maximum dynamic braking torque in the event of emergency stop | Nm |
| $M_{1\text{m}, 100\text{ °C}}$ | Minimal averaged dynamic braking torque in the event of emergency stop at 100 °C | Nm |
| $M_{2, 20\text{ °C}}$ | Nominal torque for slipping brake lining carrier (relative speed between brake lining carrier and friction surface: 1 m/s) at 20 °C | Nm |
| $M_{4, 100\text{ °C}}$ | Minimum static braking torque (holding torque) at 100 °C | Nm |
| $M_{\text{aEmergStop}}$ | Maximum permitted emergency stop torque of the gear unit | Nm |
| i | Gear unit ratio | |
| M_L | Static load torque, in relation to motor shaft | Nm |
| n | Motor speed | min^{-1} |
| n_m | Motor speed, from application or travel diagram | min^{-1} |
| n_D | Increase of motor speed until brake application | min^{-1} |
| $n_{\text{m EmergStop}}$ | Real emergency stop speed relevant for check | min^{-1} |
| s_b | Stopping distance | mm |
| t_2 | Brake application time | s |
| t_B | Braking time | s |
| t_r | Response time or signal runtime | s |
| v | Speed | ms^{-1} |
| W_1 | Permitted braking work per braking operation | J |
| W_2 | Permitted braking work per hour | J |

11.2 Declaration of conformity

EU-Konformitätserklärung



Originaltext

901730512/DE

SEW-EURODRIVE GmbH & Co. KG**Ernst-Blickle-Straße 42, D-76646 Bruchsal**

erklärt in alleiniger Verantwortung die Konformität der folgenden Produkte

| | |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Motoren der Baureihe | CMP40... CMP50... CMP63... CMP71... CMP80... CMP100... CMPZ71... CMPZ80... CMPZ100... |
| gegebenenfalls in Verbindung mit Bremse Typ | BP.. BK.. BY.. |
| in der Ausführung | /II3D oder /II3GD |
| Kennzeichnung | II3D Ex tc IIIC T150°C Dc X II3D Ex tc IIIC T150°C Dc II3G Ex nA IIC T3 Gc X II3G Ex nA IIC T3 Gc |
| nach | |
| ATEX-Richtlinie | 2014/34/EU (L 96, 29.03.2014, 309-356) |
| RoHS-Richtlinie | 2011/65/EU (L 174, 01.07.2011, 88-110) |
| angewandte harmonisierte Normen: | EN 60079-0:2012/A11:2013 EN 60079-15:2010 EN 60079-31:2014 EN 60034-1:2010 EN 50581:2012 |

Bruchsal

11.07.2017

Ort

Datum

Johann Soder

Geschäftsführer Technik

a) b)

a) Bevollmächtigter zur Ausstellung dieser Erklärung im Namen des Herstellers

b) Bevollmächtigter zur Zusammenstellung der technischen Unterlagen mit identischer Adresse des Herstellers

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12 Address list

| Argentina | | | |
|--------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Assembly Sales | Buenos Aires | SEW EURODRIVE ARGENTINA S.A. Ruta Panamericana Km 37.5, Lote 35 (B1619IEA) Centro Industrial Garín Prov. de Buenos Aires | Tel. +54 3327 4572-84 Fax +54 3327 4572-21 http://www.sew-eurodrive.com.ar sewar@sew-eurodrive.com.ar |
| Australia | | | |
| Assembly Sales Service | Melbourne | SEW-EURODRIVE PTY. LTD. 27 Beverage Drive Tullamarine, Victoria 3043 | Tel. +61 3 9933-1000 Fax +61 3 9933-1003 http://www.sew-eurodrive.com.au enquires@sew-eurodrive.com.au |
| | Sydney | SEW-EURODRIVE PTY. LTD. 9, Sleigh Place, Wetherill Park New South Wales, 2164 | Tel. +61 2 9725-9900 Fax +61 2 9725-9905 enquires@sew-eurodrive.com.au |
| Austria | | | |
| Assembly Sales Service | Vienna | SEW-EURODRIVE Ges.m.b.H. Richard-Strauss-Straße 24 1230 Wien | Tel. +43 1 617 55 00-0 Fax +43 1 617 55 00-30 http://www.sew-eurodrive.at sew@sew-eurodrive.at |
| Bangladesh | | | |
| Sales | Bangladesh | SEW-EURODRIVE INDIA PRIVATE LIMITED 345 DIT Road East Rampura Dhaka-1219, Bangladesh | Tel. +88 01729 097309 salesdhaka@seweurodrivebangladesh.com |
| Belarus | | | |
| Sales | Minsk | Foreign unitary production enterprise SEW- EURODRIVE RybalkoStr. 26 220033 Minsk | Tel. +375 17 298 47 56 / 298 47 58 Fax +375 17 298 47 54 http://www.sew.by sales@sew.by |
| Belgium | | | |
| Assembly Sales Service | Brussels | SEW-EURODRIVE n.v./s.a. Researchpark Haasrode 1060 Evenementenlaan 7 3001 Leuven | Tel. +32 16 386-311 Fax +32 16 386-336 http://www.sew-eurodrive.be info@sew-eurodrive.be |
| Service Competence Center | Industrial Gears | SEW-EURODRIVE n.v./s.a. Rue du Parc Industriel, 31 6900 Marche-en-Famenne | Tel. +32 84 219-878 Fax +32 84 219-879 http://www.sew-eurodrive.be info@sew.be |
| Brazil | | | |
| Production Sales Service | São Paulo | SEW-EURODRIVE Brasil Ltda. Estrada Municipal José Rubim, 205 – Rodovia Santos Dumont Km 49 Indaiatuba – 13347-510 – SP | Tel. +55 19 3835-8000 sew@sew.com.br |
| Assembly Sales Service | Rio Claro | SEW-EURODRIVE Brasil Ltda. Rodovia Washington Luiz, Km 172 Condomínio Industrial Conpark Caixa Postal: 327 13501-600 – Rio Claro / SP | Tel. +55 19 3522-3100 Fax +55 19 3524-6653 montadora.rc@sew.com.br |
| | Joinville | SEW-EURODRIVE Brasil Ltda. Jvl / Ind Rua Dona Francisca, 12.346 – Pirabeiraba 89239-270 – Joinville / SC | Tel. +55 47 3027-6886 Fax +55 47 3027-6888 filial.sc@sew.com.br |
| Bulgaria | | | |
| Sales | Sofia | BEVER-DRIVE GmbH Bogdanovetz Str.1 1606 Sofia | Tel. +359 2 9151160 Fax +359 2 9151166 bever@bever.bg |

Cameroon

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Canada

| | | | |
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| | Montreal | SEW-EURODRIVE CO. OF CANADA LTD. 2001 Ch. de l'Aviation Dorval Quebec H9P 2X6 | Tel. +1 514 367-1124 Fax +1 514 367-3677 n.paradis@sew-eurodrive.ca |

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| | | | |
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| | Guangzhou | SEW-EURODRIVE (Guangzhou) Co., Ltd. No. 9, JunDa Road East Section of GETDD Guangzhou 510530 | Tel. +86 20 82267890 Fax +86 20 82267922 guangzhou@sew-eurodrive.cn |
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| | Wuhan | SEW-EURODRIVE (Wuhan) Co., Ltd. 10A-2, 6th Road No. 59, the 4th Quanli Road, WEDA 430056 Wuhan | Tel. +86 27 84478388 Fax +86 27 84478389 wuhan@sew-eurodrive.cn |
| | Xi'An | SEW-EURODRIVE (Xi'An) Co., Ltd. No. 12 Jinye 2nd Road Xi'An High-Technology Industrial Development Zone Xi'An 710065 | Tel. +86 29 68686262 Fax +86 29 68686311 xian@sew-eurodrive.cn |
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| Croatia | | | |
| Sales Service | Zagreb | KOMPEKS d. o. o. Zeleni dol 10 10 000 Zagreb | Tel. +385 1 4613-158 Fax +385 1 4613-158 kompeks@inet.hr |
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| Assembly Sales Service | Copenhagen | SEW-EURODRIVE A/S Geminivej 28-30 2670 Greve | Tel. +45 43 95 8500 Fax +45 43 9585-09 http://www.sew-eurodrive.dk sew@sew-eurodrive.dk |
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| Sales | Tallin | ALAS-KUUL AS Loomäe tee 1, Lehmja küla 75306 Rae vald Harjumaa | Tel. +372 6593230 Fax +372 6593231 http://www.alas-kuul.ee info@alas-kuul.ee |
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| Assembly Sales Service | Hollola | SEW-EURODRIVE OY Vesimäentie 4 15860 Hollola | Tel. +358 201 589-300 Fax +358 3 780-6211 http://www.sew-eurodrive.fi sew@sew.fi |
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| | Tornio | SEW-EURODRIVE Oy Lossirannankatu 5 95420 Tornio | Tel. +358 201 589 300 Fax +358 3 780 6211 http://www.sew-eurodrive.fi sew@sew.fi |
| Production Assembly | Karkkila | SEW Industrial Gears Oy Santasalonkatu 6, PL 8 03620 Karkkila, 03601 Karkkila | Tel. +358 201 589-300 Fax +358 201 589-310 http://www.sew-eurodrive.fi sew@sew.fi |
| France | | | |
| Production Sales Service | Hagenau | SEW USOCOME 48-54 route de Soufflenheim B. P. 20185 67506 Hagenau Cedex | Tel. +33 3 88 73 67 00 Fax +33 3 88 73 66 00 http://www.usocom.com sew@usocom.com |
| Production | Forbach | SEW USOCOME Zone industrielle Technopôle Forbach Sud B. P. 30269 57604 Forbach Cedex | Tel. +33 3 87 29 38 00 |
| | Brumath | SEW USOCOME 1 Rue de Bruxelles 67670 Mommenheim Cedex | Tel. +33 3 88 37 48 00 |

France

| | | | |
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| Assembly Sales Service | Bordeaux | SEW USOCOME Parc d'activités de Magellan 62 avenue de Magellan – B. P. 182 33607 Pessac Cedex | Tel. +33 5 57 26 39 00 Fax +33 5 57 26 39 09 |
| | Lyon | SEW USOCOME 75 rue Antoine Condorcet 38090 Vaulx-Milieu | Tel. +33 4 74 99 60 00 Fax +33 4 74 99 60 15 |
| | Nantes | SEW USOCOME Parc d'activités de la forêt 4 rue des Fontenelles 44140 Le Bignon | Tel. +33 2 40 78 42 00 Fax +33 2 40 78 42 20 |
| | Paris | SEW USOCOME Zone industrielle 2 rue Denis Papin 77390 Verneuil l'Étang | Tel. +33 1 64 42 40 80 Fax +33 1 64 42 40 88 |

Gabon

Representation: Cameroon

Germany

| | | | |
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| Production / Industrial Gears | Bruchsal | SEW-EURODRIVE GmbH & Co KG Christian-Pähr-Str. 10 76646 Bruchsal | Tel. +49 7251 75-0 Fax +49 7251 75-2970 |
| Production / Precision Gear Units | Bruchsal | SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 42 76646 Bruchsal | Tel. +49 7251 75-0 Fax +49 7251 75-1970 sew@sew-eurodrive.de |
| Production | Graben | SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 1 76676 Graben-Neudorf | Tel. +49 7251 75-0 Fax +49 7251-2970 |
| Service Competence Center | Mechanics / Mechatronics | SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 1 76676 Graben-Neudorf | Tel. +49 7251 75-1710 Fax +49 7251 75-1711 scc-mechanik@sew-eurodrive.de |
| | Electronics | SEW-EURODRIVE GmbH & Co KG Christian-Pähr-Straße 12 76646 Bruchsal | Tel. +49 7251 75-1780 Fax +49 7251 75-1769 scc-elektronik@sew-eurodrive.de |
| | MAXOLU- TION® Factory Automation | SEW-EURODRIVE GmbH & Co KG Eisenbahnstraße 11 76646 Bruchsal | Tel. +49 7251 75-0 Fax +49 7251 75-1970 sew@sew-eurodrive.de |
| Drive Technology Center | North | SEW-EURODRIVE GmbH & Co KG Alte Ricklinger Straße 43 30823 Garbsen (Hannover) | Tel. +49 5137 8798-30 Fax +49 5137 8798-55 dtc-nord@sew-eurodrive.de |
| | East | SEW-EURODRIVE GmbH & Co KG Dänkritzer Weg 1 08393 Meerane (Zwickau) | Tel. +49 3764 7606-0 Fax +49 3764 7606-20 dtc-ost@sew-eurodrive.de |
| | South | SEW-EURODRIVE GmbH & Co KG Domagkstraße 5 85551 Kirchheim (München) | Tel. +49 89 909551-21 Fax +49 89 909551-50 dtc-sued@sew-eurodrive.de |
| | West | SEW-EURODRIVE GmbH & Co KG Siemensstraße 1 40764 Langenfeld (Düsseldorf) | Tel. +49 2173 8507-10 Fax +49 2173 8507-50 dtc-west@sew-eurodrive.de |
| Drive Center | Berlin | SEW-EURODRIVE GmbH & Co KG Alexander-Meißner-Straße 44 12526 Berlin | Tel. +49 306331131-30 Fax +49 306331131-36 dc-berlin@sew-eurodrive.de |
| | Hamburg | SEW-EURODRIVE GmbH & Co KG Hasselbinnen 44 22869 Schenefeld | Tel. +49 40298109-60 Fax +49 40298109-70 dc-hamburg@sew-eurodrive.de |
| | Ludwigshafen | SEW-EURODRIVE GmbH & Co KG c/o BASF SE c/o BASF SE Gebäude W130 67056 Ludwigshafen | Tel. +49 7251 75 3759 Fax +49 7251 75 503759 dc-ludwigshafen@sew-eurodrive.de |

| Germany | | | |
|---------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Saarland | SEW-EURODRIVE GmbH & Co KG Gottlieb-Daimler-Straße 4 66773 Schwalbach Saar – Hülzweiler | Tel. +49 6831 48946 10 Fax +49 6831 48946 13 dc-saarland@sew-eurodrive.de |
| | Ulm | SEW-EURODRIVE GmbH & Co KG Dieselstraße 18 89160 Dornstadt | Tel. +49 7348 9885-0 Fax +49 7348 9885-90 dc-ulm@sew-eurodrive.de |
| | Würzburg | SEW-EURODRIVE GmbH & Co KG Nürnbergerstraße 118 97076 Würzburg-Lengfeld | Tel. +49 931 27886-60 Fax +49 931 27886-66 dc-wuerzburg@sew-eurodrive.de |
| Drive Service Hotline / 24 Hour Service | | | 0 800 SEWHELP 0 800 7394357 |
| Great Britain | | | |
| Assembly Sales Service | Normanton | SEW-EURODRIVE Ltd. DeVilliers Way Trident Park Normanton West Yorkshire WF6 1GX | Tel. +44 1924 893-855 Fax +44 1924 893-702 http://www.sew-eurodrive.co.uk info@sew-eurodrive.co.uk |
| Greece | | | |
| Sales | Athens | Christ. Boznos & Son S.A. 12, K. Mavromichali Street P.O. Box 80136 18545 Piraeus | Tel. +30 2 1042 251-34 Fax +30 2 1042 251-59 http://www.boznos.gr info@boznos.gr |
| Hungary | | | |
| Sales Service | Budapest | SEW-EURODRIVE Kft. Csillaghegyi út 13. 1037 Budapest | Tel. +36 1 437 06-58 Fax +36 1 437 06-50 http://www.sew-eurodrive.hu office@sew-eurodrive.hu |
| Iceland | | | |
| Sales | Reykjavik | Varma & Vélaverk ehf. Knarrarvogi 4 104 Reykjavik | Tel. +354 585 1070 Fax +354 585)1071 https://vov.is/ vov@vov.is |
| India | | | |
| Registered Office Assembly Sales Service | Vadodara | SEW-EURODRIVE India Private Limited Plot No. 4, GIDC POR Ramangamdi • Vadodara - 391 243 Gujarat | Tel. +91 265 3045200 Fax +91 265 3045300 http://www.seweurodriveindia.com salesvadodara@seweurodriveindia.com |
| Assembly Sales Service | Chennai | SEW-EURODRIVE India Private Limited Plot No. K3/1, Sipcot Industrial Park Phase II Mambakkam Village Sriperumbudur - 602105 Kancheepuram Dist, Tamil Nadu | Tel. +91 44 37188888 Fax +91 44 37188811 saleschennai@seweurodriveindia.com |
| | Pune | SEW-EURODRIVE India Private Limited Plant: Plot No. D236/1, Chakan Industrial Area Phase- II, Warale, Tal- Khed, Pune-410501, Maharashtra | Tel. +91 21 35 628700 Fax +91 21 35 628715 salespune@seweurodriveindia.com |
| Sales Service | Gurgaon | SEW-EURODRIVE India Private Limited Drive Center Gurugram Plot no 395, Phase-IV, UdyogVihar Gurugram , 122016 Haryana | Tel. +91 99588 78855 salesgurgaon@seweurodriveindia.com |
| Indonesia | | | |
| Sales | Medan | PT. Serumpun Indah Lestari Jl.Pulau Solor no. 8, Kawasan Industri Medan II Medan 20252 | Tel. +62 61 687 1221 Fax +62 61 6871429 / +62 61 6871458 / +62 61 30008041 sil@serumpunindah.com serumpunindah@yahoo.com http://www.serumpunindah.com |

| Indonesia | | | |
|------------------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| | Jakarta | PT. Cahaya Sukses Abadi Komplek Rukan Puri Mutiara Blok A no 99, Sunter Jakarta 14350 | Tel. +62 21 65310599 Fax +62 21 65310600 csajkt@cbn.net.id |
| | Jakarta | PT. Agrindo Putra Lestari JL.Pantai Indah Selatan, Komplek Sentra In- dustri Terpadu, Pantai indah Kapuk Tahap III, Blok E No. 27 Jakarta 14470 | Tel. +62 21 2921-8899 Fax +62 21 2921-8988 aplindo@indosat.net.id http://www.aplindo.com |
| | Surabaya | PT. TRIAGRI JAYA ABADI Jl. Sukosemolo No. 63, Galaxi Bumi Permai G6 No. 11 Surabaya 60111 | Tel. +62 31 5990128 Fax +62 31 5962666 sales@triagri.co.id http://www.triagri.co.id |
| | Surabaya | CV. Multi Mas Jl. Raden Saleh 43A Kav. 18 Surabaya 60174 | Tel. +62 31 5458589 Fax +62 31 5317220 sianhwa@sby.centrin.net.id http://www.cvmultimas.com |
| Ireland | | | |
| Sales Service | Dublin | Alpert Engineering Ltd. 48 Moyle Road Dublin Industrial Estate Glasnevin, Dublin 11 | Tel. +353 1 830-6277 Fax +353 1 830-6458 http://www.alpert.ie info@alpert.ie |
| Israel | | | |
| Sales | Tel Aviv | Liraz Handasa Ltd. Ahofer Str 34B / 228 58858 Holon | Tel. +972 3 5599511 Fax +972 3 5599512 http://www.liraz-handasa.co.il office@liraz-handasa.co.il |
| Italy | | | |
| Assembly Sales Service | Milan | SEW-EURODRIVE S.a.s. di SEW S.r.l. & Co. Via Bernini,12 20033 Solaro (Milano) | Tel. +39 02 96 980229 Fax +39 02 96 980 999 http://www.sew-eurodrive.it milano@sew-eurodrive.it |
| Ivory Coast | | | |
| Sales | Abidjan | SEW-EURODRIVE SARL Ivory Coast Rue des Pêcheurs, Zone 3 26 BP 916 Abidjan 26 | Tel. +225 21 21 81 05 Fax +225 21 25 30 47 info@sew-eurodrive.ci http://www.sew-eurodrive.ci |
| Japan | | | |
| Assembly Sales Service | Iwata | SEW-EURODRIVE JAPAN CO., LTD 250-1, Shimoman-no, Iwata Shizuoka 438-0818 | Tel. +81 538 373811 Fax +81 538 373814 http://www.sew-eurodrive.co.jp sewjapan@sew-eurodrive.co.jp |
| Kazakhstan | | | |
| Sales Service | Almaty | SEW-EURODRIVE LLP 291-291A, Tole bi street 050031, Almaty | Tel. +7 (727) 350 5156 Fax +7 (727) 350 5156 http://www.sew-eurodrive.kz sew@sew-eurodrive.kz |
| | Tashkent | Representative Office SEW-EURODRIVE Representative office in Uzbekistan 95A Amir Temur ave, office 401/3 100084 Tashkent | Tel. +998 97 134 01 99 http://www.sew-eurodrive.uz sew@sew-eurodrive.uz |
| | Ulaanbaatar | IM Trading LLC Olympic street 28B/3 Sukhbaatar district, Ulaanbaatar 14230, MN | Tel. +976-77109997 Fax +976-77109997 imt@imt.mn |
| Latvia | | | |
| Sales | Riga | SIA Alas-Kuul Katlakalna 11C 1073 Riga | Tel. +371 6 7139253 Fax +371 6 7139386 http://www.alas-kuul.lv info@alas-kuul.com |

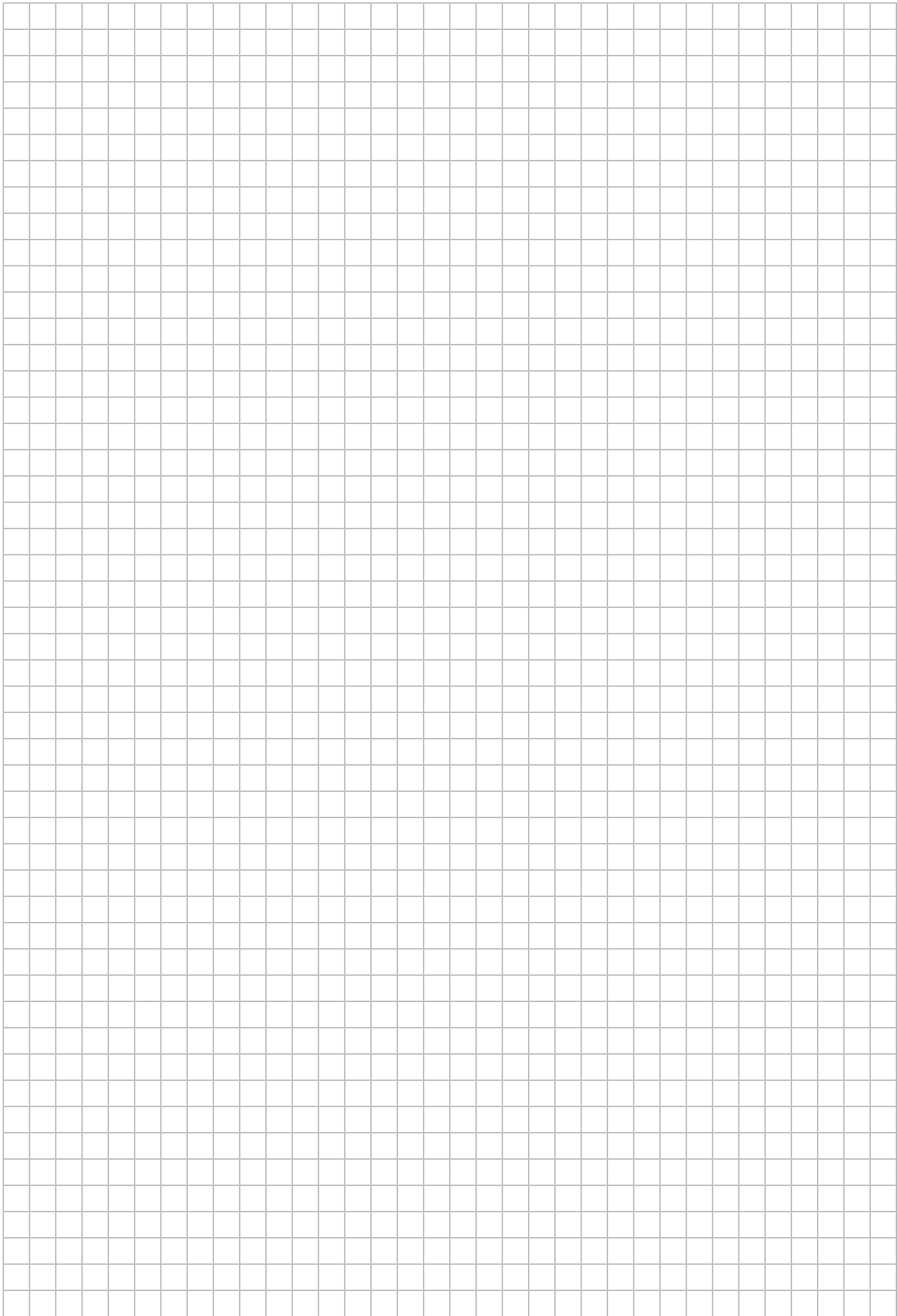
| Lebanon | | | |
|--------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sales (Lebanon) | Beirut | Gabriel Acar & Fils sarl B. P. 80484 Bourj Hammoud, Beirut | Tel. +961 1 510 532 Fax +961 1 494 971 ssacar@inco.com.lb |
| Sales (Jordan, Kuwait , Beirut Saudi Arabia, Syria) | | Middle East Drives S.A.L. (offshore) Sin El Fil. B. P. 55-378 Beirut | Tel. +961 1 494 786 Fax +961 1 494 971 http://www.medrives.com info@medrives.com |
| Lithuania | | | |
| Sales | Alytus | UAB Irseva Statybininku 106C 63431 Alytus | Tel. +370 315 79204 Fax +370 315 56175 http://www.irseva.lt irmantas@irseva.lt |
| Luxembourg | | | |
| Representation: Belgium | | | |
| Macedonia | | | |
| Sales | Skopje | Boznos DOOEL Dime Anicin 2A/7A 1000 Skopje | Tel. +389 23256553 Fax +389 23256554 http://www.boznos.mk |
| Malaysia | | | |
| Assembly Sales Service | Johor | SEW-EURODRIVE SDN BHD No. 95, Jalan Seroja 39, Taman Johor Jaya 81000 Johor Bahru, Johor West Malaysia | Tel. +60 7 3549409 Fax +60 7 3541404 sales@sew-eurodrive.com.my |
| Mexico | | | |
| Assembly Sales Service | Quéretaro | SEW-EURODRIVE MEXICO S.A. de C.V. SEM-981118-M93 Tequisquiapan No. 102 Parque Industrial Quéretaro C.P. 76220 Querétaro, México | Tel. +52 442 1030-300 Fax +52 442 1030-301 http://www.sew-eurodrive.com.mx scmexico@seweurodrive.com.mx |
| Sales Service | Puebla | SEW-EURODRIVE MEXICO S.A. de C.V. Calzada Zavaleta No. 3922 Piso 2 Local 6 Col. Santa Cruz Buenavista C.P. 72154 Puebla, México | Tel. +52 (222) 221 248 http://www.sew-eurodrive.com.mx scmexico@seweurodrive.com.mx |
| Mongolia | | | |
| Technical Office | Ulaanbaatar | IM Trading LLC Olympic street 28B/3 Sukhbaatar district, Ulaanbaatar 14230, MN | Tel. +976-77109997 Tel. +976-99070395 Fax +976-77109997 http://imt.mn/ imt@imt.mn |
| Morocco | | | |
| Sales Service Assembly | Bouskoura | SEW-EURODRIVE Morocco SARL Parc Industriel CFCIM, Lot. 55/59 27182 Bouskoura Grand Casablanca | Tel. +212 522 88 85 00 Fax +212 522 88 84 50 http://www.sew-eurodrive.ma sew@sew-eurodrive.ma |
| Namibia | | | |
| Sales | Swakopmund | DB MINING & INDUSTRIAL SUPPLIES CC Einstein Street Strauss Industrial Park Unit1 Swakopmund | Tel. +264 64 462 738 Fax +264 64 462 734 anton@dbminingnam.com |
| Netherlands | | | |
| Assembly Sales Service | Rotterdam | SEW-EURODRIVE B.V. Industrieweg 175 3044 AS Rotterdam Postbus 10085 3004 AB Rotterdam | Tel. +31 10 4463-700 Fax +31 10 4155-552 Service: 0800-SEWHELP http://www.sew-eurodrive.nl info@sew-eurodrive.nl |

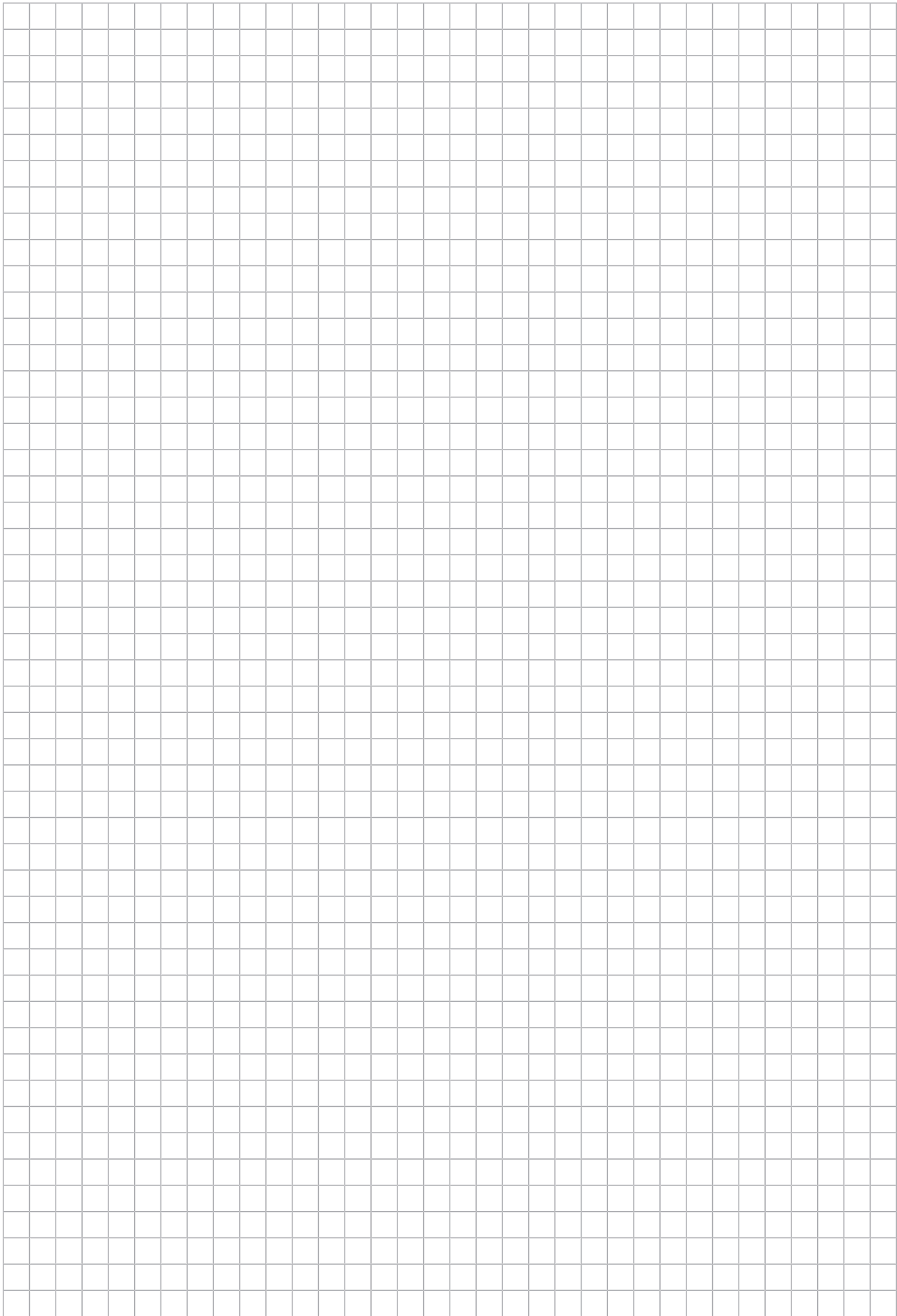
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|------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| New Zealand | | | |
| Assembly Sales Service | Auckland | SEW-EURODRIVE NEW ZEALAND LTD. P.O. Box 58-428 82 Greenmount drive East Tamaki Auckland | Tel. +64 9 2745627 Fax +64 9 2740165 http://www.sew-eurodrive.co.nz sales@sew-eurodrive.co.nz |
| | Christchurch | SEW-EURODRIVE NEW ZEALAND LTD. 30 Lodestar Avenue, Wigram Christchurch | Tel. +64 3 384-6251 Fax +64 3 384-6455 sales@sew-eurodrive.co.nz |
| Nigeria | | | |
| Sales | Lagos | Greenpeg Nig. Ltd Plot 296A, Adeyemo Akapo Str. Omole GRA Ikeja Lagos-Nigeria | Tel. +234-701-821-9200-1 http://www.greenpeg ltd.com sales@greenpeg ltd.com |
| Norway | | | |
| Assembly Sales Service | Moss | SEW-EURODRIVE A/S Solgaard skog 71 1599 Moss | Tel. +47 69 24 10 20 Fax +47 69 24 10 40 http://www.sew-eurodrive.no sew@sew-eurodrive.no |
| Pakistan | | | |
| Sales | Karachi | Industrial Power Drives Al-Fatah Chamber A/3, 1st Floor Central Com- mercial Area, Sultan Ahmed Shah Road, Block 7/8, Karachi | Tel. +92 21 452 9369 Fax +92-21-454 7365 seweurodrive@cyber.net.pk |
| Paraguay | | | |
| Sales | Fernando de la Mora | SEW-EURODRIVE PARAGUAY S.R.L De la Victoria 112, Esquina nueva Asunción Departamento Central Fernando de la Mora, Barrio Bernardino | Tel. +595 991 519695 Fax +595 21 3285539 sewpy@sew-eurodrive.com.py |
| Peru | | | |
| Assembly Sales Service | Lima | SEW EURODRIVE DEL PERU S.A.C. Los Calderos, 120-124 Urbanizacion Industrial Vulcano, ATE, Lima | Tel. +51 1 3495280 Fax +51 1 3493002 http://www.sew-eurodrive.com.pe sewperu@sew-eurodrive.com.pe |
| Philippines | | | |
| Sales | Makati | P.T. Cerna Corporation 4137 Ponte St., Brgy. Sta. Cruz Makati City 1205 | Tel. +63 2 519 6214 Fax +63 2 890 2802 mech_drive_sys@ptcerna.com http://www.ptcerna.com |
| Poland | | | |
| Assembly Sales Service | Łódź | SEW-EURODRIVE Polska Sp.z.o.o. ul. Techniczna 5 92-518 Łódź | Tel. +48 42 293 00 00 Fax +48 42 293 00 49 http://www.sew-eurodrive.pl sew@sew-eurodrive.pl |
| | Service | Tel. +48 42 293 0030 Fax +48 42 293 0043 | 24 Hour Service Tel. +48 602 739 739 (+48 602 SEW SEW) serwis@sew-eurodrive.pl |
| Portugal | | | |
| Assembly Sales Service | Coimbra | SEW-EURODRIVE, LDA. Av. da Fonte Nova, n.º 86 3050-379 Mealhada | Tel. +351 231 20 9670 Fax +351 231 20 3685 http://www.sew-eurodrive.pt infosew@sew-eurodrive.pt |
| Romania | | | |
| Sales Service | Bucharest | Sialco Trading SRL str. Brazilia nr. 36 011783 Bucuresti | Tel. +40 21 230-1328 Fax +40 21 230-7170 http://www.sialco.ro sialco@sialco.ro |

| Russia | | | |
|------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Assembly Sales Service | St. Petersburg | ЗАО «СЕВ-ЕВРОДРАЙФ» 188660, Russia, Leningrad Region, Vse- volozhsky District, Korabselki, Aleksandra Nevskogo str. building 4, block 1 P.O. Box 36 195220 St. Petersburg | Tel. +7 812 3332522 / +7 812 5357142 Fax +7 812 3332523 http://www.sew-eurodrive.ru sew@sew-eurodrive.ru |
| Senegal | | | |
| Sales | Dakar | SENEMECA Mécanique Générale Km 8, Route de Rufisque B.P. 3251, Dakar | Tel. +221 338 494 770 Fax +221 338 494 771 http://www.senemeca.com senemeca@senemeca.sn |
| Serbia | | | |
| Sales | Belgrade | DIPAR d.o.o. Ustanicka 128a PC Košum, IV floor 11000 Beograd | Tel. +381 11 347 3244 / +381 11 288 0393 Fax +381 11 347 1337 office@dipar.rs |
| Singapore | | | |
| Assembly Sales Service | Singapore | SEW-EURODRIVE PTE. LTD. No 9, Tuas Drive 2 Jurong Industrial Estate Singapore 638644 | Tel. +65 68621701 Fax +65 68612827 http://www.sew-eurodrive.com.sg sewsingapore@sew-eurodrive.com |
| Slovakia | | | |
| Sales | Bernolákovo | SEW-Eurodrive SK s.r.o. Priemyselná ulica 6267/7 900 27 Bernolákovo | Tel. +421 2 33595 202, 217, 201 Fax +421 2 33595 200 http://www.sew-eurodrive.sk sew@sew-eurodrive.sk |
| Slovenia | | | |
| Sales Service | Celje | Pakman - Pogonska Tehnika d.o.o. Ul. XIV. divizije 14 3000 Celje | Tel. +386 3 490 83-20 Fax +386 3 490 83-21 pakman@siol.net |
| South Africa | | | |
| Assembly Sales Service | Johannesburg | SEW-EURODRIVE (PROPRIETARY) LIMITED Eurodrive House Cnr. Adcock Ingram and Aerodrome Roads Aeroton Ext. 2 Johannesburg 2013 P.O.Box 90004 Bertsham 2013 | Tel. +27 11 248-7000 Fax +27 11 248-7289 http://www.sew.co.za info@sew.co.za |
| | Cape Town | SEW-EURODRIVE (PROPRIETARY) LIMITED Rainbow Park Cnr. Racecourse & Omuramba Road Montague Gardens Cape Town P.O.Box 36556 Chempet 7442 | Tel. +27 21 552-9820 Fax +27 21 552-9830 Telex 576 062 bggriffiths@sew.co.za |
| | Durban | SEW-EURODRIVE (PROPRIETARY) LIMITED 48 Prospecton Road Isipingo Durban P.O. Box 10433, Ashwood 3605 | Tel. +27 31 902 3815 Fax +27 31 902 3826 cdejager@sew.co.za |
| | Nelspruit | SEW-EURODRIVE (PROPRIETARY) LIMITED 7 Christie Crescent Vintonia P.O.Box 1942 Nelspruit 1200 | Tel. +27 13 752-8007 Fax +27 13 752-8008 robermeyer@sew.co.za |
| | | | |
| South Korea | | | |
| Assembly Sales Service | Ansan | SEW-EURODRIVE Korea Co., Ltd. 7, Dangjaengi-ro, Danwon-gu, Ansan-si, Gyeonggi-do, Zip 425-839 | Tel. +82 31 492-8051 Fax +82 31 492-8056 http://www.sew-eurodrive.kr master.korea@sew-eurodrive.com |

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|------------------------------|------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| South Korea | | | |
| | Busan | SEW-EURODRIVE Korea Co., Ltd. 28, Noksansandan 262-ro 50beon-gil, Gangseo-gu, Busan, Zip 618-820 | Tel. +82 51 832-0204 Fax +82 51 832-0230 |
| Assembly Sales Service | Siheung | SEW-EURODRIVE Korea Co., Ltd. 35, Emtibeui 26-ro 58beon-gil, Siheung-si, Gyeonggi-do | http://www.sew-eurodrive.kr |
| Spain | | | |
| Assembly Sales Service | Bilbao | SEW-EURODRIVE ESPAÑA, S.L. Parque Tecnológico, Edificio, 302 48170 Zamudio (Vizcaya) | Tel. +34 94 43184-70 http://www.sew-eurodrive.es sew.spain@sew-eurodrive.es |
| Sri Lanka | | | |
| Sales | Colombo | SM International (Pte) Ltd 254, Galle Raod Colombo 4, Sri Lanka | Tel. +94 1 2584887 Fax +94 1 2582981 |
| Swaziland | | | |
| Sales | Manzini | C G Trading Co. (Pty) Ltd Simunye street Matsapha, Manzini | Tel. +268 7602 0790 Fax +268 2 518 5033 charles@cgtrading.co.sz www.cgtrading.co.sz |
| Sweden | | | |
| Assembly Sales Service | Jönköping | SEW-EURODRIVE AB Gnejsvägen 6-8 553 03 Jönköping Box 3100 S-550 03 Jönköping | Tel. +46 36 34 42 00 Fax +46 36 34 42 80 http://www.sew-eurodrive.se jonkoping@sew.se |
| Switzerland | | | |
| Assembly Sales Service | Basel | Alfred Imhof A.G. Jurastrasse 10 4142 Münchenstein bei Basel | Tel. +41 61 417 1717 Fax +41 61 417 1700 http://www.imhof-sew.ch info@imhof-sew.ch |
| Taiwan | | | |
| Sales | Taipei | Ting Shou Trading Co., Ltd. 6F-3, No. 267, Sec. 2 Tung Huw S. Road Taipei | Tel. +886 2 27383535 Fax +886 2 27368268 Telex 27 245 sewtwn@ms63.hinet.net http://www.tingshou.com.tw |
| | Nan Tou | Ting Shou Trading Co., Ltd. No. 55 Kung Yeh N. Road Industrial District Nan Tou 540 | Tel. +886 49 255353 Fax +886 49 257878 sewtwn@ms63.hinet.net http://www.tingshou.com.tw |
| Tanzania | | | |
| Sales | Daressalam | SEW-EURODRIVE PTY LIMITED TANZANIA Plot 52, Regent Estate PO Box 106274 Dar Es Salaam | Tel. +255 0 22 277 5780 Fax +255 0 22 277 5788 http://www.sew-eurodrive.co.tz info@sew.co.tz |
| Thailand | | | |
| Assembly Sales Service | Chonburi | SEW-EURODRIVE (Thailand) Ltd. 700/456, Moo.7, Donhuaroh Muang Chonburi 20000 | Tel. +66 38 454281 Fax +66 38 454288 sewthailand@sew-eurodrive.com |
| Tunisia | | | |
| Sales | Tunis | T. M.S. Technic Marketing Service Zone Industrielle Mghira 2 Lot No. 39 2082 Fouchana | Tel. +216 79 40 88 77 Fax +216 79 40 88 66 http://www.tms.com.tn tms@tms.com.tn |

| Turkey | | | |
|-------------------------------------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Assembly Sales Service | Kocaeli-Gebze | SEW-EURODRIVE Ana Merkez Gebze Organize Sanayi Böl. 400 Sok No. 401 41480 Gebze Kocaeli | Tel. +90 262 9991000 04 Fax +90 262 9991009 http://www.sew-eurodrive.com.tr sew@sew-eurodrive.com.tr |
| Ukraine | | | |
| Assembly Sales Service | Dnipropetrovsk | SEW-EURODRIVE, LLC Robochya str., bld. 23-B, office 409 49008 Dnipro | Tel. +380 56 370 3211 Fax +380 56 372 2078 http://www.sew-eurodrive.ua sew@sew-eurodrive.ua |
| United Arab Emirates | | | |
| Drive Technology Center | Dubai | SEW-EURODRIVE FZE PO Box 263835 Jebel Ali Free Zone – South, P.O. Box Dubai, United Arab Emirates | Tel. +971 (0)4 8806461 Fax +971 (0)4 8806464 info@sew-eurodrive.ae |
| Uruguay | | | |
| Assembly Sales | Montevideo | SEW-EURODRIVE Uruguay, S. A. Jose Serrato 3569 Esquina Corumbe CP 12000 Montevideo | Tel. +598 2 21181-89 Fax +598 2 21181-90 sewuy@sew-eurodrive.com.uy |
| USA | | | |
| Production Assembly Sales Service | Southeast Region | SEW-EURODRIVE INC. 1295 Old Spartanburg Highway P.O. Box 518 Lyman, S.C. 29365 | Tel. +1 864 439-7537 Fax Sales +1 864 439-7830 Fax Production +1 864 439-9948 Fax Assembly +1 864 439-0566 Fax Confidential/HR +1 864 949-5557 http://www.seweurodrive.com cslyman@seweurodrive.com |
| Assembly Sales Service | Northeast Region | SEW-EURODRIVE INC. Pureland Ind. Complex 2107 High Hill Road, P.O. Box 481 Bridgeport, New Jersey 08014 | Tel. +1 856 467-2277 Fax +1 856 845-3179 csbridgeport@seweurodrive.com |
| | Midwest Region | SEW-EURODRIVE INC. 2001 West Main Street Troy, Ohio 45373 | Tel. +1 937 335-0036 Fax +1 937 332-0038 cstroy@seweurodrive.com |
| | Southwest Region | SEW-EURODRIVE INC. 3950 Platinum Way Dallas, Texas 75237 | Tel. +1 214 330-4824 Fax +1 214 330-4724 csdallas@seweurodrive.com |
| | Western Region | SEW-EURODRIVE INC. 30599 San Antonio St. Hayward, CA 94544 | Tel. +1 510 487-3560 Fax +1 510 487-6433 cshayward@seweurodrive.com |
| | Wellford | SEW-EURODRIVE INC. 148/150 Finch Rd. Wellford, S.C. 29385 | Tel. +1 864 439-7537 Fax +1 864 661 1167 IGOrders@seweurodrive.com |
| Additional addresses for service provided on request! | | | |
| Vietnam | | | |
| Sales | Ho Chi Minh City | SEW-EURODRIVE PTE. LTD. RO at Hochim- inh City Floor 8, KV I, Loyal building, 151-151 Bis Vo Thi Sau street, ward 6, District 3, Ho Chi Minh City, Vietnam | Tel. +84 937 299 700 huytam.phan@sew-eurodrive.com |
| | Hanoi | MICO LTD Quảng Trị - North Vietnam / All sectors except Construction Materials 8th Floor, Ocean Park Building, 01 Dao Duy Anh St, Ha Noi, Viet Nam | Tel. +84 4 39386666 Fax +84 4 3938 6888 nam_ph@micogroup.com.vn http://www.micogroup.com.vn |
| Zambia | | | |
| Representation: South Africa | | | |









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