Operating Instructions
BA 14.0175-EN
13056569

Electromagnetic clutch and brake
INTORQ 14.105 and INTORQ 14.115
Read Operating Instructions before set-up!

Manufacturer:
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D-31849 Aerzen

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Email: info@intorq.de
Internet: www.intorq.de

Origin and year of manufacture:
See nameplate (page 4)

These Operating Instructions are only valid for:

Electromagnetic clutches
INTORQ 14.105.06.
INTORQ 14.105.08.
INTORQ 14.105.10.
INTORQ 14.105.12.
INTORQ 14.105.16.
INTORQ 14.105.20.
INTORQ 14.105.25.

Electromagnetic brakes
INTORQ 14.115.06.
INTORQ 14.115.08.
INTORQ 14.115.10.
INTORQ 14.115.12.
INTORQ 14.115.16.
INTORQ 14.115.20.
INTORQ 14.115.25.

What is new / what has changed in the Operating Instructions?

<table>
<thead>
<tr>
<th>Material number</th>
<th>Edition</th>
<th>Important</th>
<th>Content</th>
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<tr>
<td>00 178 685</td>
<td>1.0 12/1995 TD09</td>
<td>1st edition</td>
<td>First edition for preseries</td>
</tr>
<tr>
<td>00 467 314</td>
<td>1.0 07/2002 TD09</td>
<td>1st edition replaces 178 685</td>
<td>All chapters: Correction offaults and complete revision</td>
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<tr>
<td>13056569</td>
<td>2.0 05/2005 TD09</td>
<td>2nd edition replaces 467 314</td>
<td>Change of the firm's name to INTORQ</td>
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All information given in this documentation has been carefully selected. Required corrections will be included in updates of this documentation.
### Product key

| INTORQ 14.105 | Electromagnetic clutches, 7.5 - 480 Nm |
| INTORQ 14.115 | Electromagnetic brakes, 7.5 - 480 Nm |

| INTORQ 14.1□5. | □□□ - □ - ..V, Ø.., Ø.. |

- **Type**
- **Size**
- **Stator design**
- **Armature design**
- **Variants**

| **Frame size** | 06, 08, 10, 12, 16, 20, 25 |
| **Armature design** | 1 - with outer flange hub |
| | 2 - with inner flange hub (brakes only) |
| | 3 - without flange hub |
| | 5 - with flange hub bearing (for clutches only) |

| **Stator design** | 1 - Flange design |
| | 3 - with bearing |

| **Variants** | Supply voltage |
| | Rotor bore |
| | Armature bore |

- The specifications in the product key, nameplate and packaging sticker are valid for electromagnetic clutches and electromagnetic brakes.
## Nameplate

### Structure

<table>
<thead>
<tr>
<th>Field</th>
<th>Content</th>
<th>Example</th>
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<tr>
<td>1</td>
<td>Manufacturer</td>
<td>INTORG, D - Aerzen</td>
</tr>
<tr>
<td>2</td>
<td>Brake type</td>
<td>14.115.06.1.0</td>
</tr>
<tr>
<td>3</td>
<td>Rated voltage, Rated power</td>
<td>24 V DC 11.5 W</td>
</tr>
<tr>
<td>4</td>
<td>Ident no., Rated brake torque, Date of manufacture</td>
<td>Nr. 00034106 7.5 NM 01.04.05</td>
</tr>
</tbody>
</table>

## Packaging sticker

### Assembly

<table>
<thead>
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<th>Content</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Manufacturer</td>
<td>INTORG, D - Aerzen</td>
</tr>
<tr>
<td>2</td>
<td>Type see product key, Type no.</td>
<td>Typ: 14.115.06.1.0 Nr. 00034106</td>
</tr>
<tr>
<td>3</td>
<td>Name, Qty. per box</td>
<td>MAGNETTEIL KPL. 1 Stück</td>
</tr>
<tr>
<td>4</td>
<td>Rated voltage, Rated power, Rated brake torque, Date of packaging</td>
<td>24 V DC 11.5 W 7.5 NM 01.04.05</td>
</tr>
<tr>
<td>5</td>
<td>Note</td>
<td>Rostschutzverpackung-Reibflächen fettfrei halten!</td>
</tr>
</tbody>
</table>
Contents

1 Preface and general information ................................................................. 6
   1.1 About these Operating Instructions .......................................................... 6
      1.1.1 Terminology used ........................................................................ 6
   1.2 Items supplied ....................................................................................... 6
   1.3 Lenze drive systems ............................................................................. 7
      1.3.1 Labelling ..................................................................................... 7
      1.3.2 Application as directed ................................................................ 7
      1.3.3 Legal regulations ......................................................................... 7

2 Safety information ....................................................................................... 9
   2.1 Persons responsible for the safety ............................................................ 9
   2.2 General safety information ................................................................... 9
   2.3 Layout of the safety information ............................................................. 11

3 Data ........................................................................................................... 13
   3.1 Product description ............................................................................. 13
      3.1.1 Flange-mounted clutches ............................................................... 13
      3.1.2 Shaft-mounted clutches ................................................................ 13
      3.1.3 Flange-mounted brakes ................................................................ 14
   3.2 Selection table of clutches ................................................................... 15
   3.3 Selection table of brakes ...................................................................... 15

4 Installation .................................................................................................. 16
   4.1 Preparation ........................................................................................... 16
      4.1.1 Product key .................................................................................. 16
      4.1.2 Designs ....................................................................................... 17
   4.2 Assembly ............................................................................................... 18
      4.2.1 Clutch and brake of design 1 .......................................................... 18
      4.2.2 Stator design 3 ............................................................................ 18
      4.2.3 Mounting of armature assembly of designs 1, 2 and 5 ................. 19
      4.2.4 Mounting of armature assembly of design 3 ................................. 19
   4.3 Electrical connection ............................................................................ 21

5 Maintenance ............................................................................................... 22
   5.1 Disassembly ......................................................................................... 22
   5.2 Spare parts list ..................................................................................... 23
1 Preface and general information

1.1 About these Operating Instructions ...

- These Operating Instructions inform about safety-relevant working on and with electromagnetic clutches and brakes. They contain all safety information which must be observed.
- All persons working on or with the stated electromagnetic clutches and brakes must have these Operating Instructions available and observe the information and notes relevant for their work.
- The Operating Instructions must always be in a complete and perfectly readable state.

1.1.1 Terminology used

Clutches and brakes
The terms “clutches” and “brakes” will be used for "electromagnetic clutches and brakes" in the following text.

Drive system
The term "drive system" will be used for drive systems with spring-applied brakes and other drive components.

1.2 Items supplied

- The drive systems are individually designed with modules. The list of all items supplied can be obtained from the accompanying papers.
- After receipt of the delivery, check immediately whether the items delivered match the accompanying papers. INTORQ GmbH & Co. KG does not accept any liability for deficiencies claimed subsequently. Claim
  – visible transport damage immediately to the forwarder.
  – visible deficiencies/incompleteness immediately to your INTORQ representative.
1.3 Drive systems

1.3.1 Labelling

- Drive systems and components are clearly labelled and defined by the indications on the nameplates.
- Manufacturer:
  INTORQ GmbH & Co. KG
  Postfach 11 03  
  Wülser Weg 5
  D-31849 Aerzen  
  D-31855 Aerzen
- Clutches and brakes are supplied as individual parts. The user combines them as desired. Specifications, especially packing stickers, nameplate and type code are valid for the entire stator.
- If individual parts are supplied, there is no identification.

1.3.2 Application as directed

- Drive systems
  – are to be used in machines and systems.
  – are only to be used for the ordered and acknowledged application conditions.
  – must only be operated under the conditions prescribed in these Instructions.
  – must not be used at powers higher or lower than indicated in these Instructions.

Any other use shall be deemed as inappropriate!

1.3.3 Legal regulations

Liability

- The information, data, and notes in these Operating Instructions met the state of the art at the time of printing. Claims on modifications referring to controllers which have already been supplied cannot be derived from the information, illustrations, and descriptions.
- Lenze does not accept any liability for damage and operating interference caused by:
  – inappropriate use
  – unauthorized modifications to the drive system
  – improper working on and with the controller
  – operating errors
  – disregarding these Instructions

Warranty

- Warranty conditions: see Sales and Delivery Conditions of INTORQ GmbH & Co. KG.
- Warranty claims must be made to the INTORQ representative responsible for you immediately after detecting defects or faults.
- The warranty is void in all cases where liability claims cannot be made.
2 Safety information

2.1 Persons responsible for the safety

Operators

- An operator is any natural or legal person who uses the clutch or the brake or on whose behalf the clutch or brake is used.
- The operator or the safety personnel must ensure
  - that all relevant regulations, instructions, notes and laws will be maintained.
  - that only qualified personnel works on and with the clutch or brake.
  - that the Operating Instructions are always available
  - that unqualified personnel is not allowed to work on and with the clutch or brake.

Qualified personnel

Qualified personnel are persons who, because of their training, experience and knowledge of all applicable standards and regulations as well as of all operating circumstances, have been entitled by the person responsible for the system to work on and with the system and to see and avoid all possible dangers.

(Definition for qualified personnel to IEC 364)

2.2 General safety information

- These safety notes do not claim to be complete. If any questions or problems occur, please contact your Lenze representative.
- The clutches and brakes met the state of the technology at the time of delivery and are generally safe to operate.
- Clutches and brakes endanger persons, the clutches and brakes themselves and other properties of the user if
  - unqualified personnel works on and with clutches and brakes.
  - the clutches and brakes are used for a purpose other than intended.
- The clutches and brakes must be designed such that they perform their function and do not cause danger for persons if they are installed correctly and used as intended in error-free operation. This also applies to clutches and brakes integrated into a drive system.
- Operate the clutches and brake only in a correct state.
- Retrofittings, modifications or changes of the clutch or brake are generally forbidden. In any case, INTORQ GmbH & Co. KG must be contacted before.
- The friction lining and the friction surfaces must by no means have contact to oil or grease since even small amounts reduce the brake torque considerably.
- Enclosure IP44, temperature class B (130°C).
Application range of the INTORQ clutches and brakes

- No potentially-explosive or aggressive atmosphere.
- Humidity, no restrictions.
- Ambient temperature -20°C to +40°C
- Sparking in switching operation
  - Especially at high speeds and high surface speeds of large clutches and brakes sparking can occur during the switch-on slip phase. This is a completely normal phenomenon of pole face clutches and brakes. If necessary, insulate the drive system depending on the ambient conditions.

2.3 Layout of the safety information

- All safety information given in these Operating Instructions have the same layout:

<table>
<thead>
<tr>
<th>Icons used</th>
<th>Signal words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warning of hazardous electrical voltage</td>
<td>Danger!</td>
</tr>
<tr>
<td>Warning of a general danger</td>
<td>Warning!</td>
</tr>
<tr>
<td>Caution!</td>
<td>Caution!</td>
</tr>
</tbody>
</table>

Warning of damage to material

<table>
<thead>
<tr>
<th>Icons used</th>
<th>Signal words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop!</td>
<td>Stop!</td>
</tr>
</tbody>
</table>

Other notes

<table>
<thead>
<tr>
<th>Icons used</th>
<th>Signal words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tip!</td>
<td>Tip!</td>
</tr>
</tbody>
</table>
3 Data

3.1 Product description

3.1.1 Flange-mounted clutches

The clutch consists of the stator (1) with encapsulated coil, the rotor (2) with fixed friction lining and an armature assembly (5,6,7) with armature plate and prestressed spring. The stator (1) is centred to the shaft and mounted at the machine panel. The rotor (2) is connected to the shaft using a key. Designs 1.1 and 1.5 are particularly suitable for through-shafts. The magnetic field which is created when a DC voltage is applied attracts the armature plate against the friction face of the rotor (2) via the air gap “sLü”. The torque is transmitted without backlash by the spring. The prestressed springs draw the armature plate back to its initial position when the DC voltage is no longer applied. The clutch is released without residual torque.

1 Stator
2 Rotor
5,6,7 Armature assembly

Fig. 1 Flange-mounted clutch INTORQ 14.105.1.1

3.1.2 Shaft-mounted clutches

The clutch with magnet frame with bearing is particularly suitable for the mounting on through-shafts. The stator (1) with encapsulated coil and sealed deep-groove ball bearing is secured against torsion by a torque arm engaging into the lug at the stator. The torque arm must only accept the bearing friction. A circlip holds the stator (1) on the rotor in axial direction. At the same time the rotor (2) with fixed friction lining must be mounted onto the shaft. Centrings are not necessary. If a DC voltage is applied the armature plate of the armature assembly (5,6,7) is attracted against the friction surface of the rotor (2) by the magnetic field. The torque is transmitted without backlash. When the DC voltage is switched off the prestressed spring pulls the armature plate back to its initial position. It is released without residual torque.
3.1.3 Flange-mounted brakes

The brake consists of the stator (1) with encapsulated coil and fixed friction lining and an armature assembly (5,6,7) with armature plate and prestressed spring. The stator (1) is centred to the shaft and mounted at the machine panel. The armature assembly is connected to the shaft to be braked. If a DC voltage is applied the armature plate is attracted against the friction surface of the stator by the magnetic field. The shaft is braked by friction locking. When the DC voltage is switched off the prestressed patented spring pulls the armature plate back to its initial position. It is released without residual torque.
### 3.2 Selection table of clutches

<table>
<thead>
<tr>
<th>Type</th>
<th>M_k [Nm]</th>
<th>r_max [min⁻¹]</th>
<th>P_{20°C} [W]</th>
<th>Operating times₂) [ms]</th>
<th>Q_E [J]</th>
<th>Q_{NA} [kWh]</th>
<th>S_{na} [h⁻¹]</th>
<th>J [10⁻⁵ kgm²]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>t₁₁</td>
<td>t₁₂</td>
<td>t₁</td>
<td>t₂</td>
<td></td>
</tr>
<tr>
<td>INTORQ 14.105.06</td>
<td>7.5</td>
<td>8000</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>45</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>INTORQ 14.105.08</td>
<td>15</td>
<td>6000</td>
<td>15</td>
<td>15</td>
<td>20</td>
<td>20</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>INTORQ 14.105.10</td>
<td>30</td>
<td>5000</td>
<td>25</td>
<td>25</td>
<td>85</td>
<td>110</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>INTORQ 14.105.12</td>
<td>60</td>
<td>4000</td>
<td>35</td>
<td>35</td>
<td>105</td>
<td>140</td>
<td>40</td>
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<tr>
<td></td>
<td>INTORQ 14.105.16</td>
<td>120</td>
<td>3000</td>
<td>45</td>
<td>45</td>
<td>125</td>
<td>170</td>
<td>50</td>
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<tr>
<td></td>
<td>INTORQ 14.105.20</td>
<td>240</td>
<td>3000</td>
<td>60</td>
<td>60</td>
<td>140</td>
<td>200</td>
<td>60</td>
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<tr>
<td></td>
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<td>480</td>
<td>2000</td>
<td>85</td>
<td>75</td>
<td>155</td>
<td>230</td>
<td>70</td>
</tr>
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</table>

Tab. 1

### 3.3 Selection table of brakes

<table>
<thead>
<tr>
<th>Type</th>
<th>M_k [Nm]</th>
<th>r_max [min⁻¹]</th>
<th>P_{20°C} [W]</th>
<th>Operating times₂) [ms]</th>
<th>Q_E [J]</th>
<th>Q_{NA} [kWh]</th>
<th>S_{na} [h⁻¹]</th>
<th>J [10⁻⁵ kgm²]</th>
<th>Armature assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>t₁₁</td>
<td>t₁₂</td>
<td>t₁</td>
<td>t₂</td>
<td></td>
<td>1/2</td>
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<tr>
<td>INTORQ 14.115.06</td>
<td>7.5</td>
<td>8000</td>
<td>11,5</td>
<td>10</td>
<td>20</td>
<td>35</td>
<td>40</td>
<td>10</td>
<td>3.6x10³</td>
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<tr>
<td></td>
<td>INTORQ 14.115.08</td>
<td>15</td>
<td>6000</td>
<td>16</td>
<td>15</td>
<td>25</td>
<td>25</td>
<td>40</td>
<td>20</td>
</tr>
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<td></td>
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<td>5000</td>
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<td>60</td>
<td>30</td>
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<td>60</td>
<td>4000</td>
<td>28</td>
<td>25</td>
<td>55</td>
<td>80</td>
<td>45</td>
<td>16x10³</td>
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<td>70</td>
<td>100</td>
<td>60</td>
<td>25x10³</td>
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<td>240</td>
<td>3000</td>
<td>45</td>
<td>35</td>
<td>80</td>
<td>115</td>
<td>70</td>
<td>40x10³</td>
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<tr>
<td></td>
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<td>480</td>
<td>2000</td>
<td>70</td>
<td>40</td>
<td>90</td>
<td>130</td>
<td>80</td>
<td>65x10³</td>
</tr>
</tbody>
</table>

Tab. 2

1) referred to relative speed n = 100min⁻¹
2) Average values for switching on the DC side with rated air gap and warm coil
Standard voltage 24V +5% / -10% acc. to VDE 0580
Temperature class B (130°C)
4 Installation

4.1 Preparation

1. Unpack clutch or brake.
2. Check completely.
3. Check nameplate data, especially rated voltage.

4.1.1 Product key

Example:

INTORQ 14.105. 16.1. 1. - 050480 - 24 - 25 - 30

- Type
- Size
- Stator design
- Armature design
- Armature bore
- Rotor bore
- Connection voltage
- Article no.
### 4.1.2 Designs

<table>
<thead>
<tr>
<th>Size</th>
<th>Stator design</th>
<th>Armature design</th>
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<td>INTORQ 14.105</td>
<td>1.1</td>
<td>Item 1; 2; 5</td>
</tr>
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<td>INTORQ 14.105</td>
<td>1.3</td>
<td>Item 1; 2; 6</td>
</tr>
<tr>
<td>INTORQ 14.105</td>
<td>1.5</td>
<td>Item 1; 2; 7</td>
</tr>
<tr>
<td>INTORQ 14.105</td>
<td>3.1</td>
<td>Item 3a; 3b; 5</td>
</tr>
<tr>
<td>INTORQ 14.105</td>
<td>3.3</td>
<td>Item 3a; 3b; 6</td>
</tr>
<tr>
<td>INTORQ 14.105</td>
<td>3.5</td>
<td>Item 3a; 3b; 7</td>
</tr>
<tr>
<td>INTORQ 14.115</td>
<td>1.1</td>
<td>Item 4; 5</td>
</tr>
<tr>
<td>INTORQ 14.115</td>
<td>1.2</td>
<td>Item 4; 8</td>
</tr>
<tr>
<td>INTORQ 14.115</td>
<td>1.3</td>
<td>Item 4; 6</td>
</tr>
</tbody>
</table>

![Fig. 4](image-url)
4.2 Assembly

Stop!
- Keep friction faces free of grease and oil!
- Use oil- and grease-tight deep groove ball bearings only!

4.2.1 Clutch and brake of design 1

The stator of clutch or brake of design 1 must be mounted internally or externally centered (observe dimension “tk” for max. centricity from Tab. 3). The mounting surface should not exceed a maximum phase run-out “x” (Tab. 3) and should not be convex. In the case of internal centring the register diameter is machined to an oval clearance.

When the rotor is assembled, dimension “b” (Tab. 3) must be observed maintained.

Stop!
The rotor must be secured axially!

4.2.2 Stator design 3

The stator design 3 does not need a mounting surface as the centring is performed by a deep groove ball bearing on the rotor. A torque arm must be provided for the bearing friction. This torque arm engages in the recess of the anti-rotation tag.

Stop!
The stator must not be strained in any case!
4.2.3 Mounting of armature assembly of designs 1, 2 and 5

The armature assembly is shifted onto the shaft. The maximum permissible centre offset of the shafts, dimension "tw" can obtained from Tab. 3. The air gap "s_Lü" (Tab. 3) must be adjusted using a feeler gauge.

Use shims for the exact air gap setting and for the compensation of wear.

Stop!
The armature assembly must be fixed axially.

Fig. 6

<table>
<thead>
<tr>
<th>Size</th>
<th>s_Lü [mm]</th>
<th>x [mm]</th>
<th>INTORQ 14.105</th>
<th>INTORQ 14.115</th>
</tr>
</thead>
<tbody>
<tr>
<td>06</td>
<td>0.2 ± 0.05</td>
<td>0.04</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>08</td>
<td>0.2 ±0.05</td>
<td>0.05</td>
<td>0.3</td>
<td>0.1</td>
</tr>
<tr>
<td>10</td>
<td>0.2 ±0.05</td>
<td>0.06</td>
<td>0.3</td>
<td>0.1</td>
</tr>
<tr>
<td>12</td>
<td>0.3 ± 0.1</td>
<td>0.07</td>
<td>0.3</td>
<td>0.1</td>
</tr>
<tr>
<td>16</td>
<td>0.3 ± 0.1</td>
<td>0.09</td>
<td>0.4</td>
<td>0.2</td>
</tr>
<tr>
<td>20</td>
<td>0.5 ± 0.15</td>
<td>0.11</td>
<td>0.4</td>
<td>0.2</td>
</tr>
<tr>
<td>25</td>
<td>0.5 ± 0.15</td>
<td>0.14</td>
<td>0.5</td>
<td>0.2</td>
</tr>
</tbody>
</table>
4.2.4 Mounting of armature assembly of design 3

Use bolts with threads up to the head to fix the armature assembly.

- For the tapped holes the clearance bores “\( \Phi d \)” and the depth “\( t \)” (Tab. 4) must be observed maintained in any case.
- The rivet heads require a sufficient clearance hole.

<table>
<thead>
<tr>
<th>Size</th>
<th>Screws</th>
<th>DIN</th>
<th>Schnorr lock washer *</th>
<th>Ø d [mm]</th>
<th>t [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>06</td>
<td>M 3 x 8</td>
<td>DIN 84</td>
<td>Schnorr lock washer 3</td>
<td>3.1</td>
<td>0.8</td>
</tr>
<tr>
<td>08</td>
<td>M 4 x 10</td>
<td>DIN 84</td>
<td>Schnorr lock washer 4</td>
<td>4.1</td>
<td>1.0</td>
</tr>
<tr>
<td>10</td>
<td>M 5 x 12</td>
<td>DIN 6912</td>
<td>Schnorr lock washer 5</td>
<td>5.1</td>
<td>3.5</td>
</tr>
<tr>
<td>12</td>
<td>M 6 x 16</td>
<td>DIN 7984</td>
<td>Schnorr lock washer 6</td>
<td>6.1</td>
<td>2.8</td>
</tr>
<tr>
<td>16</td>
<td>M 8 x 20</td>
<td>DIN 7984</td>
<td>Schnorr lock washer 8</td>
<td>8.2</td>
<td>3.5</td>
</tr>
<tr>
<td>20</td>
<td>M 10 x 25</td>
<td>DIN 7984</td>
<td>Schnorr lock washer 10</td>
<td>10.2</td>
<td>3.5</td>
</tr>
<tr>
<td>25</td>
<td>M 12 x 25</td>
<td>DIN 7984</td>
<td>Schnorr lock washer 12</td>
<td>12.2</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Tab. 4

Fig. 7

* Source of supply:
Adolf Schnorr GmbH & CO KG
Postfach 60 0162; D-71050 Sindelfingen
Phone: ++49 7031 - 3020; Fax: ++49 7031 - 382600
4.3 Electrical connection

The device is connected to DC voltage (observe voltage specification on the stator). Permissible voltage fluctuation acc. to VDE 0580: +6% to -10%

The standard voltage is 24 V DC. If no DC voltage is available the voltage must be supplied via transformers or rectifiers.

The clutches and brakes should be switched on the DC side to achieve short switch-off times.

When switching on the DC side use a spark suppressor to protect coil and contacts from excessive inductive voltages.

**STOP**

If there is no protective circuit the inductive voltage can be higher than the values specified in VDE 0580 and cause the coil to fail which destroys switching contacts.

The spark suppressor consists of a non-inductive pulse capacitor which accepts current peaks during switching. When a spark suppressor is used the spark at the contact and thus the contact erosion is considerably reduced.
5 Maintenance

The clutches and brakes are largely free of maintenance. In applications requiring many switching operations the air gap “sLÜ” must be checked and readjusted at certain periods. When the air gap has reached 250% of its rated value “sLÜ” at the latest it must be readjusted to the rated value at the latest.

- For air gap setting “sLÜ” after wear see chapter 5.1, Disassembly.
- The shims mentioned in section 2 can be removed or the spacers can be reduced.

The friction face poles of the rotor or stator of clutches or brakes run into the armature plate. Friction marks are thus normal and must not be re-worked!

Stop!
Friction faces must be kept absolutely free of oil and grease!

5.1 Disassembly

Remove the axial circlip or shaft locking plate Fig. 9 to disassemble the armature assembly of design 1 or 2 or the rotor. After that the armature assembly can be withdrawn from the shaft via the withdrawal thread “d” (see Fig. 9 and Tab. 5) provided for disassembly in the flange hub or rotor of the corresponding part. After the armature assembly has been withdrawn, remove the shims depending on the air gap size “sLÜ” (Fig. 6 and Tab. 3) and mount them afterwards between circlip and flange hub.

![Fig. 9](image)

<table>
<thead>
<tr>
<th>ø c</th>
<th>06</th>
<th>08</th>
<th>10</th>
<th>12</th>
<th>16</th>
<th>20</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø e</td>
<td>31</td>
<td>37</td>
<td>47</td>
<td>56</td>
<td>73</td>
<td>93</td>
<td>120</td>
</tr>
</tbody>
</table>

Tab. 5 Dimensions in mm
5.2 **Spare parts list**

The clutches and brakes have a wear reserve of several millimeters. When these are used up after several readjustments the rotor and armature assembly of clutches and the stator and armature assembly of brakes **must be replaced in pairs**.

- When ordering spare parts indicate the designation of the parts according to the illustration and list below.

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Item</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clutch-stator design 1</td>
<td>10</td>
<td>Setscrew</td>
</tr>
<tr>
<td>2</td>
<td>Rotor design 1</td>
<td>11</td>
<td>Deep-groove ball bearing 2RS</td>
</tr>
<tr>
<td>3</td>
<td>Clutch-stator + rotor</td>
<td>12</td>
<td>Spacer</td>
</tr>
<tr>
<td>4</td>
<td>Brake-stator 14.115</td>
<td>13</td>
<td>Circlip</td>
</tr>
<tr>
<td>5</td>
<td>Armature assembly design 1</td>
<td>14</td>
<td>Fitted key</td>
</tr>
<tr>
<td>6</td>
<td>Armature assembly design 3</td>
<td>15</td>
<td>Spring ring</td>
</tr>
<tr>
<td>7</td>
<td>Armature assembly design 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Armature assembly design 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
• Spare parts should be ordered according to the following example:

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
<th>Spare part</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electromagnetic clutch</td>
<td>INTORQ 14.105. 10.</td>
<td>Item 1 - 24V / 28W</td>
</tr>
<tr>
<td>Electromagnetic brake</td>
<td>INTORQ 14.115. 16.</td>
<td>Item 6</td>
</tr>
</tbody>
</table>

• When you order stators you also have to indicate the coil voltage and power (see section Electrical connection).

• When ordering rotors, armature assemblies of designs 1 and 2 also specify the bore diameter.
INTORQ – sales and service worldwide

Région France Sud : Rond point du sans souci 69078 LIMONEST Cedex
Toulouse 31400 TOULOUSE
Agen 47270 SAINT-PIERRE-DE-CLAIRAC

GRECE
George P. Alexandris S.A.
12K. Marinforma St.
185 45 PIRAEUS
2040 BUDAÖRS
Handelsgesellschaft mbH
Lenze Antriebstechnik
HUNGARY

ITALY

LATVIA
see LITHUANIA

LITHUANIA
Lenze UAB
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Phone +370 37 407174
Fax +370 37 407175

MISGAV 20179
Bar-Lev Industrial Park
Greenshpon Engineering Works LTD
P.O.Box. 19395-5177
Tavan Ressan Co. Ltd.
IRAN

INDONESIA
P.T. Fufiringo Globalasya
Jl. Prof. Dr. Latumanun No. 18
Kompleks Perkantoran
Kota Grogol Blok A 35
JAKARTA 11460

INDIA
Electronic Service:
National Power Systems,
10, Sababa Shopping Centre
Keshav Rao Kadam Marg,
Off Lamington Rd.
MUMBAI 400018

V3 Controls Pvt. Ltd.
1, `Devryan` Next to SBI,
Bhaner ITI Road, Aundh,
PUNE 411007, MS

Mechanical Service:
Emco Lenz Pvt. Ltd.
1st Floor, Sai Mall
Madatkar Bhigira Road
Panch Puthadi, Shaniwar (West)
Mumbai 400026, MS

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+91 22 / 25 30 63 50

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SELANGOR

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Fax +60 (0)3 7256 24 23

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Automation & Controls Engineering Ltd
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MAURITIUS

Phone +232 2488211
Fax +232 2488688

MEXICO
Automation y Control de Energia S.A. de C.V.
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Fax +52 (055)277/5937

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Automatisation Industrielle
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MOROCCO

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Fax +212 245 28 88 78

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