3 Mounting Positions, Mounting Surfaces and Shaft Positions

3.1 Mounting positions

Definition

The mounting position defines the spatial orientation of the gear unit housing and is designated M1...M6.

The table below shows the mounting positions.

<table>
<thead>
<tr>
<th></th>
<th>Standard mounting position (shown in gray in the illustration below)</th>
<th>Alternative mounting position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal gear units</td>
<td>M1</td>
<td>M3</td>
</tr>
<tr>
<td>Vertical gear units</td>
<td>M5</td>
<td>M6</td>
</tr>
<tr>
<td>Upright gear units</td>
<td>M4</td>
<td>M2</td>
</tr>
</tbody>
</table>

With the alternative mounting positions there may be limitations regarding certain options. Contact SEW-EURODRIVE for additional information.
X.T..
Gear unit size ≤ 210

Gear unit size ≥ 220
3.2 Mounting surfaces

**Definition**

The mounting surface is the surface used to mount the gear unit.

- Foot mounting (X.... /B) or
- Flange mounting (X.... /F).

SEW-EURODRIVE defines 6 different mounting surfaces (designation F1...F6).
3.3 Shaft positions

The shaft positions and corresponding directions of rotation shown in the following figures apply to both solid and hollow output shafts (LSS). There may be restrictions with regard to the possible shaft positions for gear units with a backstop or with a shaft end pump.

3.3.1 X.F..

The following shaft positions are possible for gear unit type X.F.:

<table>
<thead>
<tr>
<th>Shaft position X.FS.</th>
<th>Shaft positions X.FH. / X.FA.</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Shaft position X.FS." /></td>
<td><img src="image2" alt="Shaft positions X.FH. / X.FA." /></td>
</tr>
</tbody>
</table>

60728AXX 60731AXX

3.3.2 X.K..

The following shaft positions are possible for gear unit type X.K.:

<table>
<thead>
<tr>
<th>Shaft position X.KS.</th>
<th>Shaft positions X.KH. / X.KA.</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Shaft position X.KS." /></td>
<td><img src="image4" alt="Shaft positions X.KH. / X.KA." /></td>
</tr>
</tbody>
</table>

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3.3.3 X.T..

The following shaft positions are possible for gear unit type X.T.:

<table>
<thead>
<tr>
<th>Shaft position X.TS.</th>
<th>Shaft position X.TH. / X.TA.</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5" alt="Shaft position X.TS." /></td>
<td><img src="image6" alt="Shaft position X.TH. / X.TA." /></td>
</tr>
</tbody>
</table>

65676AXX 65677AXX
3.4 *Mounting positions and standard mounting surfaces*

A certain standard mounting surface is assigned to each mounting position:

**INFORMATION**
- The actual mounting position and/or mounting surface must match the information on the order. However, a deviation of ± 1° is permitted.

**INFORMATION**
- The gear units marked in gray are standard gear units.
- There might be restrictions regarding accessories and longer delivery times for types other than the standard version.
- Other mounting surfaces are possible in combination with a certain mounting position. Refer to the order-specific dimension drawing.
Mounting Positions, Mounting Surfaces and Shaft Positions

Mounting positions and standard mounting surfaces

X.T

Gear unit size ≤ 210

Gear unit size ≥ 220
3.5 **Pivoted mounting positions and variable mounting positions**

Mounting positions that differ from standard are referred to as pivoted or variable mounting positions.

Gear units with a pivoted mounting position have a fixed position that differs from the standard.

Gear units with a variable mounting position have a position that can change within the specified range.

The designation of pivoted and variable mounting positions is stated as follows:

```
M1 - M2/20°/V
[1] [2] [3] [4]
```

- [1] Initial mounting position
- [2] Desired mounting position
- [3] Pivoting angle
- [4] F = Fixed final position; V = Variable final position

The following figure shows two examples:

```
M1 - M4/20°/F
M1 - M2/20°/V
```

All final positions have to be specified if the mounting position of the gear unit deviates from standard in several axes. Combinations of fixed and variable final positions are possible.

Example: Gear unit based on M1 is tilted by ±20° around the drive shaft during operation and is mounted in a fixed angle of 30° around the longitudinal axis:

```
M1 - M2/20°/V - M4/20°/V - M5/30°/F
```

**INFORMATION**

Pivoted and variable mounting positions may involve restrictions concerning accessories and technical data. Also, delivery may be longer. Consult SEW-EURODRIVE.
3.6 Mounting position sheets

The following mounting position sheet provides an overview of the positions of the oil fill plug, oil drain plug, oil dipstick, breather plug, etc. on the gear unit.

3.6.1 Key to the mounting position sheet

The following symbols are used in the mounting position sheet:

- Oil fill plug
- Oil inflow

- Oil drainage
- Oil return

- Oil level glass
- Water inflow

- Oil dipstick
- Water return

- Breather plug
- Flat grease nipple

- Inspection opening
- Taper grease nipple

- Air outlet screw
- Grease outlet (applies only to Drywell option)

3.6.2 Dimension sheet information

INFORMATION

More mounting dimension sheets are available from SEW-EURODRIVE upon request.
3.6.3 Gear unit: Mounting positions M1 and M3 / Splash or pressure lubrication

- **M1**
  - XF.. / XK.. / X.T..

- **M3**
  - XF.. / XK.. / X.T..
3.7  **Direction of rotation dependencies, position of backstops**

**INFORMATION**

The gear unit can be operated in both directions of rotation. However, gear units with backstop are an exception.

The following tables show the direction of rotation between the input and output shaft. The gear units, as well as the exact position of the backstop, are schematically depicted as a solid shaft version.

### 3.7.1  X.F..

<table>
<thead>
<tr>
<th>Shaft position</th>
<th>14</th>
<th>23</th>
<th>13 (^1)</th>
<th>24 (^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>End gear position</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

![Diagram](image-url)

\(^1\) Note the restrictions regarding external forces on the output shaft (LSS)
### 3.7.2 X.K..

**Standard**

<table>
<thead>
<tr>
<th>Shaft position</th>
<th>03</th>
<th>04</th>
<th>034</th>
<th>043</th>
</tr>
</thead>
<tbody>
<tr>
<td>End gear position</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>X2K...</td>
<td><img src="image1.png" alt="Diagram" /></td>
<td><img src="image2.png" alt="Diagram" /></td>
<td><img src="image3.png" alt="Diagram" /></td>
<td><img src="image4.png" alt="Diagram" /></td>
</tr>
<tr>
<td>X3K...</td>
<td><img src="image5.png" alt="Diagram" /></td>
<td><img src="image6.png" alt="Diagram" /></td>
<td><img src="image7.png" alt="Diagram" /></td>
<td><img src="image8.png" alt="Diagram" /></td>
</tr>
<tr>
<td>X4K...</td>
<td><img src="image9.png" alt="Diagram" /></td>
<td><img src="image10.png" alt="Diagram" /></td>
<td><img src="image11.png" alt="Diagram" /></td>
<td><img src="image12.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**Direction of rotation reversal**

<table>
<thead>
<tr>
<th>Shaft position</th>
<th>03</th>
<th>04</th>
</tr>
</thead>
<tbody>
<tr>
<td>End gear position</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>X2K...</td>
<td><img src="image13.png" alt="Diagram" /></td>
<td><img src="image14.png" alt="Diagram" /></td>
</tr>
<tr>
<td>X3K...</td>
<td><img src="image15.png" alt="Diagram" /></td>
<td><img src="image16.png" alt="Diagram" /></td>
</tr>
<tr>
<td>X4K...</td>
<td><img src="image17.png" alt="Diagram" /></td>
<td><img src="image18.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

1) Note the restrictions regarding external forces on the output shaft (LSS)

---

= Position of the backstop

= Alternative backstop position (depending on size and gear ratio)
M 1 … M 6

3.7.3 X.T..

Standard

<table>
<thead>
<tr>
<th>Shaft position</th>
<th>63 4</th>
<th>64 3</th>
<th>634 1) 3</th>
<th>643 1) 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>X3T...</td>
<td>![Image]</td>
<td>![Image]</td>
<td>![Image]</td>
<td>![Image]</td>
</tr>
<tr>
<td>X4T...</td>
<td>![Image]</td>
<td>![Image]</td>
<td>![Image]</td>
<td>![Image]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shaft position</th>
<th>53 4</th>
<th>54 3</th>
<th>534 1) 3</th>
<th>543 1) 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>X3T...</td>
<td>![Image]</td>
<td>![Image]</td>
<td>![Image]</td>
<td>![Image]</td>
</tr>
<tr>
<td>X4T...</td>
<td>![Image]</td>
<td>![Image]</td>
<td>![Image]</td>
<td>![Image]</td>
</tr>
</tbody>
</table>

Direction of rotation reversal

<table>
<thead>
<tr>
<th>Shaft position</th>
<th>53 1) 3</th>
<th>54 1) 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>End gear position</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>X3T...</td>
<td>![Image]</td>
<td>![Image]</td>
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<tr>
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<td>![Image]</td>
<td>![Image]</td>
</tr>
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</table>

= Position of the backstop

= Alternative backstop position (depending on size and gear ratio)

1) Note the restrictions regarding external forces on the output shaft (LSS)