6 Options and Accessories

6.1 Torque arm

A torque arm is available to support the reaction torque of hollow shaft gear units in the shaft-mounted version.

The torque arm can bear tensile stress as well as thrust loads.

The length of the torque arm can be adjusted within a certain range.

The torque arm consists of a joint head with bolt [1], threaded bolt [2], maintenance-free joint head, and fork plate with bolt [4]. The design using the joint head allows for the compensation of assembly tolerances and operational displacements. Constraining forces on the output shaft are thus avoided.

Do not place the torque arm under strain during installation. Strain leads to constraining forces on the output shaft, which may negatively influence the service life of the output shaft bearings.

To keep the bending moment on the machine shaft as low as possible, the torque arm must always be mounted on the same side as the machine that is driven.

The torque arm can be mounted on the top or bottom of the gear unit.
6.2 Backstop

Sections 3.5, 10.3.13 and 11.3.9 contain information about the exact position, the direction of rotation dependencies and the position of the backstop.

6.2.1 Usage

The purpose of a backstop is to prevent undesirable reverse rotation. During operation, the backstop permits rotation in only one specified direction of rotation.

6.2.2 Description

The backstop functions by using centrifugal lift-off sprags. Once the lift-off speed is reached, the sprags lift off from the contact surface of the outer ring completely. The backstop is lubricated with the gear unit oil.

6.2.3 Direction of rotation

SEW-EURODRIVE installs backstops according to the specifications given with the order. This means that it is necessary to specify the direction of rotation for the output shaft. The customer must check that the connected electric motor rotates in the correct direction. If not, the electric motor may damage the backstop.

The direction of rotation is determined with a view to the output shaft (LSS).
- CW = Clockwise
- CCW = Counterclockwise (anti-clockwise)

The permitted direction of rotation [1] is indicated on the housing.

If the drive has a through-going output shaft, the direction of rotation of the backstop should be given as viewed towards shaft position 3.

6.2.4 Dimensioning

Dimensioning of the backstop is carried out according to the following basic rules:
- Speed of the gear unit input shaft: 0... 1800 1/min
- Maximum permitted torque of the backstop in relation to the output shaft: at least 1.8 times the nominal gear unit torque.

Contact SEW-EURODRIVE for differing specifications.
6.3 **Motor adapters**

Motor adapters are available for mounting:

- **IEC (B5) motors** sizes 100 to 355
- **NEMA ("C" face) motors** sizes 182 to 449

See sections 10.3.14 and 11.3.10 for connection dimensions.

An elastic claw coupling is included in the scope of delivery of the motor adapter. All motor adapters may be equipped with a fan for two- and three-stage gear units.

The diagrams below show the basic design of the motor adapter.

![Motor adapter diagram](image-url)
6.3.1 Maximum motor weight depending on gear unit

When selecting a motor, take into account the permitted motor weight, the gear unit version and the type of gear unit mounting according to the following tables.

The table only applies to stationary applications. For mobile applications (e.g. travel drives), consult SEW-EURODRIVE.

<table>
<thead>
<tr>
<th>Mounting type</th>
<th>Series / gear unit version</th>
<th>Horizontal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Foot-mounted version</td>
<td>GM ≤ 1.25 G_G</td>
</tr>
<tr>
<td></td>
<td>X.F..</td>
<td>GM ≤ 1.5 G_G</td>
</tr>
<tr>
<td></td>
<td>Shaft mounted version</td>
<td>GM ≤ 0.5 G_G</td>
</tr>
<tr>
<td></td>
<td>X.K..</td>
<td>GM ≤ 1.0 G_G</td>
</tr>
<tr>
<td></td>
<td>Flange-mounted version</td>
<td>GM ≤ 0.5 G_G</td>
</tr>
</tbody>
</table>

G_M = Motor weight
G_G = Gear unit weight
6.3.2 Maximum motor weight depending on the adapter size

In addition to the maximum motor weights depending on the gear unit described in section 6.3.1, the following maximum loads on the motor adapter may not be exceeded.

![Diagram showing motor adapter and center of gravity](image)

[1] Center of gravity of the motor

\( X = \text{Distance from the center of gravity} \)

\( G_M = \text{Weight of the motor that is mounted} \)

<table>
<thead>
<tr>
<th>Motor adapter</th>
<th>IEC</th>
<th>NEMA</th>
<th>( G_M ) [N]</th>
<th>( X ) [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>100/112</td>
<td>182</td>
<td>100/112</td>
<td>600</td>
<td>190</td>
</tr>
<tr>
<td>132</td>
<td>213</td>
<td>132</td>
<td>1100</td>
<td>230</td>
</tr>
<tr>
<td>160/180</td>
<td>254</td>
<td>160/180</td>
<td>2200</td>
<td>310</td>
</tr>
<tr>
<td>200</td>
<td>324</td>
<td>200</td>
<td>2800</td>
<td>340</td>
</tr>
<tr>
<td>225</td>
<td>326</td>
<td>225</td>
<td>4000</td>
<td>420</td>
</tr>
<tr>
<td>225/280</td>
<td>364</td>
<td>225/280</td>
<td>8200</td>
<td>480</td>
</tr>
<tr>
<td>315S-L</td>
<td>444</td>
<td>315S-L</td>
<td>14500</td>
<td>680</td>
</tr>
<tr>
<td>315</td>
<td></td>
<td>315</td>
<td>20000</td>
<td>740</td>
</tr>
<tr>
<td>355</td>
<td></td>
<td>355</td>
<td>25000</td>
<td>740</td>
</tr>
</tbody>
</table>

The maximum permitted weight of the attached motor (\( G_M \)) must be linearly reduced if the distance from the center of gravity distance \( X \) is increased. \( G_M \text{ max} \) cannot be increased if the center of gravity distance is reduced.
6.4 **Drive package on steel frame**

For gear units in a horizontal mounting position, complete preassembled drive packages on a steel frame (swing base or base frame) are available from SEW-EURODRIVE.

6.4.1 **Swing base**

A swing base is a steel frame [1] that accommodates the gear unit, (hydro) coupling and motor (and brake, if required), including a protection device, such as a guard. A swing base is normally used for:

- Hollow shaft gear units or
- Solid shaft gear units with flange coupling on the output shaft

The steel frame [1] is supported by a torque arm [2].

**It is essential that:**

- The system frame is sufficiently dimensioned to absorb the torque
- The swing base is not strained during installation (hazard of damage to gear unit and coupling)

**Example: Swing base with coupling**

![Diagram of swing base with coupling]

[1] Swing base  
[2] Torque arm (optional)  
[3] Helical-bevel gear unit  
[4] Coupling with protection guard  

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6.4.2 Base frame

A base frame is a steel frame [1] that accommodates the gear unit, coupling and motor (and brake, if required), including a protection device, such as a guard. The steel frame is supported by several foot mountings [2]. Such a frame is usually used for solid shaft gear units with elastic coupling on the output shaft.

It is essential that

- The support structure of the foot mounting is adequately dimensioned and rigid
- The base frame is not strained during installation (hazard of damage to gear unit and coupling)

Example: Base frame with coupling

[1] Base frame  
[2] Foot mounting  
[3] Bevel-helical gear unit  
[4] Coupling with protection guard  