

MOTOX Geared Motors

Worm geared motors

Orientation

Overview



Worm gearboxes are designated as follows:

Gearbox type:

SC Worm gearbox

Output-side designs:

- 1** Shaft designs:
 - A** Hollow shaft
 - E** Plug-in shaft
 - With one shaft extension (position A or B)
 - With two shaft extensions
- 2** Mounting designs:
 - C** Additional feet on cover (position 6h, 9h, or 12h)
 - D** Torque arm (position A or B) can be mounted in 5 positions
 - F** Flange, A-type (position A or B)
 - Short design
 - Long design
 - Z** Housing flange, C-type, on both sides

Input-side designs:

- 3**
 - K4** Adapter unit with plug-in shaft connection according to:
 - Motor size and mounting position or
 - Flange size and shaft diameter (additional data required)

Example:

SC **1** **2** 50 - **3**
(basic gearbox = SCAZ50)

The series currently comprises three gearbox sizes.

Worm gearboxes are available in a 1-stage version.

Worm and wheel sets with CAVEX gearing

The concave-profile cylindrical worm with its enveloping worm wheel is very much different to conventional designs. The worm threads have a concave profile instead of an involute or convex one.

The concave-profile teeth are subject to only low specific tooth pressure. The retention of a separating oil film between the tooth flanks is facilitated in particular, as the hollow flanks are in contact with convex mating flanks. Therefore, profile contact is much more favorable than in conventional gear teeth systems.

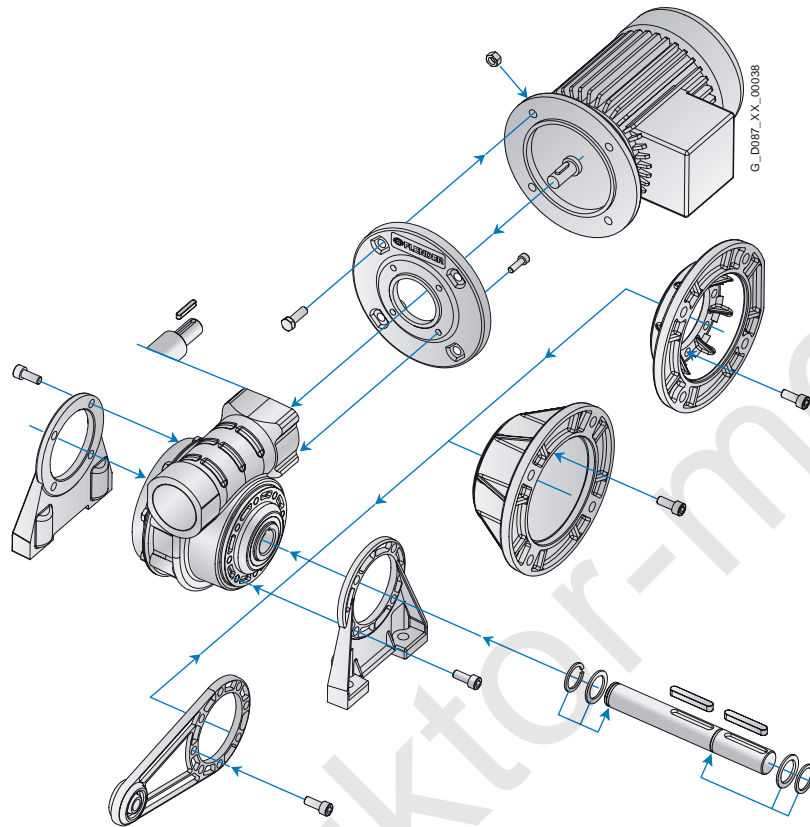
The concave-profile teeth provide a particularly favorable position for the instantaneous axes, which extend mainly at right angles to the sliding direction. This assists the build-up of lubricating pressure, i.e. the generation of an oil film between the tooth flanks.

The tooth flanks on new gearboxes will not yet be fully smoothed, meaning that the friction angle will be greater and efficiency lower during initial operation. The smaller the lead angle or, in other words, the higher the transmission ratio, the more pronounced the effect. The run-in procedure should take approximately 24 to 30 hours of operation at full load.

Starting efficiency is never as great as the efficiency at operating speed. This fact should be taken into account when starting a machine at full load, depending on the starting characteristics of the motor.

Attention: In respect of torque driving back from the output shaft, please take into account the reduced gear tooth efficiency $\eta' = 2 - 1/\eta$, particularly with high transmission ratios of the worm gear stage (η = efficiency with driving worm).

Modular system



SC = Basic gearbox with housing flanges (C-type)

Input-side variants		Output-side variants	
LAI	= Motor (IM B14* or IM B5)	C	= 2 feet
K4	= Adapter flange* for IEC standard motors (IM B14 or IM B5)	FK	= Short flange (A-type)*
		FL	= Long flange (A-type)*
		E1	= Plug-in shaft with one shaft extension**
		E2	= Plug-in shaft with two shaft extensions**
		D	= Torque rm^{**} a

* These modules are mounted at the factory prior to delivery, in accordance with the order.

** These modules are not mounted prior to delivery in order to provide greater flexibility during installation.

Use

MOTOX worm gearboxes are characterized by high throughput in a very small space and a high transmission ratio in a single stage. Thanks to their compact design, worm gearboxes are an ideal solution when installation space is at a premium and they offer a range of mounting options due to their flange, foot, and torque-arm housing designs.

Output shafts are available in different versions and diameters, as solid or hollow shafts. The gearbox housings, made from die-cast aluminum with good thermal conductivity, are strong and absorb vibrations.