

LOEWE GK

INSTALLATION AND OPERATING MANUAL




Loewe GK


Loewe GK: angular and radial displacement compensation combined with axial stiffness.


The compact coupling combines angular and radial displacement with a high capacity for axial traction and thrust without longitudinal displacement.

It is designed for precise transmission of linear positioning movements.

The installation and operating manual (I+O) is an essential part of the Loewe GK. It gives information about installation, operation and maintenance.

 Please read it in full and observe the instructions it contains.

 The coupling may only be installed by trained and qualified technical staff.

 Loewe GK couplings may only be used in conformity with their technical data.

Safety and warning symbols



Attention! Danger of injury and damage to the machine.



Warning on important points.

Please read the operating manual in full and follow its recommendations!

Failure to do so can lead to malfunction, including failure of the coupling, and the consequent damage.

Manufacturer's declaration

Pursuant to Machinery Directive 2006/42/EC, the product is a component for integration into a machine or plant. Commissioning is not permitted until the machine or plant into which the product is to be integrated is itself conforming with EC Directives.

Safety instructions

The installation and operating manual (I+O) is an essential part of the Loewe GK. Please keep the I+O in the vicinity of the coupling itself for easy access at all times.

It gives information about installation, operation and maintenance.

Please read it in full and observe the instructions it contains.

Loewe GK couplings may only be used in conformity with their technical data.



Danger! Rotating drive parts are hazardous.

The user must implement protective measures pursuant to applicable safety regulations in their current editions. The user is responsible for implementing such measures and for using the drive components exclusively as specified and within their specified technical limits.



Tampering and modifications are expressly prohibited.



The coupling may only be installed by trained and qualified technical staff.



Read the installation and operating manual carefully before installing and commissioning the unit.



The safety warnings make no claim to completeness.

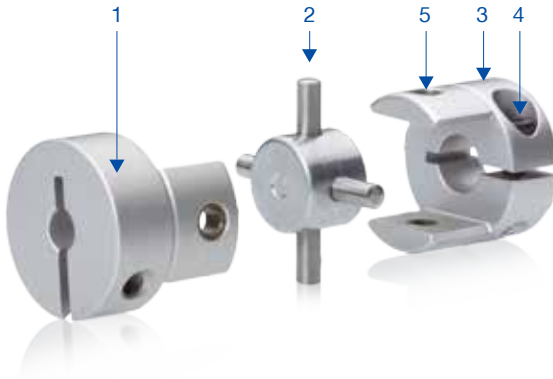
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Please read the operating manual in full and follow its recommendations!

Failure to do so can lead to malfunction, including failure of the coupling, and the consequent damage.

Installing the Loewe GK



Parts list

- 1 Input shaft clamping hub
- 2 Central element with press-fitted pins
- 3 Output shaft clamping hub
- 4 Clamping screw
- 5 Plain bearings

Function

The Loewe GK coupling consists of two hard-coated aluminium hubs.

An internal ring houses a set of studs at 90° to each other. This intermediate section, similar to a cross coupling, can swivel in the bearing. However, since it is not fixed in the link section like a cross coupling, it can move in the bushing in case of radial shaft displacement. This combined swivel and linear movement in the bearing enables the unit to compensate radial and angular displacement in short axial constructions.

Loewe GK couplings are designed to compensate radial and angular shaft displacements, misalignment and offset during operation.

The lower the misalignment in installation, the better its compensation capacity, the longer its service life and the lower its running noise. The permitted displacement values - refer to the respective specifications - must be observed in installation and especially in operation (Table 1).

Loewe GK Torque is intended for applications where couplings must transmit torque on the one hand, while additionally being able to be loaded by axial thrust and traction, or even perform guiding tasks in axial directions, on the other.

Loewe GK Linear is intended for applications in which the coupling need only transmit purely linear positioning commands.

Consignment

The Loewe GK coupling is supplied complete and ready for installation.

The Loewe GK coupling is very robust, however it should be protected against external stresses and delivered to the assembly location in its original packaging after acceptance controls. The packaging is designed to prevent loss of the pre-installed clamping screws.



Tampering and modifications are expressly prohibited. SCHMIDT-KUPPLUNG GmbH is not liable for any consequent damage.

Temperature range

The Loewe GK coupling can operate at a permanent temperature of -20° to +150°C. Higher temperatures up to max 250°C are possible. In this case, please discuss the coupling's performance data with out application technicians.

Maximum bores

Loewe GK couplings are delivered ready-to-mount with the desired bore diameters.



SCHMIDT-KUPPLUNG GmbH is not liable for the consequences of re-machining the pre-bored coupling hubs. The user or client is alone responsible.



Attention! Do not exceed the maximum permitted bore diameter of Controlflex (Table 1). Doing so can destroy the unit. Projected parts in case of catastrophic failure can cause serious injury.

Table 1: Maximum bores (mm)

Type Torque /Linear	max. bores mm
GK 27	10
GK 35	16
GK 56	30
GK 75	40
GK 100	50

Permitted shaft displacement

Loewe GK Torque couplings are torsionally rigid compensating couplings designed to compensate radial and angular shaft displacements (Table 2). The couplings are mounted axially and cannot compensate axial displacements.

The technical specifications and Table 2 give the maximum values for the various types of displacement. Observing these values ensures that the unit can handle operational displacement, for example, due to the foundation slab moving. If both types of displacement occur at the same time, the maximum permitted displacement values must be reduced. The sum of the actual displacements should not exceed 100% of the maximum value.

The service life of the coupling is determined by the application loads and displacements. The effects of torque and displacement are described below.

1. The peak torque $T_{K_{max}}$ should not be exceeded in operation. The rating torque is derived from the nominal torque on the coupling in relation to the displacement. The transmissible torque decreases with increasing shaft speed or displacement.

2. The maximum permitted radial displacement ΔK_r must never be exceeded. For a given torque, increasing displacements lead to a greater linear movement of the bearings and hence to increased wear. If necessary, select

a higher rated coupling with a higher torque transmission capacity.

3. The maximum permitted angular displacement ΔK_w must never be exceeded. For a given torque, increasing displacements lead to a greater swivel movement of the bearings and hence to increased wear. If necessary, select a higher rated coupling with a higher torque transmission capacity.

Table 2: Permitted shaft displacement

Type Torque /Linear	ΔK_r (mm)	ΔK_w (mm)
GK 27	1	3
GK 35	1,5	3
GK 56	2	3
GK 75	2	3
GK 100	2,5	3

Loewe GK Linear couplings transmit precise linear positioning commands while compensating parallel and angular misalignments. The specified maximum axial load F_a of a given coupling size may not be exceeded in operation. The transmissible axial load decreases with the frequency of positioning strokes.

Installation

The shaft ends and hub bores to be connected must be clean, dry and burr-free.

Check shaft connection dimensions (also feather key dimensions) and tolerances. Bores are supplied in fit F9.

The clamping screws must be tightened to the recommended driving torque according to size (Table 3).

Table 3: Tightening torque

Type Torque /Linear	Screw size	Tightening torque Nm
GK 27	M4	3
GK35	M5	5,7
GK 56	M6	8
GK 75	M8	24
GK 100	M12	80

The Linear series with threaded bores is installed using hook spanners. The coupling must not be loaded with the driving torque.

Maintenance

Loewe GK couplings are maintenance free.

General information

Failure, improper selection or improper use of the product can result in malfunction or failure of the coupled assemblies. On the other hand, malfunction of the coupled assemblies can cause the product itself to fail.

The information on the website, in the technical brochures and other publications allow the technically qualified user to make the proper choice for further tests. It is important that the application be thoroughly analysed and the above-mentioned product information be reviewed in full.

Due to the vast range of applications for these products and the variety of operating conditions, the user alone is responsible for choosing the correct product in accordance with his plant or machine design and testing, compatible with the operating conditions and safety and protection requirements characteristic of the application.

The product's specifications may be changed at any time without notification.

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