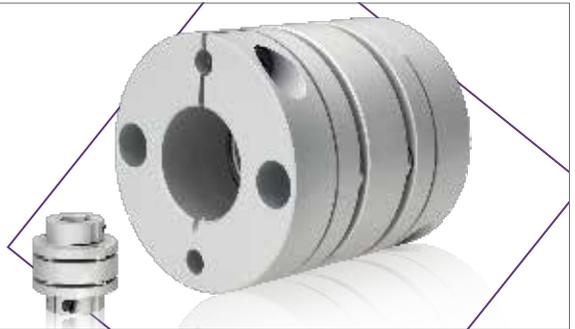


# SERVOFLEX

INSTALLATION AND OPERATING MANUAL



## Servoflex

The Servoflex coupling has been designed to meet the most demanding requirements of modern servo motors. They combine highest precision requirements with a minimal inertial mass. Dynamic drive tasks with frequent starting, stopping and reversing, where absolute positioning accuracy is paramount, are its speciality.

The installation and operating manual (I+O) is an essential part of the Servoflex. 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.

 Servoflex 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 Servoflex. 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.

Servoflex 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.

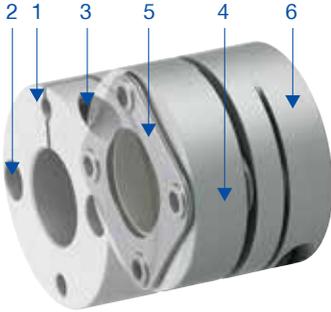
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### Please read the operating manual in full and follow its recommendations!

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

## Installing the Servoflex



### Parts list

- 1 Input shaft hub
- 2 Screws
- 3 Clamping screw
- 4 Central element
- 5 Disc pack
- 6 Output shaft hub

### Function

The Servoflex unit is composed of lightweight aluminium clamping hubs combined with a disk pack which is torsionally rigid while being flexible. The backlash-free coupling stands out for its light construction combined with high torsional stiffness.

The design of the disk pack itself has been optimised using FEM analysis. Layered, flexible and elastic disks made of stainless steel result in a disk pack with distinct torsional stiffness for high-precision drive tasks. The clamping hubs and the intermediate section of the double cardan construction are made in high specification aluminium and have a correspondingly low moment of inertia, which is essential for highly dynamic positioning and pushing applications. The coupling is available in both single and double cardan versions. The single cardan version combines unbeatable torsional stiffness with a very compact design. It can compensate axial and angular shaft displacements. For multiple axis systems, two single cardan units provide the optimal solution for intermediate shaft coupling in synchronised processes. In addition to the displacement compensating capacity of the single cardan version, the double cardan version also compensates radial displacements.

### Consignment

The Servoflex coupling is supplied complete and ready for installation.

The Servoflex 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.



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

### Temperature range

The couplings are designed for operating temperature of  $-30\text{ °C}$  to  $+100\text{ °C}$ .

## Maximum bores

Servoflex couplings are supplied ready for installation with the specified bore diameter.



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 Servoflex (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	max. bores
SFC-002	5
SFC-005	6
SFC-010	8
SFC-020	10
SFC-025	14
SFC-030	14
SFC-035	16
SFC-040	19
SFC-050	25
SFC-055	30
SFC-060	30
SFC-080	35
SFC-090	40
SFC-100	45

## Permitted shaft displacement

Servoflex couplings are torsionally stiff compensating couplings which, in the single cardan version, can compensate axial and angular displacement, while the double cardan version can compensate axial, angular and radial shaft displacements (Table 2). The technical specifications and table 2 give the maximum values for the various types of displacement. They ensure that the unit is able to handle the actual operating conditions, including thermal expansion and imprecise assembly. In the event of the simultaneous occurrence of several combined types of offset, every single one may not achieve its maximum value. They must be aligned in such a way that the sum of the actual offset percentages does not exceed 100%.

**Table 2: Permitted shaft displacement**

Type	$\Delta K_r$ mm	$\Delta K_a$ mm	$\Delta K_w$ °
SFC-002S		0,04	0,5
SFC-005S		0,05	0,5
SFC-010S		0,1	1
SFC-020S		0,15	1
SFC-025S		0,19	1
SFC-030S		0,2	1
SFC-035S		0,25	1
SFC-040S		0,3	1
SFC-050S		0,4	1
SFC-055S		0,42	1
SFC-060S		0,45	1
SFC-080S		0,55	1
SFC-090S		0,65	1
SFC-100S		0,74	1
SFC-002D	0,03	0,08	0,5 <sup>1</sup>
SFC-005D	0,05	0,1	0,5 <sup>1</sup>
SFC-010D	0,11	0,2	1 <sup>1</sup>
SFC-020D	0,15	0,33	1 <sup>1</sup>
SFC-025D	0,16	0,38	1 <sup>1</sup>
SFC-030D	0,18	0,4	1 <sup>1</sup>
SFC-035D	0,24	0,5	1 <sup>1</sup>
SFC-040D	0,24	0,6	1 <sup>1</sup>
SFC-050D	0,28	0,8	1 <sup>1</sup>
SFC-055D	0,31	0,84	1 <sup>1</sup>
SFC-060D	0,34	0,9	1 <sup>1</sup>
SFC-080D	0,52	1,1	1 <sup>1</sup>
SFC-090D	0,52	1,3	1 <sup>1</sup>
SFC-100D	0,55	1,48	1 <sup>1</sup>

<sup>1</sup> per disk pack

## Installation

The Servoflex coupling is supplied ready for installation. For our bores, we recommend our customers use a fit h7 shaft.

1. Please ensure that the coupling's clamping screws are loose. Clean off any dirt such as dust or oil.
2. Slide the Servoflex onto the motor shaft shank. Do not force the assembly or coupling. Now proceed in the same way with the second shaft. Now please ensure that the Servoflex coupling is easy to move both axially and in its direction of rotation, and that it is unloaded (Figure 1).

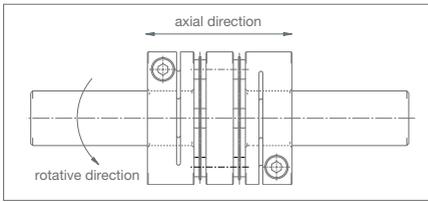


Figure 1

3. Please also ensure that both shaft shanks are inserted fully into hub section L1 (Figure 2 - please refer to the catalogue specifications for details).

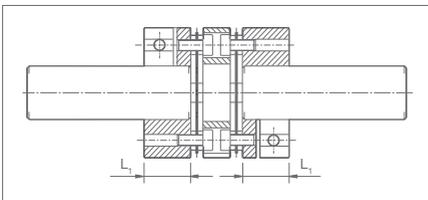


Figure 2

4. When properly positioned, the fastening screw of this hub is to be tightened to the full driving torque (values can be found in Table 3).

Table 3: Tightening torque

Type	Screw size	Tightening torque Nm
SFC-002	M1,6	0,25
SFC-005	M2	0,5
SFC-010	M2,5	1
SFC-020	M2,5	1
SFC-025	M2,5	1
SFC-030	M3	1,7
SFC-035	M4	3,8
SFC-040	M4	3,8
SFC-050	M5	8
SFC-055	M6	14
SFC-060	M6	14
SFC-080	M8	28
SFC-090	M8	28
SFC-100	M8	28

## Maintenance

Servoflex couplings are designed to be maintenance free.



SCHMIDT-KUPPLUNG GmbH does not accept liability for damage or injury caused by customer-serviced or modified couplings and/or couplings fitted with parts other than those supplied by SCHMIDT-KUPPLUNG. Any warranty becomes void through any such modifications.

## 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.

**SCHMIDT-KUPPLUNG GMBH 2022**

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