

CONTROLFLEX


INSTALLATION AND OPERATING MANUAL





Controlflex

Controlflex, the electrically insulated encoder coupling: the exclusive central element provides precise transmission of the rotary movement without angular displacement. The three-part, mating design enables flexible combinations of a variety of stock bore diameters.

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

 Controlflex 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 Controlflex. 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.

Controlflex 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.

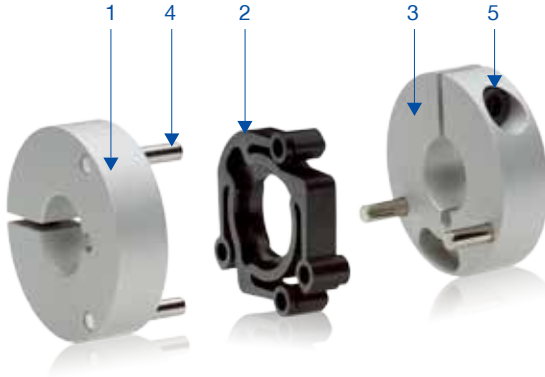
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Failure to do so can lead to malfunction, including failure of the coupling, and the consequent damage.

Installing the Controlflex



Parts list

- 1 Input shaft clamping hub
- 2 Central element
- 3 Output shaft clamping hub
- 4 Drive pin
- 5 Clamping screw

Function

Controlflex couplings are designed to compensate certain shaft displacements, unavoidable misalignments and expansions 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 2).

The Controlflex is composed of two hard-coated aluminium clamping hubs, each of which has two drive pins pressed into it. The intermediate element, which mounts on the drive pins, allows for a relatively large radial displacement.

Rotary and swivel movements are transmitted with minimal restoring forces even in the presence of radial, axial and angular displacement.

Consignment

Controlflex is supplied complete and ready for installation. The packaging is designed to prevent loss of the pre-installed clamping screws.

Controlflex 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 operating temperature range for continuous duty is -30° to $+80^{\circ}\text{C}$. Please discuss other temperature ranges with the manufacturer.

Maximum bores

Controlflex 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 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 Standard	max. bores mm
CPS 8.1	10
CPS 10.1	12
CPS 15.1	20
Type Compact	
CPS 9.1	12
CPS 14.1	22
Type Impuls Plus	
CPS 8.2	10
CPS 10.2/9.2	12
CPS 15.2/14.2	20
Type Industry	
CPS 23.1/23.2	30
CPS 30.1/30.2	40
CPS 22.1/22.2	34

Permitted shaft displacement

Controlflex couplings are torsionally rigid compensating couplings designed to compensate radial, axial and angular 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 movements of the foundation slab. If several 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.

Table 2: Permitted shaft displacement

Type Standard	Misalignment		
	radial mm	axial mm	angular °
CPS 8.1	0,4	0,3	1,5
CPS 10.1	0,7	0,5	1,5
CPS 15.1	1	0,7	1,5
Type Compact			
CPS 9.1	0,7	0,5	1,5
CPS 14.1	1	0,7	1,5
Type Impuls Plus			
CPS 8.2	0,4	0,3	1
CPS 10.2/9.2	0,7	0,5	1
CPS 15.2/14.2	1	0,7	1
Type Industry			
CPS 23.1	1,5	1	1,5
CPS 30.1	2	1,5	1,5
CPS 22.1	1,5	1	1,5
CPS 22.2	1,5	1	1
CPS 23.2	1,5	1	1
CPS 30.2	2	1,5	1

Installation

Observe the specified installation dimensions (Table 3). Controlflex couplings are generally installed as complete units. If the coupling is initially connected in parts to the shafts, then care must be taken to ensure that the driving pins are run into the corresponding bores of the central element. The attachments of the central element serve as spacers and are mounted in the direction of the hub to be connected.

Should a shaft end penetrate into the area of movement of the central element, make sure that the shaft diameter is smaller than the central element's ID by at least twice the possible radial offset.

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. For our fit F9 bore, we recommend a fit h7 shaft to our customers. In addition, shaft fits j6, k6, m6 as well as $\leq h9$ can be used without restriction.

Adjust length in accordance to the list or drawing (the smallest size is often available upon delivery) and check the assembly after installation. Changes in length, e.g. due to the effect of heat on long shafts, must be considered in terms of direction and magnitude.

The clamping screws must be tightened to the recommended driving torque according to size (see Table 4).

Table 3: Installation dimensions

Type Standard	Adjust length
CPS 8.1	16
CPS 10.1	25,5
CPS 15.1	30

Type Compact	
CPS 9.1	20,5
CPS 14.1	24

Type Impuls Plus	
CPS 8.2	20
CPS 10.2	31
CPS 15.2	38
CPS 9.2	26
CPS 14.2	32

Type Industry	
CPS 23.1	45
CPS 30.1	57

Table 4: Tightening torque

Type Standard	Screw size	Tightening torque Nm
CPS 8.1	UNC 2-56x6	0,4
CPS 10.1	M3x12	1,3
CPS 15.1	M4x16	3

Type Compact		
CPS 9.1	M2,5x12	0,7
CPS 14.1	M3x12	1,3

Type Impuls Plus		
CPS 8.2	UNC 2-56x6	0,4
CPS 10.2/14.2	M3x12	1,3
CPS 15.2	M4x16	3
CPS 9.2	M2,5x12	0,7

Type Industry		
CPS 23.1	M6x25	8
CPS 30.1	M8x30	24
CPS 22.1	M5x20	5,7

Maintenance

Controlflex couplings are maintenance free. The functionally most important part of the coupling is the central element. If lost, or damaged during commissioning, replacement central elements are available as spare parts.

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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