



Mounting and operating instructions

Safety clutch SI



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The **Coupling SI** is an overload system with positive locking. It protects the following components against destruction.
It re-engages after 30° each into the following lock-in position in case of an overload.

General Hints

Please read through these mounting instructions carefully before you set the coupling into operation. Please pay special attention to the safety instructions!
The mounting instructions are part of your product. Please keep them carefully and close to the coupling.

Safety and Advice Hints



DANGER !

Danger of injury to persons.



CAUTION !

Damages on the machine possible.



ATTENTION !

Pointing to important items.

General Hints to Danger



DANGER !

With assembly, operation and maintenance of the coupling it has to be made sure that the entire drive train is secured against unintentional engagement. You can be seriously hurt by rotating parts. Please make absolutely sure to read through and observe the following safety instructions.

- All operations on and with the coupling have to be performed taking into account "safety first".
- Please make sure to disengage the drive unit and the power packs in service before you perform your work.
- Secure the drive unit against unintentional engagement, e. g. by providing hints at the place of engagement or removing the fuse for current supply.
- Do not touch the operation area of the coupling as long as it is in operation.
- Please secure the coupling against unintentional touch. Please arrange for the corresponding protection devices and caps.

Proper Use

You may only assemble, operate and maintain the coupling if you

- have carefully read through the mounting instructions and understood them
- and if you are authorised and have proper skills

The coupling may only be used in accordance with the technical data. Unauthorized modifications on the coupling design are not admissible. We do not take any warranty for resulting damages. To further develop the product we reserve the right for technical modifications.

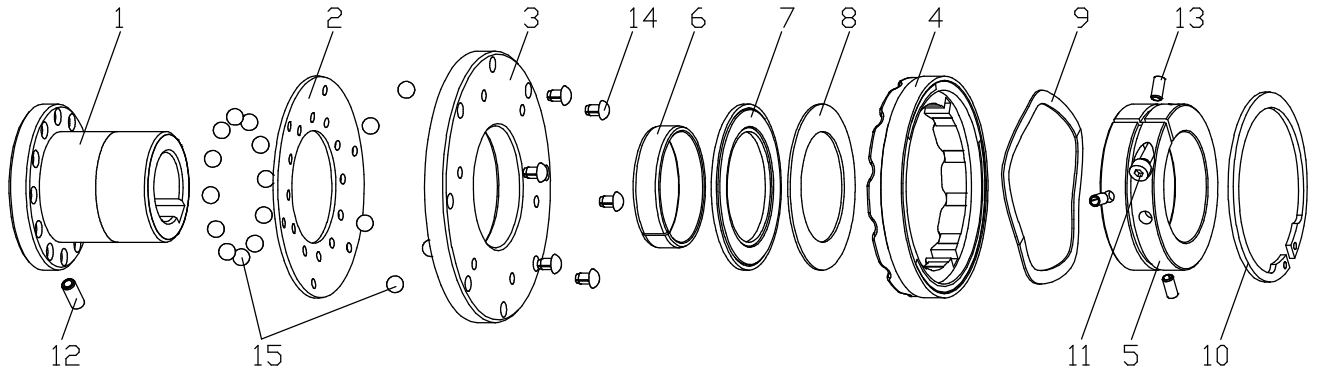
The **Coupling SI** described in here corresponds to the technical status at the time of printing of these mounting instructions.

The **Coupling SI** overload system is delivered in assembled condition.

Components Coupling SI

Component	Quantity	Nomination
1	1	hub
2	1	disk spring
3	1	flange ring
4	1	shifting ring
5	1	setting nut
6	1	slide bush
7	1	axial needle spider
8	1	axial disk

Component	Quantity	Nomination
9	1	shaft lock washer
10	1	circlip
11	1	set screw DIN 912
12	1	grub screw DIN 916
13	3	clamping sleeve DIN 7346
14	6	round head grooved pin
15	18	ball DIN 5401



picture 1: Coupling SI

General mounting instructions

- Please make sure the perfect technical condition of the **Coupling SI** overload system.
- Before assembly and operation please check whether it is necessary to clean the components.
- Lubricate the balls (e. g. Klüber-Microlube GL 263).
- Please only use original components.

Adjustment of a higher torque of engagement

- Fix the hub against twisting.
- Unscrew the set screw in the setting nut.
- Rotate the setting nut clockwise with a sickle spanner acc. to the 12 partition in the shifting ring.
- An axial thrust of the shifting ring corresponds to a twisting angle of 30° (see table of torque of engagement).
- When the desired torque of engagement is adjusted, fix the setting nut by screwing down the set screw on the threaded portion of the hub.

Adjustment of a lower torque of engagement

- Fix the hub against twisting.
- Unscrew the set screw in the setting nut.
- Rotate the setting nut anticlockwise with a sickle spanner acc. to the 12 partition in the shifting ring.
- An axial thrust of the shifting ring corresponds to a twisting angle of 30° (see table of torque of engagement).
- Count the number of axial thrusts; one axial thrust = twisting angle of 30°.
- When the desired torque of engagement is adjusted, fix the setting nut by screwing down the set screw on the threaded portion of the hub

Table of torque of engagement [Nm]

The **Coupling SI** overload system is adjusted with the torques of engagement indicated in the table, if the customer does not indicate any other value.



CAUTION !

The **Coupling SI** overload system must not exceed the max. torque of engagement!

Twisting angle setting nut	612 720 00		612 725 00		612 735 00		612 750 00	
	spring TD1	spring TD2	spring TD1	spring TD2	spring TD1	spring TD2	spring TD1	spring TD2
30°	5		10		15		50	
60°	7		20		25		57	
90°	8	15	23		28		65	
120°	9	17	25		32		73	
150°	11	20	29		35		80	
180°	13	23	33	46	38		88	
210°	15	25	37	52	40	78	95	
240°	17	27	41	58	45	86	100	
270°	18	29	45	64	49	93	110	
300°	20	30	49	70	53	100	118	
330°			52	76	57	108	126	175
360°			55	82	61	115	134	188
390°			58	86	66	122	142	200
420°			60	90	71	129	150	212
450°					74	136	157	225
480°					77	143	165	237
510°					80	150	172	250
540°							180	262
570°								275
600°								288
630°								300

 preadjusted torque of engagement

Adjustment of the torque of engagement after the disassembly

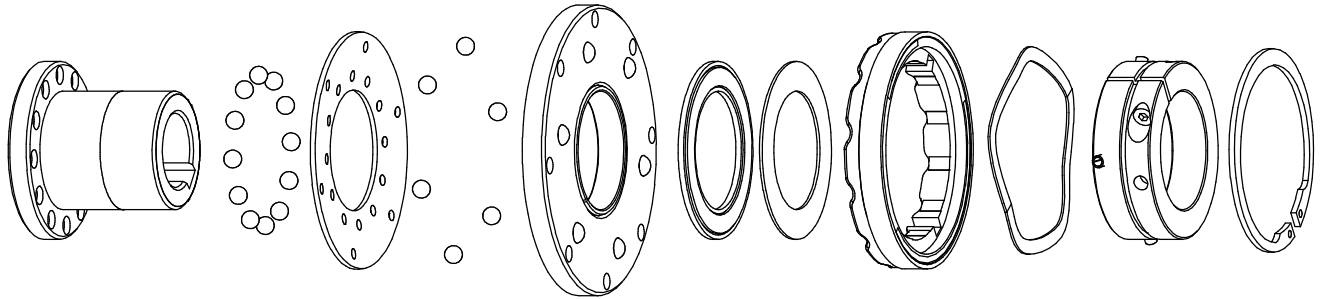
Please observe the following instructions in case of the assembly (see picture 2):

- Assemble the **Coupling SI** overload system in the order as shown in the explosion drawing.
- Assemble the balls with the help of a lubricant (e. g. Klüber-Microlube GL 263). Make sure that balls fit properly.
- The elements shifting ring, ondular washer and safety ring do not have to be assembled yet.
- Tighten the part of the setting nut without thread in the direction of the thread of the hub, tighten the setting nut onto the thread of the hub until it is in contact with the surface of the flange ring.
- Move the shifting ring onto the setting nut. Make sure that the shifting ring nuts fit properly on the grooved drive studs (turn the setting nut into the right position).
- Insert the ondular washer into the recess of the shifting ring.
- Insert the safety ring into the keyway of the setting nut (make sure a proper fit).
- Turn the setting nut clockwise by one pitch (30°) by means of a sickle spanner. A revolution of 30° corresponds to one axial thrust of the shifting ring.
- With this assembled condition the minimum slipping torque (see table of torque of engagement) of each size is achieved.
- By turning the setting nut clockwise you can set a higher torque acc. to the pitch.

Adjustment of the torque of engagement after the disassembly

Continuation:

- When the requested slipping torque is set, fix the setting nut by tightening the set screw on the threaded portion of the hub.



picture 2

Assembly feather keyway or clamping set



ATTENTION !

Please check the bore, shaft, keyway and feather key before the assembly concerning their dimensional accuracy.

Feather keyway:

For the axial fixing of the **Coupling SI** overload system with cylindrical finish bore (standard: ISO fit - H7) and feather keyway (standard: DIN 6885, page 1 - JS9), there are the following possibilities.

1. Tighten the grub screw on the feather key or the shaft.
2. Secure the hub with an end plate and a screw. The grub screw must be removed.

Clamping set:

Please ask for the special mounting instruction for the respective clamping set.
Please consider the assembly situation.

Limit switch

Operation

The axial thrust of the shifting ring arising in the event of overload operates a mechanical limit switch or an inductive sensor. Consequently a control operation is performed to disengage the drive.

Assembly

The sensor has to be mounted in a solid device in order to ensure a smooth operation. The sensor should be protected against dirt and potential mechanical disorders.

Adjustment

When the overload coupling slips, the shifting ring makes an axial thrust of about 2 mm. The sensor or limit switch, respectively, has to be mounted within this shifting range. In order to adapt the mechanical limit switch and the shifting process to the machine, the limit switch has to be adjusted accordingly. For that purpose the shifting process can be regulated after opening the cover plate on the tappet.



CAUTION !

Before delivery of the machine please make absolutely sure to check the operation of the limit switch. Please also note the operating instructions for the sensor or limit switch, respectively. The axial thrust of the hub must not be obstructed by other components.