

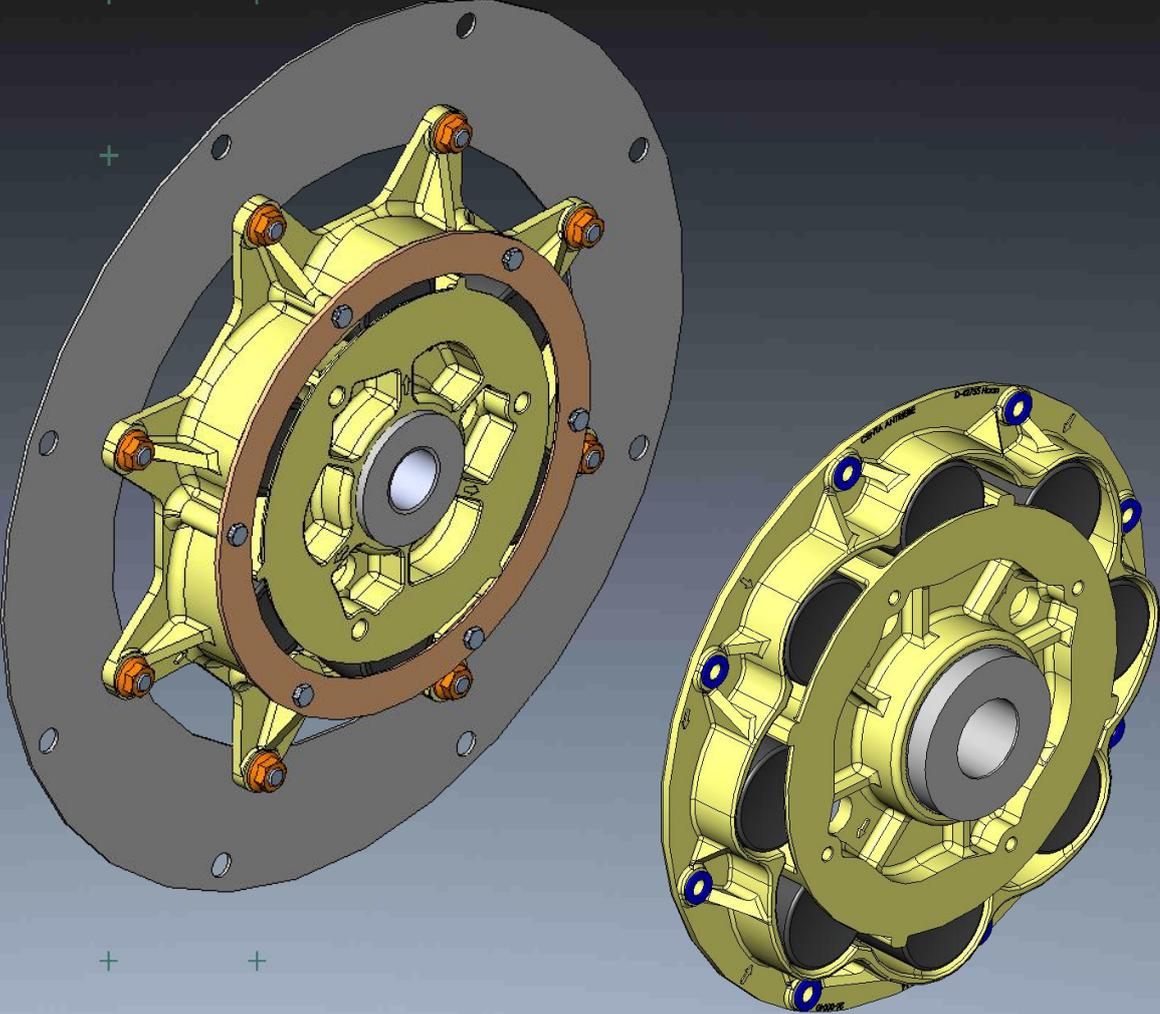
CENTAFLEX-R

Assembly and operating instructions

026S-00094...00520

M026-00006-EN

Rev. 4



Power Transmission
Leading by innovation



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1 General remarks

These assembly and operating instructions form a constituent part of the coupling delivery and must be kept in an easily accessible place at all times.

CENTA products are developed and produced to quality standard DIN EN ISO 9001:2000.

In the interests of further development, CENTA reserves the right to make technical changes.



IMPORTANT

CENTA is unable to accept liability for damage and operating faults caused by failure to observe the operating instructions.

These operating instructions are protected under copyright to CENTA Antriebe Kirschey GmbH.

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2 Safety

The purpose of these operating instructions is to enable users to:

- use the coupling safely and correctly
- maximize efficiency
- ensure that care and maintenance are carried out correctly

For this reason, these operating instructions must be thoroughly read and understood prior to work on and with the coupling.

WARNING



Injury and material damage can occur as a result of:

- Failure to adhere to the safety and accident prevention regulations valid at the relevant installation site

The safety and accident prevention regulations valid at the installation site in question must be adhered to when performing any of the tasks described in these operating instructions.

2.1 Safety remarks

In these operating instructions, safety remarks are indicated by a pictogram and a signal word.

2.1.1 Signal words

The following signal words are used in the safety remarks:

DANGER

Denotes the immediate threat of danger.
If not prevented, fatal or extremely serious injuries can result.

WARNING

Denotes a potentially dangerous situation.
If not prevented, fatal or extremely serious injuries can result.

CAUTION

Denotes a potentially dangerous situation.
If not prevented, minor injuries and/damage to property may result.

IMPORTANT

Denotes application tips and particularly useful information. This is not a signal word denoting a dangerous or damaging situation.

2.1.2 Pictograms

Possible pictograms in the safety precautions:



Warning of a hazardous area



Do not switch



Use protective gloves



Use protective goggles

2.2 Qualification of deployed personnel

All the work described in these operating instructions may only be performed by authorized persons with adequate training and instruction.

WARNING	
	<p>Injury and material damage can occur as a result of:</p> <ul style="list-style-type: none"> ▪ Work at the coupling which is not described in these instructions <p>Only carry out work which is described in these operating instructions.</p>

2.3 Intended application

WARNING	
	<p>Injury and material damage can occur as a result of:</p> <ul style="list-style-type: none"> ▪ Application not in compliance with the intended use <p>The couplings are intended exclusively for use in accordance with the relevant design. They may only be used under the specified conditions.</p>

WARNING



Injuries can occur as a result of:

- Contact with rotating parts

Shield the coupling in accordance with the applicable accident prevention regulations with an enclosure.

Exception:

The coupling is encased by the driving and driven units.

The scope of delivery provided by CENTA does not include a protective enclosure.

This enclosure must fulfil the following criteria:

- Provide protection against persons gaining access to rotating parts
- Restrain any rotating parts which may be work loose
- Guarantee sufficient ventilation for the coupling

This enclosure must be made of stable steel components. In order to ensure adequate ventilation for the coupling, the enclosure must be fitted with regular openings. For safety reasons, these openings must not exceed the dimensions outlined in table 2-1.

Component	Circular openings [mm]	Rectangular openings [mm]
Top of the enclosure	Ø 8	□ 8
Side elements of the enclosure	Ø 8	□ 8

Table 2-1 Shape and size of ventilation holes

The enclosures must be positioned a minimum of 15 mm distant from rotating parts. The enclosure must be electrically conductive and be included in the equipotential bonding.

Before commencing long-term operation, the plant must successfully complete a test run.

2.4 Application not in compliance with the intended use

WARNING	
	<p>Injury and material damage can occur as a result of:</p> <ul style="list-style-type: none">▪ Inadmissibly high torque▪ Inadmissibly high or low speeds▪ Exceeding the specified ambient temperature▪ Inadmissible ambient medium▪ Inadmissible coupling enclosure▪ Exceeding the admissible overall misalignment values <p>Only use the coupling for the specified application.</p>

CENTA bears no liability for damage resulting from application not in compliance with the intended use of the equipment.

Should there be a change of plant parameters, the coupling design must be reviewed by CENTA (address see chapter 1).

3 Delivery, transport, storage and disposal

3.1 Delivery

After delivery, the coupling:

- must be checked for completeness and correctness of the delivery.
- must be examined for possible transport damage (which must be reported immediately to the carrier).

3.2 Transport

CAUTION	
	<p>Injury and material damage can occur as a result of:</p> <ul style="list-style-type: none">▪ Incorrect transportation of couplings <p>Ensure that the coupling is correctly transported.</p>
CAUTION	
	<p>Material damage to coupling components can occur as a result of:</p> <ul style="list-style-type: none">▪ Contact with sharp-edged objects <p>Protect coupling components for transportation. Only hoist coupling components with nylon belts or ropes. Always cushion parts when supporting them from below.</p>

Following transportation damage:

- Check the coupling carefully for damage.
- Consult the manufacturer (Address see chapter 1).

3.3 Storage

CAUTION	
	<p>Material damage to elastic elements and rubber parts can occur as a result of:</p> <ul style="list-style-type: none">▪ Incorrect storage <p>These parts must be stored laid flat and so they cannot distort, and protected from ozone, heat, light, moisture and solvents.</p>
 IMPORTANT	
Rubber parts are marked where possible with their production date. From this date, they may only be stored for a maximum of 5 years.	

3.3.1 Storage location

Requirements imposed on the storage location:

- Moderately ventilated and low in dust
- Dry (max. 65% humidity)
- Temperature stabilized (-10°C to +25°C)
- Free of ozone-producing devices such as light sources and electric motors
- Free of UV light sources and direct sunlight
- Do not store solvents and disinfectants, fuels or lubricants, acids, chemicals etc. in the same location

For more details, refer to DIN 7716.

3.3.2 Storage of couplings / flexible elements

- Unpack the parts.
- Check the packaging for damage. Replace if necessary.
- Check that the wax protection on steel components is intact. If necessary, patch or renew.
- Package the parts (for prolonged periods of storage, enclose desiccant and weld into film).
- Place the parts into storage.

3.4 Disposal

RECYCLING	
	Ensure safe, environmentally responsible disposal of operating supplies and exchange parts. For this, locally provided recycling facilities and regulations must be utilized.

For disposal, the coupling parts must be separated where possible and sorted according to material type.



4 Characteristics

- Progressive characteristic with low rigidity and increased but moderate rigidity at high torques
- Anti-spin
- Simple, reliable, no vulcanisation, the rubber elements are only subjected to strain when pressure applied
- Specially developed, temperature-resistant elastomer CENTALAN with high damping effect, can be used at high ambient temperatures up to 120°C (248°F)
- For difficult operating conditions or applications, we recommend the use of our special "HD" rollers, these are also resistant to oil and can be used at ambient temperatures up to 140°C (284°F)
- In small gearboxes with splined shafts at the input shaft, the coupling may move in an axial direction. For this reason, there is a retainer plate mounted on the outer flange that secures the coupling axially
- Well proven in use and approved by classification organisations
- High dissipation due to intensive internal and external ventilation
- Economical and service-friendly
- Simple mounting - axial plug-in capability
- Protected by international patents
- Direction of motor rotation **only** counterclockwise (CCW) (looking onto the motor flywheel)

5 Mounting

5.1 General assembly instructions

Any work method which impairs the safety of the coupling is prohibited. The user undertakes to notify the manufacturer immediately of any changes occurring at the coupling which could impair safety (address see chapter 1).

WARNING	
	<p>Injuries can occur as a result of:</p> <ul style="list-style-type: none"> ▪ Contact with rotating parts <p>Before starting work at the coupling, switch off the plant and secure against unintentional start-up.</p>
WARNING	
	<p>Injury and material damage can occur as a result of:</p> <ul style="list-style-type: none"> ▪ Assembly of the coupling in the wrong sequence <p>Only ever assemble the coupling in the described sequence.</p>
WARNING	
	<p>Injury and material damage can occur as a result of:</p> <ul style="list-style-type: none"> ▪ Falling coupling components <p>Secure coupling components against falling to the floor.</p>
WARNING	
	<p>Injuries and material damages can occur as a result of:</p> <ul style="list-style-type: none"> ▪ Incorrect screw firmness and tightening torque at screw connections on SAE flywheels <p>Screws and tightening torques according to CENTA data sheet D13-017 (see Annex).</p>
CAUTION	
	<p>Material damage can occur as a result of:</p> <ul style="list-style-type: none"> ▪ Soiled joint surfaces <p>The surfaces that are to be joined must be free of dirt, preservatives and lubricants.</p>

IMPORTANT

- Use suitable lifting devices for assembly.
- Elements for connection of the coupling to customer components do not form part of the delivery.
- Part illustration and marking may differ slightly from installation drawing and delivery state.

5.2 Mounting the coupling

- Mount the coupling as appropriate for the supplied design.
 - Mounting the pre-mounted coupling (see chapter 5.3), if the inner part has:
 - a tothing and is fixed axially.

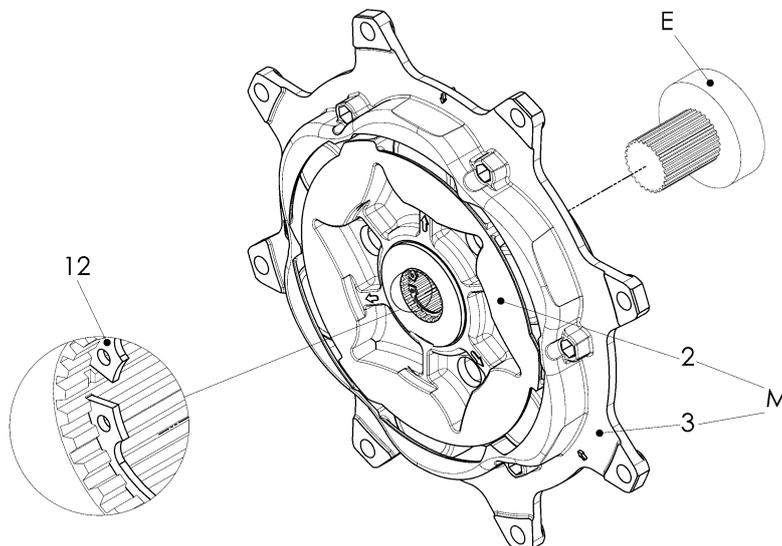


Fig. 5-1 Example: Inner part with tothing, axial fixed with circlip

Item	Info	Designation	Remark
2		Inner part	
3		Outer part	
12		Circlip	Pre-mounted, see installation drawing
E		Shaft	Customer part
M		Pre-mounted coupling	Pre-mounted by CENTA, see installation drawing

- Mounting the coupling components part by part (see chapter 5.4), if the inner part has:
 - a cylindrical bore and keyway,
 - a conical oil interference fit,
 - a CENTA-conical clamping device
 - a tothing, which must be fixed axially.

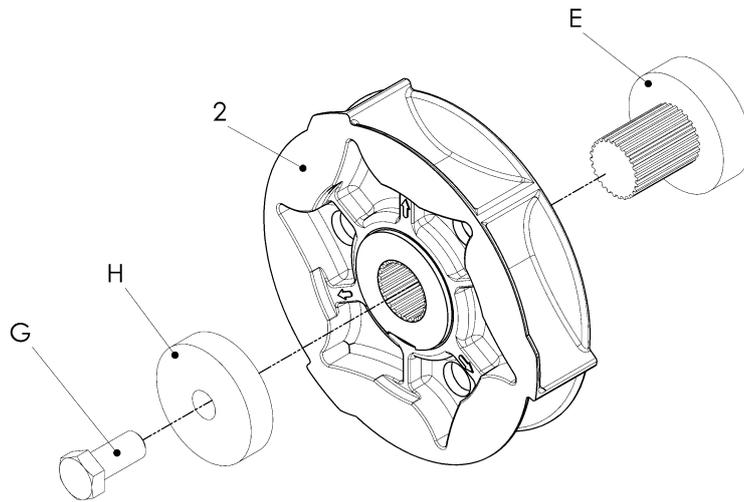


Fig. 5-2 Example: Tothing which must be fixed axially

Item	Info	Designation	Remark
2		Inner part	
E		Shaft	Customer part
G		Screw	Customer part
H		Washer	Customer part

5.3 Mounting the pre-mounted coupling

- Mount the pre-mounted coupling to the flywheel as appropriate for the supplied design.
- Mounting the pre-mounted coupling to the flywheel, see chapter 5.3.1 .
- Mounting the pre-mounted coupling with a flywheel flange to the flywheel, see chapter 5.3.2 .
- Connecting the driving and driven units, see chapter 5.3.3 .

5.3.1 Mounting the pre-mounted coupling to the flywheel

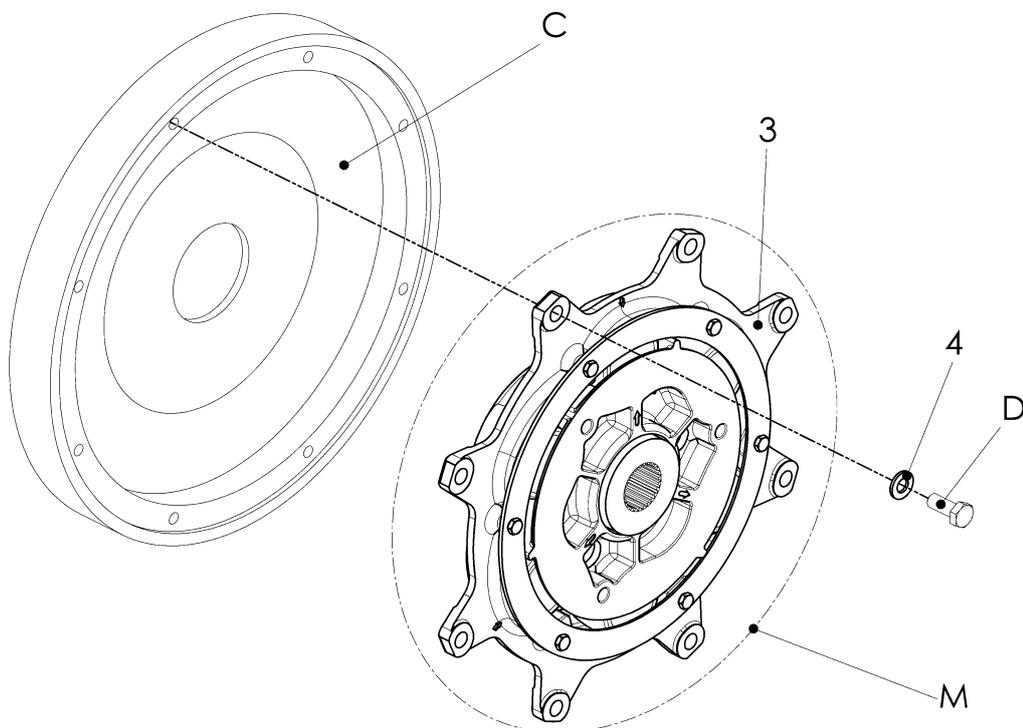


Fig. 5-3 Mounting the pre-mounted coupling to the flywheel

Item	Info	Designation	Remark
3		Outer part	
4		Washer	
C		Flywheel	Customer part
D		Screw	No scope of supply
M		Pre-mounted coupling	Pre-mounted by CENTA, see installation drawing

- Push the pre-mounted coupling (M; see installation drawing) into the centring of the flywheel (C).
- Screw the outer part (3) with screws (D) and washers (4) to the flywheel (C). Use the washers provided (4).

5.3.2 Mounting the pre-mounted coupling with a flywheel flange to the flywheel

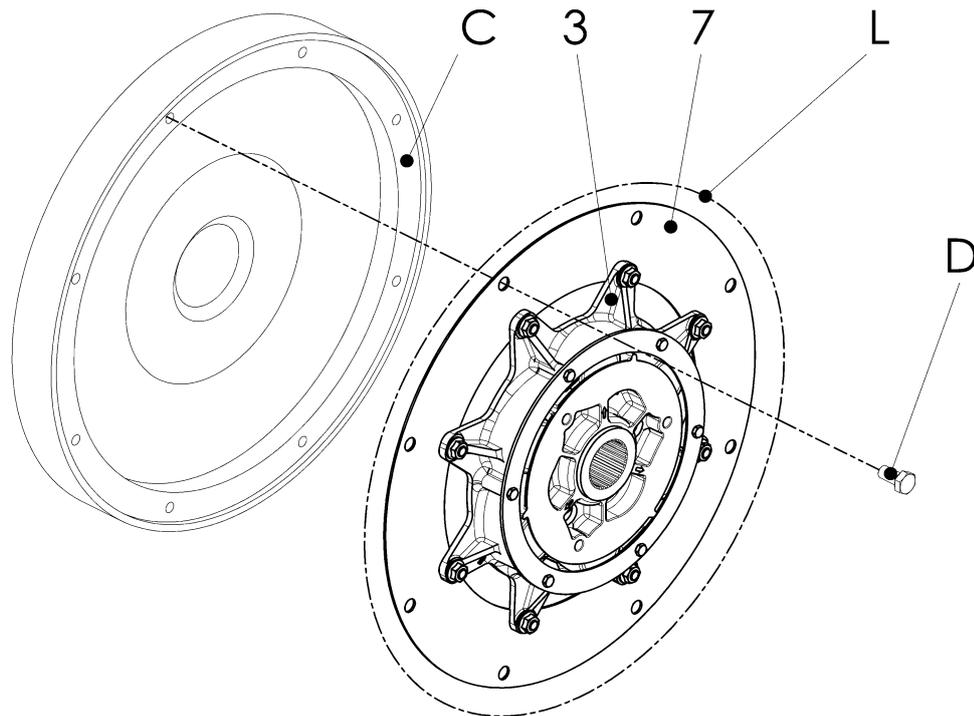


Fig. 5-4 Mounting the pre-mounted coupling with a flywheel flange to the flywheel

Item	Info	Designation	Remark
3		Outer part	
7		Flywheel flange	
C		Flywheel	Customer part
D		Screw	No scope of supply
L		Pre-mounted coupling	Pre-mounted by CENTA, see installation drawing

- Push the pre-mounted coupling (L) into the centring of the flywheel (C).
- Screw the flywheel flange (7) with screws (D) to the flywheel (C).

5.3.3 Connecting the driving and driven units

- Push the driving and driven units together.
- Screw the driving and driven units together as described by the manufacturer.

5.3.4 After completed mounting

WARNING	
	<p>Injury and material damage can occur as a result of:</p> <ul style="list-style-type: none">▪ Loose screw connections <p>Before commissioning, the tightening torque levels of all screws must be checked and corrected if necessary.</p>
CAUTION	
	<p>Motor damage can occur as a result of:</p> <ul style="list-style-type: none">▪ High axial forces at the axial bearings of the crank shaft <p>Prior to commissioning the system, ensure that the crank shaft has axial play.</p>

Before commencing long-term operation, the plant must successfully complete a test run.

5.4 Mounting the coupling in components

- Disassembling the coupling for mounting, see chapter 5.4.1 .
- Mount the outer part according to the delivered design (see installation drawing).
 - Mounting the outer part, see chapter 5.4.2 .
 - Mounting the pre-mounted outer part (N), see chapter 5.4.3 .
 - Mounting the flange and the outer part, see chapter 5.4.4 .
- Mounting the inner part according to the delivered design (see installation drawing).
 - Mounting the inner part with cylindrical bore and keyway, see chapter 5.4.5 .
 - Mounting the inner part with conical oil interference fit, see chapter 5.4.6 .
 - Mounting the inner part with CENTA-conical clamping device, see chapter 5.4.7 .
 - Mounting the inner part with toothing, see chapter 5.4.8 .
- Inserting the rubber rollers, see chapter 5.4.9 .
- Connecting the driving and driven units, see chapter 5.4.10 .
- After completed mounting, see chapter 5.4.11 .

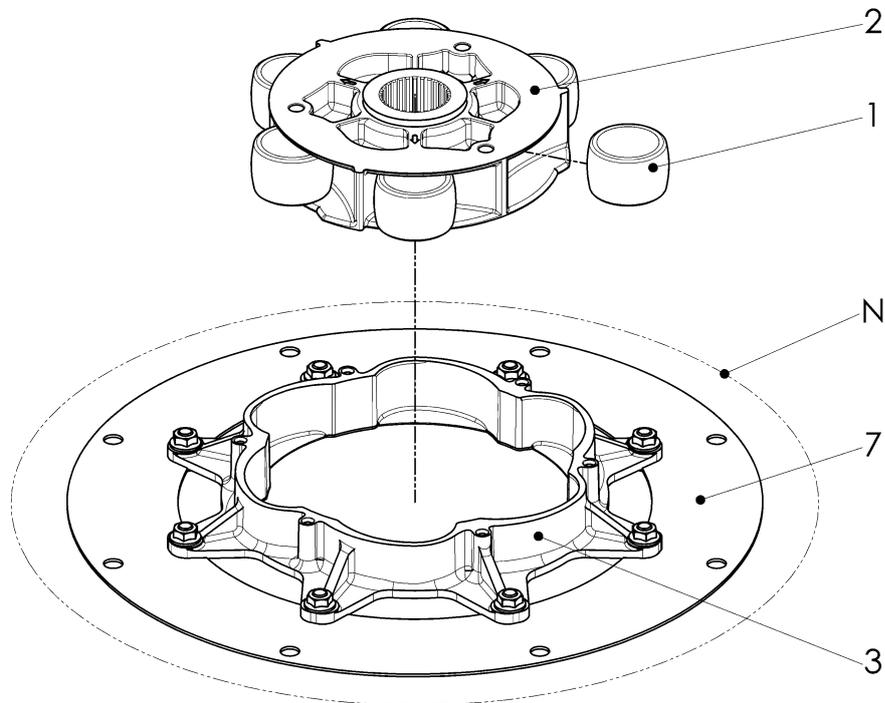
5.4.1 Disassembling the coupling for mounting


Fig. 5-5 Disassembling the coupling for mounting

Item	Info	Designation	Remark
1		Rubber roller	
2		Inner part	
3		Outer part	
7		Flywheel flange	If available
N		Pre-mounted outer part	See installation drawing

- Disassemble as follows the coupling for mounting and store temporarily.
 - Push the inner part (2) together with the rubber rollers (1) off the outer part (3).
 - Remove the rubber rollers (1) off the inner part (2).

5.4.2 Mounting the outer part

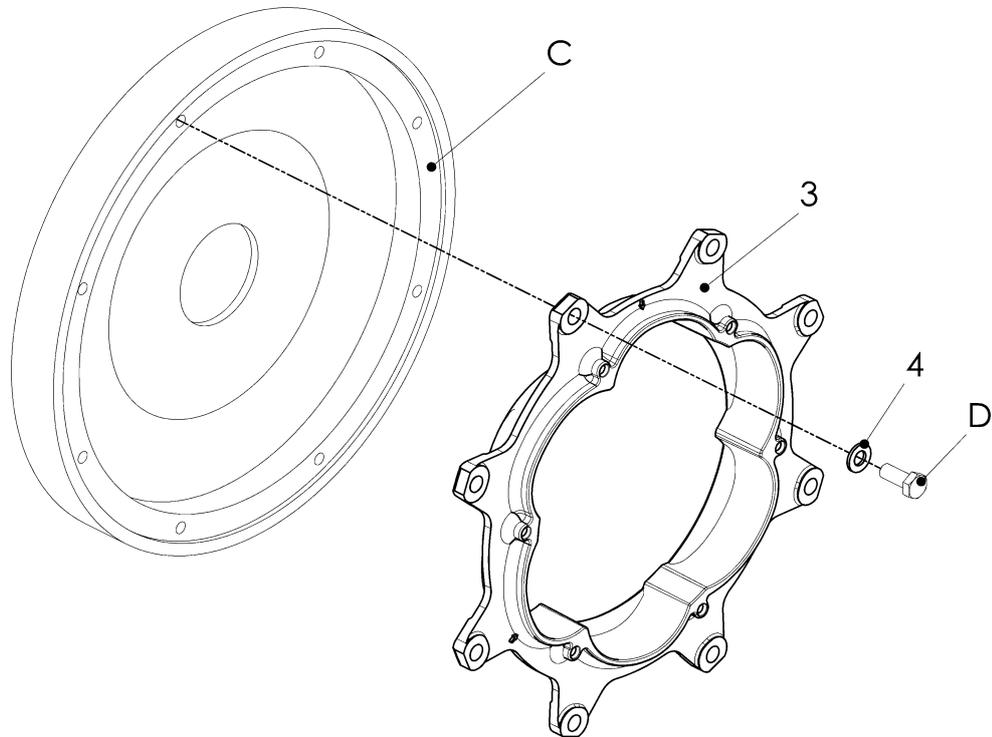


Fig. 5-6 Mounting the outer part

Item	Info	Designation	Remark
3		Outer part	
4		Washer ISO7089 300HV	
C		Flywheel	Customer part
D		Screw	Customer part

- Push the outer part (3) into the centring of the flywheel (C).
- Screw the outer part (3) with screws (D) and washers (4) to the flywheel (C). Use the washers provided (4).

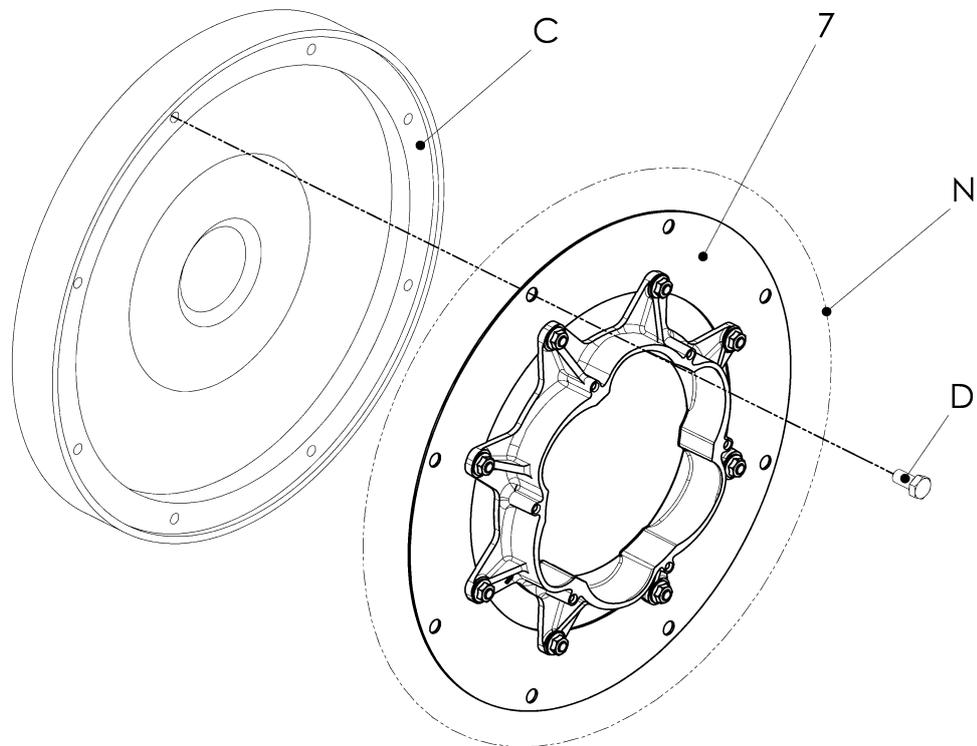
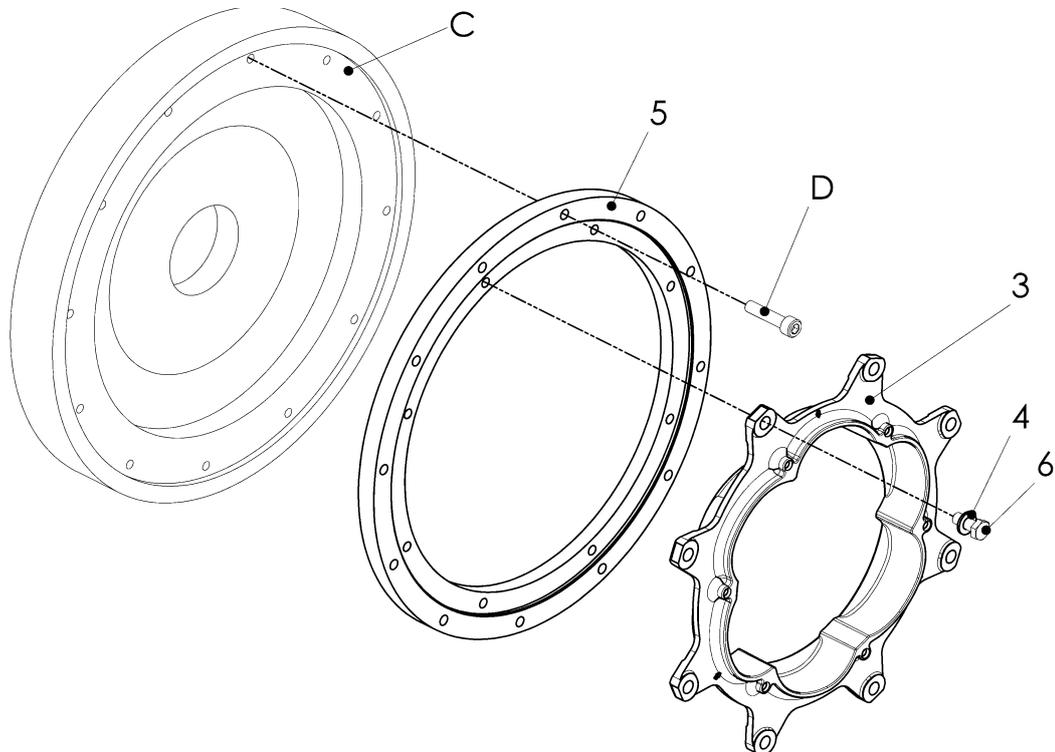
5.4.3 Mounting the pre-mounted outer part (N)


Fig. 5-7 Mounting the pre-mounted outer part (N)

Item	Info	Designation	Remark
7		Flywheel flange	
C		Flywheel	Customer part
D		Screw	Customer part
N		Pre-mounted outer part	See installation drawing

- Push the pre-mounted outer part (N) into the centring of the flywheel (C).
- Screw the flywheel flange (7) with screws (D) to the flywheel (C).

5.4.4 Mounting the flange and the outer part

Fig. 5-8 Mounting the flange and the outer part

Item	Info	Designation	Remark
3		Outer part	
4		Washer ISO7089 300HV	
5		Flange	
6		Screw ISO4762-8.8	
C		Flywheel	Customer part
D		Screw	Customer part

- Push the flange (5) into the centring of the flywheel (C).
- Screw the flange (5) with screws (D) to the flywheel (C).
- Push the outer part (3) into the centring of the flange (5).
- Screw the outer part (3) with screws (6) and washers (4) to the flange (5).

5.4.5 Mounting the inner part with cylindrical bore and keyway

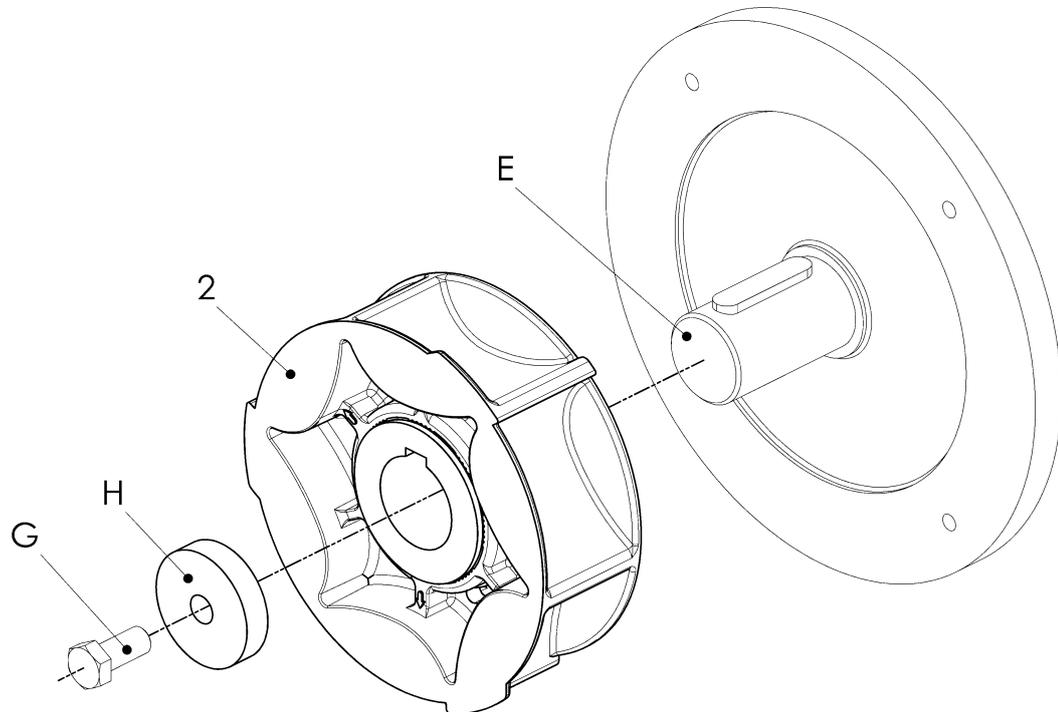


Fig. 5-9 Mounting the inner part with cylindrical bore and keyway

Item	Info	Designation	Remark
2		Inner part	
E		Shaft	Customer part
H		Washer	Customer part
G		Screw	Customer part

- Push the inner part (2) onto the shaft (E).
- If necessary:
Secure the inner part (2) against axial slip, e.g. brace the inner part (2) with washer (H) and screw (G) to the shaft (E).

5.4.6 Mounting the inner part with conical oil interference fit

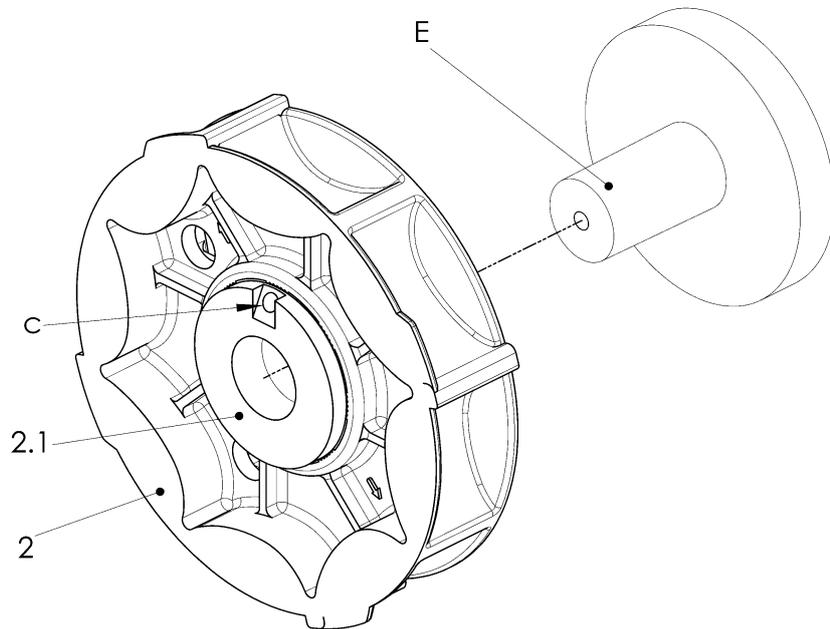


Fig. 5-10 Mounting the inner part with conical oil interference fit

Item	Info	Designation	Remark
2		Inner part	
2.1		Hub	
E		Shaft with thread	Customer part
	c	Thread	G $\frac{1}{4}$

- Lightly oil the cone of the shaft (E).
- Push the inner part (2) onto the shaft (E).

WARNING



Injury and material damage can occur as a result of:

- Non-compliance with the operating instructions for the hydraulic pumps

Before carrying out work with the hydraulic pumps, do not fail to read their operating instructions. Only ever work with hydraulic pumps as described in their operating instructions.

WARNING



Injury and material damage can occur as a result of:

- Hydraulic fluid spraying out

Use protective goggles.

 **IMPORTANT**

We recommend the following mounting fluids:

- For mounting:
Oil with a viscosity 300 mm²/s at 20°C, e.g. SKF LHMF300
- For dismantling:
Oil with a viscosity 900 mm²/s at 20°C, e.g. SKF LHDF900

- Connect the pump for expanding the hub (2.1) to the thread G¼ (c).
- Screw the pump for pushing on the hub to the shaft (E).
- Build up the oil pressure to push on the hub.

WARNING**Material damage can occur as a result of:**

- Too fast increase of the expanding pressure in the hub
- The increase of the expanding pressure may not exceed **35 bar/minute**.

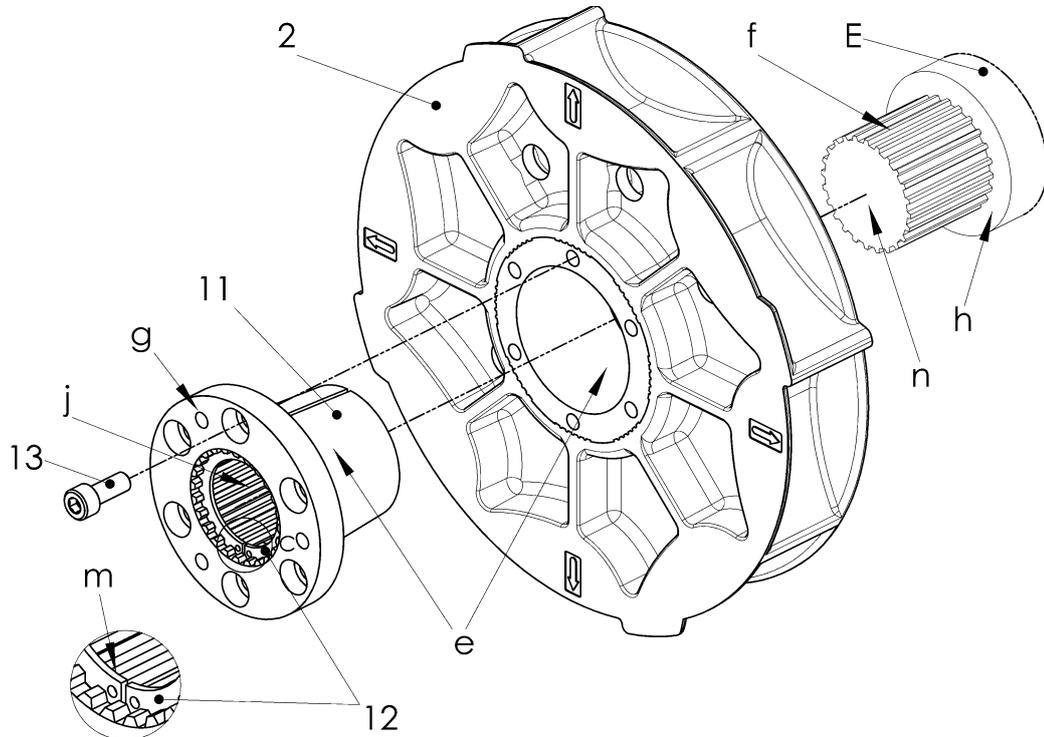
WARNING**Material damage can occur as a result of:**

- Insufficient expanding pressure in the hub
- If the expanding pressure is too low, the necessary pushing pressure is too high.

- Build up the oil pressure (**p_{max} = 1500 bar**) for expanding the hub slowly.
- Build up the oil pressure alternately until the lift path (p up) of the hub (2.1) is reached (for p up and reference faces, see installation drawing).
- Decrease the oil pressure for expanding the hub.
- Remove the pump for expanding the hub from the hub (2.1).
- Maintain the oil pressure for pushing on the hub for one hour.
- Decrease the oil pressure for pushing on the hub.
- Remove the pump for pushing on the hub from the shaft (E).
- Turn the hub (2.1), allow the oil to run out of the thread (c) and dispose of it correctly.

 **IMPORTANT**

Do not place a load on the hub for 24 hours.

5.4.7 Mounting the inner part with CENTA-conical clamping device

Fig. 5-11 Mounting the inner part with CENTA-conical clamping device

Item	Info	Designation	Remark
2		Inner part	
11		Hub-taper	
12		Circlip	Pre-mounted, see installation drawing
13		Screw ISO4762-8.8	
E		Shaft	Customer part
	e	Conical surface	
	f	Shaft extension	
	g	Forcing thread	
	h	Shaft shoulder	
	j	Drilling with tothing	
	m	Rear side of circlip	
	n	Shaft end	

 **IMPORTANT**

The conus of the inner part and hub-conus, as well as drilling in the hub-conus and shaft surfaces must be free of oil, grease and dirt.

- Preparing the hub-taper (11), inner part (2) and the shaft (E) for mounting:
 - Clean and degrease the drilling with tothing (j) and the conical surface (e) of the hub-taper (11).
 - Clean and degrease the conical surface (e) of the inner part (2).
 - Clean and degrease the shaft extension (f) of the shaft (E).
- Insert the hub-taper (11) into the inner part (2).
- Screw the hub-taper (11) with screws (13) loosely to the inner part (2).
- Push the hub-taper (11) as appropriate for the supplied design **with / without** circlip (12; see installation drawing) onto the shaft (E):
 - **with** circlip (12):
Push the hub-taper (11) with the inner part (2) onto the shaft (E), until the shaft end (n) touches the rear side of the circlip (m).

 **IMPORTANT**

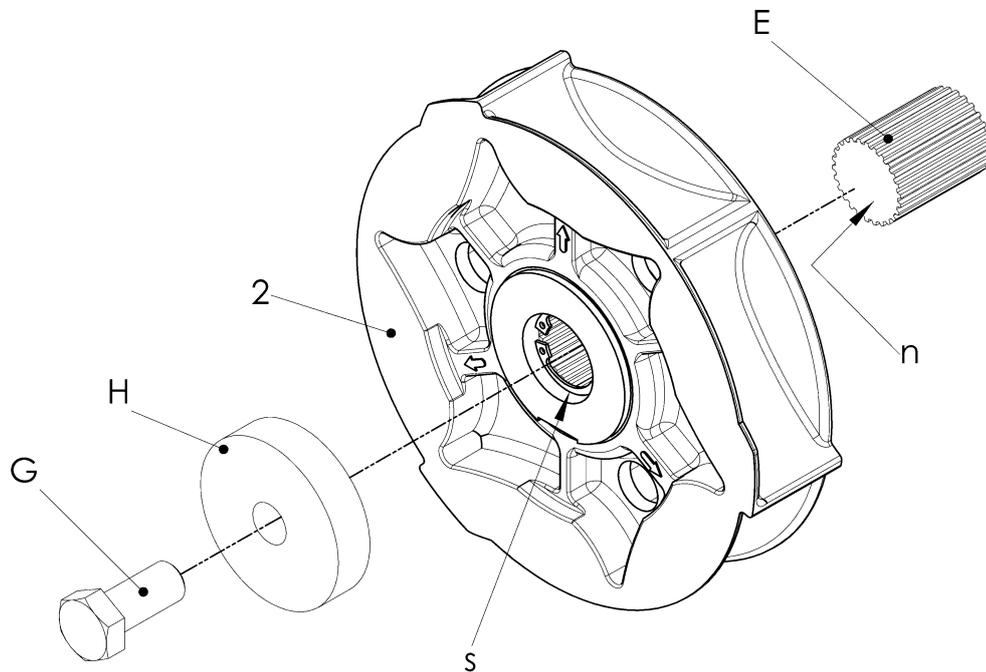
Ensure that the hub-conus is correctly positioned on the shaft (against shaft shoulder). If necessary brace hub-conus with washer against the shaft.

- **without** circlip (12):
Push the hub-taper (11) with the inner part (2) onto the shaft (E) against the shaft shoulder (h).

 **IMPORTANT**

Ensure that the hub-conus is correctly positioned on the shaft (against shaft end). If necessary brace hub-conus with washer against the shaft.

- Evenly tighten screws (13) in three steps crosswise, until the tightening torque (see installation drawing) has been achieved for all screws.
 - Step 1: 40 % of the specified tightening torque.
 - Step 2: 60 % of the specified tightening torque.
 - Step 3: 100 % of the specified tightening torque.
- Check the tightening torques of the screws (13) one after the other.

5.4.8 Mounting the inner part with tothing

Fig. 5-12 Mounting the inner part with tothing

Item	Info	Designation	Remark
2		Inner part	
H		Washer	
G		Screw	Customer part
E		Shaft	Customer part
	n	Shaft end	
	s	Stop for shaft	Pre-mounted, see installation drawing

- Push the inner part (2) onto the shaft (E), until the shaft end (n) touches the stop for the shaft (s). Mounting position and extent of the pre-assembled inner part (2) has to be taken from the installation drawing.
- If necessary:
Secure the inner part (2) against axial slip, e.g. brace the inner part (2) with washer (H) and screw (G) to the shaft (E).

5.4.9 Inserting the rubber rollers

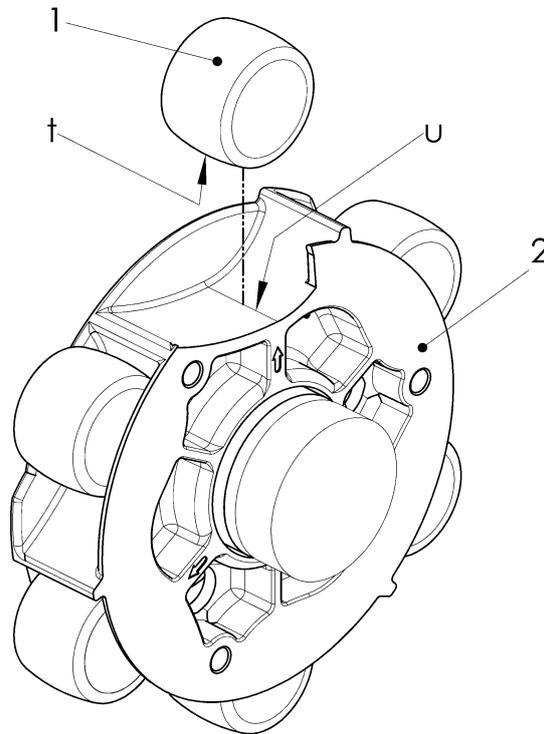


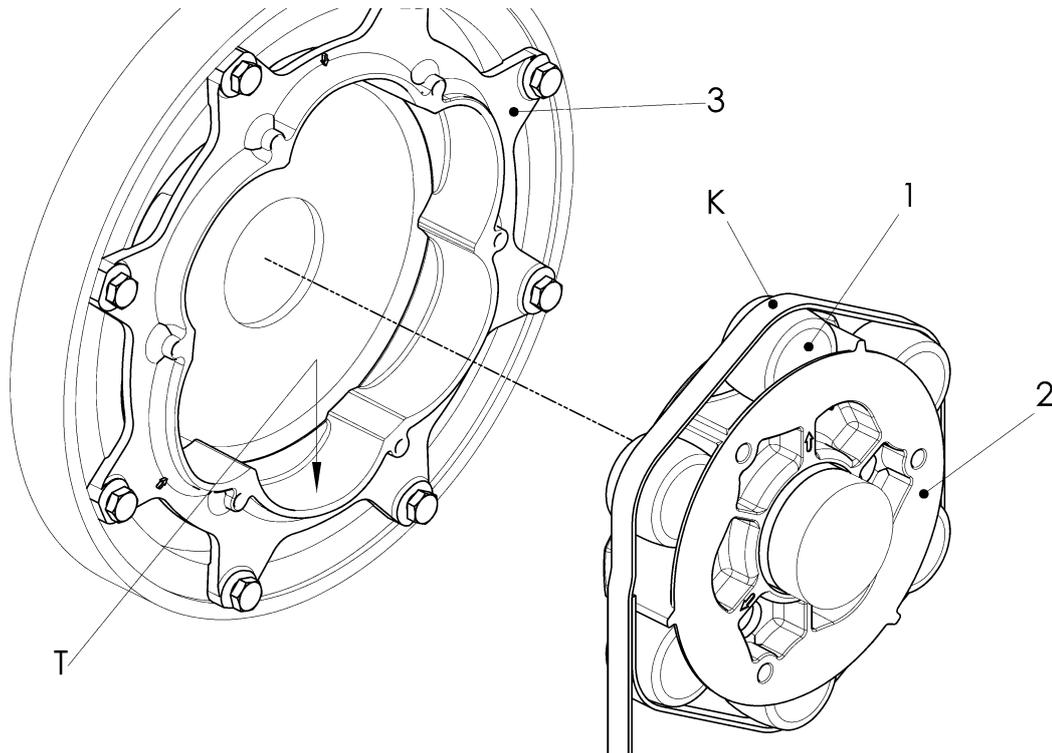
Fig. 5-13 Inserting the rubber rollers

Item	Info	Designation	Remark
1		Rubber roller	
2		Inner part	
	t	Largest diameter	Of rubber roller (1)
	u	Deepest point of pocket	Of inner part (2)

 IMPORTANT

Lay in the rubber rollers with its largest outer diameter into the deepest point of the pockets of the inner part.

- Insert the rubber rollers (1) so into the pockets of the inner part (2) that its largest diameter (t) will lay at the deepest point of the pockets (u).


Fig. 5-14 Assembly tape/cord

Item	Info	Designation	Remark
1		Rubber roller	
2		Inner part	
3		Outer part	
C		Flywheel	Customer part
K		Assembly tape	
T		Pocket	


IMPORTANT

To easy assembly, only moisten the pockets of the outer part with soap solution (10% liquid soap with 90% water) or silicone spray.

- Secure the rubber rollers (1) with assembly tape (K) to stop them falling out.
- Moisten the pockets (T) of the outer part (3) with soap solution or silicone spray.

5.4.10 Connecting the driving and driven units

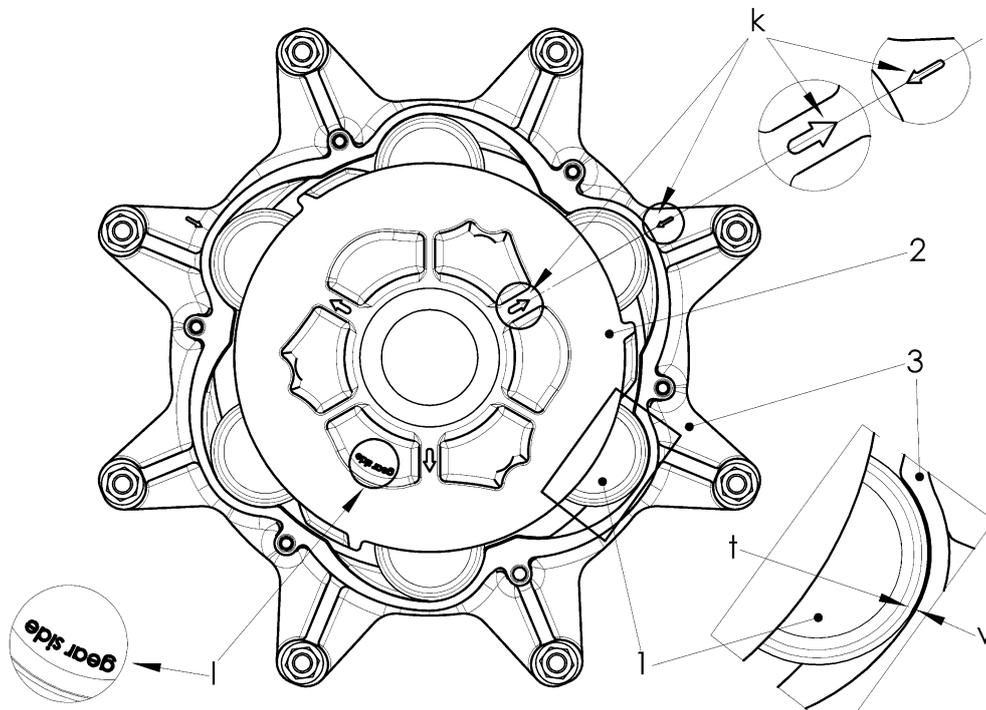


Fig. 5-15 Assembly arrows

Item	Info	Designation	Remark
1		Rubber roller	
2		Inner part	
3		Outer part	
	l	Label „gear side“	
	k	The arrows must be congruent	
	t	Largest diameter	Of rubber roller (1)
	v	Deepest point of pocket	Of outer part (3)

CAUTION



Material damage can occur as a result of:

- Incorrect positioning of outer and inner parts

The arrows on the outer part and inner part must match up (see previous fig.).

- The arrows (k) of the outer part (3) and inner part (2) must be congruent. Turn the inner part (2) towards the outer part (3) so, that the largest diameter (t) of the rubber rollers (1) are at the deepest point of the pockets (v).

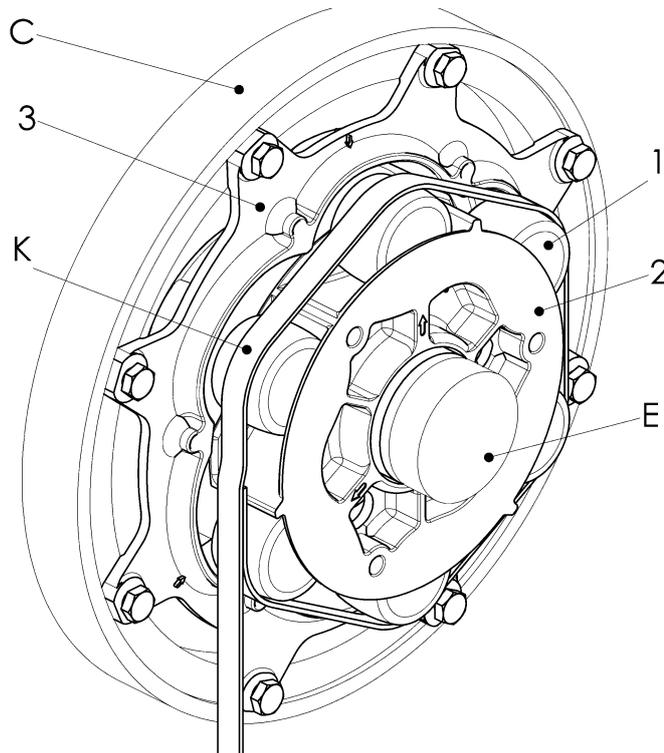


Fig. 5-16 Mounting the flange

Item	Info	Designation	Remark
1		Rubber roller	
2		Inner part	
3		Outer part	
C		Flywheel	Customer part
E		Shaft	Customer part
K		Assembly tape	

- Push the driving and driven units together until the rubber rollers (1) are held in place by the outer part (3) and inner part (2) of the coupling.
- Remove the assembly tape (K).
- Push the driving and driven units further together.
- Screw the driving and driven units together as described by the manufacturer.

5.4.11 After completed mounting**WARNING****Injury and material damage can occur as a result of:**

- Loose screw connections

Before commissioning, the tightening torque levels of all screws must be checked and corrected if necessary.

CAUTION**Motor damage can occur as a result of:**

- High axial forces at the axial bearings of the crank shaft

Prior to commissioning the system, ensure that the crank shaft has axial play.

Before commencing long-term operation, the plant must successfully complete a test run.

6 Operation**WARNING****Injury and material damage can occur as a result of:**

- Worn coupling components

If the running noises change and/or vibrations occur turn the plant off immediately.

Determine the fault and its root cause, and remedy.

The troubleshooting process is simplified by the table in the next chapter.

On principle in case of a fault, an analysis of the entire plant should be performed.



6.1 Operating faults, root causes and remedy

Faults	Possible root causes	Remedy
Running noises or vibrations in the plant	Tolerance error	<ol style="list-style-type: none"> 1. Switch off the plant 2. Check the concentricity tolerances of the connections on the driving and driven units 3. Trial run
	Loose bolts	<ol style="list-style-type: none"> 1. Switch off the plant 2. Check screw torque levels and correct if necessary 3. Trial run
Breakage of the rubber rollers	Tolerance error	<ol style="list-style-type: none"> 1. Switch off the plant 2. Exchange the rubber rollers 3. Check the concentricity tolerances of the connections on the driving and driven units 4. Trial run
	Damage due to rotary oscillation: <ul style="list-style-type: none"> • Motor idle running speed too low • Cylinder failure 	<ol style="list-style-type: none"> 1. Switch off the plant 2. Exchange the rubber rollers 3. Trial run
	Inadmissibly high torque	<ol style="list-style-type: none"> 1. Switch off the plant 2. Exchange the rubber rollers 3. Trial run

Table 6-1 Troubleshooting table

In case of uncertainty or if you have questions, please contact our head office (address see chapter 1).

7 Care and maintenance

WARNING

**Injuries can occur as a result of:**

- Contact with rotating parts

Shield the coupling in accordance with the applicable accident prevention regulations with an enclosure.

Exception:

The coupling is encased by the driving and driven units.

The coupling requires low maintenance. We recommend a visual inspection if the driving and driven units have to be separated.

7.1 Work to be performed

7.1.1 Cleaning the coupling

- Remove any loose dirt from the coupling.

7.1.2 Visual inspection of the coupling

- Inspect the coupling for cracks, chips or missing parts.
- Replace faulty and missing parts.

7.1.3 Visual inspection of the rubber rollers

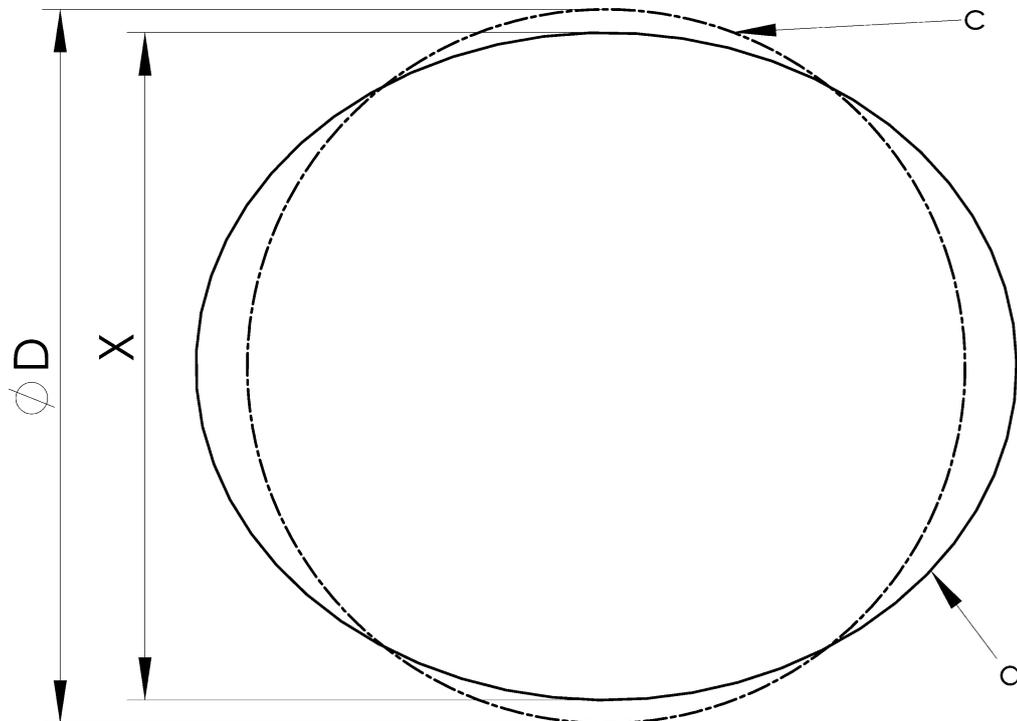


Fig. 7-1 Oval deformation of the rubber roller

Item	Info	Designation	Remark
	c	Rubber roller Delivery condition	
	d	Rubber roller Limiting value of the oval deformation	

 IMPORTANT
Deposits of rubber dust are normal.

- Examine rubber rollers for cracks.
- Check the dimension of the rubber rollers.
Exchange the rubber rollers, if measured dimension is smaller than the dimension "X".
Dimensions "X" and øD of the rubber rollers have to be taken from the following table.

CF-R Size	øD [mm]	X [mm]
94	40	36
114	55	50
136	55	50
178	55	50
216	75	70
268	81	75
318	81	75
420	81	75
520	81	75

Table 7-1 Rubber rollers**IMPORTANT**

Exchange the rubber rollers in the event of:

- Damage

7.1.4 Inspection of the screw connections

- Check the tightening torque levels of all screws and if necessary, correct.

7.2 Replacing defective parts

- Remove the coupling as described in chapter 8.
- Replace wearing parts.
- Mount the coupling as described in chapter 5.

8 Dismantling

8.1 General dismantling instructions

Any work method which impairs the safety of the coupling is prohibited.
The user undertakes to notify the manufacturer immediately of any changes occurring at the coupling which could impair safety (address see chapter 1).

 IMPORTANT
--

The coupling is dismantled in reverse order to the assembly process.
--

WARNING	
----------------	--



	Injuries can occur as a result of:
--	---

- Contact with rotating parts

Before starting work at the coupling, switch off the plant and secure against unintentional start-up.

WARNING	
----------------	--



	Injury and material damage can occur as a result of:
--	---

- Falling coupling components

Secure coupling components against falling to the floor.

WARNING	
----------------	--



	Injury and material damage can occur as a result of:
--	---

- Dismantling of the coupling in the wrong sequence

Only ever dismantle the coupling in the described sequence.

 IMPORTANT
--

Use suitable lifting devices for dismantling.

8.2 Disconnecting the driving and driven unit

- Loosen and remove the screws of the connections of the driving and driven units.
- Pull the driving and driven units apart.

 IMPORTANT
--

At pulling the driving and driven unit apart, secure the rubber rollers against falling down.

8.3 Dismantling the pre-mounted coupling with ring

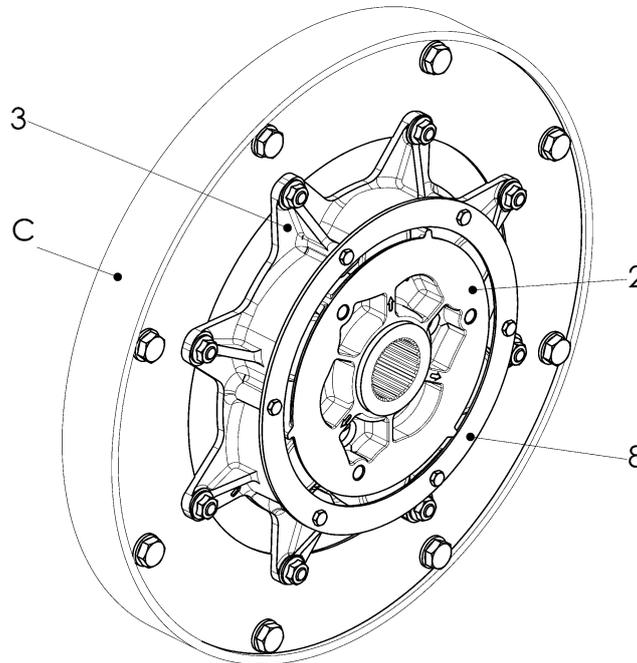


Fig. 8-1 Dismantling the pre-mounted coupling with ring

Item	Info	Designation	Remark
2		Inner part	
3		Outer part	
8		Ring	
	C	Flywheel	

- Dismantling the pre-mounted coupling, see chapter 8.3.1 .
- Dismantling the ring, see chapter 8.3.2 .
- Removing the rubber rollers, see chapter 8.3.3 .
- Assembling the coupling for reassembling
 - Preparing the outer part for reassembling, see chapter 8.3.4 .
 - Reassembling the coupling, see chapter 8.3.5 .
 - Mounting the ring, see chapter 8.3.6 .

8.3.1 Dismantling the pre-mounted coupling

See Fig. 5-3 and 5-4:

- Loosen the screws (D) of the connection pre-mounted coupling (M/L) with flywheel (C) and remove with washers (4).
- Pull the pre-mounted coupling (M/L) off the centring of the flywheel (C) and remove it.

8.3.2 Dismantling the ring

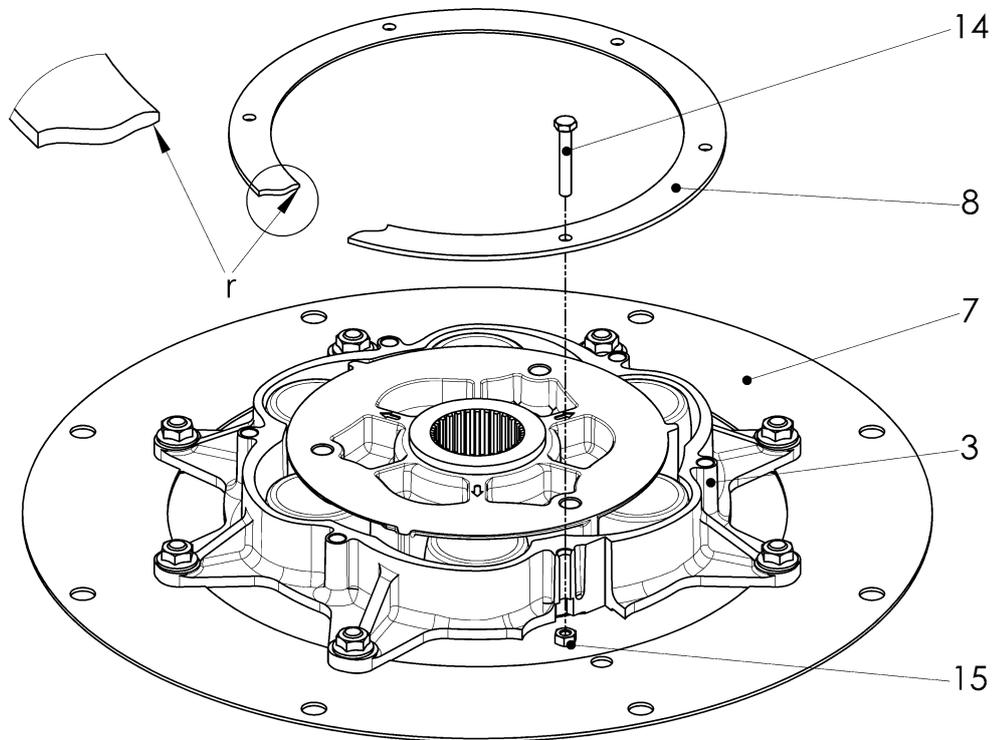


Fig. 8-2 Dismantling the ring

Item	Info	Designation	Remark
3		Outer part	
8		Ring	
14		Screw ISO4014-8.8	
15		Nut	
	r	Radius	

- Loosen and remove the screws (14) of the connection ring (8) and outer part (3).
- Remove the ring (8).

8.3.3 Removing the rubber rollers

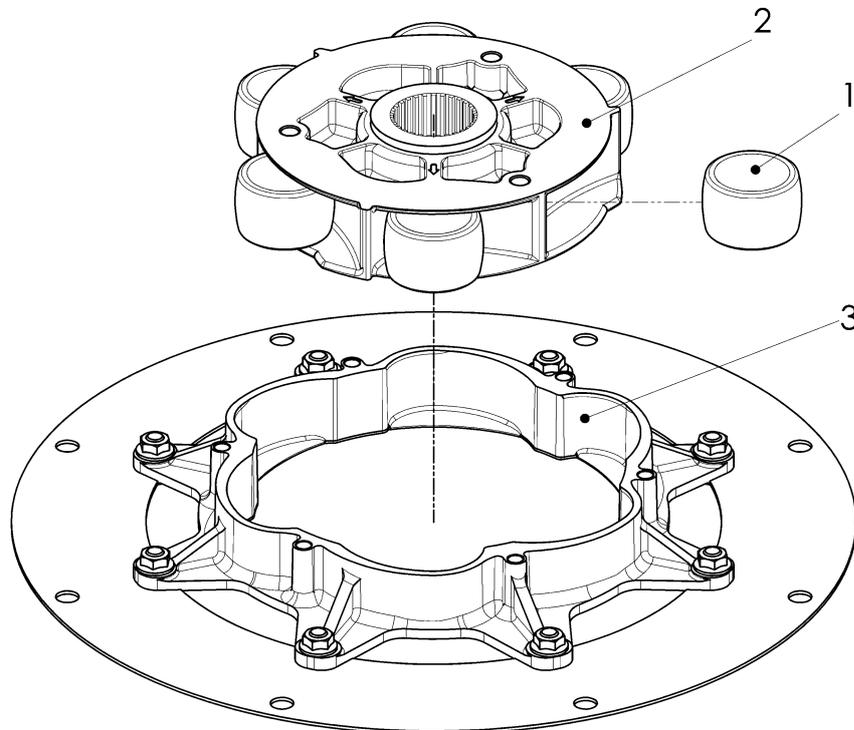


Fig. 8-3 Removing the rubber rollers

Item	Info	Designation	Remark
1		Rubber roller	
2		Inner part	
3		Outer part	

- Push the inner part (2) with the rubber rollers (1) out of the outer part (3).
- Remove the rubber rollers (1).

8.3.4 Preparing the outer part for reassembling

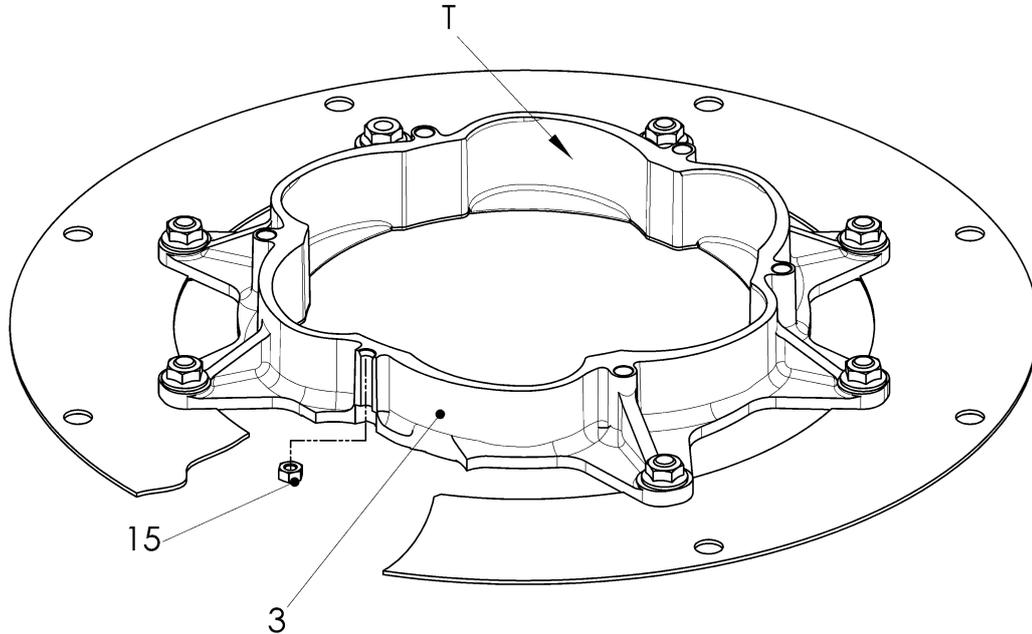


Fig. 8-4 Preparing the outer part for reassembling

Item	Info	Designation	Remark
3		Outer part	
15		Nut	
	T	Pocket of outer part	



IMPORTANT

To easy assembly, only moisten the pockets of the outer part with soap solution (10% liquid soap with 90% water) or silicone spray.

- Moisten the pockets (T) of the outer part (3) with a soap solution or silicone spray.
- Check whether the nuts (15) are in the drilling of the outer part (3), if necessary press in again.

8.3.5 Reassembling the coupling

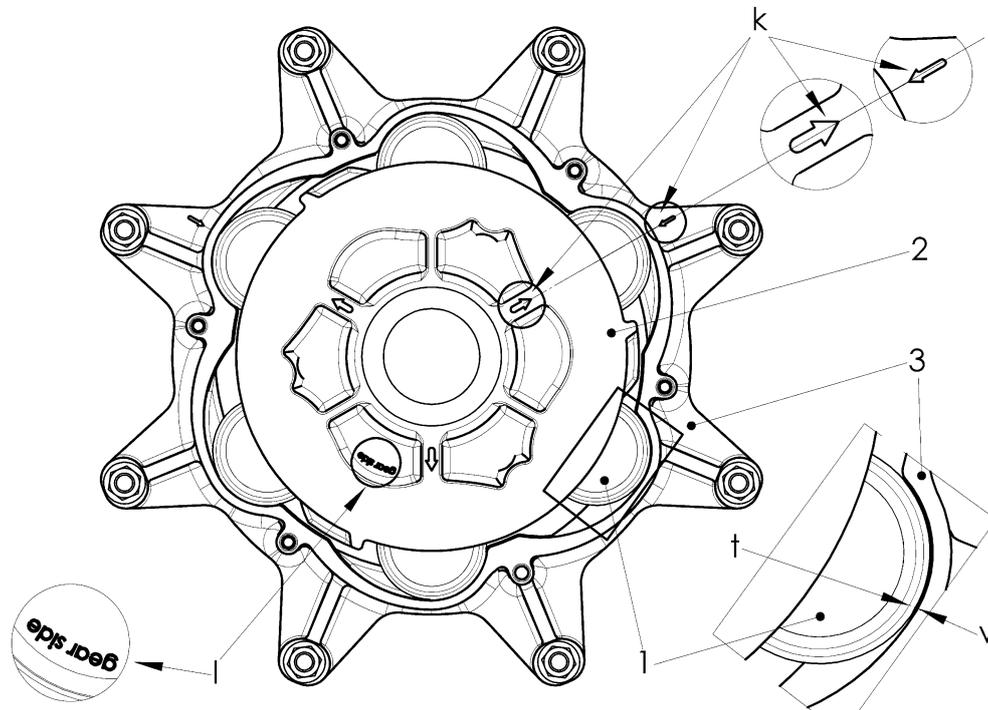


Fig. 8-5 Reassembling the coupling

Item	Info	Designation	Remark
1		Rubber roller	
2		Inner part	
3		Outer part	
	l	Label „gear side“	
	k	The arrows must be congruent	
	t	Largest diameter	Of rubber roller (1)
	v	Deepest point of pocket	Of outer part (3)

i IMPORTANT

Always replace the full set of rubber rollers.

CAUTION



Material damage can occur as a result of:

- Incorrect positioning of outer and inner parts

The arrows on the outer part and inner part must match up (see previous fig.).

- Put the inner part (2) down label (l) "gear side" on top.
- Put the rubber rollers (1) into the pockets of the inner part (2).
- Push the inner part (2) with the rubber roller (1) into the outer part (3). The arrows (k) of the outer part (3) and inner part (2) must be congruent. Turn the inner part (2) towards the outer part (3) so, that the largest diameter (t) of the rubber rollers (1) are at the deepest point of the pockets (v).

8.3.6 Mounting the ring

See Fig. 8-2:

- Place the ring (8) onto the outer part (3). The Radius (r) of the ring (8) must be directed to the outer part (3).
- Screw the ring (8) and the outer part (3) with screws (14) and nuts (15).

8.3.7 Reassembling the coupling

- Reassemble the coupling, as described in chapter 5 and chapter 5.3.

8.4 Dismantling the coupling in parts

- Exchanging the rubber rollers, see chapter 8.4.1 .
- Dismantling the inner part.
 - Dismantle the inner part with cylindrical bore and keyway, see chapter 8.4.2 .
 - Dismantling the inner part with conical oil interference fit, see chapter 8.4.3 .
 - Dismantling the inner part with CENTA-conical clamping device, see chapter 8.4.4 .
- Dismantling the outer part, see chapter 8.4.5 .

8.4.1 Exchanging the rubber rollers

- If necessary pull the inner part (2) off the outer part (3).



IMPORTANT

At pulling the driving and driven unit apart, secure the rubber rollers against falling down.

See Fig. 5-13:

- Remove the old rubber rollers (1) out of the inner part (2).

See Fig. 5-13 and 5-14:

- Insert **new** rubber rollers (1), see chapter 5.4.9 .



IMPORTANT

Always replace the full set of rubber rollers.

See Fig. 5-15 and 5-16:

- Connecting the driving and driven unit, see chapter 5.4.10 .

8.4.2 Dismantling the inner part with cylindrical bore and keyway (if necessary)

See Fig. 5-9:

- If necessary:
Loosen the screw (G) of the connection washer (H), inner part (2) and shaft (E) and remove with washer (H).
- Remove the inner part (2) off the shaft (E).

8.4.3 Dismantling the inner part with conical oil interference fit (if necessary)

WARNING



Injury and material damage can occur as a result of:

- Non-compliance with the operating instructions for the hydraulic pumps

Before carrying out work with the hydraulic pumps, do not fail to read their operating instructions. Only ever work with hydraulic pumps as described in their operating instructions.

WARNING



Injury and material damage can occur as a result of:

- Hydraulic fluid spraying out
- Use protective goggles.

WARNING



Injuries and material damages can occur by:

- Suddenly loosening hubs
- Secure the hub with a hydraulic tool against sudden axial loosening.

 IMPORTANT

We recommend the following mounting fluids:

- For mounting:
Oil with a viscosity 300 mm²/s at 20°C, e.g. SKF LHM300
- For dismantling:
Oil with a viscosity 900 mm²/s at 20°C, e.g. SKF LHDF900

See Fig. 5-10:

- Connect the pump to the thread G¼ (c) of hub (2.1) to expand the hub.
- Screw the pump to the shaft (E), in order to hold the hub.
- Build up oil pressure in order to hold the hub.

WARNING



Material damage can occur as a result of:

- Too fast increase of the expanding pressure in the hub
- The increase of the expanding pressure may not exceed **35 bar/minute**.

- Slowly build up oil pressure to expand the hub ($p_{\max} = 1500 \text{ bar}$).
 - Slowly reduce the oil pressure for holding the hub.
 - Slowly reduce the oil pressure for expanding the hub.
- Repeat the above mounting section until the hub is completely released from the shaft.
- Remove the pump for holding the hub from the shaft (E)
- Remove pump for expanding the hub from the hub (2.1).
- Turn the hub (2.1), drain oil out of the thread (c) and dispose correctly.
- Remove the inner part (2) off the shaft (E).

8.4.4 Dismantling the inner part with CENTA-conical clamping device (if necessary)

See Fig 5-11:

- Loosen the screws (13) and screw them out equally about 10mm.
- For each forcing thread screw out a screw (13) and screw it loose into the forcing thread (g).
- Force away the hub-taper (11) by screws (13) of the forcing threads.
- Remove the screws (13).
- Remove the inner part (2) with hub-taper (11) off the shaft (E).

8.4.5 Dismantling the inner part with tothing (if necessary)

See Fig. 5-12:

- If necessary:
Loosen the screw (G) of the connection washer (H), inner part (2) and shaft (E) and remove with washer (H).
- Remove the inner part (2) off the shaft (E).

8.4.6 Dismantling the outer part (if necessary)

See Fig. 5-6, 5-7 and 5-8:

- Loosen the screws (D) of the connection outer part (3) / flywheel flange (7) / flange (5) with flywheel (C) and remove with washers (4; if existing).
- Pull the outer part (3) / flywheel flange (7) / flange (5) off the centring of the flywheel (C) and remove it.

8.4.7 Reassembling the coupling

- Reassemble the coupling as described in chapter 5 and chapter 5.4 .

9 Wearing and spare parts

WARNING

**Injury and material damage can occur as a result of:**

- Mounting and/or utilization of non-original CENTA parts
- Never use parts from other manufacturers.

A stock of the most important wearing and spare parts is the most important condition to ensure that the coupling is functional and ready for operation at all times.

We only provide a warranty for CENTA original parts.

Wearing parts of this coupling:

- Rubber rollers



IMPORTANT

Always replace the full set of rubber rollers.

When ordering a spare, specify:

- Order no.
- Coupling order no.
- Drawing no.



10 Annex

10.1 CENTA data sheet D013-017 (SAE flywheel screw connection)

Validity:

For all dynamically non-stressed screw connections on SAE flywheels with headless screws according to ISO 4014, ISO 4017 and ISO 4762 (DIN 912) with standard metric thread according to DIN ISO 262 and further threads indicated in the following table, if no deviating data are specified in CENTA documents.

Preparation of components to be screwed

Joining areas must be free of dirt, preservative and lubricant agents.

Preparation of oiled screws:

Additionally lubricate screws under the screw head and on the thread with motor oil.

Use tightening torque for **oiled** screws.

Preparation of non-oiled screws:

Use screws as delivered.

Use tightening torque for **non-oiled** screws.

Screw tightening procedure:

rotating (by hand with torque wrench).

Flywheel SAE J620c		Thread size	Strength class	Tightening torques for			
				non-oiled screws		oiled screws	
				[Nm] ±5%	[in lbs] ±5%	[Nm] ±5%	[in lbs] ±5%
165	6 ½	M8	DIN 8.8 or 10.9	23	205	21	185
		5/16-18	SAE 5 or 8	24	212	18	160
190	7 ½	M8	DIN 8.8 or 10.9	23	205	21	185
		5/16-18	SAE 5 or 8	24	212	18	160
200	8	M10	DIN 8.8 or 10.9	46	410	41	360
		3/8-16	SAE 5 or 8	42	370	31	275
255	10	M10	DIN 8.8 or 10.9	46	410	41	360
		3/8-16	SAE 5 or 8	42	370	31	275
290	11 ½	M10	DIN 8.8 or 10.9	46	410	41	360
		3/8-16	SAE 5 or 8	42	370	31	275
355	14	M12	DIN 8.8 or 10.9	79	700	71	630
		1/2-13	SAE 5 or 8	100	885	77	680
405	16	M12	DIN 8.8 or 10.9	79	700	71	630
		1/2-13	SAE 5 or 8	100	885	77	680
460	18	M16	DIN 8.8 or 10.9	195	1725	170	1500
		5/8-11	SAE 5 or 8	205	1820	155	1370
530	21	M16	DIN 8.8 or 10.9	195	1725	170	1500
		5/8-11	SAE 5 or 8	205	1820	155	1370
610	24	M18	DIN 8.8 or 10.9	245	2170	245	2170
		3/4-10	SAE 5 or 8	360	3200	270	2400



10.2 CENTA data sheet D026-900
Declaration of incorporation according to the EC Machinery Directive 2006/42/EC, Appendix II B

Manufacturer:

CENTA Antriebe
Kirschey GmbH
Bergische Strasse 7
42781 Haan / GERMANY

Contact:

Phone +49-2129-912-0
Fax +49-2129-2790
centa@centa.de
www.centa.info

We herewith declare that the **incomplete** machine

Product: Highly elastic coupling CENTAFLEX-R

Model / series code: CF-R(S) / 026S

Installation size: 94...520

Design: all

Serial number: according to shipping documents, if applicable

- provided this is possible as far as the scope of supply is concerned - complies with the following basic requirements of the **Machinery Directive 2006/42/EC** Appendix I, subchapters 1.1.2, 1.1.3, 1.1.5, 1.3.2, 1.3.3, 1.3.4 and 1.5.4.

In addition, we declare that the special technical documents for this incomplete machine were compiled according to Appendix VII Part B and undertake to forward these to the market monitoring authorities by request via our "Documentation Department".

Commissioning of the incomplete machine is interdicted until the incomplete machine has been incorporated in a machine and the latter complies with the provisions of the EC Machinery Directive and the EC Declaration of Conformity according to Appendix II A is on hand.

The declaration is invalidated by every modification to the delivered parts.

Authorised representative for the compilation of the relevant technical documents:

i.A. G. Anderseck

by order of Gunnar Anderseck
(Authorised Person Documentation)

Declaration of incorporation was issued:

i.v. J. Exner

by proxy Dipl.-Ing. Jochen Exner
(Design Management)

Haan, 14.12.2009