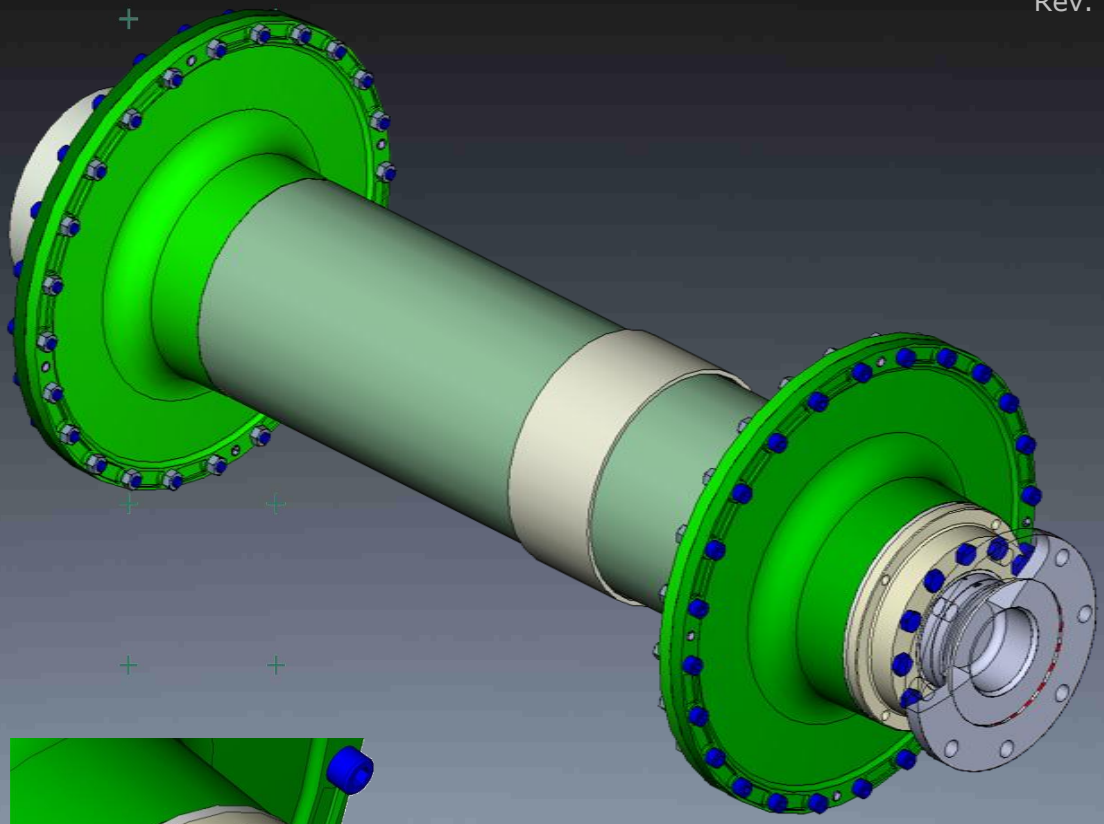
CENTADISC

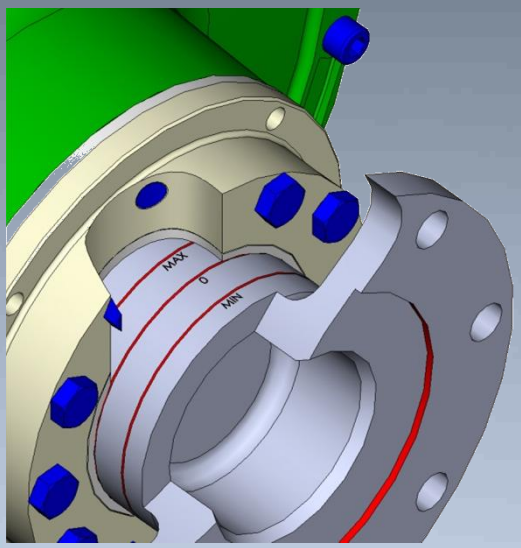
Assembly and operating instructions

CD-C0F/G...C5F/G

M034-00003-EN

Rev. **1**





CENTA

Power Transmission
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Contents

Index of illustrations

Index of tables

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.

In case of technical questions, please enquire with our head office:

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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	
	**Injury and material damage can occur as a result of:** ▪ Work at the coupling which is not described in these instructions Only carry out work which is described in these operating instructions.

2.3 Intended application

WARNING	
	**Injury and material damage can occur as a result of:** ▪ Application not in compliance with the intended use The couplings are intended exclusively for use in accordance with the relevant design. They may only be used under the specified conditions.

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	
	**Injury and material damage can occur as a result of:** ▪ 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 Only use the coupling for the specified application.

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	
	**Injury and material damage can occur as a result of:** ▪ Incorrect transportation of couplings Ensure that the coupling is correctly transported.

CAUTION	
	**Material damage to coupling components can occur as a result of:** ▪ Contact with sharp-edged objects Protect coupling components for transportation. Only hoist coupling components with nylon belts or ropes. Always cushion parts when supporting them from below.

Following transportation damage:

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

3.3 Storage

CAUTION	
	**Material damage to elastic elements and rubber parts can occur as a result of:** ▪ Incorrect storage These parts must be stored laid flat and so they cannot distort, and protected from ozone, heat, light, moisture and solvents.

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 Technical description

4.1 Characteristics

The CENTADISC-C series have following exellent characteristics:

- Robust, lightweight, torsional stiff, corrosion resistant, sound absorbing and dampening for vibrations.
- Any kind of displacement (axial, radial and angular) is accepted without wear within the tolerable limits.
- Adaptable concerning length and connecting flanges or hubs.
- The middle part can be removed radially without displacing the units. The load capacity and reliability under maximum misalignment and nominal torque has been proven by detailed tests with moore than $10x10^6$ load changes.
- Design is patented.

4.2 Specifications

The specifications can be found in the catalogue and the dimensions in the installation drawing.

5 Alignment of the units being connected

IMPORTANT

- The units should be aligned during assembly.
- The overall misalignment is composed of the misalignment and the operating misalignment. The permissible overall misalignment values can be found in chapter 7.2 and must not be exceeded.
  Align the units that are to be connected as accurately as possible. In this way, a long service life for the coupling and maximum operating misalignment values can be achieved.
  After completion of assembly, check the alignment of the coupling again and if necessary correct.

➢ Align the units being connected as appropriate for the type of the coupling supplied. To identify the type refer to the installation drawing.

  ➢ Aligning the units for couplings of type: F,
  see chapter 5.1.1 to 5.1.3.

  ➢ Aligning the units for couplings of type: G,
  see chapter 5.2.1 to 5.2.3 .

5.1 Aligning the units for couplings of type: F

5.1.1 Axial alignment, type: F

Determine the axial misalignment (see Fig. 5-1).

- Take installation length **L** from the installation drawing.
- Align the units (installation dimension = **$L \pm \Delta K_{A\ max}$**).

Permissible axial alignment tolerance:
$\Delta K_{A\ max} = \pm 10$ mm

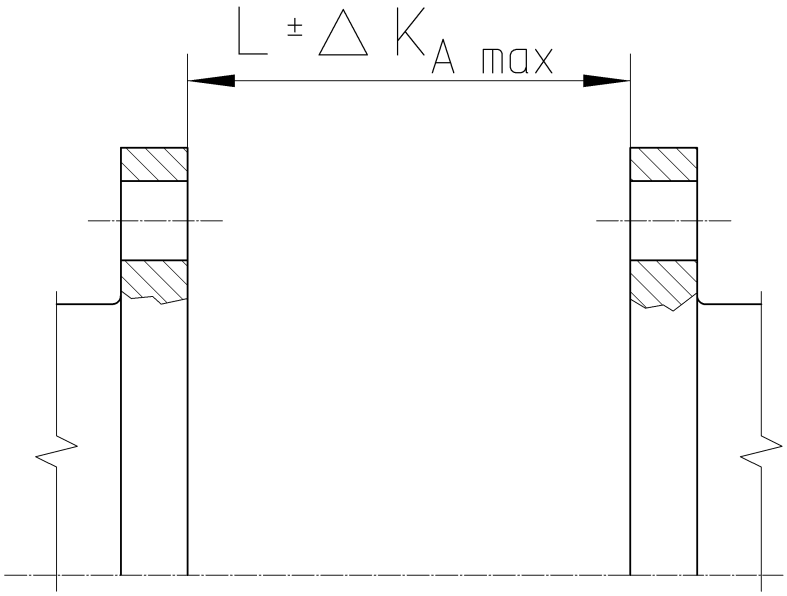

Fig. 5-1 Axial misalignment, type: F

5.1.2 Radial alignment, type: F

Determine the radial misalignment (see Fig. 5-2).

- Take installation length **L** from the installation drawing.
- Align the units (calculated deviation **≤$\Delta K_{R\,max}$**).

The permissible radial alignment tolerance **$\Delta K_{R\,max}$** can be found in the following table.

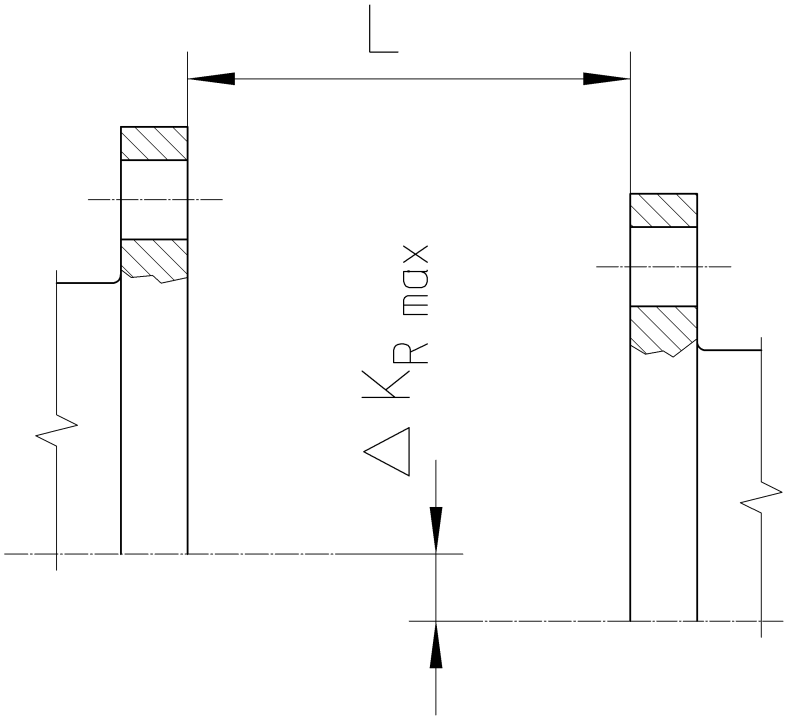

Fig. 5-2 Radial misalignment, type: F

L [mm]	**$\Delta K_{R\ max}$ [mm]**
200 - 400	±0.6
400 - 600	±1.4
600 - 800	±2.0
800 - 1000	±2.8
1000 - 1200	±3.4
1200 - 1400	±4.2
1400 - 1600	±4.8
1600 - 1800	±5.6
1800 - 2000	±6.2
2000 - 2200	±7.0
2200 - 2400	±7.6
2400 - 2600	±8.4
2600 - 2800	±9.0
2800 - 3000	±9.6
3000 - 3200	±10.4
3200 - 3400	±11.2
3400 - 3600	±11.8
3600 - 3800	±12.6
3800 - 4000	±13.2
4000 - 4200	±14.0
4200 - 4400	±14.6
4400 - 4600	±15.4
4600 - 4800	±16.0
4800 - 5000	±16.8

Table 5-1 Permissible radial alignment tolerance

5.1.3 Angular alignment, type: F

Determine the angular misalignment (see Fig. 5-3).

- Align the units (calculated deviation **≤ΔK$_{W\ max}$**). The angular deflection has to be checked at each flange seperately.

Permissible angular alignment tolerance:
ΔK$_{W\ max}$=0.2°

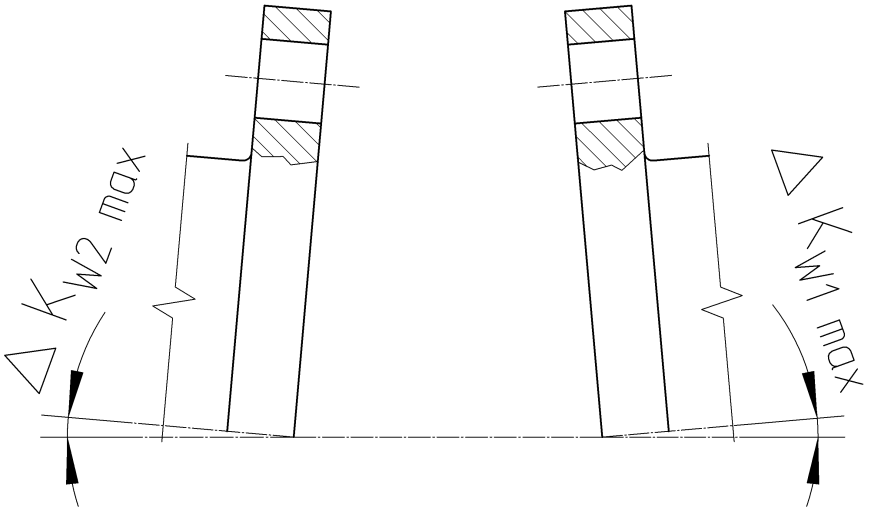

Fig. 5-3 Angular misalignment, type: F

5.2 Aligning the units for couplings of type: G

5.2.1 Axial alignment, type: G

Determine the axial misalignment (see Fig. 5-4).

- Take the installation length **L** from the installation drawing.
- Align the units (installation dimension = **$L \pm \Delta K_{A\ max}$**).

Permissible axial alignment tolerance:
$\Delta K_{A\ max}$=±10 **mm**

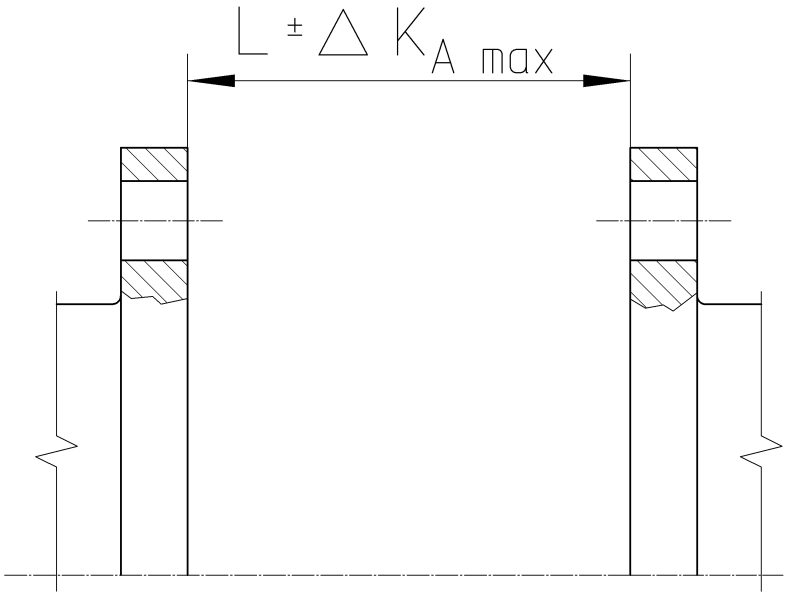

Fig. 5-4 Axial misalignment, type: G

5.2.2 Radial alignment, type: G

Determine the radial misalignment (see Fig. 5-5).

- Take the installation length **L** from the installation drawing.
- Align the units (calculated deviation **≤ΔK$_{R\ max}$**).

The permissible radial alignment tolerance **ΔK$_{R\ max}$** can be found in the following table.

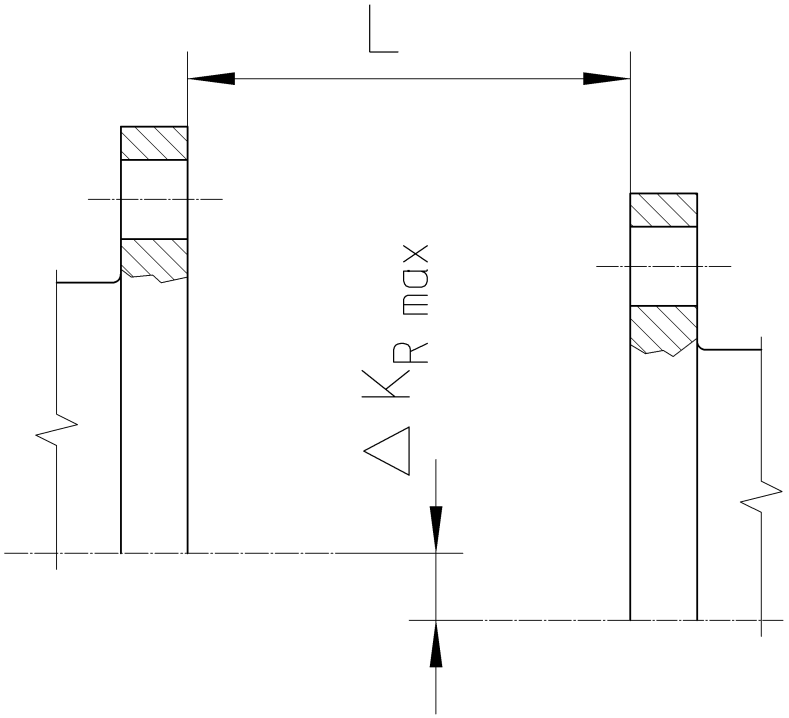

Fig. 5-5 Radial Misalignment, type: G

L [mm]	**$\Delta K_{R\ max}$ [mm]**
200 - 400	±0.3
400 - 600	±0.7
600 - 800	±1.0
800 - 1000	±1.4
1000 - 1200	±1.7
1200 - 1400	±2.1
1400 - 1600	±2.4
1600 - 1800	±2.8
1800 - 2000	±3.1
2000 - 2200	±3.5
2200 - 2400	±3.8
2400 - 2600	±4.2
2600 - 2800	±4.5
2800 - 3000	±4.8
3000 - 3200	±5.2
3200 - 3400	±5.6
3400 - 3600	±5.9
3600 - 3800	±6.3
3800 - 4000	±6.6
4000 - 4200	±7.0
4200 - 4400	±7.3
4400 - 4600	±7.7
4600 - 4800	±8.0
4800 - 5000	±8.4

Table 5-2 Permissible radial alignment tolerance

5.2.3 Angular alignment, type: G

Determine the angular misalignment (see Fig. 5-6)

- Align the units (calculated deviation **≤$\Delta K_{W\,max}$**). The angular deflection has to be checked at each flange separately.

Permissible axial alignment tolerance:
$\Delta K_{W\,max}$=0.1°

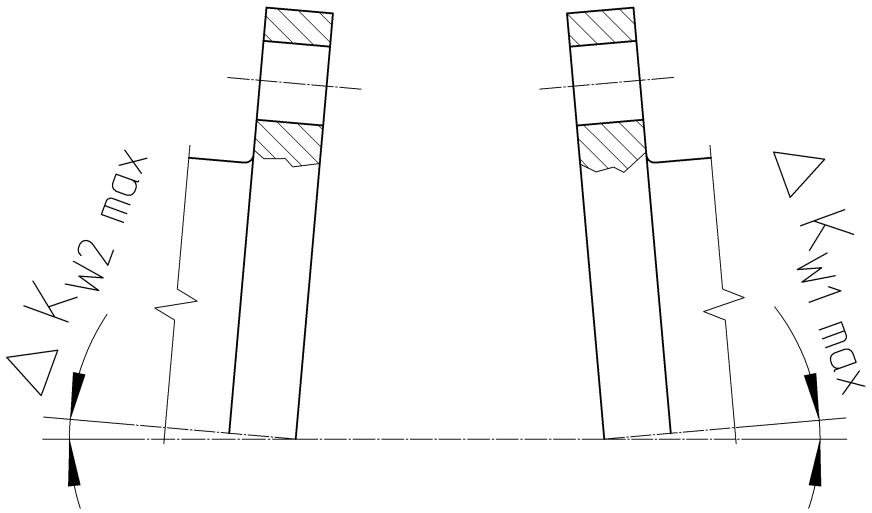

Fig. 5-6 Angular misalignment, type: G

6 Mounting

6.1 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	
	**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:** ▪ Assembly of the coupling in the wrong sequence Only ever assemble the coupling in the described sequence.

WARNING	
	**Injury and material damage can occur as a result of:** ▪ Falling coupling components Secure coupling components against falling to the floor.

CAUTION	
	**Material damage to coupling components can occur as a result of:** ▪ Contact with sharp-edged objects Protect coupling components for transportation. Only hoist coupling components with nylon belts or ropes. Always cushion parts when supporting them from below.

CAUTION	
	**Material damage can occur as a result of:** ▪ Soiled joint surfaces The surfaces that are to be joined must be free of dirt, preservatives and lubricants.

CAUTION	
	**Material damage to coupling components can occur as a result of:** ▪ Anaerobic adhesives (e.g. Loctite) used for screw locking This type of screw locking medium may not be in contact with rubber parts.

IMPORTANT

- Screw preparation and tightening torque levels in accordance with CENTA data sheet D013-013 (see chapter 11.1).
- Use suitable lifting devices for assembly.
- The following assembly stages are described for coupling CD-C2..
- Elements for connection of the coupling to customer components do not form part of the delivery.
- Part illustration and marking may different slightly from installation drawing and delivery state.

6.2 Aligning the units

➢ Align the units to be connected (see chapter 5).

6.3 Mounting the coupling according to the installation location

➢ Mount the coupling either in all or part by part, depending on the installation location.

  ➢ Mounting the pre-mounted coupling, see chapter 6.4 .

  ➢ If necessary (e.g. in small installation spaces with bulkhead) Disassembling the pre-mounted coupling and mounting part by part, see chapter 6.5 .

IMPORTANT

- Damages to the CFK-tubes are not accepted by classification companies.

6.4 Mounting the pre-mounted supplied coupling

6.4.1 Preparing the pre-mounted supplied coupling for mounting

CAUTION	
	**Material damage can occur as a result of:** ▪ Unbalanced mass by wrong reassembling of the coupling Careful dismantling and proper transient storing of the parts is required in order to restore the coupling to state of origin.

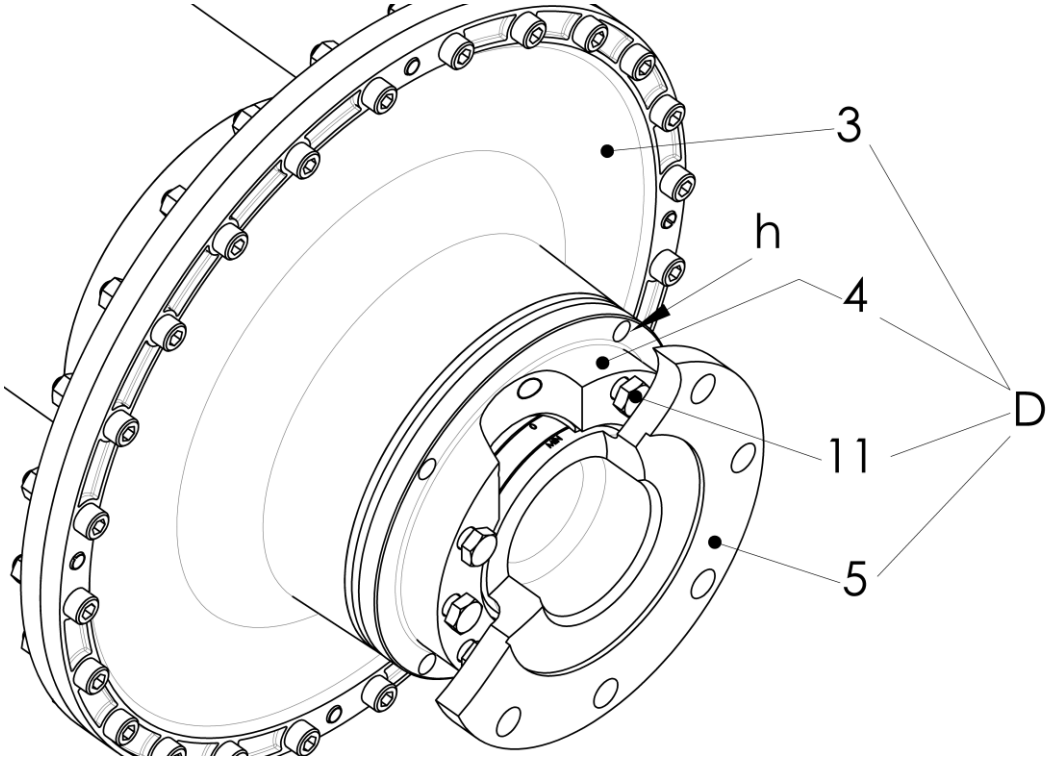

Fig. 6-7 Preparing the pre-mounted supplied coupling for mounting

Item	Info	Designation	Remark
3		Membrane	Contains inner-part of clamping set
4		Clamping set outer-part	
5		Shaft	
11		Screw ISO4014-10.9-VC	
D		Pre-mounted supplied coupling	Pre-mounted by CENTA
	h	Forcing thread	

- Push the shaft (5) into the membrane (3) as far as possible.
- For this purpose, if necessary:
  - Unscrew the screws (11) in the outer-part of the clamping set (4) by approx. 10 mm.
  - Loosely screw one screw into each forcing thread (h).
  - Untighten the clamping set (4) by alternately screwing the screws in the forcing threads (h).
- Pull the outer-part of the clamping set (4) from the membrane (3) to the screw heads (11).

6.4.2 Positioning the pre-mounted supplied coupling in the installation space

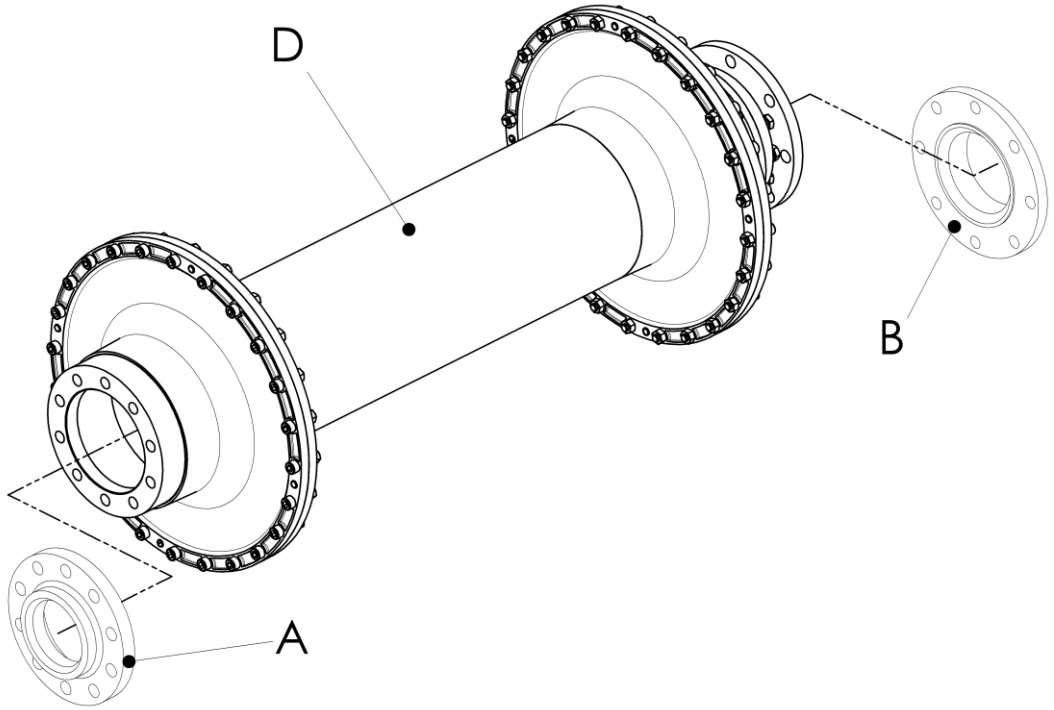

Fig. 6-8 Positioning the pre-mounted supplied coupling in the installation space

Item	Info	Designation	Remark
A		Flange	Customer part, Position see installation drawing
B		Flange	Customer part, Position see installation drawing
D		Pre-mounted supplied coupling	

- Position the pre-mounted supplied coupling (D) in the installation space between the flange (A) and flange (B) and support.
  Pay attention to the right position between driving and driven side (see installation drawing).

6.4.3 Mounting the pre-mounted supplied coupling to flange (A/B)

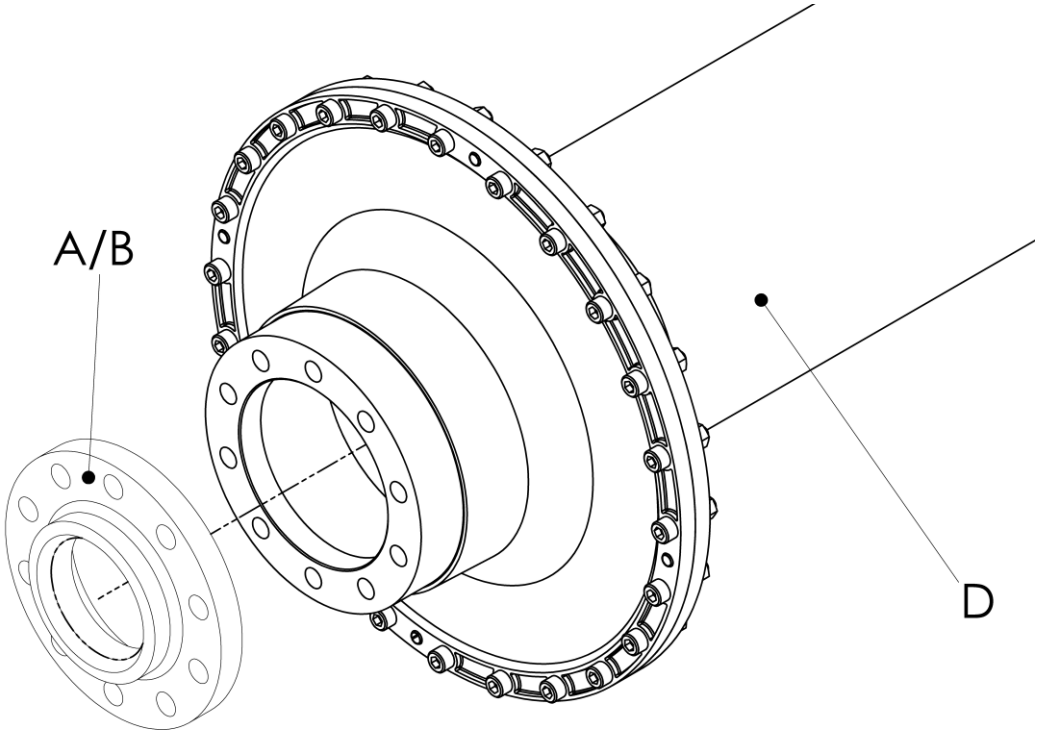

Fig. 6-9 Mounting the pre-mounted supplied coupling to flange (A/B)

Item	Info	Designation	Remark
A/B		Flange	Customer part, position see installation drawing
D		Pre-mounted supplied coupling	

- Push the pre-mounted supplied coupling (D) onto/into the centring of the flange (A/B).
- Screw the pre-mounted supplied coupling (D) and the flange (A/B).

6.4.4 Mounting the pre-mounted supplied coupling to flange (A/B)

CAUTION	
	**Material damage can occur as a result of:** ▪ Operating the coupling with wrong installation length Ensure that – in mounted condition - the face (a) of the membrane (3) is placed between the markings MIN and MAX.

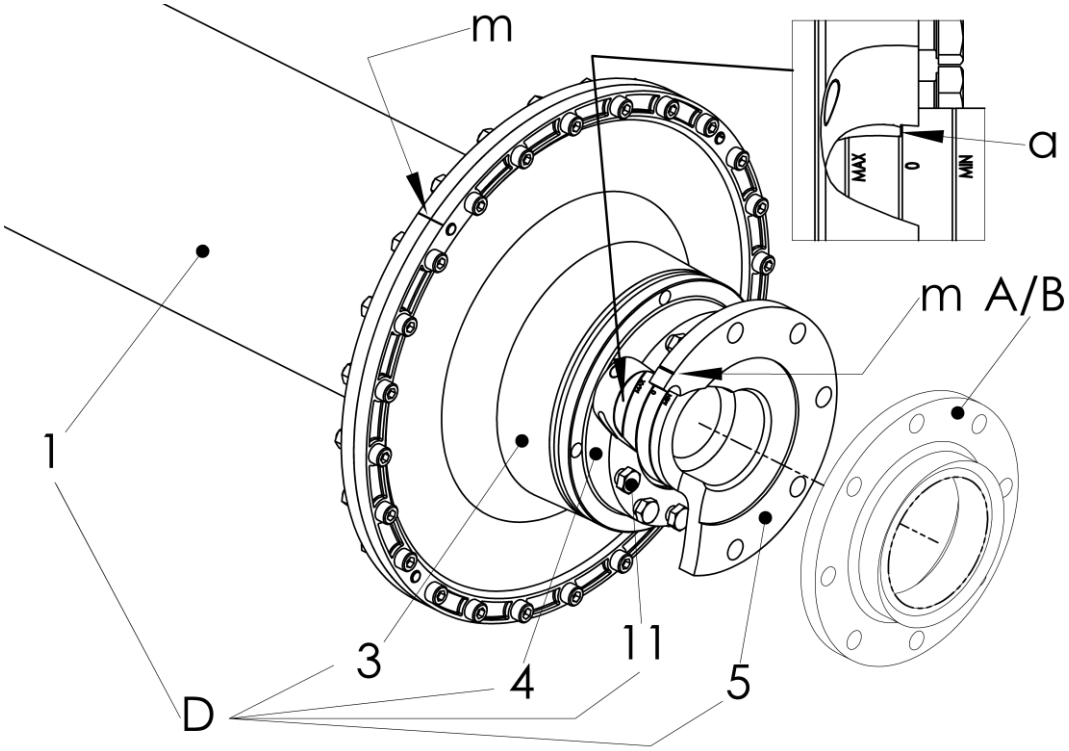

Fig. 6-10 Mounting the pre-mounted supplied coupling to flange (A/B)

Item	Info	Designation	Remark
1		Tube	
3		Membrane	Contains inner-part of clamping set
4		Clamping set, outer-part	
5		Shaft	
11		Screw ISO4014-10.9-VC	
A/B		Flange	Customer part, position see installation drawing
D		Pre-mounted supplied coupling	
	a	Face of inner-part of clamping set in membrane (3)	
	m	Marking	

- Pull the shaft (5) and push onto/into the centring of the flange (A/B).
- Screw the shaft (5) and the flange (A/B).
- Verify that the face (a) of the inner-part of the clamping set is located between the markings MIN and MAX on the shaft (5). If not, readjust the axial alignment (see chapter 5.1).
- Turn the shaft (5) until the markings (m) on the shaft (5) and the membrane (3) are aligned.

6.4.5 Mounting the clamping set

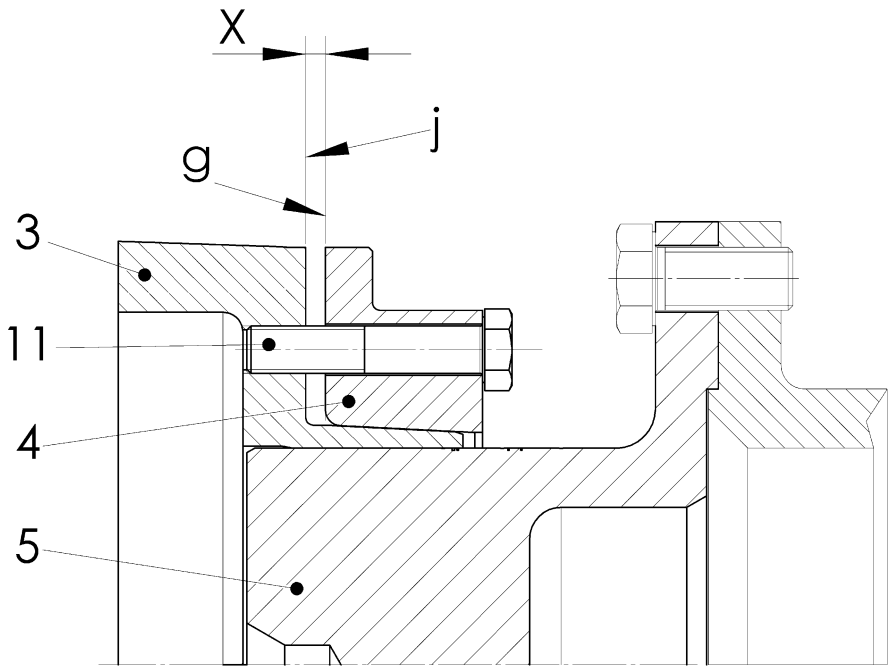

Fig. 6-11 Mounting the clamping set

Item	Info	Designation	Remark
3		Membrane containing clamping set inner-part	
4		Clamping set, outer-part	
5		Shaft	
11		Screw ISO4014-10.9-VC	
	g	Face of clamping set outer-part	
	j	Face of clamping set inner-part	
	x	Push up distance	

Push-up procedure:

- Evenly tighten the screws (11) crosswise in three steps, until the tightening torque has been achieved for all screws.

  Step 1: 40% of the specified tightening torque
  Stap 2: 60% of the specified tightening torque
  Step 3: 100% of the specified tightening torque

  The dimension X reduces itself to zero.
  The clamping set outer part (4) is finally pushed up, if the faces (g and j) are in contact.

- In turn check the tightening torques of the screws (11).

6.4.6 Removing the mounting supports

- Remove all mounting supports.

6.4.7 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.

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

6.5 Disassembling the pre-mounted supplied coupling and remounting part by part

- Disassemble and remount the pre-mounted supplied coupling according to the coupling size.
  - Disassembling and remounting the pre-mounted supplied coupling sizes 0, 1, 3 and 5, see chapter 6.5.1 to 6.5.4 .
  - Disassembling and remounting the pre-mounted supplied coupling sizes 2 and 4, see chapter 6.5.5 to 6.5.8 .
- Mounting the clamping set (all sizes), see chapter 6.5.9 .
- Removing the mounting supports (all sizes), see chapter 6.5.10 .
- Mounting the bulkhead (if available, all sizes), see chapter 6.5.11 .
- After completed mounting (all sizes), see chapter 6.5.12 .

6.5.1 Disassembling the pre-mounted supplied coupling sizes 0, 1, 3 and 5

CAUTION	
	**Material damage can occur as a result of:** ▪ Unbalanced mass by wrong reassembling of the coupling Careful dismantling and proper transient storing of the parts is required in order to restore the coupling to state of origin.

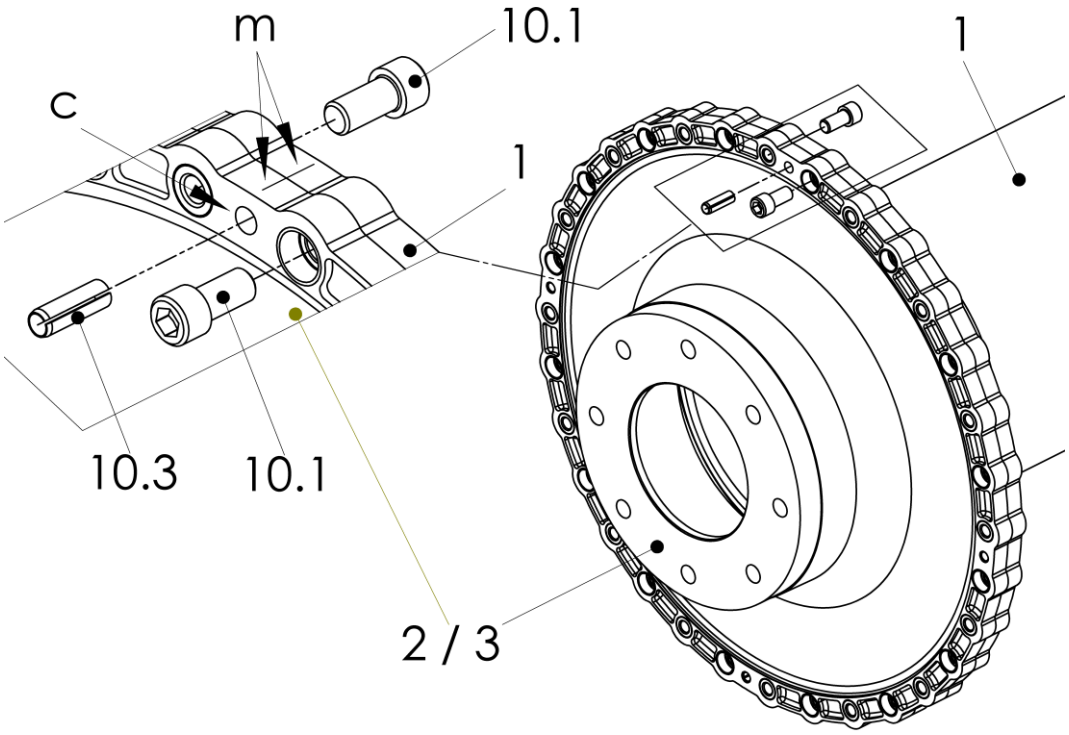

Fig. 6-12 Disassembling the pre-mounted supplied coupling sizes 0, 1, 3 and 5

Item	Info	Designation	Remark
1		Tube	
2/3		Membrane	
10.1		Screw ISO4762-8.8-VC	
10.3		Spring type straight pin ISO13337	
	c	Drilling for spring type straight pin	
	m	Marking	

- Remove the spring type straight pins (10.3) from the membrane (2 and 3) and the tube (1) and store temporarily.
- Loosen and remove the screws (10.1) of the connection membrane (2 and 3) and tube (1) and store temporarily for further mounting.
- Disconnect the tube (1) and the membranes (2 and 3) and store temporarily.

6.5.2 Positioning the tube in the installation space

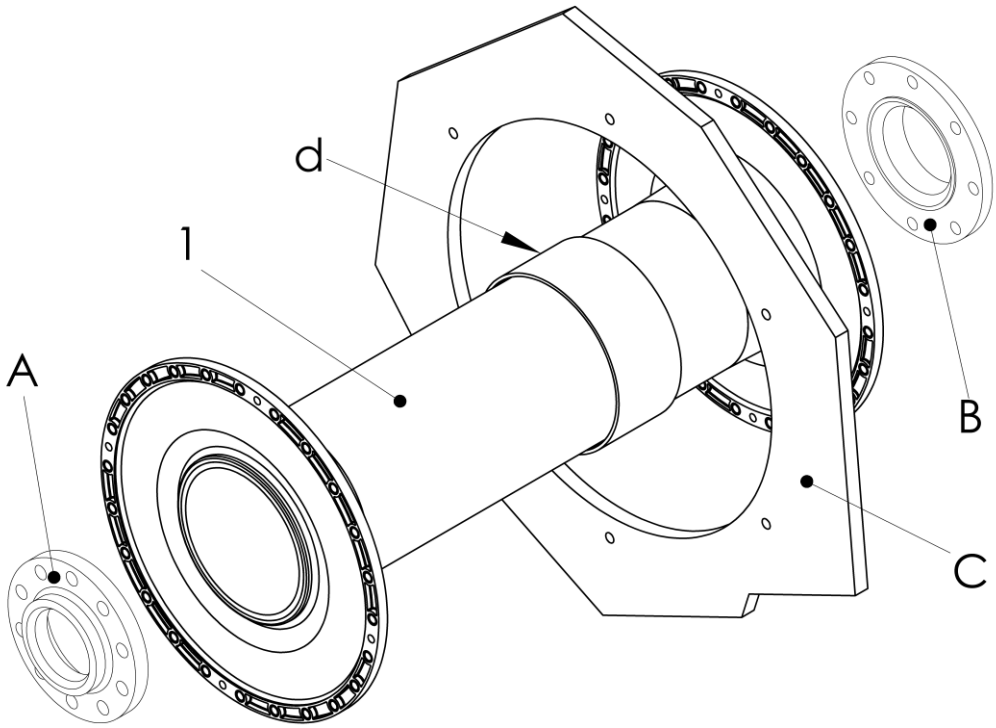

Fig. 6-13 Positioning the tube in the installation space

Item	Info	Designation	Remark
1		Tube	
A		Flange	Customer part, position see installation drawing
B		Flange	Customer part, position see installation drawing
C		Bulkhead	Customer part
	d	Friction ring	

- Push the tube (1) through the bulkhead (C), place it in the installation space between the flange (A) and flange (B) and support.
  Pay attention to the right mounting orientation (see installation drawing).
  The friction ring (d) must be placed on the side of the bulkhead (C).

6.5.3 Mounting the coupling to the driving and the driven side

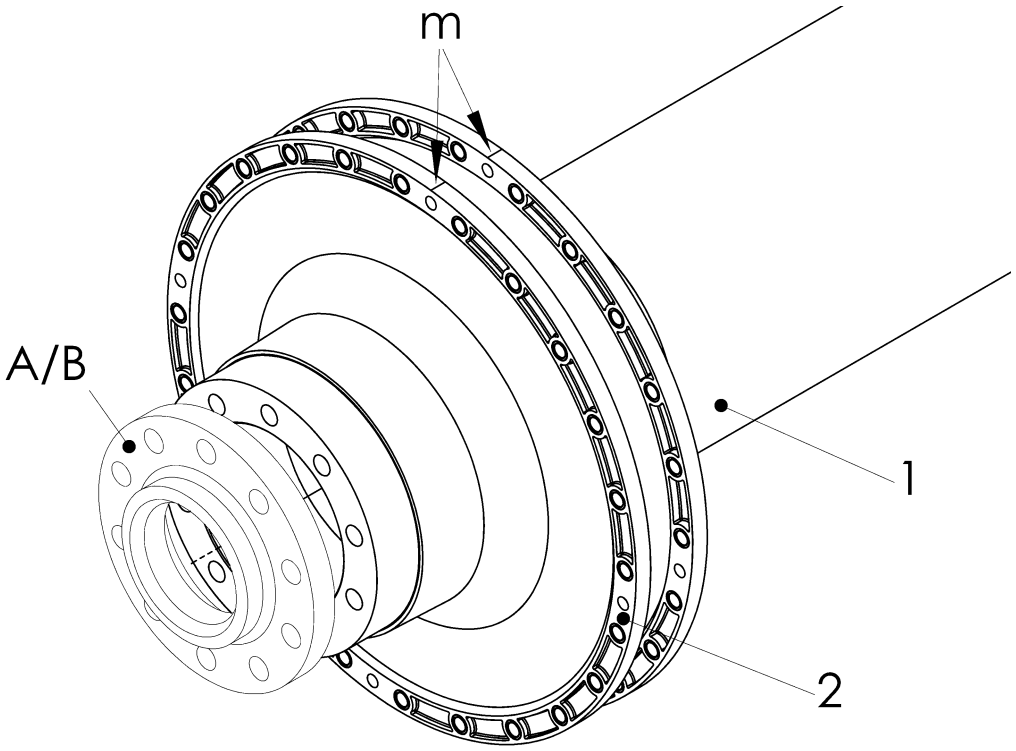

Fig. 6-14 Mounting the membrane to the driving or the driven side

Item	Info	Designation	Remark
1		Tube	
2		Membrane	Mounting orientation see installation drawing
A/B		Flange	Customer part

IMPORTANT

The markings (m) on the parts which to be connected must be aligned and have the same marking (e.g.: 1.1).

- Position the membrane (2) in the installation space between the tube (1) and the flange (A or B). For the right mounting orientation refer to the installation drawing.
- Push the membrane (2) onto/into the centring of the flange (A or B).
- Screw the membrane (2) and the flange (A or B).

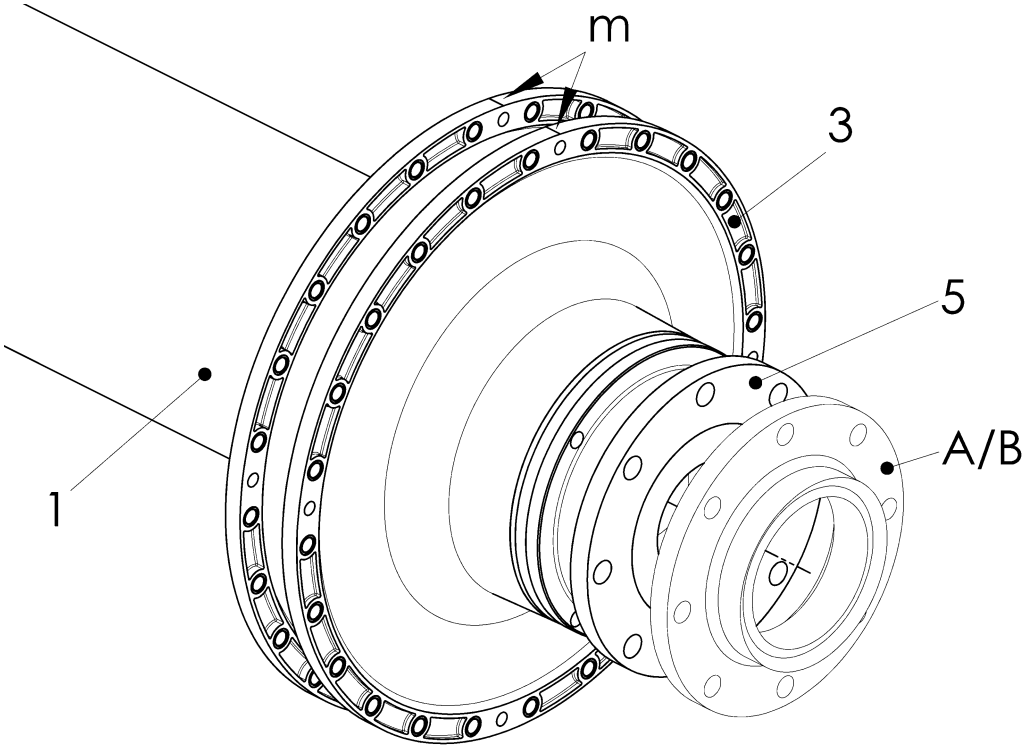

Fig. 6-15 Mounting the shaft to the driving or the driven side

Item	Info	Designation	Remark
1		Tube	
3		Membrane	Mounting orientation see installation drawing
5		Shaft	Mounting orientation see installation drawing
A/B		Flange	Customer part

IMPORTANT

The markings (m) on the parts which to be connected must be aligned and have the same marking (e.g.: 1.1).

- Position the membrane (3) with the shaft (5) inside in the installation space between the tube (1) and the flange (A or B). For the right mounting orientation refer to the installation drawing.
- Push the shaft (5) onto/into the centring of the flange (A or B).
- Screw the shaft (5) and the flange (A or B).

6.5.4 Remounting the disassembled coupling sizes 0, 1, 3 and 5

CAUTION	
	**Material damage can occur as a result of:** ▪ Unbalanced mass by wrong reassembling of the coupling Careful dismantling and proper transient storing of the parts is required in order to restore the coupling to state of origin.

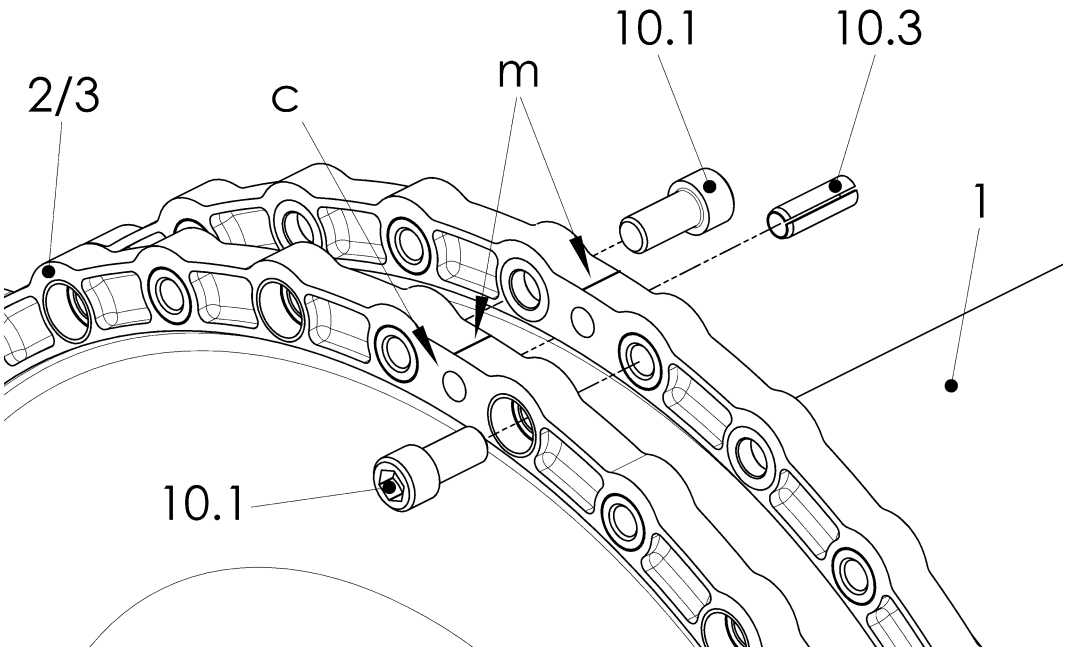

Fig. 6-16 Coupling sizes 0, 1, 3 and 5: Mounting the tube to the membrane

Item	Info	Designation	Remark
1		Tube	
2/3		Membrane	
10.1		Screw ISO4762-8.8-VC	
10.3		Spring type straight pin ISO 13337	
	c	Drilling for spring type straight pin	
	m	Marking	

IMPORTANT
The markings (m) on the parts which to be connected must be aligned and have the same marking (e.g.: 1.1).

- Turn the membrane (2/3) towards the tube (1) until all markings (m) are aligned.
- Hand-screw the membrane (2/3) and the tube (1) using the screws (10.1 and 10.2).
- Press the spring type straight pins (10.3) into the center hole (c) of both, the tube (1) and the membrane (2/3).
- Tighten the screws (10.1 and 10.2) of the connection membrane (2 and 3) and tube (1) by observing the specified tightening torque (see data sheet D013-013).

- Repeat the mounting section above, until all screws of the driving- and the driven side are mounted.

6.5.5 Disconnecting the pre-mounted coupling sizes 2 and 4

CAUTION	
	**Material damage can occur as a result of:** ▪ Unbalanced mass by wrong reassembling of the coupling Careful dismantling and proper transient storing of the parts is required in order to restore the coupling to state of origin.

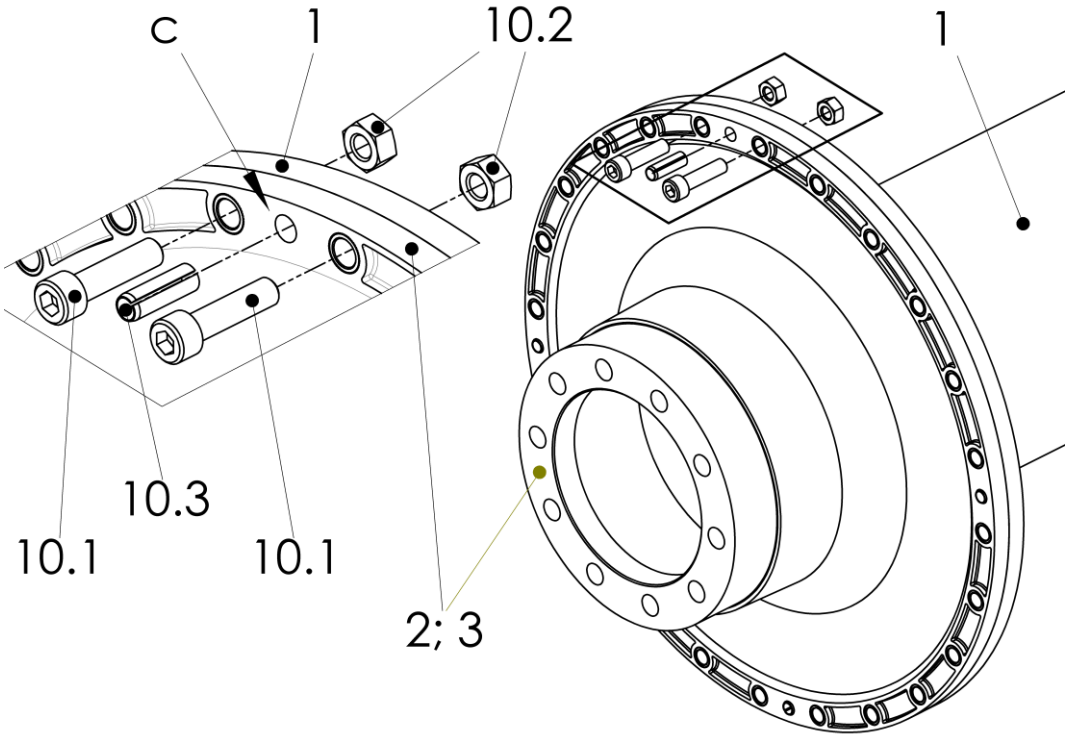

Fig. 6-17 Disconnecting the pre-mounted coupling sizes 2 and 4

Item	Info	Designation	Remark
1		Tube	
2/3		Membrane	
10.1		Screw ISO4762-8.8-VC	
10.2		Nut ISO4032-10-VC	
10.3		Spring type straight pin ISO13337	
	c	Drilling for spring type straight pin	

- Remove the spring type straight pins (10.3) from the membrane (2 and 3) and the tube (1) and store temporarily.
- Loosen and remove the screws (10.1) and the nuts (10.2) of the connection membrane (2 and 3) and tube (1) and store temporarily for further mounting.
- Disconnect the tube (1) and the membranes (2 and 3) and store temporarily.

6.5.6 Positioning the tube in the installation space

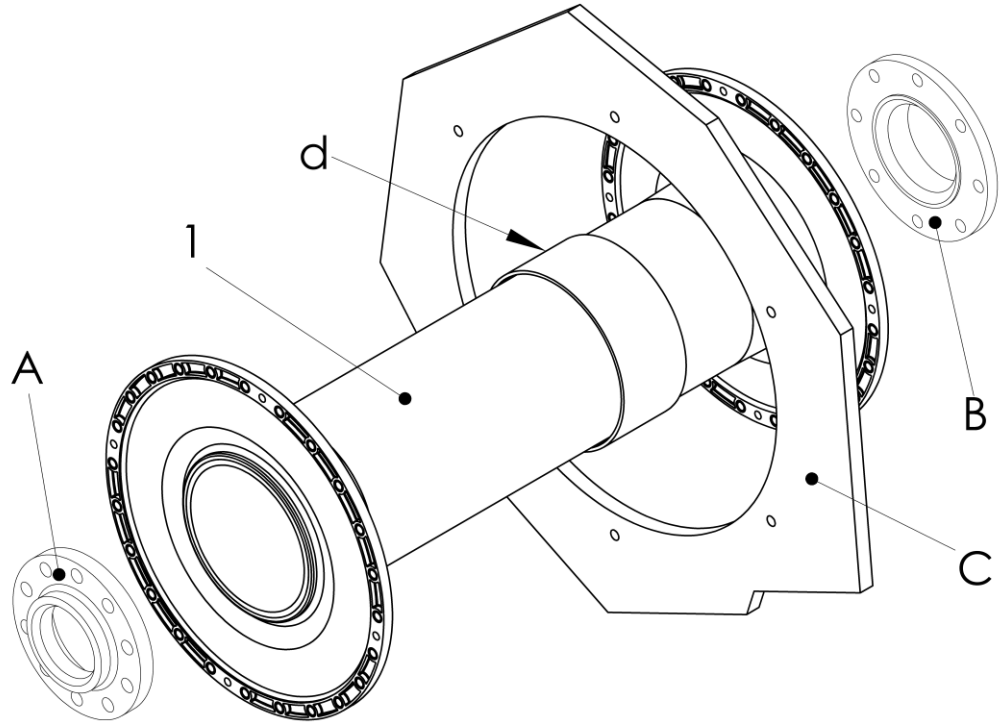

Fig. 6-18 Positioning the tube in the installation space

Item	Info	Designation	Remark
1		Tube	
A		Flange	Customer part, position see installation drawing
B		Flange	Customer part, position see installation drawing
C		Bulkhead	Customer part
	d	Friction ring	

- Push the tube (1) through the bulkhead (C), place it in the installation space between flange (A) and flange (B) and support.
  Pay attention to the right mounting orientation (see installation drawing).
  The friction ring (d) must be placed on the side of the bulkhead (C).

6.5.7 Mounting the coupling to the driving and the driven side

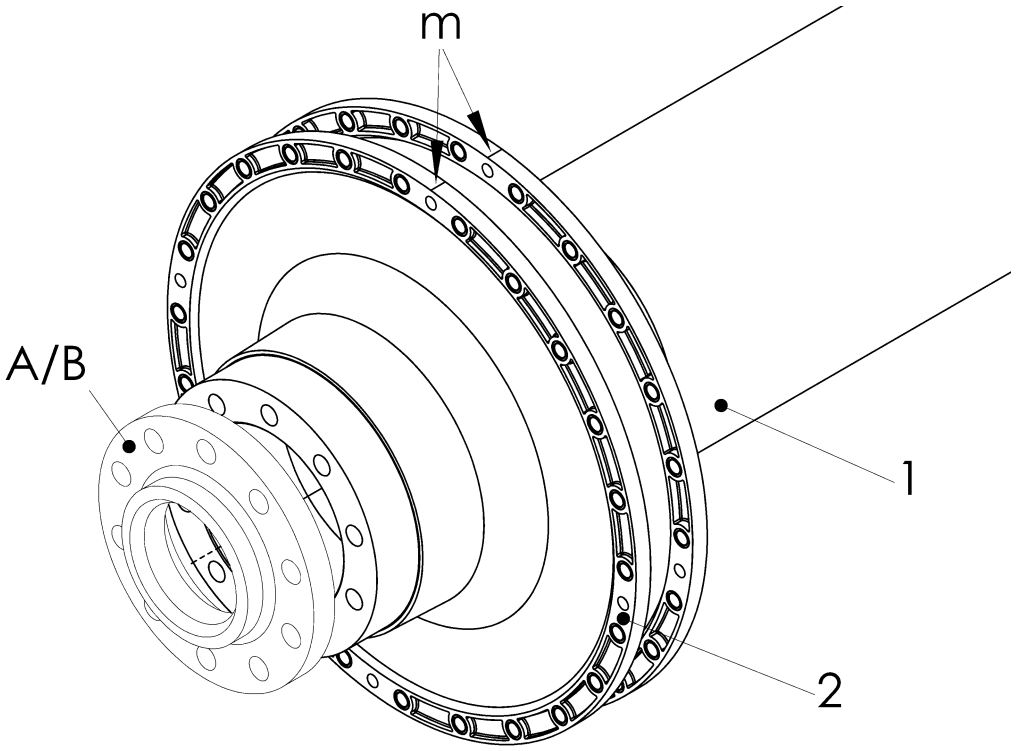

Fig. 6-19 Mounting the membrane to the driving or the driven side

Item	Info	Designation	Remark
1		Tube	
2		Membrane	Mounting orientation see installation drawing
A/B		Flange	Customer part

IMPORTANT

The markings (m) on the parts which to be connected must be aligned and have the same marking (e.g.: 1.1).

- Position the membrane (2) in the installation space between the tube (1) and the flange (A or B). For the right mounting orientation refer to the installation drawing.
- Push the membrane (2) onto/into the centring of the flange (A or B).
- Screw the membrane (2) and the flange (A or B).

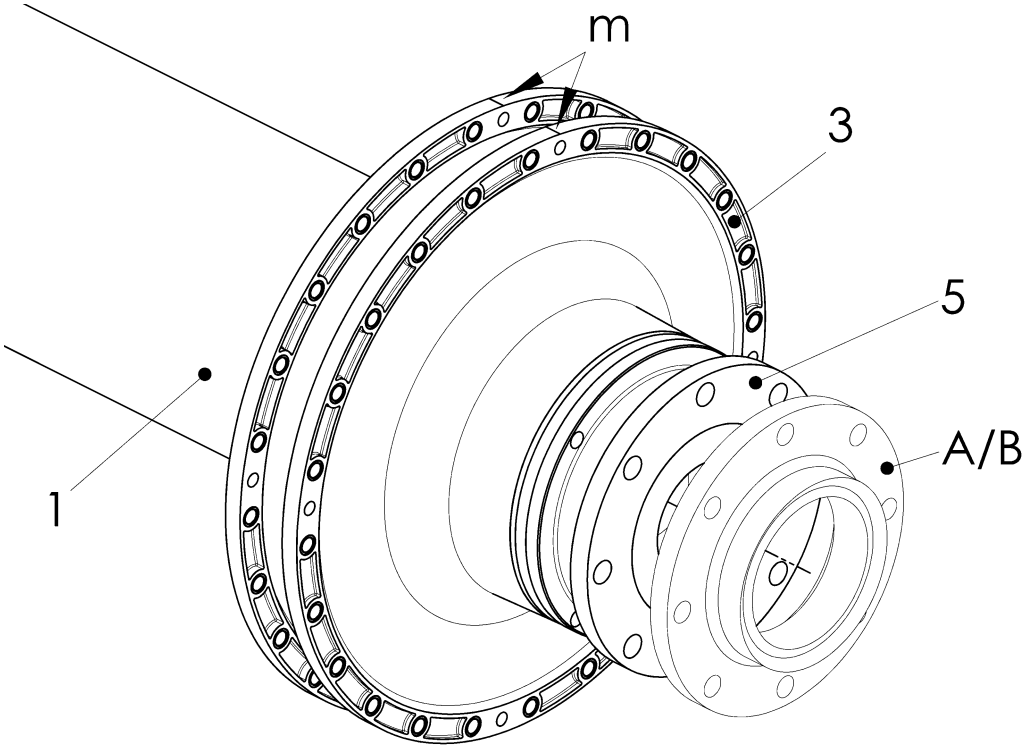

Fig. 6-20 Mounting the shaft to the driving or the driven side

Item	Info	Designation	Remark
1		Tube	
3		Membrane	Mounting orientation see installation drawing
5		Shaft	Mounting orientation see installation drawing
A/B		Flange	Customer part

IMPORTANT

The markings (m) on the parts which to be connected must be aligned and have the same marking (e.g.: 1.1).

- Position the membrane (3) with the shaft (5) inside in the installation space between the tube (1) and the flange (A or B). For the right mounting orientation refer to the installation drawing.
- Push the shaft (5) onto/into the centring of the flange (A or B).
- Screw the shaft (5) and the flange (A or B).

6.5.8 Remounting the disassembled coupling sizes 2 and 4

CAUTION	
	**Material damage can occur as a result of:** ▪ Unbalanced mass by wrong reassembling of the coupling Careful dismantling and proper transient storing of the parts is required in order to restore the coupling to state of origin.

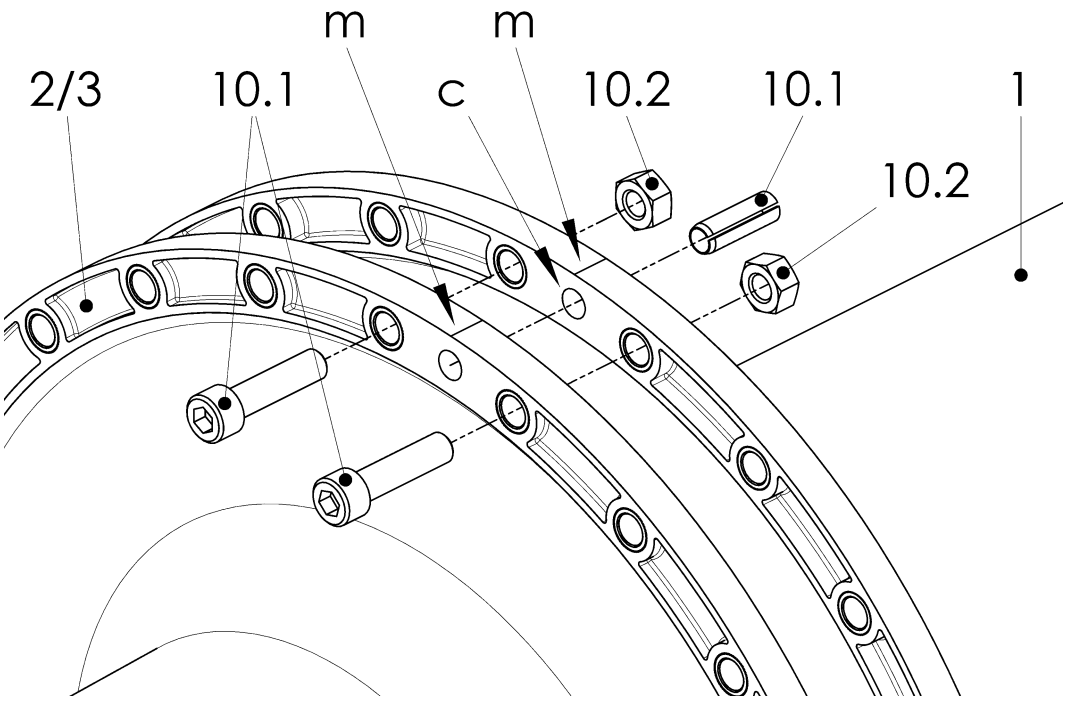

Fig. 6-21 Coupling sizes 2 and 4: Mounting the tube to the membrane

Item	Info	Designation	Remark
1		Tube	
2/3		Membrane	
10.1		Screw ISO4762-8.8-VC	
10.2		Nut ISO4032-10-VC	
10.3		Spring type straight pin ISO13337	
	c	Drilling for spring type straight pin	
	m	Marking	

IMPORTANT
The markings (m) on the parts which to be connected must be aligned and have the same marking (e.g.: 1.1).

- Turn the membrane (2/3) towards the tube (1) until all markings (m) are aligned.
- Hand-screw the membrane (2/3) and the tube (1) using the screws (10.1) and the nuts (10.2).
- Press the spring type straight pins (10.3) into the center hole (c) of both, the tube (1) and the membrane (2/3).
- Tighten the boltings (10.1/10.2) of the connection membrane (2 and 3) and tube (1) by observing the specified tightening torque (see data sheet D013-013).

- Repeat the mounting section above, until all screws of the driving- and the driven side are mounted.

6.5.9 Mounting the clamping set

See Fig. 6-5:

- Mount the clamping set (4) as described in chapter 6.4.5 .

6.5.10 Removing the mounting supports

- Remove all mounting supports.

6.5.11 Assembling the bulkhead seal (if existing)

CAUTION	
	**Injuries and material damages can occur as a result of:** ▪ Exceeding the maximum allowable radial displacements shown in the manufacturer's instructions of the bulkhead seal. Ensure that the radial displacement of the coupling does not exceed the maximum allowable radial displacement of the bulkhead seal during the operation.

- Assemble the bulkhead seal, as described in the manufacturer's instructions.

6.5.12 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.

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

7 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.

7.1 Operating faults, root causes and remedy

Faults	Possible root causes	Remedy
Running noises or vibrations in the plant	Alignment error	1. Switch off the plant 2. Check alignment, correct if applicable 3. Trial run
	Loose bolts	1. Switch off the plant 2. Check alignment, correct if applicable 3. Check screw torque levels and correct if necessary 4. Trial run
Membran damaged	Alignment error or inadmissibly high torque	1. Switch off the plant 2. Replace defective parts 3. Check alignment, correct if applicable 4. Trial run

Table 7-1 Troubleshooting table

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

7.2 Admissible overall misalignment of the coupling

The overall misalignment values can be found in the catalogue.

8 Care and maintenance

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.

The coupling requires low maintenance. We recommend a visual inspection at the regular scheduled maintenance intervals for the whole unit.

8.1 Work to be performed

8.1.1 Cleaning the coupling

➢ Remove any loose dirt from the coupling.

8.1.2 Visual inspection of the coupling

➢ Inspect the coupling for cracks, chips or missing parts.

➢ Replace faulty and missing parts.

8.1.3 Inspection of the screw connections

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

8.2 Replacing defective parts

➢ Remove the coupling as described in chapter 9.

➢ Replace wearing parts.

➢ Mount the coupling as described in chapter 6.

9 Dismantling

9.1 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.
Please refer to the illustrations in chapter 6.

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:

- Dismantling of the coupling in the wrong sequence

Only ever dismantle the coupling in the described sequence.

WARNING

Injury and material damage can occur as a result of:

- Falling coupling components

Secure coupling components against falling to the floor.

CAUTION

Material damage to coupling components can occur as a result of:

- Contact with sharp-edged objects

Protect coupling components for transportation.
Only hoist coupling components with nylon belts or ropes.
Always cushion parts when supporting them from below.

IMPORTANT

Use suitable lifting devices for dismantling.

9.2 Dismantling the bulkhead seal (if necessary)

- Dismantle the bulkhead seal, as described in the assembly instruction of the manufacturer.

9.3 Dismantling the coupling according to the installation location

- Dismantle the coupling either in all or part by part, depending on the installation location.
  - Dismantling the coupling in all, see chapter 9.4 .
  - If necessary (e.g. in small installation spaces with bulkhead) Dismantling the coupling part by part, see chapter 9.5 .

9.4 Dismantling the coupling in all

9.4.1 Releasing the clamping set

See Fig. 6-1 and 6-5:

- Unscrew the screws (11) in the clamping set outer-part (4) by approx. 10 mm.
- Loosely screw one screw into each forcing thread (h).
- Untighten the clamping set (4) by alternately screwing the screws in the forcing threads (h).
- Pull the outer-part of the clamping set (4) from the membrane (3) to the screw heads (11).

9.4.2 Dismantling the membrane (2) from the customer flange (A/B).

See Fig. 6-3:

- Support the coupling (D).
- Loosen the screws of the connection coupling (D) and flange (A/B) and remove.
- Pull the coupling (D) off the centring of the flange (A/B).

9.4.3 Dismantling the shaft (5) from the customer flange (A/B)

See Fig. 6-4:

- Support the coupling (D).
- Loosen the screws of the connection shaft (5) and flange (A/B) and remove.
- Pull the couling (D) off the centring of the flange (A/B).

9.4.4 Removing the coupling

See Fig. 6-2 and 6-4:

- Push the shaft (5) as far as possible into the membrane (3).
- Remove the coupling (D) out of the installation space.
- Remove the mounting supports out of the installation space.

9.4.5 Preparing the clamping set for remounting

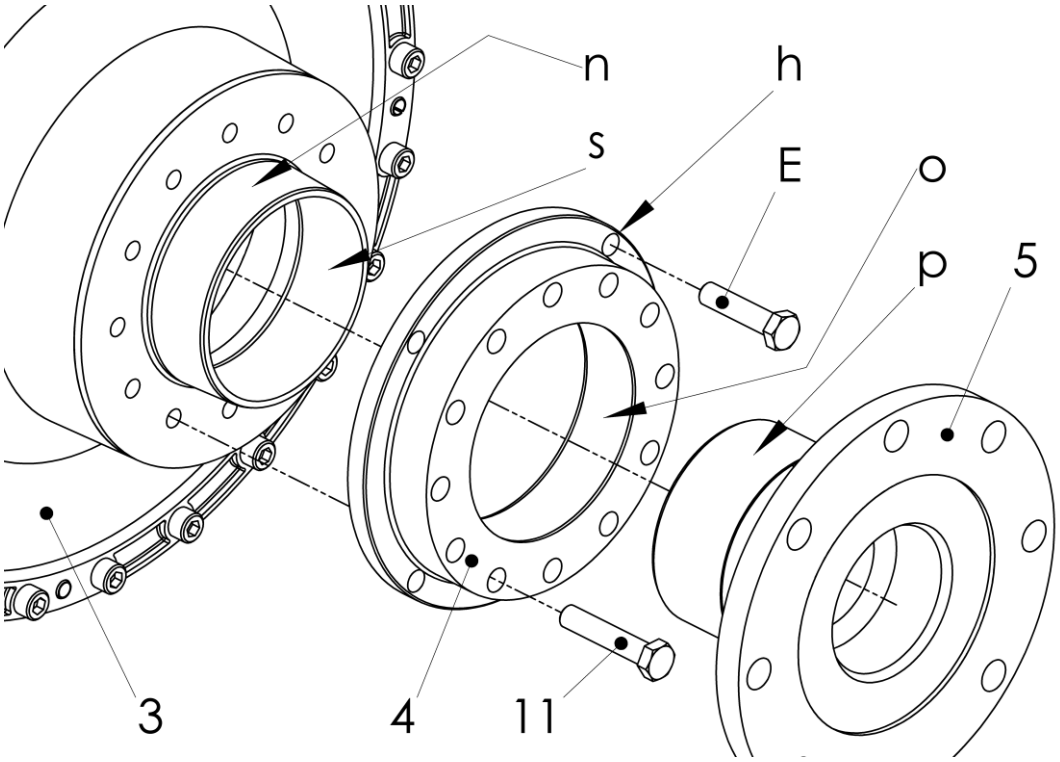

Fig. 9-22 Preparing the clamping set for remounting

Item	Info	Designation	Remark
3		Membrane	
4		Clmping set, outer-part	
5		Shaft	
11		Screw ISO4014-10.9-VC	
	h	Forcing thread	
	n	Conical surface of clamping set, inner part	
	o	Conical surface of clamping set, outer part	
	p	Face of shaft	
	s	Inner face of clamping set, inner-part	In membrane (3)
E		Screw	

- Pull the shaft (5) out of the membrane (3) and store temporarily.
- Remove the screws (E).
- Remove the screws (11) and store temporarily.
- Pull the outer-part (4) of the clamping set off the inner-part of the clamping set in membrane (3).
- Clean and degrease both, the face (p) of the shaft (5) and the face (s) of the inner-part of the clamping set in membrane (3).
- Clean and degrease both, (o) of the outer-part of the clamping set (4) and the conical surface (n) of the inner-part of the clamping set.
- Lightly coat the conical surface (n) of the clamping set inner-part with the fitting lubricant Molykote „G".
- Push the outer-part of the clamping set (4) onto the inner-part of the clamping set in membrane (3).
- Loosely screw the screws (11) into the clamping set (4).
- Push the shaft (5) into the membrane (3).

9.5 Dismantling the coupling part by part

9.5.1 Dismantling the tube from the membrane

See Fig. 6-10 and 6-15:

- Support the tube (1).
- Loosen the screws (10.1) and remove with the nuts (10.2; if available).
- Remove the spring type straight pins (10.3) from the center hole (c) of the tube (1) and the membrane (2/3).

9.5.2 Releasing the clamping set

See Fig. 6-1 and 6-5:

- Release the clamping set as described in chapter 9.4.1.

9.5.3 Dismantling the membrane (2) from the customer flange (A/B)

See Fig. 6-13:

- Support the membrane (2).
- Loosen the screws of the connection membrane (2) and flange (A/B) and remove.
- Pull the membrane (2) off the centring of the flange (A/B) and remove.

9.5.4 Dismantling the shaft (5) from the customer flange (A/B)

See Fig. 6-14:

- Support the membrane (3).
- Loosen the screws of the connection shaft (5) and flange (A/B) and remove.
- Pull the shaft (5) off the centring of the flange (A/B).
- Push the shaft (5) as far as possible into the membrane (3).
- Remove the membrane (3) including the clamping set (4) and the shaft (5).

9.5.5 Removing the tube

See Fig. 6-12:

- Remove the tube (1) out of the installation space.
- Remove the mounting supports out of the installation space.

9.5.6 Preparing the clamping set for remounting

See Fig. 9-1:

- Prepare the clamping set (4) for remounting as described in chapter 9.4.5 .

9.6 Reassembling the coupling

- Reassemble the coupling as described in chapter 6.

10 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:

- CFK-tube with membrans. These are delivered marked and balanced together.

When exchanging, all screw connections must be renewed. These must be ordered separately.

When ordering a spare, specify:

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

11 Annex

11.1 CENTA data sheet D013-013 (lubricated screw connections)

Validity:
For all non-dynamically stressed screw connections with **lubricated** shank bolts in accordance with ISO 4014, ISO 4017 and ISO 4762 (DIN 912) with metric standard thread in accordance with DIN ISO 262, unless other specifications are given on CENTA documents.

Preparation of parts that are to be screwed together:
The joining areas must be free of dirt, preservatives and lubricants.

Preparation of screws that ARE NOT secured with liquid screw locking medium:
Give the screws extra lubrication with motor oil under the screw head and in the thread.

Preparation of screws that ARE secured with liquid screw locking medium:
Give the screws extra lubrication with motor oil under the screw head. Remove all grease from the thread.

Screw tightening method:
Screw in (by hand with torque wrench).

Thread size				Thread size			
d	Strength class	Tightening torques [Nm] ±5%	Tightening torques [in lbs] ±5%	d	Strength class	Tightening torques [Nm] ±5%	Tightening torques [in lbs] ±5%
M6	8.8	9	80	M22	8.8	470	4160
	10.9	13	115		10.9	670	5930
	12.9	15	135		12.9	780	6900
M8	8.8	21	185	M24	8.8	600	5310
	10.9	30	265		10.9	850	7520
	12.9	35	310		12.9	1000	8850
M10	8.8	41	360	M27	8.8	750	6640
	10.9	60	530		10.9	1070	9470
	12.9	71	630		12.9	1250	11060
M12	8.8	71	630	M30	8.8	1000	8850
	10.9	104	920		10.9	1450	12830
	12.9	121	1070		12.9	1700	15050
M14	8.8	113	1000	M33	8.8	1400	12400
	10.9	165	1460		10.9	1950	17250
	12.9	195	1725		12.9	2300	20350
M16	8.8	170	1500	M36	8.8	1750	15500
	10.9	250	2210		10.9	2500	22150
	12.9	300	2660		12.9	3000	26550
M18	8.8	245	2170	M39	8.8	2300	20350
	10.9	350	3100		10.9	3300	29200
	12.9	410	3630		12.9	3800	33650
M20	8.8	350	3100				
	10.9	490	4340				
	12.9	580	5130				

11.2 CENTA data sheet D034-900 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:	Torsionally stiff drive shaft CENTADISC-C
Model / series code:	CD-C / 034F
Installation size:	C0F…C5F
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 und 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. Anderseck

by order of Gunnar Anderseck
(Authorised Person Documentation)

Declaration of incorporation was issued:

i.V. Exner

Haan, 11.12.2009

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

11.3 CENTA data sheet D034-901 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:	Torsionally stiff drive shaft CENTADISC-C
Model / series code:	CD-C / 034G
Installation size:	C0G…C5G
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 und 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. S. Anderseck

by order of Gunnar Anderseck
(Authorised Person Documentation)

Declaration of incorporation was issued:

i.V. J. Exner

Haan,11.12.2009

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