

CENTAX-G100

Assembly and operating instructions

038G-00176...00186-F.10

M038-00104-EN

Rev. 3



Contents

1	General remarks	5
2	Safety	6
2.1	Safety remarks	6
2.1.1	Signal words	6
2.1.2	Pictograms	7
2.2	Qualification of deployed personnel	7
2.3	Intended application.....	7
2.4	Application not in compliance with the intended use	9
3	Delivery, transport, storage and disposal	10
3.1	Delivery	10
3.2	Transport.....	10
3.3	Storage	10
3.3.1	Storage location.....	11
3.3.2	Storage of couplings / flexible elements	11
3.4	Disposal.....	11
4	Technical description	12
4.1	Characteristics.....	12
4.2	Specifications	12
5	Alignment of the units being connected.....	13
5.1	Axial alignment.....	13
5.2	Radial alignment.....	14
5.3	Angular alignment.....	16
6	Mounting	18
6.1	General assembly instructions	18
6.2	Mounting overview.....	20
6.3	Mounting the hub (3; if existing)	22
6.3.1	Mounting the hub with cylindrical bore and keyway	22
6.3.2	Mounting the hub with conical oil interference fit.....	24
6.4	Mounting the adapter (17; if existing)	27
6.5	Aligning the units.....	27
6.6	Mounting the rubber element (1.1) and the sheet (7) to the flywheel	28
6.7	Mounting the membrane.....	29
6.8	Connecting the rubber element and the membrane	30
6.9	Removing the mounting supports.....	32
6.10	After completed mounting.....	33
7	Operation.....	34
7.1	Operating faults, root causes and remedy	34
7.2	Admissible overall misalignment of the coupling	34



8	Care and maintenance	35
8.1	Work to be performed	35
8.1.1	Cleaning the coupling	35
8.1.2	Visual inspection of the coupling	35
8.1.3	Visual inspection of the rubber elements / rubber segments	35
8.1.4	Inspection of the screw connections	35
8.2	Replacing defective parts	35
9	Dismantling	36
9.1	General dismantling instructions	36
9.2	Dismantling the rubber element from the membrane.....	37
9.3	Dismantling the membrane	37
9.4	Dismantling the rubber element (1.1) and the sheet (7) from the flywheel.....	37
9.5	Dismantling the adapter (17; if existing/ necessary)	37
9.6	Dismantling the hub (if existing/ necessary).....	37
9.6.1	Dismantling the hub with cylindrical bore and keyway	37
9.6.2	Dismantling the hub with conical oil interference fit	38
9.7	Reassembling the coupling.....	39
10	Wearing and spare parts.....	40
11	Annex	41
11.1	CENTA data sheet D013-013 (lubricated screw connections)	41
11.2	CENTA data sheet D038-900 Declaration of incorporation according to the EC Machinery Directive 2006/42/EC, Appendix II B.....	42



Index of illustrations

Fig. 5-1 Axial misalignment.....	13
Fig. 5-2 Radial misalignment.....	14
Fig. 5-3 Angular misalignment.....	16
Fig. 6-1 Example: 038G-00184-F.10	20
Fig. 6-2 Mounting the hub with cylindrical bore and keyway	22
Fig. 6-3 Mounting the hub with conical oil interference fit	24
Fig. 6-4 Mounting the adapter	27
Fig. 6-5 Mounting the rubber element (1.1) and the sheet (7) to the flywheel ..	28
Fig. 6-6 Mounting the membrane.....	29
Fig. 6-7 Connecting the rubber element and the membrane	30
Fig. 6-8 Detail X: Connecting the rubber element and the membrane	31

Index of tables

Table 2-1 Shape and size of ventilation holes	8
Table 5-1 Permissible radial alignment tolerance	15
Table 5-2 Permissible angular alignment tolerance.....	17
Table 7-1 Troubleshooting table	34



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.

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

**CENTA Antriebe
Kirschey GmbH**
Bergische Strasse 7
42781 Haan
GERMANY
Phone +49-2129-912-0
Fax +49-2129-2790
centa@centa.de
www.centa.info

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	
	<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	
	Injury and material damage can occur as a result of: <ul style="list-style-type: none"> ▪ Incorrect transportation of couplings <p>Ensure that the coupling is correctly transported.</p>
	Material damage to coupling components can occur as a result of: <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	
	Material damage to elastic elements and rubber parts can occur as a result of: <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>
	<div style="text-align: center;"> IMPORTANT</div> <p>Rubber parts are marked where possible with their production date. From this date, they may only be stored for a maximum of 5 years.</p>

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

CENTAX-SEC series G couplings have the following excellent characteristics:

- Sufficient elasticity to take up axial, radial and angular misalignment, movements, installation errors and heat expansion in units with rigid or elastic bearings.
- High torsional elasticity with linear curve. One or more elements with different shore hardnesses can be used in series, in which case the necessary torsional rigidity for optimal vibration behaviour of the unit can be ensured.
- All sides of the rubber element are ventilated all round in order to guarantee good heat dissipation and high heat capacity.
- High dynamic capacity and balancing quality.
- Simple, cost-effective design with compact dimensions, low weight and mass moment of inertia.
- Wear free, low maintenance, simple to install. In all the series, the elements can be replaced radially – without having to move the connected machine components. Suitable dimensioning of bolts and clamping forces for torque transmission by friction.
- Available with or without failsafe device.

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

- Align the units during the assembly.
- 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.
The overall misalignment is composed of the misalignment and the operating misalignment. The permissible overall misalignment values can be found in the corresponding catalogue and must not be exceeded.
- All permissible alignment tolerances apply to arrangements at operating temperatures.
If the arrangement would be aligned at a different temperature, there would be additional deviations in the arrangement, which were produced by the difference between the aligning and operating temperature.
For alignment, this has to be taken into account.
- After completion of assembly, check the alignment of the coupling again and if necessary correct.

5.1 Axial alignment

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:

ΔK_A max = 0.8 mm

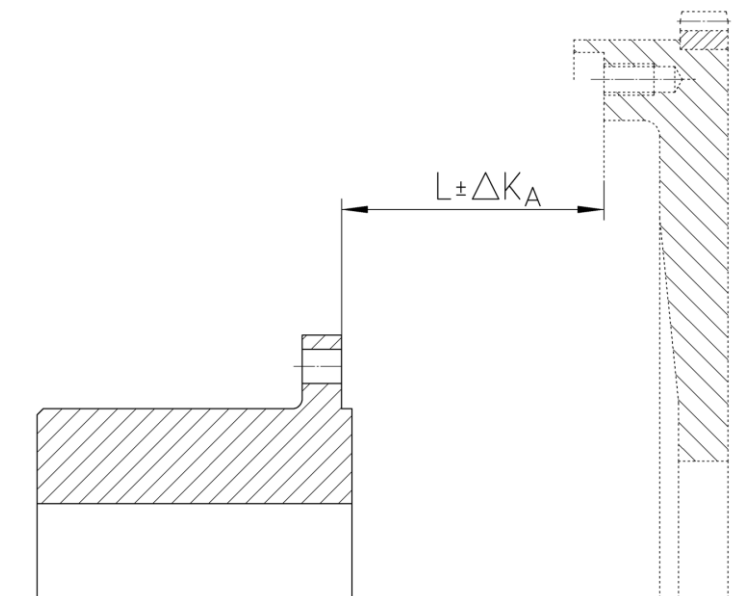


Fig. 5-1 Axial misalignment

5.2 Radial alignment

CAUTION



Material damage to elastically installed engines can occur as a result of:

- Disregard to which extent the engine mounts may settle during alignment

During vertical alignment, take into account the extent by which the engine mounts settle. Please enquire about specifications for the degree of settling from the engine manufacturer or engine mounts manufacturer.

Measure the radial misalignment with a dial gauge (see Fig. 5-2).

- Attach the dial gauge to the hub.
- Set the sensor of the dial gauge radially against the centering.
- Turn the hub with dial gauge and flywheel slowly by 360°.
- Align the units (calculated deviation $\leq \Delta K_{R \max}$).

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

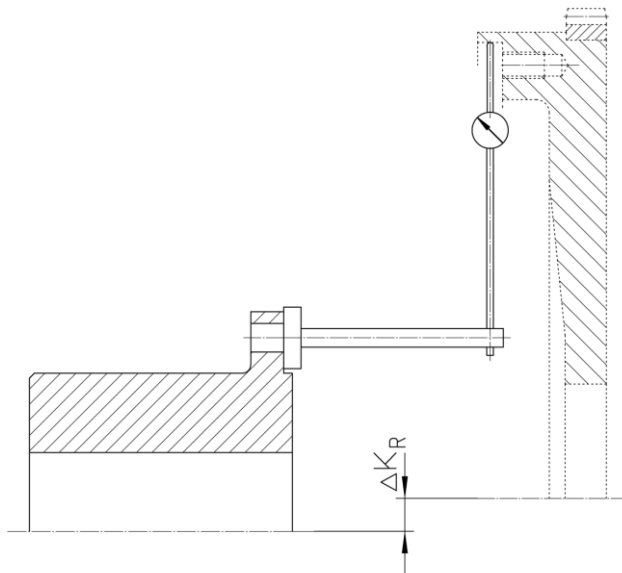


Fig. 5-2 Radial misalignment



Size	Shore hardness [Shore A]	$\Delta K_{R \max}$ [mm]
176	50 / 60	± 0.83
	70	± 0.26
177	50 / 60	± 0.9
	70	± 0.3
179 / 181	50 / 60	± 1.05
	70	± 0.38
183	50 / 60	± 1.13
	70	± 0.38
184 / 185 / 186	50 / 60	± 1.2
	70	± 0.38

Table 5-1 Permissible radial alignment tolerance

5.3 Angular alignment

Measure the angular misalignment with a dial gauge (see Fig. 5-3).

- Attach the dial gauge to the hub.
- Position the sensor of the dial gauge radially against flat surface at a distance R.
- Turn the hub with dial gauge and flywheel slowly by 360°.

The maximum dial gauge deflection must not exceed the value $2 \times S_W$ at any point. The permissible tolerance $S_{W \max}$ should be taken from the table below.

- Align the units (calculated deviation $\leq \Delta K_{W \max}$).

Permissible angular alignment tolerance:

$$\Delta K_{W \max} = 0.05^\circ$$

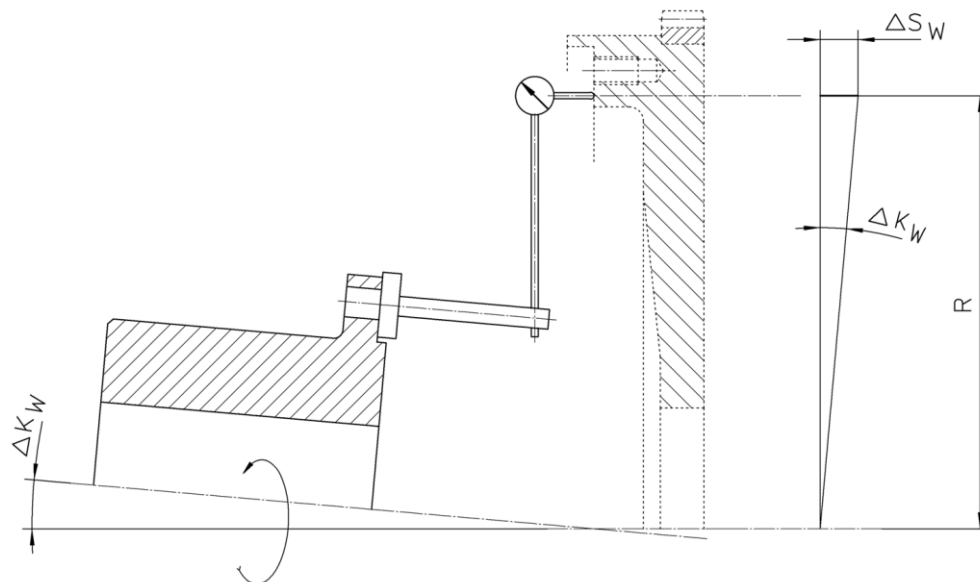


Fig. 5-3 Angular misalignment



Size	R [mm]	S_{w max} [mm]
176	340	0.30
177	365	0.32
179	395	0.34
181	425	0.37
183	460	0.40
184	495	0.43
185	540	0.47
186	580	0.51

Table 5-2 Permissible angular alignment tolerance

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 038G-00184-F.10.
- Part illustration and marking may differ slightly from installation drawing and delivery state.

6.2 Mounting overview

The following figure is showing examples of possible design.

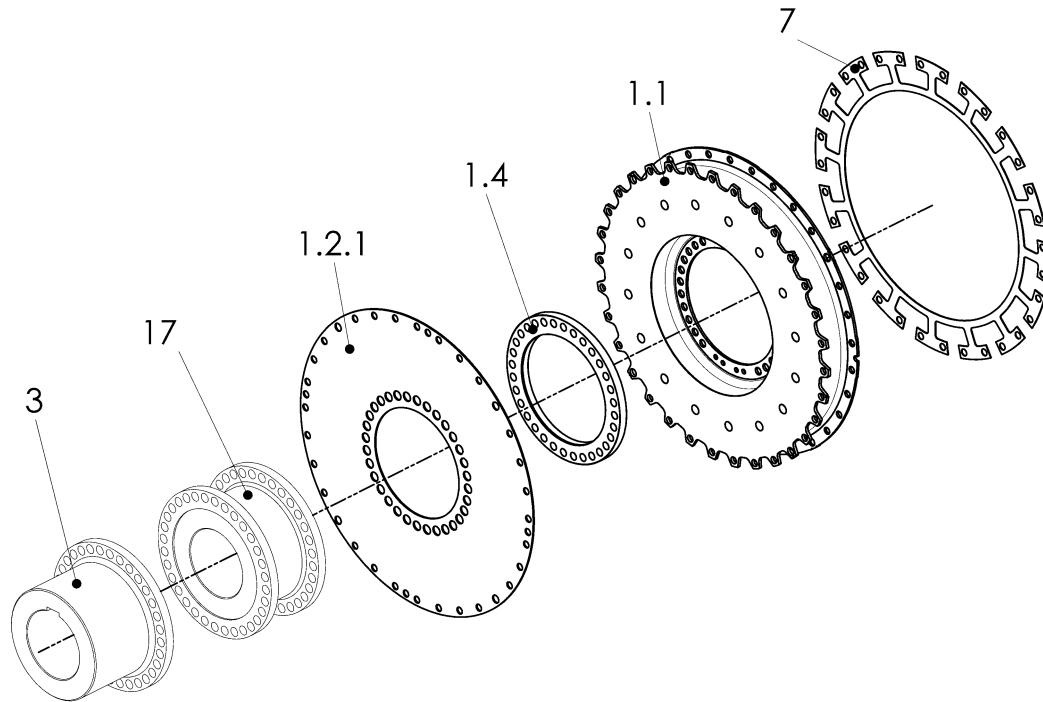


Fig. 6-1 Example: 038G-00184-F.10

Item	Info	Designation	Remark
1.1		Rubber element	
1.2.1		Membrane	
1.4		Ring	
3		Hub	If scope of supply
7		Sheet	
17		Adapter	If scope of supply



- Mount the coupling according to the following described order as appropriate for the supplied design. For delivered design and built-in parts, see installation drawing.
 - Mounting the hub (3), see chapter 6.3 .
 - Mounting the adapter (17), see chapter 6.4 .
 - Aligning the units, see chapter 5 .
 - Mounting the rubber element (1.1) and the sheet (7) to the flywheel, see chapter 6.6.
 - Mounting the membrane, see chapter 6.7 .
 - Connecting the rubber element (1.1) with the membrane, see chapter 6.8 .
 - After completed mounting, see chapter 6.9 .

6.3 Mounting the hub (3; if existing)

- Mount the hub as appropriate for the type supplied (see installation drawing):
 - Mounting the hub with cylindrical bore and keyway, see chapter 6.3.1 .
 - Mounting the hub with conical oil interference fit, see chapter 6.3.2 .

6.3.1 Mounting the hub with cylindrical bore and keyway

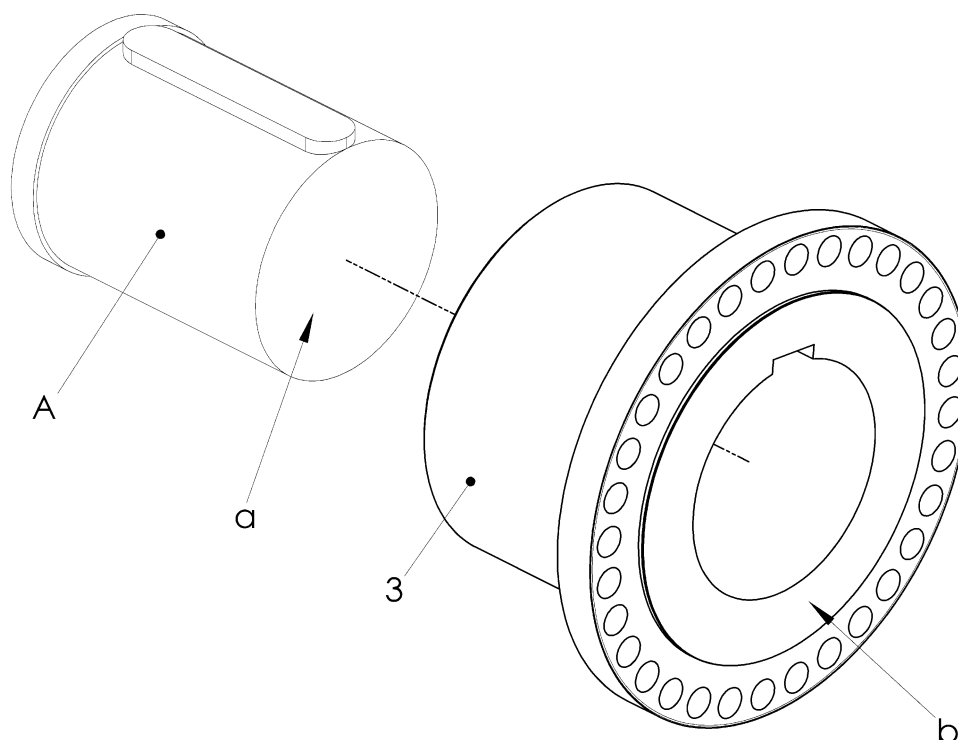


Fig. 6-2 Mounting the hub with cylindrical bore and keyway

Item	Info	Designation	Remark
3		Hub	
A		Shaft	Customer part
	a	Face of shaft	
	b	Face of hub	

CAUTION



Material damage can occur as a result of:

- Incorrect heating of the hubs/flange hubs
- Heat the hubs/flange hubs steadily in an oil bath, a fan oven, on an electric hot plate, either inductive or with a flame (ring burner).

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

- Hot coupling components
- Use suitable protective gloves.

- Heat the hub (3) to a temperature of 170° - 200°C.
- Push the hub (3) onto the shaft (A).

**IMPORTANT**

Face of shaft must not protrude to face of hub. Otherwise radial replacement of other coupling parts is not guaranteed.

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

- Hot hubs/flange hubs
- Before further mounting of hubs/flange hubs, allow them to cool to ambient temperature.

6.3.2 Mounting the hub with conical oil interference fit

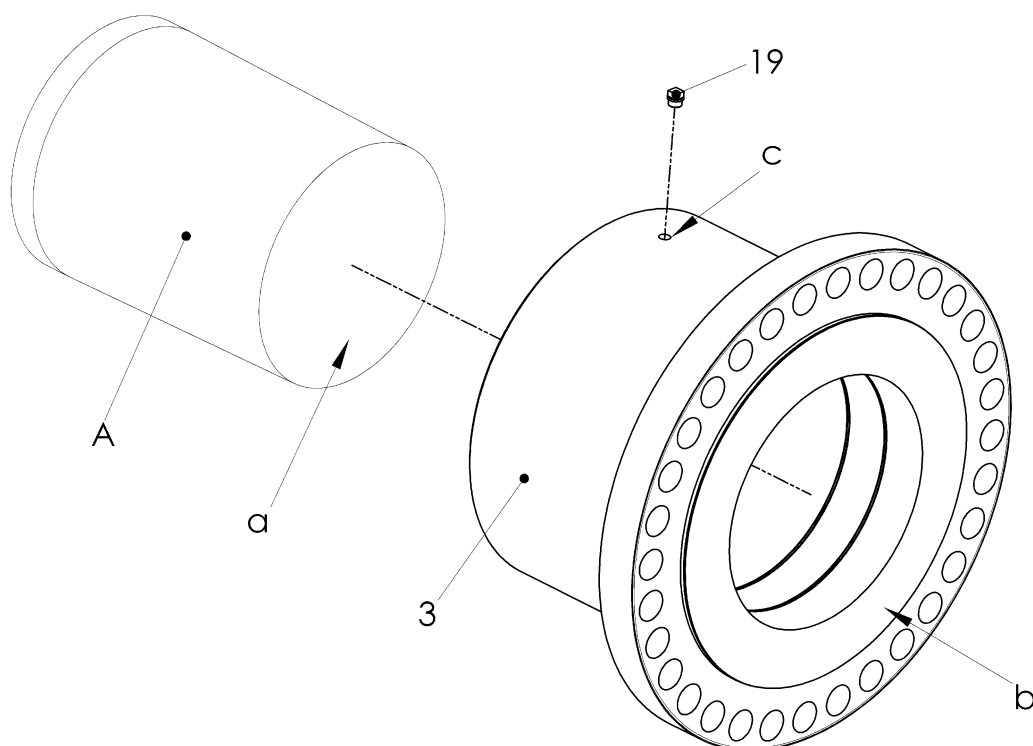


Fig. 6-3 Mounting the hub with conical oil interference fit

Item	Info	Designation	Remark
3		Hub	
19		Screw plug	G $\frac{1}{4}$ or G $\frac{3}{4}$ see installation drawing
A		Shaft	Customer part
	a	Face of shaft	
	b	Face of hub	
	c	Thread	G $\frac{1}{4}$ or G $\frac{3}{4}$ see installation drawing

- Lightly oil the cone of the shaft (A).
- Push the hub (3) onto the shaft (A).
- Remove the screw plug (19) from the hub (3).

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

- Connect the pump (**p_{max} = 3000 bar**) for expanding the hub (3) to the thread G¼ or G¾ (c).
- Screw the pump for pushing on the hub to the shaft.
- Build up the oil pressure to push on the hub.

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 for expanding the hub.
- Build up the oil pressure alternately until the lift path (p up) of the hub (3) 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 (3).
- 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.
- Turn the hub (3), drain oil out of the thread G $\frac{1}{4}$ or G $\frac{3}{4}$ (c) and dispose correctly.
- Screw the screw plug (19) into the hub (3).



IMPORTANT

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



IMPORTANT

Face of shaft must not protrude to face of hub. Otherwise radial replacement of other coupling parts is not guaranteed.

6.4 Mounting the adapter (17; if existing)

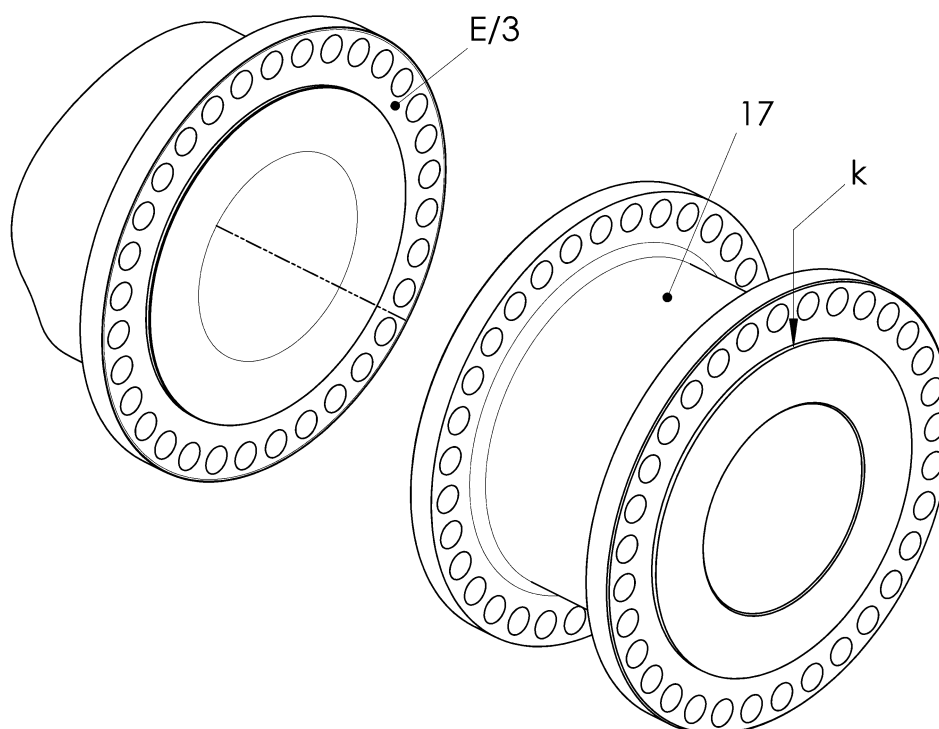


Fig. 6-4 Mounting the adapter

Item	Info	Designation	Remark
3		Hub	Scope of supply see installation drawing
17		Adapter	
E		Flange	Customer part
	k	Centring	For the membrane

- Push the adapter (17) onto/into the centring of the flange/hub (E/3, see installation drawing).
The centring (k) must be directed towards the membrane (1.2.1).
- Screw the adapter (17) to the flange/hub (E/3).



IMPORTANT

Tightening torques for elements to connect couplings with customer parts could deviate from CENTA data sheet D013-013.
Consider specifications on installation drawing.

6.5 Aligning the units

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

6.6 Mounting the rubber element (1.1) and the sheet (7) to the flywheel

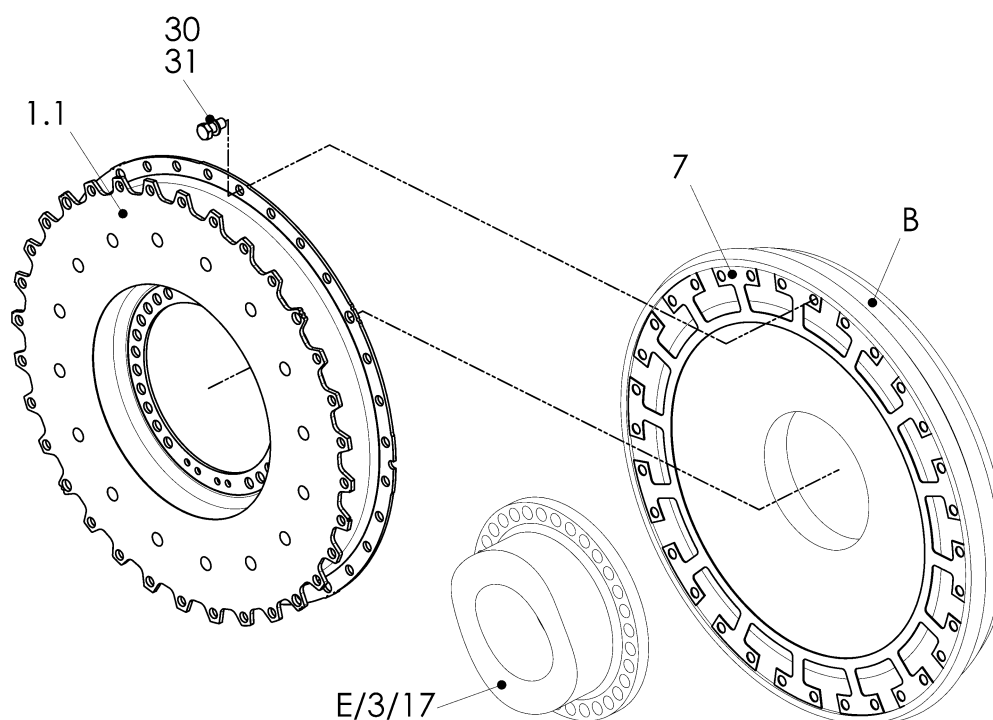


Fig. 6-5 Mounting the rubber element (1.1) and the sheet (7) to the flywheel

Item	Info	Designation	Remark
1.1		Rubber element	
3		Hub	See installation drawing
7		Sheet	
17		Adapter	See installation drawing
30		Screw	If ordered
31		Washer	If ordered
B		Flywheel	Customer part
E		Flange	Customer part; see installation drawing

- Push the sheet (7) into the centring of the flywheel (B).
- Push the rubber element (1.1) into the centring of the flywheel (B).
- Screw the rubber element (1.1) and the sheet (7) to the flywheel (B) using the screws (30) and the washers (31).



IMPORTANT

Tightening torques for elements to connect couplings with customer parts could deviate from CENTA data sheet D013-013.
Consider specifications on installation drawing.

6.7 Mounting the membrane

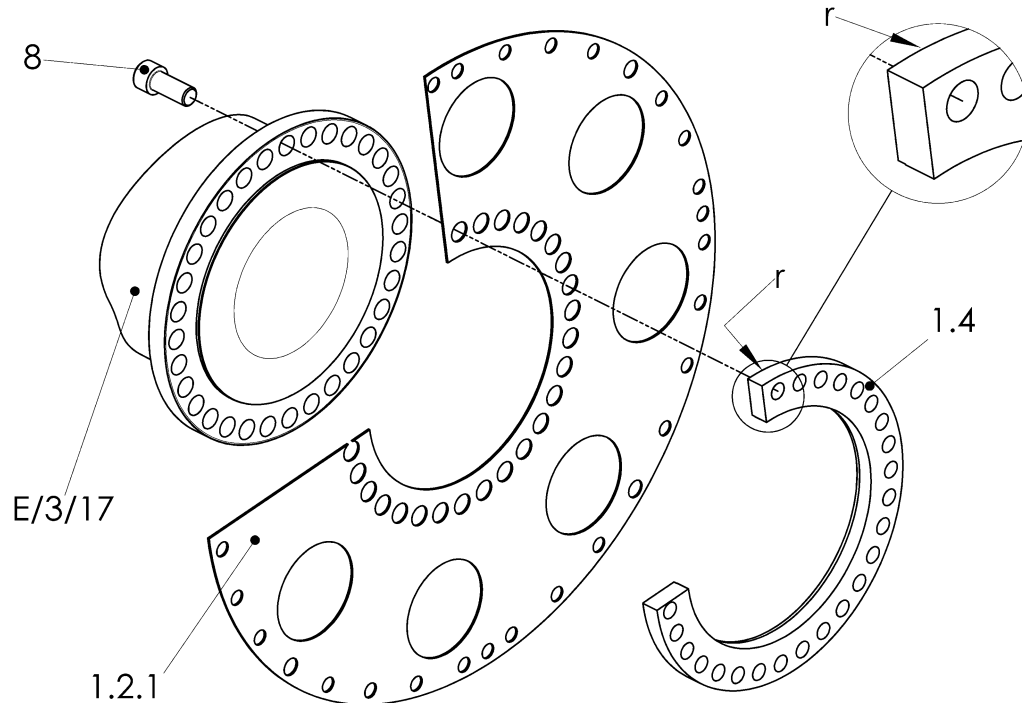


Fig. 6-6 Mounting the membrane

Item	Info	Designation	Remark
1.2.1		Membrane	
1.4		Ring	
3		Hub	
8		Screw ISO4762-10.9	
17		Adapter	
E		Flange	Customer part
	r	Radius must be on the side of the membrane	

- Push the membrane (1.2.1) onto the centring of the flange/hub/adaptor (E/3/17; see installation drawing).
- Push the ring (1.4) onto the centring of the flange/hub/adaptor (E/3/17; see installation drawing). The radius (d) must point towards the membrane (1.2.1).
- Screw the flange/hub/adaptor (E/3/17) and the membrane (1.2.1) to the ring (1.4) using the screws (8).

6.8 Connecting the rubber element and the membrane

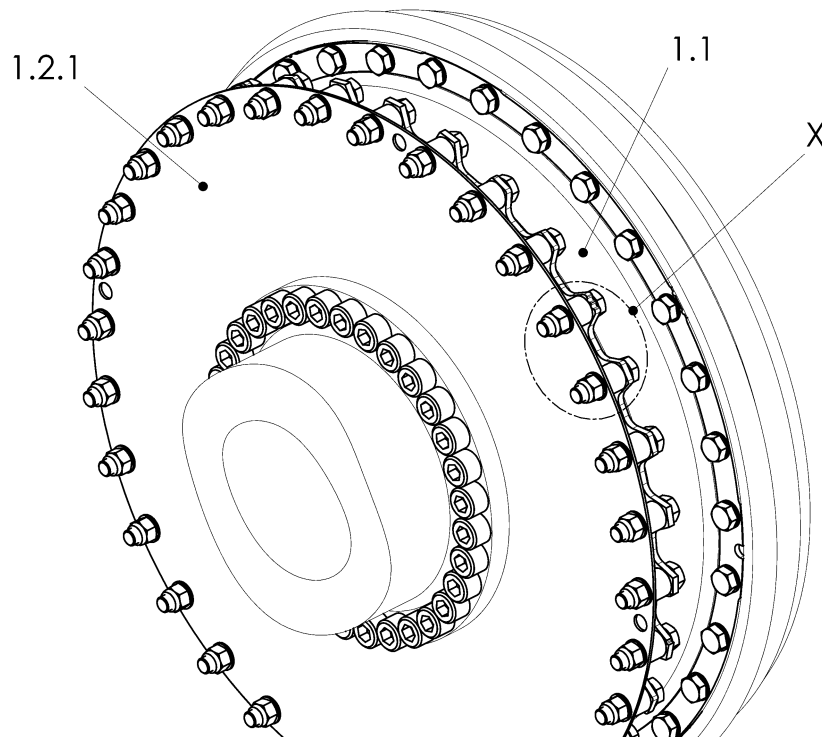


Fig. 6-7 Connecting the rubber element and the membrane

Item	Info	Designation	Remark
1.1		Rubber element	
1.2.1		Membrane	
X		Detail	See Fig. 6-8

- Connect the rubber element (1.1) and the membrane (1.2.1), see Fig. 6-8, Detail: X .

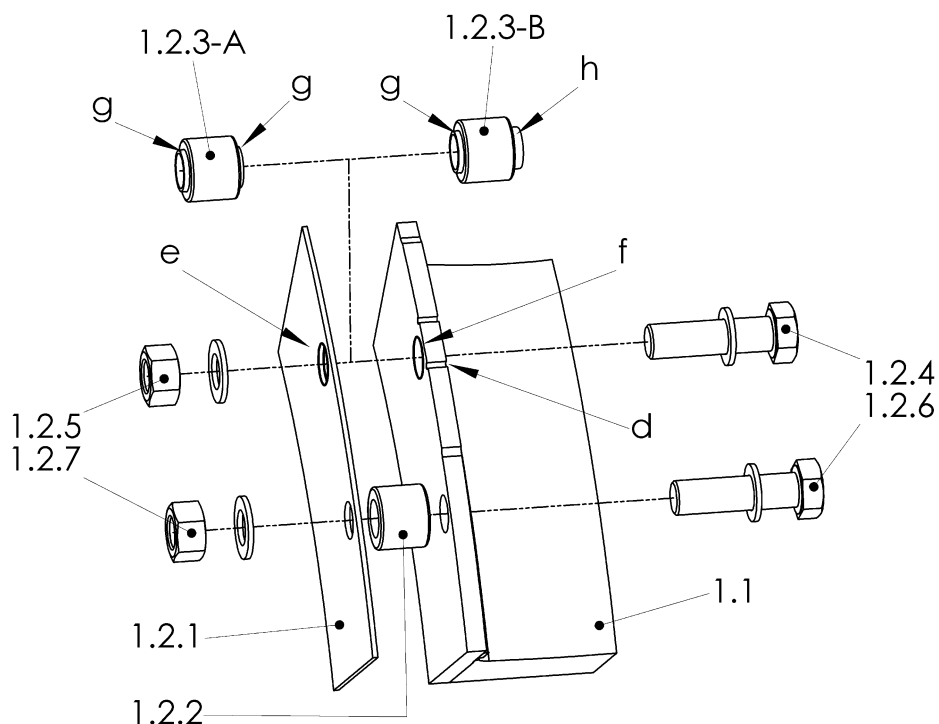


Fig. 6-8 Detail X: Connecting the rubber element and the membrane

Item	Info	Designation	Remark
1.1		Rubber element	
1.2.1		Membrane	
1.2.2		Ring	
1.2.3-A		Bush; design A	With short centring (g)
1.2.3-B		Bush; design B	With short centring (g) and long centring (h)
1.2.4		Screw ISO4014/ISO4017-10.9	See installation drawing
1.2.5		Nut ISO7040-10	
1.2.6		Washer 300HV	
1.2.7		Washer 300HV	
	d	Marking (Position of the bush)	4x90°
	e	Drilling for the bush	4x90°
	f	Drilling for the bush	4x90°
	g	Short centring	Of the bush (1.2.3)
	h	Long centring	Of the bush (1.2.3)



IMPORTANT

Ensure during installation that the bushes are in the right position.
Consider following table.

Size	Drilling diameter [mm]	Centring diameter H7 [mm]
176	16	20
177	18	22
179	20	24
181	19	22
183	22	26
184	24	28
185 / 186	26	30

- Turn the membrane (1.2.1) towards the rubber element (1.1) until the drillings for the bushes (e and f) are aligned, (see previous table).
- Mount the bushes (1.2.3; 4x90°) according to the supplied design **A** or **B**.
 - Place the bushes (1.2.3-**A**) into the drillings (e and f) of the rubber element (1.1) and the membrane (1.2.1).

CAUTION



Material damage can occur as a result of:

- Incorrect mounting position of the bushes (1.2.3-B) with short centring (g) and long centring (h)

Mount the bushes (1.2.3-B) in right position.


Always place the long centring (h) into the drillings (f) of the rubber element (1.1).

- **Always** place the bushes (1.2.3-**B**) with its long centring (h) into the drilling (f) of the rubber element (1.1) and with its short centring (g) into the drilling of the membrane (1.2.1).
- Screw the rubber element (1.1), the bushes (1.2.3-A or 1.2.3-B) and the membrane (1.2.1) using the screws (1.2.4), washers (1.2.6 and 1.2.7) and nuts (1.2.5).
- Screw the rubber element (1.1) to the membrane (1.2.1) using the screws (1.2.4), washers (1.2.6), rings (1.2.2), washers (1.2.7) and nuts (1.2.5).

6.9 Removing the mounting supports

- Remove all mounting supports.

6.10 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>

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	<ol style="list-style-type: none"> 1. Switch off the plant 2. Check alignment, correct if applicable 3. Trial run
	Loose bolts	<ol style="list-style-type: none"> 1. Switch off the plant 2. Check alignment, correct if applicable 3. Check screw torque levels and correct if necessary 4. Trial run
Membran or rubber element / rubber segment damaged	Alignment error	<ol style="list-style-type: none"> 1. Switch off the plant 2. Replace defective parts 3. Check alignment, correct if applicable 4. Trial run
	Inadmissibly high torque	<ol style="list-style-type: none"> 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. It is possible to perform a visual inspection during the regular scheduled maintenance intervals for the complete unit. Every 12 month a visual inspection is strictly required.

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 Visual inspection of the rubber elements / rubber segments

**IMPORTANT**

Exchange the rubber elements / rubber segments in the event that:

- The wear specifications given in W000-00002 are exceeded

- Assess the rubber elements / rubber segments as described in CENTA guidelines W000-00002.

8.1.4 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 rubber element from the membrane

See Fig. 6-7 and 6-8:

- Loosen screws (1.2.4) of the connection membrane (1.2.1) and rubber element (1.1) and remove with washers (1.2.6), nuts (1.2.5), rings (1.2.2) and bushes (1.2.3).

9.3 Dismantling the membrane

See Fig. 6-6:

- Loosen and remove the screws (8) of the connection flange/hub/adapter (E/3/17), ring (1.4) and the membrane (1.2.1).
- Pull the ring (1.4) off the centring of the flange/hub/adapter (E/3/17) and remove.
- Push the membrane (1.2.1) off the centring of the flange/hub/adapter (E/3/17) and remove.

9.4 Dismantling the rubber element (1.1) and the sheet (7) from the flywheel

See Fig. 6-5:

- Loosen the screws (30) of the connection rubber element (1.1), sheet (7) and flywheel (B) and remove with the washers (31).
- Pull the rubber element (1.1) out of the centring of the flywheel (B) and remove.
- Pull the sheet (7) out of the centring of the flywheel (B) and remove.

9.5 Dismantling the adapter (17; if existing/ necessary)

See Fig. 6-4:

- Loosen the screws of the connection adapter (17) and the flange/hub (E/3) and remove.
- Pull the adapter (17) off/out of the centring of the flange/hub (E/3) and remove.

9.6 Dismantling the hub (if existing/ necessary)

- Dismantle the hub as appropriate for the supplied design (see installation drawing):
 - Dismantling the hub with cylindrical bore and keyway, see chapter 9.6.1 .
 - Dismantling the hub with conical oil interference fit, see chapter 9.6.2 .


9.6.1 Dismantling the hub with cylindrical bore and keyway


See Fig. 6-2:


- Remove the hub (3) from the shaft (A).


9.6.2 Dismantling the hub with conical oil interference fit

See Fig. 6-3:


WARNING	
	<p>Injury and material damage can occur as a result of:</p> <ul style="list-style-type: none"> Non-compliance with the operating instructions for the hydraulic pumps <p>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.</p>

WARNING	
	<p>Injury and material damage can occur as a result of:</p> <ul style="list-style-type: none"> Hydraulic fluid spraying out <p>Use protective goggles.</p>

WARNING	
	<p>Injuries and material damages can occur by:</p> <ul style="list-style-type: none"> Suddenly loosening hubs <p>Secure the hub with a hydraulic tool against sudden axial loosening.</p>

 IMPORTANT	
<p>We recommend the following mounting fluids:</p> <ul style="list-style-type: none"> 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 	

- Remove the screw plug (19) from the hub (3).
- Connect the pump (**p_{max} = 3000 bar**) to the thread G¹/₄ or G³/₄ (c) of hub (3) to expand the hub.
- Screw the pump to the shaft (A), in order to hold the hub.
- Build up oil pressure in order to hold the hub.

WARNING	
	<p>Material damage can occur as a result of:</p> <ul style="list-style-type: none"> Too fast increase of the expanding pressure in the hub <p>The increase of the expanding pressure may not exceed 35 bar/minute.</p>

- Slowly build up oil pressure to expand the hub (**p_{max} = 1500 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 (A).
- Remove pump for expanding the hub from the hub (3).
- Turn the hub (3), drain oil out of the thread G¹/₄ or G³/₄ (c) and dispose correctly.
- Screw the screw plug (19) into the hub (3).
- Remove the hub (3) from the shaft (A).

9.7 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:

- Rubber element

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		d	Strength class	Tightening torques	
		[Nm] ±5%	[in lbs] ±5%			[Nm] ±5%	[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 D038-900

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 CENTAX-G100

Model / series code: CX-G100 / 038G

Installation size: 176...194

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. J. Anderseck

by order of Gunnar Anderseck
(Authorised Person Documentation)

Declaration of incorporation was issued:

i.v. J. Exner

Haan, 08.12.2009

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