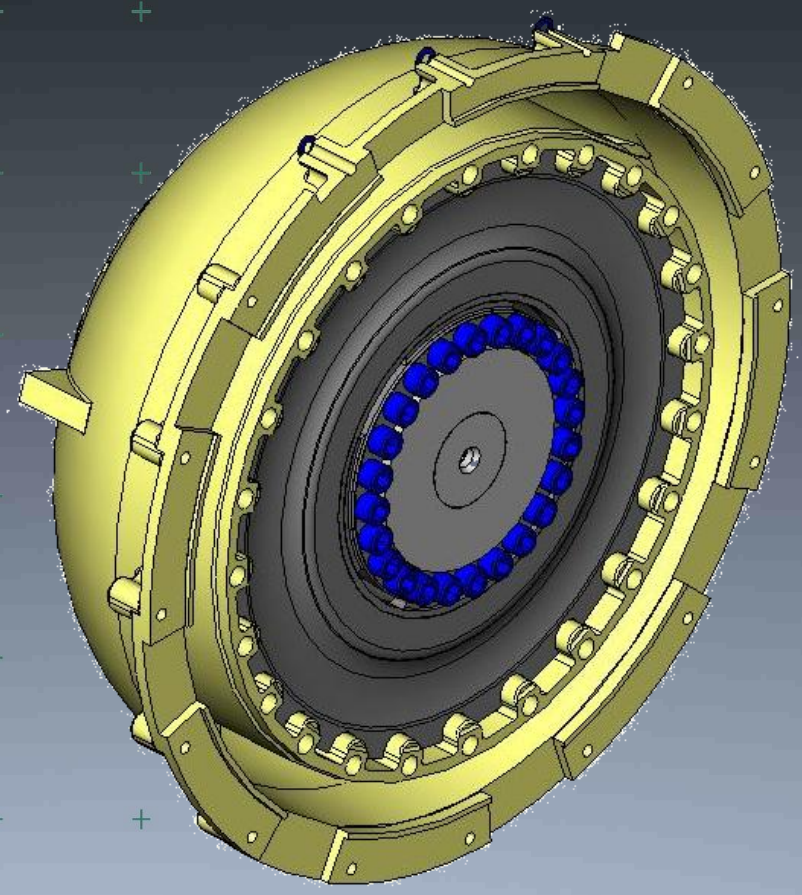
CENTA-FH

Assembly and operating instructions

002M-01600…18000-.001…-.000

M002-00005-EN

Rev. **1**



CENTA

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.

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

- Protects the crankshaft from the reaction forces coming from the cardan shaft.
- Ideal torsional vibration tuning due to combination with different types of highly flexible couplings.
- High capacity bearings with long term lubrication to achieve extended lifetime, little maintenance.
- Compact design, light weight due to bearing housing being manufactured from hardened aluminium.
- Extensive internal ventilation to reduce the ambient temperature around the elastic coupling.

4.2 Specifications

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

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	
	**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 for screws item(s) 3.4 and 30 in accordance with CENTA data sheet D013-016 (see chapter 10.1).
- Screw preparation and tightening torque levels for screws item(s) D and E in accordance with CENTA data sheet D013-017 (see chapter 10.2).
- Elements for connection of the coupling to customer components do not form part of the delivery.
- Use suitable lifting devices for assembly.
- The following assembly stages are described for coupling 002M-12000.
- Part illustration and marking may different slightly from installation drawing and delivery state.

5.2 Mounting the flange to the flywheel

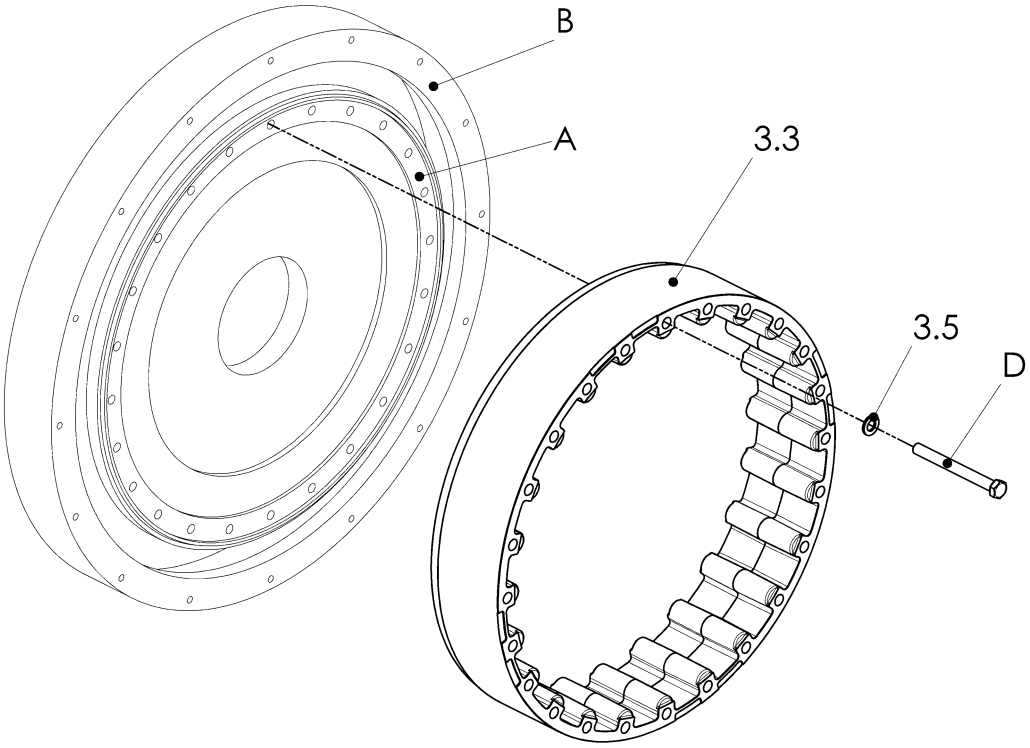

Fig. 5-1 Mounting the flange to the flywheel

Item	Info	Designation	Remark
3.3		Flange	
3.5		Washer ISO7089 300HV	
A		Flywheel	Customer part
B		Flywheel housing	Customer part
D		Screw	No scope of supply

WARNING

Injuries and material damages can occur as a result of:

- Incorrect screw firmness and tightening torque at screw connections on SAE flywheels

Screws and tightening torques according to CENTA data sheet D013-017 (see Annex).

IMPORTANT

For design reasons, unmounted coupling flanges can be slightly out of round.
These adjust to the centering fixture of the flywheel when mounting.

- Push the flange (3.3) into the centring of the flywheel (A).
- Screw the flange (3.3) with screws (D) and washers (3.5) to the flywheel (A).
  Screws (D) are not part of the CENTA scope of supply.
  Use the washers (3.5) provided.

5.3 Mounting the flange bearing housing assembly to the flywheel housing

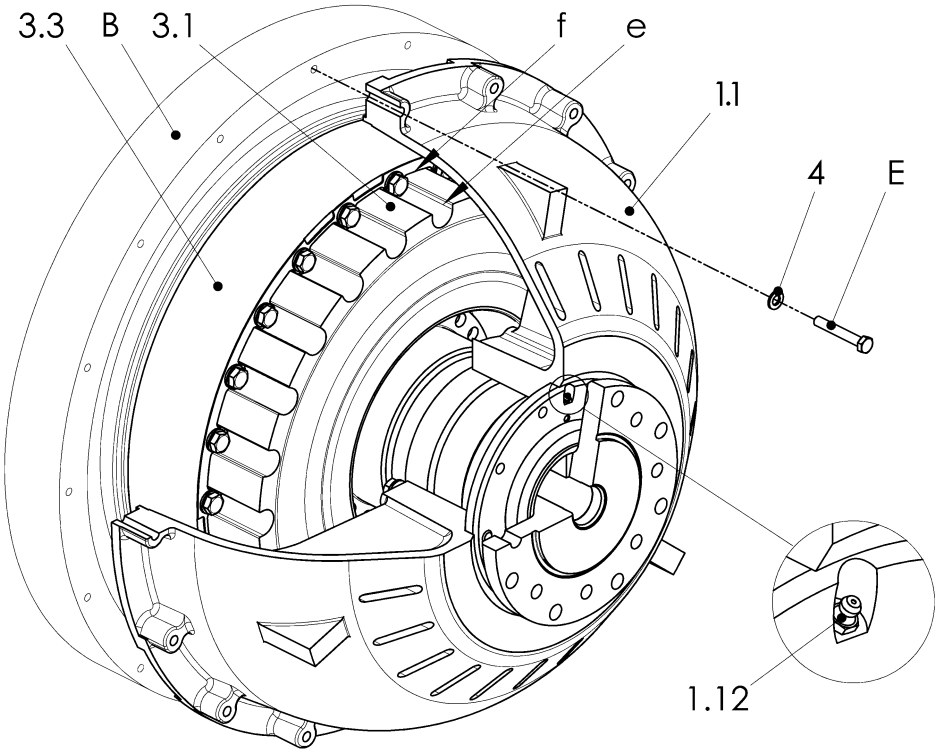

Fig. 5-2 Mounting the flange bearing housing assembly to the flywheel housing

Item	Info	Designation	Remark
1.1		Flange bearing housing	
1.12		Lubricating nipple	Only for flange bearing housing size SAE 00
3.1		Rubber element	
3.3		Flange	
4		Washer ISO7089 300HV	
B		Flywheel housing	Customer part
E		Screw	No scope of supply
	e	Toothing of the rubber element	
	f	Toothing of the flange	

IMPORTANT

The coupling is delivered ready for installation. Do not dismantle any part.

IMPORTANT

The toothing on the rubber element must be free of oil and grease.
If necessary, use soap or talcum powder.

- Turn the rubber element (3.1) towards the flange (3.3) until it is possible to push the toothing of the rubber element (e) into the toothing of the flange (f).
- Push the flange bearing housing (1.1) into the centring of the flywheel housing (B).
  Simultaneously place the rubber element (3.1) in the flange (3.3).

IMPORTANT

Lubricating nipple must be accessible during operation.

- Mount the flange bearing housing assembly correspondingly.

- Only for flange bearing housing size SAE 00:
  Turn the flange bearing housing (1.1) so that the lubricating nipple (1.12) is accessible during operating.
- Screw the flange bearing housing (1.1) to the flywheel housing (B) using screws (E) and washers (4).
  Screws (E) are not part of the CENTA scope of supply.
  Use the washers (4) provided.

5.4 Mounting the driven unit to the flange bearing housing

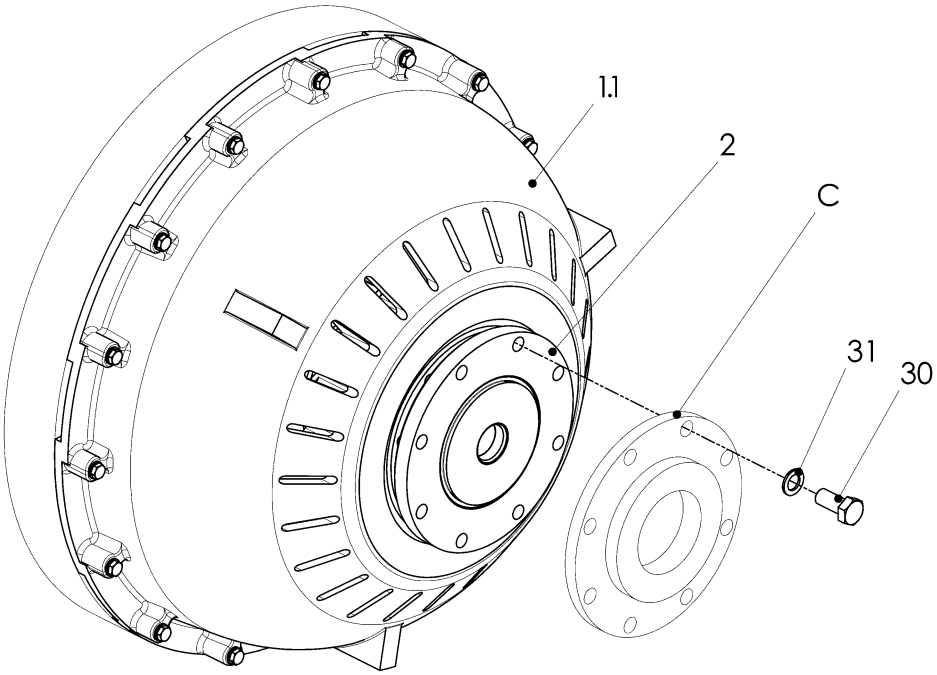

Fig. 5-3 Mounting the driven unit to the flange bearing housing

Item	Info	Designation	Remark
1.1		Flange bearing housing	
2		Shaft	
30		Screw	If ordered
31		Washer	If ordered
C		Flange	Of driven unit; customer part

- Push the flange (C) onto the centring of the shaft (2).
- Screw the flange (C) to the shaft (2) using the screws (30) and the washers (31).

5.5 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 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

Malfunctions	Possible causes	Remedy
Running noises or vibrations in the unit	Loose screw connections	1. Shut down the unit 2. Check screw torque levels and correct if necessary 3. Test run
	Damage of bearing	1. Shut down the unit 2. Replace the bearing 3. Test run
Fracture of rubber element	Inpermissibly high torque	1. Shut down the unit 2. Replace the rubber element 3. Test run
	Damage due to rotary oscillation: • Motor idle running speed too low • Cylinder failure	1. Shut down the unit 2. Replace the rubber element 3. Test run

Table 6-1 Malfunction 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 Before starting work at the coupling, switch off the plant and secure against unintentional start-up.

7.1 Maintenance intervals

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.

Maintenance interval	Work to be performed	See chapter
every 12 months	Visual inspection of the coupling	7.2
only for size SAE 00 every 6000 operating hours	Relubricating the bearing	7.2 and 7.3
if the driving and driven units have to be separated	Visual inspection of the rubber element	7.2 and 7.4

Table 7-1 Maintenance intervals

7.2 Work to be performed

7.2.1 Visual inspection of the coupling

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

7.2.2 Inspection of the screw connections

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

7.3 Relubricating the bearing (only for flange bearing housing size SAE 00)

VORSICHT	
	**Material damage can occur as a result of:** ▪ Relubricating using the incorrect type of grease ▪ Relubricating using the incorrect amount of grease **Only** use grease Isoflex Topas L 152 produced by Klüber Lubrication München KG. For the correct amount of grease refer to the table below.

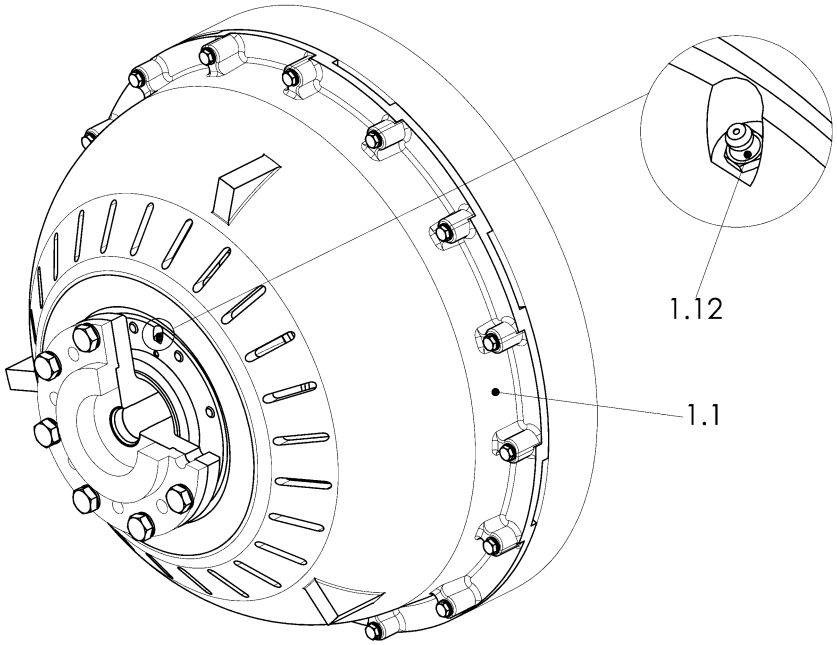

Fig. 7-1 Relubricating the bearing

Item	Info	Designation	Remark
1.1		Flange bearing housing	
1.12		Lubrication nipple	Only for flange bearing housing size SAE 00

- Clean the lubrication nipple (1.12)
- Relubricate according to table (7-2).
- Remove leaking grease.

Relubrication interval [h]	Amount of grease		Type of grease
	[g]	[cm³]	
6000	250	285	Isoflex Topas L 152 Klüber Lubrication KG München

Table 7-2 Relubrication interval

7.4 Visual inspection of the rubber elements

IMPORTANT

Exchange the rubber elements:

- In the event of damage, but at the standard maintenance interval of the engine at the latest.

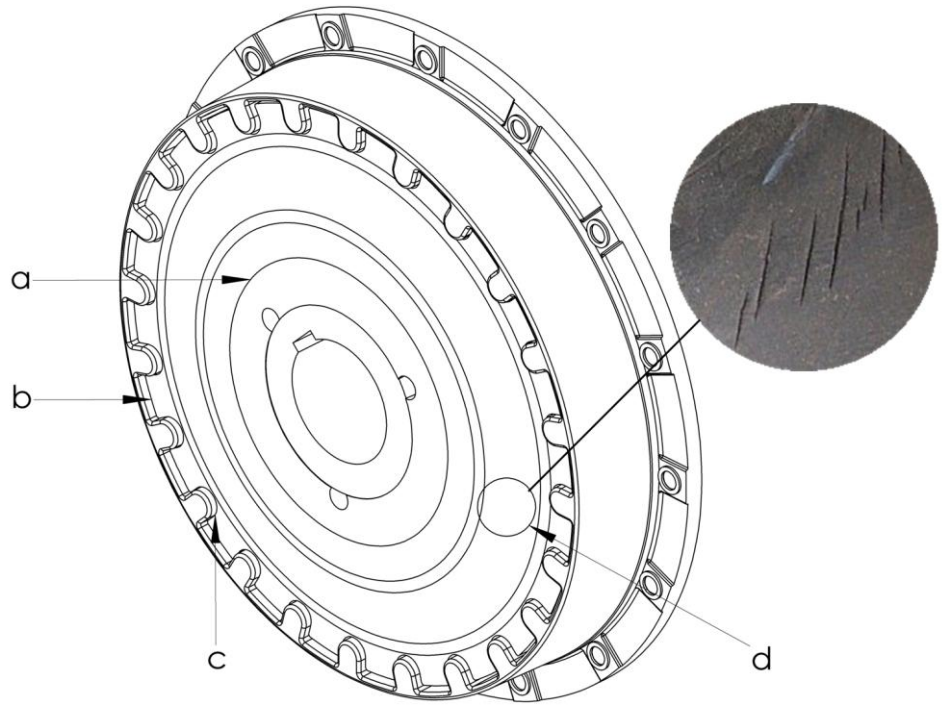

Fig. 7-2 Visual inspection at the rubber elements

Pay attention to cracks / adherence of rubber and metal parts in the zones marked by arrows (a).
Should the cracks be 3 mm or deeper, the rubber element **must** be exchanged (d).
Wear of 3-4 mm to the round teeth on the load side is admissible (c).
At a standstill, there is a distance of 1-2 mm between the coupling flange and the rubber element. At operational speed, the centrifugal force presses the rubber toothing against the coupling flange (b).

7.5 Replacing defective parts

- Remove the coupling as described in chapter 8.3 .
- Replace wearing parts.
- Mount the coupling as described in chapter 8.4 .

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).

WICHTIG

The coupling is dismantled in reverse order to the assembly process.
Please refer to the illustrations in chapter 5.

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 Dismantling the coupling

8.2.1 Dismantling the driven unit from the shaft

See Fig. 5-3:

- Loosen the screws (30) of the connection flange (C) and shaft (2) and remove with the washers (31).
- Pull the flange (C) off the centring of the shaft (2) and remove.

8.2.2 Separating the flange bearing housing from the flywheel housing

See Fig. 5-2:

- Loosen the screws (E) of the connection flange bearing housing (1.1) and flywheel housing (B) and remove with washers (4).
- Pull the flange bearing housing (1.1) out of the centring of the flywheel housing (B).

8.2.3 Dismantling the flange from the flywheel

See Fig. 5-1:

- Loosen the screws (D) of the connection flange (3.3) and flywheel (A) and remove with the washers (3.5).
- Pull the flange (3.3) out of the centring of the flywheel (A) and remove.

8.2.4 Reassembling the coupling

- Reassemble the coupling as described in chapter 5.

8.3 Dismantling the coupling for replacing the wearing parts

8.3.1 Dismantling the driven unit from the shaft

See Fig. 5-3:

- Loosen the screws (30) of the connection flange (C) and shaft (2) and remove with the washers (31).
- Pull the flange (C) off the centring of the shaft (2) and remove.

8.3.2 Separating the flange bearing housing from the flywheel housing

See Fig. 5-2:

- Loosen the screws (E) of the connection flange bearing housing (1.1) and flywheel housing (B) and remove with washers (4).
- Pull the flange bearing housing (1.1) out of the centring of the flywheel housing (B).

8.3.3 Dismantling the rubber element

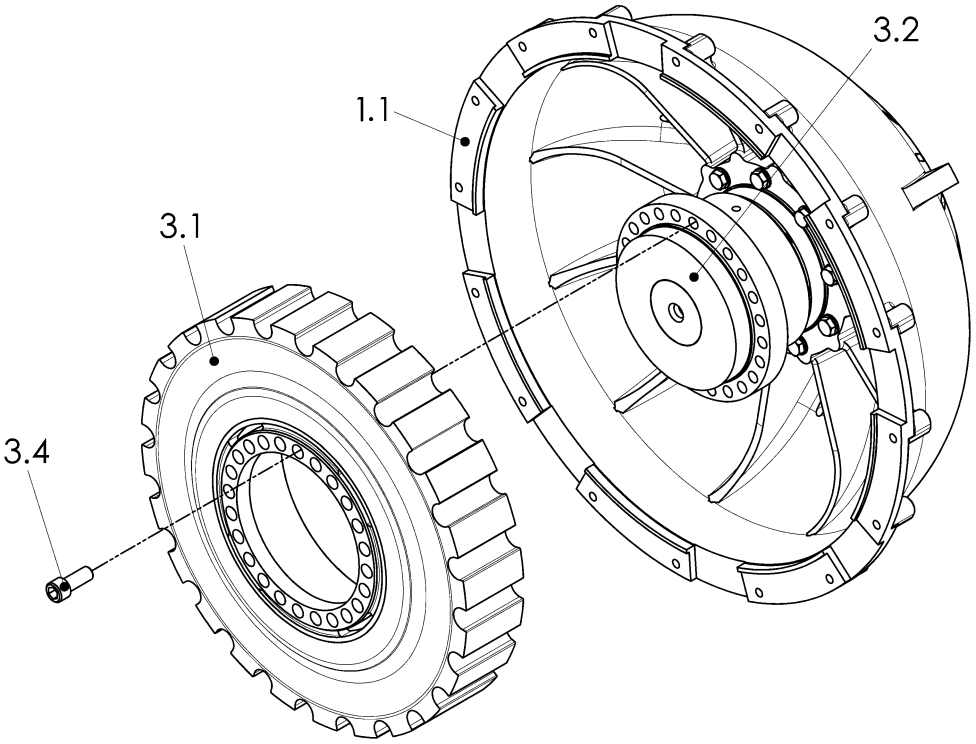

Fig. 8-1 Dismantling the rubber element

Item	Info	Designation	Remark
1.1		Flange bearing housing	
3.1		Rubber element	
3.2		Hub	
3.4		Screw ISO4762-10.9	

- Loosen the screws (3.4) of the connection rubber element (3.1) and hub (3.2) and remove.
- Pull the rubber element (3.1) off the centring of the hub (3.2) and remove.

8.4 Mounting the coupling after replacing the wearing parts

8.4.1 General assembly instructions

- General assembly instructions, see chapter 5.1 .

8.4.2 Mounting the rubber element

See Fig. 8-1:

- Push the rubber element (3.1) onto the centring of the hub (3.2).
- Screw the rubber element (3.1) to the hub (3.2) using the screws (3.4).

8.4.3 Mounting the flange bearing housing assembly to the flywheel housing

- Mounting the flange bearing housing assembly to the flywheel housing, see chapter 5.3 .

8.4.4 Mounting the driven unit to the flange bearing housing

- Mounting the flange (of the driven unit) to the flange bearing housing assembly, see chapter 5.4 .

8.4.5 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.

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 element

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

- Flange bearing housing
  This is delivered pre-assembled as pre-mounted flange bearing housing assembly.

When ordering a spare, specify:

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

10 Annex

10.1 CENTA data sheet D013-016 (unlubricated screw connections)

Validity:
For all non-dynamically stressed screw connections with **not 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:
Use screws as delivered.

Preparation of screws that ARE secured with liquid screw locking medium:
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	10	90	M22	8.8	470	4160
	10.9	14	125		10.9	670	5930
	12.9	17	150		12.9	780	6900
M8	8.8	23	205	M24	8.8	600	5310
	10.9	34	300		10.9	850	7520
	12.9	40	350		12.9	1000	8850
M10	8.8	46	410	M27	8.8	750	6640
	10.9	68	600		10.9	1070	9470
	12.9	79	700		12.9	1250	11060
M12	8.8	79	700	M30	8.8	1000	8850
	10.9	117	1050		10.9	1450	12830
	12.9	135	1200		12.9	1700	15050
M14	8.8	125	1100	M33	8.8	1400	12400
	10.9	185	1650		10.9	1950	17250
	12.9	215	1900		12.9	2300	20350
M16	8.8	195	1725	M36	8.8	1750	15500
	10.9	280	2500		10.9	2500	22150
	12.9	330	2900		12.9	3000	26550
M18	8.8	245	2200	M39	8.8	2300	20350
	10.9	350	3100		10.9	3300	29200
	12.9	410	3600		12.9	3800	33650
M20	8.8	350	3100				
	10.9	490	4350				
	12.9	580	5150				

10.2 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

10.3 CENTA data sheet D002-900 Declaration of incorporation according to the EC Machinery Directive 2006/42/EC, Appendix II B

Manufacturer:

CENTA Antriebe Kirschey GmbH
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42781 Haan / GERMANY

Contact:

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

We herewith declare that the **incomplete** machine

Product:	CENTA Flange bearing housing
Model / series code:	FH-CM / 002M
Installation size:	3-800…00-18000
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. S. Anderseck

by order of Gunnar Anderseck
(Authorised Person Documentation)

Declaration of incorporation was issued:

i.V. J. Exner

Haan, 15.12.2009

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