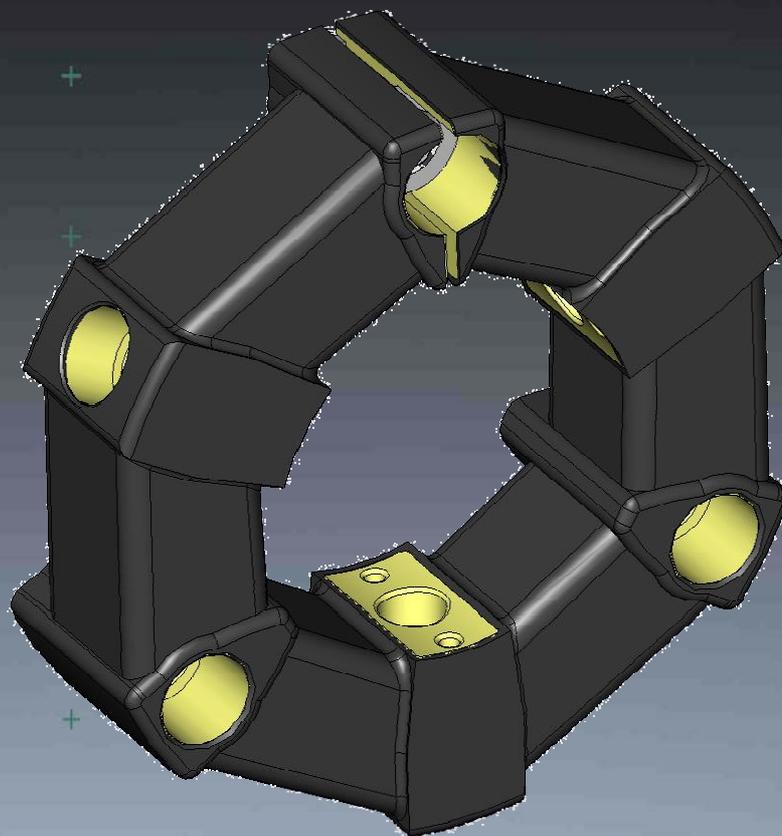


CENTAFLEX Series A  
Assembly and operating instructions  
CF-AR-16...600  
M008-00074-EN  
Rev. 2



Power Transmission  
Leading by innovation



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## 1 General remarks

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

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

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



### IMPORTANT

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

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

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**

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

<b>CAUTION</b>	
	<p><b>Injury and material damage can occur as a result of:</b></p> <ul style="list-style-type: none"> <li>▪ Incorrect transportation of couplings</li> </ul> <p>Ensure that the coupling is correctly transported.</p>
<b>CAUTION</b>	
	<p><b>Material damage to coupling components can occur as a result of:</b></p> <ul style="list-style-type: none"> <li>▪ Contact with sharp-edged objects</li> </ul> <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

<b>CAUTION</b>	
	<p><b>Material damage to elastic elements and rubber parts can occur as a result of:</b></p> <ul style="list-style-type: none"> <li>▪ Incorrect storage</li> </ul> <p>These parts must be stored laid flat and so they cannot distort, and protected from ozone, heat, light, moisture and solvents.</p>
 <b>IMPORTANT</b>	
<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**

<b>RECYCLING</b>	
	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

CENTAFLEX-A couplings are proven, extremely simple, versatile and offer good torsional flexibility.

- Simple, compact smooth-faced design.
- Low weight, low moment of inertia.
- High output, high admissible speeds, large bores permitted, rupture-proof
- Large angle of twist with almost linear curve (appr. 6-8° at nominal torque).
- High elasticity and considerable flexibility in any direction (radial, axial, angular) with low counter forces acting on shafts and bearings.
- The CENTAFLEX coupling has a shock and vibration absorbing action.
- Torque transmission is absolutely free of play, uniform, silent and electrically insulating.
- The coupling is low-maintenance. The rubber parts are not subject to wear, resulting in a long service life and no generation of dirt (rubber particles).
- The rubber element is air flushed all round, resulting in good dissipation of the generated heat. The rubber element remains cool.
- By slackening the radial screws, the drive can be conveniently separated and rotated without dismantling.
- Because of the torque, no axial reaction forces at all are applied to the shaft and bearings.
- The rubber elements are available in a number of different shore hardnesses.
- This allows the torsional stiffness to be varied within wide limits and so adjusted to the vibration-specific requirements.
- Material: Normal version: Natural rubber, capable of withstanding dynamic loads and temperature resistant.

### 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 in accordance with CENTA data sheet D13-019 (see chapter 10.1).
- Use suitable lifting devices for assembly .
- Elements for connection of the coupling to customer components do not form part of the delivery.
- The following assembly stages are described for coupling CF-AR-30, -250, -400.
- Part illustration and marking may slightly differ from installation drawing and delivery state.

 **IMPORTANT**

Use exclusively **new** screws supplied by CENTA.  
These are coated with microencapsulated adhesive INBUS PLUS **IP** which serves as a screw locking medium.

 **IMPORTANT**

To ensure optimum screw locking, after tightening the curing time for the microencapsulated adhesive must be observed:

- Appr. 4-5 hours at room temperature (20°C)
- Higher temperatures will accelerate the curing time (e.g. 15 minutes at 70°C created by a hot air blower)

After 24 hours, the adhesive is completely cured.



## 5.2 Dismantling the built-in rubber element

- Dismantle the built-in rubber element as described in chapter 8.

## 5.3 Checking the alignment of the units being connected

- Check the alignment of the units being connected, according to chapter 5 of the assembly and operating instructions, of the built-in coupling (type CF-A ...).  
If necessary:
  - Correct the alignment.

### 5.4 Positioning the rubber element

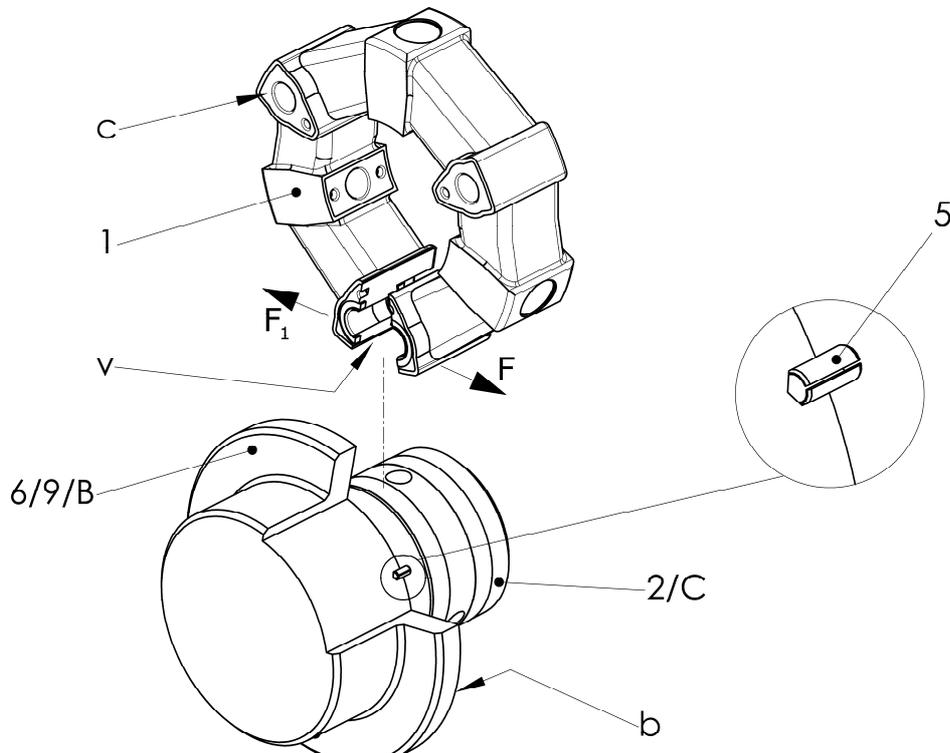


Fig. 5-1 Positioning the rubber element

Item	Info	Designation	Remark
1		Rubber element	
2		Hub	
5		Spring pin	
6/9		Flange hub/Flange	
B		Flange	
C		Hub	Customer part
	b	Face of flange hub/Flange	
	c	Contact surface of rubber element	
	v	Split-line	
	F/F <sub>1</sub>	Force in tensile direction	

**CAUTION****Material damages to the AR- rubber element can occur by:**

- Excessive pulling apart during mounting/dismantling
- Only pull the AR-rubber element until you can push it onto/off the hub.

- Check the correct fit of the spring pins (5) in flange/flange hub and if necessary (B/9/6) strike again.
- Pull the rubber element (1) towards the illustrated direction (F/F<sub>1</sub>) until you can push it onto the hub (2/C).
- Push the rubber element (1) onto the hub (2/C). The contact surfaces of the rubber element (c) must be on the side of face of flange hub/flange (b).

**5.5 Mounting the rubber element**

- Mounting the rubber element:
  - Mounting the rubber element (CF-AR-16...200), see chapter 5.5.1.
  - Mounting the rubber element (CF-AR-250), see chapter 5.5.2 .
  - Mounting the rubber element (CF-AR-400...600), see chapter 5.5.3 .

5.5.1 Mounting the rubber element (CF-AR-16...200)

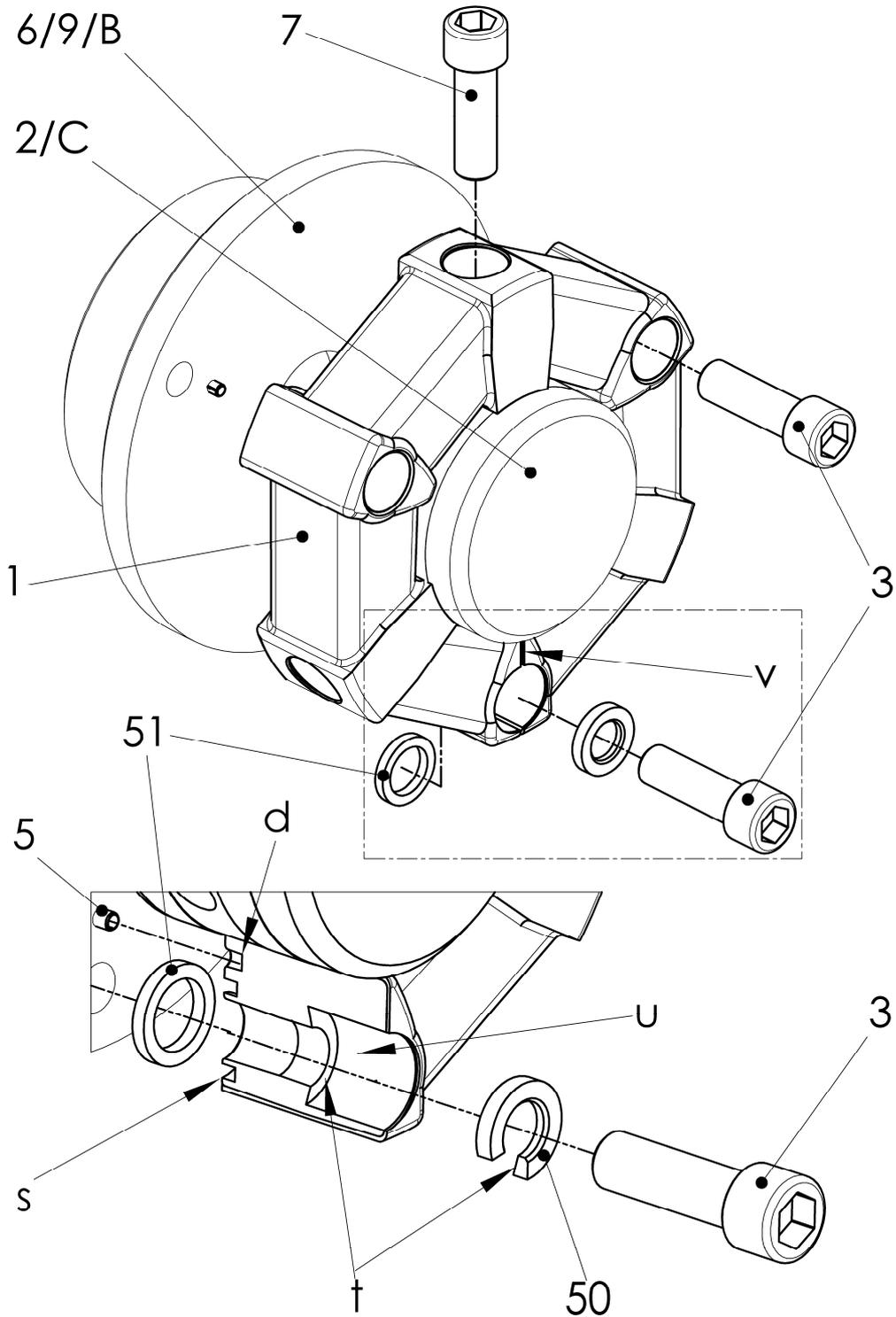


Fig. 5-2 Mounting the rubber element (CF-AR-16...200)



Item	Info	Designation	Remark
1		Rubber element	
2		Hub	
3		Washer	
5		Spring pin	
6/9		Flange hub/Flange	
7		Screw	
50		Washer	
51		Washer	
B		Flange	Customer part
C		Hub	Customer part
	d	Drilling for spring pin	
	s	Groove	For washer (51)
	t	Conical surface	Off/for washer (50)
	u	Drilling	
	v	Split-line	

- Lock the rubber element (1) at the split-line (v) using the washers (50 and 51):
  - Push the washer (51) into the groove (s) of the rubber element (1).
  - Push the washer (50) into the drilling (u) of the rubber element (1). The conical surface (t) of the washer (50) must be on the side of conical surface (t) of the rubber element (1).
- Turn the rubber element (1) towards the flange hub/ flange (6/9/B) until the drillings (d) and the spring pins (5) are aligned.
- Screw the rubber element (1) with screws (3) to the flange hub/ flange (6/9/B).
- Push the screws (7) into the rubber elements (1) and turn them first two to three threads into the hub (2/C).
- Tighten all screws (7) until the prescribed tightening torque (see chapter 11.1) has been achieved.

5.5.2 Mounting the rubber element (CF-A-250)

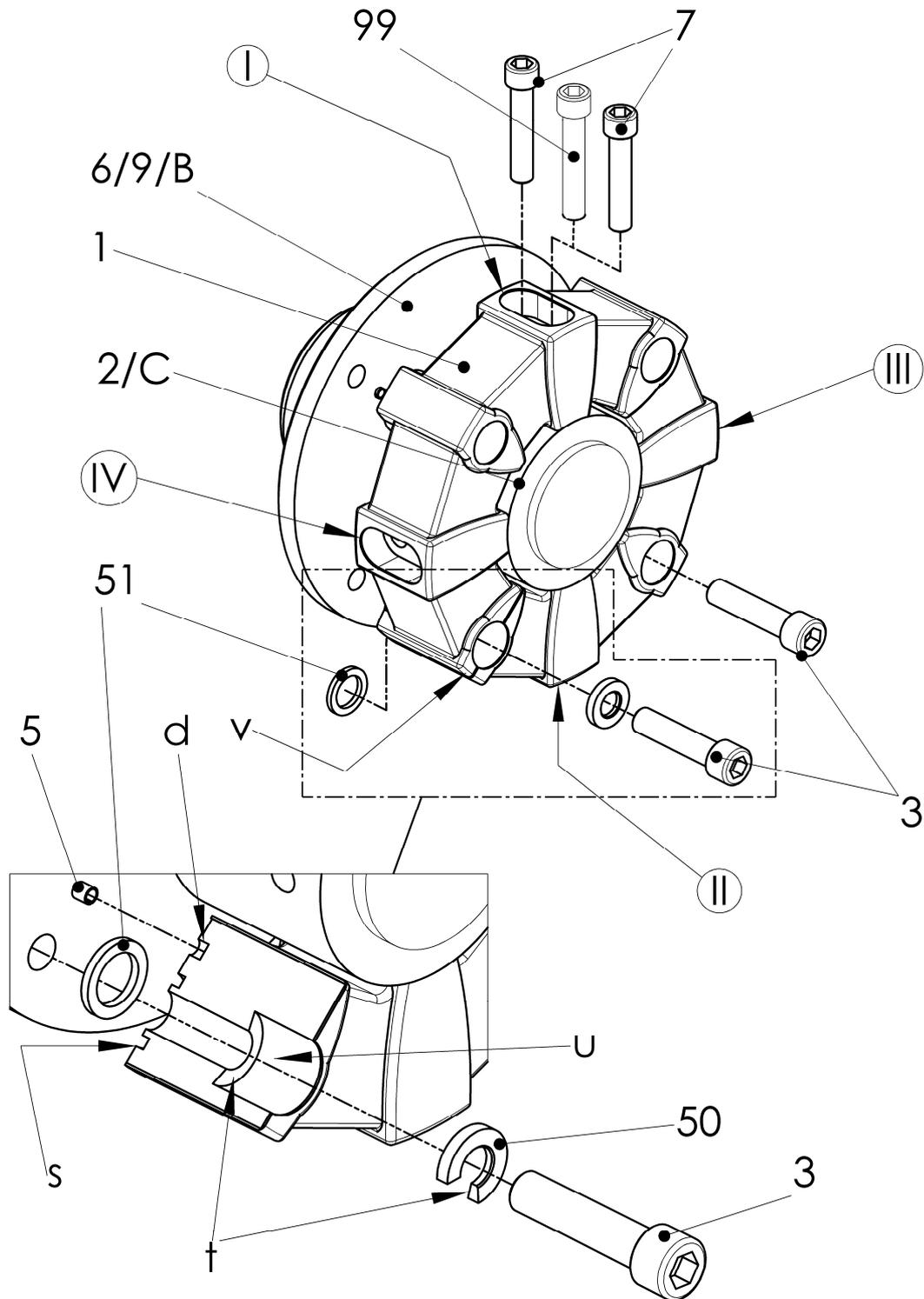


Fig. 5-3 Mounting the rubber element (CF-A-250)



Item	Info	Designation	Remark
1		Rubber element	
2		Hub	
3		Screw	
5		Spring pin	
6/9		Flange hub/Flange	
7		Screw	
50		Washer	
51		Washer	
99		Screw ISO4762-10.9 M20x90	1 pc. for mounting
B		Flange	Customer part
C		Hub	Customer part
	d	Drilling for spring pin	
	s	Groove	For washer (51)
	t	Conical surface	Off/for washer (50)
	u	Drilling	
	v	Split-line	
	I - IV	Sequences of mounting	

- Lock the rubber element (1) at the split-line (v) using the washers (50 and 51):
  - Push the washer (51) into the groove (s) of the rubber element (1).
  - Push the washer (50) into the drilling (u) of the rubber element (1). The conical surface (t) of the washer (50) must be on the side of conical surface (t) of the rubber element (1).
- Turn the rubber element (1) towards the flange hub/ flange (6/9/B) until the drillings (d) and the spring pins (5) are aligned.
- Screw the rubber element (1) with screws (3) to the flange hub/ flange (6/9/B).
- Repeat the following mounting section in sequence I – IV until all screws (7) are screwed in two to three threads:
  - Pull up the rubber element (1) with screw (99) to the hub (2/C) and screw in next to this a screw (7) two to three threads.
  - Remove the screw (99) and replace it by another screw (7), at first screw it two to three threads in the hub (2/C).
- Tighten in sequence I – IV all screws (7) until the prescribed tightening torque (see chapter 11.1) has been achieved.

5.5.3 Mounting the rubber element (CF-A-400...600)

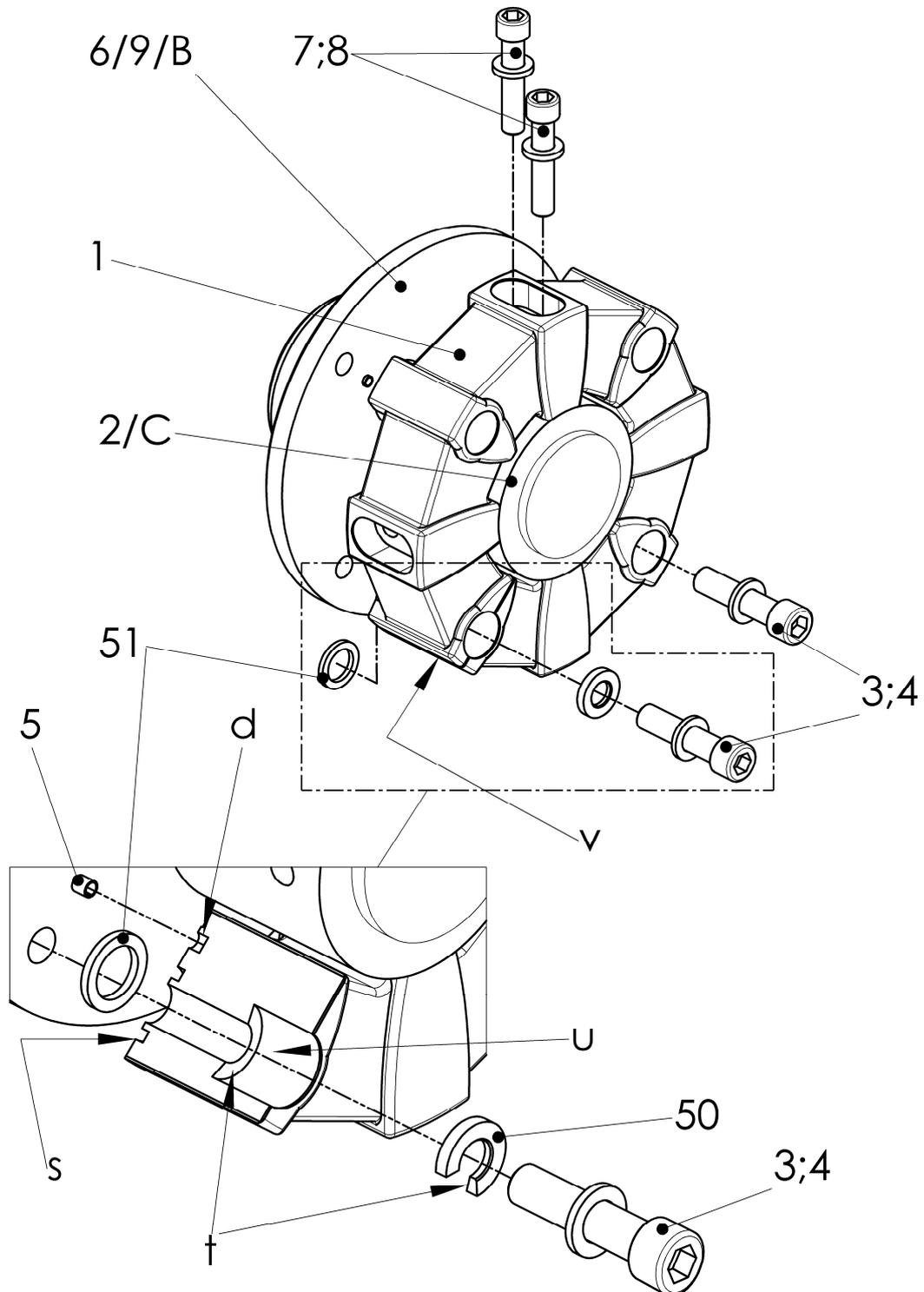


Fig. 5-4 Mounting the rubber element (CF-A-400...600)



Item	Info	Designation	Remark
1		Rubber element	
2		Hub	
3		Screw	
4		Washer	
5		Spring pin	
6/9		Flange hub/Flange	
7		Screw	
8		Washer	
50		Washer	
51		Washer	
B		Flange	Customer part
C		Hub	Customer part
	d	Drilling for spring pin	
	s	Groove	For washer (51)
	t	Conical surface	Off/for washer (50)
	u	Drilling	
	v	Split-line	

- Lock the rubber element (1) at the split-line (v) using the washers (50 and 51):
  - Push the washer (51) into the groove (s) of the rubber element (1).
  - Push the washer (50) into the drilling (u) of the rubber element (1). The conical surface (t) of the washer (50) must be on the side of conical surface (t) of the rubber element (1).
- Turn the rubber element (1) towards the flange hub/ flange (6/9/B) until the drillings (d) and the spring pins (5) are aligned.
- Screw the rubber element (1) with screws (3) and washers (4) to the flange hub/ flange (6/9/B).
- Push the screws (7) and the washers (8) into the rubber elements (1) and turn them first two to three threads into the hub (2/C).
- Tighten crosswise all screws (7) until the prescribed tightening torque (see chapter 11.1) has been achieved.

## 5.6 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.



### IMPORTANT

- After completion of assembly, check the alignment of the coupling again and if necessary correct.

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

## 6 Operation

### WARNING



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

- Worn coupling components

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

Determine the fault and its root cause, and remedy.  
The troubleshooting process is simplified by the table in the next chapter.  
On principle in case of a fault, an analysis of the entire plant should be performed.

### 6.1 Operating faults, root causes and remedy

Faults	Possible root causes	Remedy
Running noises or vibrations in the plant	Alignment error	<ol style="list-style-type: none"> <li>1. Switch off the plant</li> <li>2. Check alignment, correct if applicable</li> <li>3. Trial run</li> </ol>
	Loose bolts	<ol style="list-style-type: none"> <li>1. Switch off the plant</li> <li>2. Check alignment, correct if applicable</li> <li>3. Check screw torque levels and correct if necessary</li> <li>4. Trial run</li> </ol>
Rubber element / rubber segment damaged	Alignment error	<ol style="list-style-type: none"> <li>1. Switch off the plant</li> <li>2. Replace defective parts</li> <li>3. Check alignment, correct if applicable</li> <li>4. Trial run</li> </ol>
	Inadmissibly high torque	<ol style="list-style-type: none"> <li>1. Switch off the plant</li> <li>2. Replace defective parts</li> <li>3. Check alignment, correct if applicable</li> <li>4. Trial run</li> </ol>

*Table 6-1 Troubleshooting table*

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

### 6.2 Admissible overall misalignment of the coupling

The overall misalignment values can be found in the catalogue.

## 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.

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

### 7.1 Work to be performed

#### 7.1.1 Cleaning the coupling

- Remove any loose dirt from the coupling.

#### 7.1.2 Visual inspection of the coupling

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

### 7.1.3 Visual inspection of the rubber element

Visual inspection of the CENTAFLEX rubber element (see fig. below). Pay particular attention to cracks or to the adhesion of rubber and metal parts in the zones indicated by the arrows. Pressure folds (creasing) in these zones may be considered normal.

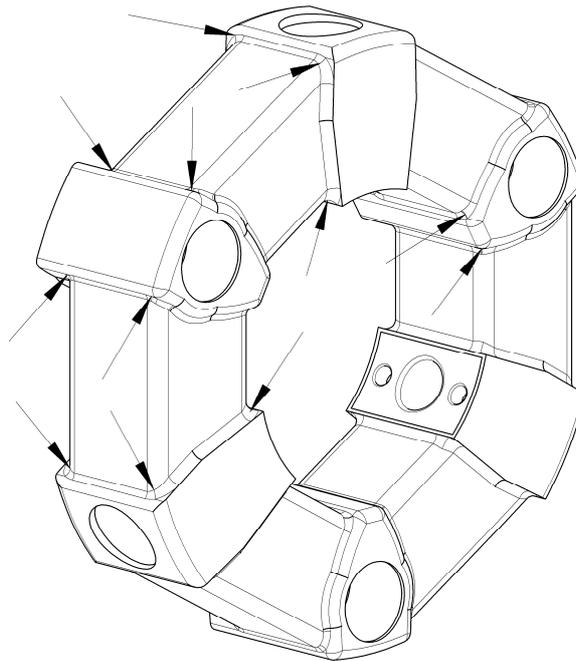


Fig. 7-1 Examples of wear zones at the CF-A rubber element indicated by arrows

In the event of cracks, deeper than permissible (see table below) or rubber-to-metal connections have become detached, the rubber parts must be exchanged.

CF-A	permissible crack depth [mm]
1 / 2 / 4 / 8 / 12	1.5
16 / 22 / 25 / 28 / 30 / 50	2.0
80 / 90 / 140 / 200 / 250	3.0
400 / 600	5.0

Table 7-1 Permissible crack depth at the CF-A-rubber element (Sizes 1 to 600)

### 7.1.4 Inspection of the screw connections

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

## 7.2 Replace defective parts



### IMPORTANT

Exchange the rubber elements in the event of damage.

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



### IMPORTANT

Use exclusively **new** screws supplied by CENTA.

These are coated with microencapsulated adhesive INBUS PLUS **IP** which serves as a screw locking medium.

- Mount the coupling as described in chapter 5.

## 8 Dismantling

### 8.1 General dismantling instructions

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

<b>WARNING</b>	
	<p><b>Injuries can occur as a result of:</b></p> <ul style="list-style-type: none"> <li>▪ Contact with rotating parts</li> </ul> <p>Before starting work at the coupling, switch off the plant and secure against unintentional start-up.</p>
<b>WARNING</b>	
	<p><b>Injury and material damage can occur as a result of:</b></p> <ul style="list-style-type: none"> <li>▪ Dismantling of the coupling in the wrong sequence</li> </ul> <p>Only ever dismantle the coupling in the described sequence.</p>
<b>WARNING</b>	
	<p><b>Injury and material damage can occur as a result of:</b></p> <ul style="list-style-type: none"> <li>▪ Falling coupling components</li> </ul> <p>Secure coupling components against falling to the floor.</p>
<b>CAUTION</b>	
	<p><b>Material damage to coupling components can occur as a result of:</b></p> <ul style="list-style-type: none"> <li>▪ Contact with sharp-edged objects</li> </ul> <p>Protect coupling components for transportation. Only hoist coupling components with nylon belts or ropes. Always cushion parts when supporting them from below.</p>
 <b>IMPORTANT</b>	
Use suitable lifting devices for dismantling.	

## 8.2 Dismantling the rubber element

- Dismantle the rubber element (1) as appropriate for the type supplied.
  - Dismantling the rubber element type A, see chapter 8.2.1 .
  - Dismantling the rubber element type AR, see chapter 8.2.2 .

### 8.2.1 Dismantling the rubber element type A

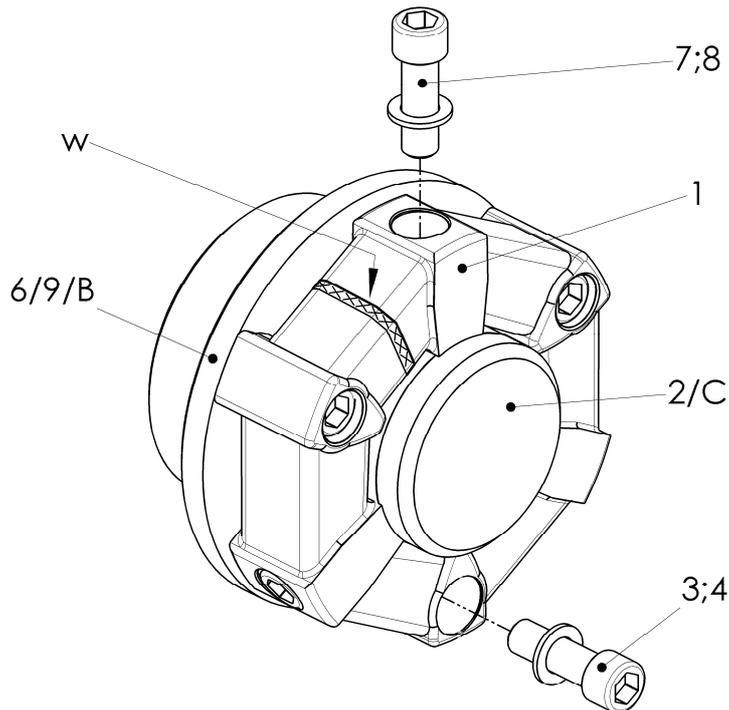


Fig. 8-1 Dismantling the rubber element type A

Item	Info	Designation	Remark
1		Rubber element	
2		Hub	
3		Screw	
4		Washer	Coupling size 400 and larger
6/9		Flange hub/Flange	
7		Screw	
8		Washer	Coupling size 400 and larger
B		Flange	Customer part
C		Hub	Customer part
	w	Cutting area	

- Loosen the screws (7) of the connection rubber element (1) and hub (2/C) and remove together with washers (8, coupling size 400 and larger).
- Loosen the screws (3) of the connection rubber element (1) and flange hub/flange (6/9/B) and remove together with washers (4, coupling size 400 and larger).
- Cut through the rubber element (1) at the cutting area (w).
- Remove the rubber element (1) off the hub (2/C).

### 8.2.2 Dismantling the rubber element type AR

- Dismantle the rubber element (1) as appropriate for the coupling size supplied.
  - Dismantling the rubber element (CF-AR-16...200): **see Fig. 5-2**
  - Dismantling the rubber element (CF-AR-250): **see Fig. 5-3**
  - Dismantling the rubber element (CF-AR-400...600): **see Fig. 5-4**
- Loosen the screws (7) of the connection rubber element (1) and hub (2/C) and remove together with washers (8, coupling size 400 and larger).
- Loosen the screws (3) of the connection rubber element (1) and flange hub/flange (6/9/B) and remove together with washers (4, coupling size 400 and larger).
- Pull the rubber element (1) off the spring pins (5).
- Loosen and remove the washers (50 and 51) off the rubber element (1).

See Fig 5-1:

<b>CAUTION</b>	
	<p><b>Material damages to the AR- rubber element can occur by:</b></p> <ul style="list-style-type: none"><li>▪ Excessive pulling apart during mounting/dismantling</li></ul> <p>Only pull the AR-rubber element until you can push it onto/off the hub.</p>

- Pull the rubber element (1) towards the illustrated direction (F/F<sub>1</sub>) until you can pull it off the hub (2/C).
- Remove the rubber element (1) off the hub (2/C).

### 8.3 Reassembling the coupling

- Reassemble the coupling as described in chapter 5.

## 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 part of this coupling:

- Rubber element



### IMPORTANT

When exchanging, all screw connections of the rubber elements must be renewed. These must be ordered separately.



### IMPORTANT

Use exclusively **new** screws supplied by CENTA. These are coated with microencapsulated adhesive INBUS PLUS **IP** which serves as a screw locking medium.

When ordering a spare, specify:

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



## 10 Annex

### 10.1 CENTA data sheet D13-019 (IP-screw connections)

**Validity:**

For all non-dynamically stressed screw connections with **IP<sup>\*</sup>-screws** in accordance with ISO 4014, ISO 4017 and ISO 4762 (DIN 912) with metric standard thread in accordance with DIN ISO 262 and **IP<sup>\*</sup>-socket bolts** with metric standard thread in accordance with DIN ISO 262, unless other specifications are given on CENTA documents.

\* The threads are coated with microencapsulated adhesive INBUS-PLUS (**IP**) which serves as a screw locking medium.

**Preparation of parts that are to be screwed together:**

The joining areas must be free of dirt, preservatives and lubricants.

**Preparation of IP-screws:**

Give the IP-screws extra lubrication with grease under the screw head.

**Screw tightening method:**

Screw in (by hand with torque wrench).

**Curing time for the microencapsulated adhesive:**

To ensure optimum screw locking, after tightening the curing time for the microencapsulated adhesive must be observed:

- Appr. 4-5 hours at room temperature (20°C)
- Higher temperatures will accelerate the curing time (e.g. 15 minutes at 70°C created by a hot air blower)

After 24 hours, the adhesive is completely cured.

CENTAFLEX			Thread size d	Strength class	Tightening torques	
A Size	H Size	X Size			[Nm] ±5%	[in lbs] ±5%
1	--	1	M6	8.8	10	90
2/4	--	2/4	M8		25	220
8/12	8	8	M10		50	440
16/22	16	16	M12		85	750
25/28	25	25	M14		140	1250
30/50/80	30/50	30/90	M16		220	1950
--	110	--	M18	10.9	300	2650
90/140/ 200/250	140	--	M20		500	4450
400	--	--	M20		610	5400
	--	--	M24		1050	9300
600	--	--	M24		1050	9300
	--	--	M27		1550	13700
800	--	--	M22	820	7250	