

# Assembly and maintenance manual

## Type DC, DC races



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## General safety instructions

	<p><b>WARNING</b></p>	<p><b>Risk of injury due to moving components!</b>          Rotating driven components can cause the most severe injuries. Therefore, during operation:</p> <ul style="list-style-type: none"> <li>➤ It is strictly forbidden for persons to loiter in the danger zone or in its immediate vicinity.</li> <li>➤ Do not disable, render unusable or circumvent safety equipment and / or safety functions.</li> </ul> <p>Prior to entering the danger zone:</p> <ul style="list-style-type: none"> <li>➤ Switch off the power supply and secure it against being switched on again.</li> <li>➤ Wait for lagging components to come to a standstill.</li> </ul>
	<p><b>DANGER!</b></p>	<p><b>Danger due to improper operation!</b></p> <ul style="list-style-type: none"> <li>➤ Modifications to the one-way clutch are not permitted and may impair safety.</li> <li>➤ All tasks may only be performed by personnel with the requisite training and expertise.</li> <li>➤ Repairs and maintenance tasks may only be performed when the machine is at a standstill. To this end, the machine is to be secured against a restart.</li> </ul>
	<p><b>WARNING</b></p>	<p><b>Risk of injury due to the one-way clutch falling down or tipping over!</b>          The weight of the one-way clutch can injure people and cause severe crushing. Therefore:</p> <ul style="list-style-type: none"> <li>➤ Use a suitable lifting gear for lifting (slings, etc.) which is able to support the weight of the one-way clutch.</li> </ul>
	<p><b>WARNING</b></p>	<p><b>Risk of injury due to incorrect assembly!</b>          Faulty installation and maintenance can cause severe property damage and personal injury. Installation, maintenance and repair work may only be performed by personnel with the requisite training and expertise.</p>
	<p><b>WARNING</b></p>	<p><b>Risk of injury for insufficiently qualified personnel!</b>          Improper handling can cause significant personal injury and property damage. Therefore:</p> <ul style="list-style-type: none"> <li>➤ Only ever have tasks performed by those persons to whom the tasks have been assigned.</li> </ul>

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## 1 General

### 1.1 Information relating to the assembly and maintenance manual

This assembly and maintenance manual provides important information regarding the installation and commissioning of the one-way clutch of type DC.

Prerequisite for safe operation is compliance with all of the stated safety and handling instructions.

Moreover, the relevant local accident protection guidelines and general safety provisions for the field of application of the one-way clutch are to be complied with.

Read the assembly and maintenance manual carefully prior to installation and commissioning. It is a product component and must be kept in the immediate vicinity of the installation site and be accessible to personnel at all times. Furthermore, all safety instructions stated in the assembly and maintenance manual are to be observed.

### 1.2 Explanation of symbols

Warnings are marked throughout this assembly and maintenance manual by symbols. These warning symbols are introduced by signal words which indicate the extent of the danger. Comply with these warning symbols under all circumstances and act with due care and attention to avoid accidents, personal injury and property damage.

	<b>Danger!</b>	...indicates an imminently dangerous situation which can be fatal or cause severe injuries if it is not averted.
	<b>WARNING</b>	...indicates a potentially dangerous situation which can be fatal or cause severe injuries if it is not averted.
	<b>ATTENTION</b>	...indicates a potentially dangerous situation which can cause minor or light injuries if it is not averted.
	<b>CAUTION</b>	...indicates a potentially dangerous situation which can cause property damage if it is not averted.
	<b>NOTE</b>	... highlights helpful tips and recommendations as well as information for efficient and fault-free operation.

### 1.3 Manufacturer

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Phone +49 (0) 6221 3047-0, Fax -31

### 1.4 Labeling

Front face of the outer race

- Manufacturer's name
- Type designation

### 1.5 Environmental protection

Energy: The one-way clutch does not use any electrical energy

Materials: Steel

Recycling: Steel parts are up to 100% recyclable

## 2 Safety

### 2.1 Intended use

One-way clutches of type DC are directional clutches, engaged and disengaged automatically. They can be used as overrunning clutches, one-way clutch or indexing clutches in machinery and equipment.

One-way clutch may only be operated within the limitations of use outlined in section 2.5.

All of the specifications stated in the assembly and maintenance manual must be strictly adhered to.

Any claims due to damage arising from improper use are excluded. The operator carries sole liability for all damage arising from improper use.

#### Driving operation of an overrunning clutch:

When operating in torque transmission mode the driving machine element and the driven member are connected in a force-locking manner. In this operating state, power will be transferred.

#### Overrunning operation of an overrunning clutch:

The overrunning clutch automatically releases the frictional connection between the driving machine element and the driven machine element if the driven machine element has a higher speed than the driving machine element.

#### Lockout mode of a backstop:

When operating in the locking direction of the clutch coupling, the machine shaft and the torque bracing to the machine element are connected in a force-locking manner.

In this operating state, torque will be transferred.

#### Overrunning mode of a backstop:

The clutch coupling disengages automatically the force-locked connection between the machine shaft and the torque bracing to the machine element, when the machine shaft runs in clutch coupling direction.

#### Driving operation of an indexing clutch:

When operating in torque transmission mode the driving machine element and the driven member are connected in a force-locking manner. In this operating state, power will be transferred.

#### Overrunning operation of an indexing clutch:

The overrunning clutch automatically disengages the non-positive connection between the machine shaft and the driven machine element when the machine shaft is operated in the freewheeling direction.

## **2.2 Responsibility of the operator**

The operator of the machine, in which the one-way clutch is installed, is subject to the legal obligations concerning occupational safety.

The valid provisions for the site of operation as well as the safety and accident prevention regulations of the trade associations are to be observed. This, in particular, means that the operator:

- is aware of the valid occupational safety provisions.
- implements the necessary behavioral requirements for operation of the machine, in which the one-way clutch is installed, at the site of operation.
- clearly defines responsibilities for installation, operation, maintenance and cleaning of the machine in which the one-way clutch is installed.
- ensures that all staff members, who work at or with the machine in which the one-way clutch is installed, are employed and have read and understood the operating manual. Moreover, he must, at regular intervals, provide training for personnel on how to handle the machine, in which the one-way clutch is installed, and inform them of the potential dangers. In addition, the operator is responsible for ensuring that the machine in which the one-way clutch is installed:
  - is always in perfect technical condition.
  - is maintained in accordance with the specified maintenance intervals.

- has all its safety equipment checked regularly for completeness and functionality.

## 2.3 Assembly and maintenance personnel

	<b>WARNING</b>	<p><b>Risk of injury for insufficiently qualified personnel!</b>          Improper handling can cause significant personal injury and property damage. Therefore:</p> <ul style="list-style-type: none"> <li>➤ Only ever have tasks performed by those persons to whom the tasks have been assigned.</li> </ul>
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Qualified personnel are those persons who, owing to their training, experience and instruction as well as their knowledge of relevant standards, provisions, accident prevention regulations and operating conditions, have been authorized by the person responsible for the safety of the plant to perform the requisite tasks and are able to recognize and avoid potential dangers in doing so. Knowledge of first-aid measures and on-site emergency equipment must also be included.

## 2.4 Personal protective equipment

It is necessary to wear personal protective equipment when handling the machine, in which the one-way clutch is installed, to minimize health risks.

The necessary protective equipment such as work shoes, gloves, safety goggles etc. is to be put on prior to all tasks and kept on during the task.

## 2.5 Limitations of use

- Maximum allowable overrunning speeds and maximum torque capacity:

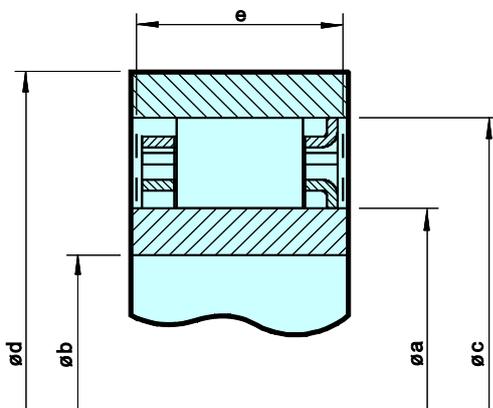


Fig.1 DC Dimensions

DC Cage	T <sub>max</sub> [Nm]	n <sub>imax</sub> [rpm]	n <sub>amax</sub> [rpm]	Øa <sup>+0,008</sup> <sub>-0,005</sub> [mm]	Øc <sup>+0,013</sup> <sub>-0,013</sub> [mm]	Clips (*)	e <sub>min</sub> [mm]	Ød <sub>min</sub> [mm]	Øb <sub>max</sub> [mm]
DC2222G-N	126	8600	4300	22,225	38,885	-	10	50	15
DC2222C-N	290	8600	4300	22,225	38,885	-	25,4	50	15
DC2534G	160	7000	3500	25,34	42	-	10	52,8	20,2
DC2776-N	238	6900	3400	27,762	44,422	-	13,5	58	18
DC2776H	314	6900	3400	27,762	44,422	-	19,05	58	18
DC2776C-N	438	6900	3400	27,762	44,422	-	25,4	58	18
DC3034-N	248	6300	3100	30,34	47	-	13,5	61,4	23,5
DC-3175 (3C) -N	250	6000	3000	31,75	48,41	3	13,5	62,5	24,6
DC-3175 A (8C) -N	300	6000	3000	31,75	48,41	8	16	62,5	24,6
DC-3175 A -N	300	6000	3000	31,75	48,41	-	16	62,5	24,6
DC-3175 C -N	578	6000	3000	31,75	48,41	-	25,4	62,5	24,6
DC-3277 B (8C) -N	462	5900	2900	32,75	49,43	8	21	62,5	24,6
DC-3809 A (3C) -N	556	5000	2500	38,092	54,752	3	16	71	30
DC-3809 A -N	556	5000	2500	38,092	54,752	-	16	71	30
DC-3834	370	5000	2500	38,34	55	-	13,5	71	30
DC-3834 A	445	5000	2500	38,34	55	-	16	71	30
DC-3834 H (3C)	595	5000	2500	38,34	55	3	19,05	71	30
DC-3834 -N	340	5000	2500	38,34	55	-	13,5	71	30
DC-4127 (3C) -N	448	4600	2300	41,275	57,935	3	13,5	74,2	32
DC-4445 A -N	726	4300	2100	44,45	61,11	-	16	78,7	34,5
DC-4445 C (10C) -N	1092	4300	2100	44,45	61,11	10	25,4	78,7	34,5
DC-4445 C -N	1092	4300	2100	44,45	61,11	-	25,4	78,7	34,5
DC-4972 (4C) -N	612	3800	1900	49,721	66,381	4	13,5	86	33
DC-4972 C -N	940	3800	1900	49,721	66,381	-	25,4	86	33
DC-4972 H	926	3800	1900	49,721	66,381	-	19,05	86	33
DC-4972 H (11C)	926	3800	1900	49,721	66,381	11	19,05	86	33
DC-5134 -N	700	3700	1800	51,34	68	-	13,5	87,1	40,1
DC-5476 A (12C) -N	1050	3500	1700	54,765	71,425	12	16	92	36
DC-5476 A (4C) -N	1050	3500	1700	54,765	71,425	4	16	92	36
DC-5476 A -N	1050	3500	1700	54,765	71,425	-	16	92	36
DC-5476 B (4C) -N	1538	3500	1700	54,765	71,425	4	21	92	36
DC-5776 B -N	1538	3500	1700	57,76	74,42	-	21	92	36
DC-5476 C (4C) -N	1980	3500	1700	54,765	71,425	4	25,4	92	36
DC-5776 C -N	1980	3500	1700	57,76	74,42	-	25,4	92	36
DC-5834 C (4C)	2312	3400	1600	58,34	75	4	25,4	99,5	45,5
DC-5953 C(4C)	2295	3400	1600	59,58	76,198	4	25,4	97,8	46,2
DC-6334 B -N	1612	3000	1500	63,34	80	-	21	104	42
DC-7221 (5C) -N	1350	2600	1300	72,217	88,877	5	13,5	115	48
DC-7221 A (10C) -N	1316	2600	1300	72,217	88,877	5	16	115	48
DC-7221 B (10C)	2555	2600	1300	72,217	88,877	10	21	115	48
DC-7221 C (5C) -N	2550	2600	1300	72,217	88,877	5	25,4	115	48

DC Cage	T <sub>max</sub> [Nm]	n <sub>imax</sub> [rpm]	n <sub>amax</sub> [rpm]	Øa <sup>+0,008</sup> <sub>-0,005</sub> [mm]	Øc <sup>+0,013</sup> <sub>0,013</sub> [mm]	Clips (*)	e <sub>min</sub> [mm]	Ød <sub>min</sub> [mm]	Øb <sub>max</sub> [mm]
DC-7221 C -N	2550	2600	1300	72,217	88,877	5	25,4	115	48
DC-7334 B (5C) -N	2635	2600	1300	73,34	90	5	21	117,2	57,1
DC-7495-F4065	4436	2500	1250	74,95	93,95	6	31,9	130	59
DC-7969 C (5C) -N	4076	2400	1200	79,698	96,358	5	25,4	124	53
DC-7969 C (5C)-N F	4076	2400	1200	79,698	96,358	5	25,4	124	53
DC-8334 C -N	4110	2300	1100	83,34	100	-	25,4	132	55
DC-85776 CD (17C)	4410	2300	1100	85,776	104,776	17	25,4	133,6	67,8
DC-8729 (17C) -EB	4410	2200	1100	85,776	104,776	17	25,4	133,6	67,8
DC-8729 A (17C) -N	2500	2200	1100	85,776	104,776	17	16	133,6	67,8
DC-8729 A -N	2500	2200	1100	87,29	103,96	-	16	134	58
DC-10323 A (5C) -N	3224	1800	900	103,231	119,891	5	16	155	68
DC-10323 B (5C)	5100	1800	900	103,231	119,891	5	21	154,2	80,2
DC-11739 A (6C)	2600	1600	900	117,39	136,39	6	16	172,1	90,1
DC-12334 C (5C) -N	9600	1500	750	123,34	140	5	25,4	184	68
DC-12334 C -N	9600	1500	750	123,34	140	-	25,4	184	68
DC-12388 C (11C)	9750	1500	750	123,881 <sup>+0,013</sup> <sub>-0,013</sub>	142,88	11	25,4	186	80
DC-12388 C (22C)	9750	1500	750	123,881 <sup>+0,013</sup> <sub>-0,013</sub>	142,88	22	25,4	186	80
DC-16507 DD (20C)	20200	—	—	165,074 <sup>+0,013</sup> <sub>-0,013</sub>	184,074	20	32,3	230	132,1

\*) additional friction elements, so-called clips  
(see Fig.2 Chap.2 Structure and function).

Tab.1 Specifications

- Limits for ambient temperature: from 5°C to +60°C
- Maximum operating temperature: 90°C
- Maximum bore diameter in the inner ring, if any, and minimum outer diameter for the non-grooved outer ring according to Tab.1 ( $\varnothing d_{\min}$ ;  $\varnothing b_{\max}$ ).
- When using case-hardening steels, the minimum hardening depth Eht should be 1.3 mm (DIN 50190), based on the finished part.
- The raceways must have a surface hardness of HRC=60..62
- The surface roughness Rt of the clamping surfaces must not exceed 6.3  $\mu\text{m}$ .
- The permissible conicity between the clamping surfaces must not exceed a maximum of 0.007 mm over a length of 25 mm.
- There must be no necking-downs or insertion chamfers in the possible sprag working area.
- The DC type version-N accepts all type of lubricants currently used in the power transmission equipment.
- For DC freewheels (without index "N") we recommend all ATF oils and gear oils (e.g. SAE10 to SAE80) with a kinematic viscosity of approx. 10 to 40 cSt at operating temperature.

#### Inner and outer race

- Required tolerance machine shaft  
DC inner ring with press fit :  $d = n6$
- Required tolerance machine shaft  
DC inner ring with keyway:  $d = h6$
- Required tolerance interference fit of the DC outer race in a rigid steel housing  
 $d = N6$
- Required tolerance interference fit of the DC outer race with keyway in a rigid steel housing:  
 $d = H6$

### 3 Structure and function

#### 3.1 Structure

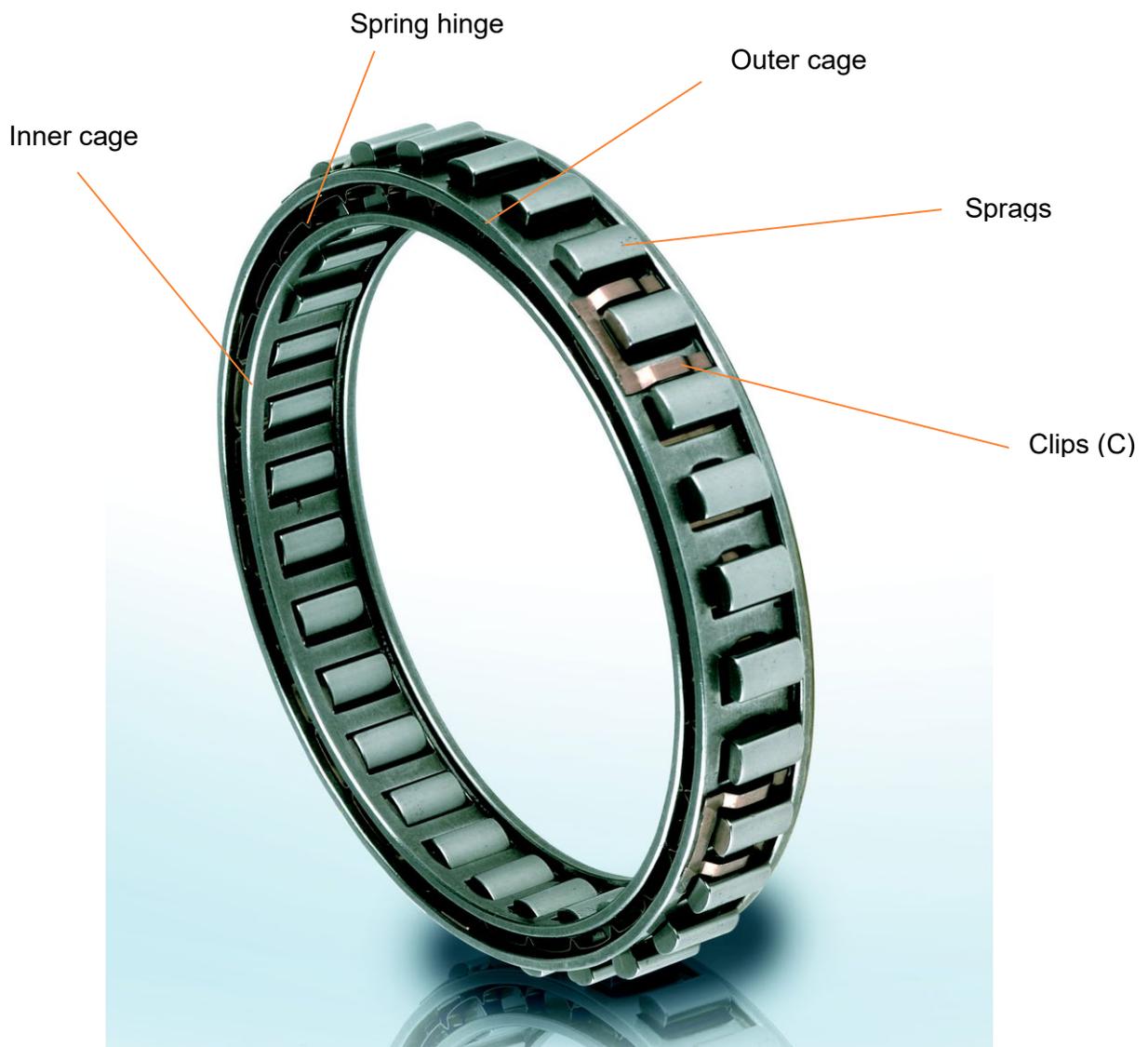


Fig.2 Structure DC

#### 3.2 Function

Clutch couplings of type DC are fitted with DC cages. The individually spring loaded sprags, fitted in a DC cage, run synchronously and are supported by the inner and the outer race. The sprags ensures engagement and disengagement according to the relative motion of the races.

When turning the inner or outer clutch race (see Fig. 3a) in the torque transmission direction, the sprags create a frictional connection between the inner and outer race so that a torque or output can be transmitted.

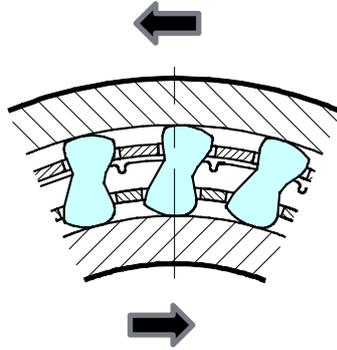


Fig.3a Torque transmission

Overrun operation is carried out if the inner race or outer race is turned in the overrun direction. This interrupts the frictional connection (see Fig. 3b) between the inner and outer race. In overrun operation the speeds of the inner race and outer race are different.

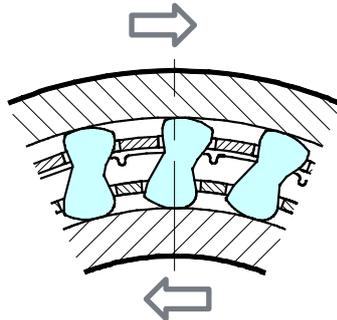


Fig.3b Overrun operation

If the working conditions may cause the cage assembly to move within the outer race, additional friction springs called clips ( see Fig. 2) may be fitted on the outside of the outer cage.

This provides a frictional connection between the freewheel and the outer race.

## 4 Transport and packaging



### NOTE

The local provisions regarding the disposal of transport and packaging materials are to be observed!

The one-way clutches is wrapped in anti-corrosion paper and shipped in a carton.

Transport damage to the packaging and / or the one-way clutch is to be reported to the respective transit company! The one-way clutch must be unpacked in a clean and dry environment!

## 5 Storage

### 5.1 Short-term storage

The type DC is packed in VCI bubble wrap. The VCI bubble wrap is to be checked at regular intervals. The frequency of these intervals is dependent on the environmental conditions (temperature, moisture, salt content of the air, etc.) at the storage site.

The maximum storage period (short-term storage) is 6 months. Moreover, the one-way clutch must have long-term storage corrosion protection applied to it.

Store packages under the following conditions:

- Do not keep outdoors
- Keep dry and free from dust
- Do not expose to aggressive media
- Keep away from direct sunlight
- Avoid mechanical shocks and vibrations
- Storage temperature: -10 to +60°C
- Relative humidity: max. 95%, non-condensing

### 5.2 Long-term storage

For long-term storage, the one-way clutch must be shrink-wrapped with a desiccant and provided with a hygroscope. The corrosion protection must be checked after a period not exceeding one year or else depending on the environmental conditions (temperature, moisture, salt content of the air, etc.) at the storage site.

Store packages under the following conditions:

- Do not keep outdoors
- Keep dry and free from dust
- Do not expose to aggressive media
- Keep away from direct sunlight
- Avoid mechanical shocks and vibrations
- Storage temperature: -10 to +60°C
- Relative humidity: max. 95%, non-condensing

## 6 Installation

### 6.1 Checking the direction of rotation

	<b>WARNING</b>	<p><b>Risk of injury due to incorrect assembly!</b>          Faulty installation and maintenance can cause severe property damage and personal injury!          Installation, maintenance and repair work may only be performed by personnel with the requisite training and expertise!</p>
	<b>WARNING</b>	<p><b>Risk of injury due to moving components!</b>          Rotating driven components can cause the most severe injuries. Therefore, during operation:</p> <ul style="list-style-type: none"> <li>➤ It is strictly forbidden for persons to loiter in the danger zone or in its immediate vicinity.</li> <li>➤ Do not disable, render unusable or circumvent safety equipment and / or safety functions.</li> </ul> <p>Prior to entering the danger zone:</p> <ul style="list-style-type: none"> <li>➤ Switch off the power supply and secure it against being switched on again.</li> <li>➤ Wait for lagging components to come to a standstill.</li> </ul>
	<b>WARNING</b>	<p><b>Risk of injury for insufficiently qualified personnel!</b>          Improper handling can cause significant personal injury and property damage. Therefore:</p> <ul style="list-style-type: none"> <li>➤ Only ever have tasks performed by those persons to whom the tasks have been assigned.</li> </ul>

The direction of rotation must be checked prior to installation.

## 6.2 Lubrication

Lubricant selection is carried out as described in chapter (2.5 Limitation of Use).

First oil must be changed safter approx. 10 operating hours. Subsequent oil changes must be done after approx. 2000 operating hours, or approx. 1000 operating hours in a heavily contaminated environment. If the freewheel is connected to the lubricating oil supply, e.g. of a gear unit, the oil change instructions of the gear unit apply to the freewheel.

Oil lubrication is to be used at high idle speeds or high switching frequency.

Before commissioning, the freewheels must be filled with 1/3 oil by the customer or an appropriate oil level must be ensured.

An increase in idle speed of approx. 50% to 80% can be achieved with circulating oil lubrication. In this case, an oil flow of 1 to 3 l/min is sufficient, depending on the freewheel size.

The optimum supply of oil to the freewheel takes place at high idle speeds through a central bore in the shaft and three radial bores with a diameter of approx. 2mm from there into the running surface of the freewheel on the inner race. If the installation space for the freewheel is open on both sides, it is permissible to set the holes to the center of the sprag length.

Best switching accuracies are achieved with unalloyed, low-viscosity oils of about 10 mm<sup>2</sup>/s (cSt) at freewheeling operating temperature.

Oil mist, splash oil or grease lubrication are possible.

For grease lubrication, fill the free space in the freewheel approx. 30 to 40% with grease.

	<b>NOTE</b>	Overgreasing can lead to malfunction of the overrunning clutch. Observe the grease quantity!
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	<b>NOTE</b>	At temperatures below minus 20°C and above plus 100°C lubricant selection after consultation with specialist engineers of the lubricant suppliers!
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## 6.3 Before assembly

The inner diameter of the outer race and outer diameter of the inner race with tolerance must be checked, as well as the concentricity error between the clamping surfaces of the outer and inner race.

The surfaces must not show any damage.

If circulating oil lubrication is provided for the freewheel, the free passage of the oil through the supply holes must be checked.

## 6.4 Assembly

	<p><b>WARNING</b></p>	<p><b>Risk of injury due to incorrect assembly!</b>          Faulty installation and maintenance can cause severe property damage and personal injury.</p> <p>Installation, maintenance and repair work may only be performed by personnel with the requisite training and expertise.</p>
	<p><b>WARNING</b></p>	<p><b>Risk of injury due to moving components!</b>          Rotating driven components can cause the most severe injuries. Therefore, during operation:</p> <ul style="list-style-type: none"> <li>➤ It is strictly forbidden for persons to loiter in the danger zone or in its immediate vicinity.</li> <li>➤ Do not disable, render unusable or circumvent safety equipment and / or safety functions.</li> </ul> <p>Prior to entering the danger zone:</p> <ul style="list-style-type: none"> <li>➤ Switch off the power supply and secure it against being switched on again.</li> <li>➤ Wait for lagging components to come to a standstill.</li> </ul>
	<p><b>WARNING</b></p>	<p><b>Risk of injury due to falling down components!</b>          Falling down components can cause serious injuries!          Prevent the one-way clutch from falling down!</p>
	<p><b>WARNING</b></p>	<p><b>Risk of injury for insufficiently qualified personnel!</b>          Improper handling can cause significant personal injury and property damage. Therefore:</p> <ul style="list-style-type: none"> <li>➤ Only ever have tasks performed by those persons to whom the tasks have been assigned.</li> </ul>

The installation takes place between two concentric raceways or rings which must be supported relative to each other.

Lubrication and sealing must be provided.

Procedural steps:

- Remove the freewheel from the package until shortly before assembly and only assemble them in a clean and dry environment.
- Press the freewheel into the clamping gap between the outer race and inner race by hand in the freewheeling direction according to the required direction of rotation.
- Pay attention to any side disc. Secure the freewheel against axial displacement.
- Check whether the freewheel can be turned in the required direction without increased force.

## 6.5 Changing the direction of rotation

The direction of rotation is changed by reversing the DC cage by 180 °.

## 6.6 Installation example

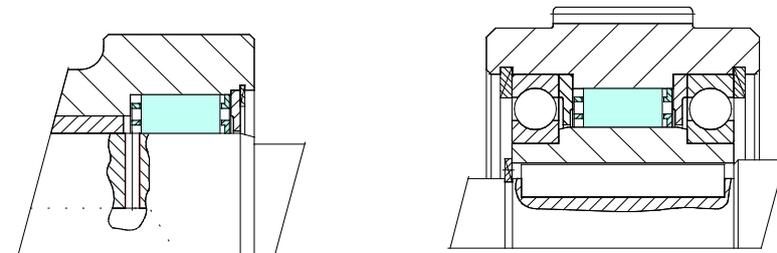


Fig.4 Installation example

## 7 Start-up

Prior to commissioning, the freewheel must be filled with oil of the specified quality!

## 8 Maintenance

	<b>WARNING</b>	<p><b>Risk of injury due to moving components!</b> Rotating driven components can cause the most severe injuries. Therefore, during operation:</p> <ul style="list-style-type: none"> <li>➤ It is strictly forbidden for persons to loiter in the danger zone or in its immediate vicinity.</li> <li>➤ Do not disable, render unusable or circumvent safety equipment and / or safety functions.</li> </ul> <p>Prior to entering the danger zone:</p> <ul style="list-style-type: none"> <li>➤ Switch off the power supply and secure it against being switched on again.</li> <li>➤ Wait for lagging components to come to a standstill.</li> </ul>
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	<b>WARNING</b>	<p><b>Risk of injury due to incorrect assembly!</b> Faulty installation and maintenance can cause severe property damage and personal injury. Installation, maintenance and repair work may only be performed by personnel with the requisite training and expertise!</p>
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	<b>WARNING</b>	<p><b>Risk of injury due to falling down components!</b>          Falling down components can cause serious injuries!          Prevent the one-way clutch from falling down!</p>
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	<b>WARNING</b>	<p><b>Risk of injury for insufficiently qualified personnel!</b>          Improper handling can cause significant personal injury and property damage. Therefore:</p> <ul style="list-style-type: none"> <li>➤ Only ever have tasks performed by those persons to whom the tasks have been assigned.</li> </ul>
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	<b>WARNING</b>	<p><b>Risk of scalding from hot surfaces!</b>          There is a risk of sustaining burns or scalds on hot surfaces during operation. Therefore:</p> <ul style="list-style-type: none"> <li>➤ Do not touch the one-way clutch during operation!</li> </ul>
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Check lubrication conditions from time to time, flush with thin flushing oil if necessary and change oil.

## 9 Disassembly

	<b>WARNING</b>	<p><b>Risk of injury due to incorrect assembly!</b>          Faulty installation and maintenance can cause severe property damage and personal injury.          Installation, maintenance and repair work may only be performed by personnel with the requisite training and expertise!</p>
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	<b>WARNING</b>	<p><b>Risk of injury due to moving components!</b>          Rotating driven components can cause the most severe injuries.          Therefore, during operation:</p> <ul style="list-style-type: none"> <li>➤ It is strictly forbidden for persons to loiter in the danger zone or in its immediate vicinity.</li> <li>➤ Do not disable, render unusable or circumvent safety equipment and / or safety functions.</li> </ul> <p>Prior to entering the danger zone:</p> <ul style="list-style-type: none"> <li>➤ Switch off the power supply and secure it against being switched on again.</li> <li>➤ Wait for lagging components to come to a standstill.</li> </ul>
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	<b>WARNING</b>	<b>Risk of scalding from hot surfaces!</b> There is a risk of sustaining burns or scalds on hot surfaces during operation. Therefore: <ul style="list-style-type: none"><li>➤ Do not touch the one-way clutch during operation!</li></ul>
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	<b>WARNING</b>	<b>Risk of injury due to falling down components!</b> Falling down components can cause serious injuries! Prevent the one-way clutch from falling down!
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Procedural steps:

- Remove the axial fixing of the inner race.
- Press the freewheel out of the clamping gap between the outer race and inner race by hand according to the required direction of rotation while turning it slightly in the freewheeling direction.

## 10 Disposal

	<b>NOTE</b>	The local provisions regarding the disposal of metallic components and any lubricants present are to be observed!
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The one-way clutch is comprised of metallic materials which are coated with grease or oil. Metallic materials are fully recyclable. Lubricants and anticorrosive agents are to be disposed of separately. The local disposal provisions are to be observed in this regard.

## 11 Faults

The manufacturer is to be contacted immediately should any faults arise.

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