

**Wind power.**  
Safety.

Made in Germany



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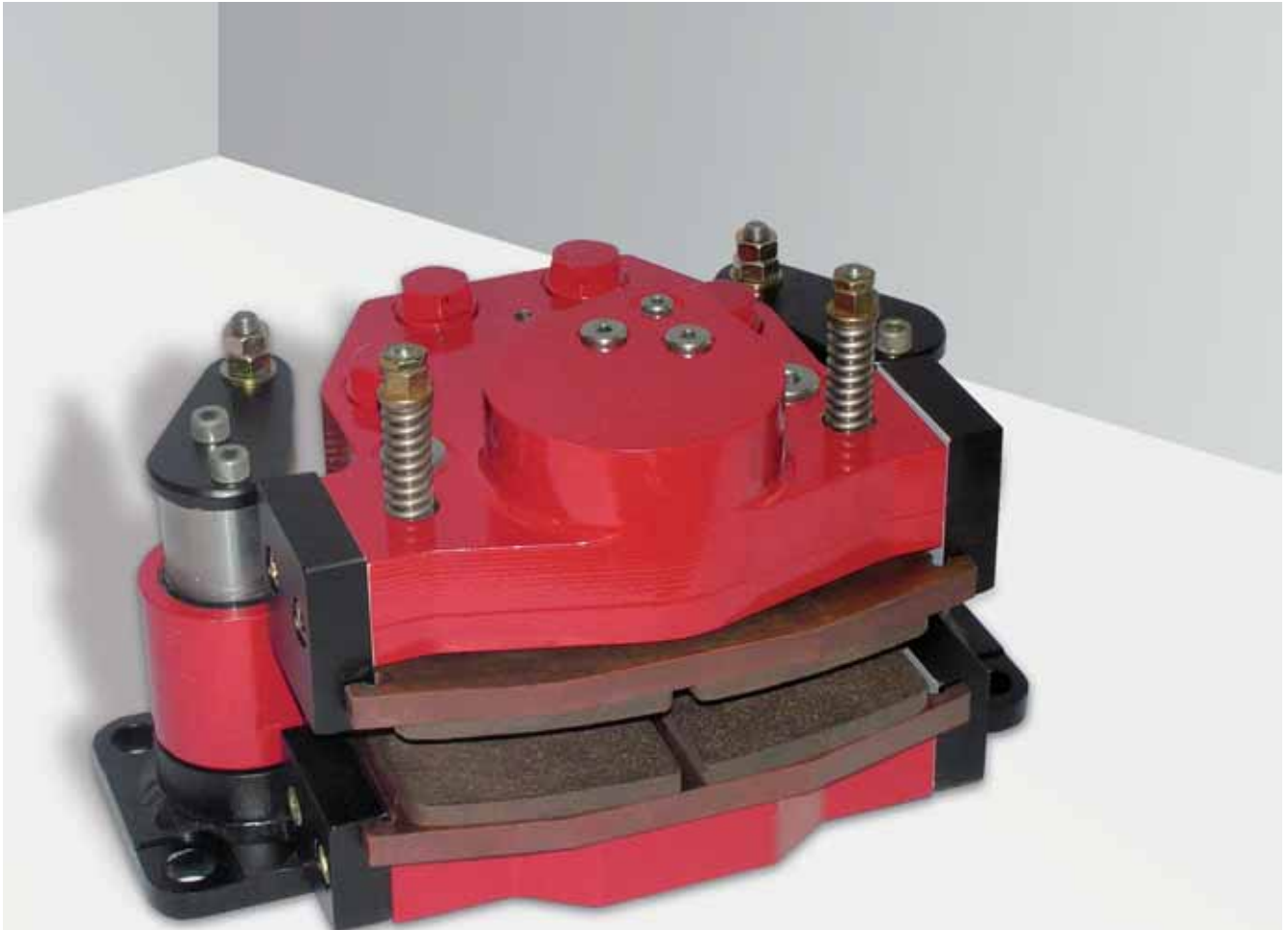
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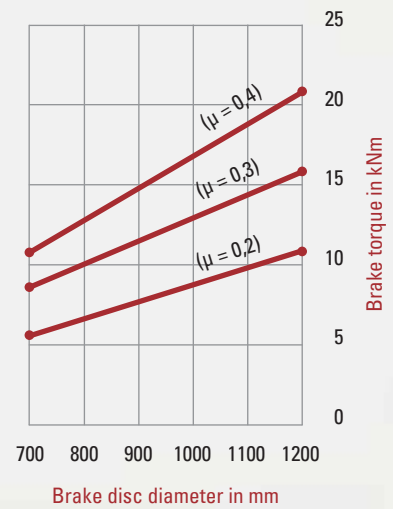
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Rotor Brake (active)

# Hydraulic Caliper Disc Brakes SFRA 5



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High Performance



Robust Design



Easy Maintenance

# Rotor Brake (active)

## Description SFRA 5



### Main Features

- Active caliper brake, ready to operate, hydraulically applied, spring retracted
- No failsafe function!
- Sintered linings
- Horizontal compensation +/- 5 mm
- Support for direct gear box mounting

### Applications

- The high capacity of these brakes makes them particularly suitable as rotor brakes in wind turbines
- Use of the brakes for applications with high duty cycles should be specifically indicated during technical selection procedure

### Options

- Limit switch release control
- Limit switch wear control
- Hydraulic power units
- Brake discs and couplings
- Seals for special fluids
- Sensors for remote monitoring and diagnostic, like e.g. temperature-, wear- and release gap monitoring
- Rotor locking pin
- Temperature sensor

### Operating Restrictions

Brakes of this range are tested both mechanically and hydraulically. Operating conditions other than described in this brochure require the manufacturer's approval and may influence the function of the caliper and its components



#### Please Note

We supply a detailed operating manual with every order. Nevertheless, we would point out that brakes are only as safe as the servicing and maintenance performed while they are in operation. The guarantee for the correct functioning of our brakes is therefore only valid if the user adheres to the German DIN standard 5434 part 2 (drum and disc brakes, servicing and maintenance in operation) or to comparable standards in his own country.

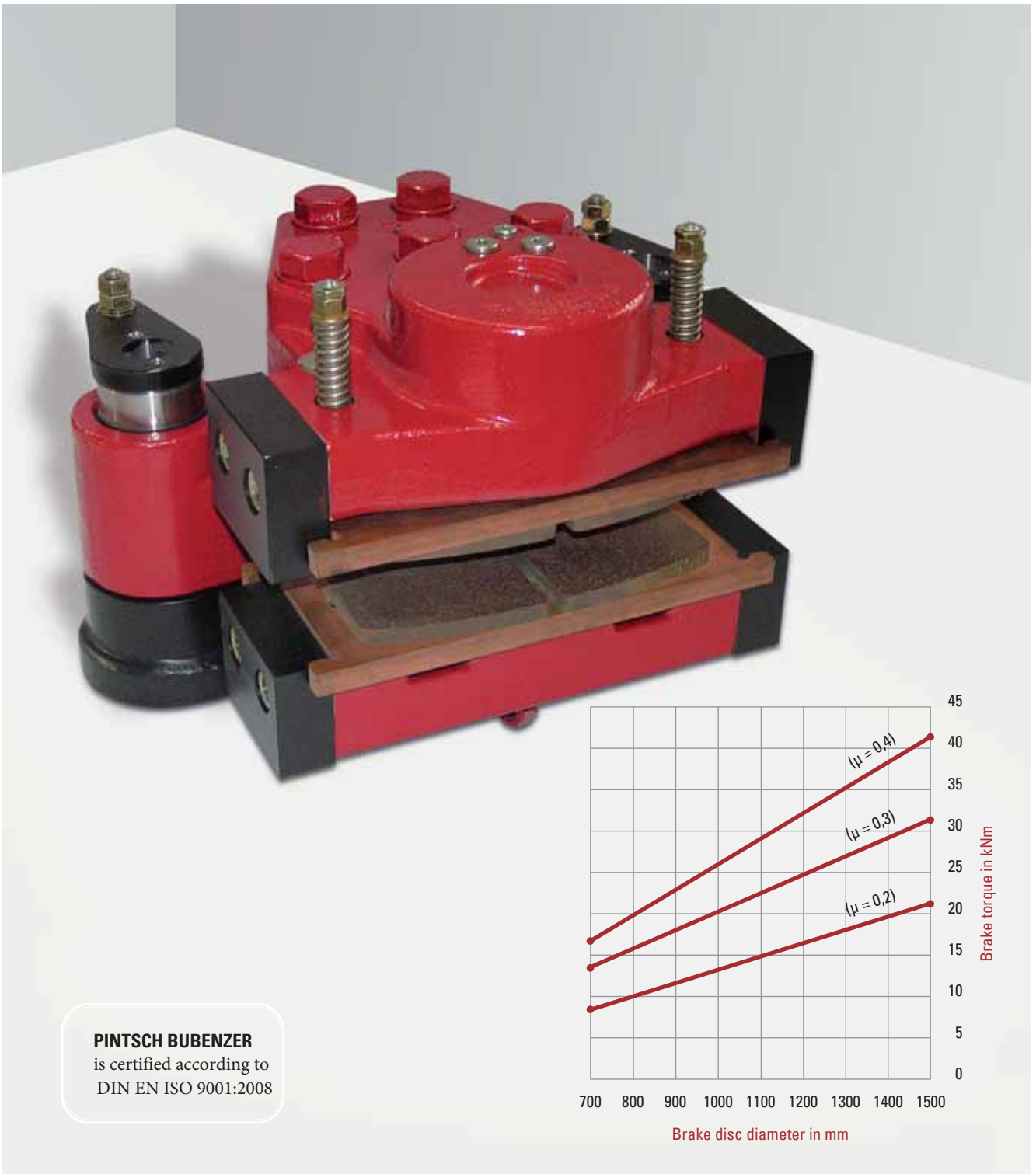


#### PINTSCH BUBENZER Service

This includes the verification of the brake selection, if required. A detailed questionnaire is provided for this purpose. Installation and commissioning on site is possible by PINTSCH BUBENZER service engineers. Drawings as DWG/DXF files for your engineering department are available upon request.

Rotor Brake (active)

## Hydraulic Caliper Disc Brakes SFRA 8



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# Rotor Brake (active)

## Description SFRA 8



### Main Features

- Active caliper brake, ready to operate, hydraulically applied, spring retracted
- No failsafe function!**
- Sintered linings
- Horizontal compensation +/- 5 mm
- Support for direct gear box mounting

### Applications

- The high capacity of these brakes makes them particularly suitable as rotor brakes in wind turbines
- Use of the brakes for applications with high duty cycles should be specifically indicated during technical selection procedure

### Options

- Limit switch release control
- Limit switch wear control
- Hydraulic power units
- Brake discs and couplings
- Seals for special fluids
- Sensors for remote monitoring and diagnostic, like e.g. temperature-, wear- and release gap monitoring
- Rotor locking pin
- Temperature sensor

### Operating Restrictions

Brakes of this range are tested both mechanically and hydraulically. Operating conditions other than described in this brochure require the manufacturer's approval and may influence the function of the caliper and its components



#### Please Note

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#### PINTSCH BUBENZER Service

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Rotor Brake (active)

# Hydraulic Caliper Disc Brakes SFRA 12



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## Main Features

<b>Active</b> caliper brake, ready to operate, hydraulically applied, spring retracted
<b>No failsafe function!</b>
<b>Sintered linings</b>
Horizontal compensation +/- 5 mm
Support for direct gear box mounting

## Applications

The high capacity of these brakes makes them particularly suitable as rotor brakes in wind turbines
Use of the brakes for applications with high duty cycles should be specifically indicated during technical selection procedure

## Options

Limit switch release control
Limit switch wear control
Hydraulic power units
Brake discs and couplings
Seals for special fluids
<b>Sensors for remote monitoring</b> and diagnostic, like e.g. temperature-, wear- and release gap monitoring
Rotor locking pin
Temperature sensor

## Operating Restrictions

Brakes of this range are tested both mechanically and hydraulically. Operating conditions other than described in this brochure require the manufacturer's approval and may influence the function of the caliper and its components
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### Please Note

We supply a detailed operating manual with every order. Nevertheless, we would point out that brakes are only as safe as the servicing and maintenance performed while they are in operation. The guarantee for the correct functioning of our brakes is therefore only valid if the user adheres to the German DIN standard 5434 part 2 (drum and disc brakes, servicing and maintenance in operation) or to comparable standards in his own country.



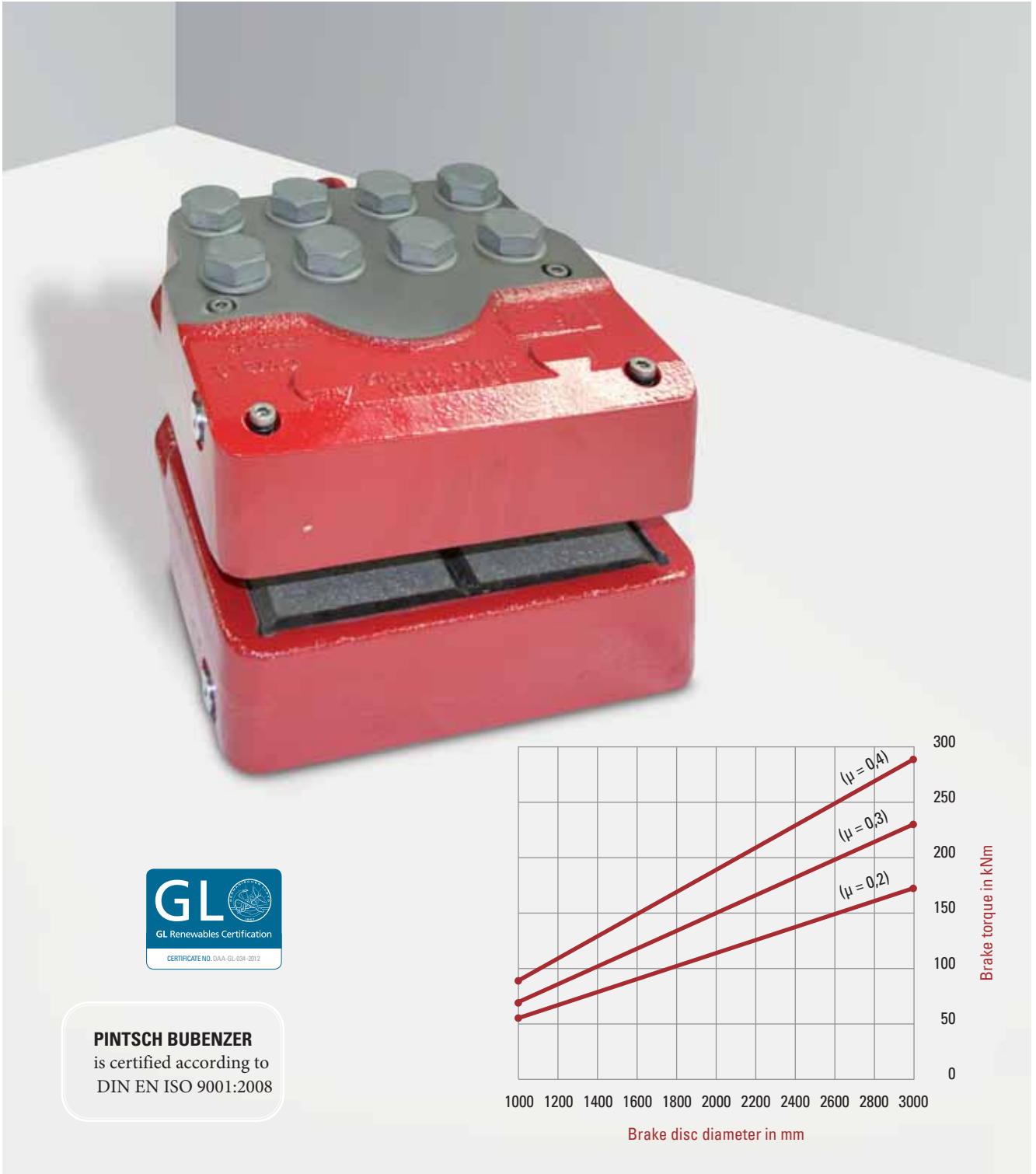
### PINTSCH BUBENZER Service

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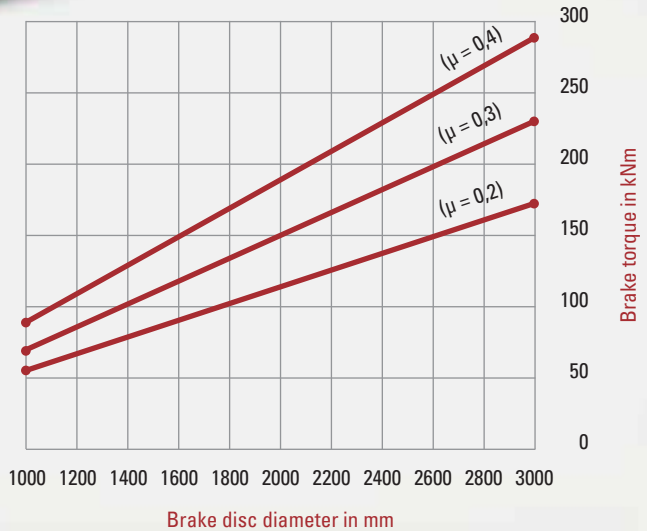


Rotor Brake (active)

# Hydraulic Caliper Disc Brakes BACW 100



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Rotor Brake (active)

## Description BACW 100



### Main Features

Brake <u>hydraulic</u> applied
<b>No failsafe function!</b>
Organic, non-asbestos linings
Airgap between brake pad and disc up to 2 mm per side

### Options

Sintered linings
Complete piped supports for one or more calipers
Hydraulic power units
Brake discs
Temperature sensor

### Applications

Rotor Brake Systems with organic lining material for low speed applications
Rotor Brake Systems with sintered lining material for high speed applications

### Operating Restrictions

Brakes of this range are tested both mechanically and hydraulically. Operating conditions other than described in this brochure require the manufacturer's approval and may influence the function of the caliper and its components



#### Please Note

We supply a detailed operating manual with every order. Nevertheless, we would point out that brakes are only as safe as the servicing and maintenance performed while they are in operation. The guarantee for the correct functioning of our brakes is therefore only valid if the user adheres to the German DIN standard 5434 part 2 (drum and disc brakes, servicing and maintenance in operation) or to comparable standards in his own country.



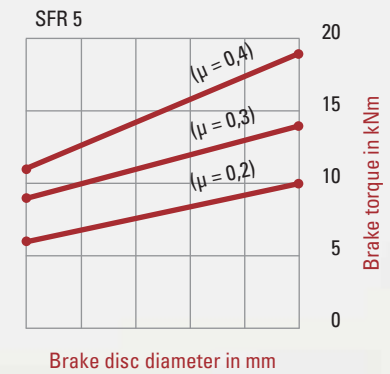
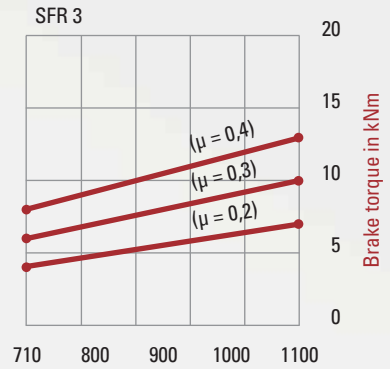
#### PINTSCH BUBENZER Service

This includes the verification of the brake selection, if required. A detailed questionnaire is provided for this purpose. Installation and commissioning on site is possible by PINTSCH BUBENZER service engineers. Drawings as DWG/DXF files for your engineering department are available upon request.

Rotor Brake (passive)  
**Hydraulic Caliper Disc Brakes SFR Series**



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High Performance



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Easy Maintenance

## Description SFR



### Main Features

- Monospring caliper brake, ready to operate, with spring pack set to nominal force
- Sintered linings
- Limit switch release control
- Easy, manual pad wear compensation
- Horizontal compensation +/- 5 mm
- Support for direct gear box mounting

### Applications

The high capacity of these brakes makes them particularly suitable as rotor brakes in wind turbines

### Options

- Limit switch wear control
- Hydraulic power units
- Brake discs and couplings
- Seals for special fluids
- Sensors for remote monitoring and diagnostic, like e.g. spring force-, temperature-, wear- and release gap monitoring
- CMB contact force measurement
- Automatic wear compensator
- Temperature sensor

### Operating Restrictions

Brakes of this range are tested both mechanically and hydraulically and are set to nominal force. This setting can only be changed by the manufacturer. Operating conditions other than described in this brochure require the manufacturer's approval and may influence the function of the caliper and its components



#### Please Note

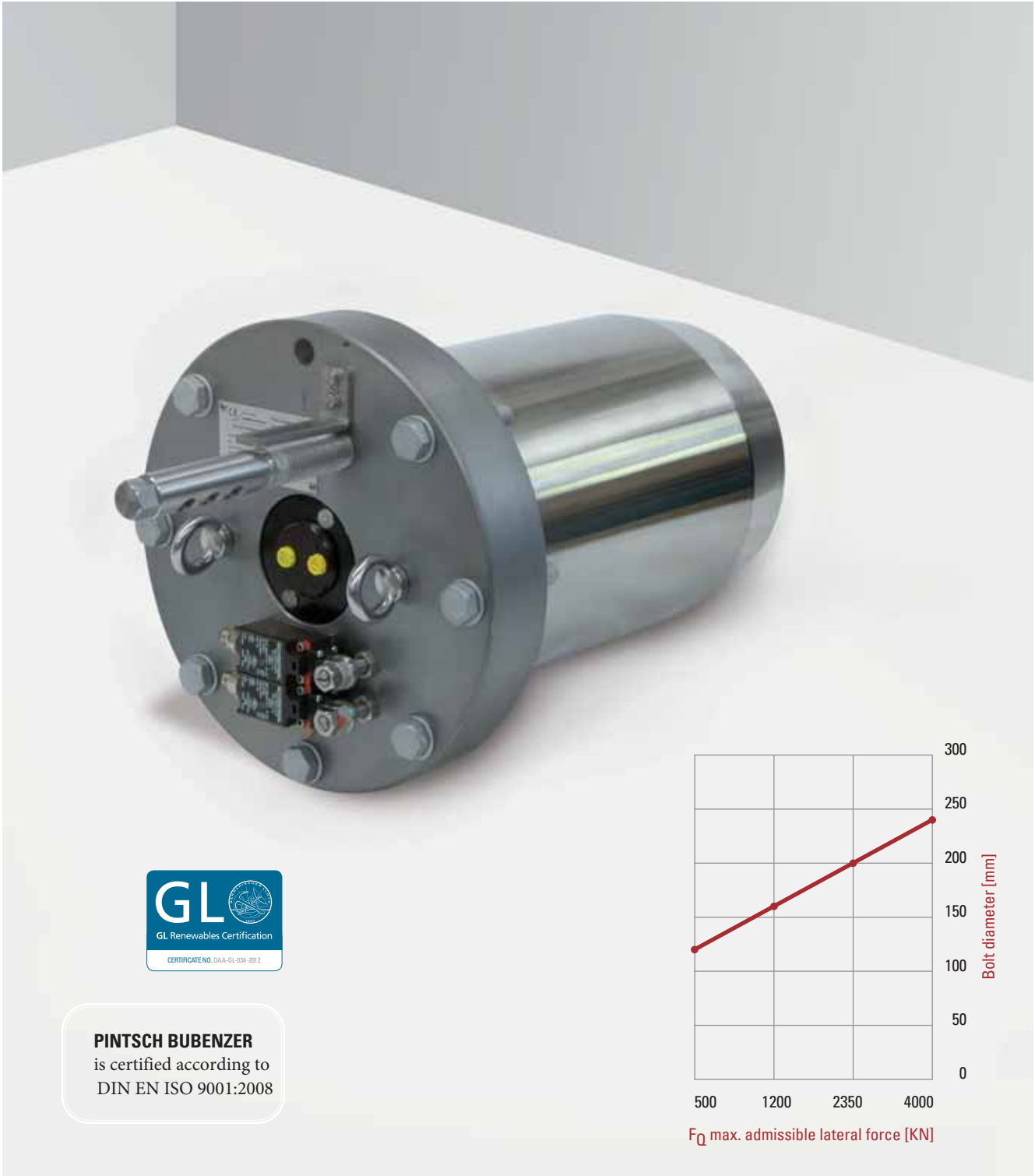
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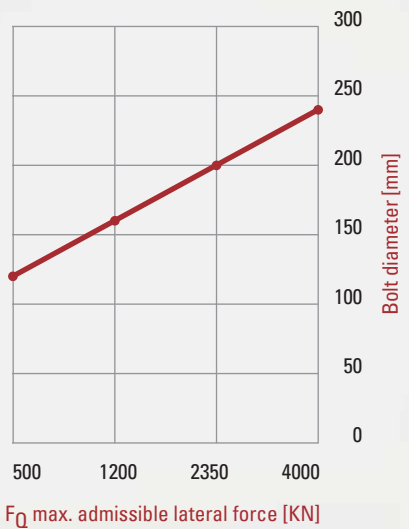
#### PINTSCH BUBENZER Service

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# Rotor Locking Device HRV



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Reliable



High Performance



Robust Design



Easy Maintenance

# Description Rotor Locking Device HRV



## Main Features

Standard design and design for off-shore application available
Hydraulic operation
Monitoring and display of end positions "rotor locked / rotor unlocked"
Low-maintenance design
Compact design

## Applications

Monitoring and display of intermediate lock bolt positions available on request
Hydraulic design optionally provided with check valves
Mechanical bolt locking
Lock bolt operated electromechanically
Suitable for application at high and low temperatures



### Please Note

We supply a detailed operating manual with every order. Nevertheless, we would point out that brakes are only as safe as the servicing and maintenance performed while they are in operation. The guarantee for the correct functioning of our brakes is therefore only valid if the user adheres to the German DIN standard 5434 part 2 (drum and disc brakes, servicing and maintenance in operation) or to comparable standards in his own country.



### PINTSCH BUBENZER Service

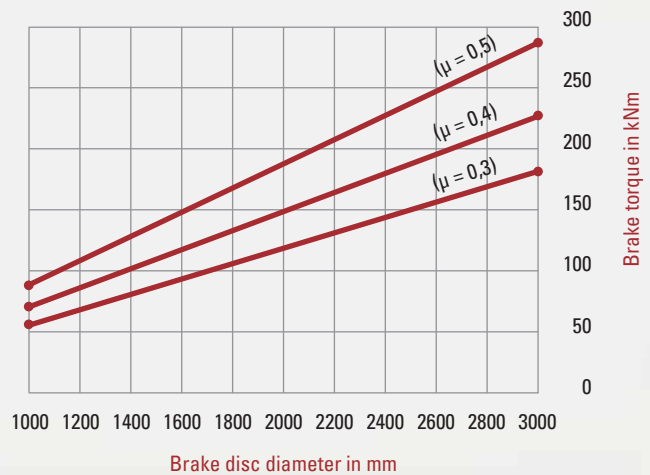
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Yaw Brake (active)

# Hydraulic Caliper Disc Brakes BACW 100



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Reliable



High Performance



Robust Design



Easy Maintenance

Yaw Brake (active)

## Description BACW 100



### Main Features

■	Brake <u>hydraulic</u> applied
■	<b>No failsafe function!</b>
■	Organic, non-asbestos linings
■	Airgap between brake pad and disc up to 2 mm per side

### Applications

■	YAW Brake Systems
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### Options

■	Pad Retraction Springs for dynamically Applications
■	Sintered linings
■	Complete piped supports for one or more calipers
■	Hydraulic power units
■	Brake discs

### Operating Restrictions

■	Brakes of this range are tested both mechanically and hydraulically. Operating conditions other than described in this brochure require the manufacturer's approval and may influence the function of the caliper and its components
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#### Please Note

We supply a detailed operating manual with every order. Nevertheless, we would point out that brakes are only as safe as the servicing and maintenance performed while they are in operation. The guarantee for the correct functioning of our brakes is therefore only valid if the user adheres to the German DIN standard 5434 part 2 (drum and disc brakes, servicing and maintenance in operation) or to comparable standards in his own country.



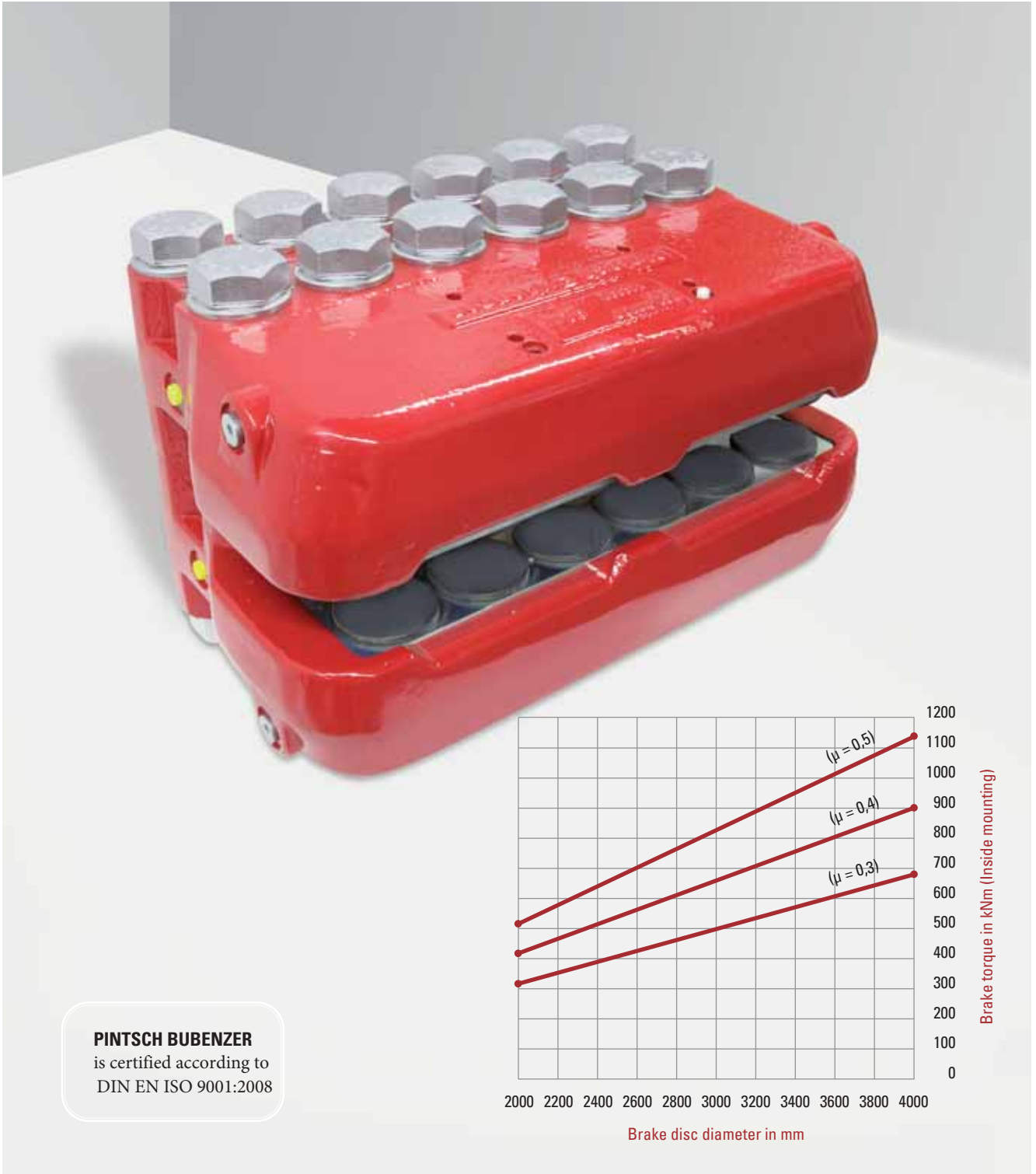
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This includes the verification of the brake selection, if required. A detailed questionnaire is provided for this purpose. Installation and commissioning on site is possible by PINTSCH BUBENZER service engineers. Drawings as DWG/DXF files for your engineering department are available upon request.



Yaw Brake (active)

# Hydraulic Caliper Disc Brakes BACW 200



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- Reliable
- High Performance
- Robust Design
- Easy Maintenance

Yaw Brake (active)

## Description BACW 200



### Main Features

Brake <u>hydraulic</u> applied
<b>No failsafe function!</b>
Organic, non-asbestos linings
Airgap between brake pad and disc up to 2 mm per side

### Options

Composite linings
Complete piped supports for one or more calipers
Hydraulic power units
Brake discs

### Applications

Yaw Brake System
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### Operating Restrictions

Brakes of this range are tested both mechanically and hydraulically. Operating conditions other than described in this brochure require the manufacturer's approval and may influence the function of the caliper and its components



#### Please Note

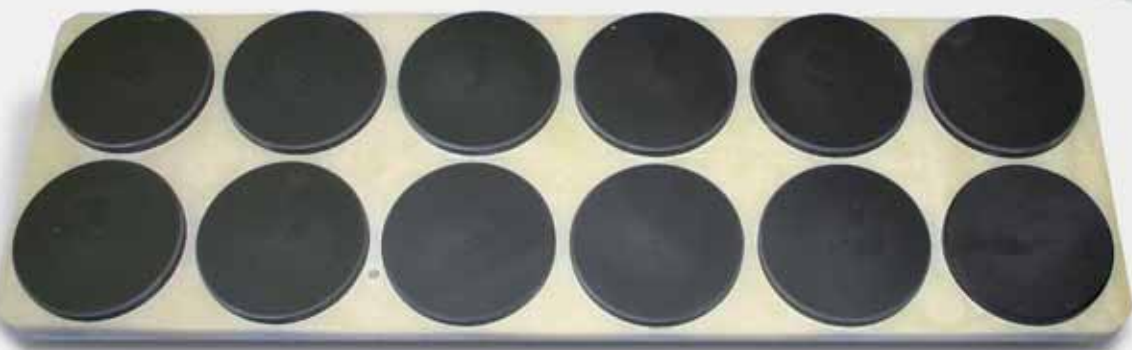
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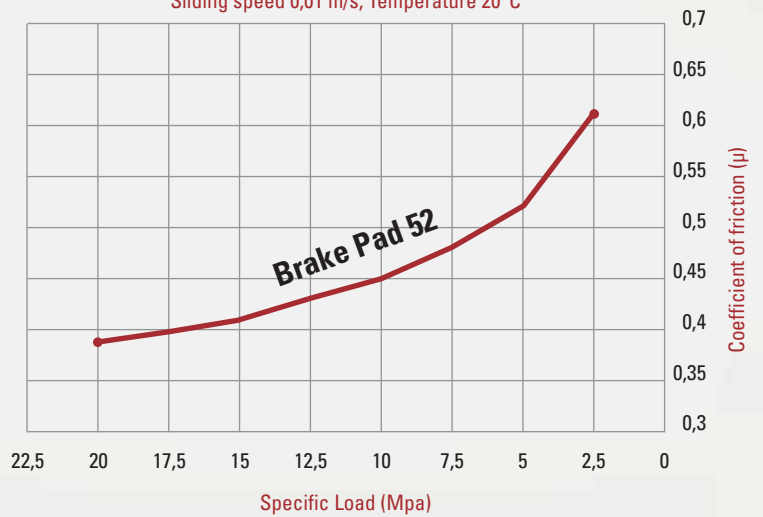
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# Brake Pad 52 for YAW Brake Application



Sliding speed 0,01 m/s, Temperature 20°C



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High Performance



Robust Design



Easy Maintenance

# Description Brake Pad 52



## Main Features

Slip-stick free running
No adhesive friction
Emergency operation qualities (brake disks remain undamaged when brake pads are worn)
No corrosion prevention needed
Saving in weight of 75 % (against conventional brake pads)
In combination with JSF-grease largely insensitive against leaking oils and greases
Noiseless Sliding
Low Wear Rate

## Chemical Resistance

Brake Pad 52 has a high resistance to corrosive media. The material is resistant against different media. Suitability for other chemicals and media should be determined experimentally according to for example DIN 50905 or ASTM D543

## Applications

Brake Pad 52 is a composite material for yaw-brakes. The supporting layer consists of glass-fibre reinforced epoxy resin, the sliding layer composed of a compound of epoxy resin, filled with a combination of different solid lubrications and brake additives. The glass-fibre reinforced supporting layer in combination with the sliding layer, which has been applied by a specific casting process, leads to very high stability characteristics and high load capacity and offers very good tribological characteristics with low wear and very good temperature resistance



### Please Note

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### PINTSCH BUBENZER Service

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Yaw/Pitch Drive Brake (passive)

## Electro-magnetic Motor-mounted Brake KFB



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High Performance



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Easy Maintenance



Compact



Tried and Trusted

## Description KFB



### Main Features

Spring applied safety brake
Electromechanically released
Protection-class IP67 – seawater protected
High wear reserve by multiple air gap adjustment
Small construction at high work capacity
High availability caused by high durability
Functional without cover
Emergency release screws

### Applications

Wind energy systems
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### Options

Special brake torque
Handlever
Micro- or proximity switch: <ul style="list-style-type: none"> <li>• Monitoring the function on/off</li> <li>• Maximum air gap (wear-monitoring)</li> </ul>
Lateral junction box
Tacho preparation with all mounting parts
Cover bore
Shaft-sealing
Special voltage
Anti condensation heater
Radial cable outlet
Special flange

### Electrical equipment

One-way-, bridge-, and switching- rectifier
Protective element
Brake control unit = BCU 2001
Brake control and monitoring system = BCMS-4



#### Please Note

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#### PINTSCH BUBENZER Service

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# Hydraulic Power Units



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High Performance



Robust Design



Easy Maintenance

# Description Hydraulic Power Units (Example)



## Applications

- Single solution for rotor brake, yaw brake or rotor locking device
- Dual solution for rotor and yaw brakes or in combination with rotor locking device
- Combined triple solution for rotor brake, yaw brake and rotor locking device in one unit

## Options

- Temperature switch
- Oil level switch
- Terminal box
- Pressure switch analogue 4-20 mA
- Pipes, hoses and fittings as mounting material
- Hydraulic oil

## Special Applications

- All these variations of hydraulic power units are available in cold climate version "cold weather extreme" down to -40°C
- UL certificate for 60 Hz version in combination with brake type BACW200



### Please Note

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### PINTSCH BUBENZER Service

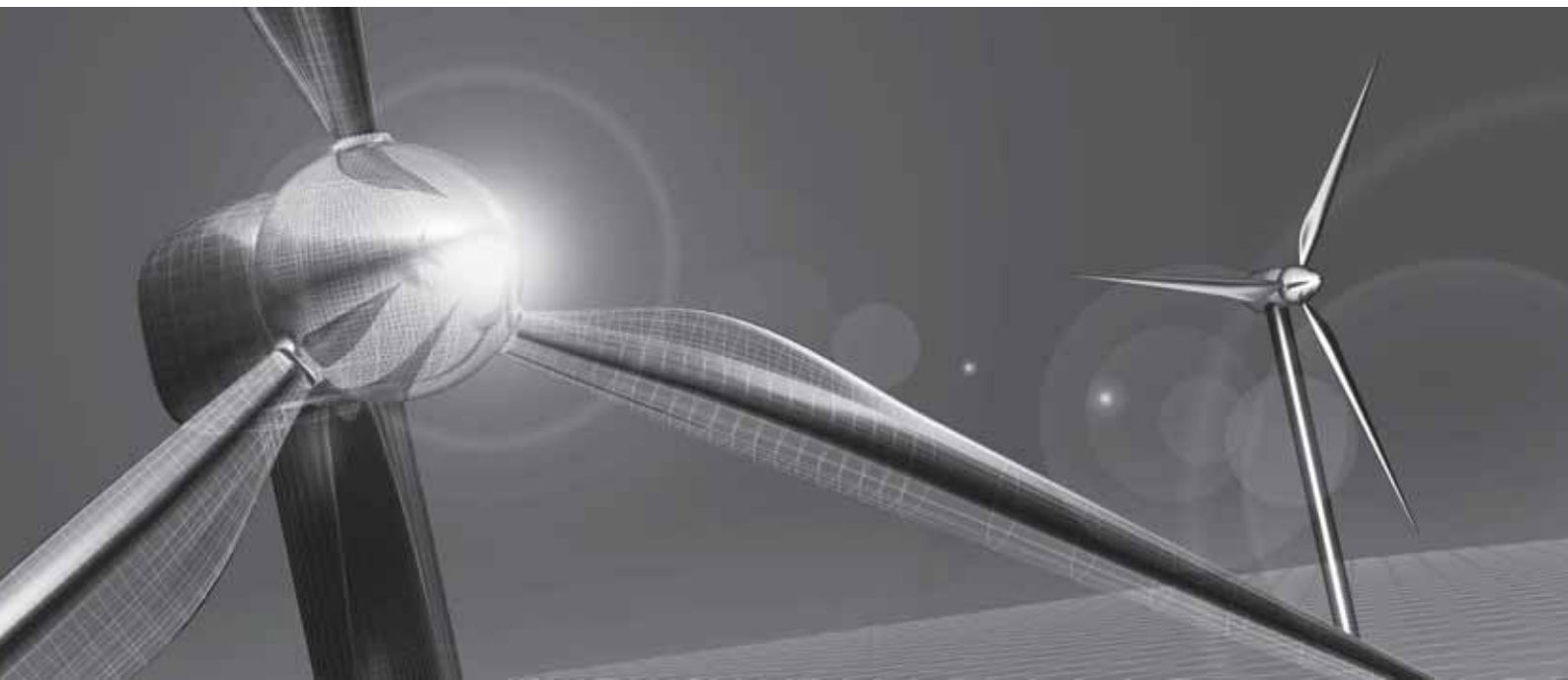
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4th edition

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