

Instruction for Magnetic-Particle-Brakes and -Couplings

(All technical data and drawings on our website: www.mobac.de and in our catalogue)

Type FAT / FRAT / EAT / ERAT – 20 / 50 / 120 / 350 / 650 / 1200 / 2002 / 3500 / 5001 / 10001 (RR)

Torque range:

The torque of this units is adjustable from 2 Nm to 1000 Nm.

Handling:



**Do not lubricate mobac units. Bearings are self-lubricated with grease.
This will affect torque capacity of the unit**

This units are precision products with small, inner tolerances. For this reason dropping the brake on the floor or hammer strokes on the housing can cause a damage on the brake.

It is also important to avoid dirt entering the housing.

The two power connection cables need to be protected by the provided rubber caps.

Mounting:



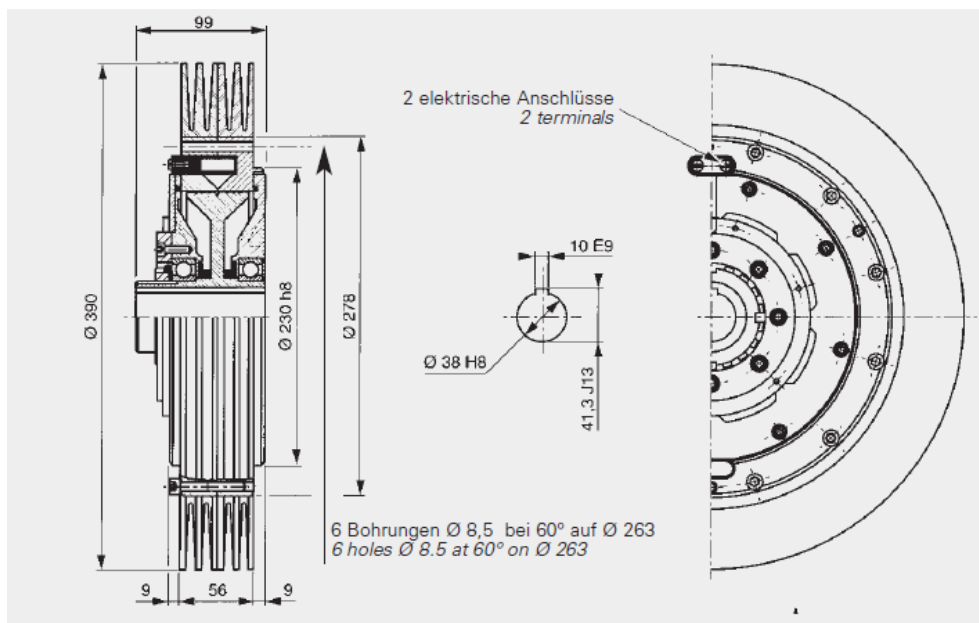
**Avoid the pollution of seals and bearings with solvent or liquid.
It may reduce the life expectancy of your unit.**

Example: FRAT 2002

The brake (stator housing) with the spigot, e.g. $\text{Ø } 230 \text{ h8}$ need to be fit to a frame (customer specific) and tightened with 6 pieces DIN 912 – M8 screws on a hole circle of $\text{Ø } 263 \text{ mm}$.

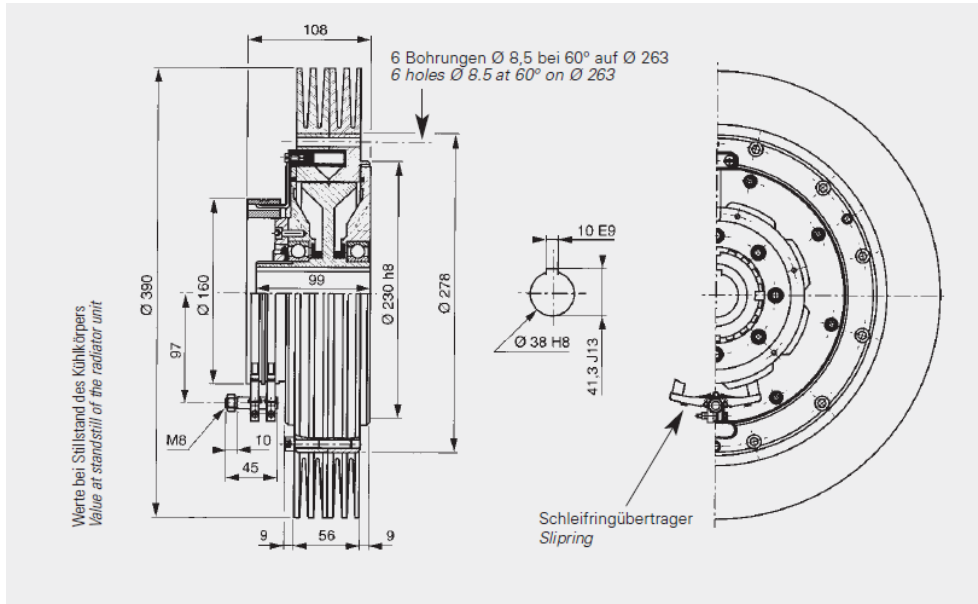
The hollow shaft from the rotor got a bore $\text{Ø } 38 \text{ H8}$ with a 10 E9 keyway. The brake can be also float-mounted on the shaft. In this case a torque support is needed on the stator housing.

Warning: The driving shaft must align after putting it into the hub!



Example: ERAT 2002

The mounting is the same as by the brake but with additional slip ring transmitter. The slip ring transmitter is provided by mobac and need to be mounted on a suitable frame (the frame is not in the scope of delivery). The slip ring itself is mounted on the coupling.



Adjustment of the Brake:

To adjust the brake / the coupling a power supply of type PowerBlock 2, IV C-A or IV C-E is needed. The desired torque can be adjust by the regulation of current strength from 0 – 1.7A by potentiometer.

Before putting in operation or after a longer standstill it is important to run the brake at 100 – 300min⁻¹ for approximately 5 minutes, whereby the nominal current must be switch on and off at least 30 times. Hereby the magnetic powder can space out evenly and the maximal transmission torque will be adjust.

RPM and Temperature:

The units are designed for a min. RPM of 60min⁻¹ and a max. RPM of 3000min⁻¹(up to type 650); 2000min⁻¹ (type 1200 up to 3500) and 1500min⁻¹ (type 5001 and 10001).

The min. RPM of 40min⁻¹ can be reached with the RR version.

It is important not to exceed the max. heat dissipation that is specified in the data sheet.

The heat dissipation is calculated as follows:

$$P [W] = \frac{n [min^{-1}] * M [Nm]}{10}$$

P = heat dissipation
n = nominal RPM
M = nominal torque

The working temperature should lies between -20°C and +85°C.

If a higher heat dissipation is needed, an additional electrical cooling fan can be mounted.

	<p>Do not touch mobac unit while or just after operation. It may cause severe injuries</p>
---	--

Maintenance:

All bearings are lubricated for life durance and do not need any specific maintenance.

The containing powder should be changed after approx. 5000 hours of working or if the nominal torque goes down to a level of 70 % from the first operation at the same potentiometer position. The powder change can be done either by the user himself or by **mobac GmbH Kiel**.