

Specifically design  
for robotic applications

LONG-TERM  
STATIC WORKING AND  
EMERGENCY BRAKING

EXCELLENT PERFORMANCE



**SMB electromagnetic brakes** are activated by the force of the springs when not energized. These standard brakes have various advantages, including quiet operation, long service life, thin designed components, high torque in a compact size. They have steady braking torque compared to permanent magnet brakes, as there is not a decreasing of the braking torque. We can also design a customized brake based on this standard product.

TEMPORITI srl can offer a wide range of electromagnetic brakes, this enabling us to become the best partner for all your applications. The high quality of friction material allows to this new brake, to get an high performance both for static and dynamic braking. The combination between friction material composition and low disc inertia gives as final result, a long brake life. We also designed a new concept for the disc, with a metal sheet between the friction material rings, to ensure an high mechanical resistance for this component.

#### Low-inertia rotor

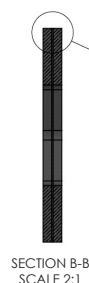
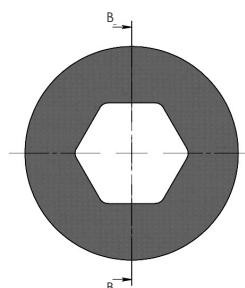
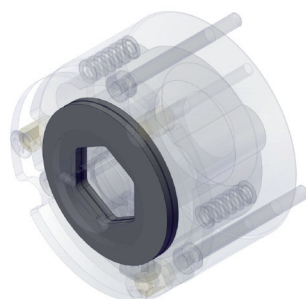
We succeeded in an high reducing of mass and drag wear, ensuring adequate strength.

#### Extremely small backlash

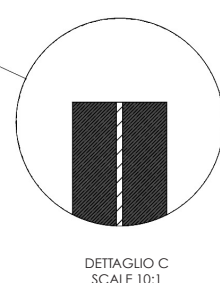
The backlash of the spline hub type is  $0.1^\circ$  to  $0.2^\circ$ . Top value for this application.

#### Steady braking

With a very low torque fluctuation, these brakes have the right torque instantly.



SECTION B-B  
SCALE 2:1

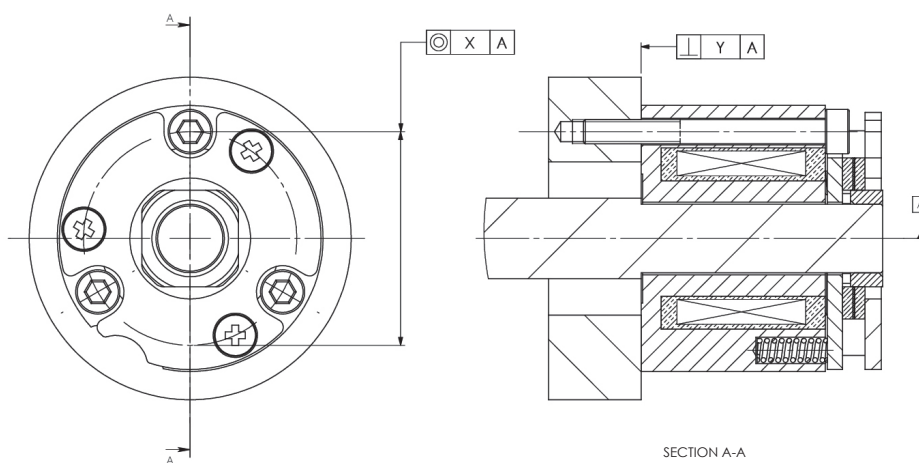
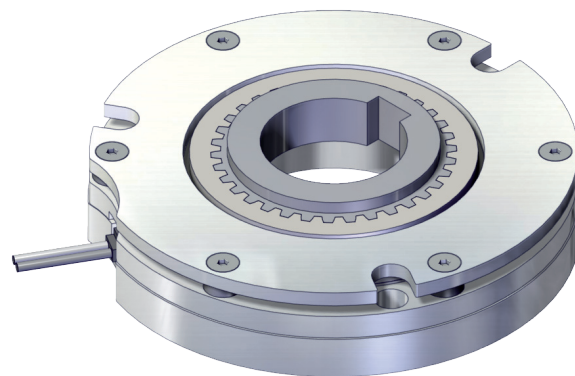
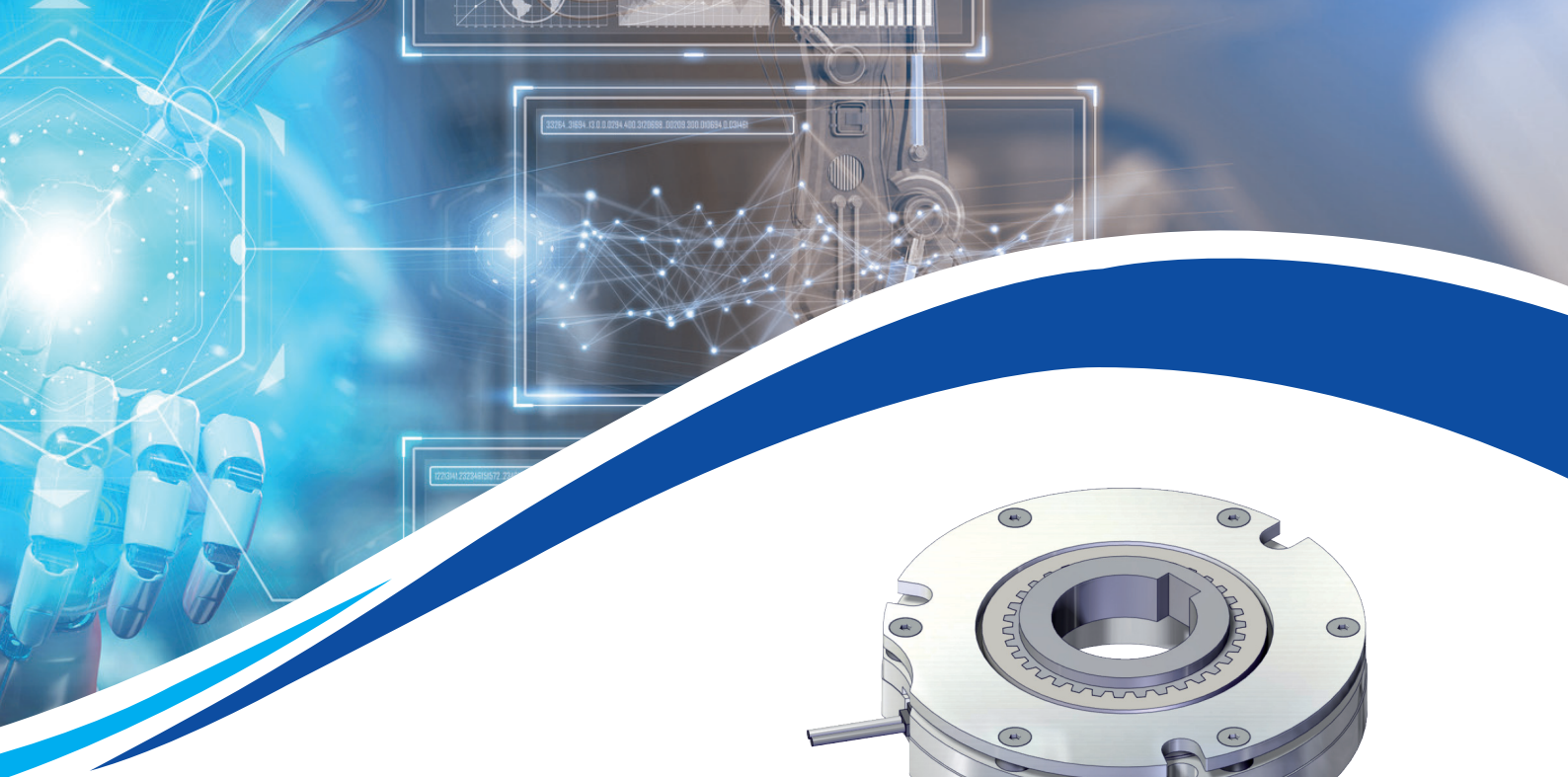


DETTAGLIO C  
SCALE 10:1

BRAKE SIZE	STATIC TORQUE [Nm]
SMB040	>0,35Nm
SMB060	>1,9Nm
SMB080	>4Nm
SMB110	>22Nm

BRAKE SIZE	STATIC TORQUE [Nm]
SMB130	>22Nm
SMB180	>43Nm
SMB180s	>72Nm





BRAKE SIZE	Concentricity [X] [mm]	Perpendicularity [Y] [mm]
SMB040	0,05	0,02
SMB060	0,05	0,02
SMB080	0,05	0,02
SMB110	0,05	0,02

BRAKE SIZE	Concentricity [X] [mm]	Perpendicularity [Y] [mm]
SMB130	0,05	0,02
SMB180	0,05	0,02
SMB180s	0,05	0,02

## Precautions for handling

### Brakes

Most electromagnetic braking systems are made using flexible materials. Be careful when handling such parts and materials as striking or dropping them or applying excessive force could cause them to become damaged or deformed.

### Lead Wires

Be careful not to pull excessively on the brake lead wires, bend them at sharp angles, or allow them to hang too low.

### Frictional Surface

Since these are dry brakes, they must be used with the frictional surface dry. Keep water and oil off of the frictional surfaces when handling the brakes.

## Precautions for use

### ■ Environment

These brake units are dry braking systems, meaning that the torque will drop if oil residue, moisture, or other liquids get onto friction surfaces. Use the protective cover when the brake works in areas with oil, moisture, dust and other particles that could affect the braking system.

### ■ Operating

The operating temperature range is -20°C to 40°C. If you use the product at other temperatures, consult TEMPORITI.

### ■ Power Supplies

SMB models guarantee better performances using single phase.

### ■ Power Supply Voltage

The brake working may not be guaranteed with changes higher than +/-6% of rated supply voltage. Make sure to keep power supply voltage within  $\pm 6\%$  of the rated voltage value.

### ■ Air Gap Adjustment

SMB models do not require air gap adjustment. Air gap adjustment is made from TEMPORITI before delivery.

### ■ Circuit Protectors

If using a power supply that is not equipped with a circuit protector for DC switching, make sure to connect the recommended circuit protector device in parallel with the brake.

## Precautions for mounting

### ■ Mounting Orientation

SMB models must be mounted with the stator facing outwards (plate mounted).

### ■ Rotor hub fixing

Fix the rotor hub by press-fitting it onto the shaft at a position that does not interfere with other parts of system.

### ■ Bolts and Screws

Implement screw-locking measures such as use of an adhesive thread-locking compound to bolts and screws used to install brakes. Be careful that the adhesive does not come out.

### ■ Shafts

The hub tolerance is +/-0.01mm. Note that the harder the material used in the shaft, the less effective the hexagon socket set screw will be. Note also that for the SMB type, the shaft is press fitted into the rotor hub. The shaft tolerance should be determined based on the press-fit tolerance.

### ■ Brake Accuracy

Attachment Surfaces. Make sure that concentricity (X) and perpendicularity (Y) do not exceed the allowable values of the table on the previous page.



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