Hysteresis Brake Dynamometer

Allows measurements even in the unstable ranges of AC motors

More compact than motor brakes or other brake types

Measurements of the speed and torque characteristics of a wide range of motors

Features and Benefits

- **Uses hysteresis brake for measurement devices**
  Sugawara Laboratories boasts many years of brake development and manufacturing experience. In addition to minimizing the magnetic field aperture in which the hysteresis cup rotates, this component minimizes the cup’s moment of inertia, enabling improved torque-control precision and controlling vibrations at high RPMs.

- **Enables stable measurements from low through high RPMs**
  Torque is detected by the force exerted by the brake stator, enabling stable torque measurements from low through high RPM ranges. This component features a maximum speed of 30,000 rpm (depending on torque rating). In addition, optional components can be used to improve speed resolution for use with low-speed motors of 100 rpm or less.

- **Compatible with broad range of torque ratings from 5 mN·m through 50 N·m**
  Measurement components can be selected to suit motor power to ensure high-precision measurements. Users can select from 14 models of TA/TB torque measurement components offering differing torque ratings.

- **Long-lasting non-contact brake**
  Hysteresis brakes are non-contact devices and offer long service life. Except for bearings, hysteresis brakes have virtually no maintenance requirements.

- **Superior heat resistance**
  Another hysteresis brake advantage is its resistance to changes in torque values due to increases in brake temperature or surrounding temperature.

- **Features air bearings for low-torque use**
## Overall torque specifications

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</thead>
<tbody>
<tr>
<td>Torque rating</td>
<td>5 Nm</td>
<td>10 Nm</td>
<td>20 Nm</td>
<td>50 Nm</td>
<td>100 Nm</td>
<td>200 Nm</td>
<td>500 Nm</td>
<td>1 Nm</td>
<td>2 Nm</td>
<td>5 Nm</td>
<td>10 Nm</td>
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<tr>
<td>Torque measurement range</td>
<td>0.15-5 Nm</td>
<td>0.3-10 Nm</td>
<td>0.5-20 Nm</td>
<td>1.5-50 Nm</td>
<td>3-100 Nm</td>
<td>6-200 Nm</td>
<td>15-500 Nm</td>
<td>0.01-1 Nm</td>
<td>0.05-2 Nm</td>
<td>0.15-5 Nm</td>
<td>0.3-15 Nm</td>
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<tr>
<td>Torque measurement precision</td>
<td>±(0.5% of range + 1 µNm)</td>
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</table>
| Brake support methods | At bearings | Ball bearings |}

### Torque measurement methods
- Brake-stator reaction force detected by strain-gauge load cell
- RPM measurement: 100-50,000 r/min
- RPM measurement precision: ±0.001% of range + 1 µNm
- RPM detection methods: Photoelectric transmission rotary encoder at 60 P/R (standard) or 600 P/R (optional)
- Frictional-torque detection: Using two photoelectric transmission signals at 1 P/R with 90° phase difference

### Brake torque protection
- Automatic cutoff of brake current at 80% or higher. Also features buzzer and LED alarm

### Brake torque specification

<table>
<thead>
<tr>
<th>Moment of Inertia</th>
<th>0.6 x 10^-4 kg m²</th>
<th>0.8 x 10^-4 kg m²</th>
<th>1 x 10^-4 kg m²</th>
<th>2.4 x 10^-4 kg m²</th>
<th>3.7 x 10^-4 kg m²</th>
<th>9 x 10^-4 kg m²</th>
<th>28 x 10^-4 kg m²</th>
<th>185 x 10^-4 kg m²</th>
<th>540 x 10^-4 kg m²</th>
<th>1 x 10^-3 kg m²</th>
<th>6.3 x 10^-3 kg m²</th>
<th>7.5 x 10^-3 kg m²</th>
<th>31 x 10^-3 kg m²</th>
<th>61 x 10^-3 kg m²</th>
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</thead>
</table>

### Shaft diameter specification

- Diameter: 63 mm
- Shaft length: 150 mm

### Motor specifications

<table>
<thead>
<tr>
<th>Motor specification</th>
<th>NA-78</th>
<th>NA-88</th>
<th>NA-118</th>
<th>NA-128</th>
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<tbody>
<tr>
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<td>1.9 kg</td>
<td>5.6 kg</td>
<td>5.7 kg</td>
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### Diameter of attachable member

- 25-100 mm
- 45-150 mm
- 60-180 mm
- 44-200 mm

### Dynamic Hyst. Brake

- Customized solutions
- Customer support
- Technical services
- 1-Year warranty
- Optional extended warranty program
- Local sales offices throughout the world

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**Text Examples of Performance Graphs for models TB-20KS and TB-50KS**

![Graphs for TB-20KS and TB-50KS](image-url)