

MAGPOWR HIGH EFFICIENCY BRAKE

MAXCESS®

MAGPOWR



TIDLAND

The MAGPOWR HEB250 pneumatic brake packs many powerful features into a compact design. Ideal for the demands of general converting and corrugating operations, the HEB produces higher torque at cooler brake pad temperatures. These cooler temperatures along with a thicker brake pad will ensure longer pad life to minimize downtime.

The HEB is engineered for rugged environments, utilizing a single, ventilated cast iron rotor with a bi-directional flute design which allows for efficient cooling when used in either direction of rotation, a through bore and keyway design for easy mounting of the rotor to the brake shaft and an integrated set of caliper mounting brackets that can be mounted directly to the machine frame. These caliper mounting brackets are also an integral part of the safety guarding along with the caliper bodies to reduce the overall size of the brake.

Web tension is accurately controlled by adjusting air pressure to the calipers, pushing brake pads against each side of the rotor to produce consistent brake torque.



Brake shown without fan cooling option

GENERAL SPECIFICATIONS

Enclosure

IP20 (IEC529)

Climatic Class

3K3 (EN60721)

Temperature Range

Operating: 0° C to 50° C

Storage: -30° C to 80° C

Pollution Degree

2 (IEC664-1)

Altitude

0 to 2000 meters

Mounting Style

Through bore and keyway

Maximum RPM

3200 RPM

Brake Pads

Do not contain asbestos

Pad Coefficient of Friction

Low: 0.12

Medium: 0.41

High: 0.51

Maximum Pressure

621 kPa (90 PSI)

Minimum Activation Pressure

21 kPa (3 PSI)

Fan Requirements

Voltage: 24 VDC

Current: 1.5 ADC

Proximity Sensor Requirements

Supply Voltage 24 VDC

Signal Output: NPN N.O.

Maximum Signal Current:

200 mADC

Maximum Frequency: 2kHz

One Pulse per Revolution

KEY FEATURES

- Small compact size
- Through bores and keyways
- Inch and metric bores
- Optional mounting adapter
- High torque output
- High heat dissipation
- Longer pad life
- Bi-directional cooling
- Optional integrated proximity sensor

PRODUCT SELECTION

NUMBER OF CALIPERS	NUMBER OF PADS	TORQUE AT 60 PSI (414 KPA) LB-IN (NM) COEFFICIENT OF FRICTION OF PADS			TORQUE AT 80 PSI (552 KPA) IN LB-IN (NM) COEFFICIENT OF FRICTION OF PADS		
		LOW (0.12)	MED (0.41)	HIGH (0.51)	LOW (0.12)	MEDIUM (0.41)	HIGH (0.51)
1	2	290 (33)	1007 (114)	1174 (133)	387 (44)	1343 (152)	1565 (177)
2	4	580 (66)	2014 (228)	2348 (265)	773 (87)	2685 (303)	3131 (354)
3	6	870 (99)	3021 (341)	3522 (398)	1160 (131)	4028 (455)	4696 (531)
4	8	1160 (132)	4028 (455)	4696 (531)	1547 (175)	5371 (607)	6261 (707)
5	10	1450 (164)	5035 (569)	5870 (663)	1933 (218)	6713 (759)	7827 (884)
6	12	1740 (197)	6042 (683)	7044 (796)	2320 (262)	8056 (910)	9392 (1061)

We recommend sizing the brake using values at 60 psi and medium coefficient of friction pads.

Step 1. Determine torque requirement in lb-in from maximum tension and maximum roll diameter.

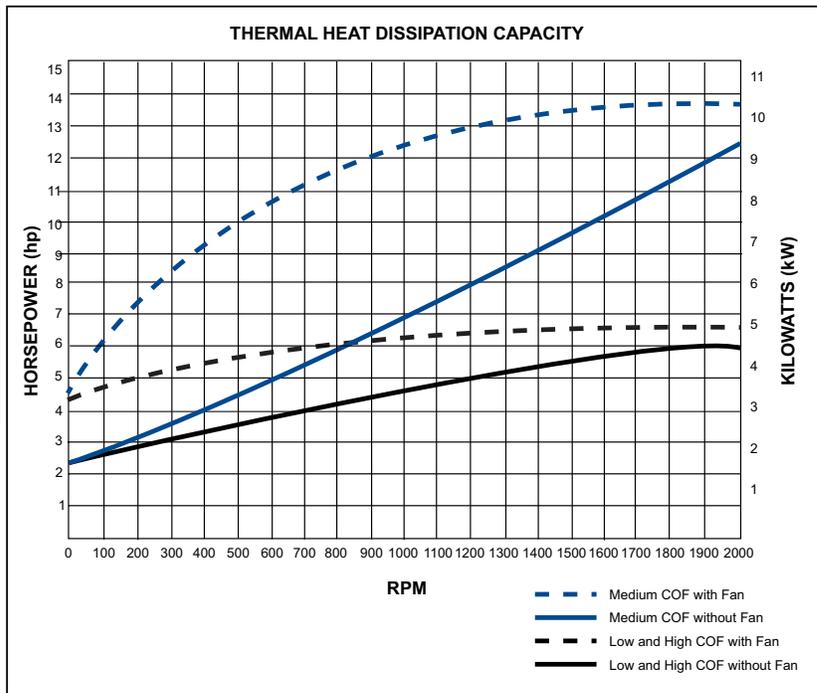
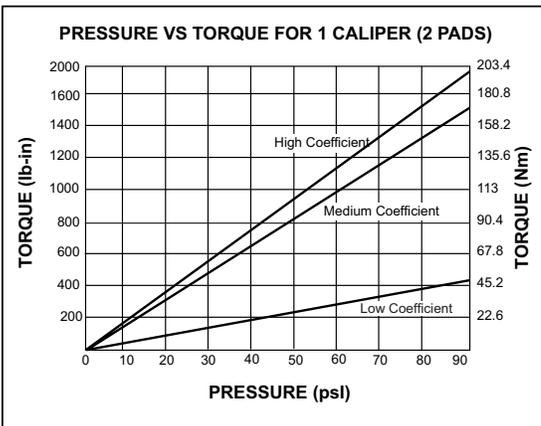
$$\text{Torque} = \text{Tension (pounds)} \times \text{Radius (inches) at full roll}$$

Step 2. Determine RPM for full roll. RPM at full roll diameter = $\frac{\text{Maximum Line Speed (fpm)}}{2 \times \pi \times r}$ (r is radius in feet at full roll)

Step 3. Determine thermal heat dissipation required.

$$\text{Thermal horsepower} = \frac{\text{Torque at full roll diameter (in inch-pounds)} \times \text{RPM at full roll diameter}}{63,000}$$

Step 4. Determine Effective Average RPM = $\frac{\text{Maximum Line Speed (fpm)}}{3.14 \left(\frac{\text{Maximum Roll Diameter (feet)} + \text{Core Diameter (feet)}}{2} \right)}$



Step 5. Choose the number of calipers required from the chart above that will provide the torque required at the full roll diameter. Since not all facilities have a reliable air pressure source to supply the 80 or 90 psi full pressure rating to the brake, and as a factor of safety in initial applications, select the number of calipers required from the 60 psi table.

Step 6. Verify that the thermal horsepower generated by the application can be dissipated by looking at the chart to the right and ensure that the calculated horsepower falls on or under the line at the Effective Average RPM calculated in Step 4.

TORQUE RATING AT MAXIMUM AIR PRESSURE

TORQUE AT 90 PSI (621 KPA) IN LB-IN (NM) COEFFICIENT OF FRICTION PADS		
LOW (0.12)	MEDIUM (0.41)	HIGH (0.51)
435 (49)	1511 (171)	1761 (199)
870 (98)	3021 (341)	3522 (398)
1305 (147)	4532 (512)	5283 (597)
1740 (197)	6042 (683)	7044 (796)
2175 (246)	7553 (853)	8805 (995)
2610 (295)	9063 (1024)	10566 (1194)

REPLACEMENT PART KITS

Each kit includes 2 (each) pads to fill 1 (each) caliper

MODEL NUMBER	DESCRIPTION
HEBPKL	HEB Pad Kit for Low Friction Pads (0.12)
HEBPKM	HEB Pad Kit for Medium Friction Pads (0.41)
HEBPKH	HEB Pad Kit for High Friction Pads (0.51)

ORDERING INFORMATION

The model number consists of the base model HEB250 followed by six digits specifying the options and an additional two digits for special features when applicable.

Format: HEB250-A-B-C-D-EE

A	NUMBER OF CALIPERS	B	FRICTION COEFFICIENT	C	FAN	D	PROXIMITY SENSOR (1)	EE	ROTOR BORE (2)
1	1 Caliper	L	Low = 0.12	0	No Fan	0	No Proximity Sensor	00	10 mm (pilot hole)
2	2 Calipers	M	Medium = 0.41	F	Fan	P	Proximity Sensor	10	28 mm
3	3 Calipers	H	High = 0.51					17	35 mm
4	4 Calipers							32	50 mm
5	5 Calipers							42	60 mm
6	6 Calipers							47	1.000 inch
								53	1.375 inches

NOTES

- (1) If a proximity sensor is selected, then a fan must be selected and the maximum number of calipers is 5
- (2) Listed rotor bores are standard. Other non-standard bores are available from 19 mm (0.75 inch) through 60 mm (2.31 inches) for an additional charge

PRODUCT OPTIONS

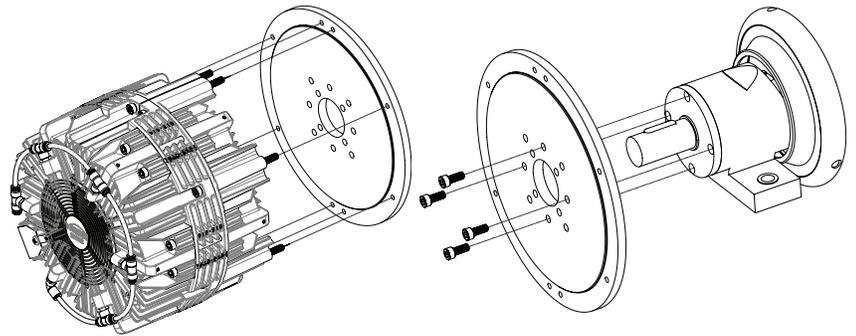
Integrated Proximity Sensor

for measuring unwind RPM (assembly mounts in place of one caliper)

Adapter Plate

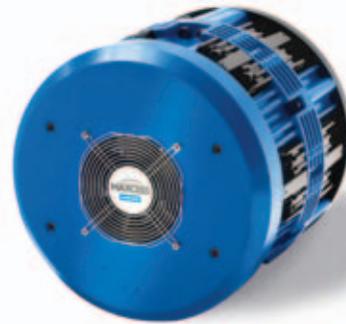
Used for mounting to Tidland System Boschert Safety Chucks. Adapter plate can also be used with competitive safety chucks, on other bearing housings, but different mounting holes may be needed and supplied by customer. The plate can also be used to mount to a machine frame with uneven surfaces. The Plate is steel and can be welded.

To order the adapter plate, use part number HEB250BKPLT.



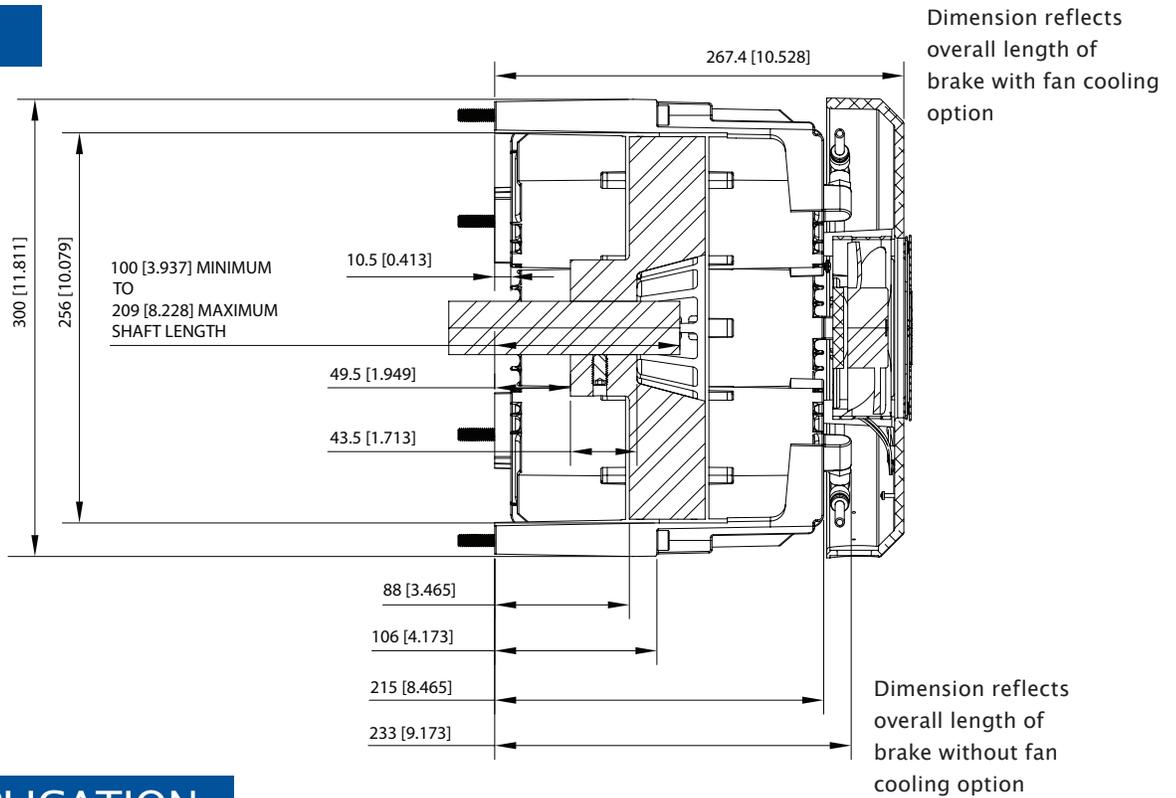
Fan Cooling Option

Brake shown with fan cooling option



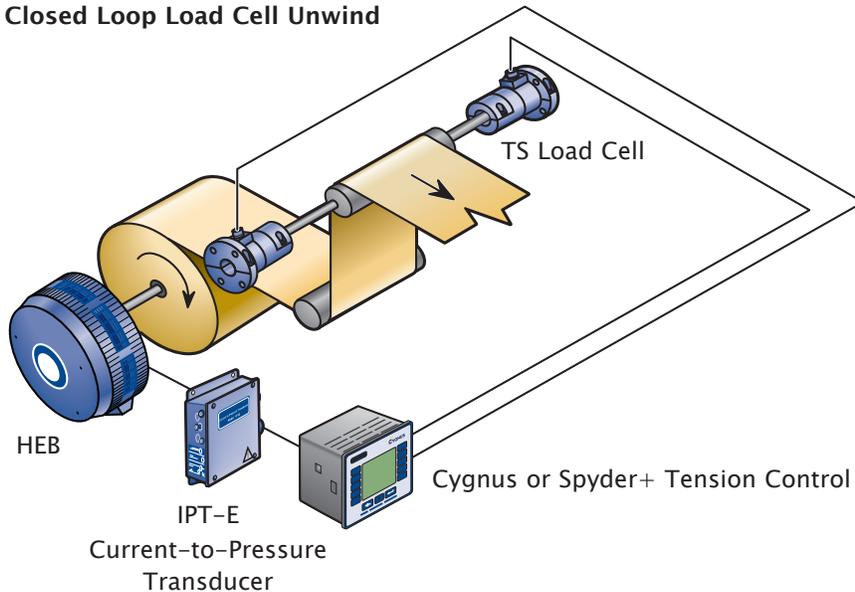
MAGPOWR HIGH EFFICIENCY BRAKE

DIMENSIONS



TYPICAL APPLICATION

Closed Loop Load Cell Unwind



NORTH, CENTRAL AND SOUTH AMERICA

Tel +1.405.755.1600
 Fax +1.405.755.8425
 sales@maxcessintl.com
 www.maxcessintl.com

INDIA

Tel +91.22.27602633
 Fax +91.22.27602634
 india@maxcessintl.com
 www.maxcess.in

EUROPE, MIDDLE EAST AND AFRICA

Tel +49.6195.7002.0
 Fax +49.6195.7002.933
 sales@maxcess.eu
 www.maxcess.eu

JAPAN

Tel +81.43.421.1622
 Fax +81.43.421.2895
 japan@maxcessintl.com
 www.maxcess.jp

CHINA

Tel +86.756.881.9398
 Fax +86.756.881.9393
 info@maxcessintl.com.cn
 www.maxcessintl.com.cn

KOREA, TAIWAN AND SE ASIA

Tel +65.9620.3883
 Fax +65.6235.4818
 asia@maxcessintl.com