

MK GUIDE RAIL BRAKE



MK

ELECTROMAGNETIC FAILSAFE CALIPER



MK Guide Rail Brake

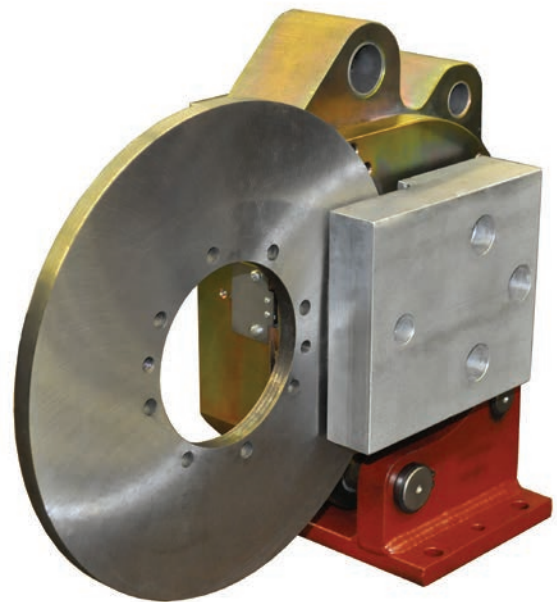
The Hilliard MK Guide Rail Brake is designed for use on elevators, conveyors, cranes, or other devices requiring a spring-applied electromagnetically released brake. The patented MK brake can be applied to a guide rail or a brake disc. It is unique in that it is direct acting with only one moving part. The brake incorporates an electromagnetic coil that uses a voltage dropping circuit to minimize current draw and heat when the brake is released. Shipped with manual release bolts for easy assembly to the rail or disc, it can also be equipped with a manual release mechanism for a momentary release of the brake with a standard open-end or socket wrench.

Benefits

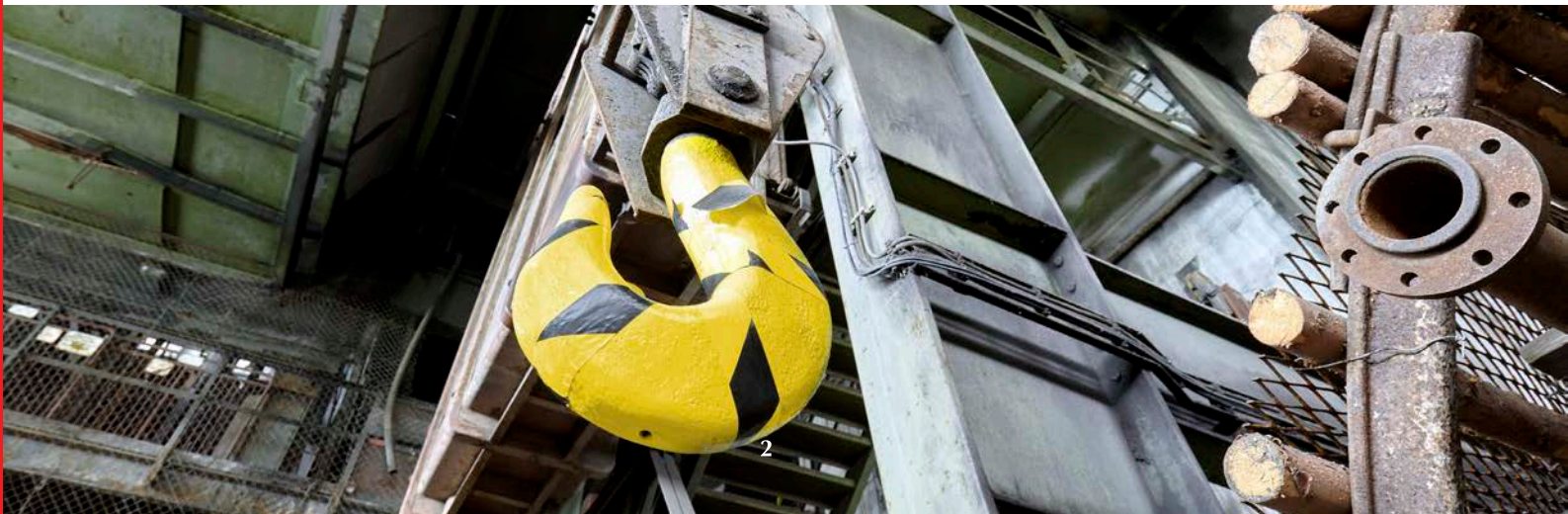
- Designed for holding duty and emergency stopping
- Manual release mechanism automatically reapplies the brake when force is removed
- Equipped with a microswitch for monitoring brake status
- Can be configured for various rail or disc thickness
- Easy to install - equipped with manual release bolts
- Can be adjusted for wear by adding shims behind the brake pads
- Mounted on pins allowing for axial movement



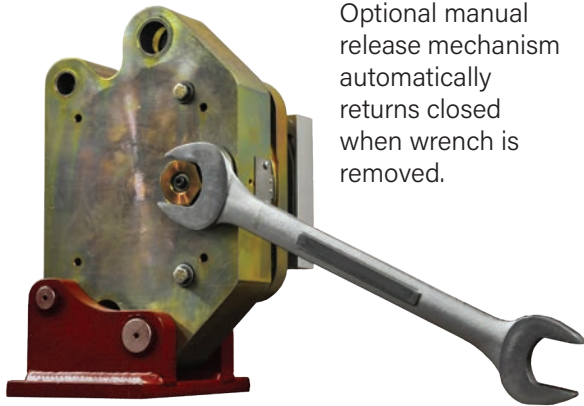
MK Rail Brake



MK Disc Brake

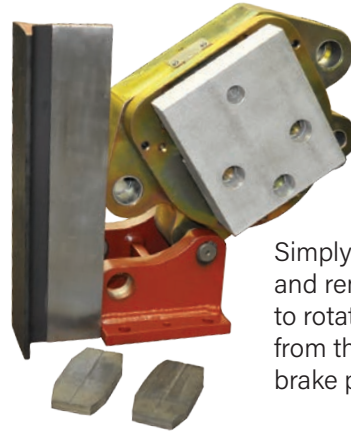


Manual Release



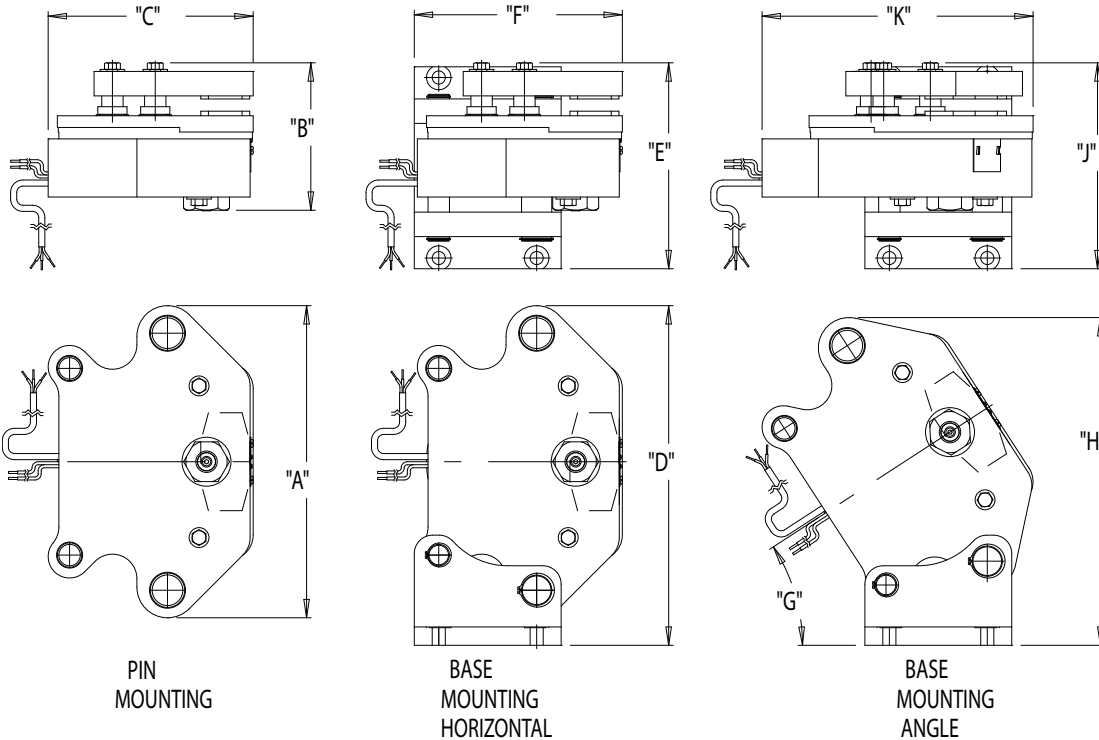
Optional manual release mechanism automatically returns closed when wrench is removed.

Pad Replacement



Simply release the brake and remove the front pin to rotate the brake clear from the rail to install new brake pads.

Mounting Arrangements



Approximate Envelope Dimensions (in)

Brake Type	A	B*	C	D	E*	F	G	H	J*	K	Weight
MK-350	7.50	4.95	5.44	8.31	6.82	5.44	30°	8.13	6.82	6.94	25 lb
MK-750	10.13	6.00	7.25	11.31	9.00	7.25	32°	11.25	9.00	9.63	50 lb
MK-1400	13.50	6.82	8.75	14.63	8.94	8.75	33°	14.00	8.94	11.56	80 lb
MK-4800	21.50	10.18	16.50	23.00	13.69	16.50	28°	22.56	13.69	18.88	325 lb

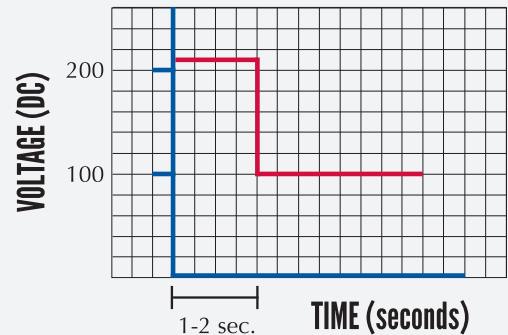
*Dimension varies with rail or disc thickness

Hilliard Electric Brake Controller



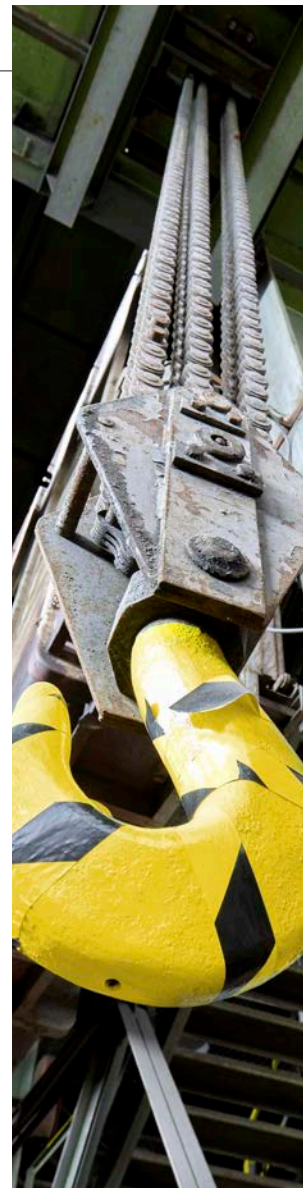
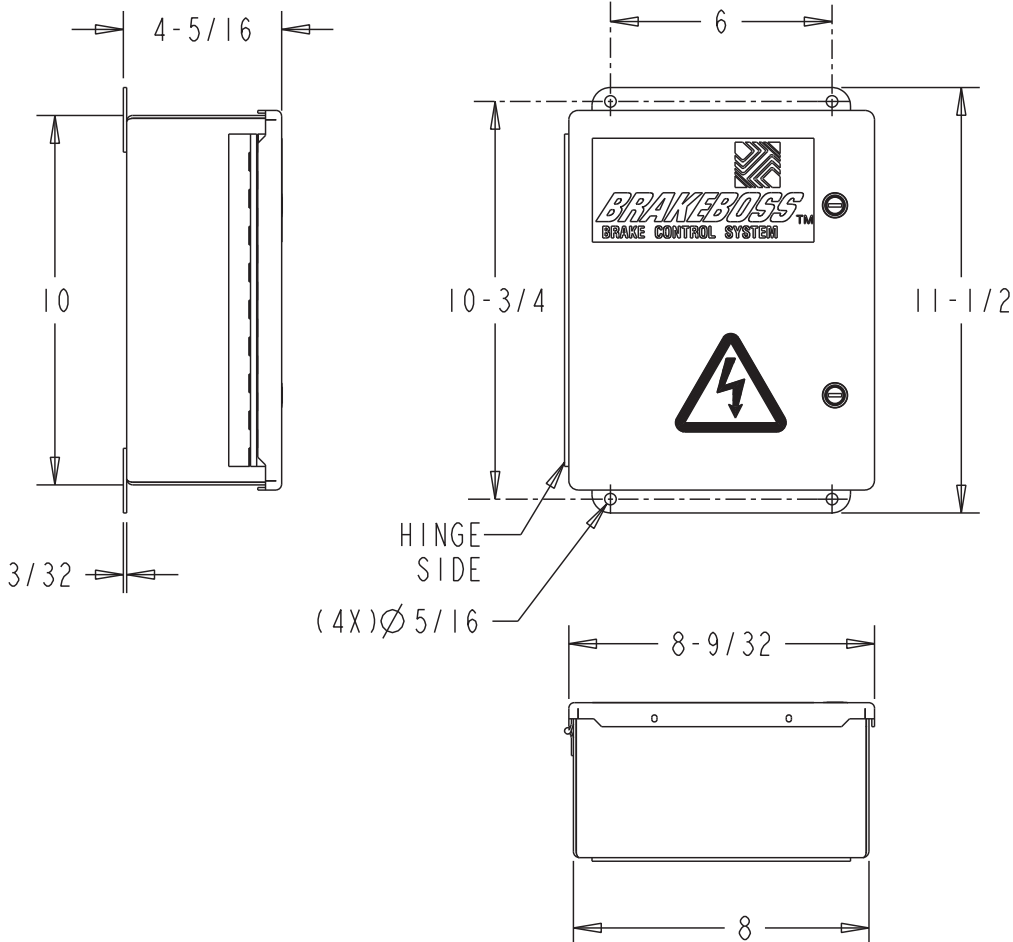
The Brakeboss electric brake controller features rectification from AC to DC, combined with Peak Inverse Voltage suppression and magnetic field over-energization for interface to the MK Rail Brakes.

BRAKE OVER-ENERGIZATION



The control box input voltage is 230 VAC 50/60 Hz. The output to the brakes is 210 VDC for 1-2 seconds, during which time the brake releases. The voltage then drops to 105 VDC indefinitely to keep the brake in the released condition. The brake applies when power is removed (fail safe).

Enclosure Dimensions (in.)

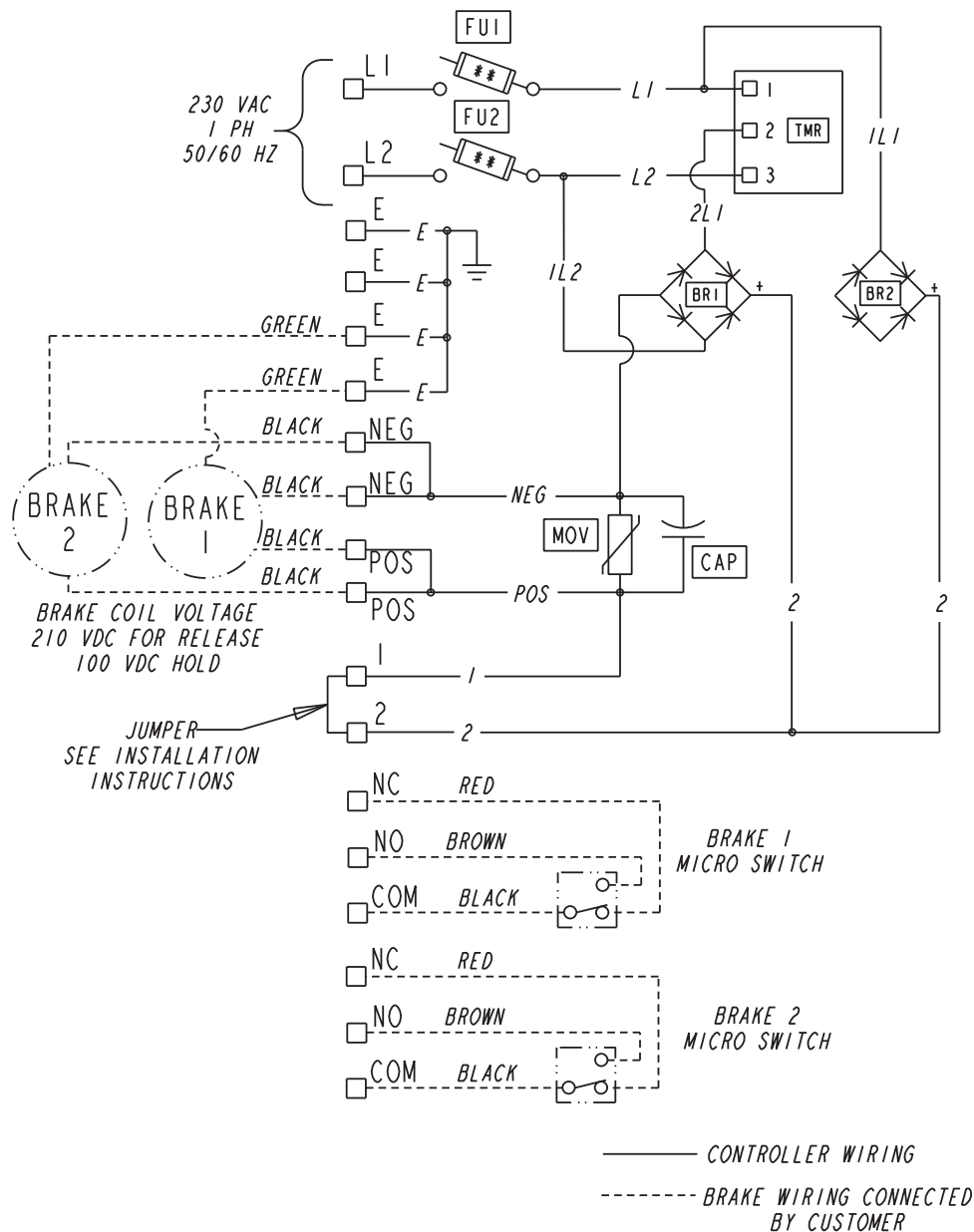


Controller Fuse Ratings		
Brake Type	One Brake	Two Brakes
MK-350	.25 AMP	.5 AMP
MK-750	3 AMP	6 AMP
MK-1400	4 AMP	8 AMP
MK-4800	8 AMP	N/A



BRAKEBOSS

Wiring Diagram



Applications

MK-1400 brake installed on the high speed shaft of a gearbox on top of a hoist. In this application the disc brake application acts as a holding brake when power is removed from the main drive.



This theatrical stage lift incorporates eight MK-1400 brakes acting on four separate elevator T-Rails. These are secondary safety brakes that apply in the event of a drive chain failure.



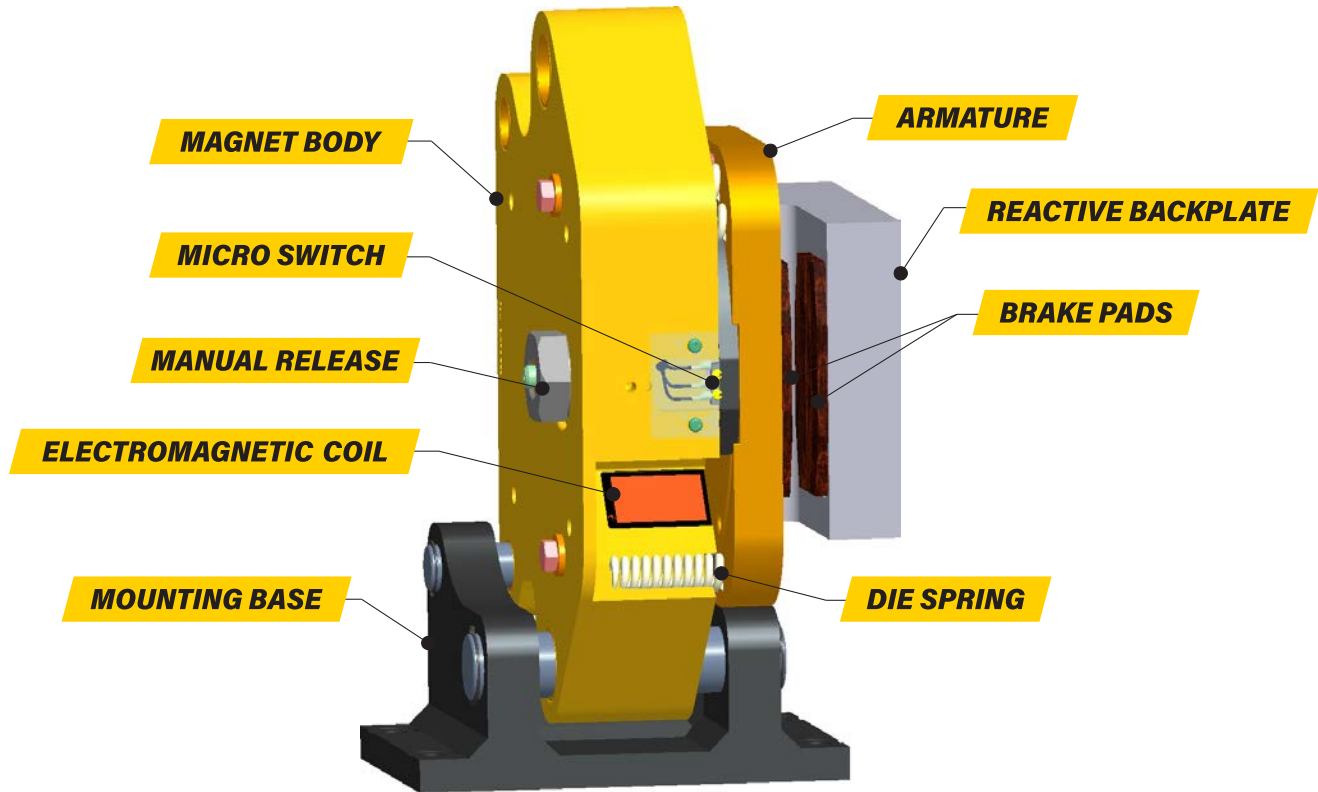
MK-1400 brakes are pin-mounted on the bridge drive of an overhead crane, ensuring the bridge doesn't drift during critical lift operations.



Torque Calculation

$$\text{Rated Torque} = \frac{\text{Braking Force} \times (\text{Disc Radius} - "X")}{12} \text{ in Lb-Ft Torque}$$

If the brake is for holding duty and no dynamic stops are made, reduce rated torque by 50%.



Data

Brake Type	Braking Force (lb)	Release Voltage (vdc)	Holding Voltage (vdc)	Dimension "X" (in)	Min Disc Diameter (in)	Min Rail Depth (in)
MK-350	350	210	100	0.75	6	1.50
MK-350	250	100	100	0.75	6	1.50
MK-350	150	100	100	0.75	6	1.50
MK-750	750	210	100	1.05	10	2.50
MK-750	525	100	100	1.05	10	2.50
MK-750	400	100	100	1.05	10	2.50
MK-1400	1400	210	100	1.38	12	3.00
MK-1400	1025	100	100	1.38	12	3.00
MK-1400	865	100	100	1.38	12	3.00
MK-4800	4000	210	100	2.25	20	4.75
MK-4800	3000	100	100	2.25	20	4.75
MK-4800	2000	100	100	2.25	20	4.75

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