

Airflex® FHB Brake Elements

Section E

Overview

Eaton Airflex has introduced a revolutionary new design in disc brake technology called the Floating Housing Brake (FHB). The spring applied (power off), air-cooled disc brake is well suited for applications in Surface Mining, Oilfield and other heavy-duty industrial machinery designs.

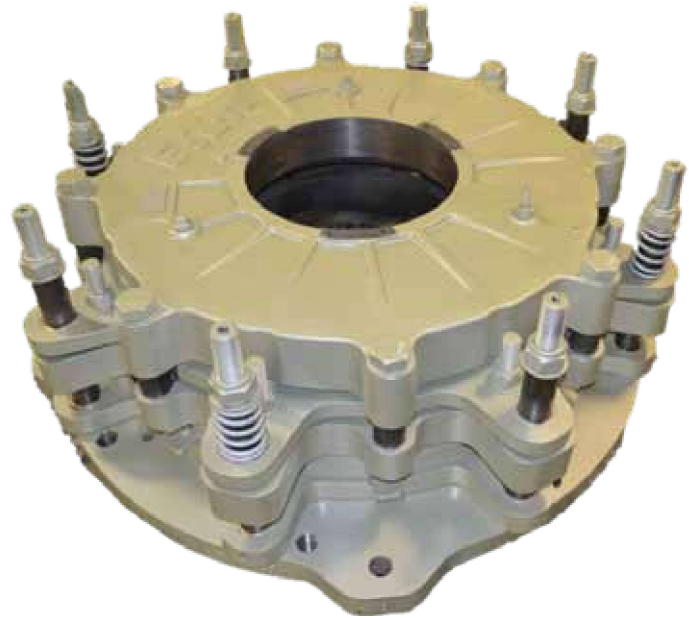
The FHB is an air cooled spring applied brake with exceptional friction life and rapid friction replacement capability. It is supplied with long wearing, organic friction material and a rugged solid cast, rotating disc that provides lower inertia than typical caliper brakes.

Features

- Rated for over 430,000 lb-in of torque
- Patented braking concept uses a floating housing instead of a floating rotor
- Multiple brake installation designs exist for industry leading motors
- Fixed hub and rotor design

Benefits

- Ability to quickly change the friction pads reduces down time on dragline from 3 hours to 1 hour
- Reduced maintenance cost with elimination of spline tooth or gear wear
- Longer friction pad wear life due to a full 360° annular disc
- Faster and safer installation with exclusive shaft lock assembly for ease of mounting and removal
- Virtually no wear during free wheeling, allows high product life



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Technical Introduction

The FHB brake is offered for applications with non-cyclic brake engagement that require higher speed operation or precise balance of the rotating components is required. It uses a solid rotor and stationary friction material to develop equal torque in either direction of rotation. The disc is mounted on the shaft which is to be stopped while the brake assembly is attached to the machine frame. Pressurizing the brake compresses the brake springs and withdraws the clamping force from the brake disc so the shaft can rotate freely. As air pressure is exhausted, the springs force the pressure plate towards the mounting flange and the spring housing which in turn forces the floating plate away from the mounting flange, clamping the disc and the friction pad assembly.

Typical Applications

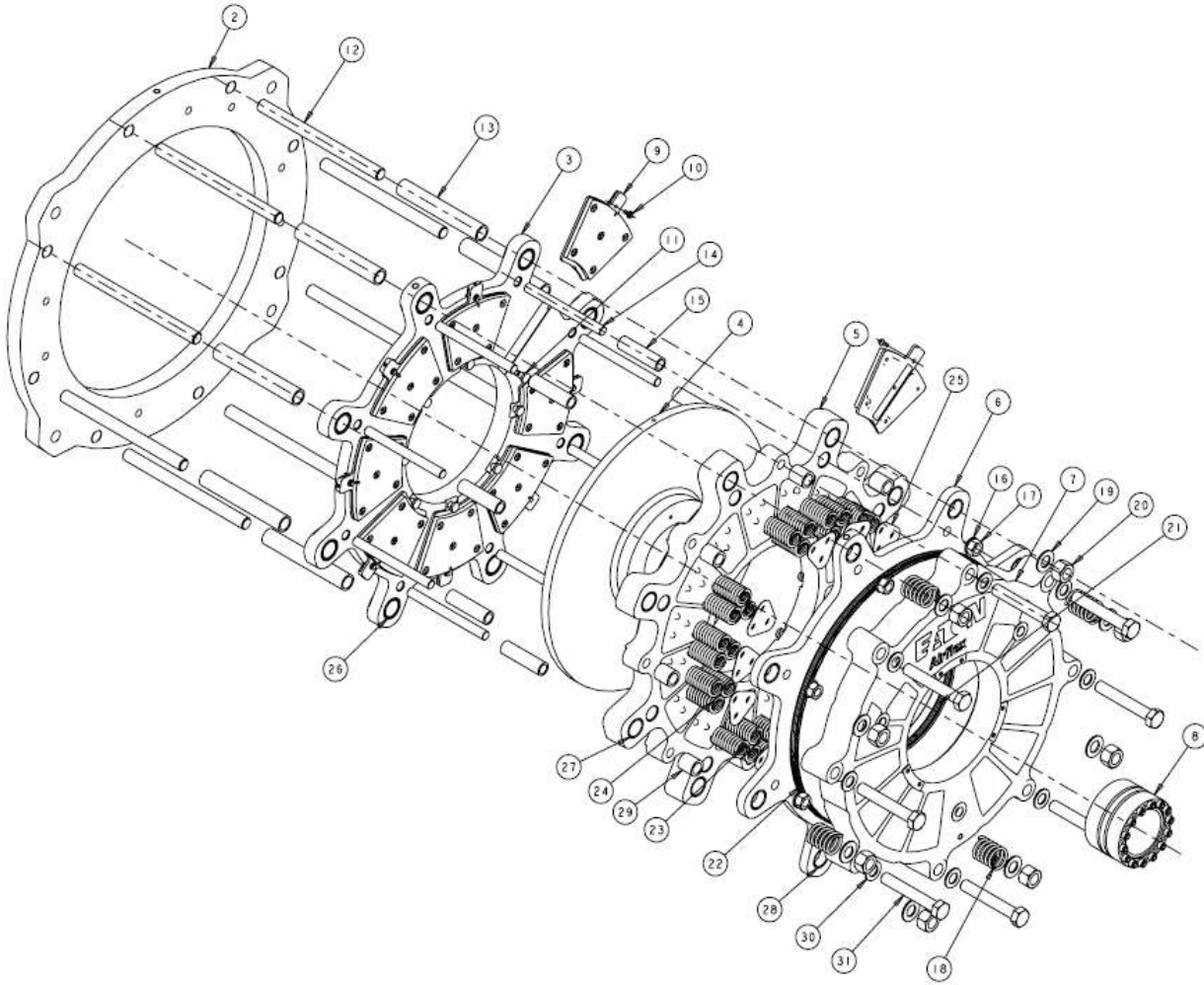
Draglines	Electric Shovels	Winches
Hoist	Hoist	
Drag	Crowd	
Swing	Swing	
Propel (Walk)	Propel	

Size	No. of Spring Sets	Dynamic Torque*		Max RPM	Length Engaged		Length Released	
		lb-in	N-m		in.	mm.	in.	mm.
138FHB	36	432,900	48,918	950	18.24	463.3	18.48	469.39

*Dynamic torque calculated based on 36 sets of springs, static torque is approximately 15% more. Torque in each application is dependent on number of spring sets.

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Typical Applications

Item	Qty.	Description	Part Number
*2	1	Mounting Flang	515532
3	1	Floating Plate	515503
*4	1	Disc	515536
5	1	Pressure Plate	515505
6	1	Spring Housing	515507
7	1	Cylinder	515509
*8	1	B-Loc	417385-02
9	16	Friction Linning S/A	308589
10	16	Flanged Bolt	308602
11	16	Metric Shoulder Screw	308593
12	8	Main Stud	308601-01
13	8	Clamp Tube	308586-01
14	8	Support Stud	308592-01
15	8	Spacer	308590-01
16	8	Plain Washer	000067X0063

Typical Applications

Item	Qty.	Description	Part Number
17	8	Nut	000414X0013
18	4	Return Spring	416751-04
19	8	Plain Washer	000067X0065
20	8	Nut	000414X0004
21	2	Lip Seal	000402X0005
22	2	Lip Seal	000402X0006
**23	36	Inner Apply Spring	416751-08
**24	36	Outer Apply Spring	416751-07
25	12	Spring Retainer	415635
26	8	FP Bush	204214-01
27	8	PP Bush	204214-02
28	8	SH Bush	204214-03
29	8	Power Head Spacer	308599-01
30	8	Plain Washer	000067X0064
31	8	Screw	000391X3602

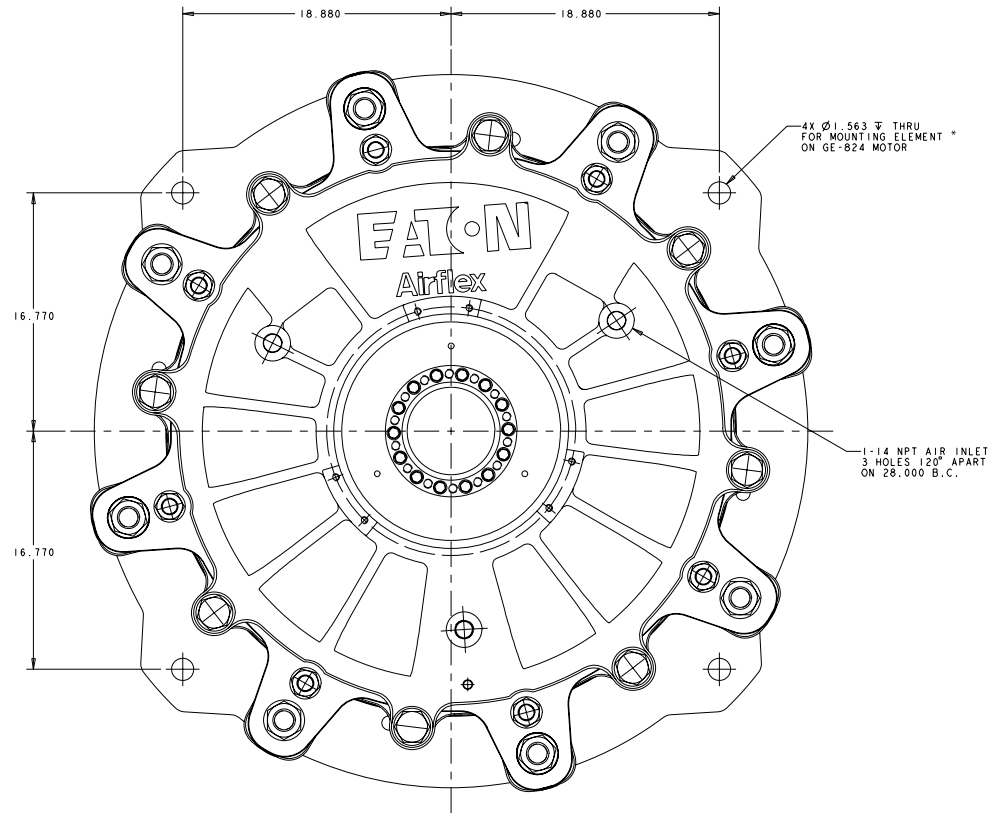
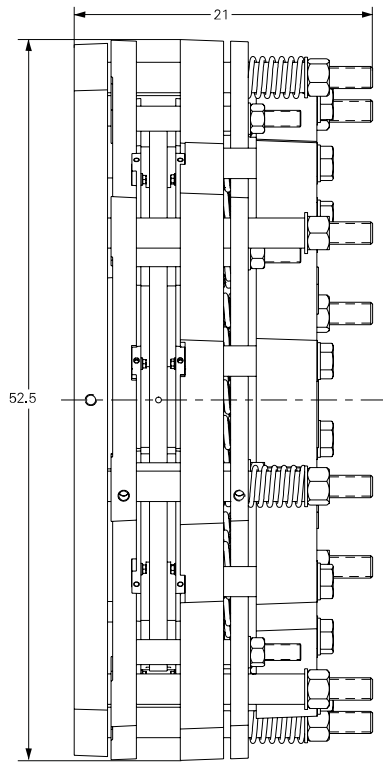
*Part number may vary - depending on application

**Quantity may vary - depending on application requirements

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138FHB Specifications and Dimensions Illustrated

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* Consult factory for alternate mounting options.