

**Eaton Floating Housing Brake**  
Airflex product line



**EATON**

*Powering Business Worldwide*

# Airflex FHB brake elements

These spring-applied, pressure released, disc style brakes develop equal torque in either direction of rotation. The revolutionary floating housing concept helps provide quick change friction capability with longer friction life than traditional caliper brakes.

## 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

# Airflex FHB brake elements

## 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.

Size	No. of spring sets	Dynamic Torque*		Max. RPM	Length Engaged		Length released	
		lb-in	N-m		in	mm	in	mm
130FHB	32	288,000	32,540	960	17.55	455.8	17.79	451.90
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.

## Typical applications

### 130FHB



#### Draglines

- Hoist
- Drag
- Swing
- Propel/Walk

#### Motor frame compatible

- GE820/822
- P&H 8412D

### 138FHB



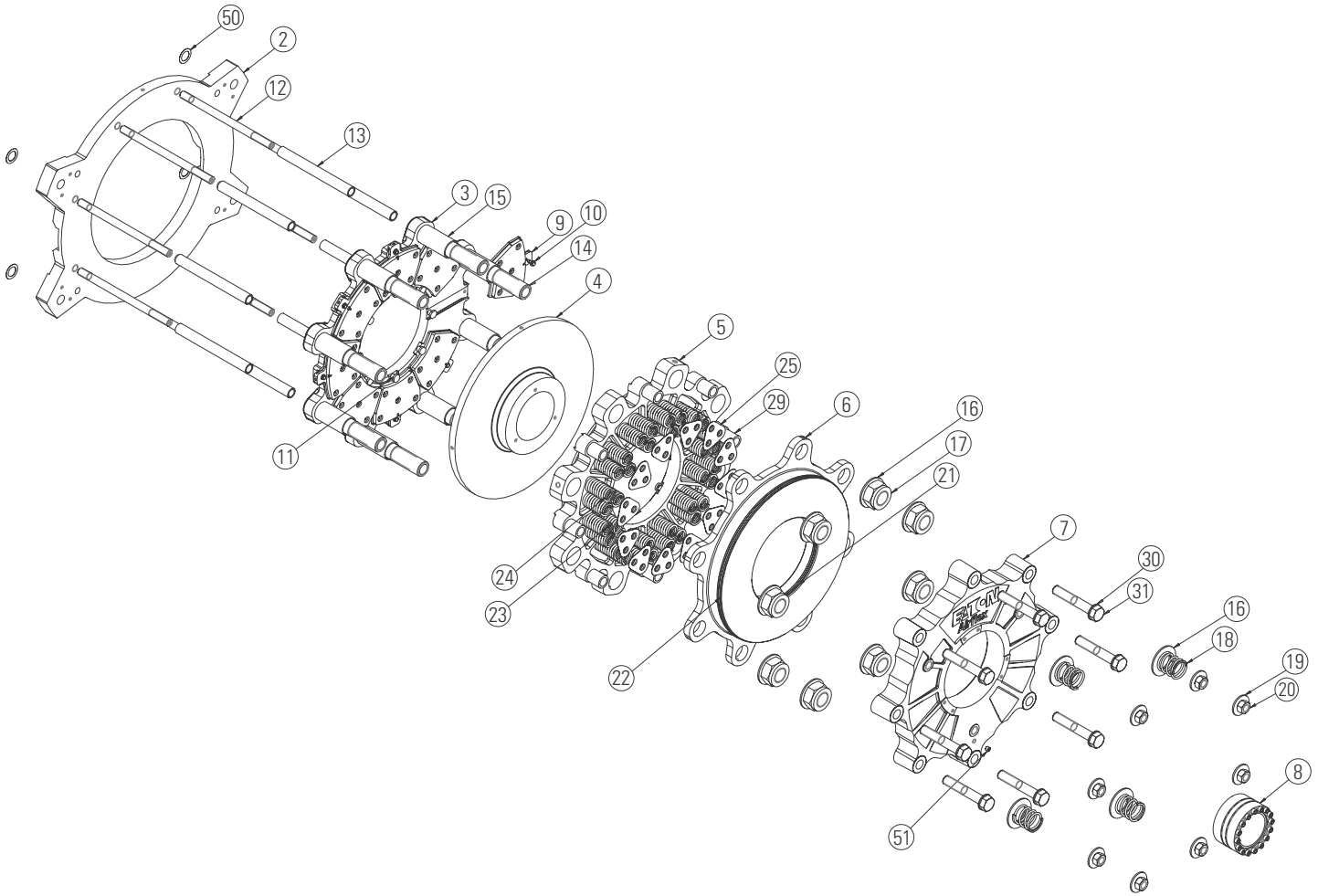
#### Draglines

- Hoist
- Drag
- Swing
- Propel/walk

#### Motor frame compatible

- GE824/826
- Siemens BI348

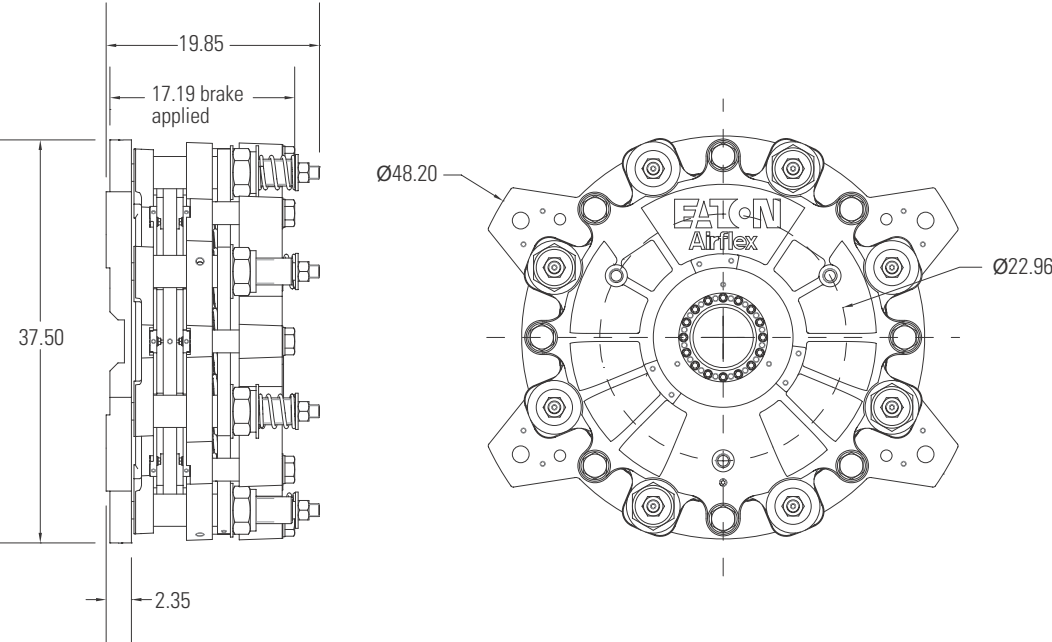
# 130FHB component parts



Item	Qty.	Description	Part number
2	1	Mounting flange	515771
3	1	Floating plate	515773
4	1	Disc	515775
5	1	Pressure plate	515777
6	1	Spring housing	515779
7	1	Cylinder	515781
8	1	TSL	417385-04
9	16	Friction pad S/A	308644
10	16	Special flanged screw	308602
11	16	Shoulder screw (metric)	308593
12	8	Main stud	308635-01
13	8	Large clamp tube	308636-01
14	8	Hollow stud	308637
15	8	Spacer (small clamp tube)	308638-01
16	12	Flat washer	000067X0023

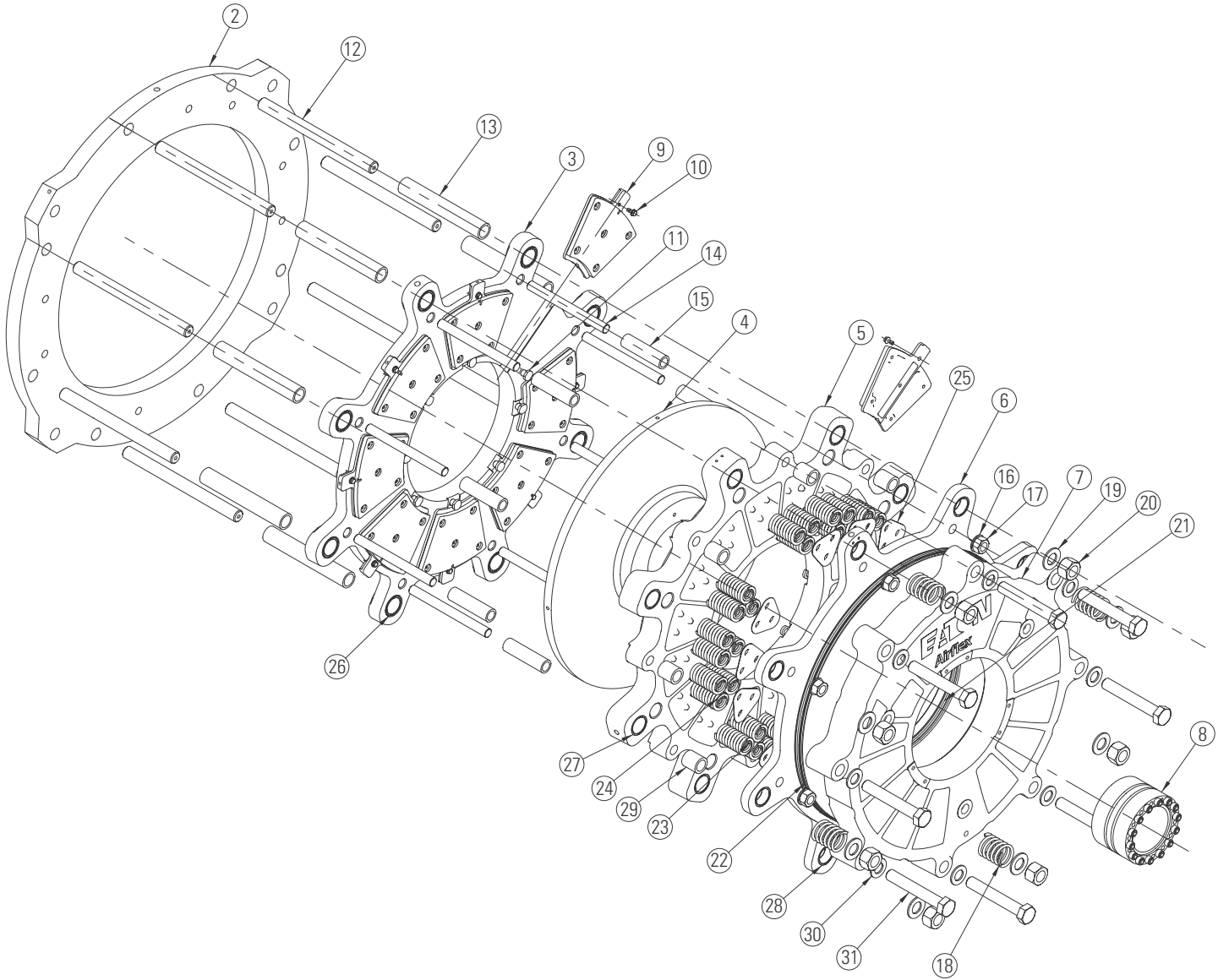
Item	Qty.	Description	Part number
17	8	Self locking nut	000110X0094
18	4	Release spring	416751-15
19	8	Custom washer (release)	204243
20	8	Self locking nut	000414X0013
21	2	Inner lip seal	000402X0091
22	2	Outer lip seal	000402X0092
23	24	Inner spring	416751-08
24	24	Outer spring	416751-07
25	12	Spring retainer	415635
29	8	Power head spacer	308599-02
30	8	Power head washer	000067X0064
31	8	Power head screw	000391X3605
50	40	Shims	000153X1020
51	1	Drain plug	000077X0021

# 130FHB specifications and dimensions illustrated



Part number	Item
146587A	130FHB assembly for GE-822
146587B	130FHB assembly for (P&H-HAF8412D)
146587C	130FHB assembly for GE-820
108168A	130FHB with shield and guard (GE-822)
108168B	130FHB with shield and guard (P&H-HAF8412D)
108168C	130FHB with shield and guard (GE-820)
108168D	130FHB with new shield and guard (GE-822)

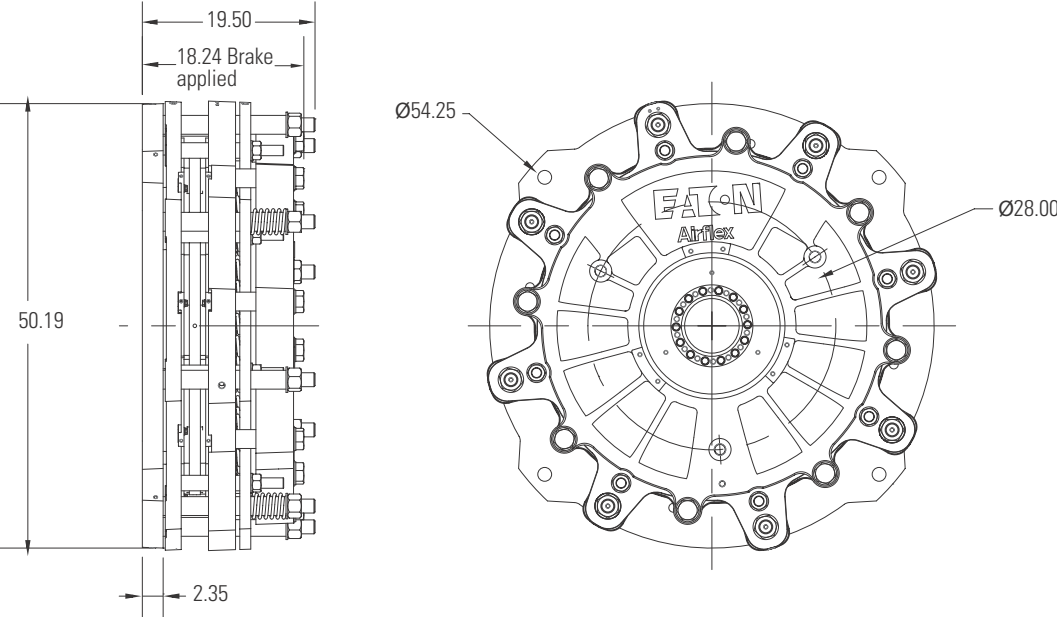
# 138FHB component parts



Item	Qty.	Description	Part number
2	1	Mounting flange	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 lining 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

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

# 138FHB specifications and dimensions illustrated



Part number	Item
146562A	138FHB-GE-824
108154	138FHB-GE-824 w/ shield and guard
108154A	138FHB-GE-824 w/ shield, guard, and sensors
146562B	138FHB-GE-826
146562	138FHB_siemens
515531	Adapter plate for the BI-348 motor

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