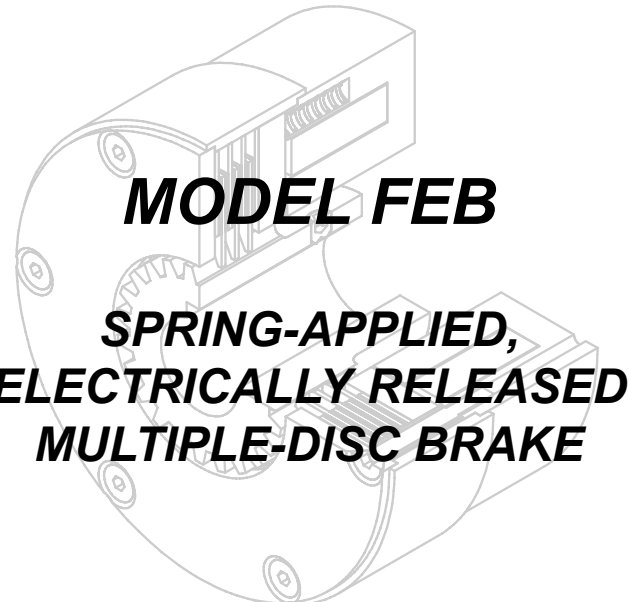




**CARLYLE JOHNSON
MAXITORQ®**



**MODEL FEB
SPRING-APPLIED,
ELECTRICALLY RELEASED
MULTIPLE-DISC BRAKE**

**INSTALLATION
MANUAL**

*The Carlyle Johnson Machine Company, LLC
291 Boston Turnpike / P O Box 9546 / Bolton, Connecticut 06043
1 - (860) - 643 -1531 / Toll Free: 1 - (888) - MAXITORQ
www.cjmco.com*

SAFETY WARNING

**ALWAYS DISCONNECT POWER
AND PLACE EQUIPMENT IN REST POSITION
(WITH NO STORED ENERGY)
BEFORE PERFORMING SERVICE
OR REMOVING/REINSTALLING BRAKE**

**WHEN ON-EQUIPMENT
ELECTRICAL READINGS ARE REQUIRED,
INSTRUMENTS / METERS
MUST BE ATTACHED
PRIOR TO RECONNECTING LEADS
AND INTRODUCING POWER TO SYSTEM**

**DISASSEMBLY OF BRAKE
SHOULD ONLY BE ATTEMPTED
BY FACTORY-TRAINED PERSONNEL**

**STRONG SPRING FORCES ARE PRESENT
WITHIN BRAKE
WHICH WILL CAUSE INJURY
TO MAINTENANCE PERSONNEL
IF BRAKE IS DISASSEMBLED
WITHOUT USING PROPER EQUIPMENT**

**BRAKE SHOULD BE RETURNED
TO FACTORY
FOR ALL SERVICE**

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ASSEMBLY DIAGRAM

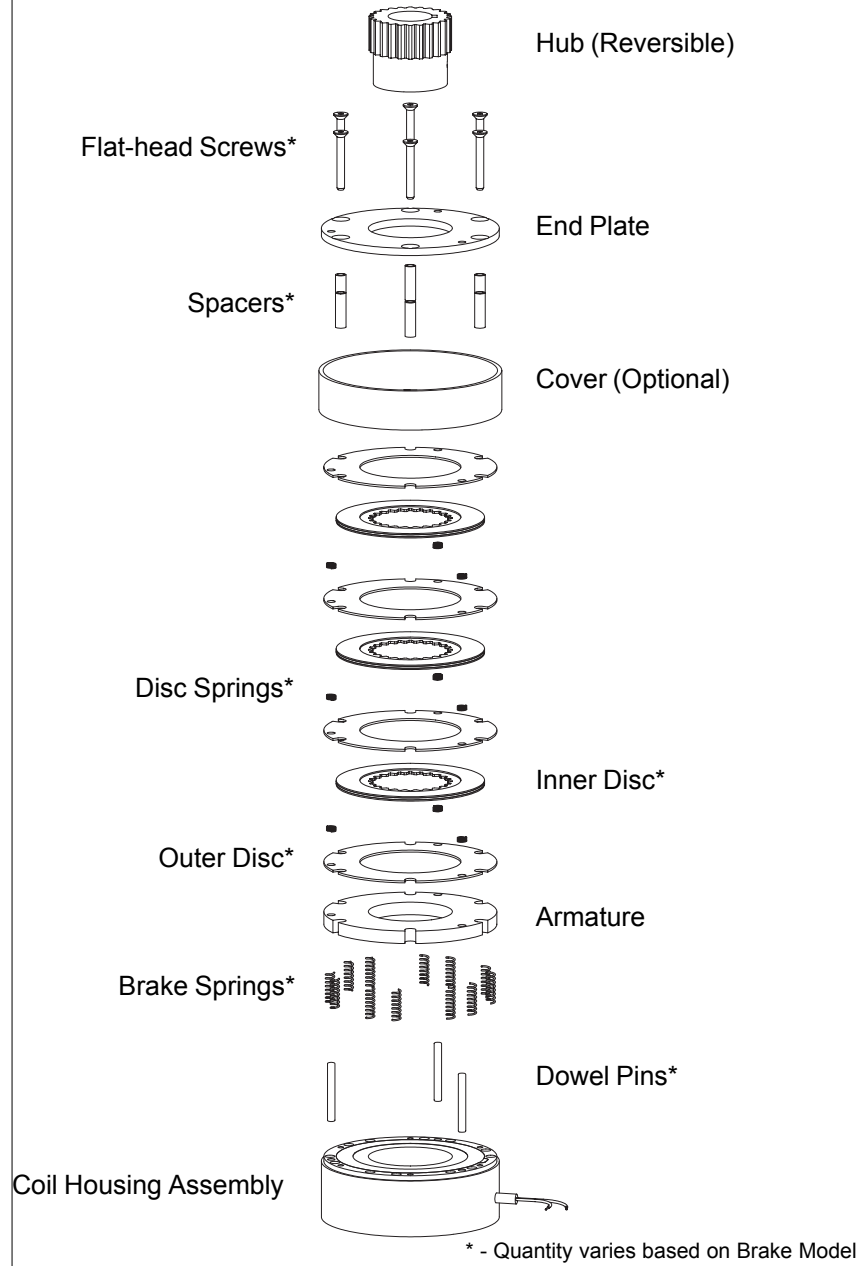


Figure 1

BRAKE SECTIONED VIEW

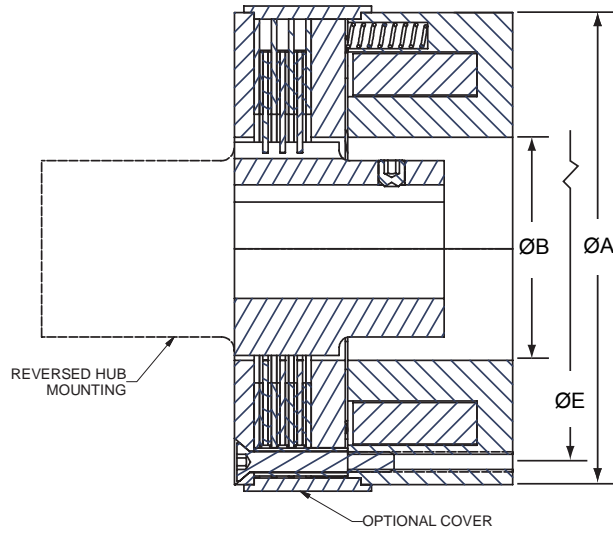


Figure 2

BRAKE CUT-AWAY VIEW

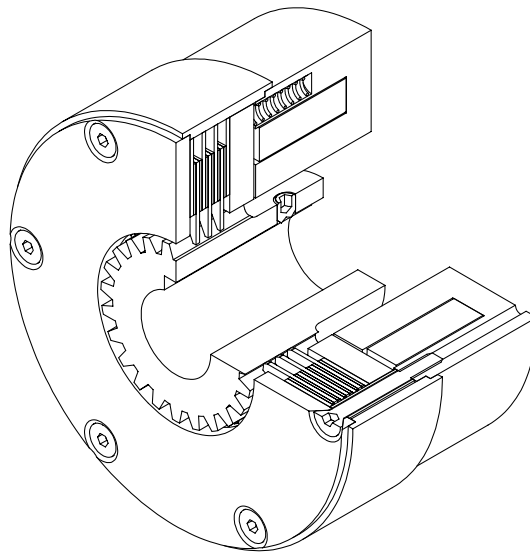


Figure 3

BRAKE INSTALLATION

Model FEB brakes must be correctly installed and accurately aligned to give satisfactory performance. Most performance problems are the result of incorrect installation or brake/shaft misalignment.

Premature wear, damage, or failure of Model FEB brakes due to improper installation, alignment, or use is not covered by warranty.

LOCATING DIAMETERS

The brake may be piloted on the O.D. ($\varnothing A$ in Figure 2) or on the Bore Diameter ($\varnothing B$ in Figure 2).

Dimensions for the different FEB brakes are shown in "***BRAKE MECHANICAL SPECIFICATIONS***" on Page 6, together with the diameter of the Bolt Circle ($\varnothing E$ in Figure 2).

ALIGNMENT OF HUB TO BRAKE BORE

When the brake is tested at the factory prior to shipment, the Hub is accurately aligned with the brake bore, and discs are centered in the brake. If this setting is disturbed before or during installation, it must be restored or proper brake operation will not be possible.

Prior to starting installation, check that the Hub is centered in the bore, and that the centerline of the hub is coincident with the centerline of the bore. Make this determination with the Hub inserted with the spline end "up" toward the cover end (away from the Coil Housing Assembly end) of the brake.

Place the brake "face down" (with the Coil Housing Assembly up) on a flat surface. Observe the relationship of the Hub to the bore. If it is centered, the brake can be installed. If adjustment is needed, do the following:

Obtain a suitable power supply (**Read the SAFETY WARNING inside the front cover**). Apply power to the brake to disengage it and allow free movement of the discs.

Using pins or a spacer, adjust the location of the hub until it is centered in the brake bore

Remove the power, which will engage the brake. The Hub can be removed, and the discs will stay aligned, so that when installed the Hub will be accurately centered.

SHAFT TO BRAKE ALIGNMENT

After attaching the Hub to a drive shaft, the Hub and brake must be held concentric within .005 TIR. Misaligned shaft/hub and brake will result in unsatisfactory brake wear, and may prevent the brake from engaging when power is removed.

BRAKE INSTALLATION, con't

ATTACHMENT OF HUB TO SHAFT

The brake Hub is intended to be mounted on a finished shaft with a square key to transmit torque. It is important that after the hub is attached, the relationship of the hub and shaft is inspected carefully.

The hub must fit securely on the shaft and be centered. There can be no eccentric motion of the outer spline of the hub when the shaft is rotated. Any such "wobble" due to improper attachment, bent shaft, or lack of shaft support will result in incorrect brake performance and premature brake failure.

BRAKE MOUNTING

Model FEB brakes contain 6 or 8 threaded holes (depending on brake model - see "***BRAKE MECHANICAL SPECIFICATIONS***" in this manual) for mounting. To achieve proper performance at rated torque, all holes must be used for attachment to a stationary location, utilizing the specified size attaching bolt or screw. Failure to correctly install the brake may result in poor operation, brake failure, and injury to personnel.

Screws must be tightened to torque levels with minimum thread engagement as specified (see "***BRAKE MECHANICAL SPECIFICATIONS***"), and in applications with high vibration levels, screws must be coated with Loctite or a similar sealant.

We recommend using Loctite 272 sparingly in ALL applications for mounting screws.

BRAKE TO MOUNTING SURFACE PERPENDICULARITY

In addition to the shaft/brake alignment, the brake must be mounted to a surface which is precisely perpendicular to the axis of the driving shaft. The maximum deviation cannot exceed .005", measured across the diameter of the brake.

There is no provision within the brake design to compensate for any brake misalignment. As with alignment of rotating centers above, lack of perpendicularity will result in accelerated wear, damage, and possible injury to operating personnel, since the brake may be unable to fully engage, stop, or hold the rotating device to which it is attached.

BRAKE MECHANICAL SPECIFICATIONS

Model	Static Torque (Lb. Ft.)	Locating \varnothing (in.)			Bolt Circle \varnothing (in.)		Mounting Bolts ²			Air Gap (in) (\pm .005)
		A ⁴	B ⁴	E ⁴	Qty/Size	Minimum Thread Engagement (in)	Torque Required ^{1,3}			
FEB 250	15	2.50	0.82	2.188	6 x #8-32	3/8	15 Lb-In	0.023		
FEB 350	35	3.50	1.50	3.125	6 x #10-24	7/16	27 Lb-In	0.023		
FEB 450	75	4.50	2.13	4.063	6 x #10-24	7/16	27 Lb-In	0.023		
FEB 600	175	6.00	2.88	5.500	6 x 1/4-20	1/2	64 Lb-In	0.028		
FEB 800	300	8.00	3.88	7.500	8 x 1/4-20	1/2	64 Lb-In	0.034		
FEB 1000	550	10.00	4.88	9.375	8 x 5/16-18	5/8	125 Lb-In	0.035		

NOTES:

- 1 #6 and #8 screws - use Grade 5 equivalent or better fasteners
1/4" and 5/16 bolts - use min Grade 5 fasteners
- 2 In applications with high vibration levels, use of Loctite or similar thread sealant is required
We recommend use of Loctite sparingly in ALL applications
- 3 Use same torque specifications for brake assembly when tightening flat-head screws
- 4 See Figure 2

Table 1

BRAKE ELECTRICAL SPECIFICATIONS

Model	Power (Watts)	Current (amps)		Recommended Fuse ¹ (amps)		Coil Resistance (ohms)		Minimum voltage to energize (volts)		Minimum holding voltage ²		Maximum overenergizing voltage ³	
		24-volt	100-volt	24-volt	100-volt	24-volt	100-volt	24-volt	100-volt	24-volt	100-volt	24-volt	100-volt
FEB 250	30	1.25	0.30	1.75	0.50	19	330						
FEB 350	40	1.67	0.40	2.25	0.75	14	250						
FEB 450	50	2.08	0.50	3.00	0.75	12	200	22	90	14	60	36	150
FEB 600	55	2.29	0.55	4.00	1.00	10	180						
FEB 800	60	2.50	0.60	4.00	1.00	10	166						
FEB 1000	75	3.13	0.75	5.00	1.25	8	133						

NOTES:

- 1 Always follow manufacturer's recommendations - fuse is intended to protect upstream equipment
Use this table ONLY if no fuse specified
- 2 Recommendations are based on Buss Type AGC fuse
- 3 After applying full voltage for one second, voltage may be reduced to these values to hold brake disengaged
- 3 For rapid disengagement, or during maintenance/disassembly, coil may be overenergized for not more than one second

Table 2

CONTACTING THE FACTORY

Carlyle Johnson is located in the Eastern Time Zone of the United States, and may be reached on normal workdays from 8:00 AM to 5:00 PM local time.

By Telephone: 1-(860) 643-1531 Option "3" for Sales then Option "2" for Application Engineering (Main Number)

1-(888) MAXITORQ (629-4867) Option "3" for Sales then Option "2" for Application Engineering (Toll Free in the USA)

By FAX: 1-(860) 646-2645

By EMail: maxitorq@cjmco.com

Internet: www.cjmco.com

Mail: 291 Boston Turnpike
P O Box 9546
Bolton, Connecticut 06043-9546 USA

RETURNING PRODUCTS FOR REPAIR

Contact Carlyle Johnson as above, and request a Returned Material Authorization (RMA) Number. Package the brake securely, and write the RMA number on the outside of the package.

Ship the package prepaid and insured to the above address.

Your brake will be evaluated and you will be contacted before repairs begin. If the product is within its warranty period and warranty coverage applies, it will be repaired and returned to you prepaid without charge.

If your brake is outside its warranty coverage, we will advise you as to the cost to restore it to like-new condition. If you decide to have the unit returned without repair, an evaluation charge may apply.

PURCHASING REPLACEMENT PARTS

You may reach our Replacement Parts professionals by calling Carlyle Johnson at the above numbers. Select Option "3" for SALES and then Option "1" for SPARE PARTS.

Have the model number and serial number of your brake available for the Customer Service representative, who will assist you in obtaining parts.

You may also write, fax, or EMail our Sales Department for quotations on parts.

NOTES



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