

Global Series Brake

Instruction Manual

Models GBA, GBAM, GBB, GBBM, GBC, GBCM, GBD, GBDM, GBE, GBEM, GBF, GBFM



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These brake devices must not be installed or used in a machine or system which does not comply with the machinery directive 2006/42/EC.

These brake devices were designed and manufactured to be installed as Partly Completed Machinery into a machine or partly completed machine.

The instructions must be read and used by all persons who have the responsibility of installing and maintaining these brake devices.

These instructions must be retained and incorporated in the technical documentation for the machine or partly completed machinery into which the brake device is installed.

These are the original instructions, written in English.

CE MARKING

These brake devices are marked with the CE sign according to the low voltage directive 2006/95/EC for the 90 volt coil models. The 24 volt coil models do not carry the CE sign. The air hoods are marked with the CE sign according to the low voltage directive 2006/95/EC.

Electromagnetic Compatibility (EMC)

The brake device is inherently benign in terms of electromagnetic compatibility and the EMC directive has not been applied. The electromagnetic compatibility of the brake device can only be assessed in connection with the entire electrical installation including the control. The machine builder who installs this partly completed machinery into a machine is responsible for compliance with the EMC directive.

MODEL NUMBER KEY

Global brakes purchased with/without attached air hood blower cooling

Format: Series – Size – Coil/Volt – Bore – Cooling – Sxx

Series: GB – Global Brake

Size: A, B, C, D, E, F

Coil/Volt: 24 = 24 volt coil
90 = 90 volt coil

Bore: Blank = English dimension bore diameter
M = Metric dimension bore diameter

Cooling: Blank = No Cooling
A115 = Air Hood with 115 VAC blower motor
A230 = Air Hood with 230 VAC blower motor

Sxx: Specials: Other coil voltages, bore diameters, etc.

Example model number:

GBE90A115 = Global brake, size E with 90 volt coil, English dimension bore diameter and 115 VAC fan cooling.

Air Hood Blower kits purchased separately to be installed by customer on a global brake.

Format: BlowerKit – Series – Size - Voltage

BlowerKit: BK – Blower kit

Series: GB – Global Brake

Size: A, B, C, D, E, F

Voltage: 115 = 115 VAC blower motor
230 = 230 VAC blower motor

Example model number:

BKGBA230 = Air hood blower kit for GBA brake with 230 VAC blower motor.

SAFETY INSTRUCTIONS

To ensure safe and problem free installation of the magnetic particle brake device, the brake must be properly transported and stored, professionally installed and placed in operation. Proper operation and maintenance will ensure a long service life of the device. Only persons who are acquainted with the installation, commissioning, operation and maintenance of the system and who possess the necessary qualifications for their activities may work on the magnetic particle brake. Note: The safety information may not be comprehensive.



- The content of these instructions must be read and followed.
- All national, state, and local requirements for installation, accident prevention and environmental protection must be followed.

The safety instructions and symbols described in this section are used to avoid possible dangers for users and to prevent material damage.



SIGNAL WORD

Source of danger and its results.
Avoiding dangers.

The signal word **WARNING** refers to the danger of moderate to severe bodily injuries or death.

The signal word **CAUTION** refers to the danger of slight to moderate bodily injuries or material damage.



WARNING/CAUTION – General danger or important note

Reference to general hazards that may result in bodily injuries or damage to device or material.



WARNING/CAUTION – danger due to crushing

Reference to danger of injury caused by crushing.



WARNING/CAUTION – danger due to cutting

Reference to danger of injury caused by cutting.



WARNING/CAUTION – danger due to voltage, electric shock

Reference to danger of injury caused by electric shock due to voltage.



WARNING/CAUTION – danger due to hot surfaces

Reference to risk of injury caused by burning.

BASIC SAFETY INFORMATION

PROPER USE:

- The brake devices are intended to be used on machines or systems to control the braking torque of a device connected to the shaft of the brake device.
- Indoor operation, see environmental specifications

IMPROPER USE:

- Operation outside the technical specifications
- Operation in an Ex-area or intrinsically safe area
- Operation as a safety component or safety brake. The brake does not produce torque if the control current fails.
- Outdoor operation
- Any other use than the proper use shall be deemed inappropriate

INSTALLATION AND COMMISSIONING:

- Any brake device which is damaged must not be installed or put into operation.
- Only perform installation, maintenance or repair tasks on the brake device when the machine has been stopped and is secured from being turned on.
- Only perform installation, maintenance or repair tasks on the brake device when there is no electrical power in the system.
- The brake device must be securely mounted before being placed in operation.
- Only replacement parts obtained from Fife may be used.
- No modifications may be made to the brake device.
- Do not place electrical cables under mechanical strain.
- Do not bring this brake device into contact with water or other fluids. Grease or oil on the internal brake parts will cause a loss of torque.



WARNING – The brake device contains rotating parts which could cause injury due to crushing. Appropriate protective guards must be installed by the user according to his use of this product.



WARNING – Death or injury can result from electric shocks. Protect against electric shocks by installing a conductive connection between the terminal marked with the PE symbol on the brake device and air hood and the PE circuit of the building or machine.



WARNING – Danger of falling down or muscle or skeletal injury during installation. The brake devices, especially the larger designs, are heavy. Appropriate equipment is to be used and the safety rules of the company must be observed.

OPERATION:



CAUTION – Burns can result from touching the brake surface during operation. The brake device converts mechanical motion into heat and the surface of the brake will become hot during operation. Appropriate guards must be installed by the user according to his use of the product.



WARNING – The brake device contains rotating parts which could cause injury due to crushing. Do not touch anything on or in the vicinity of the moving or rotating parts. Appropriate protective guards must be installed by the user according to his use of this product.

MAINTENANCE AND REPAIR:



WARNING – Death or injury can result from electric shocks. Maintenance and repair tasks on the brake device must be performed when there is no electrical power in the system.



WARNING – Danger of injury from crushing. Maintenance and repair tasks on the brake device must be performed only when the machine has been stopped and has been secured from being turned on again.



WARNING – Danger of falling down or muscle or skeletal injury during maintenance and repair. The brake devices, especially the larger designs, are heavy. Appropriate equipment is to be used and the safety rules of the company must be observed.

DECOMMISSIONING:

- The brake must be disposed of in accordance with all the applicable national, state and local regulations.

THEORY OF OPERATION

The brake construction consists of two stators, a rotor, a coil assembly, magnetic powder, and two bearings. The bearings support and align the rotor with the stators, and allow the rotor to rotate within the brake assembly. The magnetic powder occupies the space between the stators and the rotor, and represents a key element in the operation of the brake.

The stators are connected to the machine frame through a torque arm and remain stationary. The rotor is connected to a rotating machine shaft, which supports the weight of the brake. The magnetic powder functions as the adjustable bond or link between the stators and the rotor. It is the medium for the transmission of torque.

An electric current in the coil creates a magnetic field (flux), which passes through the stators, magnetic powder, and the rotor. The flux aligns the powder particles, forming a bond or link between the stators and the rotor. The strength of the bonding action (torque) is proportional to the amount of current in the coil. The torque is transmitted to the rotating shaft through the rotor. See figure 1 for a cross-sectional view of the brake.

MECHANICAL INSTALLATION



WARNING – The brake device contains rotating parts which could cause injury due to crushing. Appropriate protective guards must be installed by the user according to his use of this product.



WARNING – Death or injury can result from electric shocks. Installation of the brake device must be performed when there is no electrical power in the system.



WARNING – Danger of injury from crushing. Installation of the brake device must be performed only when the machine has been stopped and has been secured from being turned on again.



WARNING – Danger of falling down or muscle or skeletal injury during maintenance and repair. The brake devices, especially the larger designs, are heavy. Appropriate equipment is to be used and the safety rules of the company must be observed.

1. Unpack the brake, check for completeness and transport damages and verify the nameplate. The GBE/M and GBF/M models should be packed with 2 eye bolts to facilitate lifting and positioning of the brake.
2. The rotor shaft centerline must be mounted within 30° of the horizontal plane.
3. Prior to installation, manually check the rotation of the rotor to observe that it is smooth and free of binding or scraping.
4. Mount the brake on the shaft and tighten the two set screws in the collar using the torque from table 1. This will prevent axial movement of the brake. The GBE/M and GBF/M models have eye bolts which may be installed in the threaded holes to facilitate lifting and positioning of the brake. After installation of the brake on the shaft, remove the eye bolts and store in a safe place for use when removing the brake from the shaft for repair.



WARNING – Danger due to falling or flying objects. Do not leave the lifting eye bolts installed during operation of the brake. These could come loose and fall or be projected from the brake during operation.

	lb-in	N-m
GBA	28	3.2
GBB	48	5.4
GBC	48	5.4
GBD	116	13.1
GBE	229	25.9
GBF	229	25.9

Table 1. Collar Set Screw Tightening Torque

5. Attach a torque arm between the extension bolt(s) and the machine frame with a “loose” or “floating” mount to prevent binding forces on the brake bearings. The torque arm will prevent the rotation of the brake stators. Tighten the mounting bolts to the torque specified in table 2.

	lb-in	N-m
GBA	30	3.4
GBB	30	3.4
GBC	51	5.8
GBD	124	14
GBE	249	28.1
GBF	860	97.2

Table 2. Mounting Bolt Tightening Torque



CAUTION – Damage to the fan on blower models can result from the shaft extending past the end of the brake and hitting the fan blades. On blower models ensure the shaft does not extend past the end of the brake.

ELECTRICAL INSTALLATION



WARNING – Death or injury can result from electric shocks. Installation of the brake device must be performed when there is no electrical power in the system.

Never break the electrical connection to the device with a switch or similar component while the brake device is energized. The inductive voltage generated by breaking the current flow may breakdown the coil insulation system and may pose a shock hazard. Destruction of the electronics of the power amplifier or control unit may also occur.

Never place electrical cables under mechanical strain. Always route wiring in either flexible or rigid conduit.

Protection class 1: Protection class 1 is based on an intact basic insulation and when all conductive parts are connected to the PE (Protective Earth) conductor on the permanent installation.

All wiring must comply with the essential requirements of the appropriate standard(s) and is the responsibility of the installer.

Wiring to the brake and blower kit must be insulated copper wire with a temperature rating of at least 105 °C. The wire size should be 0.52 or 0.82 mm² (20 or 18 AWG).

The tightening torque for the terminals is 0.4 N-m (3.5 lb-in).

For both 24 VDC and 90 VDC devices:

1. Mount a conduit fitting in one of the junction box knock-outs.
2. Connect DC (direct current) power source to the terminals marked 1 and 2.
3. Connect the protective grounding circuit to the terminal marked with the P.E. symbol.



WARNING – Death or injury can result from electric shocks. Protect against electric shocks by installing a conductive connection between the terminal marked with the PE symbol on the brake device and the PE circuit of the building or machine.

4. Connect the appropriate AC (alternating current) power source to the terminals marked 1 and 2 of the blower if it exists.
5. Connect the protective grounding circuit to the terminal marked with the PE symbol of the blower if the blower exists.



SPECIFICATIONS



WARNING – Do not use the devices outside of their rated specifications.

Temperature Range:

Operating

0°C to 40°C

Storage

-30° to +80°C

Relative Humidity:

5% to 85%

Pollution Degree:

2 (IEC664-1)

Altitude:

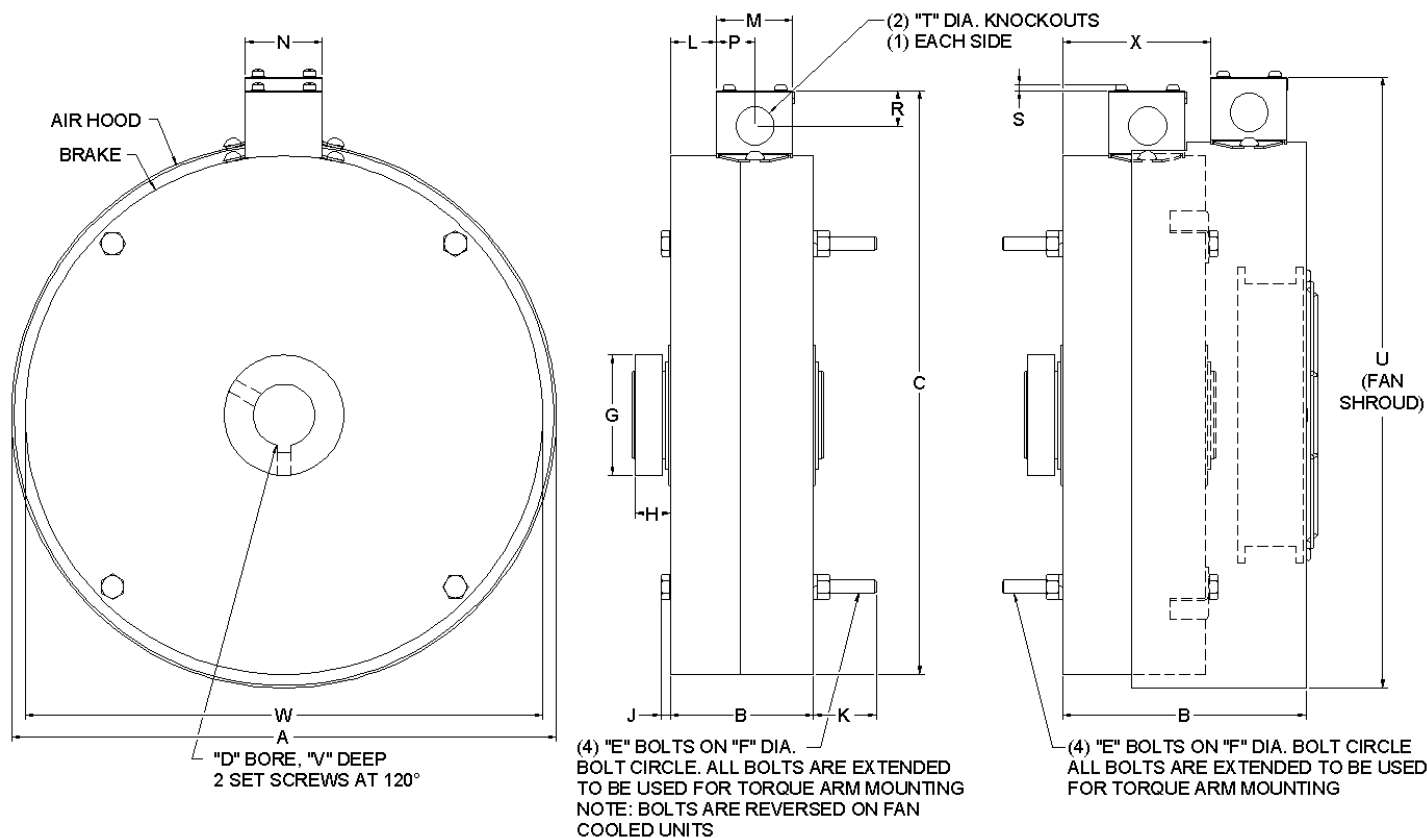
0 to 2000 meters

Maximum RPM:

1800 RPM

NOTE: All rated current and resistance is for Class F coils.

Models (also applies to metric models)	Rated Torque		Heat Dissipation (Watts)	Non-Excited Drag Torque		Inertia (WR ²) of Rotating Members		Weight		Coil Data		Fan Current (Amps)		Time Constants (Seconds)	
	lb-ft	N-m		lb-ft	N-m	lb-ft ²	kg-m ²	Lb	kg	Rated Current (Amps)	Ohms @ 20°C	115 VAC	230 VAC	Current	Torque
GBA-90	5.5	7.5	88	0.07	0.09	0.013	5.5e-4	11	5	0.16	361	—	—	0.06	0.22
GBA-90 AIR			295					14	7			0.19	0.09		
GBA-24			88					11	5	0.76	20.8	—	—	0.06	0.22
GBA-24 AIR			295					14	7			0.19	0.09		
GBB-90	11	14.9	85	0.07	0.09	0.030	1.3e-3	15	7	0.21	278	—	—	0.09	0.18
GBB-90 AIR			351					17	8			0.19	0.09		
GBB-24			85					15	7	1.00	15.7	—	—	0.09	0.18
GBB-24 AIR			351					17	8			0.19	0.09		
GBC-90	26	35.2	155	0.23	0.31	0.08	3.4e-3	25	11	0.32	186	—	—	0.10	0.28
GBC-90 AIR			556					28	13			0.19	0.09		
GBC-24			155					25	11	1.18	13.2	—	—	0.10	0.28
GBC-24 AIR			556					28	13			0.19	0.09		
GBD-90	56	75.9	195	0.56	0.76	0.30	0.013	38	17	0.39	150	—	—	0.16	0.36
GBD-90 AIR			657					42	19			0.19	0.09		
GBD-24			195					38	17	1.54	10.2	—	—	0.16	0.36
GBD-24 AIR			657					42	19			0.19	0.09		
GBE-90	100	135	320	3.5	4.75	0.33	0.014	75	34	0.45	129	—	—	0.56	1.38
GBE-90 AIR			1230					86	39			0.23	0.11		
GBE-24			320					75	34	1.58	9.95	—	—	0.56	1.38
GBE-24 AIR			1230					86	39			0.23	0.11		
GBF-90	325	441	595	10.0	13.5	1.97	0.083	180	81.6	0.53	111	—	—	1.12	1.88
GBF-90 AIR			1930					191	86.6			0.34	0.17		
GBF-24			595					180	81.6	1.61	9.21	—	—	1.12	1.88
GBF-24 AIR			1930					191	86.6			0.34	0.17		



Note: Mounting bolts are reversed on fan cooled units.

English Model Dimensions (Inches)

Model Number	A	B	C	D -0.000	Keyway	Set Screws (mm)	E (mm)	F	G	H	J	K	L	M	N	P	R	S	T	U	V	W	X
GBA	—	2.25	6.81	0.500 +0.001	NONE	M5x0.8	M5x0.8	4.81	1.38	0.38	0.12	0.75 0.69	0.46	1.75	1.75	0.88	0.81	0.12	0.88	—	THRU	5.31	—
GBA-AIR	6.84	4.56	6.81	0.500 +0.001	NONE	M5x0.8	M5x0.8	4.81	1.38	0.38	0.12	0.75 0.69	0.46	1.75	1.75	0.88	0.81	0.12	0.88	8.34	2.63	5.31	2.36
GBB	—	2.28	7.45	0.625 +0.001	3/16x3/32	M6x1.0	M5x0.8	5.50	1.75	0.44	0.12	0.72 0.66	0.46	1.75	1.75	0.88	0.81	0.12	0.88	8.34	2.72	5.94	—
GBB-AIR	6.84	4.59	7.45	0.625 +0.001	3/16x3/32	M6x1.0	M5x0.8	5.50	1.75	0.44	0.12	0.72 0.66	0.46	1.75	1.75	0.88	0.81	0.12	0.88	8.34	2.72	5.94	2.37
GBC	—	2.50	9.03	0.750 +0.001	3/16x3/32	M6x1.0	M6x1.0	6.94	1.88	0.44	0.16	1.00 0.94	0.57	1.75	1.75	0.88	0.81	0.12	0.88	9.66	2.94	7.50	—
GBC-AIR	8.13	4.56	9.03	0.750 +0.001	3/16x3/32	M6x1.0	M6x1.0	6.94	1.88	0.44	0.16	1.00 0.94	0.57	1.75	1.75	0.88	0.81	0.12	0.88	9.66	2.94	7.50	2.19
GBD	—	2.81	10.42	1.000 +0.001	1/4x1/8	M8x1.25	M8x1.25	8.25	2.38	0.50	0.20	0.94 0.88	0.73	1.75	1.75	0.88	0.81	0.12	0.88	10.91	3.31	8.88	—
GBD-AIR	9.50	4.87	10.42	1.000 +0.001	1/4x1/8	M8x1.25	M8x1.25	8.25	2.38	0.50	0.20	0.94 0.88	0.73	1.75	1.75	0.88	0.81	0.12	0.88	10.91	3.31	8.88	2.36
GBE	—	3.29	13.38	1.375 +0.002	5/16x5/16	M10x1.5	M8x1.25	11.13	2.75	0.80	0.24	1.22 1.16	1.06	1.75	1.75	0.88	0.81	0.12	0.88	—	THRU	11.88	—
GBE-AIR	12.50	5.59	13.38	1.375 +0.002	5/16x5/16	M10x1.5	M8x1.25	11.13	2.75	0.80	0.24	1.22 1.16	1.06	1.75	1.75	0.88	0.81	0.12	0.88	14.00	4.37	11.88	3.40
GBF	—	4.66	17.29	1.750 +0.002	3/8 SQ.	M10 x 1.5	M12x1.5	14.72	3.50	0.86	0.35	1.64 1.58	1.65	1.75	1.75	0.88	0.81	0.12	0.88	—	THRU	15.75	—
GBF-AIR	16.75	8.28	17.29	1.750 +0.002	3/8 SQ.	M10 x 1.5	M12x1.5	14.72	3.50	0.86	0.35	1.64 1.58	1.65	1.75	1.75	0.88	0.81	0.12	0.88	18.45	6.69	15.75	6.08

Metric Model Dimensions (Millimeters)

Model Number	A	B	C	D -0.000	Keyway	Set Screws	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V	W	X
GBAM	—	57	173	14 H8 +0.025	NONE	M5x0.8	M5x0.8	122.2	35	10	3	19 18	11	44	44	22	21	3	22	—	THRU	135	—
GBAM-AIR	174	116	173	14 H8 +0.025	NONE	M5x0.8	M5x0.8	122.2	35	10	3	19 18	11	44	44	22	21	3	22	212	67	135	60
GBBM	—	58	189	17 H8 +0.025	5 x 2.5	M6x1.0	M5x0.8	139.7	44	11	3	18 17	12	44	44	22	21	3	22	212	69	151	—
GBBM-AIR	174	117	189	17 H8 +0.025	5 x 2.5	M6x1.0	M5x0.8	139.7	44	11	3	18 17	12	44	44	22	21	3	22	212	69	151	60
GBCM	—	64	229	19 H8 +0.025	6 x 3	M6x1.0	M6x1.0	176.2	48	11	4	25 24	14	44	44	22	21	3	22	245	75	190	—
GBCM-AIR	207	116	229	19 H8 +0.025	6 x 3	M6x1.0	M6x1.0	176.2	48	11	4	25 24	14	44	44	22	21	3	22	245	75	190	56
GBDM	—	71	265	25 H8 +0.025	8 x 3.5	M8x1.25	M8x1.25	209.6	60	13	5	24 22	19	44	44	22	21	3	22	277	84	226	—
GBDM-AIR	241	124	265	25 H8 +0.025	8 x 3.5	M8x1.25	M8x1.25	209.6	60	13	5	24 22	19	44	44	22	21	3	22	277	84	226	60
GBEM	—	83	340	35 H8 +0.051	10 x 8	M10x1.5	M8x1.25	282.6	70	20	5	37 35	27	44	44	22	21	3	22	—	THRU	302	—
GBEM-AIR	318	142	340	35 H8 +0.051	10 x 8	M10x1.5	M8x1.25	282.6	70	20	5	37 35	27	44	44	22	21	3	22	356	111	302	86
GBFM	—	118	439	45 H8 +0.051	14 x 9	M10x1.5	M12x1.5	373.8	89	22	9	42 40	42	44	44	22	21	3	22	—	THRU	400	—
GBFM-AIR	425	210	439	45 H8 +0.051	14 x 9	M10x1.5	M12x1.5	373.8	89	22	9	42 40	42	44	44	22	21	3	22	469	170	400	154

RATED COIL CURRENTS

NOTE: The coil system has changed from Class A to Class F. Refer to the nameplate on your unit to determine which insulation class you have. If you have Class F insulation, the nameplate will denote Class F. If you have Class A, there will be no notation on the nameplate. All new brake products have Class F coils.

	Rated Current, Amp DC	
	Coil Voltage, VDC	
	24	90
Model	Class F	Class F
GBA, GBAM	0.76	0.16
GBB, GBBM	1.00	0.21
GBC, GBCM	1.18	0.32
GBD, GBDM	1.54	0.39
GBE, GBEM	1.58	0.46
GBF, GBFM	1.61	0.53

Legacy Models (Before 2003)	Rated Current, Amp DC	
	Coil Voltage, VDC	
	24	90
Model	Class A	Class A
GBA, GBAM	0.60	0.15
GBB, GBBM	0.88	0.19
GBC, GBCM	1.25	0.28
GBD, GBDM	1.36	0.37

MAXIMUM COIL CURRENTS AT 0°C

This table shows the maximum current draw at rated voltage when the coil is at 0°C.

	Maximum Current @ 0°C, Amp DC			
	Coil Voltage, VDC			
	24		90	
Model	Class A	Class F	Class A	Class F
GBA, GBAM	0.94	1.32	0.25	0.28
GBB, GBBM	1.06	1.75	0.28	0.37
GBC, GBCM	1.56	2.06	0.42	0.55
GBD, GBDM	2.03	2.68	0.54	0.69
GBE, GBEM	---	2.76	---	0.80
GBF, GBFM	---	2.98	---	0.93

MAINTENANCE



WARNING – Death or injury can result from electric shocks.

Maintenance and repair of the brake device must be performed when there is no electrical power in the system.



WARNING – Danger of injury from crushing.

Maintenance and repair of the brake device must be performed only when the machine has been stopped and has been secured from being turned on again.



WARNING – Danger of falling down or muscle or skeletal injury during maintenance and repair.

The brake devices, especially the larger designs, are heavy. Appropriate equipment is to be used and the safety rules of the company must be observed.

Due to its small number of moving components and its basic design, maintenance of the brake is generally necessary only after extended service. The main loss of function occurs by the magnetic powder eventually deteriorating and manifests itself as the maximum torque of the brake slowly decreasing until it no longer produces sufficient torque for the application. When a problem appears in the system, ensure that all couplings, belts, etc., and the control device are functioning properly. Use the Troubleshooting guide below to determine the cause of the problem. For general maintenance, the brakes can be rebuilt with a repair kit. A repair kit includes a new powder charge and the appropriate bearings, seals and snap rings generally needed to rebuild the unit.

NOTE: When ordering parts not contained in the kit, provide the model number, serial number and parts list item number and description from Figure 1.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	ACTION
Load is not controlled by brake	Power supply voltage output low	Replace or repair control
	Magnetic powder has deteriorated	Overhaul the brake
	Coil is open	Replace coil
Load operates in an intermittent manner with proper voltage	Coil is intermittently open	Replace coil
Brake is noisy and has vibration	Bearings are worn	Overhaul brake using repair kit

DISASSEMBLY (Refer to Figure 1)

1. Remove the set screws and collar from the rotor shaft and remove the brake from the shaft. For the GBE/M and GBF/M models use the supplied eye bolts to facilitate lifting and positioning of the brake.
2. Remove the external snap rings from both sides of the rotor shaft.
3. Remove the three (four) screws which hold the left and right stators together.
4. Separate the stator frames by tapping on the end of the rotor with a soft mallet (all models except GBE/GBEM and GBF/GBFM). Tap on the right stator side first. The rotor will remain attached to the left stator. For the GBE/GBEM/GBF/GBFM insert the 4 bolts removed in step 3 into the tapped holes in the left stator frame and screw them in evenly to separate the stator halves.

NOTE: Removal of the junction box and cover are not required.



CAUTION – Damage to the stator halves may occur.

Do not attempt to pry the left and right stators apart with a screwdriver or wedge. This can damage the mating surfaces and could result in a loss of torque.

5. Remove the coil and the coil gaskets from the stators.
6. Remove the rotor from the left stator by tapping on the rotor shaft with a soft mallet from the left stator side.
7. Remove the powder seals from the stators by prying around the inner lip with a screwdriver.
8. Remove the internal snap rings from both stators.
9. Press the bearing out of each stator.
10. Remove the powder fill screw (and washer for GBA, GBAM, GBB & GBBM only) from the right stator. For all other models remove the blind rivet.

NOTE: Discard all bearings, powder seals, gaskets, snap rings and magnetic powder. These parts must be replaced, and are included in the repair kit.

RE-ASSEMBLY



CAUTION – Loss of torque due to grease or oil.

Re-assembly of the brake must be performed in a clean, dry area. The brake components must be cleaned with solvent, and must be dry and totally free of grease and oil. Grease or oil on the internal brake parts will cause loss of torque.

Do not immerse the coil in solvent. This may remove the varnish coating on the magnet wire and result in a shorted coil.

1. Install the internal snap rings in the stators.
2. Press the new powder seals into the left and right stators. The powder seals will bottom out on the internal snap rings.

NOTE: The seal lip must face toward the inside of the brake.

3. Support the rotor on a bench with the cross-drilled holes facing down. Wrap a 6" x 6" (152 mm x 152 mm) piece of stiff paper, thin plastic, or shim stock around the rotor shaft forming a sleeve. This will allow the powder seal to slide over the end of the rotor shaft and the external snap ring groove.
4. Slide the left stator and powder seal over the thin sleeve until it bottoms on the rotor. Pull the sleeve off the end of the rotor shaft.
5. Press one bearing onto the end of the rotor shaft until it seats against the internal snap ring of the left stator.

NOTE: The seal side of the bearing must face the inside of the brake.

6. Apply 2 or 3 drops of wicking Loctite to the inner and outer race of both bearings. Wait ten seconds and wipe off the excess Loctite.
7. Install the external snap ring on the rotor shaft.
8. Turn this assembly over.
9. Install the left side coil gasket.

NOTE: For Models GBA, GBAM, GBB AND GBBM: Install the coil gasket into the slot in the left stator. Insure that the coil gasket is evenly seated all the way around the stator slot.

NOTE: For Models GBC/GBCM, GBD/GBDM, GBE/GBEM and GBF/GBFM: Install the coil gasket into the slot in the coil bobbin. Insure that the coil gasket is evenly seated all the way around the bobbin slot. Use a few drops of instant adhesive to keep gasket from moving during assembly.

10. Place the coil into the left stator with the leads exiting through the slot into the junction box.
11. Install the right side coil gasket.

NOTE: For Models GBA, GBAM, GBB AND GBBM: Install the coil gasket into the slot in the right stator. Insure that the gasket is evenly seated all the way around the stator slot.

NOTE: For Models GBC/GBCM, GBD/GBDM, GBE/GBEM, and GBF/GBFM: Install the coil gasket into the slot in the coil bobbin. Insure that the coil gasket is seated evenly all the way around the bobbin slot. Use a few drops of instant adhesive to keep gasket from moving during assembly.

12. Support the left stator assembly on a bench with the cross-drilled holes facing up. Wrap a 6" x 6" (152 mm x 152 mm) piece of stiff paper, thin plastic, or shim stock around the rotor shaft, forming a sleeve. This will allow the powder seal to slide over the end of the rotor shaft and the external snap ring groove. Slide the right stator and powder seal over the thin sleeve until it bottoms on the left stator assembly. Pull the sleeve off the end of the rotor shaft.
13. Install the three (four) stator screws, split lockwashers, and nuts loosely.

NOTE: The long stator screw should be installed 180° from the junction box.

14. Press the other bearing onto the end of the rotor shaft until it seats against the internal snap ring of the right stator.

NOTE: The seal side of the bearing must face the inside of the brake.

15. Tighten the stator screws evenly until the left and right stators are clamped together.
16. Apply 2 or 3 drops of wicking Loctite to the inner and outer race of both bearings. Wait ten seconds and wipe off the excess Loctite.
17. Install the other external snap ring on the rotor shaft against the bearing. This step is made easier by supporting the brake on the opposite end of the rotor shaft.

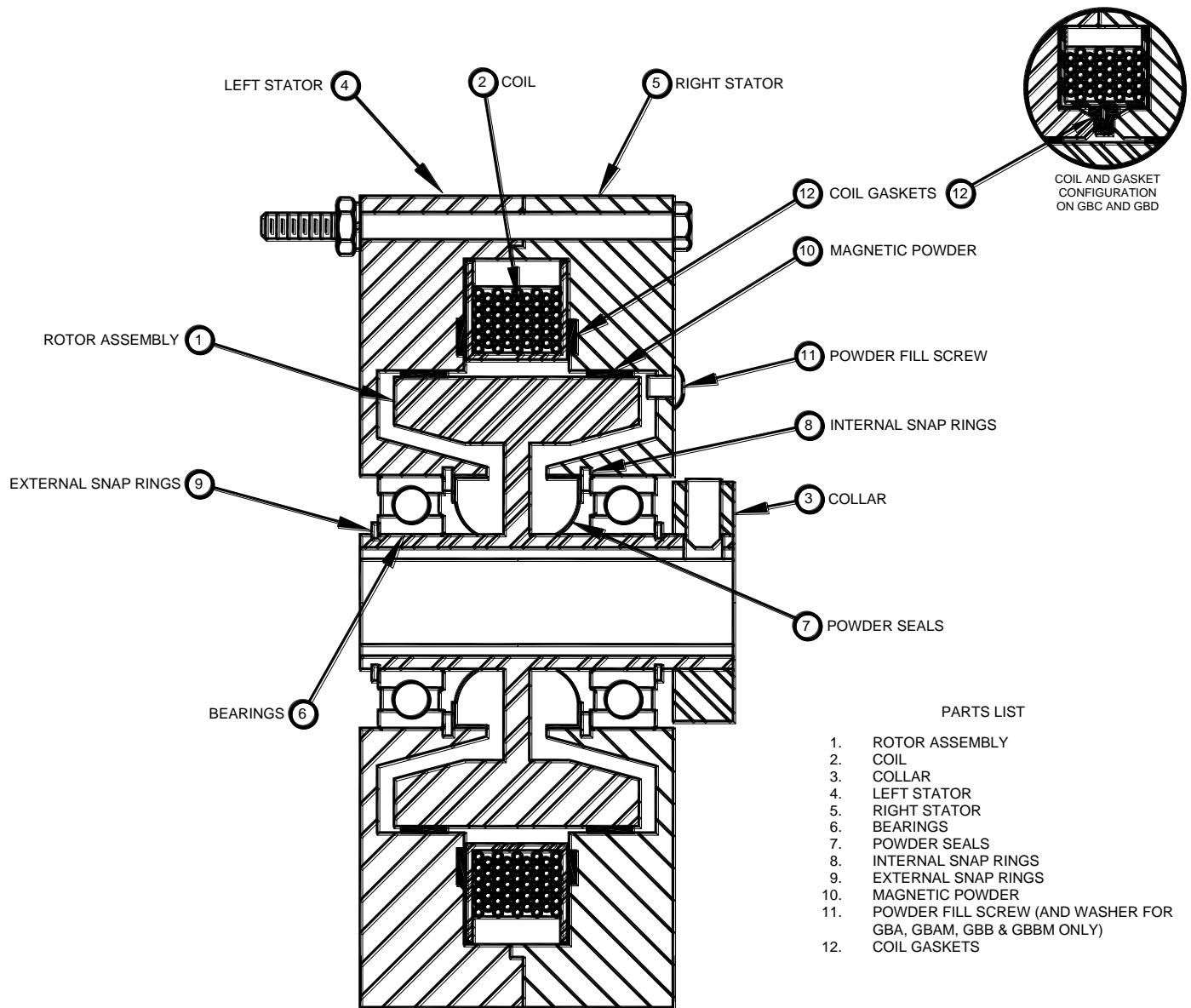
NOTE: Insure that the right bearing is seated against the internal snap ring before attempting to install the external snap ring.

18. Manually rotate the rotor shaft to insure smooth operation of the rotating parts.
19. Place the brake on a clean piece of paper. Support the brake at 45° so that the cross-drilled holes are facing up. Fill the brake with all of the magnetic powder supplied in the repair kit. While filling, slowly rotate the rotor to evenly distribute the magnetic powder.

NOTE: Collect any spilled magnetic powder from the clean paper and pour it into the brake.

20. Install the powder fill screw (and washer for GBA, GBAM, GBB & GBBM only) into the right stator. All other models have a blind rivet.
21. Install the collar and set screws onto the rotor shaft.

FIGURE 1. BRAKE CROSS SECTIONAL VIEW



SERVICE REQUESTS AND REPLACEMENT PARTS

To request service or to get replacement parts, contact one of the following addresses:

When ordering replacement parts, please indicate, where possible, part number, drawing number and model description.

Fife Corporation
222 West Memorial Rd.
Oklahoma City, OK, 73114, USA
Phone: 1-405-755-1600
Fax: 1-405-755-8425
Web: www.maxcessintl.com

Fife-Tidland GmbH
Max-Planck-Strasse 8
65779 Kelkheim
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Fax: +49.6195.7002.933
Web: www.maxcess.eu

Siemensstrasse 13-15
48683 Ahaus
Deutschland



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