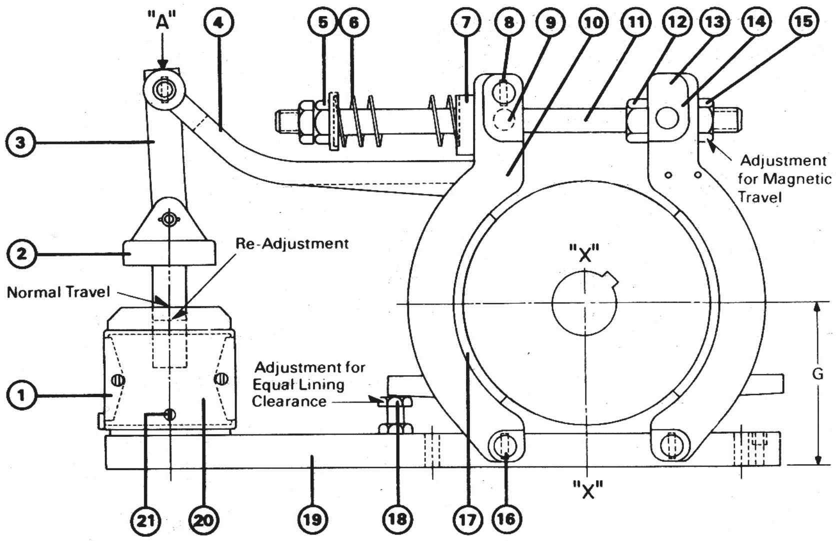
Magnetic Shoe Brakes

Installation and Service Instructions - TYPE CB

AC Magnetic Shoe Brakes

General Description

The type CB brakes have an AC solenoid for operation. When the brake solenoid is energized, the lining will clear the wheel, and when de-energized the linings are pressed against the wheel by means of a compression spring. These brakes are designed with power failure protection; that is, in the event of a power failure, the brake automatically spring-sets.



1 Solenoid Frame
2 Solenoid Plunger
3 Link
4 Lever
5 Torque Adjustment
6 Main Spring
7 Spring Seat
8 Pivot Pin
9 Tie Rod Pin
10 Inner Shoe Arm
11 Tie Rod
12 Lock Nut
13 Outer Shoe Arm
14 Outer Tie Rod Block
15 Travel Adjustment Nut
16 Base Pin
17 Lining
18 Stop for Equal Lining Clearance
19 Base
20 Coil
21 Screw for Plunger Guides

Figure 1 Operation

CAUTION

The power supply must be disconnected before any adjustments or servicing work is performed on the brake.

Operation (See Fig. 1)

1. When brake is de-energized, the compression spring (6) exerts pressure on the brake wheel as follows:

a. The spring on the inner shoe arm (10) is transmitted through the spring seat (7).

b. The spring force on the outer shoe arm (13) is transmitted from nut (5) on the tie rod (11) to nut (15) to outer tie rod block (14), to outer shoe arm.

2. When brake is energized, pressure is removed from the brake wheel as follows:

The solenoid plunger (2) pulls into the stationary portion of solenoid (1) moving lever arm (4) down. The lever acting about pivot pin (8) forces the inner and outer shoe arms apart by moving the tie rod to the right through tie rod pin (9).

Mounting

If the brake was shipped with the wheel clamped between shoes, remove wheel from shoes by pushing down solenoid lever at point 'A'.

With wheel mounted on shaft, install brake as follows:

1. Brake must be mounted on a flat surface parallel to shaft. Distance from center line of shaft to bottom of base of brake should agree with 'G' dimension within limits of +.03, -0 inch. Center line X-X should pass midway between mounting holes within .03 inches.

Frame	'G'	Frame	G'
CB15	3.07	CB110	4.75
CB35	3.83	CB160	6.85
CB75	4.75		

2. Release brake by pushing down solenoid lever at point 'A'. Place brake in position over mounting holes, then release solenoid lever to clamp lining on wheel, Insert shims under base if required, then bolt brake to base.

3. The brake should be mounted in the horizontal mounting position for maximum solenoid life.

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Adjustment

The solenoid plunger (2) has two lines scribed around its surface. The upper line is an indication of normal travel and the lower line is for readjustment (see Table 2). For normal travel, the upper scribed line should line up with the top of the solenoid frame (1). The brake is set for normal travel at the factory; however, if the adjustment is off, then bring into adjustment by moving adjustment nut (15). Turning this nut in will decrease amount of travel and turning nut out will increase amount of travel. Nut (12) is used to lock this adjustment in place.

Adjustment in stop bolt (18) is used to obtain equal lining opening at both sides of wheel. When the brake is energized the linkage is pulled towards the solenoid; therefor, the adjustment bolt is required to equalize this movement between shoe arms. Turning bolt in allows more clearance at the inner shoe and backing bolt out allows more clearance at the outer shoe. Stop bolt (18) has a lock nut for maintaining its position. Either using a feeler gauge or rotating the wheel by hand can insure that there is clearance between the wheel and lining. Due to variation in the lining thickness, there may be occasions, at initial installation, when the normal travel setting will not give complete clearnace between the lining and the wheel. If this should happen, temporarily increase the solenoid plunger travel beyond the normal travel line.

Torque Adjustment

Brake is adjusted at our factory for the torque rating as given on the nameplate. With brake de-energized and solenoid plunger adjusted for normal travel, the compressed length of spring should be per value in Table 1.

Table 1

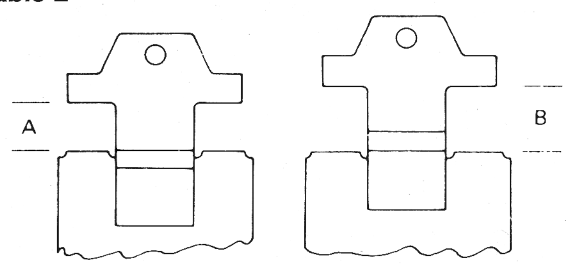
Frame	Travel	Torque	Compressed Spring Length	Spring Free Length
CB15	.85	10	2.22	2.75
		15	2.01	2.75
CB35	.85	25	2.88	3.50
		35	2.69	3.50
CB75	1.17	50	4.12	5.0
		75	3.85	5.0
CB110	1.17	85	3.74	5.0
		110	3.45	5.0
CB160	.92	125	3.65	5.0
		160	3.36	

Readjustment for Lining Wear

The brake solenoid has sufficient power to operate when the solenoid plunger travel is beyond the readjust line; however, to obtain maximum brake life, the travel should be maintained within the limits scribed on the plunger (Table 2).

When lining wear results in travel beyond the re-adjust line, bring the travel into normal adjustment as described under Adjustment section.

Table 2



Normal Travel — Maximum Travel Re-adjust

	A	B
CB15	.85	1.00
CB35	.85	1.00
CB75	1.17	1.50
CB110	1.17	1.50
CB160	.92	1.50

Relining Shoe Arms

To reline the shoe arms, relieve the spring pressure by backing off spring nut (5). Back off nut (15) and remove roll pins that retain base pins (16). Remove base pins and swing shoe arms away from wheel. The drive rivets holding the lining are easily removed with a drift.

After replacing the lining, reassemble brake and readjust per Adjustment Section. Drive rivets are reusable. Shoes with bonded linings will have to be re-bonded or drilled for rivet type linings.

Coil Connection

CAUTION

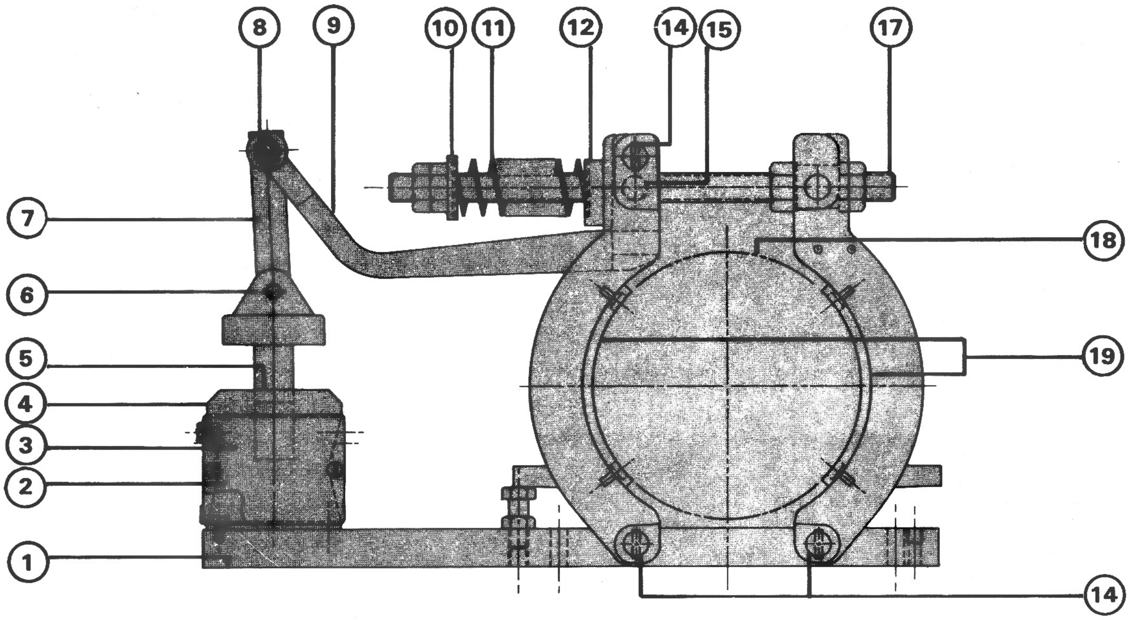
The power supply must be disconnected before removing coil.

Disconnect power leads from the coil. To remove coil and plunger guides, disconnect link (3) from solenoid plunger (2). Remove plunger from solenoid frame. The plunger guides are held in place by screw (21) located in the bottom of the solenoid frame. Remove this screw and the plunger guides can be pulled out of the solenoid frame. With the guides removed, the coil slides out of the frame.

Magnetic Shoe Brakes

Replacement Parts List - TYPE CB

AC Magnetic Shoe Brakes



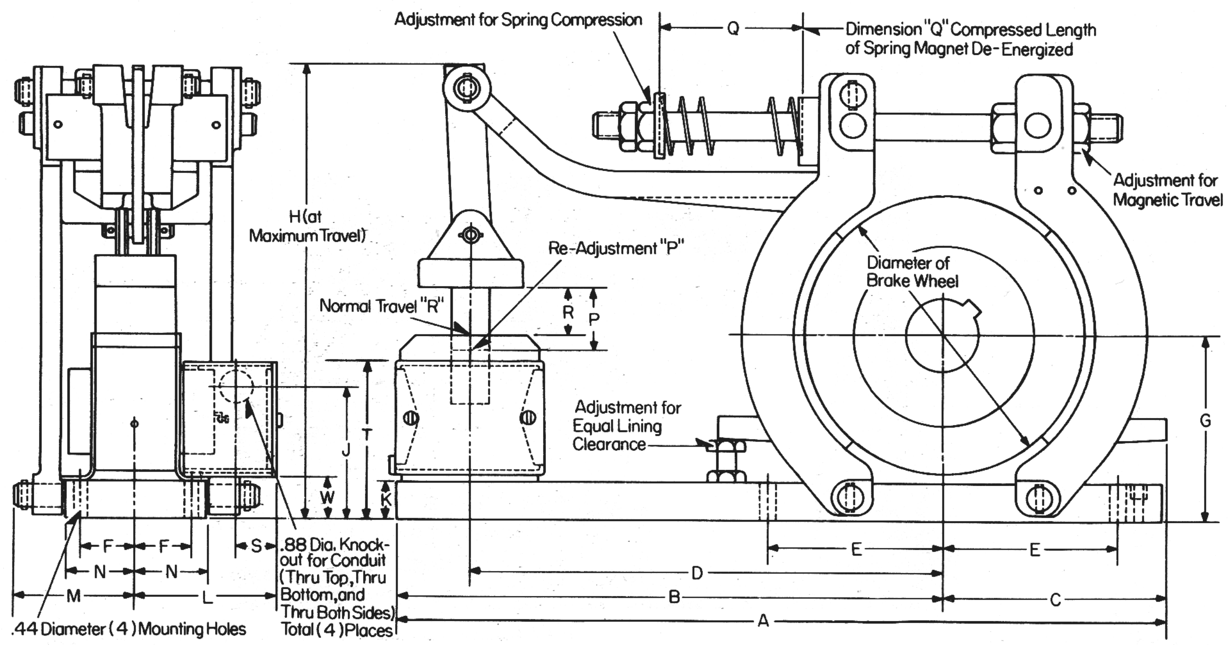
Ref. No.	Description	Style Number Frame CB 15	CB 35	CB 75	CB110	CB 160	Quantity
1	Base	E004068	E005042	E007069	E007069	E010068	1
2	Coil 115/60	E004104	E005051	E007080	E007087	E007087	1
	230/60	E004105	E005052	E007081	E007088	E007088	1
	460/60	E004102	E005039	E007065	E007066	E007066	1
	575/60	E004106	E005053	E007082	E007089	E007089	1
	200/60	E004107	E005054	E007083	E007090	E007090	1
3	Conduit Box	E005044	E005044	E010069	E010069	E010069	1
4	Solenoid Assy.	E004109	E005055	E007079	E007091	E010103	1
5	Solenoid Guide	E005050	E005050	E007076	E007076	E007076	2
6	Pin	E004056	E005029	E007055	E007055	E010056	1
7	Link	E004062	E005035	E007061	E007062	E010062	1
8	Pin	E004055	E005028	E007054	E007054	E010055	1
9	Lever	E004059	E005032	E007058	E007058	E010059	1
10	Spring Seat	E004063	E005036	E007063	E007063	E007063	1
11	Spring	E004065	E005038	E010064	E010064	E010064	1
12	Spring Plate Assy.	E004111	E005057	E007084	E007084	E010104	1
14	Pin	E004054	E005027	E007053	E007053	E010054	3
15	Pin	E004058	E005031	E007057	E007057	E010058	1
17	Adj. Rod Assy.	E004060	E005033	E007059	E007059	E010098	1
18	Wheel	[1]	[1]	[1]	[1]	[1]	
[2,3]	Brake Shoe - Inner	E004113	E005048	E007074	E007074	E010106	1
[2,3]	Brake Shoe - Outer	E004114	E005047	E007073	E007073	E010107	1
[4] 19	Lining & Pin Kit	E004101	E005049	E007078	E007078	E010108	1

1 When ordering, give shop order number from nameplate.
2 Parts not illustrated.
3 Brake Shoe with lining.
4 Lining Kit for old style brakes with rivet type linings.

NOTE: As of January, 1993, Brake Assemblies and Replacement Shoes have bonded linings.

Magnetic Shoe Brakes

Dimension Sheet - TYPE CB
FRAMES CB 15 to CB 160



Frame No.	Brake Wheel Dia.	Face	Max. Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	W
CB 15	4.50	2.75	1.625	12.00	8.25	3.75	6.62	3.00	.94	3.07	8.31	2.47	.63	3.25	2.06	1.25	1.00	.85	1.13	3.25	.66
CB 35	5.50	3.25	1.625	14.13	9.73	4.38	8.10	3.50	1.03	3.83	9.43	2.72	.88	3.25	2.45	1.50	1.00	.85	1.13	3.50	.91
CB 75	7.00	4.25	1.875	19.25	13.75	5.50	11.78	4.38	1.31	4.75	12.00	3.24	1.00	3.64	2.98	1.75	1.50	1.17	1.12	4.00	1.12
CB 110	7.00	4.25	1.875	19.25	13.75	5.50	11.78	4.38	1.31	4.75	12.00	3.24	1.00	3.64	2.98	1.75	1.50	1.17	1.12	4.00	1.12
CB 160	10.00	4.25	2.250	21.12	14.00	7.12	12.36	6.00	1.38	6.85	15.75	3.24	1.00	3.64	3.62	1.88	1.50	.92	1.12	4.00	1.12

Frame No.	Torque Ft. Lbs.	Q	Weight Lbs. Brake Without Wheel	Weight Lbs. Brake Wheel
CB 15	10	2.22	20	6
CB 15	15	2.01		
CB 35	25	2.88	30	10
CB 35	35	2.69		
CB 75	50	4.12	60	25
CB 75	75	3.85		
CB 110	85	3.74	60	25
CB 110	110	3.52		
CB 160	125	3.65	78	40
CB 160	160	3.36		

NOTE: DIMENSIONS ARE IN INCHES. These dimensions are not to be used for construction purposes unless approved by the factory.

GEMCO
INDUSTRIAL BRAKES

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