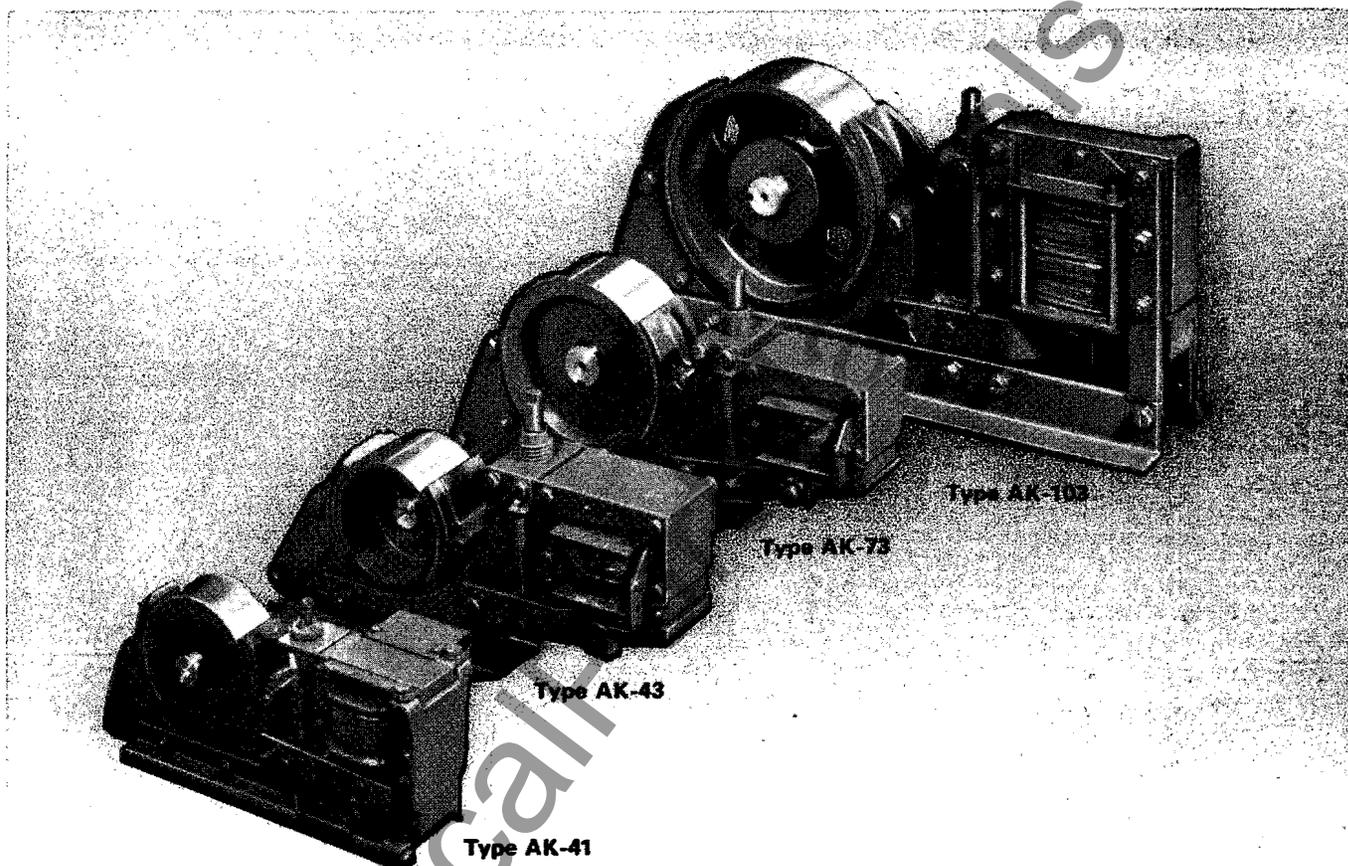


Westinghouse



## Ac Spring Set Shoe-Type Brakes Magnet Operated

Type AK, Floor or Motor Mounted  
10 to 160 Lbs Ft Torque



Type AK spring set shoe-type brakes, featuring a single adjustment, designed for rugged industrial braking service on such applications as cranes, hoists, conveyors and machine tools.

Single adjustment restores magnet travel and compensates for wheel lining wear. Shoe clearance is automatically equalized. These brakes are designed with power failure protection. In event of power failure, brake automatically spring sets and the single adjustment can be used as an emergency release. In normal operation, release is effected by a short stroke clapper-type magnet.

**Mounting:** Type AK brakes can be floor mounted in any position and can be motor-mounted by means of a suitable brake mounting adapter.

**Optional Equipment:** Drip-proof, splash-proof, and water-tight, dust-tight enclosures, hand release levers, auxiliary switches and non-corrodible fittings can be furnished.

### Advantages

**A single adjustment** – restores magnet travel and shoe clearance quickly and accurately to save valuable maintenance time over multiple adjustment brakes.

**Automatic equalized shoe clearance and shoe pressure** – when magnet is energized each shoe automatically moves an equal distance from the wheel – shoe pressure automatically equalized.

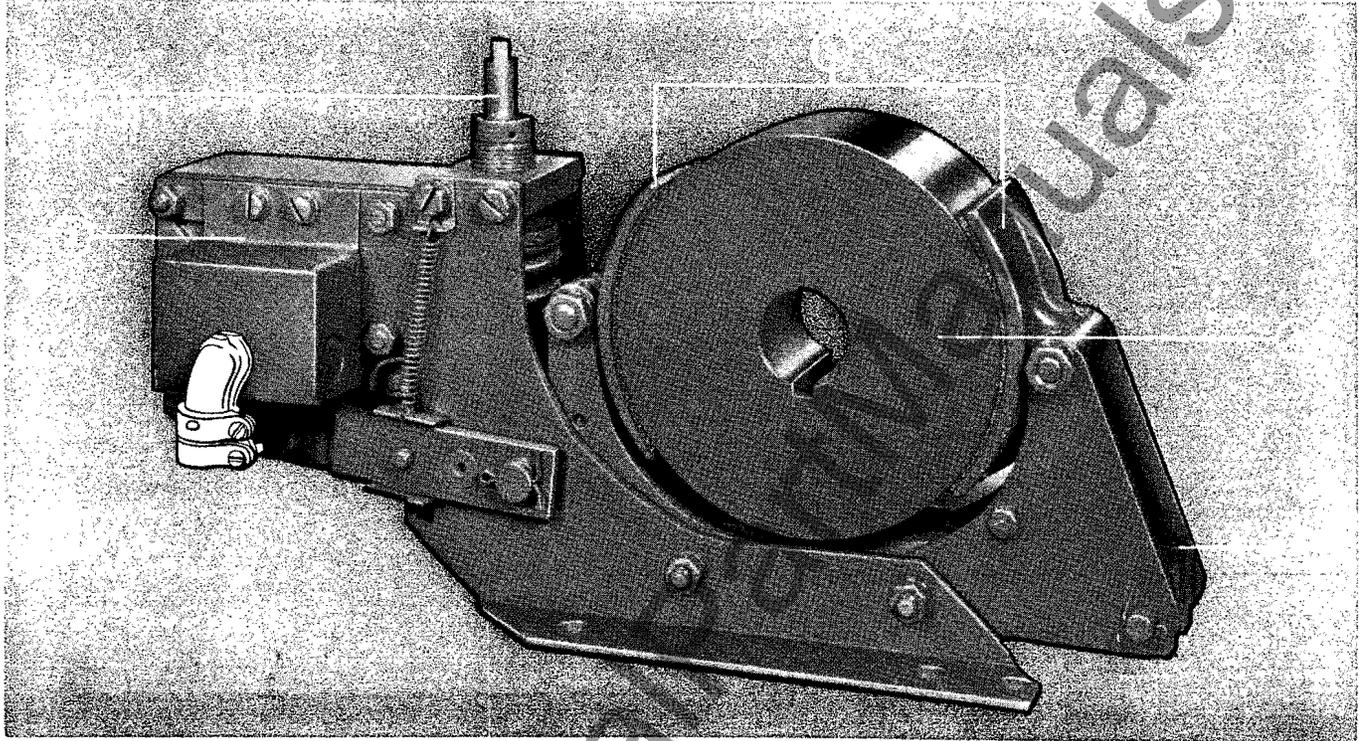
**Clapper type positive action magnet** – brake released by clapper type positive action magnet . . . efficient operation in any position.

**Pivot system** – all linkage underneath the wheel so that wheel can be removed vertically without disassembly of brake. Pivot system eliminates loading bearing points during operation . . . spring take-up eliminates back lash.

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**Construction**



**Single Adjustment**

Only one simple adjustment is necessary to restore magnet travel and to compensate for lining wear. Any maintenance man can quickly and easily make this adjustment. The shoe clearance is automatically equalized.

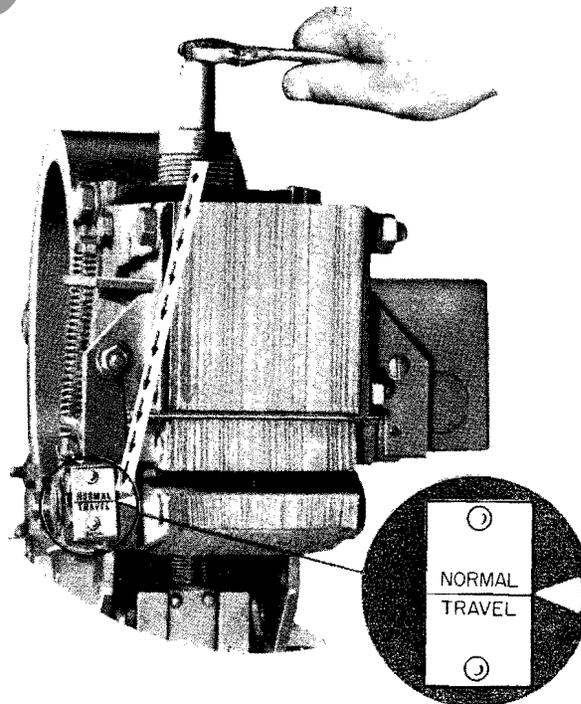
The normal travel indicator shows when an adjustment is necessary and when proper adjustment has been made. With the magnet de-energized, the adjustment is made by turning the single adjustment until the indicator points to normal travel.

Accurate adjustment can be made when the indicator is not visible, either with the motor stopped or running.

**Motor stopped** – with magnet de-energized turn the single adjustment clockwise as far as possible, then back off one turn.

**Motor running** – turn the single adjustment clockwise until shoes drag on wheel, then back off until wheel turns free.

The single adjustment can be used to free the wheel during brake installation and during brake or motor maintenance. It also can be used as an emergency release.



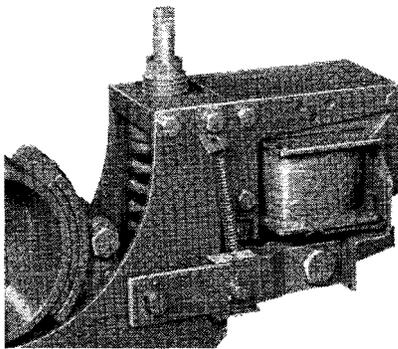
## Ac Spring Set Shoe-Type Brakes Magnet Operated

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### Magnet

A short-stroke clapper type magnet-releases the brake when power is applied. The travel of the magnet armature is limited so that the magnet armature will always pull in and protect the coil from high open-gap current.

The positive-action design permits the brake to be operated in any position.



The brake is normally assembled for mounting with the magnet unit to the right and the terminal box on the motor side. The coil, the magnet assembly, and the conduit box can be quickly and easily removed and reassembled for left-hand mounting.

The coil is designed for single phase full voltage operation and is form wound and well insulated.

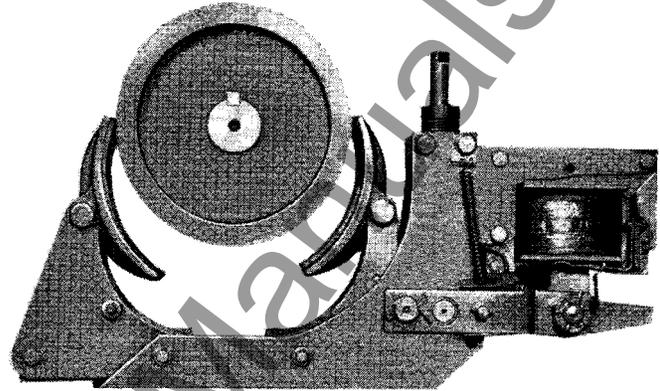
### Shoes

Brake shoes are automatically moved equidistant from the wheel permitting the brake to adapt itself to considerable misalignment with the motor. Uniform pressure is always applied when braking. Automatic shoe adjustment assures positive action and quick brake release.

Brake shoes are mounted between the arms on a single pivot bolt which permits self-alignment with the wheel. Once aligned, pivot bolts are tightened, holding shoes in position and preventing the tips from dragging.

Brake shoes are cast iron and lined with molded asbestos material held by brass rivets. Heat or moisture has little effect on the linings. Shoes are removed quickly and easily by loosening pivot bolt and turning single adjustment.

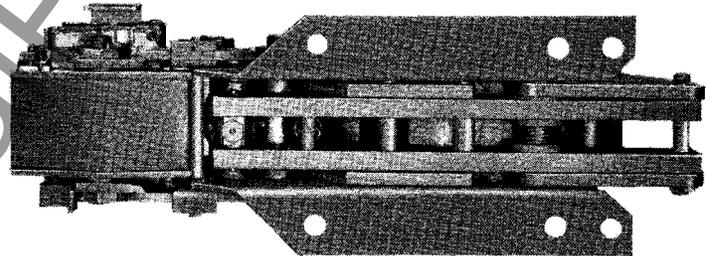
### Wheels



Brake wheel is easily removed by turning the single adjustment to free the wheel. Since all the linkage is underneath the wheel, the wheel can be removed vertically without disassembling the wheel from the shaft.

The wheels are machined from high strength annealed iron castings for longer wear, and higher resistance to scoring than other materials.

### Linkage



Rolled steel brake arms and levers are arranged in a compact, out-of-the-way assembly. Bearing pins and bushings are of high grade steel designed for maximum service life.

Loading of bearing points during operation is eliminated through the pivoting system employed . . . minimizes wear on pins and bearings.

### Application of Optional Equipment

For indoor or outdoor installation subject to falling dust, moisture and limited snow and sleet conditions, the drip-proof, splash-proof enclosure should be specified.

For installations subject to more severe weather conditions, a water-tight, dust-tight enclosure is available.

When the brake is subject to excessive moisture, non-corrodible fittings are recommended.

A manual release lever is available to hold the brake in released position until manually reset or until it is re-energized. An interlocking switch is available as optional equipment for making the control inoperative when brake is latched in released position.

### Brake Selection

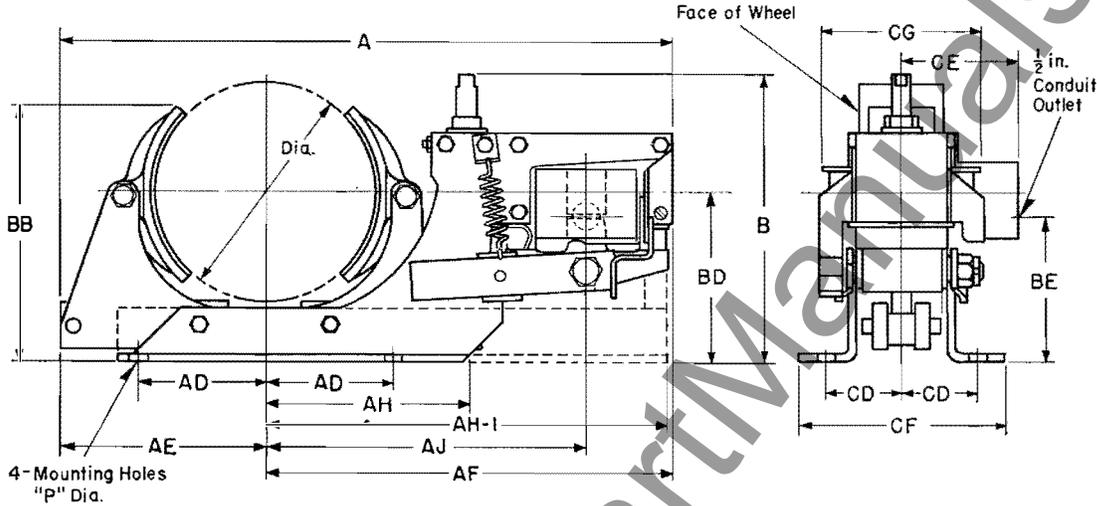
These brakes are rated either continuous or intermittent based on the amount of time the brake is in the released position. Continuous rated brakes can be used in all cases. Intermittent rated brakes can be used with intermittent rated motors and where the continuous application of power will not exceed one hour and the coil is not energized more than one-half of the time.

For most applications, the retarding torque of the brake should be equal to, or greater than the full load torque transmitted by the shaft to which the brake is applied. Where the stored energy of the load may be measurable, its value and the frequency of operation should be compared with the braking capacity and if too high, the next larger brake should be used.

# Ac Spring Set Shoe-Type Brakes Magnet Operated

Type AK, Floor or Motor Mounted  
10 to 160 Lbs Ft Torque

**Dimensions** All dimensions are approximate, not to be used for construction purposes.



Frame Size No.	Brake Wheel			Dimensions in Inches															
	Dia. Inches	Face Inches	① Max. Bore Inches	A	AD	AE	AF	B	BB	BD	BE	CD	CE	CF	CG	AH	AH-1	AJ	P
AK-41	4.50	1.62	1.12	14.00	2.00	4.50	9.44	.88	5.88	3.62	3.66	1.31	2.78	3.38	3.50	....	9.06	7.19	.34
AK-43	4.50	3.12	1.38	18.00	3.25	5.75	12.06	10.00	6.50	4.25	4.69	2.38	3.69	6.50	5.00	5.62	....	9.34	.56
AK-73	7.00	3.12	2.00	19.50	4.00	6.50	12.81	10.00	8.94	5.44	4.69	2.38	3.69	6.50	5.00	6.38	....	10.03	.56
AK-103	10.00	3.75	3.00	28.00	4.00	9.50	18.50	13.25	12.75	7.75	5.38	3.12	3.94	7.75	7.50	....	18.25	14.38	.69

① For standard wheel.

## Specifications

Type and Frame No.	Maximum Retarding Torque, Lb Ft <sup>②</sup>		Approx. Net Wt. Lbs.	WR <sup>2</sup> of Wheel Lb Ft <sup>②</sup>	④ Brake Capacity Hp Seconds Per Min.	Max. Safe Speed Rpm
	Continuous	③ Intermittent				
AK-41	10	15	20	.075	10	10000
AK-43	25	35	50	.137	20	8000
AK-73	50	75	60	.74	30	5000
AK-103	125	160	160	3.5	52	3800

② Brakes are usually applied so that the brake torque is equal to or greater than the motor torque calculated by formula:

$$\text{Torque in Lb Ft} = \frac{\text{Hp} \times 5250}{\text{Rpm}}$$

③ Intermittent Duty is equivalent to half time "on" and half time "off" with continuous application of voltage not exceeding one hour or three operations per minute.

④ This value should be greater than the value calculated from the formula:

$$\frac{\text{WR}^2 \times (\text{Rpm})^2 \times \text{No. of operations per minute}}{3,220,000}$$

## Further Information

Prices: Price List 5220.  
Dimensions: Dimension Section 5240.