



# Black & Webster

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## INSTALLATION, OPERATING, MAINTENANCE INSTRUCTIONS

# Electropunch

## MODELS BS, JS, FJS and SMS

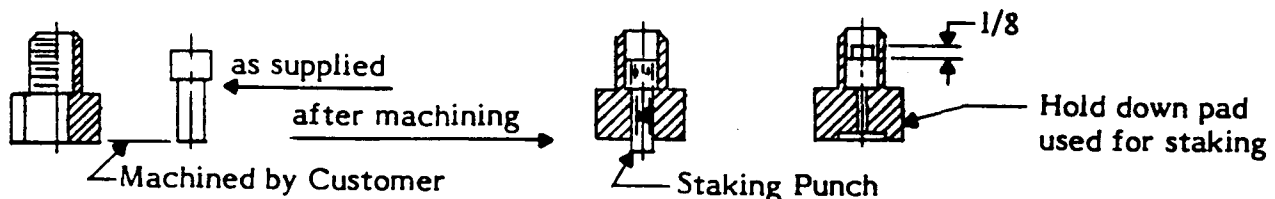
**USE:** A high speed production tool for use where a blow or impact is required.

### INSTALLATION:

**Mounting:** See Figure 1, page 4.

**Wiring:** BS, FJS, and SMS equipped with electrical cord with molded three-prong plug. JS has (2) ring type lugs. The unit must be connected to a power source with 12 gage wire or larger, and with 15 amps of available current at 115 volts.

**Tools:** BS, JS, and FJS: The striking tool must have a shank .498" to .500" dia. x 7/8" long, with a shoulder on the shank which butts against the bottom of the spindle. (See Figure 2, page 5.)  
SMS - "Blank" tool sets are supplied for machining by customer, as illustrated below.



Harden blanks after machining (for longer tool life.) Hold-down pad may be used as staking tool by cutting off small end of staking punch to 1/8" length, and inverting punch, allowing the shoulder part to be used as an anvil as shown. Operations in which careful locating is desired particularly lend themselves to this method.

### **Set-up:**

**BS, JS, and FJS:**

1. Install tools (nesting and spindle), pull down spindle and insert set-up pin. (See Figure 2.)
2. BS - Mounting bracket must be adjusted and fastened (see procedure, page 2) so that spindle tool rests on work piece. Remove set-up pin.  
JS - Must be located and fastened with spindle tool resting on work piece. Remove set-up pin.

Set-up:

SMS:

1. The staking punch is inserted in the hold-down pad and the latter screwed into the threaded hole in the bottom of the hold-down sleeve. (See Figure 3, page 5.) Flats (2) on this sleeve are provided for a wrench. Install nesting tools, raise back of hold-down frame until hold-down sleeve has been depressed enough to receive set-up gage. (See Figures 3 & 4.) Mounting bracket must be adjusted and fastened (see procedure) so that hold-down pad rests on work piece, making sure that when in this position, the staking punch is still high enough for the spindle to strike it before the stop ring hits the bronze bearing. (See Figure 4.) Remove set-up gage.
2. Attaching foot treadle: Attach hooks on chain to foot treadle and to bottom of cable. With the hold-down frame at rest in the "UP" position, adjust this connection so that the "toe" end of the foot treadle is approximately 3 inches off the floor. (This treadle adjustment must be rechecked after any changes in the height of the mounting bracket above the base.) The "toe" end of the treadle should be far enough off the floor so that when it is depressed, the back of the hold-down frame will come up against the STOP PIN. (See Figure 3.) Clips are furnished to hold the hinge pin of the foot treadle in location.
3. Hold-down pressure adjustment: Loosen screw on switch cam. Clockwise rotation of cam reduces hold-down pressure. Counter-clockwise rotation of cam increases hold-down pressure.

#### MOUNTING BRACKET ADJUSTMENT PROCEDURE (BS, SMS):

Loosen the two cap screws on the split ears of the bracket and then screw in the set screw between to spread the ears. This allows the mounting bracket to be adjusted for set-up. After set-up, back off set screw and tighten cap screw.

#### ALL MODELS

Full stroke is required to develop maximum impact. (Accessories are available to vary impact.) DO NOT move bracket down toward work, or work toward spindle in the "UP" position to shorten the stroke. THIS WILL CAUSE THE SOLENOID TO OVERHEAT AND WILL SHORTEN THE LIFE OF ITS COIL.

#### OPERATION:

Hand, foot or limit switches cause momentary contacts. Current flows through the solenoid for as long as they are closed. If the switch is closed for too short a time, the unit will not deliver its maximum power; and if it is closed too long, the solenoid will hum and its coil will overheat and consume an unnecessary amount of current. Operators quickly learn the optimum time to hold the switch closed. (1/25th of a second).

## MAINTENANCE:

Lubrication: The spindle bearing should be cleaned and lubricated every few days with a drop or two of oil, furnished with each machine. (#200104 Molub-Alloy Lubricant.)

## TROUBLE SHOOTING:

### Insufficient power —

1. Sluggish spindle --  
Dirty spindle/ bearing - Clean with Agitene or other solvent and wipe clean, applying one or two drops of Molub-Alloy Lubricant. (See procedure for DISASSEMBLING.)
2. Spindle bottoming on bearing -  
Repeat set-up instructions.
3. Solenoid Coil  
Check resistance of coil (0.5 OHM).

### Unit does not operate - -

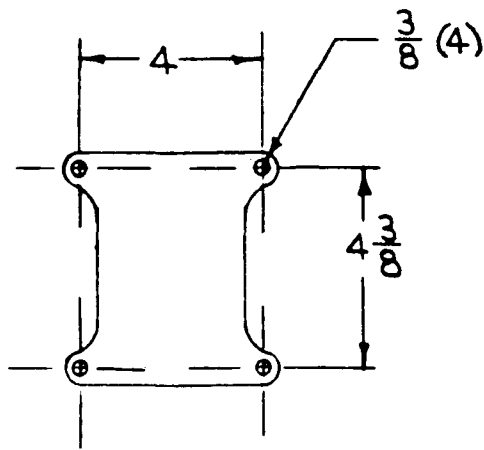
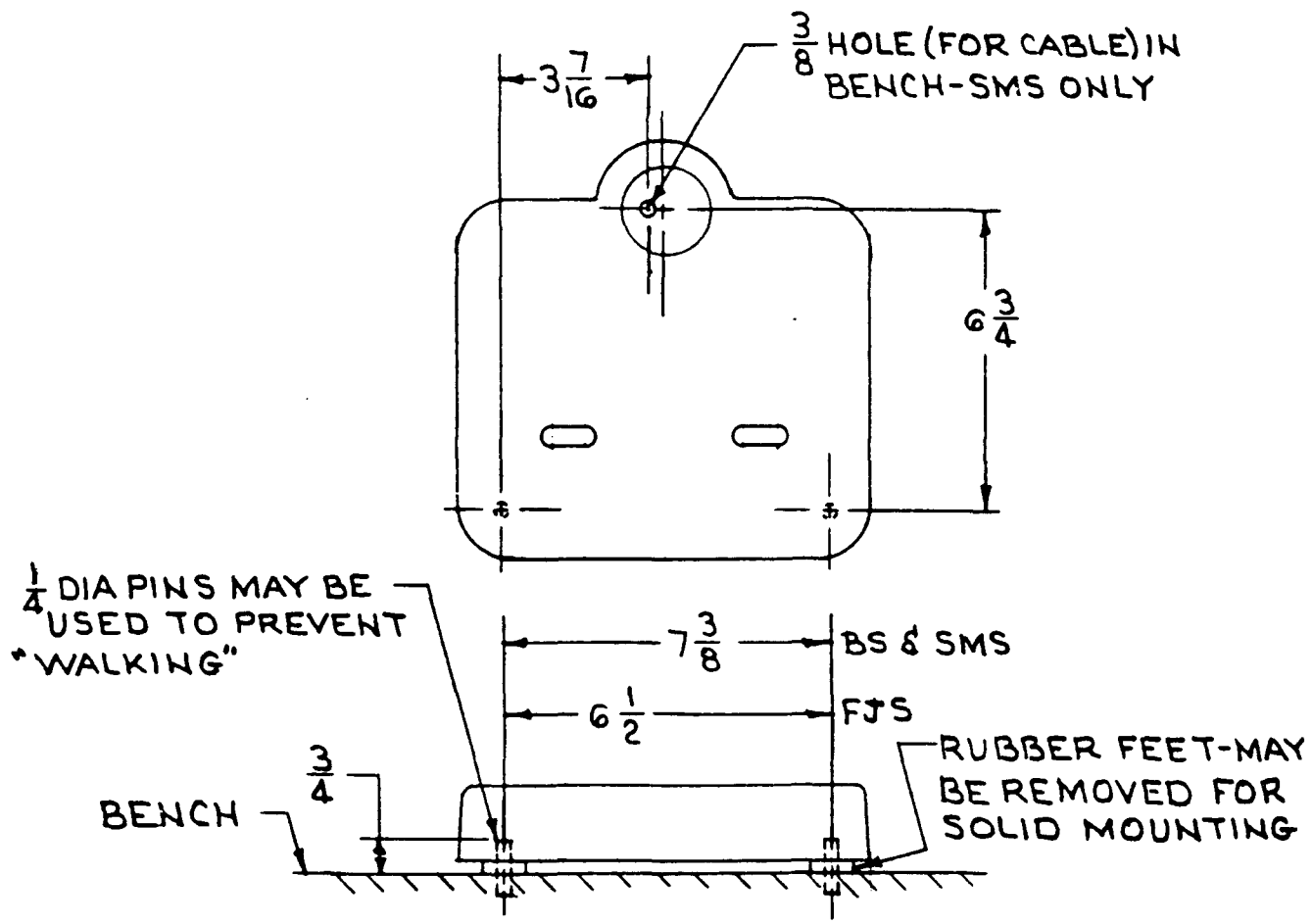
1. Check all electrical connections to be sure electrical contact is being made.
2. Check the limit switch contacts by removing the wires and testing with a continuity tester.
3. Check coil for open winding with continuity tester.

## DISASSEMBLING:

Remove the four bolts at the corners of the upper casting of the solenoid. **HOLD THE SOLENOID TOGETHER** and remove it from the bracket as a unit. Put two mounting bolts back through diagonal corners and install nuts to hold the unit **TOGETHER** until ready to reassemble. For BS, FJS, and JS units, make sure the spindle and tool-holding set screws have been removed, or turned in far enough so that they will not score the bronze bearing. The spindle and return spring may be lifted out.

## WARRANTY:

We warrant these articles to be free from defect in materials or workmanship. Our obligation under this warranty, however, is limited to repairing or replacing at our plant in Waltham, Massachusetts, any part which, in our judgement upon inspection, is defective as above stated, provided that notice of such defect is given to us, and the article is returned to our plant within a period of 12 months from the date the article is shipped by us. The foregoing is in lieu of all other expressed or implied warranties; there is no implied warranty of merchantability and no warranty for any particular purpose, application or use; there are no warranties which extend beyond the description on the face hereof, expressed or implied; the remedies provided for herein shall be customers' exclusive remedies for any breach of warranty and under no circumstances will Black & Webster, Inc., be liable for special or consequential damages.



JS MOUNTING DIMENSIONS  
MAY BE MOUNTED IN ANY POSITION

FIGURE 1

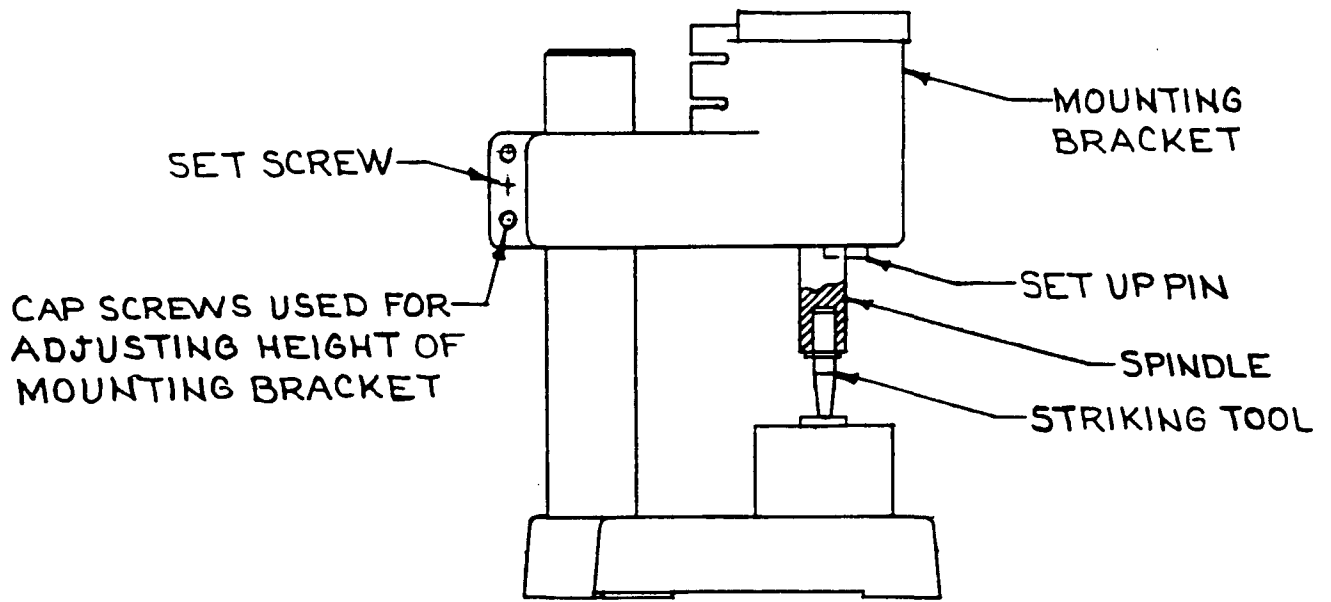


FIGURE 2

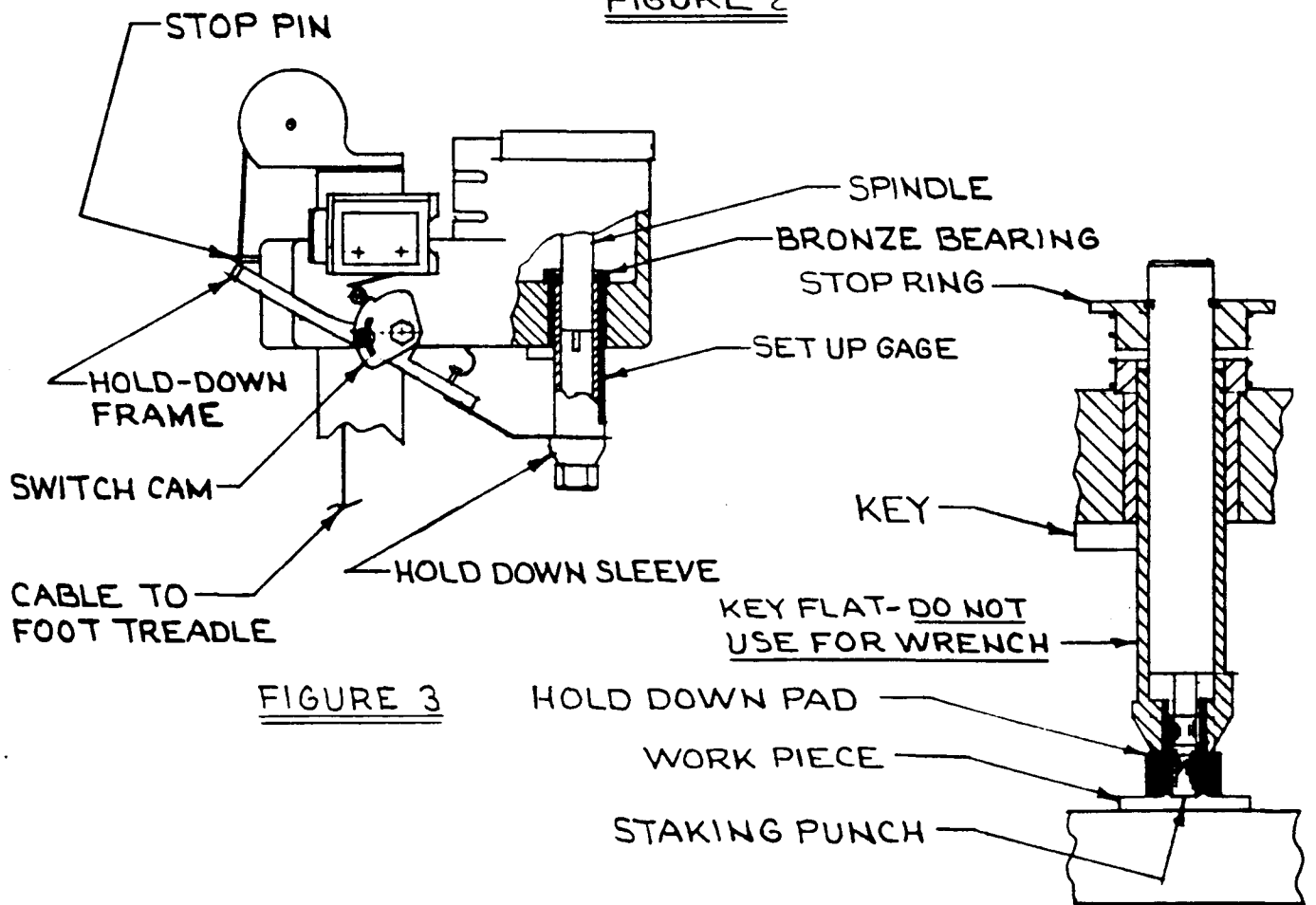
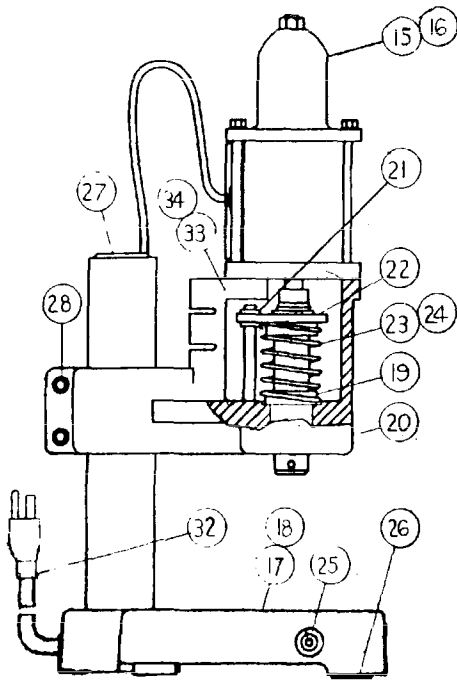
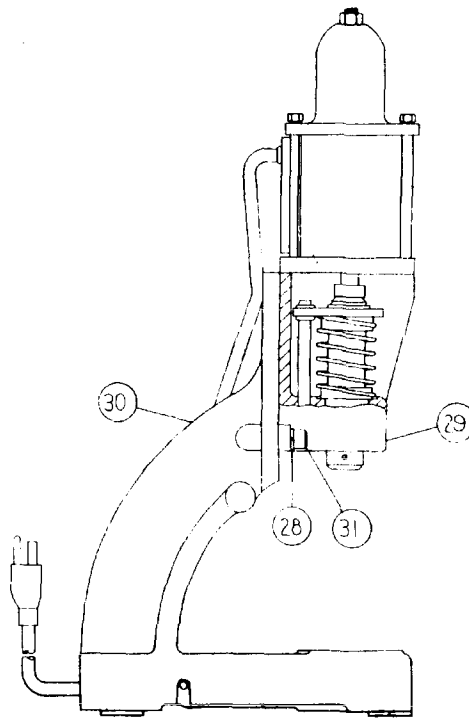


FIGURE 3

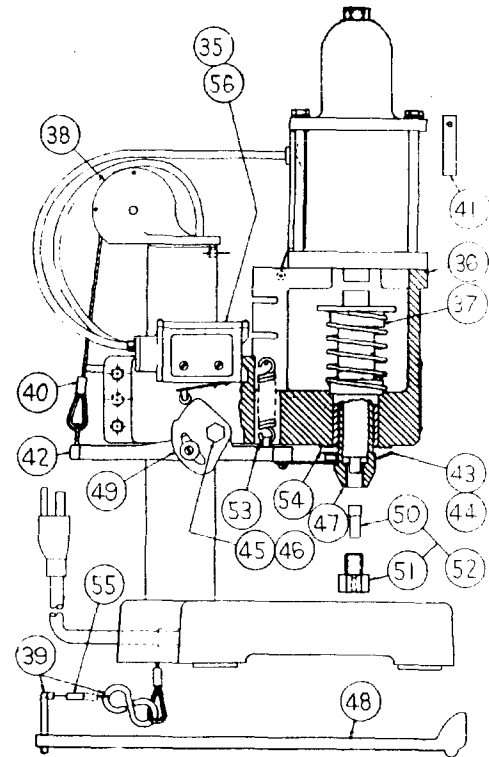
FIGURE 4



MODEL BS



MODEL FJS &  
MODEL JS - WITHOUT FRAME (30)



MODEL SMS

BS, JS, FJS, AND SMS  
PARTS LIST

ITEM NO	PART NO	DESCRIPTION	USED ON			
			BS	JS	FJS	SMS
15	200085	Model K Solenoid, 115V	1	1	1	1
16	200086	Model K Solenoid, 230V				
17	200010	Base with 12" column	1	-	-	1
18	200011	Base with 18" column				
19	200015	Bronze bearing for Brkt.	1	1	1	1
20	200025	Brkt, with brg, & Guide Pin	1	-	-	-
21	200032	Spool Guide with Bearing	1	1	1	-
22	200040	Spindle and Guide Assy.	1	1	1	-
*	200104	Molub-Alloy Spindle Oil, Tube	1	1	1	1
23	200110	Spring, Spdl. Rtn, Std. (.067)	1	1	1	1
24	200112	Spring, (.079) for Heavy Tools				
25	200116	Switch, Hand, BA-2RB-A2	1	-	1	-
26	200122	Foot Rubber	4	-	3	4
27	200123	Plug, Wrench Holder	1	-	-	-
28	200131	Washer, Lock-Special	2	-	4	2
29	200157	Bracket, with Brg. & Guide Pin	-	1	1	-
30	200185	Frame	-	-	1	-
31	200187	Screw, Soc Head Cap	-	-	4	-
32	100510	Cord Set, 3 wire, with plug	1	-	1	1
33	101204	Chain for Set-up Pin	1	1	1	-
34	101406	Pin, Set-up	1	1	1	-
35	200305	Housing for Cam Switch	-	-	-	1

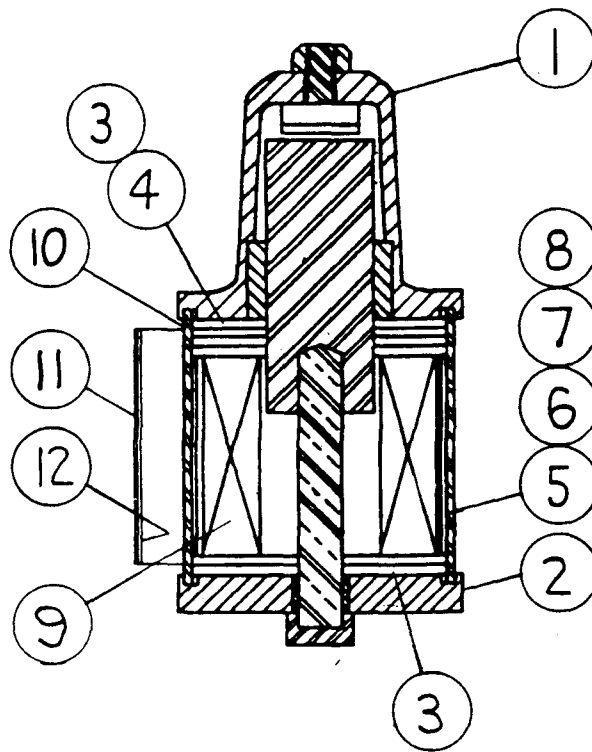
ITEM NO	PART NO	USED ON SMS ONLY
		DESCRIPTION
36	200348	Brkt. with brg, roll & stop pin
37	200356	Spindle and Ring Assy.
38	200366	Pulley Assembly
39	200375	"8" Hook (2 req'd.)
40	200380	Cable with clamps and thimbles
41	200385	Gage, Set-up
42	200396	Frame, Hold Down
43	200397	Spring, Leaf, Hold Down (.032)
44	200398	Spring, Leaf, Hold Down, Std. (.050)
45	200401	Screw, Shoulder, Long
46	200402	Screw, Shoulder, Short
47	200407	Sleeve, Hold Down
48	200408	Foot Treadle
49	200409	Cam, Switch
50	200411	Punch, Staking (blank)
51	200414	Pad, Hold Down (blank)
52	200417	Tool Blanks, Set (Punch & Pad)
53	200418	Spring, Hold Down Return
54	200420	Key, Hold Down Sleeve
55	200426	Chain, Double Loop for Treadle
56	201270	Switch, Cam, BA-2RV22-A2

\* Not Illustrated

* ACCESSORIES - For Descriptive Literature, Contact Black & Webster, Inc.					
PART NO	DESCRIPTION	USED ON			
		BS	JS	FJS	SMS
200493	Height Adjustment	X	-	-	X
201309	Protectoswitch Model SAF-2 (Safety Device)	X	X	X	-
201557	Foot Switch Guarded Model JB w/6 ft-wire cord)	X	X	X	X
201558	Replacement Sw. for JB Foot Switch	X	X	X	X
201562	Bolster Plate, Blank	X	X	X	X
201590	Impact Control, 115 V	X	X	X	X
201823	Power-Pak, 115V, Model PK	X	X	X	X
200104	Molub-Alloy Lubricant	X	X	X	X

# MODEL K SOLENOID

## PARTS LIST



ITEM NO	PART NO	DESCRIPTION
1	200047	Upper Housing with Bearing & Stop Screw.
2	200058	Lower Plate with Bearing, Plunger Extension & Cap.
3	200054	Washers, Metal, straight-slot, upper and lower, 9 required.
4	200073	Washers, Metal, V-notch, upper, 3 required.
*	200076	Washer, Wave
*	200077	Washers, Insulating, Fiber Board, 2 required.
5	200065	Lamination, Inner, 115V, 3 required
6	200066	Lamination, Middle, 115V, 3 required
7	200069	Lamination, Outer, 115V, 3 required
8	200070	Lock, Lamination 115V
5	200062	Lamination, Inner, 230V, 3 required
6	200063	Lamination, Middle, 230V, 3 required
7	200064	Lamination, Outer, 230V, 3 required
8	200079	Lock Lamination, 230V,
9	200074	Coil, 115V
9	200075	Coil, 230V
10	200068	Shell
11	200071	Terminal Cover
12	200072	Insulation for Terminal Cover
*	200078	Bolt, Tie Down, 4 used.

\* Not Illustrated