

## Service Instructions for Size 4 Coil Kits

### Series 48,000 (1-048-051 and 1-048-061 only); 48,100; 55,X00; 56,X00 and 57,500 Disc Brakes

### Single and Dual Voltage Coils

Item No.	Description of Parts Included in Kit (kit contents may vary)	Qty. per kit
12B	Coil	1
82A	Plunger guide	1
12AN	Wire nut	2
12A	Coil	1
139	Lead wire and terminal assy.	2
139S	Terminal screw	2
139W	Terminal lock washer	2
82	Plunger guide	2
84	Screw - plunger guide	2
84W	Lock washer - plunger guide	2
12AN*	Wire nut	1
12AT*	Crimp terminal	2

\*Dual voltage coils only.

#### Important

Please read these instructions carefully before servicing your Stearns Brake. Failure to comply with these instructions could cause injury to personnel and/or damage to property if the brake is installed or operated incorrectly. For definition of limited warranty/liability, contact Rexnord Industries, LLC, Stearns Division, 5150 S. International Dr., Cudahy, Wisconsin 53110, (414) 272-1100.

#### Caution

1. Servicing shall be in compliance with applicable local safety codes including Occupational Safety and Health Act (OSHA). All wiring and electrical connections must comply with the National Electric Code (NEC) and local electric codes in effect.
2. To prevent an electrical hazard, disconnect power source before working on the brake. If power disconnect point is out of sight, lock disconnect in the *off* position and tag to prevent accidental application of power.
3. Be careful when touching the exterior of an operating brake. Allow sufficient time for the brake to cool before disassembly. Surface may be hot enough to be painful or cause injury.
4. Do not operate brake with housing removed. All moving parts should be guarded.
5. After usage, the brake interior will contain burnt and degraded friction

material dust. This dust must be removed before servicing or adjusting the brake.

DO NOT BLOW OFF DUST using an air hose. It is important to avoid dispersing dust into the air or inhaling it, as this may be dangerous to your health.

- a) Wear a filtered mask or a respirator while removing dust from the inside of a brake.
  - b) Use a vacuum cleaner or a soft brush to remove dust from the brake. When brushing, avoid causing the dust to become airborne. Collect the dust in a container, such as a bag, which can be sealed off.
6. Maintenance shall be performed only by qualified personnel familiar with the construction and operation of the brake.
  7. For proper performance and operation, only genuine Stearns parts should be used for repairs and replacements.

**Warning!** Any mechanism or load held in position by the brake should be secured to prevent possible injury to personnel or damage to equipment before any disassembly of the brake is attempted or before the manual release knob or lever is operated on the brake.

#### INSTRUCTIONS: 48,000 Series style 1-048-051-00 and 1-048-061-00, 1½ and 3 lb-ft

1. To remove housing, remove the two housing screws (15), remove housing (7) by pulling back.

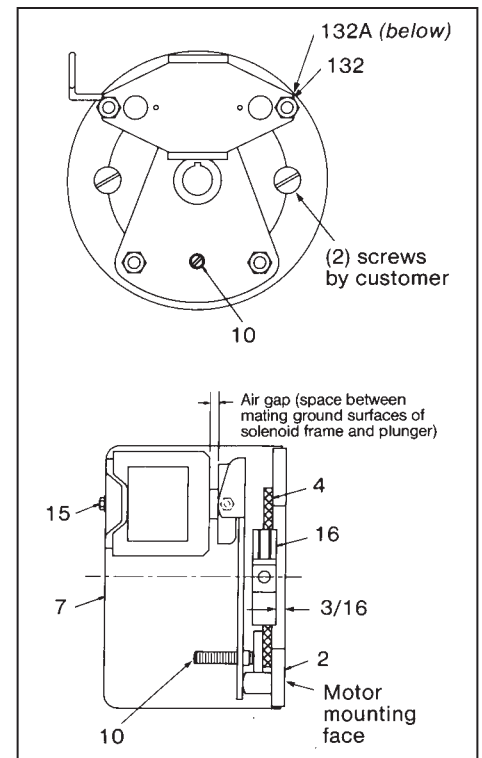


Figure 1: 48,000 Series style

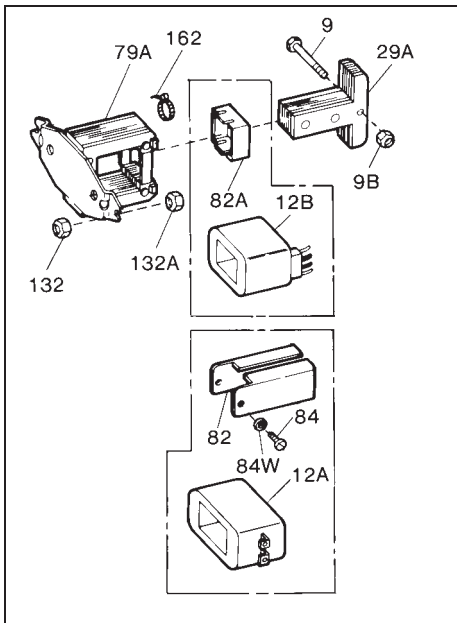


Figure 2: 48,000 Series style

- To replace the solenoid coil, disconnect coil. Cut the plastic wire (162) holding the coil leads onto the solenoid mount stud.
- Remove the two solenoid nuts (132) and solenoid frame (79A) from the solenoid mount studs.
- Follow instructions and notes 55,XXX Series Items 4 and 5 for coil removal.
- Install new coil (12A) into solenoid frame (79A) with same relative position as old coil. Assemble new plunger guides (82), plunger guide screw(s) (84) and lock washer(s) (84W). If original lead wires (139) are damaged, replace with new lead wires. New terminal screws (139S) and lock washers (139W) are also provided in kit.
  - Install new coil (12B) with lock tab at top of solenoid frame (79A) with lead wires in same relative position as old coil. Check that lock tab locks. Place plunger guide (82A), lock tabs down, into top of solenoid frame (79A). Install wire tie (162).
- Reassemble engaging plunger (29A) in reverse order of Item 3.
- Follow instructions of the 55,XXX Series, Items 8 and 9 for coil connection. Install new wire tie to solenoid mounting stud.
- Push in plunger (29A) and allow it to snap out several times. Measure solenoid air gap between mating surfaces of solenoid frame and solenoid plunger.

**If air gap exceeds  $\frac{1}{8}$ ", adjustment should be made. See Figure 1.**

**Note:** To check air gap on 1½ & 3 lb-ft brakes with plunger (29A) below the solenoid frame (79A), it is necessary to push the plunger into frame until a slight resistance is felt. Hold plunger at this position to measure air gap.

To decrease air gap, turn the wear adjusting screw (10) clockwise until an air gap of  $\frac{1}{8}$ " minimum is attained. To increase gap, turn screw counterclockwise. After adjustment, push in plunger and allow it to snap out. Recheck air gap, see *note* in Item 8.

- Replace housing (7) and housing screws (15).

**Note:** If solenoid buzz is noted, remove housing and readjust frame alignment by a slight repositioning of solenoid mounting nuts (right hand) (132) and (132A). Check that plunger is in center of frame. Recheck air gap. If adjustment is necessary, see Step 8 and Figure 1. Replace housing and screws.

**Caution!** Do not run motor with brake in manual release position. It is intended only for emergency manual movement of the driven load, not as a substitute for full electrical release.

### INSTRUCTIONS: 48,100 Series style

- Disconnect coil (12B) from circuit.
- Remove housing studs (18) and lock washers (18A) from the solenoid mount studs. Pull solenoid frame (79A) off the solenoid mount studs. The solenoid mount studs may loosen with the removal of the housing studs (18). If necessary, rethread the studs into the endplate. Make sure the lock washers (3F) and shock pads (3G) are on each stud.
- Remove plunger guide (82A) by lifting out of top of solenoid frame. Coil (12B) has a lock tab, located at top of coil opposite lead wire side, which is pressed against coil and coil is slid sideways from solenoid frame.
- For coil replacement, inspect and clean solenoid assembly. Install the new coil in original solenoid frame or original coil in new solenoid frame with the lead wires positioned as before. Install plunger guide in reverse order of (4).
- Reassemble brake in reverse order of Steps 1, 2 and 3. Tighten the housing studs (18) to 15 lb-in of torque to compress the shock pads (3G). If

solenoid buzz is noted, readjust frame alignment by slight tightening or loosening of one housing stud (18).

- Push in plunger (29A) and allow it to snap out several times. Measure solenoid air gap between mating surfaces of solenoid frame and solenoid plunger.

**If air gap exceeds  $\frac{1}{8}$ ", adjustment should be made. See Figure 1.**

**Note:** To check air gap on brakes with plunger (29A) below the solenoid frame (79A), it is necessary to push the plunger into frame until a slight resistance is felt. Hold plunger at this position to measure air gap.

To decrease air gap, turn the wear adjusting screw (10) clockwise until an air gap of  $\frac{1}{8}$ " minimum is attained. To increase gap, turn screw counterclockwise.

After adjustment, push in plunger and allow it to snap out. Recheck air gap, see *note* above.

- Replace housing (7) and housing screws (15).

### INSTRUCTIONS: 55,XXX Series and 56,X00 Series

- To remove housing, follow instructions listed in Figure 4 for the appropriate brake series.
- To replace the solenoid coil, disconnect lead wire terminal screws (132S), lock washers (139W) and lead wires (139) or wire nuts.
- Insert a screwdriver between support plate (126) and top of lever arm (17). With screwdriver wedge apart, remove bearing pin (26), bearing (6), pivot pin (131) and solenoid lever (8) with solenoid link (13) and plunger (29). It is not necessary to separate the solenoid lever, solenoid link and plunger. See Figure 7.
- To remove coil (12A), unscrew plunger guide screws (84) and lock washers (84W). Remove both plunger guides (82) by prying up on the flanges. Discard plunger guides.

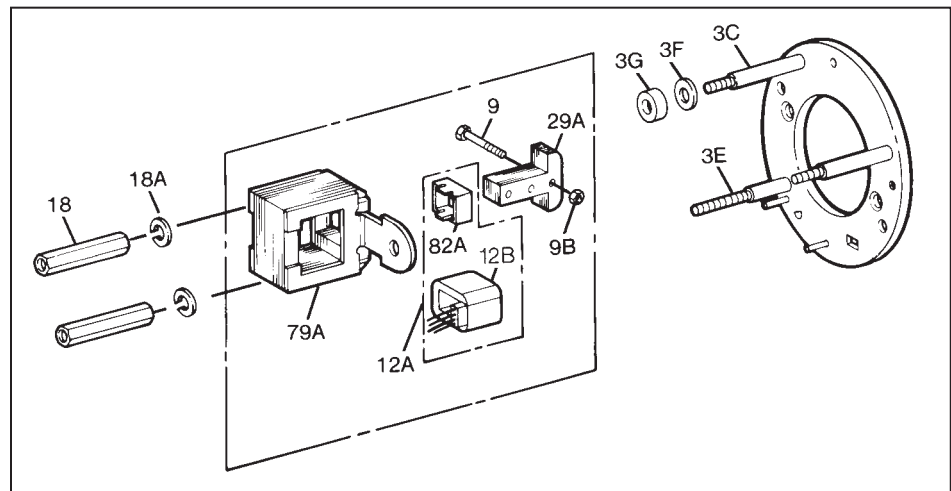
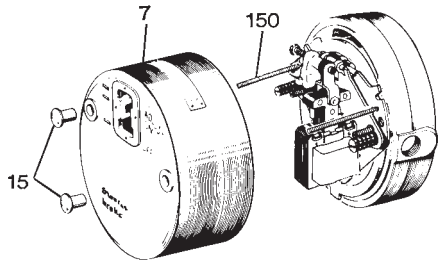


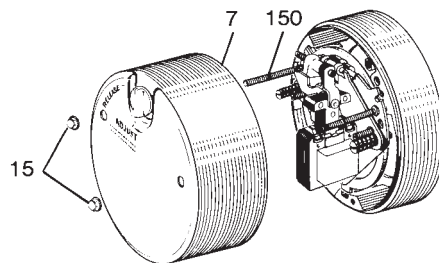
Figure 3: 48,100 Series style

55,000; 55,400; 56,100; 56,200; 56,600;  
56,800; 56,900 and 57,500 Series



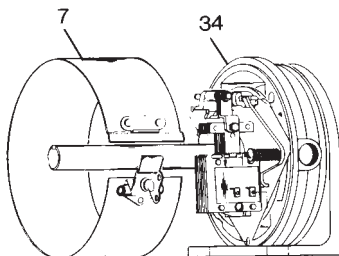
Remove housing nuts (15) by unscrewing from housing studs (150), remove housing (7) by pulling back.

55,500; 56,000; 56,400 and 56,500 Series



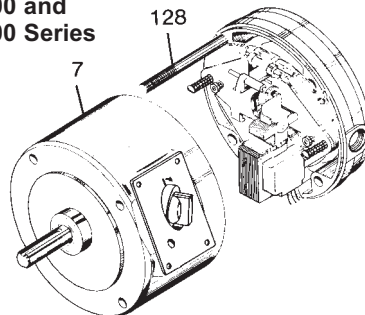
Remove housing nuts (15) by unscrewing from housing studs (150), remove housing (7) by pulling back.

55,200 Series



- Remove wraparound sheet metal housing (7) by turning wing-nut on latch counterclockwise until the latch releases.
- Open housing and slide over the brake or away from the floor stand (34).

55,700 and 56,700 Series



- Remove housing (7) by unscrewing nuts from the four mounting studs (128) that protrude through the reducer flange.
- Grasp the coupler brake and motor as a unit and pull free from the reducer.
- Pull housing from the mounting studs (128). These studs are threaded into the motor C-face and should remain in place.

Figure 4

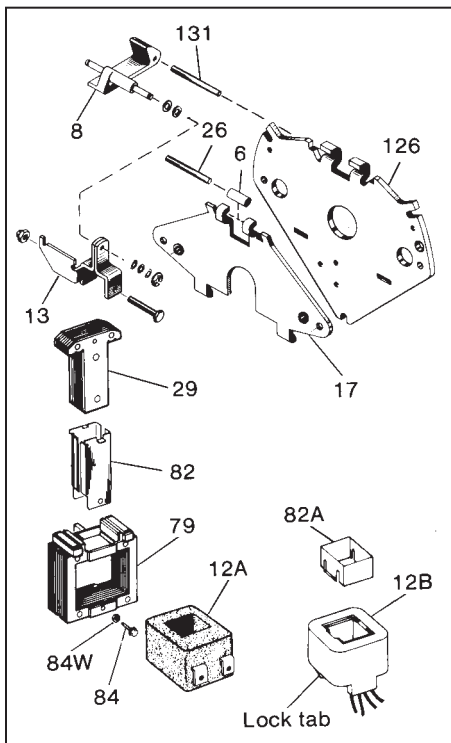


Figure 5

- To remove coil (12B), lift plunger guide (82A) out of top of solenoid frame (79).

- Slide coil (12A) sideways from solenoid frame (79) if necessary, tap coil lightly with soft hammer.

- To remove coil (12B) from solenoid frame (79), depress lock tab opposite lead wire side of coil and slide coil sideways from frame.

**Note 1:** If coil burned out, be sure to remove all foreign material from solenoid plunger (29) and solenoid frame (79).

**Note 2:** Only use plunger guides (82) and (82A) with their respective coil kit.

- Install new coil (12A) into solenoid frame with same relative position as old coil. Assemble new plunger guides (82), plunger guide screws (84) and lock washers (84W). If original lead wires (139) are damaged, replace with new lead wires. New terminal screws (139S) and lock washers (139W) are also provided in kit.

- Install new coil (12B) with leads at lower outboard side of solenoid

frame, except on the 55,700 Series coupler.

- On the 55,700 Series, position coil so that leads are toward the outboard upper right side of frame. Route leads away from air gap to avoid pinching. Slight repositioning of the solenoid frame may be required to avoid interference of mounting stud (128) and corner of coil. If required to shift frame, re-tighten screws to torque of 43 in-lbs.

In both cases, check that lock tab locks. Place plunger guide (82A) lock tabs down into top of solenoid frame (79).

- Reassemble plunger (29) in reverse order of Item 3, remove screwdriver. Check that plunger and frame are aligned; realign frame if necessary.
- Dual voltage class H (encapsulated) coils have two terminals and two black wires. Dual voltage class B (molded) coils have two red and two black wires. Follow proper leadwire sequence shown in figure 6.

#### AC Voltage Coil Connection

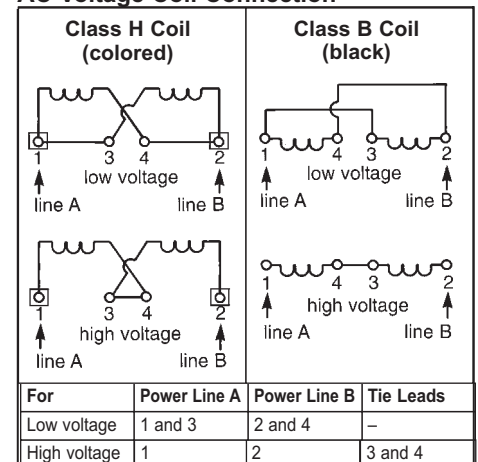


Figure 6 (see next page for dual frequency coil connection)

- Be sure lead wires to coil are not tight or pinched; leads will not be rubbed by friction disc; leads will not be trapped between solenoid plunger and frame.
- Manually lift plunger to maximum travel. Depress and allow solenoid plunger to snap out several times. Measure solenoid air gap (see Figure 7) between mating surfaces of solenoid frame and solenoid plunger. (On vertically mounted brakes, it will be necessary to push solenoid plunger into solenoid frame to the point where spring pressure is felt, before measuring solenoid air gap.)  
If solenoid air gap is less than or exceeds air gaps in Tables (on next page), adjustment is recommended.
- The solenoid air gap may be decreased by turning both wear adjustment screws (10) equal amounts clockwise, approximately  $\frac{1}{8}$  turn, until appropriate solenoid gap is

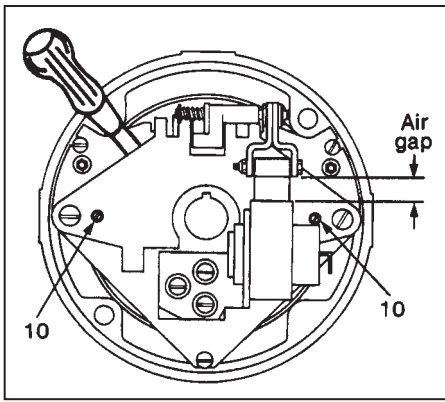


Figure 7

### Wiring Diagram – Dual Frequency Coil

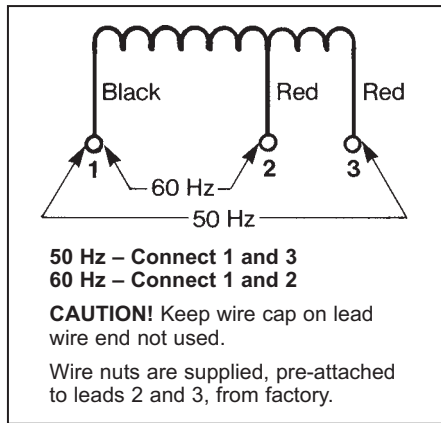


Figure 8

Nominal Static Torque (lb-ft)	55,000; 55,200; 55,400 and 57,500 Series	55,500 and 55,700 Series
1.5 and 3	13/32"	13/32"
6	1/2"	–
10	9/16"	1/2"
15	9/16"	9/16"
20 and 25	9/16"	–

**Caution 2!** Class H coils with terminals. Do not bend lead wire crimp connection as this causes a fatigue in the metal which may break under vibration.

**NOTE:** For complete instructions, *with troubleshooting*, request sheet applicable to the series of brake that you have.

Nominal Static Torque (lb-ft)	Air Gap
1.5, 3 and 6	3/8"
10 and 15	7/16"
20 and 25	1/2"

attained. To increase gap, turn screws counterclockwise equal amounts.

**Table 1:** Air Gap Settings (55,X00 Series)

**Table 2:** Air Gap Settings (56,X00 Series)

12. Reconnect coil leads.
13. Replace housing and housing nuts in reverse order of the appropriate point in Step 1.
14. **Caution 1!** Do not run motor with brake in manual release position. It is intended only for emergency manual movement of the driven load, not as a substitute for full electrical release.

