

Service Instructions for No. 5, 6 & 8 DC Solenoid Assembly Series 87,000; 87,200, 87,400, 87,600 and 87,700 Disc Brakes

Item No.	Description of Parts Included in Kit	Qty. per Kit
29	Solenoid plunger	1
79	Solenoid frame	1
132	Solenoid mounting screw	3
132W	Solenoid lock washer	3
156	Cable clamp	1
156S	Machine screw (cable clamp)	1
13N	Solenoid link nut	1
132P	Drive-lok pin*	1
13W	Solenoid washer**	1

*87,700 No. 8 solenoid only
**No. 8 solenoid 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 serviced or operated incorrectly. For definition of limited warranty/liability, contact Rexnord Industries, Inc., 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 should 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.

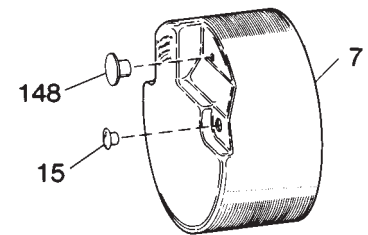
Warning! Any mechanism or load held in position by the brake should be secured to prevent possible injury to personnel or damage to equipment before any disassembly of the brake is attempted or before the manual release knob or lever is operated on the brake.

Instructions

1. To remove housing, follow instructions listed under each individual brake series shown in next column, then continue with the following steps.
2. Solenoid replacement can be accomplished without removing the support plate (126) from brake.
3. Disconnect coil lead wires. Remove cable clamp screw (156S), cable clamp (156) and DC switch (157) from solenoid frame bracket. Remove three cap screws (132) and lock washers (132W) to free solenoid subassembly (12).

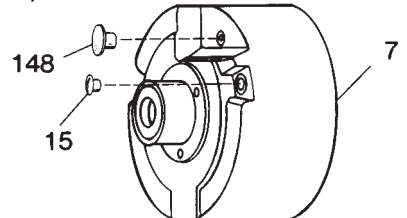
Note: 87,700 Series, No. 8 solenoid only. Insert a screwdriver under solenoid frame and pry up. This will free it from drive-lok pin (132P). Drive-lok pin is inserted from back side of support plate. Push out drive-lok pin (132P) using a 3/16" diameter drift and remove pin.
4. For metallic plunger guides (82), remove plunger guide screws (84). Remove both plunger guides (82) by prying up on flanges.

87,000; 87,400 and 87,600 Series



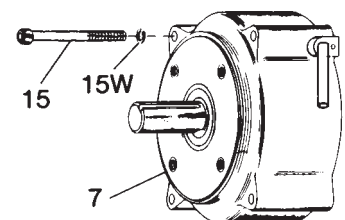
Remove manual release knob (148), housing nuts (15) or bolts holding housing to endplate, and housing (7) by pulling back.

87,200 Series



- a) Remove any accessories, sprockets, sheaves, etc., from brake shaft on housing side.
- b) Remove manual release knob (148), housing nuts (15) and housing (7).

87,700 Series



- a) Remove brake and motor as a unit from reducer.
- b) Remove four housing bolts (15) and lock washers (15W).
- c) Pull back on housing and shaft assembly to remove it as a unit.

To remove non-metallic plunger guides (82A), remove screws (84). Insert shim stock or other thin gauge material at top center of coil between coil and solenoid frame. Push to release lock tab while lifting up on plunger guide. Repeat for other plunger guide. Do not reuse worn plunger guides; replace.

Note: On 87,700 with 5 and 6 solenoid using the four lead coil, remove right side screw and guide, slide coil to left and remove left screw and guide.

5. Slide coil (12A) sideways from solenoid frame (79). If necessary, tap lightly with soft hammer. (It is assumed coil is serviceable and will be reused).
6. Assemble non-metallic plunger guides (82) by inserting into position and pushing down until lock tab snaps under top bar of solenoid frame. Install plunger guide screw and lock washer. With encapsulated coils (with terminals) check that lock tabs allow free movement of plunger. If movement is restricted, file chamfer 1/16" x 45° on coil at lock tab areas.

Remount and connect DC switch (157) to new solenoid frame (79). (Two coil leads and two arc suppression leads are reconnected to switch. Polarity is immaterial.) Install new cable clamp (156S). Set subassembly aside for later installation on support plate.

7. Remove solenoid link nut (13N) from cap screw (13C) to free plunger. Discard nut and plunger.
8. Attach solenoid link to new solenoid plunger using cap screw (13C) and new nut (13N).
9. Slide solenoid subassembly (12) over new plunger (29). Attach to support plate (126) with three new mounting screws (132) and lock washers (132W).

Note 1: On the 87,700 brake there is a spacer (179) inserted between the solenoid mounting flange and support plate on unit using the No. 5 and No. 6 solenoid only.

Note 2: 87,700 Series, No 8 solenoid only. Secure plunger by wiring it to frame. Remove support plate. Remove drive-loc pin (132P) pushed out in Step 2, if not previously removed.

Place support plate on drill press so that it rests on the from side of the solenoid frame (79). Using the drive-loc pin hole (in support plate) as a pilot, drill a 3/16" hole into solenoid mounting flange, approximately 3/16" deep. Drive in new drive-loc pin (132P) until it is fully seated.

Remount support plate to brake and torque screws (142S) with lock washers (142W) to 10 ft-lbs. Remove safety wire from solenoid.

Before tightening mounting screws, align the plunger and frame so that mating surfaces are parallel. Manually pulling the plunger (29) down into the sealed position will help with alignment. If later there is a solenoid buzz upon energization, then a slight realignment may be necessary. Torque No. 5 and 6 size solenoid screws to 3.5 ft-lbs. and No. 8 size solenoid to 10 ft-lbs.

10. Depress and allow solenoid plunger to snap out several times. Measure solenoid air gap 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.) The operating air gap measurement is 13/16" to 15/16".
11. The solenoid air gap may be increased by raising or decreased by lowering the wrap spring stop (76). To accomplish this, loosen two (stop) screws (76S), move wrap spring stop slightly and retighten screws. Set air gap at 13/16" to 15/16". Repeat Step 10 after each change in wrap spring stop position to obtain correct solenoid air gap measurement.
12. Reconnect solenoid coil leads.

13. Replace housing, screws and manual release knob in the reverse order of the appropriate point in Step 1.

14. 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.

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

