

Wiring and Service Instructions for DC Voltage Coils 5X,XXX and 8X,XXX Series

Important

Please read these instructions carefully before installing, operating or 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. Installation and servicing must be made in compliance with all 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. Do not install the brake in atmospheres containing explosive gases or dusts.
3. 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.
4. Make certain power source conforms to the requirements specified on the brake nameplate.
5. Be careful when touching the exterior of an operating brake. Allow sufficient time for brake to cool before disassembly. Surfaces may be hot enough to be painful or cause injury.
6. Do not operate brake with housing removed. All moving parts should be guarded.
7. Installation and servicing should be performed only by qualified personnel familiar with the construction and operation of the brake.
8. For proper performance and operation, only genuine Stearns parts should be used for repairs and replacements.

Caution! Due to high initial current demands of a DC solenoid, a separate DC power source of adequate current capacity is usually required.

Caution 2! Never use a series resistor to drop power supply voltage to the coil as brake malfunction will result.

Caution 3! For electrical release of brake, apply full rated coil voltage instantly. Do not increase voltage slowly.

56,X00 ONLY

Connect the free red and black lead wires, from the electronic DC switch, to power.

See Figure 1. See notes and cautions below.

DC Voltage Coil Connection

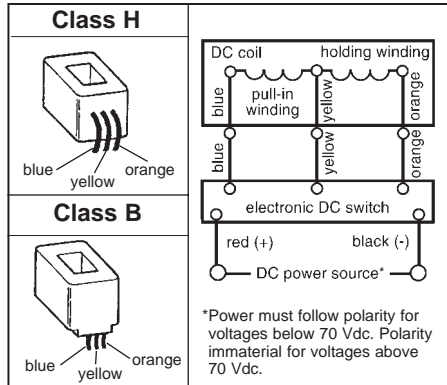


Figure 1

Note 1: Polarity is immaterial for DC voltages greater than 70 Vdc.

Note 2: For DC voltages less than 70 Vdc, the (red +) lead wire must be connected to positive and the (black -) lead wire to negative.

Note 3: Do not use a half wave rectifier with input voltages above 230 vac. Instantaneous peak voltages can be high enough to cause premature failure of the arc suppression module or, electronic DC switch.

55,XXX and 8X,XXX ONLY

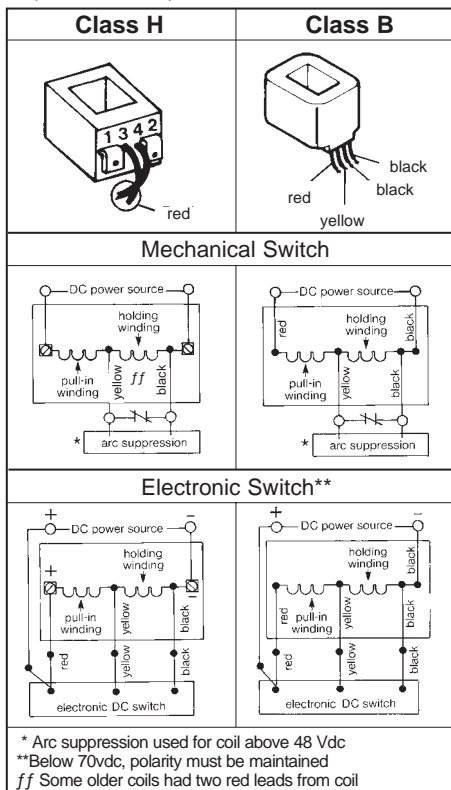


Figure 2

These Stearns DC coils are single voltage dual winding. A high current pull-in winding is initially energized to start the plunger movement, while a low current holding winding is momentarily shunted from the circuit until the plunger has pulled in. The older design incorporated a mechanical switch mounted to the solenoid frame and actuated by an arm mounted to the plunger to bring the holding coil into the circuit. In addition, coils over 48 Vdc have an arc suppression module in parallel with the switch contacts to protect the contacts from arc erosion and suppress EMI. The polarity of the incoming power supply is immaterial with the mechanical switch. The new electronic switch design incorporates an electronic timing circuit to allow the plunger to pull in, then electrically switch to the holding winding. Polarity of the power supply to the electronic switch and coil must be maintained. Refer to Figure 2 for proper wiring. Refer to Figure 3 (next page) for approximate switch position.

Table 1: Air Gap Settings

Nominal Static Torque (lb-ft)	Air Gap
55,000; 55,200 and 55,400 Series	
1.5 and 3	13/32"
6	1/2"
10	9/16"
15	9/16"
20 and 25	9/16"
55,500 and 55,300 Series	
1.5 and 3	13/32"
6	1/2"
10	1/2"
15	9/16"
57,500 Series	
10	9/16"
15	9/16"
20 and 25	9/16"
56,X00 Series	
1 disc	3/8"
2 disc	7/16"
3 disc	1/2"
87,X00 Series	
all torques	7/8" to 15/16"
81,X00; 82,X00 and 86,X00 Series	
all torques	1-3/8" to 1-7/16"

Solenoid Kits

Series	Electronic	Mechanical*
55,X00 and 57,500 Series		
55,000	5-66-5041-00	5-12-5542-00
55,100	5-66-5041-00	5-12-5546-00
55,400	5-66-5549-00	5-12-5550-00
55,500	5-66-5041-00	5-12-5546-00
55,700	5-12-5547-00	5-12-5548-00
57,500	5-12-5544-00	5-12-5545-00
56,X00 Series (electronic switch only)		
56,600	5-66-5042-00	---
56,100	5-66-5042-00	---
56,200	5-66-5047-00	---
56,300	5-66-5042-00	---
56,400	5-66-5042-00	---
56,500	5-66-5042-00	---
56,700	5-66-5047-00	---
56,900	5-66-5047-00	---

Torque (lb-ft)	Electronic	Mechanical*
87,000; 87,100 and 87,200 Series		
6 and 10	5-66-5051-00	5-12-5557-00
15, 25 and 50	5-66-5061-00	5-12-5567-00
35, 75 and 105	5-66-5081-00	5-12-5589-00
87,700 Series		
6 and 10	5-66-5052-00	5-12-5557-00
15, 25 and 50	5-66-5062-00	5-12-5567-00
35, 75 and 105	5-66-5081-00	5-12-5589-00
81,000 and 82,000 Series		
all	5-12-5529-00	5-12-5539-00
86,X00 Series		
right hand } left hand }	5-12-5521-00	5-12-5531-00 5-12-5532-00

*All mechanical switches used with coils over 48 Vdc require the use of arc suppression module 5-57-5711-00.

All brakes with mechanical switch design use switch kit 5-57-5501-00 except for the following:
87,700 Series (35, 75 and 105 torque) - use 5-57-5503-00
57,500 and 55,700 Series - use 5-57-5502-00

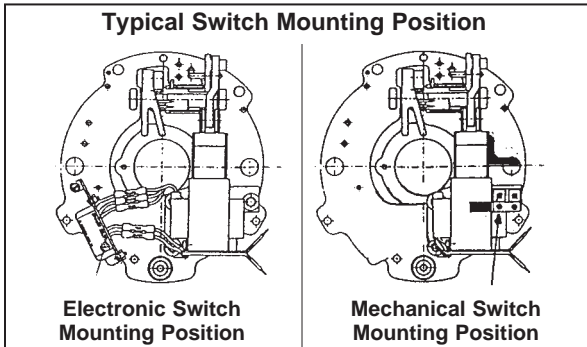
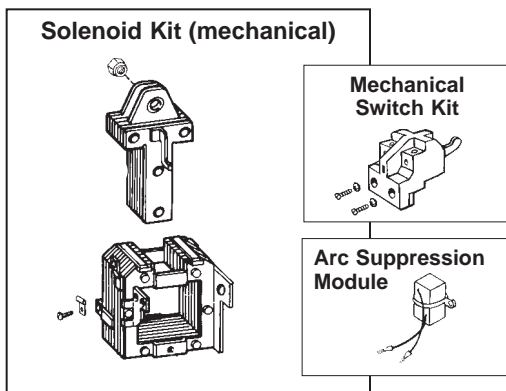


Figure 3



Coil Kits - Electronic Switch Kits

(coil kit can be used with either electronic or mechanical switch design)

Description		Part Number	Torque (lb-ft)			
			1.5 - 10	15 - 25*		
55,X00 and 57,500 Series						
No. 4 coil assembly	24/28 Vdc	5-96-6412-33	1			
	115 Vdc	5-96-6416-33	1			
	230 Vdc	5-96-6417-33	1			
No. K4 coil assembly	24/28 Vdc	5-96-6462-33			1	
	115 Vdc	5-96-6466-33			1	
	230 Vdc	5-96-6467-33			1	
Electronic DC switch kit	24/28 Vdc	5-57-5712-05	1		1	
	115 Vdc	5-57-5716-05	1		1	
	230 Vdc	5-57-5717-05	1		1	
56,X00 Series			1.5 & 3	6 & 10	15 & 20	25
No. 4+ coil assembly	24/28 Vdc	5-96-6412-43	1			
	115 Vdc	5-96-6416-43	1			
	230 Vdc	5-96-6417-43	1			
No. K4+ coil assembly	24/28 Vdc	5-96-6412-23		1		
	115 Vdc	5-96-6416-23		1		
	230 Vdc	5-96-6417-23		1		
No. M4+ coil assembly	24/28 Vdc	5-96-6462-23			1	
	115 Vdc	5-96-6466-23			1	
	230 Vdc	5-96-6467-23			1	
No. P4+ coil assembly	24/28 Vdc	5-96-6442-43				1
	115 Vdc	5-96-6446-43				1
	230 Vdc	5-96-6447-43				1
Electronic DC switch kit	24/28 Vdc	5-57-5712-15	1	1	1	1
	115 Vdc	5-57-5716-15	1	1	1	1
	230 Vdc	5-57-5717-15	1	1	1	1
87,X00 Series			6 & 10	15, 25 & 50	35, 75 & 105	
No. 5 coil assembly	24/28 Vdc	5-96-6512-33	1			
	115 Vdc	5-96-6516-33	1			
	230 Vdc	5-96-6517-33	1			
No. 6 coil assembly	24/28 Vdc	5-96-6612-33		1		
	115 Vdc	5-96-6616-33		1		
	230 Vdc	5-96-6617-33		1		
No. 8 coil assembly	24/28 Vdc	5-96-6812-33				1
	115 Vdc	5-96-6816-33				1
	230 Vdc	5-96-6817-33				1
Electronic DC switch kit	24/28 Vdc	5-57-5712-07	1	1	1	1
	115 Vdc	5-57-5716-07	1	1	1	1
	230 Vdc	5-57-5717-07	1	1	1	1
81,000; 82,000 and 86,000 Series						
No. 9 coil assembly	24/28 Vdc	5-96-6912-33				---
	115 Vdc	5-96-6916-33				---
	230 Vdc	5-96-6917-33				---
Electronic DC switch kit	<i>Not available at this time</i>		---			

*Except 55,000 Series (15 lb-ft) - use No. 4.

