

Replacement Contact and Solenoid Kits For Class 8903 Type PB Lighting Contactors 9998PB●●●

Retain for future use.

DISASSEMBLY

CAUTION

IMPROPER ASSEMBLY

- Do not cross-thread the soft copper contacts when installing screws.
- Be careful to follow all instructions completely.

Failure to follow these instructions can result in equipment damage and improper operation.

⚠ DANGER

HAZARDOUS VOLTAGE

Turn off all power supplying the equipment before working on it.

Failure to follow this instruction will result in death or serious injury.

Letters in parentheses refer to parts in the figures.

1. Verify that you have the correct kit for your application. See Table 1.

Table 1: Kit Catalog Numbers

Contact Kits			Solenoid Kits	
Amperage	No. of Poles	Catalog Number	AC Control Voltage	Catalog Number
30–100	2	9998PB2	120	9998V02
	3	9998PB3	240/277	9998PBV39
150–225	2	9998PB14	480	9998PBV28
	3	9998PB15		

208V = 9998PBV08

2. Gather the tools needed:



- Torque wrench¹, 10–25 lb-in (1.1–2.8 N•m)
- 5/16 in. nut driver¹
- 1/8 in. Allen wrench²
- 3/32 in. Allen wrench
- Phillips screw driver, No. 2

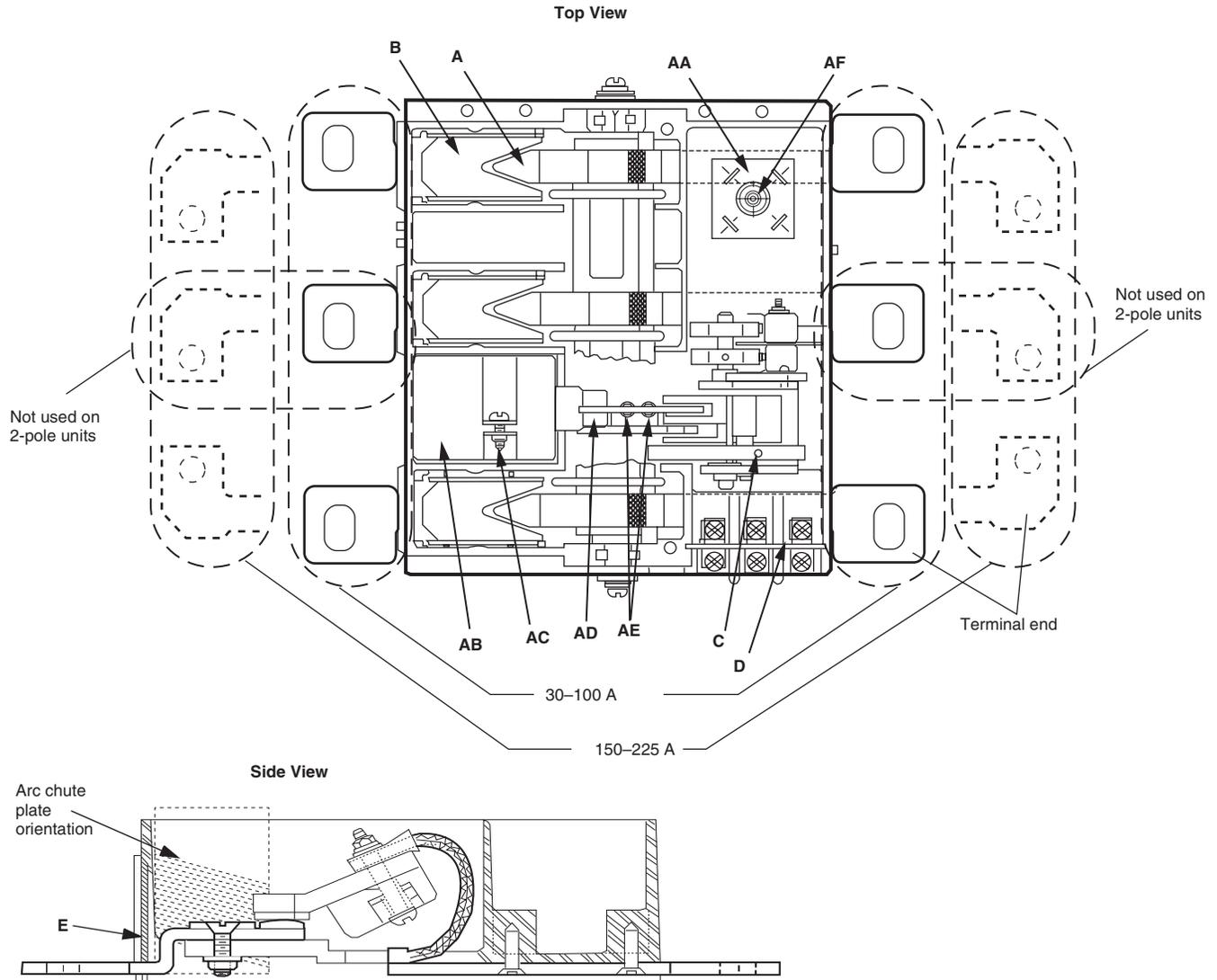
1. contact kit only
2. solenoid kit only

3. For the contact kit, remove the unit from its mounting so that you can access both sides of the unit.
4. Open the contacts by inserting the 3/32 in. Allen wrench into the hole in the manual operating roller (C), then rotating the roller toward the open position. See the label.
(When closing the contacts, follow the same procedure, but rotate the roller toward the closed position.)

NOTE: Do not put your fingers into the unit while opening or closing the contacts.

5. Remove and retain the two cover retaining screws and remove the cover.
6. Note the orientation of the arc chutes (B). It is important to reinstall them in the exact same orientation. Slide out all the arc chutes and the barrier (D) over the control wiring terminals to prevent them from falling out and getting damaged.
7. Proceed to the replacement instructions for the appropriate kit.

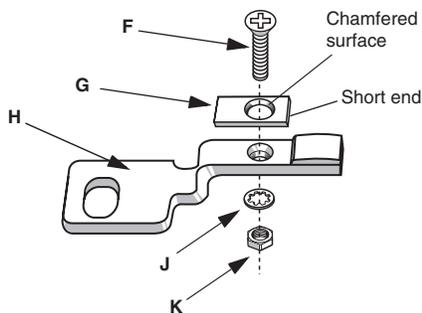
Figure 1: Contactor Layout and Orientation



CONTACT KITS

STATIONARY CONTACT REPLACEMENT

Figure 2: Stationary Contact Assembly

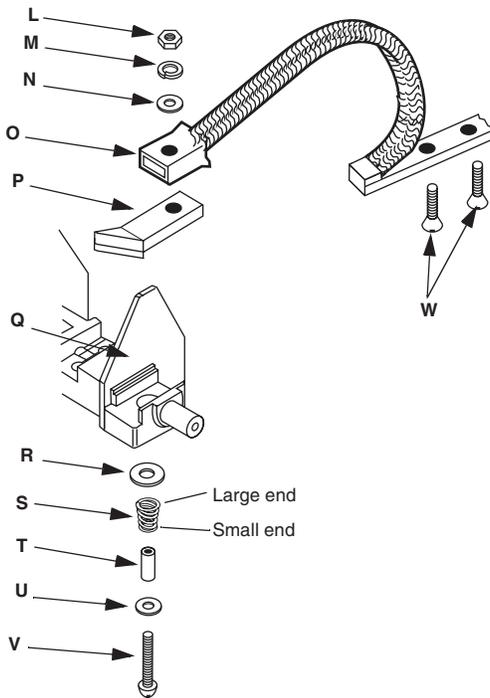


Discard the old parts, unless otherwise instructed.

1. From the back of the unit, remove the mounting nut (K) and lock washer (J). From the top of the unit, remove the screw (F) and arc runner (G) from the stationary contact (H).
2. Slide the stationary contact out from under the vent screen (E). Retain the vent screen.
3. Using the new parts from the kit, reassemble in the reverse order of removal. Be sure to orient the terminals as shown in Figure 1. Ensure that all parts are flush and the arc runner is parallel to the stationary contact.
4. Torque the nut to 20 lb-in (2.3 N•m), holding the screw in position with a screw driver.

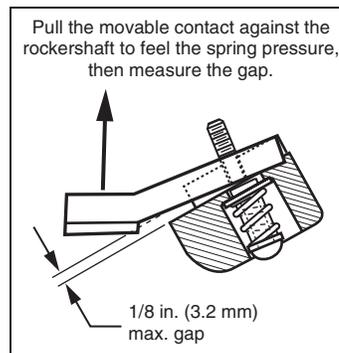
MOVABLE CONTACT REPLACEMENT

Figure 3: Movable Contact Assembly



5. Ensure that the arc runner is parallel to the stationary contact.
6. Repeat Steps 1–5 for each pole.
1. Remove the nut (L), split lock washer (M), flat washer (N), and braided end of the bus plate (O) from the contact holding screw (V).
2. From the bottom of the unit, remove the two screws (W) in the solid end of the bus plate (O) and remove the bus plate.
3. Close the contacts (see Step 4 on page 1).
4. From the bottom of the unit, unscrew the contact holding screw (V), and as a unit remove the contact holding screw, small washer (U), contact spacer (T), contact spring (S), and large washer (R) from the rockershaft (Q).
5. Remove the movable contact (P).
6. Using the new parts from the kit, reassemble parts Q–V in the reverse order of removal.
7. Open the contacts.
8. Check the movable contact for free play as shown:

NOTE: The contact is soft copper; do not cross-thread when installing the screw. Ensure that the spring and the spacer are square against the facing washers. Ensure that the large end of the spring and the large washer are inside the rockershaft recess. Torque the screw to 25 lb-in (2.8 N•m).



- If the movable contact does not move freely under the spring pressure, or
 - If the gap between the contact and its seat on the rockershaft is less than 1/8 in. (3.2 mm) when the movable contact is manually pulled back
- repeat Steps 3–7 to ensure proper contact spacer seating and washer placement.

9. Ensure that the mating surfaces of the movable contact and the stationary contact are free of any dirt or grease.
10. Using the new parts from the kit, reassemble parts L–P and W in the reverse order of removal. Tighten screws (W) snugly. Then hold the contact holding screw (V) to prevent it from turning while you torque the nut to 25 lb-in (2.8 N•m).
11. Repeat Steps 1–10 for each pole.
12. Proceed to “Solenoid Replacement” below or “Reassembly” on page 4.

SOLENOID KITS

SOLENOID REPLACEMENT

1. Close the contacts (see Step 4 on page 1).
2. Remove the screw (AC) from the clamp around the solenoid (AB). Bend the clamp away from the solenoid.
3. Open the contacts to lift the solenoid out of its seat in the base.
4. Pull the solenoid from its base. Disengage and retain the plunger (AD) and spring.

CAUTION

IMPROPER CONTACT FORCE

Do not adjust the two screws (AE).

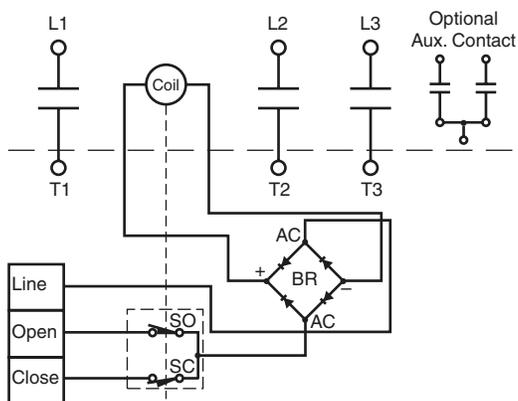
Failure to follow this instruction can result in equipment damage.

5. Disconnect the solenoid wires at the connectors. Polarity is unimportant.
6. Using the new solenoid, reconnect and reassemble in the reverse order of removal. Ensure that the wire connectors are out of the way of the solenoid mounting. Leave the grease on the spring. Ensure that the spring is properly seated inside the counterbore of the solenoid.
7. Press down on the solenoid to ensure that it is fully seated. Close the clamp and tighten the clamp screw until snug, leaving a gap of approximately 1/8 in. (3.2 mm) between the two flanges on the clamp.
8. Ensure that the contacts open and close properly (see Step 4 on page 1).

RECTIFIER REPLACEMENT

Figure 4: Controller Reference Diagram

Contactor is in the open position.
For a two-pole unit, omit the middle pole.



1. One at a time, disconnect the electrical connectors from the old rectifier (AA) and install them in the same location on the new rectifier. For proper orientation, refer to the red dot next to the (+) terminal.
2. Unscrew and retain the mounting screw (AF) and remove the rectifier.
3. Install the new rectifier. Tighten the screw until snug.
4. Proceed to "Reassembly" .

REASSEMBLY

1. Slide the arc chutes and the barrier back into place. Ensure that the arc chutes are replaced as shown in Figure 1 on page 2.
2. Ensure that the contacts open and close properly (see Step 4 on page 1).
3. Screw the cover snugly back in place with the cover retaining screws. Do not overtighten.
4. Repeat Step 2.
5. If applicable, remount the unit.
6. Apply power and verify proper operation of the device.

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