

Instructions for Replacement of Puffer Assembly in 15kV Pad-mounted Switchgear

DANGER!

Before proceeding with these instructions, the equipment to be serviced must be completely de-energized at all connection points in and out of the switchgear, tested for voltage using appropriate voltage testing equipment and grounded in accordance with user's standard operating practices.

NOTE: These instructions cover the specific procedure for replacement of the puffer assembly that is internal to the pump insulator installed at the top (jaw) end of each phase on each 600-ampere load interrupter switch in the pad-mounted switchgear. See Figure 1.

After de-energizing, testing for voltage and grounding the switchgear, the puffer assembly (internal to the pump insulator installed at the top — jaw end — of the interrupter switch) is to be removed and a replacement puffer assembly is to be installed. The removed puffer assembly is to be tagged and marked to show (a) the switchgear serial number, (b) the switch compartment number and (c) the switch phase from which it was removed. The removed puffer assemblies are to be returned to Federal Pacific for analysis.



Figure 1. Switch open with interphase barriers removed. Cable connections, terminators and grounding clamps not illustrated.

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To replace the puffer assembly, refer to Figure 1 and proceed as follows:

1. Make certain the switchgear is completely de-energized, tested for voltage and grounded in accordance with the user's standard operating procedure. Make certain the interrupter switches are open and tagged.
2. For each phase of the load interrupter switch:
 - a. Loosen (only) the upper bolt of the two (2) 1/2" (3/4-inch drive) bolts that secure the bus to the switch main contact. See Figure 2.
 - b. Remove and retain the lower bolt, nut and washers that secure the bus to the switch main contact.
 - c. Remove and retain the four (4) flat, Allen-head screws that secure the main contact to the pump insulator. See Figure 3.
3. Note that Loctite has been used to further secure these screws in place. Therefore, some force may be required to loosen the Allen-head screws.

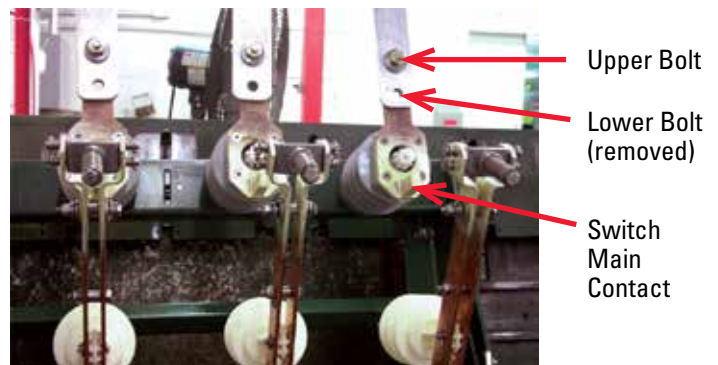


Figure 2. Upper bus bolt loosened; lower bus bolt removed and retained.

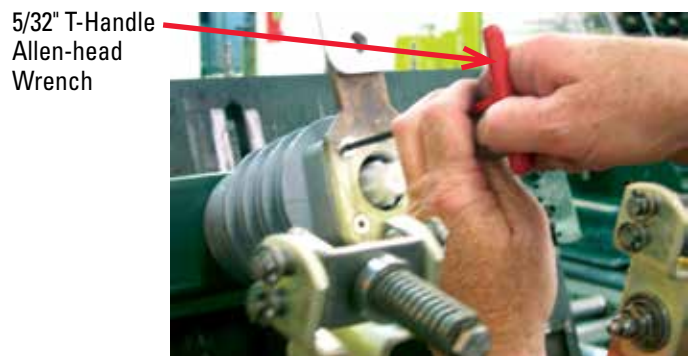


Figure 3. Remove and retain screws that attach main contact to pump insulator. Note that Loctite secures screws in place.

- d. Pivot the main contact off of the pump insulator, to expose the pump spring and puffer assembly. See Figure 4. To pivot the main contact, it may be necessary to further compress the pump spring (by reaching through the opening in the main contact).
 - e. Remove and retain the pump spring.
 - f. Remove, tag and mark the puffer assembly. Show unit serial number, e.g. JXXXX; compartment number, e.g. C1; and phase e.g. A, B, or C as designated on unit.
3. For each phase of the load interrupter switch, re-assemble the unit as follows:
- a. Install the replacement puffer assembly in the correct orientation. In particular, make certain that the pump washer is down against the pump seal. See Figure 5. Also, make sure the black rubber seal on the puffer assembly is lubricated using a silicon grease (such as by Dow Corning).
 - b. Re-install the pump spring over the puffer assembly. Make certain the pump spring keeps the pump washer in place.
 - c. Pivot the main contact over the pump insulator and position the pump-insulator spring in the recessed groove in the backside of the main contact. It may be necessary to slightly compress the pump spring. Then, align the holes in the main contact over the inserts in the pump insulator. To secure the main contact to the pump insulator, first apply Loctite to each Allen-head screw and then re-install the screws to full tightness.
 - d. Re-install to finger tightness the bolt, Belleville washers (one under the bolt head and two under the nut with the concave side of the washers against the bus) in the bottom holes of the bus.
 - e. Fully tighten both 1/2" (3/4-inch drive) bolts to 50 ft. pounds.
4. With proper dispatch authority and clearance, open and close each interrupter switch once or twice to verify alignment and that the probes on the switch blades properly enter the nozzles on the puffer assemblies.
5. Before returning the pad-mounted switchgear to service, make certain no tools remain inside the unit and that all grounds are removed.
6. Follow the user's standard operating practice to bring the pad-mounted switchgear to a service ready condition before energizing.

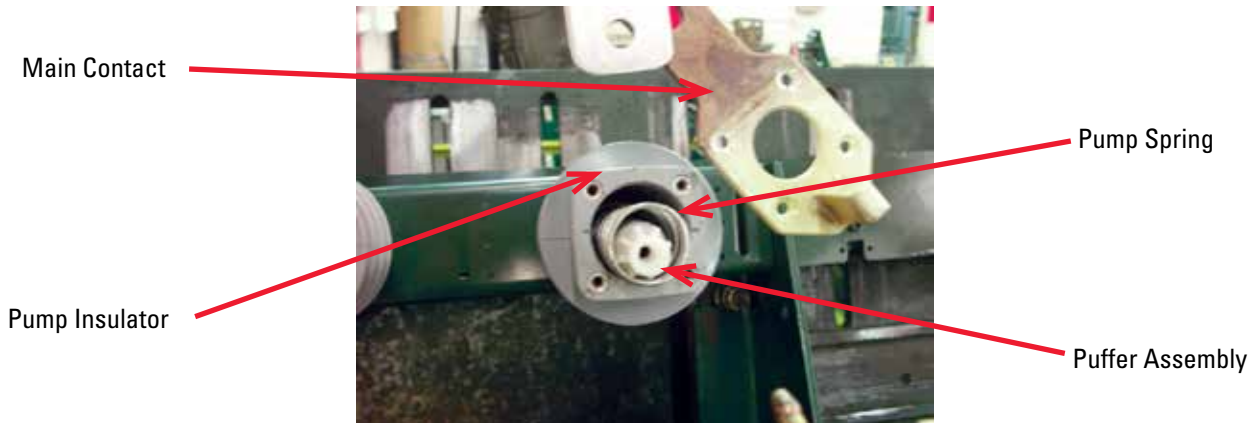


Figure 4. Pivot main contact off pump insulator to expose puffer assembly and pump spring.

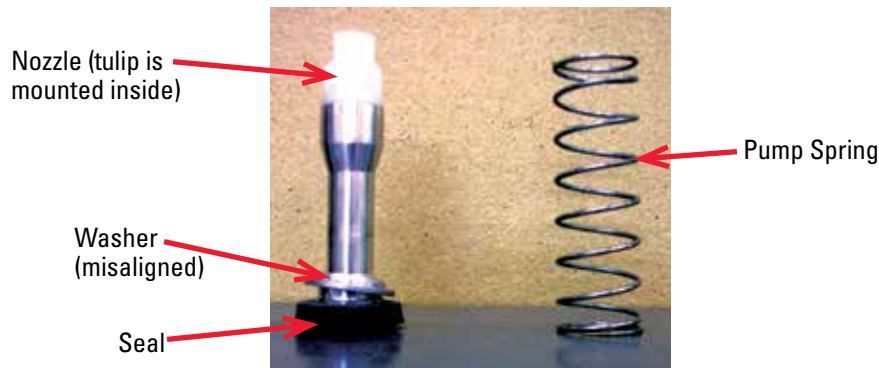


Figure 5. Puffer assembly and spring. Note that puffer washer is illustrated in a *misaligned* position. Install washer seated in place and flush to seal.

