

TYPE AJS – AUTO-JET® SWITCHES

15kV • 25kV • 38kV

INSPECTION & MAINTENANCE RECOMMENDATIONS

Qualified Persons

⚠ WARNING

The equipment covered by this publication must be selected for a specific application and it must be operated and maintained by **Qualified Persons** who are thoroughly trained and knowledgeable in the installation, operation, and maintenance of underground power distribution equipment along with the associated hazards that may be involved. This publication is written only for such qualified persons and is not intended to be a substitute for adequate training and experience in safety procedures for this type of equipment. Proper installation is the responsibility of the operating and construction personnel and the utility performing and authorizing the work. Completion of these instructions implies no further warranty by the manufacturer.

A **Qualified Person** is defined in the National Electrical Code (NEC/NFPA-70) as:

One who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training to recognize and avoid the hazards involved.

The specific electrical safety training requirements to be considered a qualified person are detailed in **NFPA-70E, Article 110.I(D), Employee Training**. Some of the requirements from the 2012 edition are shown below. For the specific detailed training requirements for a Qualified Person make certain to refer to the most recent applicable edition.

These training requirements would include, but are not limited, to the following key points:

- The skills and techniques necessary to distinguish exposed energized parts from other parts of electrical equipment.
- The skills and techniques necessary to determine the proper approach distances corresponding to the voltages to which the qualified person will be exposed.
- The proper use of the special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electrical equipment.
- Tasks performed less often than once per year have additional training requirements.

These instructions are intended only for such qualified persons. They are not intended to be a substitute for adequate training and experience in safety procedures for this type of equipment. Additionally, the recommendations in this instruction bulletin are not intended to supersede or to take the place of established utility safety guidelines and established practices. If there is any question, consult with your foreman or supervisor, as appropriate.

Please refer to OSHA 29 CFR 1910.399 and NFPA 70E Articles 100 and 110.

The procedures required for operation of the Federal Pacific Auto-jet® Load-Interrupter Switches. The inspection and maintenance recommendations covered in this bulletin are expected to be performed in conjunction with a review of IB-3A-310. This bulletin does not cover all the detailed and specific operational procedures and checks. In addition, these instructions are not intended as a substitute for the user's standard operating practices and procedures. A copy of Instruction Bulletin Section IB-3A-310 can be printed from the internet at www.federalpacific.com.

⚠ WARNING

When cleaning components, **NEVER** use any industrial strength cleaners. **NEVER** apply lubricants to the probe contact or the tulip contact which are the interrupting contacts. **NEVER** use any solvent-based or flammable products on any components in the pad-mounted switchgear. Solvents and flammable products can attack non-metallic components of the equipment and reduce electrical and mechanical properties.

Maintenance

Federal Pacific switchgear does not require routine mechanical or electrical maintenance. However, the following are some recommendations for enhancing continued service of the equipment.

Before Opening the Switchgear

⚠ DANGER

The following inspection and maintenance procedures must be performed with the unit completely de-energized and isolated from voltage. Any attempt to perform the inspection and maintenance with the unit energized may result in electrical arc flash that can cause equipment damage, personal injury or death.

I. Exercising

Yearly mechanical exercising of the switch is recommended. Refer to Instruction Bulletin Section IB-3A-310 for information on operating the switch.

WARNING

The switchgear must be completely de-energized from all sources before any attempt is made to enter switchgear. Follow normal system operating practices to de-energize the unit, test for voltage and ground the unit before any work is performed.

2. Cleanliness

Check for cleanliness generally, but particularly for accumulation of any foreign material on insulators and barriers.

NOTICE

Barriers and insulators can be cleaned with a non-alcohol and non-solvent based cleaner that does not leave any residue when dry. Residue must be removed.

3. Barrier Removal

WARNING

When removing barriers, care must be taken to keep the barrier clean and dry. Contamination on barrier can lead to tracking and arcing. Clean off any contamination with a non-alcoholic and non-solvent based cleaner that does not leave any residue.

Removal of the barriers is readily accomplished as follows:

- Completely disconnect the unit from all power sources.
- Open main door.
- Test for voltage, and ground the unit using the user's standard practice procedures and using grounding clamps suitable for the short-circuit rating of the equipment.

4. Switch Operation

CAUTION

Do not put any lubricant on switch probe or puffer contacts. Refer to Section 6 "Lubrication".

Check switch for proper operation refer to Instruction Bulletin IB-3A-310. If the switch is closed on a short circuit within the fault closing rating and the short circuit is cleared by circuit breakers or fuses, the switch will not sustain damage which would require major repairs. However, the switch should be inspected before returning to service to determine switch condition. See Lubrication.

5. Replacement Parts

If parts or labels are required they may be ordered by contacting Federal Pacific at 276-669-4084 or your local Federal Pacific Manufacturer's Representative. A directory of the representatives can be found at www.federalpacific.com. If parts are ordered, the unit serial number and date of manufacture must be provided along with the part description.

6. Lubrication

When maintenance is performed, check for lubrication at the locations pictured on Page 3.

7. Verify Security Devices

Verify the operational integrity of security devices such as door latches, penta-head bolts, hinges and key-interlock systems. Make certain padlocks are properly installed on all doors and covers.

8. Specification

Torque Value: For bus bar connections, apply 50ft-lbs torque to 1/2-13 UNC 18-8SS (or equivalent) hex bolts. For other bolted connections, refer to factory.

High-Pot Test Value: After cleaning and restoring equipment, apply as follows:

15.5 kV - 75% of 36kV for one (1) minute
25 kV - 75% of 60kV for one (1) minute
38 kV - 75% of 80kV for one (1) minute

⚠ WARNING

Lubrication is NOT required on any other surfaces than the locations identified below. Applying lubrication in other areas may reduce mechanical and electrical performance. DO NOT OVER LUBRICATE!

LUBRICATE ONLY:

1. On the switch main-contact stab. See Figure 1.
2. On the contact interface at the fuse-mounting stationary main contact. See Figure 2.
3. On the forward contact that engages the fuse contact rod and on the fuse hinge contacts that engage the fuse contact ferrule. The contact rod and fuse ferrule on the fuse assembly. Refer to fuse manufacturer's instructions.
4. **DO NOT LUBRICATE ANY OTHER AREAS.**
5. If lubrication is required apply a coating of NYE Rheolube 363, which is the only approved lubricant.

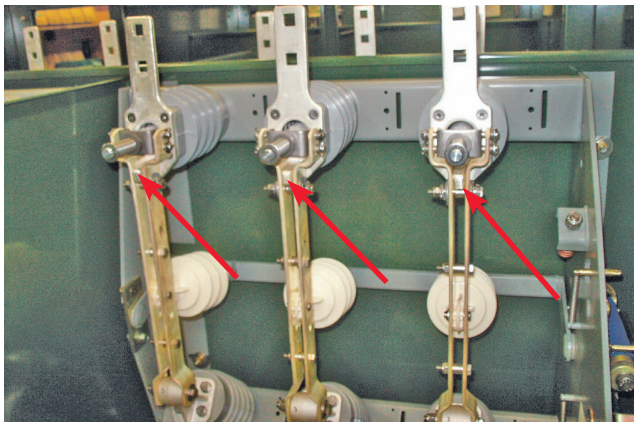


Figure 1. Lubricate only the interface between the main-contact stab and the switch blade marked by arrows.

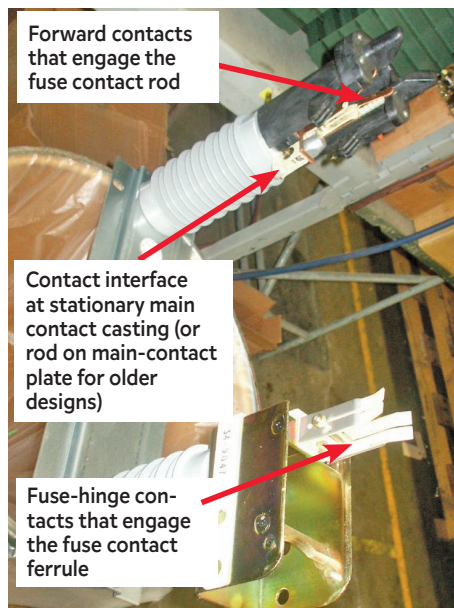


Figure 2. Lubrication points on fuse mounting include three contact locations, namely, the main contact, forward contact and fuse hinge contacts.

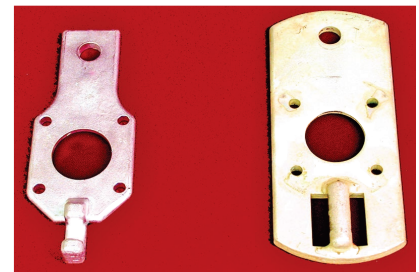


Figure 3. View shows present cast fuse main contact at left and previous main contact, which was a weldment, at right (removed from fuse mounting).

Notes:

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