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Introduction

⚠ CAUTION

The equipment covered by this publication must be inspected by qualified persons who are thoroughly trained and who understand any 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.

This publication contains inspection and maintenance recommendations for S&C Power-Operated Metal-Enclosed Switchgear. Included in these recommendations are instructions for a complete functional inspection of the Micro-AT Source-Transfer Controls for switchgear having automatic source-transfer capabilities.

Units of metal-enclosed switchgear with automatic source-transfer shipped after October 1992 are equipped with the Micro-AT control. This control uses an advanced electronic microprocessor to perform specific control operations, as directed by settings programmed into the control at the factory and the field. These settings are entered into the control by means of a keypad on the front panel, and a liquid-crystal display screen is provided for their review.

To successfully complete the inspection procedures involving the Micro-AT control, the gear must be energized with adequate voltage available on both power sources. S&C recommends that this inspection be performed at least every year. Refer to Tables 1 and 2 on pages 3 through 6 for switchgear configured in a common-bus and split-bus primary-selective arrangement respectively.

S&C generally recommends that the metal-enclosed switchgear enclosure and components located in high-voltage bays be inspected six months to a year after installation and then every five years thereafter to ensure continued proper performance of the gear. Each user's own experience as well as environmental conditions at the installation will determine whether more or less frequent inspections are required. Refer to Table 3 on page 7.

A partial visual inspection of the gear for general cleanliness and to confirm the proper alignment and condition of barriers and terminators may be performed with the gear energized, if permitted by the user's own operating practices and provided standard precautionary practices are followed. Such visual inspections may be performed when the gear is visited for other reasons. However, the more detailed inspection and maintenance procedures outlined in this publication may only be completed when the unit is completely de-energized and grounded.

⚠ CAUTION

When following the inspection procedures involving the Micro-AT Control, decouple all switch operators from their associated Mini-Rupter® or Alduti-Rupter® Switches. Switching operations will result in temporary service interruptions if the operators are coupled.

For instructions regarding decoupling of Type MS-2 and Type AS-30 switch operators from their associated switches, refer to:

Instruction Sheet 629-510	
S&C Switch Operators Type MS-2	Catalog Numbers 38744 and 38754

Instruction Sheet 629-500	
S&C Switch Operators Type AS-30	Catalog Number 38960

For instructions regarding field programming and operation of the Micro-AT control, refer to:

Instruction Sheet 515-500	
S&C Micro AT Source-Transfer Controls	For use in S&C Metal-Enclosed Gear

For instructions regarding the operation of the optional test-paned feature (catalog number suffix "-Y5"), refer to:

Instruction Sheet 515-505	
S&C Micro AT Source-Transfer Controls	Test Panel Feature

For Micro-AT troubleshooting, refer to:

Instruction Sheet 515-520	
S&C Micro AT Source-Transfer Controls	For use in S&C Metal-Enclosed Gear

For instruction regarding the inspection and maintenance of SPD open-phase detectors and ZSD overcurrent relays, refer to:

Instruction Sheet 542-500	
S&C Open-Phase Detector Type SPD	For use in S&C Metal-Enclosed Gear

Instruction Sheet 551-500	
S&C Overcurrent Relay Type ZSD	For use in S&C Metal-Enclosed Gear

Applicable instruction sheets, drawings, and wiring diagrams for each switchgear assembly, plus similar documents for meters, relays, and other low-voltage components not of S&C manufacture, are in an envelope entitled "Installation and Operation Information Kit." This envelope is located in a holder inside the appropriately labeled switchgear-bay door.

If maintenance is required that is beyond the scope of this publication of if replacement parts are necessary, contact the nearest S&C Sales Office. Have the complete catalog number of the gear and date of shipment (as shown on the nameplate) available for reference.

Table 1. Inspection Procedures for the Micro-AT® Source-Transfer Control in Switchgear Configured in a Common-Bus Primary-Selective Arrangement①

Item	Procedures
Switch operators	1. Place the MANUAL/AUTOMATIC operation selector switch on the Micro-AT control in the **Manual** position and decouple both operators from their associated Mini-Rupter or Alduti-Rupter Switches (switching operations will result in temporary service interruptions if the operators are coupled). 2. Open the preferred-source operator by pressing the appropriate OPEN pushbutton. After opening, Type MS-2 Switch Operators should recharge in approximately 1½ seconds; Type AS-30 Switch Operators do not recharge. 3. Close the alternate-source operator by pressing the appropriate CLOSE pushbutton. The operator should recharge in approximately 1½ seconds if it is Type MS-2; Type AS-30 Switch Operators do not recharge. 4. Each switch operator should be given an exercising consisting of five or more operations, power operated, unless normal operating duty provides equal or greater exercise.
Clock	1. Press the <Time> key on the Micro-AT control. Then press the <Last> key. The **"HH:MM:SS"** (hour:minute:second) item will appear on the display. If necessary, reset the time as directed below. 2. To reset the time, first press the <Change> key. Then, press each digit of the access-code number and the <Enter> key. Press the number keys corresponding to the desired value, and press the <Enter> key again.
Lamps, display, and keypad	1. Press the <Test> key on the Micro-AT control. Then press the <Next> key. The **Test Lamps** item will appear on the display. Press the <Enter> key, and confirm all lamps on the control flash a total of five times. 2. Press the <Next> key again. The **Test Display** item will appear on the display. Press the <Enter> key, and confirm all dot segments comprising the characters of the display alternately appear black and then disappear a total of five times. 3. Press the <Next> key again. This time the **Test Keypad** item will appear on the display. Press the <Enter> key. Now individually press all the keys on the control and verify the value or name of each key pressed appears on the display. When finished, press the <Quit> key.
Transfer on loss of source and return of source	1. While still in the Test menu, press the <Next> key one more time. The **Enable Test Keys** item will appear on the display. Press the <Change> key. Then select the **On** setting by pressing the <Enter> key. The test keys are now enabled for 15 minutes. 2. Place the MANUAL/AUTOMATIC operation selector switch in the **Automatic** position. 3. If the Micro-AT control has been programmed for automatic return: a. Simulate a prolonged loss of preferred-source voltage by pressing and holding in the <Loss of Voltage> key for the left- or right-hand source, as appropriate. Verify the time to initiate transfer is the same as the loss-of-source time delay programmed into the control for the preferred source. Also, confirm the associated source voltage lamp extinguishes, and verify the switch operator targets correctly indicate an **Open** or **Closed** position. b. Now, release the <Loss of Voltage> key to simulate a return of the preferred-source voltage. Verify the time to initiate back transfer is the same as the return-of-source time delay programmed into the control. Confirm the associated source voltage lamp relights. Again, verify the switch operator targets' position. 4. If the Micro-AT control has been programmed for **Hold Return** mode: a. Simulate a prolonged loss of preferred-source voltage by pressing and holding in the <Loss of Voltage> key for the left or right source, as appropriate. Verify the time to initiate transfer is the same as the loss-of-source time delay programmed into the control for the preferred source. Also, confirm the associated source voltage lamp extinguishes, and verify the switch operator targets correctly indicate an **Open** or **Closed** position. b. Release the <Loss of Source> key to simulate a return of the preferred-source voltage, and wait a sufficient length of time to verify back transfer does not occur. Confirm the associated source voltage lamp relights. c. Now, simulate a loss of alternate-source voltage by pressing and holding in the <Loss of Voltage> key for the left or right source, as appropriate. Verify the time to initiate back transfer is the same as the loss-of-source time delay programmed into the control for the alternate source. Also, confirm the associated source voltage lamp extinguishes, and release the <Loss of Voltage> key. Again, verify the switch operator targets' positions. 5. Return the MANUAL/AUTOMATIC operation selector switch to the **Manual** position.

① If the power-operated switchgear being inspected does not operate as indicated in these inspection recommendations, refer to the Micro-AT control troubleshooting guide, S&C Instruction Sheet 515-520. If further assistance is necessary, contact the nearest S&C Sales Office. Have the complete catalog number of the gear, date of shipment (as shown on the nameplate), operating characteristics, and voltage-, current-, and time-related operating parameters available for reference.

TABLE CONTINUED ►

Table 1. Inspection Procedures for the Micro-AT® Source-Transfer Control in Switchgear Configured in a Common-Bus Primary-Selective Arrangement①—Continued

Item	Procedures
Optional Overcurrent-Lockout feature	1. If test keys are not enabled, press the <Test> key. Then, press the <Last> key. The **Enable Test Keys** item will appear on the display. Press the CHANGE key and select the **On** setting by pressing the <Enter> key. The test keys are now enabled for 15 minutes. 2. Place the MANUAL/AUTOMATIC operation selector switch on the Micro-AT control in the **Automatic** position, and simulate a fault cleared by feeder fuses by momentarily pressing the <Overcurrent> key for the preferred source. Verify the LOCKOUT lamp lights for a period of time equal to the lockout-reset time delay programmed into the Micro-AT control 3. Now, simulate a lockout resulting from a fault cleared by a source-side protective device. To accomplish this, press the <Overcurrent> key for the preferred source and confirm the LOCKOUT lamp lights. Then, press and hold in the associated <Loss of Voltage> key. Release the <Loss of Voltage> key when the preferred-source operator opens and verify the alternate-source operator remains open and locked out. 4. Return the MANUAL/AUTOMATIC operation selector switch to the **Manual** position and press the <Reset> key to cancel the lockout condition. Confirm the LOCKOUT lamp extinguishes. Then, close the preferred-source operator by pressing the appropriate <Close> key.
Event log	1. Press the <Event> key. Then, press the <Next> key. The date, time, and event ID for the last control operation will appear on the display. Confirm the event ID on the display is 218 (enter manual-software). Press the <←> key to view the earlier event, and confirm the event ID on the display is "11" (local to manual-control). 2. To view the event IDs for earlier or later control operations, press the <→> or <←> key, respectively. The event IDs that appear on the display will vary depending on system conditions and programming of the Micro-AT control. 3. When no additional items are to be reviewed, press the <Quit> key. Confirm the EVENT lamp extinguishes.
Before leaving the gear . . .	So that the Micro-AT control is ready for automatic operation when leaving the site, perform the following: 1. Press the <Quit> key. 2. With the MANUAL/AUTOMATIC operation selector switch in the **Manual** position, recouple both operators to their associated Mini-Rupter or Alduti-Rupter Switches. 3. Place the MANUAL/AUTOMATIC operation selector switch in the **Automatic** position. 4. Confirm both source voltage lamps and the READY lamp are lit. (If the READY lamp is not lit, refer to the display on the control. When not being used to show menu information, this display shows messages explaining why the lamp is not lit.) 4. Close and padlock all doors and covers.

① If the power-operated switchgear being inspected does not operate as indicated in these inspection recommendations, refer to the Micro-AT control troubleshooting guide, S&C Instruction Sheet 515-520. If further assistance is necessary, contact the nearest S&C Sales Office. Have the complete catalog number of the gear, date of shipment (as shown on the nameplate), operating characteristics, and voltage-, current-, and time-related operating parameters available for reference.

Table 2. Inspection Procedures for the Micro-AT Control in Switchgear Configured in a Split-Bus Primary-Selective Arrangement①②

Item	Procedures
Switch operators	1. Place the MANUAL/AUTOMATIC operation selector switch on the Micro-AT control in the **Manual** position and decouple all operators (including the bus-tie switch operator) from their associated Mini-Rupter or Alduti-Rupter Switches (switching operations will result in temporary service interruptions if the operators are coupled). 2. Open the left-hand source operator by pressing the appropriate OPEN pushbutton. After opening, Type MS-2 Switch Operators should recharge in approximately 1½ seconds; Type AS-30 Switch Operators do not recharge. 3. Close the bus-tie switch operator by pressing the appropriate CLOSE pushbutton. Again, the operator should recharge in approximately 1½ seconds if it is Type MS-2; Type AS-30 Switch Operators do not recharge. 4. Each switch operator should be given an exercising consisting of five or more operations, power-operated, unless normal operating duty provides equal or greater exercise. 5. Return both operators to their original positions (left hand closed, bus-tie open, right hand closed).
Clock	1. Press the <Time> key on the Micro-AT control. Then, press the <Last> key. The **HH:MM:SS** (hour:minute:second) item will appear on the display. If necessary, reset the time as directed below. 2. To reset the time, first press the <Change> key. Then, press each digit of the access-code number and the <Enter> key. Press the number keys corresponding to the desired value, and press the <Enter> key again.
Lamps, display, and keypad	1. Press the <Test> key on the Micro-AT control. Then, press the <Next> key. The **Test Lamps** item will appear on the display. Press the <Enter> key and confirm all lamps on the control flash a total of five times. 2. Press the <Next> key again. The **Test Display** item will appear on the display. Press the <Enter> key and confirm all dot segments comprising the characters of the display alternately appear black and then disappear a total of five times. 3. Press the <Next> key again. This time, the **Test Keypad** item will appear on the display. Press the <Enter> key. Now, individually press all keys on the control and verify the value or name of each key pressed appears on the display. When finished, press the <Quit> key.
Transfer on loss of source and return of source	1. While still in the **Test** menu, press the <Next> key one more time. The **Enable Test Keys** item will appear on the display. Press the <Change> key. Then, select the On setting by pressing the <Enter> key. The test keys are now enabled for 15 minutes. 2. Place the MANUAL/AUTOMATIC operation selector switch in the **Automatic** position. 3. If the Micro-AT control has been programmed for **Automatic** return: a. Simulate a prolonged loss of left-hand source voltage by pressing and holding in the LOSS OF VOLTAGE button for the left source. Verify the time to initiate transfer is the same as the loss-of-source time delay programmed into the control for that source. Also, confirm the associated source voltage lamp extinguishes. Verify the switch operator targets correctly indicate an **Open** or **Closed** position. b. Now, release the <Loss Of Voltage> key to simulate a return of the left-hand source voltage. Verify the time to initiate back transfer is the same as the return-of-source time delay programmed into the control. Confirm the associated source voltage lamp relights. Again, verify the switch operator targets' position. c. With the MANUAL/AUTOMATIC selector switch in the **Automatic** position, repeat steps 3a and 3b above for the right-hand source. 4. If the Micro-AT control has been programmed for **Hold Return** mode: a. Simulate a prolonged loss of left-hand source voltage by pressing and holding in the <Loss Of Voltage> key for the left source. Verify the time to initiate transfer is the same as the loss-of-source time delay programmed into the control for that source. Also, confirm the associated source voltage lamp extinguishes. Verify the switch operator targets correctly indicate an **Open** or **Closed** position. b. Release the <Loss-Of-Source> key to simulate a return of the left-hand source voltage and wait a sufficient length of time to verify back transfer does not occur. Confirm the associated source voltage lamp relights. c. Now, simulate a loss of alternate-source voltage by pressing and holding in the <Loss Of Voltage> key for the right source. Verify the time to initiate back transfer is the same as the loss-of-source time delay programmed into the control for that source. Also, confirm the associated source voltage lamp extinguishes, and then release the <Loss Of Voltage> key. Again, verify the switch operator targets' positions. d. Place the MANUAL/AUTOMATIC selector switch in the **Manual** position. Open the bus-tie switch operator and close the right-hand switch operator. e. With the MANUAL/AUTOMATIC selector switch in the **Automatic** position, repeat steps 4a, 4b, 4c, and 4d above for the right-hand source. f. Return the MANUAL/AUTOMATIC selector switch to the **Manual** position.

① If the power-operated switchgear being inspected does not operate as indicated in these inspection recommendations, refer to the Micro-AT control troubleshooting guide, S&C Instruction Sheet 515-520. If further assistance is necessary, contact the nearest S&C Sales Office. Have the complete catalog number of the gear, date of shipment (as shown on the nameplate), operating characteristics, and voltage-, current-, and time-related operating parameters available for reference

② Switchgear configured as "split-bus primary-selective" also is referred to as "main-tie-main."

TABLE CONTINUED ►

Table 2. Inspection Procedures for the Micro-AT Control in Switchgear Configured in a Split-Bus Primary-Selective Arrangement①②—Continued

Item	Procedures
Optional Overcurrent-Lockout feature	1. If test keys are not enabled, press the <Test> key. Then, press the <Last> key. The **Enable Test Keys** item will appear on the display. Press the <Change> key and select the **On** setting by pressing the <Enter> key. The test keys are now enabled for 15 minutes. 2. Place the MANUAL/AUTOMATIC operation selector switch in the **Automatic** position and simulate a fault cleared by feeder fuses by momentarily pressing the <Overcurrent> key for the left-hand source. Verify that the LOCKOUT lamp lights for a period of time equal to the lockout-reset time delay programmed into the Micro-AT control. 3. Now, simulate a lockout resulting from a fault cleared by a source-side protective device. To accomplish this, press the <Overcurrent> key for the left-hand source and confirm the <Lockout> lamp lights. Then, press and hold in the associated <Loss of Voltage> key. Release the <Loss of Voltage> key when the left-hand source operator opens and verify the bus-tie switch operator remains open and locked out. 4. Return the MANUAL/AUTOMATIC operation selector switch to the **Manual** setting and press the <Reset> key to cancel the lockout condition. Confirm the LOCKOUT lamp extinguishes. Then, close the left-hand source operator by pressing the appropriate <Close> key. 5. Repeat Steps 1, 2, 3, and 4 for the right-hand source.
Event log	1. Press the <Event> key. Then press the <Next> key. The date, time, and event ID for the last control operation will appear on the display. Confirm the event ID on the display is "218" (enter manual-software). Press the <←> key to view the earlier event, and confirm the event ID on the display is "11" (local to manual-control). 2. To view the event IDs for earlier or later control operations, press the <→> or <←> key, respectively. The event IDs that appear on the display will vary depending on system conditions and programming of the Micro-AT control. 3. When no additional items are to be reviewed, press the <Quit>key. Confirm the EVENT lamp extinguishes.
Before leaving the gear . . .	So that the Micro-AT control is ready for automatic operation when leaving the site, perform the following: 1. Press the <Quit> key. 2. With the MANUAL/AUTOMATIC selector switch in the Manual position, recouple all operators to their associated Mini-Rupter or Alduti-Rupter Switches. 3. Place the MANUAL/AUTOMATIC selector switch in the Automatic position. 4. Confirm both source voltage lamps and the READY lamp are lit. (If the READY lamp is not lit, refer to the display on the control. When not being used to show menu information, this display shows messages explaining why the lamp is not lit.) 5. Close and padlock all doors and covers.

① If the power-operated switchgear being inspected does not operate as indicated in these inspection recommendations, refer to the Micro-AT control troubleshooting guide, S&C Instruction Sheet 515-520. If further assistance is necessary, contact the nearest S&C Sales Office. Have the complete catalog number of the gear, date of shipment (as shown on the nameplate), operating characteristics, and voltage-, current-, and time-related operating parameters available for reference

② Switchgear configured as "split-bus primary-selective" also is referred to as "main-tie-main."

Table 3. Inspection and Maintenance Procedures for the Enclosure and for Components in High-Voltage Bays

⚠ WARNING

When access to high-voltage bays is required, it must be restricted to qualified persons only. Such qualified persons must observe the following procedures:

1. Adhere to prescribed safety rules at all times.
2. Be certain that fuses, interrupter switches, switch operators and their mechanisms, and any other devices are disconnected from all power sources and are grounded before the device is inspected, serviced, or repaired.
3. Discharge all stored-energy switch operators by using the utility crank (for MS-2 operators), the manual trip handle (for MS-10 operators), or manual-operating wrench (for AS-30 operators), as applicable.
4. Always assume both sets of terminals on any interrupter switch or fuse are energized unless proven otherwise by test, by visual evidence of open-circuit conditions on both terminal ends, or by grounding.
5. Test for voltage. Qualified persons should be certain they have and know how to operate the correct test equipment for determining voltage on both sets of terminals on any fuse or interrupter switch.
6. After the switchgear has been completely disconnected from all sources of power and tested, properly connect suitable grounding leads to both sides of the equipment, that is, the incoming and outgoing phases of the equipment to be maintained.
7. Install dual-purpose front barriers, if furnished, in the "slide-in" position. If a contact on either side of a barrier is energized, do not leave the barrier in the "slide-in" position for longer than one week. These barriers are intended for temporary use only to isolate the blades of the switch from the main contacts while work is being performed. If the barriers are left in the "slide-in" position for extended periods of time, there is the possibility of corona discharge to the barriers. Prolonged exposure to corona discharge may damage the barriers and result in a flashover.
8. Padlock and tag equipment in accordance with the user's standard operating procedures.
9. All voltage transformers and voltage sensors must be disconnected when external voltage is used to test any secondary-side wiring or devices to avoid energizing the high-voltage conductors through the voltage transformers or sensors. If drawout-type voltage transformers are provided, draw out the transformers and completely disconnect the secondary connections. Otherwise, remove the primary fuses of the voltage transformers and disconnect the secondaries by removing the secondary fuses or by disconnecting the secondary leads. Do not disconnect the burden or the voltage limiter from the voltage sensor until the switchgear is de-energized; otherwise, the voltage sensor will be damaged. For voltage sensors, the secondary leads must be shorted either by removing the plug from the input receptacle and transferring it to the shorting receptacle (for applications involving Micro-AT Source-Transfer Control) or by inserting screws into shorting-type terminal block.
10. When the equipment to be inspected is not of S&C manufacture, follow the instructions supplied by the manufacturer of the equipment.
11. Make certain ground connections from the ground bus (or ground pad on a single-bay assembly) to the permanent station or system ground facility are made. No equipment should be returned to service unless such grounds are properly made.

Note: Occasionally, low-voltage components may require maintenance. In the servicing or repair of space heaters, voltage-transformer secondary wiring and any other components located in a high-voltage bay, all the preceding safety procedures apply. The maintenance of other low-voltage components (such as voltmeters, ammeters, relays, etc.) isolated from high voltage may be performed under the safety rules for equipment rated 600 volts or less. If maintenance is to be performed on ammeters, short-circuit the secondary connections of the associated current transformer at the shorting-type terminal block before removing the ammeter. This may require access to a high-voltage bay, in which case the foregoing procedures apply.

When returning the equipment to service, observe the following procedures:

1. Reconnect any low-voltage terminals that may have been disconnected when servicing the switchgear.
2. Withdraw any dual-purpose front barriers, if furnished, from the "slide-in" position and return them to their normal, suspended position.
3. Make certain that fuses (or switch blades in lieu of fuses) are closed and securely latched.
4. Open any grounding switch, or remove other grounding means, before energizing the associated interrupter switch(es).
5. Close and securely latch each switchgear-bay door before energizing the circuit or operating any switching device.
6. Lock interrupter switches in the **Open** or **Closed** position, as dictated by the electric power system design.
7. Padlock all doors, switch-operating handles, and covers before leaving the installation site, even momentarily. Observe this procedure even in those cases where the gear is accessible only to qualified persons.

TABLE CONTINUED ►

Table 3. Inspection and Maintenance Procedures for the Enclosure and for Components in High-Voltage Bays①—Continued

<table>
<tr><th>Item</th><th>Procedures</th></tr>
<tr><td>Inspect and clean interior</td><td>1. Visually inspect the interior of each bay for dirt, weeds, rodent, reptile, and insect intrusion.
2. If cleaning is necessary, S&C recommends using water to wash dirty or contaminated surfaces. Mild soap may be used to remove particularly stubborn deposits on painted surfaces, barriers, and Cypoxy® Insulator parts.▲
3. Inspect insulators, surge arrestors, terminators, etc., for physical and electrical damage.
4. Check that the gasketing around doors and windows is securely affixed and that grouting around the exterior of the bays is in good condition. Verify there has been no major water ingress.</td></tr>
<tr><td>Inspect barriers and minimum air clearances</td><td>1. Inspect barriers for signs of tracking and corona discharge. Surface deposits can be wiped off. If surface erosion is present, the barriers may need to be replaced.
2. Verify the interphase and end barriers hang vertically and retaining hardware securely holds them in place.
3. Verify the clearance from the terminators and other energized parts to the barriers and electrical ground is maintained to prevent flashover (e.g. fuse silencer to terminator drain wire). Minimum air clearances are listed below:
<table>
<tr><th colspan="2">Rating, kV</th><th colspan="4">Minimum Air Clearances (Inches)</th></tr>
<tr><th>Nominal</th><th>BIL</th><th>Energized Parts to Barriers</th><th>Terminator Skirts to Barriers</th><th>Energized Parts to Elec. Ground</th><th>Phase-to-Phase</th></tr>
<tr><td>4.8</td><td>60</td><td>½ (13)</td><td>½ (13)</td><td>3½ (89)</td><td>4½ (114)</td></tr>
<tr><td>7.2</td><td>75</td><td>1 (25)</td><td>½ (13)</td><td>4½ (114)</td><td>6 (152)</td></tr>
<tr><td>13.8</td><td>95</td><td>1 (25)</td><td>½ (13)</td><td>6 (152)</td><td>6 (152)</td></tr>
<tr><td>25</td><td>125</td><td>2¼ (57)</td><td>1¼ (32)</td><td>7½ (191)</td><td>7½ (191)</td></tr>
<tr><td>25</td><td>150</td><td>3¼ (83)</td><td>1¼ (32)</td><td>10½ (267)</td><td>12 (305)</td></tr>
<tr><td>34.5</td><td>150</td><td>3¼ (83)</td><td>3 (76)</td><td>10½ (267)</td><td>12 (305)</td></tr>
<tr><td>34.5</td><td>200</td><td>3¼ (83)</td><td>3 (76)</td><td>15 (381)</td><td>15 (381)</td></tr>
</table></td></tr>
<tr><td>Inspect and exercise Mini-Rupter and Alduti-Rupter Switches</td><td>1. While switchgear-bay doors are closed and latched, exercise the Mini-Rupter and Alduti-Rupter Switches and verify proper opening and closing. If dual-purpose front barriers are furnished, make sure they are not in the “slide-in” position.
2. Inspect, clean, and re-lubricate the Mini-Rupter Switches.▲◆
a. Check blades for signs of galling and excessive arc interruption. Minor surface imperfections can be burnished out. Clean the blades and apply a thin layer of lubricant, as necessary.
b. Clean rotating hinge contacts and apply a thin layer of lubricant, as necessary.
c. Check contacts and joints for signs of overheating, as evidenced by distorted or discolored metal.■
3. Inspect, clean, and re-lubricate the Alduti-Rupter Switches.▲●
a. Check the main current-carrying contacts for signs of galling. Minor surface imperfections can be burnished out. Clean the contacts and apply a thin layer of lubricant, as necessary.
b. Check contacts and joints for signs of overheating, as evidenced by distorted or discolored metal.■
Note: S&C recommends cleaning and re-lubricating Mini-Rupter and Alduti-Rupter Switches every 10 years, regardless of condition, to ensure proper operation, or to do so more frequently if the environment tends to be excessively hot, humid, dry, dirty, or contaminated.</td></tr>
<tr><td>Inspect fuses</td><td>1. Open and close fuses to ensure proper latching. Refer to the applicable S&C instruction sheet for fuse handling instructions.
2. Inspect the fuse-contact surfaces for signs of galling and overheating, as evidenced by distorted or discolored contacts. ■ Minor surface imperfections can be burnished out. Clean contacts and apply a thin layer of lubricant, as necessary. ▲</td></tr>
<tr><td>Inspect mechanical and key interlocks, and door latching mechanisms</td><td>1. Inspect all mechanical interlocks and key interlocks for proper functioning. Refer to S&C Instruction Sheets 621-500 and 622-500 for Custom and System II Metal-Enclosed Switchgear respectively.
2. Verify proper operation of the door latching mechanisms.</td></tr>
<tr><td>Inspect, clean, and touch up exterior</td><td>1. To maintain the original integrity of the finish, clean the exterior of the switchgear and touch up scratches and abrasions using S&C touch-up finish and red-oxide primer, available in aerosol spray cans. Order catalog number 9999-058 for olive green finish, 9999-079 for light-gray indoor finish, 9999-080 for light-gray outdoor finish, and 9999-061 for red-oxide primer.
2. Inspect exterior vent filters (if supplied). Replacement fiberglass filters (two required per vent) are available from S&C, catalog number CD-1056-6. If the environment is very dusty, S&C recommends that the filters be inspected several times during the year to ensure sufficient ventilation in the switchgear.</td></tr>
</table>

① If maintenance is required beyond the scope of this publication, or if replacement parts are necessary, contact the nearest S&C Sales Office. Have the complete catalog number of the switchgear and date of shipment (as shown on the nameplate) available for reference.

▲ Do not use industrial strength cleaning solutions (e.g. Formula 409®, Simple Green®) or lubricants that contain solvents. Solvent vapors can attack arc compressor components and fuse pull rings, resulting in reduced interrupting performance or weakened parts.

◆ NYE Rheolube 368, available in ¼-oz. tubes from S&C, part number 9999-044, is the only approved lubricant.

■ There may be discoloration of copper and copper alloy surfaces caused by oxidation. This does not indicate overheating.

● Shell Gadus® S2 U1000 2 Lubricant, catalog number 9999-043, is available in 1-oz. tubes from S&C. Shell Darina SD1, Dow 33, or equivalent can be substituted.