

S&C Omni-Rupter Switches have been redesigned from the ground up to provide long-life, high-performance switching while building in the quality, reliability, and durability you've come to expect from S&C.

Here's a rundown of the major improvements:

- **Interrupters** now feature a redesigned operating cam and shunt arm arrangement with an internal latch and spring mechanism that provides a consistent operating speed for the interrupters independent of the speed of the operating mechanism.

The interrupter housing is now molded from a high-performance, UV-resistant polycarbonate thermoplastic. The same interrupter is now used at both 14.4 kV and 25 kV, reducing your stocking requirements for spare components.

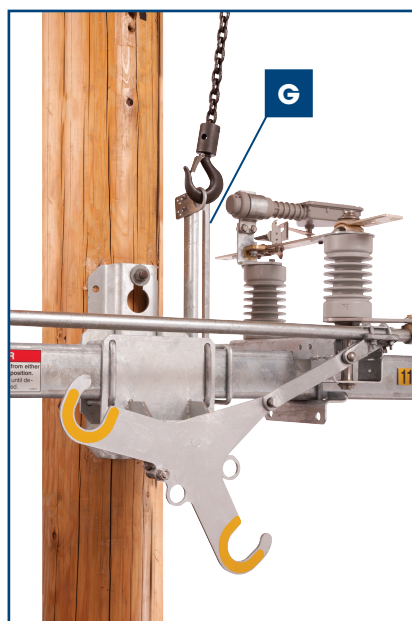
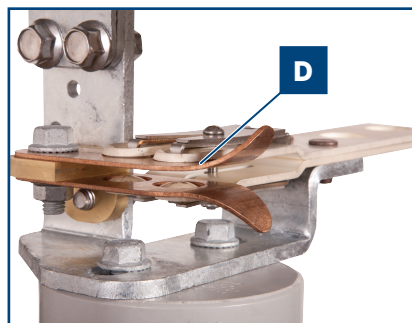
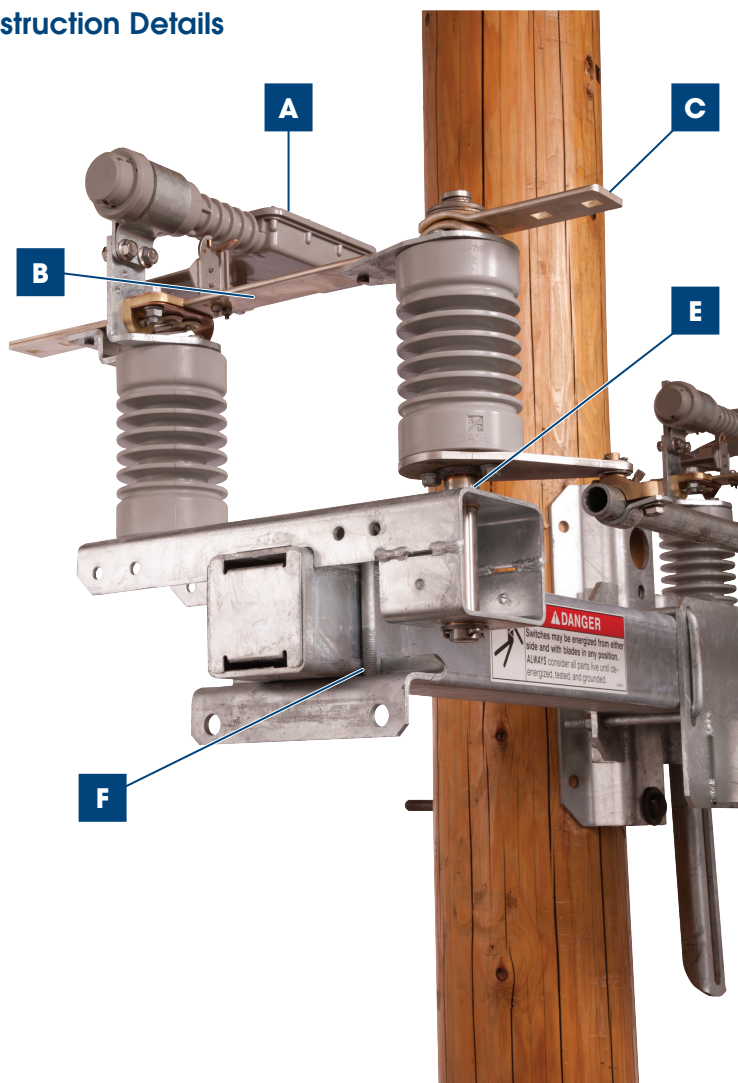
- **The positive toggle linkage** ensures that the switch blades are under positive pressure when the switch is closed. By eliminating the need to provide “wind up” in the vertical pipe, Omni-Rupter Switches are now even easier to install. The linkage also eliminates the possibility of “contact creep” and overheating, which can occur if the operating handle closed stop is not properly set or if the pole warps over time.
- **Jaw contacts** now use spring-loaded “floating contact” buttons that provide secure, even contact

pressure when the switch is closed. Field-replaceable sacrificial guide fingers help align the blade and protect the current-carrying contacts if the switch is closed into a fault, giving the Omni-Rupter Switch improved fault-closing performance.

- New **articulating terminal pads** (patent pending) allows more flexibility when connecting jumpers. They reduce loading stress on the blades while minimizing operating friction and blade misalignment from overloaded terminal pads.
- The hookstick operating handle is also improved. The new **curved hookstick handle** has rounded “U-shaped” pull-rings that provide a larger landing area for the hookstick . . . and is larger, for smoother operation through the full opening or closing stroke. It is also easier to operate from under the switch . . . at an angle from the switch . . . and even from behind the pole. The lockout tab is now incorporated into the operating handle . . . improving its visibility by placing it front and center on the switch.



Construction Details



A	No-External Arc Interrupter. Provides circuit interruption without external arc. Employs a specially-designed trailer and liner formulation which creates de-ionizing gases for efficient circuit interruption. Same interrupter is used on 14.4-kV and 25-kV models.
B	Blade with Copper-Tungsten Arcing-Tip. Nickel-silver-plated copper blade is aligned at the factory without any requirement for field adjustment. All current path parts are copper or copper-based materials.
C	Articulating Hinge-end Terminal Pad. Pivoting terminal pads minimize loading of the blade and provide greater flexibility when making jumper connections.
D	Stationary Jaw and Contact Assembly. Floating jaw contact buttons provide even contact forces between the upper and lower jaw contacts, reducing friction during operation.
E	Redesigned Spindle and Bronze Flange Bearing, Stainless-Steel Shaft, and Drive Lever. Provide all-weather durability and performance.
F	Unique Clamping System with Dead-Ending Bracket. Securely and permanently locks the pole-units to the base. Integral dead ending brackets eliminate the need for separate dead-ending provisions.
G	Single Point Lifting Bracket. Provides permanent means of lifting for convenient rigging and hoisting.

Switch Operation

When the switch is closed, each interrupter shunt arm is positioned between the auxiliary return arm and the opening shunt contact. The return arm is an extra visual assurance that the interrupter was reset, and is ready for the opening operation. See Figure 1.

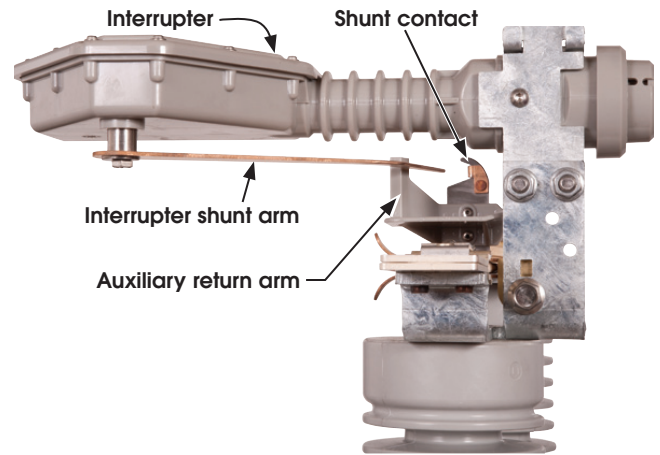


Figure 1. Switch in closed position. Interrupter shunt arm is between shunt contact and auxiliary return arm.

As the switch is opened, each interrupter shunt arm engages the shunt contact, transferring current through the interrupter. The curved shape of the shunt contact guides the shunt arm through its travel and keeps the arm centered on the contact surface. A copper-bronze alloy inset minimizes display. See Figure 2.

As each blade reaches 45 degrees open, the latch inside the interrupter holding the spring loaded trailer releases. This provides a consistent interrupting speed . . . switching performance is independent of the speed of the operating pipe or hookstick mechanism. As the blades open to 90 degrees, the interrupter shunt arm snaps back into position beneath the interrupter.

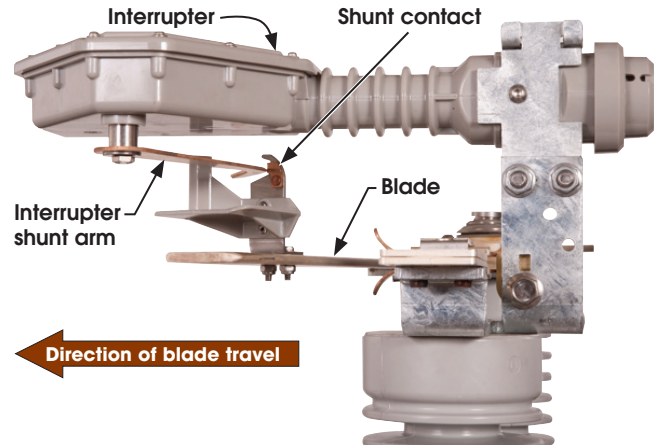


Figure 2. Switch during opening. Interrupter shunt arm engages shunt contact, transferring current through the interrupter.

As the switch is closed, each interrupter shunt arm is guided into position by the curved back of the shunt contact, as the blade closes into the jaw contact guide fingers. See Figure 3. The shunt arm again comes to rest between the return arm and the shunt contact as shown in Figure 1.

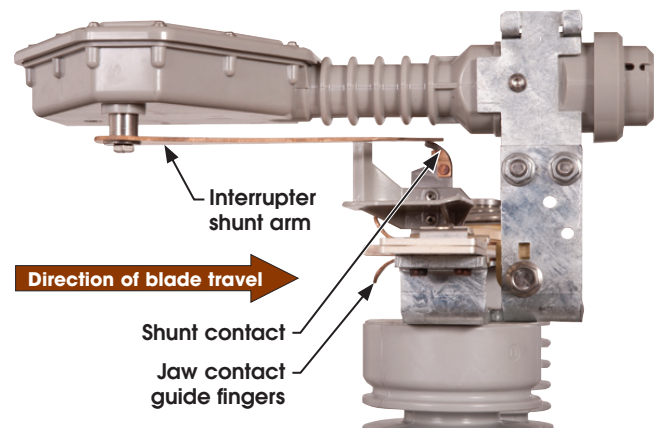


Figure 3. Switch during closing. Interrupter shunt arm is guided into place by shunt arm guide, as jaw contact guide fingers guide blade into place.

Standard Features

- Choice of steel or insulated base. The steel base is constructed of 4" × 4" galvanized, electric-welded tube. The insulated base is constructed of reinforced pultruded structural tube, finished with a UV-resistant gray polyurethane coating. (Insulated bases not available for switches in the triangular mounting configuration.)
- Four sections of 6'–10" vertical operating pipe as specified on the erection drawing for the applicable Standard Mounting Arrangement.
- Pole Mounting Bracket. Galvanized steel pole-mounting bracket which accommodates steel or wood poles, 5½ inches to 14 inches in diameter.
- Integrated single-point lifting bracket provides easy hoisting and installation. Retracts for storage.
- Dead-ending bracket. Dead-ending requires optional pole band and J-bolts, and extension link assemblies.
- The appropriate set of operating-mechanism components for the vertical operating pipe; e.g., handle, rod guides or guide bearings, and couplings.

Optional Features

- Hookstick-operating mechanism is operable from the ground using an "extendo" stick. There's no vandal-tempting operating handle. Reduces installation time by up to 60%. Includes integrated lockout/tagout tab.
- Wildlife protection helps reduce wildlife-related nuisance outages. Made from high-strength, UV-resistant materials.
- Mounting provisions for three or six surge arresters. Pole band and J-bolts provide required support when dead-ending directly to the switch.

- Extension-link assemblies for dead-ending directly to the switch.
- Ice shields (applicable for vertical and tiered-outboard mounting configurations).

Standard Minor Modifications

Standard minor modifications are departures from Standard Mounting Arrangements which are so frequently encountered that they are included on S&C's basic erection drawings.

- One 2½" diameter tubular fiberglass insulating section in vertical operating shaft (rotating-type operating mechanisms).
- One Cypoxy® Insulator unit in vertical operating shaft (specify rotating- or reciprocating-type operating mechanism).
- Key interlock—single lock for "locked-open" application.
- One 1" diameter fiberglass insulating section in vertical operating shaft (reciprocating-type operating mechanisms).
- Heavy-duty vertical operating shafts—1¼" IPS pipe in lieu of ¾" IPS pipe (reciprocating-type operating mechanisms).

For additional information concerning application, installation, or operation of Omni-Rupter Switches, contact your nearest S&C Sales Office.

RATINGS									
kV			Amperes					Fault Closing Capability, Amperes Peak	
Nominal	Maximum	BIL	Continuous	Interrupting★	Peak	One-Second, RMS Sym.	Three-Second, RMS Sym.	Two-Time Duty Cycle	Ten-Time Duty Cycle
14.4	17.0	110	900	900	65 000	25 000	20 000	42 000	21 000
25	29	150	900	900	65 000	25 000	20 000	42 000	21 000

★ Line and cable dropping interrupting ratings are dependent on the length of line. Contact your nearest S&C Sales Office for details.