

Three-pole Alduti-Rupter Switches for outdoor distribution are offered in an unequalled variety of standard mounting arrangements—a selection of arrangements that cuts engineering costs as well as lead time.

Note: Vertical-break integer, side-break integer, and double-break integer Alduti-Rupter Switches, unlike other styles of three-pole Alduti-Rupter Switches, consist of three switch poles factory-assembled on a single base. Integer styles are offered in a variety of basic mounting arrangements. Certain statements in this document do not apply to the integer styles; such statements are indicated by footnote “●” in the main text.

The selector charts that follow illustrate 96 standard mounting arrangements, classified by:

- Style of switch—side-break integer, side-break, vertical-break integer, vertical-break, double-break, and double-break integer
- Type of mounting—single-pole, two-pole, structure, or pedestal
- Type of operating mechanism—rotating or reciprocating

Many advantages accrue from using one of the standard mounting arrangements:

No Design Delays; No Ordering Delays

Switches can be ordered immediately, and you can complete your line or station layout, plus actual design work, from erection drawings (EDs) that are immediately available. No other drawings are required from S&C to adapt the switches to the majority of applications.

Reduced Shipping Time

Shipping time is greatly reduced because there is no delay for custom engineering, customer approval, or time-consuming fabrication of custom parts.

Stocking Switches for Immediate Use

Standard mounting arrangements make it possible to buy and warehouse a quantity of Alduti-Rupter Switches with operating mechanisms preferred arrangements for use in future installations. A switch can be taken from stock at any time and installed.

Erection Drawings Immediately Available

Each standard mounting arrangement in the selector charts is identified with an ED number; this number indicates the erection drawing corresponding to the mounting arrangement. EDs are printed in a legible, double-page, “D”-size format folded to an “A” size for convenient filing. See Figure 1. They are available at no charge in as many copies as required; just ask the local S&C Sales Office for the ED numbers needed.

Each erection drawing is complete with detailed installation data, including an outline drawing of the mounting arrangement, base details, operating-mechanism component details, a bill of materials, installation notes and illustrations, and recommended clearances.

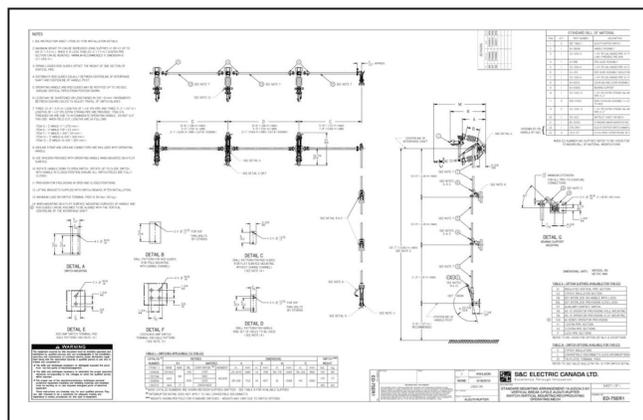


Figure 1. Typical erection drawing, reduced from full “D” size.



Standard Mounting Arrangements

When a standard mounting arrangement is specified, the shipment will include:

- Three switch poles or, in the case of an integer style Alduti-Rupter Switch, a three-pole switch, complete with interphase drive, factory-assembled on a single base
- Mounting pedestal, if ordered (vertical-break and double-break integer style Alduti-Rupter Switches for pedestal mounting only)
- The appropriate number of sections of vertical operating pipe and interphase pipe (Refer to Table 1 for vertical operating pipe included with each standard mounting arrangement.)
- The appropriate set of operating-mechanism components; e.g., handle, rod guides, couplings, bell crank assembly, etc.
- The appropriate detailed erection drawing
- Complete installation instructions

What About Specials?

Departures from standard mounting arrangements are easily handled. They fall into three categories:

1. Standard minor modifications of standard mounting arrangements
2. Special minor modifications of standard mounting arrangements●
3. Special mounting arrangements

Standard Minor Modifications

Standard minor modifications are those so frequently encountered they are included on S&C's basic erection drawings. Standard minor modification(s) may be specified by adding the following suffixes to the standard mounting arrangement ED number:

- S1 A 2⁵/₈-inch diameter tubular fiberglass insulating section in vertical operating shaft
- S2 One Cypoxy™ Insulator unit in vertical operating shaft
- S3 An insulated interphase operating shaft and one fiberglass insulating section in a vertical operating shaft
- S4 An insulated interphase operating shaft and one Cypoxy Insulator unit in vertical operating shaft
- S5 A 2-inch NPS pipe, which is required for rotating-type operating mechanism when the vertical shaft exceeds three 10-foot-4-inch (315-cm) sections (four 10-foot-4-inch (315-cm) sections for side-break heavy-duty switches)
- S5A One extra 2-inch NPS pipe section
- S5B Two extra 2-inch NPS pipe sections
- S5C Three extra 2-inch NPS pipe sections
- S6 A key interlock—single lock for “locked-open” or “locked-closed” application
- S6L Provision for a key interlock (lock supplied by customer)
- S7 An auxiliary contact switch (4NO, 4NC contacts)

● See Note on page 1.

Table 1. Standard Vertical Operating Pipe Included with Standard Mounting Arrangements

Alduti-Rupter Switch		For Standard Mounting Arrangements Having	
Style	Rating, kV	Reciprocating-Type Operating Mechanism	Rotating-Type Operating Mechanism
Side-Break Integer	All	(3) 10-foot- 4-inch (315-cm) sections of 1¼-inch NPS	(3) 10-foot- 4-inch (315-cm) sections of 1½-inch NPS
Side-Break Heavy-Duty	All	(3) 10-foot- 4-inch (315-cm) sections of 1¼-inch NPS	(3) 10-foot- 4-inch (315-cm) sections of 1½-inch NPS
Side-Break Standard-Duty	All	(3) 10-foot- 4-inch (315-cm)sections of 1¼-inch NPS	(3) 10-foot- 4-inch (315-cm) sections of 1½-inch NPS
Vertical-Break Integer	All	(3) 10-foot- 4-inch (315-cm) sections of 1¼-inch NPS●	(3) 10-foot- 4-inch (315-cm) sections of 1½-inch NPS
Vertical-Break	All	(3) 10-foot- 4-inch (315-cm) sections of 1¼-inch NPS	(3) 10-foot- 4-inch (315-cm) sections of 1½-inch NPS
Double-Break	34.5 & 46	(3) 10-foot- 4-inch (315-cm) sections of 1¼-inch NPS	(3) 10-foot- 4-inch (315-cm) sections of 1½-inch NPS
	69	(3) 10-foot- 4-inch (315-cm) sections of 1¼-inch NPS	(3) 10-foot- 4-inch (315-cm) sections of 2-inch NPS
Double-Break Integer	All	(3) 10-foot- 4-inch (315-cm) sections of 1¼-inch NPS	(3) 10-foot- 4-inch (315-cm) sections of 2-inch NPS■

● Switches in the pedestal mounting configuration include (1) 10-foot-4-inch (315-cm) section.

■ Switches in the pedestal mounting configuration include (1) 10-foot-4-inch (315-cm) section and (1) 5-foot-2-inch (157-cm) section.

- S8 Provision for power operation of a pole-mounted switch by a Type AS-10 Switch Operator (for reciprocating-type operating mechanism), a Type AS-1A Switch Operator (for rotating-type operating mechanism), or an LS-2 Switch Operator (for 69-kV switches with rotating-type mechanism)
- S9 Provision for power operation of steel-structure or pedestal-mounted switch by a Type AS-10 Switch Operator (for reciprocating-type operating mechanism), a Type AS-1A Switch Operator (for rotating-type operating mechanism), or LS-2 Switch Operator (for 69-kV switches with rotating-type mechanism)
- S16 Provision for power operation of switches by a 6801M Automatic Switch Operator—rotating or reciprocating
- V1 One extra 1¼-inch NPS pipe section (for reciprocating-type operating mechanism)
- V2 Two extra 1¼-inch NPS pipe sections (for reciprocating-type operating mechanism)

Refer to Table 2 for standard minor modification availability for each style switch.

Special Minor Modifications●

Special minor modifications of standard mounting arrangements are those which include such departures as special base drillings or special mounting brackets for operating-mechanism components. For this category of “special,” S&C will prepare a custom erection drawing based on the standard mounting arrangement erection drawing.

Special Mounting Arrangements●

Special mounting arrangements are those which include complete departures from the standard mounting arrangements and are usually brought about by S&C being asked to customize an alduti-rupter switch to fit the user’s structure. Custom erection drawings will be prepared as required.

- See “Note” at top left of page 1.

Table 2. Standard Minor Modifications—Shaded cells denote the option is available for that style of switch

Alduti-Rupter Switch		Standard Minor Modification															
Style	Rating, kV	-S1	-S2	-S3	-S4	-S5	-S5A	-S5B	-S5C③	-S6	-S6L	-S7	-S8	-S9	-S16	-V1④	-V2④
Side-break integer①	14.4																
	25																
	25/34.5																
	34.5																
Side-break standard-duty①	14.4																
Side-break heavy-duty②	14.4																
	25																
	34.5																
Vertical-break②	14.4																
	25																
	25/34.5																
	34.5, 14.4 2400A																
Vertical-break integer①	34.5																
Double-break②	34.5																
	46																
	69																
Double-break integer①	46																

① The standard minor modifications for this style of switch are available on a selective basis only, as indicated in S&C Specification Bulletin 761-31.

② The standard minor modifications for this style of switch are available on a selective basis only. Consult the nearest S&C Sales Office.

③ For rotating-type EDs only.

④ For reciprocating-type EDs only.

Guide to Using the Selector Charts

Alduti-Rupter Switches for outdoor distribution are offered in side-break integer, side-break, vertical-break integer, vertical-break, double-break, and double-break integer styles. Each is fully described in S&C Specification Bulletin 761-31, which should be reviewed before using the selector charts on the following pages. These charts are arranged by style of switch, as follows:

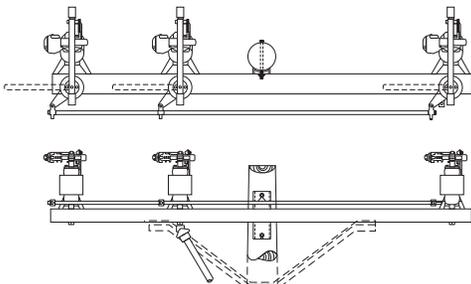
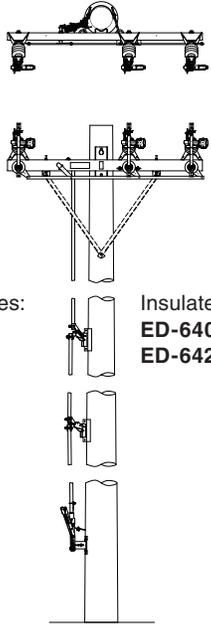
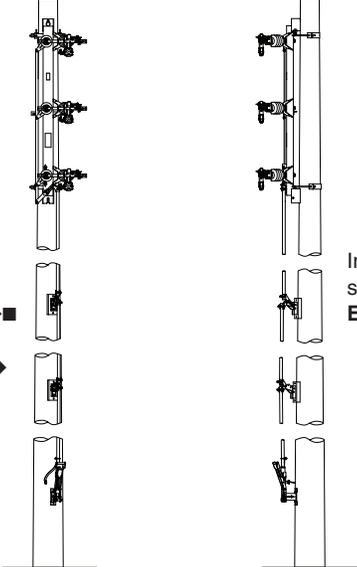
- Side-break integer style switches: page 5
- Side-break heavy-duty style switches: pages 6-8
- Side-break standard-duty style switches: page 6
- Vertical-break integer style switches: pages 9-10
- Vertical-break style switches: pages 11-13
- Double-break style switches: pages 14-16
- Double-break integer style switches: pages 17-18

For each switch style, mountings are shown, as available, for installation on single poles, two poles, or a structure, whether of wood or steel—or, for certain styles, on a pedestal. Mounting provisions are shown for both rotating and reciprocating-type operating mechanisms.

Each drawing in the charts represents schematically the corresponding standard mounting arrangement erection drawing. The ED number indicated should be used in ordering the required erection drawing. The drawing supplied may be supplemented with the letter “R” followed by a digit, indicating the most recent modification of construction details.

Side-Break Integer Style★☆

For Mounting on a Single Pole—Wood, Steel, Concrete, or Composite

Upright Mounting Configuration	Vertical Mounting Configuration
<p style="text-align: center;">Rotating</p>  <p>Steel-base switches: For two switch poles on left ED-135R20●■ (As shown) ED-669R3●▲</p> <p>For two switch poles on right ED-136R20◆■ ED-667R3▲◆</p> <p>Insulated-base switches: For two switch poles on left ED-635R4●■ ED-639R3●▲</p> <p>For two switch poles on right ED-636R4◆■ ED-637R3▲◆</p>	<p style="text-align: center;">Reciprocating</p>  <p>Steel-base switches: ED-140R21◆■ (As shown) ED-672R4▲◆</p> <p>Insulated-base switches: ED-640R5◆■ ED-642R4▲◆</p>
Tiered Outboard Mounting Configuration	
Reciprocating	
 <p>Steel-base switches: ED-144R19◆■ (As shown) ED-676R3▲◆</p> <p>Insulated-base switches: ED-644R2◆■</p>	

★ Refer to Specification Bulletin 761-31 for available voltage and current ratings.

☆ Applicable for side-break integer style switches with steel or insulated bases.

● To be used with counterclockwise-opening switch.

■ For switches rated 14.4 kV and 25 kV.

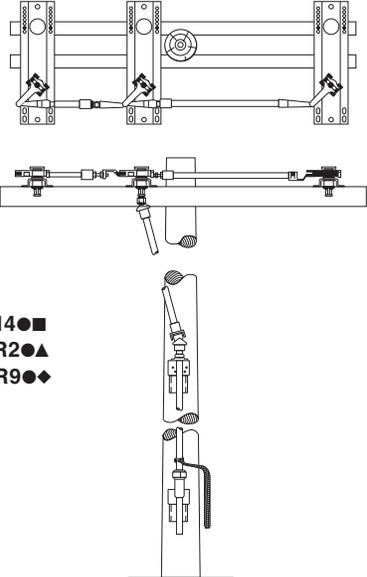
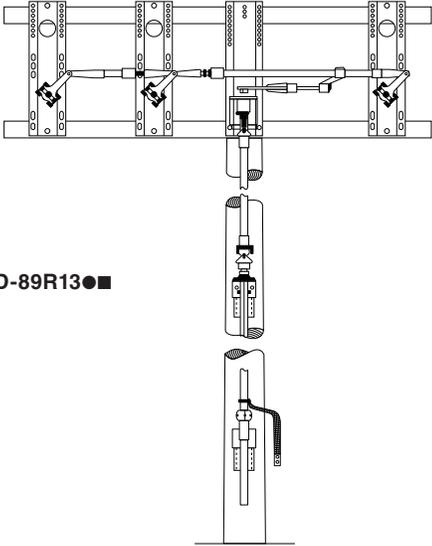
▲ For switches rated 25/34.5 kV and 34.5 kV.

◆ To be used with clockwise-opening switch.

Alduti-Rupter® Switches

Side-Break Heavy-Duty Style and Standard-Duty Styles★

For Mounting on a Single Pole—Wood, Steel, Concrete, or Composite

Upright Mounting Configuration	Vertical Mounting Configuration
Rotating	Rotating
 <p data-bbox="138 695 277 772"> ED-91R14●■ ED-91ER2●▲ ED-91AR9●◆ </p>	 <p data-bbox="899 667 1036 695">ED-89R13●■</p>

★ Refer to Specification Bulletin 761-31 for available voltage and current ratings.

● To be used with counterclockwise-opening switch.

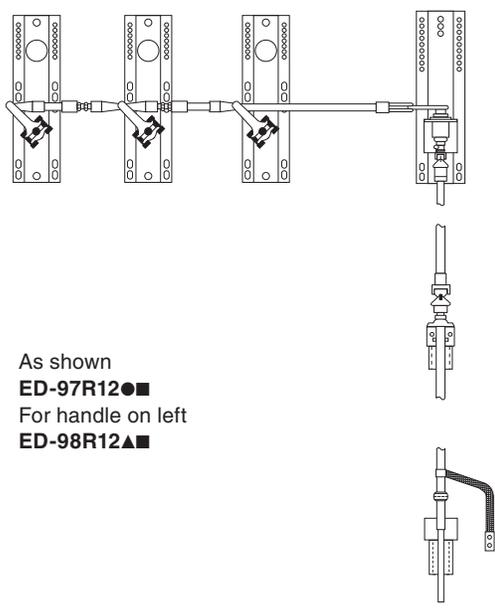
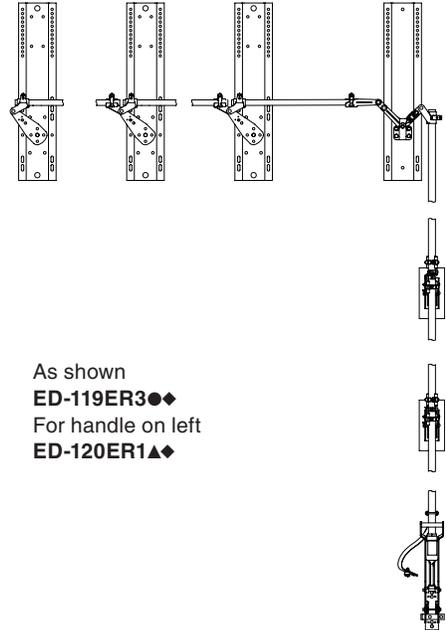
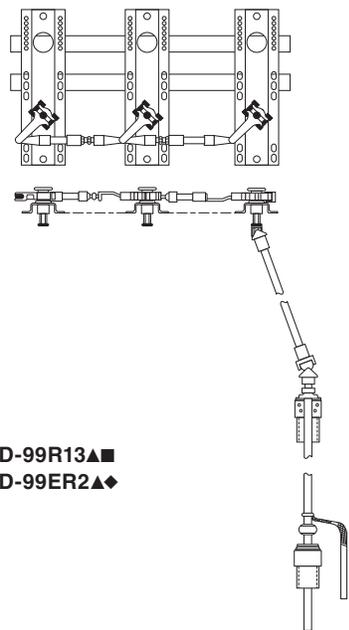
■ For switches rated 14.4 kV and 25 kV.

▲ For switches rated 34.5 kV.

◆ For side-break standard-duty style switches, for mounting on a single pole—wood or steel.

Side-Break Heavy-Duty Styles★

For Mounting on Two Poles—Wood, Steel, Concrete, or Composite

Vertical Mounting Configuration①	Vertical Mounting Configuration①
<p style="text-align: center;">Rotating</p>  <p>As shown ED-97R12●■ For handle on left ED-98R12▲■</p>	<p style="text-align: center;">Reciprocating</p>  <p>As shown ED-119ER3◆ For handle on left ED-120ER1◆</p>
	<p style="text-align: center;">Upright Mounting Configuration②</p> <p style="text-align: center;">Rotating</p>  <p>ED-99R13▲■ ED-99ER2▲◆</p>

① For side-break heavy-duty style switches, for mounting on two poles—wood or steel.

② For side-break standard-duty style switches, for mounting on a single pole—wood or steel.

★ Refer to Specification Bulletin 761-31 for available voltage and current ratings.

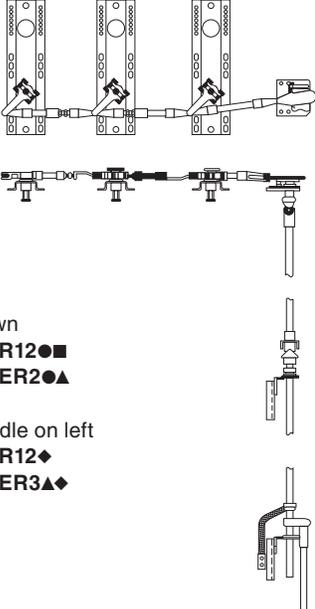
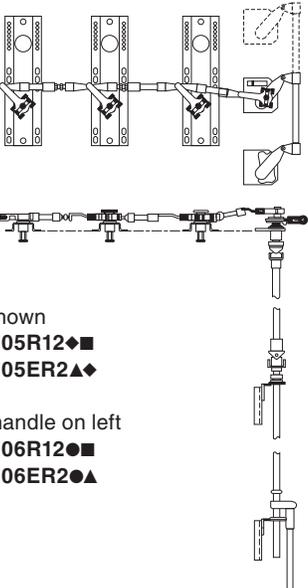
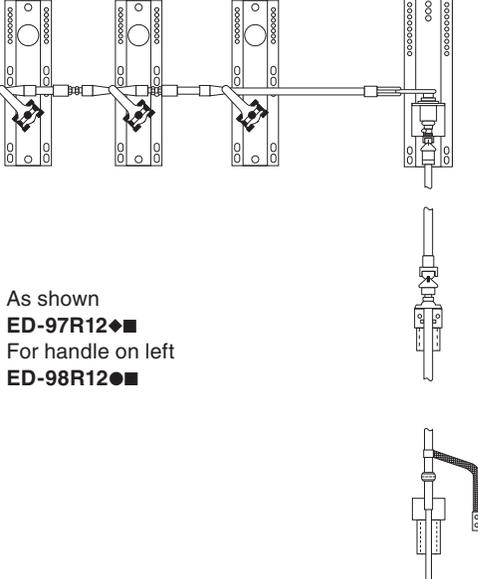
● To be used with clockwise-opening switch.

■ For switches rated 14.4 kV and 25 kV.

▲ To be used with counterclockwise-opening switch.

◆ For switches rated 34.5 kV.

Side-Break Heavy-Duty Style—Continued★
For Mounting on a Structure

Upright Mounting Configuration	
Rotating—Direct or Single Offset	Rotating—Double Offset
 <p>As shown ED-103R12●■ ED-103ER2●▲</p> <p>For handle on left ED-104R12◆ ED-104ER3▲◆</p>	 <p>As shown ED-105R12◆■ ED-105ER2▲◆</p> <p>For handle on left ED-106R12●■ ED-106ER2●▲</p>
Vertical Mounting Configuration	
Rotating	
 <p>As shown ED-97R12◆■ For handle on left ED-98R12●■</p>	

★ Refer to Specification Bulletin 761-31 for available voltage and current ratings.

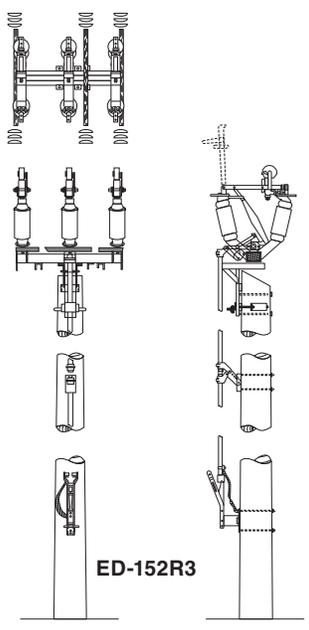
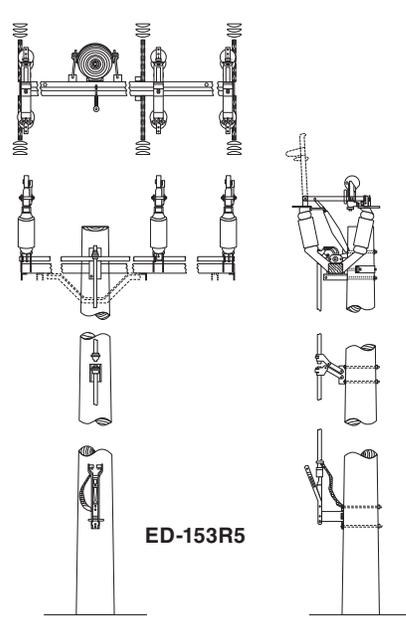
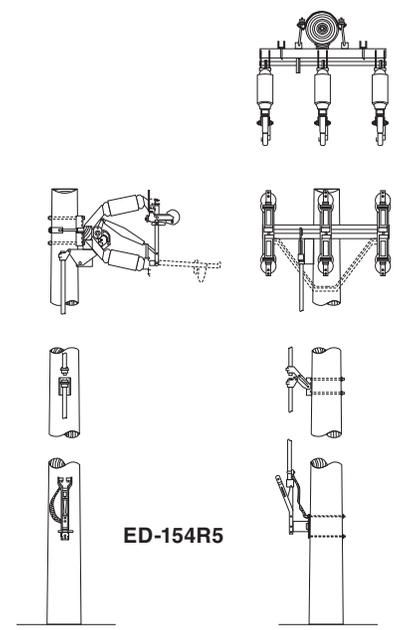
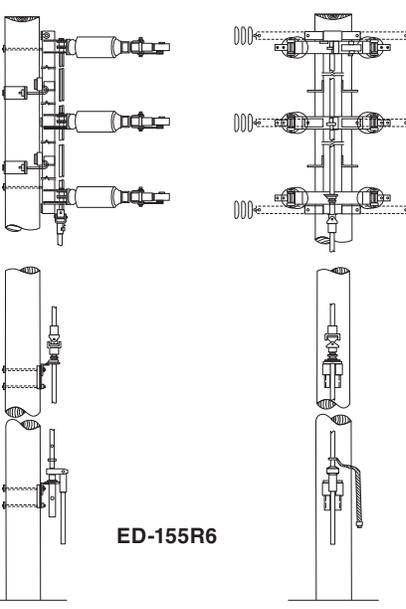
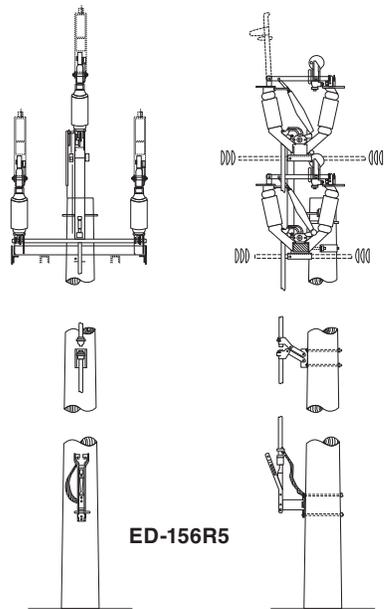
- To be used with counterclockwise-opening switch.
- For switches rated 14.4 kV and 25 kV.

▲ For switches rated 34.5 kV.

◆ To be used with clockwise-opening switch.

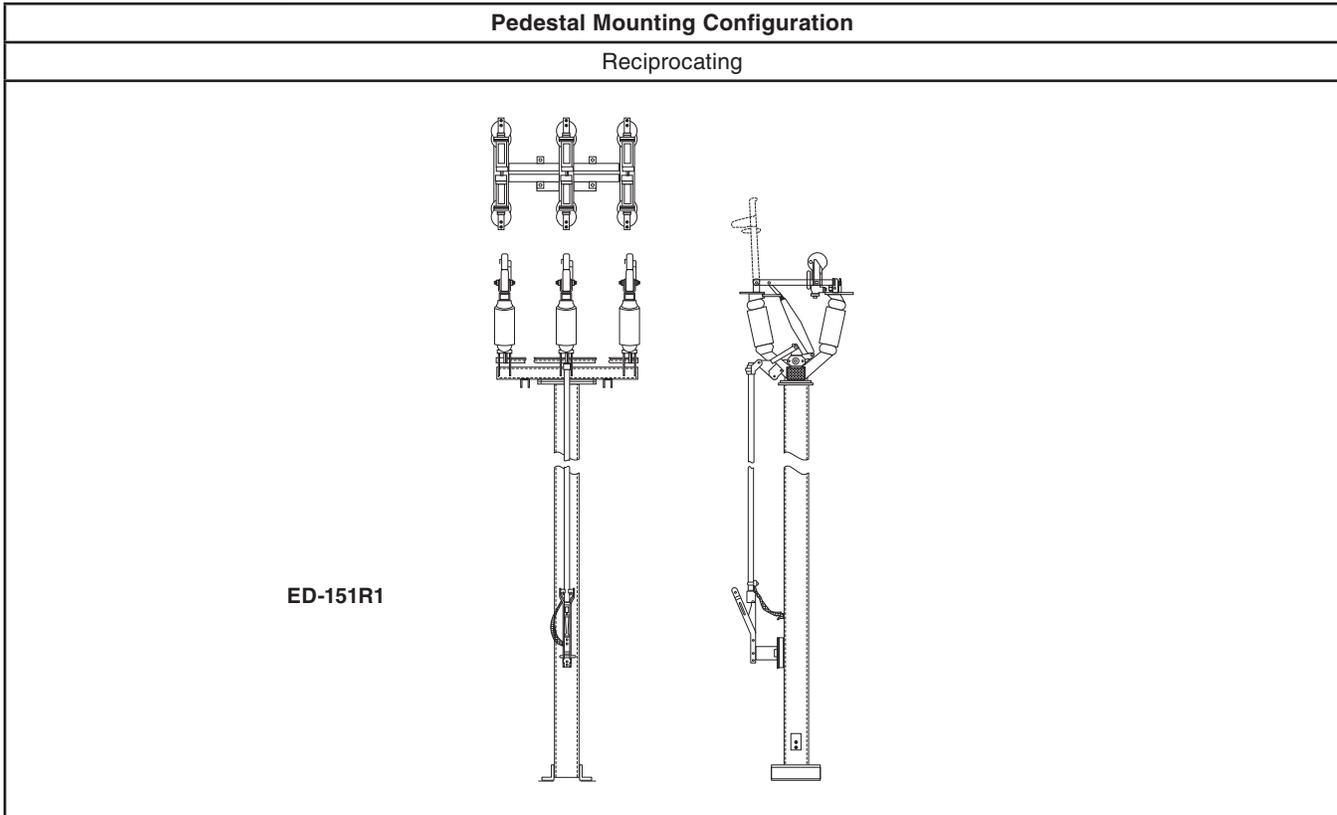
Vertical-Break Integer Style★

For Mounting on a Single Pole—Wood, Steel, Concrete, or Composite

Pole-Top Mounting Configuration	Upright Mounting Configuration	Vertical Mounting Configuration
<p style="text-align: center;">Reciprocating</p>  <p style="text-align: center;">ED-152R3</p>	<p style="text-align: center;">Reciprocating</p>  <p style="text-align: center;">ED-153R5</p>	<p style="text-align: center;">Reciprocating</p>  <p style="text-align: center;">ED-154R5</p>
<p style="text-align: center;">Tiered Outboard Mounting Configuration</p>	<p style="text-align: center;">Triangular Mounting Configuration</p>	
<p style="text-align: center;">Rotating</p>  <p style="text-align: center;">ED-155R6</p>	<p style="text-align: center;">Reciprocating</p>  <p style="text-align: center;">ED-156R5</p>	

★ Refer to Specification Bulletin 761-31 for available voltage and current ratings.

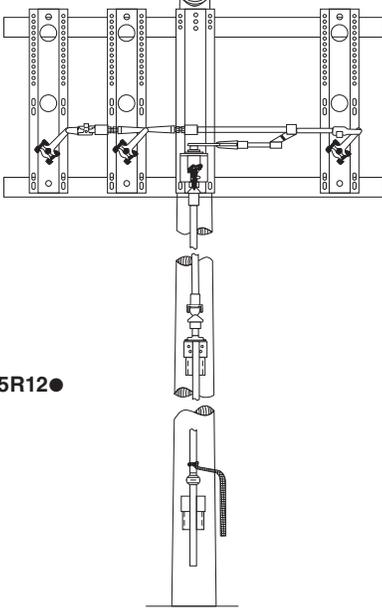
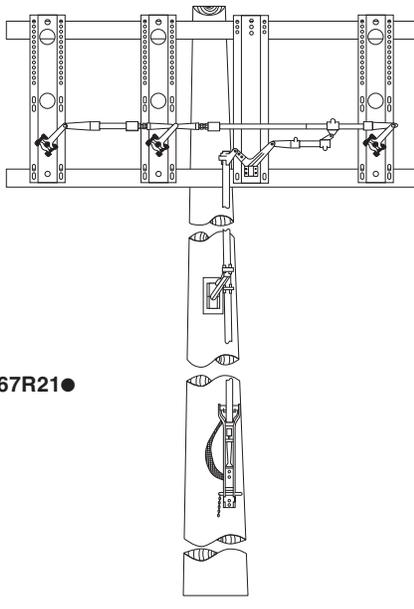
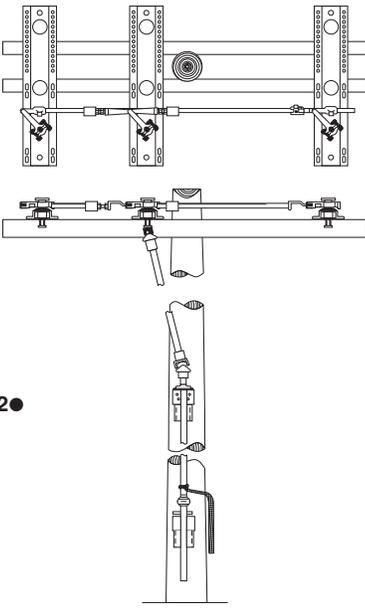
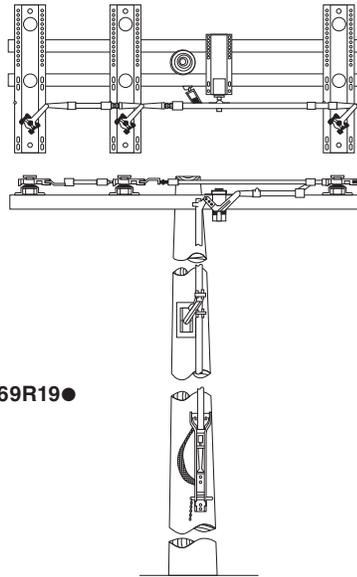
Vertical-Break Integer Style—Continue★
For Pedestal Mounting



★ Refer to Specification Bulletin 761-31 for available voltage and current ratings.

Vertical-Break Style★

For Mounting on a Single Pole—Wood, Steel, Concrete, or Composite

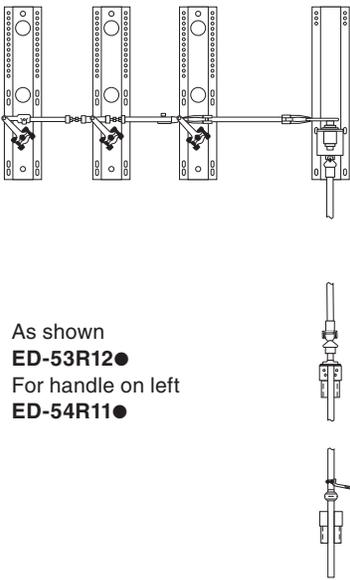
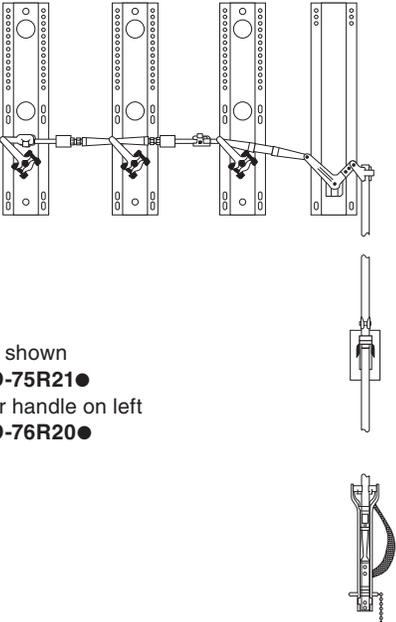
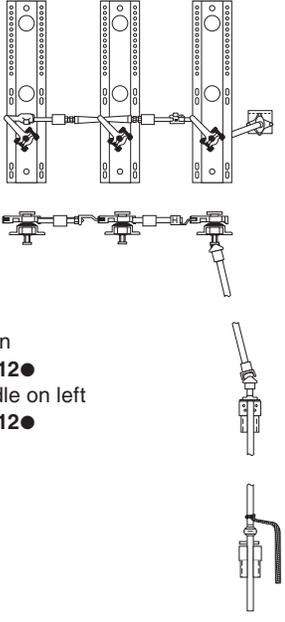
Vertical Mounting Configuration	
Rotating	Reciprocating
 <p>ED-45R12●</p>	 <p>ED-67R21●</p>
Upright Mounting Configuration	
Rotating	Reciprocating
 <p>ED-47R12●</p>	 <p>ED-69R19●</p>

★ Refer to Specification Bulletin 761-31 for available voltage and current ratings.

● For switches rated 14.4 kV (600 A and 1200 A) and 25 kV (600 A and 1200 A).

Vertical-Break Style—Continued★

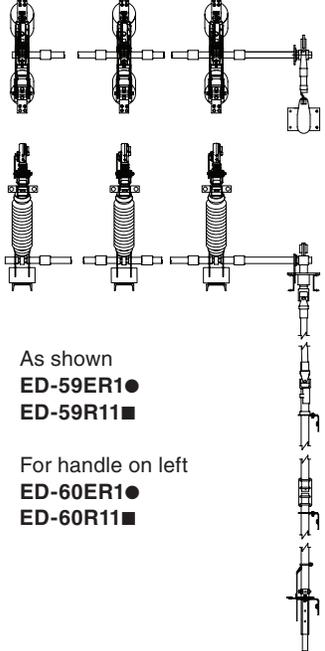
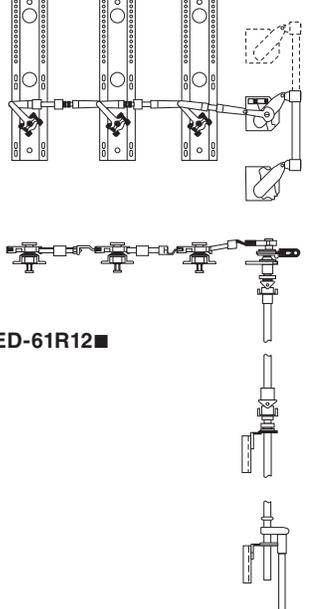
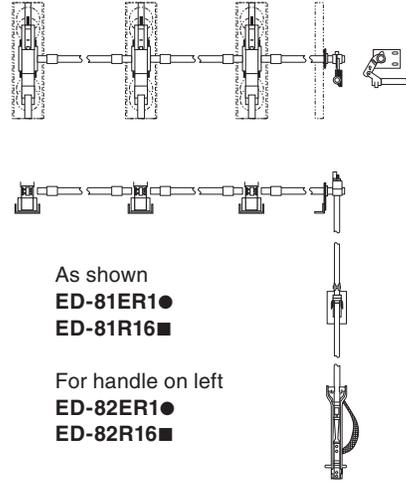
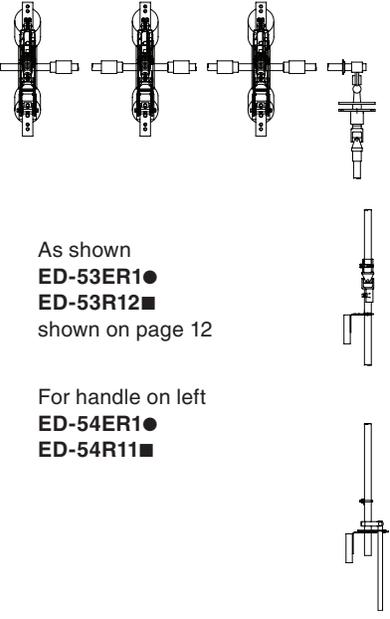
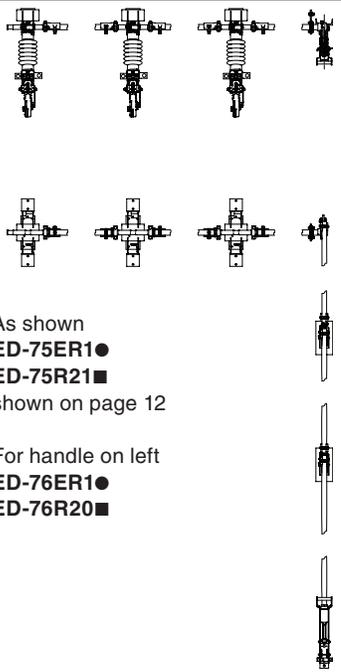
For Mounting on Two Poles—Wood, Steel, Concrete, or Composite

Vertical Mounting Configuration	
Rotating	Reciprocating
 <p>As shown ED-53R12● For handle on left ED-54R11●</p>	 <p>As shown ED-75R21● For handle on left ED-76R20●</p>
Upright Mounting Configuration	
Rotating	
 <p>As shown ED-55R12● For handle on left ED-56R12●</p>	

★ Refer to Specification Bulletin 761-31 for available voltage and current ratings.

● For switches rated 14.4 kV (600 A and 1200 A) and 25 kV (600 A and 1200 A).

Vertical-Break Style—Continued★
 For Mounting on a Structure

Upright Mounting Configuration		
Rotating—Direct or Single Offset	Rotating—Double Offset	Reciprocating
 <p>As shown ED-59ER1● ED-59R11■</p> <p>For handle on left ED-60ER1● ED-60R11■</p>	 <p>ED-61R12■</p>	 <p>As shown ED-81ER1● ED-81R16■</p> <p>For handle on left ED-82ER1● ED-82R16■</p>
Vertical Mounting Configuration		
Rotating	Reciprocating	
 <p>As shown ED-53ER1● ED-53R12■ shown on page 12</p> <p>For handle on left ED-54ER1● ED-54R11■</p>	 <p>As shown ED-75ER1● ED-75R21■ shown on page 12</p> <p>For handle on left ED-76ER1● ED-76R20■</p>	

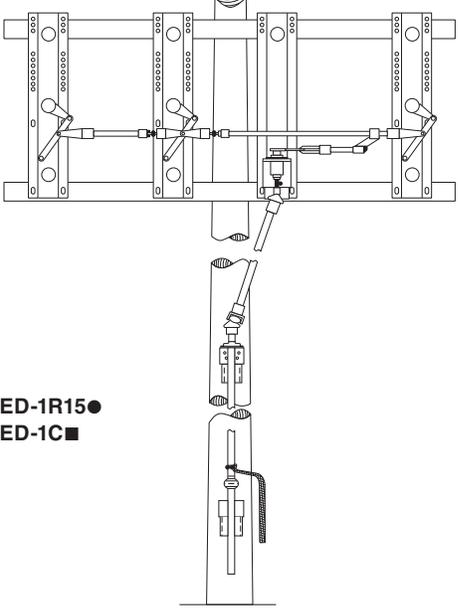
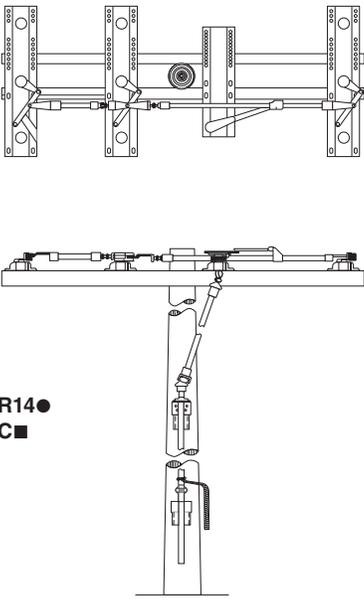
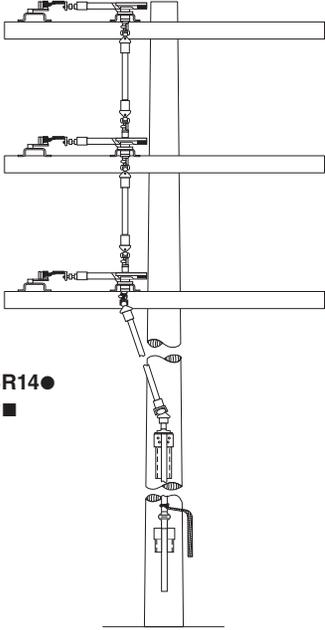
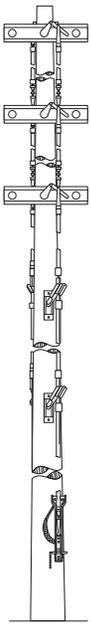
★ Refer to Specification Bulletin 761-31 for available voltage and current ratings.

● For switches rated 14.4 kV (2400 A), 25/34.5 kV and 34.5 kV.

■ For switches rated 14.4 kV (600 A and 1200 A) and 25 kV (600 A and 1200 A).

Double-Break Style★☆☆

For Mounting on a Single Pole—Wood, Steel, Concrete, or Composite

Vertical Mounting Configuration	Upright Mounting Configuration
<p style="text-align: center;">Rotating</p>  <p>ED-1R15● ED-1C■</p>	<p style="text-align: center;">Rotating</p>  <p>ED-3R14● ED-3C■</p>
<p style="text-align: center;">Tiered Upright Mounting Configuration</p>	<p style="text-align: center;">Tiered Outboard Mounting Configuration</p>
<p style="text-align: center;">Rotating</p>  <p>ED-5BR14● ED-5C■</p>	<p style="text-align: center;">Reciprocating</p>  <p>ED-27R18●</p>

★ Refer to Specification Bulletin 761-31 for available voltage and current ratings.

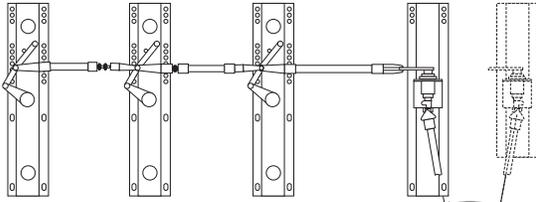
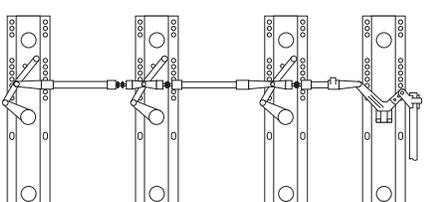
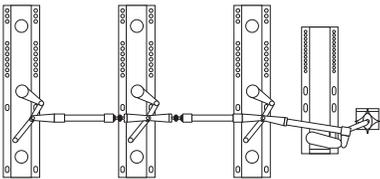
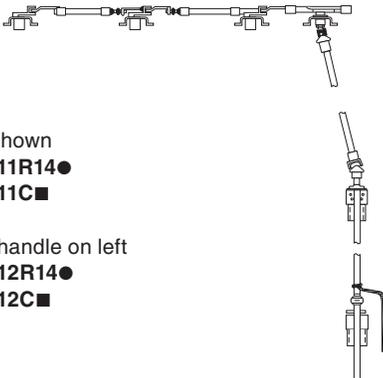
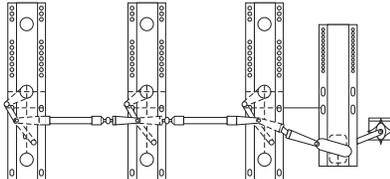
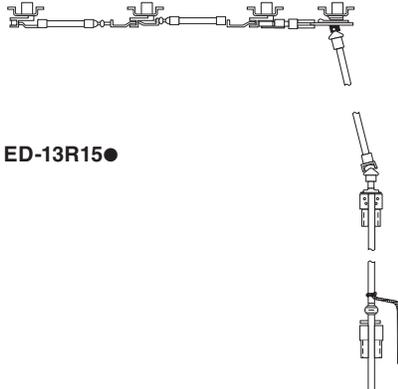
☆☆ For double-break switches with “-G” option (ground switches), consult the nearest S&C Sales Office for ED.

● For switches rated 34.5 kV and 46 kV.

■ For switches rated 69 kV only.

Double-Break Style—Continued★☆

For Mounting on Two Poles—Wood, Steel, Concrete, or Composite

Vertical Mounting Configuration	
Rotating	Reciprocating
 <p>As shown ED-9R14● ED-9C■</p> <p>For handle on left ED-10R12● ED-10C■</p> 	 <p>As shown ED-31R23● ED-31C■</p> <p>For handle on left ED-32R21● ED-32C■</p> 
Upright Mounting Configuration	Inverted Mounting Configuration
Rotating	Rotating
 <p>As shown ED-11R14● ED-11C■</p> <p>For handle on left ED-12R14● ED-12C■</p> 	 <p>ED-13R15●</p> 

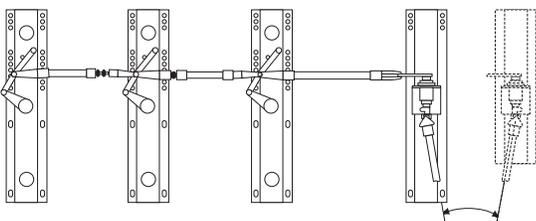
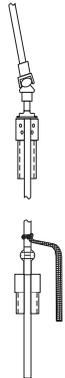
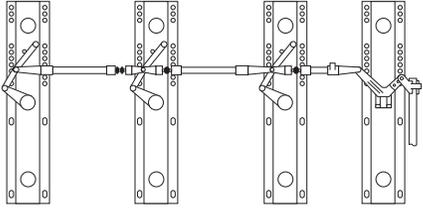
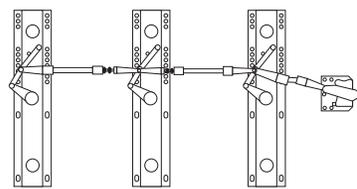
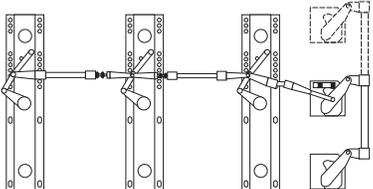
★ Refer to Specification Bulletin 761-31 for available voltage and current ratings.

☆ For double-break switches with “-G” option (ground switches), consult the nearest S&C Sales Office for ED.

● For switches rated 34.5 kV and 46 kV.

■ For switches rated 69 kV only.

Double-Break Style—Continued★☆ For Mounting on a Structure

Vertical Mounting Configuration	
Rotating	Reciprocating
 <p>As shown ED-9R14● ED-9C■</p> <p>For handle on left ED-10● ED-10C■</p> 	 <p>As shown ED-31R23● ED-31C■</p> <p>For handle on left ED-32R21● ED-32C■</p> 
Upright Mounting Configuration	
Rotating—Direct or Single Offset	Rotating—Double Offset
 <p>As shown ED-15R14● ED-11C■</p> <p>For handle on left ED-16R14● ED-12C■</p> 	 <p>As shown ED-17R15●</p> <p>For handle on left ED-18R15●</p> 

★ Refer to Specification Bulletin 761-31 for available voltage and current ratings.

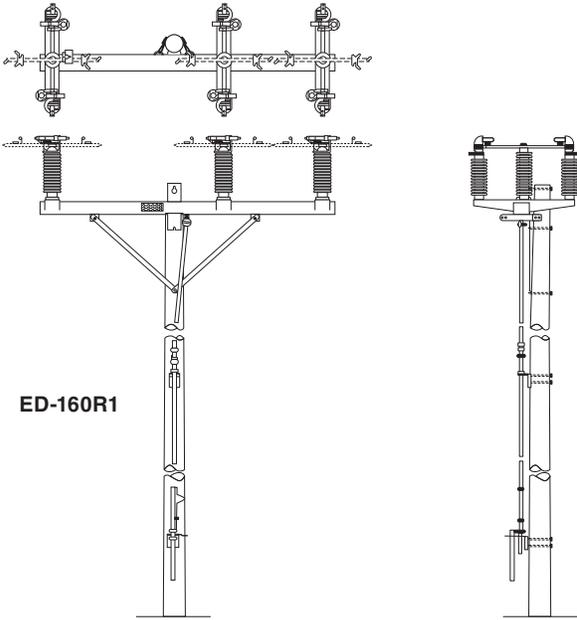
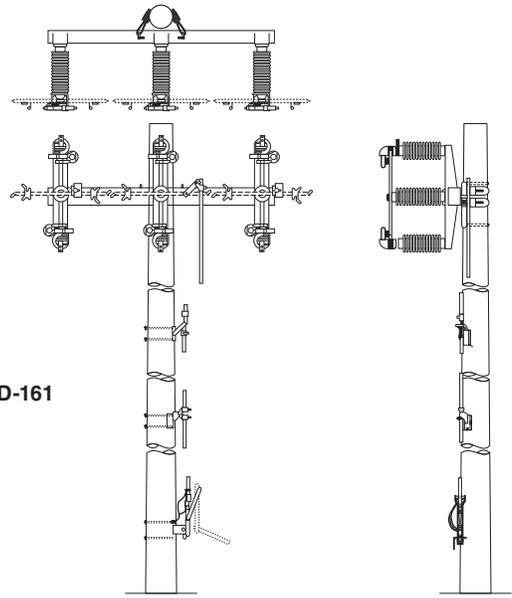
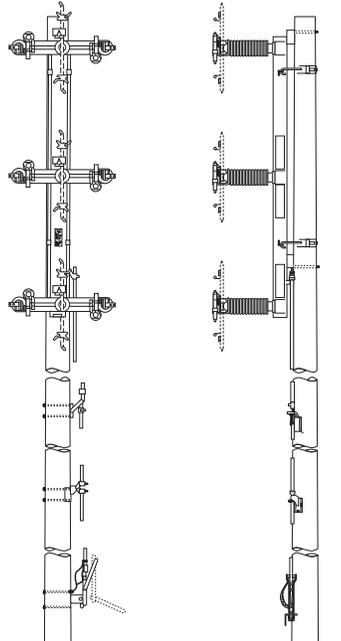
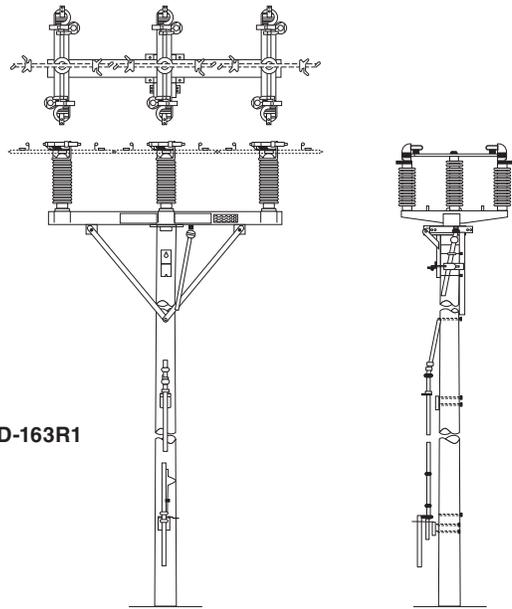
☆ For double-break switches with -G option (ground switches), consult the nearest S&C Sales Office for ED.

● For switches rated 34.5 kV and 46 kV.

■ For switches rated 69 kV only.

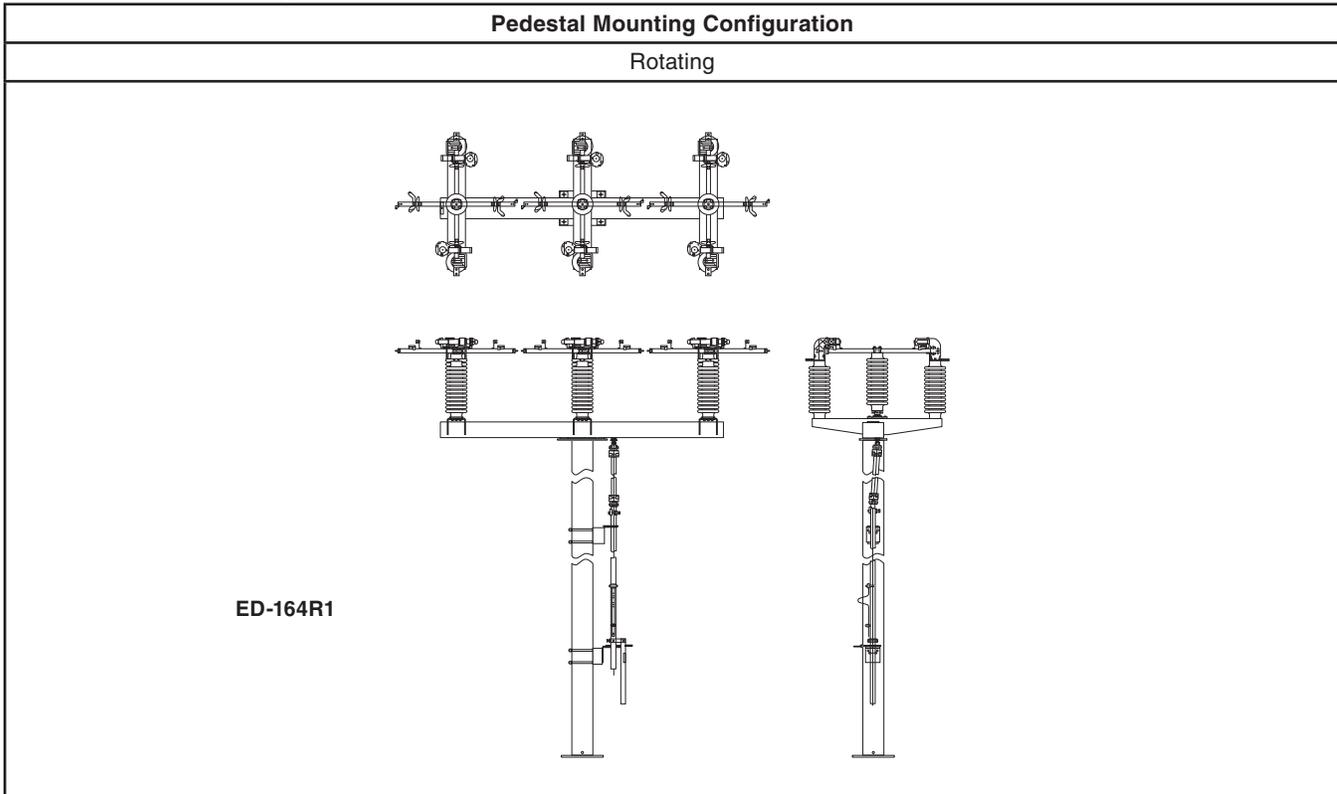
Double-Break Integer Style★

For Mounting on a Single Pole—Wood, Steel, Concrete, or Composite

Upright Mounting Configuration	Vertical Mounting Configuration
<p style="text-align: center;">Rotating</p>  <p style="text-align: left; margin-left: 10%;">ED-160R1</p>	<p style="text-align: center;">Reciprocating</p>  <p style="text-align: left; margin-left: 10%;">ED-161</p>
Tiered-Outboard Mounting Configuration	Pole-Top Mounting Configuration
<p style="text-align: center;">Reciprocating</p>  <p style="text-align: left; margin-left: 10%;">ED-162</p>	<p style="text-align: center;">Rotating</p>  <p style="text-align: left; margin-left: 10%;">ED-163R1</p>

★ Refer to Specification Bulletin 761-31 for available voltage and current ratings.

Double-Break Integer Style—Continued★
For Pedestal Mounting



★ Refer to Specification Bulletin 761-31 for available voltage and current ratings.