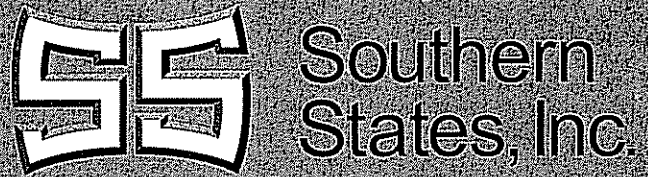


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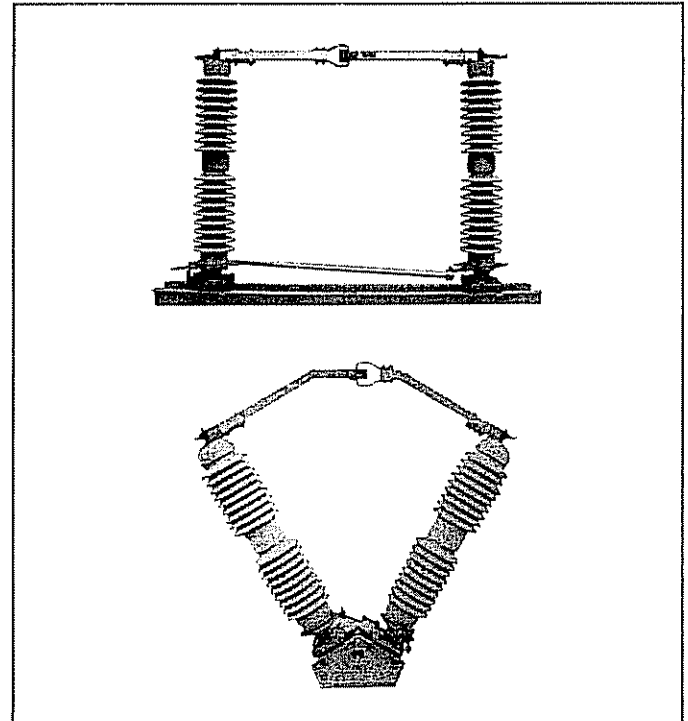
The Quality Name in High Voltage Products  
**GROUP OPERATED DISCONNECT SWITCHES**  
**CENTER BREAK**

## General Application

Southern States' type EC-1 and its Vee design mounting variation type EC-1V are group operated center break disconnect switches constructed primarily of high strength aluminum. By combining years of experience with new innovations, we have accomplished a center break switch design that conforms to ANSI standards and is both economical and reliable for your systems. Applications for these switches include disconnecting and sectionalizing of lines, and isolating or bypassing other electrical equipment.

- Using only two insulators per phase results in cost and weight savings.
- Ratings are 72.5 kV through 242 kV; 1200 and 2000 continuous amperes.
- All models are thoroughly tested, both electronically and mechanically.
- Arc horns are available where required.
- The EC-1 and EC-1V switches may be operated with either a manual (swing handle or worm gear) or Southern States Type VM-1 Motor Operator.
- Both conventional and Vee mounting arrangements are available in upright, vertical, and underhung positions.
- For easy installation, all models use jack screws which provide infinite adjustments and eliminate time consuming shimming of insulator stacks.

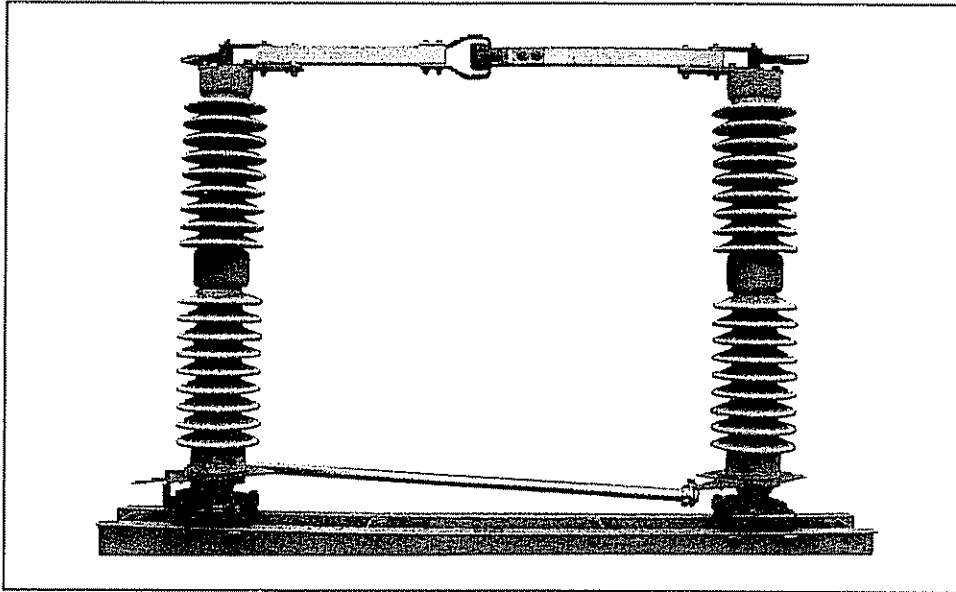
Conventional operation mechanism designs are provided with all mounting steel included. Bases are precision drilled to your mounting specification. Custom operating mechanism pipes are delivered cut to length to avoid measuring and cutting errors in the field.



**Type EC-1 and EC-1V**  
**ALUMINUM**  
**7.25 kV - 242 kV**  
**1200 and 2000 A**



# Type EC-1 and EC-1V Center Break Disconnect Switches



## Standard Features

### **BLADE:**

The switch blade is constructed from 6063-T6 aluminum in a square tube configuration. This design provides additional strength, stiffness, radiating surface area and reduced electrical resistance when compared to more conventional switch blades

### **SWIVEL CONTACTS:**

This switch uses machined, cast copper alloy swivel assemblies.

Current transfer from high strength, one - piece, tinned terminal pad to the blade support is via high pressure, non-separating silver-to-copper contacts. Constant contact pressure is maintained by a factory-set, beryllium copper bellville washer.

### **CENTER CONTACTS:**

All center contacts are silver-to-copper. The female contact fingers are hard-drawn copper, which can be silver-plated when silver to silver contacts are required. Dissimilar metal interfaces are sealed with an oxidation inhibitor. The number of contact fingers varies with the amperage ratings

The male contact consist of 15 mil. nickel silver strips brazed to a formed copper bar. Electrolytic corrosion is prevented by the same highly effective method used on the female assembly. Each opening and closing wipes the contact surfaces clean of dirt and contaminates.

A positive blade stop, located in the center of the female contact allows the insulators to be preloaded

toward the center of the switch, providing a solid, movement-free current interchange, further reducing contact wear.

### **TERMINAL PADS:**

The terminal pads are tinned for use with either copper or aluminum conductors and have NEMA standard drilling patterns.

### **INSULATOR BEARINGS:**

Heavy duty, double row ball bearings with a one-piece galvanized housing. They are exceptionally rigid and rotate with very little resistance. Factory lubricated and sealed stainless steel, they are completely, maintenance-free. Supported by a jack screw at each corner, the bearings are easily adjusted to compensate for insulator or mounting surface irregularities.

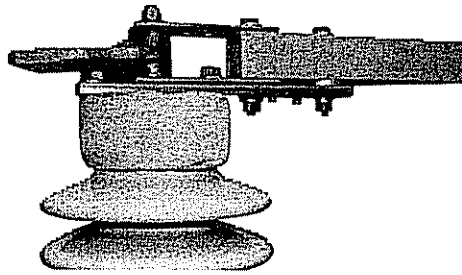
### **ADJUSTABLE OPEN AND CLOSE POSITION STOPS**

Position stops are provided on the rotating insulating stacks for individual pole adjustments, allowing maximum synchronization of the three phase assembly

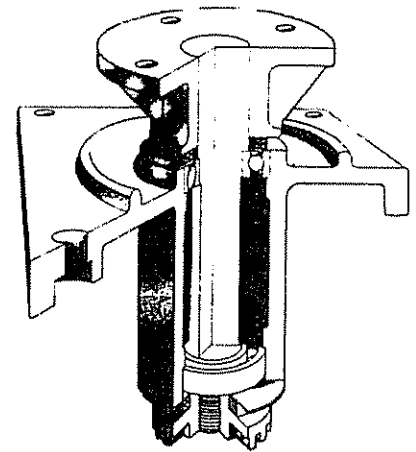
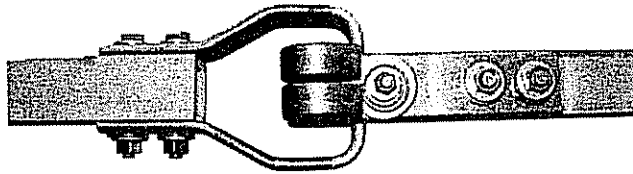
### **BASES:**

Depending on the rating, the EC-1 switch has a single channel or double channel galvanized steel base.

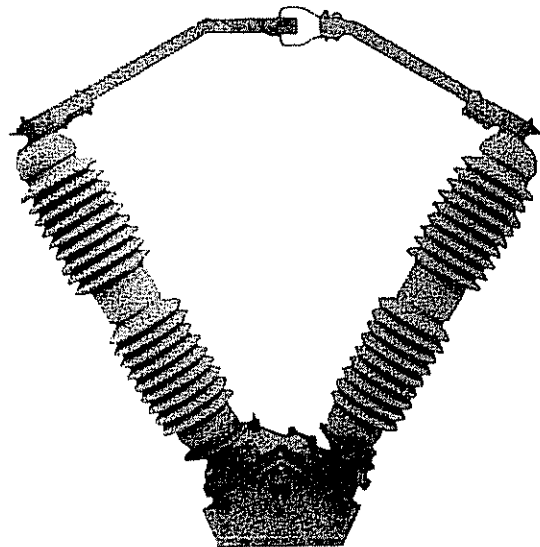
**Figure 2**  
**Swivel Contact**



**Figure 3**  
**Center Contact**



**Figure 4**  
**Insulator Bearing**  
**115 kV and above**



**Figure 5 - Type EC-1V 115kV, 1200 Ampere**

The EC-1V (aluminum construction - Vee mounting configuration) features silver-to-copper swivel contacts, silver-to-copper center contacts, maintenance-free insulator bearings and galvanized steel bases. Switches poles are shipped fully assembled.

Maximum Voltage (kV)	Current Ampere			Catalog Number	Insulator TR No	Dimensions (Inches)								Net Weight (lbs)
	Cont.	MOM X 100	BIL kV			A	B (ANIS)	C (POST)	D	E	F	G	H (ANSI)	
72.5	1200	61	350	EC-1-691200	216	42	51	36 15/16	2 1/2	25 15/16	24 3/16	6 1/8	3	888
	2000	100		EC-1-692000		45	54	38 1/16	6	27 3/8	25 11/16	7 1/8	8 1/4	1614
121	1200	61	550	EC-1-1151200	286	60	72	52 1/2	6	34 15/16	33 3/16	6 1/8	8 1/4	1695
	2000	100		EC-1-1152000		60	72	53 1/16	6	34 7/8	33 3/16	7 1/8	8 1/4	1854
145	1200	61	650	EC-1-1381200	288	72	84	61 1/2	6	40 15/16	39 3/16	6 1/8	8 1/4	2001
	2000	100		EC-1-1382000		72	84	62 1/16	6	40 7/8	39 3/16	7 1/8	8 1/4	2163
169	1200	61	700	EC-1-1611200	291	84	96	69 1/2	6	49 1/4	-	6 1/8	8 1/4	2862
	2000	100		EC-1-1612000		84	96	10 1/16	6	46 7/8	-	7 1/8	8 1/4	3024
230	1200	61	900	EC-1-2301200-9	304	.	.	.	.	.	.	.	.	.
	2000	100		EC-1-2302000-9		.	.	.	.	.	.	.	.	.
230	1200	61	1050	EC-1-2301200-10	312	.	.	.	.	.	.	.	.	.
	2000	100		EC-1-2302000-10		.	.	.	.	.	.	.	.	.

• Refer to factory

## NOTES:

Catalog numbers are listed for Type EC-1 (conventional base) only. For Vee design, pre-fix numbers with EC-1V.

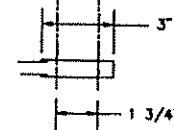
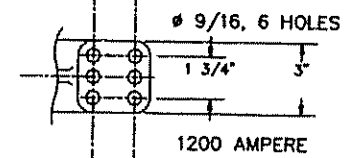
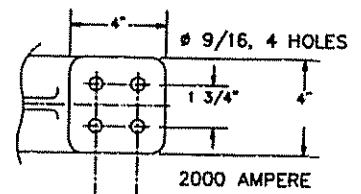
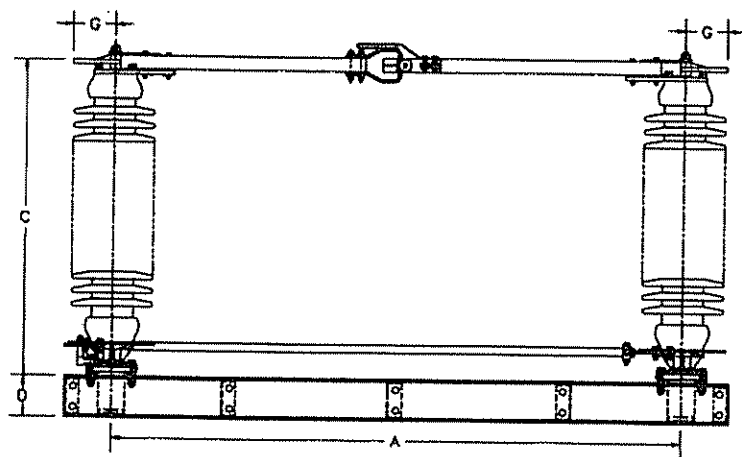
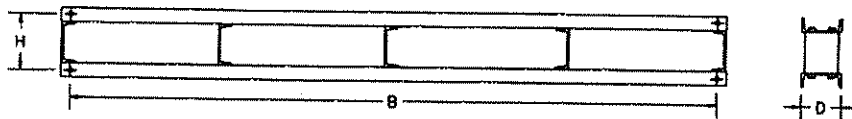
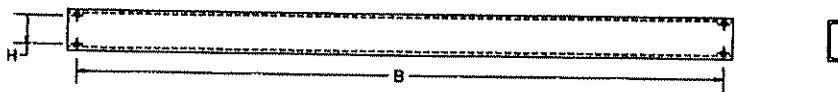
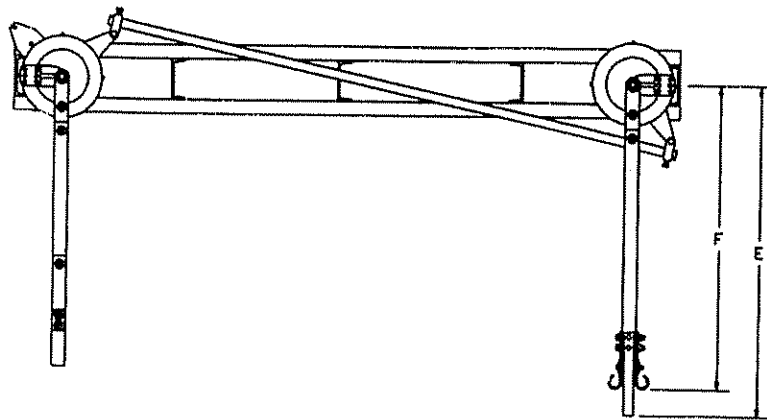
For EC-1V switch weights and dimensions, refer to factory.

Arching horns are optional at 72.5 kV through 145 kV.

Net weight is for a three pole switch with conventional base and insulators listed in the data table.

Refer to factory for 69 kV on 5" B.C. insulators.

The information contained herein is general in nature and is not intended for specific construction, installation or application purposes. Southern States, Inc. reserves the right to make changes in specifications shown herein or add improvements at any time without notice or obligation.



# OPTIONAL ACCESSORIES

**S**OUTHERN STATES TYPE EC-1 and EC-1V Switches can be provided with a wide variety of accessories. Many of the more popular accessory offerings are shown below. Please contact your local representative for any accessories not listed.

- Whip Type Arcing Horns
- Worm Gear Operating Mechanism
- Motor Operating Mechanism
- In-Line Ground Switches
- Spill Gaps (rod gaps, spark gaps)
- Stainless Steel Bearings
- Outriggers (Cable Guides)
- Terminal Connectors
- Brown Insulators
- Auxiliary Switches mounted on the vertical operating pipes
- Mounting Provisions for key interlocks
- Vertical Pipe Insulators
- Braidless Grounding Device
- Silver - to - Silver Contacts

## Testing

The EC-1 Switch has been tested in accordance with ANSI standards and meets or exceeds the requirements for the following tests: **Temperature Rise** (Continuous Current), **Dielectric** (60 hertz and impulse), **Ice**, **Short Time Current** and **Mechanical Operations**.

## Ordering Instructions

When ordering, please provide the following information

- KV Rating
- Continuous current rating
- BIL Level
- Insulators - If required, provide TR number (or catalog number) and color (if brown is desired).
- Type of Operating mechanism (Swing handle, worm gear or motor).
- Specific accessories required (See optional accessories section).
- Detailed steel structural drawings showing the mounting hole locations for attaching the switch bases and controls.
- The preferred locations and mounting provisions for the operating mechanism and the outboard bearing assembly.



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