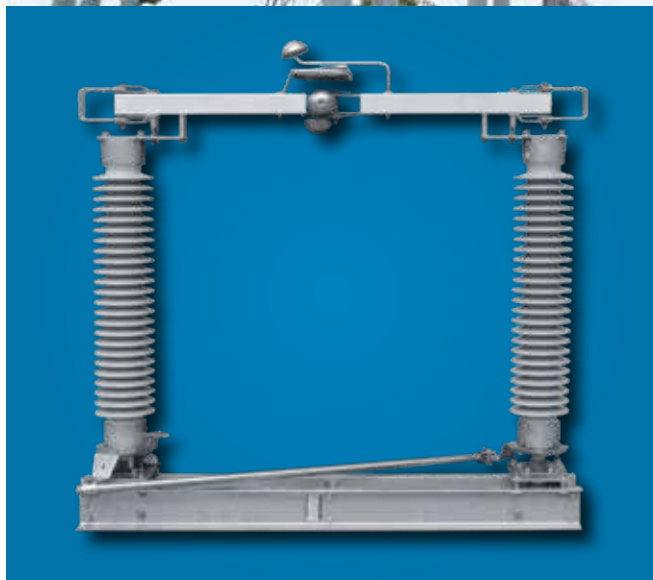


Aluminum Center Break Switch

Switch Types CB-A, CB-AV

69 kV - 230 kV ■ 1200A - 3000A



 **CLEVELAND/PRICE INC.**

14000 Rt. 993, Trafford, PA 15085 **p** 724-864-4177 **f** 724-864-9040

e sales@cleavelandprice.com **w** cleavelandprice.com

Type CB-A Switch

CB-A Application

The Cleaveland/Price CB-A is a three-pole, group-operated, aluminum center break switch for installation in substation or transmission line locations. The switch can be mounted in the horizontal upright, vertical, or horizontal underhung positions. The CB-A is suitable for use in a variety of applications including line disconnecting and sectionalizing, circuit breaker bypass and isolation, and transformer isolation. Arc horns or quick break whips can be supplied when small amounts of transformer magnetizing currents or line charging currents must be interrupted.

Accessories and options needed to adapt the switch to a customer's particular requirements are available. The CB-A may be operated manually by use of a swing handle or wormgear mechanism, or electrically operated by use of a type TP-C2 or BT-T motor operator.

The CB-A meets applicable NEMA and IEEE Standards and the rating requirements of applicable IEC Standards.

CB-A Features

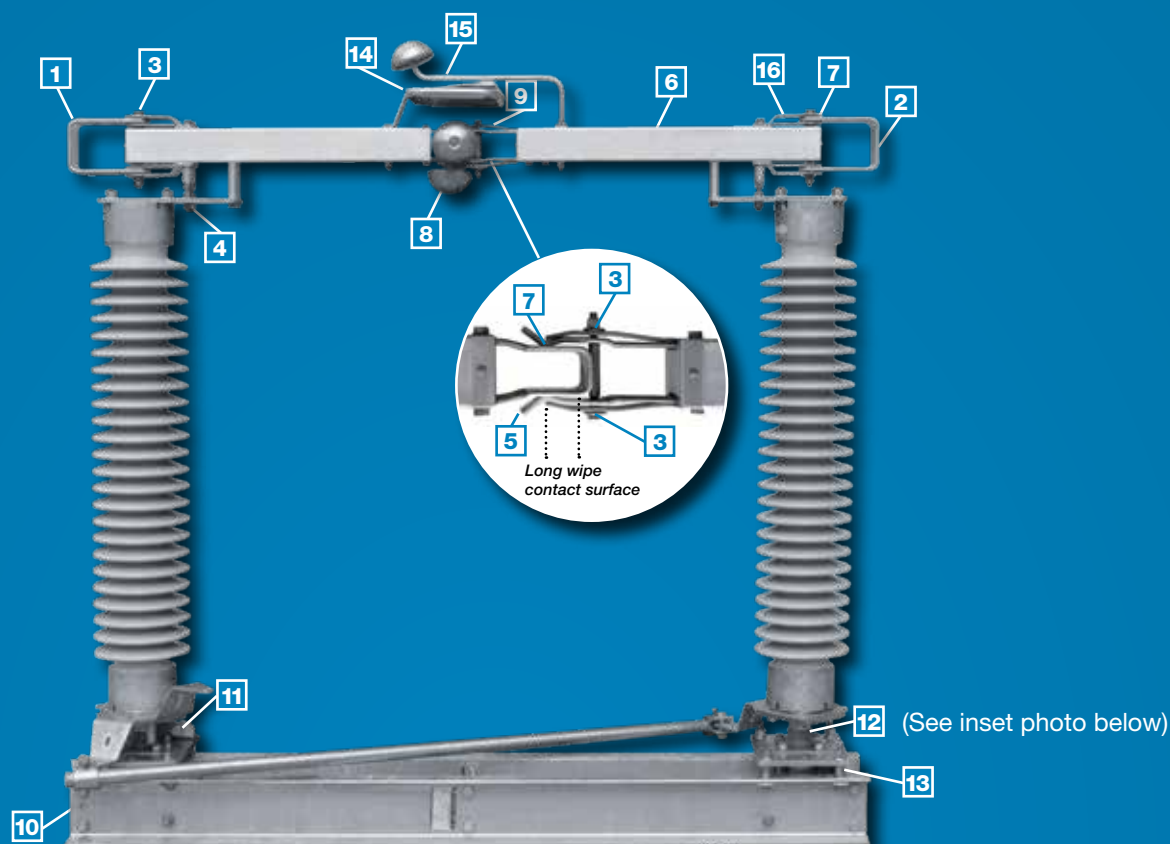
The CB-A continues the Cleaveland/Price tradition of designing simple, dependable switches without the use of castings. Knowledge gained from working with customers to identify and solve general switch problems has played a major part in refining the CB-A. Significant design features include:

- Total non-cast aluminum, copper, and steel parts resulting in superior dependability
- Live parts constructed from extruded aluminum and hard-drawn, high-conductivity copper, producing stronger, more conductive components than parts made of cast materials
- Silver-to-silver, high-pressure line contacts for effective transfer current
- Magnetically attracting parallel path hinge and jaw contacts for outstanding performance under short circuit
- Wiping action at both the jaw contacts and hinge contacts that keep the contacts clean for years of reliable service. Jaw contacts have a long contact wipe surface to accommodate insulator movement.
- Tin-plated copper terminal pads that can accept terminal connectors on three surfaces
- Aluminum to tin-plated copper bolted connections. All bolted contact surfaces are prepared and treated with an oxide inhibitor. Moving contacts are silver-to-silver with a hard-drawn, high-conductivity copper base material.
- Special hinge design supports high cantilever terminal loads while maintaining low pivot force

Cleaveland/Price has a very basic approach to design... keep it simple.

We apply this approach from material selection to mechanical design. All Cleaveland/Price CB-A and CB-AV switch current-carrying parts are fabricated from high-strength, high-conductivity aluminum or copper. Switch performance is not compromised by flaws that could occur in the casting process. To assure product quality, all incoming material is tested for conductivity and composition verification. Every current carrying part is made in the United States at the Cleaveland/Price manufacturing facility for maximum quality control.

Designed for Simplicity



1 Tin-plated copper terminal pads

2 NEMA standard terminal pads with three surfaces to attach connectors

3 Stainless steel contact springs

4 Blade-leveling screws

5 Blade guide with generous lead-in

6 Single-piece aluminum square tube blade — no welding, no castings!

7 Silver-to-silver contacts at hinge and jaw

8 Corona-eliminating hemisphere

9 Replaceable jaw end contacts (contact configuration varies according to amperage rating of the switch)

10 Rigid hot-dip galvanized steel base

11 Rotating insulator stop

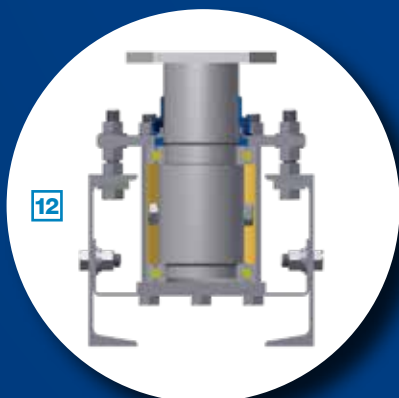
12 Rugged rotating insulator bearing assembly

13 Insulator jacking bolts

14 Ice shield

15 True corona-free arc horns

16 Magnetically attracting hinge contact leaves (each end)



Superior Bearing Assembly

- Maintenance-free, permanently lubricated construction
- High-strength, non-cast, hot-dip galvanized steel shaft
- Special ozone-resistant and UV-resistant seals that outlast conventional seals and contain no metal parts that typically corrode
- Individually sealed ball bearing assemblies in a sealed, grease-packed housing with outer silicone boot shaft seal
- Permanently adjusted bearing assembly

Installation



115 kV, 1200A CB-AV

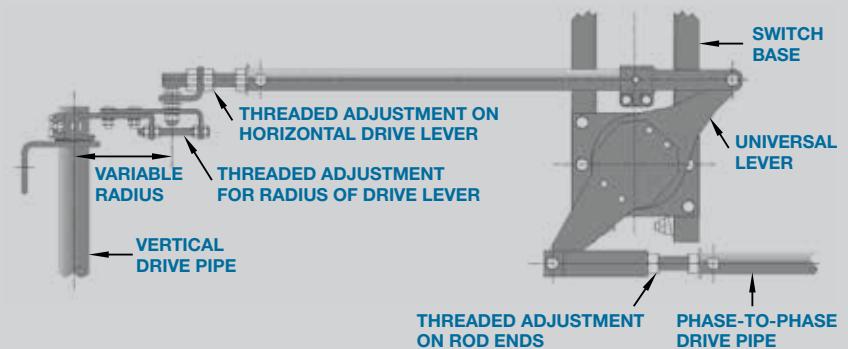


115 kV, 2000A CB-A

Adjustment Features

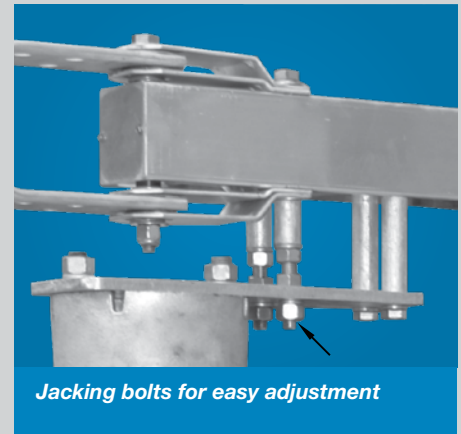
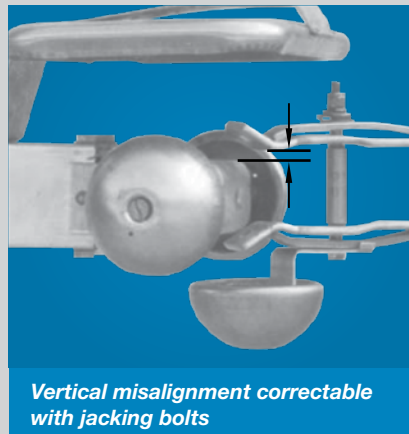
Operating Pipe Adjustment

Threaded adjustments allow for quick and precise switch setup. Not only are the interphase and drive pipes of the operating mechanism supplied with adjustable threaded rod ends, the drive lever has a threaded adjustable radius as well. No special tools are required.

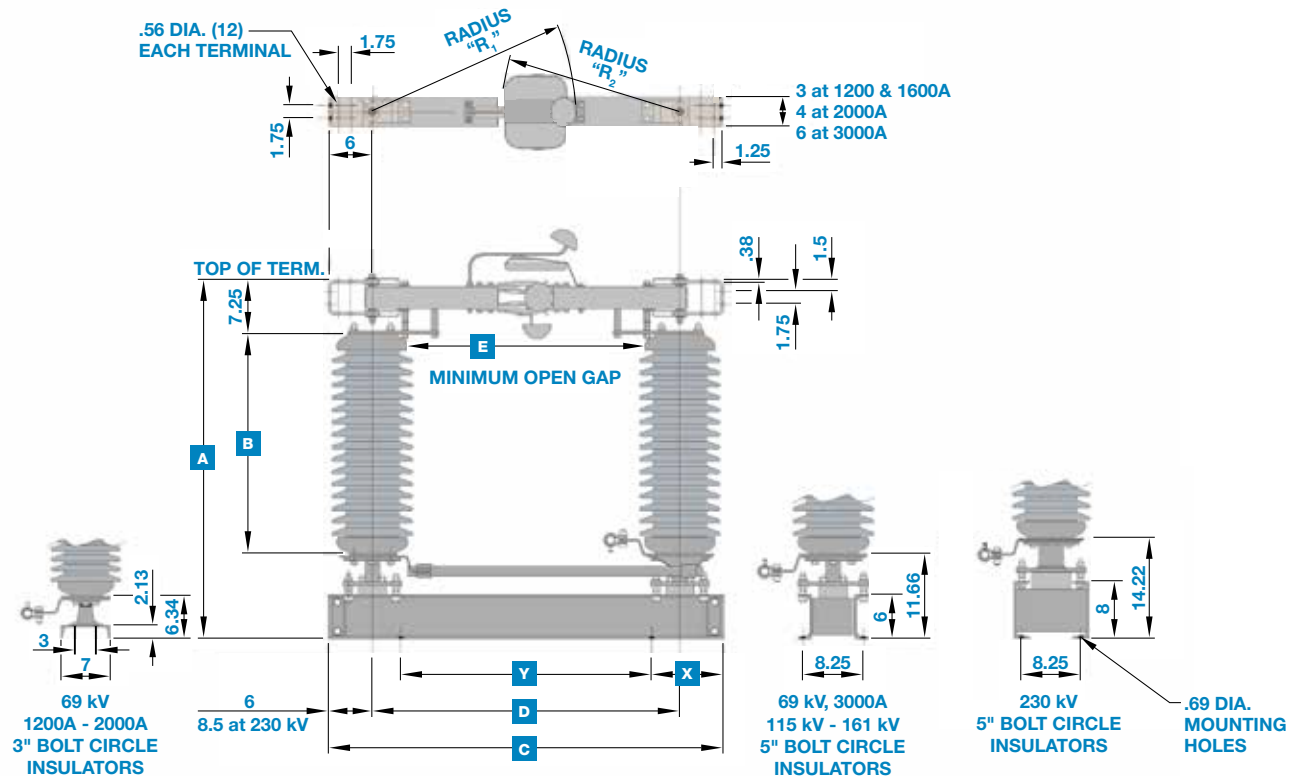


Live Part Adjustment

CB-AV pole units are shipped from the factory pole unit assembled with insulators and are completely adjusted. Should conductor tension move the switch contacts out of alignment, live part adjustments can be made by using the jacking bolts provided at the base of the switch. By using the additional jacking bolts at the blade hinge, the blade tip contacts can be lowered or raised until the contacts are perfectly aligned.



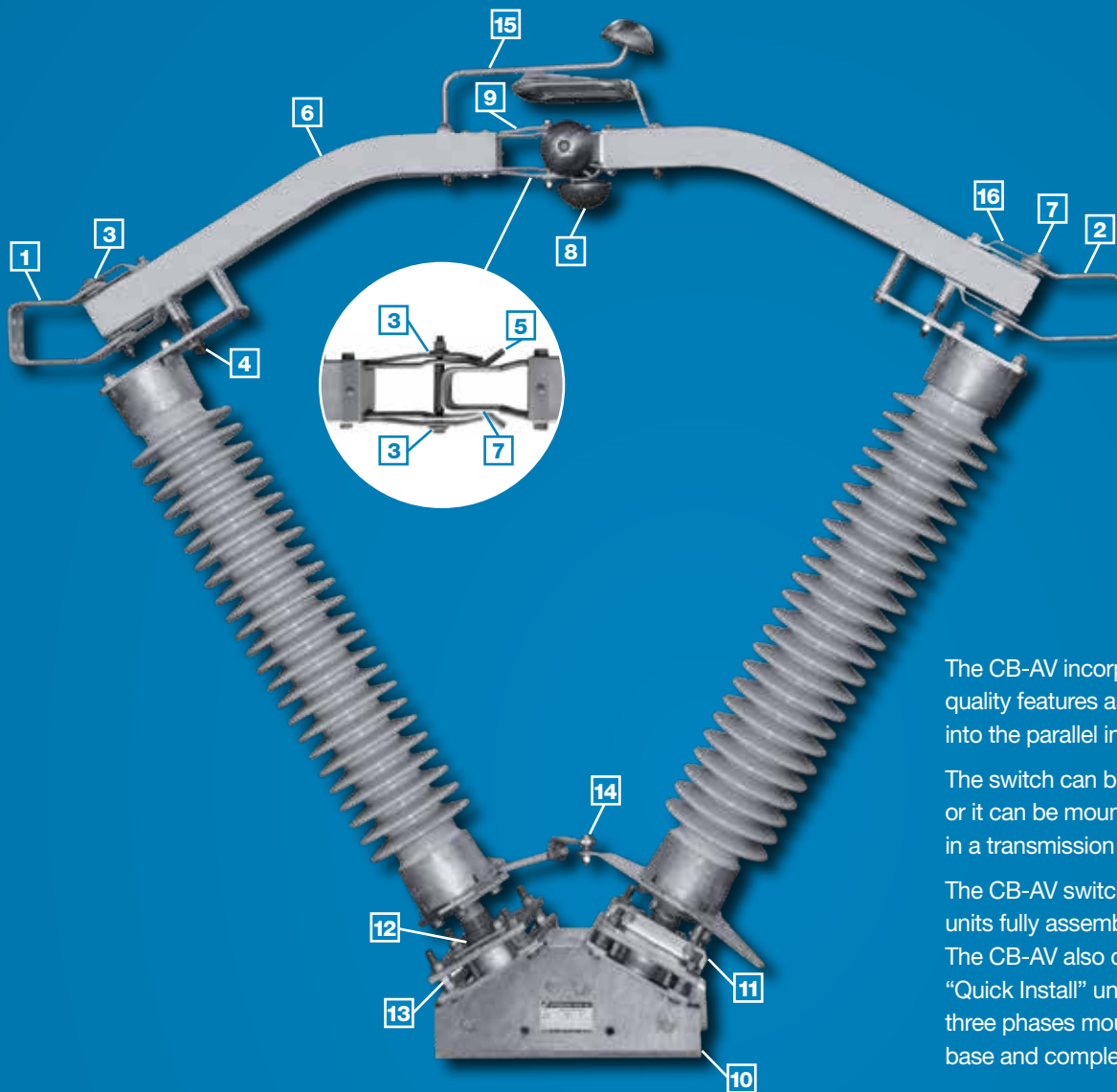
CB-A Dimensions and Technical Data



Note: “X” and “Y” dimensions per customer requirements

		Ratings							Dimensions								
		Nom. kV	Max. kV	kV BIL	Amp.	Mom. kA	Peak Short Circuit Rating kA	Short-time Rating kA	Insulator TR#	Switch Style Number	A	B	C	D	E	R ₁	R ₂
69	72	350	1200	61	99	38	216	C26A032G01	43.59	30	52	42	32	27.80	23.81		312
			1600	70	114	44		C26A034G01									316
			2000	100	164	63		C26A033G01	323								
			3000	120	195	75		C26A031G01	48.91		54						561
115	123	550	1200	61	99	38	286	C26A028G02	63.91	45	72	60	50	36.80	32.81		675
			1600	70	114	44		C26A029G02									679
			2000	100	164	63		C26A030G02									690
			3000	120	195	75		C26A031G02									728
138	145	650	1200	61	99	38	288	C26A028G03	72.91	54	82	70	60	40.80	36.81		758
			1600	70	114	44		C26A029G03									762
			2000	100	164	63		C26A030G03									773
			3000	120	195	75		C26A031G03									814
161	170	750	1200	61	99	38	291	C26A028G04	80.91	62	90	78	68	45.80	41.81		957
			1600	70	114	44		C26A029G04									961
			2000	100	164	63		C26A030G04									975
			3000	120	195	75		C26A031G04									1018
230	245	900	1200	61	99	38	304	C26A025G01	101.85	80	113	96	84	54.80	50.81		1232
			1600	70	114	44		C26A026G01									1236
			2000	100	164	63		C26A026G03									1248
			3000	120	195	75		C26A027G01									1298
230	245	1050	1200	61	99	38	312	C26A025G02	113.85	92	131	114	104	63.80	59.81		1394
			1600	70	114	44		C26A026G02									1398
			2000	100	164	63		C26A026G04									1413
			3000	120	195	75		C26A027G02									1468

Type CB-AV “V” Configuration Center Break Switch



The CB-AV incorporates the same quality features as those designed into the parallel insulator CB-A.

The switch can be used in a substation or it can be mounted phase-over-phase in a transmission line application.

The CB-AV switch ships with the pole units fully assembled with insulators. The CB-AV also can be shipped as a “Quick Install” unitized switch with the three phases mounted to a common base and completely adjusted.

1 Tin-plated copper terminal pads

2 NEMA standard terminal pads with three surfaces to attach connectors

3 Stainless steel contact springs

4 Blade-leveling screws

5 Blade guide with generous lead-in

6 Single-piece aluminum square tube blade — no welding, no castings!

7 Silver-to-silver contacts at hinge and jaw

8 Corona-eliminating hemisphere

9 Replaceable jaw end contacts (contact configuration varies according to amperage rating of the switch)

10 Rigid hot-dip galvanized steel base

11 Rotating insulator stop

12 Rugged rotating insulator-bearing assembly

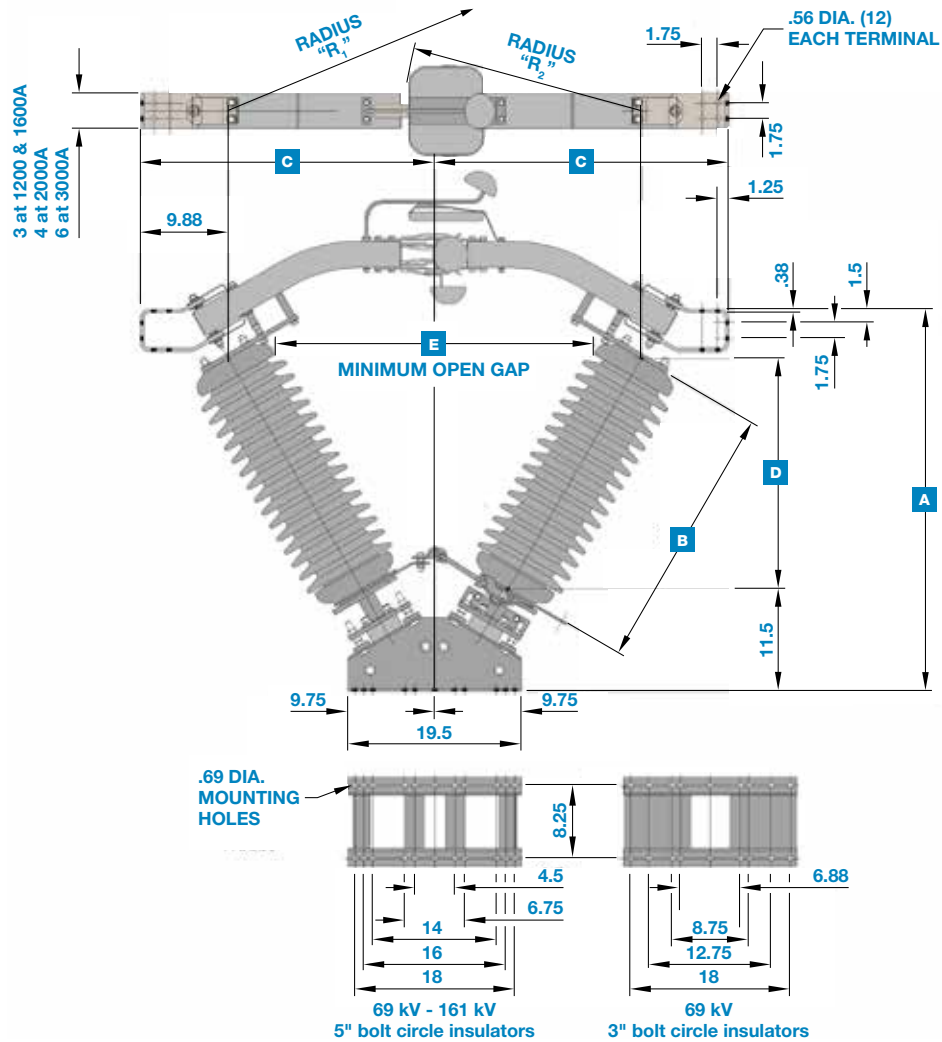
13 Insulator jacking bolts

14 Simple and rugged tie-rod assembly with stainless steel hardware

15 Arc horn/Ice shield

16 Magnetically attracting hinge contact leaves (each end)

CB-AV Dimensions and Technical Data



Nom. kV		Max. kV		Ratings						Dimensions							
				kV BIL	Amp.	Moim. kA	Peak Short Circuit Rating kA	Short-time Rating kA	Insulator TR#	Switch Style Number	A	B	C	D	E	R ₁	R ₂
69	72	350	1200	61	99	38	216	C26A018G01									
			1600	70	114	44		C26A019G01	316								
			2000	100	164	63		C26A020G01	323								
			3000	120	195	75		C26A024G01	523								
115	123	550	1200	61	99	38	286	C26A021G02	56.03	45	40.71	38.97	50	42.05	37.25	604	
			1600	70	114	44		C26A022G02								607	
			2000	100	164	63		C26A023G02								617	
			3000	120	195	75		C26A024G02								664	
138	145	650	1200	61	99	38	288	C26A021G03	63.83	54	45.21	46.77	60	47.24	42.44	674	
			1600	70	114	44		C26A022G03								677	
			2000	100	164	63		C26A023G03								688	
			3000	120	195	75		C26A024G03								736	
161	170	750	1200	61	99	38	291	C26A021G04	70.75	62	49.21	53.69	68	51.80	47.00	858	
			1600	70	114	44		C26A022G04								861	
			2000	100	164	63		C26A023G04								873	
			3000	120	195	75		C26A024G04								927	

Operators/Accessories

Standard Operator Features

- Swing handle or handcrank operator
- Padlock provision in both the open and closed positions
- Ground strap for vertical operating pipe
- Adjustable stops
- Open and closed position indicators
- Self-lubricating, maintenance-free outboard bearing
- 2" IPS galvanized steel vertical operating pipe
- Adjustable radius outboard bearing lever
- Threaded interphase and drive lever adjustment



Optional TP-C2, TP-C3, or BT-T (Transmission) Motor Operator



Geared Handcrank Operator



Swing Handle Operator

Ordering Information

Furnish:

- Switch type
- Voltage
- Amperage
- Peak and short-time short circuit ratings
- BIL level
- Insulator TR number
- Mounting position
- Operator type
- Accessories required
- Base-mounting details

Available Accessories

- Arc horns
- Auxiliary switch
- Braidless ground contact
- Electrical interlock
- Extended vertical operating pipe
- Ground blades
- Insulated vertical pipe
- Insulated interphase pipe
- Key interlock
- Mounting hardware
- Operator grounding platform
- Quick break whips
- Spill gaps
- Terminal connectors

This brochure describes standard products and does not show variations in design that are available. Contact the factory for additional details.

Cleveland/Price reserves the right to make changes or improvements to the products shown in this brochure without notice or obligation.

CLEAVELAND/PRICE INC.

14000 Rt. 993, Trafford, PA 15085
p 724-864-4177 f 724-864-9040
e sales@cleavelandprice.com
w cleavelandprice.com