Bulletin DB-104DB11

Type DB-C

Copper Double Break Switch

7.2 kV - 69 kV
600 A. - 2000 A.

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Type DB-C Double Side Break Switch

Application

The Cleaveland/Price DB-C is a three pole, group operated, copper double break switch, suitable for use in a variety of applications including line disconnecting, circuit breaker bypass and isolation, and transformer isolation. The double break switch is commonly used in installations where overhead clearances will not permit use of a vertical break switch. The double side break switch can be installed on the same phase spacing as a vertical break switch.

The DB-C can be mounted in the horizontal upright, vertical, or horizontal underhung position.

The switch may be manually operated by use of a swing handle or wormgear mechanism or electrically operated by a type TP-C2 motor operator. Accessories and options needed to adapt the switch to a customer's particular requirements are available. Arc horns can be supplied when small amounts of magnetizing current must be interrupted.

Design

The DB-C is a disconnect switch that characterizes Cleaveland/Price's philosophy of simplicity and taking advantage of magnetic forces. There are few parts above the insulators, and current transfer points are kept to a minimum.

Construction

The DB-C double side break switch is a three insulator disconnect switch. The switch blade is bolted to the center rotating insulator. The switch blade engages the break-jaws mounted on the stationary insulators through direct entry. The simple direct entry engagement eliminates the need for a rotating or pivot mechanism on either the blade or the break-jaws.

The DB-C has total non-cast construction. All current carrying parts are fabricated from hard-drawn, high conductivity copper, which is stronger and more conductive than cast materials. Ferrous parts are fabricated from cold-rolled and hot-rolled steel. Bases, spacers, and other ferrous parts are galvanized after fabrication.

Contacts

The DB-C uses high-pressure, line-type contacts to establish efficient current transfer. Both the blade and the break-jaw contact areas are silver-plated, eliminating the buildup of non-conducting copper oxides on the contact surfaces.

The contact design has a proven wiping action that cleans the contact area of contamination that could accumulate.

The location of the contact springs in relation to the break-jaw enhances the contact pressure during short circuit conditions.

Bearings

The rotating insulator utilizes a simple, non-metallic sleeve type bearing that is permanently lubricated and maintenance-free.

Standards

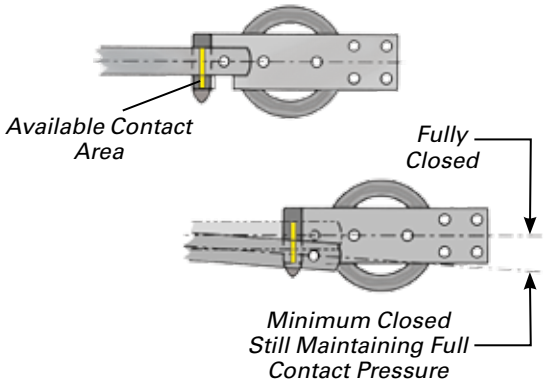
The DB-C conforms to NEMA and ANSI Standards and meets the rating requirements of IEC Standards.

Engineered for Performance

Long-term Contact Integrity

Problem: Disconnect switches may lose travel over time due to linkage tolerances and increase in contact friction. Reduced travel may prevent the switch from attaining maximum contact pressure resulting in pitted and burned contacts. Some side break switches also depend on critical adjustments during installation.

Solution: Long wipe contacts that allow generous contact engagement range. Variations in blade travel do not affect switch performance. Because there are no critical adjustments necessary when installing the DB-C, installation time is reduced.

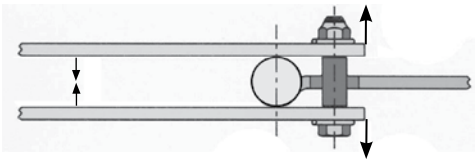


LONG WIPE SAFETY MARGIN BETWEEN FULLY CLOSED AND MINIMUM CLOSED

Short Circuit Dependability

Cleaveland/Price locates the contact springs in a position that takes advantage of electromagnetic forces.

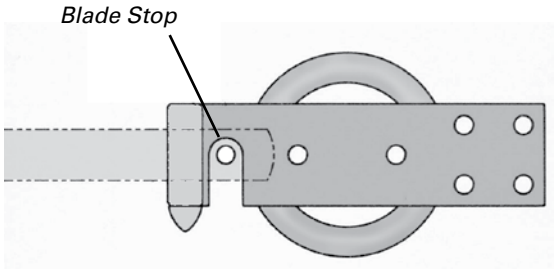
Under short circuit conditions, the blades attract due to the parallel path of current. As the blades attract, the break-jaw acts as a fulcrum that causes the contact springs to compress rather than relax. This double squeeze action enables the DB-C to endure high fault currents.



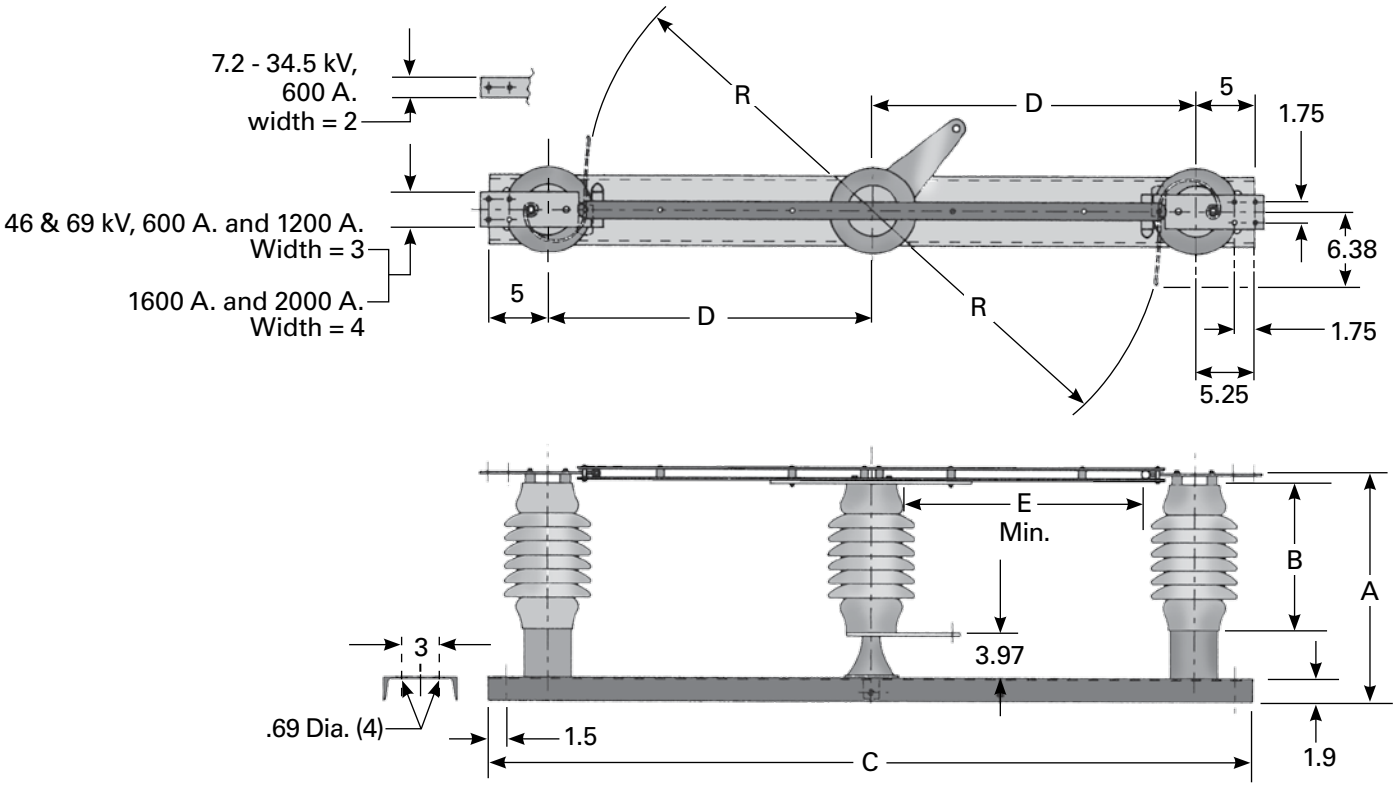
Blade Over-travel Protection

In addition to the adjustable stops at the operating handle, the DB-C features a blade stop in the break-jaw assembly to prevent over-travel of the blade in the contact making position.

The blade is captured in the break-jaw to maintain its position despite line pull and insulator movement during high fault current and seismic conditions.

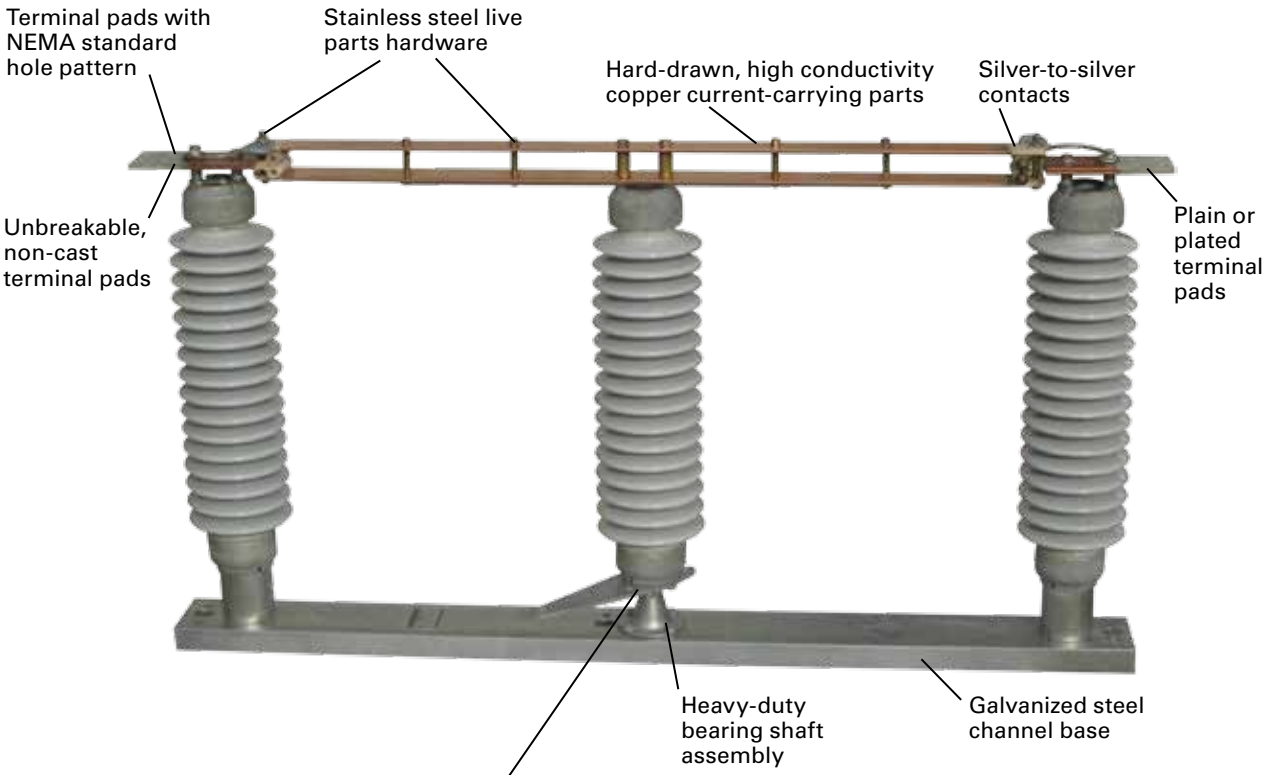


DB-C Technical Data

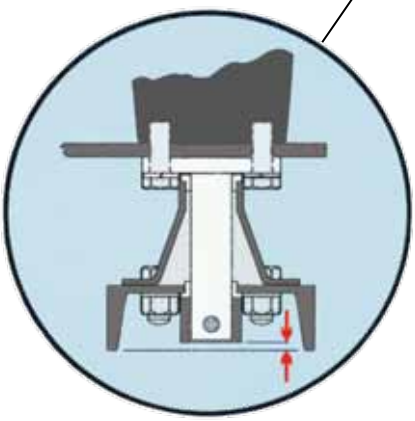


Nom. kV	Max. kV	KV BIL	Ins. TR#	Amp.	Mom. kA	Switch Style Number	Dimensions						Wt./Pole lbs.
							A	B	C	D	E	R	
7.2	8.3	95	202	600	40	C104A140G01	14.63	7.5	40	15	7	12	99
				1200	61	C104A140G02							103
				1600	70	C104A140G03							110
				2000	70	C104A140G04	15.19						121
14.4	15.5	110	205	600	40	C104A140G05	17.13	10	40	15	7	12	109
				1200	61	C104A140G06							113
				1600	70	C104A140G07							120
				2000	70	C104A140G08	17.69						131
23	27	150	208	600	40	C104A140G09	21.13	14	50	20	12	17	166
				1200	61	C104A140G10							171
				1600	70	C104A140G11							178
				2000	70	C104A140G12	21.69						190
34.5	38	200	210	600	40	C104A140G13	25.13	18	50	20	12	17	188
				1200	61	C104A140G14							193
				1600	70	C104A140G15							200
				2000	70	C104A140G16	25.69						212
46	48.3	250	214	600	40	C104A140G17	29.13	22	57	23.5	15	20.5	250
				1200	61	C104A140G18							256
				1600	70	C104A140G19							265
				2000	70	C104A140G20	29.69						279
69	72.5	350	216	600	40	C104A140G21	37.13	30	72	31	22	28	363
				1200	61	C104A140G22							371
				1600	70	C104A140G23							381
				2000	70	C104A140G24	37.69						395

Designed for Simplicity



Permanently lubricated, maintenance-free sleeve bearing

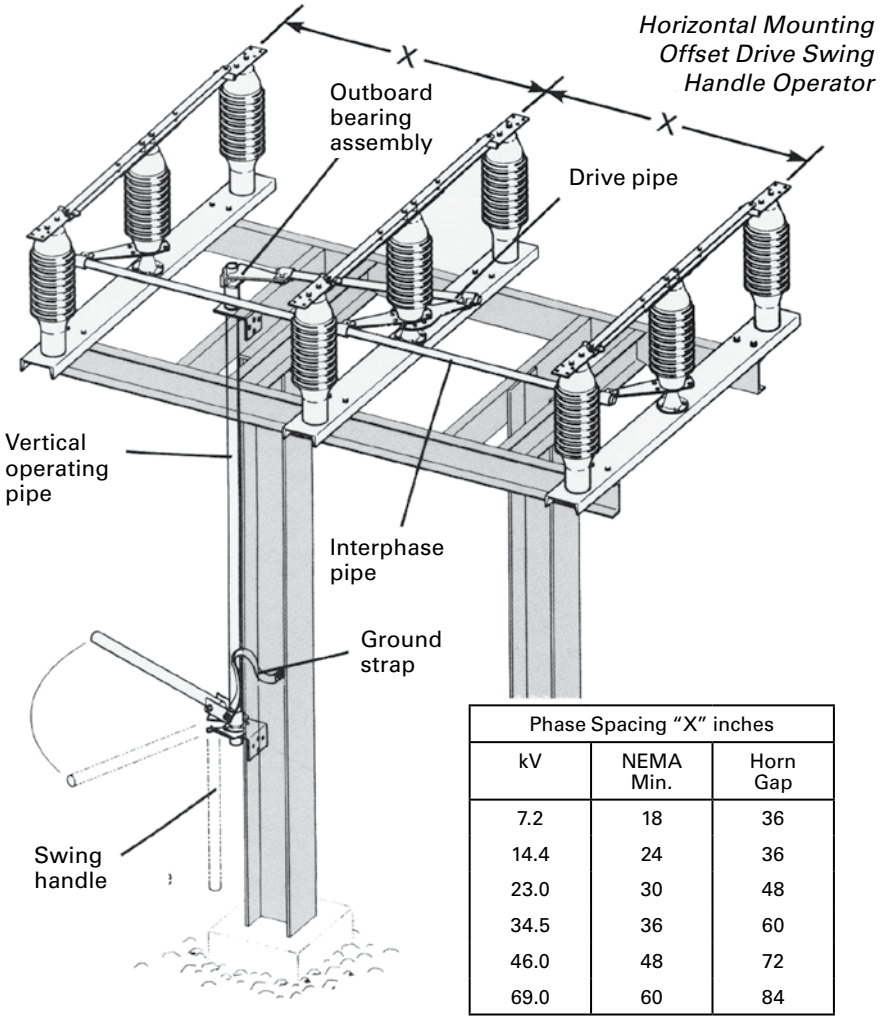


Rotating insulator bearing does not extend below the housing base to interfere with the mounting structure

The DB-C follows the Cleaveland/Price tradition of designing simple, dependable switches without the use of castings. Knowledge gained from maintaining switches in the field for over 60 years has played a major part in refining the DB-C. Significant design features include:

- Total non-cast copper and steel construction resulting in superior dependability of parts
- Live parts constructed from hard-drawn, high conductivity copper producing stronger, more conductive components than parts made of cast material
- Wiping action at the jaw contacts keep the contacts clean for years of reliable service.
- Parallel blade construction allows free flow of air over the blade surfaces for effective cooling
- Built-in closed position blade stop on the live parts prevents over-travel of the blade.

Operators / Accessories



Phase Spacing "X" inches		
kV	NEMA Min.	Horn Gap
7.2	18	36
14.4	24	36
23.0	30	48
34.5	36	60
46.0	48	72
69.0	60	84

Maximum mounting height with standard operator is 23 feet. An extended operator to increase the mounting height is available. Switches may also be mounted in the vertical or underhung positions.

Standard Operator Features

- Swing handle operator
- Padlock provision in both the open and closed positions
- Ground strap for vertical operating pipe
- Adjustable stops
- Clamp-on open/closed indicators
- Self-lubricating, maintenance-free outboard bearing
- 1½" IPS galvanized steel vertical operating pipe

Ordering Information

Furnish:

- Switch type
- Voltage
- Amperage
- Momentary rating
- BIL level
- Mounting position
- Operator type
- Accessories required

Available Accessories

- Adjustable base mounting side clips
- Arc horns
- Auxiliary switch
- Braidless ground
- Electrical interlock
- Extended operator
- Ground blades
- Insulated interphase pipe
- Insulated vertical pipe
- Key interlock
- Mounting hardware
- Operator grounding platform
- Outriggers
- Quick break whips
- Spill gaps
- Terminal connectors
- Universal joint assembly for direct drive

This brochure describes our standard product and does not show variations in design that may be available. Contact the factory for additional details.

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