A-8 SIDE-BREAK, GROUP-OPERATED

2¼- AND 3-INCH BOLT CIRCLE
7.2 THRU 23 KV NOMINAL
75 THRU 150 KV BIL
600 AND 1200 AMPERES

GENERAL

The A-8 side-break switch is a general-purpose, economical, group-operated disconnect. It can be applied on any standard-disconnect application within its operating range. Mounting can be horizontal, vertical or inverted. Operation can be either clockwise or counterclockwise, and can be mounted on either substation structures or wood poles.

FEATURES

(1) High-pressure, silver-to-copper jaw and hinge contacts, maintained by stainless-steel compression springs.
(2) One-piece blade guide and stop.
(3) Aluminum sleet hood to protect jaw contact.
(4) Rigid, reinforced, hard-drawn copper blade.
(5) Drilled terminal pads to accept NEMA aluminum or copper connectors.
(6) Maintenance-free nylon hinge bearing.
(7) Current-carrying parts mount on either low-cost Type D insulators (2¼-inch bolt circle) or NEMA standard insulators (3-inch bolt circle).
(8) Rigid, 6-inch, galvanized steel channel base.

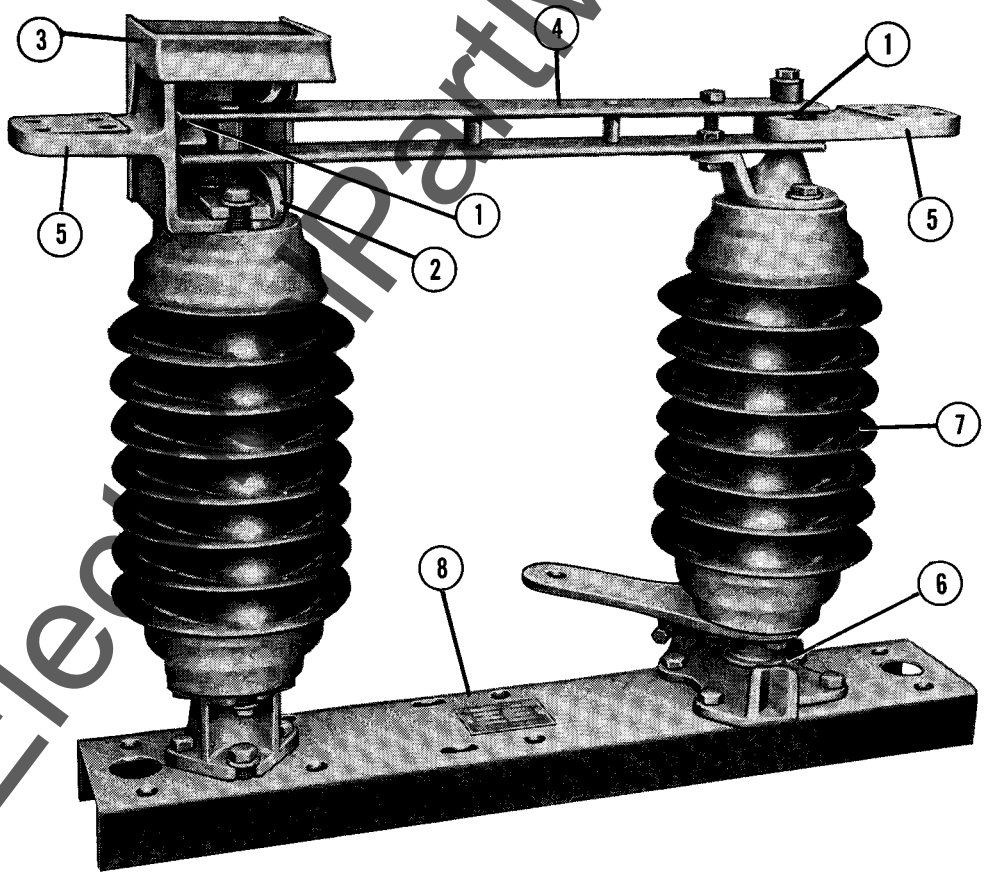


Fig. 1 23-kV, 1200-Ampere A-8 Switch.

A-8 SWITCH CONSTRUCTION DETAILS

HIGH-PRESSURE JAW CONTACT

Stainless-steel compression springs control the jaw contact pressure. The one-piece blade guide and stop combined with the tapered jaw contact assures positive alignment and closing of the blade, see Fig. 2. Due to the wiping action on both closing and opening, contacts are self-cleaning. The stationary jaw contact is silver-plated chrome-copper and the blade is copper, providing the ideal mating contact surfaces.

PROTECTIVE SLEET HOOD

The sleet hood shown in Fig. 2 is incorporated with the jaw to protect it from inclement weather conditions such as sleet, snow and rain. It is a one-piece aluminum casting of symmetrical design so that it can be positioned for either clockwise or counterclockwise operation of the blade.

HIGH-PRESSURE HINGE CONTACT ASSEMBLY

A high-pressure contact between the blade and the terminal pad at the hinge end is achieved by means of a stainless-steel compression spring, Fig. 3. Conductivity is enhanced further through the use of chrome-copper for the pad. Here, again, the contact surfaces are self-cleaning due to the rotary motion of the blade relative to the stationary pad.

MAINTENANCE-FREE ROTOR ASSEMBLY

The fixed rotor base is a one-piece casting including the switch stop, Fig. 4. The rotating crank is cast as an integral part of the rotor shaft. The nylon bearings require no lubrication. After a test of 10,000 operations, this rotor assembly was still in top working order.

INSULATORS

The A-8 switch is available with either a 2¼-inch bolt circle, post-type insulator (Type D) or a 3-inch bolt circle, cap-and-pin or station-post insulator (NEMA standard). The Type D insulators, which meet all NEMA requirements with top performance at low cost, can be provided for those applications when NEMA standard insulators are not required.

PERFORMANCE DETAILS

The A-8 switch has been thoroughly tested and meets all applicable NEMA standards in electrical performance and physical dimensions.

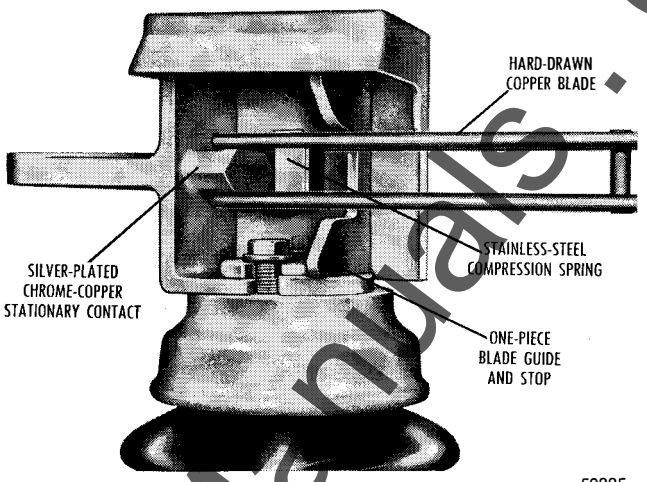


Fig. 2 High-Pressure Jaw Contact.

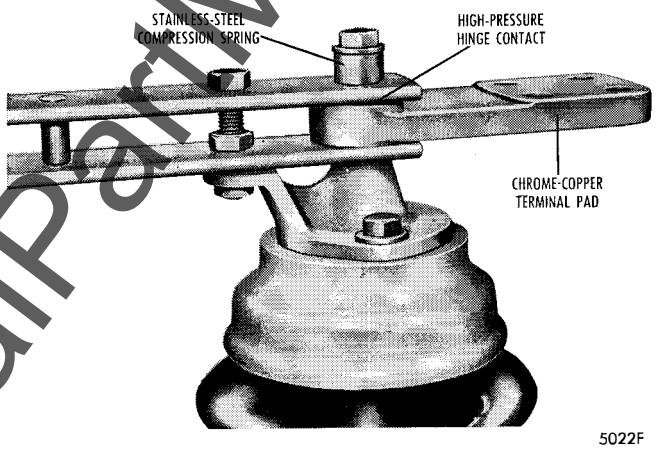


Fig. 3 High-Pressure Hinge Contact Assembly.

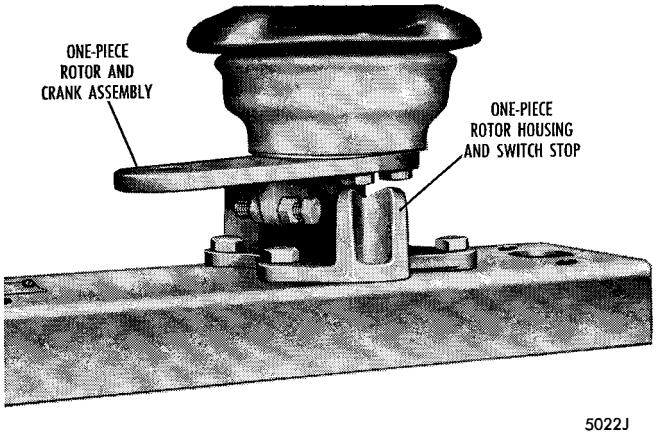


Fig. 4 Rotor Assembly.

A-8 SWITCH STANDARD OPERATING MECHANISMS

Three types of standard operating mechanisms are available for the A-8 switch:

- Direct Torsional
- Offset Torsional
- Reciprocating

DIRECT TORSION—TYPE DT

The direct-torsion mechanism, type DT, is applicable to switches mounted in the horizontal-upright position—such that the vertical operating pipe is directly below one of the switch rotors, see Fig. 5.

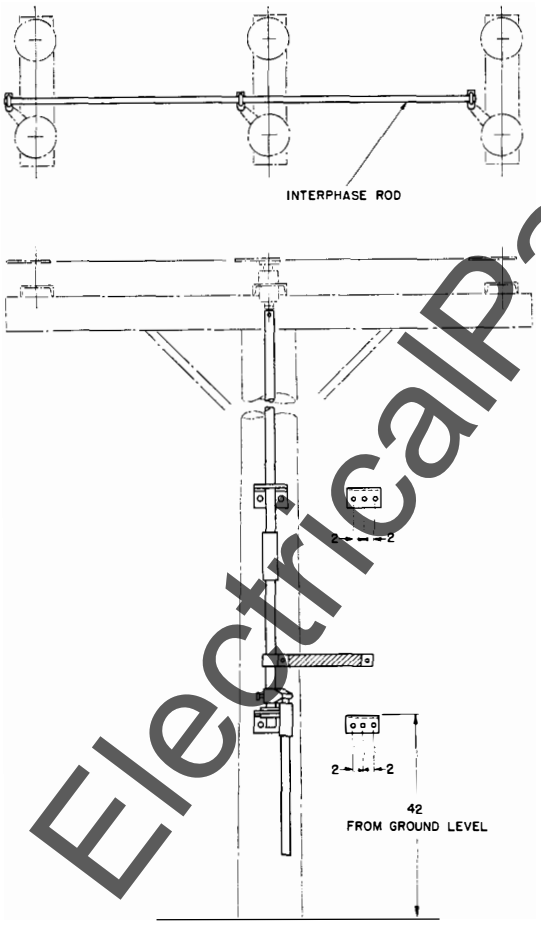


Fig. 5 Direct-Connected Operating Mechanism.

UNIVERSAL JOINTS

A universal joint is used with a type DT mechanism when the actuating device cannot be located directly below switch rotor, Fig. 6.

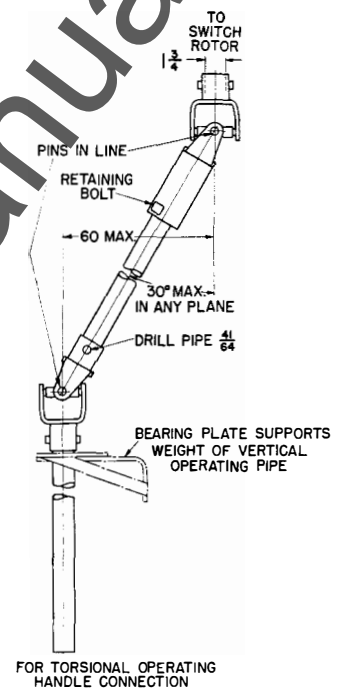


Fig. 6 Galvanized Steel Universal Joint.

A-8 SWITCH STANDARD OPERATING MECHANISMS

OFFSET-TORSION—TYPE OT

In cases where the vertical operating pipe must be horizontally displaced from the centerline of the nearest switch rotor by more than the five-foot distance recommended for the universal joint, the standard offset-torsion mechanism, type OT, must be used, see Fig. 7.

Standard offset-torsion mechanism includes an offset bearing, sometimes referred to as a fourth bearing or outboard bearing. This offset bearing has a rotor which is identical to the rotors on the switch bases. This rotor is mounted on a channel base, which is to be mounted horizontally in the same plane as the switch bases and directly over the vertical operating pipe.

RECIPROCATING—TYPE RO

Where A-8 switches are mounted vertically, the reciprocating-type RO switch operating mechanism is applicable, see Fig. 8. This type of mechanism is supplied with an outboard bearing similar to the one supplied with the offset-torsion mechanism, with the addition of an adjustable bell-crank.

This outboard bearing is to be mounted with its channel base in the same vertical plane as the switch bases, and the center of its rotor on the horizontal centerline through all the switch rotors. In cases where the vertical operating pipe can be located directly in line with one of the switch poles, the outboard bearing is not required.

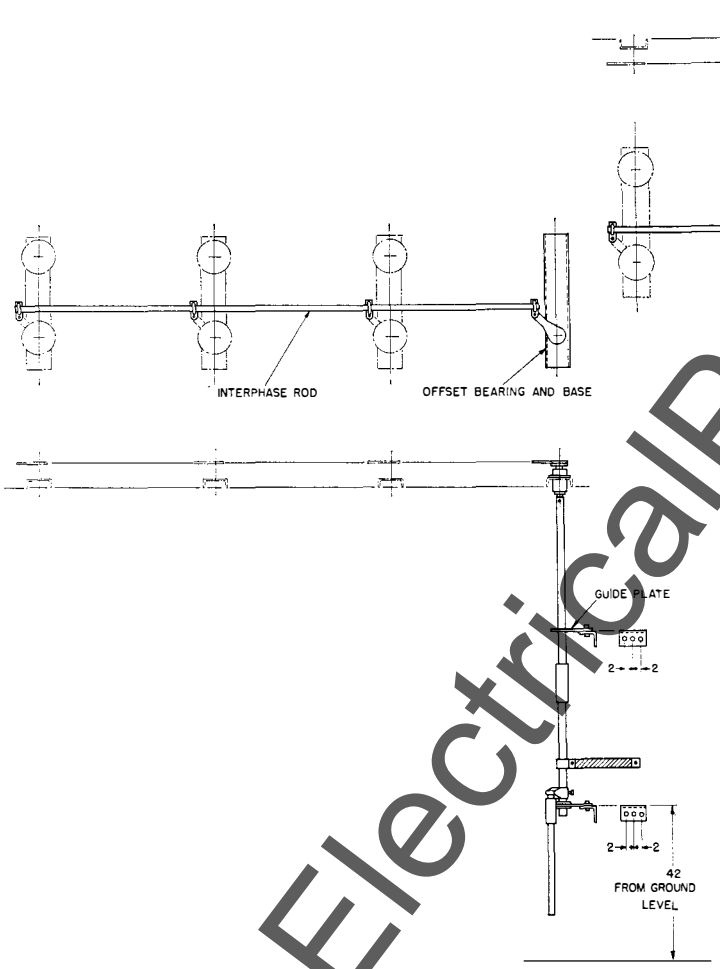


Fig. 7 Offset-Torsion Type Operating Mechanism.

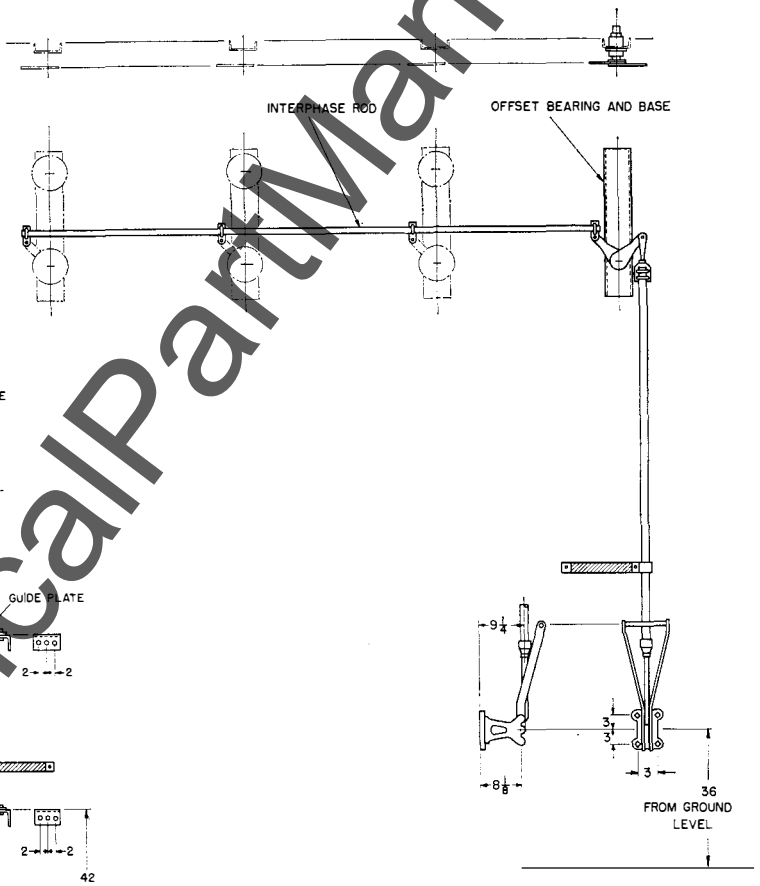


Fig. 8 Reciprocating-Type Operating Mechanism.

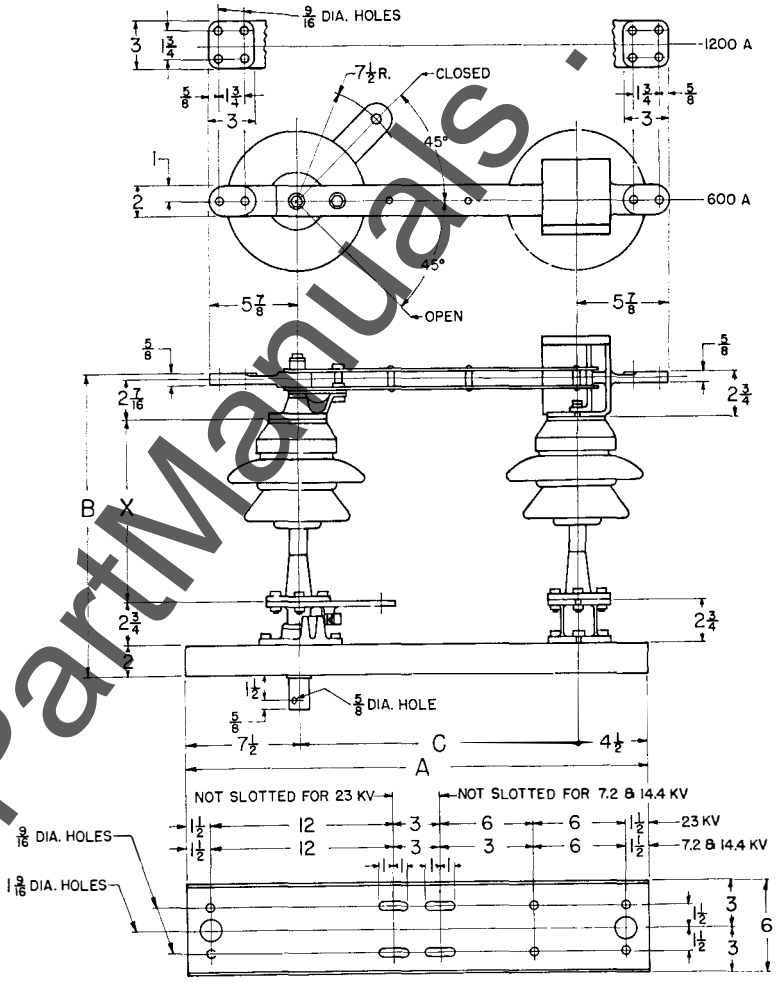
CUSTOM MECHANISMS

Switches also can be furnished with operating pipe cut to exact length, with special brackets or channels for adapting operating mechanism parts to fit user's structures, and with custom drawing showing switch and mechanism mounted on user's structure.

A-8 SIDE-BREAK, GROUP-OPERATED

DIMENSIONS

2¼- AND 3-INCH BOLT CIRCLE
7.2 THRU 23 KV NOMINAL
75 THRU 150 KV BIL
600 AND 1200 AMPERES



ORDERING INFORMATION

1. Catalog number, BIL, insulator type, and ratings.
2. Mounting position—vertical, upright or inverted.
3. Terminal requirements.
4. Mounting dimensions.
5. Phase spacing.

BLADE OPERATION

Blades move in a horizontal plane with the base of the switch in a clockwise or counterclockwise direction. Switch operation may be changed from one direction to the other in the field. All A-8 switches are furnished for clockwise operation unless otherwise specified.

INSULATOR DATA

Refer to Sections 1001 and 1032.

Ratings				3-Inch Bolt Circle NEMA Standard Insulators								2¼-Inch Bolt Circle Type D Insulators					
KV		Amperes			Dimensions in Inches—For Reference Only								Dimensions in Inches—For Reference Only				
Nom.	BIL	Cont.	Mom. (M)	Catalog Numbers	A	B Pin	B Post	C	X Pin	X Post	Nt. Wt. Single Pole*	Catalog Numbers	A	B	C	X	Nt. Wt. Single Pole*
7.2	75	600 1200	40 61	—	—	—	—	—	—	—	—	A8D-7-6 A8D-7-12	27	13½	15	6	92 117
	95	600 1200	40 61	A8-7-6 A8-7-12	27	15	15	15	7½	7½	100 125	A8D-7-7 A8D-7-13	27	14½	15	7	98 123
14.4	95	600 1200	40 61	—	—	—	—	—	—	—	—	A8D-15-6 A8D-15-12	27	14½	15	7	103 133
	110	600 1200	40 61	A8-15-6 A8-15-12	27	17½	17½	15	10	10	125 155	A8D-15-7 A8D-15-13	27	15½	15	8	105 135
23	150	600 1200	40 61	A8-23-6 A8-23-12	30	19½	21½	18	12	14	145 170	A8D-23-6 A8D-23-12	30	19	18	11½	115 145

*Based on post-type insulators.