OUTSTANDING FEATURES

Exclusive Vacu-Break® Arc Control—Hazardous switching arcs are safely confined and controlled in Vacu-Break chamber.

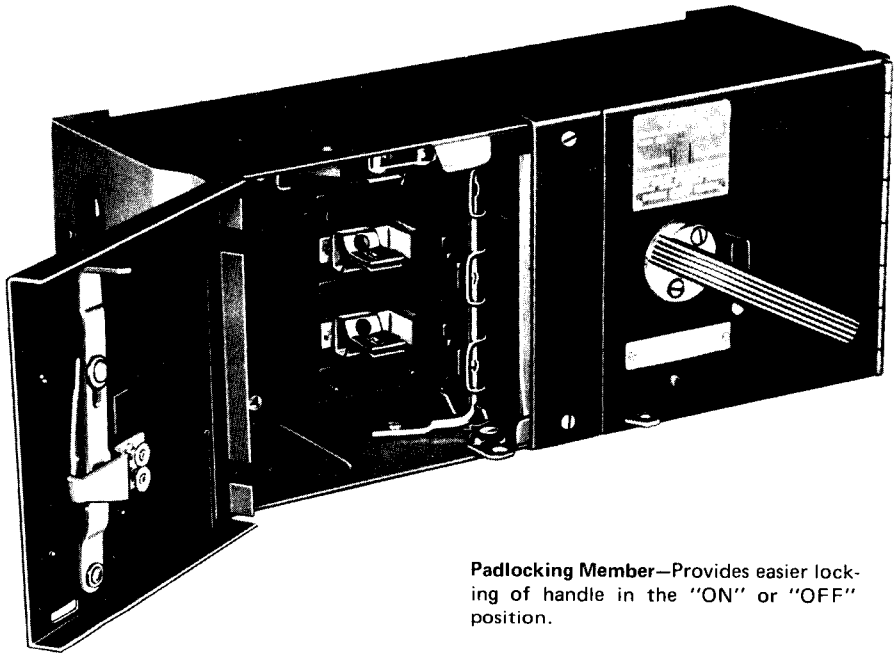
NEMA Phasing—All line connections are phased as per NEMA Standards, i.e., left to right and top to bottom as you face the unit.

Proven Line Connection Straps —On 200, 400, and 600 Ampere Units assures easier installation and cooler operation of the Vacu-Break Units

Easy Mounting—Mounting feet have captive bullet nosed screws added, which seat quickly and positively, reducing installation time.

Connection Screws—Bullet nosed for positive location and seating of screw.

Pressure Wire Grips—Suitable for aluminum or copper (100 Amperes and larger). All Wire Grips 200 Amperes and larger are removable



Fiber End Barriers—Insulated End Barriers prevent damage to wires during installation and are designed with openings large enough to accommodate removable wire grips (200 Amperes and larger units).

Voidable Cover Interlock—Permits authorized personnel to void the door interlock and open door with switch "ON". "Foolproof" mechanism will not permit door to be closed with the handle in the wrong position.

Padlocking Member—Provides easier locking of handle in the "ON" or "OFF" position.

Plastic Covered Identification Card—Full-sized for clear circuit information, attached to front by two thread cutting screws.

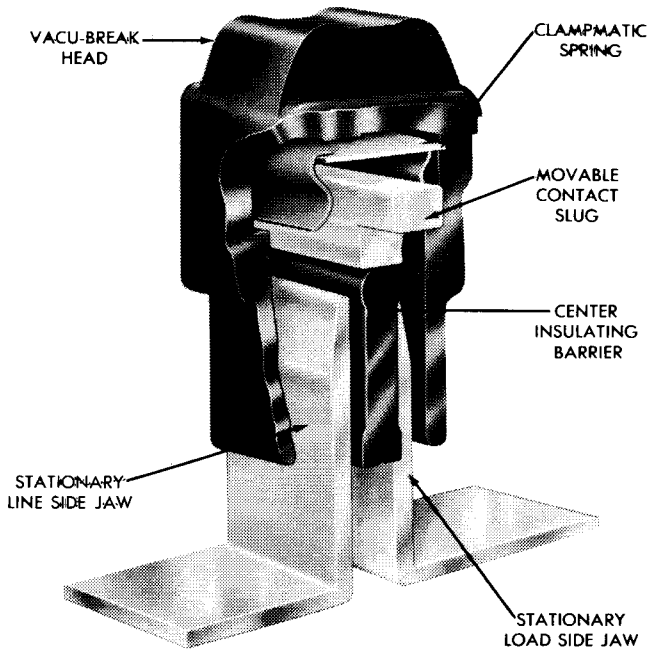
High Pressure Spring Reinforced Copper Fuse Grips—Provide extra pressure at the contact points. Fuse grips are removable from the front in 7½" and 10" high Units and from the rear of 5" Units.

Quick-Make, Quick-Break—Assured by design of cam mechanism and powerful Springs. Positive operation in "ON" or "OFF" position results from design of the cross arm and Vacu-Break head linkage.

I-T-E'S EXCLUSIVE VACU-BREAK® ARC CONTROL

Exclusive Vacu-Break action confines and controls arcing through a combination of four effective arc interruption methods: Enclosed Arc Chamber, Double-Break Action, Magnetic Blow-Out Froce and Controlled Arcing Surfaces.

VACU-BREAK CLAMPMATIC DESIGN AND OPERATION



48277AAA

1 ENCLOSED ARC CHAMBER

The Vacu-Break Head, made of strong Melamine or Glass Polyester insulating material, completely encloses the switching contacts. Specifically designed to isolate and temper arcing effects at contact-break when switching loads, this oxygen-limiting chamber sharply reduces the pitting and burning action of the arcs on the switching contacts caused by oxidation. In addition, this arc-secluding enclosure effectively shields the balance of the switch unit.

2 DOUBLE-BREAK ACTION

Double-Break action refers to the formation of two separate arcs in series at the switching contacts. As the head moves to the "OFF" position, the movable contact reaches a point in its travel where it breaks contact with both the stationary line and load jaws. At that instant, an arc is formed between the movable contact and each of the stationary contacts. Series-Arcing permits speedier arc interruption because it doubles the "break-distance" or arc path.

CLAMPMATIC PRESSURE SPRING ACTION

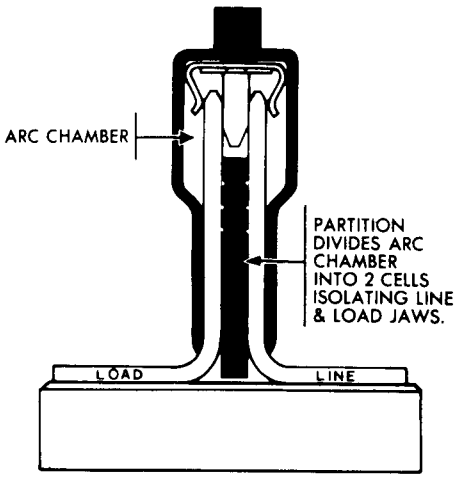
To avoid overheating at the contact points, it is essential that a bolt-tight pressure be developed and maintained while the switch is in the "ON" position, even after repeated operations. At the same time, the pressure at the contact points must be released quickly so as not to interfere with the quick-break mechanism when the unit is switched to the "OFF" position. With the development of the Clampmatic Pressure Spring Action both of these requirements have been effectively and successfully fulfilled in all Vacu-Break Units.

The Clampmatic pressure unit is a "U" shaped special steel spring located at the top of the Vacu-Break Head arc chamber. As the Head is moved to the "ON" position the movable contact is guided into position between the stationary line and load jaws and aligned prior to the time the Clampmatic spring engages the stationary jaws. As the Vacu-Break Head continues to the full "ON" position, the Clampmatic spring is forced over the outside edges of the stationary line and load jaws and clamps the movable concontact in position. The beveled edges of the Clampmatic

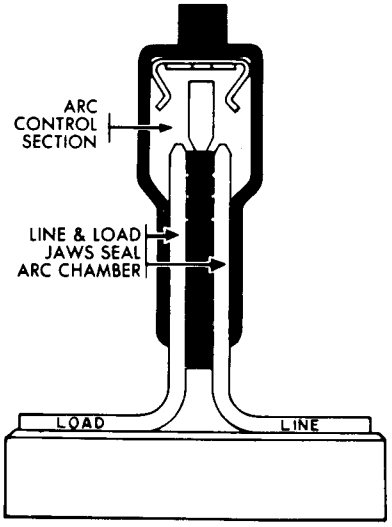
FULL "ON" POSITION
Movable contact has engaged stationary jaws. Clampmatic spring exerts continuous bolt-tight pressure over contact surfaces. Low resistance (silvered) contact gives maximum efficiency with low operating temperature.

BREAKING THE CIRCUIT
Clampmatic spring releases pressure prior to movable contact breaking the circuit. Double-break action has been initiated, Arcing is confined to arc chamber. This oxygen-limiting chamber sharply reduces the pitting and burning action of the arcs on the switching contacts caused by oxidation.

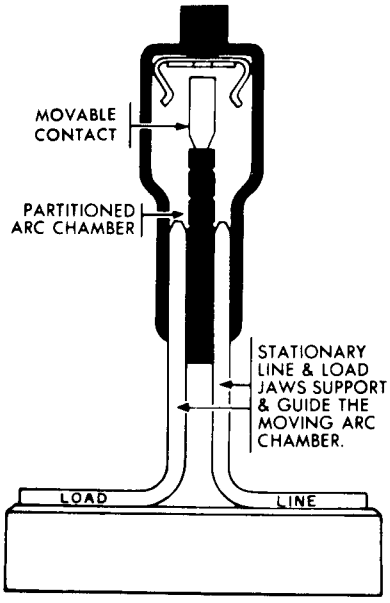
FULL "OFF" POSITION
Movable contact is completely disengaged. Circuit has been opened with minimum arcing. Vacu-Break Head can be operated to "ON" position immediately, if required.



"ON" POSITION



MOVING TO "OFF"



"OFF" POSITION

3 MAGNETIC BLOW-OUT FORCE

As in any electrical conductor, a magnetic field surrounds each of the arcs within the Vacu-Break® Head. Since these fields are in opposition to each other, the arc is forced outward against the enclosing head material. Heat transference between the arcs and the head material speeds up the rate of gas de-ionization. This action, also, further increases the length the arc must travel by forcing it to take a curved path.

4 CONTROLLED ARCING SURFACES

The presence of the arcs, even for the infinitesimal time that they are in existence, may result in some pitting and burning at the contact points. Movable contact and stationary jaws were specially designed with beveled edges on which the arcs can "play" leaving the main contact surfaces smooth and clean.

spring and the switch jaws allow the spring to guide itself into position.

In the full "ON" position, the Clampmatic spring applies pressure against the beveled surfaces of the switch jaws. When the Unit is switched "OFF", the Clampmatic spring slides off the stationary jaws releasing the pressure on the movable contact before it begins its movement to the "OFF" position. In this way, the Clampmatic spring does not interfere with, or delay, the quick-break action of the operating mechanism.

The combination of "Vacu-Break Arc Control" and the "Clampmatic Pressure Spring Action" on all I-T-E Vacu-Break Units affords unequalled performance for switching applications in the low voltage field.