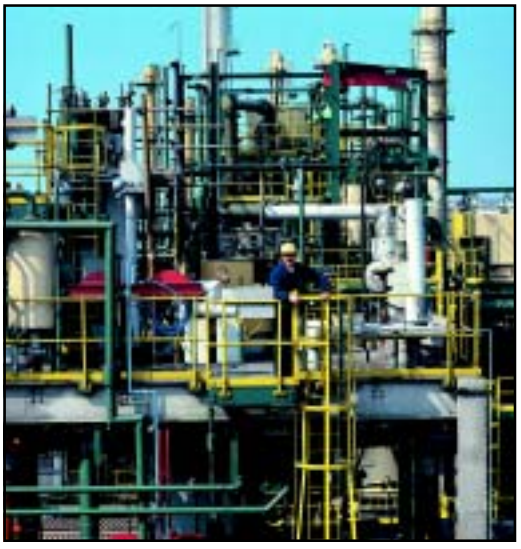
GEA 10049H

POWER/VAC ®

Medium Voltage Metalclad Switchgear

4760V - 15000V

20kA - 63kA



POWER/VAC® METALCLAD SWITCHGEAR TRANSFORMED THE INDUSTRY WITH VACUUM TECHNOLOGY AND IS STILL THE LEADER IN EXPERIENCE

For more than 25 years, General Electric's Power/VAC® has provided the industry with the most reliable and durable Metalclad Switchgear available. Power/VAC® offers significant advantages over other interrupting technologies, such as reduced floor space and reduced maintenance. Many companies offer vacuum switchgear, many of them look like POWER/VAC, but none can match Power/VAC's years of experience, with over 50,000 sections and 125,000 breakers in-service.

More Than 40 Years of Interrupter Experience

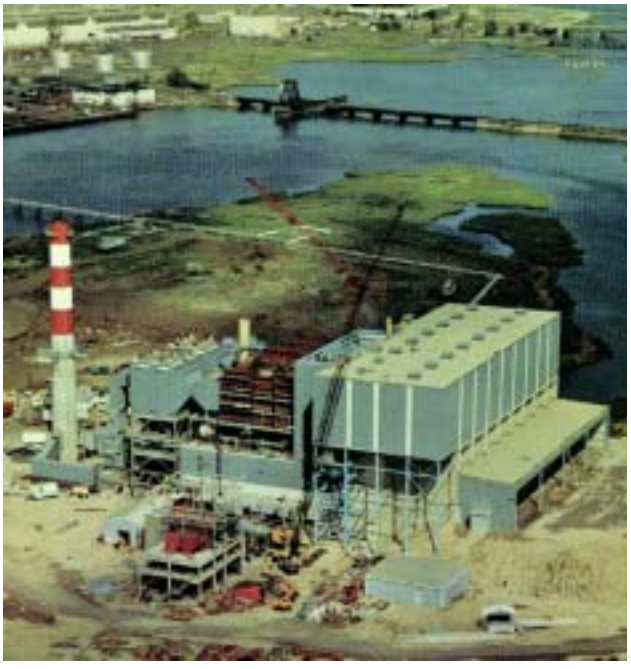
GE pioneered experimental vacuum interrupters in the 1920's. Refined and tested, GE introduced the world's first vacuum interrupter distribution breaker in the 1960's. To date, this interrupter design has been the world leader in vacuum technology and has accumulated over 40 years of reliable field service. It's the heart of thousands of POWER/VAC® breakers in service with ratings from 4.16kV - 250 MVA through 13.8kV - 1500 MVA at 1200, 2000, 3000, 3500, and 4000 amps (fan cooled).

GE has expanded the POWER/VAC® line to include Arc Resistant Switchgear because safety of operating personnel is of primary importance. Arc Resistant Switchgear is available tested per EEMAC G-14, 1987 types A, B, and C protection, 40kA for 1 second.

World-wide Acceptance

POWER/VAC® metalclad switchgear is in service throughout the U.S. and in dozens of other countries. Many installations are subjected to harsh operating environments: salt air aboard offshore platforms miles out to sea, high altitudes in the mountains of Chile, excessive heat at fertilizer plants in Trinidad, humidity at petro-processing operations in Venezuela, wind and sand at power plants, public works and oil exploration installations in Saudi Arabia. It is online in paper mill, steel mills, cement mills, petro-chemical facilities and in electric utility systems the world over - wherever a high value is placed on reliability, POWER/VAC® is the industry accepted leader.

POWER/VAC® switchgear is highly reliable in paper mills.



POWER/VAC® switchgear helps protect electric utility systems around the world.

® Registered Trademark of General Electric Co.

THE POWER/VAC® TRADITION OF QUALITY

POWER/VAC® switchgear is on the job day after day in the severe operating environment found in this steel mill....

and the tough seas and salt air aboard this natural gas platform.

POWER/VAC® INTEGRITY

POWER/VAC® switchgear is designed, assembled and tested to meet or exceed applicable ANSI, IEEE, and NEMA standards. UL/CSA and ABS Type certifications are available. It incorporates the compartment concept with grounded metal barriers that segregate primary functions so that no live parts are exposed. Safety interlocks are standard, as are closed door racking and storage, breaker position indicator, and positively actuated safety shutters. Combining the time-honored advantages of General Electric metalclad switchgear - flexibility, quality, ruggedness and safety - with vacuum interruption's longer life, design simplicity, smaller size and weight, and reduced maintenance, POWER/VAC® has built it's own tradition of superiority.

POWER/VAC® Flexibility

POWER/VAC® switchgear is designed to meet a wide variety of protection and switching applications. All functional units such as incoming line, radial feeders, feeder bypass, bus-tie, bus-entrance and auxiliary units are available to give your system-planning staff a wide range of latitude. These basic functions, plus the versatility of one-high or two-high stacking, afford maximum value for your application dollar.

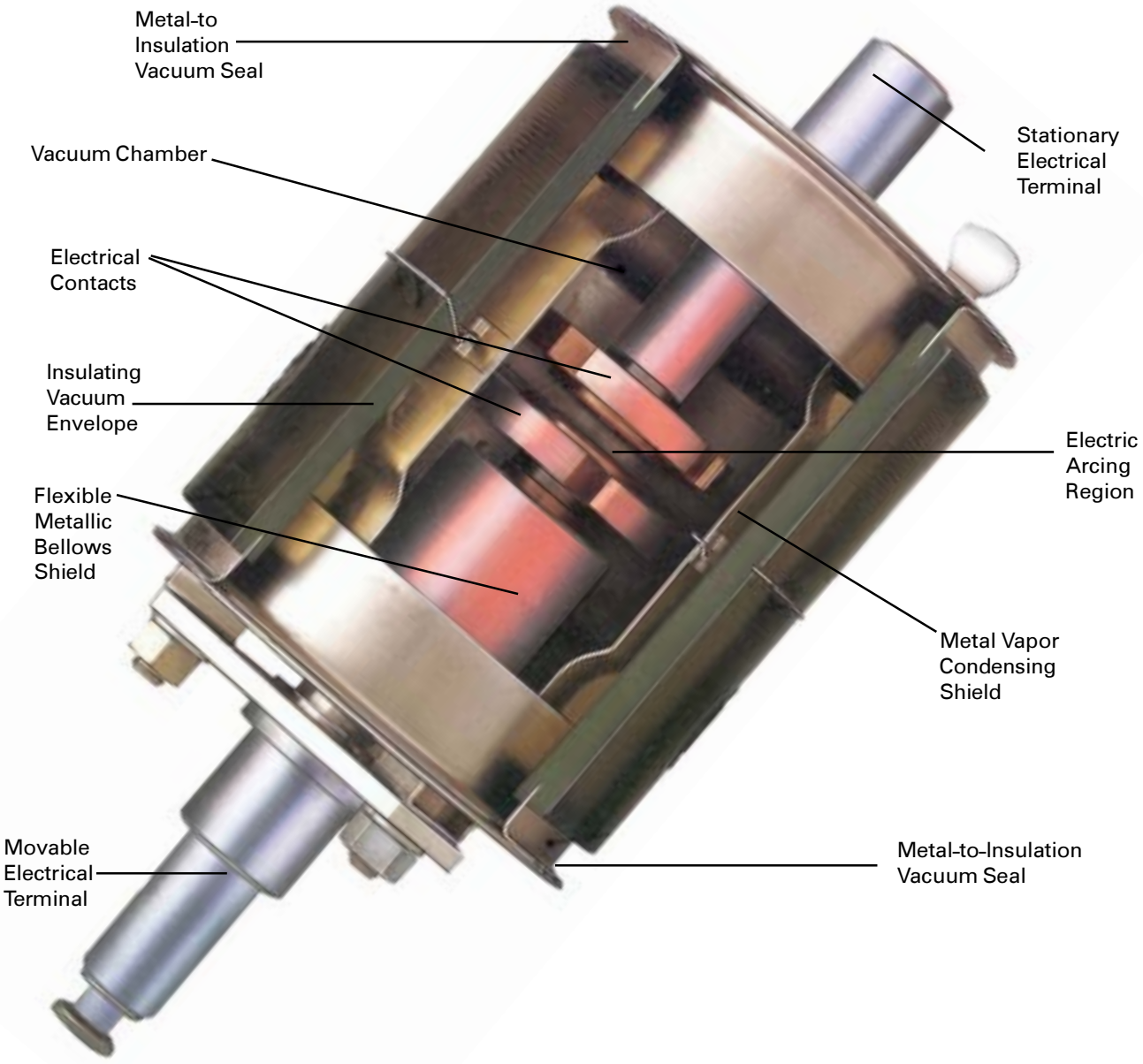
POWER/VAC® Quality

Manufactured, assembled and tested all in the same sophisticated facility, POWER/VAC® is the product of 6 Sigma Design Methodologies. Our manufacturing facility is both ISO-9001-2000 certified and an OSHA VPP Star site. Precision-tooled parts, computer-aided design and advanced production techniques, as well as the protection of the "E Coat" paint process have resulted in a standard of excellence unmatched in the industry.

POWER/VAC® PUTS OVER 40 YEARS OF VACUUM INTERRUPTER EXPERIENCE TO WORK FOR YOU

The heart of every POWER/VAC® switchgear is the vacuum interrupter. The POWER/VAC® interrupter is a reliable device that provides fast, quiet power switching. It consists of a pair of butt contacts, a vapor-condensing shield and a bellows through which one of the contacts moves, all sealed in a vacuum-tight enclosure.

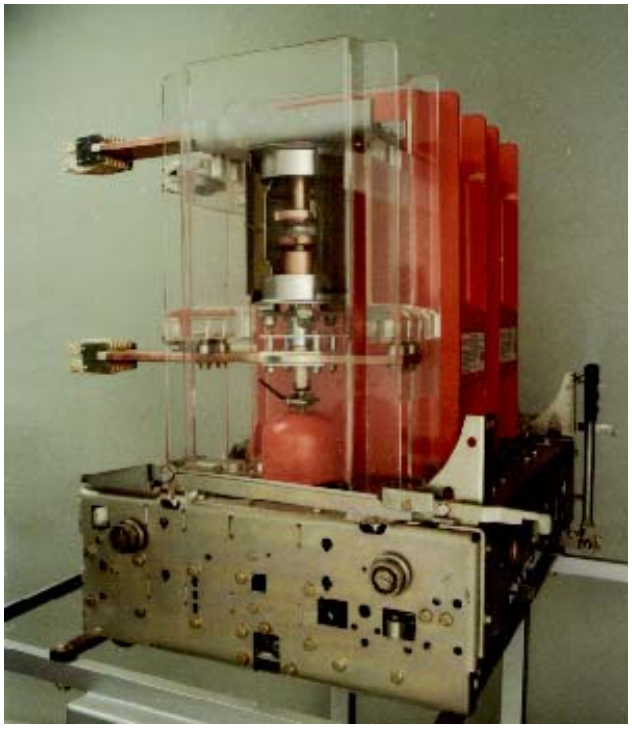
Vacuum is recognized as having many advantages over other arc interruption technologies. It is a nearly perfect dielectric for arc extinction. Also because the vacuum interrupter is smaller, the circuit breakers can be reduced in size, weight and complexity. Environmentally friendly, no oil, gas or high pressure air is needed to aid interruption, so breaker design can be further simplified.



POWER/VAC® VACUUM INTERRUPTERS OFFER ADVANTAGES OVER OTHER TECHNOLOGIES

POWER/VAC® is Easier to Maintain

When maintenance is required, POWER/VAC® reduces the time to perform it by up to 50% compared to other technologies. For example, contacts require no maintenance over the life of the vacuum interrupter because they are hermetically sealed in a high-vacuum environment free from contamination. Vacuum eliminates the special equipment needed to handle the interrupting medium in SF_6 designs. Vacuum interrupters are also unaffected by low ambients, are non-polluting and can still interrupt load currents after loss of vacuum. SF_6 and other designs cannot.



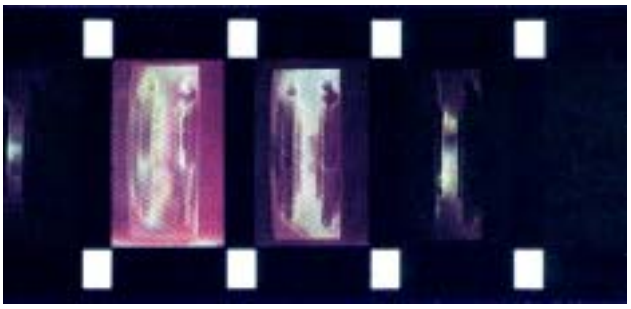
The heart of General Electric POWER/VAC® switchgear is this vacuum interrupter - a high- technology device that provides very efficient 5 cycle power switching and long service life. Optional 3 cycle breakers are also available. Power/VAC vacuum interrupters reduce equipment size and weight, lowers maintenance requirements and improves operating reliability over other interrupting methods. The mounting arrangement of a cutaway interrupter is shown in the above photo behind a clear plastic sheet.

Reliable, Quiet Arc Interruption

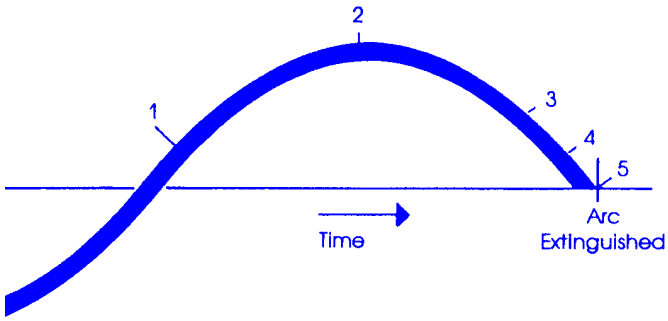
Arc interruption typically takes place at the first current zero after contact separation because the high dielectric strength of the vacuum gap results in an extremely short clearing time. Arc extinction is silent and the sound level of the mechanism is low.

Little Contact Erosion Means Long Service Life

There is little contact erosion because the contact geometry causes the arc to move from the contact region to the spirals of the electrical contacts. This means that you can expect extended service life from POWER/VAC® vacuum interrupters.



1. Contacts are open, with current at low value (see curve below), the arc is diffused.
2. At peak of the current wave, an intense arc encompasses entire contact region.
3. As current decreases, intensity and energy of arc lessens.
4. Nearing current zero, only a faint glow of arc remains.
5. After current zero with recovery voltage applied, arc is fully extinguished.



POWER/VAC® VACUUM BREAKERS DESIGNED FOR QUALITY AND SAFETY

Standardization Means High Quality

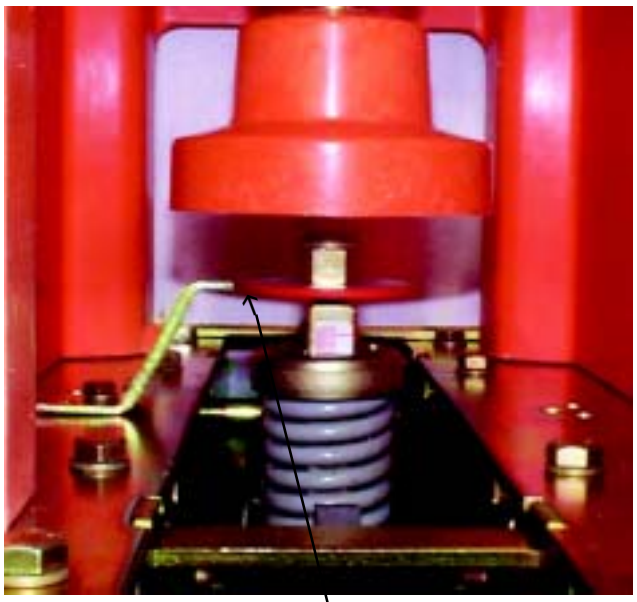
A high degree of standardization has been achieved with POWER/VAC® breakers. All breakers are the same size, regardless of voltage or interrupting capability. Additionally, most parts of the frame, primary conductors, disconnects and mechanisms are interchangeable throughout the breaker product line. This results in a higher quality product and reduces training time for operating and maintenance personnel.

Interlock System Protects Operating Personnel

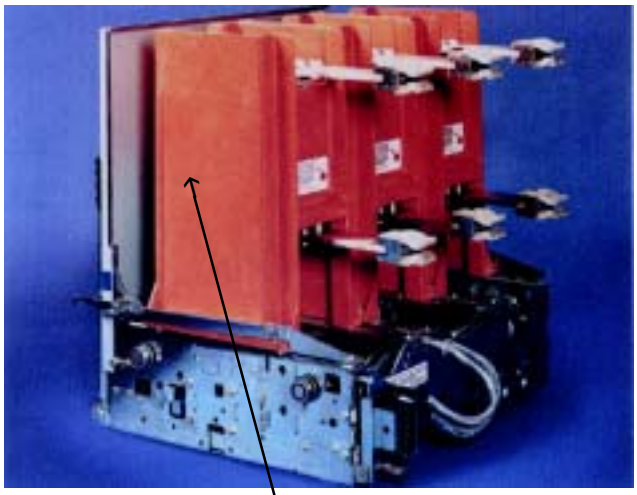
For personnel safety, POWER/VAC® breakers are designed with a number of mechanical and electrical interlocks. For example, breaker contacts must be open before the breaker can be moved to or from the CONNECT position. A positive mechanical stop is provided when the breaker reaches the CONNECT or TEST/DISCONNECT positions. Mechanical interference interlocks are provided to permit only the insertion of properly rated breakers into any specific compartment. These and other necessary interlocks provide a comprehensive protection system. Futhermore, springs automatically discharge when the breaker is withdrawn from the CONNECT position and breakers cannot be inserted in the closed position. Closed door drawout design also contributes an extra measure of operator protection.

2. Primary Disconnect

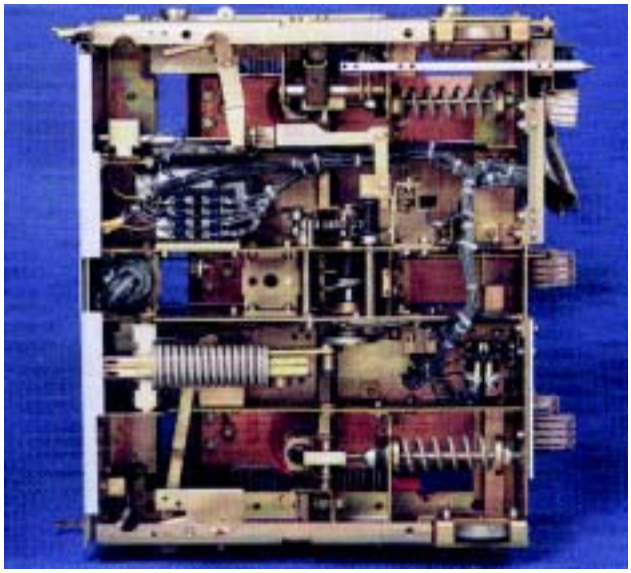
1. Breaker Front Panel



3. Contact Erosion Indicator



4. Interrupter Support



5. Breaker Mechanism (ML-18)

6. Roll-in Option

Breaker Features

1. FRONT PANEL: Thick 11-guage steel front panel fits into a collar - frame in the equipment when the breaker is in the CONNECT position, which provides a safe grounded metal barrier between the breaker compartment and the secondary device compartment. Well marked and easy-to-read operating controls and indicators include TRIP button, CLOSE button, OPEN/CLOSE indicator, CHARGE/DISCHARGE indicator, OPERATIONS counter and provision for manual charging the breaker.

2. PRIMARY DISCONNECT: The primary disconnect finger set is rugged and easy to inspect. Designed for optimum contact, built of silver-plated copper and tested for continuous and momentary currents. These disconnects provide proper contact integrity throughout the life of the gear for the critical primary disconnect function.

3. CONTACT EROSION INDICATOR: GE Vacuum interrupter contacts seldom wear out over the normal duty life-span of a circuit breaker. Nevertheless, a contact erosion indicator is provided for inspection convenience. It is visible when the breaker is withdrawn from the compartment, or with the front panel removed.

4. INTERRUPTER SUPPORT: A rugged, high strength, track-resistant polyester glass support assembly firmly positions and holds the interrupter and primary conductors while providing insulation to ground and between phases. This support assembly can be removed quickly by disengaging six bolts. Only a simple alignment of contact wipe is required in the unlikely event that the interrupter assembly needs to be replaced.

5. BREAKER MECHANISM: Both ML-17 and ML-18 mechanisms use a spring-charged, stored-energy design that is mechanically and electrically trip-free and can be operated by dc control voltages of 48V, 125V, or 250V, or ac voltages of 115V, and 230V. High quality mechanism parts are precision-tooled for operating consistency, reliability, maintenance ease and plated for corrosion resistance for long life.

6. ROLL-IN OPTION: A roll-in breaker designed for use in the lower compartment of indoor switchgear or outdoor walk-in is available in all breaker ratings. The roll-in feature eliminates the need for a lift truck and reduces the required front aisle space. Upper compartments may be left empty or used as auxillary compartments. The breaker used for this option is the same as used for the two-high product, with the addition of an undercarriage.

THESE SUPERIOR DESIGN FEATURES ARE STANDARD ON POWER/VAC® SWITCHGEAR

A. MAIN BUS COMPARTMENT

is completely isolated by 11 gauge metal barriers. Bus bars are provided with high dielectic epoxy insulation and pass through track-resistant polyester glass barriers between cubicles. All main bus is fully tin-plated after fabrication for positive contact and low resistance, and are insulated with performed boots (not shown in this photo). Porcelain insulation to ground and silver plating are optional.

B. SECONDARY DISCONNECTS

combine the positive-contact reliability of a plug with the automatic, self aligning convenience of sliding-type contacts. While in the test position, secondary contacts are easily disengaged or rengaged by a linkage operated from the front of the circuit breaker.

C. CURRENT TRANSFORMERS

are typically located behind mechanically actuated safety shutter and barrier that isolates the primary disconnects as the breaker is moved into the DISCONNECT position. Two standard accuracy CT's per phase can be accomodated on both the line and load sides of the breaker (as many as 12 CT's per breaker). CT's are front accessible after removal of the safety shutter barrier and barrier.

D. VOLTAGE TRANSFORMERS

meet all applicable industry standards and are mounted in an easy-access roll-out tray. VT's are automatically grounded upon withdrawl, tray provides isolation from primary connections.

E. DRY TYPE CONTROL POWER TRANSFORMERS

have molded epoxy resin insulation and are mounted in a draw out tray for easy access. Ratings run through 15kVA single phase. When a higher rating, or 3 CPT's, are required, a key interlocked fused roll-out tray will be supplied with stationary CPT's mounted in the rear of
the unit.

F. CABLE COMPARTMENT

in a basic two-breaker vertical section has ample space for termination of up to two 750 MCM cables per phase, including stress cone makeup. When only one breaker is required in a vertical section, the entire cable space is available for use. In two-high breaker equipment, a vertical steel trough serves as a seperation barrier from the other cable compartment. This duct is easily removed to facilitate initial installation of the "inside" cables. When the vertical steel duct is in place, there is still access to the "inside" terminations. The power cable compartment can be arranged to permit both sets of cables to exit below or above.

G. PORTABLE BREAKER LIFT

is provided for handling a breaker or roll-out during installation into a compartment, or during removal for inspection or maintenance. Lifts for both indoor and outdoor equipment have interlocks on the lifting forks to lock the breaker in place during transporting.

THE INSIDE STORY ON ADDITIONAL POWER/VAC® FEATURES

1. Two-High Breaker Stacking can save up to 50% in floor space for most applications, depending on the rating, and results in fewer shipping splits. In addition, cubicle dimensions are the same across all ratings so space requirements are clearly defined at the outset. System planning and layout are thus simplified.

2. Breakers Roll Along Side-Rails Into Position
to assure proper alignment. Positive stops are provided in TEST/DISCONNECT and CONNECT positions. Movement to the CONNECT position is accomplished with a dual jackscrew racking mechanism that can be manually, or (as an option) remote electrically operated from the front of the unit with the door closed.

3. Precision Tooling brings uniform quality to breaker and equipment parts and facilitates trouble-free field assembly and operation.

4. Transformer Roll-Out Tray's can be mounted as a combination of two trays either in the top or bottom cubicles. The combination can be two sets of VT's or one VT and one CPT up to 15 KVA in either the top or bottom section. The transformer primaries are connected with insulated bus, not cable, and are automatically grounded when withdrawn.

5. A Rugged Steel Frame employs bolted reinforced gussets for added strength and dimensional integrity. Seismic-qualified versions are available. Grounded metal barriers isolate all high voltage compartments.

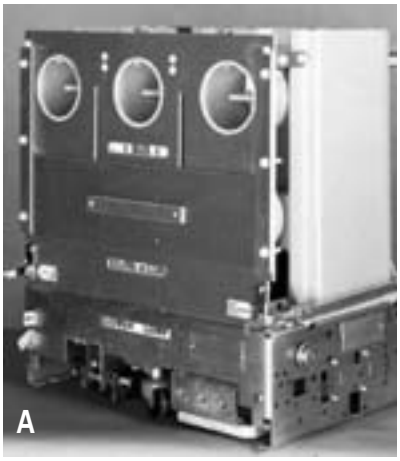
6. Easy Installation results because many foundations that are smooth and level don't require embedded floor steel or grouting. To reduce installation time, equipment can be lifted into place without using skids.

7. Ample Relay and Terminal Block Space accepts complex configurations and is compartmentalized by the front panel enclosing the breaker. Meters, relays, instruments and handles are positioned on compartment doors for easy reading or operation. Open doors are securely held with positive stops so breakers can be inserted and withdrawn without damaging control, indication or protective devices.

A Full Selection of Accesories

To facilitate inspection, maintenance and test operations, General Electric offers a full selection of devices and accesories for POWER/VAC® metalclad switchgear.

A. OPTIONAL GROUND AND TEST DEVICES are manually or electrically operated and provide facilities for grounding either the bus side or the outgoing cable side of the metalclad unit, or for "phasing out" operating circuits.



B. TEST CABINET provides a convenient means to close and trip breakers for maintenance or inspection.

C. OPTIONAL REMOTE RACKING DEVICE is portable and connects to a remote operator station via a 30 foot cable. It is motorized and electrically racks the breaker between the CONNECT and DISCONNECT positions with the door closed which provides additional operator safety, as recommended in NFPA 70E.

D. RACKING HANDLE manually operates the breaker racking mechanism to move the breaker between the CONNECT and TEST/DISCONNECT positions (standard).

THOROUGH TESTING INSURES HIGH RELIABILITY

General Electric POWER/VAC® metalclad switchgear has been thoroughly tested to all applicable ANSI, IEEE, and NEMA standards. Typical tests included fault current interruption, dielectric withstand, continuous current carrying, load current switching, capacitance current switching and mechanical life tests. UL, CSA, and ABS certification is also available.

In addition, selected electrical tests were run in a wide range of environments which simulated field conditions. For example, mechanical operations were conducted during cold soak at -30° C and hot soak at +75° C. Electrical tests were conducted after high humidity soak and temperature shock cycling between +57° C and +5° C. And specific dielectric tests were conducted following exposure to dust and representative industrial pollutants to check insulation degradation.

This test program was carefully designed to meet or exceed pre-set reliability goals based on switchgear failure rate data in the IEEE Report on "RELIABILITY SURVEY OF INDUSTRIAL PLANTS." Sample sizes, test types, number of tests and required results were coordinated to provide what we believe to be the most thoroughly tested medium voltage draw-out circuit breaker ever produced.

And the testing hasn't stopped. Using 6 Sigma and the on-going quality control program, ISO 9001-2000, POWER/VAC® breakers are subjected to extensive mechanical endurance tests to assure they continue to exceed ANSI mechanical operation requirements.

Each breaker is pre-tested for 300 open/close operations to assure quality before the unit leaves the factory.

Final breaker test verifies the opening and closing characteristics of every unit.

A hi-pot insulation resistance and ohmic test is also performed on every breaker prior to shipment.

A primary dielectric test of a fully assembled line-up is conducted prior to shipment in accordance with ANSI standards.

MORE TESTING AND MORE EXPERIENCE MEAN LESS MAINTENANCE, LESS OFTEN

NO CONTACT MAINTENANCE because the contacts are sealed in a vacuum-tight environment free from contamination.

DIRECT READING CONTACT EROSION INDICATOR - While contact erosion should not exceed allowable limits during the service life of a breaker under normal operation, a contact erosion indicator is provided and can be inspected when the breaker is withdrawn. This erosion indicator, unlike those on some other brands of switchgear, provides for a direct reading, eliminating the possibility of a misleading reading.

CONTACT WIPE ADJUSTMENT is infrequent, usually not before 5000 operations have occurred (more than a lifetime for most breakers). If required, however, the adjustment can be done without disassembling the breaker.

VACUUM INTEGRITY can be confirmed by conducting a 10 second AC hi-pot test on each vacuum interrupter. Test voltage is applied to the breaker primary conductors with the interrupter contact in the open position (see photo).

TEN-YEAR MAINTENANCE RECOMMENDATION
Based on testing and high reliability figures, General Electric recommends a 10 Year, 10,000 No-Load Operations, or 5,000 Load Operations Preventative Maintenance Schedule, effective for switchgear operating under service conditions in a mild environment.* It is not a guarantee or a warranty, but a recommendation for preventative maintenance. Users remain responsible for determining their own maintenance policies and inspection routines. (*see GEA 11108)

Mechanism Coupling Clamp

Vacuum Integrity Test

Circuit Breaker Rated Maximum Voltage (kV)	Insulation		Corona Tests*
	Rated Withstand Test Voltage		
	Low Frequency rms, hi-pot test (kV)	Crest Impulse (kV)	Minimum allowable corona extinction rms voltage** (Line-to-ground) (kV)
4.76 8.25 15.00	19 36 36	60 95 95	3.5 5.5 10.5
Success Criteria	No flashover or insulation puncture	No flashover or insulation puncture	Corona extinction occurs above allowable voltage

*Corona tests not required by industry standards
**CSA C22.2 #31 - 1972

Factory dielectric test requirements for POWER/VAC® Metalclad Switchgear.

INTEGRATED MANUFACTURING IN ONE LOCATION

From the proposal stage to the time POWER/VAC® switchgear is shipped, the entire manufacturing process takes place in a single location; the General Electric facility in Burlington, Iowa, which is ISO-9001-2000 certified. This means that the most rigorous quality control can be maintained at all times. In addition, the most technically advanced design and manufacturing procedures are used in the production of POWER/VAC® metalclad switchgear. Here are a few of the reasons for POWER/VAC's® superiority.

GE facility; West Burlington, Iowa.

Computer controlled dual plating system provides in-house tin and silver plating capabilities. Our bus is fully tin or silver plated, after all shearing, forming and drilling operations are completed.

Numerically controlled machines meet the stringent requirements of GE switchgear design engineering.

Fluidized bed process coats bus bars, connection bars, and some barriers with a tough epoxy coating known for its high dielectric strength (450 volts per mil), low resistivity to moisture and high impact resistance.

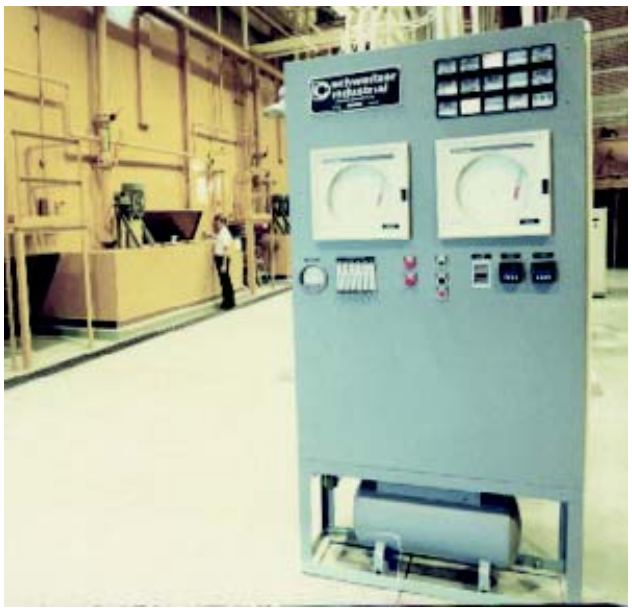
THE WORLD'S MOST SOPHISTICATED MANUFACTURING FACILITY

The cathodic electrodeposition ("E Coat") paint system ensures a tough, durable finish on every square inch of the switchgear enclosure and other fabricated parts.

Parts pass through a bake oven ensuring a tough finish, and return to the staging area prior to assembly.

Highly reliable POWER/VAC® vacuum interrupters are produced in the state-of-the-art vacuum interrupter manufacturing facility.

The custom-built vacuum furnace creates the vacuum and seals the assembled interrupter.



After cleaning, phosphating and sealing, parts are immersed in the paint tank where they receive an epoxy coat .7 to .8 mils thick.

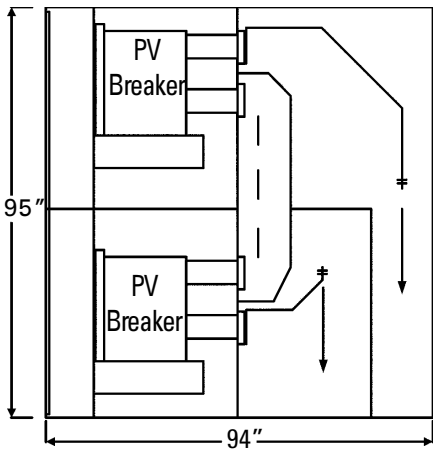
A magnetron test verifies the vacuum integrity of every interrupter. Capable of measuring pressures to 10^{-8} torrs, it utilizes a magnetic field to produce ion current flow which is proportional to the pressure within the interrupter. Each interrupter is checked three times before shipment.

POWER/VAC ESTIMATING WEIGHTS & DIMENSIONS

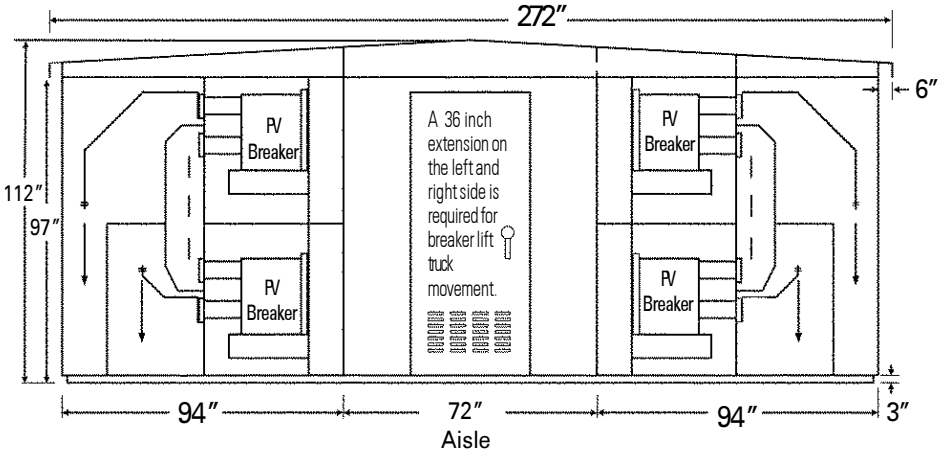
Equipment Rating		Indoor Equipment						Outdoor Equipment					
4.76KV, 8.25KV & 15KV				2-High Breaker Vertical Section (less breakers)		Auxiliary Vertical Section				2-High Breaker Vertical Section (less breakers)		Auxiliary Vertical Section	
Current Rating (Amps)	Breaker Weights (lbs)	Height (in)	Depth (in) (1)	Width (in)	Weight (lbs)	Width (in)	Weight (lbs)	Height (in)	Depth (in)	Width (in)	Weight (lbs) (2,5)	Width (in)	Weight (lbs.)
1200	550	95	94	36	3050	36	2950	111 O/D 112 P/A or C/A	106 O/D 181 P/A 272 C/A	36	3550	36	3450
2000	650				3100		3000				3600		3500
3000	780				3180		3080				3680		3580
3500	850				3280		3180				3780		3680
4000	860				3300		3200				3800		3700

(1) An optional 82″ depth is available for some indoor applications. Consult factory.
(2) For Common Aisle construction (CA), add 1500 pounds to weight of 2 indoor vertical sections.
(3) Standard front aisle space required 66″, Reduced minimum front aisle space of 58″ is available on indoor construction.
(4) Weights listed are for estimating purposes only.
(5) For protected aisle construction (P/A), add 1100 pounds to weight of each outdoor vertical section.

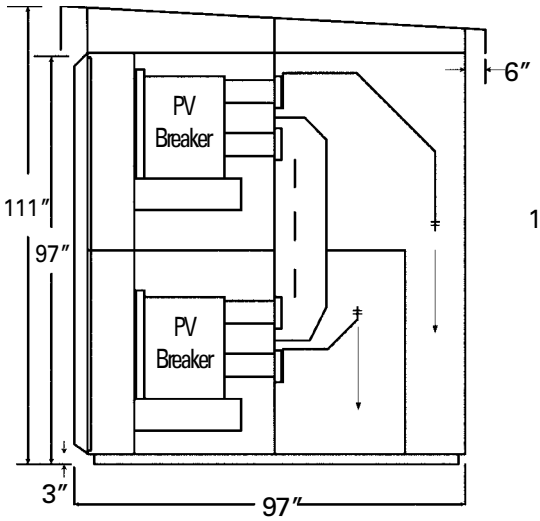
Typical Section Dimensions
Indoor and Outdoor Equipment



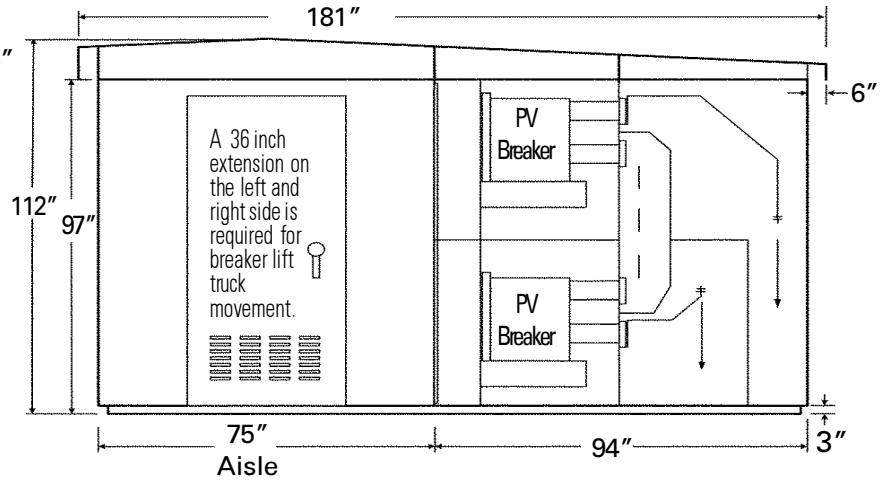
Indoor



Outdoor Common Aisle



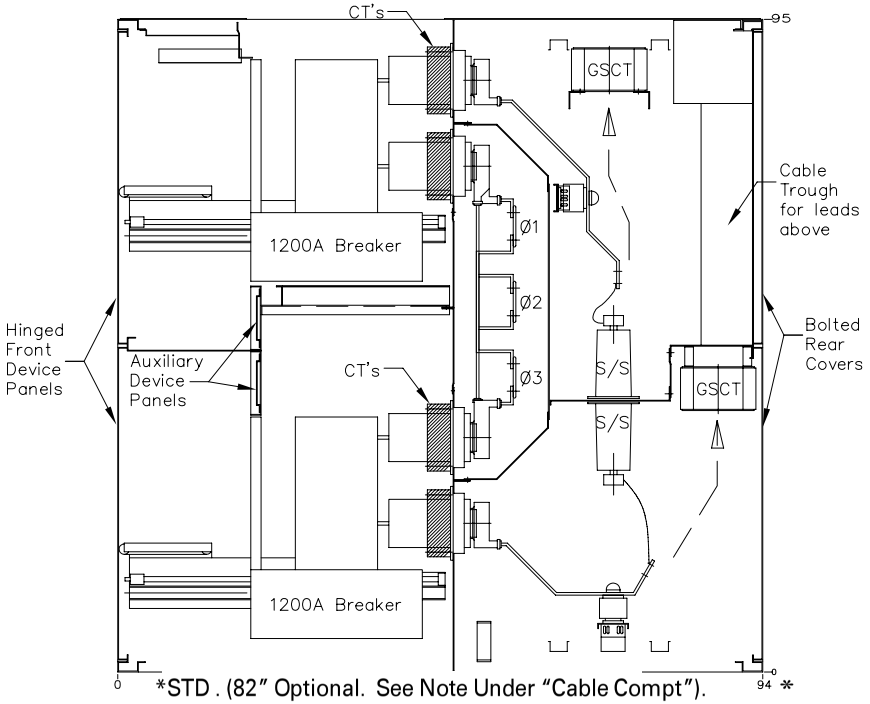
Outdoor Non-Walkin



Outdoor - Protected Aisle

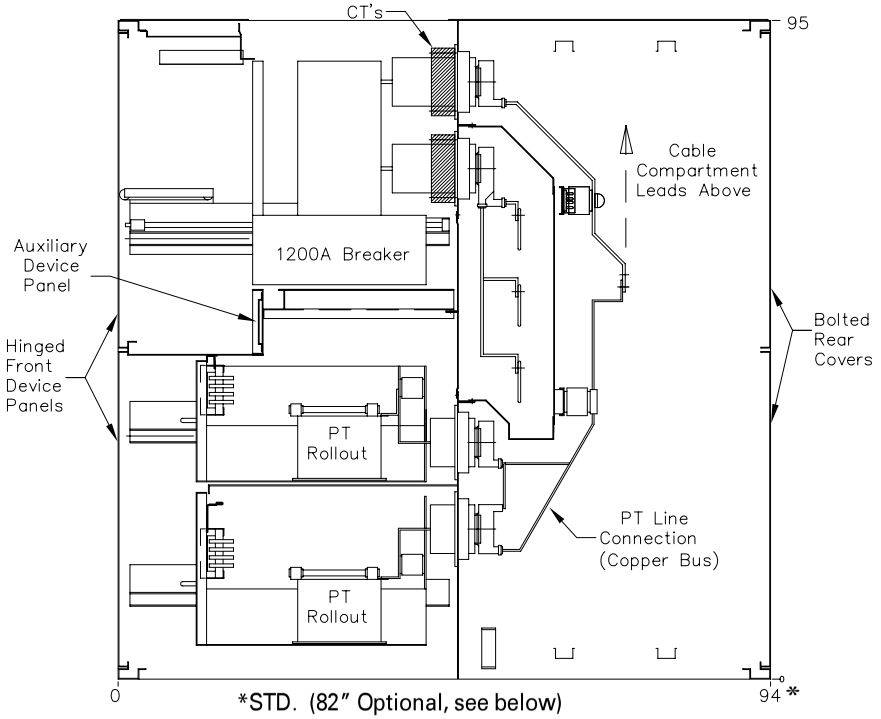
Typical Equipment Section Views

Typical 2-High Breaker Section



*STD . (82" Optional. See Note Under "Cable Compt").

Typical Breaker and Auxiliary Section



*STD. (82" Optional, see below)

BUS COMPARTMENT

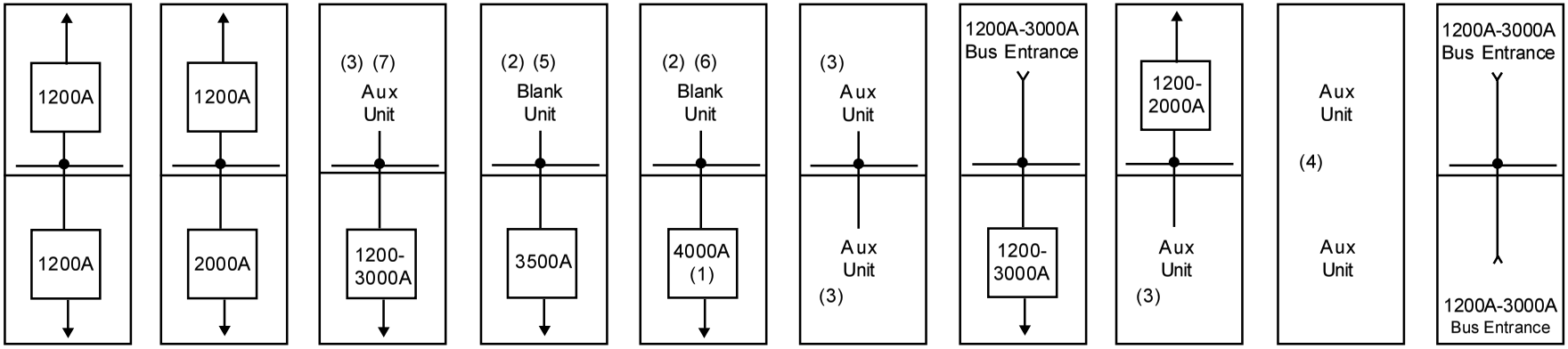
- 1200 - 4000A: Standard copper bus.
- Bus supports are designed for 78kA momentary (higher rating available).
- All joints connected with minimum 2 bolts and booted.
- Bus support insulation system:
  - Non-tracking polyester glass (std. 5kV & 15kV)
  - Porcelain inserts (optional)
  - Fluidized bed epoxy bus installation (standard).

*Space for 4CTS Per Phase, 2 in Upper Studs & 2 on Lower Studs. Rating Range: 150A - 4000A Accuracy Per ANSI C37.20 Table 6

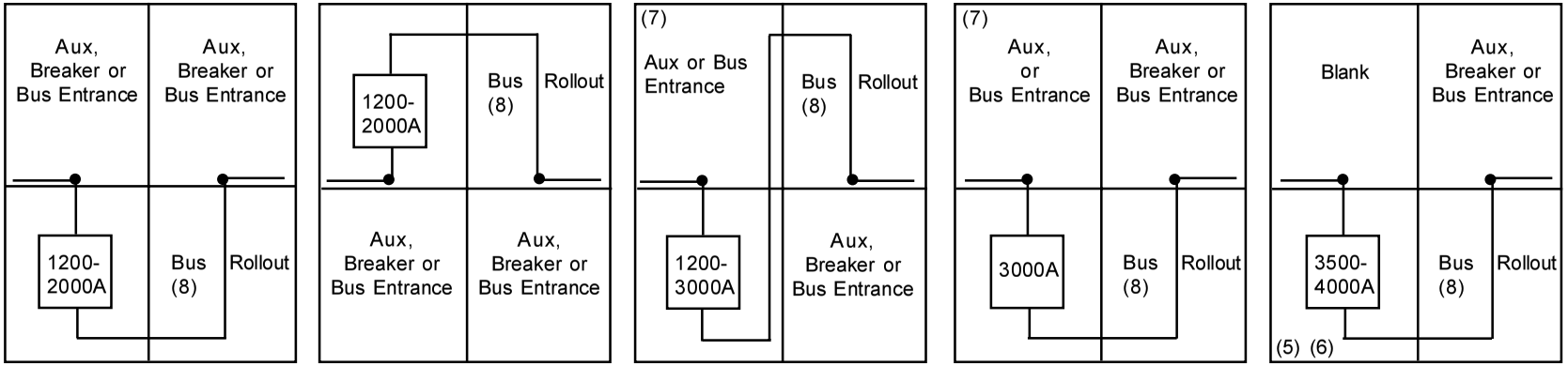
CABLE COMPARTMENT

- Designed for 2-750MCM per breaker; cables above or below. Additional cables/size optional.
- CT's with greater than ANSI accuracy may be mounted in cable compartment and may limit such cases to one breaker per vertical section.
- Stress cone space of 21 inches is provided and use of performed stress cones, such as GE Termimatic (TM), is recommended.
- Certain simple cable compartment configurations such as clamp type terminations for one moderate-sized cable per phase, with or without Ground Sensor, permit a unit depth of 82 inches on indoor units.

Standard Power/VAC Breaker Stacking Configurations



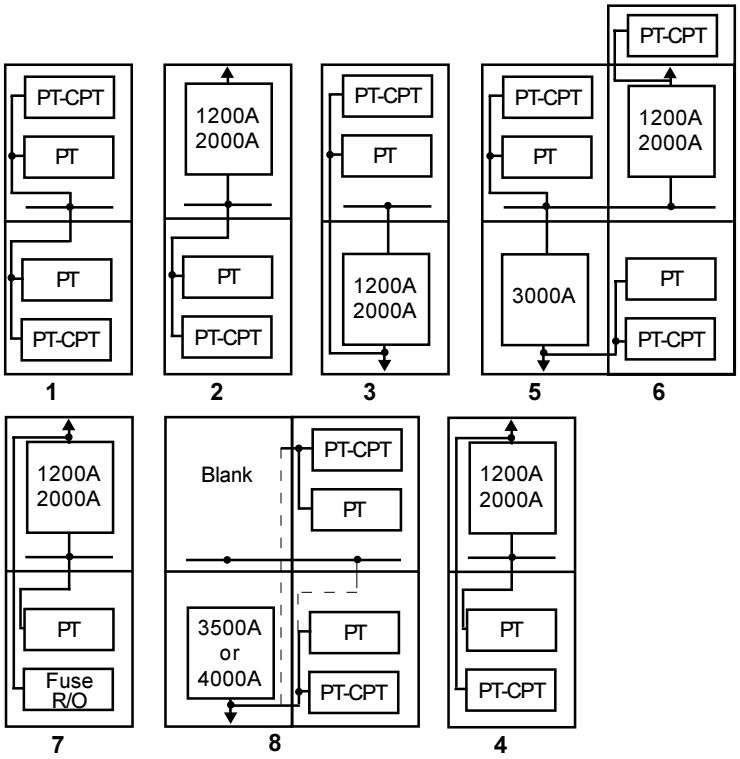
Standard Power/VAC Bus Tie Breaker Stacking Configurations



(1) 4000A breakers require fans on top of structure for forced air cooling.
(2) Blank Unit above 3500A & 4000A breakers have room for device mounting.
(3) Auxiliary Units can contain roll-out tray for PTs & CPTs, or additional device mounting.
(4) Full height Auxiliary Units can contain additional device mounting or be used for material storage.
(5) 3500A must be derated to 3250A in outdoor construction.
(6) 4000A is not available in outdoor construction.
(7) Roll-outs located above a 3000A breaker, are only available on indoor construction.
(8) Auxiliary Bus Ties can contain 1 bus connected roll-out tray.

Each section in standard indoor construction is 36" W x 95" H x 94" D.
Bus Ties always require two sections.
Not all possible configurations shown, consult factory.

Power/VAC Auxiliary Compartment Configurations



1. 4 high auxiliaries capability
2. 1200A/2000A breaker in A, two bus connected rollouts in B
3. 1200A/2000A breaker in B, two line connected rollouts in A
4. 1200A/2000A breaker in A, two rollouts in B, one line & one bus connected
5. 3000A breaker in B, two bus connected rollouts in A (Indoor only)
6. 1200A/2000A breaker in A, with line connected rollout in superstructure. Two rollouts in B, line connected from adjacent section (3000A breaker)
7. 1200A/2000A breaker in A. Two rollouts in B, one line connected fused R/O, with large CPT mounted in rear
8. Two rollouts in A or B compartments, line connected to 3500A/4000A breaker in adjacent section, B compartment, or bus connected.

NOTES: ALL ROLLOUT TRAYS ARE HARD BUS CONNECTED. NO CABLE CONNECTED TRAYS.
NOT ALL POSSIBLE CONFIGURATIONS SHOWN. CONSULT FACTORY OR GET-6600.

Devices	Ratings	Roll-out Unit	A Compartment		B Compartment	
			Lower	Upper	Lower	Upper
3-VT's (1)	5kV and 15kV	–	Yes	Yes	Yes	Yes
2-VT's (1)	5kV and 15kV	–	Yes	Yes	Yes	Yes
1-CPT (1)	5/10/15/kVA	–	No	Yes	Yes	No
1-CPT (2)	25, 37.5kVA (4)	–	No	No	No	No
CPT Fuses (3)		Fused Unit	No	No	Yes	No

(1) Fuses are an integral part of VT or CPT. CPTs are single phase.
(2) CPT is installed in the rear cable compartment. CPT fuses are installed in a key intelocked fused roll-out in the Lower B compartment.
(3) Fused rollout tray must be key interlocked with remote CPT secondary breaker.
(4) See factory for larger CPTs or 3-phase bank.

NEW POWER/VAC® Power Circuit Breaker Characteristics - KA Rated

Symmetrical Rating Basis ANSI C37.06 (2000)

ANSI Rated Values									
Rated Maximum rms Voltage (kV) (1)	Rated Voltage Range Factor, K	Rated Withstand Test Voltage		Continuous rms Current Rating at 60HZ (amperes) (2)	Short Circuit rms Current Rating (at Rated Max. kV) (kA) (3)	Rated Interrupting Time (Cycles)	Rated Permissible Tripping Delay, Y (Seconds)	2 Sec Short time Current Carrying Capability (kA)	Close and Latch Peak (2.6K x short circuit current rating) (kA)
		Low Frequency rms Voltage (kV)	Crest Impulse Voltage (kV)						
4.76	1.0	19	60	1200-4000	31.5	5 or 3	2	31.5	82
				1200-4000	40	5 or 3		40	104
				1200-4000	50	5 or 3		50	130
				1200-4000	63 *	5		63	164
8.25		36	95	1200-4000	40	5 or 3		40	104
				1200-4000	50 *	5 or 3		50	130
				1200-4000	63 *	5		63	164
15				1200-4000	20	5 or 3		20	52
				1200-4000	25	5 or 3		25	64
				1200-4000	31.5	5 or 3		31.5	82
				1200-4000	40	5 or 3		40	104
				1200-4000	50	5 or 3		50	130
				1200-4000	63	5		63	164

Notes:

1. Maximum voltage for which the breaker is designed and upper limit of operation.
2. 4000A rating is forced air-cooled, indoor construction only. 3500A must be derated to 3250A in outdoor construction.
3. Within the limitations stated in ANSI C37.04-1999.5.8.

* Exceeds ANSI C37.06-2000 preferred ratings.

POWER/VAC® Power Circuit Breaker Characteristics - MVA Rated

Symmetrical Rating Basis ANSI C37.06 (1987)

Identification		Rated Values									Related Required Capabilities			
		Voltage		Insulation Level		Current								
Nominal rms Voltage Class (kV)	Nominal 3-phase class (MVA) (6)	Rated Maximum rms Voltage (kV) (1)	Rated Voltage Range Factor (K) (2)	Rated Withstand Test Voltage		Continuous rms Current Rating at 60HZ (amperes) (7) & (8)	Short Circuit rms Current Rating (at Rated Max. kV) (kA) (3) (4)	Rated Interrupting Time (Cycles) (9)	Rated Permissilbe Tripping Delay, Y (Seconds)	Rated Maximums Voltage Divided by K (kV)	Maximum Symmetrical Interrupting Capability (5)	3 Sec Short Time Current Carrying Capability (6)	Closing and Latching Capability rms Current (kA) (10)	Close and Latch Peak (2.7K x max short circuit current rating) (kA) (6)
				Low Frequency rms Voltage (kV)	Crest Impulse Voltage (kV)						K times Related Short circuit rms Current			
											(kA)	(kA)		
4.16	250	4.76	1.24	19	60	1200-4000	29	5	2	3.85	36	36	58	97
	350		1.19			1200-4000	41			4.0	49	49	78	132
	450 (6)		1.0			1200-4000	63			4.76	63	63	101	164
7.2	500	8.25	1.25	36	95	1200-4000	33			6.6	41	41	66	111
	785 (6)		1.00			1200-4000	63			8.25	63	63	101	164
13.8	500	15	1.30			1200-4000	18			11.5	23	23	37	63
	750		1.30			1200-4000	28			11.5	36	36	58	98
	1000		1.30			1200-4000	37			11.5	48	48	77	130
	1500 (6)		1.0			1200-4000	63			15	63	63	101	164

Notes:

1. Maximum voltage for which the breaker is designed and upper limit of operation.
2. K is the ratio of the maximum voltage to the lower limit of the range of operating voltage in which the required symmetrical and asymmetrical interruping capabilities vary in inverse proportion to the operating voltage.
3. To obtain the required symmetrical interrupting capability of a circuit breaker at an operating voltage between 1/K times rated maximum voltage and rated maximum voltage, the following formula shall be used: Required Symmetrical Interruping Capability=Rated Short Circuit Current X $\frac{\text{(Rated Maximum Voltage)}}{\text{(Operating Voltage)}}$

   For operating voltages below 1/K times rated maximum voltage, the required symmetrical interrupting capability of the circuit breaker shall be equal to K times the rated short-circuit current.
4. With the limitation stated in 5.10 of ANSI-C37.04-1991, all values apply for polyphase and line-to-line faults. For single phase-to-phase faults, the specific conditions stated in 5.10.2.3 of ANSI-C37.04-1991 apply.
5. Current values in this column are not to be exceeded even for operating voltages below 1/K times maximum voltage.
6. MVA Class listed for reference only. Note 4160V-450MVA, 7.2KV-785MVA and 13.8KV-1500MVA are not listed as preferred ratings according to table 2.1 of ANSI-C37.06-1987.
   For these ratings the Short Time current is on a 2 sec basis, and the peak C&L is 2.6 X S/C rating.
7. 3500A must be derated to 3250A in outdoor construction.
8. 4000A breaker is forced-air cooled, and indoor construction only.
9. 3 cycle interrupting ratings are available, consult factory.
10. Non-standard, high Close & Latch ratings are available, consult factory.

For further information, call your local GE sales office, or write:

GE Industrial Systems
GE Switchgear Operations
510 E. Agency Road
West Burlington, IA 52655

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