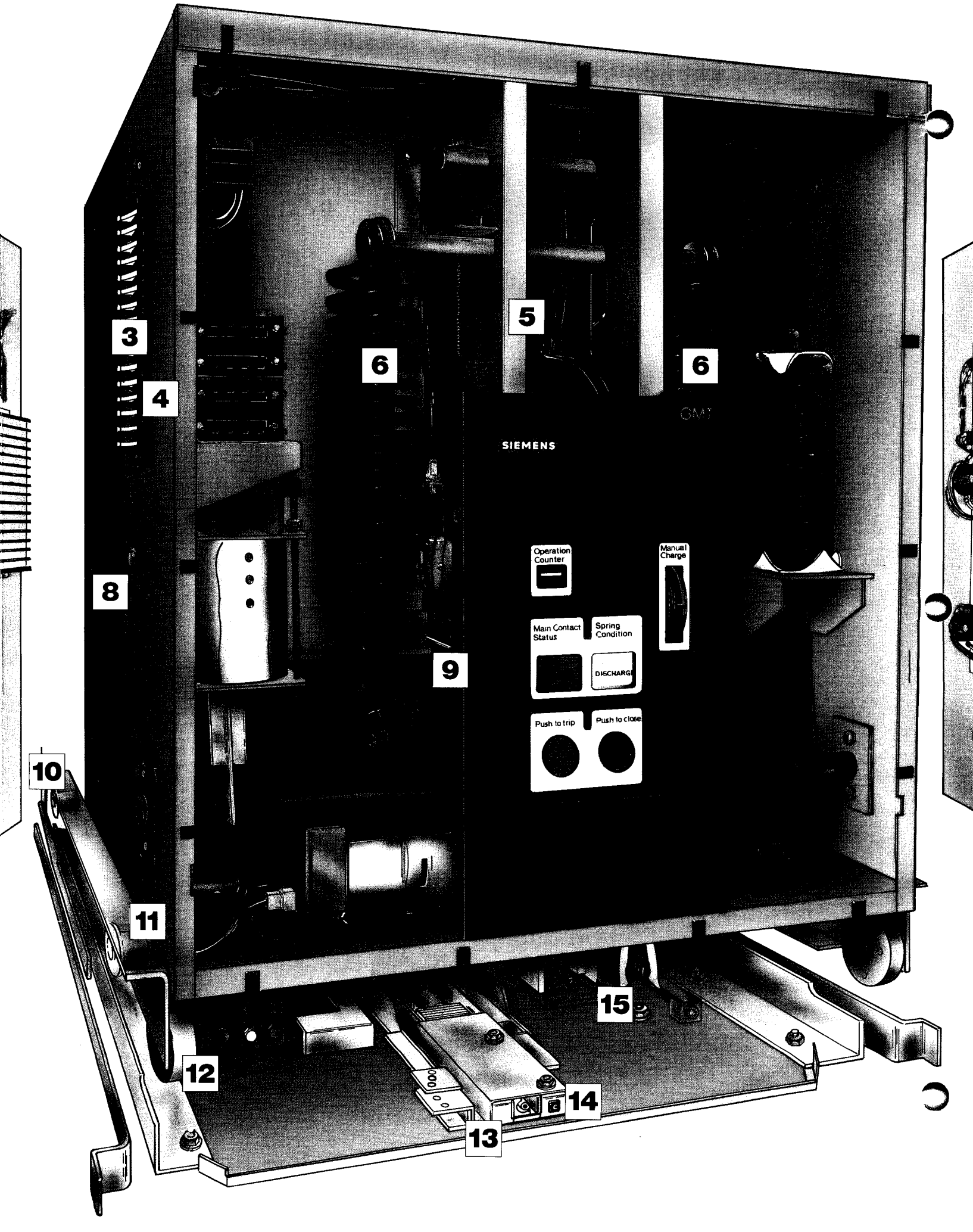
SIEMENS

GM Stackable Medium Voltage Metalclad Switchgear

SG3109-01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SIEMENS
Operation Counter
Manual Charge
8
Main Contact Status
Spring Condition
DISCHARGE
9
Push to trip
Push to close
10
11
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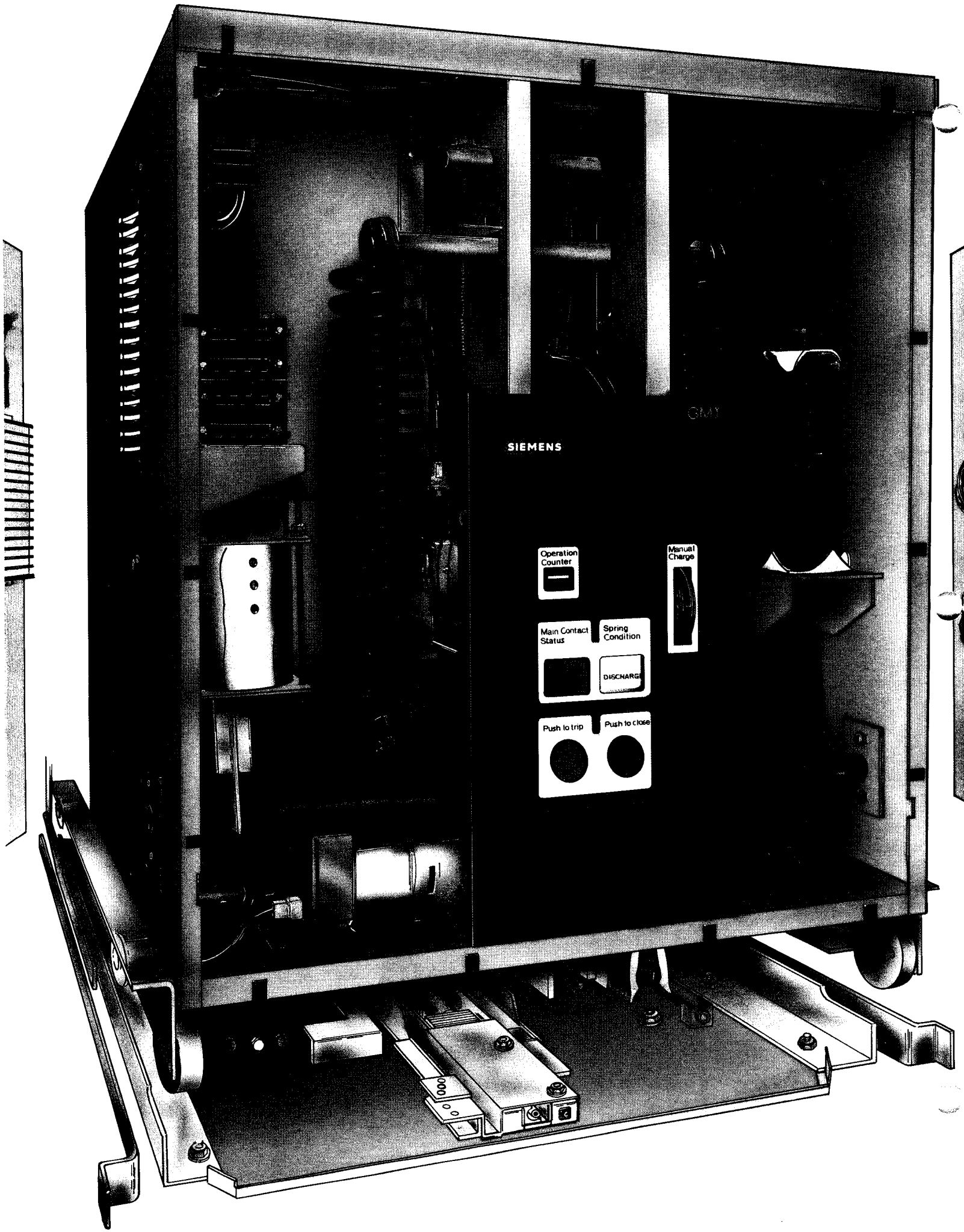
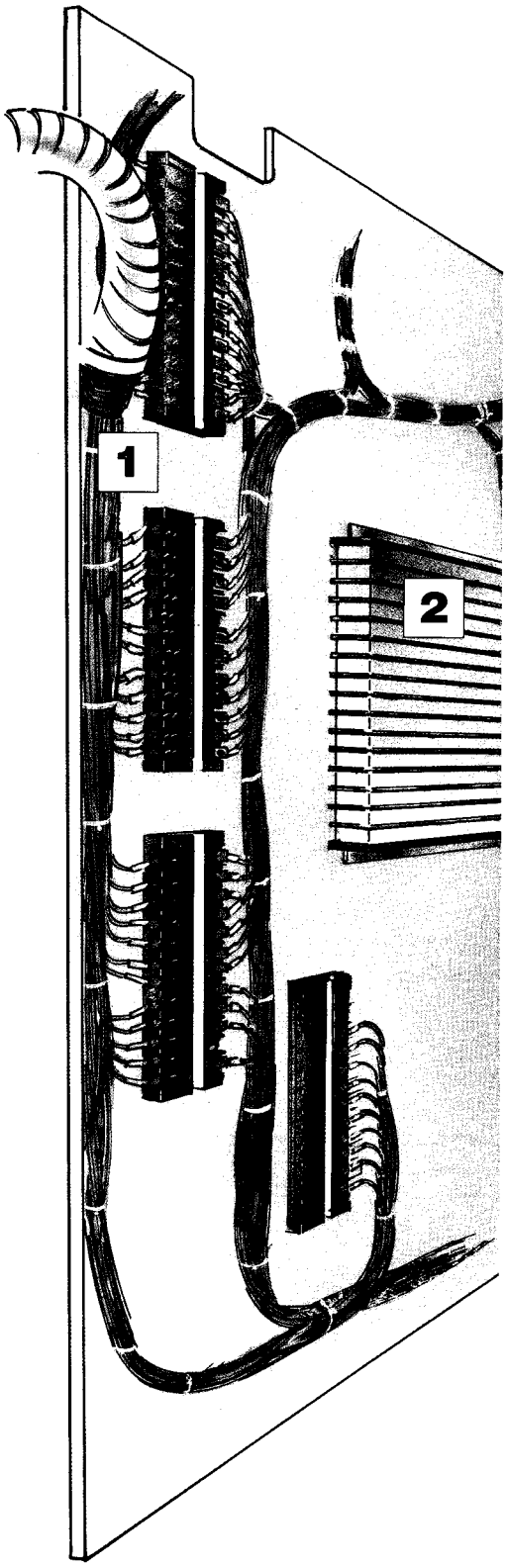
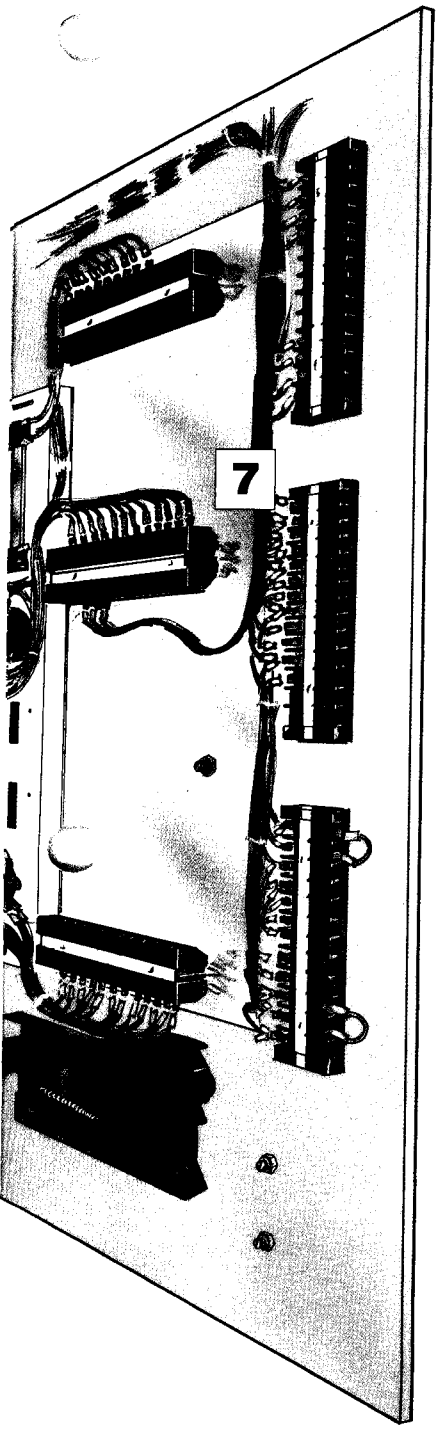

SIEMENS
Operation Counter
Manual Charge
Main Contact Status
Spring Condition
DISCHARGE
Push to trip
Push to close

1. Internal switchgear wiring isolated on left sidesheet
2. Secondary disconnect, stationary portion
3. Spring-loaded contact fingers
4. Secondary disconnect, circuit breaker portion
5. Rugged dual backbone
6. Balanced operator mechanism
7. Customer wiring isolated on right sidesheet
8. Precision "tab & slot" assembly
9. Front mounted operator mechanism
10. "Tie-down" hooks capture rear wheel-set of breaker
11. Precision wheel set for aligning breaker in cubicle
12. Floor rollout wheel set
13. Floor-mounted racking mechanism
14. Breaker position indicator
15. "Grip rail" holds breaker to racking mechanism





The GM design significantly reduces on-going maintenance costs.

- Vacuum interrupter requires no service - withstands 30,000 mechanical operations, 100 full current interruptions and has a ten year shelf life.
- Interrupter mechanism has no slides or pivots to wear or that require lubrication.
- Simple inspection process for contact wear.
- Single size primary stabs in all rating cells simplify ground testing.
- GMI breakers in lower cells rollout directly on the floor.
- GMI breakers in upper cells rollout on extension rails.
- GMI operator mechanism is front mounted; all adjustments are accessible without tipping or reorienting the breaker in any way.
- The need for most adjustments has been eliminated; mechanism is manufactured for precise fit and consequently requires little, if any, adjustment.
- Floor mounted racking mechanism is out of the way, eliminates chain drives and adjustments, doesn't interfere with sidewall wiring or maintenance.
- Auxiliary trays rollout on self-contained extension rails.
- Bus bars are tightened from the front of the GM cabinet through an access panel in the upper rear of each lower cell.
- All customer wiring terminates on dedicated terminal blocks.
- Simplified bus barrier system allows quick access when required.
- Racking mechanism is self-contained and can be easily removed and reinstalled.
- Spare or replacement parts fit precisely; many are interchangeable among breaker frame ratings.
- Bus bars are encapsulated to minimize possibility for contamination or deterioration.
- Silver-plated copper or tin-plated aluminum bus bar joints assure efficient contact.
- Tin-plated copper bus optional.
- 4000A fan-cooled breaker rating available.

GMI Ratings

Voltage-MVA Class		Continuous Current 1200	2000	3000
4.16 kV	-250	X	X	
	-350	X	X	X
7.2 kV	-500	X	X	X
13.8 kV	-500	X	X	
	-750	X	X	X
	-1000	X	X	X

The GM design offers stacking versatility; e.g. stack auxiliaries four high, or two high over or under a circuit breaker.

1200A or 2000A	1200A or 2000A	AUX	VENTED AUX	AUX
1200A or 2000A	AUX	1200A or 2000A	3000A	AUX

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Siemens Energy & Automation, Inc.
Electrical Apparatus Division
P.O. Box 29503
Raleigh, NC 27626-0503

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International
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Fax: (404) 751-2496
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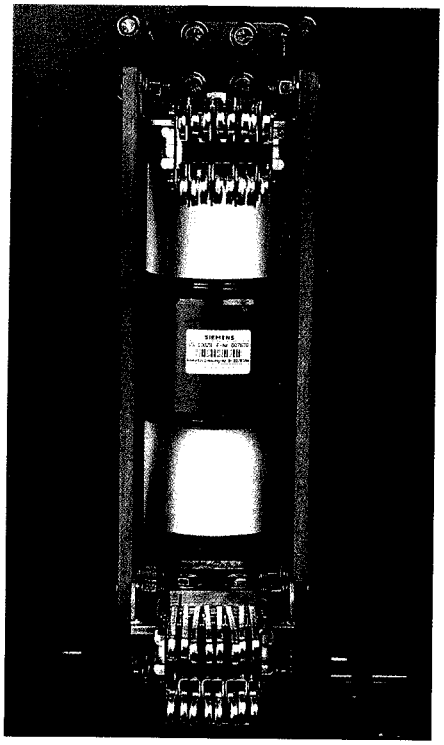


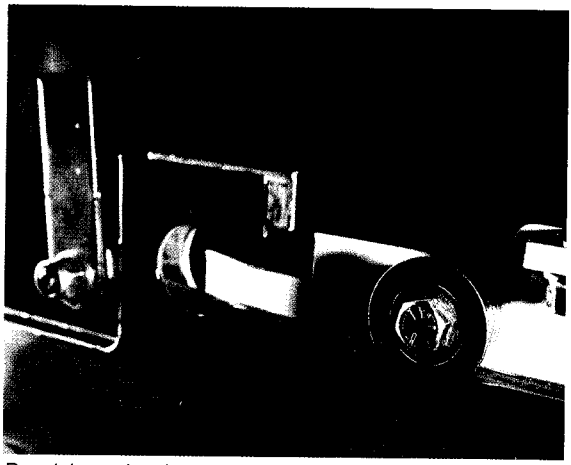
Siemens vacuum technology is maintenance free. The typical tube endures 30,000 mechanical operations and 100 full current interruptions.

GM design maximizes safety.

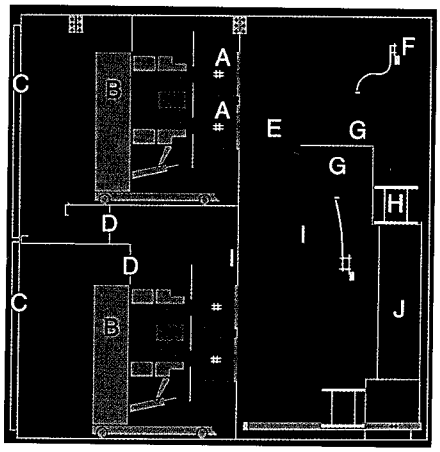
- Meets applicable ANSI, NEMA, IEEE standards
- Floor mounted racking mechanism and "tiedown hooks" securely hold breaker in place against short circuit forces during interruption.
- Shutters for primary stabs require breaker to be present in order to open (in contrast to racking screw driven systems).
- Shutters are grounded metal.
- Interlocks prevent inserting racking crank unless breaker is open.
- Closed door racking standard.
- Remote racking available.
- Floor rollout; upper extension rails.
- Front mounted mechanism - all adjustments and maintenance are performed without reorienting breaker.
- Each auxiliary tray features safety interlocks
- Each auxiliary uses self-contained drawout rails
- Mechanical interlocks prevent loading an under-rated breaker into a higher-rated cell.
- Special funnelling guides circuit breaker into proper alignment when reinserting.

GM design reduces capital costs and maximizes application flexibility.

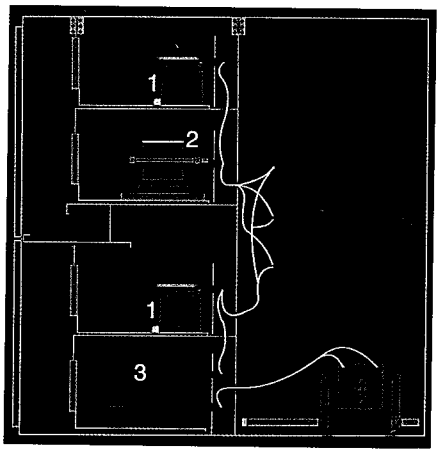
- Application flexibility often reduces the number of vertical sections required for a given installation.
- Minimizes floor space required
- 1200 and 2000 amp breakers are stackable "2-high"
- Cell below 3000A breaker can be used for an auxiliary tray.
- Auxiliary trays are stackable four high even with CPTs.
- Each cell allows ample space for door mounted devices.
- Vertical bus bar configuration reduces depth of gear.
- Multiple standard bus bar configurations eliminate most custom design requirements.
- Wiring paths allow complete flexibility for positioning breakers, CPTs, fuses, etc.
- Reduces spare breaker inventory.
- Many parts are interchangeable among breaker frame ratings — reduces spare parts inventory.
- Cubicles and breakers manufactured and tested in a single location for quality assurance and greater reliability.



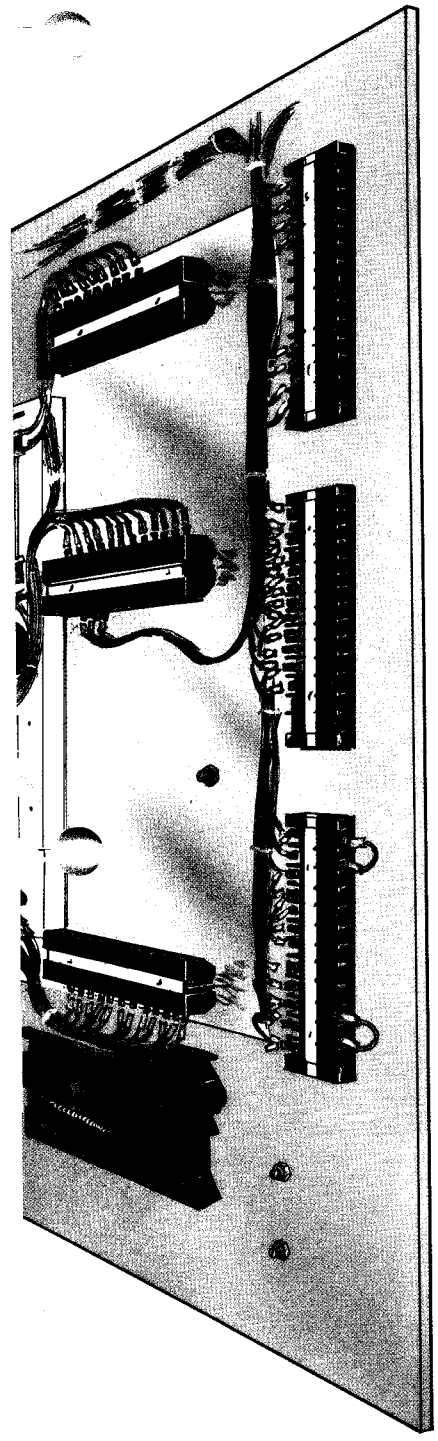
Precision wheel set assures alignment within the cubicle and operates the metal shutters. In the connect position, the rear wheel set is held captive by tie-down hooks and secures the breaker against electrodynamic forces.



A. CT
B. 1200A or 2000A Vacuum Circuit Breaker
C. Relay/Instrument Panel
D. Secondary Device Panels
E. Main Bus Compartment
F. Outgoing Cable Lugs
G. 3 EF Surge Limiters
H. Ground Sensor CT
I. Removable Barrier
J. Power Cable Trough



1. Rollout VT
2. Rollout CPT or VT
3. Rollout CPT, VT or Fuses
4. Stationary Mounted Control Power Transformer (Over 15kVA Single Phase, All Three Phase Units)



GM MV Metalclad Switchgear — The Standard Of Quality Design And Precision Craftsmanship.

Siemens engineers have utilized proven vacuum interrupter technology, state-of-the-art design and manufacturing processes and some down to earth Yankee ingenuity to create a truly elegant design. The result is a new generation of safety and convenience in metalclad switchgear.

GM is rugged, reliable, quality. And provides great value both today and tomorrow.

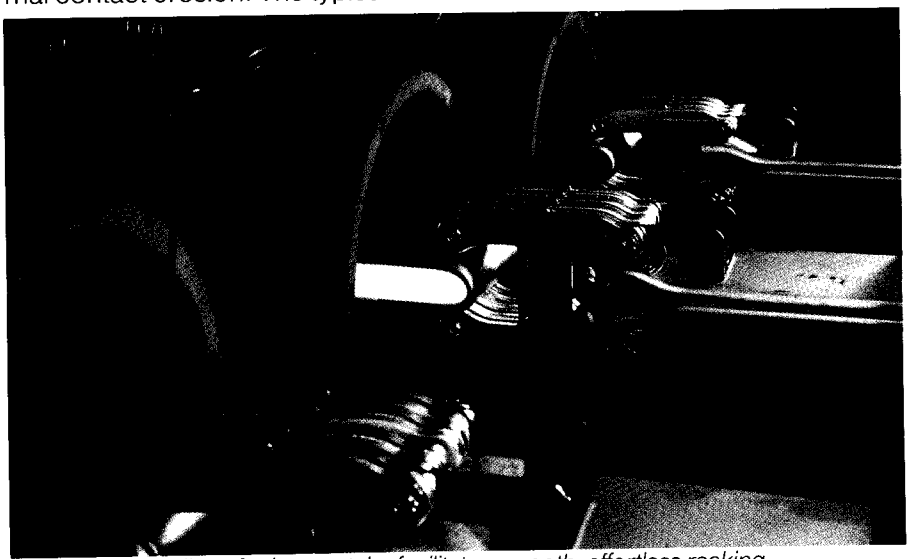
As you become familiar with the GM design concept and execution, you'll see how Siemens has improved application flexibility, lowered capital costs, lowered maintenance costs, increased safety and improved reliability.

The backbone of the GM switchgear is the Siemens vacuum interrupter. Its unique contact design and construction, coupled with superior vacuum technology, has been proven in more than 100,000 breakers. The Siemens vacuum interrupter provides quick separation without restrike, but with low chopping currents and minimal contact erosion. The typical Siemens interrupter will endure over 30,000 mechanical operations, 20,000 operations at rated current, 100 interruptions at rated short-circuit current, and has a shelf life in excess of ten years.

GMI circuit breakers have been designed to eliminate the need for most adjustments. The operator is front mounted, easily accessible. Breakers in lower cells rollout on the floor; in upper cells, on provided extension rails. And on-going maintenance costs have been slashed.

The GM switchgear design is logical and effective. Customer wiring is isolated from internal switchgear wiring. The racking mechanism is floor mounted, doesn't interfere with side walls or customer wiring. The buses are easily accessed from front and rear. A single "universal spare" breaker can serve an entire installation.

The GM series of stackable MV metalclad switchgear represents significant advance in design, product reliability and customer convenience. Find out more. Call Siemens today.



The constant radius of primary stabs facilitates smooth, effortless racking.