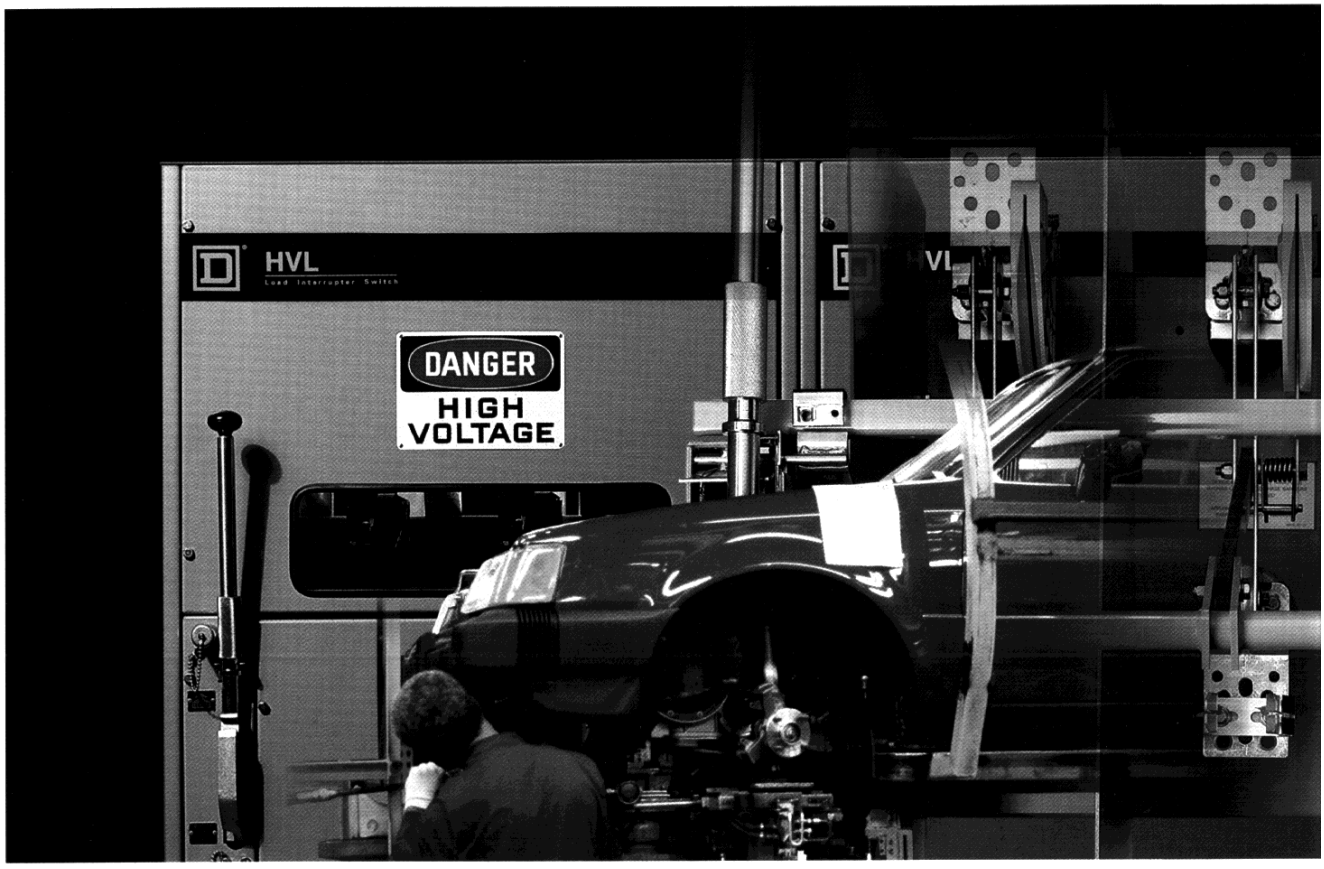
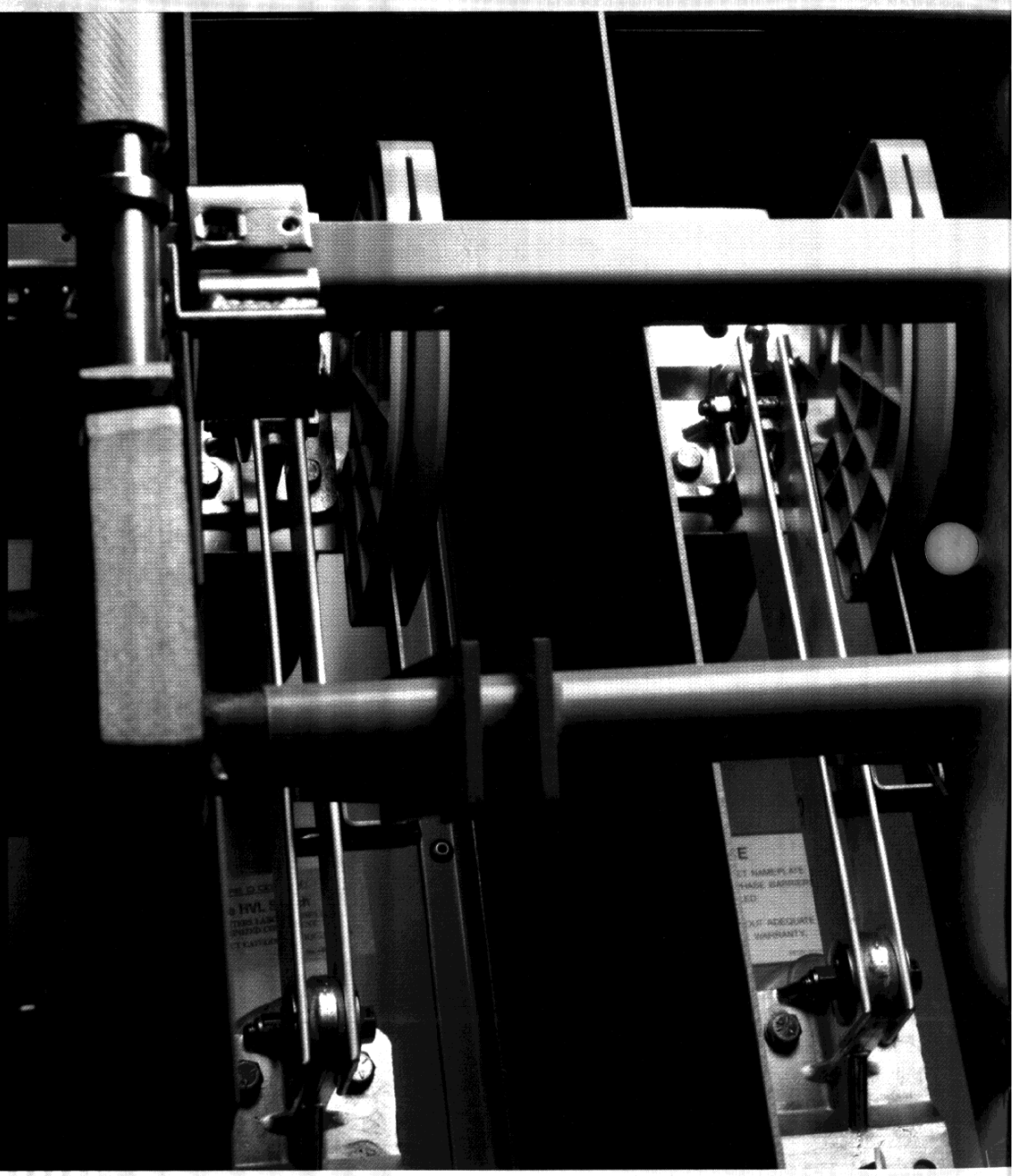
HVL



5-38 kV Load Interrupter Switchgear
Class 6040

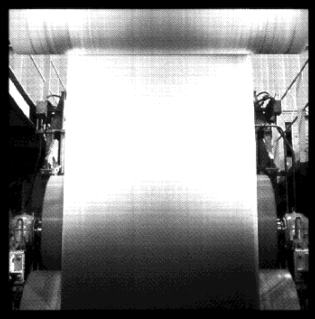
SQUARE D
GROUPE SCHNEIDER

SETTING THE STANDARD FOR UNIT SUBSTATIONS



For a generation of engineers, High Voltage Load (HVL) Interrupter Switchgear from Square D has set the standard for performance, protection, and dependability in metal-enclosed switchgear. From the beginning, we've had a reputation for quality, service, and technical innovation. Today, we're the only manufacturer in America that engineers, manufactures, and services all the components of a unit substation. We believe in giving you choices. Square D: we're on your side.

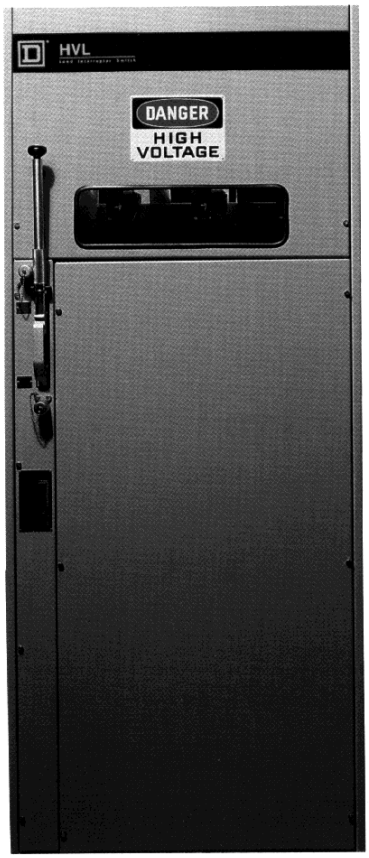
S O L U T I O N S



When it came time to choose a contractor for a new joint-venture steel plant, the purchasing manager gave the $4 million contract to Square D. "I wanted the best engineering support, proven ability to meet schedules, technical contacts, open lines of communication and thorough follow-up," he said. "I wanted the best value."

Square D provided 13.8 kV metal-clad and HVL load-interrupter switchgear, 13 kV single-ended indoor unit substations, 13.8 kV three-phase, dry-type and oil-filled transformers, and all the other equipment needed to handle more than fifty megawatts of electricity.

The Square D reputation for quality was what made the difference, the purchasing manager said. "Our lines run 24 hours a day, seven days a week. The entire power distribution system has to work perfectly all the time."



5 kV, 15 kV

Setting the Standard for Metal-Enclosed Switchgear

HVL Load Interrupter Switchgear from Square D is the most popular ANSI-rated switchgear in its class (5-38 kV) in America. Among high voltage interrupters, both the switch and the enclosure stand as industry benchmarks in the areas of design, manufacturing, and performance.

High voltage interrupters must perform a number of critical functions in a unit substation—protecting equipment, disconnecting faulted lines and transformers, and protecting personnel from accidents. Designed and tested to the latest applicable standards, HVL has been engineered to provide superior protection not only for your distribution system but also for your operating personnel. That's why HVL switchgear is chosen for more installations than any other ANSI-rated load-interrupter equipment.

HVL switchgear is available for various applications and configurations, including:

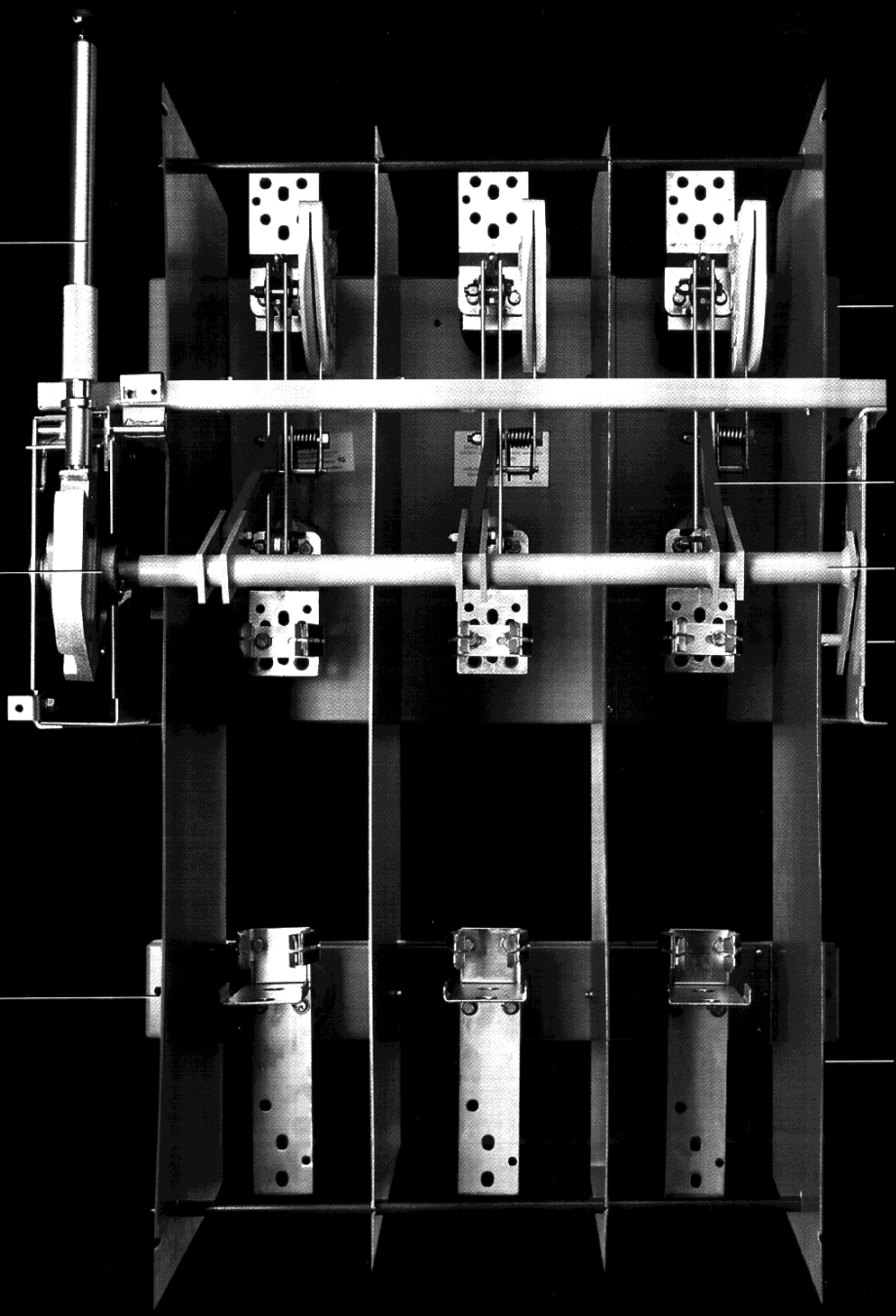
- Individual service entrance bays
- Multiple-bay lineups incorporating HVL load interrupters and optional VISI/VAC® circuit interrupters
- Substation primaries
- Main-Tie-Main VISI/VAC circuit interrupters with HVL load interrupter switches as feeders

Square D metal-enclosed switchgear has become an industry standard for its better system performance, lower maintenance cost, easier system expansion, and reduced system expense.

SQUARE D COMPANY
REGISTERED TO ISO 9001
CERTIFICATE NO. A2211

Square D HVL Load Interrupter Switchgear is designed and manufactured in a facility that is Quality Systems Registered by Underwriters Laboratories, Inc. to ISO 9001.

Square D HVL Load Interrupter Switch



Permanently attached direct acting handle with padlocking provisions in open and closed positions.

Stored energy switch operating mechanism.

Lower fuse clip assembly mounting channel.

One-piece switch frame supports entire switch assembly.

High strength glass-polyester insulating links with track resistant coating.

Switch drive shaft and connecting linkage.

Travel stop.

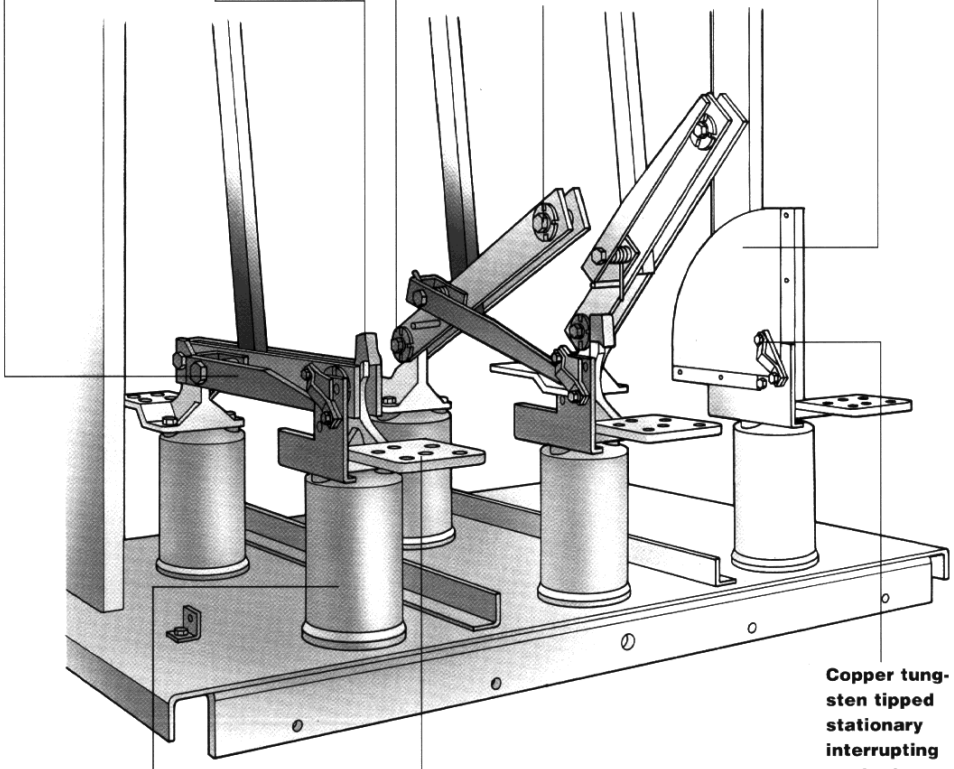
Full length glass fiber reinforced polyester phase barriers.

The Best Engineered Switch

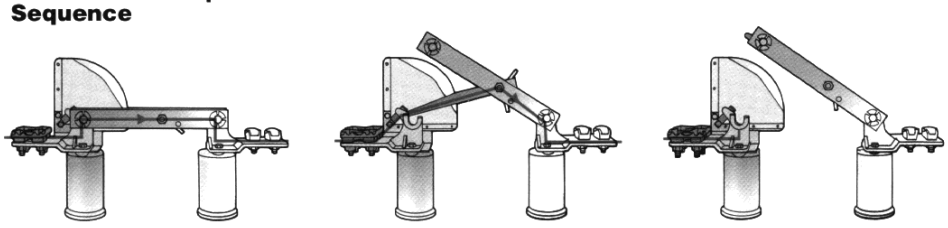
An important design feature is the HVL load interrupter's direct-drive operating mechanism. Our engineers concluded that chain-drive systems were simply too unreliable, so they created a chainless direct drive. The result is one of the most dependable and consistent load-interrupter switches in the industry.

The same spirit of engineering innovation can be seen in the way arc interruption is handled by the HVL switch. There are separate paths for current and for arcing. During the opening operation, the main blades completely disconnect and transfer the current to the arcing path. The arc is then forced to travel through the arc chute, where it is extinguished. This sequence of operation prevents erosion of the main contacts caused by arcing during the interruption of the load current.

To minimize the potential of catastrophic phase-to-phase faults, all live parts of HVL switchgear are mounted on insulators attached to the grounded sheet metal of the enclosure.



HVL Arc Interruption Sequence



Closed.

Interruption (No arcing on main blade).

Open.

Red line indicates load current.

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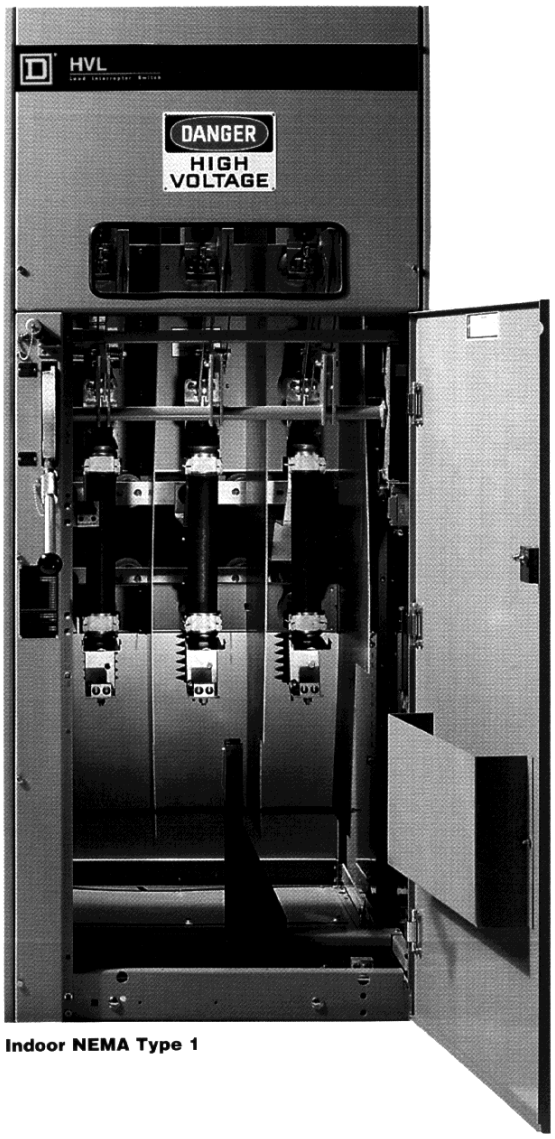


Indoor NEMA Type 1

Outdoor NEMA Type 3R

The Best Engineered Enclosure

The enclosure for the HVL load interrupter switch is as carefully designed as the switch itself. It features the same rigorous engineering that goes into all Square D switchgear products. In fact, it's the same compact enclosure that's used for VISI/VAC switchgear.

Our common enclosure, modular in construction, bolted and riveted for strength, allows for significant flexibility in configuring metal-enclosed switchgear. More flexibility gives you more options. For example, you can specify a duplex HVL configuration, and also include the increased protection of a VISI/VAC circuit interrupter. In the same lineup, this common construction allows standardization of the cubicle and its associated components. It also permits the integration of the HVL load interrupter switch and the VISI/VAC circuit interrupter into a continuous, modular, space-efficient lineup.

The enclosure containing the HVL load interrupter is available in single- or multiple-bay configurations. It can be close-coupled to a transformer for unit substation applications. There are HVL enclosures for both indoor (NEMA Type 1) and outdoor (NEMA Type 3R) applications. Type 3R is a door-in-door enclosure which provides additional safety for operating personnel. The enclosures are constructed of 11-gauge steel and have the toughest finish in the industry—Square D TGIC polyester

powder paint. TGIC resins offer excellent mechanical properties, corrosion and exposure protection, edge coverage, and are also environmentally friendly. TGIC polyester powder paint has proven to be superior to any other paint system available today.

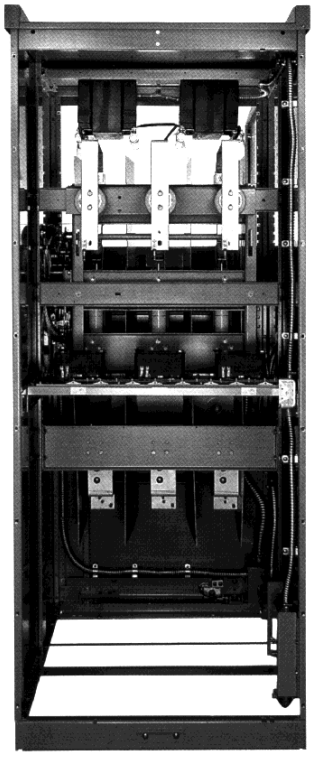
For increased safety, the enclosure door of HVL switchgear gives access only to the fuses when the switch is open. The blades can be viewed through a Lexan safety window mounted in the permanently attached upper panel. Consequently, there's no need to specify a screen to prevent operating personnel from accidentally coming into contact with live parts when the lower compartment door is open.

Duplex Configuration

The Best Service

Since a medium voltage load interrupter is essential to the safe and dependable operation of a power distribution system, service and support are vital elements of a successful installation and continuing operation. Square D has one of the largest engineering and service teams in the industry to provide a level of support unmatched by any other manufacturer.

For more information on how we can assist you, contact your local Square D sales office. They are conveniently located in over 200 cities throughout the world to serve you.



Rear Cable Compartment

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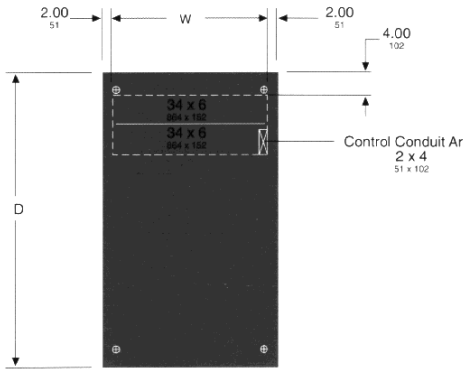
DIMENSIONS

Floor Detail



0.875" (22mm) Mounting Holes
(4 places) Except Indoor 25/38 kV (2 places)

Dual Dimensions = Inches / Millimeters

Enclosure Type Dual Dimensions: Inches / Millimeters

kV		Width (W)	Depth (D)	Weight	Height
5 /15	Indoor	38.00 / 965	54.50 / 1384	1200 lbs / 545 kg	90.0 / 2286
5 /15	Indoor	38.00 / 965	46.50 / 1181	1000 lbs / 454 kg	90.0 / 2286
5 /15	Outdoor	38.00 / 965	60.00 / 1524	1400 lbs / 636 kg	97.5 / 2477
25	Indoor	48.00 / 1219	72.00 / 1829	2000 lbs / 908 kg	114.0 / 2896
25	Outdoor	48.00 / 1219	78.00 / 1981	2500 lbs / 1135 kg	121.0 / 3073
29	Indoor	48.00 / 1219	72.00 / 1829	2000 lbs / 908 kg	114.0 / 2896
29	Outdoor	48.00 / 1219	78.00 / 1981	2500 lbs / 1135 kg	121.0 / 3073
38	Indoor	60.00 / 1524	80.00 / 2032	2200 lbs / 999 kg	120.0 / 3048
38	Outdoor	60.00 / 1524	86.00 / 2184	2700 lbs / 1226 kg	127.0 / 3226

HVL Load Interrupter Switch Ratings

Nominal Voltage (kV)	4.16			13.8			16.5	24.9		29		34.5
Maximum Design Voltage (kV)	4.76			15.0			17.0①	25.8		29.0		38.0
BIL (kV)	60			95			95	125		125		150
Frequency (Hz)	50/60			50/60			50/60	50/60		50/60		50/60
Continuous Amperes	600	1200	1200	600	1200	1200	600	600	1200	600	1200	600
Interrupting Amperes	600	1200	1200	600	1200	1200	600	600	1200	400		400
Fault Close (kA Asymmetrical)	40	61	61	40	61	61	40	28		28		20
Fault Close (kA Symmetrical)	25	38	38	25	38	38	25	—		—		—
Momentary Current (kA Asymmetrical 10 Cycle)	40②	61	80	40②	61	80	40	40	61	40	61	40
Capacitor Switching (kVAR)	2400	2400	—	2400	2400	—	—	—		—		—
Short-Time Current (kA 2 Seconds)	25	38	48	25	38	48	25	25		25		25
Dielectric Withstand (kV 1 Minute)	19		19	36		19	36	60		60		80

① For fused versions only, S&C 16.5 kV boric acid fuses can be used.
② 61 kA momentary current rating is available as an option.

Screened areas not UL Listed.

As standard specifications and designs change from time to time, please ask for confirmation of the information given in this publication.

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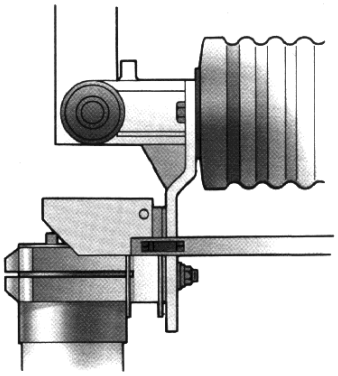
(Replaces BR146) 20M DL 6/94

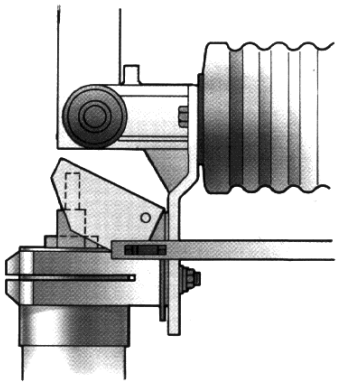
SQUARE D
GROUPE SCHNEIDER

The new Square D medium voltage current limiting fuse sets the standard for features and protection. The new extended travel blown fuse indicator provides more travel to positively operate the optional FUSELOGIC™ protection system.

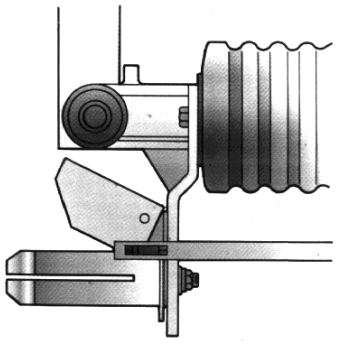
The new FUSELOGIC system prevents closing of the HVL switch if a fuse is blown or has not been installed. This reduces operator error and the potential of equipment damage due to single phasing. The FUSELOGIC system can be used to operate auxiliary contacts for optional local and/or remote indication.



Good Fuse in Place



Blown Fuse



No Fuse in Clip