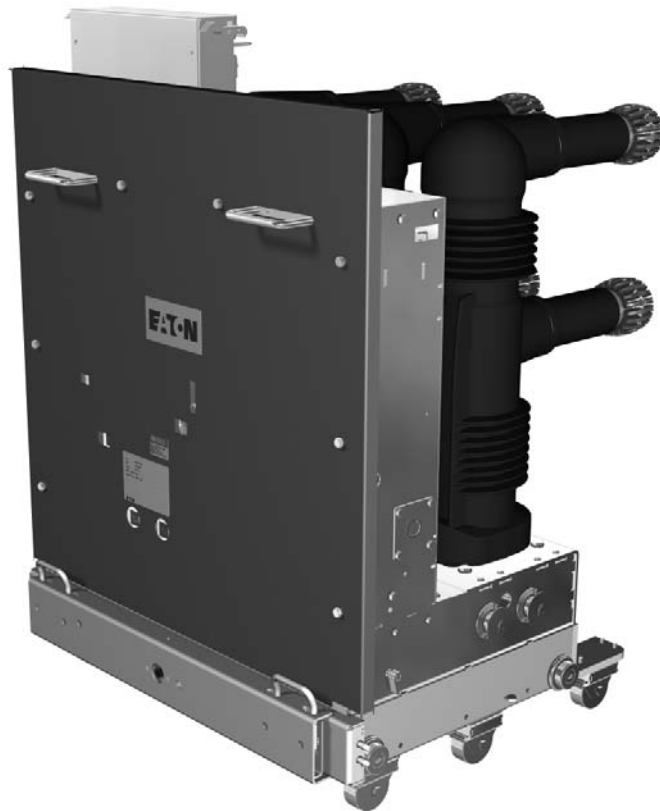


38 kV Type VCP-Wind medium voltage vacuum circuit breakers, structures, and accessories



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Powering Business Worldwide

General information**Standard breaker features**

- Maintenance-free Eaton vacuum interrupters
- Direct roll-on-the-floor design
- Encapsulated epoxy pole units
- Front-accessible operating mechanism
- Electrically operated trip-free, spring stored energy mechanism
- Trip-free interlocks, which prevent moving a closed circuit breaker into or out of the Connected position
- Closing springs automatically discharge before moving the circuit breaker into or out of the enclosure
- Provisions for manual charging of closing spring
- Manual close and trip pushbuttons
- Operations counter
- Closing spring charged/discharged indicator
- Circuit breaker open/closed indicator
- Auxiliary switch with 6a/7b spare contacts for customer use
- TOC switch 4a/4b
- Spring charging motor, close coil, trip coil, latch check switch, and anti-pump relay
- Primary and secondary fully automatic disconnects
- Code pins ensure that only breakers of the correct rating can be inserted into the enclosure
- Nameplate with serial number, circuit breaker type, ratings, etc.
- Quality assurance certificate
- Designed, tested, and certified in accordance with IEEE® C37.06, C37.09, and C37.10

38 kV breaker mini-modules

- Mini-module has been fully tested in accordance with IEEE C37.20.2
- The breaker has three distinct latched positions: Disconnect, Test, and Connect
- Front-accessible epoxy spouts have embedded stress shields and are designed to allow up to six standard-class C200 or two standard-class C200 and two class C400 current transformers per phase
- The automatic secondary contacts are wired and identified with wire markers; 10-foot-long wires are then coiled for customer use
- Fully automatic, padlockable primary shutters are provided with the breaker module

38 kV 150 kV BIL VT module

- VT module has been fully tested in accordance with IEEE C37.20.2
- VT modules and VT carriages are available in one, two, and three VT L-L and L-G ground configurations
- VT module and carriage is designed to accommodate single or dual secondary VTs
- VT carriage does not include the VT or fuse but is designed to accommodate them
- The VT fuse assembly automatically grounds when in the Disconnect position

38 kV tilt-out fuse unit

- Tilt-out fuse unit has been fully tested in accordance with IEEE C37.20.2
- Tilt-out fuse units are available in one-, two-, and three-fuse configurations
- Tilt-out fuse unit can be ordered to accept either 3.15A or 50 kA fuses. Note that the fuses are not supplied and must be ordered by OEM
- The fuse assembly automatically grounds when in the Disconnect position
- Tilt-out fuse unit is provided with padlocking provision and mounting of a Type D Kirk® key lock

Order entry

Order entry will consist of a four-step process, outlined below.

- A. Select the proper VCP-Wind breaker.
- B. Select the proper Breaker Mini-Module Structure.
- C. Select the proper Auxiliary Power Modules.
- D. Select the proper Accessories.

Breaker ordering information

Specify:

1. Type of breaker.
2. Voltage, continuous ampere, and short-circuit current rating.
3. Control voltage and frequency.
4. Accessories.
5. Quantity of breakers.
6. Enter by description on Vista using suffix **Y3**.

A. Select the Proper Breaker

Select breaker catalog/style number from price list.

B. Select the Proper Breaker Mini-Module Style Number

To select the proper breaker mini-module for your application, first determine the continuous current for your breaker and then select the appropriate breaker mini-module. Order the breaker mini-module by style number from **Page 7** on Vista order entry, using suffix **Y3**.

C. Auxiliary Power Modules

1. VT Modules and VT carriage

- a. To select the proper VT modules and VT carriages, first determine the structural configurations required, then determine the electrical connection and quantity of VT(s) that are required. Select the Proper VT module and VT carriage required.

Note: Provisions are provided only for VT(s) and primary fuses.

- b. Select and order the VT module and VT carriage by style number from the choices given on **Page 7**.

2. Tilt-Out Fuse Unit

- a. To select the proper tilt-out fuse unit, first determine the structural configurations required, then determine the electrical connection and quantity of fuses that are required. Select the proper tilt-out fuse unit required.
- b. Select and order the tilt-out fuse unit by style number from the choices given on **Page 7**.

D. Select the Proper Accessories

38 kV VCP-wind accessories

- Main bus supports
- Bus boots

Note: Epoxy main bus supports and bus boots style numbers can be found on **Page 8**.

Note: The "TOC" (truck-operated cell) is supplied as part of the breaker carriage. This switch indicates when the breaker is in the Connected or the Disconnected position.

A set of standard accessories includes:

- Spin-free levering-in crank
- Manual charging handle

These accessories can be ordered according to their style numbers as shown on **Page 9**.

Optional accessories include:

- Test jumper
- Breaker lifting yoke
- Test cabinet
- Electric levering-in crank

These accessories should be ordered by their style numbers as shown on **Page 9**.

All accessories should be entered by style number on Vista order entry, using suffix **Y3**.

38 kV VCP-Wind circuit breaker outlines

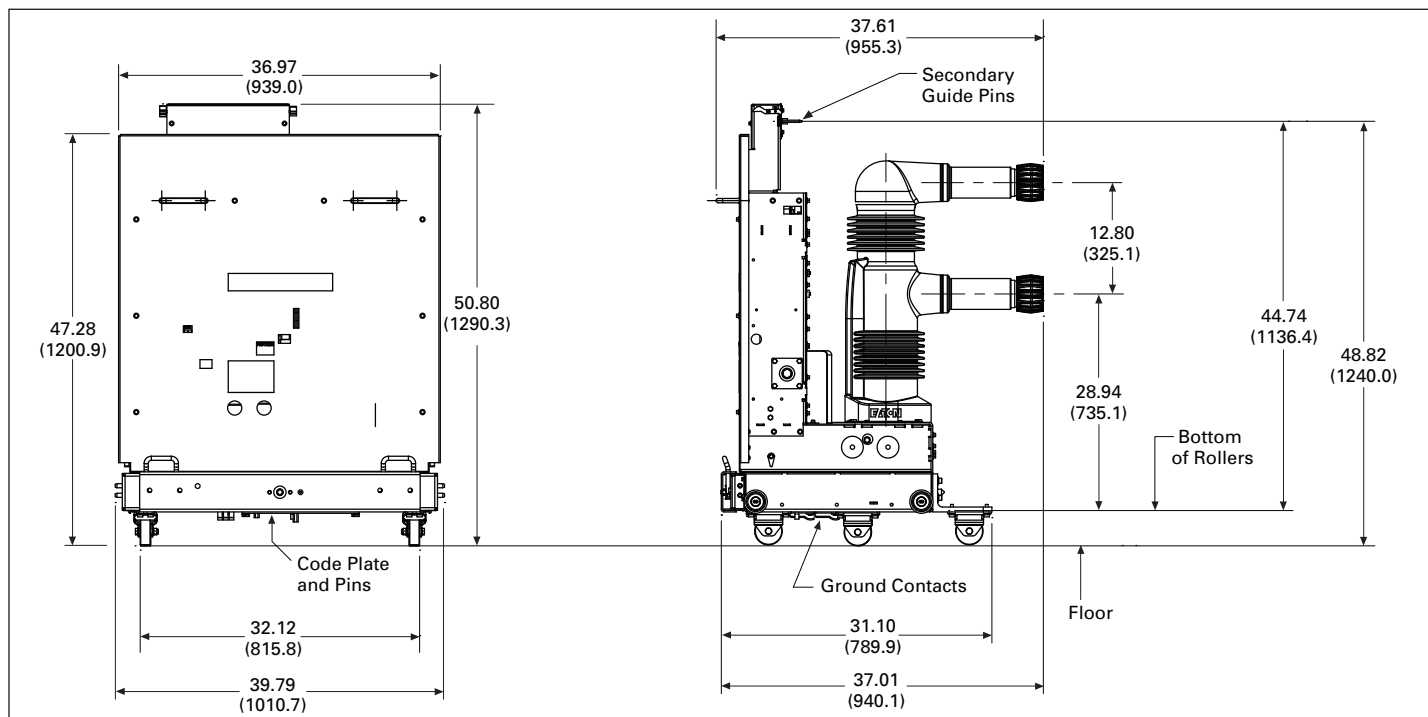


Figure 1. 38 kV VCP-Wind Circuit Breaker

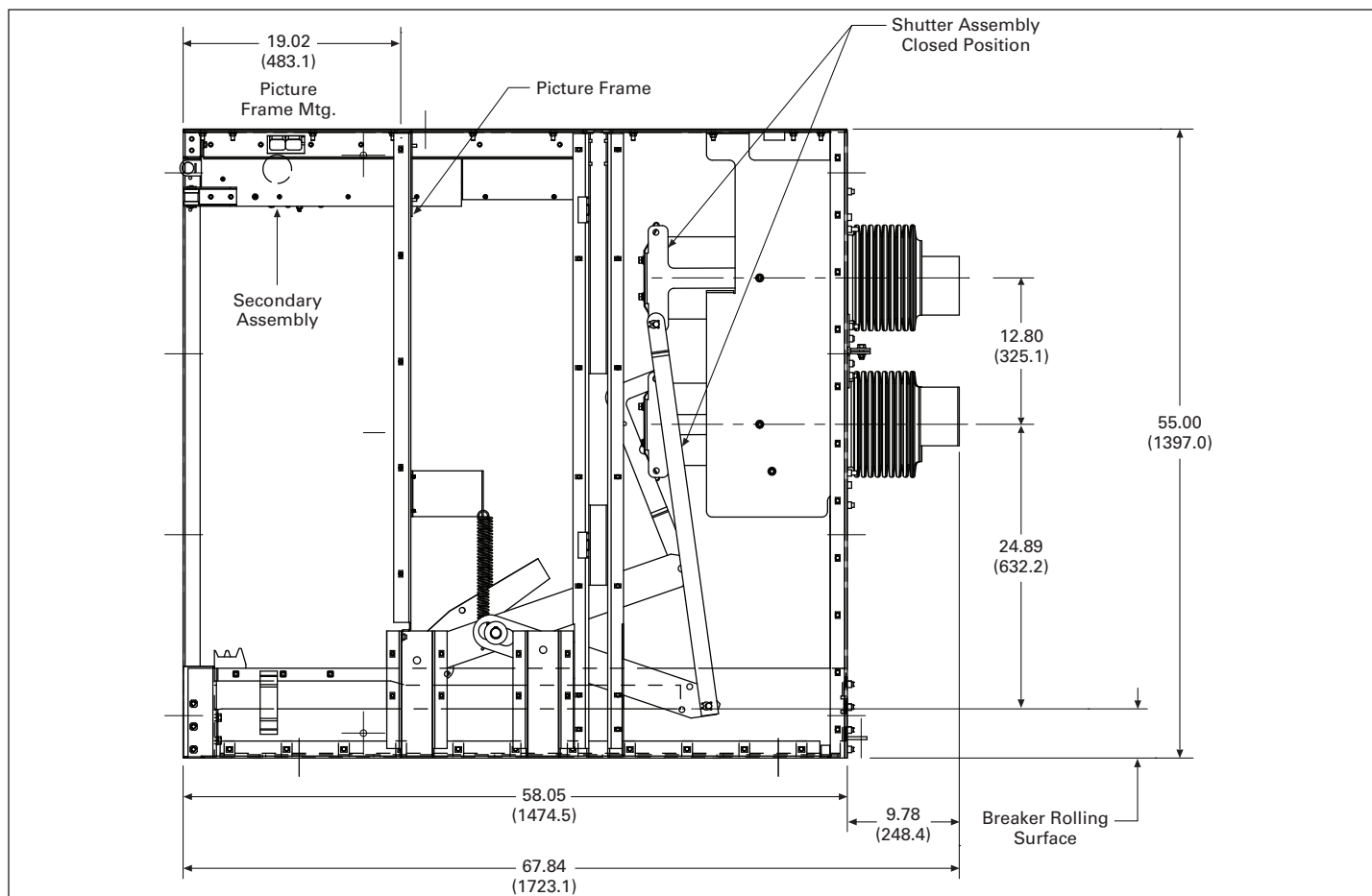


Figure 2. 38 kV VCP-Wind Breaker Mini-Module

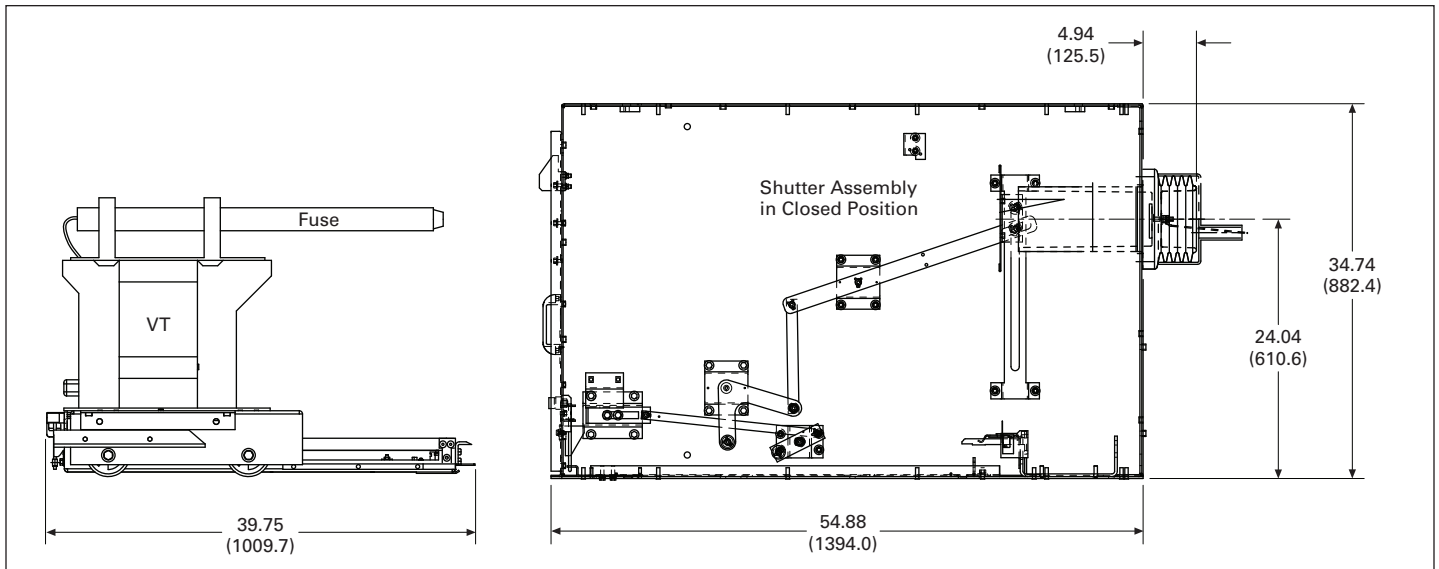


Figure 3. 38 kV VT Module and VT Carriage Assembly

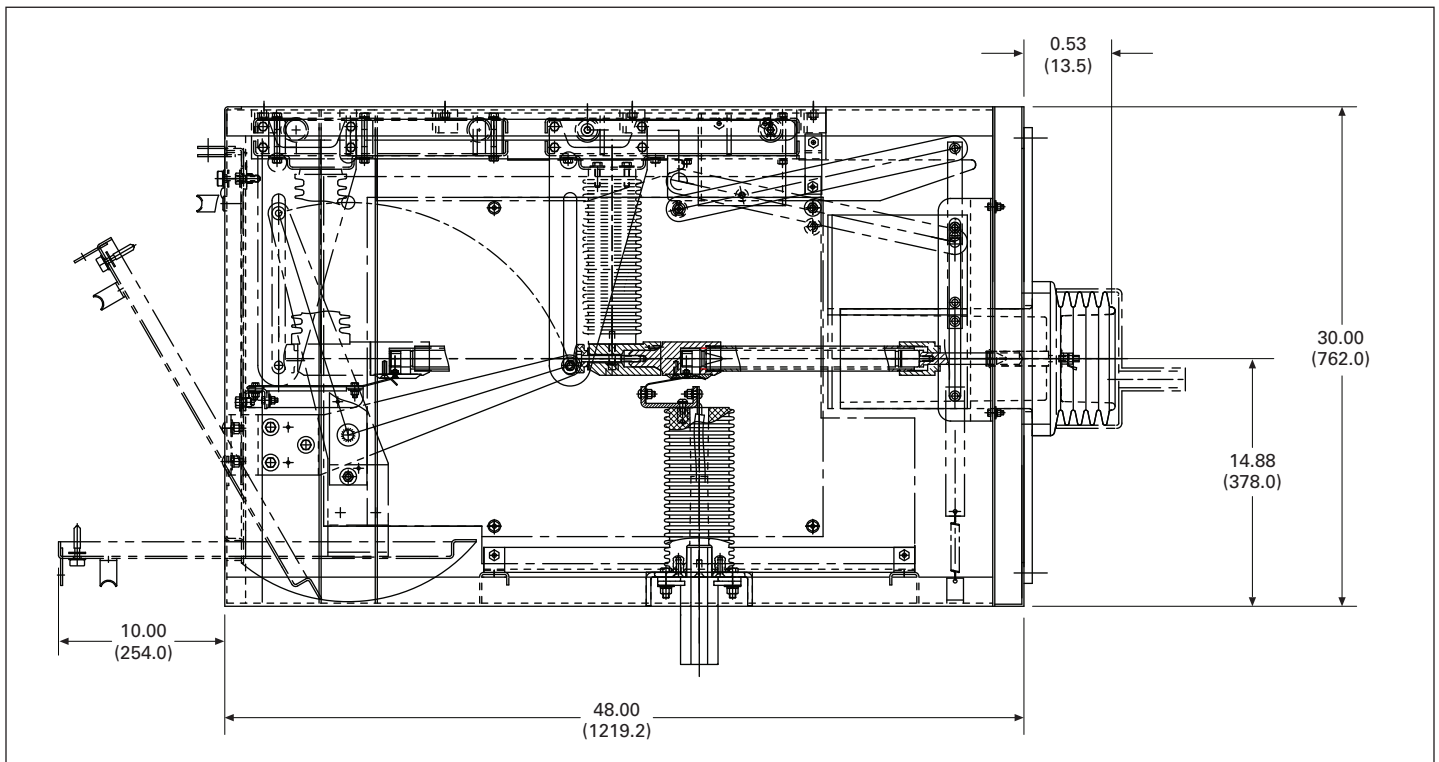


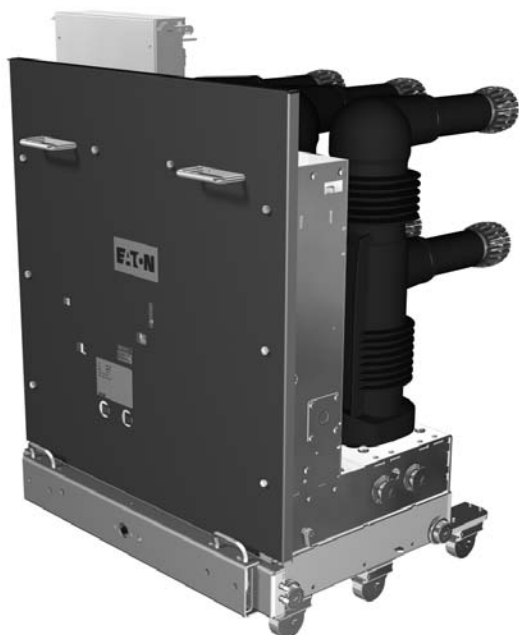
Figure 4. 38 kV Tilt-Out Fuse Unit Assembly

Product selection

Table 1. ANSI Type VCP-Wind Circuit Breaker 38 kV (Five-Cycle)—Removable Element Only

Circuit Breaker Type ①	Rated Values			Short-Circuit Current		BIL (Impulse) Withstand kV Peak	List Price U.S. \$
	Continuous Current Amperes	Maximum Voltage kV	Voltage Range K-Factor	Interrupting kA rms	Closed and Latch kA Peak		
380VCP-Wind16	600	38	1.0	16	42	150	25,538.00
	1200	38	1.0	16	42	150	25,971.00
	1600	38	1.0	16	42	150	27,096.00
	2000	38	1.0	16	42	150	29,122.00
380VCP-Wind25	600	38	1.0	25	65	150	27,702.00
	1200	38	1.0	25	65	150	28,706.00
	1600	38	1.0	25	65	150	29,434.00
	2000	38	1.0	25	65	150	31,408.00
380VCP-Wind32	600	38	1.0	31.5	82	150	28,567.00
	1200	38	1.0	31.5	82	150	29,693.00
	1600	38	1.0	31.5	82	150	31,165.00
	2000	38	1.0	31.5	82	150	32,186.00

① Three-cycle breaker ratings are also available.



38 kV Type VCP-Wind Medium Voltage Vacuum Circuit Breaker

Table 2. Breaker Control Voltage

Close Coil and Motor	Trip Coil
48 Vdc	48 Vdc
125 Vdc	125 Vdc
250 Vdc	250 Vdc
120 Vac	48 Vdc
240 Vac	48 Vdc
120 Vac	CAP 120 Vac ①
240 Vac	CAP 240 Vac ①

① Provisions for capacitor trip only

Table 3. Breaker Accessory Options

Description	List Price U.S. \$
Capacitor trip device 120 Vac	464.00
Capacitor trip device 240 Vac	464.00
Undervoltage release (48 Vdc, 125 Vdc, 250 Vdc, 120 Vac, 240 Vac)	1,389.00
Second shunt trip	463.00
Three-cycle rating	1,376.00

Table 4. 38 kV VCP-Wind Mini-Modules ①



Description	Style Number	List Price U.S. \$
600/1200/2000A breaker mini-module	72C2506G01	26,630.00

① This module is not supplied with rear-mounted spout boots. See **Table 10** for available spout boots.

Table 5. 38 kV VT Modules ①②

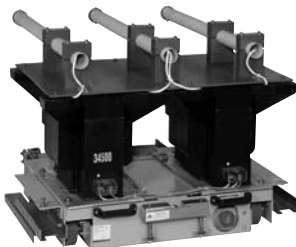


Description	Style Number	List Price U.S. \$
VT modules two VT (L to L) or three VT (L to G)	1C19574G02	14,224.00
VT modules two VT (L to G) or one VT (L to L)	1C19574G03	14,224.00
VT modules one VT (L to G)	1C19574G04	8,887.00
Blank module assembly	1C19574G05	1,370.00

① VT carriage to be ordered separately.

② These VT modules are not supplied with the rear-mounted spout boots. See **Table 10** for available spout boots.

Table 6. 38 kV VT Carriages ①



Description	Style Number	List Price U.S. \$
VT carriage assembly one VT (L to G)	1C19575G01	6,879.00
VT carriage assembly two VT (L to G)	1C19575G02	8,604.00
VT carriage assembly three VT (L to G)	1C19575G03	10,314.00
VT carriage assembly two VT (L to L)	1C19575G04	10,160.00
VT carriage assembly one VT (L to L)	1C19575G05	8,377.00

① VTs are not included with the VT carriage assembly.

Table 7. 38 kV Primary Fuse Drawer Modules and Tilt-Out Units ①②



Description	Style Number	List Price U.S. \$
One-fuse tilt-out unit 31.5 kA (located phase B)	70A2570G01	18,088.00
Two-fuse tilt-out unit 31.5 kA (located phase A and C)	70A2570G02	20,292.00
Three-fuse tilt-out unit 31.5 kA (located phase A, B, and C)	70A2570G03	25,337.00
One-fuse tilt-out unit 50 kA (located phase B)	70A2570G04	19,041.00
Two-fuse tilt-out unit 50 kA (located phase A and C)	70A2570G05	20,981.00
Three-fuse tilt-out unit 50 kA (located phase A, B, and C)	70A2570G06	26,670.00

① The tilt-out fuse units are not supplied with the rear-mounted spout boots. See **Table 10** for available spout boots.

② Primary fuses are not supplied with this tilt-out fuse unit. See OEM Handbook Dwg 72C2593 for dimensional information.

Table 8. 38 kV CT Bushing (Line Side 600V Class Current Sensing Provision)

Description	Style Number	List Price U.S. \$
600/1200A for Phase A or C	1C95250G12	3,821.00
600/1200A for Phase B	1C95251G12	3,242.00
1600A for Phase A or C	1C95250G13	3,821.00
1600A for Phase B	1C95251G13	3,242.00
2000A for Phase A	1C95253G11	3,937.00
2000A for Phase B	1C95254G11	3,358.00
2000A for Phase C	1C95255G11	3,937.00

Table 9. 38 kV Main Bus Support (150/170 kV BIL)

Description	Style Number	List Price U.S. \$
600/1200A main bus support with snubbers 1 x ¼ x 4	1C95091G03	1,737.00
1600A main bus support with snubbers 1 x ½ x 4	1C95091G02	1,737.00
2000/2500/3000A main bus support with snubbers 2 x ¾ x 4	1C95091G01	1,853.00
2000/2500/3000A main bus support with snubbers 2 x ½ x 4	1C95091G04	1,853.00

Table 10. 38 kV Bus Boots (PVC)

Description	Style Number	List Price U.S. \$
Bus spout / riser boot phase A and B—150 kV BIL	67C7043G01	361.00
Bus spout / riser boot phase C—150 kV BIL	67C7043G03	406.00
Spout cable riser boot assembly—150 kV BIL	67C7043G02	384.00
"T" boot (4x4x4 inches) 600/1200/1600A	1C95090H01	105.00
"T" boot (4x4x4 inches) 2000A	1C95090H02	116.00
Fuse module spout boot	1C95095H01	135.00
Through boot (4x4 inches) 600/1200/1600A	1C95096H01	193.00
Through boot (4x4 inches) 2000A	1C95096H02	198.00
End cap 600/1200/1600A	1C95097H01	30.00
End cap 2000A	1C95097H02	36.00
Tilt-out fuse unit spout boot	72C2583H01	181.00

Table 11. VCP-Wind Accessories

Description	Style Number	List Price U.S. \$
Spin-free levering-in crank	8079A35G05	435.00
Spin-free levering-in crank (38 kV VCP-W VT carriage) ①	701B601G11	435.00
38 kV VCP-Wind breaker lifting yoke	72C2600G11	2,285.00
Manual charging handle	8064A02G11	117.00
Test jumper	72C2574G02	348.00
Test cabinet		
Any DC close and any trip	8346A28G71	725.00
AC or DC close and DC trip	8346A28G72	725.00
120 Vac close and capacitor trip	8346A28G73	725.00
240 Vac close and capacitor trip	8346A28G75	725.00
Breaker-mounted electric levering-in crank 120 Vac only	72C2565G01	2,287.00
Thru door electric levering-in crank 120 Vac only	1A30257G06	2,402.00
38 kV breaker portable lifter (1500 lb capacity)	72C2641G01	13,554.00
38 kV VCP-Wind breaker lifter pan ②	72C2641G02	5,571.00
38 kV VT lifter pan assembly ②	1C19086G02	6,153.00
38 kV VT portable lifter (800 lb)	1C19086H01	3,764.00

① This levering-in crank will be required for use with the 38 kV VT carriage.

② These lifter pans can be used with 38 kV breaker portable lifter (1500 lb capacity).

Table 12. Manual Ground and Test Devices

Description	Style Number	List Price U.S. \$
38 kV VCP-Wi SMG and TD 600/1200/1600A, 16–31.5 kA	70A2550G01	32,435.00

Note: SMG and TD lifting yoke 72C2660G01 is supplied with component.



Manual Charging Handle



Spin-Free Levering-In Crank



Breaker Lifting Yoke



38 kV VCP-Wi SMG and TD
(complete with lifting yoke)



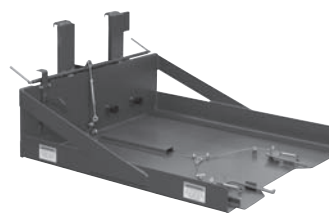
VT Portable Lifter



38 kV VT Lifter Pan Assembly



38 kV Breaker Portable Lifter
(1500 lb capacity)



38 kV VCP-Wind and VCP-HD
Breaker Lifter Pan

Technical data

Table 13. VCP-Wind Circuit Breaker Ratings

Voltage			Insulation Level			Current									
Nom. Voltage Class	Max. Voltage	Voltage Range Factor	V/K	Withstand Test			Short-Circuit Current								
				Power Freq. (1 Min.)	Lightning Impulse 1.2x50 μ s	Cont. Current at 60 Hz	Sym. Interrupting at V (Isc)	Min. Open Time	% DC Component (I _{dc})	Asym. Factor S (ref)	Asym. Interrupting (I _a)	Max. Sym. Interrupting at V/K (KxIsc)	Max. Asym. Interrupting at V/K (SxKxIsc)	Closing and Latching Capability	Short-Time Current
kV rms	kV rms	K	kV rms	kV rms	kV Peak	A rms	kA rms	ms	%		kA rms Total	kA rms	kA rms Total	kA Peak	kA rms
380 VCP-Wind 16															
38	38	1	38	80	150	600	16	36	39	1.14	18.3	16	18.3	42	16
38	38	1	38	80	150	1200	16	36	39	1.14	18.3	16	18.3	42	16
38	38	1	38	80	150	1600	16	36	39	1.14	18.3	16	18.3	42	16
38	38	1	38	80	150	2000	16	36	39	1.14	18.3	16	18.3	42	16
380 VCP-Wind 25															
38	38	1	38	80	150	600	25	36	39	1.14	28.6	25	28.6	65	25
38	38	1	38	80	150	1200	25	36	39	1.14	28.6	25	28.6	65	25
38	38	1	38	80	150	1600	25	36	39	1.14	28.6	25	28.6	65	25
38	38	1	38	80	150	2000	25	36	39	1.14	28.6	25	28.6	65	25
380 VCP-Wind 31.5															
38	38	1	38	80	150	600	31.5	36	39	1.14	36	31.5	36	82	31.5
38	38	1	38	80	150	1200	31.5	36	39	1.14	36	31.5	36	82	31.5
38	38	1	38	80	150	1600	31.5	36	39	1.14	36	31.5	36	82	31.5
38	38	1	38	80	150	2000	31.5	36	39	1.14	36	31.5	36	82	31.5

38 kV Type VCP-Wind medium
voltage vacuum circuit breakers,
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