



Pennsylvania Switchgear

HIGH VOLTAGE DEAD TANK CIRCUIT BREAKERS

PB123

PB145

PB170

PB 145

Family of Breakers

123kV - 170kV • 40kA

Superior Performance

The PB145 breaker family delivers superior performance with advanced spring and interrupter technology:

- Tested to L30 line fault duties for proper interruption at typical short-circuit levels
- First-pole-to-clear factor of 1.5 at 170kV for ungrounded and improved grounded system performance
- High asymmetry ratio of 33, nearly double the standard required ratio of 17
- 50kA short-time current test, 25% above standard, with no deformation or welding of contacts
- Certified for Definite Purpose For Fast Transient Recovery Rise Times per ANSI C37.06.1

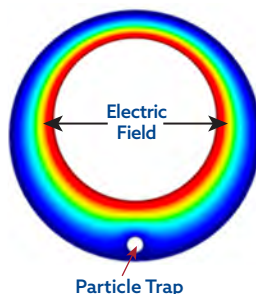
Ease of Maintenance

Maintenance is simplified with built-in lube fittings on all main bearings, hand-charging via a standard wrench, and auxiliary switches mounted directly on the mechanism—eliminating the need for special tools or linkage adjustments.

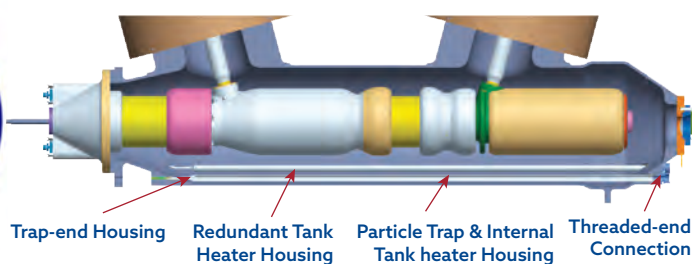
PB145 Breakers - Performance, Reliability, Simplicity

The PB145 Family of High-Voltage Dead-Tank Circuit Breakers (123-170kV) combines proven performance with easy maintenance and long-term reliability. With advanced insulation, efficient heating, and customizable options, they deliver dependable protection in even the toughest conditions.

Tank Cross Section



Integral Particle Trap/Tank Heater



Design Features

Integral Particle Trap: Improved dielectric performance is achieved through the patented particle trap design, integral to each interrupter's enclosure. The trap ensures that any particles or arc by-products generated during breaker operations are electrically shielded at the enclosure's lowest point.

Internal Tank Heater

Specialized Heater Element: Unlike conventional external heaters, Pennsylvania Switchgear heaters are installed inside the tank to directly heat the SF₆ gas. The heater element can be replaced within minutes without opening the tank or removing the SF₆ gas.



Pennsylvania Switchgear
A Division of Pennsylvania Transformer Technology, LLC
(724) 873-2100 • sales@paswitchgear.com
30 Curry Avenue, Canonsburg, PA 15317



paswitchgear.com

HIGH VOLTAGE DEAD TANK CIRCUIT BREAKERS

PERFORMANCE.
RELIABILITY. SIMPLICITY.

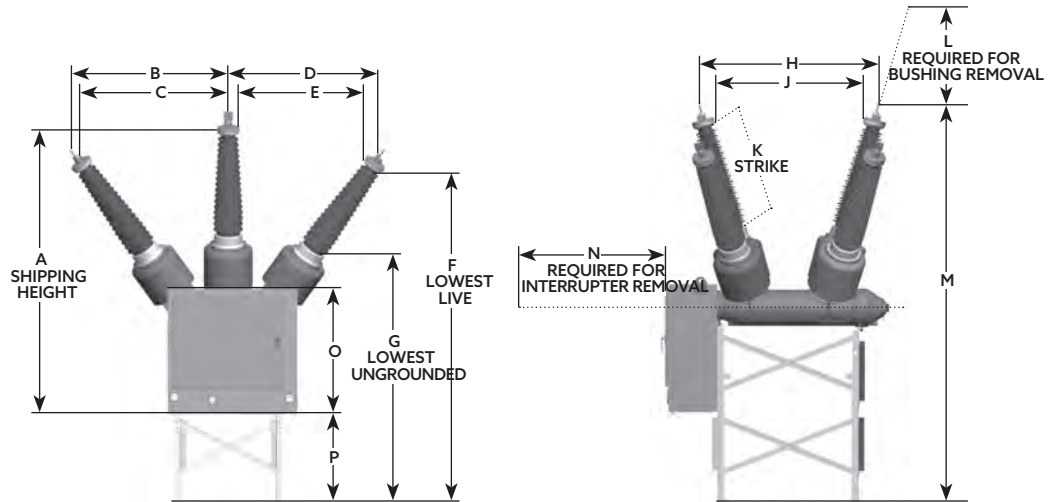
Standard Features

- Integral particle trap
- Composite insulators
- Galvanized support frame
- Powder-coated NEMA 3R control cabinet
- Stainless steel door handles
- Stainless steel SF₆ tubing
- Ganged SF₆ monitoring
- SAE hardware
- Fully assembled shipments

Optional Features

- Low-temperature performance to -55°C
- ASME Pressure Vessel Certification
- Internal tank heater
- Porcelain insulators
- Extra-high creep/high-altitude insulators
- High seismic performance
- Individually-phased SF₆ monitoring
- NEMA four-hole universal positioning terminals
- NEMA 4X mechanism/control cabinet
- Custom control package
- Extra auxiliary contacts
- Custom support structure
- Side-mounted position indicator for long-distance viewing

Inches	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
PB123-40	138	74	71	71	58	153	115	82	68	48	22	181	84	58	41
PB145-40	138	74	71	71	58	153	115	82	68	48	22	181	84	58	41
PB170-40	143	77	74	74	62	158	115	85	72	56	22	188	84	58	41



RATINGS	PB123-40	PB145-40	PB170-40
Standards	ANSI/IEEE	ANSI/IEEE	ANSI/IEEE
Maximum Voltage	123kV	145kV	170kV
BIL	550kV	650kV	750kV
Frequency	60Hz	60Hz	750kV
60Hz Withstand	260kV	310kV	365kV
Short-Circuit Current	40kA	40kA	40kA
Continuous Current	2kA/3kA/4kA	2kA/3kA/4kA	2kA/3kA/4kA
Interrupting Time	3 cycles	3 cycles	3 cycles
Duty Cycle	O-0.3s-CO-15s-CO	O-0.3s-CO-15s-CO	O-0.3s-CO-15s-CO
Temperature	-55°C to +50°C	-55°C to +50°C	-55°C to +50°C
Altitude above sea level	up to 3,300ft	up to 3,300ft	up to 3,300ft
Seismic (IEEE 693-2005)	High	High	High
Normal Operating Pressure	90psig@20°C	90psig@20°C	90psig@20°C
Minimum pressure to interrupt fault current	76psig@20°C	76psig@20°C	76psig@20°C
Minimum pressure to interrupt load current	76psig@20°C	76psig@20°C	76psig@20°C



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