Replacement Bushings

HUBBELL
Power Systems, Inc.

TWO PRIMARY REQUIREMENTS

Original Bushing Nameplate

- Manufacturer
- Catalog Number
- Serial Number
- Bushing Type
- Voltage Class
- BIL
- Current Rating

Replacement Bushing Application

- TBI Interchangeability
- Bushing Mounting Angle
- Seismic / Cantilever Capabilities
- Special Dimensional Requirements
- Overload Capabilities
- Contaminated Environments (Creepage)

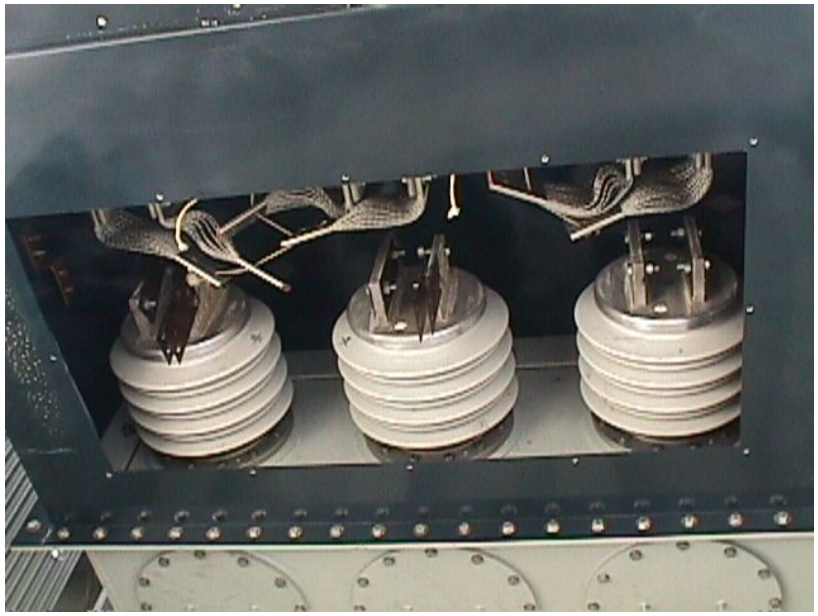
APPLICATION EXAMPLES

Breaker application with test terminals and rigid pipe connections

APPLICATION EXAMPLES

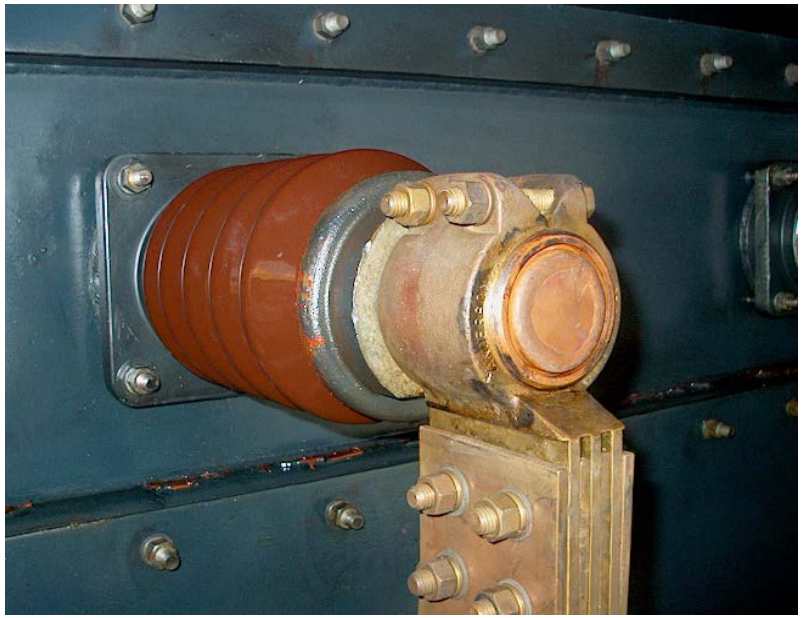
25kV-10,000A GSU

Bushings in an Enclosed Bus Duct



Horizontal Mount

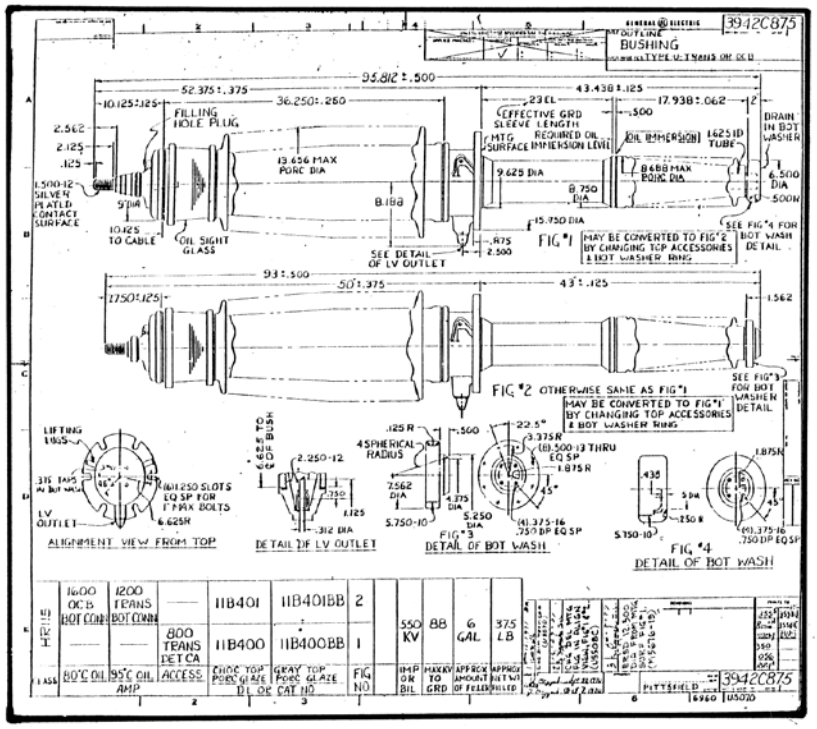
Solid Porcelain Bushing Application



BUSHING OUTLINE DRAWINGS

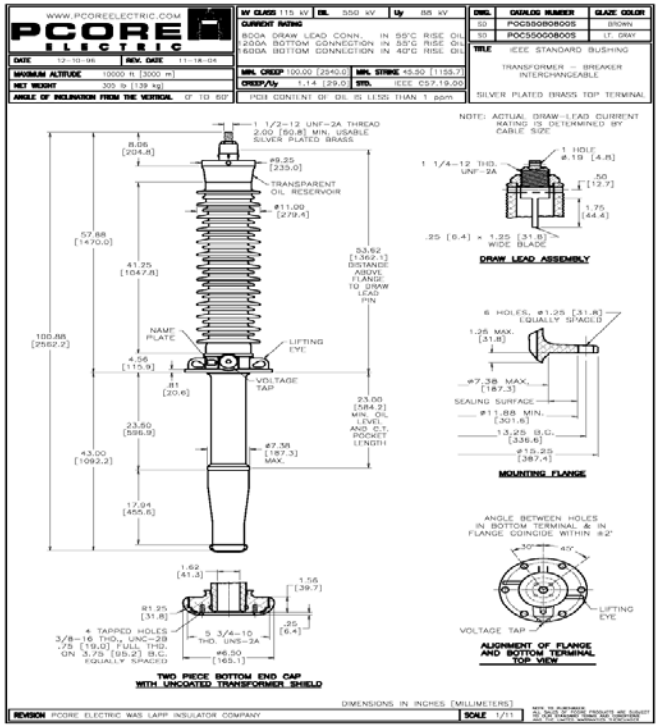
General Electric

115kV Bushing

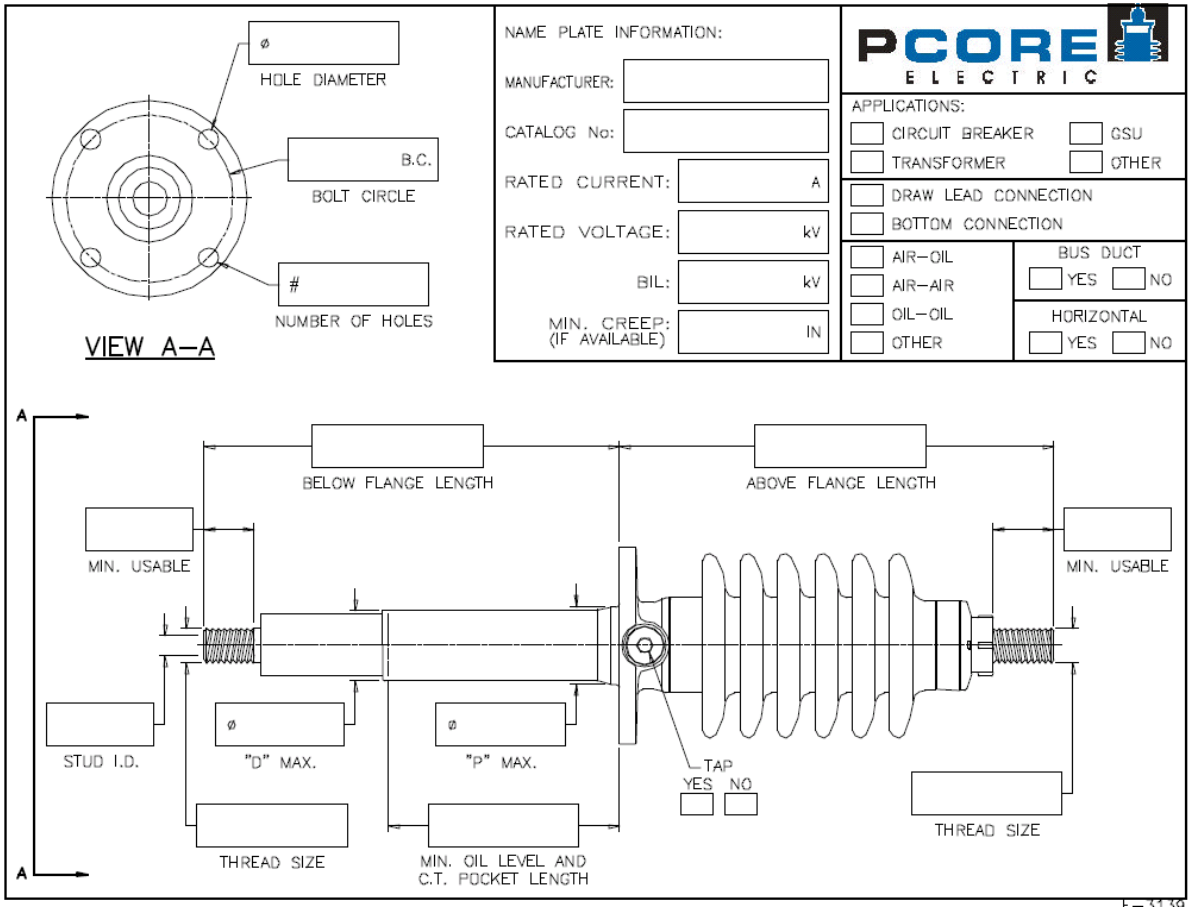


PCORE Electric

115kV Bushing



BUSHING OUTLINE DRAWING



BUSHING COMPARATIVE ANALYSIS

BUSHING
COMPARATIVE ANALYSIS

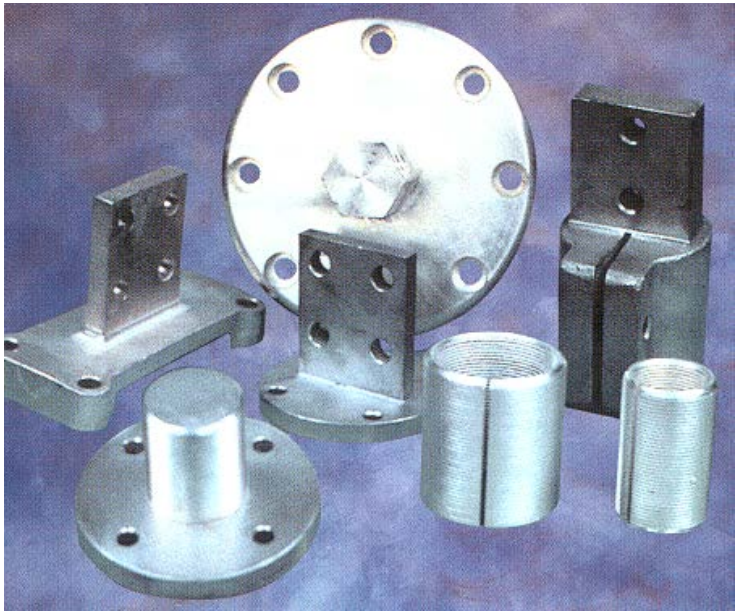
	General Electric 7B590BB	PCORE Electric Co. 89593-70
RATING:	69 kV 350 BIL 400/1200 AMP	69 kV 350 BIL 400/1200 AMP
CREEPAGE:	N/A	69.50
MIN. OIL LEVEL:	21.00	21.00
BELOW FLANGE:	37.50	37.50
ABOVE FLANGE:	35.19	36.88
MAX DIA. BELOW FLANGE:		
UP TO 1" – P:	5.75	4.50
BELOW 1" – D:	5.16	4.00
TOP TERMINAL:	1 1/2-12 Thread 2.25 Min. Usable Silver Plated	1 1/2-12 Thread 2.50 Min. Usable Silver Plated
FLANGE DETAIL BOLT CIRCLE: # HOLES / DIA.:	9.25 B.C. (6) .88 Dia. Slots	9.25 B.C. (6) .88 Dia. Holes
DRAW LEAD HOLE:	.88 I.D.	.88 I.D.
BOTTOM TERMINAL:	1 1/2-12 Thread 2.38 Min. Usable	1 1/2-12 Thread 2.12 Min. Usable

- Catalog Number
- kV Class
- Current Rating
- Creepage
- Minimum Oil Level
- C.T. Pocket Length
- Above Flange Length
- Below Flange Length
- Bushing Diameters
- Flange Detail
- Top Terminal
- Bottom Terminal

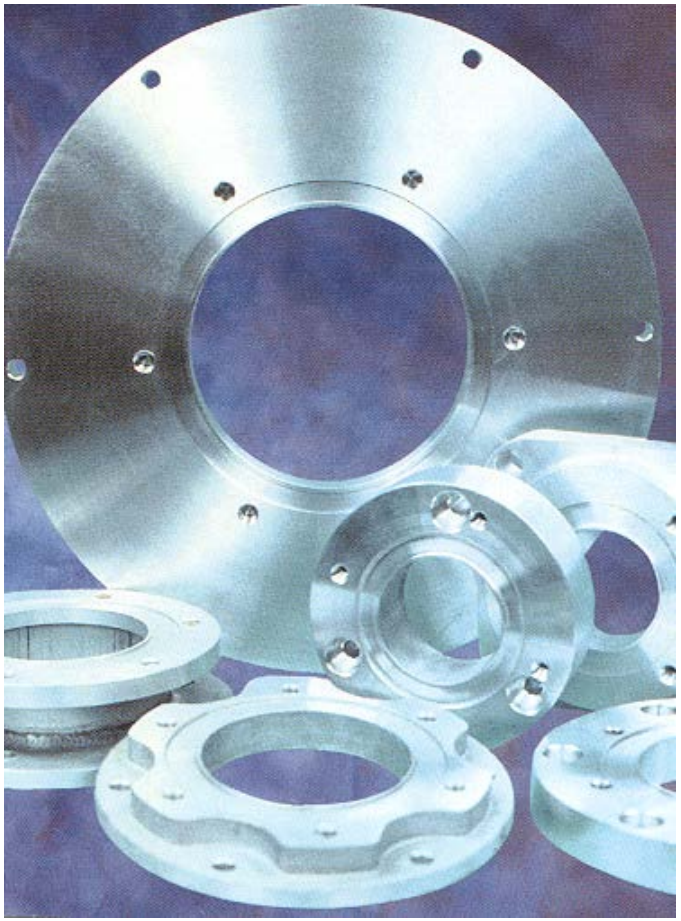
PCORE BUSHING REPLACEMENTS

PCORE Bushing Modification Capabilities

- Above Flange Length
- Below Flange Length
- Top and Bottom Terminals
- Minimum Oil Level Dimension
- Porcelain Creepage Requirements
- Mounting Flange Modifications



PCORE FLANGE ADAPTORS



- Difference in bolt circle and/or number of mounting holes
- Vertical adjustment of replacement bushings
- Raised ring on transformer / OCB tank opening

PCORE POC DRAW-LEAD ADAPTORS

May be supplied for use with 115kV bushings and above

- G.E. Type-U – (1 ¼”- 12 Thread)
- WH Type-O+C – (1”- 14 Thread)

CONCLUSION

Original Bushing Nameplate

- Contains important information about original manufacturer's bushing

Bushing Applications

- TBI, mounting angles, overload and ambient temperature extremes, etc.

Outline Drawings

- Original drawing compared to PCORE's to ensure PCORE bushing is an equivalent

Comparative Analysis

- Electrical and dimensional comparison between bushings

Modifications and Adaptors

- Flange adaptors and draw-lead terminal adaptors

Bushing Repair

- Types of bushing repair

Thank You!

Questions, comments, concerns?

Electro Composites™
solid HV bushings solution

PCORE ELECTRIC
THE POWER TO SERVE™