

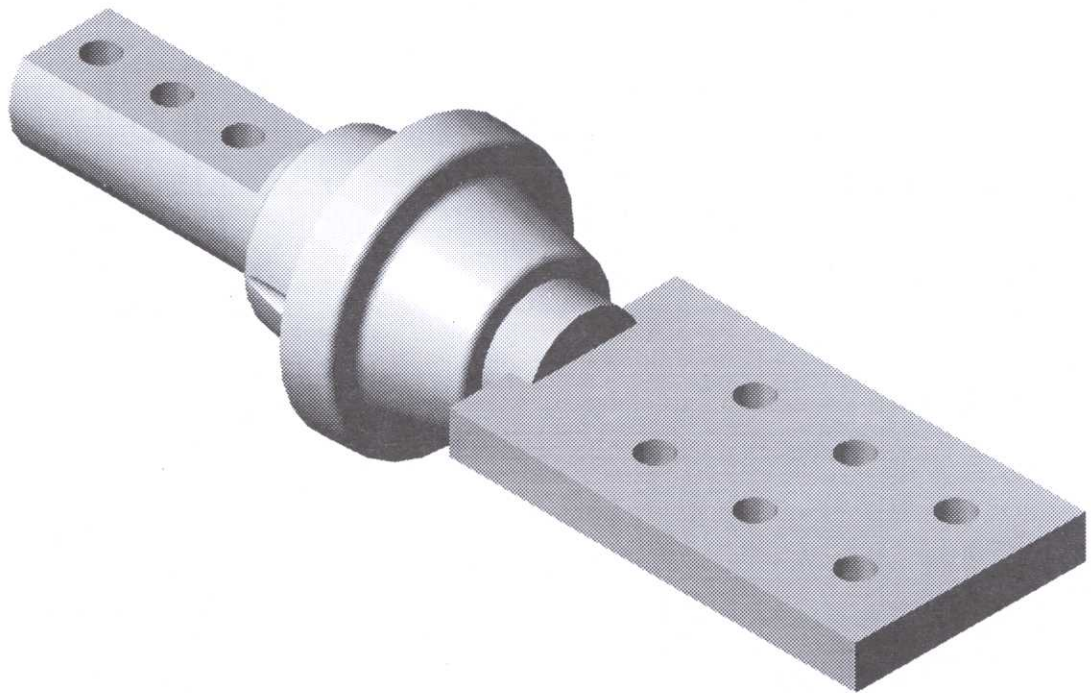
# 1003 SERIES

## TRANSFORMER MOUNTED SECONDARY LV BUSHINGS

1.2 kV, 30 kV BIL (AIR/OIL)

CONDUCTIVITY: 99.99%

CURRENT RATING: 3500 AMP (MAX.)



### USE:

1003 Series Transformer Mounted LV Bushings are designed for use as secondary bushings in liquid filled transformer applications. Units are available for both outdoor (UV exposed) and enclosed applications. The 1003 Series bushing is designed for use in ambient temperatures ranging from -50°C to 155°C. Current ratings are based on 65°C rise above ambient and are typical for sidewall mounting with shanks below oil level. Current carrying capacity is affected by mounting and termination methods.

### CONSTRUCTION:

1003 Series Secondary Bushings are constructed of C110 electrolytic grade copper with silver brazed connections for maximum conductivity. Insulation is Bis-A cast epoxy for enclosed applications. Outdoor units are supplied with Cycloaliphatic epoxy material. 1003 Series bushings are designed for external clamping applications.

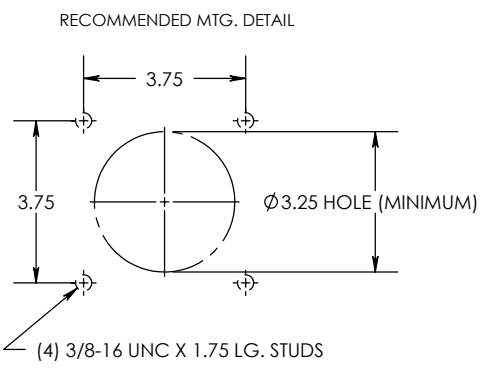
### CUSTOM OPTIONS:

1003 Series Secondary Bushings are easily customized for non-standard applications. Spade and stud options can be adapted to suit customer requirements for easy installation in existing equipment.

8 7 6 5 4 3 2 1

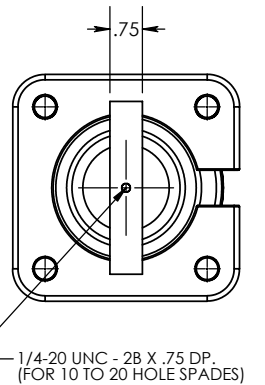
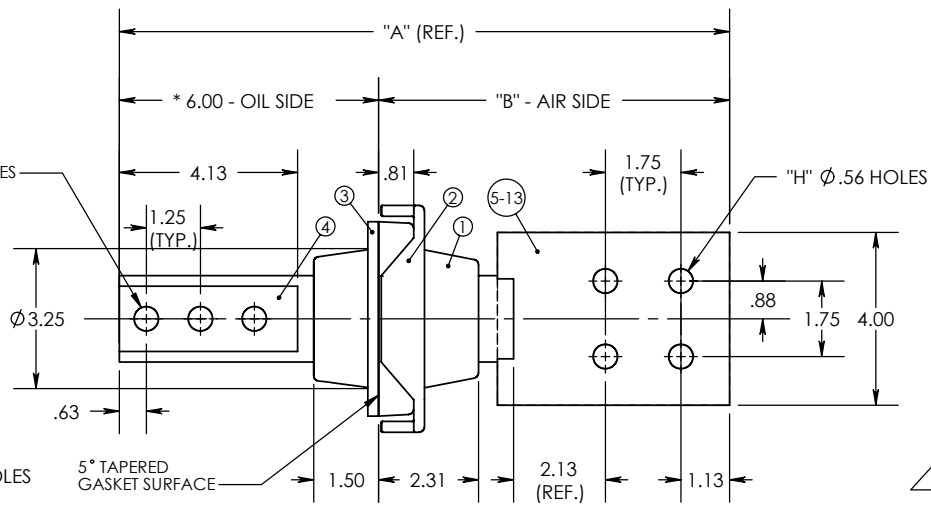
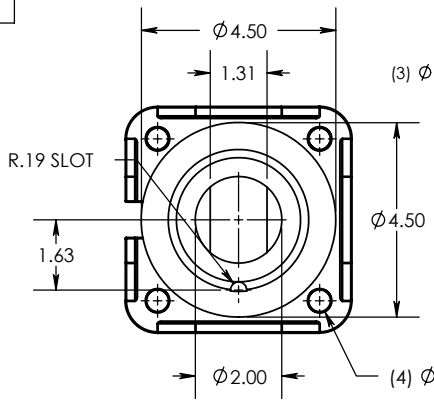
REV. 3  
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CAD FILE: 1000 SERIES  
 DWG. NO. 10-032-000



ITEM NO.	QTY.	PART NO.	DESCRIPTION	EPC PART NO.	DIM "A"	DIM "B"	"H"
1	1	10-032-0	BUSHING, EPOXY (BIS-A/CYCLO *)				
2	1	98-000-016	1/4" CLAMP, ALUMINUM				
3	1	645-110-032-0	1/4" GASKET, NITRILE 94-056 D68				
4	1	10-032-000 A01	STUD, 3-HOLE, COPPER				
5	1	10-032-000 A02	SPADE (EXT) 4-HOLE, COPPER	10-032-000 3A E01T	14.13	8.13	4
6	1	10-032-001 A02	SPADE (EXT) 6-HOLE, COPPER	10-032-001 3A E01T	15.88	9.88	6
7	1	10-032-002 A02	SPADE (EXT) 8-HOLE, COPPER	10-032-002 3A E01T	17.63	11.63	8
8	1	10-032-003 A02	SPADE (EXT) 10-HOLE, COPPER	10-032-003 3A E01T	19.38	13.38	10
9	1	10-032-004 A02	SPADE (EXT) 12-HOLE, COPPER	10-032-004 3A E01T	21.13	15.13	12
10	1	10-032-005 A02	SPADE (EXT) 14-HOLE, COPPER	10-032-005 3A E01T	22.88	16.88	14
11	1	10-032-006 A02	SPADE (EXT) 16-HOLE, COPPER	10-032-006 3A E01T	24.63	18.63	16
12	1	10-032-007 A02	SPADE (EXT) 18-HOLE, COPPER	10-032-007 3A E01T	26.38	20.38	18
13	1	10-032-008 A02	SPADE (EXT) 20-HOLE, COPPER	10-032-008 3A E01T	28.13	22.13	20

\* REPLACE "E01" IN EPC P/N WITH "E07" FOR CYCLOALIPHATIC EPOXY \*



NOTES:  
 1. ALL UNSPECIFIED RADII TO BE R0.125  
 2. ALL CONTACT SURFACES TO BE CLEAN & FREE FROM FLASH  
 3. RATINGS BASED ON SIDE MOUNTED BUSHINGS WITH OIL IMMERSED SHANK AND SUITABLE TERMINATION AND LEAD CONNECTIONS

MATERIAL:  
 1. E01 - BISPHENOL-A EPOXY, GREY (UV SHIELDED)  
 2. E07 - CYCLOALIPHATIC, GREY (UV EXPOSED)  
 3. HD ETP C11000 COPPER (CONDUCTOR), TIN PLATED  
 4. 356.1 CAST ALUMINUM (CLAMP)

SPECIFICATIONS:  
 1. BASIC IMPULSE LEVEL ..... 30kV  
 2. CURRENT RATING ..... 3500A  
 3. TEMPERATURE CLASSIFICATION ..... -50°C TO 110°C

REVISIONS	0	1	2	3
ADDED MOUNTING DETAIL				
DB 31/08/2000				
REFORMATTED DWG.				
RM 20/11/2002				
DB 20/11/2002				
REPLACED 98-000-001				
C/NMP WITH 98-000-016				
RM 09/04/2003				
DB 09/04/2003				

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:  
 ONE PLACE MM ±0.50  
 TWO PLACE MM ±0.25  
 TWO PLACE DEC. ±0.020  
 THREE PLACE DEC. ±0.010  
 ANGLES 1°  
 TEMPERATURE ±5°C  
 VOLTAGE ±5%  
 AMPERAGE ±5%  
 RESISTANCE ±5%

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE.  
 APPROVALS DATE  
 DRAWN BY: DB 20/04/1999  
 CHECKED BY: RM 20/04/1999  
 ENGINEERING DB 20/04/1999



1.2kV / 3500A  
 SECONDARY BUSHING  
 (COPPER CONDUCTOR)

REF.

\* STATISTICAL DIMENSION  
 NO. OF SAMPLES [ 1 ]

TOOLING REF. T10-032-0  
 PRODUCT GROUP 1000 SERIES

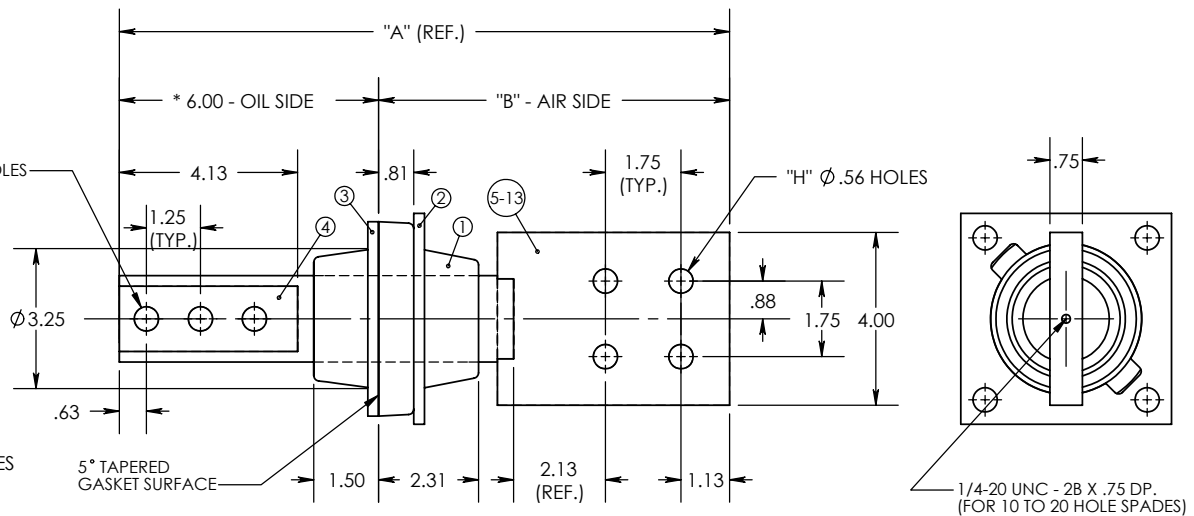
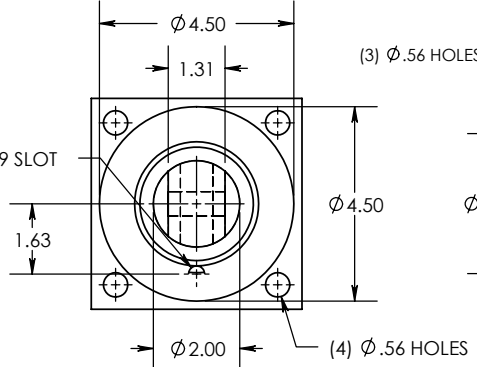
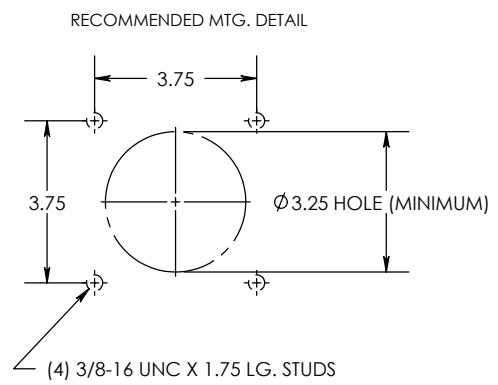
SIZE DWG. NO. 10-032-000 REV. 3  
 SCALE: 4 CAD FILE: 1000 SERIES SHEET 1 OF 1

8 7 6 5 4 3 2 1

8 7 6 5 4 3 2 1

REV. 2  
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CAD FILE: 1000 SERIES  
 DWG. NO. 10-032-000



ITEM NO.	QTY.	PART NO.	DESCRIPTION	EPC PART NO.	DIM "A"	DIM "B"	"H"
1	1	10-032-0	BUSHING, BIS-A EPOXY				
2	1	98-000-001	1/4" CLAMP, ALUMINUM				
3	1	645-110-032-0	1/4" GASKET, NITRILE 94-056 D68				
4	1	10-032-000 A01	STUD, 3-HOLE, COPPER				
5	1	10-032-000 A02	SPADE (EXT) 4-HOLE, COPPER	10-032-000 2A E01T	14.13	8.13	4
6	1	10-032-001 A02	SPADE (EXT) 6-HOLE, COPPER	10-032-001 2A E01T	15.88	9.88	6
7	1	10-032-002 A02	SPADE (EXT) 8-HOLE, COPPER	10-032-002 2A E01T	17.63	11.63	8
8	1	10-032-003 A02	SPADE (EXT) 10-HOLE, COPPER	10-032-003 2A E01T	19.38	13.38	10
9	1	10-032-004 A02	SPADE (EXT) 12-HOLE, COPPER	10-032-004 2A E01T	21.13	15.13	12
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12	1	10-032-007 A02	SPADE (EXT) 18-HOLE, COPPER	10-032-007 2A E01T	26.38	20.38	18
13	1	10-032-008 A02	SPADE (EXT) 20-HOLE, COPPER	10-032-008 2A E01T	28.13	22.13	20

- NOTES:
1. ALL UNSPECIFIED RADII TO BE R0.125
  2. ALL CONTACT SURFACES TO BE CLEAN & FREE FROM FLASH
  3. RATINGS BASED ON SIDE MOUNTED BUSHINGS WITH OIL IMMERSED SHANK AND SUITABLE TERMINATION AND LEAD CONNECTIONS

- MATERIAL:
1. E01 - BISPHENOL-A EPOXY, GREY
  2. HD ETP C11000 COPPER (CONDUCTOR), TIN PLATED
  3. 6061-T6 ALUMINUM (CLAMP)

- SPECIFICATIONS:
1. BASIC IMPULSE LEVEL ..... 30kV
  2. CURRENT RATING ..... 3500A
  3. TEMPERATURE CLASSIFICATION ..... -50°C TO 110°C

REVISIONS	0	1	2
ADDED MOUNTING DETAIL			
DB 31/08/2000			
REFORMATTED DWG.			
RM 20/11/2002			
DB 20/11/2002			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:

ONE PLACE MM  $\pm$ 0.50  
 TWO PLACE MM  $\pm$ 0.25  
 TWO PLACE DEC.  $\pm$ 0.20  
 THREE PLACE DEC.  $\pm$ 0.10  
 ANGLES 1°

TEMPERATURE  $\pm$ 5°C  
 VOLTAGE  $\pm$ 5%  
 AMPERAGE  $\pm$ 5%  
 RESISTANCE  $\pm$ 5%

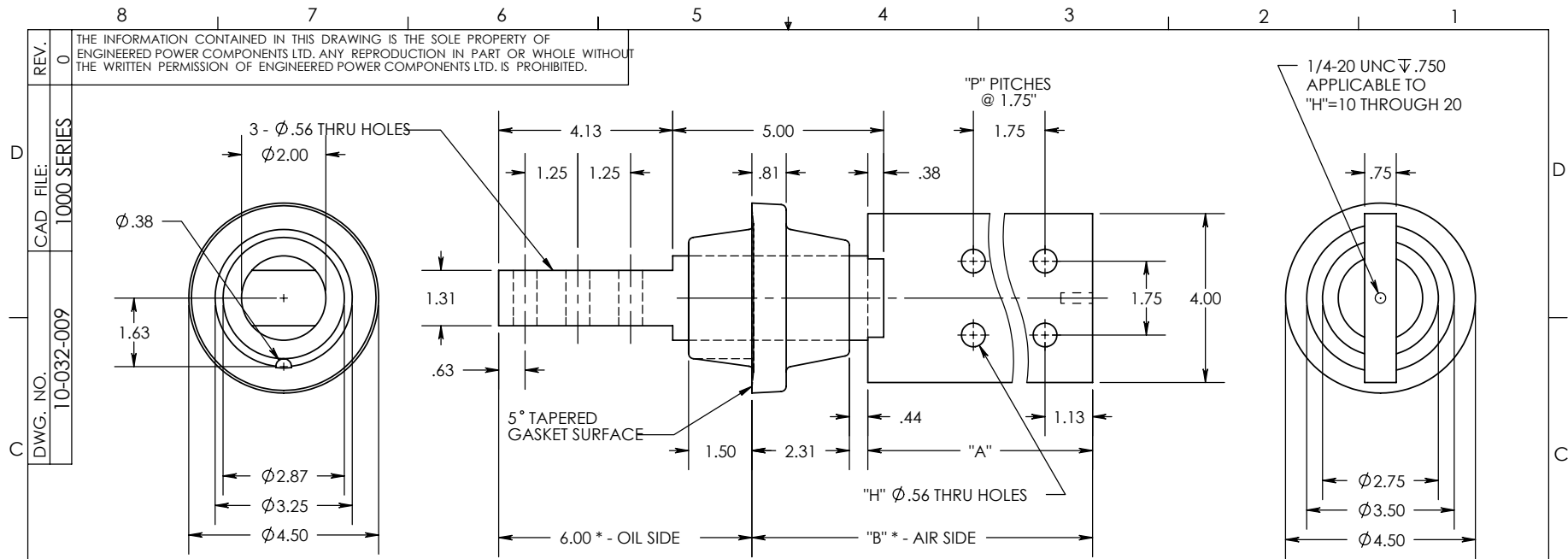
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APPROVALS	DATE
DRAWN BY: DB	20/04/1999
CHECKED BY: RM	20/04/1999
ENGINEERING: DB	20/04/1999



1.2kV / 3500A  
 SECONDARY BUSHING  
 (COPPER CONDUCTOR)

REF.		* STATISTICAL DIMENSION NO. OF SAMPLES [ 1 ]	TOOLING REF. T10-032-0	SIZE A	DWG. NO. 10-032-000	REV. 2
			PRODUCT GROUP 1000 SERIES	SCALE: 4	CAD FILE: 1000 SERIES	SHEET 1 OF 1



**PRODUCT SELECTION GUIDE**

TERMINAL STYLE (AIR SIDE)				PART NUMBERS	PLATING TYPES		
"A"	"B"	"H"	"P"		TIN	SILVER	NONE
5.38	8.13	4	1	10-032-009 0A E01	T	S	N
7.13	9.88	6	2	10-032-010 0A E01	T	S	N
8.88	11.63	8	3	10-032-011 0A E01	T	S	N
10.63	13.38	10	4	10-032-012 0A E01	T	S	N
12.38	15.13	12	5	10-032-013 0A E01	T	S	N
14.13	16.88	14	6	10-032-014 0A E01	T	S	N
15.88	18.63	16	7	10-032-015 0A E01	T	S	N
17.63	20.38	18	8	10-032-016 0A E01	T	S	N
19.38	22.13	20	9	10-032-017 0A E01	T	S	N

**NOTES:**

1. ALL UNSPECIFIED RADII TO BE R0.125
2. ALL CONTACT SURFACES TO BE CLEAN & FREE FROM FLASH

**MATERIAL:**

1. E01 - BISPENOL-A EPOXY, GREY
2. C110 GRADE COPPER

**SPECIFICATIONS:**

1. BASIC IMPULSE LEVEL ..... 30KV
2. MAXIMUM CURRENT RATING..... 3500 AMPS
3. TEMPERATURE CLASSIFICATION..... -50°C TO 155 °C

A	REVISIONS	0
	REF.	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:

ONE PLACE MM  $\pm$ 0.50  
TWO PLACE MM  $\pm$ 0.25  
TWO PLACE DEC.  $\pm$ 0.020  
THREE PLACE DEC.  $\pm$ 0.010  
ANGLES 1°

TEMPERATURE  $\pm$ 5°C  
VOLTAGE  $\pm$ 5%  
AMPERAGE  $\pm$ 5%  
RESISTANCE  $\pm$ 5%

\* STATISTICAL DIMENSION  
NO. OF SAMPLES [ 2 ]

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE.

APPROVALS	DATE
DRAWN BY: DB	05/25/19
CHECKED BY:	
ENGINEERING	

TOOLING REF. T10-032

PRODUCT GROUP 1003 SERIES

ENGINEERED POWER COMPONENTS

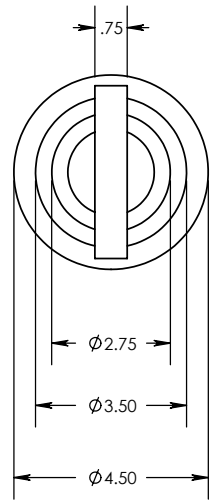
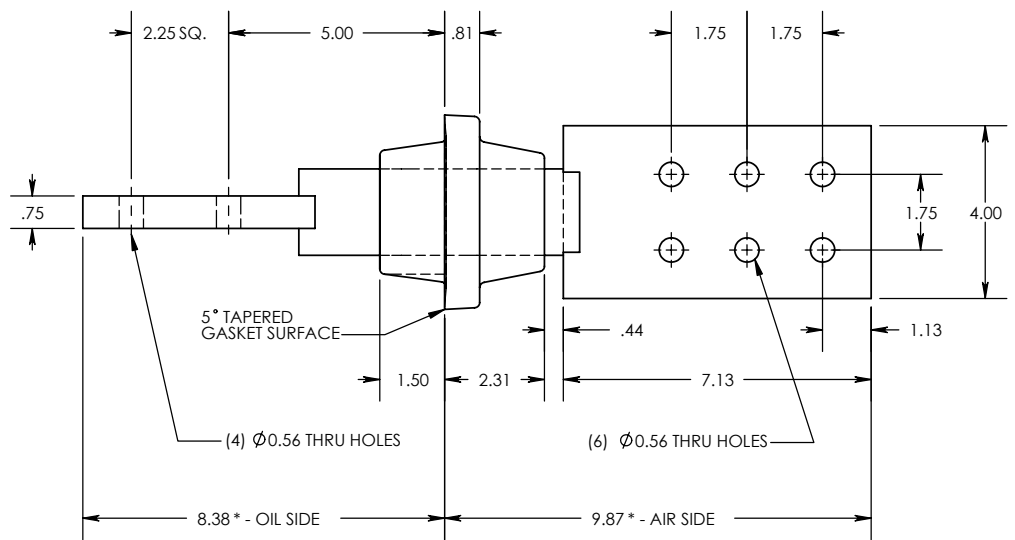
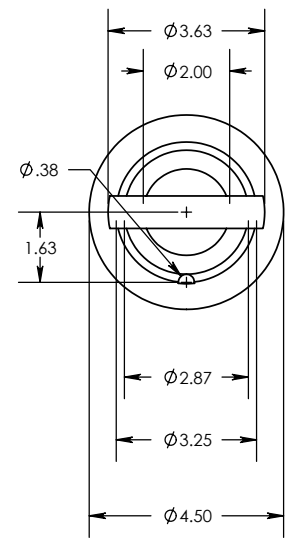
1003 SERIES - 1.2kV  
LV BUSHING  
3500 AMP (MAX.)

SIZE A	DWG. NO. 10-032-009	REV. 0
SCALE: 3.9	CAD FILE: 1000 SERIES	SHEET 1 OF 1

8 7 6 5 4 3 2 1

REV. 0  
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DWG. NO. 10-032-019  
 CAD FILE: 1000 SERIES



NOTES:  
 1. RECOMMENDED OPENING Ø3.75 (MIN.)  
 2. ALL UNSPECIFIED RADII TO BE R0.125  
 3. ALL CONTACT SURFACES TO BE CLEAN & FREE FROM FLASH

MATERIAL:  
 1. E01 - BISPHENOL-A EPOXY, GREY  
 2. C110 GRADE COPPER

SPECIFICATIONS:  
 1. BASIC IMPULSE LEVEL ..... 30KV  
 2. MAXIMUM CURRENT RATING..... 3500 AMPS  
 3. TEMPERATURE CLASSIFICATION..... -50°C TO 155°C

REVISIONS	0
REF.	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:  
 ONE PLACE MM ±0.50  
 TWO PLACE MM ±0.25  
 TWO PLACE DEC. ±0.020  
 THREE PLACE DEC. ±0.010  
 ANGLES 1°  
 TEMPERATURE ±5°C  
 VOLTAGE ±5%  
 AMPERAGE ±5%  
 RESISTANCE ±5%

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE.  
 APPROVALS DATE  
 DRAWN BY: DB 04/20/19  
 CHECKED BY:  
 ENGINEERING



1003 SERIES - 1.2 kV  
 LV BUSHING  
 3500 AMP (MAX.)

\* STATISTICAL DIMENSION  
 NO. OF SAMPLES [ 2 ]

TOOLING REF. T10-032  
 PRODUCT GROUP 1003 SERIES

SIZE A DWG. NO. 10-032-019 REV. 0  
 SCALE: 4 CAD FILE: 1000 SERIES SHEET 1 OF 1

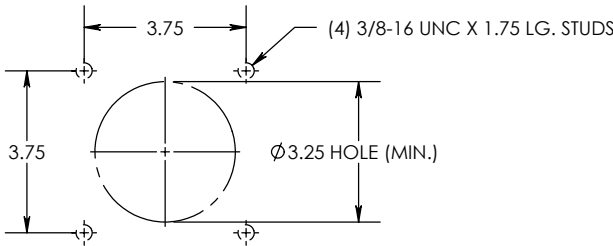
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8 7 6 5 4 3 2 1

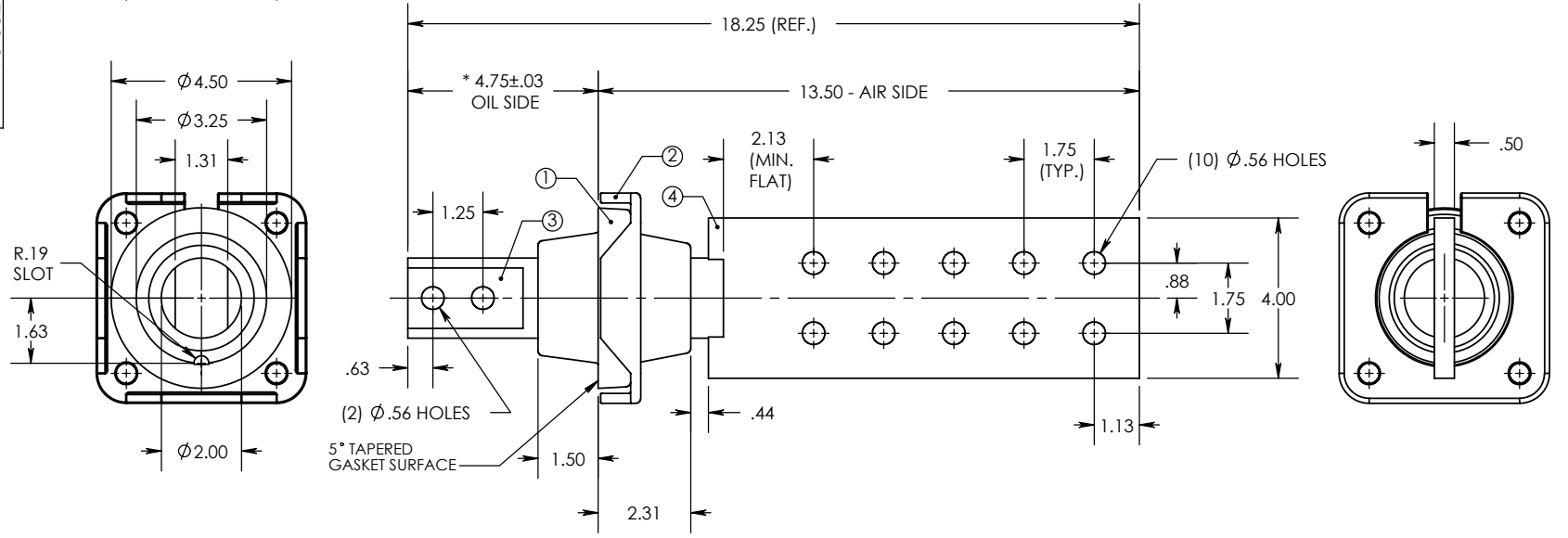
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ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	10-032-0	BUSHING, EPOXY
2	1	98-000-016	CLAMP, ALUMINUM
3	1	10-032-020 A01	STUD, 2-HOLE, COPPER
4	1	10-032-020 A02	SPADE (EXT) 10-HOLE, COPPER

RECOMMENDED MTG. DETAIL



D  
 CAD FILE: 1000 SERIES  
 C  
 DWG. NO. 10-032-020



NOTES:  
 1. ALL UNSPECIFIED RADII TO BE R0.125  
 2. ALL CONTACT SURFACES TO BE CLEAN & FREE FROM FLASH  
 3. RATINGS BASED ON SIDE MOUNTED BUSHINGS WITH OIL IMMERSERD SHANK AND SUITABLE TERMINATION AND LEAD CONNECTIONS

MATERIAL:  
 1. E01 - BISPHENOL-A EPOXY, GREY (UV SHIELDED)  
 2. HD ETP C11000 COPPER (CONDUCTOR), TIN PLATED  
 3. 356.1 CAST ALUMINUM (CLAMP)

SPECIFICATIONS:  
 1. BASIC IMPULSE LEVEL ..... 30kV  
 2. CURRENT RATING ..... 2500A  
 3. TEMPERATURE CLASIFICATION ..... -50°C TO 110°C

A  
 REVISIONS  
 REF.

REV.	DESCRIPTION
0	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:  
 ONE PLACE MM ±0.50  
 TWO PLACE MM ±0.25  
 TWO PLACE DEC. ±0.020  
 THREE PLACE DEC. ±0.010  
 ANGLES 1°  
 TEMPERATURE ±5°C  
 VOLTAGE ±5%  
 AMPERAGE ±5%  
 RESISTANCE ±5%

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE.	
APPROVALS	DATE
DRAWN BY: DB	09/04/2003
CHECKED BY: RM	10/04/2003
ENGINEERING	DB 10/04/2003
TOOLING REF.	T10-032-0
PRODUCT GROUP	1003 SERIES

1.2kV / 2500A  
 SECONDARY BUSHING  
 (COPPER CONDUCTOR)

SIZE A DWG. NO. 10-032-020 REV. 0  
 SCALE: 4 CAD FILE: 1000 SERIES SHEET 1 OF 1

8 7 6 5 4 3 2 1