

300 SERIES UNIFORM STRENGTH SWITCH & BUS INSULATORS

A30 STRENGTH CLASS

USE:

300 Series Uniform Strength Switch and Bus Insulators are available for outdoor and non UV exposed (enclosed) applications. 300 Series insulators are available for 5 kV through 46 kV voltage classes and are suitable for temperature applications from -50°C to 155°C. 300 Series insulators are used primarily as bus supports in switchgear applications, dry type transformers and other custom applications.

CONSTRUCTION:

300 Series Uniform Strength Switch and Bus Insulators are precision engineered to ANSI C29.1-1988 specifications using state of the art Finite Element Analysis (FEA) software.

300 Series insulators are of cast epoxy construction with metallic mounting inserts integrally cast into the unit. Through use of an integrally cast insert, the need for metallic end caps fixed with adhesives is eliminated. Adhesives tend to deteriorate over time causing future partial discharge concerns. This problem is most often associated with porcelain insulator designs. 300 Series insulators' conical design provides mechanical loading characteristics superior to most polymer insulator designs in the market today. Mounting configurations are NEMA standard and may comprise of up to 100 different variations. The deep shed design offers generous creep distances. The epoxy material is lightweight compared to porcelain, and is self extinguishing when exposed to continuous arcing or constant heating. Units at 95 kV BIL or greater, with more than two mounting inserts per end, are tied internally to prevent floating of inserts not used.



ELECTRICAL/MECHANICAL DATA

Identification No.	Dimensions		Strength Class (NEMA)	Creep Distance (in)	Electrical Ratings, kV			Mechanical Ratings		
	Dia. (in)	Height (in)			Highest System Voltage (kV)	Impulse Voltage (kV)	60 HZ Withstand 1 min (kV)	Cantilever (lbs)	Tension (lbs)	Compression (lbs)
03-001	5.00	4.50	A30	7.75	8.3	75	26	4500	5000	60000
03-002		6.00		11.25	15.0	95	36	3500		
03-003		7.50		14.75	20.0	110	50	2800		
03-004		8.75		17.75	25.0	125	60	2400		
03-005		10.50		21.75	38.0	150	80	2000		
03-006		11.00		22.25	38.0	150	80	1900		
03-007		12.75		27.00	38.0	170	80	1700		
03-008		14.00		29.00	48.3	200	100	1500		

Uniform Strength Switch & Bus Insulators are tested in accordance with ANSI C29.1-1988. Mechanical ratings, based on static loading applied in a practically stepless variation, are provided for design purposes and are considered safe for all insert configurations.

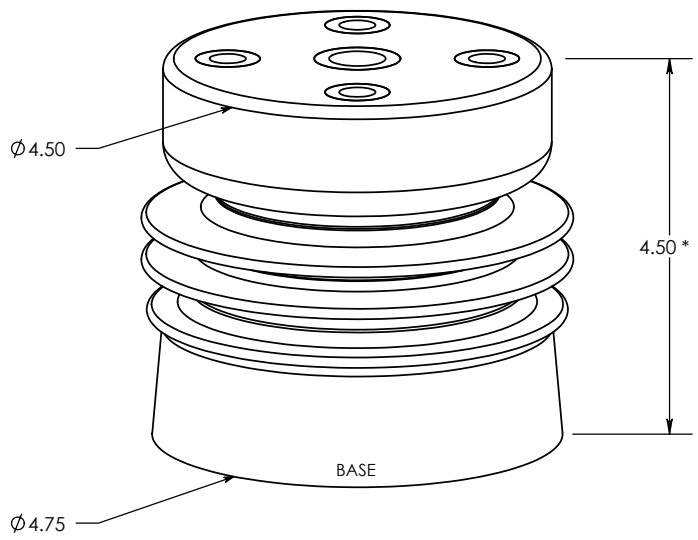
Actual values attainable will vary with each application and type of loading condition.

Impulse wave 1.2 x 50 µS.
Frequency 60 Hz.

8 7 6 5 4 3 2 1

REV. 1
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CAD FILE: 300 SERIES
 DWG. NO. 03-001-000

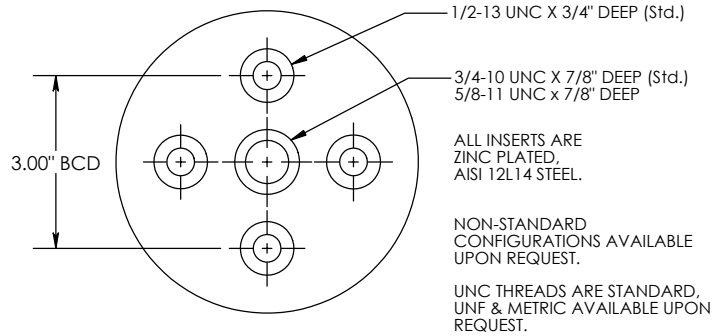


IDENTIFICATION NO. : 03-001

INSULATOR SHOWN WITH 5 INSERTS EACH END: PART NUMBER 03-001-028
 MATERIAL: E01 - BISPHENOL-A (GREY)
 E07 - CYCLOALIPHATIC
 FOR CUSTOM INSERT CONFIGURATIONS PLEASE CONTACT OUR SALES DEPT.

TOP							
BOTTOM							
	000	001	SEE 001	002	SEE 002	003	004
	005	006	007	008	009	010	011
	012	013	014	015	016	017	018
	019	020	SEE 020	021	SEE 021	022	023
	024	025	SEE 025	026	SEE 026	027	028

MOUNTING INSERT CONFIGURATIONS (NEMA STANDARD)
 TOP OR BOTTOM



FOR B.I.L. RATINGS 95KV AND HIGHER, ALL INSERT CONFIGURATIONS WITH 3 OR MORE INSERTS EITHER END, WILL BE INTERNALLY CONNECTED (COMMON), ALLOWING FOR SELECTIVE APPLICATIONS.

REVISIONS	0	1
		ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002
REF.		

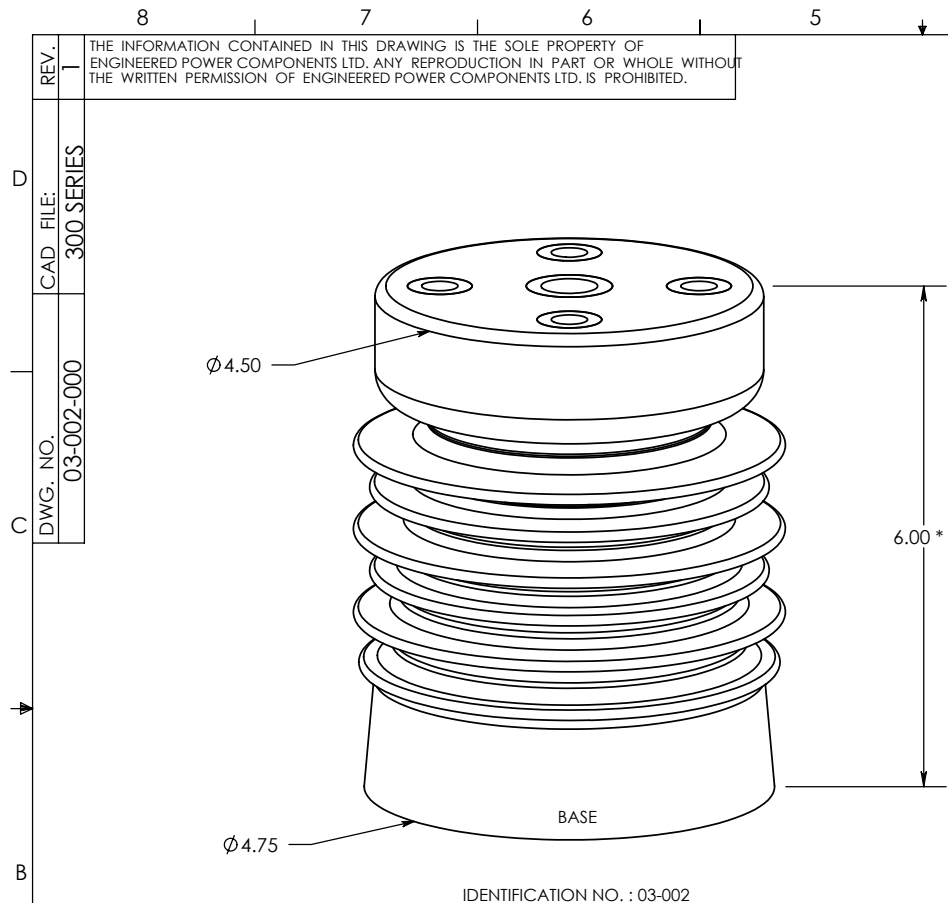
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
 ONE PLACE MM ±0.50
 TWO PLACE MM ±0.25
 TWO PLACE DEC. ±0.020
 THREE PLACE DEC. ±0.010
 ANGLES 1°
 TEMPERATURE ±5°C
 VOLTAGE ±5%
 AMPERAGE ±5%
 RESISTANCE ±5%

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE.	
APPROVALS	DATE
DRAWN BY: DB	02/06/1999
CHECKED BY: RM	05/06/1999
ENGINEERING DB	05/06/1999
TOOLING REF.	T03-001
PRODUCT GROUP	300 SERIES

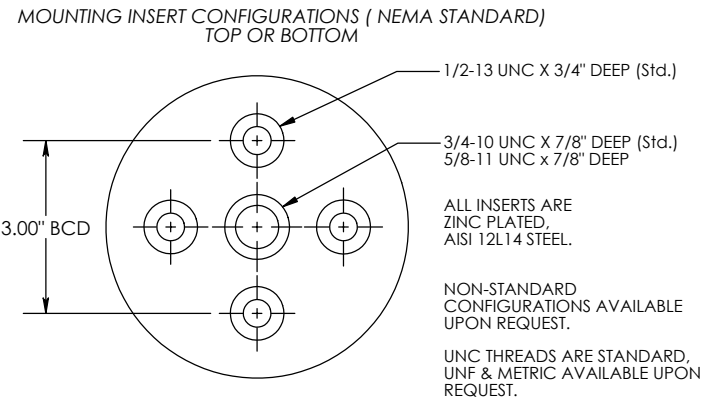
8kV INDOOR/OUTDOOR INSULATOR
 A30 UNIFORM STRENGTH CLASS
 75kV BIL

SIZE A	DWG. NO. 03-001-000	REV. 1
SCALE: 2	CAD FILE: 300 SERIES	SHEET 1 OF 1

8 7 6 5 4 3 2 1



	8	7	6	5	4	3	2	1
REV.	1							
CAD FILE:	300 SERIES							
DWG. NO.	03-002-000							
TOP								
BOTTOM								
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	005	006	007	008	009	010	011	
	012	013	014	015	016	017	018	
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	024	025	SEE 025	026	SEE 026	027	028	



FOR B.I.L. RATINGS 95KV AND HIGHER, ALL INSERT CONFIGURATIONS WITH 3 OR MORE INSERTS EITHER END, WILL BE INTERNALLY CONNECTED (COMMON), ALLOWING FOR SELECTIVE APPLICATIONS.

REVISIONS	0	1
ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002		
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 %

* STATISTICAL DIMENSION
NO. OF SAMPLES [1]

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE.

APPROVALS	DATE
DRAWN BY: DB	02/06/1999
CHECKED BY: RM	05/06/1999
ENGINEERING DB	05/06/1999

TOOLING REF. T03-002

PRODUCT GROUP 300 SERIES

ENGINEERED POWER COMPONENTS

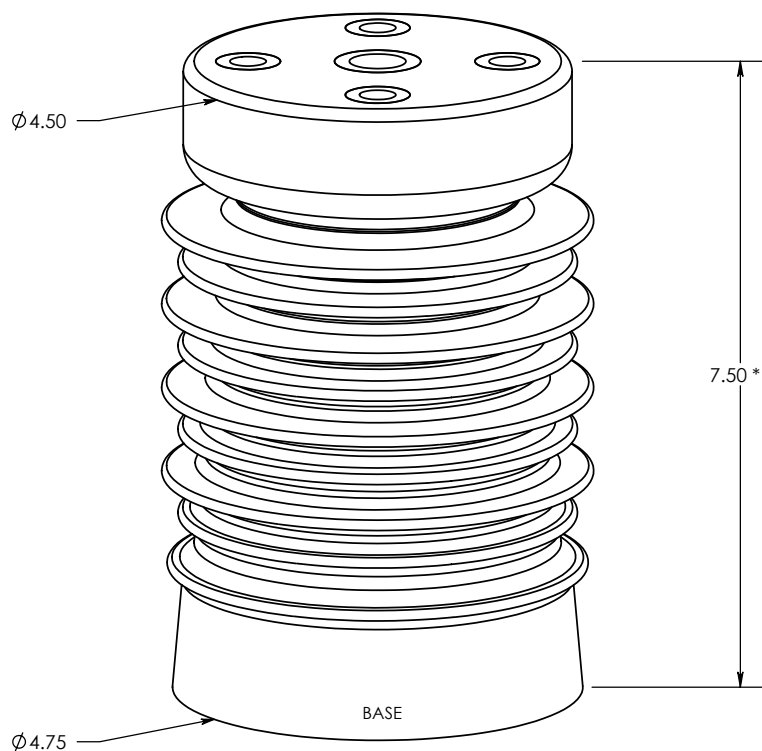
15kV INDOOR/OUTDOOR INSULATOR
A30 UNIFORM STRENGTH CLASS
95KV BIL

SIZE A	DWG. NO. 03-002-000	REV. 1
SCALE: 1:2	CAD FILE: 300 SERIES	SHEET 1 OF 1

8 7 6 5 4 3 2 1

REV. 1
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DWG. NO. 03-003-000
 CAD FILE: 300 SERIES

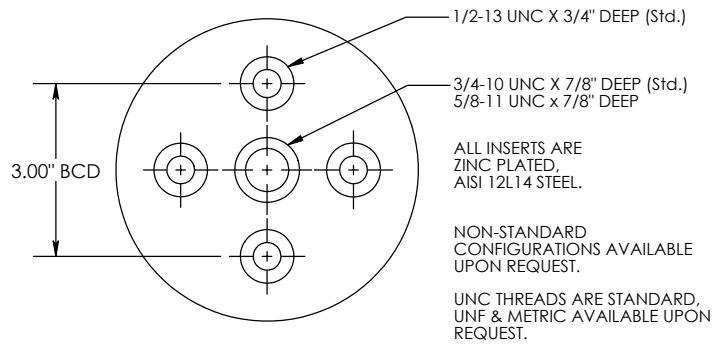


IDENTIFICATION NO. : 03-003

INSULATOR SHOWN WITH 5 INSERTS EACH END: PART NUMBER 03-003-028
 MATERIAL: E01 - BISPENOL-A (GREY)
 E07 - CYCLOALIPHATIC (GREY)
 FOR CUSTOM INSERT CONFIGURATIONS PLEASE CONTACT OUR SALES DEPT.

TOP							
BOTTOM							
	000	001	SEE 001	002	SEE 002	003	004
	005	006	007	008	009	010	011
	012	013	014	015	016	017	018
	019	020	SEE 020	021	SEE 021	022	023
	024	025	SEE 025	026	SEE 026	027	028

MOUNTING INSERT CONFIGURATIONS (NEMA STANDARD)
 TOP OR BOTTOM



FOR B.I.L. RATINGS 95KV AND HIGHER, ALL INSERT CONFIGURATIONS WITH 3 OR MORE INSERTS EITHER END, WILL BE INTERNALLY CONNECTED (COMMON), ALLOWING FOR SELECTIVE APPLICATIONS.

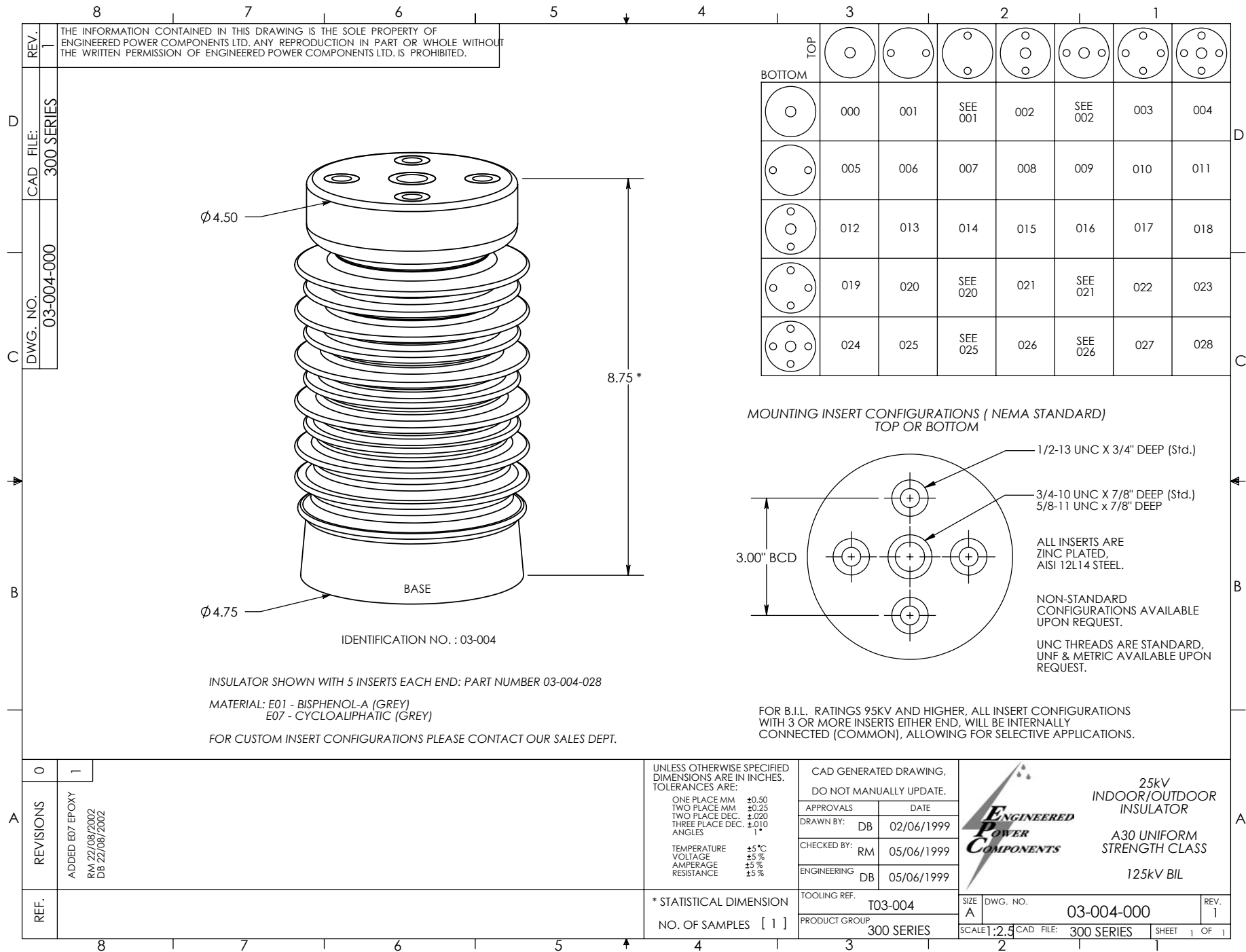
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REVISIONS	ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002
REF.	

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	02/06/1999
CHECKED BY: RM	05/06/1999
ENGINEERING DB	05/06/1999
TOOLING REF.	T03-003
PRODUCT GROUP	300 SERIES

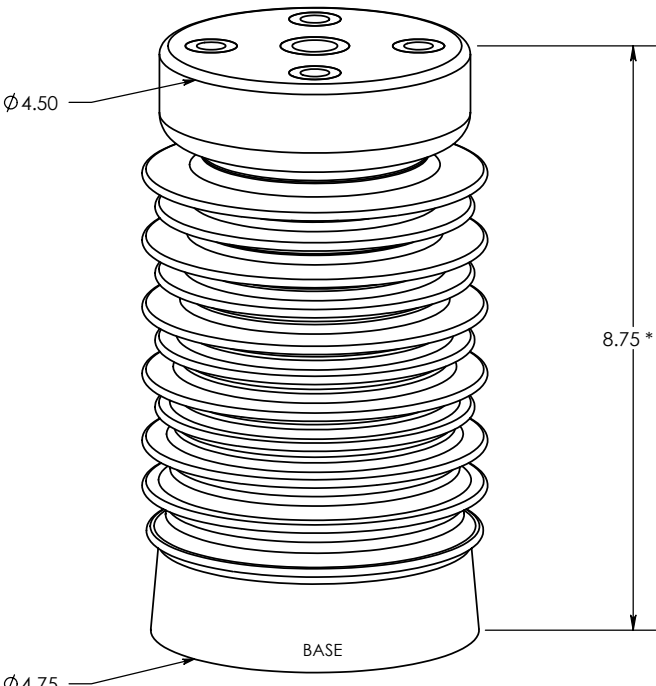
20kV
 INDOOR/OUTDOOR
 INSULATOR
 A30 UNIFORM
 STRENGTH CLASS
 110kV BIL

* STATISTICAL DIMENSION NO. OF SAMPLES [1]	SIZE A	DWG. NO. 03-003-000	REV. 1
	SCALE: 1:2	CAD FILE: 300 SERIES	SHEET 1 OF 1



REV. 1
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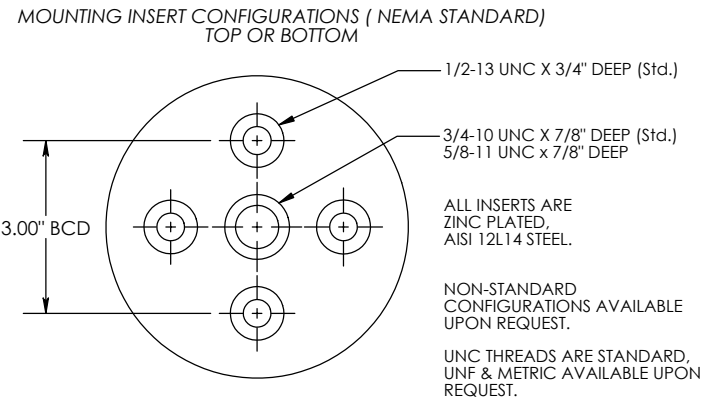
CAD FILE: 300 SERIES
 DWG. NO. 03-004-000



IDENTIFICATION NO. : 03-004

INSULATOR SHOWN WITH 5 INSERTS EACH END: PART NUMBER 03-004-028
 MATERIAL: E01 - BISPHENOL-A (GREY)
 E07 - CYCLOALIPHATIC (GREY)
 FOR CUSTOM INSERT CONFIGURATIONS PLEASE CONTACT OUR SALES DEPT.

TOP							
BOTTOM							
	000	001	SEE 001	002	SEE 002	003	004
	005	006	007	008	009	010	011
	012	013	014	015	016	017	018
	019	020	SEE 020	021	SEE 021	022	023
	024	025	SEE 025	026	SEE 026	027	028



FOR B.I.L. RATINGS 95KV AND HIGHER, ALL INSERT CONFIGURATIONS WITH 3 OR MORE INSERTS EITHER END, WILL BE INTERNALLY CONNECTED (COMMON), ALLOWING FOR SELECTIVE APPLICATIONS.

REVISIONS	0	1
		ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002
REF.		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
 ONE PLACE MM ±0.50
 TWO PLACE MM ±0.25
 TWO PLACE DEC. ±0.20
 THREE PLACE DEC. ±0.10
 ANGLES 1°
 TEMPERATURE ±5 °C
 VOLTAGE ±5 %
 AMPERAGE ±5 %
 RESISTANCE ±5 %

* STATISTICAL DIMENSION
 NO. OF SAMPLES [1]

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE.

APPROVALS	DATE
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CHECKED BY: RM	05/06/1999
ENGINEERING DB	05/06/1999

TOOLING REF. T03-004
 PRODUCT GROUP 300 SERIES

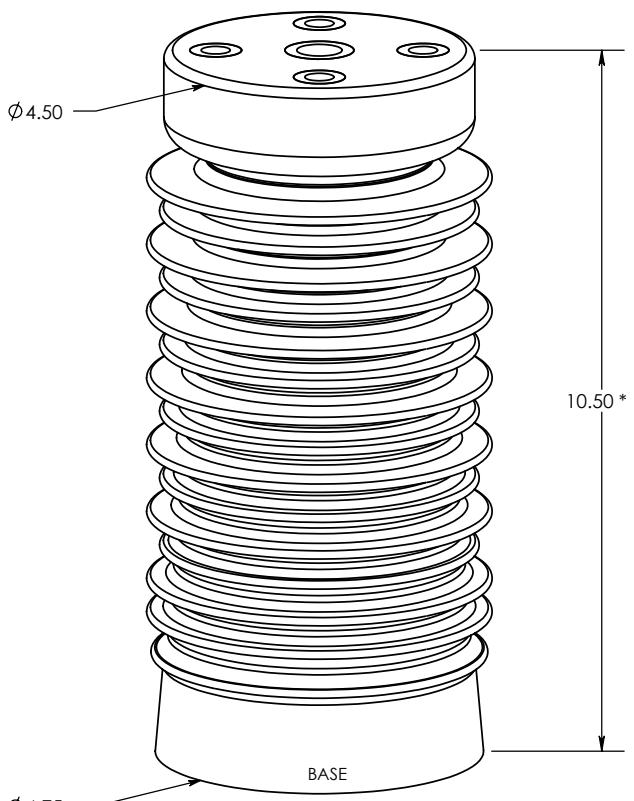
25kV
 INDOOR/OUTDOOR
 INSULATOR
 A30 UNIFORM
 STRENGTH CLASS
 125kV BIL

SIZE A DWG. NO. 03-004-000
 SCALE: 1:2.5 CAD FILE: 300 SERIES SHEET 1 OF 1

8 7 6 5 4 3 2 1

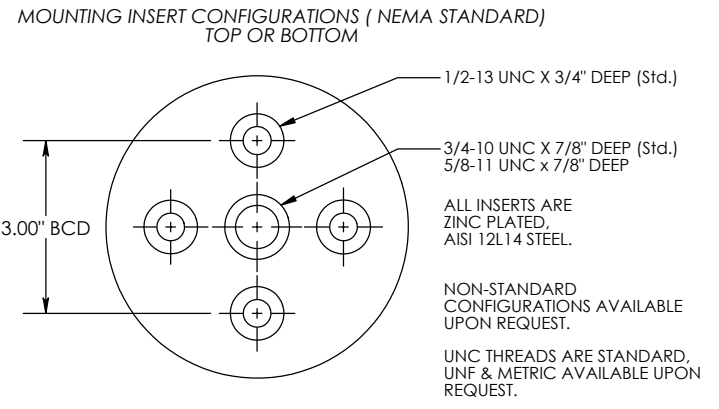
REV. 1
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DWG. NO. 03-005-000
 CAD FILE: 300 SERIES



IDENTIFICATION NO. : 03-005
 INSULATOR SHOWN WITH 5 INSERTS EACH END: PART NUMBER 03-005-028
 MATERIAL: E01 - BISPHENOL-A (GREY)
 E07 - CYCLOALIPHATIC (GREY)
 FOR CUSTOM INSERT CONFIGURATIONS PLEASE CONTACT OUR SALES DEPT.

TOP							
BOTTOM							
	000	001	SEE 001	002	SEE 002	003	004
	005	006	007	008	009	010	011
	012	013	014	015	016	017	018
	019	020	SEE 020	021	SEE 021	022	023
	024	025	SEE 025	026	SEE 026	027	028



FOR B.I.L. RATINGS 95KV AND HIGHER, ALL INSERT CONFIGURATIONS WITH 3 OR MORE INSERTS EITHER END, WILL BE INTERNALLY CONNECTED (COMMON), ALLOWING FOR SELECTIVE APPLICATIONS.

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REVISIONS	ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002
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 %

* STATISTICAL DIMENSION
 NO. OF SAMPLES [1]

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE.

APPROVALS	DATE
DRAWN BY: DB	02/06/1999
CHECKED BY: RM	05/06/1999
ENGINEERING: DB	05/06/1999

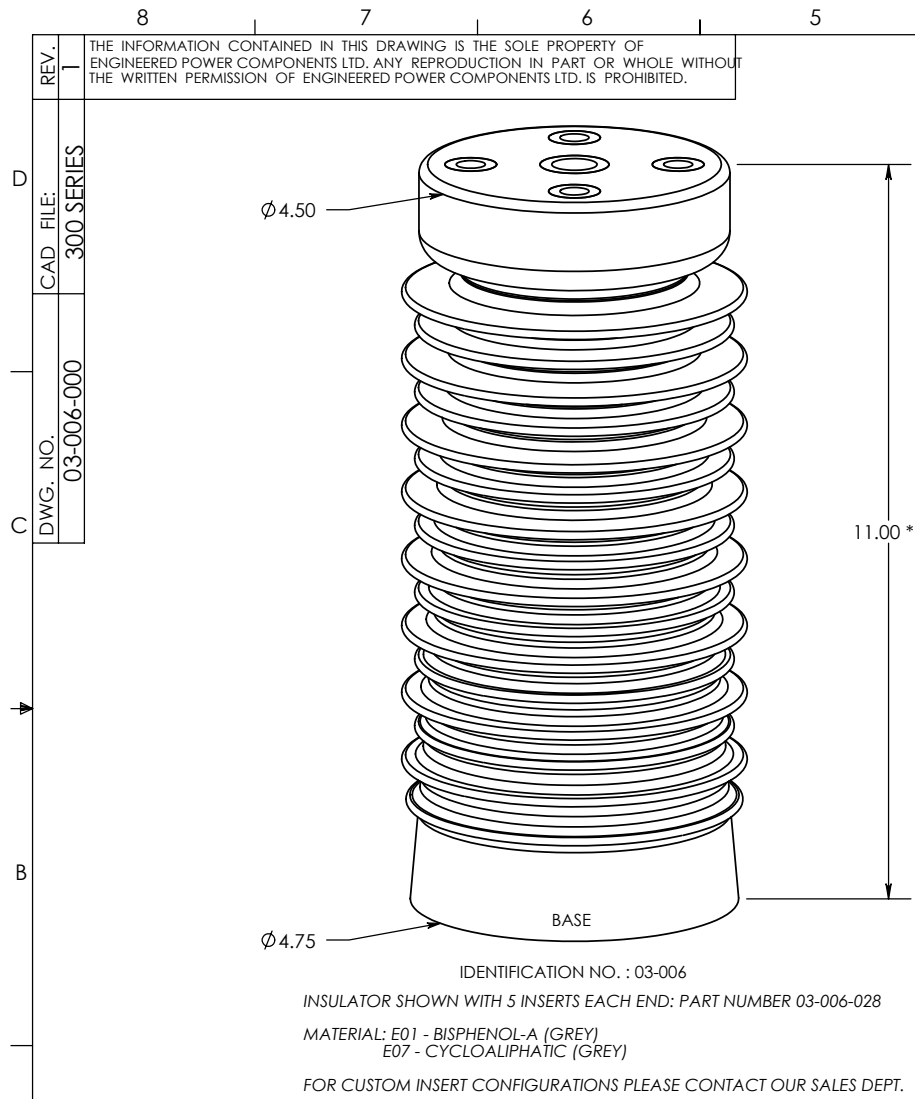
TOOLING REF. T03-005
 PRODUCT GROUP 300 SERIES

38kV
 INDOOR/OUTDOOR
 INSULATOR

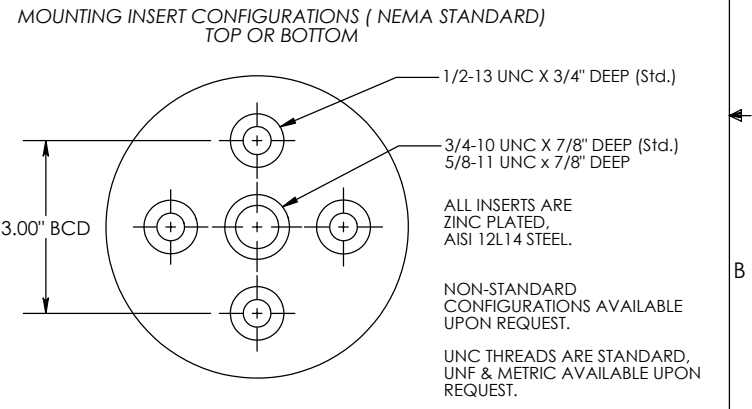
A30 UNIFORM
 STRENGTH CLASS

150KV BIL

SIZE A	DWG. NO. 03-005-000	REV. 1
SCALE: 1:2.5	CAD FILE: 300 SERIES	SHEET 1 OF 1

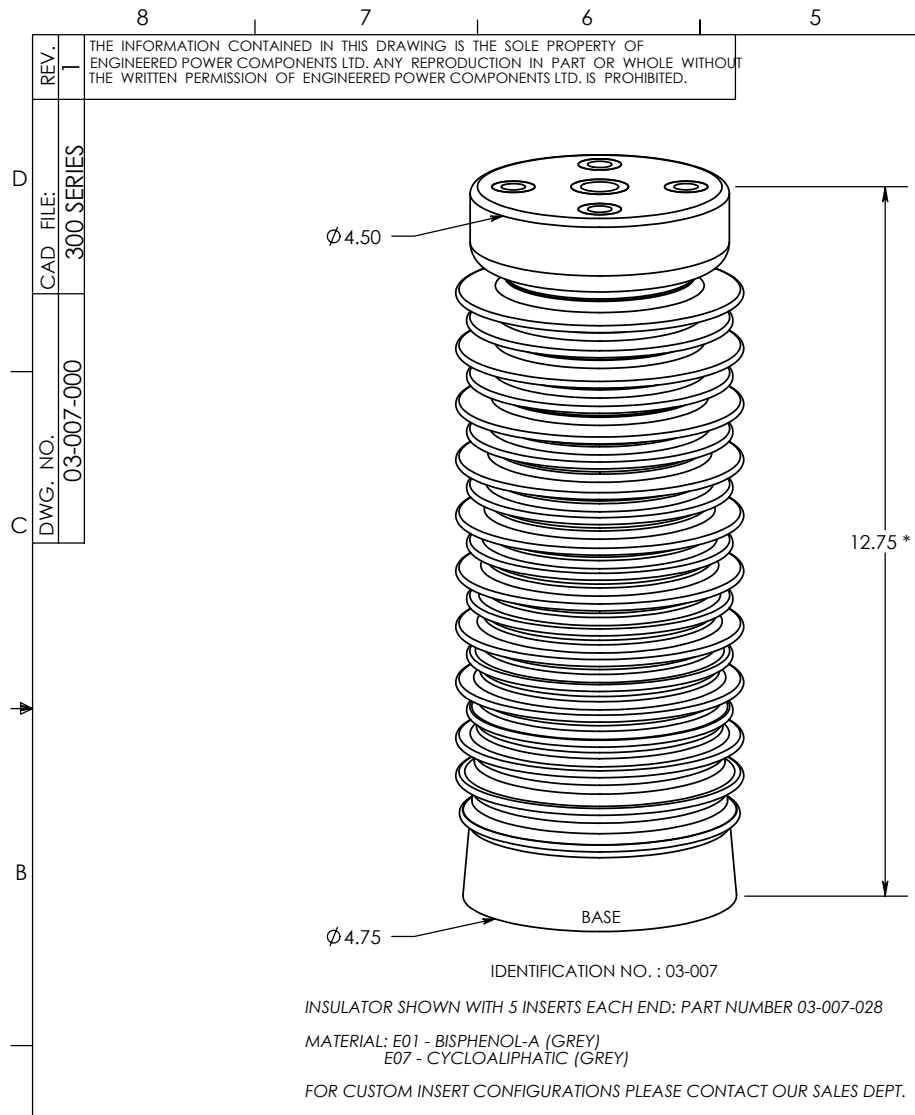


TOP							
BOTTOM							
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		005	006	007	008	009	010
		012	013	014	015	016	017
		019	020	SEE 020	021	SEE 021	022
		024	025	SEE 025	026	SEE 026	027
							028

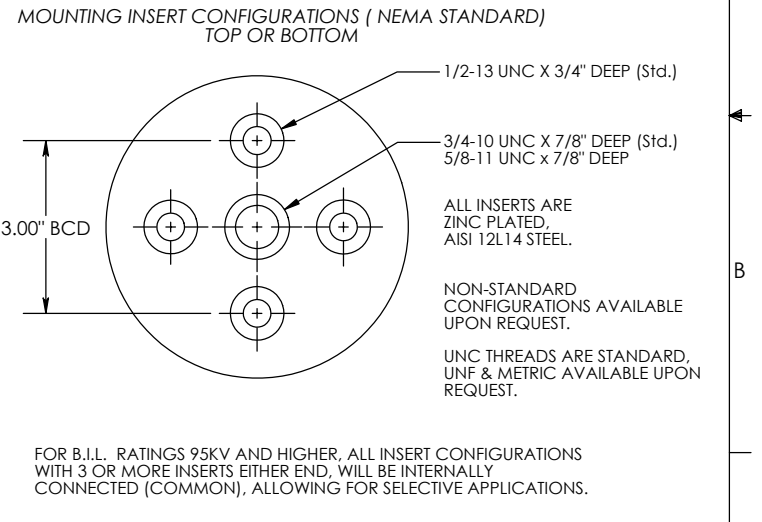


FOR B.I.L. RATINGS 95KV AND HIGHER, ALL INSERT CONFIGURATIONS WITH 3 OR MORE INSERTS EITHER END, WILL BE INTERNALLY CONNECTED (COMMON), ALLOWING FOR SELECTIVE APPLICATIONS.

A	0	1	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 02/06/1999 CHECKED BY: RM 05/06/1999 ENGINEERING DB 05/06/1999	<p>38kV INDOOR/OUTDOOR INSULATOR A30 UNIFORM STRENGTH CLASS 150kV BIL</p>
	REVISIONS	ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002			
	REF.		* STATISTICAL DIMENSION NO. OF SAMPLES [1]		REV. 1 SHEET 1 OF 1



TOP							
BOTTOM							
	000	001	SEE 001	002	SEE 002	003	004
	005	006	007	008	009	010	011
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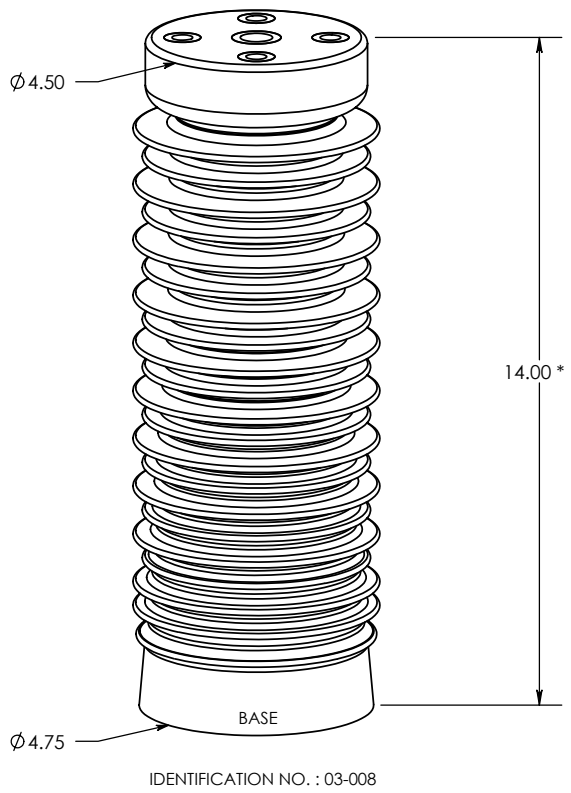


A	0	1	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: ONE PLACE MM ±0.50 TWO PLACE MM ±0.25 TWO PLACE DEC. ±0.020 THREE PLACE DEC. ±0.010 ANGLES 1° TEMPERATURE ±5 °C VOLTAGE ±5 % AMPERAGE ±5 % RESISTANCE ±5 %	CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE. APPROVALS DATE DRAWN BY: DB 02/06/1999 CHECKED BY: RM 05/06/1999 ENGINEERING DB 05/06/1999	<p>38kV INDOOR/OUTDOOR INSULATOR</p> <p>A30 UNIFORM STRENGTH CLASS</p> <p>170kV BIL</p>	SIZE A DWG. NO. 03-007-000 REV. 1
	REVISIONS	ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002				
	REF.		* STATISTICAL DIMENSION NO. OF SAMPLES [1]	PRODUCT GROUP 300 SERIES		

8 7 6 5 4 3 2 1

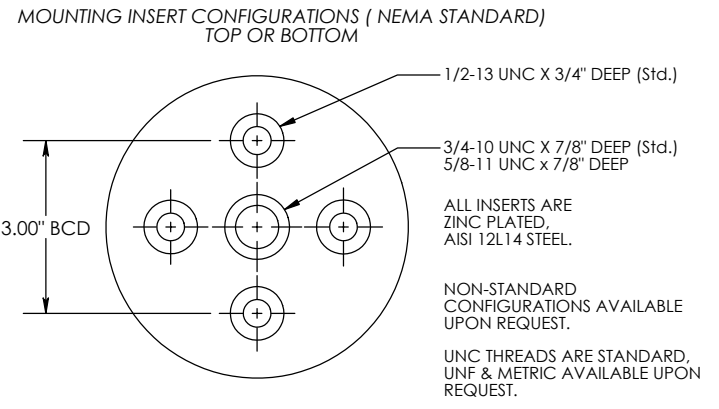
REV. 1
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D
 CAD FILE: 300 SERIES
 C
 DWG. NO. 03-008-000



INSULATOR SHOWN WITH 5 INSERTS EACH END: PART NUMBER 03-008-028
 MATERIAL: E01 - BISPHENOL-A (GREY)
 E07 - CYCLOALIPHATIC (GREY)
 FOR CUSTOM INSERT CONFIGURATIONS PLEASE CONTACT OUR SALES DEPT.

TOP							
BOTTOM							
	000	001	SEE 001	002	SEE 002	003	004
	005	006	007	008	009	010	011
	012	013	014	015	016	017	018
	019	020	SEE 020	021	SEE 021	022	023
	024	025	SEE 025	026	SEE 026	027	028



FOR B.I.L. RATINGS 95KV AND HIGHER, ALL INSERT CONFIGURATIONS WITH 3 OR MORE INSERTS EITHER END, WILL BE INTERNALLY CONNECTED (COMMON), ALLOWING FOR SELECTIVE APPLICATIONS.

0	1
REVISIONS	ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002
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°	CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE.
TEMPERATURE ±5 °C VOLTAGE ±5 % AMPERAGE ±5 % RESISTANCE ±5 %	APPROVALS DATE DRAWN BY: DB 02/06/1999 CHECKED BY: RM 05/06/1999 ENGINEERING DB 05/06/1999
* STATISTICAL DIMENSION NO. OF SAMPLES [1]	TOOLING REF. T03-008 PRODUCT GROUP 300 SERIES

48kV
 INDOOR/OUTDOOR
 INSULATOR

A30 UNIFORM
 STRENGTH CLASS

200kV BIL

SIZE A DWG. NO. 03-008-000
 SCALE: 3.9 CAD FILE: 300 SERIES SHEET 1 OF 1