

	EARTHING CHOKE SPECIFICATION No: CLW/ES/3/0018	ALT -'B'
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ENCLOSURES:

CLW/ES/3/SK-1/0018 Alt B

CLW/ES/3/SK-2/0018 Alt B

SPECIFICATION FOR EARTHING CHOKE USED FOR 3-PHASE ELECTRIC LOCOMOTIVE OF INDIAN RAILWAYS

Specification No: CLW/ES/3/0018 Alt 'B'

ISSUE DATE: 27.02.1997

ISSUED BY:

DY. CHIEF ELECTRICAL ENGINEER/D-II

CHITTARANJAN LOCOMOTIVE WORKS

P.O CHITTARANJAN – 713331

DIST. BARDHMAN (WEST), WEST BENGAL (INDIA)

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ALTERATION RECORD SHEET

SL NO.	DATE OF AMENDMENT	PAGE NO.	ALTERATION NUMBER	REASON	AUTHORITY
1.	16.08.2001	9, 7 & 10	A	1) Part list have been modified with inclusion of identification No. & Qty. per no. 2) Drawings of different subassemblies have been added. 3) Test have been introduced.	Sd/
2.	21.08.2002		B	Dimensions are modified as per OEM drg on drawing no. CLW/ES/3/0018-SK-2.	Sd/

Note: Specification has been digitized and all alterations have been incorporated.

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**SPECIFICATION FOR EARTHING CHOKE FOR 3-PHASE ELECTRIC
LOCOMOTIVES****INDEX**

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	EARTHING CHOKE SPECIFICATION No: CLW/ES/3/0018	ALT -'B'
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SPECIFICATION FOR EARTHING CHOKE

1. Scope :

This specification applies to EARTHING CHOKE for 3-Phase Electric locomotive for 25KV AC 50 Hz system.

2.0. Climatic and environmental conditions:

- Maximum atmospheric temperatures : 70°C (Under Sun)
: 50°C (In shade)
- Humidity : 100% saturation during rainy season.
- Reference Site conditions:
 - i. Ambient Temp. : Max.47°C and min. 0°C
 - ii. Humidity : 60%.
 - iii. Altitude : 160 meters above mean sea level.
 - iv. Rainfall : Very heavy in certain areas. The locomotive will be designed to permit it's running at 10 kilometer hour in flood water level of 102 millimeter above rail level.
- Atmosphere during hot weather : Extremely dusty and desert terrain in certain areas.
- Coastal areas : Locomotive and equipment will be designed to work in coastal areas in humid and salt laden atmosphere.
- Vibration : The equipment , subsystem and their mounting arrangement will be designed to withstand vibrations and shocks encountered in service as specified in corresponding IEC publications unless otherwise prescribed.

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3.0. Standard:

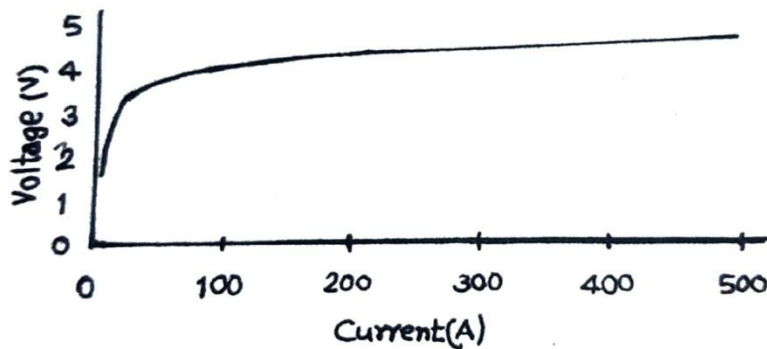
Relevant IS / IEC.

4.0. TECHNICAL DATA: -

Frequency	: 50 Hz.
Assly. Unit	: Machine Room,
Stud	: M16 X 660,
No. of sheet washers	: 1524
Washer Thickness	: 0.32 mm
Quantity	: 1 per loco,

Transformer Lamination

Power Loss for 1.5 Tesla	
Peak value	: 1 W /Kg.
Thickness	: 0.35 mm glowed in the end.

Characteristics of the Earthing choke

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5.0 DESIGN & CONSTRUCTIONAL FEATURES:

The tenderer shall submit design & constructional features of the item quoted in their tender quotation.

6.0 DOCUMENTS TO BE SUPPLIED BY TENDERER:

The tenderer shall interalia furnish the following in three copies, along with the quotation:

- 1) Clause wise comments on the specification and test programme.
- 2) Detailed drawings.
- 3) Past experience with supporting papers (If any)
- 4) Past test reports, (if any)

7.0 DOCUMENTS TO BE SUPPLIED BY THE SUPPLIER :

The following documents shall be supplied by the supplier as part of contract:

- 1) Type test report
- 2) Routine test report along with each set
- 3) Maintenance manual
- 4) Detailed drawings

8.0 QUALITY ASSURANCE:

Quality assurance should be as per ISO 9000.

9.0 REFERENCE:

The equipment used by M/s. ABB for WAG- 9 Class electric locomotive.

Type: ABB –CHOKE or Similar

Supplier: ABB Unifer,
BARR,
CH-5242
SWITZERLAND
FAX : 0041 564 666 323

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10.0 TEST:**TYPE TEST:**

1. Dimensional check up.
2. Visual check up.
3. Tightening torque measurement between nuts and bolts.
(It should be = 35 Nm)
4. Verification of characteristics curve (voltage Vs current).
5. Temp. rise test at 360 Amp (max. temp rise 40°C).
6. Di-electric test at 1000V, 50 Hz for one minute.

ROUTINE TEST :

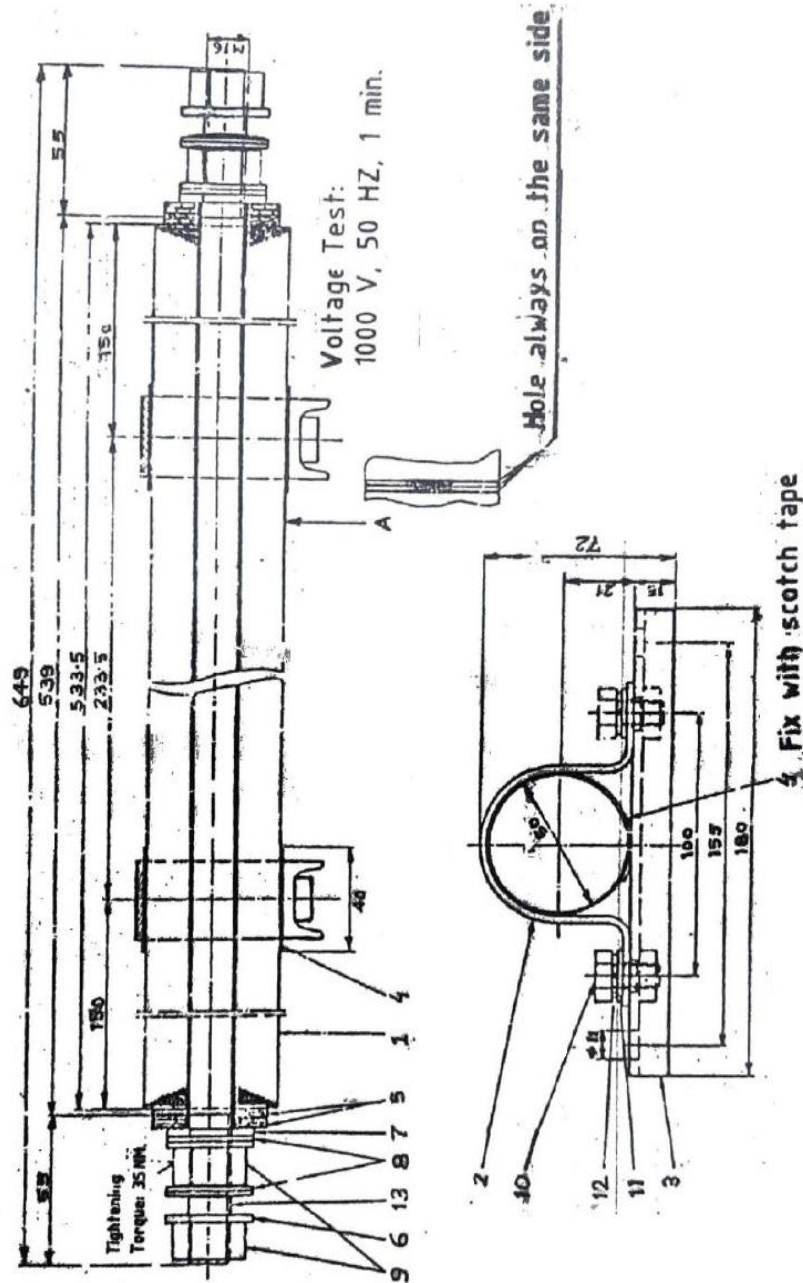
1. Dimensional check up.
2. Visual check up.
3. Tightening torque measurement between nuts and bolts.
(It should be = 35 Nm)
4. Verification of characteristics curve (voltage Vs current).
5. Di-electric test at 1000V, 50 Hz for one minute.

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11. PART LIST:

ITEM NO.	DESCRIPTION	QTY./ ITEM	IDEN. NO.	FIG NO.	MATERIAL
1.	SH. MD=18.2/52, H=0.35	1524	HBT415075P0002	1	INSULATED SILICON STEEL
2.	CABLE CLIP	3	HBT415074P0001	2	NON MAGNETIC S.S
3.	CABLE CLIP BASE PLATE	3	HBT415073R0001	2	NON MAGNETIC S.S
4.	RUBBER SHEET 40 * 190	3	HBT215000P0006		NEOPRENE RUBBER
5.	INSU. WASHER 18.2/45*4	4	3EHW470059P0001		FIBRE GLASS
6.	WASHER 7/34 CUZN/NI	2	NB 335200P5024		
7.	WASHER A 17/30 SST	2	NB 335050P0611		
8.	CON WASHER 17/34 SST	8	NB 336407P0217		
9.	HEX NUT 0.8D M16 SST	4	NB 332600P0515		
10.	HEX SCREW M10*20 SST	6	3EHP416001P1020		
11.	WASHER A 10.5/21 SST	6	NB 335050P0609		
12.	HT SPRING WASHER 10 SST	6	NB 335805P0512		
13.	CHOKE STUD LG 649	1	HBT315002R0003	4	CU - ETP

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Dimension and Weight:-

weight: 8.0 Kg (approx.)
TOLERANCE AS PER IS 2021 PT-1 (COARSE)

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KARMAKAR

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17:50:56 +05'30'

APPROVED BY:

ANSHU
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Date: 2023.04.19
11:18:11 +05'30'

DY.CEE/D-II

CHITTARANJAN LOCOMOTIVE WORKS



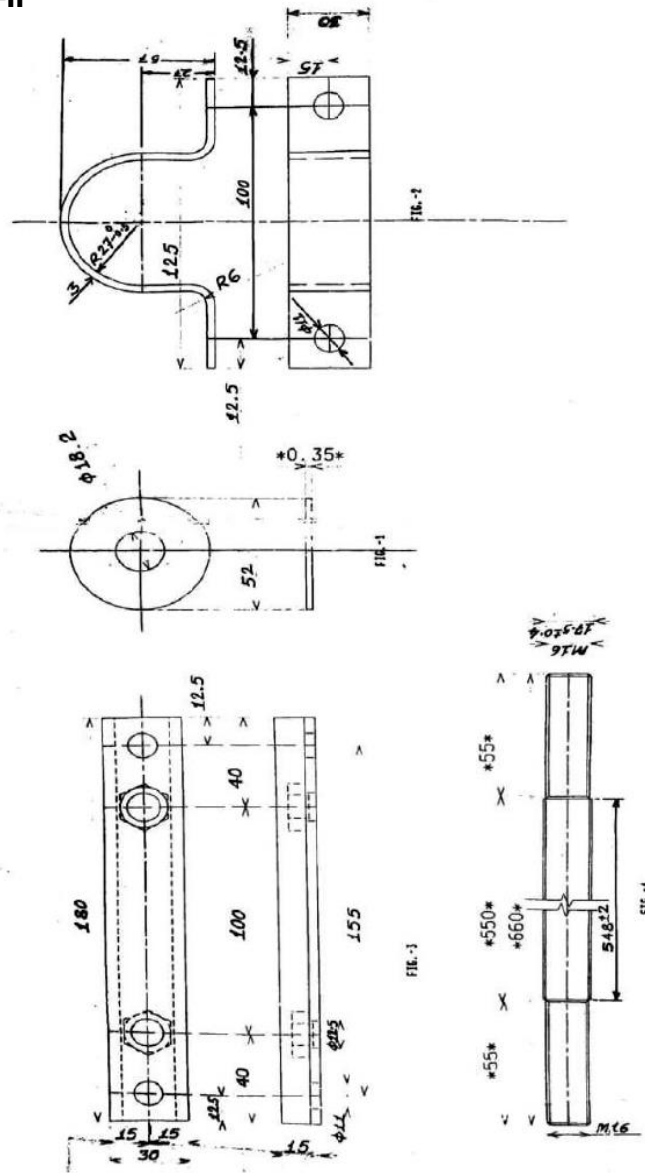
Date: 27.02.1997

SPECIFICATION FOR EARTHING CHOKE
DRG. NO. CLW/ES/3/SK-1/0018 Alt 'B'

Checked By: AEE/Design

CHANDAN
KUMAR


Digitally signed by
CHANDAN KUMAR
Date: 2023.04.17 18:20:04
+05'30'



TOLERANCE AS PER: IS 2102 PT:I (Coarse),

Note:-

- i) The name and year of manufacture of the firm should be embossed on the item.
- ii) Hardware's are to be used should be any of the following make:
 - a) Un-brako (Precision fasteners)
 - b) Laxmi precision (LPS)
 - c) Sundaram fasteners (TVS)
 - d) All spring washers of Forbes Gokak Ltd, Mofia Mumbai only.

<p>Prepared By: SSE/Design</p> <p>BIDYASAGAR KARMAKAR</p> <p>Digitally signed by BIDYASAGAR KARMAKAR Date: 2023.04.17 17:51:11 +05'30'</p> <p>Checked By: AEE/Design</p> <p>CHANDAN KUMAR</p> <p>Digitally signed by CHANDAN KUMAR Date: 2023.04.17 18:20:40 +05'30'</p>	<p>APPROVED BY:</p> <p>ANSHU KUMAR VERMA</p> <p>Digitally signed by ANSHU KUMAR VERMA Date: 2023.04.19 11:18:33 +05'30'</p> <p>DY.CEE/D-II</p>	<p>CHITTARANJAN LOCOMOTIVE WORKS</p> <p></p> <p>Date: 16.08.2001</p> <p>SPECIFICATION FOR EARTHING CHOKE</p> <p>DRG. NO. CLW/ES/3/SK-2/0018 Alt 'B'</p>
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