# SPECIFICATION FOR SET OF METALLIC PLATES FOR WAG-9 (Co-Co), ELECTRIC LOCOMOTIVES

## SPECIFICATION No. CLW/ES/3/0450 ALT. ~~I~~ J
## ISSUE DATE: 07.02.2000

Enclosures:- CLW/ES/3/SK-1/0450 to CLW/ES/3/SK-16/0450 except CLW/ES/3/SK-3/0450 & CLW/ES/3/SK-15/0450

ISSUED BY:
DY. CHIEF ELECTRICAL ENGINEER /D/CONV.
CHITTARANJAN LOCOMOTIVE WORKS
P.O. CHITTARANJAN – 713331
DIST. BARDHAMAN (WEST), WEST BENGAL (INDIA)

| PREPARED BY | CHECKED BY | APPROVED BY |
|---|---|---|
| Bikash Naik<br>Digitally signed by Bikash Naik<br>Date: 2025.02.10 11:31:58 +05'30' | Abu Naser<br>Digitally signed by Abu Naser<br>Date: 2025.02.10 12:11:06 +05'30' | AMIT AGGARWAL<br>Digitally signed by AMIT AGGARWAL<br>Date: 2025.02.10 13:19:16 +05'30' |
| SSE/DRG&DGN (M) | SSE/ DRG&DGN (M) | DY. CEE/D-III |

Signature Not Verified
Digitally signed by Bikash Naik
Date: 2025.02.14 13:22:55 IST
Reason: IREPS-CRIS
Location: New Delhi

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8. TECHNICAL DOCUMENTS TO BE SUPPLIED BY SUPPLIER
9. QUALITY ASSURANCE

| PREPARED BY | CHECKED BY | APPROVED BY |
|---|---|---|
| Bikash Naik<br>Digitally signed by Bikash Naik<br>Date: 2025.02.10 11:32:30 +05'30' | Abu Naser<br>Digitally signed by Abu Naser<br>Date: 2025.02.10 12:11:50 +05'30' | AMIT AGGARWAL<br>Digitally signed by AMIT AGGARWAL<br>Date: 2025.02.10 13:19:40 +05'30' |
| SSE/DRG&DGN (M) | SSE/ DRG&DGN (M) | DY. CEE/D-III |

## ALTERATION RECORD SHEET

| ALT. No. | DATE | REASON | AUTHORITY |
|---|---|---|---|
| A | 11.03.2002 | 1) Qty/Loco Deleted.<br>2) Plate Green –HBTB 43689 P0001 & Distance Plate (TY-6) 3EHP431639P0001 Deleted.<br>3) Bur input snubber plate for bur – 1/2 Added.<br>4) Drg. No. CLW/ES/3/SK-16/0450 added items Transfer from Set of Bracket Sheet Specn. CLW/ES/3/153 | S/d-<br>11.03.2002 |
| B | 25.04.2003 | Drg. No. CLW/ES/3/0450 for Capacitor Separator for fitter Cubicle incorporated vide letter No- C D&D /TOT/148 dt-25.3.2003 added. | S/d-<br>25.04.2003 |
| C | 17.08.2016 | Designation E' Grade of Material Specn & Coating is added In Drg. No CLW/ES/3/SK-4/0450 | S/d-<br>17.08.2016 |
| D | 25.01.2019 | 3 Nos X Ø 9 Hole Size is Changed to 3 Nos X oblong Hole of Size 12mm X 9 mm at Plate Type -10, DRG. No. – CLW/ES/3/SK-11/0450 | S/d-<br>25.01.2019 |
| E | 10.02.2021 | Item No 1A-Plate Insulator(TY-23) & 1B-Plate Insulator (TY-24) are Deleted from scope of Supply Relative Drg CLW/ES/3/SK-16/0450 is also Deleted. | S/d-<br>10.02.2021 |
| F | 10.05.2021 | Design of angle plate Type 1 & Type -2 is modified at Sketch no. CLW/ES/3/SK-4/0450 | S/d-<br>10.05.2021 |
| G | 02.08.2021 | 03 nos. Oblong holes of size 12mm x 9mm is changed to 03 nos. Oblong holes of size 22mm x 9mm at plate Type-10, drg. No. CLW/ES/3/SK-11/0450 | S/d-<br>02.08.2021 |
| H | 18.01.2025 | Para 4 & 5 are corrected.<br>Drawing No. SK-4, SK-5, SK-6, SK-9, SK-13 & SK-16 are corrected.<br>Drawing No. SK-11 is modified. | S/d-<br>18.01.2025 |
| I | 10.02.2025 | Note added below Para 4 (Scope of supply) | AMIT AGGARWAL Digitally signed by AMIT AGGARWAL Date: 2025.02.10 13:20:16 +05'30' |
| J | | Para 4 modified. Drawing of Metallic plate Aluminium plate modified to specify Grades for IS 6651 & IS 1868. | |

**Specification have been digitized and all alterations have been incorporated.**

| PREPARED BY | CHECKED BY | APPROVED BY |
|---|---|---|
| Bikash Naik<br>Digitally signed by Bikash Naik<br>Date: 2025.02.10 11:33:12 +05'30' | Abu Naser<br>Digitally signed by Abu Naser<br>Date: 2025.02.10 12:12:19 +05'30' | AMIT AGGARWAL<br>Digitally signed by AMIT AGGARWAL<br>Date: 2025.02.10 13:20:42 +05'30' |
| SSE/DRG&DGN (M) | SSE/ DRG&DGN (M) | DY. CEE/D-III |

## SPECIFICATION FOR METALLIC PLATES

A. **SCOPE :**

This specification covers the manufacture and supply of METALLIC PLATES for WAG-9, WAG-9HC (Co-Co), 6000 HP, 3-Phase, 25 Kv. 50 Hz. AC Locomotive.

2. **Climatic and environmental condition:-**

Maximum atmospheric temperature : +70˚C (in sun) & +50˚C (in shade)
Humidity : 100% saturation during rainy season.

**Reference site condition:**

i) Ambient Temperature : Max 55˚C min. 0˚C
ii) Humidity : 60%
iii) Altitude : 160 m above mean sea level.
iv) Rain Fall : Very heavy in certain areas. the Locomotive will be designed to permit its running at 10 km/hr in flood water level of 102mm above rail level.

Atmosphere during hot weather : Extremely dusty and desert terrain in certain areas.

Coastal areas : Locomotive and equipment will be design to work in coastal areas in humid and salty laden atmosphere.

Vibration : The equipment sub-system and their mounting arrangement will be designed to withstand vibrations and shocks encountered in service as specified in corresponding IEC publications unless otherwise prescribed

3. **STANDARD:**

As per relevant IS/IEC.

| PREPARED BY | CHECKED BY | APPROVED BY |
|---|---|---|
| Bikash Naik<br>Digitally signed by Bikash Naik<br>Date: 2025.02.10 11:33:35 +05'30' | Abu Naser<br>Digitally signed by Abu Naser<br>Date: 2025.02.10 12:12:39 +05'30' | AMIT AGGARWAL<br>Digitally signed by AMIT AGGARWAL<br>Date: 2025.02.10 13:21:11 +05'30' |
| SSE/DRG&DGN (M) | SSE/ DRG&DGN (M) | DY. CEE/D-III |

## 4. SCOPE OF SUPPLY:

| SL. No. | Description | Ident. No. | SKETCH NO. | MATERIAL |
|---|---|---|---|---|
| **METALLIC PLATES – ALUMINIUM PLATES :-** | | | | |
| 01 | WARNING PLATE | 3EHP 431593 P0001 | SK-1 | Al. anodized oxidized as per ~~IS:1868 & 6651~~ * |
| 02 | CLW PLATE ML 18X52 G-BK | NBT 401375 P0104 | SK-2 | -do- |
| 03 | ANGLE PLATE (Type-1) | 3EHP 431337 R0001 | SK-4 | -do- |
| 04 | ANGLE PLATE (Type-2) | 3EHP 431337 R0002 | SK-4 | -do- |
| 05 | ANGLE PLATE (Type-3) | 3EHP 431722 P0001 | SK-5 | -do- |
| 06 | BASE PLATE (Type-13) | 3EHP 431499 P0001 | SK-6 | -do- |
| **STEEL PLATES :** | | * IS 6651-1972 Gr-19000(1C) & IS 1868:1996 Gr. AC1D | | |
| 07 | PLATE (Type-6) | 3EHP 431243 P0001 | SK-7 | Stainless steel as per ASTM A240 Gr.321 |
| 08 | PLATE (Type-7) | 3EHP 470205 P0001 | SK-8 | -do- |
| 09 | PLATE (Type-8) | 3EHP 431491 P0001 | SK-9 | -do- |
| 10 | PLATE (Type-9) | 3EHP 431032 P0001 | SK-10 | -do- |
| 11 | PLATE (Type-10) | 3EHP 431506 R0001 | SK-11 | -do- |
| 12 | CAPACITOR SEPARATOR FOR FILTER CUBICLE FIG-2 ONLY | | SK-16 | SST-GR-AISI-304 |
| 13 | PLATE (Type – 11) | 3EHP 431127 R0001 | SK-12 | Stainless steel as per ASTM A240 Gr.321 |
| 14 | ANGLE PLATE (Type-4) | 3EHP 431721 P0001 | SK-13 | -do- |
| 15 | ANGLE PLATE (Type-5) | 3EHP 431721 P0002 | SK-13 | -do- |
| 16 | DISTANCE PLATE (Type-15) | 3EHP 431509 P0001 | SK-14 | -do- |

**NOTE:** QTY/Loco to be followed as mentioned in related category No- P/0/0042 for WAG-9HC, WAP-7 and WAP-5 locos in clubbed categories Nos. R/9/0155, R/11/0155 and R/10/0094 respectively and category No- R/9/0156 for ELAAU / Dankuni.

## 5. DRAWINGS

The following drawings are attached with the specification:

Drg.No. : CLW/ES/3/SK-1/0450 to CLW/ES/3/SK-16/0450 except CLW/ES/3/SK-3/0450 & CLW/ES/3/SK-15/0450

**5.1** Technical documents and drawings to be furnished by the supplier as part of the contract.

## 6. TESTS :

Type test and routine test shall be carried out according to the relevant IS/IEC Standard.

| PREPARED BY | CHECKED BY | APPROVED BY |
|---|---|---|
| Bikash Naik<br>Digitally signed by Bikash Naik<br>Date: 2025.02.10 11:34:05 +05'30' | Abu Naser<br>Digitally signed by Abu Naser<br>Date: 2025.02.10 12:13:02 +05'30' | AMIT AGGARWAL<br>Digitally signed by AMIT AGGARWAL<br>Date: 2025.02.10 13:21:32 +05'30' |
| SSE/DRG&DGN (M) | SSE/ DRG&DGN (M) | DY. CEE/D-III |

**7. SUBMISSION OF TENDER QUOTATION:**

**7.1** All tender documents including the quotation shall be submitted in triplicate including any correspondence till a contract is finalised.

**7.2** The tenderer shall give sufficient information to prove that his factory has adequate facilities and capacity to manufacture the above materials to meet fully the technical requirements of the specification and quality of materials and workmanship.

**7.3** Quotation shall not be considered complete unless all information is furnished and are therefore liable to be rejected.

**7.4** Detailed drawings of the above materials should be submitted for approval of purchaser.

**7.5** Past test reports (if any).

**8. TECHNICAL DOCUMENTS TO BE SUPPLIED BY THE SUPPLIER:-**

| | | |
|---|---|---|
| i) | Type test reports | : 10 Copies. |
| ii) | Routine test reports along with each set | : 4 Copies. |
| iii) | Detailed drawings | : 6 Copies. |

**9. QUALITY ASSURANCE:**

Quality assurance should be as per ISO 9000.

**NOTE :**

A. The tenderer must indicate the price of each item of the set separately.

Set of Metallic Plates – CLW/ES/3/0450

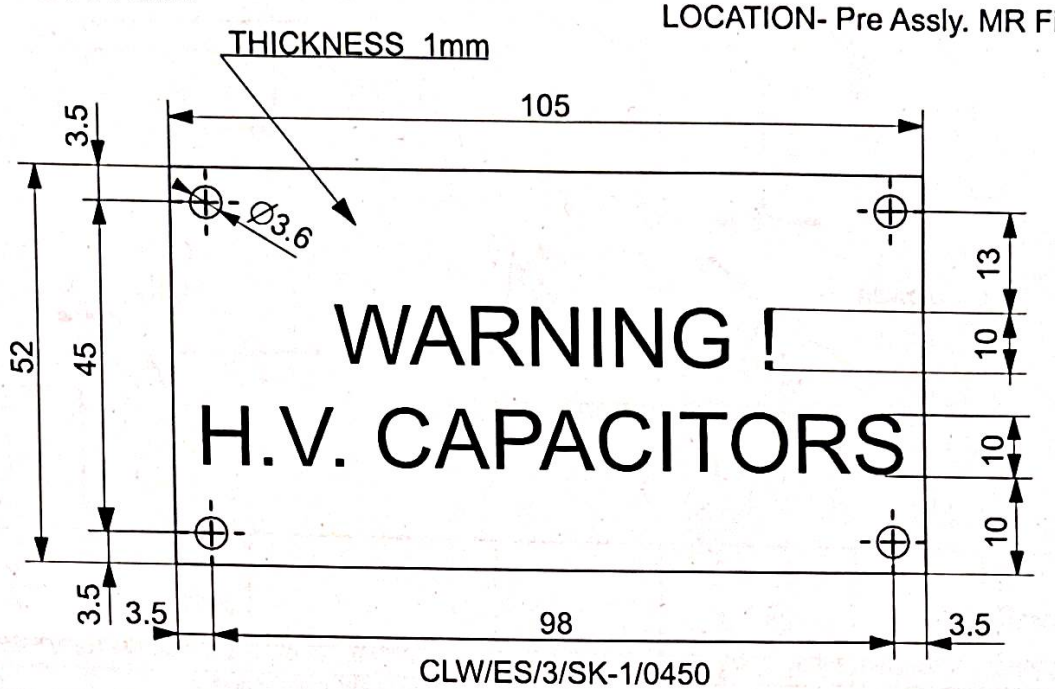
B. Firms identification Mark, Type No, Material identification Number, Month & Year of mfg. are required to be punched.

| PREPARED BY | CHECKED BY | APPROVED BY |
|---|---|---|
| Bikash Naik<br>Digitally signed by Bikash Naik<br>Date: 2025.02.10 11:34:29 +05'30' | Abu Naser<br>Digitally signed by Abu Naser<br>Date: 2025.02.10 12:13:23 +05'30' | AMIT AGGARWAL<br>Digitally signed by AMIT AGGARWAL<br>Date: 2025.02.10 13:22:01 +05'30' |
| SSE/DRG&DGN (M) | SSE/ DRG&DGN (M) | DY. CEE/D-III |

MATERIAL: AL anodised oxidised,
as per IS:1868. & IS:6651
BACKGROUND: Blank
SCRIPT :BLACK
LOCATION- Pre Assly. MR Filter Block

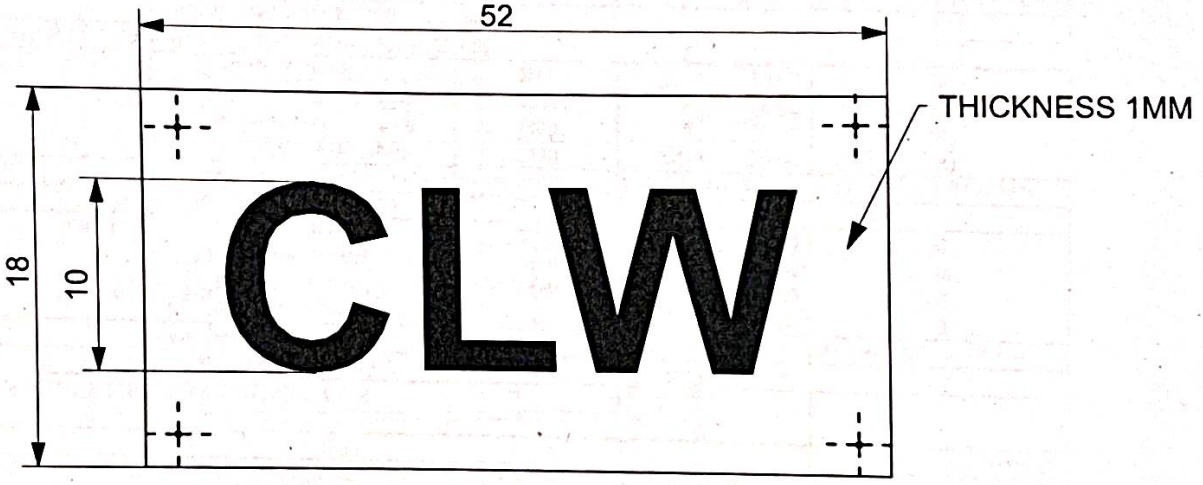
## WARNING PLATE [IDENT. NO. 3EHP431593P0001]

*LINE THICKNESS : 2mm




CLW/ES/3/SK-1/0450

## CLW PLATE [ML 18X52 G-BK] IDENT. NO. NBT 401375P0104




CLW/ES/3/SK-2/0450

MATERIAL: AL ANODISED OXIDISED AS PER ~~IS:1868 & IS:6651~~ *
BACKGROUND: BLANK
SCRIPT: BLACK.

* IS 6651-1972 Gr-19000 (1C) & IS 1868:1996 Gr-AC10

| परिवर्तन संख्या ALT.NO. | प्राधिकार AUTHY | वर्णन DESCRIPTION | दिनांकित आद्यक्षर DATED INITIAL |
|---|---|---|---|
| | | | |

| | | |
|---|---|---|
| सतह – रुक्षता का मान भा. मा. 3073 / अ. मा. सं. 1302 SURFACE ROUGHNESS VALUE TO IS 3073 / ISO 1302 | अनिर्दिष्ट सघ – सीमा भा. मा. : 2102 / अ. मा. सं. : 2768 UNSPECIFIED TOLERANCE TO IS : 2102 / ISO : 2768 | TOL CLS. |
| | धातु–वेल्डन चिन्ह भा. मा. : 813 / अ. मा. सं. :2553 WELDING SYMBOLS TO IS 813 / ISO 2553 | |

| पदांक GRADE NO | सं1 N1 | सं2 N2 | सं3 N3 | सं4 N4 | सं5 N5 | सं6 N6 | सं7 N7 | सं8 N8 | सं9 N9 | सं10 N10 | सं11 N11 | सं12 N12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rz | 0.16-0.3 | 0.5-0.7 | 0.9-1.1 | 1.5-2.0 | 2.5-3.8 | 5.0-6.3 | 9.0-12 | 16-25 | 30-40 | 50-63 | 75-100 | 160-250 |
| Ra μm | 0.025 | 0.05 | 0.1 | 0.2 | 0.4 | 0.8 | 1.6 | 3.2 | 6.3 | 12.5 | 25 | 50 |
| चिन्ह SYMBOL | | | | | | | | | | | | |

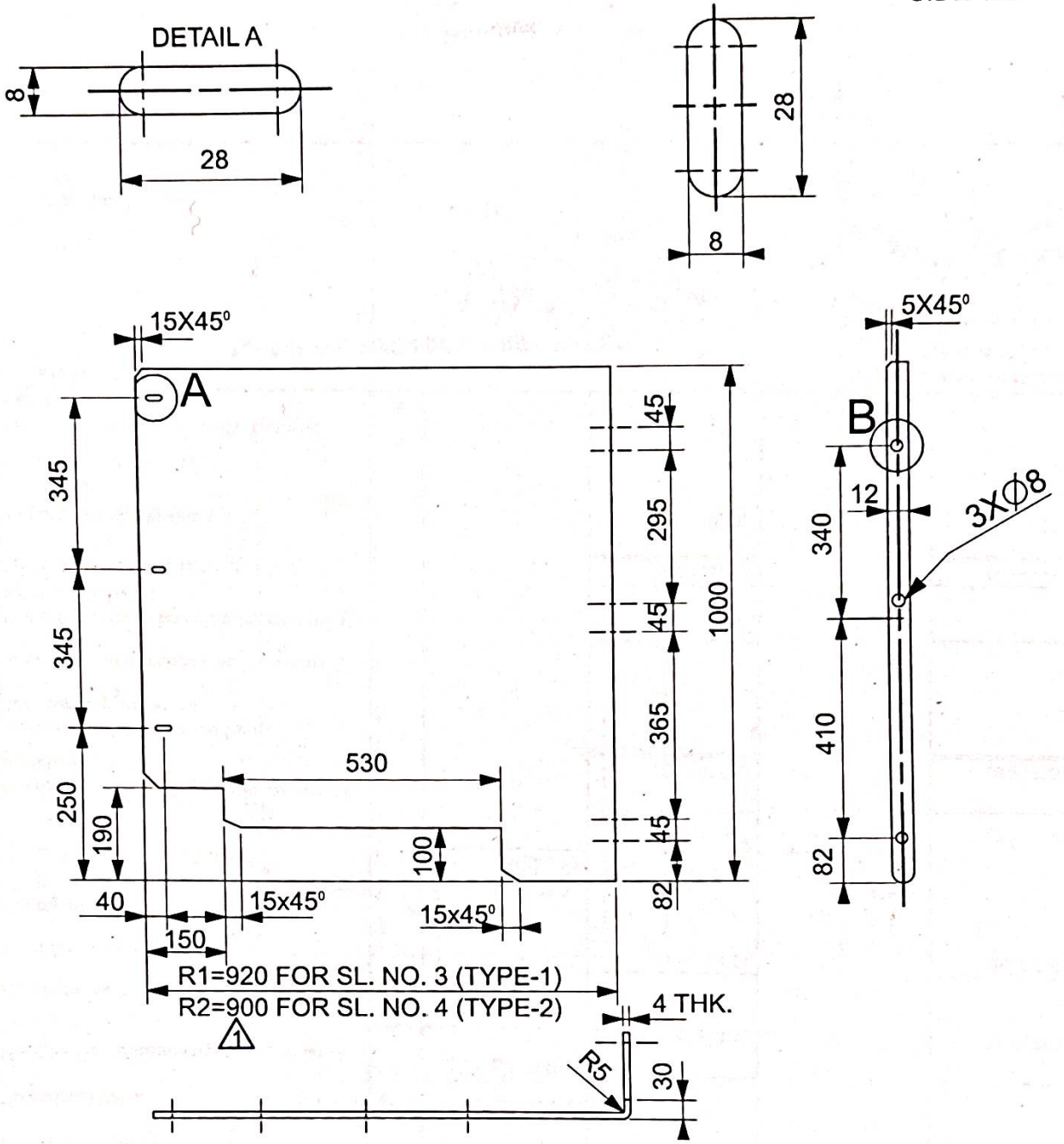
| | | |
|---|---|---|
| अभिकल्पित DGN | | |
| जाँचा व.अ.अ. CHD SSE | ASHISH KUMAR | |
| समीक्षित स.वि.अ. / व.वि.अ. REVIEWED AEE / SEE | | |
| अनुमोदित उ.मु.वि.अ. APPROVED DYCEE | SYAMA PRASAD PATRA | |
| दिनांक DATE | | |
| रैखिक अनुपात SCALE | | |
| संदर्भ / REF. | | ALT.- |

चित्तरंजन रेलइंजन कारखाना
CHITTARANJAN LOCOMOTIVE WORKS, INDIA

| | |
|---|---|
| पदार्थ MATL | प्रति भार कि. ग्रा. WT. EACH IN KG |
| विशिष्टि SPECN | |
| वर्णन DESCRIPTION | SET OF METALLIC PLATE |
| आरेखण संख्या DRAWING NO. | CLW/ES/3/SK-1&2/0450 |
| परिवर्तन संख्या ALTERATION NO. | पर्ण SHEET 1 OF 1 — A4 |

ANGLE PLATE TYPE-1 IDENT. NO. 3EHP431337R0001
TYPE-2 IDENT. NO. 3EHP431337R0002

LOCATION:-
MACHINE ROOM
SIDE 1&2




CLW/ES/3/SK-4/0450

MATERIAL: ALUMINIUM ANODISED OXIDISED AS PER ~~IS:1868~~ *IS 1868:1996 Gr. AC-10 & ~~IS:6651 DEG.~~ **19000(IC)

** IS:6651-1972 Gr

| | | | |
|---|---|---|---|
| 1 | DYCEE/O-4 | DIMENSION CORRECTED FOR R2 AND SL. NO. ALSO CORRECTED FOR R1 AND R2 | |
| परिवर्तन संख्या ALT NO | प्राधिकार AUTHY | वर्णन DESCRIPTION | दिनांकित आद्याक्षर DATED INITIAL |

सतह – रुक्षता का मान भा. मा. मा. सं. 3073 / अ. मा. सं. 1302 SURFACE ROUGHNESS VALUE TO IS:3073 / ISO:1302

अनिर्दिष्ट सघ – सीमा भा. मा. सं : 2102 / अ. मा. सं. : 2768 UNSPECIFIED TOLERANCE TO IS : 2102 / ISO : 2768

धातु-वेल्डन चिन्ह भा. मा. सं : 813 / अ. मा. सं. :2553 WELDING SYMBOLS TO IS:813 / ISO:2553

TOL. CLS.

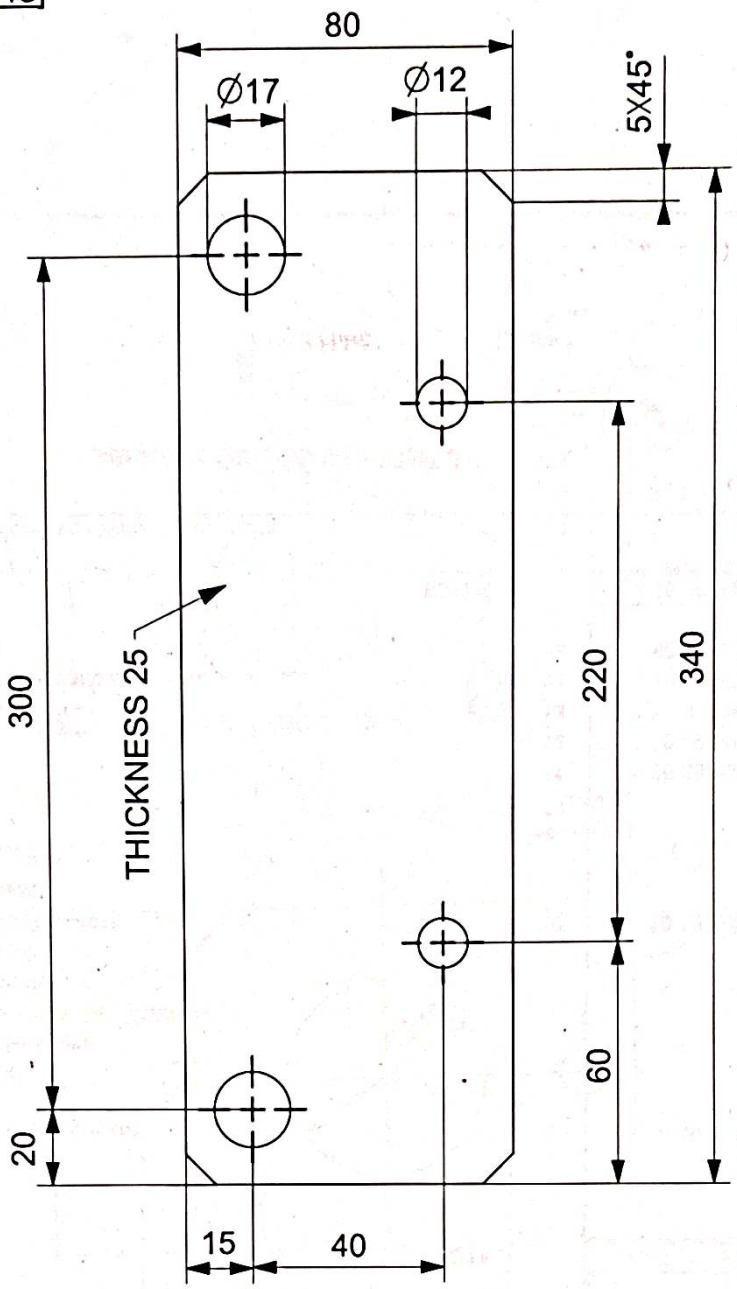
| पदांक GRADE NO. | सं1 N1 | सं2 N2 | सं3 N3 | सं4 N4 | सं5 N5 | सं6 N6 | सं7 N7 | सं8 N8 | सं9 N9 | सं10 N10 | सं11 N11 | सं12 N12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rz | 0.16-0.3 | 0.5-0.7 | 0.9-1.1 | 1.5-2.0 | 2.5-3.8 | 5.0-6.3 | 9.0-12 | 16-25 | 30-40 | 50-63 | 75-100 | 160-250 |
| Ra μm | 0.025 | 0.05 | 0.1 | 0.2 | 0.4 | 0.8 | 1.6 | 3.2 | 6.3 | 12.5 | 25 | 50 |
| चिन्ह SYMBOL | | | | | | | | | | | | |

| | | | |
|---|---|---|---|
| अभिकल्पित DGN | | | |
| जाँचा व.अ.अ. CHD SSE | Abu Naser | | |
| समीक्षित स.वि.अ. / व.वि.अ. REVIEWED AEE / SEE | BHARAT CHAND RA BAL | | |
| अनुमोदित उ.मु.वि.अ. APPROVED DYCEE | AMIT AGGA RWAL | | |
| दिनांक DATE | | | |
| रैखिक अनुपात SCALE | 1:1 | | |
| संदर्भ / REF. | | | |
| ALT.- | | | |

चित्तरंजन रेलइंजन कारखाना
CHITTARANJAN LOCOMOTIVE WORKS, INDIA

| | |
|---|---|
| पदार्थ MATL | प्रति भार कि. ग्रा. WT. EACH IN KG |
| विशिष्टि SPECN | |
| वर्णन DESCRIPTION | SET OF METALLIC PLATE |
| आरेखण संख्या DRAWING NO. | CLW/ES/3/SK-4/0450 |
| परिवर्तन संख्या ALTERATION NO 1 | पर्ण SHEET 1 OF 1 A4 |

# BASE PLATE[TYPE 13]




CLW/ES/3/SK-6/0450

IDENT. NO. 3EHP431499P0001

MATERIAL:-ALUMINIUM ANODISED OXIDISED
AS PER ~~IS:1868.& IS:6651~~*

LOCATION:-ROOF MOUNTING FOR PRIMARY VOLTAGE TRANSFORMER

* IS 6651-1972 Gr-19000 (1C) & IS 1868:1996 Gr-AC10

| परिवर्तन संख्या ALT.NO | प्राधिकार AUTHY | वर्णन DESCRIPTION | दिनांकित आद्यक्षर DATED INITIAL |
|---|---|---|---|
| 1 | Dy CEE/D-III | SL. NO. DELETED | |

| सतह – रुक्षता का मान भा. मा. 3073 / अ. मा. सं. 1302 SURFACE ROUGHNESS VALUE TO IS 3073 / ISO 1302 | अनिर्दिष्ट सह – सीमा भा. मा. ः 2102 / अ. मा. सं. ः 2768 UNSPECIFIED TOLERANCE TO IS : 2102 / ISO : 2768 | TOL CLS |
|---|---|---|
| | धातु–वैल्डन चिन्ह भा. मा. ः 813 / अ. मा. सं. ः2553 WELDING SYMBOLS TO IS 813 / ISO 2553 | |

| पदांक GRADE NO | सं1 N1 | सं2 N2 | सं3 N3 | सं4 N4 | सं5 N5 | सं6 N6 | सं7 N7 | सं8 N8 | सं9 N9 | सं10 N10 | सं11 N11 | सं12 N12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rz | 0.16-0.3 | 0.5-0.7 | 0.9-1.1 | 1.5-2.0 | 2.5-3.8 | 5.0-6.3 | 9.0-12 | 16-25 | 10-40 | 50-63 | 75-100 | 160-250 |
| Ra μm | 0.025 | 0.05 | 0.1 | 0.2 | 0.4 | 0.8 | 1.6 | 3.2 | 6.3 | 12.5 | 25 | 50 |
| चिन्ह SYMBOL | | | | | | | | | | | | |

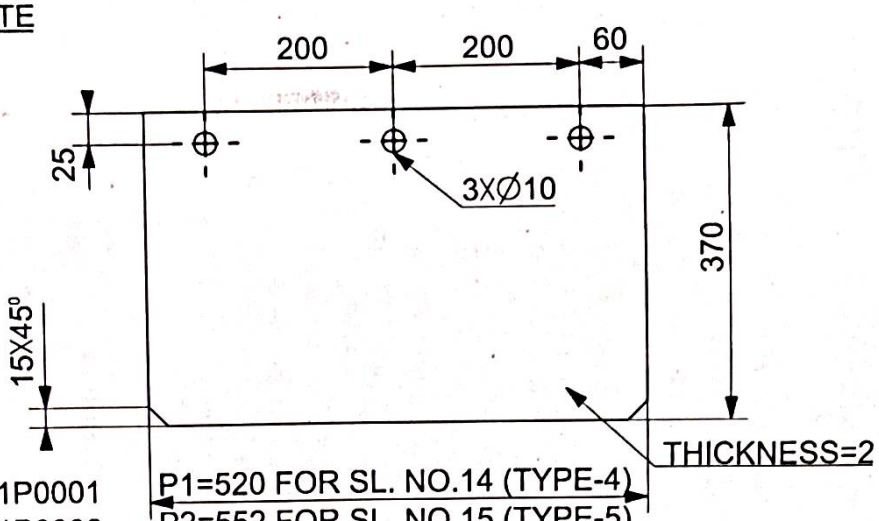
| | |
|---|---|
| अभिकल्पित DGN | |
| जाँचा व.अ.अ. CHD SSE | Abu Naser |
| सभीक्षित स.वि.अ. / व.वि.अ. REVIEWED AEE / SEE | BHARAT CHAND RA BAL |
| अनुमोदित उ.मु.वि.अ. APPROVED DYCEE | AMIT AGGA RWAL |
| दिनांक DATE | |
| रैखिक अनुपात SCALE | 1:1 |
| संदर्भ / REF. | ALT.- |

चित्तरंजन रेलइंजन कारखाना
CHITTARANJAN LOCOMOTIVE WORKS, INDIA

| पदार्थ MAT'L | प्रति भार कि. ग्रा. WT. EACH IN KG |
|---|---|
| विशिष्टि SPECN. | |
| वर्णन DESCRIPTION | SET OF METALLIC PLATE |
| आरेखण संख्या DRAWING NO. | CLW/ES/3/SK-6/0450 |
| परिवर्तन संख्या ALTERATION NO. 1 | पर्ण SHEET 1 OF 1 — A4 |

## SL.NO.14&15 ANGLE PLATE

CLW/ES/3/SK-13/0450



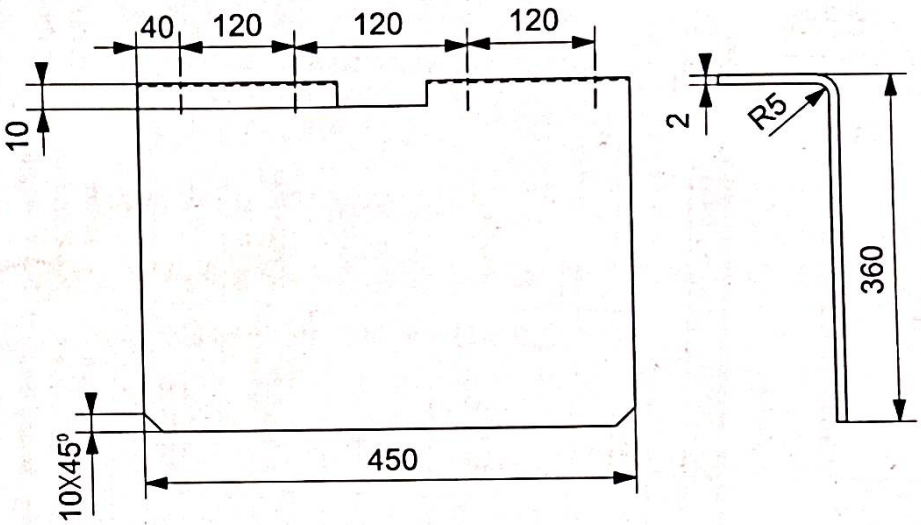

**MATERIAL:**
STAINLESS STEEL AS PER
ASTM A240 Gr. 321

TYPE4 IDENT NO. 3EHP431721P0001
TYPE5 IDENT NO. 3EHP431721P0002

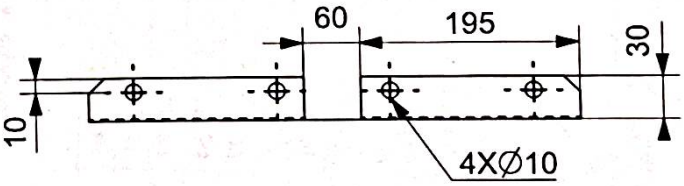
P1=520 FOR SL. NO.14 (TYPE-4)
P2=552 FOR SL. NO.15 (TYPE-5)
△1

## SL.NO.5 △1 ANGLE PLATE (TYPE-3)

IDENT NO. 3EHP431722P0001
CLW/ES/3/SK-5/0450




MATERIAL:-ALUMINIUM
ANODISED
OXIDISED AS
PER ~~IS:1868 &~~
~~IS:6651~~ *




* IS 6651-1972 Gr-19000(1C) & IS 1868:1996 Gr-AC10

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Dy CEE D-II | IN SK-13 SL. NO CORRECTED FOR P1&P2 DIMN CORRECTED FOR P2 SK-5 SL NO CORRECTED | | | | | | | | | | | |
| परिवर्तन संख्या ALT NO | प्राधिकार AUTHY | वर्णन DESCRIPTION | | | | | | | | | | | दिनांकित हाशिया DATED INITIAL |
| सतह – रुक्षता का मान भा. मा. 3073 / अ. मा. सं. 1302 SURFACE ROUGHNESS VALUE TO IS 3073 / ISO 1302 | | अनिर्दिष्ट सघ – सीमा भा. मा. : 2102 / अ. मा. सं. : 2768 UNSPECIFIED TOLEARANCE TO IS 2102 / ISO 2768 | | | | | | | | | | | TOL CLS. |
| | | धातु-वेल्डन चिन्ह भा. मा. : 813 / अ. मा. सं. :2553 WELDING SYMBOLS TO IS 813 / ISO 2553 | | | | | | | | | | | |
| पदांक GRADE NO | सं1 N1 | सं2 N2 | सं3 N3 | सं4 N4 | सं5 N5 | सं6 N6 | सं7 N7 | सं8 N8 | सं9 N9 | सं10 N10 | सं11 N11 | सं12 N12 | |
| Rz | 0.16-0.3 | 0.5-0.7 | 0.9-1.1 | 1.5-2.0 | 2.5-3.8 | 5.0-6.3 | 9.0-12 | 16-25 | 30-40 | 50-63 | 75-100 | 160-250 | |
| Ra μm | 0.025 | 0.05 | 0.1 | 0.2 | 0.4 | 0.8 | 1.6 | 3.2 | 6.3 | 12.5 | 25 | 50 | |
| चिन्ह SYMBOL | | | | | | | | | | | | | |

| | | |
|---|---|---|
| अभिकल्पित DGN | | चित्तरंजन रेलइंजन कारखाना CHITTARANJAN LOCOMOTIVE WORKS, INDIA |
| जाँचा व.अ.अ. CHD SSE | Abu Naser | पदार्थ MATL / प्रति भार कि. ग्रा. WT. EACH IN KG |
| समीक्षित स.वि.अ. / व.वि.अ. REVIEWED AEE / SEE | BHARAT CHAND RA BAL | विशिष्टि SPECN |
| अनुमोदित उ.मु.वि.अ. APPROVED DYCEE | AMIT AGGA RWAL | वर्णन DESCRIPTION SET OF METALLIC PLATE |
| दिनांक DATE | | आरेखण संख्या DRAWING NO. CLW/ES/3/SK-13&5/0450 |
| रैखिक अनुपात SCALE | 1:1 | परिवर्तन संख्या ALTERATION NO. / पर्ण SHEET 1 OF 1 / A4 |
| संदर्भ / REF. | ALT.- | |