# SPECIFICATION FOR SET OF CLIP WAG-9 (Co-Co)/ WAP-5 (Bo-Bo) ELECTRIC LOCOMOTIVES

## SPECIFICATION No. CLW/ES/3/0136 ALT.-D
## ISSUE DATE:04.06.1997

Enclosures: DRG. No. 1. CLW/ES/3/SK-1/0136
2. CLW/ES/3/SK-2/0136
3.CLW/ES/3/SK-3/0136 ALT-C

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

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| SSE/DRG&DGN (M) | SSE/DRG | DY. CEE/D-III |

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## ALTERATION RECORD SHEET

| ALT. No. | DATE | REASON | AUTHORITY |
|---|---|---|---|
| A | 26.04.1999 | Item against Material Schedule at page no 3 bearing SL.No. 01 to 05 are deleted. Quantity/Loco against Sl No 6E is increased | S/d- 28.04.1999 |
| B | 14.12.2001 | As KLIPCO make clip are being used regularly in our locos and the dia of hose clip in our specn are not matching with the dia of KLIPCO catalogue.The detail dimensions of hose clip and testing procedure has been added. | S/d- 20.12.2001 |
| C | 28.02.2019 | Hose Clip (18-25), Hose Clip (45-60) & Hose Clip (90-110) of FIG No. (I), (IV) & (VI) repectively are deleted and hose clip (32-45) of FIG No. (III) is increased QTY/Loco from 58 Nos. to 60 Nos. per Loco Set. | S/d- 28.02.2019 |
| D | | Qty/Loco Column Deleted From Para 4 (Scope of Supply) And Note Added Below Para 4. | AMIT AGGARWAL Digitally signed by AMIT AGGARWAL Date: 2025.07.15 13:19:03 +05'30' |
| E | | (i) Standard has been specified at Para 7, 7.1, 7.2 & Drawing CLW/ES/3/SK-3/0136. (ii) Sub Clause (iv) of Clause 7.1 has been deleted. | |

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

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| RAVI KARMALI Digitally signed by RAVI KARMALI Date: 2025.05.26 15:57:40 +05'30' | RAVI KUMAR SUMAN Digitally signed by RAVI KUMAR SUMAN Date: 2025.06.13 12:43:50 +05'30' | AMIT AGGARWAL Digitally signed by AMIT AGGARWAL Date: 2025.07.15 13:19:26 +05'30' |
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## SPECIFICATION FOR SET OF CLIP

1. **SCOPE :**

This specification covers the manufacture and supply of SET OF CLIP for WAG-9 (Co-Co), 6000 HP , 3-Phase, 25KV 50 HZ, AC Locomotive.

2. **SERVICE CONDITION:-**

2.1

| | |
|---|---|
| Maximum atmospheric temperature | : +70˚C (in sun) & +50˚C (in shade) |
| Normal humidity | : 60% |
| Maximum humidity | : 100% saturation during rainy season. |
| Altitude | : 160 m.a.s.l. |
| Rain fall | : Very heavy in certain areas. The equipment Should be designed in such a way as to Withstand 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 designed to work in coastal area in humid and salty laden atmosphere. |
| Vibration | : The equipment sub-system and their mounting arrangement will be designed to withstand vibration and shock encountered in service as specified in correspondence unless otherwise prescribed. |

3. **STANDARD:**

The relevant IEC, BS, DIN Standard & Indian standard specification shall apply with respect to all materials used in the manufacture of CLIP.

4. **SCOPE OF SUPPLY:**

| Fig. No. | Description | Ref. No. | Material |
|---|---|---|---|
| II | Hose Clip (22-30) | Klipco make | S.S-304 |
| III | Hose Clip (32-45) | -do- | -do- |
| V | Hose Clip (70-90) | -do- | -do- |

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**NOTE:** QTY/LOCO TO BE FOLLOWED AS MENTIONED IN RELATED CATEGORY NO.P/0/0021 FOR WAG-9HC, WAP-7 AND WAP-5 LOCOS.

**5. SUBMISSION OF TENDER QUOTATION:**

**5.1** All tender documents including the quotation shall be submitted in duplicate including any correspondence till a contact is finalised.

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

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

**5.4** Detailed drawings of the clip should be submitted for approval of purchaser.

**6. DRAWINGS :**

The following drawings are attached with the specification:

Drg. No. : CLW/ES/3/SK-3/0136/B

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

**7.0 TEST:**

Type test and routine test shall be carried out according to IS : 4762 & IS : ~~1572~~ 6911 : 2017 Gr 304 H

**7.1 Type Test:**

i) Dimensional checking.
ii) Examination for band, housing and screw as per ~~DIN 17224~~. IS : 4762 & IS : 6911 : 2017 Gr 304 H
iii) Finish of the product.
~~iv) Thickness of cadmium plating: 0.3 to 0.5 micron as per IS: 1572~~
v) **Torque Test**: - The test shall be conducted with the hose clip in the unlubricated condition mounted on a rigid mandrel of a diameter equal to the designating size of the clip. The clip shall be tightened to the following appropriate torque load.

| | | |
|---|---|---|
| Hose Clip (22-30) | : | 0.69 Kgf/m |
| Hose Clip (32-45) | : | 0.81 Kgf/m |
| Hose Clip (45-60) | : | 0.81 Kgf/m |
| Hose Clip (18-25) | : | 0.58 Kgf/m |
| Hose Clip (90-110) | : | 0.92 Kgf/m |
| Hose Clip (70-90) | : | 0.92 Kgf/m |

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| SSE/DRG&DGN (M) | SSE/DRG | DY. CEE/D-III |

vi) **Fatigue Torque Loading Test**: - The test shall be conducted with the same set up of torque testing procedure. The clip shall then be subjected to a torque loading and release of torque loading to the values specified in the result of torque test at least 10 times without resulting in any distortion or permanent deformation of clip as a whole.

vii) **Hydraulic Pressure Test**: - the fluid used for the test shall be water at room temperature. Pressure shall be applied gradually from an external source until leakage or other failures occurs, at which stage the pressure shall be not less than the following appropriate value:

| | | Minimum Pressure |
|---|---|---|
| Hose Clip (22-30) | : | 14.1 Kgf/sq.cm |
| Hose Clip (32-45) | : | 8.4 Kgf/sq.cm |
| Hose Clip (45-60) | : | 8.4 Kgf/sq.cm |
| Hose Clip (18-25) | : | 14.1 Kgf/sq.cm |
| Hose Clip (90-110) | : | 4.2 Kgf/sq.cm |
| Hose Clip (70-90) | : | 4.2 Kgf/sq.cm |

**7.2 Routine Test**:

i) Dimensional checking

ii) Examination for band, housing and screw as per ~~DIN 17224.~~ IS:4762 & IS:6911:2017 Gr 304H

iii) Finish of the product.

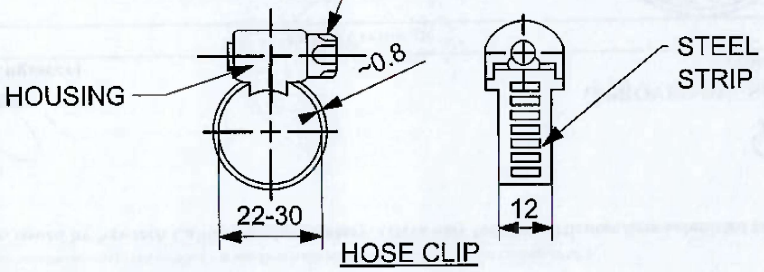
**8.0 Technical documents to be supplied by the supplier**:

| | | | |
|---|---|---|---|
| i) | Type Test Reports | : | 10 Copies |
| ii) | Routine Test Report along with each set | : | 04 Copies |
| iii) | Maintenance manual | : | 20 Copies |
| iv) | Detailed drawings | : | 06 Copies |

**NOTE:** The name and year of Manufacture of the firm should be embossed on the item.

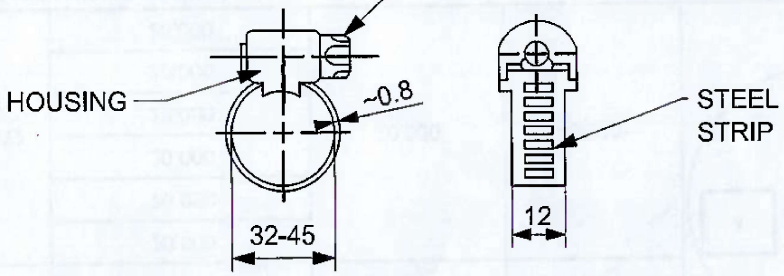
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| SSE/DRG&DGN (M) | SSE/DRG | DY. CEE/D-III |

FIG.NO.(II) SCREW WEIGHT IN Kg/No.=0.023




HOSE CLIP

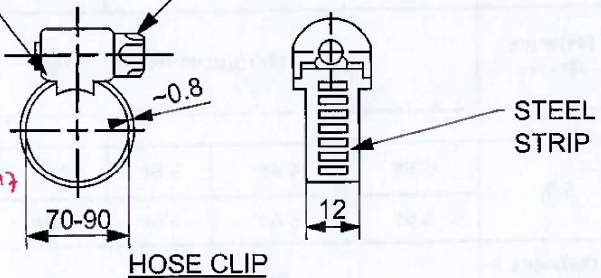
FIG.NO.(III) SCREW WEIGHT IN Kg/No.=0.025




HOSE CLIP

HOUSING

FIG.NO.(v) SCREW WEIGHT IN Kg/No.=0.047




HOSE CLIP

MATERIAL:-
STRIP+HOUSING
~~X12CrNi177~~
~~W.Nr.1.4310 ACCORDING~~
TO ~~DIN17224~~ IS: 6911:2017 Gr 304 H

SCREW:-
~~CADMIUM PLATED~~
~~C22W.Nr.1.0402~~
~~CK22W.Nr.1.1151 ACCORDING~~
TO ~~DIN 17220/IS:1572~~
IS:6911:2017 Gr 304 H

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

| खरदड़ – रुक्षता का मान भा. मा. 3073 / अ. मा. सं. 1302 SURFACE ROUGHNESS VALUE TO IS:3073 / ISO1302 | अनिर्दिष्ट सह – 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. 12553 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 | 0.5-0.1 | 0.8-1.1 | 1.5-2.0 | 2.5-3.8 | 5.0-6.3 | 8.0-11 | 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 स.मु.वि.अ. APPROVED DYCEE | SYAMA PRASAD PATRA |
| दिनांक DATE | |
| रैखिक अनुपात SCALE | 1:1 |
| संदर्भ / REF. | ALT.- |

चितरंजन रेलइंजन कारखाना
CHITTARANJAN LOCOMOTIVE WORKS, INDIA

| पदार्थ MATL | प्रति भार कि. ग्रा. WT. EACH IN KG |
|---|---|
| विशिष्टि SPECN | |

वर्णन DESCRIPTION **SET OF CLIPS**

आरेखण संख्या DRAWING NO. **CLW/ES/3/SK-3/0136**

परिवर्तन संख्या ALTERATION. NO. | पर्ण SHEET 1 OF 1 | A4

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