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TECHNICAL SPECIFICATION FOR

1) SPRING LOADED SWITCH FOR SANDING
2) PUSH BUTTON FOR RELEASE OF INDEP.BRAKE

FOR 3-PHASE ELECTRIC LOCOMOTIVES.

Specification No : CLW/ES/3/0032 ALT.H

ISSUE DATE: 04.06.2000

ENCLOSURES

1. **DRG.NO.**
   - (i) **CLW/ES/3/SK-1/0032/H**
   - (ii) **CLW/ES/3/SK-2/0032/H**

ISSUED BY :

DY. CHIEF ELECTRICAL ENGINEER/D-II
CHITTARANJAN LOCOMOTIVE WORKS P.O.
CHITTARANJAN – 713331
DIST.PASCHIM BARDHAMAN WEST BENGAL (INDIA)

Prepared by	Checked by	Approved by
JE/D/Elec.	SEE/D-I	Dy. CEE/D-II

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ALTERATION RECORD SHEET

Amendment No.	Date of Amendment	Page No.	Alteration	Reason	Authority
1	06.06.2000	5 & 7	A	I) Rated voltage & Current have been changed at sheet no.5 & mounting dimension have been added at sheet no.7. II) Type test & Routine test introduce in clause-6	S/d-
2.	23.08.2007	6	B	In Page No.6 Type No of the Switches wrongly mentioned as 7277 in place of 7727. It is corrected as SPI-PI-7727.	S/d-
3.	17.03.2008	5	C	In Page No.5, Clause 6.1 Endurance test for 10,000 operation has been changed to min 15 million operation as per R.B. letter no.2007/Elect (TRS)/138/9 Pt. dated.22.10.07	S/d-
4.	26.06.2009	5	D	Exemption of Endurance test as mentioned Alt.6 for OEM i.e. M/s. Spring AG/SWZ.	S/d
5.	09.08.2011	5	E	I) Sl.no.5 of clause no.6.2 has been deleted. II) Sl.no.6 of clause no.6.2 has been included.	S/d
6.	06.11.2013	5	F	I) Deletion of Sub-clause 6 of clause 6.2 Routine tests. II) Sub-clause 5 of clause 6.2 is reintroduced.	S/d
7.	30.05.2017	5	G	Electrical Endurance has been changed from 15 to 1.5 million.	S/d
8.	14. 07.2025	Drg.	H	1. "Foot Switch Spring Load Vigilance" has been deleted wherever specified in the specification due to implementation of RDSO MS-505. 2. Material of Knob and stud has been specified as "Stainless Steel Gr.321". in Sheet No. CLW/ES/3/SK-1 & SK-2/0032/H	S/d
9.	------	Drg.	I	Following changes have been made in Sheet No. CLW/ES/3/SK-1/0032/I (i) Lenth of the switch has been corrected as 8.5 cm in drg. (ii) Width of the switch has been corrected as 7 cm in drg. (iii) Width of the switch (without 0.5cm notch) 6.5 cm indicated in drg.	-

Note:- Specifications have been digitized and all alterations have been incorporated.

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SPECIFICATION FOR 1) SPRING LOADED SWITCH FOR SANDING 2) PUSH BUTTON FOR RELEASE OF INDP.BRAKE

1. SCOPE :

This specification applies to SPECIFICATION FOR 1) SPRING LOADED SWITCH FOR SANDING 2) PUSH BUTTON FOR RELEASE OF INDP.BRAKE for 3-Phase Electric Locomotives for 25 KV, 50 Hz system..

2. Climatic and environmental condition: -

Maximum atmospheric temperatures	* Under Sun: 70°C. * In shade.: 50°C. * Minimum Temperature - 10°C (also snowfall in certain areas during winter season}.
Humidity	100% saturation during rainy season.
Reference site conditions	• Ambient Temperature max 55°C • Min – 10°C • Humidity: 100% • Altitude: 1776m above mean sea level against USBRL Project condition
Rainfall	Very heavy in certain areas. The locomotive shall be designed to permit it's running at 10 Km per hour in flood water level of 200 millimeter above Rail level.
Atmosphere during hot weather	Extremely dusty and desert terrain in certain areas.
Coastal areas	Locomotive and equipment shall be designed to work in coastal areas in humid and salt laden atmosphere.

3. STANDARDS :

ISO 4589-28V 94-1 These standard are applicable for 1) SPRING LOADED SWITCH FOR SANDING 2) PUSH BUTTON FOR RELEASE OF INDP.BRAKE. These relevant Indian standard shall also apply with respect to all materials used in the manufacture of these items

4. SUBMISSION OF TENDER QUOTATION :

4.1 The tenderer shall give sufficient information to prove that his factory has adequate facilities and capacity to manufacture such items.

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

4.3 Detailed drawing of the 1) SPRING LOADED SWITCH FOR SANDING 2) PUSH BUTTON FOR RELEASE OF INDEPENDANT.BRAKE should be submitted for approval of the purchaser.

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5. DRAWINGS:

The following drawings are attached with the specification: -

1) CLW/ES/3/SK-1/0032/H
2) CLW/ES/3/SK-2/0032/H

6. TEST:

The following type test and routine test shall be conducted: -

Sl. No.	Test Description	Type Test	Routine Test
1.	Visual check up	✓	✓
2.	Dimensional check-up according to drawing	✓	✓
3.	Milli volt drop test (max. allowable voltage drop = 20 mV)	Before and after endurance test	✓
4.	Endurance test under loaded condition (i.e. 110 V D.C., 1.2A) for min 1.5 million operation	✓	One sample from a group of every 25 samples shall be subjected to endurance test for 10,000 operations
5.	Di-electric test (At 1.5KV for one minute)	✓	✓

7. TECHNICAL DESCRIPTION :

RATED VOLTAGE : 150 V, D.C.

CURRENT : 1.2 A

TEMPERATURE : -40°C TO +70°C

PROTECTION CLASS : IP20 CONDENSATION PROOF

8. QUANTITY PER LOCO :

1) SPRING LOADED SWITCH FOR SANDING : 2 NOS
2) PUSH BUTTON INDEPENDANT. BRAKE : 2 NOS

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9. REFERENCES :

This specification refers to the original manufacturer of :

M/S. SPRING AG
SWITZERLAND
TYPE: SPR-PI-7727

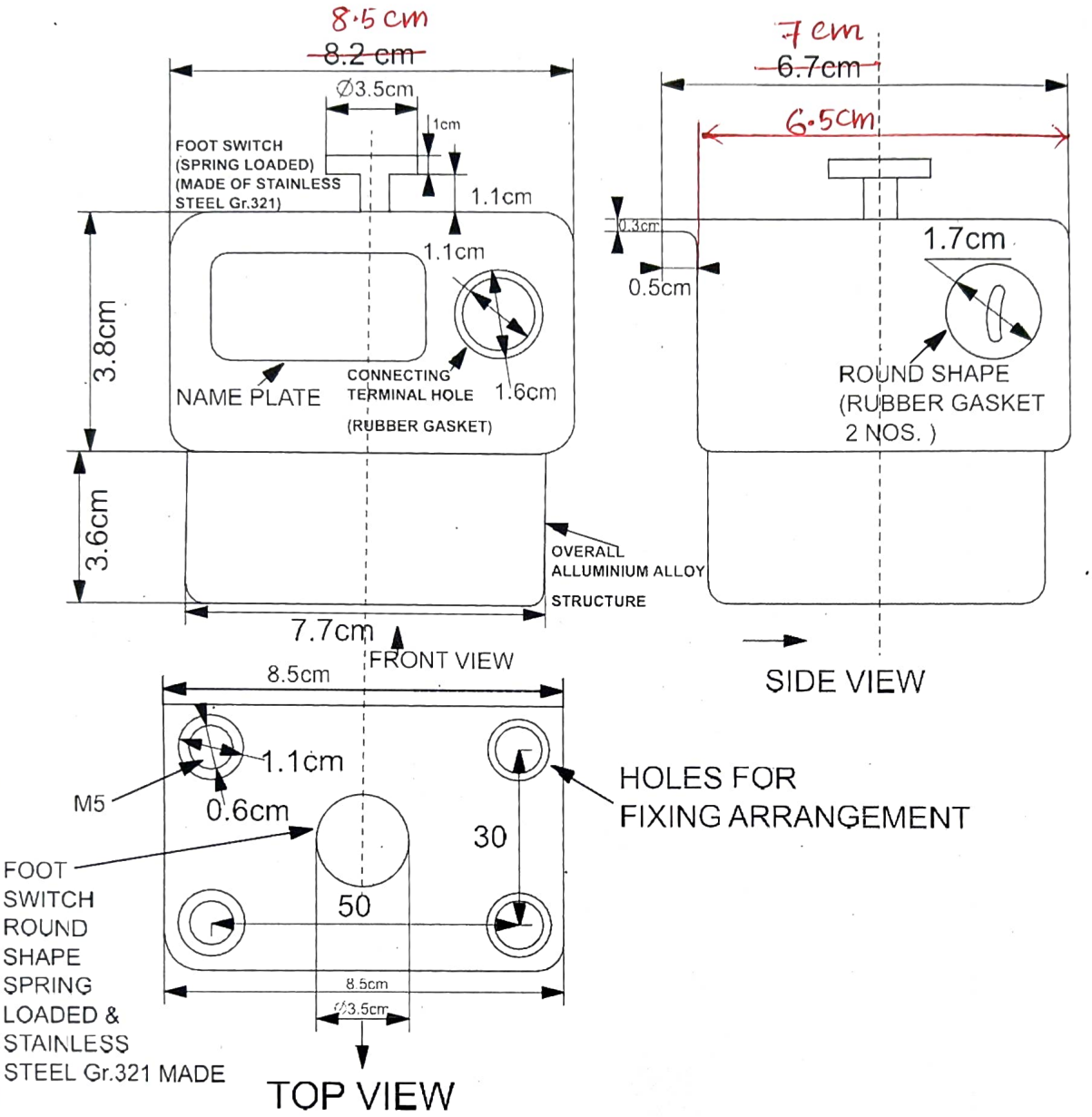
• SCHEMATIC POSITION OF THE LOCOMOTIVE:

1) SPRING LOADED SWITCH FOR SANDING : 192.1
2) PUSH BUTTON INDEPENDANT. BRAKE : 262

NOTE :-

1) The name and year of manufacture of the firm should be embraced on the item.
2) Hardwares are to be used should be any of the following make :-
   a) Un-brako (Precision Fasteners)
   b) Sundaram Fasteners (TVS)
   c) Laxmi Precision (LPS)
   d) All spring washers of Forbes Gohtak Ltd. Make, Mumbai only

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OUTER STRUCTURE VIEW OF FOOT SWITCH FOR WAG-9 (CO-CO)

परिवर्तन संख्या ALT.NO.	प्राधिकार AUTHY	वर्णन DESCRIPTION	दिनांकित द्वारा DATED INITIAL

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

अनिर्दिष्ट सह – छीजा भा. मा. : 2102 / अ. मा. सं. : 2768 UNSPECIFIED TOLEARANCE TO IS : 2102 / ISO : 2768

धातु–वेल्डन चिन्ह भा. मा. : 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	9.8-12	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												

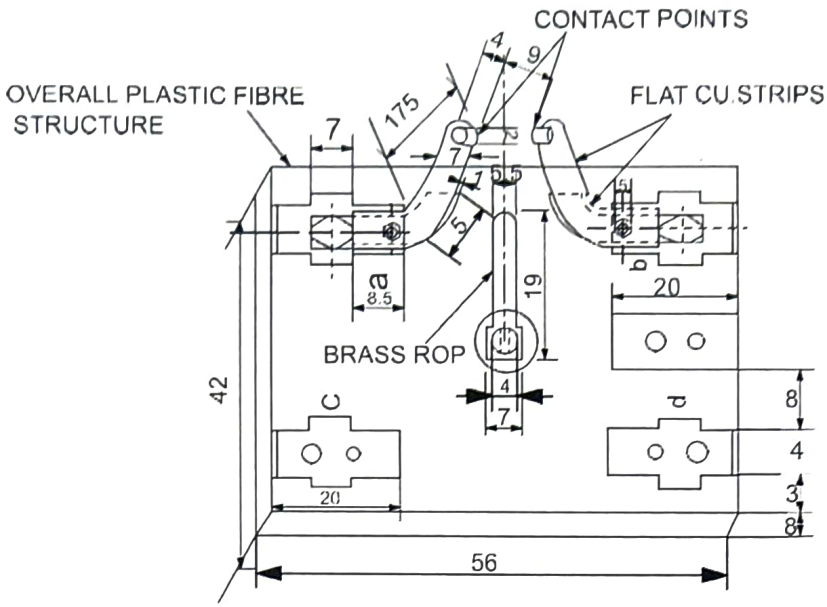
अभिकल्पित DGN	
जॉचा व.अ.अ. CHO SSE	NARENDRA KUMAR Digitally signed by NARENDRA KUMAR Date: 2025.07.18 11:12:57 +05'30'
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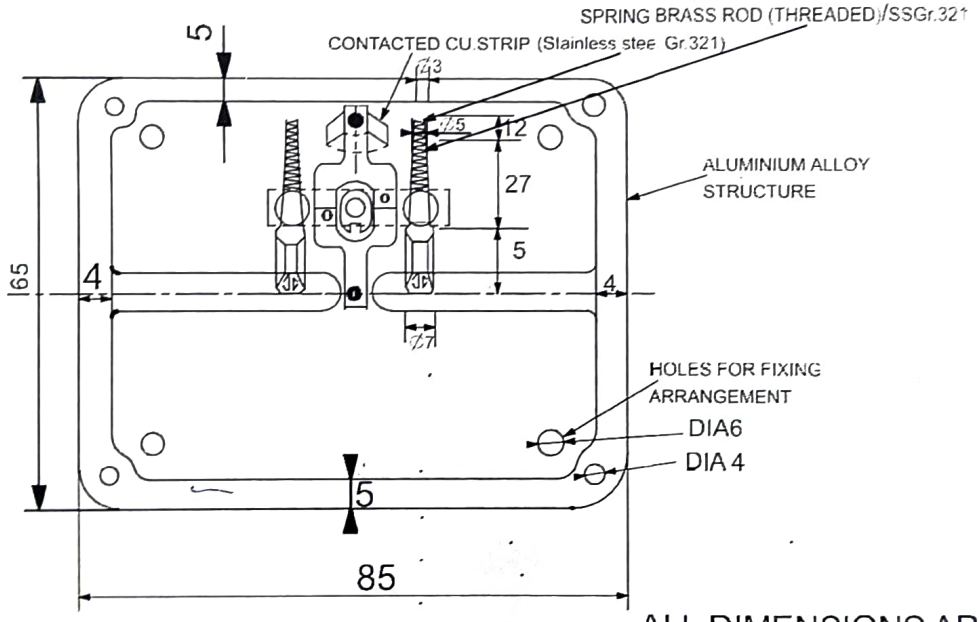
चित्तरंजन रेलइंजन कारखाना
CHITTARANJAN LOCOMOTIVE WORKS, INDIA

पदार्थ MATL	प्रति भार कि. ग्रा. WT. EACH IN KG
विशिष्टि SPECN	
वर्णन DESCRIPTION	FOOT SWITCH SPRING LOAD FOR SANDING AND RELEASE OF INDEP. BRAKE
आरेखण संख्या DRAWING NO.	CLW/ES/3/SK-1/0032/H1
परिवर्तन संख्या ALTERATION. NO.	पर्ण SHEET 1 OF 1 — A4

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ALL DIMENSIONS ARE IN mm

परिवर्तन संख्या ALT.NO	प्राधिकार AUTHY	वर्णन DESCRIPTION	दिनांकित दाखल DATED INITIAL

सतह – खुरदरा का मान भा. मा. सं. 3073 / अ. मा. सं. 1302 SURFACE ROUGHNESS VALUE TO IS:3073 / ISO 1302	अनिर्दिष्ट छूट – दीर्घ भा. मा. : 2102 / अ. मा. सं. : 2768 UNSPECIFIED TOLERANCE TO IS : 2102 / ISO 2768		TOL. CLS.
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Ra μm	0.025	0.05	0.1	0.2	0.4	0.8	1.6	3.2	6.3	12.5	25	50
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अधिकल्पित DGN		
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संदर्भ / REF.	ALT.-	

चित्तरंजन रेलइंजन कारखाना
CHITTARANJAN LOCOMOTIVE WORKS, INDIA

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वर्णन DESCRIPTION	FOOT SWITCH SPRING LOAD FOR SANDING AND RELEASE OF INDEP. BRAKE
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