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TECHNICAL SPECIFICATION FOR

- 1) SPRING LOADED SWITCH FOR SANDING
- 2) FOOT SWITCH SPRING LOAD VIGILANCE
- 3) ~~FOOT SWITCH~~ ~~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.BARDHAMAN (WEST), WEST BENGAL (INDIA)**

Prepared By	Checked By	Approved By
SSE/Design	AEE/Design	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 inclause-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 caluse 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.	04.04.2024	1,4,5, 6	H	I) Description of Push Button Independent Brake is changed to FOOT SWITCH FOR RELEASE OF INDP.BRAKE II) Quantity for Foot switch for Traction Motor Dropping detection System is included for implementantation of RDSO MS 496 rev '0'.	S/d

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

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SPECIFICATION FOR 1) SPRING LOADED SWITCH FOR SANDING 2) FOOT SWITCH SPRING LOAD VIGILANCE 3) ~~FOOT SWITCH PUSH BUTTON~~ FOR RELEASE OF INDP.BRAKE

1. SCOPE :

This specification applies to SPECIFICATION FOR 1) SPRING LOADED SWITCH FOR SANDING 2) FOOT SWITCH SPRING LOAD VIGILANCE 3) ~~FOOT SWITCH 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.
Humidity	100% saturation during rainy season.
Ambient temperature range	0.....+55°C (motor in air flow)
Humidity	Normal : 60% Maximum : 100%
Altitude	Normal :160 m above mean sea level.
Cooling	Power dissipation in air flow

Locomotive and equipment will be designed to work in coastal areas (humid and salt laden atmosphere possible) and in desert areas (extremely dusty and dried atmosphere).

3. STANDARDS :

ISO 4589-28V 94-1 These standard are applicable for 1) SPRING LOADED SWITCH FOR SANDING 2) FOOT SWITCH SPRING LOAD VIGILANCE 3) ~~FOOT SWITCH 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) FOOT SWITCH SPRING LOAD VIGILANCE 3) ~~FOOT SWITCH 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/G
- 2) CLW/ES/3/SK-2/0032/G

6.1. TYPE TESTS :

The following type test shall be conducted: -

- 1) Visual check up. 2) Dimensional check up according to drawing. 3) Milli volt drop test before endurance test (max. allowable voltage drop = 20 mv) 4) Endurance test under loaded condition (i.e. 110 v D.C., 1.2A) for min 1.5 million operation. 6) Milli volt drop test after endurance test (max. allowable voltage drop = 20 mv). 6) Di-electric test (At 1.5KV for one minute).

Note:- Endurance test as mentioned in Alt.C is not applicable for OEM i.e.M/s.Spring AG/SWZ.

6.2 ROUTINE TESTS :

- 1) Visual check up. 2) Dimensional check up according to drawing. 3) Milli volt drop test (max.allowable voltage drop = 20 mv) 4) Di-electric test (At 1.5KV for one minute). 5) One sample from a group of every 25 samples shall be subjected to endurance test for 10000 operations.

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

for G-9, P-7 & P-5

- 1) SPRING LOADED SWITCH FOR SANDING : 2 NOS
- 2) FOOT SWITCH SPRING LOAD VIGILANCE : 2 NOS
- 3) FOOT SWITCH FOR RELEASE OF ~~PUSH BUTTON~~ INDPENDANT.BRAKE : 2 NOS
- 4) FOOT SWITCH FOR TRACTION MOTOR DROPPING DETECTION SYSTEM : 6 NOS FOR WAG-9HC/9/9H & WAP-7

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9. REFERENCES :

This specification refers to the original manufacturer of :

**M/S. SPRING AG
SWITZERLAND**

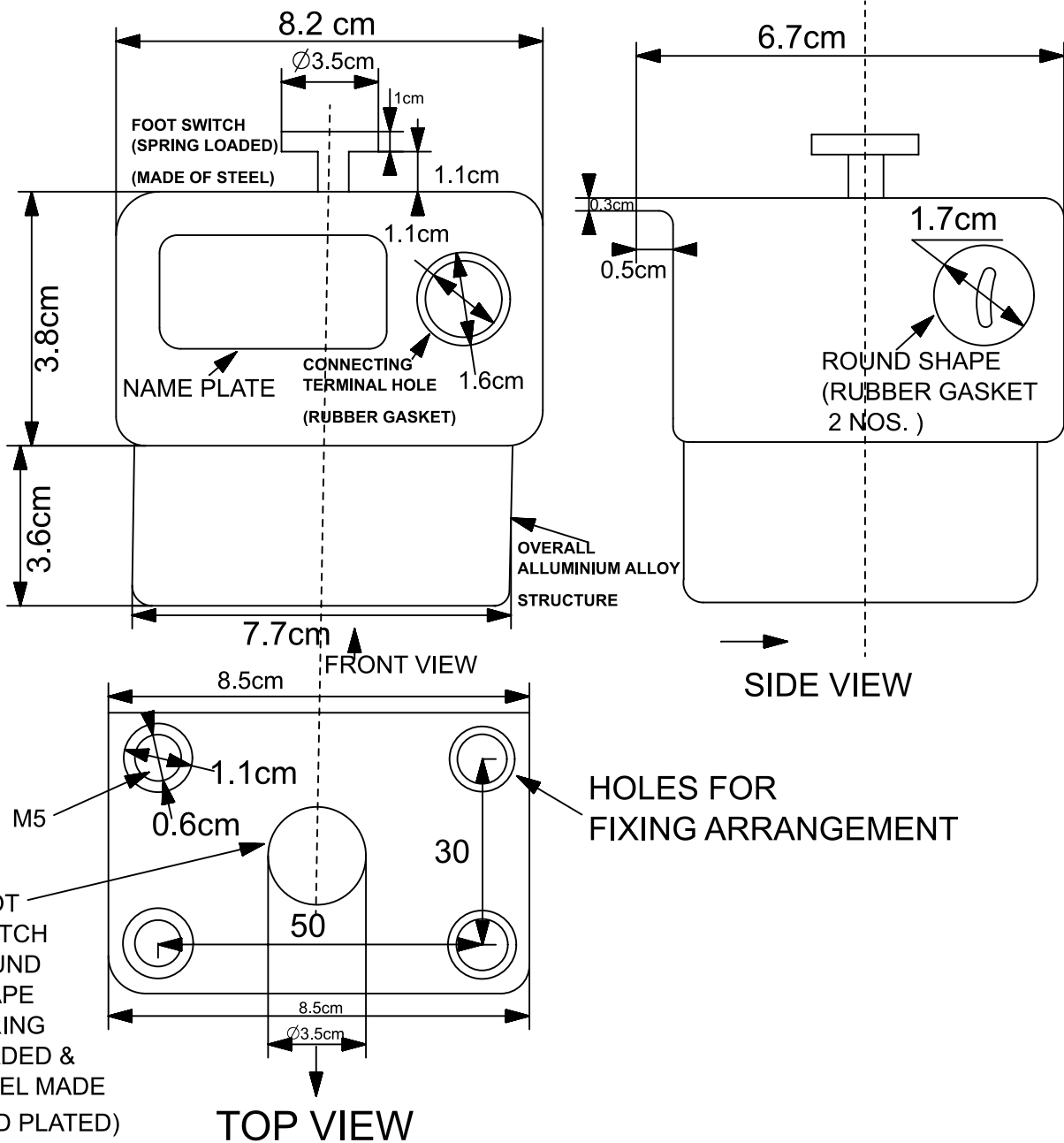
TYPE: SPR-PI-7727

- SCHEMATIC POSITION OF THE LOCOMOTIVE:








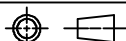
1) SPRING LOADED SWITCH FOR SANDING	: 192.1
2) FOOT SWITCH SPRING LOAD VIGILANCE	: 235
3) FOOT SWITCH FOR RELEASE OF PUSH BUTTON INDEPENDANT BRAKE	: 262

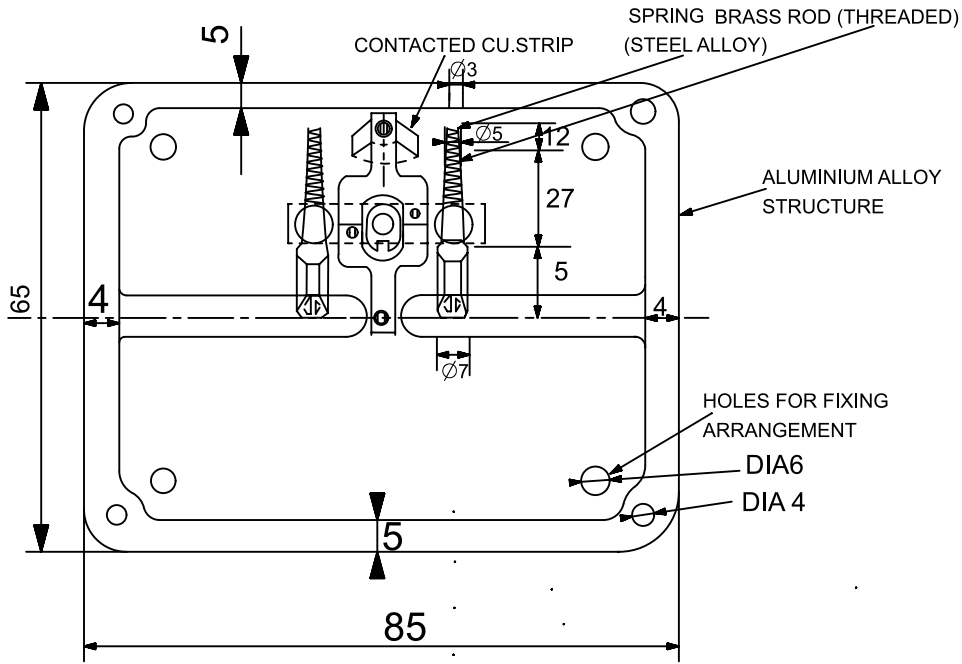
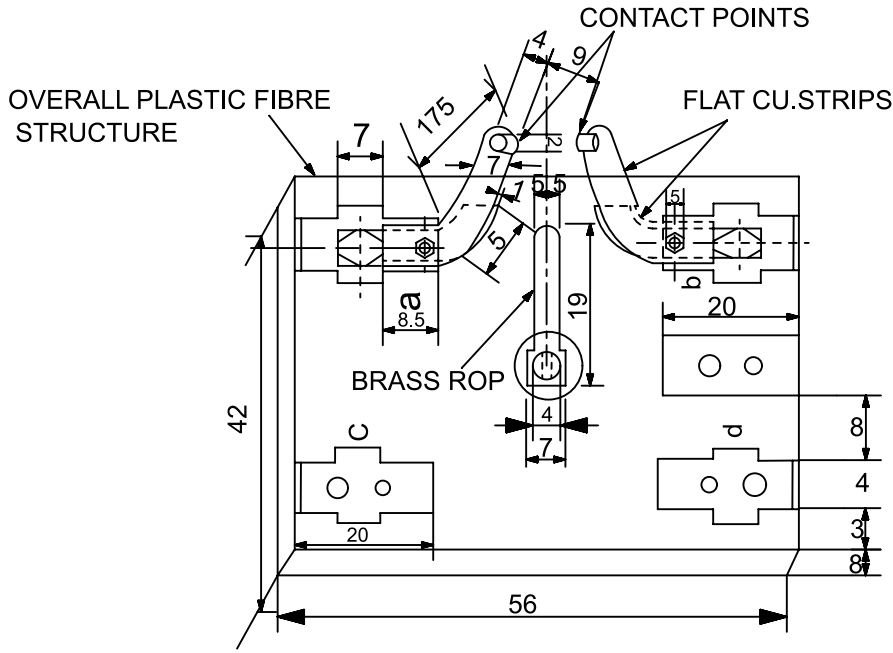
- NOTE :-**
- 1) The name and year of manufacture of the firm should be embraced on the item.
 - 2) Hardwares are to be used should be any of the following make :-
 - a) Un-brako (Precision Fasteners)
 - b) Sundaram Fasteners (TVS)
 - c) Laxmi Precision (LPS)
 - d) All spring washers of Forbes Gohtak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

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




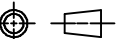


OUTER STRUCTURE VIEW OF FOOT SWITCH FOR WAG-9 (CO-CO)

													अधिकृतपत्र DGN		 चितरंजन रेलइंजन कारखाना CHITTARANJAN LOCOMOTIVE WORKS, INDIA							
													जोधा व.अ.अ. CHD SSE									
परिवर्तन संख्या ALT.NO.	प्राधिकार AUTHY		वर्णन DESCRIPTION						दिनांकित बाबत DATED INITIAL		समीक्षित स.वि.अ. / व.वि.अ. REVIEWED AEE / SEE		पदार्थ MATL		प्रति भार कि. ग्रा. WT. EACH IN KG							
सतह — छल्ला का मान वा. सं. 3073 / अ. वा. सं. 1302 SURFACE ROUGHNESS VALUE TO IS:3073 / ISO:1302			अनिर्दिष्ट सतह — सीमा वा. सं. : 2102 / अ. वा. सं. : 2700 UNSPECIFIED TOLERANCE TO IS : 2102 / ISO : 2768						TOL. CLS.		अनुमोदित स.नु.वि.अ. APPROVED DYCEE		वर्णन FOOT SWITCH SPRING LOAD FOR SANDING, VIGILANCE AND RELEASE OF INDEP. BRAKE									
आतु-वेल्डन चिन्ह वा. सं. : 013 / अ. वा. सं. : 2563 WELDING SYMBOLS TO IS:813 / ISO:2553											दिनांक DATE											
पदार्थ 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	रेखिक अनुपात SCALE	NTS		आरेखण संख्या DRAWING NO.						
Rz	0.16-0.3	0.5-0.7	0.9-1.1	1.5-2.0	2.5-3.0	5.0-6.3	9.0-12	16-25	30-40	50-63	75-100	100-250			CLW/ES/3/SK-1/0032/H							
Ra μm	0.025	0.05	0.1	0.2	0.4	0.8	1.6	3.2	6.3	12.5	25	50	संदर्भ / REF.		परिवर्तन संख्या ALTERATION. NO.							
चिन्ह SYMBOL													ALT.-									
															परिवर्तन संख्या ALTERATION. NO.		पृष्ठ SHEET		1 OF 1		A4	



ALL DIMENSIONS ARE IN mm

												अधिकृत DGN		 <div>चितरंजन रेलइंजन कारखाना CHITTARANJAN LOCOMOTIVE WORKS, INDIA</div>									
												जॉचा व.अ.अ. CHD SSE											
परिवर्तन संख्या ALT.NO.		प्राधिकार AUTHY		वर्णन DESCRIPTION				दिनांकित बाबत DATED INITIAL		समीक्षित स.वि.अ. / व.वि.अ. REVIEWED AEE / SEE		पदार्थ MATL		प्रति भार कि. ग्रा. WT. EACH IN KG									
												विशिष्ट SPECN											
सतह — रूखाता का मान वा. मा. 3073 / अ. मा. सं. 1302 SURFACE ROUGHNESS VALUE TO IS:3073 / ISO:1302												अनिर्दिष्ट सतह — सीमा वा. मा. : 2102 / अ. मा. सं. : 2700 UNSPECIFIED TOLERANCE TO IS : 2102 / ISO : 2700				TOL. CLS.		अनुमोदित स.प्र.वि.अ. APPROVED DYCEE		वर्णन DESCRIPTION FOOT SWITCH SPRING LOAD FOR SANDING,VIGILANCE & RELEASE OF INDEP. BRAKE			
वातु-वेल्डन चिन्ह वा. मा. : 013 / अ. मा. सं. : 2563 WELDING SYMBOLS TO IS:813 / ISO:2553														दिनांक DATE									
पदार्थ 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	रेखिक अनुपात SCALE		NTS							
Rz		0.16-0.3	0.5-0.7	0.9-1.1	1.5-2.0	2.5-3.0	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														संदर्भ / REF.		ALT.-							
																परिवर्तन संख्या ALTERATION. NO.		पृष्ठ SHEET		1 OF 1		A4	