

GOVERNMENT OF INDIA

Ministry of Railways

Research Designs and Standards Organisation

Manak Nagar,
Lucknow – 226 011

No.EL/3.2.70

Dated :18.12.2000

MODIFICATION SHEET NO.ELRS/MS/0290-2000 (Rev.001)

1. TITLE OF MODIFICATION

To provide epoxy moulded terminal box cover for auxiliary motors of electric locomotives.

2. APPLICATION TO CLASS OF LOCOMOTIVES

All auxiliary motors of conventional electric locomotives.

3. OBJECT OF MODIFICATION

Railways have reported the failure of auxiliary motor on account of flash over between terminal stud and terminal cover due to inadequate space available between them. Some Railways like N.Railway and SC Rly. have provided epoxy moulded covers to avoid cases of flash overs and to bring down the weight of this component. Therefore, it is proposed in the modification sheet to provide epoxy moulded terminal box covers for auxiliary motors of electric locomotives

4. MATERIAL REQUIRED.

- 4.1 Epoxy moulded terminal box covers of various sizes having epoxy moulding conforming to IS 10192-1982 Grade EP2.

5. DETAILS OF MODIFICATION OR WORKS TO BE CARRIED OUT.

- 5.1 Remove the existing terminal box cover and provide the modified epoxy moulded terminal cover.
- 5.2 The drawings shall be dimensioned in mm.
- 5.3 One sample should be approved by user railways before bulk manufacture.

5.4 All the inserts viz. bush, bonds and threaded screws, should be moulded along with the epoxy moulding of the terminal cover. Bushes should be of Cadmium plated steel. All the rubber parts used shall be provided after the moulding conforming to IS 638. All the inserts used in the terminal cover should be properly bonded with bonding materials before final moulding of the cover.

5.5 All the mouldings should be designed in such a way that any part of the moulds is not in stressed condition.

5.6 T.B.Cover manufacturer shall submit the full technical details of "Epoxy Resin" procured from Epoxy resin manufacturers along with hardner etc. The resin may conform to standard specification and may be suitable for use of epoxy mouldings to IS-10192 – 1982 – grade EP2 to be confirmed by resin manufacturer.

6 MODIFICATION DRAWING :-

6.1 RDSO have prepared following six drawings as mentioned under para.6.2 which may be followed by Railways, Sheds and shops for the development of terminal box covers:

6.2	<u>List of RDSO drawing No:</u>	<u>Application of Terminal Cover</u>
(i)	SKEL – 4575 (Alt.0)	M/s.CGL make MVMT, MVRH, MCP & MPV (old design).
(ii)	SKEL – 4576 (Alt.0)	M/s.CGL make MVMT, MVRH, MCP & MPV (New Design).
(iii)	SKEL – 4577 (Alt.0)	M/s.ABB make MVMT,MVRH & MCP (supplied from year 2000).
(iv)	SKEL – 4578 (Alt.0)	M/s.ABB make MVMT, MVRH & MCP (Supplied before 2000)
(v)	SKEL - 4579 (Alt.0)	M/s.Siemens make MVMT & MVRH. (New design) & MCP (old & new design)
(vi)	SKEL – 4580 (Alt.'0')	M/s.Siemens make MVMT & MVRH (old design)

Other drawings of any old version of terminal board cover may be prepared in line with above RDSO drawings.

6.3 List of Northern Railway, GZB drawings mentioned under para-6.2 of the Modification Sheet No.ELRS/MS/0290-2000 Rev.000 issued vide RDSO letter of even no., dated 11.8.2000 shall not be followed in future.

7 PROVISIONALLY APPROVED MANUFACTURERS OF EPOXY MOULDED TERMINAL COVER

- 1) M/s.Dusada Engg. Co Pvt. Ltd, Zora mandir, Kavi Guru Rabindra Path, Kancharapara, 24 Parganas North (West Bengal)

- 2) M/s.Hind Engg Co., Todi Corner, 32, Ezra Street, 3rd Floor, Room No.356, Calcutta – 700 001
- 3) M/s. Atul Industries, E-925,Dabua Colony, New Industrial Township, Faridabad – 121 001 (Haryana)

7.1 Provisionally approved for educational order only :

- (i) M/s.Venus Enterprises,
40 B, Nehru Co operative Society,
Behind Paras Hotel,
Ambedkar Road, Ghaziabad.
- (ii) M/s.Mica Ply,
Sector 23-24, New Sec. Phase II,
Mandideep,
Bhopal-462 046..
- (iii) Terminal Box cover shall not be developed through M/s.Tork Air Tools (P) Ltd, F-86 Sector 8, Noida, Gautam Budh Nagar (UP) in future, since their name is deleted by RDSO.

8.0 AGENCY FOR IMPLEMENTATION

All electric loco sheds and shops of Indian Railways

8 PERIODICITY OF MODIFICATION

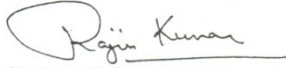
To be carried out during AOH,IOH and POH.

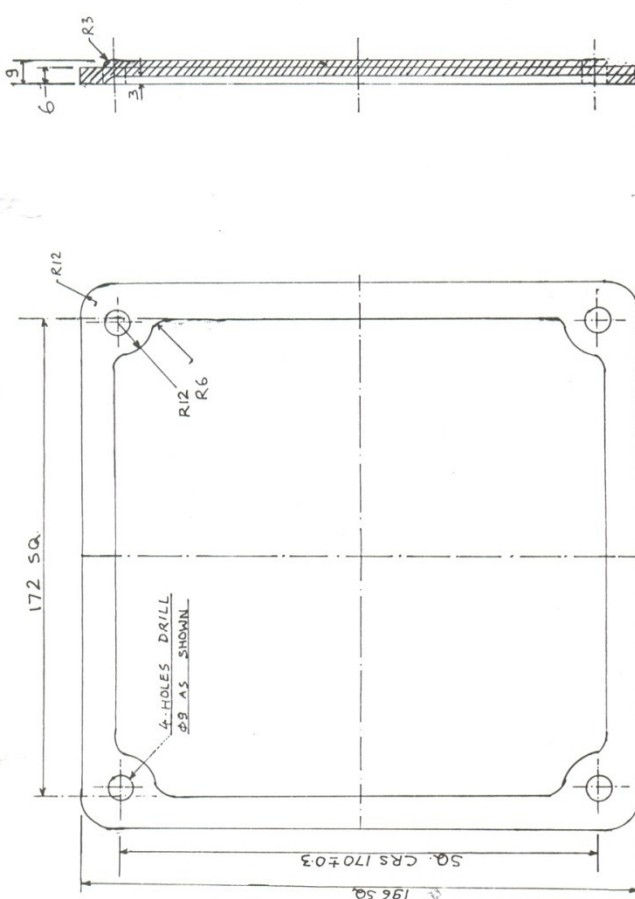
- 9 This modification sheet supersedes modification sheet No.ELRS/MS/0290-2000 (Rev.000) issued vide RDSO letter of even no., dated 11.8.2000.

10 DISTRIBUTION

As per enclosed list.

DA : As Above


(R.K.KULSRESTHA)
for Director General/Electrical



NOTE

1. ALL DIMENSIONS ARE IN MM.
2. A SAMPLE IS TO BE GOT APPROVED BY THE CONSIGNEE BEFORE BULK MANUFACTURE.
3. MANUFACTURER SHOULD MARK CLEARLY THEIR IDENTIFICATION CODE, YEAR OF MANUFACTURE, AT SUITABLE PLACE.
4. MATERIAL : FIRE RETARDANT EPOXY GLASS FIBRE TO IS: 10192-1992, GRADE -EP2.

DI 7/12.2 K	STATUS		ALT	REF NO.	DESCRIPTION	APPROVED BY	DATE
D C S SHYAM							
C S K S.							
FILE NO							
	REF NO	PART NO.	DESCRIPTION	DETAIL DRG NO	NO/LXQ	MATL.	SPEC.
	REF.	QA	2964/5348	SCALE: NTS			APPROVED BY <i>Raj Kumar</i> (FOR B)
EPOXY MOULDED TERMINAL BOX COVER FOR				FIRST ISSUED			
M/S CGL MAKE MWM, MVRH, MCP & MPV (OLD DESIGN)				SUPERSEDED BY			
RDSO ELECT. DTE.				SKEP-4575 (ALT-0)			

NOTE

- ALL DIMENSIONS ARE IN MM.
- A SAMPLE IS TO BE GOT APPROVED BY THE CONSIGNEE BEFORE BULK MANUFACTURER.
- MANUFACTURER SHOULD WORK CLEARLY THEIR IDENTIFICATION CODE, YEAR OF MANUFACTURE AT SUITABLE PLACE.
- MATERIAL: FIRE RETARDANT EPOXY GLASS FIBRE TO IS: 10192-1982, GRADE -EP2

REF. NO.	PART NO.	DESCRIPTION	DETAIL DRG. NO.	NO. LOC.	MATL. SPEC.
REF. QA 2964/5348		M/S CGL DRG NO 1			

SCALE: 1:1000

APPROVED BY: *[Signature]* DATE: *[Date]*

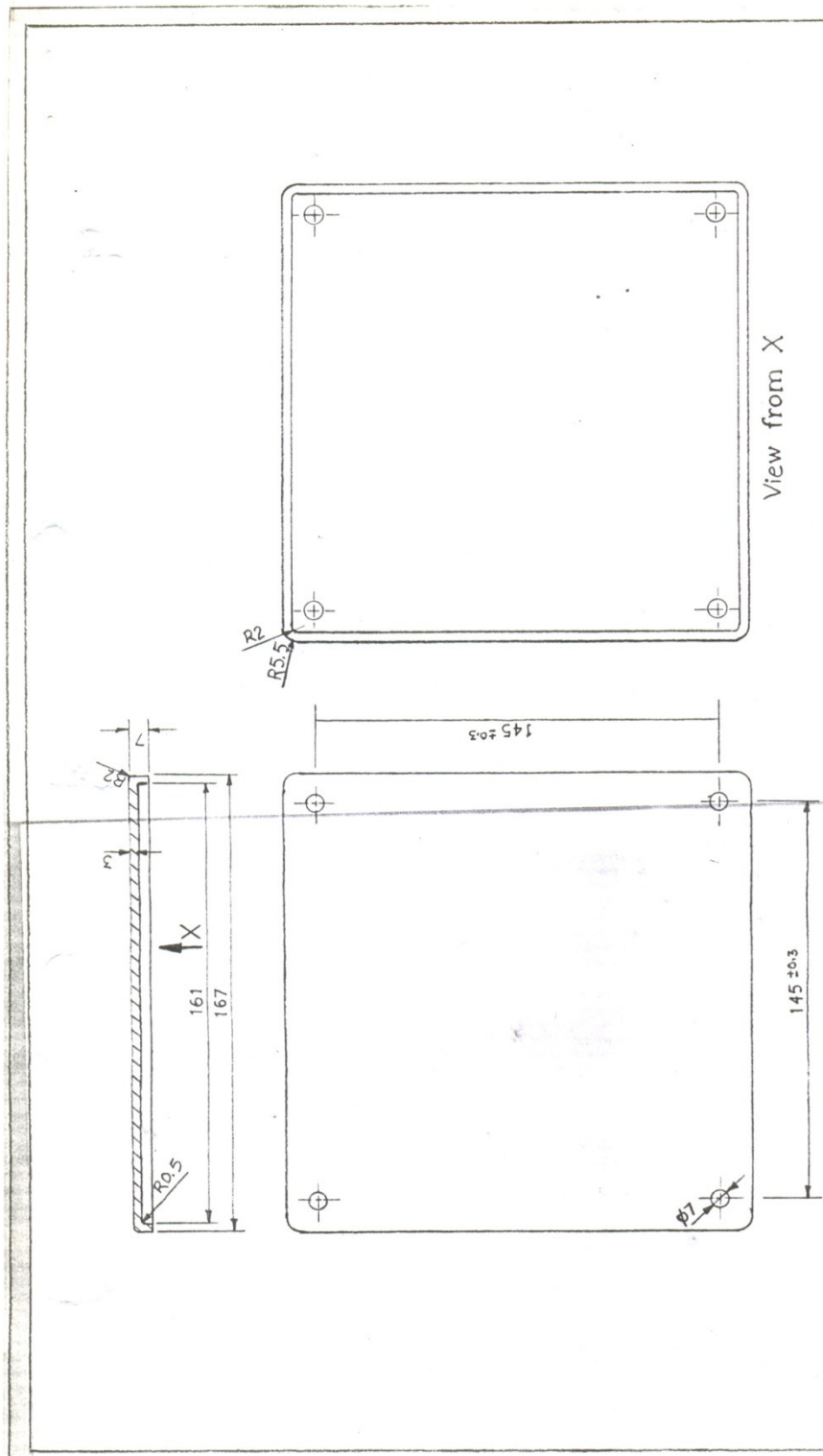
EPOXY MOULDED TERMINAL BOX COVER

FOR M/S CGL MAKE MVMT, MVRH, MCP & MPV. (NEW DESIGN)

STATUS	ALT.	REF. NO.	DESCRIPTION	APPD. BY	DATE

SKEL-4576 (ALT-D)		RDSO. ELECT. DIE	
SUPERSEDED BY		SUPERSEDES	

C.S. SHYAM	S.K.S
EL/3270	



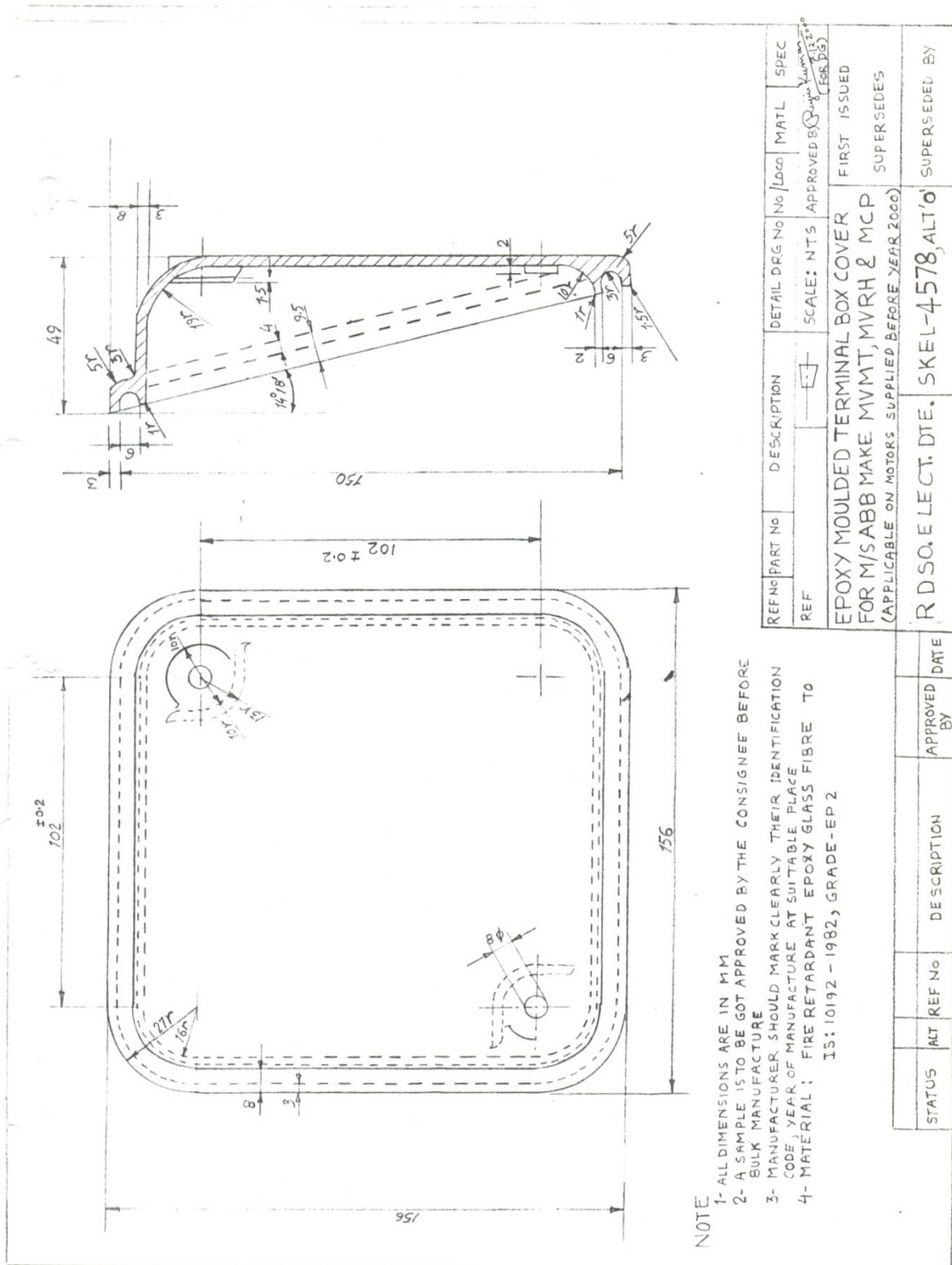
- NOTES:
- 1- ALL DIMENSIONS ARE IN MM
 - 2- A SAMPLE IS TO BE GOT APPROVED BY THE CONSIGNEE BEFORE BULK MANUFACTURE
 - 3- MATERIAL: FIRE RETARDANT EPOXY GLASS FIBRE TO IS: 10192 - 1982, GRADE-EP2
 - 4- MANUFACTURER SHOULD MARK CLEARLY THEIR IDENTIFICATION MARK, YEAR OF MANUFACTURE AT A SUITABLE PLACE

View from X

REF. NO	PART NO	DESCRIPTION	DETAIL DRG NO	No /Loco	MATL	SPEC
REF: M/S ABB DRG. NO 3GYN 312043		— 	SCALE: N.T.S	APPROVED BY 	FIRST ISSUED	SUPERSEDES
EPOXY MOULDED TERMINAL BOX COVER FOR M/S ABB MAKE MVMT, MVRH2 MCP (APPLICABLE ON NEW MOTORS SUPPLIED FROM YEAR 2000)						
R D SO. ELECT. DTE			SKEI-4577		ALT'o	
SUPERSEDED BY						

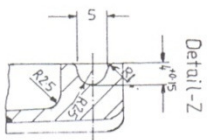
STATUS	ALT	REF NO	DESCRIPTION	APPROVED	DATE
--------	-----	--------	-------------	----------	------

7/12/2X
D 5 K 5
C 12-5-2000



REF	PART No	DESCRIPTION	DETAIL DRG No	No	LOC	MATL	SPEC
EPOXY MOULDED TERMINAL BOX COVER			SCALE: NTS				FIRST ISSUED
FOR M/S ABB MAKE MVMT, MVRH & MCP							SUPERSEDES
(APPLICABLE ON MOTORS SUPPLIED BEFORE YEAR 2000)							
R D S O E L E C T. D T E. SKEL-4578, ALT '0							SUPERSEDED BY

STATUS	ALT	REF No	DESCRIPTION	APPROVED BY	DATE
D	SKS				
C	CS	Shyam			
F	FL	EP	270		



4. MATERIAL: FIRE RETARDANT EPOXY GLASS FIBRE TO IS: 10192 - 1982. GRADE-EP2

Detail-Z

