

as notch for fatigue initiation. Development of crack and subsequent failure of TM mounting lug is due to stress concentration at the lug portion due to sudden change of profile.

During the failure investigation for crack in Motor Support, it was found that cracks were initiated from both bogie nose portion in fatigue manner and finally Motor Supports had sheared away perpendicularly resulting in torque arm going down with the TM. During investigation a number of bogies were inspected at ELS/LGD. It was found that CLW built bogie frame had fillet radius of 8mm on upper face of Motor Support whereas bogies supplied by Trade did not have any fillet. The failure of Motor Support in fatigue manner may be attributed to sharp edges at lug hole portion which had acted as notch for fatigue initiation. Development of crack and subsequent failure of Motor Support is due to stress concentration at the lug portion due to sudden change of machining profile.

5.0 Maintenance Instructions

- 5.1. Intensive visual inspection of bogies should be carried out during trip inspection at trip sheds particularly the TM mounting plate, Motor Support and Torque arm for any crack. The condition of sling should be inspected and if strands are found to be cut, the sling should be replaced.
- 5.2. The condition of the spheriblocs of TM support torque arms should be checked during all the maintenance schedules. The spheriblocs with cracked/damaged rubber components should be replaced.
- 5.3. DPT should be conducted on TM support plate lug portion as well as Motor Support during TOH/IOH/POH.
- 5.4. The fillet radius for TM support plates should be measured in IOH/POH. If fillet radius is found to be less than 8mm, TM support plate should be replaced with increased fillet radius (R-12mm) at lug portion as per CLW/CRJ drawing no.1209-01.118-002 Alt. 2 as shown below:-



Fillet Radius should be increased from 8 mm to 12 mm

Fig: TM support plate

16/3

5.5. Implementation of Modification Sheet No. 0443 Rev. '0' dated 17.09.2015 shall be ensured by all sheds/workshops. MPT along with DPT of Motor Support of the unmodified bogies should be carried out during all the maintenance schedules as well as unscheduled visits of loco to homing shed.

5.6. 12 mm safety sling as per IS 2762:2009 made of steel wire rope (6x19 construction with steel core, double crimped at both ends) as per IS 2266: 2002, grade 1770 should be provided around the TM plate upper bolt and with bogie transom to support Traction Motor in case of breakage of TM supporting plate or Motor Support in WAP7/WAG9/WAG9H Locomotives as below:

TM Nos.	Length of slings (mm)	RDSO Drawing Nos.
1, 2, 5, 6	1510 +3/-0	i. SKEL-4859 (Alt. '1') for safety sling ii. (SKEL-4860 (Alt. '1') Sheet 1&2 for fitment arrangement. iii. SKEL-5007 (Alt. '0') for 'D' Shackle
3, 4	1810 +3/-0	

Every Traction motor should be provided with 2 no. of safety slings on each side.

7.0 Application to Class of Locomotives:

All WAP-7/WAG-9/WAG9H Electric locomotives.

8.0 Agency of Implementation:

CLW/CRJ

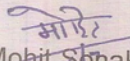
All Electric Loco sheds maintaining 3-phase locomotives,
POH/MTR workshops

9.0 Periodicity of Implementation:

As mentioned above.

10.0 Supersedes:

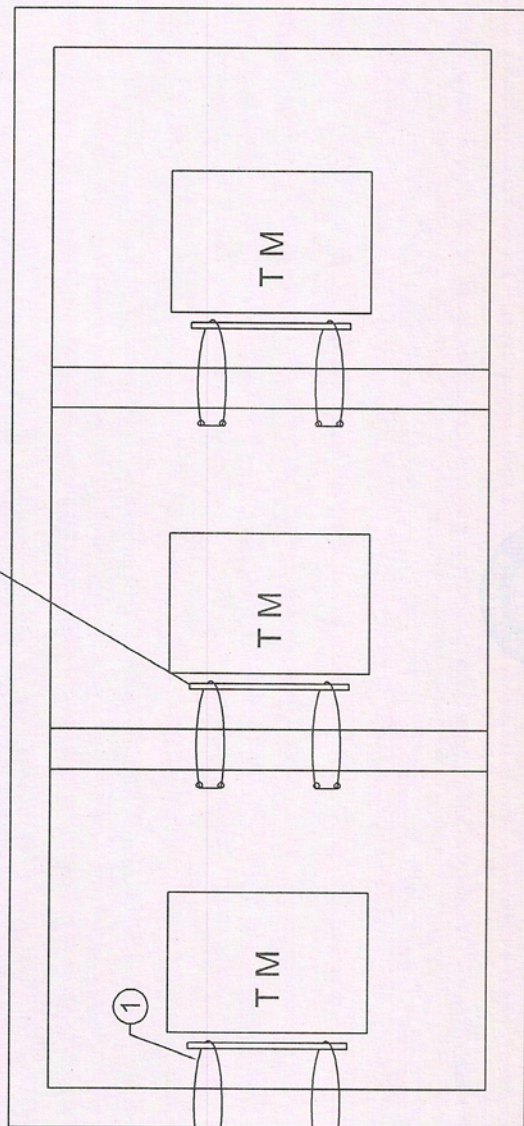
SMI 0280 issued vide letter no. EL/3.5.2 dated 5.5.04 as amended vide amendment no.1 issued on 19.5.2014


 (Mohit Sonakiya)
 for Director General/Electrical

Encl: 1. SKEL-4859 (Alt. 1)
2. SKEL-4860 (Alt. 1) sheet 1 & 2
3. SKEL-5007 (Alt. '0')

Copy to: As per Standard mailing list no. EL/M/0019 Version '3'.

TRACTION MOTOR SUPPORT PLATE



BOGIE FRAME

'D'Shackle

NOTE-

1. ALL DIMENSIONS ARE IN MM.

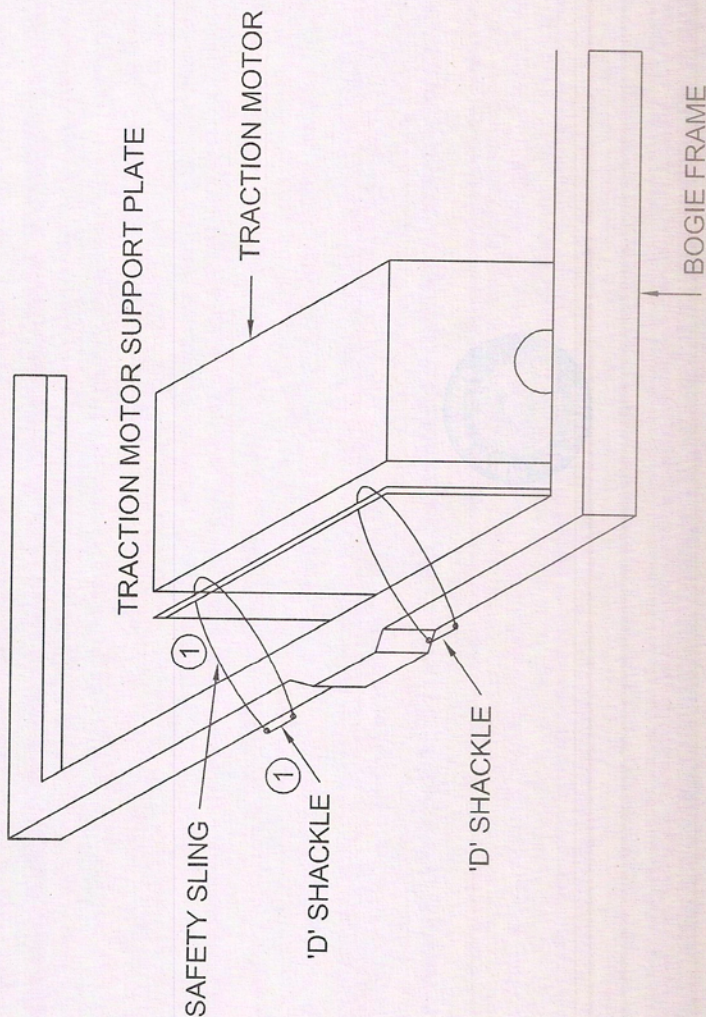
REF.	PART NO.	DESCRIPTION	DETAIL DRG. NO.	NO./ LOCO	MATL	SPEC
REF. RDSO/2011/EL/SMI/0269 REV. '0' WITH AMDT. NO.1						

FITMENT ARRANGEMENT OF SAFETY SLING FOR TRACTION MOTOR OF WAG-9/WAP-7 LOCOS.	FIRST ISSUED
	May'2011 SUPERSEDES

RDSO. ELECT. DTE	SKEL-4860 SHEET NO.1	SUPERSEDED BY

Dt	09.03.2016
D	U. YADAV
C	K. K. SHARMA
T	

1	FITMENT ARRANGEMENT OF SAFETY SLINGS CHANGED	09.03.16
STATUS	ALT. REF.NO.	DESCRIPTION
		APPD. BY
		DATE



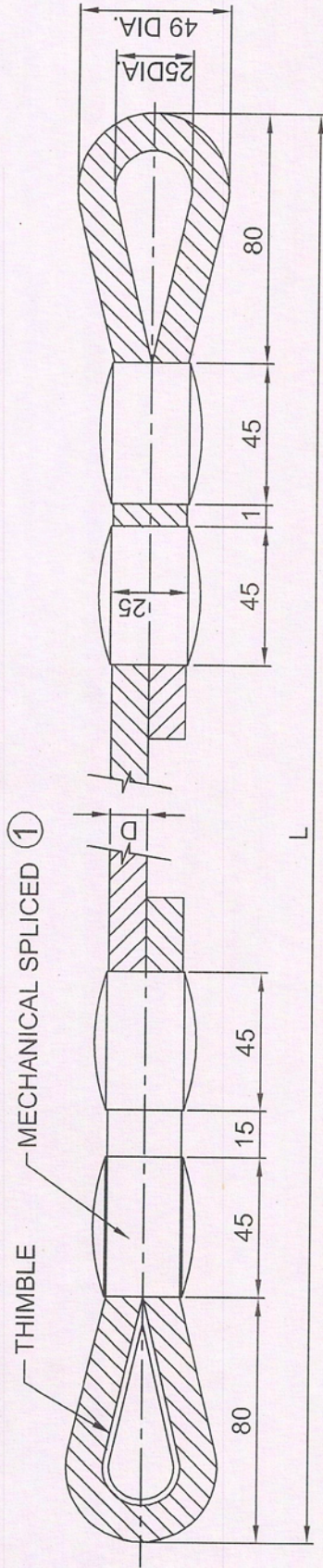
REF.	PART NO.	DESCRIPTION	DETAIL DRG. NO.	NO./ LOCO	MATL	SPEC
REF. RDSO/2011/EL/SMI/0269 REV. '0' WITH AMDT. NO. 1						

FITMENT ARRANGEMENT OF SAFETY SLING FOR TRACTION MOTOR OF WAG-9/WAP-7 LOCOS.		FIRST ISSUED
		May'2011
		SUPERSEDES

RDSO. ELECT. DTE		SUPERSEDED BY
		SKEL-4860 SHEET NO.2

Dt	09.03.16
D	U ADAY
C	SAHOO SH Kc.
T	

1	FITTMENT ARRANGEMENT OF SAFETY SLINGS CHANGED	APPD. BY	DATE
STATUS	ALT. REF. NO.	DESCRIPTION	



TRACTION MOTOR NO.	D	L (1)	QTY.
TRACTION MOTOR 3 & 4	12	1810-0/+3	4 NOS.
TRACTION MOTOR 1,2,5&6	12	1510-0/+3	8 NOS.

NOTE-

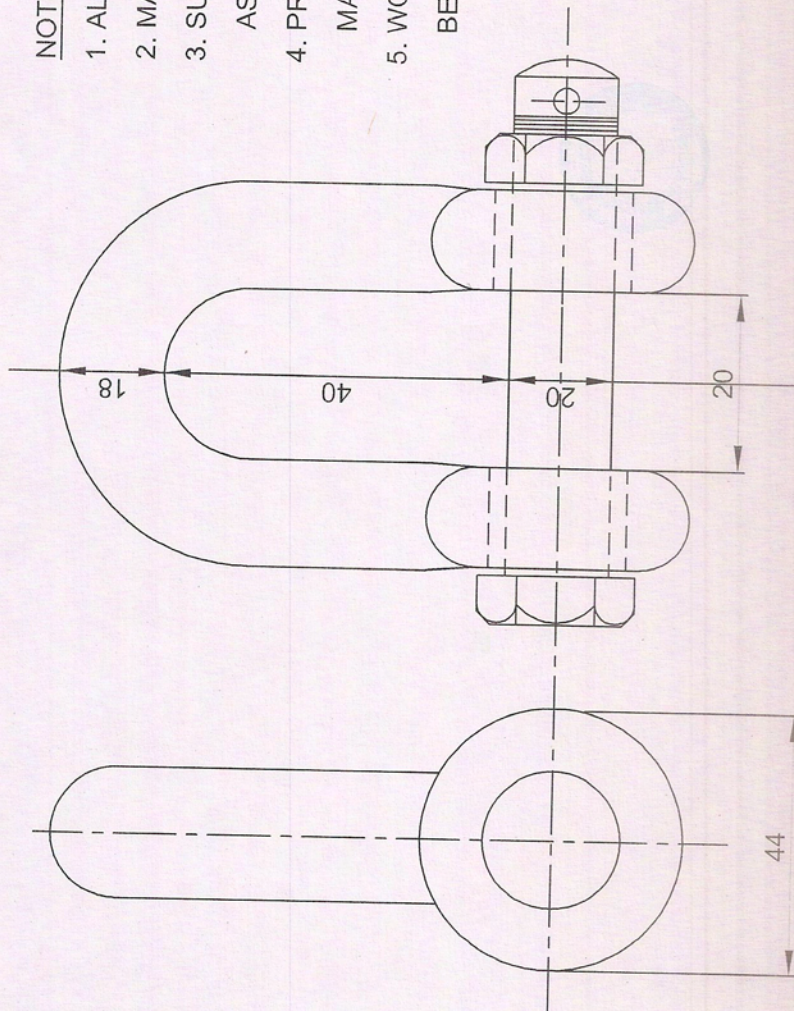
1. ALL DIMENSIONS ARE IN MM.
2. MATERIAL: STEEL WIRE ROPE AND SPECN IS:2266 : 2002, GRADE '1770' (1)
3. SLING TO BE MADE AS PER IS:2762
4. THIMBLE, MECHANICAL SPLICED TO BE FITTED OF SUITABLE SIZE FOR 12 mm DIA SLING ON ONE END ONLY.

REF.	PART NO.	DESCRIPTION	DETAIL DRG. NO.	NO./ LOCO	MATL	SPEC
REF. RDSO/2011/EL/SMI/0269 REV. '0' WITH AMDT. NO. 1						

SAFETY SLING FOR TRACTION MOTOR OF WAG-9/WAP-7 LOCOS		FIRST ISSUED May'2011
		SUPERSEDED
RDSO. ELECT. DTE	SKEL-4859	SUPERSEDED BY

STATUS	ALT. REF.NO.	DESCRIPTION	APPD. BY	DATE
1		1. LENGTH OF SLINGS CHANGED 2. GRADE OF IS:2266 ADDED 3. MECHANICAL SPLICED AT BOTH END ADDED	09.03.16	

Dt	09.03.2016
D	U B KADAV
C	SANJAY K.
T	



NOTE-

1. ALL DIMENSIONS ARE IN MM.
2. MATL: & SPECN:- IS/ISO. 2415:2004, GRADE'8'.
3. SUITABLE 'D' SHACKLE BOLT SHOULD BE TYPE 'X' AS PER IS/ISO. 2415:2004
4. PROPERTY CLASS OF 'D' SHACKLE BOLT MATERIAL SHOULD BE OF 10.9.
5. WORKING LOAD LIMIT OF 'D' SHACKLE SHOULD BE 3.20 TON AS PER GRADE '8' OF IS/ISO 2415:2004.

REF.	PART NO.	DESCRIPTION	DETAIL DRG. NO.	NO./ LOCO	MATL	SPEC
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REF. RDSO/2011/EL/SMI/0269 REV. '0' WITH AMDT. NO. 1

'D' SHACKLE FOR SAFETY SLING ARRANGEMENT FOR TRACTION MOTOR OF WAG9/WAP7 LOCOS.

FIRST ISSUED
March'2016
SUPERSEDES

RDSO. ELECT. DTE
SKEL-5007

SUPERSEDED BY

Dt	09.03.16
D	UBHAR
C	SHARMA
T	SHARMA

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