

Government of India
Ministry of Railways
Research Designs and Standards Organisation

Manak Nagar, Lucknow-226011.

No. EL/3.2.127/TM-L.

Dated: 28.8.1981.

MODIFICATION SHEET NO. RDSO/WAM-L/118

REPLACEMENT OF FLEXIBLE CONTACT ASSEMBLY BY A BRAIDED SHUNT IN TAO/659 TRACTION MOTOR.

1. OBJECT:

- 1.1 Railways have reported failures of the flexible contact assemblies of TAO/659 traction motors due to overheating and pitting of knife blades and flexible contact jaws. To overcome these problems, it is necessary to use materials which are not yet available indigenously. In the meantime, to tide-over the problems created by the non-availability of required materials, it is suggested that flexible contact assemblies may be replaced by braided shunts with bolted connections described below.
- 1.2 It is recommended that this modification be implemented as a regular measure only for the negative contact at present which is easily accessible from the bottom inspection cover. The modification may be implemented in the positive contact only when it is not possible to replace the defective assembly with a new one. For regular maintenance of flexible contact assembly on positive side, MI No. MI/E-7/04 dated Aug. 1977 should be referred.

2. MATERIALS REQUIRED:

- 2.1 The modification is based on Alstom's recommendations. Existing knife blades may be utilised by drilling suitable holes as per drawing Nos. SKEL-3393 and SKEL-3394 provided they are not overheated or burnt out. Braided Shunt of copper as per drawing No. SKEL-3397 may be procured from trade. For the positive connection, the "two-hole threaded plate" will have to be replaced by two independent M-14 nuts to facilitate tightening in position.

3. WORK TO BE CARRIED OUT:

Following step-by-step procedure is suggested:

- .1 Open the bottom inspection cover.
- .2 Remove the flexible contact jaws and knife blades from the connections to be modified.
- .3 Drill holes in the knife blades as per relevant drawing. Arrange for silver plating if the same is worn out. If the knife blades are pitted or burnt out, new ones should be fitted after drilling holes.
- .4 Assemble the modified knife blades into the motor.
- .5 Fit the braided copper shunt to the modified knife blade as per drawing No. SKEL-3398 Alt.I.
- .6 For negative contact assembly, use the "two-hole threaded plate" and tighten fully.
- .7 For the positive contact, use M-14 Hex nuts in place of "two-hole threaded plate". Carry out the tightening of the M-14 nuts with box spanners.
- .8 After complete tightening of all the connections, lock the double locking plates properly as shown in the drawing.
- .9 Fit the bottom inspection cover back into position.

NOTE: The connection bolts/nuts must be tightened fully to ensure proper contact & prevent overheating.

4. APPLICATION:

WAM-4 and WAM-1 class of locomotives.

5. PERIODICITY OF IMPLEMENTATION:

- 5.1 For negative contact assembly - during I₀ inspections.
- 5.2 For positive contact assemblies - only if knife contact assemblies of proper quality are not available.

6. AGENCY OF IMPLEMENTATION:

All Electric Loco Sheds, Repair and POH Shops.

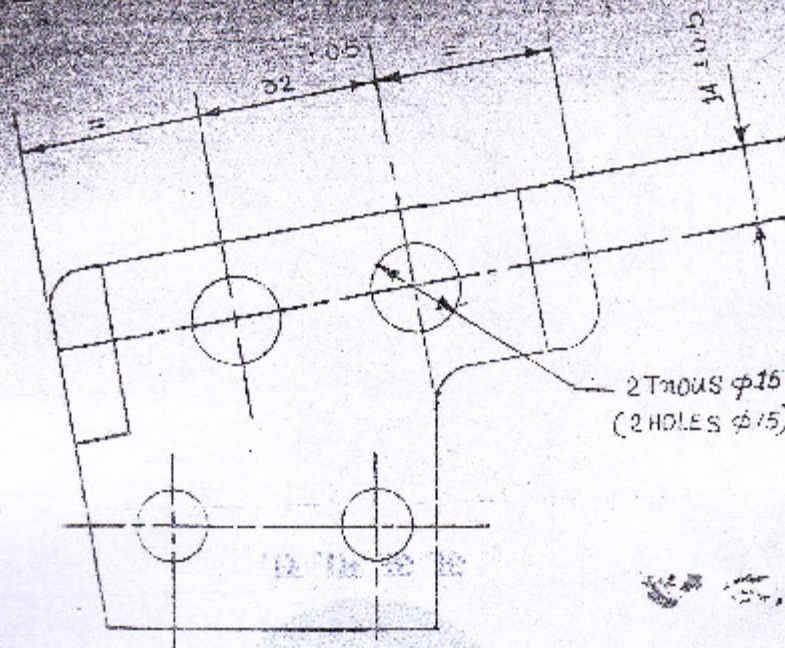
7. DISTRIBUTION:

As per sheet attached.

DA/as above.

K.K. Gupta 4/8/87
(D.K. Gupta)
for Director General Elec.

58



NOTE:-

1. ALL DIMENSIONS ARE IN MM
2. MATERIAL- ALUMINIUM BRUNZE, IS 305-1961GY-II
PRESSURE DIE CASTED.
3. CONTACT SURFACES SHOULD BE SILVER PLATED
TO 0.1 MM DEPOSITION.
4. ELEC. CONDUCTIVITY MINIMUM 14% IACS.

REF:- ALSTNOM 78510635
AND
CLW DRS NO 37W0032104

SCALE-1:1

APP. BY: *S. R. Rangan*
CS.R. 207)
ADE/ED. LAB 10/6/81

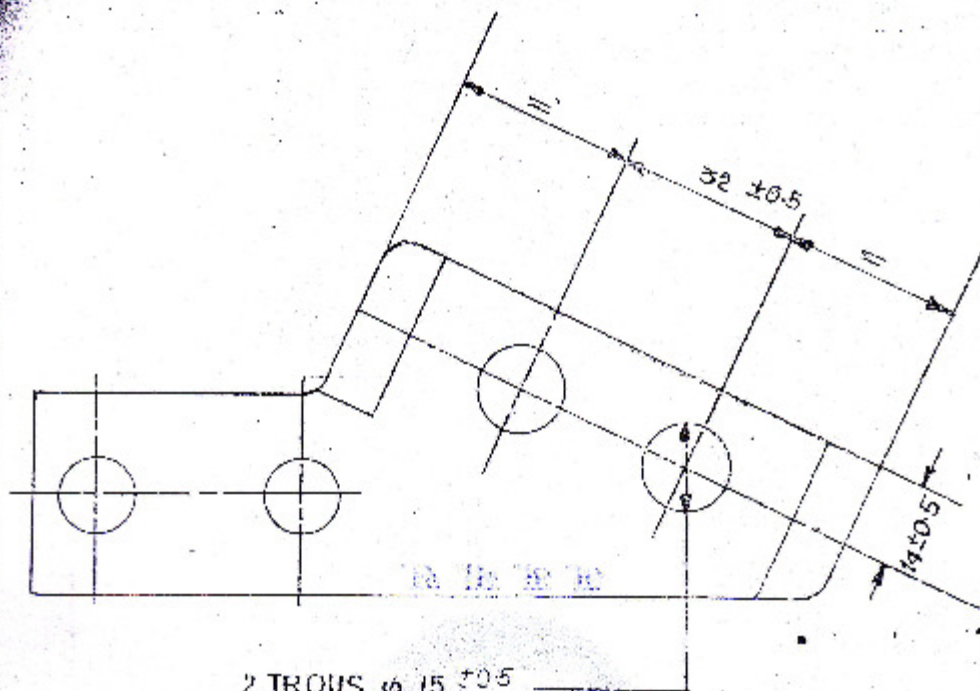
KNIFE BLADE CONTACT -VE

RD.S.O ELEC.DTE. SKEL- 3393

581

Shm
Nishu

SKEL-3394



2 TROUS ϕ 15 ± 0.5
(2 HOLES ϕ 15 ± 0.5)

NOTE:-

- 1- ALL DIMENSIONS ARE IN MM.
- 2- MATERIAL- ALUMINIUM BRONZE, IS-305-1961 GY-II PRESSURE DIE CASTED.
3. CONTACT SURFACES SHOULD BE SILVER PLATED TO 0.1 MM DEPOSITION.
4. ELEC. CONDUCTIVITY MINIMUM 14% IACS.

REF:- ALSTHOM DRC NO
716 66/0634
CLW DRC NO 32ND 053104

SCALE- 1:1

APP. BY: Subodh Ranjan Ray
(S.R. Ray)
ADP/EdLab. 10/6/81

KNIFE BLADE, CONTACT (+VE)

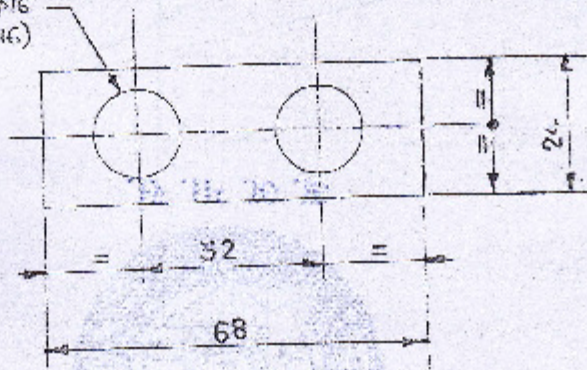
R.D.S.O. ELEC. DTE SKEL- 3394

SKEL-3395

PIECE CADMIÉE Cd 10 - NFA 91-102

EPAISSUR = 1mm
(THICKNESS - 1mm)

2 TROUS $\phi 16$
(2 HOLES $\phi 16$)



NOTE:-

- 1- ALL DIMENSIONS ARE IN MM.
2. MATERIAL - CARBON STEEL SHEET TO IS: 513-1963
TYPE - DD (DEEP DRAWING)
SURFACE FINISH - BRIGHT
3. TO BE CAD. PLATED AS PER IS: 1572-1968
THICKNESS - Cd 12
4. TOLERANCE - ± 0.5 UNLESS OTHERWISE GIVEN.

REF - ALSTHOM
TR 5604167

SCALE - 1:1

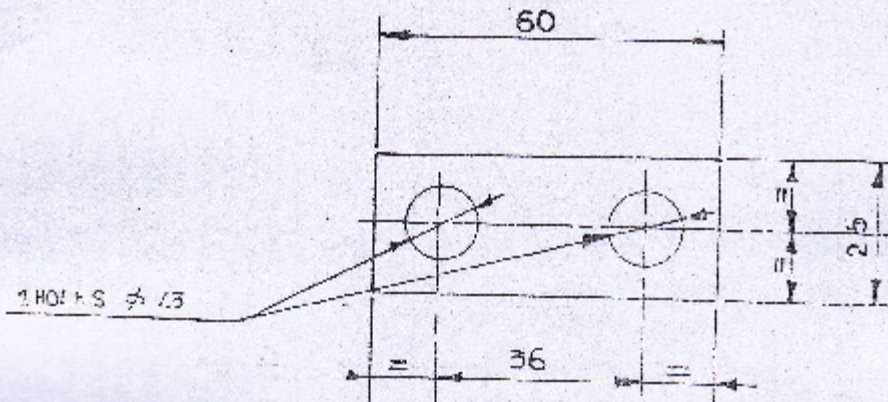
APP. BY. *S. R. R. R.*
CS. R. R. R.
ADE/F. D. LAB 1-16

TWO HOLE PLATE

SKEL-3395

DT	21-5-81
D	6/8/81
A	6/8/81

SKEL-3396



ÉPAISSEUR = 1mm
(THICKNESS = 1mm)

PIECE CADMIÉE cd 16 NFA 91102

NOTE:-

1. ALL DIMENSIONS ARE IN MM.
2. MATERIAL- CARBON STEEL SHEET TO IS: 513-1963,
TYPE- DD (DEEP DRAWING).
SURFACE FINISH- BRIGHT.
3. TO BE CAD. PLATED AS PER IS: 1572-1968.
THICKNESS- Cd 12.
4. TOLERANCE- ± 0.5 UNLESS OTHER WISE GIVEN.

REF:- ALSTHOM
TR 6604138

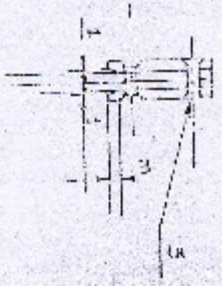
SCALE - 1:1

APP. BY: *S. R. Ravi*
(S.R. Ravi)
RDS/10/6/80

TWO HOLE PLATE

R.D.S.O. ELEC. DTE. SKEL- 3396.

5-81

$$s_2 = 0.5$$


21 APR 1968

21. 4. 50

- | | | |
|---|---|-------------|
| 3- 30° PLAT COUNTER SPIN HARD C.V. RIVET. | 8 | 161 2907-16 |
| 2- ELECTROLYTIC COPPER PLATE SLVS E6A18X3 | 4 | 788 1927-16 |
| 1- FLEXIBLE COPPER BRAD, SIZE 5X78X24 | 4 | SEE NOTE |

FLEXIBLE BRAID ASSEMBLY OF TMTAO-65

REF	DESCRIPTION	DATE
1513N-32	EMERGENCY INCIDENT	2/10/87