

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RESEARCH DESIGNS & STANDARDS ORGANISATION**

Manak Nagar, Lucknow-11

Dated 4.6.1997

NO. EL/3.2.15

MODIFICATION SHEET NO.RDSO/WAM4/197

1.0 Foreword :

This modification sheet supersedes the modification sheet No.RDSO/WAM4/190.

2.0 Title of Modification :

Provision of EMU type after-cooler on air brake locomotives.

3.0 Application to the class of modification :

WAG4A, WAG-5, WAG-7, WAP-1, WAP-3 and WAP-4

4.0 Object of modification :

This existing after-cooler provided in the compressor line is considered inadequate with the conversion of WAG4 Locomotives into dual brake system. Similarly, it is observed that the compressed air contains moisture on other air brake locomotives like WAG5, WAG7, WAP1, and WAP4 also. The moisture results in rusting of the pipe line and the valves. The rust particles also enter the valves and result in mal-operation of the valves.

Electric loco shed, Kanpur has replaced the existing after-cooler with EMU type after-cooler, which is of higher capacity, on a few locomotives. The length of pipe for condensation is 2.5 mts. in existing after-coolers and 17 mts. in the ones used on EMUs.

These after-coolers have been mounted on the underframe in series with the compressors and a drain in each has been provided for easy drainage of the condensate at regular intervals on line.

Kanpur loco shed have reported a considerable reduction of failures of pneumatic valves and have also reported that a large quantity of water gets condensed.

EMU type after coolers may be fitted in WAP class of locomotives as per CLW drawing No.03/1/34/50 Alt (1) and in WAG5 and WAG7 locomotives as per CLW drawing No.06/2/34/23.

5.0 Material Required :

EMU after-cooler as per RDSO sketch 7.2.043 - 2 nos. per loco.

6.0 Details of modification for WAG5 and WAG7 locomotives :

- 6.1 Remove the existing after-coolers and its mounting brackets from its present location.
- 6.2 4 mounting angles 75x75x10 thick are to be welded at the location as shown in CLW drawing No.06/2/34/23.
- 6.3 Mount each EMU after-coolers with the help of 4 Nos. Bolts M-12x60 and nuts (M-12) as per CLW drawing No.6/2/34/23.
- 6.4 Connect the pneumatic circuit as per RDSO Drg. No. SK. EL. 4406.
- 6.5 The drain cock on the after cooler may be brought out so that it can be operated periodically by the running staff.

7.0 Details of modification for WAP class of locomotives :

- 7.1 Remove the existing after-cooler and its mounting brackets from its present location.
- 7.2 Supporting brackets are to be welded as per CLW drawing No.03/1/34/50 Alt (1)
- 7.3 Mount both EMU after coolers with 4 nos. bolt and nuts as shown in CLW drawing No.03/1/34/50 Alt(1).
- 7.4 Connect the Pneumatic circuit as per RDSO Drg. No. SK. EL.-4406.
- 7.5 The drain cock on the after-cooler may brought out so that it can be operated periodically by the running staff.

8. Modification Drawing Nos. :

CLW drawing Nos 06/2/34/23, 03/1/34/50 Alt(1), RDSO Sketch 7.2.043 and RDSO drawing No. SK. EL.-4406. Copy of CLW drawings may be obtained from CLW.

9. Special Instructions :

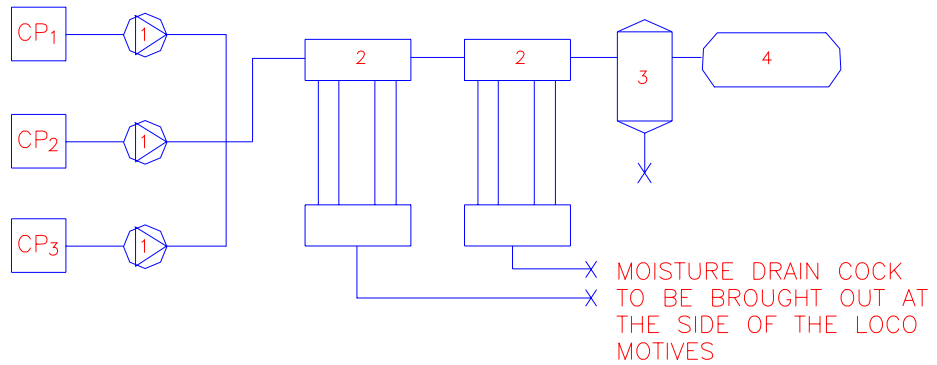
Running staff may be advised to drain the water from the reservoir periodically.

10. **Agency of Implementation :**
All Electric Loco Sheds and shops.
11. **Periodicity of implementation :**
During IOH/POH or during any major repairs to locomotives.
12. **Distribution :**
As per mailing list enclosed.

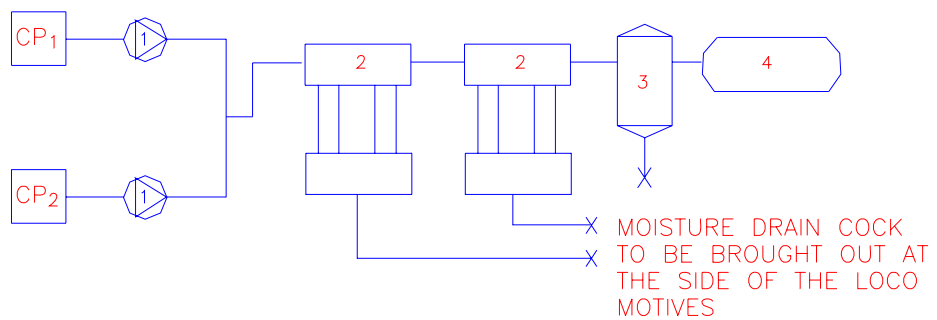
Encl : As above



(R.K.Kulshrestha)
for Director General (Elec.)



FOR WAG 5 CLASS LOCOMOTIVES



FOR WAG 7 & WAP CLASS LOCOMOTIVES

1. CHECK VALVE
2. EMU AFTER COOLER
3. MOISTURE RESERVOIR
4. MAIN RESERVOIR

REF :-	SCALE:- NTS	APPROVED:-	FOR DG.
PNEUMATIC CONNECTION FOR EMU AFTER COOLER FITTED ON AIR BRAKE LOCOMOTIVES			
RDSO.ELEC. DTE.		SKEL - 4406	

Dt	21.5.97
D	
T	
C	

