

Engine Alteration Instruction No.696/57,
dated 19th July 1957.

Fitting modified piston valve rings.
Applicable to various locomotives
operating on Rhodesia Railways

Notes to readers

The source document for this file was the Office Copy of the E.A.I. held in the National Railways of Zimbabwe Drawing Office in Bulawayo. It was discovered, in March 1998, while I was helping with searching for a complete set of drawings of the 15th Class locomotives after No. 398 had been purchased by a private group in New Zealand for eventual export to that country.

The original document was a duplicated copy hence the slightly indistinct type in some places. This was photocopied (with permission) on to A4 size paper while in the Drawing Office and the photocopies scanned when we were back in New Zealand.

The scanned file has been lightly “Photoshopped” to remove most of the artefacts resulting from the photocopying and scanning processes and to increase the contrast to make it more readable.

Any alterations, amendments or corrections done by hand have all been left in place and this file is a reasonably accurate reproduction of the original.

Alan Bailey
December 2010

ENGINE ALTERATION INSTRUCTION.

E.A.I. NO. 696/57.
DATED 19.7.57.

- (a) FITTING MODIFIED PISTON VALVE HEADS TO 10th, 14A, 15, 16A, 19th, 20th & 20A CLASS LOCOMOTIVES.
- (b) "CHOKE" FITTING OF PISTON VALVE RINGS TO ALL CLASSES OF LOCOMOTIVES.

(5) Cylinders, Pistons and Motion.

1. Reason. (a) The present piston valve heads have proved unsatisfactory in as much that they are difficult to remove and the retaining plates frequently buckle.

(b) In order to reduce wear on Piston Valve Heads and Liners it has been decided to introduce choke fitting of Piston Valve Rings (Ref. C.M.E's S.20B dated 3.6.57 minute No. 160.)

2. Alteration. (a) Fit modified valve heads, as shown on Drg. L-7307 to the respective classes. It will be noted that the 19th Class valve heads have been standardised with 20 & 20A Class and therefore must be fitted with washers Cat. No. L.F.3299 until such time as the piston valve rods are renewed. All new 19th Class piston valve rods to be made to Drg. 113/159 Alt.3. All piston valve heads are to be fitted with standard ring retaining screws Cat.No. LS.11728.

(b) The ring grooves on all piston valve heads to be standard at 21/64" deep as shown on Drgs. L-7307, L.6200 Alt.4, L-6749 Alt.1, L-6267 Alt.4, A.133 Alt.2, 5597/2 Alt.2, L-4529/2 Alt.1, L-6621 Alt.2 and Alt.3, L-3064 Alt.6. This alteration to be read in conjunction with Add.No. 1 to E.A.I. No. 567/56.

3. Engines Concerned.

- (a) 10th Class Engines.
- 14A " "
- 15 " "
- 16A " "
- 19 " "
- 20 " "
- 20A " "

*15 Class
was 6757/55
7307 only
required.*

(b) All the above engines and 9, 9A, 9B, 11, 11A, 12, 12A, 12B, 13, 14, 16, 17 Class Locomotives.

4. To be carried out.

- (a) At US. and BLR. Workshops.
- (b) At US. and BLR. Workshops and at all sheds.

5. To be completed. At General Repairs and when necessary at Wheel Jobs and whenever existing piston valve heads have to be renewed in Sheds.

6. Abstract.

(a) E.A.I.NO. 696/57 DATED 19.7.57.	10, 14A, 15, 16A, 19, 20, 20A Class Locos.	Fit modified Piston Valve Heads.	<u>Drawing Nos.</u> L-7307 113/159 Alt.3.
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(b)	9, 9A, 9B, 10, 11, 11A, 12, 12A, 12B, 13, 14, 14A, 15, 16, 16A, 17, 19, 20, 20A.	Bring all piston valve ring grooves to 21/64" deep.	L-7307, L-6200 Alt. 4, L-6749 Alt. 1, L-6267 Alt. 4, A.133 Alt. 2 L-5597/2 Alt. 2, L-4529/2 Alt. 2, L-6621 Alt. 2 & 3 L-3064 Alt. 6.
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7. Charge. S.W.O. Concerned.

8. Stores. (a) D.S.K. BLR and D.S.K. US. in conjunction with M.E.'s to pass initial W/Os for stocks of the modified piston valve heads and washers Cat. Nos. LF.2282/8, LF.2282/9, LF.2282/10, LF.2282/11, LF.2282/12, LF.2282/13 & LF.3299.

(b) The following items are now obsolete:-

LF.2282, LF.2282/1 to /7 LF.2569/1 to LF.2569/7 & LF.2279. Outstanding Work Orders for these Items to be cancelled. Existing stocks to be retained until stocks of modified piston valve heads are received. Obsolete Items then to be scrapped.

9. Sheds. Sheds to ensure that washers are fitted to the inside of 19th Class modified Piston Valve Heads until such time as new rods are fitted.

10 Pattern Shop. Pt. Drg. L-7223/3 has been issued to pattern and contains all necessary casting sizes. When all patterns have been made pattern shop to notify C.M.E.'s D.O..

11. Drawings. (a) Copies of drawing L-7307 sent to M.E.US. C.D.S.B. & D.S.K.B., Drawings 113/159 Alt.3 sent to C.D.S.B. & D.S.K.B. Pt. Drawing L-7223/3 sent to Pattern Shop.

(b) Copies of drawing L-3064 Alt.6 (9th & 9B Class) L-5597/2 Alt.5 (9A Class) L-6267 Alt 4, (11th Class), L-6749 Alt.2, (11A Class), L-6200 Alt.4, (12th, 12A, 12B Classes), L-4529/2 Alt.1, (13th & 14th Classes), L-6621 Alt.3, (16th Class) A.133 Alt.2. Sent to C.D.S.B. & D.S.K. BLR. L-4529/2 Alt.1 Sent to M.E.U. All other classes are incorporated on Drg. L-7307 sent under Para 11(a).

J. Carter
A/C.M.E.

ISSUED TO:-

M.E.B., P.P.O.(8), P.O.B., L.P.B., E.S.F.B., M.S.F.B., (2),
F.S.F.B., F.F., P., M.E.U., P.O.U., L.P.U., E.S.F.U., M.S.F.U.,
F.S.F.U., C.S.T.(26), C.S.S., D.S.K.BLR., D.S.K.US. SYS.MAN.
KBY.3 (Kindly advise L.F. MFK.)

LEB 17
LEU 6
/mm
C 50 2
DSKB 2
AS-1
KBY3
Request (E) 5
Request (S) 6
Request (W) 1

Paragraph 11 (c) to be inserted.

- (c) Copies of drawings 112/158, 74/136, 81/118, 108/159, 124/153 and 136/121 are to be returned to the Chief Mechanical Engineer's Drawing Office for destruction.

[Signature]
CHIEF MECHANICAL ENGINEER.

ADDENDUM NO. 1 DATED 6.12.63 TO E.A.I. 696/57.

OSK 02-1