

FRONZ / ONTRACK
APPROVED CODE OF PRACTISE
FOR
HERITAGE NETWORK OPERATORS

Mechanical Supplementary Code B3.4.2.04 Piston Rods
--

Issue	Prepared (P), Reviewed (R), Amended (A)	Approved by	Effective Date
1	P McCallum (P)	Heritage Technical Committee	27 June 2006

Reference Material

Source	Description	Date
NZ Railways	Mechanical Branch Code No 13, Issue 3	1/5/1947

The holder of printed or duplicated copies of this document is responsible for ensuring they are using the latest version.

Amendment History

Version	Section	Amendment

Piston Rods

1 Introduction

This Supplementary Code relates to:-

B3.1.1.01 - Mechanical Code Of Practice, Section 3.16.7 - Piston Rods

It contains:-

- NZ Railways Mechanical Branch Code No 13 - Piston Rods; Issue 3 of 1/5/1947

which contains information relevant to the sizes and maintenance of locomotive piston rods. Operators are to use those sections that are relevant to their operation.

NEW ZEALAND GOVERNMENT RAILWAYS MECHANICAL BRANCH	PISTON RODS	CODE No.13
		Issue No 3 Date Issued 1/5/47

EXISTING LOCO. CODE INSTRUCTIONS TO BE CANCELLED: 226, 320.

- (1) PISTON RODS- Original Size of, Last Turning or Grinding Size of, Condemning Size of**
[The sizes quoted in this table are superseded by those shown on Drawing Y.21195 until further notice.]

Class.	Original Diameter.	Drawing No	Last Turning or Grinding Size.	Condemning Size.
	Inches.		Inches.	Inches.
A - H.P.	2.375	3633	2.125	2.094
- L.P.	2.5	4056	2.25	2.219
A 409	3.5	3969	3.25	3.219
A (simple)	3.25	W. 15561	3.0	2.969
AA	3.25	Y. 20201	3.0	2.969
AB	3.25	W. 15330	3.0	2.969
B	2.75	2189	2.5	2.469
BA	2.75	4986	2.5	2.469
BB	3.0	5722	2.75	2.719
C	2.375	W. 15103	2.125	2.094
F	1.75		1.5	1.469
G	3.0	X. 10516	2.75	2.719
H (inside)	2.0	9256	1.75	1.719
H (outside)	2.25	9217	2.0	1.969
J, JA	3.25	X. 12418	3.0	2.969
K, KA, KB	3.75	X. 10693	3.5	3.469
Q	2.75	Z. 7337	2.5	2.469
U	2.75	1563	2.5	2.469
UB	2.75	Z. 7337	2.5	2.469
UC	3.0		2.75	2.719
W	2.375	1035	2.125	2.094
WA	2.375	2394	2.125	2.094
WAB	3.25	W. 15330	3.0	2.969
WB	2.375		2.125	2.094
WE	2.75		2.5	2.469
WF	2.375	3333	2.125	2.094
WG	2.75	4762	2.5	2.469
WW	2.75	5801	2.5	2.469
X - H.P.	2.75	4127	2.5	2.469
- L.P.	3.0	4127	2.75	2.719
X (simple)	3.0	W.15731	2.75	2.719

- (2) PISTON RODS, Packing for**

Metallic packings for piston rods must be in accordance with Drg. 20654, except where "patent" piston-rod packings are specifically authorized.

The material for metallic packings must be of the composition shown in group " O " of Code No.60.

- (3) PISTON RODS- Material for, Turning and Grinding of**

Piston rods must be made from special piston-rod steel to specification shown in group 7 (D) on

Drg. W. 16298 (Materials used for Loco. Work, &c.) and must be turned and ground round and parallel.

(4) PISTON RODS, Welding of

~~Welding will only be permitted for building up the tapered fit of a rod, and must be done by the electric process. The rod must be pre-heated before welding, and normalized when completed.~~

[The welding of piston rods under any circumstances is prohibited.]

[C.M.E.s 24/563 of 18.9.50]

(5) PISTON RODS, Bent

Bent piston rods must not be straightened and must be condemned.

(6) PISTON RODS, Condemning of

Piston rods which are condemned must be deeply marked "X" with a cold set on the tapered end, so that it will be impossible for them to be used again.

(7) PISTON RODS, Re-turning and Regrinding of

When locomotives are received in workshops for "A" or "B" class repairs, piston rods must be reground. In cases where piston rods are irregular in shape they must be turned before regrinding.

(8) PISTON RODS, Examination of

Whenever piston rods are drawn from the crosshead they must be closely examined for any defects.

(9) PISTON RODS, Lubrication of

Each piston rod must be adequately lubricated with cylinder oil as near to the gland as possible by means of an oil cup. Where "patent" packings are fitted, the method of lubricating will be subject to special illustration.

(10) PISTON RODS, Branding of

All piston rods must bear the following brands on the crosshead end: Maker's name; W.R. number; Date in service.

MFW.

C O P Y :

06/937
WELLINGTON
2nd April, 1942.

Your 42/255/2855 of 27.3.42.

Works Manager,

H U T T

In reply to your above mentioned memorandum, I would advise that everything possible is being done to secure piston rod steel for the "K", "Ka" and "J" locomotives. While there is at present no definite advice regarding deliveries, the prospect is that there will be a reasonably early delivery of the "J" class material at least.

Adverting to the concluding paragraph of your memorandum I would direct your attention to Drawing Y.21195 - Emergency Code of Last Turning, Grinding and Condemning sizes for piston rods.

In addition to this Code, I am prepared to sanction the straightening of piston rods during the emergency period. Only mild heating of the rods should be effected, and it is expected that Officers will exercise discretion in respect of which rods heating and straightening may be applied to with safety.

Failing supplies of piston rod sizes of the steel arriving in time, I would point out that the same class of material (B.S.S. Report 24, Part 4, Specification 9/1930, Class "D"), is used for other purposes - slide bars, crank pins, axlebox wedges, etc., - and if supplies of billets of bars for these purposes are available at the time, recourse will require to be made to forging piston rods therefrom.

Chief Mechanical Engineer.