

FRONZ / ONTRACK
APPROVED CODE OF PRACTISE
FOR
HERITAGE NETWORK OPERATORS

Mechanical Supplementary Code B3.6.2.01 Pressure Gauges
--

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 33, Issue 3	1/12/1962

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

Pressure Gauges

1 Introduction

This Supplementary Code relates to:-

B3.1.1.01 - Mechanical Code Of Practice, Section 3.19.1 - Lighting

It contains:-

- NZ Railways Mechanical Branch Code No 33 - Pressure Gauges; Issue No 4 of 1/12/1962.

which contains information relevant to the installation and testing of pressure gauges. Operators are to use those sections that are relevant to their operation.

NEW ZEALAND GOVERNMENT RAILWAYS	PRESSURE GAUGES	CODE No. 33
MECHANICAL BRANCH		Issue No 4 Date Issued 1/12/62

NOTE-For the purpose of this Code, the term locomotive will include steam, electric, diesel and diesel-electric locomotives, railcars, and electric multiple unit stock.

(1) INSTALLATION

Pressure gauges must be plainly visible and unobstructed by pipes, mountings, and other fittings.

(2) AIR PRESSURE GAUGES

All air brake pressure gauges on locomotives must be checked in accordance with the requirements of the Servicing Schedule. The Duplex Test Pressure gauges used for this purpose are to be sent to a main workshop for testing against a master test gauge each year in either March or September.

(3) TESTING:

All steam pressure gauges in regular use on locomotives and steam boilers and all air pressure gauges on air reservoirs must be checked against a reliable test pressure gauge in the months of March and September of each year, or more frequently, if necessary.

Air brake and gas pressure gauges on non-traction stock must be tested whenever the air brake equipment is overhauled. Pressure ventilation, steam pressure gauges, and water raising air pressure gauges are to be tested when the corresponding equipment is overhauled.

In addition, when locomotive or other boilers are received in workshops for any repairs the air and steam pressure gauges are to be tested. When locomotives are given "A" repairs (or top overhauls), or are shopped for repairs to the air brake equipment, the air brake pressure gauges are to be tested.

Pressure gauges are to be tested only in those workshops or depots where standard testing equipment and a master duplex pressure gauge is available.

Each officer in charge will be responsible for arranging the testing of pressure gauges in his charge in accordance with this Code.

(4) LIMITS OF ERROR

When the error in any pressure gauge in service exceeds the limits set out below the gauge must be forwarded to workshops for overhaul.

- (a) *Duplex Test Pressure Gauges* - $\pm \frac{1}{2}$ lb per sq. in. at any point.
- (b) *Duplex Air Brake Gauges* - The two pointers must agree within 3 lb per sq. in. at any part of the scale. Error in either gauge not to exceed ± 3 lb per sq. in.
- (c) *Other Pressure Gauges* - $\pm 2\frac{1}{2}$ per cent of nominal reading between 90 per cent and 110 per cent of working pressure.

(5) OVERHAUL OF PRESSURE GAUGES

Pressure gauges must be overhauled only at workshops where standard testing equipment and a master duplex gauge are available.

(6) MARKING OF DIALS

- (a) *Steam and General Gauges* - An extended red line, $\frac{1}{16}$ in. wide, must be painted on gauge dials at the scale division corresponding to the working pressure approved for the boiler or pressure vessel to which the gauge is fitted.
- (b) *Air Pressure Gauges* - Red lines as above must be used to show the main reservoir pressure. The working pressure of other equipment is to be indicated by extended lines $\frac{1}{16}$ in. wide, black where the dial is white and red where the dial is black.

On duplex gauges the pressure to which each pointer refers must be plainly marked on the pointer or indicated on the dial.

Gauge dials will be painted only at workshops that overhaul gauges.

The table below gives the maximum pressures applying to air brake equipment for the different classes of stock.

Locomotive Class	Main Reservoir	Equalising Reservoir	Train Pipe	Brake Cylinder	Control Air	Emergency Air
J, JA, JB, KA, and KB	100* and 120*	80	80	50	....	....
Other steam locomotives	100*	....	80	45	....	....
DE	95* and 110*	....	80	45	....	....
Ec and Eo	95* and 110*	....	80	45	70	....
ED and EW	95* and 110*	80	80	....	....	....
DF, DG, and DH	105* and 120*	80	80	50	70	....
DA	140	80	80	62	90	....
Ds, DSA, DSB, and Dsc	95* and 105*	....	80	‡	‡	....
Vulcan and 66 ft railcars	100	....	70	50	70	70
Twin set railcars	100	....	70	50	75	70
D and DM Elect. Coaches	100	....	70	45	70	....
Vans	....	....	80	....	....	....

* Both pressures to be indicated by extended red lines.

‡ See manuals.

(7) RECORDS OF TESTS

All tests of pressure gauges at workshops are to be recorded in a register under the following headings:

Date Tested	Gauge No.	Fitted to	Pressure Indication	Tested by
-------------	-----------	-----------	---------------------	-----------

The register is to be divided into the following sections- (a) Steam gauges; (b) air brake gauges; (c) gas lighting gauges; d) miscellaneous gauges.

The ~~six monthly depot~~ testing of pressure gauges is to be recorded as follows:-

[24/563 of 30.10.1962]

Steam gauges	..	On Loco 193 report.
Air brake gauges	..	On Loco 118 form.
Other gauges	..	In a register similar to the workshops register

(8) NEW PRESSURE GAUGES

Before new pressure gauges are issued from stores they must be checked against the workshops standard testing equipment, given a serial number, and details entered in the pressure gauge register.

(9) SINGLE VEHICLE BRAKE TESTER

The pressure gauge on single vehicle testers will be checked in September of each year by the Brake Inspector who will use a duplex test pressure gauge which has been tested at a main workshop.]

[The above section is Page 3 of Issue 3; Date 1/5/59]