NATIONAL TRACTION ENGINE TRUST

Preserving our heritage with steam on the road

ENGINE OWNER'S CODES OF PRACTICE

OPERATION, MAINTENANCE AND REPAIR of TRACTION ENGINES, PORTABLE ENGINES and SIMILAR VEHICLES

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03.5	February 2012	Part 3 – Revised + Loading/Unloading to Transport temporally removed
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FOREWORD

These codes of practice were last revised in 1997.

The Engine Owners Section of the National Traction Engine Trust has prepared these revised guidelines in line with the Trust's Health and Safety Policy, Statement of Intent, HS/1, reproduced below.

"The National Traction Engine Trust (NTET) is committed to "Preserving our Heritage in Steam on the Road" in a safe and healthy manner.

The NTET is a voluntary organisation with membership by subscription, and as such the NTET recognises and is committed to its duty of care to its members, and others including the public.

Being a voluntary organisation with membership by subscription, the NTET cannot impose any statutory duties made under the Health & Safety at Work etc. Act 1974 on its members, but will apply the requirements of the Act, and the regulations enabled by the Act as appropriate so as to enable the NTET to fulfil its duties of care, and also to help the membership to fulfil their duties of care to the public.

The NTET further recognise the requirements of the Management of Health & Safety at Work Regulations 1992, and will implement a Safety Management System in accordance with the Health & Safety Executive's model HS (65) "Successful Health & Safety Management", which will include this Statement of Intent, the Organisation and Arrangements responsible for implementing the Health & Safety standards and expectations, together with a Monitoring, Audit and Review process.

In implementing such a Safety Management System, the NTET will minimise the risk associated with the principle hazards associated with Heritage Steam Plant, such as Pressure Systems, Machinery, and Movement of People & Vehicles etc."

The Engine Owners Section has consulted with the Safety Assessment Federation, and other interested parties, and collectively these documents form the NTET's Engine Owners Codes of Practice.

The Safety Assessment Federation (SAFed) has approved Part 4 (Written Scheme of Examination) and Part 6 (Repairs) of these guidelines. These two components form an important part the of the NTET's Safety Management Scheme.

This publication should not be regarded as an authorative interpretation of the law. However, if the guidance provided is followed, it will normally be regarded as sufficient to comply with health and safety law in respect of the management, operation, examination and repair of steam traction engines and similar devices.

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INTRODUCTION

Since interest in the preservation of traction engines, steamrollers and other steam driven road vehicles became widespread, there have been many changes in the circumstances surrounding their use. Rallies, which used to be small informal affairs attended by a few enthusiasts, have become major public events; the public not only expect a high standard of safety, but also are very ready to sue owners or organisers if they are injured as a result of defective equipment or bad driving. Legislation governing the examination of boilers and the use of vehicles on public roads has changed dramatically.

Against such a background an increasing majority of owners and drivers have received little or no formal training, whilst repairs necessitated by neglect or lack of understanding become more and more expensive.

Since the introduction of the Health & Safety at Work Act in 1974, the United Kingdom has adopted the principle of "self regulation" in matters of health and safety. Although many aspects of the subject are covered by detailed Regulations, it has been the policy of the Health & Safety Commission to encourage organisations to set their own standards for activities, which they know and understand, rather than imposing standards set by those who may not.

Legal requirements, such as the Pressure Systems Safety Regulations 2000 (PSSR), do not normally apply to operating pressure equipment that are 'not at work'. However the Health and Safety Executive considers it good practice for those using such equipment to provide the same level of health and safety protection as they would if they were duty holders under the Regulations. To aid this process, and in accordance with the NTET's Health & Safety Policy, the principles of PSSR have been followed in drafting this document.

The NTET's Health and Safety Policy incorporates a Safety Management System of which these guidelines form an important part.

The Pressure Equipment Regulations 1999 (PER) affects the repair and modifications to pressure equipment. Guidance on the application of these regulations has been published in the Trust's magazine 'Steaming' and can also be found on the Trust's website (www.ntet.co.uk).

These Codes, therefore, have been prepared to reflect the changes outlined above and are designed to meet the current statutory standards whilst providing practical guidelines appropriate to the needs of preserved steam driven vehicles.

An important part of these codes is Part 4; 'Written Scheme of Examination'. This entirely revised version has been approved by the Safety Assessment Federation (SAFed) and includes a generic Written Scheme of Examination for application to locomotive type boilers and vertical water/smoke tube type boilers, examination report templates and a template for the newly introduced 'Certificate of Examination'. The Certificate of Examination supports requests for Insurance and the issuing of the NTET's Insurance Disc. The re-designed examination report templates form an integral part of the NTET's Boiler Inspections Audit Scheme.

These Codes, whilst not seeking to set standards in countries other than the United Kingdom, are drafted in a manner which may permit their adoption elsewhere, either in whole or in part, with a minimum of adaptation.

Significantly, each part has been presented in a 'standalone' format allowing for it to be modified independently of the whole. The numbering of the sections or parts has been retained but a more user-friendly style has been adopted.

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OBJECTIVES

1. To provide clear guidelines for those responsible for the operation, care and maintenance, examination and repair of vehicles covered by the code;
2. To set standards equivalent to current legislation relating to steam boilers and pressure systems;
3. To ensure that engines currently in preservation will be maintained to a standard which will both preserve their monetary value and keep them in good mechanical condition for as long as possible;
4. To ensure that preserved engines will continue to operate and give pleasure to their owners and the public without being a source of danger to either;
5. To preserve and enhance the reputation and image of drivers and owners as courteous and responsible people, both on the road and the rally field;
6. To obtain the best possible terms of insurance for those who conform to the Code and maintain their engines to a high standard;

APPLICATION OF THESE CODES

These Codes are designed to apply to: -

1. *Any *engine* (as defined elsewhere in these Codes), which is kept and used for recreational or other non profit-making purposes, which is used on any public road, at any *public event* or in any other public place and to any other *boiler* used at any *public event* or in any other public place.

These Codes are not designed to apply to: -

1. Any railway steam locomotive, full size or model.
2 *Engines having a boiler capacity of less than 1100 bar-litres where these are examined under “The Examination and Testing of Miniature Steam Boilers (2006)”. (1100 Bar Litres relates to a boiler that has a capacity of approximately 23.5 gallons and a working pressure of 150 psi).
3 Steam Cars. These should be examined under the “Code of Practice for Operation and Maintenance of Steam Cars” published by the Steam Car Club of Great Britain Ltd.
4 Steam Boats. These should be examined under The Steam Boat Boiler Inspection Scheme.

* See variations below

Variations

Subject to the appropriate comments being entered under the ‘Special Requirements’ section of the Written Scheme of Examination these Codes may also be applied to:-

1 Engines deemed to be at work; i.e. wherever PSSR 2000 applies.
2 Engines having a boiler capacity of less than 1100 bar-litres which are not being examined according to “The Examination and Testing of Miniature Steam Boilers (2006)”

Note: See the Written Scheme of Examination Notes of Guidance given with Part 4 Appendix A.

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DEFINITIONS

Because traditional terminology varies from place to place and between different sections of the community, the risk of confusion is minimised in this publication by using qualified definitions throughout these Codes. Words or expressions that have a defined meaning are printed throughout in ***italic***.

To avoid tedious repetition of phrases such as "engine or engines" etc., the singular should be read as including, where appropriate, the plural. The word "he" should similarly be regarded as meaning "he or she"; this is done purely for simplicity and implies no disrespect whatever to the ladies.

Unless the context otherwise requires, the following words and expressions have the meanings hereby assigned to them respectively, that is to say: -

Bar Litres is a term devised to describe the capacity of a *boiler* related to its volume and working pressure. It is obtained by working out the actual volume of the *boiler* (not the working volume of water) and multiplying it by the working pressure. (E.g. a *boiler* with a total volume, water and steam space, of 50 gallons (227.3 litres) working at a pressure of 150 psi (10.34 bar) has a capacity of 227.3 x 10.34 = 2350.28 Bar Litres)

Blowdown means the removal of water and entrained sediment, if present, from a *boiler* by controlled discharge from the bottom of the water space.

Blowdown valve means a valve or cock, located at the lowest part of a *boiler* and used for controlling *blowdown.*

Blower means a steam jet or nozzle, usually located in the base of the chimney, by means of which the fire may be drawn-up in the absence of induced draught from the engine exhaust.

Boiler means a steam boiler, being a closed vessel in which steam is raised to a pressure greater than atmospheric pressure.

Boiler Inspector means a person employed as a Boiler Inspector or as an Engineer Surveyor by an *Inspecting Organisation* or an independent person and has the same meaning as "competent person" in the Pressure Safety Systems Regulations 2000 or "Authorised Inspector" in the Boiler & Pressure Vessels Code of the American Society of Mechanical Engineers.

Competent Person (as defined in PSSR 2000) means a person who possesses such practical and theoretical knowledge and actual experience of the plant and equipment which he has to examine as will enable him to detect defects or weaknesses which it is the purpose of the examination to discover and to assess their importance in relation to the safety of the plant and equipment and *competent* shall be construed accordingly.

In relation to the Written Scheme of Examination, the National Traction Engine Trust is the Competent Person who has, in conjunction with SAFed, certified the generic scheme presented in these Codes.

In relation to a *boiler inspector*, he shall be deemed competent if he has sufficient practical and theoretical knowledge and actual experience of the type of system under examination to enable defects and weaknesses to be identified and an assessment made of their significance in terms of the integrity and safety of the equipment.

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Engine includes a traction engine, showman's engine, road locomotive, steam roller, steam tractor, ploughing engine, agricultural engine and similar steam driven road vehicles; a portable steam engine or portable boiler; steam car or steam lorry and includes models of any of the foregoing built to any scale and having a *boiler* constructed of steel.

Engines having a capacity of less than 1100 bar-litres should be examined under "The Examination and Testing of Miniature Steam Boilers (2006)". (1100 Bar Litres relates to a boiler that has a capacity of approximately 23.5 gallons and a working pressure of 150 psi).

Steam Cars should be examined under the "Code of Practice for Operation and Maintenance of Steam Cars" published by the Steam Car Club of Great Britain Ltd.

Steam Boats should be examined under The Steam Boat Boiler Inspection Scheme.

Examination means an examination carried out under a written scheme of examination in accordance with Part 4 of these Codes

Fittings includes pressure gauges, safety valves, stop valves, check valves, blowdown valves, water gauge fittings, test cocks, steam turrets or manifolds (unless permanently attached to the boiler by riveting or welding), whistles and any other item attached directly to the boiler or other part of the *pressure system* but not including the cylinder block, crosshead supports, bearing brackets and other parts, the removal of which would disturb the alignment of moving parts, and any other items which are permanently attached by riveting or welding.

Fusible plug means a plug containing a metal or alloy of metals of low melting point fitted in the crown of the firebox or other suitable point, to prevent serious over-heating of the plates if the water level falls below it.

Inspecting Organisation means a company, association or other body of persons corporate or un-incorporate, which has agreed to apply SAFed approved standards when carrying out *inspections* under the terms of these Codes, or is UKAS accredited.

Locomotive type boiler means a *boiler* constructed to the general design illustrated in Figure 1 of these Codes and, for the purposes of these Codes, the description of the component parts of such *boilers* shall be as specified therein.

Owner means the person who has control of the operation, maintenance, transport storage and repair of an *engine*. The owner for the purposes of these Codes need not be the legal owner.

PED means the Pressure Equipment Directive and

PER means the Pressure Equipment Regulations 1999, which have been developed from the Pressure Equipment Directive (*PED*)

Pressure system means every part of the engine containing steam or hot water at, or above *boiler* pressure and includes, as well as the *boiler*, all safety valves and stop valves; feed water, feed pump and injector check valves; *water gauge fittings* and all pipework subject to pressure from steam or hot water.

PSSR (2000) means The Pressure Systems Safety Regulations 2000 (PSSR 2000)

Public event means a rally, fair, show or other event where one or more *engines* are present and to which the public has access, whether for payment or not.

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Safe working pressure means the pressure specified in the report on the last *inspection* as the maximum pressure at which the *pressure system* may be operated until the date specified for the next *inspection*.

Safety Assessment Federation (*SAFed*)

SAFed represents the UK independent engineering inspection and certification industry, which plays a key role in maintaining high standards of safety within the workplace. SAFed members are UKAS accredited.

The National Traction Engine Trust means the National Traction Engine Trust of Great Britain and Northern Ireland, a Charity Registered in England No.291578.

United Kingdom Accreditation Service (*UKAS*) The United Kingdom Accreditation Service is the national accreditation body recognised by government to assess, against internationally agreed standards, organisations that provide certification, testing, inspection, and calibration services.

Water gauge means a device, directly attached to the *boiler*, having a column of glass or other suitable transparent material through which the level of water in the *boiler* may be directly observed.

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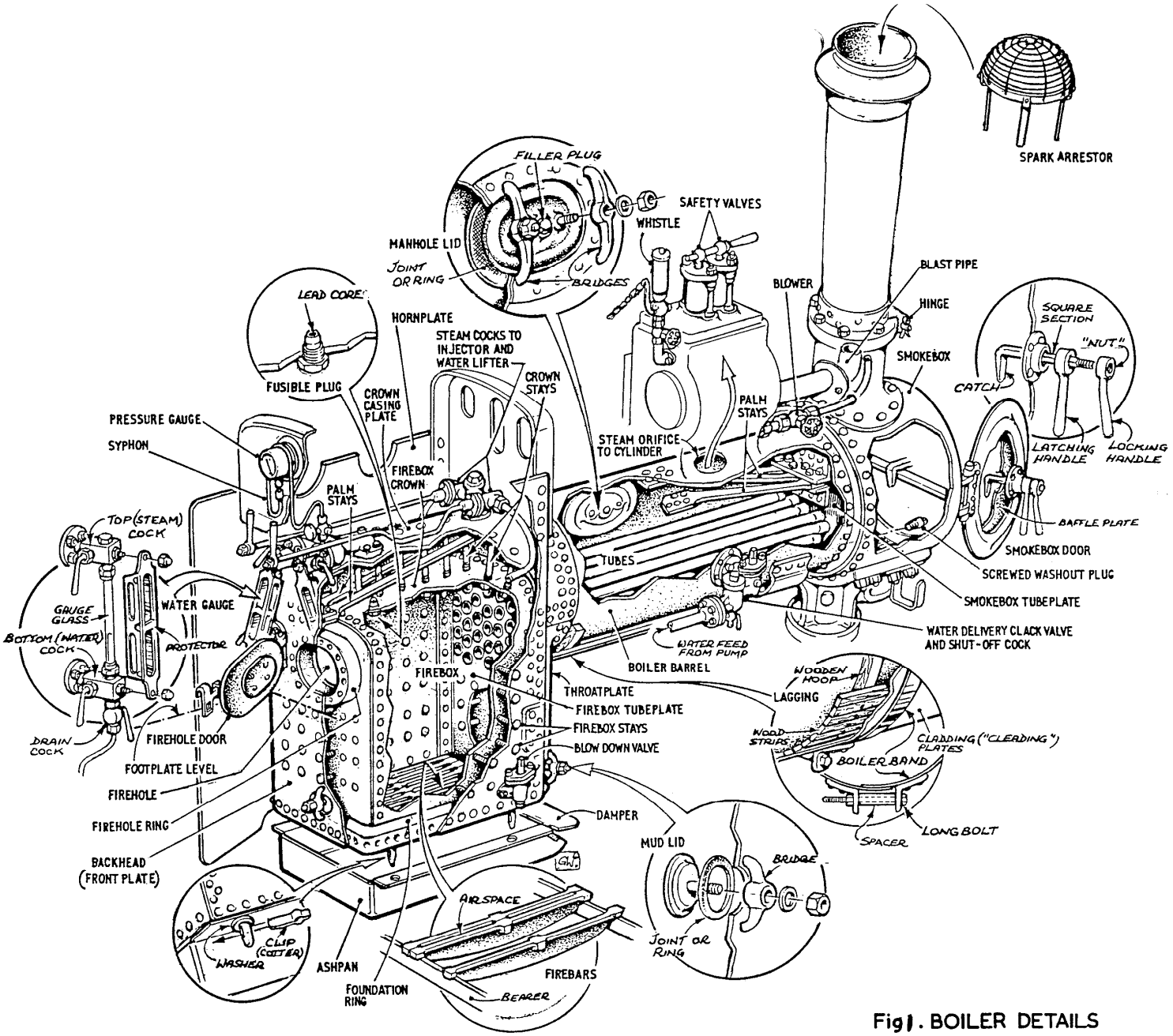

Fig 1. BOILER DETAILS

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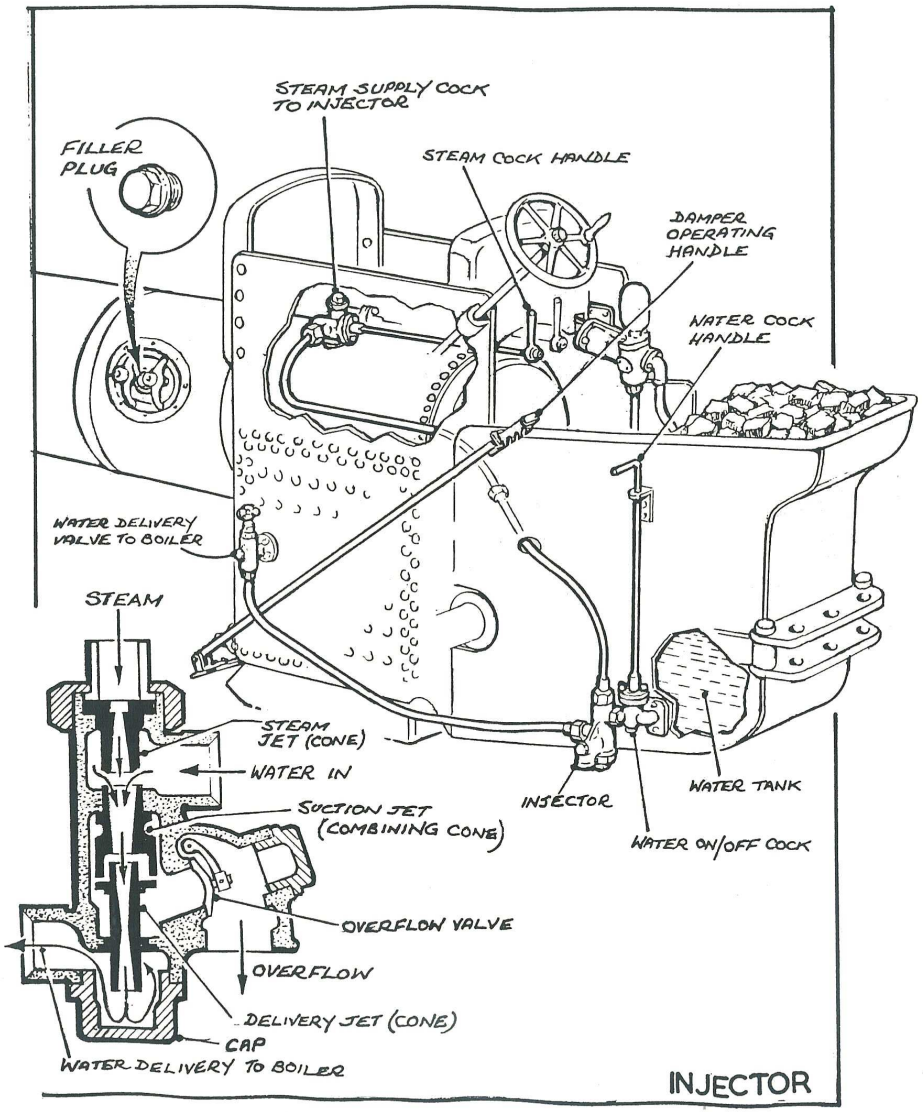

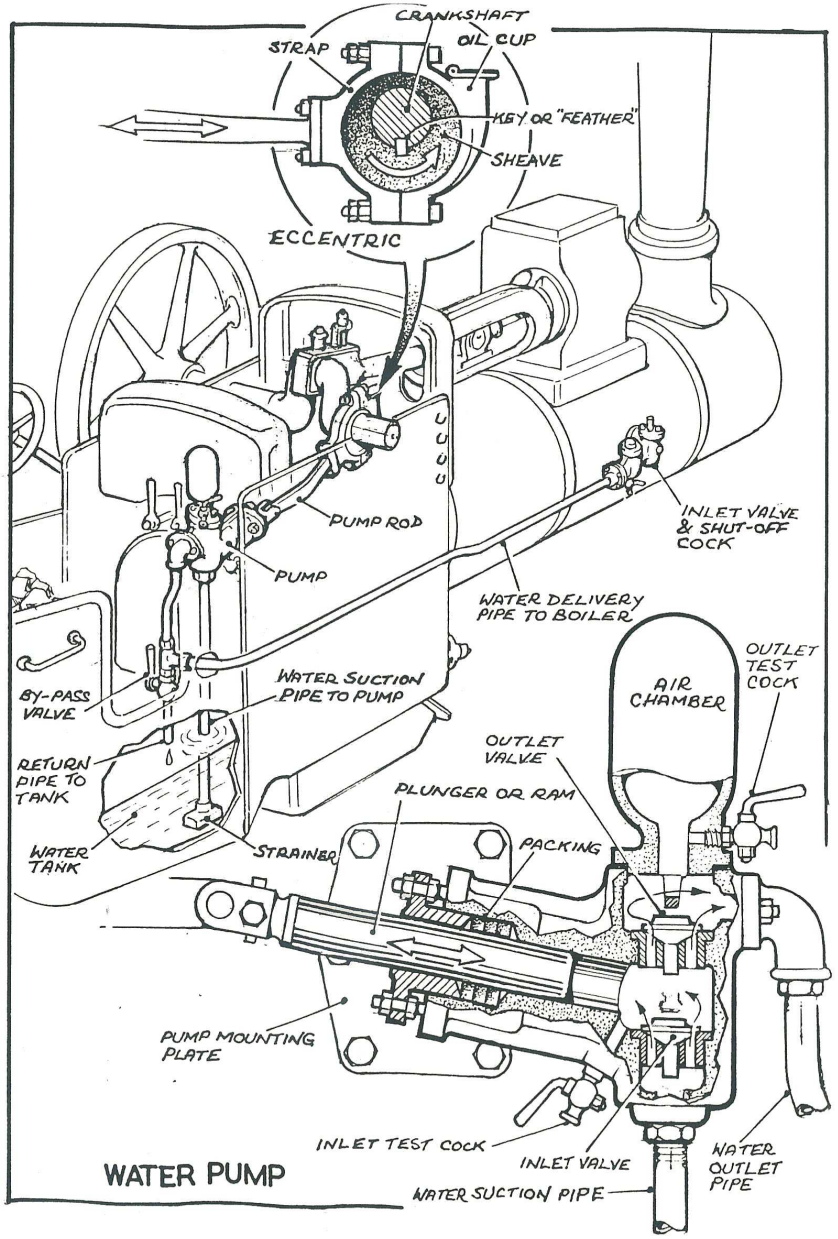

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