

workshop manual for 4.108 4.107 and 4.99 diesel engines

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Perkins Engines Limited

Peterborough England

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This publication is written for world wide use. In territories where legal requirements govern smoke emission, noise, safety factors etc., then all instructions, data and dimensions given must be applied in such a way that, after servicing (preventive maintenance) or repairing an engine, it does not contravene the local regulations in use.

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FOREWORD

This workshop manual has been compiled for use in conjunction with normal workshop practice. Mention of certain accepted practices therefore, has been purposely omitted in order to avoid repetition.

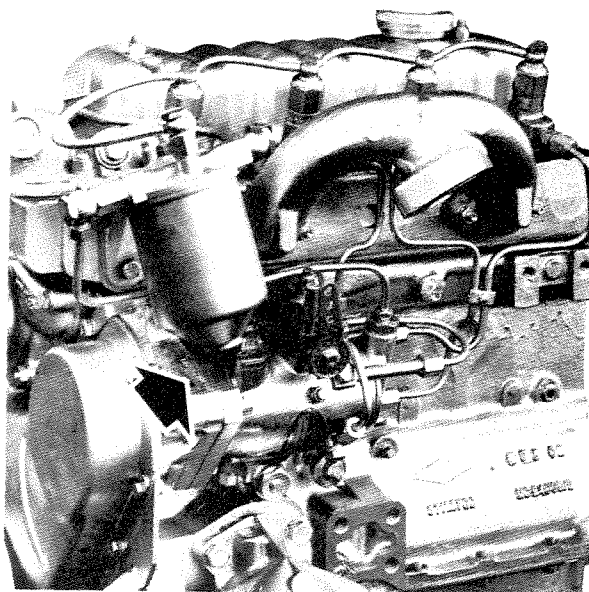
Reference to renewing joints and cleaning off joint faces has to a great extent been omitted from the text, it being understood that this will be carried out where applicable.

Similarly, it is understood that in reassembly and inspection, all parts are to be thoroughly cleaned and where present, burrs and scale are to be removed.

It follows that any open ports of high precision components, e.g., fuel injection equipment, exposed by dismantling, will be blanked off until reassembled, to prevent the ingress of foreign matter.

When setscrews or studs are fitted into holes which are tapped through into the inside of the engine, a suitable sealant must be used on the threads.

Throughout this manual, whenever the "left" or "right" hand side of the engine is referred to, it is that side of the engine as viewed from the flywheel end.



The engine number is stamped on the fuel pump mounting flange as shown in the above illustration.

Three systems of engine numbering have been used.

On very early engines the serial number consisted of seven digits as follows :—

Engine Type	Typical Engine Number
4.108	7300269
4.107	7100399
4.99	7000251

Identification on these engines can be identified by observing the first two figures of the engine number which remain constant depending on engine type.

With later engines, the number consisted of figures and letters :—

Engine Type	Typical Engine Number
4.108	108U251
4.107	107U251
4.99	99U251

The first figures represent the capacity of the engine in cubic inches, the letter "U" signifies that the engine was built in the United Kingdom and the last group of figures comprises the engine serial number.

On current engines, the number can consist of up to fifteen letters and figures, a typical number being ED21512U510256D



Safety precautions

THESE SAFETY PRECAUTIONS ARE IMPORTANT. Reference must also be made to the local regulations in the country of operation.

Do not use these engines in marine applications.

Do not change the specification of the engine.

Do not smoke when you put fuel in the tank.

Clean away any fuel which has fallen and move material which has fuel contamination to a safe place.

Do not put fuel in the tank during engine operation (unless really necessary).

Never clean, lubricate or adjust the engine during operation (unless you have had the correct training when extreme caution must be used to prevent injury).

Do not make any adjustments you do not understand.

Ensure the engine is not in a position to cause a concentration of toxic emissions.

Persons in the area must be kept clear during engine and equipment or vehicle operation.

Do not permit loose clothing or long hair near parts which move.

Keep away from parts which turn during operation. Note that fans can not be seen clearly while the engine is run.

Do not run the engine with any safety guards removed.

Do not remove the radiator cap while the engine is hot and the coolant is under pressure as dangerous hot coolant can be discharged.

Do not use salt water in the cooling system or any other coolant which can cause corrosion.

Keep sparks or fire away from batteries (especially during charge) or combustion can occur. The battery fluid can burn and is also dangerous to the skin and especially the eyes.

Disconnect the battery terminals before you make a repair to the electrical system.

Only one person must be in control of the engine.

Ensure the engine is only operated from the control panel or operators position.

If your skin comes into contact with high pressure fuel, get medical assistance immediately.

Diesel fuel can cause skin damage to some persons. Use protection on the hands (gloves or special skin protection solutions).

Do not move equipment unless the brakes are in good condition.

Ensure that the transmission drive control is in "Out of Drive" position before the engine is started.

Fit only correct Perkins Parts.

CONTENTS

ENGINE VIEWS	A
TECHNICAL DATA	B
OPERATING AND MAINTENANCE	C
FAULT FINDING	D
CYLINDER HEAD	E
PISTONS AND CONNECTING RODS	F
CYLINDER BLOCK AND LINERS	G
CRANKSHAFT AND MAIN BEARINGS	H
TIMING CASE AND DRIVE	J
TIMING	K
LUBRICATING SYSTEM	L
COOLING SYSTEM	M
AIR CLEANERS AND FUEL SYSTEM	N
FLYWHEEL AND HOUSING	P
ELECTRICAL EQUIPMENT	Q
ENGINES FOR REFRIGERATION UNITS	R
APPROVED LUBRICATING OILS	Appendix
APPROVED SERVICE TOOLS	"
INDEX	"

EXAMPLES OF SERVICE FACILITIES

Service

If any problems occur with your engine or the components fitted to it, your Perkins distributor can make the necessary repairs and will ensure that only the correct parts are fitted and that the work is done correctly.

Certain components can be supplied by your Perkins distributor through the Perkins Power exchange system. These will enable you to reduce the cost of some repairs.

Extended Warranty

The engine warranty period can be extended to two years. For details, get in contact with your nearest Perkins distributor.

Service Literature

Users handbooks and other service publications are available from your Perkins distributor at a nominal cost.

Training

Local training on correct engine operation, overhaul and service is available at some Perkins distributors. If special training is needed, your Perkins distributor can give details on how to get this at the Product Education Department, Peterborough, or other main centres.

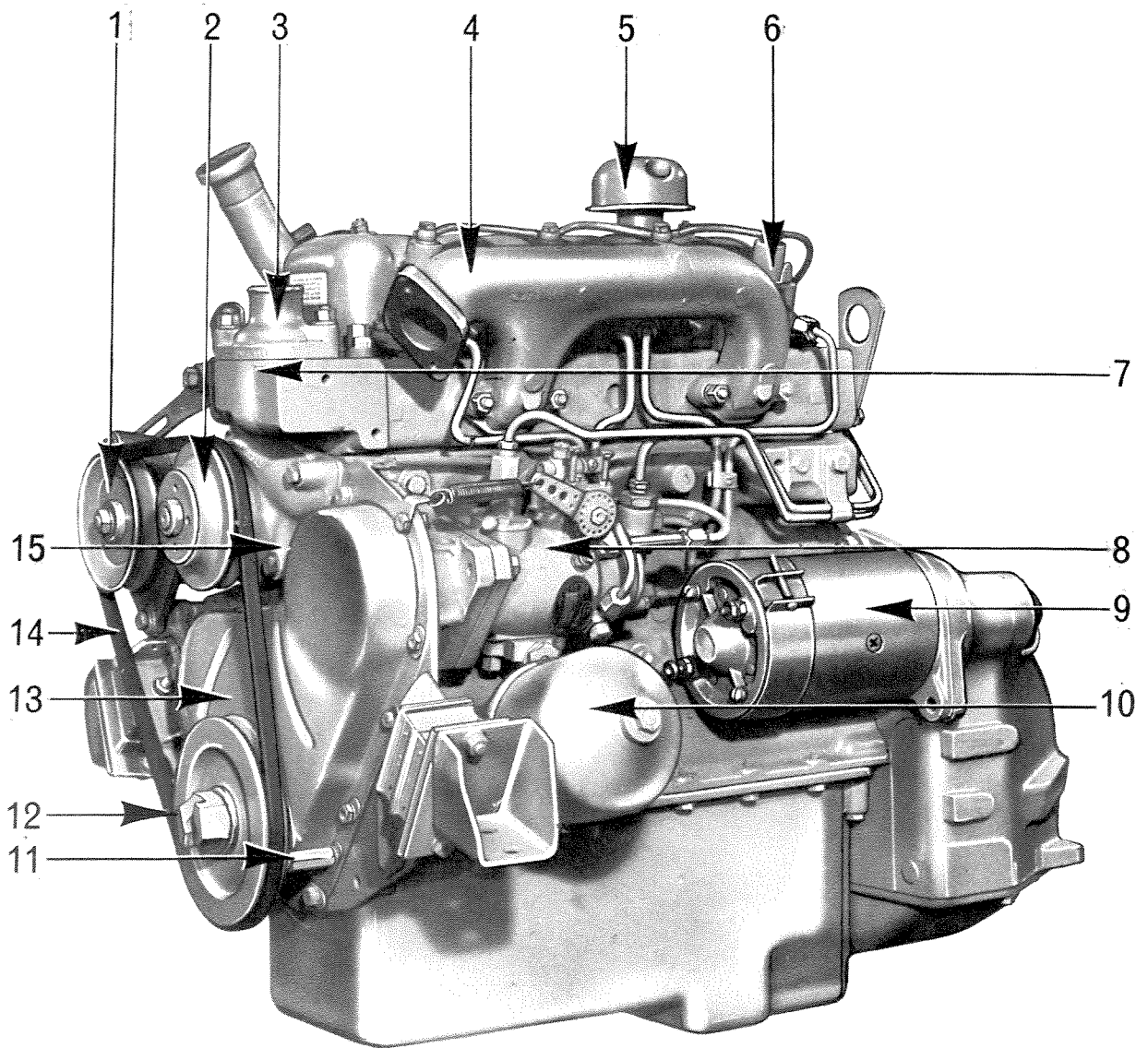
SECTION A

Engine Views



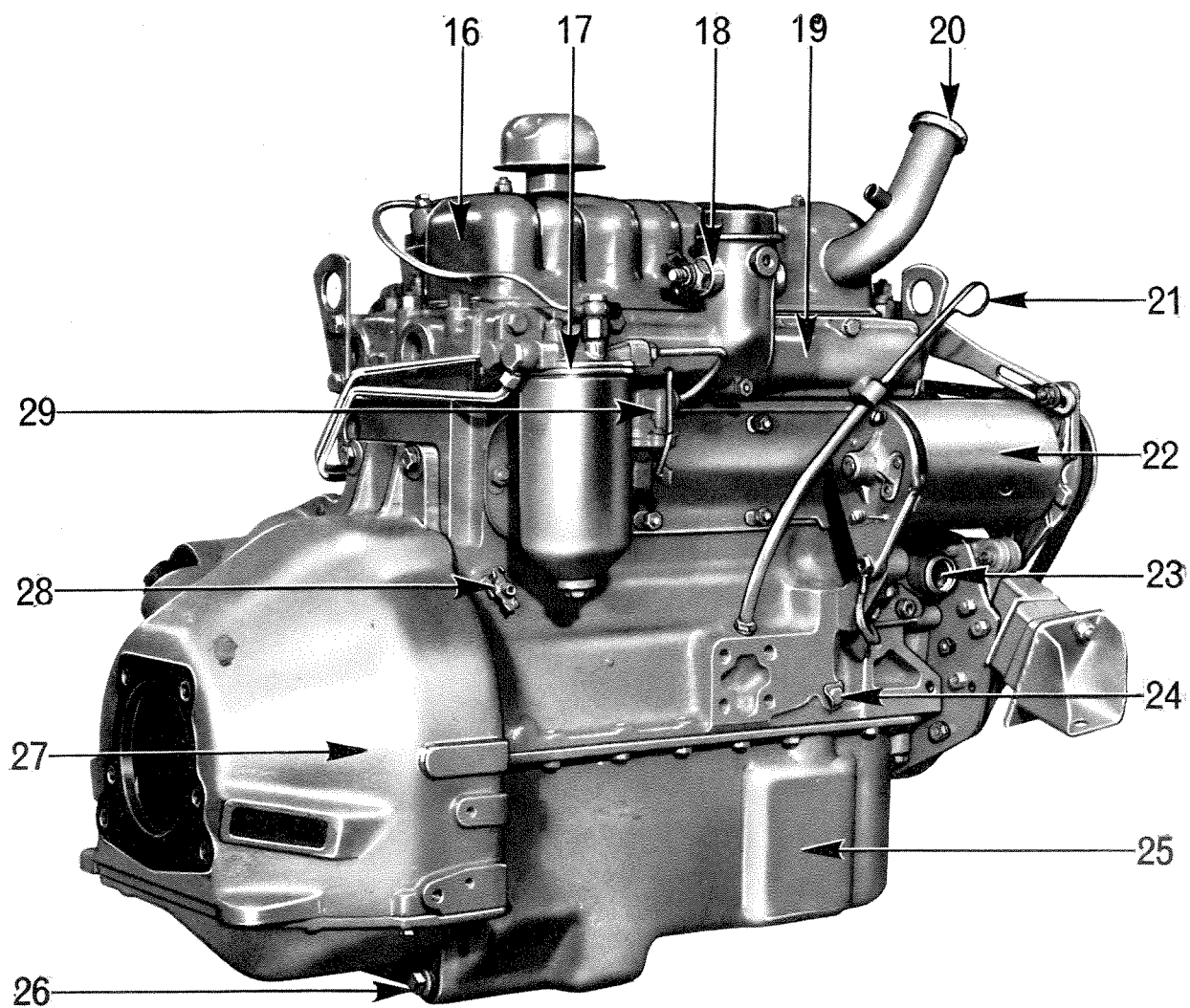
Index to Engine Views

- 1 Dynamo Pulley
- 2 Water Pump Pulley
- 3 Water Outlet
- 4 Exhaust Manifold
- 5 Breather
- 6 Atomiser
- 7 Thermostat Housing
- 8 Fuel Injection Pump
- 9 Starter Motor
- 10 Lubricating Oil Filter
- 11 Timing Pin
- 12 Crankshaft Pulley
- 13 Timing Case
- 14 Fan Belt
- 15 Water Pump
- 16 Cylinder Head Cover
- 17 Fuel Oil Filter
- 18 Starting Aid
- 19 Induction Manifold
- 20 Lubricating Oil Filter
- 21 Dipstick
- 22 Dynamo
- 23 Water Inlet
- 24 Lubricating Oil Pump Locating Setscrew
- 25 Lubricating Oil Sump
- 26 Sump Drain Plug
- 27 Flywheel Housing
- 28 Cylinder Block Drain Tap
- 29 Fuel Lift Pump



VIEW OF FUEL PUMP SIDE OF ENGINE

ENGINE VIEWS—A.4



VIEW OF CAMSHAFT SIDE OF ENGINE