Perkins engines

handbook

for marine diesel engines



your engine guarantee

As regards Guarantee, your position will depend on the terms on which you purchased your boat: Perkins do not accept Guarantee claims direct from boat owners. For your information, however, Perkins undertake (subject to their detailed Terms and Conditions of Sale) with the person or firm to whom they sell their engines, normally the Perkins Distributor, to replace or repair such engine or part or parts of an engine which need repair or replacement because of defective design, workmanship or materials during the first twelve months from delivery to the first user or for a period of twenty-four months from despatch of the engine by Perkins, whichever is the shorter.

This guarantee applies to new engines and Perkins Factory Rebuilt Engines but does not apply to secondhand engines or parts, nor to accessories and proprietary fittings.

Should you need any assistance with your engine, there is a list of addresses at the back of this book showing where Perkins Marine diesel engine specialists may be found. In the event of your being away from the boatyard from which you purchased your boat, you are advised to carry some evidence of the date of purchase of your engine/boat, for, although despatch records are normally kept by Perkins, this evidence may assist in a speedy service for you under normal guarantee.

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This handbook has been issued to guide operators in the correct use and maintenance of Perkins Marine Diesel engines. Providing an engine is correctly installed, correct maintenance and certain precautions are observed, then no operating difficulties or failures should be experienced. All matters relating to marine propulsion are covered, also fault diagnosis and remedy, and minor repairs which the average marine operator can undertake, whilst his craft is afloat.

Introduction

All Perkins Marine Diesel engines operate on the four stroke cycle. The first stroke is the induction stroke (1). The inlet valve is open and the piston is travelling downwards drawing air into the cylinder. The second stroke is the compression stroke (2). Both valves are closed and the piston is moving upwards compressing the air in the cylinder. As the piston reaches the top of its stroke, the compressed air creates such a heat as to ignite the fuel injected through the atomiser. The burning of the fuel forces the piston downwards on the combustion or power stroke (3). The fourth stroke comprises the exhaust stroke (4). The piston is travelling upwards, thus ejecting all the burnt gases from the cylinder through the open exhaust valve.

With turbocharged engines, the exhaust outlet pressure is utilised by the turbocharger to boost the air at the induction intake which assists in increasing the power output of the engine.

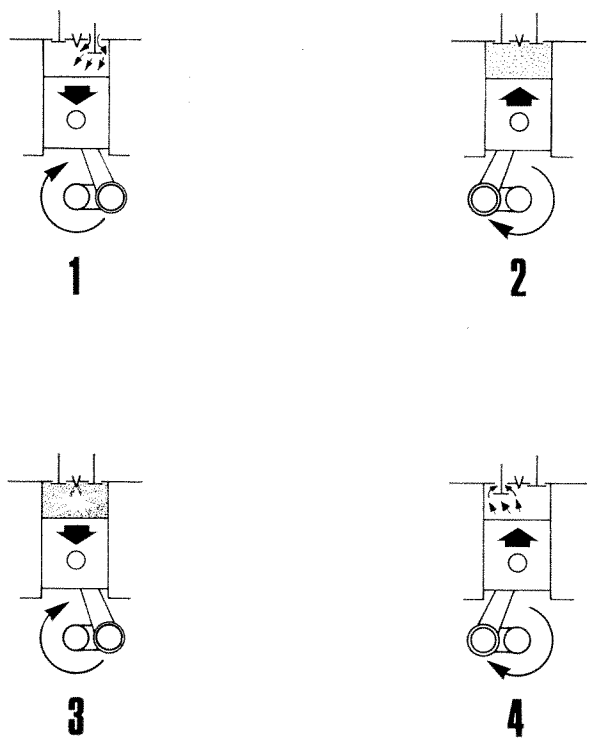


Fig. 1

engine identification

The engine types with which this marine operator's handbook is associated, are designated 4.107(M), 4.108(M), P3.152(M), 4.236(M), 6.354(M), H6.354(M), T6.354(M), HT6.354(M), V8.510(M) and TV8.510(M).

The first figure in the engine designation, signifies the number of cylinders, whilst the second group of figures, denotes the engine capacity in cubic inches. The letter "H" preceding the engine type denotes a horizontally inclined engine; the letter "T" signifies that the engine is turbocharged; the letter "V" signifies that there are two banks of cylinders in "V" formation.

The letter "M" in parenthesis following the engine type shows that the engine has been especially built for marine use.

Apart from their physical differences, engines can be identified by the engine number stamped on the cylinder block. The number consists of a combination of figures and letters, a typical example being 354U251. In this instance, the engine type would be a 6.354 as the first group of figures represents the cubic capacity: the letter "U" signifies that the engine was built in the U.K. The second group of figures comprises the serial number of the engine. Further letters can be included in the combination — a letter "H" indicates a horizontal engine — a letter "T" indicates a turbocharged engine — a letter "X" indicates a contra-rotating engine.

Fig. 2 shows engine number locations.

Where information, spare parts or assistance is required, this engine number should always be quoted in full.

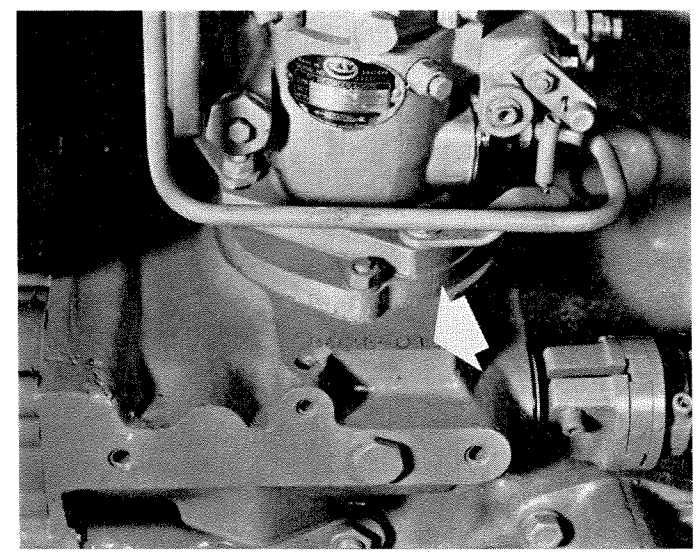


Fig. 2(a)
Engine No. Location 6.354, H6.354, T6.354 and HT6.354

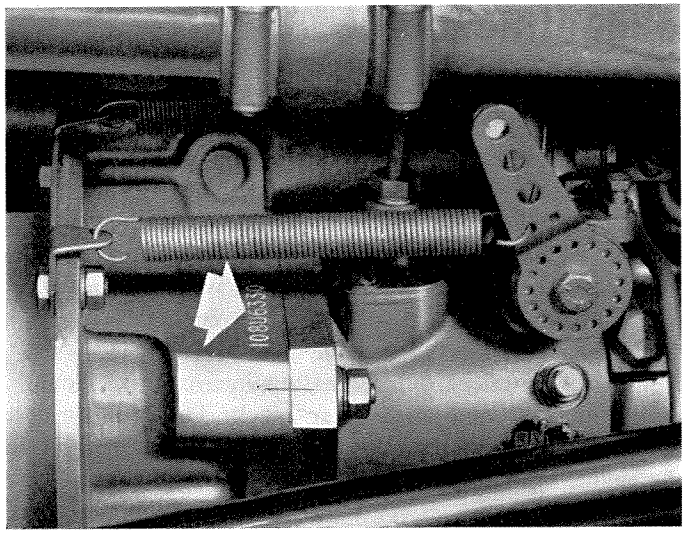


Fig. 2(b)
Engine No. Location 4.108 and 4.107

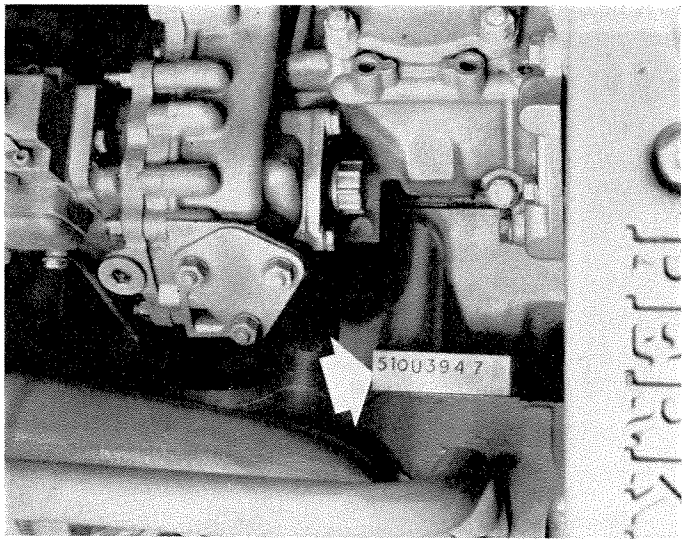


Fig. 2(c)
Engine No. Location V8.510 and TV8.510

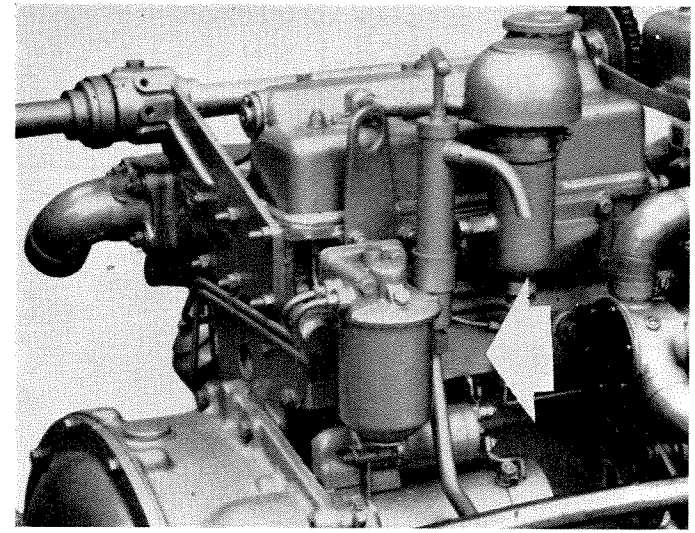


Fig. 2(d)
Engine No. Location P3.152

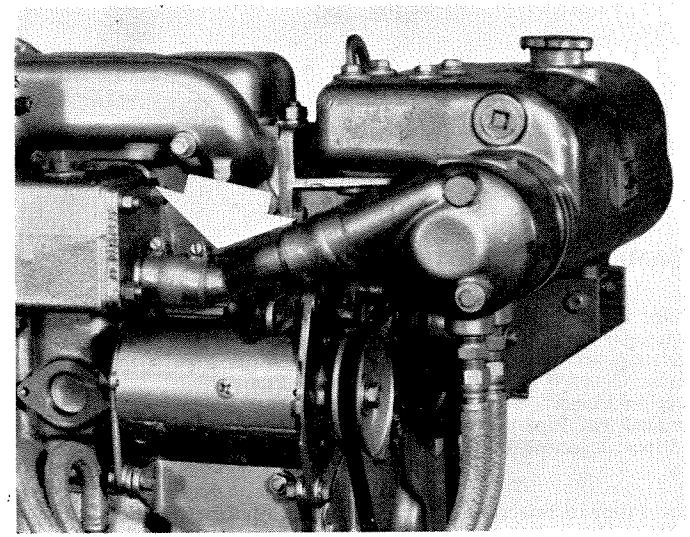


Fig. 2(e)
Engine No. Location 4.236