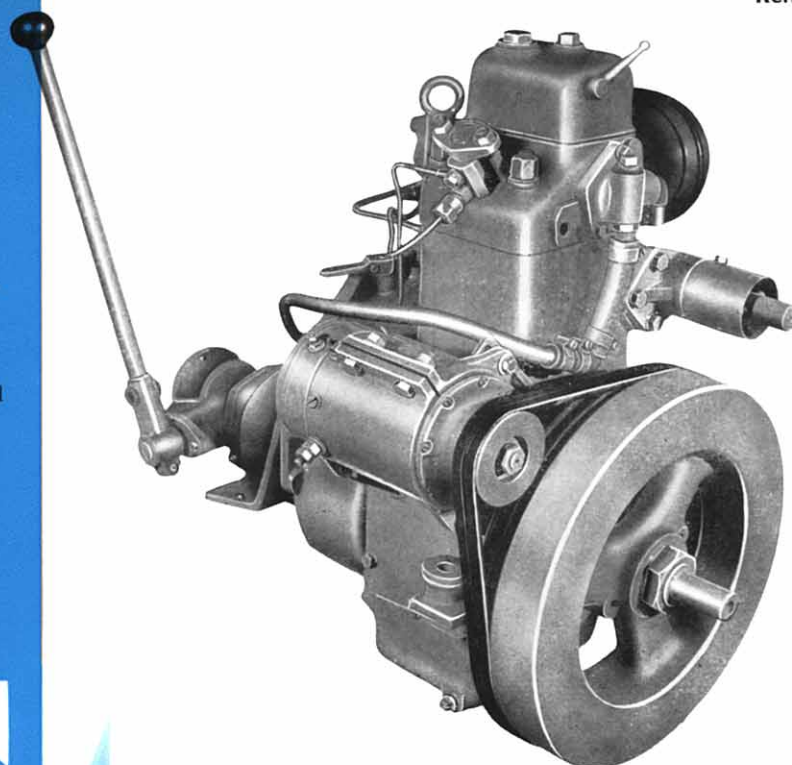


MAIN DATA

Indicated horsepower.....	8 h.p.
Marine output	5 h.p.
Number of cylinders	1
Capacity	27 cu.in.
Bore	3.12"
Stroke	3.54"
Compression ratio	18
Valves	overhead
Net weight, with reverse — reduction [gear type RB, ratio 1.87:1, approx.	285 lb.



8 hp

MD 1

Volvo Marine Diesel MD 1

For many years, boat-owners have looked forward to the day when the economical and reliable running qualities of Diesel engines would be available for small boats.

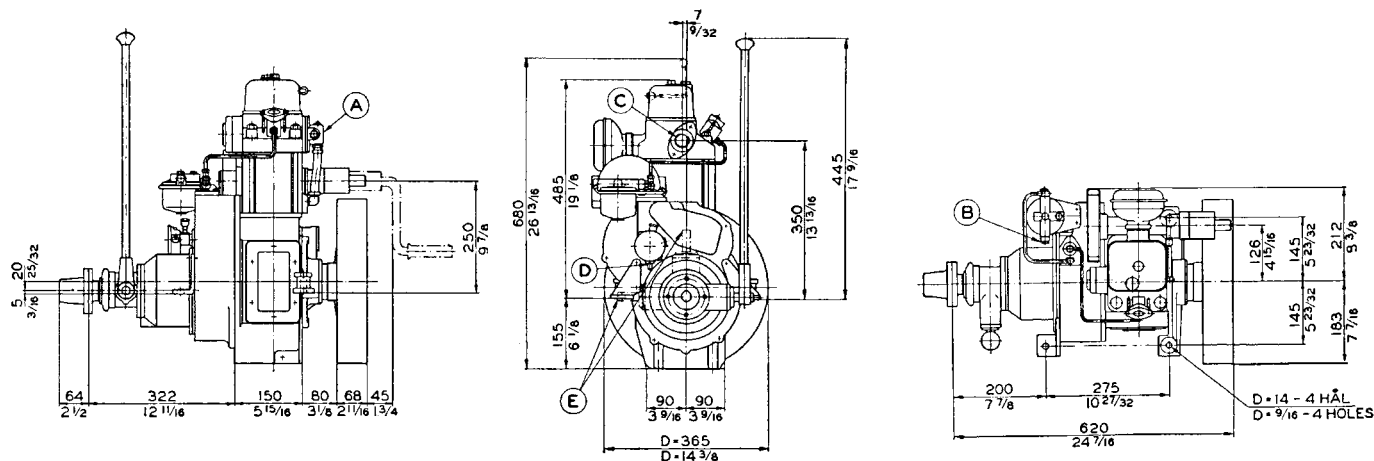
After years of research and test-running both in the laboratory and in boats, Volvo now proudly presents the MD 1.

The Volvo-Penta MD 1 is a single-cylinder, four-stroke, cold-starting Diesel engine with direct injection. This engine — which is water-cooled — has a marine output of 5 b.h.p. at 2000 r.p.m.

The Volvo-Penta MD 1 has been designed and built to more than satisfy the demands made on a marine engine which must stand up to the most gruelling conditions of operation. One of the great advantages on the MD 1 is the new Penta REVERSE AND REDUCTION GEAR. This is described in more detail overleaf. When the MD 1 is fitted with a combined electric starter motor and dynamo (dynastart), it is the ideal auxiliary engine for sailing craft.



DIMENSIONS OF THE MD 1



SPECIFICATIONS

Cylinder block of special cast-iron.

Cylinder head of special-alloy cast-iron. The copper sleeve for the injector is directly water-cooled.

The crankcase and the **sump** are cast in one unit and there is an inspection cover.

The piston is of light-alloy with three compression rings and two oil control rings. The upper compression ring is hard-chromed.

The connecting rod is drop-forged and case-hardened.

The crankshaft is drop-forged of chrome-manganese steel.

The camshaft is drop-forged and case-hardened with ground cams and bearing surface. Helically-cut timing gears.

Bearings. The big-end bearing consists of two lead-bronze lined, steel-backed shells which are easily accessible through the inspection cover. Other bearings are of bushing type.

Valves of heat-resistant special steel.

Fuel system. Bosch fuel injection pump. Injector of the three-hole type. Fuel filter with replaceable element. Centrifugal governor which is completely cased and driven from the timing gears.

Lubricating system. Pressure lubrication. All the oil passes through a strainer which is easily accessible for cleaning from the outside.

Cooling system. Cooling water circulation is taken care of by a highly effective, direct-drive, self priming pump with a neoprene rubber impeller. The engine temperature is automatically regulated by means of a thermostat.

Starter. Hand starter with conveniently located crank. A decompression device in the rocker arm cover facilitates starting.

Self-adjusting reverse gear of a new type. See below. Robust design and compact construction. Installation in a boat is facilitated by the fact that the operating lever can be fitted in three different positions. (See dimensions drawing.) Gears of case-hardened chrome-nickel steel. Pressure lubrication from engine lubricating system.

Extra equipment. 12-volt electric dynastart unit (combined starter and dynamo) together with an instrument panel containing starter switch with key, starter button, charging control lamp and oil pressure warning lamp.

REVERSE-REDUCTION GEAR

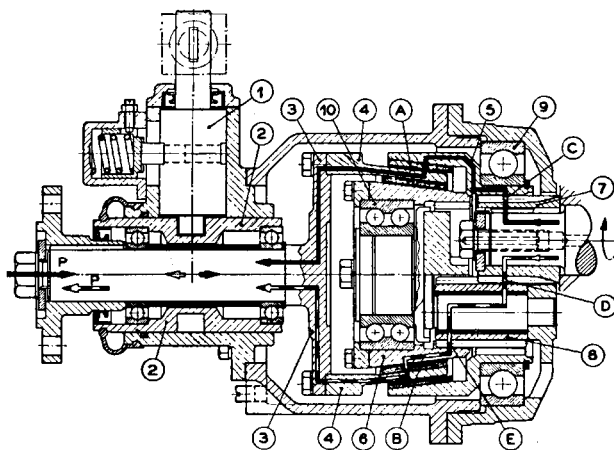
The function of the reverse gear is shown in the following description:

AHEAD: See unbroken line.

When the operating shaft 1 is moved to the AHEAD position, the bearing sleeve 2 and the flange shaft 3 are moved forwards so that the friction cone 4 presses against the gear 5 at A. This gear is driven by the engine through gear 7 at C. The direction of rotation is the same as that of the engine. The propeller pressure P presses the friction cones together automatically at A. Thrust is taken up by the ball bearing 9.

ASTERN: See broken line.

In operation astern, the bearing sleeve 2 and the flange shaft 3 are moved to the rear so that the friction cone 4 presses against the gear 6 at B. This gear is driven by the engine through gears 8 and 7 at E and D. Since gear 8 acts as an idler, the direction of rotation will be opposed to that of the engine. The propeller pressure P presses the friction cones together automatically at B. Thrust is taken up by the ball bearing 10.



NEUTRAL

When the operating shaft is moved to a marked neutral position, the friction cone 4 is moved so that it is free from both the cones on the rotating gears 5 and 6.

GENERAL IMPORTER:
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Englewood Cliffs NJ USA

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