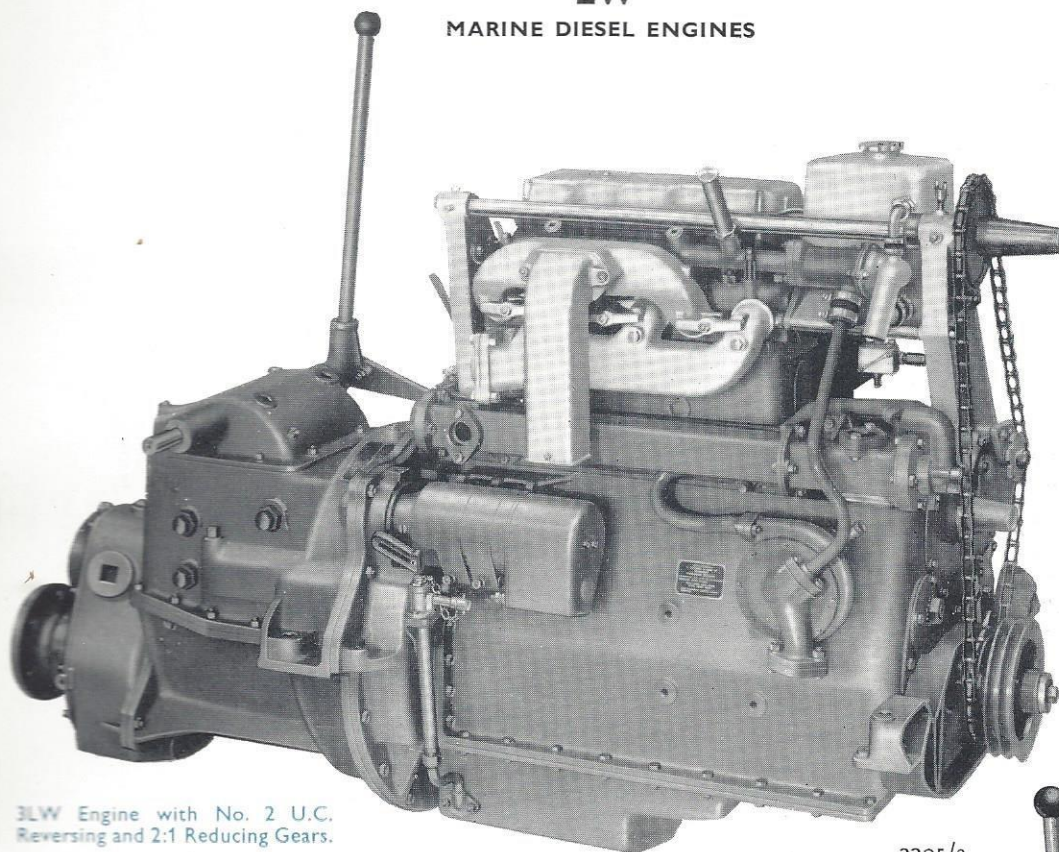


GARDNER

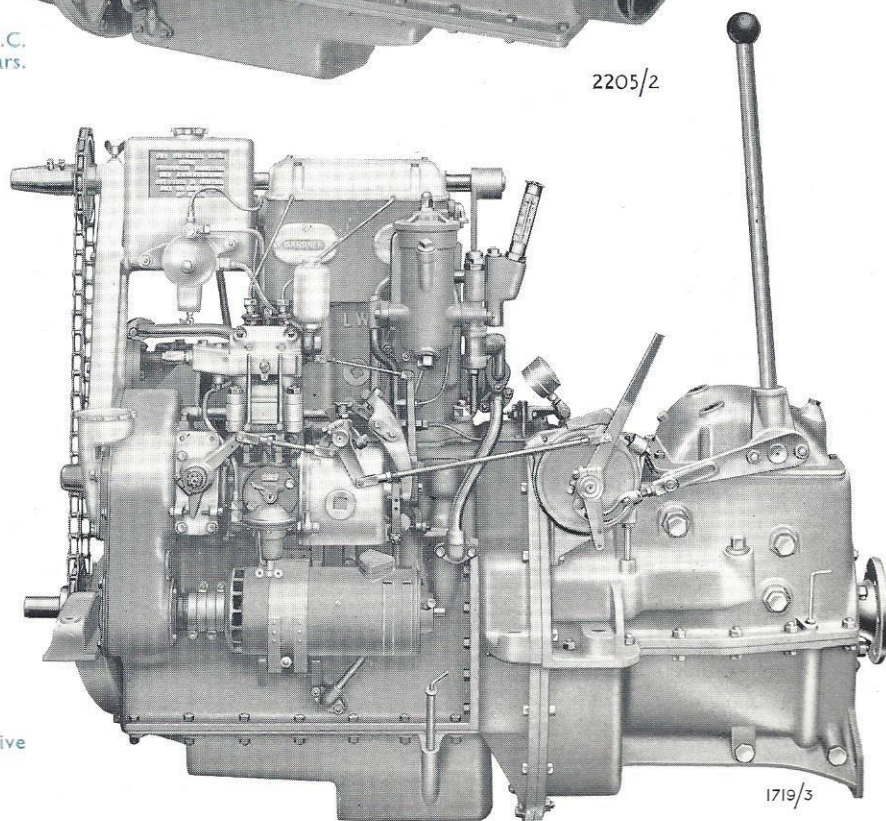
LW

MARINE DIESEL ENGINES



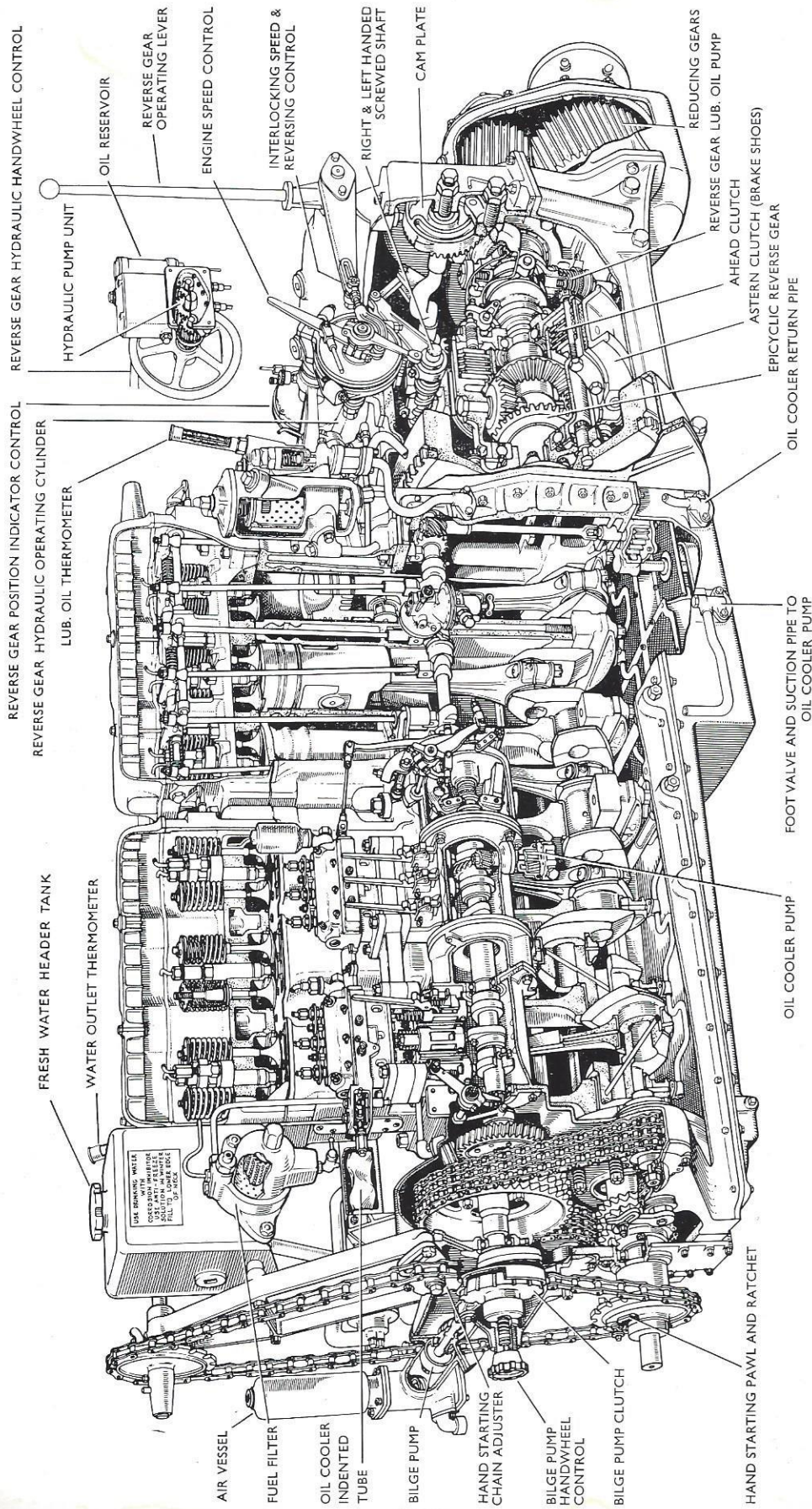
3LW Engine with No. 2 U.C.
Reversing and 2:1 Reducing Gears.

2205/2



2LW Engine with Direct Drive
No. 2 U.C. Reverse Gear.

1719/3



GARDNER

6 LW MARINE ENGINE WITH REVERSING AND REDUCING GEAR

2073 A/2


GARDNER

LW**MARINE DIESEL ENGINES**

Engine illustrations, performance curves, engine data, etc.	Pages 1 to 8
Instructions and instructional drawings, etc.	Pages 24 to 32

INDEX

(covering pages 9 to 23)

The numbers refer to paragraphs only

	<i>Para. No.</i>
Air Cooled Radiator Systems	8
Alignment of Engine and Propeller Shafting	2
Bilge Pump	18
Bilge Pump Friction Clutch	19
Centrifugal Type Pump	9
Closed Circuit Fresh Water Cooling Systems	5
Cooling of Lubricating Oil	24
Cooling Water Additives	11
Cylinder Water Jackets	17
Direct "Raw" Sea Water Cooling	12
Duplex Fuel Filter — Type No. 5	20
Engine Lifting Eye Nuts	1
Hand and Rotation of Engines	22
Heat Exchanger Systems	6
Hydraulic Remote Control System for Engine Speed	26
Hydraulic Remote Control System for Reversing Gear	28
Interlocking Speed and Reverse Control	25
Keel Cooler Systems	7
Lubricating Oil Coolers	23
Ram-type Pump Valves and Cup Washers	13
Single Lever Control	29
Sterngear Shaft and Propeller Sizes	3
Teleflex Remote Speed Control	27
Timing of Valves and Fuel Injection	21
Ventilation of Engine Room — Marine Installations	4
Water Flow Indicator	15
Water Outlet Pipe — Chokes	16
Water Temperature Control: Closed Circuit Systems	10
Water Temperature Control: Open Circuit Systems	14



LW

MARINE DIESEL ENGINES

INTRODUCTION

The following information deals with certain items which are special to LW Marine type engines and the information now given is supplementary to standard Instruction Book No. 56·6 (or later issue) for LW engines. Detailed instructions in respect of the No. 2 U.C. Reversing and Reversing-Reducing Gear fitted to LW Marine engines are contained in Instruction Book No. 44·3 (or later issue).

1. **Engine Lifting Eye Nuts.**—The following information regarding correct procedure for fitting of these nuts is given in view of a recent case where a cylinder head stud was bent during installation of the engine and the stud consequently loosened due to incorrect slinging procedure. These eye nuts have always carried a label recommending the use of a spreader.

From investigations we have made on the effect of cylinder head nut tightness after the eye nuts have been screwed down tightly on to the cylinder head nuts by means of a bar or lever, it has been found that Cylinder Head Nut tightness can be (a) unaffected, (b) partially affected, (c) considerably loosened or (d) the stud withdrawn. Accordingly, it has been considered desirable to issue instructions to the effect that this practice is incorrect and that the eye nuts should be screwed fully home *by fingers only* in order to avoid risk of reducing the correct tightness of the nuts.

The label (No. A.I.180) attached to all eye bolts, reads as follows when applied to LW engines:—

Incorrect slinging or applications of eye nuts can result in damaging or loosening the cylinder head holding down studs by either (a) bending the studs due to sideways pull caused by lack of use of spreader, or by sideways pull caused by heavy component attached to end of engine causing unbalance or, (b) by screwing up eye nuts tightly with bar or lever causing stud to be withdrawn or slackened on removal.

In order to avoid (a), it is essential that a spreader be used — see diagram — between the slings in order to secure a straight pull on the eye nuts and to arrange the apex of the sling midway between these points.

In order to avoid (b), screw eye nuts fully home to cylinder head nut . . . with fingers only: do not use bar or lever. Slacken eye nut a portion of one turn if required to engage sling or hook . . .

Replace brass cap after removing lifting eye nuts on marine engines.

The correct tightening torque for all LW engine Cylinder Head Nuts is 1,000 lb./in.

2. **Alignment of Engine and Propeller Shafting.**—Full information regarding Dimensions, Location, Quantity and combination of shims of varying thicknesses which are available for insertion between engine unit supporting feet and engine bearers to obtain accurate alignment of engine and propeller shafting are detailed in the following tables.

This information is also listed in LW and HLW Workshop Tools Book No. 48·2 (or subsequent issue).