

R.D. 300-2.

DWG. NO
4225F

SUPERSEDES	DATE
SUPERSEDED BY	24-1-52
P.R.	INDEXED BY S.V.R.
DATE	24-1-52
TRACED BY	9-1-50
CHECKED BY	M.S.R.
DRAWN BY	A.C.G.R.

MATERIAL
MACHINED

TYPE :- "L" ENGINES.

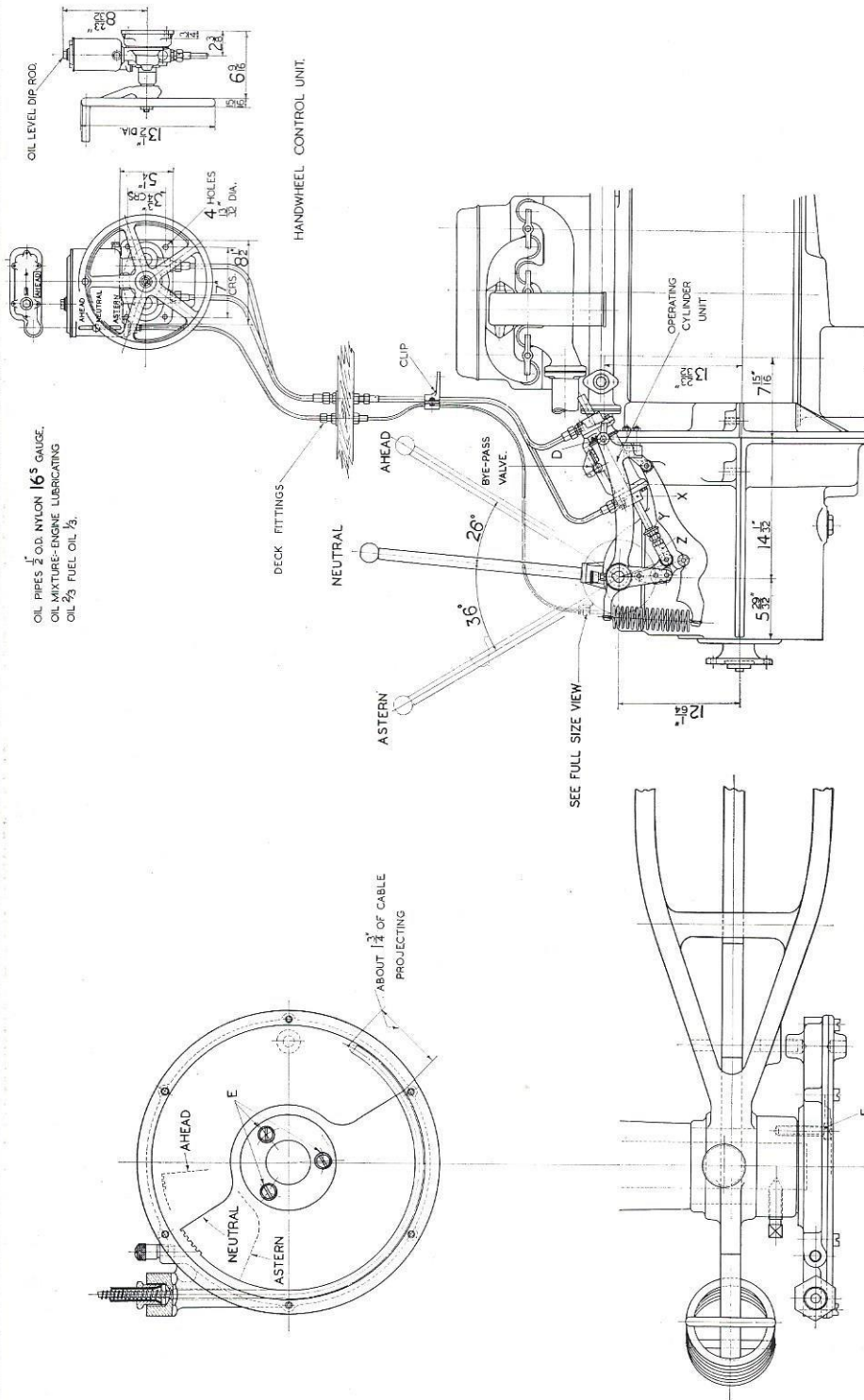
DESCRIPTION :- DIAGRAMMATIC ARRANGEMENTS OF KEEL COOLER.

SCALE :-

L. GARDNER & SONS LTD.,
PATRICROFT,
NF. MANCHESTER.

DWG. NO **4225F**

P.14



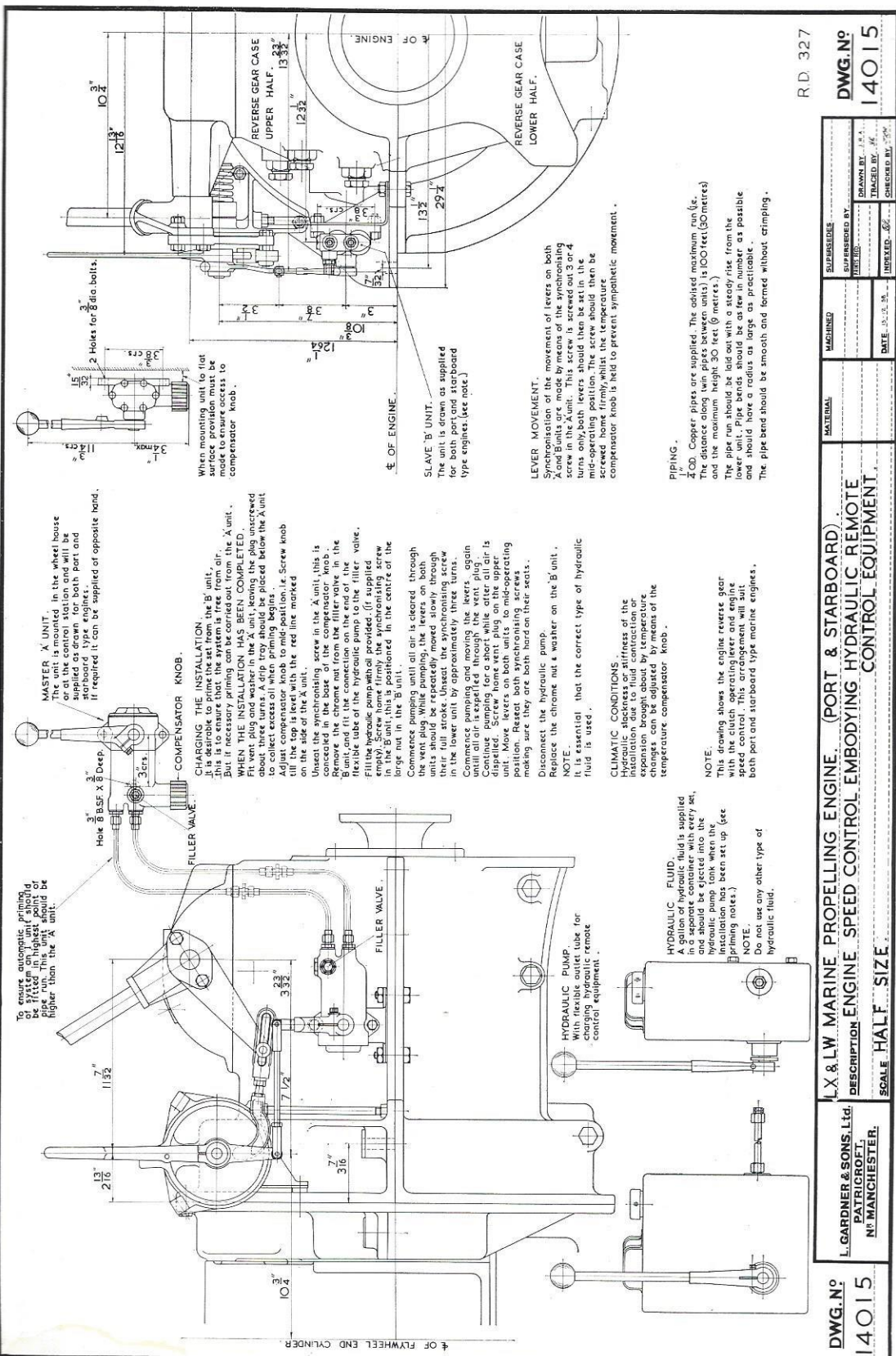
OIL PIPES 1/2 OD NYLON 16S GAUGE.
OIL MIXTURE-ENGINE LUBRICATING
OIL 3/4 FUEL OIL 1/4.

HANDWHEEL CONTROL UNIT.

SEE FULL SIZE VIEW

ABOUT 1/4 OF CABLE PROJECTING

DWG. No. 12553	TYPE LW ENGINES & No 20C-REVERSE GEAR-HYDRAULIC CONTROL...		PATENT APPLIED FOR... PATENT No.
	DESCRIPTION INSTALLATION DRAWING...		
	SCALE 3" = 1 FOOT.		
	MADE BY		
L. GARDNER & SONS, Ltd. PATRICROFT, N ^o MANCHESTER.		SUPPLEMENTED BY DATE 27.2.48.	INDEXED BY J.A. CHECKED BY J.A.
		R.D. 183. DWG. No. 12553.	



R. D. 327
DWG. NO. 14015
DWG. NO. 14015

To ensure automatic priming, the master 'X' unit should be fitted in highest point of the system, i.e., higher than the 'A' unit.

MASTER 'X' UNIT.
 The 'X' unit should be located in the wheel house or at the control station and will be supplied as drawn for both port and starboard type engines. If required it can be supplied at opposite hand.

3" Hole B BSP x 3/8 Deep.

CHARGING COMPENSATOR KNOB.
 It is desirable to prime the set from the 'B' unit. This is ensured that the system is free from air. But if necessary priming can be carried out from the 'A' unit.

WHEN THE INSTALLATION HAS BEEN COMPLETED PRIME THE SYSTEM FROM THE 'X' UNIT. Turn the compensator knob three turns. A drip tray should be placed below the 'X' unit to collect excess oil when priming begins.

Adjust compensator knob to mid-position, i.e., screw knob on the side with the red line marked.

UNSET THE SYNCHRONISING SCREW IN THE 'A' UNIT. This is concealed in the base of the compensator knob. Remove the chrome nut from the filler valve in the 'A' unit and the chrome nut on the side of the filler valve of the starboard unit. (If supplied empty.) Fill the hydraulic pump with oil provided (if supplied empty). Screw home firmly the synchronising screw in the 'B' unit. This is positioned in the centre of the large nut in the 'B' unit.

Commence pumping until all air is cleared through the system. Then the compensator knob should be turned until the units should be repeatedly moved slowly through their full stroke. Unset the synchronising screw in the lower unit by approximately three turns. Commence pumping and moving the levers. Again unplug the synchronising screw in the 'B' unit. Control pumps for about 10 minutes after air is dispelled. Screw home vent plug on the upper unit. Move levers on both units to mid-operating position. Repeat both synchronising screws making sure they are both hand on their acts.

Disconnect the hydraulic pump.
 Replace the chrome nut & washer on the 'B' unit. Note: It is essential that the correct type of hydraulic fluid is used.

CLIMATIC CONDITIONS.
 Hydraulic stiffness or stiffness of the hoses and the expansion brought about by temperature changes can be adjusted by means of the temperature compensator knob.

NOTE:
 This drawing shows the engine reverse gear with the clutch operating lever and engine speed control. This arrangement will suit both port and starboard type marine engines.

HYDRAULIC FLUID.
 A gallon of hydraulic fluid is supplied in a separate container with every set, and should be ejected into the hydraulic pump tank when the hydraulic system has been set up (see priming notes.)

NOTE:
 Do not use any other type of hydraulic fluid.

HYDRAULIC PUMP.
 With flexible outlet tube for charging hydraulic remote control equipment.

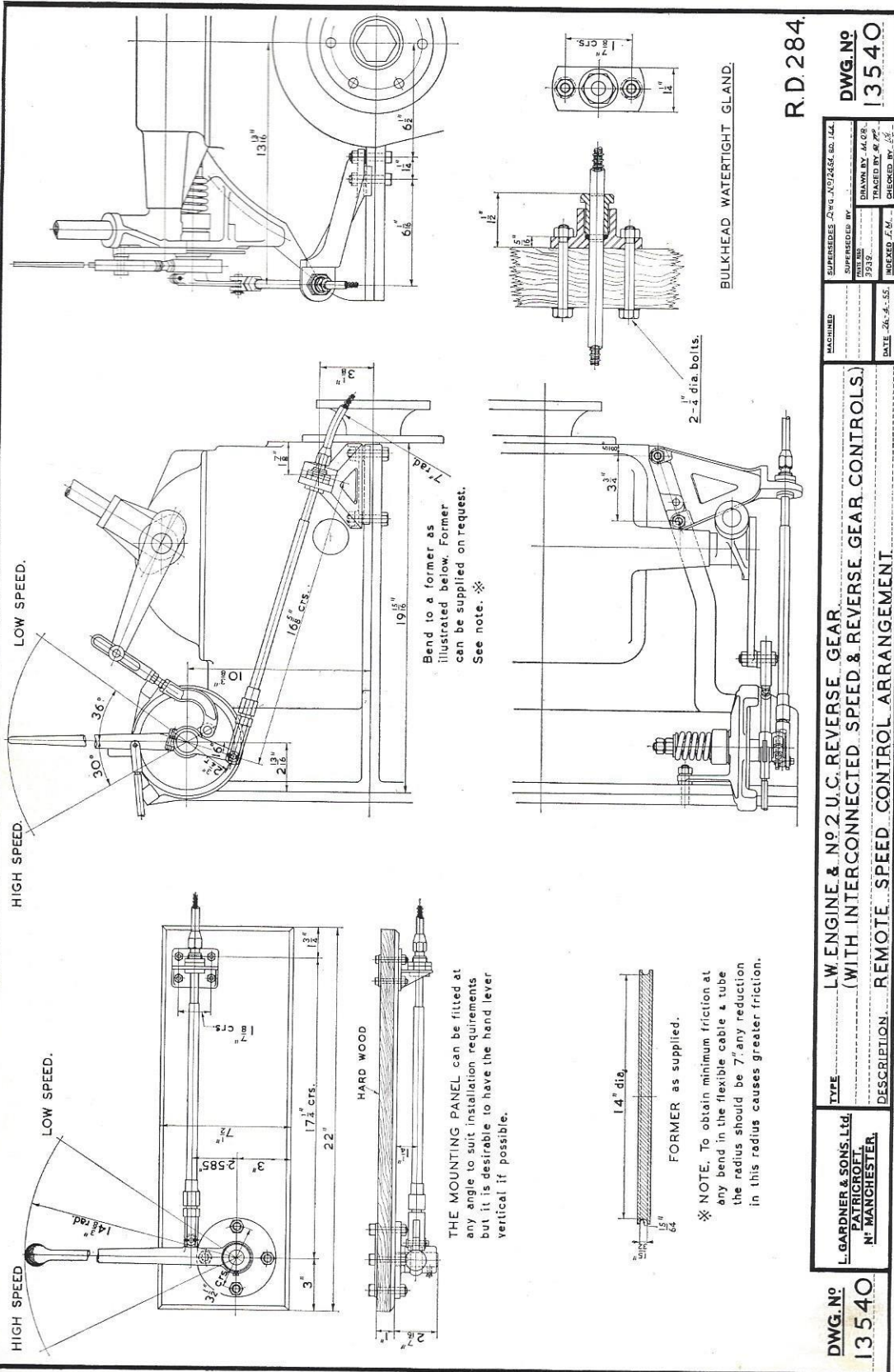
LEVER MOVEMENT.
 Synchronisation of the movement of levers on both 'A' and 'B' units are made by means of the synchronising screw in the 'A' unit. This screw is screwed out 3 or 4 turns, only both levers should then be set in the same position. This adjustment can be screened home firmly whilst the temperature compensator knob is held to prevent sympathetic movement.

PIPING.
 1/2" O.D. Copper pipes are supplied. The advised maximum run (i.e. the distance along twin pipes between units) is 100 feet (30 metres) and the maximum height 30 feet (9 metres). The pipe run should be laid out with a steady rise from the lower unit. Pipe bends should be as few in number as possible and should have a radius as large as practicable. The pipe bend should be smooth and formed without crimping.

L. GARDNER & SONS, Ltd.
 PATRICROFT,
 N^o MANCHESTER.

DWG. NO. 14015
DESCRIPTION LX & LW MARINE PROPELLING ENGINE (PORT & STARBOARD) HYDRAULIC REMOTE SPEED CONTROL EMBODYING HYDRAULIC REMOTE CONTROL EQUIPMENT.
SCALE HALF SIZE

MATERIAL	MADE IN	SUPERSEDE
DATE	BY	CHECKED BY



DWG. No. 13540

L. GARDNER & SONS, LTD.
PATRICROFT,
N^o MANCHESTER.

TYPE L.W. ENGINE & No 2 U.C. REVERSE GEAR.
 (WITH INTERCONNECTED SPEED & REVERSE GEAR CONTROLS.)

DESCRIPTION REMOTE SPEED CONTROL ARRANGEMENT.

MACHINED

SUPERSEDES DWG. No 2456, 10, 144.

DRAWN BY J.A.G.R.

TRACED BY A.R.P.P.

INDEXED F.M.

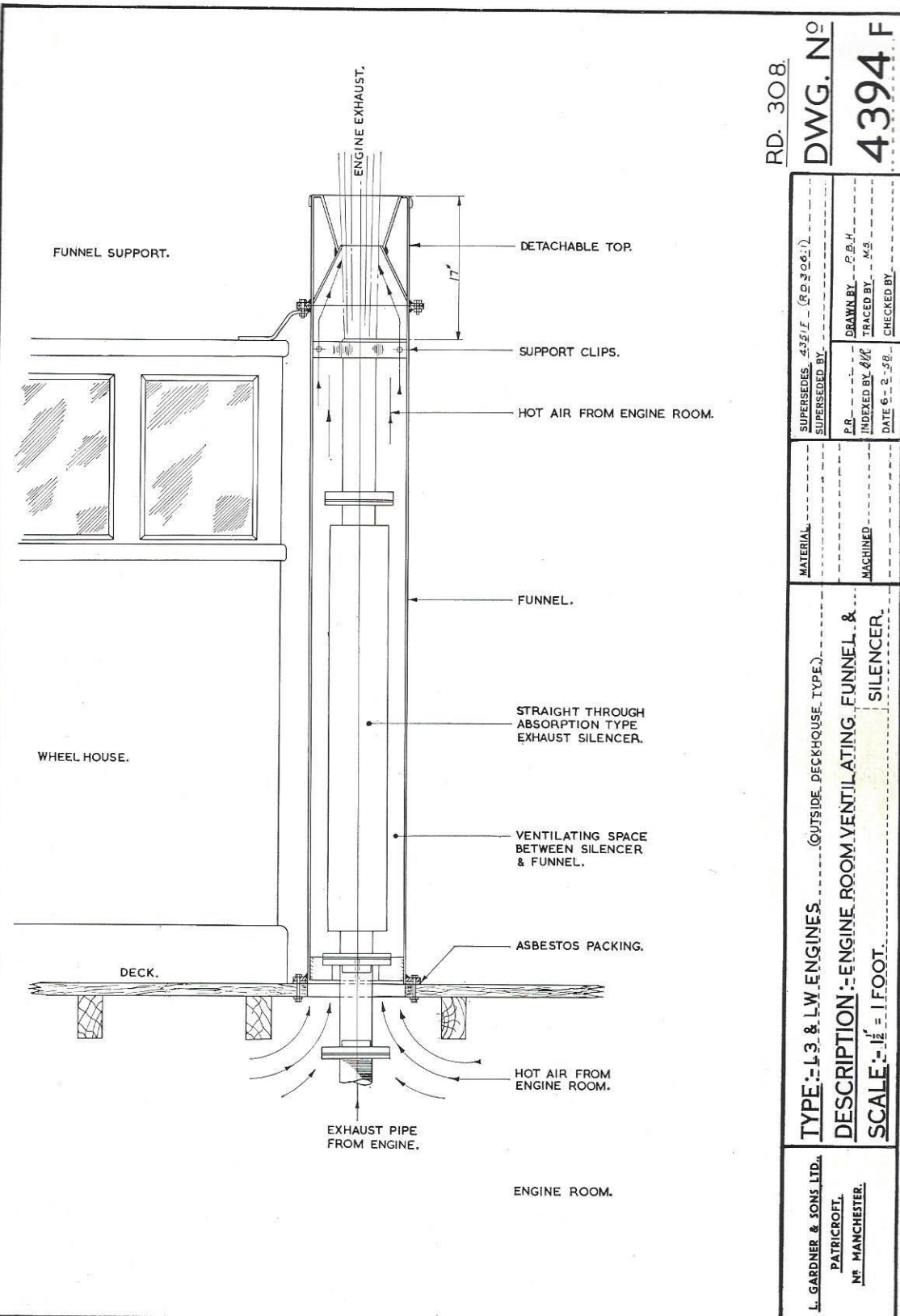
CHECKED BY J.S.

DATE 26.4.55.

DWG. No. 13540

A 196.

WORKING DWG No. 4398 E.



RD. 308.

DWG. N^o

4394 F

SUPERSEDES - 4391 F (R.D. 308.1)
SUPERSEDED BY

DRAWN BY - P.B.H.
TRACED BY - M.S.
INDEXED BY - 4/6
DATE 6-2-58
CHECKED BY

MATERIAL

MACHINED

TYPE - L3 & L.W. ENGINES. (OUTSIDE DECKHOUSE TYPE.)

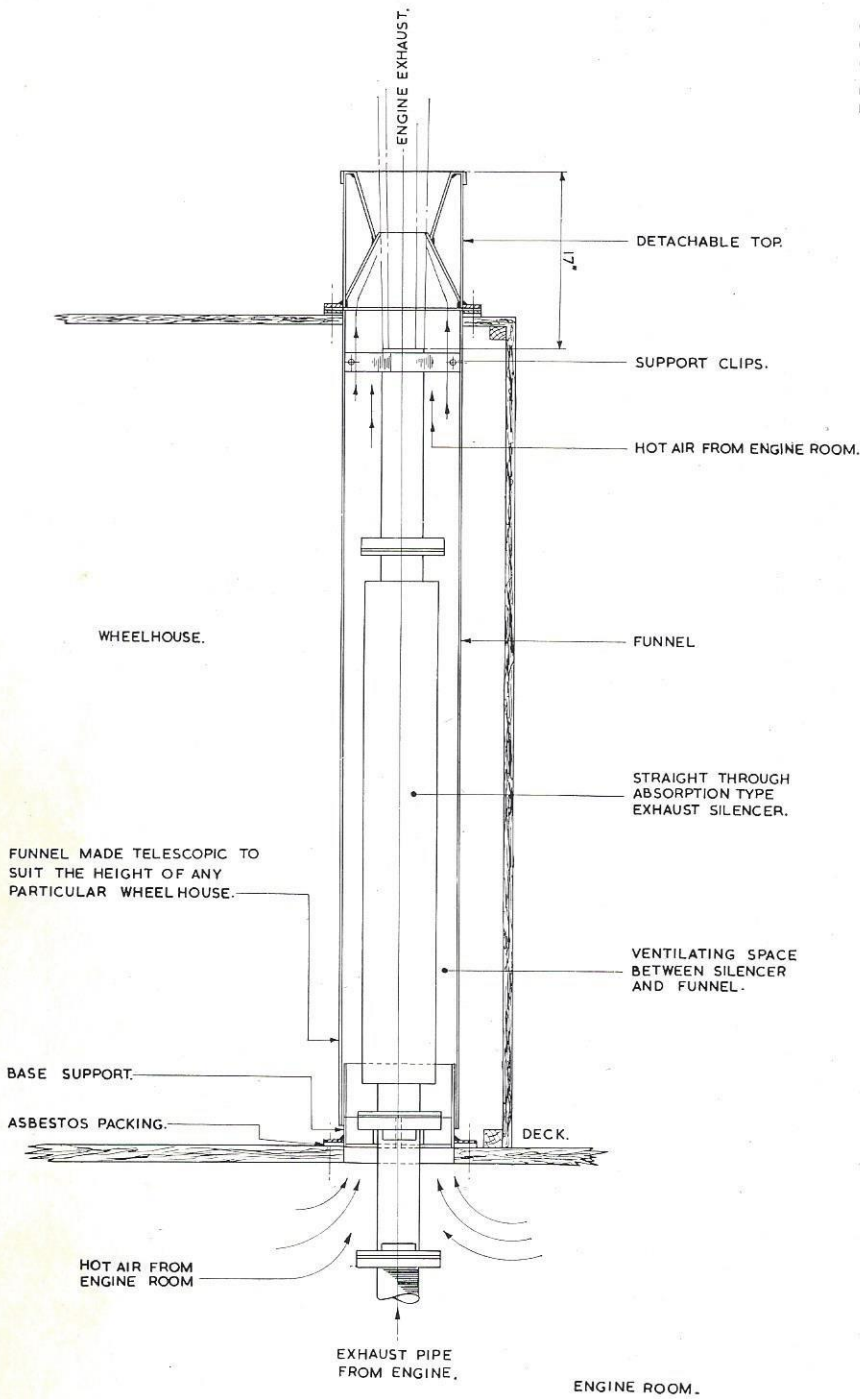
DESCRIPTION - ENGINE ROOM VENTILATING FUNNEL & SILENCER

SCALE - 1/4" = 1 FOOT

L. GARDNER & SONS LTD.
PATRICROFT,
N^o MANCHESTER.

DWG. N^o 4394. F

H 1/16



RD. 309.

DWG. N^o
4396 F

SUPERSEDES 4350 F (RD 307)	DRAWN BY P.B.H.
SUPERSEDED BY	TRACED BY M.S.
P.R.	CHECKED BY
INDEXED BY 2/4	DATE 6.2.58

MATERIAL	MACHINED
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TYPE :- L, 3 & L.W. ENGINES. (INSIDE DECK HOUSE TYPE)
 DESCRIPTION :- ENGINE ROOM VENTILATING FUNNEL & SILENCER.
 SCALE :- 1 1/2" = 1 FOOT.

L. GARDNER & SONS LTD.
 PATRICROFT,
 NR. MANCHESTER.

WORKING DWG. No. 4396 F