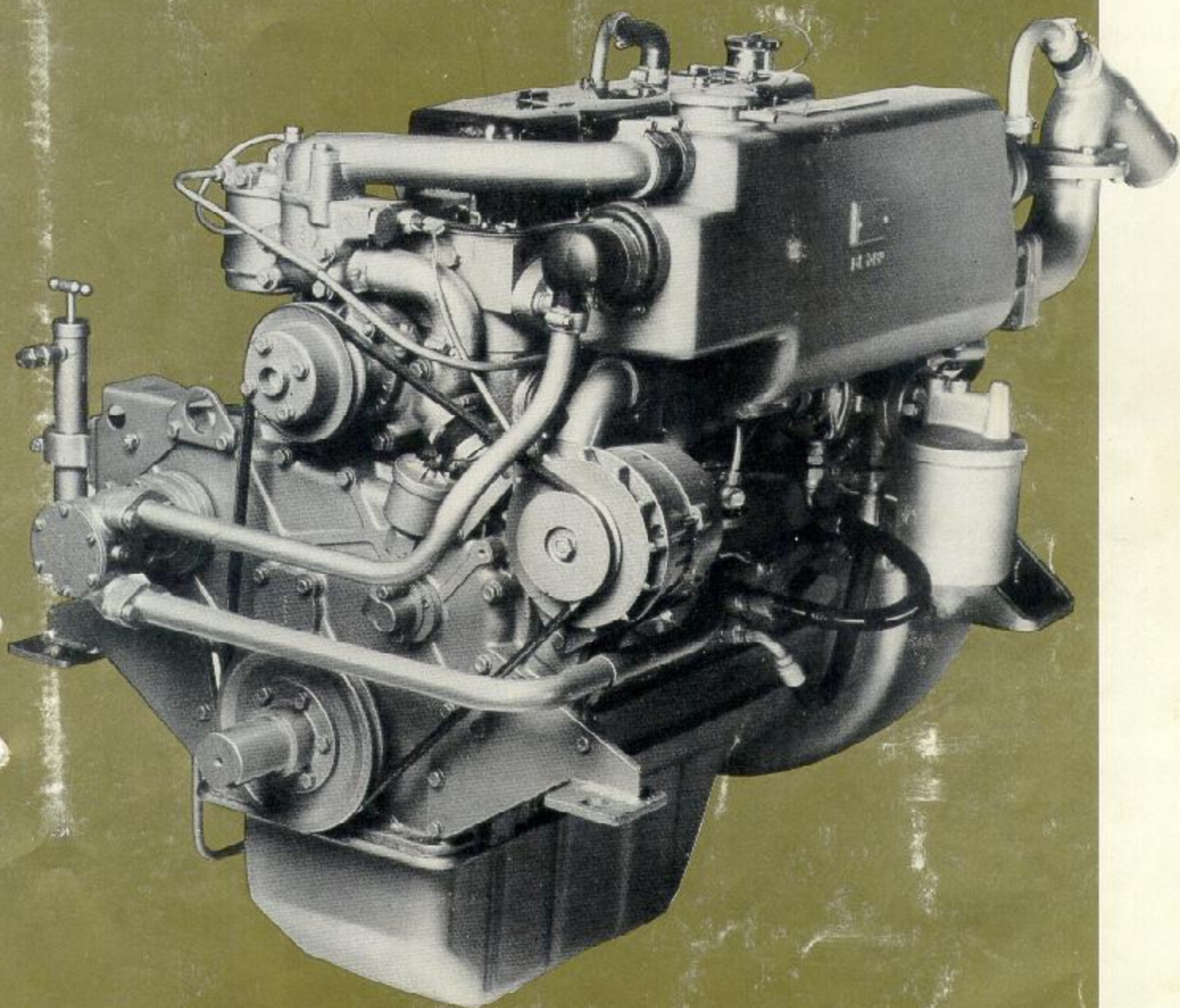




# Thornycroft

Marine Engine

## 230



Power Ratings: 55.2 Kw (74 bhp) Intermittent.  
47.0 Kw (63 bhp) Continuous.

# Thornycroft

THORNYCROFT ENGINES — a member of the BL Components Division of BL Ltd. — are quantity producers of competitively priced marine engines. Thornycroft marine engines are based on carefully selected, volume produced, power units, thus ensuring service and spare parts availability, together with a reliability and economy which can only be achieved by this type of production.

The Thornycroft type 230 — based on the Leyland 3.77 litre diesel — is particularly noted for its reliability and durability. The 230 has been accepted for a wide range of applications, from workboat to motor cruiser.



Standard Instrument Panel  
260 mm (10 1/4 in) x 171 mm (6 3/4 in)

## Specification

### Type: 230 Vertical 4-Stroke Marine Diesel Engine

No. of cylinders: Four  
Cylinder bore: 98 mm (3.858 in)  
Piston stroke: 125 mm (4.921 in)  
Swept volume: 3.77 litres (230.2 in<sup>3</sup>)  
Compression ratio: 16.8:1  
Firing order: 1, 2, 4, 3.  
Minimum full load speed: 1250 R.P.M.

### Engine installation angle

Maximum installed angle (allowing for a further 3° rise when under way) 12°.

### Combustion system

Direct injection with excess fuel device for cold starting.

### Crankshaft

Forged steel dynamically balanced crankshaft carried in five bearings.

### Lubrication system

A full pressure wet sump system is employed. Oil is drawn through a gauze strainer in the sump and before entering the system passes through an external full flow detachable element type oil filter and an oil cooler.

### Cooling system

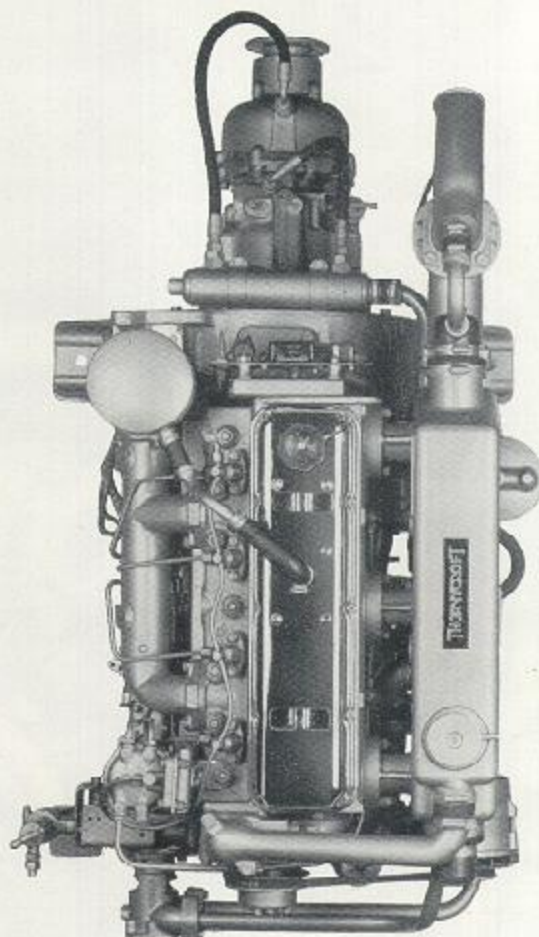
Standard. Closed circuit heat exchanger cooled fresh water system with sea water pump and fresh water circulator.

Alternative. Closed circuit fresh water system with external keel cooler and fresh water circulator.

### Electrical equipment

A 12 volt Lucas solenoid operated starter is fitted as standard together with a 12 volt Lucas alternator and regulator unit.

For further details see current price list.



### Reverse gearbox

The following hydraulically operated reverse gears complete with oil coolers are available:

Borg-Warner 71CR. PRM 310.  
Self-Changing Gears MRF350 Mk. III

### Reduction gear ratios

BORG-WARNER: 1.523:1, 2.1:1 2.57:1 and 2.91:1 for left-hand propeller rotation. 1.91:1 for right-hand propeller rotation.

PRM: 1.5:1, 2:1 and 3:1 for left- or right-hand propeller rotation.

S.C.G. MRF350 Mk. III 2:1 and 3:1 for left- or right-hand propeller rotation.

### Additional engine fittings available

Bilge pump.	Flexible engine mountings.
Forward power take off stub shaft.	Engine controls.
Tailshaft half coupling.	Extra drive pulley.
Flexible tailshaft coupling.	Alternative electrical equipment.

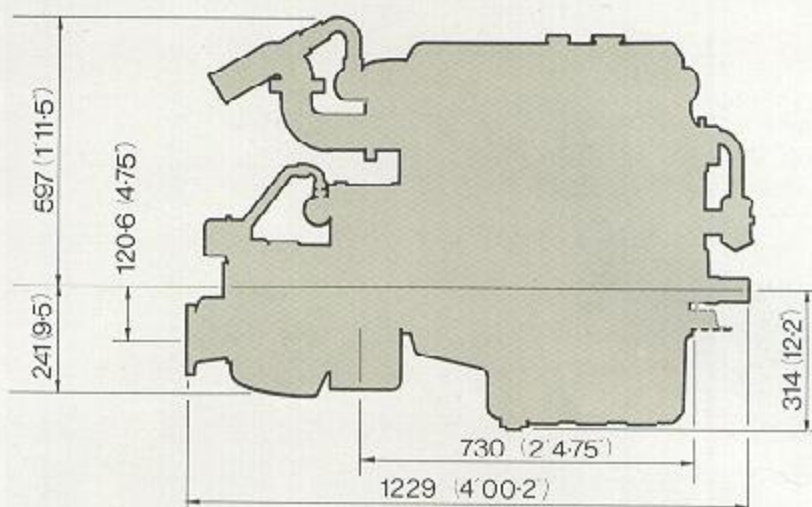
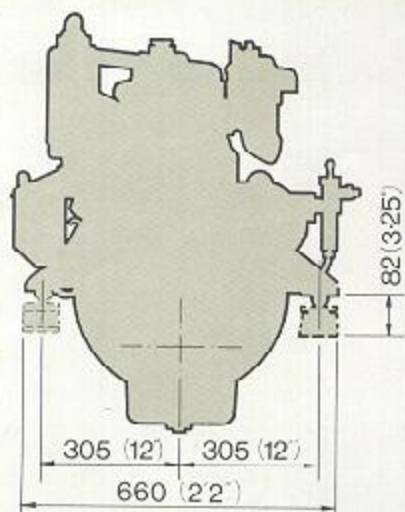
Installation materials available on request

### Approximate shipping specification

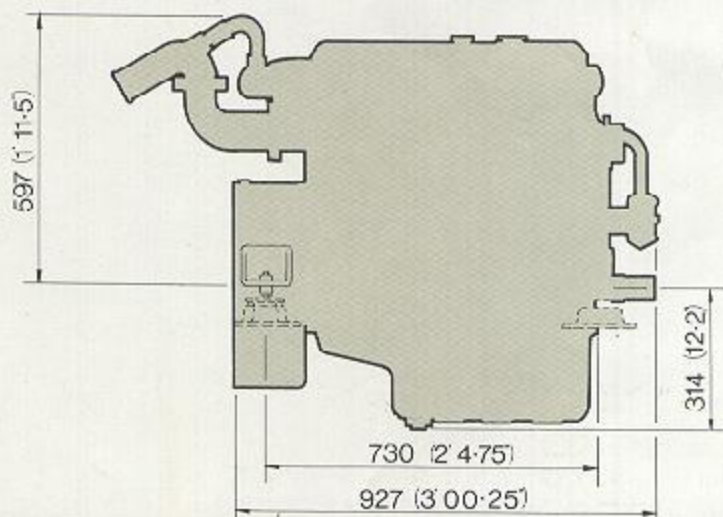
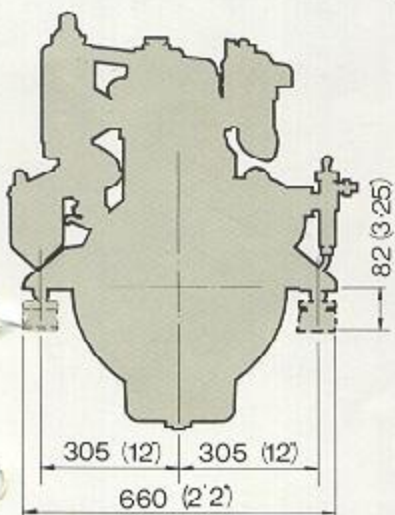
Description	Nett Weight Kg	Size of Case in cm.	Cubic Metres	Gross Weight Kg
Engine to flywheel	437	132 x 83 x 108	1.183	488
Engine with gearbox	517	145 x 83 x 108	1.300	578

NOTE: The above details are based on an engine to basic specification fitted with a Borg-Warner 71CR reverse gearbox.

**Type 230 Engine with PRM 310S Gearbox: Weight 507 kg (1116 lbs)**

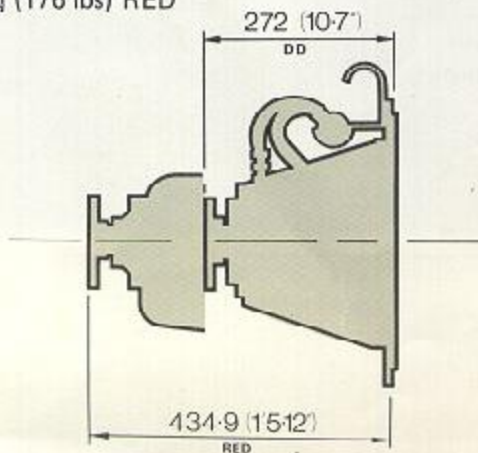


**Type 230 Engine to Flywheel: Weight 424 kg (934 lbs)**

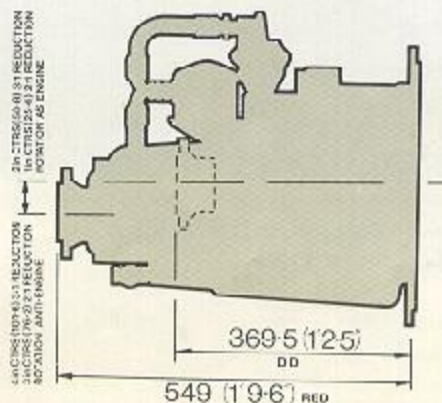


**Alternative Transmissions:**

**BORG WARNER 71CR**  
Weight 57 kg (126 lbs) DD  
80 kg (176 lbs) RED



**SCG MRF 350 Mk III**  
Weight 115 kg (254 lbs)



# **Thornycroft**

Thornycroft Engines, P.O. Box 2, Hurst Lane,  
 Tipton, West Midlands DY4 9AD.  
 Telephone: 021-557 2881. Telex: 338205.  
 Cables: Bean Tipton.

## Engine ratings

The type 230 Marine Diesel Engine may be set to develop continuous outputs from 36 to 63 B.H.P. according to requirements.

For special applications where full power will not be required for periods in excess of 1 hour in any 12 hours consecutive running the engine can be supplied at an intermittent rating of 74 B.H.P. at 2500 R.P.M.

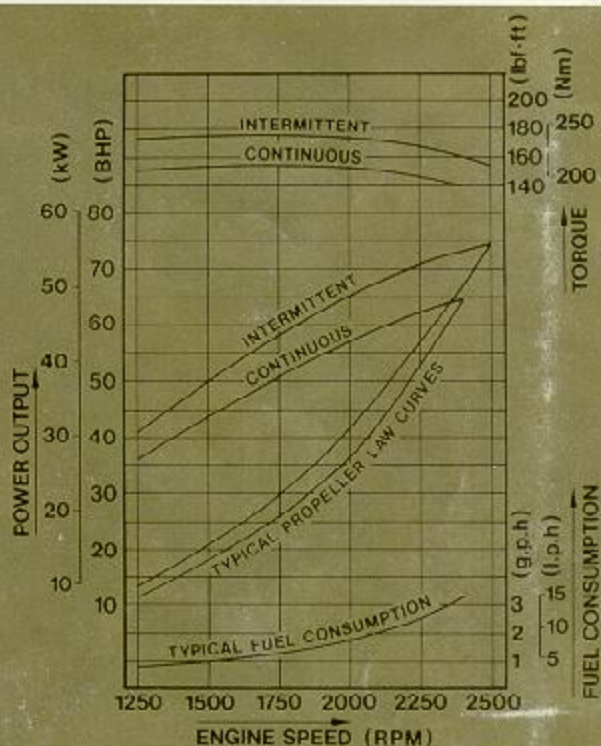
NOTE: All horsepower ratings quoted are at the engine flywheel. Due allowance must be made for transmission losses which will depend on the type of gearbox fitted. For tropical use it is necessary to derate the engine by 2% for each 5½°C (10°F) above 30°C (85°F) air temperature at sea level. In some parts of the world further derating for humidity is necessary in accordance with BS649: 1958.

## Stern gear

Complete stern gear can be supplied in materials to suit individual requirements. Standard stern gear is of the water lubricated type incorporating a high tensile brass sterntube with cutless rubber bearings, a stainless steel tailshaft and a manganese bronze propeller.

Where existing shafting is to be retained the propeller and half coupling can be bored to suit.

The following table gives tailshaft and approximate propeller diameters for various reduction ratios.



The propeller details are for general guidance only since each installation must be considered on its own merits, with particular attention to hull form, required performance and propeller aperture.

Drive Ratio		Direct Drive	1.5:1	2:1	2.5:1	3:1
Propeller Diameter	mm	356-432	457-483	559-584	660	711
(Depending on application)	in	14-17	18-19	22-23	26	28
Tailshaft Diameter	mm	32	38	38	44	44
	in	1¼	1½	1½	1¾	1¾

NOTE: Shaft sizes for Lloyds & Department of Trade applications on request.

## Continuous full power ratings and corresponding fuel consumption

B.H.P.		36	43	50	56	61	63
R.P.M.		1250	1500	1750	2000	2250	2400
Approx. fuel consumption	Litres/hr	7.64	8.91	10.40	12.23	13.95	14.78
	Gallons/hr	1.68	1.96	2.34	2.69	3.07	3.25

All drawings, dimensions, weights, fuel consumptions and other data contained in this leaflet are approximate only and, whilst they are substantially correct, are subject to alteration without notice. The outline arrangement drawings are not to scale. We reserve the right to make any variations in the above specification that we may

consider desirable to effect improvements, or which may be necessary through circumstances beyond our control. No such improvements, however, will be considered retrospective for engines already delivered. All orders placed with us or any of our Authorised Dealers or Distributors will be deemed to have been given on this understanding.

We are your nearest Thornycroft Distributor.  
Phone us and we'll tell you more.