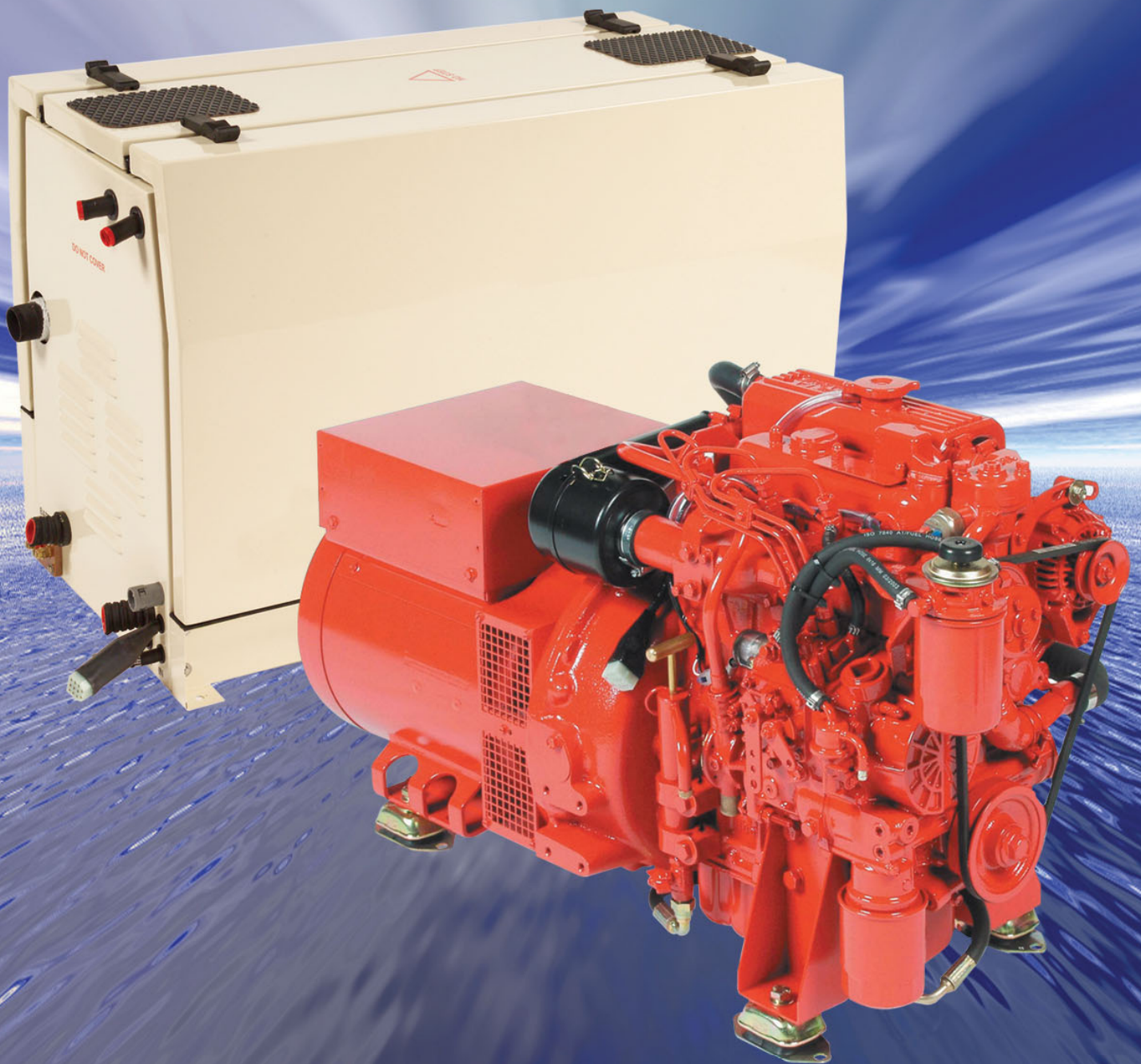


***BETA* MARINE**

**Marine Generating Sets  
3.7 to 50 kVA**



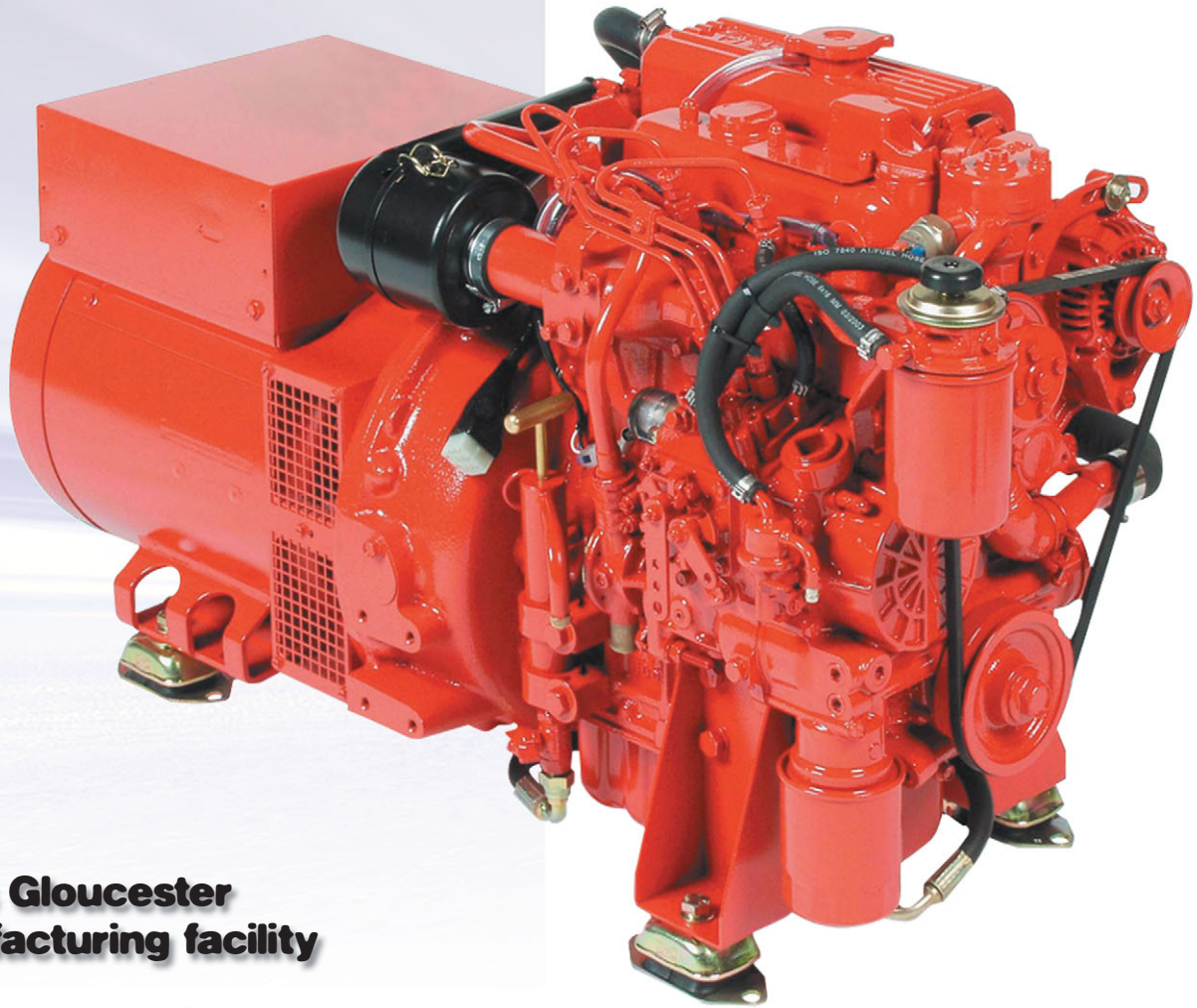
**The Marine  
Engineer's Preference**

# BetaSet - Standard Marine Generators

Beta Marine has considerable experience from over twenty years of manufacturing marine generating sets for different applications: "Wide Beam" canal boats, passenger ferries, cargo boats, fast patrol boats, sailing yachts, barges, fishing boats, trawlers, tugs, commercial vessels and "super yachts".

The development of these generating sets has resulted in our standard range of marine generating sets based on Kubota diesel engines from 3.7kVA up to 50kVA; and we can also build to individual specifications.

We can supply most electrical voltages and frequencies from 230 volt single phase; 415 volt 3 Phase; or any other normal electrical requirement - 50Hz at both 1500, 3000 rev/min, or 60Hz at 1800 and 3,600 rev/min.



**Beta's Gloucester  
manufacturing facility**



# BetaSet - Standard Marine Specifications

Beta Marine – Marine Generating Sets each having a Rated Output as detailed below, and operating; designed, built and tested by Beta Marine Limited, each comprising:

kVA Rating - 3,000rev/min - 50Hz					
Model	Single Phase kVA Max.	3 Phase kVA Max.	Cyl's	cc's	Fuel Lt/Hr
BetaSet 4/2	4.0*	-	2	479	1.2
BetaSet 6/2	5.7*	7.7	2	479	2.1
BetaSet 11/2	11.2	12.1	3	719	3.3
BetaSet 22/2	22.0	23.1	4	1335	5.8
BetaSet 25/2	24.8	25.9	4	1498	6.6

kVA Rating - 1,500rev/min - 50Hz					
Model	Single Phase kVA Max.	3 Phase kVA Max.	Cyl's	cc's	Fuel
BetaSet 7	7.2	7.2	3	899	2.1
BetaSet 10	9.7	10.1	3	1124	2.7
BetaSet 11	10.7	11.2	4	1335	3.0
BetaSet 12	12.3	13.0	4	1498	3.5
BetaSet 14	14.0	14.5	3	1647	4.3
BetaSet 17	16.0	17.3	4	1857	4.8
BetaSet 21	19.8	21.1	4	2197	5.6
BetaSet 26	25.3	26.2	4	3318	6.2
BetaSet 33	32.0	33.5	4	3318	8.4
BetaSet 40	38.5	39.6	4	3769	10.7
BetaSet 49	44.0	49.5	4	3769	11.6

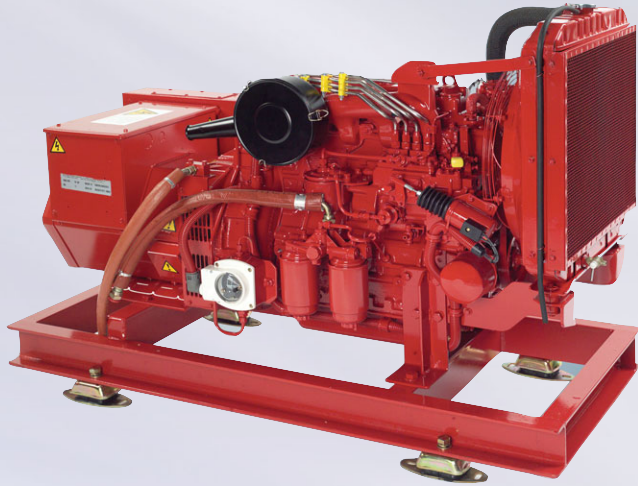
The kVA outputs detailed are maximum rated outputs available for an hour, continuous ratings are 90% of these figures. kW outputs are 80% of the kVA ratings; generators are 0.8 pf. For operation in a ship's engine room at 45°C ambient temperature a derate will apply of 5%.

\*The BetaSet 4/2 and 6/2 are unity power factor machines.

60Hz versions are available, details on request.

- Beta Marine water cooled 'Kubota' diesel engine, naturally aspirated, rated at either 1500 or 3000 rev/min for operation in accordance with ISO 3046.
- Heat exchanger cooling complete with cupro-nickel tube stack and phosphor bronze end caps and anode; with fresh water and sea water pumps.
- Water cooled exhaust manifold and water injection exhaust bend.
- 12 volt electric start system and stop solenoid valve, 2 wire grounded system (insulated return is standard on BetaSets 26, 33, 40 & 49).
- Combined start / stop, alarm and protection module is supplied loose with 3 metres of connection cable. Module includes: Starting and Stopping push buttons, an hours run meter and indicators with shutdown on fault of low lubricating oil pressure and high coolant temperature.
- Speed governor to control engine speed to the requirements of ISO 3046 for diesel generating sets.
- Engine fuel oil, lubricating oil and air filters. Engine mounted Sump drain pump.
- Marine rated generator operating at 0.8pf, and 50 Hz, ventilated drip proof enclosure with IP 23 protection, single bearing construction. The generator is self regulating, self excited and is complete with terminal box and automatic voltage regulator.
- Engine and generator are close coupled together and mounted on substantial steel feet with marine failsafe anti-vibration mountings to isolate the set.
- Each generating set is "full load" tested in accordance with our quality document QA023.
- 12 month warranty from date of commissioning or 18 months from date of despatch - which ever comes first.
- **Keel / box cooling versions are available and alternative specifications and requirements can be quoted on request.**

# Dimensions - Standard BetaSet



Radiator cooling and special options are available - details on request

3,000 rev/min				
Model	Length	Width	Height	Weight
BetaSet 4/2 & 6/2	76	44	58	116
BetaSet 11/2	84	44	58	199
BetaSet 22/2	99	55	62	296
BetaSet 25/2	104	55	62	286

1,500 rev/min				
Model	Length	Width	Height	Weight
BetaSet 7	88	43	59	237
BetaSet 10	88	43	59	245
BetaSet 11	97	46	59	267
BetaSet 12	97	46	59	283
BetaSet 14	94	56	71	390
BetaSet 17	121	54	69	412
BetaSet 21	127	54	69	454
BetaSet 26	133	62	86	602
BetaSet 33	145	62	86	670
BetaSet 40	145	68	81	690
BetaSet 49	153	66	88	735

All dimensions are in centimetres and approximate, for approximate shipping dimensions please add 30cms to Length, Width and Height.



# BetaGen "Super Silence" Marine Generating Sets

Our marine generating sets are manufactured with high quality marine grade acoustic housings that reduce the noise levels down to below 60dB(A). This is (at least) a further 10dB(A) reduction from our already quiet gensets – equivalent to about half the noise level as perceived by the human ear.

Our BetaGen Marine Generating sets have been carefully designed to have compact dimensions and low weight, with all service connections brought to the outside of the housing - ready for a quick and easy installation. We also included in the design for ease of maintenance with quick release panels, and special acoustic reduction material with attenuated air-intake and exhaust connections.



# Specifications - BetaGen

Beta Marine – BetaGen Marine Generating Sets each having a Rated Output as detailed below, and operating; designed as an acoustically housed generating set, built and tested by Beta Marine Limited, each comprising:

- Acoustic Canopy: a substantial, quality zintec / steel canopy with a 40mm sound insulated lining and removable panels for easy maintenance; the noise level will be less than 58dB(A) when measured at 7 metres under “free field” conditions.
- Beta Marine water cooled ‘Kubota’ diesel engine, naturally aspirated, rated at either 1500 or 3000 rev/min for operation in accordance with ISO 3046.
- Heat exchanger cooling complete with cupro-nickel tube stack and phosphor bronze end caps and anode; with fresh water and sea water pumps.
- Water cooled exhaust manifold and water injection exhaust bend.
- 12 volt electric start system and stop solenoid valve, 2 wire grounded system (insulated return is standard on BetaSets 26, 33, 40 & 49).
- Combined start / stop, alarm and protection module is supplied loose with 3 metres of connection cable. Module includes: Starting and Stopping push buttons, an hours run meter and indicators with shutdown on fault of low lubricating oil pressure and high coolant temperature.
- Speed governor to control engine speed to the requirements of ISO 3046 for diesel generating sets.
- Engine fuel oil, lubricating oil and air filters. Engine mounted Sump drain pump.
- Marine rated generator operating at 0.8pf, and 50 Hz, ventilated drip proof enclosure with IP 23 protection, single bearing construction. The generator is self regulating, self excited and is complete with terminal box, and automatic voltage regulator.
- Engine and generator are close coupled together and mounted on substantial steel feet with marine failsafe anti-vibration mountings to isolate the set.
- Each generating set is “full load” tested in accordance with our quality document QA023.
- 12 month warranty from date of commissioning or 18 months from date of despatch - which ever comes first.
- **Keel / box cooling versions are available and alternative specifications and requirements can be quoted on request.**

kVA Rating - 3,000rev/min - 50Hz					
Model	Single Phase kVA Max.	3 Phase kVA Max.	Cyl's	cc's	Fuel Lt/Hr
BetaGen 4/2	4.0*	-	2	479	1.2
BetaGen 6/2	5.7*	7.7	2	479	2.1
BetaGen 11/2	11.2	12.1	3	719	3.3
BetaGen 22/2	22.0	23.1	4	1335	5.8
BetaGen 25/2	24.8	25.9	4	1498	6.6

kVA Rating - 1,500rev/min - 50Hz					
Model	Single Phase kVA Max.	3 Phase kVA Max.	Cyl's	cc's	Fuel
BetaGen 7	7.2	7.2	3	899	2.1
BetaGen 10	9.7	10.1	3	1124	2.7
BetaGen 11	10.7	11.2	4	1335	3.0
BetaGen 12	12.3	13.0	4	1498	3.5
BetaGen 14	14.0	14.5	3	1647	4.3
BetaGen 17	16.0	17.3	4	1857	4.8
BetaGen 21	19.8	21.1	4	2197	5.6
BetaGen 26	25.3	26.2	4	3318	6.2
BetaGen 33	32.0	33.5	4	3318	8.4
BetaGen 40	38.5	39.6	4	3769	10.7
BetaGen 49	44.0	49.5	4	3769	11.6

The kVA outputs detailed are maximum rated outputs available for an hour, continuous ratings are 90% of these figures. kW outputs are 80% of the kVA ratings; generators are 0.8 pf. For operation in a ship's engine room at 45°C ambient temperature a derate will apply of 8%.

\*The BetaSet 4/2 and 6/2 are unity power factor machines.



# Dimensions - Standard BetaGen

3,000 rev/min				
Model	Length	Width	Height	Weight
BetaGen 4/2 & 6/2	80	49	59	160
BetaGen 11/2	100	56	65	260
BetaGen 22/2	108	56	67	380
BetaGen 25/2	108	56	67	380

1,500 rev/min				
Model	Length	Width	Height	Weight
BetaGen 7	96	54	67	290
BetaGen 10	96	54	67	300
BetaGen 11	105	56	67	330
BetaGen 12	105	56	67	345
BetaGen 14	116	67	82	498
BetaGen 17	148	67	82	530
BetaGen 21	148	67	82	580
BetaGen 26	154	71	89	792
BetaGen 33	168	71	89	860
BetaSet 40	168	74	89	890
BetaGen 49	179	74	89	950

All dimensions are in centimetres and approximate, for approximate shipping dimensions please add 30cms to Length, Width and Height.

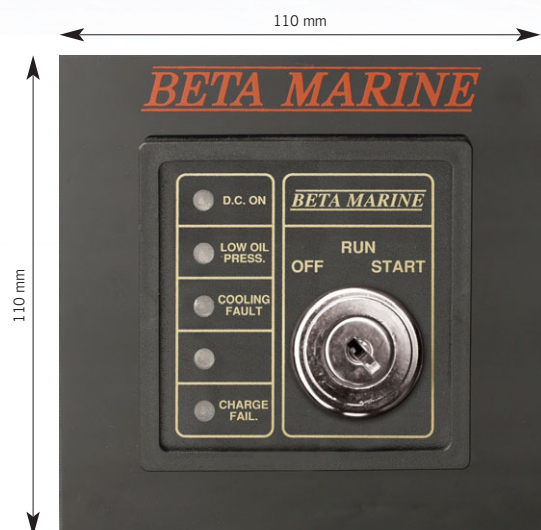


## Control Module

Combined start/stop, alarm and protection module is supplied loose with 3 metres of connection cable. Module includes: Starting and Stopping push buttons, an hours run meter, and indicators with shutdown on fault of low lubricating oil pressure and high coolant temperature.



Push Button Module



Key Start Module  
(used with insulated electric starting)

# Approvals

# BETA MARINE

Beta Marine Ltd  
Davy Way, Waterwells, Quedgeley  
Gloucestershire GL2 2AD, UK.

Tel: +44 (0)1452 723492  
Fax: +44 (0)1452 883742

sales@betamarine.co.uk  
www.betamarine.co.uk

Brochure 1760  
December 2009

Document no: **EMG 10210**  
Sheet number: **1**  
Page of 3  
Date: **20 April 2006**  
Quote this reference on all future communications: **UNDA04PENGAR010006**

Lloyd's Register  
Lloyds Register  
Marine Design Appraisal Document

Document no: **EMG 10210**  
Sheet number: **1**  
Page of 3  
Date: **20 April 2006**  
Quote this reference on all future communications: **UNDA04PENGAR010006**

**MACHINERY DESIGN APPRAISAL DOCUMENT**  
This Design Appraisal Document supplements documents **EMG 11200** and **PGG-27166**, both issue 1.  
Part 5, Chapter 2 of the Rules and Regulations for the Classification of ships  
and will be assigned an appraisal status, as indicated, subject to the following conditions and comments.

Engine Builder's Designation	BY 1500	BY 1502	BY 2203	BY 2803	BY 3300	BY 3301	BY 3302
Main Propulsion and Auxiliary	27.92	31.63	16.78	45.61	52.7	51.9	52.3
Maximum Continuous Rating, kW	2000	2800	2800	2000	2000	2000	2000
Maximum Starting Pressure, bar	75	75	75	75	75	75	75
Stroke, mm	95	87	95	95	95	95	95

**Certificate of Inspection and Tests**  
This is to certify that:  
specimens of: Beta Marine type **BY1500, BY1903, BY2203 and BY2803** Marine Diesel Engines  
manufactured by: Beta Marine Ltd  
Marwell Mills  
Bath Road  
Stroud  
Gloucester  
United Kingdom  
and described in the attached specification of the specimens  
provided that the construction is satisfactory in service

**Declaration of Conformity for Recreational Craft Propulsion Engine with the Exhaust emission requirements of Directive 94/16/EC, as amended by 2003/44/EC**  
(Compiled by manufacturer of inland engine without integral exhaust)  
Name of engine manufacturer: **Beta Marine Ltd**  
Street: **Davy Way, Waterwells**  
Post Code: **GL2 2AD**  
Town: **Quedgeley, Gloucestershire**  
Country: **U.K.**  
Engine type approved according to: **Stage II of Directive 97/68/EC**  
Name of Notified Body for exhaust emission assessment: **TUV SÜDDEUTSCH GmbH, Flensburg, Germany**  
Accession number **DAR-KBA-P 00010-90**

**DESCRIPTION OF ENGINES AND ESSENTIAL REQUIREMENTS**  
Engine type: **Inboard engine**  
Fuel type: **Diesel gas oil IS K2204:1997 or equal**  
Combustion cycle: **4-stroke**

Engine model and engine number	EC type certificate number (where applicable)
BY1500 Bm 15	01/0308/01-0100/01000100
BY1500 Bm 16	01/0308/01-0100/01000100
BY1500 Bm 17	01/0308/01-0100/01000100
BY1500 Bm 18	01/0308/01-0100/01000100
BY1500 Bm 19	01/0308/01-0100/01000100
BY1500 Bm 20	01/0308/01-0100/01000100
BY1500 Bm 21	01/0308/01-0100/01000100
BY1500 Bm 22	01/0308/01-0100/01000100
BY1500 Bm 23	01/0308/01-0100/01000100
BY1500 Bm 24	01/0308/01-0100/01000100
BY1500 Bm 25	01/0308/01-0100/01000100
BY1500 Bm 26	01/0308/01-0100/01000100
BY1500 Bm 27	01/0308/01-0100/01000100
BY1500 Bm 28	01/0308/01-0100/01000100
BY1500 Bm 29	01/0308/01-0100/01000100
BY1500 Bm 30	01/0308/01-0100/01000100
BY1500 Bm 31	01/0308/01-0100/01000100
BY1500 Bm 32	01/0308/01-0100/01000100
BY1903 Bm 33	01/0308/01-0100/01000100
BY1903 Bm 34	01/0308/01-0100/01000100
BY1903 Bm 35	01/0308/01-0100/01000100
BY1903 Bm 36	01/0308/01-0100/01000100
BY1903 Bm 37	01/0308/01-0100/01000100
BY1903 Bm 38	01/0308/01-0100/01000100
BY1903 Bm 39	01/0308/01-0100/01000100
BY1903 Bm 40	01/0308/01-0100/01000100
BY1903 Bm 41	01/0308/01-0100/01000100
BY1903 Bm 42	01/0308/01-0100/01000100
BY1903 Bm 43	01/0308/01-0100/01000100
BY1903 Bm 44	01/0308/01-0100/01000100
BY1903 Bm 45	01/0308/01-0100/01000100
BY1903 Bm 46	01/0308/01-0100/01000100
BY1903 Bm 47	01/0308/01-0100/01000100
BY1903 Bm 48	01/0308/01-0100/01000100
BY1903 Bm 49	01/0308/01-0100/01000100
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BY1903 Bm 55	01/0308/01-0100/01000100
BY1903 Bm 56	01/0308/01-0100/01000100
BY1903 Bm 57	01/0308/01-0100/01000100
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BY1903 Bm 70	01/0308/01-0100/01000100
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BY1903 Bm 72	01/0308/01-0100/01000100
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BY1903 Bm 75	01/0308/01-0100/01000100
BY1903 Bm 76	01/0308/01-0100/01000100
BY1903 Bm 77	01/0308/01-0100/01000100
BY1903 Bm 78	01/0308/01-0100/01000100
BY1903 Bm 79	01/0308/01-0100/01000100
BY1903 Bm 80	01/0308/01-0100/01000100
BY1903 Bm 81	01/0308/01-0100/01000100
BY1903 Bm 82	01/0308/01-0100/01000100
BY1903 Bm 83	01/0308/01-0100/01000100
BY1903 Bm 84	01/0308/01-0100/01000100
BY1903 Bm 85	01/0308/01-0100/01000100
BY1903 Bm 86	01/0308/01-0100/01000100
BY1903 Bm 87	01/0308/01-0100/01000100
BY1903 Bm 88	01/0308/01-0100/01000100
BY1903 Bm 89	01/0308/01-0100/01000100
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BY1903 Bm 94	01/0308/01-0100/01000100
BY1903 Bm 95	01/0308/01-0100/01000100
BY1903 Bm 96	01/0308/01-0100/01000100
BY1903 Bm 97	01/0308/01-0100/01000100
BY1903 Bm 98	01/0308/01-0100/01000100
BY1903 Bm 99	01/0308/01-0100/01000100
BY1903 Bm 100	01/0308/01-0100/01000100

Essential requirements  
Annex I.B - Exhaust Emissions  
exhaust emission requirements  
durability  
noise  
Annex I.C - Other Emissions  
Other normative document  
2003/44 annex 1B para 1  
2003/44 para 16, 17 and 19  
2003/44 annex 1B para 2  
2003/44 annex 1B para 3  
2003/44 annex 1B para 4  
2003/44 annex 1B para 5  
2003/44 annex 1B para 6  
2003/44 annex 1B para 7  
2003/44 annex 1B para 8  
2003/44 annex 1B para 9  
2003/44 annex 1B para 10  
2003/44 annex 1B para 11  
2003/44 annex 1B para 12  
2003/44 annex 1B para 13  
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2003/44 annex 1B para 92  
2003/44 annex 1B para 93  
2003/44 annex 1B para 94  
2003/44 annex 1B para 95  
2003/44 annex 1B para 96  
2003/44 annex 1B para 97  
2003/44 annex 1B para 98  
2003/44 annex 1B para 99  
2003/44 annex 1B para 100

I declare on behalf of the engine manufacturer that the engine(s) will meet the exhaust emission requirements of Directive 94/16/EC, as amended by Directive 2003/44/EC, when installed in a recreational craft, in accordance with the engine manufacturer's technical instructions and that any (diesel engine(s)) must not be put into service until the recreational craft into which it is (they are) to be installed has been declared in conformity with the relevant provisions of the above mentioned Directive.

Name: **J. A. Greenwood**  
Signature and title: *J. A. Greenwood*  
Date: (year/month/day) **2008 / 10 / 22** Quedgeley, Gloucestershire  
Certificate 2.16 Annex 1B, item of notified body added

