

# **USCG ACCEPTED LIFEBOAT/RESCUE BOAT ENGINES**

## **Accepted SOLAS Lifeboat/Rescue Boat Inboard Diesel Engines meeting US EPA Nonroad Compression-Ignition Engine Exhaust Emission Standards by Model Year 2014 or later**

### **General Requirements:**

- For more details on the U.S. EPA's marine compression-ignition engine exhaust emission requirements, please visit: <https://www.epa.gov/emission-standards-reference-guide>.
- The indicated starting methods listed with the engines below have been accepted by Commandant (CG-ENG-4), as compliant with 46 CFR 160.135-7 and 160.156-.
- Per 46 CFR 160.135-7 and 160.156-7, gauge packages for inboard engines on USCG approved lifeboats/rescue boats must include:
  - coolant temperature for a liquid cooled engine;
  - oil pressure for an engine with an oil pump;
  - tachometer for an engine not provided with over speed protection; and
  - state of charge or rate of charge for each rechargeable engine starting power source.

**Nanni Industries SAS, 11 avenue de l'Abbé Edme Mariotte, 33260 La Teste de Buch, FRANCE.**

<http://www.nannidiesel.com>.

Contact: Mr. Giani Udovicic, R&D Manager, Email: [giani.udovicic@nannidiesel.com](mailto:giani.udovicic@nannidiesel.com), or

U.S. Representative: Mr. Ben Duffy, Kraft Power Corporation, 199 Wildwood Avenue, Woburn MA 01888,

USA, Phone: 781-938-9100, Cell: 617-930-0647, Email: [BDuffy@KraftPower.com](mailto:BDuffy@KraftPower.com)

<b>Model name</b>	<b>Output</b>	<b>Rpm</b>	<b>Configuration/cylinders</b>	<b>Starting</b>
N3.30*	21.7kW/	3600 rpm	3 cylinder, in-line watercooled by heat exchanger or keel cooler	Electric
N4.38**	27.6 kW/ 37.5 Hp	3000 rpm	4 cylinder, in-line watercooled by heat exchanger or keel cooler	Electric
T4.205***	147.1 kW	3600 rpm	4 cylinder, in-line watercooled by heat exchanger 4 cylinder, in-line watercooled by heat exchanger	Electric
T4.230***	169 kW	3600 rpm	4 cylinder, in-line watercooled by heat exchanger	Electric

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T4.270***	195 kW	3600 rpm	4 cylinder, in-line watercooled by heat exchanger	Electric
Z4.205***	147.1 kW	3600 rpm	4 cylinder, in-line watercooled by heat exchanger	Electric
Z4.230***	169 kW	3600 rpm	4 cylinder, in-line watercooled by heat exchanger	Electric
Z4.270***	195 kW	3600 rpm	4 cylinder, in-line watercooled by heat exchanger	Electric

\* US EPA Compliant Tier 3 for MY17 and MY19.

\*\* US EPA Compliant Tier 3 for MY15, MY17 and MY19.

\*\*\* US EPA Compliant Tier 3 for MY19.

## **BUKH A/S, Aabenraavej 13-17, Kiskelund, 6340 Krusaa, DENMARK**

Phone: +45 74 62 20 88 +45 74 62 74 07

U.S. Representative: Alexander/Ryan Marine & Safety LLC, 2000 Wayside Drive, Houston, TX 77011. Tel: 1-713-923-1671; Fax: 1-713-923-9147. [www.alexanderryan.com](http://www.alexanderryan.com)

### **Installed per engine manufacturers instructions with required SOLAS components and fittings.**

<b>Model name</b>	<b>Output</b>	<b>rpm</b>	<b>Configuration/cylinders</b>	<b>Starting</b>
R210	154 kW (210 Hp)	3800	Inline 4	Electric
S270S (Sterndrive)	199 kW	3800	V6	Electric
S270P (Shaft)	199 kW	3800	V6	Electric
S270J (Waterjet)	199 kW	3800	V6	Electric
SOLAS VGT 300	224 kW	3500	V8	Electric
SOLAS VGT 350	257 kW	3500	V8	Electric
SOLAS VGT 400	394 kW	3500	V8	Electric
SOLAS VGT 450	331 kW	3500	V8	Electric
SOLAS VGT 500	373 kW	3500	V8	Electric
Beta 28 EPA	20.6 kW	3600	Inline 3	Electric, Spring or Hydraulic*
Beta 36 EPA	26.5 kW	3600	Inline 4	Electric, Spring or Hydraulic*
Beta 48 EPA	35.3 kW	2800	Inline 4	Electric, Spring or Hydraulic*
D2-60	44 kW(60 Hp)	3000	Inline 4	Electric
D2-75	55 kW (75 Hp)	3000	Inline 4	Electric
D3-110	78 kW (110 Hp)	3000	Inline 5	Electric
D3-150	110 kW (150 Hp)	3000	Inline 5	Electric
D3-170	125 kW (170 Hp)	4000	Inline 5	Electric
D3-220	162 kW (220 Hp)	4000	Inline 5	Electric
D4-180	132 kW (180 Hp)	2800	Inline 4	Electric
D4-225	165 kW (225 Hp)	3500	Inline 4	Electric
D4-260	191 kW (260 Hp)	3500	Inline 4	Electric
D4-300	221 kW (300 Hp)	3500	Inline 4	Electric
D6-300	221 kW (300 Hp)	3500	Inline 6	Electric
D6-330	243 kW (330 Hp)	3500	Inline 6	Electric
D6-370	272 kW (370 Hp)	3500	Inline 6	Electric
D6-435	320 kW (435 Hp)	3500	Inline 6	Electric
D13	220-735 kW (300-1000 Hp)	1800- 2300	Inline 6	Electric

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## Steyr Motors Betriebs GmbH, Im Stadtgut B1, A-4407 Steyr, Austria

Tel.: +43 (0)7252/222, Fax: +43 (0)7252/222-29, office@steyr-motors.com

All engines listed below are 4 stroke, turbocharged and raw/fresh water-cooled via heat exchanger. SOLAS kit required from manufacturer.

Model name	Output	rpm	Configuration/cylinders	Starting
SE114E33	80 kW	3300	4 cylinder	Electric
SE144E38	100 kW	3800	4 cylinder	Electric
SE164E40	117 kW	4000	4 cylinder	Electric
SE174S40	125 kW	4000	4 cylinder	Electric
SE126E25	88 kW	2500	6 cylinder	Electric
SE156E26	110 kW	2600	6 cylinder	Electric
SE156E32	110 kW	3200	6 cylinder	Electric
SE196E35	140 kW	3500	6 cylinder	Electric
SE236E40	170 kW	4000	6 cylinder	Electric
SE236S36	170 kW	3600	6 cylinder	Electric
SE266E40	190 kW	4000	6 cylinder	Electric
SE266S36	190 kW	3600	6 cylinder	Electric
SE286E40	205 kW	4000	6 cylinder	Electric
SE306J38	215 kW	3800	6 cylinder	Electric
M14TCAM Model 114K33	81 kW	3300	4 cylinder	Electric
M14TCAM Model 144M38	106 kW	3800	4 cylinder	Electric
M14TCAM Model 144V38	106 kW	3800	4 cylinder	Electric
M14TCAM Model 164M40	120 kW	4000	4 cylinder	Electric
M14TCAM Model 174V40	125 kW	4000	4 cylinder	Electric

## Volvo-Penta. Volvo Penta of the Americas, Inc.

Volvo Penta of the Americas, 1400 Volvo Penta Drive, Chesapeake, VA 23320. Phone: 757-436-2800

AB Volvo Penta, S-405 08 Gothenburg, SWEDEN. Phone: 46-31-235460

Note: SOLAS modifications and supplemental SOLAS manual required from manufacturer.

- The D3, D4, and D6 engine families are EPA tier 3 compliant for MY14 and MY15
- The D3, D4, and D6 engines meet the requirements for use in SOLAS fast rescue boats

Inboard engine models for propeller or water jet propulsion:

**D3 engine family:** 5 cylinder, 2.4 L. 4-stroke, turbocharged, water-cooled, and after-cooled.

I (Inboard); A (Duoprop (DPS)) drive)

D3-110 I, 78 kW@3000 rpm  
D3-140 A, 98 kW@4000 rpm  
D3-150 I, 106 kW@3000 rpm  
D3-170 I, 120 kW@4000 rpm  
D3-170 A, 119 kW@4000 rpm  
D3-200 I, 141 kW@4000 rpm  
D3-200 A, 140 kW@4000 rpm  
D3-220 I, 155 kW@4000 rpm  
D3-220 A, 154 kW@4000 rpm

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**D4 engine family:** 4 cylinder, 3.67 L, supercharged, and water-cooled  
I (Inboard); A (Aquamatic (formerly Duoprop (DPS)) drive)

D4-180 I, 132 kW @ 2800 rpm, 4 cylinder  
D4-225 I/ D4-225 A, 165 kW @ 3500 rpm, 4 cylinder  
D4-260 I/ D4-260 A, 191 kW @ 3500 rpm, 4 cylinder  
D4-300 I/ D4-300 A, 221 kW @ 3500 rpm, 4 cylinder

**D6 engine family:** 6 cylinder, 5.5 L, supercharged, and water-cooled  
I (Inboard); A (Aquamatic (formerly Duoprop (DPS)) drive)

D6-280 I, 206 kW @ 3500 rpm,  
D6-310 I/ D6-310 A, 228 kW @ 3500 rpm  
D6-330 I/ D6-330 A, 243 kW @ 3500 rpm  
D6-370 I/ D6-370 A, 272 kW @ 3500 rpm  
D6-400 A, 294 kW @ 3500  
D6-435 I, 320 kW @ 3500 rpm

## **Yanmar Co., Ltd.**

**Yanmar Marine International Americase Division, 5400 118<sup>th</sup> Ave., Clearwater, FL 33760, Tel: 727-803-6565  
ext. 1289, POC: Antony Dalton, [antony\\_dalton@yanmar.com](mailto:antony_dalton@yanmar.com)**

**8LV engine series:** 4-stroke, direct injection, turbo-charged 4.461 L V8 with electric start. Uses shaft gear/ZT370.  
Requires oil stop check valve assembly and tilt switch.

8LV370: 273 kW@3800 rpm  
8LV350: 257 kW@3800 rpm  
8LV320: 235 kW@3800 rpm

**6LY engine series:** 4-stroke, direct injection, turbo-charged 5.813 L in-line 6-cylinder with electric start. Shaft gear.  
Requires oil stop check valve assembly and tilt switch.

6LY440: 324 kW@3300 rpm  
6LY400: 294 kW@3300 rpm

**4LV engine series:** 4-stroke, direct injection, turbo-charged 2.755 L in-line 4-cylinder with electric start. Shaft gear.  
Requires oil stop check valve assembly and tilt switch.

4LV150: 110 kW@3500 rpm  
4LV170: 125 kW@3500 rpm  
4LV195: 143 kW@3500 rpm  
4LV230: 169 kW@3800 rpm  
4LV250: 184 kW@3800 rpm

**3JH40:** 20.4 kW@3000 rpm. 4-stroke, direct injection, normally aspirated 1.642 L in-line 3-cylinder with electric start. Shaft gear. Requires tilt switch; vibration damper mounts, breather hose, splash plate, and oil stop check valve assembly.

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**4JH engine series:** 4-stroke, direct injection, normally aspirated 2.190 L in-line 4-cylinder with electric start. Shaft gear. Requires tilt switch; vibration damper mounts, breather hose, splash plate, and oil stop check valve assembly.

4JH45: 33.1 kW@3000 rpm

4JH57: 41.9 kW@3000 rpm

**4JH engine series (high output):** 4-stroke, direct injection, turbo-charged 1.995 L in-line 4-cylinder with electric start. Shaft gear. Requires tilt switch; vibration damper mounts, breather hose, splash plate, and oil stop check valve assembly.

4JH80: 58.8 kW@3200 rpm

4JH110: 80.9 kW@3200 rpm

## Accepted SOLAS Rescue Boat Outboard Engines meeting US EPA emission requirements by MY2010.

### General Requirements:

- For more details on the U.S. EPA's marine spark-ignition engine exhaust emission requirements, please visit: <http://www.epa.gov/otaq/standards/nonroad/marines-exhaust.htm>
  - All marine spark-ignition engines must meet the U.S. EPA's evaporative emission standards. Visit the EPA's Office of Transportation and Air Quality website for details: <http://www.epa.gov/otaq/standards/nonroad/nonroadsi-evap.htm>
  - Only those listed starting methods are accepted by Commandant (CG-ENG-4).
  - Outboard engines listed in this section must be equipped with a propeller guard.
  - Permanently installed gasoline fuel systems must meet the requirements of 33 CFR 183, Subpart J - Fuel Systems.
  - Portable fuel systems must meet UL Standard 1185 Portable Marine Fuel Tanks or equal, except that hoses, primers, and filters must comply with the requirements of USCG Type A flexible hose.
  - Anti-siphon devices must be provided in the fuel system to prevent fuel spillage when the hose is disconnected.
  - The fuel tank must be able to be secured to the boat.
  - Unless otherwise specified, for outboard engines, means must be provided to allow a 5 minute supply of cooling water to the installed engine when the boat is out of the water.
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### American Honda Motor Co., Inc - Honda Marine.

- Engines distributed through Honda Marine dealership network, <http://marine.honda.com>.
- Accepted for use in SOLAS fast rescue boats by meeting the requirement in IMO Resolution MSC.81(70) Part 1/7.7.11.
- Supplied with a 160 or 190 cm manual start pull rope and "SOLAS Manual Start" addendum to the Owner's Manual.
- Tested with a 11.75", 10-pitch propeller
- All engines below are electric start, 4-stroke overhead cam, 49.3 in<sup>3</sup> (808 cm<sup>3</sup>) in-line 3 cylinder gasoline engines.

**BF40D4LHA:** tiller handle steering. Output: 40 Hp (29.8 kW). Max rpm ~6,000.

**BF40D4LRT:** motor-mounted remote control steering. Output: 40 Hp (29.8 kW). Max rpm ~6,000.

**BF50D4LRT:** motor-mounted remote control steering. Output: 50 Hp (37.3 kW). Max rpm ~6,000.

**BF50D4XRT:** motor-mounted remote control steering. Output: 50 Hp (37.3 kW). Max rpm ~6,000.

Note: The BF40D4 and BF50D4 model designations replace the BF40D2 and BF50D2 on previous editions of the accepted engine list.

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## **Donovan Marine, Inc.**

### **6316 Humphreys St., Harahan, LA 70123. Phone 877-366-2366.**

Note: Donovan Marine SOLAS Outboard Engine Kit required for use on USCG approved rescue boats. A copy of the USCG acceptance letter must be provided with each engine and kept on file by each ship with a USCG approved boat.

#### **Model Years 2016-2020:**

##### *Evinrude*

**E-TEC 25 Model E25DRGL**, pull rope start, inline 2-cylinder, 2-stroke, gasoline, with electronic ignition and fuel injection, 35.2 cu in/577 cc, 25 HP (19 kW) at 5500 rpm. Meets the acceptance criteria for use on USCG approved SOLAS fast rescue boats, subject to the speed requirements of the IMO LSA Code.

**E-TEC 40 Model E40DRGL**, electric start, inline 2-cylinder, 2-stroke, gasoline, with electronic ignition and fuel injection, 52.7 cu in/864 cc, 40 HP (30 kW) at 5500 rpm. Meets the acceptance criteria for use on USCG approved SOLAS fast rescue boats, subject to the speed requirements of the IMO LSA Code.

**E-TEC 40 Model E40DPGL**, rope recoil start, inline 2-cylinder, 2-stroke, gasoline, with electronic ignition and fuel injection, 52.7 cu in/864 cc, 40 HP (30 kW) at 5500 rpm. Not shown to meet the acceptance criteria for use on USCG approved SOLAS fast rescue boats.

#### **Model Years 2010 through 2013:**

##### *Evinrude*

**E-TEC 25 Model E25DRLxx**, rope recoil start, inline 2-cylinder, 2-stroke, gasoline, and fuel injection, 35.2 cu in/577 cc, 25 HP (19 kW) at 5500 rpm. Not shown to meet the acceptance criteria for use on USCG approved SOLAS fast rescue boats.

**E-TEC 40 Model E40DRLxx**, rope recoil start, inline 2-cylinder, 2-stroke, gasoline, and fuel injection, 52.7 cu in/864 cc, 40 HP (30 kW) at 5500 rpm. Not shown to meet the acceptance criteria for use on USCG approved SOLAS fast rescue boats.

**E-TEC 40 Model E40DPLxx**, inline 2-cylinder, 2-stroke, gasoline, with electric starter and fuel injection, 52.7 cu in/864 cc, 40 HP (30 kW) at 5500 rpm. Meets the acceptance criteria for use on USCG approved SOLAS fast rescue boats, subject to the speed requirements of the IMO LSA Code.

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## **Frydenbø Industri AS**

website: <http://www.frydenbo-industri.no>

Phone: + 47 55 34 91 00 | Fax +47 55 34 88 01 | 24/7 Support +47 92 23 50 66 Postal address: Pb 6164, 5892 Bergen, Norway, Physical address: Hanøytangen 116, 5310 Hauglandshella

#### **Model Year 2016:**

##### *Evinrude inline 2-cylinder models:*

**E-TEC 25**, electric or rope start, 2-stroke, gasoline, with electronic ignition and fuel injection, 35.2 cu in/577 cc, 25 HP (19 kW) at 5500 rpm. Meets the acceptance criteria for use on USCG approved SOLAS fast rescue boats, subject to the speed requirements of the IMO LSA Code.

**E-TEC 30**, electric or rope start, 2-stroke, gasoline, with electronic ignition and fuel injection, 35.2 cu in/577 cc, 30

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HP (22 kW) at 5500 rpm. Meets the acceptance criteria for use on USCG approved SOLAS fast rescue boats, subject to the speed requirements of the IMO LSA Code.

**E-TEC 40**, electric or rope start, 2-stroke, gasoline, with electronic ignition and fuel injection, 52.7 cu in/863 cc, 40 HP (30 kW) at 5500 rpm. Meets the acceptance criteria for use on USCG approved SOLAS fast rescue boats, subject to the speed requirements of the IMO LSA Code.

**E-TEC 50**, electric start, 2-stroke, gasoline, with electronic ignition and fuel injection, 52.7 cu in/863 cc, 50 HP (37 kW) at 5750 rpm. Meets the acceptance criteria for use on USCG approved SOLAS fast rescue boats, subject to the speed requirements of the IMO LSA Code.

**E-TEC 60**, electric start, 2-stroke, gasoline, with electronic ignition and fuel injection, 52.7 cu in/863 cc, 60 HP (45 kW) at 5750 rpm. Meets the acceptance criteria for use on USCG approved SOLAS fast rescue boats, subject to the speed requirements of the IMO LSA Code.

***Evinrude inline 3-cylinder models:***

**E-TEC 75**, electric start, 2-stroke, gasoline, with electronic ignition and fuel injection, 79.1 cu in/1295 cc, 75 HP (56 kW) at 5000 rpm. Meets the acceptance criteria for use on USCG approved SOLAS fast rescue boats, subject to the speed requirements of the IMO LSA Code.

**E-TEC 90**, electric start, 2-stroke, gasoline, with electronic ignition and fuel injection, 79.1 cu in/1295 cc, 90 HP (67 kW) at 5000 rpm. Meets the acceptance criteria for use on USCG approved SOLAS fast rescue boats, subject to the speed requirements of the IMO LSA Code.

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## **Umoe Schat-Harding**

**912 Highway 90 East, New Iberia, LA 70560. Phone: (337) 365-5451.**

Note: Schat Harding USCG Outboard Engine Kit required for use on USCG approved rescue boats. A copy of the USCG acceptance letter must be provided with each engine and kept on file by each ship with a USCG approved boat. "xx" is an alphanumeric model year/run code.

**Model Year 2016:**

***Evinrude***

**E-TEC 25**, pull rope start, inline 2-cylinder, 2-stroke, gasoline, with electronic ignition and fuel injection, 35.2 cu in/577 cc, 25 HP (19 kW) at 5500 rpm. Meets the acceptance criteria for use on USCG approved SOLAS fast rescue boats, subject to the speed requirements of the IMO LSA Code.

**E-TEC 40**, electric start, inline 2-cylinder, 2-stroke, gasoline, with electronic ignition and fuel injection, 52.7 cu in/864 cc, 40 HP (30 kW) at 5500 rpm. Meets the acceptance criteria for use on USCG approved SOLAS fast rescue boats, subject to the speed requirements of the IMO LSA Code.

**E-TEC 40**, rope recoil start, inline 2-cylinder, 2-stroke, gasoline, with electronic ignition and fuel injection, 52.7 cu in/864 cc, 40 HP (30 kW) at 5500 rpm. Not shown to meet the acceptance criteria for use on USCG approved SOLAS fast rescue boats.

**Model Years 2010 through 2013:**

***Evinrude***

**E-TEC 25**, pull rope start, inline 2-cylinder, 2-stroke, gasoline, with electronic ignition and fuel injection, 35.2 cu in/577 cc, 25 HP (19 kW) at 5500 rpm. Meets the acceptance criteria for use on USCG approved SOLAS fast rescue boats, subject to the speed requirements of the IMO LSA Code.

**E-TEC 40**, electric start, inline 2-cylinder, 2-stroke, gasoline, with electronic ignition and fuel injection, 52.7 cu in/864 cc, 40 HP (30 kW) at 5500 rpm. Meets the acceptance criteria for use on USCG approved SOLAS fast rescue boats, subject to the speed requirements of the IMO LSA Code.

**E-TEC 40**, rope recoil start, inline 2-cylinder, 2-stroke, gasoline, with electronic ignition and fuel injection, 52.7 cu



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in/864 cc, 40 HP (30 kW) at 5500 rpm. Not shown to meet the acceptance criteria for use on USCG approved SOLAS fast rescue boats.

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## **West Coast Marine Service.**

**1555 Newport Blvd., Costa Mesa, CA 92627. Attn: Dirk Eastman, Tel. 949-515-2822 ext. 2; cell 949-500-5507; e-mail: [Dirk@westcoastmarine.com](mailto:Dirk@westcoastmarine.com)**

## **Yamaha**

### **MODEL YEAR 2014/2015:**

**F70LA DOHC**, electric start, electronic fuel injection, 4-stroke, 996 cm<sup>3</sup>, gasoline engine. Output: 51.5 kW (70 Hp) @5800 rpm

- Supplied with a 13.25" diameter, 14 pitch propeller.
- Supplied with a portable fuel tank meeting UL 1185 per 46 CFR 160.156-7(b)(8) and a propeller guard meeting 46 CFR 160.156-7(b)(11).
- Not currently demonstrated to meet the acceptance criteria for use on USCG approved SOLAS fast rescue boats.

**F90LA DOHC**, electric start, electronic fuel injection, 4-stroke, 1596 cm<sup>3</sup>, gasoline engine. Output: 66.2 kW (90 Hp) @5500 rpm.

- Supplied with a 13.25" diameter, 14 pitch propeller.
  - Supplied with a portable fuel tank meeting UL 1185 per 46 CFR 160.156-7(b)(8) and a propeller guard meeting 46 CFR 160.156-7(b)(11).
  - Not currently demonstrated to meet the acceptance criteria for use on USCG approved SOLAS fast rescue boats.
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