

BARRUS

E. P. Barrus Ltd. Special Products Division



Credit: ASV Global



Credit: Atlas Elektronik UK



DELTA



BAE SYSTEMS



Specialist Design and Engineering Solutions



The Special Products Division is a dedicated team set up to design and develop custom-built engines and accessories to meet the specific operational requirements of its customers. The team has the experience and knowledge to solve the stringent requirements and applications of specialist organisations including professional rescue services, the military and other government and commercial organisations.

Barrus has developed close relationships with many of its major customers working as consultants and suppliers. These include organisations such as the RNLI, UK MoD, US DoD, HM Coastguard, Overseas Government Forces, Local Authorities, Police and Fire Service Search and Rescue Units.

Barrus has created the innovative FAST PIRS for the military, commercial and rescue services which enables an engine to be rapidly started after being submerged. This is an enormous advance for self-righting search and rescue vessels.

Barrus were proud to be awarded a long term partnering agreement with the UK MoD. This covers the supply, overhaul and repair of all outboard engines, Seatek and Yanmar inboard diesel engines and related post-design services and in-service support.

Another example of Barrus innovation is the multi-fuel outboard engine. This was designed and developed for the UK MoD and is capable of running on four different NATO fuels , NATO F34 AVTUR (JP8), NATO F44 AVCAT (JP5), NATO F67 (Gasoline – unleaded) and NATO F76 (Diesel – Naval).





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2 and 4-Stroke Outboards

2-Stroke

Models	Kilowatts ⁽¹⁾	Max. RPM at Full Throttle	Cylinders/ Displacement	Starting	Gear Ratio	Alternator System ⁽²⁾	Weight ⁽³⁾
250EFI	183	5000 - 5800	V6 / 3032 cc	Electric	1.75:1	Belt-Driven 60 amp (756 watt)	220 kg
60 + BIGFOOT	44.1	5000 - 5500	3 / 967 cc	Electric	60: 1.64:1 60 BIGFOOT: 2.33:1	16 amp (201 watt)	60: 100 kg 60 BF: 109 kg
40 - 50	29.4 - 36.8	5150 - 5850	3 / 697 cc	Manual or Electric	1.85:1	11 amp (130 watt)	75 kg
30	22.1	4800 - 5500	2 / 429 cc	Manual or Electric	1.92:1	60 amp (80 watt)	51 kg
25	18.4	5000 - 5800	2 / 429 cc	Manual or Electric	1.92:1	60 amp (80 watt)	51 kg
15	11	5000 - 6000	2 / 262 cc	Manual	2.00:1	Standard: ML Optional: M	35 kg
5 ⁽⁴⁾	3.68	4000 - 5000	1 / 102 cc	Manual	2.15:1	Optional 4 amp (50 watt) lighting	20 kg
3.3 - 2.5	2.4 - 1.8	3.3: 4500 - 5500 2.5: 4200 - 5200	1 / 74.6 cc	Manual	3.3: 2.15:1 2.5: 1.85:1	N/A	13 kg

4-Stroke

Models	Kilowatts ⁽¹⁾	Max. RPM at full throttle	Cylinders / Displacement	Starting	Gear ratio	Alternator system ⁽²⁾	Weight ⁽³⁾
400 Verado	294	6400 - 7000	6 (in-line) / 2598 cc	SmartStart electric	1.75 : 1	70 amp (882 watt)	303 kg
350 Verado	261	5800 - 6400	6 (in-line) / 2598 cc	SmartStart electric	1.75 : 1	70 amp (882 watt)	303 kg
300 Verado	221	5800 - 6400	6 (in-line) / 2598 cc	SmartStart electric	1.85 : 1	70 amp (882 watt)	288 kg
200 Verado	147	5800 - 6400	4 (in-line) / 1732 cc	SmartStart electric	2.08 : 1	70 amp (882 watt)	231 kg
150EFI	110.3	5000 - 5800	4 (in-line) / 3000 cc	Electric (turn-key)	1.92 : 1	60 amp (756 watt)	206 kg
90 Marathon	66.2	5000	4 (in-line) / 3000 cc	Electric (turn-key)	1.92 : 1	60 amp (756 watt)	206 kg
115 EFI - 90 EFI - 75EFI	84.6 - 66.2 - 55.2	115: 5000 - 6000 90-75: 4500 - 5500	4 (in-line) / 2100 cc	SmartStart electric	2.07 : 1 CT: 2.38 : 1	35 amp (441 watt)	115: 165 kg 90 - 75 : 163 kg
60 Marathon 50 Marathon	44.12 - 36.77	5000	4 (in-line) / 2100 cc	SmartStart electric	2.38 : 1	35 amp (441 watt)	165 kg
60EFI + CT 50 EFI	44.1 - 36.8	5500 - 6000	4 (in-line) / 995 cc	Electric (turn-key)	1.83 : 1 CT: 2.33 : 1	18 amp (226 watt)	112 kg CT: 118 kg
40 EFI	29.4	5500 - 6000	3 (in-line) / 747 cc	Electric (turn-key)	2.00 : 1	18 amp (226 watt)	98 kg
30 Marathon	22.06	4000	4 (in-line) / 1000 cc	Electric (turn-key)	2.33 : 1	18 amp (226 watt)	118 kg
30 ⁽³⁾ - 25 EFI ⁽³⁾	22.1 - 18.4	30: 5250 - 6250 25: 5000 - 6000	3 (in-line) / 526 cc	Manual or electric (turn-key)	1.92 : 1	15 amp (186 watt)	30: 78 kg 25: 71 kg
20 ⁽³⁾ - 15 ⁽³⁾	14.7 - 11	20: 5400 - 6100 15: 5400 - 5600	2 (in-line) / 351 cc	Manual or electric	2.15 : 1	12 amp (138 watt)	52 kg
9.9 ⁽³⁾ - 8 ⁽³⁾	7.28 - 5.88	5000 - 6000	2 (in-line) / 208 cc	Manual or electric	2.08 : 1	6 amp (76 watt) on electric start models	38 kg
6 ⁽⁵⁾ - 5 ⁽⁵⁾ - 4 ⁽⁵⁾ + 5 SailMate ⁽⁵⁾	4.41 - 3.68 - 2.94	6: 5000 - 6000 5 - 4: 4500 - 5500	1 / 123 cc	Manual	2.15 : 1	Optional 4 amp (50 watt) lighting, 2 amp (25 watt) charging 5 SAILMATE: Standard with rectifier	25 kg
3.5 ⁽⁶⁾ - 2.5 ⁽⁶⁾	2.57 - 1.84	3.5: 5000 - 6000 2.5: 4500 - 5500	1 / 85 cc	Manual	2.15 : 1	n/a	17 kg

(1) Measured at propshaft in accordance with ICOMIA 28. (2) Requires rectifier to complete installation manual versions.

(3) Dry weight specification is for lightest model and excludes engine oil, rigging hardware and propeller.

Multifuel Outboard

F67 (Gasoline)

F34 (JP8)

F44 (JP5)

F76 (NATO Diesel)



Model	MultiFuel	V6 Diesel OptiMax*
Suitable Applications	Military / Non-Commercial	
Maximum Output	F76 - 30kW @ 6000 rpm F44 - 32.28kW @ 6000 rpm F67 - 34.42kW @ 5700 rpm	137kW . 180hp
Full Speed Operation Range	5400 - 6000rpm	5500 - 5800rpm
Transom Height	403mm Shortshaft / 530mm Longshaft	508mm Longshaft / 635mm Extra Longshaft
Total Weight	89.5kg without Tilt Trim / 96.5kg with Tilt Trim	238kg
Displacement / No. Cylinders	697 / 3	3032 / V6
Bore x Stroke	68mm x 64mm	92mm x 76mm
Induction System	Reed Valve	
Cooling System	Thermostat with Rubber Impeller	Water cooled with thermostat
Lubrication	Automix- Oil Injection	
Fuel Requirement	F67 (Gasoline) / F34 (JP8) / F44 (JP5) / F76 (NATO Diesel)	
Gear Ratio	13 : 24 (1.85 : 1)	
Gearshift	F - N - R	
Trim Positions	6 (4 - 24 degrees)	
Starting System	Electric Standard (Key Switch on Engine)	Electric turn key
Ignition System	Capacity Discharge with Electronic Advance	ECU Controlled
Alternator	12 Volt 280 Watt	60 amp / 756 Watt
Propeller	Splined Rubber Hub (8" - 19" Pitch)	
Oil	2-Stroke OptiMax	JP OptiMax 2 stroke oil

*For military / semi commercial use only - engine is not RCD compliant

PIRS / Fast PIRS Engines

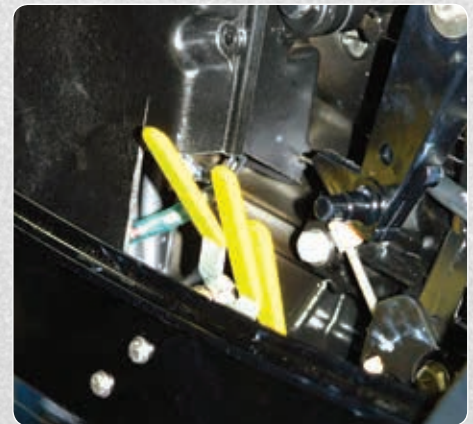
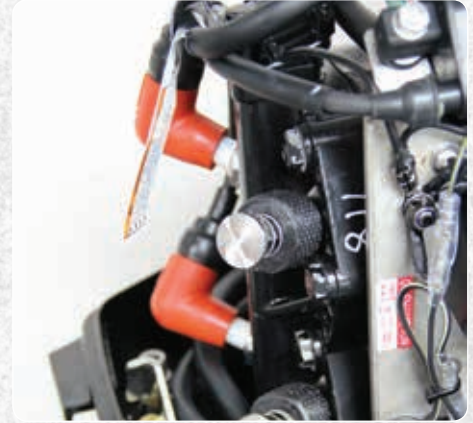


Model	PIRS	FAST PIRS	FAST PIRS GEN II
Maximum Output	29.4kW/36.8kW (40hp/50hp @ 5800RPM)		
Full Speed Operation Range	403mm Shortshaft: 530mm Longshaft		
Transom Height	75kg	75kg	75kg
Total Weight	75kg	75kg	75kg
Displacement / No. Cylinders	697 / 3	697 / 3	697 / 3
Bore / Stroke	68mm x 64mm	68mm x 64mm	68mm x 64mm
Induction System	Reed Valve	Reed Valve	Reed Valve
Carburetors	3	3	3
Cooling System	Thermostat with Rubber Impeller		
Lubrication	50 : 1 pre mix	50 : 1 pre mix	50 : 1 pre mix
Fuel Requirement	Leaded or Unleaded 89 Octane Minimum		
Gear Ratio	13 : 24 (1.85 : 1)	13 : 24 (1.85 : 1)	13 : 24 (1.85 : 1)
Gearshift	F - N - R	F - N - R	F - N - R
Trim Positions	6 (4 - 24 degrees)		
Starting System	Manual and Electric Standard (Key Switch on Engine)		
Ignition System	Capacity Discharge with Mechanical Advance		
Alternator	12 Volt 120 Watt	12 Volt 120 Watt	12 Volt 120 Watt
Propeller	Splined Rubber Hub (8" - 19" Pitch)		

Re-starting times after submersion :-

Manual Starting - After 15 clearing pulls (not under compression)

Electric starting (using starter motor) - Within 60 seconds



2nd Generation PIRS Engine Re-start Procedure

1. Switch 'Run/Off' switch to 'OFF' position.
2. Remove motor hood.
3. Open cylinder drain valves and carburetor drain.
4. Squeeze primer bulb 10 times.
5. Pull engine starter 5 times slowly.
6. Pull engine starter 10 times quickly.
7. Close carburetor drain.
8. Squeeze primer bulb until hard.
9. Inject fuel 4 times.
10. Pull engine starter 5 times.
11. Close cylinder valves.
12. Inject fuel 4 times.
13. Switch to 'RUN' position.
14. Set throttle to ¼ opening.
15. Pull engine to start.
16. If the motor fails to start, repeat the above procedures.
17. Ensure engine is run under-load for at-least 4 hours following any re-start after submerge.

Custom Accessories



Twin Engine Single Tiller

Twin Mariner outboard motors are controlled with a single tiller arm. This tough, patented, quick release system is designed to provide ease of use. Each outboard may also be used as a single unit.



Propeller Guards

This simple attachment gives effective protection to the propeller and driver, without significant detracton from the engine's performance.



Engine Lifting Harness

A harness to allow outboards to be hoisted safely during the loading and unloading of vessels.



Outboard Trolley

This rigid steel trolley enables easy transportation of outboards around the workshop. Can transport engines up to 50hp.





Outboard Cowl Covers

Our outboard cowl covers are designed for the toughest environments and are UV stable, water resistant, soft lined and breathable.



Engine Transit Frames

This rigid alloy tube frame protects the engine and fuel tanks from damage whilst in transit. The frame has also been designed to be used as a mobile workshop and includes a tool accessory box.



Carrying Handles

These tough, balanced handles simplify engine installation or removal and enhance portability. They are also designed to offer optimum protection for the engine whilst in transportation.



Custom Accessories



Umbilical Tube

The umbilical tube enables the engine to be run from the ship's own water supply. Engines can be run out of the water. As a result they can be lowered ready to run and servicing is made much easier.



Rotationally Cast Fuel Tanks

These polyethylene rotationally moulded petrol and diesel fuel tanks are exceptionally strong and can be stacked easily for optimum storage. The Special Products division also manufacture a low magnetic signature version for mine clearance duties.



Waterproof Hour Meters

Engine usage can be monitored in any condition, by keeping constant checks on operational times with this waterproof hour meter.

12 Volt Auxilliary Power Supply

A regulator/rectifier can be fitted to most engines along with a quick release connection to give a convenient power supply up to 12v.



Outboard Options Matrix

Engine	Brand	Std Prop	Props	Lengths	PIRS	Fast PIRS	Carrying Handle	Transit Frame	Prop Guard	Quick Release Transom	Hour Meter	HIPS	Umbilical	Tool Kit
2.5	Mariner / Mercury	6	6-7	S, L	-	-	-	-	-	-	YES	-	-	-
3.3	Mariner / Mercury	6	6-7	S, L	-	-	-	-	-	-	YES	-	-	-
5	Mariner / Mercury	-	6-9	S, L	YES	-	-	-	-	-	YES	-	-	-
15	Mariner / Mercury	9	5.5 - 10	L	YES	-	YES	YES	YES	-	YES	YES	-	YES
25	Mariner / Mercury	11L / 13S	8 - 14	S, L	YES	-	YES	YES	YES	YES	YES	YES	YES	YES
30	Mariner / Mercury	11L / 13S	8 - 14	S, L	YES	-	YES	YES	YES	YES	YES	YES	YES	YES
50	Mariner / Mercury	N/A	8 - 19	S, L	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
60	Mariner / Mercury	N/A	8 - 19	L	YES	-	YES	YES	YES	-	YES	-	YES	YES
60BF	Mariner / Mercury	N/A	9 - 28	L	YES	-	-	YES	YES	-	YES	-	YES	YES
200 Opti	Mariner / Mercury	N/A	11 - 36	XL	-	-	-	YES	-	-	YES	-	YES	YES
225 Opti	Mariner / Mercury	N/A	11 - 36	XL	-	-	-	YES	-	-	YES	-	YES	YES
200 Verado	Mercury	N/A	11 - 36	L, XL, XXL	-	-	-	-	-	-	YES	-	YES	YES
300 Verado	Mercury	N/A	11 - 36	L, XL, XXL	-	-	-	-	-	-	YES	-	YES	YES
350 Verado	Mercury	N/A	11 - 36	L, XL, XXL	-	-	-	-	-	-	YES	-	YES	YES
400 Verado	Mercury	N/A	11 - 36	L, XL, XXL	-	-	-	-	-	-	YES	-	YES	YES



Disaster Relief

Air Lifiable Pump

Utilised by H.M. Coastguard search and rescue helicopters is a 2" trash pump designed with a lightweight, air-portable frame that can be used for salvage, fire fighting and general pumping. the pump weighs just 48kg and has a maximum flow of 820 litres (180 gallons) per minute.



Salt Water Pump

A Yanmar powered Barrus supplied salt-water rescue pump is an integral part of the RNLI all-weather lifeboat fleet. This 2" pump is ideal for applications on salt water and mild base chemical (PH 4-9). It has a maximum flow of 865 litres (190 gallons) per minute and weights just 40kg.



MoD 5.5kVa Emergency Relief Generator



Easy Moving Handles



Rugged Frame with Electrophoretic Coating



Lifting Frame



Earthing Rod

Specifications :-

- Yanmar L100N low noise, air cooled, single cylinder diesel
- Electric / manual start
- 5.5kVa continuous (50Hz)
- 3.5hrs running @ 5kVa
- 230V 16A, 115V 16A + 32A receptacles (50Hz)
- Overload trips & voltage selection switch
- Dimensions (LxWxH)
788mm x 708mm x 728mm
- Total weight 150kg
- Durable Electrophoretic Coating

SeaSearch Inflatables

SeaSearch inflatables are easy to store, transport and are ready in minutes. They range from 3.9 to 4.2 metres and can be rowed or powered by Mariner outboards up to 30hp. Other features include aluminium floor, inflatable keel, fuel straps, oar clips, rubbing strake and bow roller.



Aluminium Floor



Fuel Strap & Oar Clips



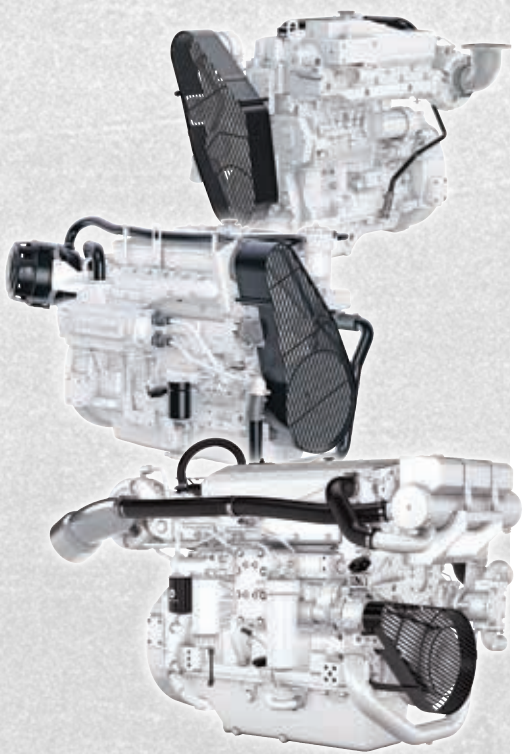
Inboard Engines

Yanmar Light Duty & Commercial



Models	Displacement (Litres)	Horsepower (MHP)	RPM	Dry Weight (kg)
3YM30AE	1.266	29.1	3200	127
4JH45	2.19	45	3000	220
4JH57	2.19	57	3000	220
4JH80	2	80	3200	229
4JH110	2	110	3200	229
4LHA-STP	3.455	240	3300	365
4LV	2.755	150 - 250	3500 - 3800	343
6LPA-STP2	4.164	315	3800	408
6LY	5.813	400 - 440	3300	585
6LY2A-STP	5.813	440	3300	535
8LV	4.46	320 - 370	3800	435
6AYEM-GT	20.4	911	1938	2365

John Deere



Models	Displacement (Litres)	Horsepower (MHP)	RPM	Dry Weight (kg)
4045DFM70	4.5	80	2500	437
4045TFM50	4.5	105 - 150	2300 - 2600	461
4045TFM75	4.5	107 - 135	2400 - 2600	462
4045TFM85	4.5	100 - 125	2400 - 2500	507
4045TFM85	4.5	160 - 225	2300 - 2600	578
4045SFM85	4.5	275 - 315	2600 - 2800	558
6068TFM50	6.8	154 - 225	2300 - 2600	730
6068SFM50	6.8	236 - 300	2400 - 2500	776
6068TFM75	6.8	158 - 201	2400 - 2600	730
6068AFM85	6.8	230 - 330	2300 - 2600	787
6068SFM85	6.8	249 - 400	2400 - 2800	763
6090AFM85	9	285 - 425	2100 - 2400	1055
6090SFM85	9	325 - 550	2100 - 2500	1056
6135AFM85	13.5	365 - 575	1800 - 2100	1410
6135SFM85	13.5	425 - 750	1800 - 2200	1426



Workboat Engines



Shire 15WB

13.6 hp @ 3600 rpm
Displacement : 570 cc
Dry Weight : 115 kg



Shire 20WB

21 hp @ 3600 rpm
Displacement : 854 cc
Dry Weight : 160 kg



Shire 25WB

25 hp @ 3000 rpm
Displacement : 1266 cc
Dry Weight : 139 kg



Shire 30WB

29 hp @ 3200 rpm
Displacement : 1266 cc
Dry Weight : 153 kg



Shire 30WBD

30 hp @ 3000 rpm
Displacement : 1331 cc
Dry Weight : 153 kg



Shire 40WB

40 hp @ 2600 rpm
Displacement : 2190 cc
Dry Weight : 270 kg



Shire 50WB

50 hp @ 3000 rpm
Displacement : 2190 cc
Dry Weight : 284 kg



Shire 70WB

70 hp @ 2500 rpm
Displacement : 3319 cc
Dry Weight : 400 kg



Shire 85WB

85 hp @ 2500 rpm
Displacement : 4500 cc
Dry Weight : 545 kg



Shire 130WB

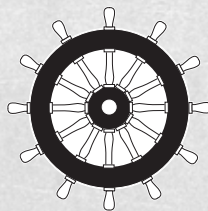
130 hp @ 2500 rpm
Displacement : 6800 cc
Dry Weight : 845 kg

BARRUS

Barrus' commitment to research and development is reflected in the substantial investment it has made in creating one of the world's largest custom engine building facilities.



- DUTCH NAVY
- FRENCH NAVY
- IRISH NAVY
- NORWEGIAN NAVY
- SOUTH KOREAN NAVY
- TAIWAN NAVY
- SULTAN OF OMAN SPECIAL FORCES
- UK MINISTRY OF DEFENCE
- USA DEPARTMENT OF DEFENCE
- BAE SYSTEMS
- MARITIME & COASTGUARD AGENCY (MCA)
- NORTH STAR SHIPPING (FAST RESCUE CRAFT)
- NORTHERN AQUA POWER (T/A DELTA)
- PORT OF LONDON AUTHORITY
- RNLI (TRADING) LTD
- UK FIRE & RESCUE SERVICES – MARINE UNITS
- UK POLICE UNDERWATER SEARCH & RESCUE UNITS
- UK INDEPENDENT SURF LIFE SAVING CLUBS
- UK INDEPENDENT LIFEBOAT TRUSTS



Suppliers of SOLAS approved
outboard & inboard engines.



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