ALPHA MARINE ENGINES

20, 30, 40, 55 TURBO

Variable speed; maximum power at flywheel at 3000 r/min: 14.9—41.0 kW; 20-55 bhp

DURABLE, ECONOMICAL LIQUID COOLED MARINE DIESEL ENGINES

SUITABLE FOR:

- small offshore boats and work boats
- pleasure boats and hire fleets
- propulsion or auxiliary applications

BASIC ENGINE CHARACTERISTICS

- 2, 3 or 4 cylinders
- raw water heat-exchanger cooling
- direct or indirect injection
- naturally aspirated or turbocharged
- durable, economical and reliable
- low fuel consumption
- long service periods

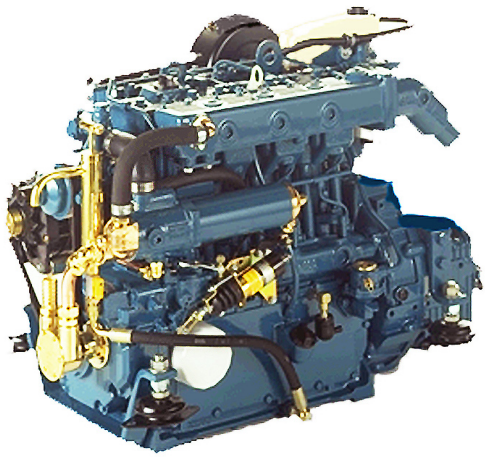
DESIGN FEATURES AND EQUIPMENT

- heat exchanger
- water cooled exhaust manifold
- raw water pump
- fuel filter/agglomerator
- self-bleed fuel system with fuel lift pump
- individual fuel injection pump for each cylinder
- high level oil filler and dipstick
- raw water cooling system pump
- operators' handbook

OPTIONAL ITEMS

A range of options enables your engine to be built to your exact needs:

- 12 volt starter motor (insulated earth return)



ALPHA MARINE ENGINE

- 55 amp alternator
- range of gearboxes
- choice of air cleaners
- high level bearers
- start panels
- drive adaptors
- high output alternator
- wiring loom
- protection systems
- anti-vibration mountings
- sump lubricating oil drain pump
- paint colour

POWER OUTPUTS [1]												
Injection D=direct I=indirect			D	I	D	I	D	I	D	I	D	I
Model	Power	r/min	1500		1800		2000		2500		3000	
20	Continuous	kW	6.8	7.4	8.5	9.1	9.6	10.1	11.8	12.2	13.4	13.4
		bhp	9.1	9.9	11.4	12.2	12.9	13.5	15.8	16.3	18.0	18.0
	Fuel Stop	kW	7.5	8.1	9.4	10.0	10.6	11.1	13.0	13.4	14.7	14.7
		bhp	10.0	10.9	12.6	13.4	14.2	14.9	17.4	18.0	19.7	19.7
30	Continuous	kW	10.3	11.1	12.8	13.6	14.5	15.2	17.7	18.3	20.1	20.1
		bhp	13.8	14.9	17.2	18.2	19.4	20.4	23.7	24.5	27.0	26.9
	Fuel Stop	kW	11.3	12.2	14.1	15.0	15.9	16.7	19.5	20.1	22.1	22.1
		bhp	15.1	16.4	18.9	20.1	21.3	22.3	26.1	26.9	29.6	29.6
40	Continuous	kW	13.6	14.7	17.0	18.2	19.3	20.2	23.6	24.4	26.8	26.8
		bhp	18.2	19.7	22.7	24.4	25.9	27.0	31.6	32.7	35.9	35.9
	Fuel Stop	kW	15.0	16.2	18.7	20.0	21.2	22.2	26.0	26.8	29.5	29.5
		bhp	20.1	21.7	25.1	26.8	28.4	30.0	34.8	35.9	39.5	39.5
55 Turbo	Continuous	kW	20.7		26.4		28.7		34.3		37.5	
		bhp	27.7		35.3		38.5		46.0		50.2	
	Fuel Stop	kW	22.3		28.5		31.0		36.7		40.2	
		bhp	29.9		38.2		41.5		49.1		53.9	

1. Powers, measured at flywheel, are for variable speed builds. Fixed speed builds also available.

Key to Emissions Compliance

EU Stage 3A only	
EU Stage 3A, USA EPA Interim Tier 4	

TORQUE				
Model	20	30	40	55
r/min	1800	1800	1800	2000
Nm	53	80	106	155

RATING DEFINITIONS, TO ISO 3046

ISO Standard Conditions
Barometric pressure 100 kPa
Relative humidity 30%
Ambient temperature at air inlet manifold 25°C

1. Fixed speed power: continuous power (ICN)
The power in kW which the engine is capable of delivering continuously at the stated crankshaft speed, under ISO standard conditions, measured at the flywheel without power-absorbing accessories, provided that the engine is overhauled and maintained in good operating condition and that fuel to BS EN 590 Class A1 or A2, and lubricating oils to the correct performance specification and viscosity classification as recommended by Lister Petter Limited, are used.

2. Fixed speed power: overload power (ICXN)
The maximum power in kW which the engine is capable of delivering intermittently at the stated crankshaft speed for a period not exceeding one hour in any period of twelve hours' continuous running, immediately after working at the continuous power, under ISO standard conditions and with the provisions specified in (1) above.

3. Variable speed: fuel-stop power, continuous power (IFN)
The maximum power in kW which an engine is capable of delivering continuously at stated crankshaft speed, under ISO standard conditions and with the provisions specified in (1) above, with the fuel limited so that the fuel stop power cannot be exceeded.

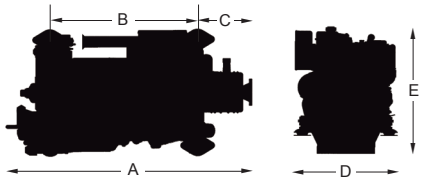
4. Variable speed: fuel-stop power, intermittent power (IOFN)
The maximum power in kW which an engine is capable of delivering intermittently at the stated crankshaft speed, for a period not exceeding one hour in any period of twelve hours' continuous running, with the fuel limited so that the fuel stop power cannot be exceeded, immediately after running at the rating in (3) above, under ISO standard conditions and with the provisions specified in (1) above.

5. De-rating
For non-standard site conditions, reference should be made to relevant BS, ISO and DIN standards. The overload capability applies to a fully run-in engine. This is normally attained after a running period of about 50 hours.

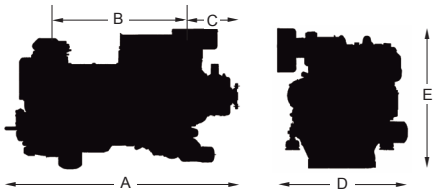
TECHNICAL DATA					
Model		20	30	40	55 T
Cylinders		2	3	4	4
Bore	mm	86	86	86	86
Stroke	mm	80	80	80	80
Total cylinder capacity	cm^3	930	1395	1860	1860
Off load idle speed	r/min	900	900	900	900
Fuel consumption (approx) at 2000 r/min	litre/hr	2.5	3.8	5.0	7.1
Oil sump capacity	litre	3.3	4.5	5.6	5.6
Max. installation angle (gearbox down)		20°	20°	20°	20°
Propeller rotation viewed from stern in forward gear		Clockwise			

APPROXIMATE DIMENSIONS AND WEIGHT [1]

20
30
40



55
Turbo



Dimension (mm)	20	30	40	55 T
Length A	732	869	969	922
Length B	377	477	577	577
Length C	180	217	217	217
Width D	490	490	490	565
Height E	607	607	607	605
Dry Weight (kg)	150	180	210	230

1. The dimensions (mm) given are for guidance only and must not be used for installation purposes.

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Long Street, Dursley, Gloucestershire, GL11 4HS, England
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DESIGN FEATURES AND EQUIPMENT

- heat exchanger
- water cooled exhaust manifold
- raw water pump
- fuel filter/agglomerator
- self-bleed fuel system with fuel lift pump
- individual fuel injection pump for each cylinder
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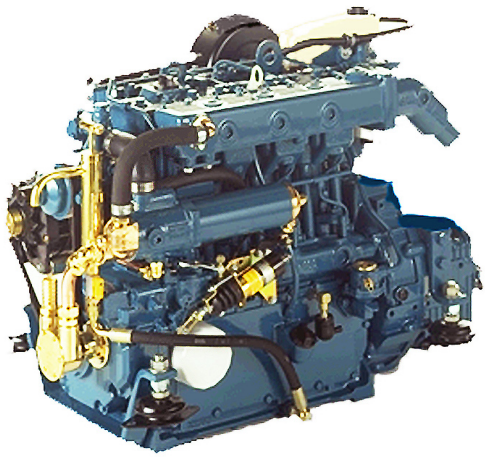

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- range of gearboxes
- choice of air cleaners
- high level bearers
- start panels
- drive adaptors
- high output alternator
- wiring loom
- protection systems
- anti-vibration mountings
- sump lubricating oil drain pump
- paint colour

POWER OUTPUTS [1]												
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		bhp	9.1	9.9	11.4	12.2	12.9	13.5	15.8	16.3	18.0	18.0
	Fuel Stop	kW	7.5	8.1	9.4	10.0	10.6	11.1	13.0	13.4	14.7	14.7
		bhp	10.0	10.9	12.6	13.4	14.2	14.9	17.4	18.0	19.7	19.7
30	Continuous	kW	10.3	11.1	12.8	13.6	14.5	15.2	17.7	18.3	20.1	20.1
		bhp	13.8	14.9	17.2	18.2	19.4	20.4	23.7	24.5	27.0	26.9
	Fuel Stop	kW	11.3	12.2	14.1	15.0	15.9	16.7	19.5	20.1	22.1	22.1
		bhp	15.1	16.4	18.9	20.1	21.3	22.3	26.1	26.9	29.6	29.6
40	Continuous	kW	13.6	14.7	17.0	18.2	19.3	20.2	23.6	24.4	26.8	26.8
		bhp	18.2	19.7	22.7	24.4	25.9	27.0	31.6	32.7	35.9	35.9
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55 Turbo	Continuous	kW	20.7		26.4		28.7		34.3		37.5	
		bhp	27.7		35.3		38.5		46.0		50.2	
	Fuel Stop	kW	22.3		28.5		31.0		36.7		40.2	
		bhp	29.9		38.2		41.5		49.1		53.9	

1. Powers, measured at flywheel, are for variable speed builds. Fixed speed builds also available.

Key to Emissions Compliance

EU Stage 3A only	
EU Stage 3A, USA EPA Interim Tier 4	

TORQUE				
Model	20	30	40	55
r/min	1800	1800	1800	2000
Nm	53	80	106	155

RATING DEFINITIONS, TO ISO 3046

ISO Standard Conditions
Barometric pressure 100 kPa
Relative humidity 30%
Ambient temperature at air inlet manifold 25°C

1. Fixed speed power: continuous power (ICN)
The power in kW which the engine is capable of delivering continuously at the stated crankshaft speed, under ISO standard conditions, measured at the flywheel without power-absorbing accessories, provided that the engine is overhauled and maintained in good operating condition and that fuel to BS EN 590 Class A1 or A2, and lubricating oils to the correct performance specification and viscosity classification as recommended by Lister Petter Limited, are used.

2. Fixed speed power: overload power (ICXN)
The maximum power in kW which the engine is capable of delivering intermittently at the stated crankshaft speed for a period not exceeding one hour in any period of twelve hours' continuous running, immediately after working at the continuous power, under ISO standard conditions and with the provisions specified in (1) above.

3. Variable speed: fuel-stop power, continuous power (IFN)
The maximum power in kW which an engine is capable of delivering continuously at stated crankshaft speed, under ISO standard conditions and with the provisions specified in (1) above, with the fuel limited so that the fuel stop power cannot be exceeded.

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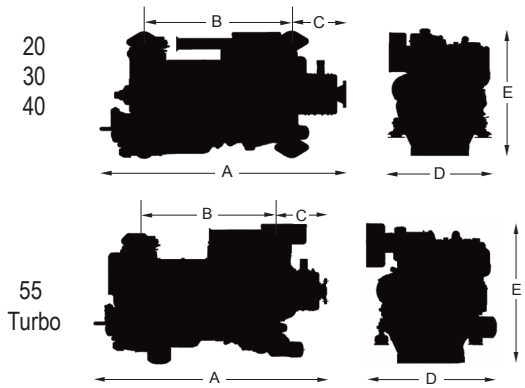
The maximum power in kW which an engine is capable of delivering intermittently at the stated crankshaft speed, for a period not exceeding one hour in any period of twelve hours' continuous running, with the fuel limited so that the fuel stop power cannot be exceeded, immediately after running at the rating in (3) above, under ISO standard conditions and with the provisions specified in (1) above.

5. De-rating
For non-standard site conditions, reference should be made to relevant BS, ISO and DIN standards. The overload capability applies to a fully run-in engine. This is normally attained after a running period of about 50 hours.

TECHNICAL DATA					
Model		20	30	40	55 T
Cylinders		2	3	4	4
Bore	mm	86	86	86	86
Stroke	mm	80	80	80	80
Total cylinder capacity	cm^3	930	1395	1860	1860
Off load idle speed	r/min	900	900	900	900
Fuel consumption (approx) at 2000 r/min	litre/hr	2.5	3.8	5.0	7.1
Oil sump capacity	litre	3.3	4.5	5.6	5.6
Max. installation angle (gearbox down)		20°	20°	20°	20°
Propeller rotation viewed from stern in forward gear		Clockwise			

APPROXIMATE DIMENSIONS AND WEIGHT [1]



Dimension (mm)	20	30	40	55 T
Length A	732	869	969	922
Length B	377	477	577	577
Length C	180	217	217	217
Width D	490	490	490	565
Height E	607	607	607	605
Dry Weight (kg)	150	180	210	230

1. The dimensions (mm) given are for guidance only and must not be used for installation purposes.

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DISTRIBUTOR'S ADDRESS

CANAL STAR ENGINES

18, 27, 36, 45

Variable speed; maximum power at flywheel at 3000 r/min: 14.9—41.0 kW; 20—55 bhp

LIQUID COOLED MARINE PROPULSION DIESEL ENGINES FOR CANAL BOATS

SUITABLE FOR:

- canal narrowboats and barges
- pleasure boats and hire fleets
- any other keel or skin tank cooled vessels

BASIC ENGINE CHARACTERISTICS

- 2, 3 or 4 cylinders
- liquid cooled
- indirect or direct injection
- naturally aspirated or turbocharged (45 only)
- durable, economical and reliable
- low fuel consumption
- long service periods
- quiet running, low vibration, low emissions

DESIGN FEATURES AND EQUIPMENT

- Newage or ZF gearbox
- air cleaner
- fresh water cooling suitable for skin tanks
- fuel filter/agglomerator
- 12 volt starter motor
- sump drain pump
- anti-vibration mountings
- high level bearers
- calorifier connections providing fast domestic hot water warm-up
- traditional 'Lister' green paint finish

OPTIONAL ITEMS

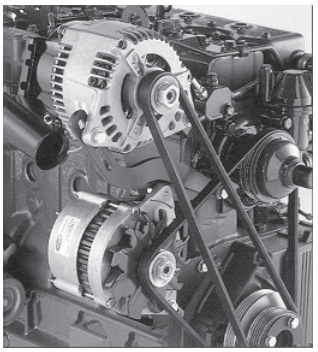
A range of options enables your Alpha marine engine to be built to your exact needs:

- choice of gearboxes (see above)
- choice of air cleaners
- high output alternator, 50 or 70 Amp (dependent on model)
- twin alternators (see illustration)

CANAL STAR ENGINE

- start panels
- instrument panel with hour recorder, key switch and visual and audible warnings
- drive adaptors
- wiring loom
- protection systems

TWIN ALTERNATORS ARE AVAILABLE AS AN OPTION



TECHNICAL DATA					
Canal Star model		18	27	36	45
Cylinders		2	3	4	4
Bore	mm	86	86	86	86
Stroke	mm	80	80	80	80
Total cylinder capacity	cm³	930	1395	1860	1860
Off load idle speed	r/min	800	800	800	800
Fuel consumption (approx.) at 1500 r/min	l/hr	1.2	1.8	2.4	2.7
Oil sump capacity	litres	3.3	4.5	5.6	5.6
Propeller rotation viewed from stern in forward gear		Clockwise			

Note: 1. The dimensions (mm) given are for guidance only and must not be used for installation purposes.

RATING DEFINITIONS, TO ISO 3046

ISO Standard Conditions

Barometric pressure	*100 kPa*
Relative humidity	*30%*
Ambient temperature at air inlet manifold	*25ºC*

1. Fixed speed power: continuous power (ICN)

The power in kW which the engine is capable of delivering continuously at the stated crankshaft speed, under ISO standard conditions, measured at the flywheel without power-absorbing accessories, provided that the engine is overhauled and maintained in good operating condition and that fuel to BS EN 590 Class A1 or A2, and lubricating oils to the correct performance specification and viscosity classification as recommended by Lister Petter Limited, are used.

2. Fixed speed power: overload power (ICXN)

The maximum power in kW which the engine is capable of delivering intermittently at the stated crankshaft speed for a period not exceeding one hour in any period of twelve hours' continuous running, immediately after working at the continuous power, under ISO standard conditions and with the provisions specified in (1) above.

3. Variable speed: fuel-stop power, continuous power (IFN)

The maximum power in kW which an engine is capable of delivering continuously at stated crankshaft speed, under ISO standard conditions and with the provisions specified in (1) above, with the fuel limited so that the fuel stop power cannot be exceeded.

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5. De-rating

For non-standard site conditions, reference should be made to relevant BS, ISO and DIN standards. The overload capability applies to a fully run-in engine. This is normally attained after a running period of about 50 hours.

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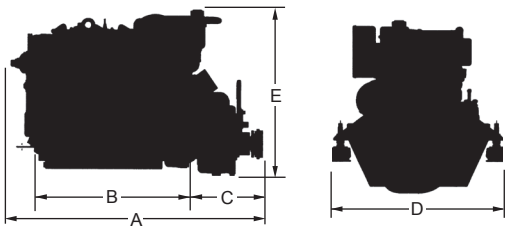

Canal Star model		18	27	36	45
Overall Length A	mm	797	897	997	997
	in.	31.4	35.1	39.3	39.3
Length B	mm	439	539	639	639
	in.	17.3	21.2	25.2	25.2
Length C	mm	179	179	179	179
	in.	7.0	7.0	7.0	7.0
Width D	mm	647	647	647	647
	in.	25.5	25.5	25.5	25.5
Height E	mm	653	653	653	653
	in.	25.7	25.7	25.7	25.7
Dry weight	kg	150	180	210	210
	lb	331	397	463	463

POWER OUTPUTS

	Model	r/min	2600	3000
Maximum power at flywheel	18	kW	13.4	
		bhp	18.0	
	27	kW	20.1	
		bhp	27.0	
	36	kW	26.8	
		bhp	36.0	
	45	kW		33.6
		bhp		45.0

TORQUE

	Model	r/min	1800	2800
Maximum torque at flywheel	18	Nm	53	
	27	Nm	80	
	36	Nm	106	
	45	Nm		112

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- choice of air cleaners
- high output alternator, 50 or 70 Amp (dependent on model)
- twin alternators (see illustration)

CANAL STAR ENGINE

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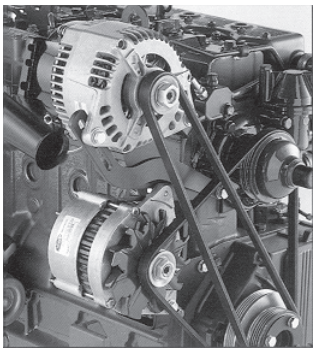

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Note: 1. The dimensions (mm) given are for guidance only and must not be used for installation purposes.

RATING DEFINITIONS, TO ISO 3046

ISO Standard Conditions

Barometric pressure	*100 kPa*
Relative humidity	*30%*
Ambient temperature at air inlet manifold	*25ºC*

1. Fixed speed power: continuous power (ICN)

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2. Fixed speed power: overload power (ICXN)

The maximum power in kW which the engine is capable of delivering intermittently at the stated crankshaft speed for a period not exceeding one hour in any period of twelve hours' continuous running, immediately after working at the continuous power, under ISO standard conditions and with the provisions specified in (1) above.

3. Variable speed: fuel-stop power, continuous power (IFN)

The maximum power in kW which an engine is capable of delivering continuously at stated crankshaft speed, under ISO standard conditions and with the provisions specified in (1) above, with the fuel limited so that the fuel stop power cannot be exceeded.

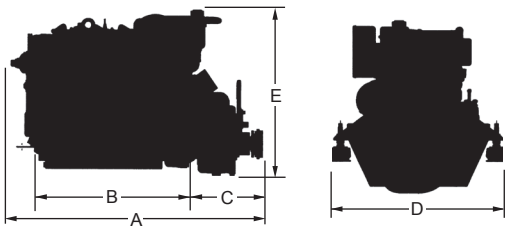
4. Variable speed: fuel-stop power, intermittent power (IOFN)

The maximum power in kW which an engine is capable of delivering intermittently at the stated crankshaft speed, for a period not exceeding one hour in any period of twelve hours' continuous running, with the fuel limited so that the fuel stop power cannot be exceeded, immediately after running at the rating in (3) above, under ISO standard conditions and with the provisions specified in (1) above.

5. De-rating

For non-standard site conditions, reference should be made to relevant BS, ISO and DIN standards. The overload capability applies to a fully run-in engine. This is normally attained after a running period of about 50 hours.

APPROXIMATE DIMENSIONS AND WEIGHT [1]



Canal Star model		18	27	36	45
Overall Length A	mm	797	897	997	997
	in.	31.4	35.1	39.3	39.3
Length B	mm	439	539	639	639
	in.	17.3	21.2	25.2	25.2
Length C	mm	179	179	179	179
	in.	7.0	7.0	7.0	7.0
Width D	mm	647	647	647	647
	in.	25.5	25.5	25.5	25.5
Height E	mm	653	653	653	653
	in.	25.7	25.7	25.7	25.7
Dry weight	kg	150	180	210	210
	lb	331	397	463	463

POWER OUTPUTS

	Model	r/min	2600	3000
Maximum power at flywheel	18	kW	13.4	
		bhp	18.0	
	27	kW	20.1	
		bhp	27.0	
	36	kW	26.8	
		bhp	36.0	
	45	kW		33.6
		bhp		45.0

TORQUE

	Model	r/min	1800	2800
Maximum torque at flywheel	18	Nm	53	
	27	Nm	80	
	36	Nm	106	
	45	Nm		112

UK

LISTER PETTER LIMITED
Long Street, Dursley, Gloucestershire, GL11 4HS, England
TEL: +44 (0)1453 544141; FAX: +44 (0)1453 546732
E-mail: sales@lister-petter.co.uk
www.lister-petter.co.uk

UAE

LISTER PETTER FZE
Dubai Silicon Oasis Headquarters,
PO Box 341077, Dubai, UAE
TEL: +971 4 372 4331; FAX: +971 4 372 4318
E-mail: sales@listerpettergroup.com
www.lister-petter.co.uk

DISTRIBUTOR'S ADDRESS

TR MARINE ENGINES

TR2, TR3 MARINE

Maximum power output: 25 kW; 34 bhp
Speed range: 1500—2500 r/min

AIR COOLED MARINE DIESEL ENGINES FOR LEISURE AND COMMERCIAL CRAFT

SUITABLE FOR:

- work boats
- pleasure boats
- propulsion and auxiliary applications

BASIC ENGINE CHARACTERISTICS

- 2 or 3 cylinders
- air cooled
- direct injection
- naturally aspirated
- durable, economical and reliable
- low fuel consumption and long service periods

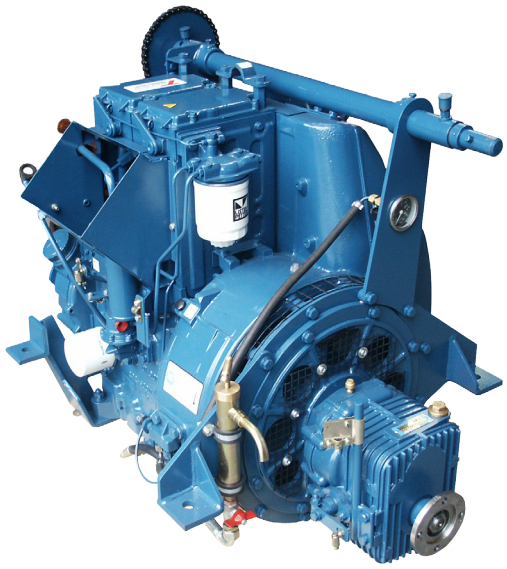
DESIGN FEATURES AND EQUIPMENT

- integral flywheel fan air cooling
- electric or hand start (see options)
- engine mounted air cleaner
- fuel filter / agglomerator
- fuel lift pump and steel fuel lines
- high level dipstick
- operators' handbook

OPTIONAL ITEMS

The range of options to enable your TR marine engine to be built to your exact needs includes:

- 12-volt starter motor (insulated earth return design) and 55 Amp marine alternator
- raised hand starting at gear end
- sump drain pump
- engine bearers
- range of gearboxes
- vibration isolating engine mounts



TR MARINE ENGINE

- hot air outlet duct adaptor
- flexible coupling disc
- panel with warning lights, alarms and keyswitch
- engine wiring
- Morse type fittings

WARRANTY

- standard: two years from delivery
- optional five year limited warranty

Conditions apply.

POWER OUTPUTS TO ISO 3046

Variable Speed		r/min	1500[4]	1800[4]	2000	2500
TR2	Continuous Power	kW	11.0	13.1	14.5	17.3
		bhp	14.8	17.6	19.4	23.2
	Fuel Stop [3]	kW	12.1	14.4	16.0	19.0
		bhp	16.2	19.3	21.5	25.5
TR3	Continuous Power	kW	16.8	20.2	22.2	25.9
		bhp	22.5	27.1	29.8	34.7
	Fuel Stop [3]	kW	18.5	22.2	24.4	28.5
		bhp	24.8	29.8	32.7	38.2

Notes: 1. The dimensions (mm) given are for guidance only and must not be used for installation purposes. 2. Power ratings (measured at the flywheel) and fuel consumptions, apply to a fully run-in, non-derated engine without power absorbing accessories or transmission equipment. 3. The overload capability applies to a fully run-in engine. This is normally attained after a running period of about 50 hours. 4. For fixed speed engines the powers at these speeds are the same.

RATING DEFINITIONS, TO ISO 3046

ISO Standard Conditions

Barometric pressure	*100 kPa*
Relative humidity	*30%*
Ambient temperature at air inlet manifold	*25ºC*

1. Fixed speed power: continuous power (ICN)

The power in kW which the engine is capable of delivering continuously at the stated crankshaft speed, under ISO standard conditions, measured at the flywheel without power-absorbing accessories, provided that the engine is overhauled and maintained in good operating condition and that fuel to BS EN 590 Class A1 or A2, and lubricating oils to the correct performance specification and viscosity classification as recommended by Lister Petter Limited, are used.

2. Fixed speed power: overload power (ICXN)

The maximum power in kW which the engine is capable of delivering intermittently at the stated crankshaft speed for a period not exceeding one hour in any period of twelve hours' continuous running, immediately after working at the continuous power, under ISO standard conditions and with the provisions specified in (1) above.

3. Variable speed: fuel-stop power, continuous power (IFN)

The maximum power in kW which an engine is capable of delivering continuously at stated crankshaft speed, under ISO standard conditions and with the provisions specified in (1) above, with the fuel limited so that the fuel stop power cannot be exceeded.

4. Variable speed: fuel-stop power, intermittent power (IOFN)

The maximum power in kW which an engine is capable of delivering intermittently at the stated crankshaft speed, for a period not exceeding one hour in any period of twelve hours' continuous running, with the fuel limited so that the fuel stop power cannot be exceeded, immediately after running at the rating in (3) above, under ISO standard conditions and with the provisions specified in (1) above.

5. De-rating

For non-standard site conditions, reference should be made to relevant BS, ISO and DIN standards. The overload capability applies to a fully run-in engine. This is normally attained after a running period of about 50 hours.

TECHNICAL DATA

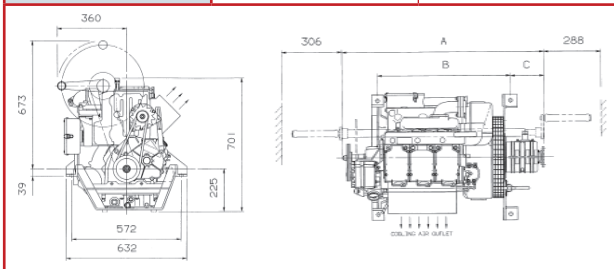
		TR2 Marine	TR3 Marine
Cylinders		2	3
Bore x Stroke	mm	98.4 x 101.6	
Total cylinder capacity	cm^3	1550	2320
Maximum power at flywheel at 2500 r/min (continuous)	bhp	23.2	34.7
Max. torque at flywheel (with engine at 2500 r/min)	Nm	72.6	108.9
Off load idle speed	r/min	850	850
Fuel consumption (approx) at 75% load, 2000 r/min	litre/hr	3.2	4.7
Oil sump capacity	litre	4	6
Net weight (dry)	kg	185	230
Max. installation angle (gearbox down)		15°	15°
Propeller rotation (viewed from the stern in forward gear)		Clockwise	

TORQUE TO ISO 3046

Variable Speed		r/min	1500	1800	2000	2500
TR2	Fuel Stop [3]	Nm	77.0	76.4	76.4	72.6
TR3		Nm	117.8	117.8	116.5	108.9

APPROXIMATE DIMENSIONS [1]

	TR2 Marine	TR3 Marine
A	897	1024
B	548	675
C	158	170
D	23	33



The illustrations show the raised hand start which is an optional accessory. D is the distance of gearbox output centre line below the underside of the engine mounts.

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LISTER PETTER LIMITED
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Dubai Silicon Oasis Headquarters,
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