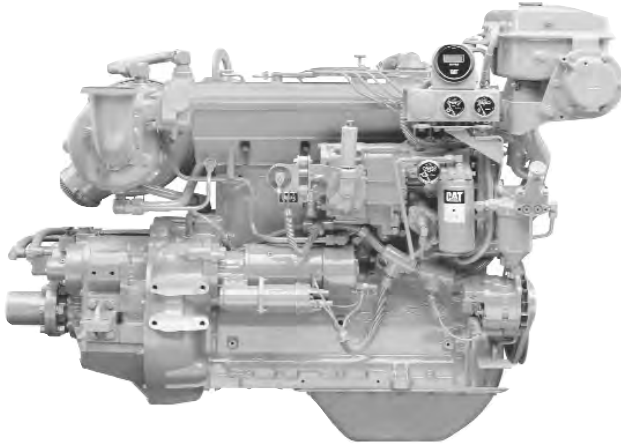




# Marine Propulsion Engine 3304B

123 kW (165 bhp) 167 mhp @ 2200 rpm



Shown with Accessory Equipment

## SPECIFICATIONS

### I-4, 4-Stroke-Cycle-Diesel

Emissions	Non-IMO
Displacement	7 L (425 cu. in.)
Bore	121 mm (4.8 in.)
Stroke	152 mm (6.0 in.)
Aspiration	Turbocharged
Governor	Hydra-mechanical
Engine Weight, Net Dry (approx)	
Heat Exchanger Cooled	810 kg (1786 lb)
Keel Cooled	768 kg (1690 lb)
Capacity for Liquids	
Cooling System	12.9 L (3.4 U.S. gal)
Lube Oil System (refill)	19.0 L (5.0 U.S. gal)
Oil Change Interval	250 hr
Caterpillar DEO 10W30 or 15W40	
Rotation (from flywheel end)	Counterclockwise

## STANDARD EQUIPMENT

### Air Inlet System

Regular duty single stage dry air cleaner

### Cooling System

Gear driven self-priming auxiliary sea water pump with rubber impeller (heat exchanger engines only), gear driven centrifugal jacket water pump, engine oil cooler, expansion tank, engine-mounted heat exchanger with removable tube bundle (heat exchanger engines only), thermostat and housing, transmission oil cooler

### Exhaust System

Watercooled manifold and turbocharger; dry elbow and flange, 102 mm (4 in.)

### Flywheel and Flywheel Housing

SAE No. 2 (156 teeth)

### Fuel System

Fuel priming pump, fuel transfer pump, fuel filter, flexible fuel lines

### Instruments

Fuel pressure gauge, service meter, heavy-duty tachometer drive

### Lube System

Top-mounted crankcase breather, LH oil filter and oil level gauge

### Mounting System

Front support

### General

Caterpillar yellow paint, lifting eyes

## ACCESSORY EQUIPMENT

Air Starting Motor

Alarm Contactor (Oil Pressure, Water Temperature)

12V 51 Amp, 24V 35 Amp, 24V 60 Amp Alternator

Auxiliary Drive Pulley

Digital Tachometer

Double Wall Fuel Lines

Duplex Fuel Filters

Electric Overspeed Shutoff

Electric Starting Motor

Ether Starting Aid

Exhaust Elbows, Pipes, Rain Caps, Flexible Fittings

Front Enclosed Clutch

Fuel Ratio Control

Hydraulic Pump Drive

Magnetic Pickup

Manual Shutoff

Pilot House Instrument Panel

Primary Fuel Filter/Water Separator

Remote-Mounted Pilot House Controls

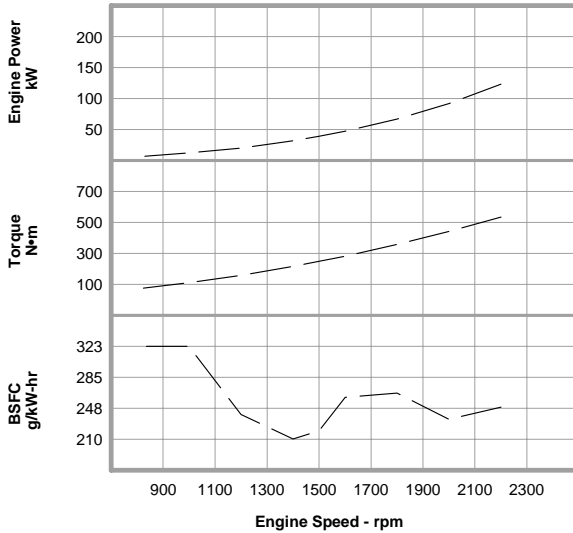
Remote Positive Locking Governor Control

Solenoid Shutoffs

Spare Parts Kit

**PERFORMANCE CURVES**

**C Rating — TM1529-02**

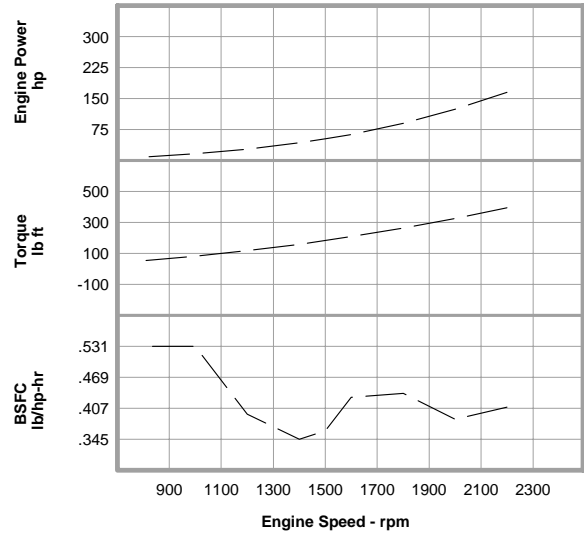


Metric Maximum Power  
Prop Demand 123 kW

**Performance Data**

	Engine Speed rpm	Engine Power kW	Engine Torque N·m	BSFC g/kW-hr	Fuel Rate L/hr
<b>Prop Demand Data</b>	2200	123	534	249.0	36.5
	2000	92	441	234.0	25.8
	1800	67	357	266.0	21.4
	1600	47	282	261.0	14.7
	1500	39	248	220.0	10.2
	1400	32	216	210.0	7.9
	1200	20	159	240.0	5.7
	1000	12	110	323.0	4.4
	800	6	71	323.0	2.3

Cubic prop demand curve with 3.0 exponent for displacement hulls only.

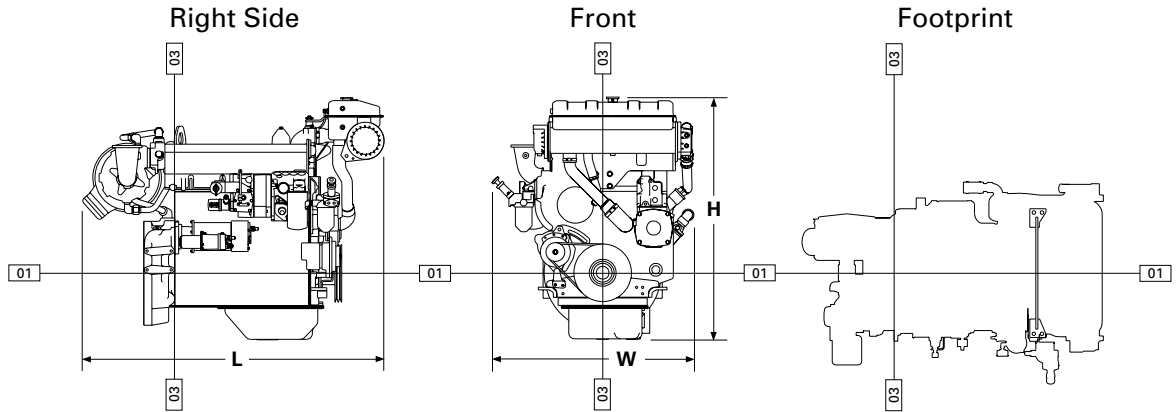


English Maximum Power  
Prop Demand 165 hp

**Performance Data**

	Engine Speed rpm	Engine Power hp	Engine Torque lb ft	BSFC lb/hp-hr	Fuel Rate gph
<b>Prop Demand Data</b>	2200	165	394	.409	9.6
	2000	124	325	.385	6.8
	1800	90	263	.437	5.7
	1600	63	208	.429	3.9
	1500	52	183	.362	2.7
	1400	43	159	.345	2.1
	1200	27	117	.395	1.5
	1000	16	81	.531	1.2
	800	8	52	.531	.6

Power produced at the flywheel will be within standard tolerances up to 50°C (122°F) combustion air temperature measured at the air cleaner inlet, and fuel temperature up to 52°C (125°F) measured at the fuel filter base. Power rated in accordance with NMMA procedure as crankshaft power. Reduce crankshaft power by 3% for propeller shaft power.



**DIMENSIONS\***

	<b>mm</b>	<b>in.</b>
<b>Overall Length</b>	1420.9	55.9
Length from front to rear face of block	986.6	38.8
Length from rear face of block to back of flywheel housing	146.3	5.8
<b>Overall Height</b>	1141.3	44.9
Height from crankshaft centerline to top of engine	827.7	32.6
Height from crankshaft centerline to bottom of engine	313.6	12.4
<b>Overall Width</b>	953.0	37.5
Width from crankshaft centerline to port side (left side)	430.3	16.9
Width from crankshaft centerline to starboard side (right side)	522.7	20.6
	<b>Front</b>	
	<b>mm</b>	<b>in.</b>
Customer mounting hole diameter	16.7	0.7
Width from crankshaft centerline to side	285.8	11.3
Length from rear face of block to front	659.4	26.0
	697.5	27.5

\*Illustrations and dimensions from drawing: 118-7824

**RATING DEFINITIONS AND CONDITIONS**

**C Rating –**

Typical Application . . . Vessels such as ferries, harbor tugs, fishing boats moving at higher speeds out and back (e.g. lobster, crayfish, and tuna), offshore service boats, and also displacement hull yachts and short trip coastal freighters where engine load and speed are cyclical.

- Typical Hours Per Year . . . . . 2000 to 4000
- Time at Rated Speed . . . . . Up to 50%
- Load Factor . . . . . 20 to 80%
- Typical Time at Full Load . . . . . 6 out of 12 hours
- Rated Speed . . . . . 2200 rpm
- Maximum Cruise Speed . . . . . 2100 rpm
- Maximum Continuous Cruise Speed . . . . . 2000 rpm

**Engine Performance Parameters**

- Power . . . . . ±3%
- Specific Fuel Consumption . . . . . ±3%
- Fuel Rate . . . . . ±5%

**Ratings** are based on SAE J1228/ISO8665 standard conditions of 100 kPa (29.61 in. Hg), 25°C (77°F), and 30% relative humidity. These ratings also apply at ISO3046/1, DIN6271/3, and BS5514 conditions of 100 kPa (29.61 in. Hg), 27°C (81°F), and 60% relative humidity.

**Fuel rates** are based on fuel oil of 35° API [16°C (60°F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29°C (85°F) and weighing 838.9 g/L (7.001 lb/U.S. gal).

Additional ratings may be available for specific customer requirements. Consult your Caterpillar representative for additional information.



## 3304B MARINE PROPULSION — 123 bkW (165 bhp)

Performance data is calculated in accordance with tolerances and conditions stated in this specification sheet and is only intended for purposes of comparison with other manufacturers' engines. Actual engine performance may vary according to the particular application of the engine and operating conditions beyond Caterpillar's control.

TM Reference No.: TM1529-02 (6-19-01)

Materials and specifications are subject to change without notice.

The International System of Units (SI) is used in this publication.

LEHM1228-00 (6-01)  
Supersedes LEHM7458

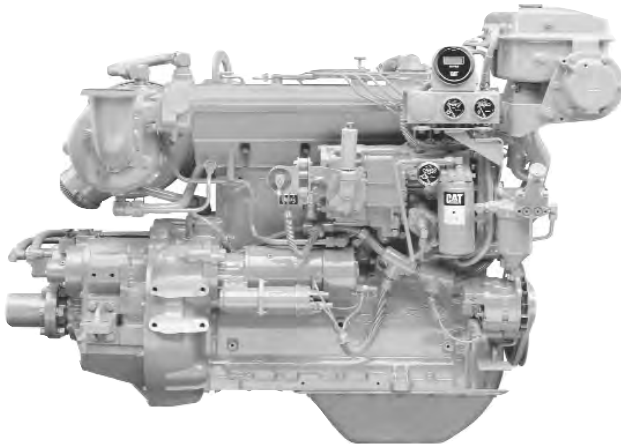
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# Marine Propulsion 3304B Engine

104 bkW (140 bhp) 142 mhp @ 2000 rpm



Shown with Accessory Equipment

## SPECIFICATIONS

### I-4, 4-Stroke-Cycle-Diesel

Emissions	Non-IMO
Displacement	7 L (425 cu. in.)
Bore	121 mm (4.8 in.)
Stroke	152 mm (6.0 in.)
Aspiration	Turbocharged
Governor	Hydra-mechanical
Engine Weight, Net Dry (approx)	
Heat Exchanger Cooled	810 kg (1786 lb)
Keel Cooled	768 kg (1690 lb)
Capacity for Liquids	
Cooling System	12.9 L (3.4 U.S. gal)
Lube Oil System (refill)	19.0 L (5.0 U.S. gal)
Oil Change Interval	250 hr
Caterpillar DEO 10W30 or 15W40	
Rotation (from flywheel end)	Counterclockwise

## STANDARD EQUIPMENT

### Air Inlet System

Regular duty single stage dry air cleaner

### Cooling System

Gear driven self-priming auxiliary sea water pump with rubber impeller (heat exchanger engines only), gear driven centrifugal jacket water pump, engine oil cooler, expansion tank, engine-mounted heat exchanger with removable tube bundle (heat exchanger engines only), thermostat and housing, transmission oil cooler

### Exhaust System

Watercooled manifold and turbocharger; dry elbow and flange, 102 mm (4 in.)

### Flywheel and Flywheel Housing

SAE No. 2 (156 teeth)

### Fuel System

Fuel priming pump, fuel transfer pump, fuel filter, flexible fuel lines

### Instruments

Fuel pressure gauge, service meter, heavy-duty tachometer drive

### Lube System

Top-mounted crankcase breather, LH oil filter and oil level gauge

### Mounting System

Front support

### General

Caterpillar yellow paint, lifting eyes

## ACCESSORY EQUIPMENT

Air Starting Motor

Alarm Contactor (Oil Pressure, Water Temperature)

12V 51 Amp, 24V 35 Amp, 24V 60 Amp Alternator

Auxiliary Drive Pulley

Digital Tachometer

Double Wall Fuel Lines

Duplex Fuel Filters

Electric Overspeed Shutoff

Electric Starting Motor

Ether Starting Aid

Exhaust Elbows, Pipes, Rain Caps, Flexible Fittings

Front Enclosed Clutch

Fuel Ratio Control

Hydraulic Pump Drive

Magnetic Pickup

Manual Shutoff

Pilot House Instrument Panel

Primary Fuel Filter/Water Separator

Remote-Mounted Pilot House Controls

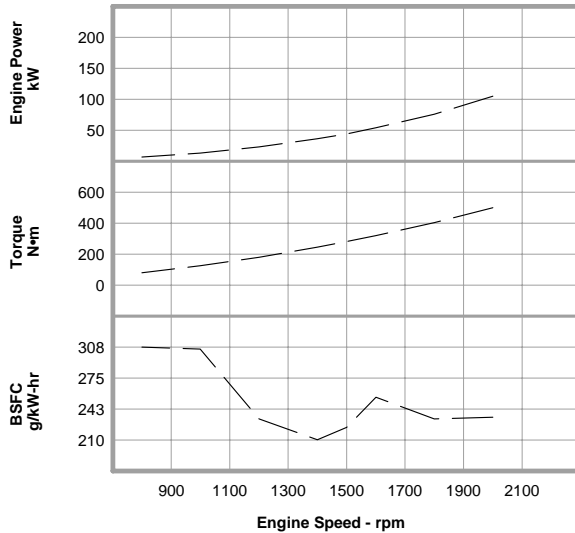
Remote Positive Locking Governor Control

Solenoid Shutoffs

Spare Parts Kit

**PERFORMANCE CURVES**

**B Rating — TM1530-02**

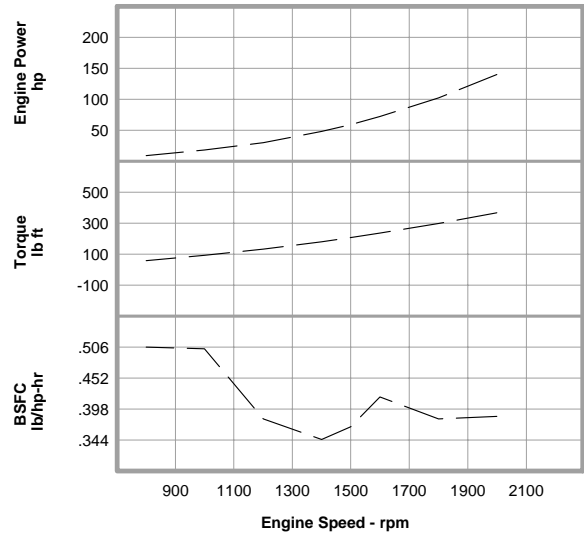


Metric Maximum Power  
Prop Demand **105 kW**

**Performance Data**

	Engine Speed rpm	Engine Power kW	Engine Torque N·m	BSFC g/kW-hr	Fuel Rate L/hr
<b>Prop Demand Data</b>	2000	105	499	234.0	29.2
	1800	76	404	232.0	21.0
	1600	54	319	255.0	16.2
	1500	44	281	223.0	11.7
	1400	36	244	210.0	9.0
	1200	23	180	232.0	6.2
	1000	13	125	306.0	4.8
	800	7	80	308.0	2.5

Cubic prop demand curve with 3.0 exponent for displacement hulls only.

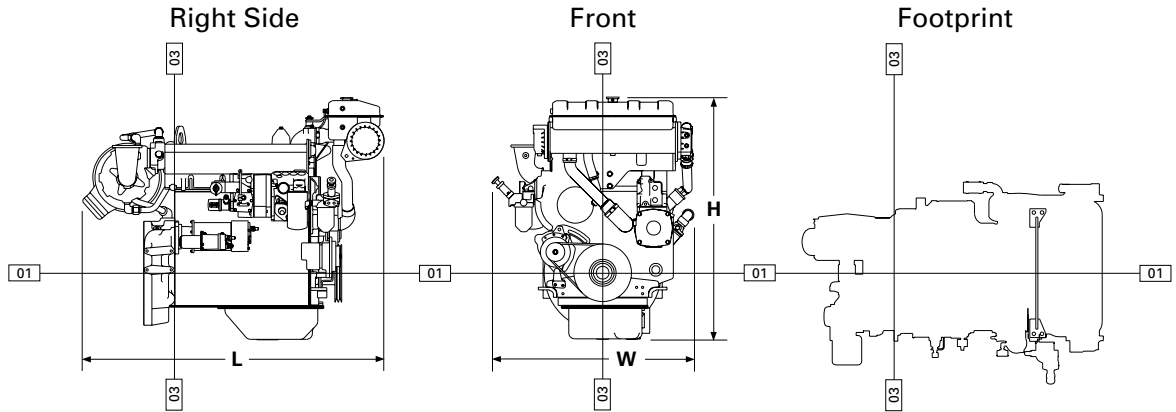


English Maximum Power  
Prop Demand **140 hp**

**Performance Data**

	Engine Speed rpm	Engine Power hp	Engine Torque lb ft	BSFC lb/hp-hr	Fuel Rate gph
<b>Prop Demand Data</b>	2000	140	368	.385	7.7
	1800	102	298	.381	5.5
	1600	72	235	.419	4.3
	1500	59	207	.367	3.1
	1400	48	180	.345	2.4
	1200	30	133	.381	1.6
	1000	18	92	.503	1.3
	800	9	59	.506	.7

Power produced at the flywheel will be within standard tolerances up to 50°C (122°F) combustion air temperature measured at the air cleaner inlet, and fuel temperature up to 52°C (125°F) measured at the fuel filter base. Power rated in accordance with NMMA procedure as crankshaft power. Reduce crankshaft power by 3% for propeller shaft power.



**DIMENSIONS\***

	<b>mm</b>	<b>in.</b>
<b>Overall Length</b>	1420.9	55.9
Length from front to rear face of block	986.6	38.8
Length from rear face of block to back of flywheel housing	146.3	5.8
<b>Overall Height</b>	1141.3	44.9
Height from crankshaft centerline to top of engine	827.7	32.6
Height from crankshaft centerline to bottom of oil pan	313.6	12.4
<b>Overall Width</b>	953.0	37.5
Width from crankshaft centerline to port side (left side)	430.3	16.9
Width from crankshaft centerline to starboard side (right side)	522.7	20.6
	<b>Front</b>	
	<b>mm</b>	<b>in.</b>
Customer mounting hole diameter	16.7	0.7
Width from crankshaft centerline to mounting holes	285.8	11.3
Length from rear face of block to mounting holes	659.4	26.0
	697.5	27.5

\*Illustrations and dimensions from drawing: 118-7824

**RATING DEFINITIONS AND CONDITIONS**

**B Rating –**

Typical Application . . . Vessels such as midwater trawlers, purse seiners, crew and supply boats, ferries, and towboats where locks, sandbars, and curves dictate frequent slowing, and engine load and speed are constant with some cycling.

Typical Hours Per Year . . . . . 3000 to 5000

Time at Rated Speed . . . . . Up to 80%

Load Factor . . . . . 40 to 80%

Typical Time at Full Load . . . . 10 out of 12 hours

Rated Speed . . . . . 2000 rpm

Maximum Cruise Speed . . . . . 1900 rpm

Maximum Continuous Cruise Speed . . . . 1800 rpm

**Engine Performance Parameters**

Power . . . . .	±3%
Specific Fuel Consumption . . . . .	±3%
Fuel Rate . . . . .	±5%

**Ratings** are based on SAE J1228/ISO8665 standard conditions of 100 kPa (29.61 in. Hg), 25°C (77°F), and 30% relative humidity. These ratings also apply at ISO3046/1, DIN6271/3, and BS5514 conditions of 100 kPa (29.61 in. Hg), 27°C (81°F), and 60% relative humidity.

**Fuel rates** are based on fuel oil of 35° API [16°C (60°F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29°C (85°F) and weighing 838.9 g/L (7.001 lb/U.S. gal).

Additional ratings may be available for specific customer requirements. Consult your Caterpillar representative for additional information.



## 3304B MARINE PROPULSION — 104 bkW (140 bhp)

Performance data is calculated in accordance with tolerances and conditions stated in this specification sheet and is only intended for purposes of comparison with other manufacturers' engines. Actual engine performance may vary according to the particular application of the engine and operating conditions beyond Caterpillar's control.

TM Reference No.: TM1530-02 (6-19-01)

Materials and specifications are subject to change without notice.

The International System of Units (SI) is used in this publication.

LEHM1229-00 (6-01)  
Supersedes LEHM7458

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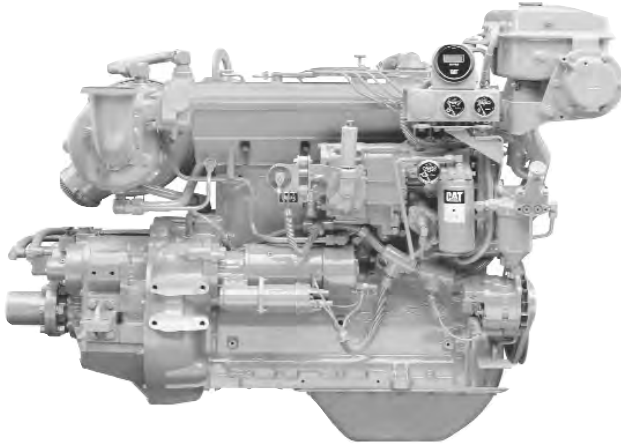
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# Marine Propulsion Engine 3304B

93 kW (125 bhp) 127 mhp @ 2000 rpm



Shown with Accessory Equipment

## SPECIFICATIONS

### I-4, 4-Stroke-Cycle-Diesel

Emissions	Non-IMO
Displacement	7 L (425 cu. in.)
Bore	121 mm (4.8 in.)
Stroke	152 mm (6.0 in.)
Aspiration	Turbocharged
Governor	Hydra-mechanical
Engine Weight, Net Dry (approx)	
Heat Exchanger Cooled	810 kg (1786 lb)
Keel Cooled	768 kg (1690 lb)
Capacity for Liquids	
Cooling System	12.9 L (3.4 U.S. gal)
Lube Oil System (refill)	19.0 L (5.0 U.S. gal)
Oil Change Interval	250 hr
Caterpillar DEO 10W30 or 15W40	
Rotation (from flywheel end)	Counterclockwise

## STANDARD EQUIPMENT

### Air Inlet System

Regular duty single stage dry air cleaner

### Cooling System

Gear driven self-priming auxiliary sea water pump with rubber impeller (heat exchanger engines only), gear driven centrifugal jacket water pump, engine oil cooler, expansion tank, engine-mounted heat exchanger with removable tube bundle (heat exchanger engines only), thermostat and housing, transmission oil cooler

### Exhaust System

Watercooled manifold and turbocharger; dry elbow and flange, 102 mm (4 in.)

### Flywheel and Flywheel Housing

SAE No. 2 (156 teeth)

### Fuel System

Fuel priming pump, fuel transfer pump, fuel filter, flexible fuel lines

### Instruments

Fuel pressure gauge, service meter, heavy-duty tachometer drive

### Lube System

Top-mounted crankcase breather, LH oil filter and oil level gauge

### Mounting System

Front support

### General

Caterpillar yellow paint, lifting eyes

## ACCESSORY EQUIPMENT

Air Starting Motor

Alarm Contactor (Oil Pressure, Water Temperature)

12V 51 Amp, 24V 35 Amp, 24V 60 Amp Alternator

Auxiliary Drive Pulley

Digital Tachometer

Double Wall Fuel Lines

Duplex Fuel Filters

Electric Overspeed Shutoff

Electric Starting Motor

Ether Starting Aid

Exhaust Elbows, Pipes, Rain Caps, Flexible Fittings

Front Enclosed Clutch

Fuel Ratio Control

Hydraulic Pump Drive

Magnetic Pickup

Manual Shutoff

Pilot House Instrument Panel

Primary Fuel Filter/Water Separator

Remote-Mounted Pilot House Controls

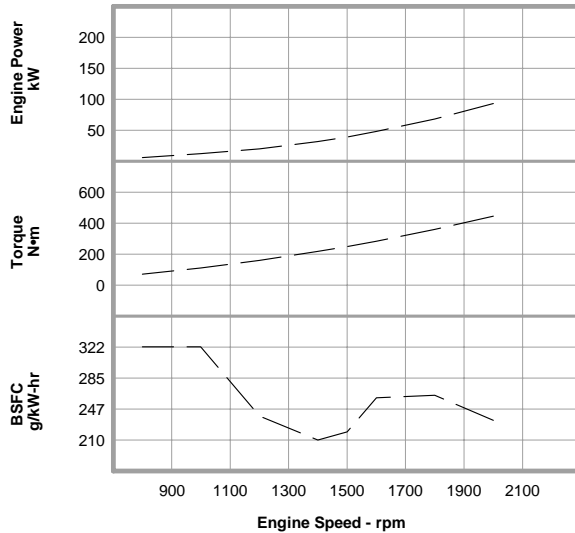
Remote Positive Locking Governor Control

Solenoid Shutoffs

Spare Parts Kit

**PERFORMANCE CURVES**

**A Rating — TM1531-02**

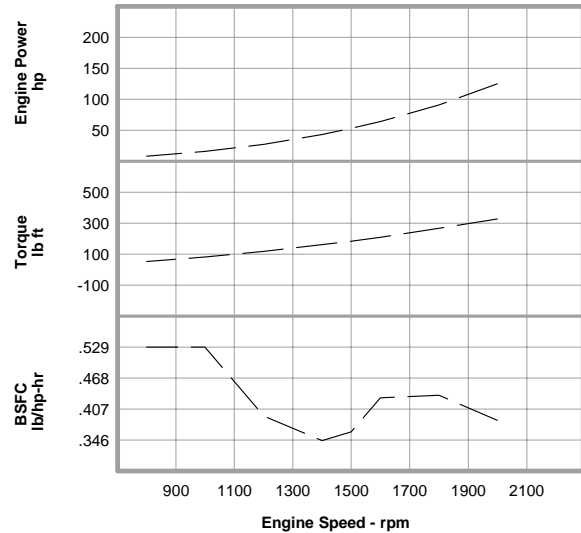


**Metric**       Maximum Power     Prop Demand      **93 kW**

**Performance Data**

	Engine Speed rpm	Engine Power kW	Engine Torque N·m	BSFC g/kW-hr	Fuel Rate L/hr
<b>Prop Demand Data</b>	2000	93	444	234.0	25.9
	1800	68	360	264.0	21.3
	1600	48	284	261.0	14.8
	1500	39	250	220.0	10.3
	1400	32	218	210.0	8.0
	1200	20	160	239.0	5.7
	1000	12	111	322.0	4.5
	800	6	71	322.0	2.3

Cubic prop demand curve with 3.0 exponent for displacement hulls only.

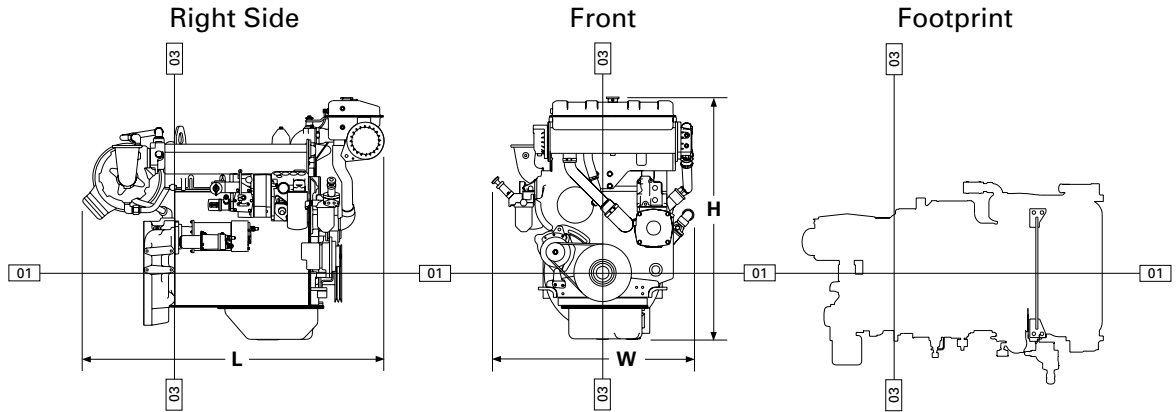


**English**       Maximum Power     Prop Demand      **125 hp**

**Performance Data**

	Engine Speed rpm	Engine Power hp	Engine Torque lb ft	BSFC lb/hp-hr	Fuel Rate gph
<b>Prop Demand Data</b>	2000	125	327	.385	6.8
	1800	91	266	.434	5.6
	1600	64	209	.429	3.9
	1500	53	184	.362	2.7
	1400	43	161	.345	2.1
	1200	27	118	.393	1.5
	1000	16	82	.529	1.2
	800	8	52	.529	.6

Power produced at the flywheel will be within standard tolerances up to 50°C (122°F) combustion air temperature measured at the air cleaner inlet, and fuel temperature up to 52°C (125°F) measured at the fuel filter base. Power rated in accordance with NMMA procedure as crankshaft power. Reduce crankshaft power by 3% for propeller shaft power.



**DIMENSIONS\***

	<b>mm</b>	<b>in.</b>
<b>Overall Length</b>	1420.9	55.9
Length from front to rear face of block	986.6	38.8
Length from rear face of block to back of flywheel housing	146.3	5.8
<b>Overall Height</b>	1141.3	44.9
Height from crankshaft centerline to top of engine	827.7	32.6
Height from crankshaft centerline to bottom of oil pan	313.6	12.4
<b>Overall Width</b>	953.0	37.5
Width from crankshaft centerline to port side (left side)	430.3	16.9
Width from crankshaft centerline to starboard side (right side)	522.7	20.6
	<b>Front</b>	
	<b>mm</b>	<b>in.</b>
Customer mounting hole diameter	16.7	0.7
Width from crankshaft centerline to mounting holes	285.8	11.3
Length from rear face of block to mounting holes	659.4	26.0
	697.5	27.5

\*Illustrations and dimensions from drawing: 118-7824

**RATING DEFINITIONS AND CONDITIONS**

**A Rating –**

Typical Application . . . For heavy-duty service in vessels such as freighters, tugboats, bottom drag trawlers, and deep river towboats where the engine is operated at rated load and speed up to 100% of the time without interruption or load cycling.

- Typical Hours Per Year . . . . . 5000 to 8000
- Time at Rated Speed . . . . . Up to 100%
- Load Factor . . . . . 80 to 100%
- Typical Time at Full Load . . . . . No limit

**Engine Performance Parameters**

- Power . . . . . ±3%
- Specific Fuel Consumption . . . . . ±3%
- Fuel Rate . . . . . ±5%

**Ratings** are based on SAE J1228/ISO8665 standard conditions of 100 kPa (29.61 in. Hg), 25°C (77°F), and 30% relative humidity. These ratings also apply at ISO3046/1, DIN6271/3, and BS5514 conditions of 100 kPa (29.61 in. Hg), 27°C (81°F), and 60% relative humidity.

**Fuel rates** are based on fuel oil of 35° API [16°C (60°F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29°C (85°F) and weighing 838.9 g/L (7.001 lb/U.S. gal).

Additional ratings may be available for specific customer requirements. Consult your Caterpillar representative for additional information.



## 3304B MARINE PROPULSION — 93 bkW (125 bhp)

Performance data is calculated in accordance with tolerances and conditions stated in this specification sheet and is only intended for purposes of comparison with other manufacturers' engines. Actual engine performance may vary according to the particular application of the engine and operating conditions beyond Caterpillar's control.

TM Reference No.: TM1531-02 (6-19-01)

Materials and specifications are subject to change without notice.

The International System of Units (SI) is used in this publication.

LEHM1230-00 (6-01)  
Supersedes LEHM7458

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