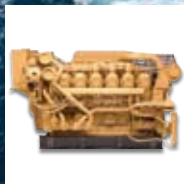


MARINE ENGINE SELECTION GUIDE

Caterpillar Marine Power Systems

September 2008



MAK

CAT®

Caterpillar Marine Power Systems

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For more information about Caterpillar Marine Power Systems
and engines that are no longer available, please visit:
<http://marine.cat.com>



Caterpillar Marine Power

When it comes to reliable engine power, you can't afford to compromise. You need proven power. Optimum power. Caterpillar understands how important your marine power needs are. That's why we design marine engines for superior reliability. That's why every Cat[®] marine engine is built to last. And why when it comes to fuel consumption, Caterpillar[®] engines are an efficient choice.

Cat engine reliability doesn't stop at the engine design. When you buy a Cat marine engine, you're assured of excellence in customer support. Our global dealer network offers you the expertise and parts you need to keep your engine running smoothly.

Caterpillar offers two product lines for marine applications. The MaK medium-speed product line has propulsion, auxiliary, and gen set engines in the power range from 1,020 to 16,000 kW. The Caterpillar product line has propulsion engines from 127 to 7,682 mhp, auxiliary engines from 162 to 5,420 bkW, and gen sets from 11 to 5,200 ekW.

Marine Classification Society certification is available for most marine ratings. Caterpillar works with eleven major marine societies. Consult your Cat dealer for detailed information.

All Cat engines in this guide over 174 bhp/130 bkW (with the exception of the Cat 3508, 3512, and 3516 Mechanical Control System engines) meet the IMO regulation on NO_x emissions (Regulation 13 of Annex VI of MARPOL 73/78). Caterpillar has met this goal while continuing to optimize engine performance and fuel efficiency.

Factory-designed systems built at Caterpillar 9001:2000 certified facilities.

How To Use This Guide

For marine propulsion engine ratings, consider how your vessel is operated. Loads vary... and Caterpillar ratings reflect various vessel operation needs. Review the rating definitions and engines available on pages 10-17, and decide which rating best defines your application. Once you have decided which rating (A, B, C, D, E) best meets your needs, refer to the appropriate engine model page for more information.

Contents

Visit www.marine.cat.com for detailed specification sheets and product information.

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Abbreviations

API — American Petroleum Institute

asp. — Aspiration

bhp — Brake Horsepower

bkW — Brake Kilowatts

BS — British Standards

CC — Combined Circuit

DIN — German Standards Organization

ekW — Electrical Kilowatts

EUI — Electronic Unit Injectors

H — Height of Engine

H E — Heat Exchanger Cooled

IMO — International Maritime Organization

ISO — International Standards Organization

JW — Jacket Water Aftercooled

KC — Keel Cooled

L — Overall Engine Length

LE — Length of Engine from Front of Engine to Rear Face of Flywheel Housing

LG — Length of Engine with Gear/Generator

l/h — Liters per Hour

mhp — Metric Horsepower

NA — Naturally Aspirated

R — Radiator Cooled

regs — Regulations

SAE — Society of Automotive Engineers

SC — Separate Circuit Aftercooled

SW — Seawater Aftercooled

T — Turbocharged

TA — Turbocharged Aftercooled

TTA — Twin Turbo Aftercooled

U.S. g/h — U.S. Gallons per Hour

WE — Width of Engine

Note: For Emissions Regulations abbreviations see page 18.

Customer Support Programs for Cat® Marine Products

Caterpillar offers a variety of integrated solutions to help you protect your investment, minimize owning and operating costs, and maximize up-time. These solutions are specifically tailored to meet your needs.

Extended Service Coverage (ESC)

Platinum ESC is available for 36-, 48-, or 60-month periods and up to 6,000 hours (25,000 hours for revenue producing) from date of delivery for your new Caterpillar propulsion engines, auxiliary engines, and generator sets. For pleasure craft applications, **Platinum-Plus ESC** covers Caterpillar engine controls and certain pilot house displays.

Advantage for Used Pleasure Craft Engines

Platinum is an exclusive Caterpillar product for propulsion engines less than eight years old. These engines must meet inspection and sea trial guidelines to qualify. Coverage is available for 12-, 24-, or 36-month periods in 250-, 500-, or 1000-hour increments. Maximum hour limitations apply. ESC coverage mirrors the standard warranty coverage and is also transferable.

Customer Support Agreements (CSAs)

Three flexible CSA options are available which can be customized to fit your needs: Inspection, Preventive Maintenance, and Total Maintenance and Repair. The more comprehensive the CSA, the greater the benefits. Caterpillar tests have proven that with CSAs, engine operating time is significantly increased. They ensure that maintenance and repairs are completed by highly skilled technicians and only use Cat parts.

Contact your nearest Caterpillar dealer for additional details on these programs.

ACERT® Technology for Caterpillar Marine Engines

Consistent with their long history of technological innovation and progress, Caterpillar is continually investing in research and development. Over \$500 million has been invested to meet today's stringent emissions regulations and to offer the market a reliable product with the performance that meets the needs of customers worldwide. This latest evolution in the Caterpillar engine line is the introduction of ACERT® Technology. Caterpillar draws on a wide range of product experience to develop these basic engine system innovations. As new engines are developed, specific ACERT Technology components are incorporated to reduce smoke and noise, provide better performance, and increase fuel efficiency. The four fundamental components are:

Electronics

- The newest Cat® ADEM™ electronic control module and proprietary software, developed specifically for each power rating and emissions level, allow ACERT engines to precisely control and shape fuel delivery, air management, and all other engine functions.

Fuel Delivery

- Multiple fuel injection delivery introduces fuel into the combustion chamber in a series of precisely timed "micro bursts." This provides maximum power and fuel efficiency with minimum emission levels.

Air Management

- Air management technologies such as cross flow cylinder heads, wastegate turbochargers, even variable valve timing can be incorporated to control combustion air, burn fuel more efficiently, and enhance performance.

Combustion

- Combustion system design pulls the maximum amount of energy from fuel delivery and applies this energy to the propeller or generator.

ACERT Technology combines proven systems with innovative new technologies to enhance the combustion process to such a high degree that it optimizes total engine performance while offering a highly effective emissions reduction solution. Because ACERT Technology is primarily for combustion, there is no external plumbing to clutter cramped engine rooms. And when you specify an engine, components are included only as needed, so you get a solution optimized for your application. In applications where stringent emissions standards are in force, Caterpillar engines with ACERT Technology deliver excellent performance, efficiency, and durability.

Cat[®] Financial

You specify Cat or MaK power solutions because you believe in the power of Caterpillar engines to keep you and your vessel safely on course. Cat Financial has the same commitment to your success — whether you need construction, term, or repower financing.

We know how to support customers in one country, construction in a second country, and registration in a third. We understand the marine industry — we've been lending to marine customers for more than 20 years. And, as it has been since 1986, our service commitment is powered by Caterpillar and Cat dealers everywhere.

Global Coverage

Whether you're a German operator building at a Chinese shipyard or a U.S. citizen building a yacht in Italy, Cat Financial can help. Our customers do business around the world, and we support them wherever they go.

Our service commitment extends to all marine sectors. From production and custom yachts to workboats and tankers — we have you covered.

Local Presence

Need a local expert? We know local markets and how to navigate the legal and regulatory environments.

Cat Financial has offices in the Americas, Europe, and Asia, and financing representatives all over the world. Put our knowledge to work to power the deal.

Quick Turnaround

You deserve fast, efficient service. Your dedicated marine account manager will guide your financing request through the process.

Questions? You'll get the solutions you need, when you need them.

Exceeding Customer Expectations

The right process simplifies everything. Our process begins with understanding your critical requirements and developing a tailored solution.

We then document, close, and fund the deal to exceed the expectations of all parties involved.

One Customer Experience Worldwide

Strong relationships are the key to our success. That's why Cat Financial works across geographical boundaries to deliver the same quality experience to each customer. Wherever you're building, wherever you're operating, count on Cat Financial to deliver world-class service.

Get your project moving anywhere in the world with Cat Financial — backed by the power of Caterpillar and our unmatched dealer network.

Visit us online at <http://marine.cat.com/finance> to learn more, send us an email at CatMarineFinance@cat.com, or call one of our three regional offices today.

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Marine Propulsion Engines

A Rating

(Unrestricted Continuous)

A Rating (Unrestricted Continuous)

Typical applications: For vessels operating at rated load and rated speed up to 100% of the time without interruption or load cycling (80% to 100% load factor).

Typical applications could include but are not limited to vessels such as freighters, tugboats, bottom trawlers, or deep river tugboats. Typical operation ranges from 5000 to 8000 hours per year.

For 3516B Engines Only:

- ◆ **Ahp** – Fast commercial vessels with high load factors. Requires CF-4 or superior lube oil and 30° C or colder aftercooler water.

For C280-6, C280-8, C280-12, and C280-16 Engines Only:

- ◆ **Continuous Service (CS) Rating** is suitable for continuous duty applications, including dredges, for operation without interruption or load cycling.

mhp	bhp	bkW	rpm	Model
255	250	187	2400	C7
345	340	254	1800	C12
460-596	454-587	339-438	1800	C18
460-485	454-479	339-357	1800	C18 ACERT
669-1014	660-1000	492-746	1600-1800	C32 ACERT
715-867	705-855	526-637	1200-1800	3508
786-1014	775-1000	578-746	1200-1800	3508B
786-1015	775-1000	578-746	1200-1600	3508C
1224-1298	1207-1280	900-954	1200-1800	3512
1115-1835	1100-1810	820-1350	1200-1800	3512B

mhp	bhp	bkW	rpm	Model
1522-1836	1500-1810	1119-1350	1600-1800	3512C
1622-1734	1603-1710	1195-1275	1200-1800	3516
1673-2481	1650-2447	1230-1825	1200-1800	3516B
2028-2482	2000-2448	1492-1825	1600	3516C

Ahp Ratings

mhp	bhp	bkW	rpm	Model
2718	2682	2000	1925	3516B

CS Ratings

mhp	bhp	bkW	rpm	Model
2352-2515	2320-2481	1730-1850	900-1000	C280-6
3127-3345	3084-3299	2300-2460	900-1000	C280-8
4704-5031	4640-4962	3460-3700	900-1000	C280-12
6255-6690	6169-6598	4600-4920	900-1000	C280-16

B Rating (Heavy Duty)

B Rating (Heavy Duty)

Typical applications: For vessels operating at rated load and rated speed up to 80% of the time, or 10 hours out of 12, with some load cycling (40% to 80% load factor).

Typical applications could include but are not limited to vessels such as mid-water trawlers, purse seiner, crew and supply boats, ferries, or towboats. Typical operation ranges from 3000 to 5000 hours per year.

- ◆ **For 3508B, 3512B, and 3516B Engines Only:**
- ◆ **Bhp** – Fast commercial and passenger vessels including catamarans and SWATH vessels with high load factors.

mhp	bhp	bkW	rpm	Model
280	275	205	2400	C7
390	385	287	1800	C12
486-680	479-671	357-500	1800-2100	C18
560-680	553-670	412-500	2100	C18 ACERT
1319	1300	970	2100	C32 ACERT
816-973	805-960	600-716	1300-1800	3508
862-1065	850-1050	634-783	1200-1800	3508B
862-1065	850-1050	634-783	1200-1600	3508C
1318-1465	1301-1445	970-1077	1200-1800	3512
1171-1938	1155-1911	861-1425	1200-1800	3512B

mhp	bhp	bkW	rpm	Model
1597-2282	1575-2250	1174-1678	1600-1800	3512C
1698-1947	1676-1920	1250-1432	1200-1800	3516
1775-2611	1750-2575	1305-1920	1200-1800	3516B
2130-3046	2100-3004	1566-2240	1600-1800	3516C

Bhp Ratings

mhp	bhp	bkW	rpm	Model
1217	1200	895	1785	3508B
1825	1800	1342	1785	3512B
2434	2400	1790	1785	3516B

C Rating (Maximum Continuous)

C Rating (Maximum Continuous)

Typical applications: For vessels operating at rated load and rated speed up to 50% of the time, or 6 hours out of 12, with cyclical load and speed (20% to 80% load factor). **Typical applications could include but are not limited to vessels such as ferries, harbor tugs, fishing boats, offshore service boats, displacement hull yachts, or short trip coastal freighters.** Typical operation ranges from 2000 to 4000 hours per year.

For 3508B, 3512B, and 3516B Engines Only:

- ◆ **Chp** – Fast commercial and passenger vessels and cruising yachts with moderate load factors.

For C280-6, C280-8, C280-12, and C280-16 Engines Only:

- ◆ **Maximum Continuous (MC) Rating** is generally used for vessel applications involving varying loads. The engine power actually produced is limited by application guidelines, leaving a power reserve for unusual operating conditions. Operating time at loads above the Continuous Service Rating for a given rpm is limited to one hour in 12 or 8.3% of total operating hours.

mhp	bhp	bkW	rpm	Model
127-208	125-205	93-153	2100-2600	3056
320	315	235	2400	C7
460-497	454-490	339-366	2100-2300	C12
725	715	533	2100	C18
725	715	533	2100	C18 ACERT
1319-1470	1300-1450	970-1081	1800-2300	C32 ACERT
831-1014	820-1000	611-746	1300-1800	3508
913-1115	900-1100	671-820	1200-1800	3508B

mhp	bhp	bkW	rpm	Model
913-1115	900-1100	671-820	1200-1600	3508C
1428-1521	1408-1500	1050-1118	1200-1800	3512
1227-2040	1210-2012	902-1500	1200-1800	3512B
1673-2400	1650-2365	1230-1765	1600-1800	3512C
1774-2028	1750-2000	1305-1491	1200-1800	3516
1876-2718	1850-2682	1379-2000	1200-1800	3516B
2231-3196	2200-3151	1641-2350	1600-1800	3516C

Chp Ratings

mhp	bhp	bkW	rpm	Model
1318	1300	969	1835	3508B
1977	1950	1454	1835	3512B
2636	2600	1939	1835	3516B

MC Ratings

mhp	bhp	bkW	rpm	Model
2583-2760	2548-2722	1900-2030	900-1000	C280-6
3440-3684	3393-3634	2530-2710	900-1000	C280-8
5167-5520	5096-5444	3800-4060	900-1000	C280-12
6879-7369	6785-7268	5060-5420	900-1000	C280-16

D Rating (Intermittent Duty)

D Rating (Intermittent Duty)

Typical applications: For vessels operating at rated load and rated speed up to 16% of the time, or 2 hours out of 12, (up to 50% load factor). **Typical applications could include but are not limited to vessels such as offshore patrol boats, customs boats, police boats, some fishing boats, fireboats, or harbor tugs.** Typical operation ranges from 1000 to 3000 hours per year.

For 3508B, 3512B, and 3516B Engines Only:

- ◆ **Dhp** – Patrol craft, fast passenger vessels, and cruising yachts with low load factors.

mhp	bhp	bkW	rpm	Model
375	370	276	2600	C7
510	503	375	2500	C9 ACERT
578	570	425	2300	C12
885	873	651	2200	C18
885	873	651	2200	C18 ACERT
1622	1600	1193	2300	C32 ACERT
1166	1150	857	1800	3508
1775	1750	1305	1800	3512
2577-2587	2541-2551	1895-1902	1800	3512C
2231	2200	1640	1800	3516
3434	3386	2525	1800	3516C

Dhp Ratings

mhp	bhp	bkW	rpm	Model
1420	1400	1044	1880	3508B
2129	2100	1566	1880	3512B
2839	2800	2088	1880	3516B

E Rating (High Performance)

E Rating (High Performance)

Typical applications: For vessels operating at rated load and rated speed up to 8% of the time, or 1/2 hour out of 6, (up to 30% load factor). **Typical applications could include but are not limited to vessels such as pleasure craft, harbor patrol boats, harbor master boats, some fishing or patrol boats.** Typical operation ranges from 250 to 1000 hours per year.

For 3508B, 3512B, and 3516B Engines Only:

- ◆ **Ehp** – Fast patrol craft and fast yachts with low load factors.

mhp	bhp	bkW	rpm	Model
355-426	350-420	261-313	2800	3126
461	455	339	2800	C7 ACERT
575	567	423	2500	C9 ACERT
609	600	448	2300	C12
669-715	660-705	492-526	2300	C12 ACERT
811-865	800-853	597-636	2300	C15 ACERT
1015	1001	747	2300	C18
1015-1150	1001-1136	747-847	2300	C18 ACERT
1572-1676	1550-1652	1156-1232	2300	C32
1723-1825	1700-1800	1267-1342	2300	C32 ACERT

Ehp Ratings

mhp	bhp	bkW	rpm	Model
1521	1500	1118	1925	3508B
2282	2250	1678	1925	3512B
3042	3000	2237	1925	3516B

Emissions Regulations

Commercial Marine EPA Tier 2 Regulations				2.5 - 30 liters per cylinder *C18, 3412D, C30, C32, C32 ACERT, All 3500s			
				< 0.9 liters per cylinder and > 37 kW *C1.5, C2.2			
				0.9 - 2.5 liters per cylinder *C4.4, C7, C9, C12, C13, C15, 3406E, 3412C, 3412E			
2003	2004	2005	2006	2007	2008	2009	2010
				0.9 - 2.5 liters per cylinder *C4.4, C7, C9, C12, C13, C15, 3406E, 3412C, 3412E			
Recreational Marine EPA Tier 2 Regulations				< 0.9 liters per cylinder and > 37 kW *C1.5, C2.2			
				2.5-30 liters per cylinder *C18, 3412D, C30, C32, C32 ACERT, All 3500s			

***Note:** Engines are listed above by displacement per cylinder. This chart does not indicate certification status.

EPA Regulations

T1 — Complies with U.S. EPA Marine Tier 1 Commercial Regulations

T2C — Complies with U.S. EPA Marine Tier 2 Commercial Regulations

T2R — Complies with U.S. EPA Marine Tier 2 Recreational Regulations

T2CR — Complies with U.S. EPA Marine Tier 2 Commercial and Recreational Regulations

NRT2 — Complies with U.S. EPA Non-Road Mobile Tier 2 Regulations (Small generator sets are often included as “portable auxiliary engines” under this regulation. Small generator sets can be certified as a “marine engine” if permanently installed in a vessel.)

NC — Not U.S. EPA Marine Certified for use in the U.S. or Canada

Central Commission for Navigation on the Rhine

Commercial Craft

CCNR Stage II

CCNR Stage II regulated Diesel Engine Emissions limits became effective July 1, 2007. The following engine is CCNR Stage II certified: C9 Constant Speed Auxiliary at 1800 rpm.

EU Regulations

Commercial Craft

Directive 97/68/EC (EU Stage IIIA)

This directive applies to propulsion engines, and all auxiliary engines with a rated power of greater than 560 kW used in inland waterway vessels and became effective by reciprocity agreement with CCNR Stage II, on July 1, 2007. The following propulsion engines are certified: C12, C18 ACERT, 3508C, 3512C, 3516C. These engines are accepted as equivalent to CCNR Stage II, but are not certified to CCNR Stage II.

CC2 — Complies with CCNR Stage II*

IW — Inland Waterway Commercial Craft Directive, complies with EU 97/68/EC Stage II (EU Stage IIIA)*

NC — Not Certified for EU Regulations

NST — Engines < 37 kW are Not Subject To CCNR legislation

RCD — Recreational Craft Directive, complies with EU 94/25/EC

*Ratings that are IW/CC2 compliant are also IMO compliant and qualify for DNV Clean and DNV Clean Design.

IMO Statement:

Compliant with IMO emissions standards for the year 2000 as defined by Regulation 13 of Annex VI to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the protocol of 1997. Engines certified to EPA Tier 1 or better are IMO compliant.

DNV Clean and Clean Design:

DNV Clean and Clean Design are ship notations granted by the DNV surveyor. DNV Clean and DNV Clean Design require specific emissions characteristics of all engines used on board. For DNV Clean, all engines must meet IMO emissions standards. An IMO technical file is required. For DNV Clean Design status, Caterpillar offers engines certified to EPA Tier 2 and EU 97/68/EC Stage IIIA standards. These engines require both an IMO technical file and an EU technical file, both available for order from Caterpillar Inc.

Caterpillar Marine Propulsion Engines

Rating Conditions for 3500 and Smaller Engines

Ratings are based on SAE J1228 standard conditions of 29.61 in Hg (100 kPa) and 77° F (25° C). These ratings also apply at ISO3046-1:2002E, ISO8665, DIN6271-3, and BS5514 conditions of 29.61 in Hg (100 kPa), 81° F (27° C), and 60% relative humidity. Caterpillar maintains ISO9001:2000 certified quality management systems for engine test facilities to assure accurate calibration of test equipment. Electronically controlled engines are set at the factory at the advertised power corrected to standard ambient conditions. The published fuel consumption rates are in accordance with ISO3046-1:2002E.

Fuel rates are based on fuel oil of 35° API [60° F (16° C)] gravity having an LHV of 18,390 Btu/lb (42 780 kJ/kg) when used at 85° F (29° C) and weighing 7.001 lbs/U.S. gal (838.9 g/liter). Additional ratings may be available for specific customer requirements. Consult your Caterpillar representative for additional information.

Rating Conditions for C280 Engines

Ratings are based on SAE J1349 standard conditions of 29.61 in Hg (100 kPa) and 77° F (25° C). These ratings also apply at ISO3046-1:2002E, ISO8665, DIN6271-3, and BS5514 standard reference conditions. Ratings also meet classification society maximum temperature requirements of 113° F (45° C) temperature to turbo and 90° F (32° C) seawater temperature without derate.

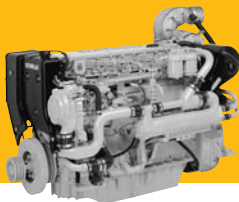
Fuel consumption is based on ISO3046/1 with +5% tolerance at rated power for fuel having an LHV of 18,390 Btu/lb (42 780 kJ/kg) and weighing 7.001 lbs/U.S. gal (838.9 g/liter). Includes engine mounted fresh water and lube oil pumps. SFOC without pumps, 2% less.

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

Performance Data

Performance along a typical fixed pitch propeller curve with a 3.0 exponent.

Power rated in accordance with NMMA procedure as crankshaft power. For units equipped with Caterpillar supplied marine gears, reduce crankshaft power by 3% for propeller shaft power.



3056

PROPULSION ENGINE

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
C	127	125	93	2600	8.2	31.2	NC	NC
C	188	185	138	2100	9.7	36.6	NC	NC
C	208	205	153	2500	11.2	42.5	NC	NC

	LE	H	WE
min.	42.05 in/1068 mm	31.5 in/801 mm	25.4 in/645 mm
max.	42.05 in/1068 mm	31.5 in/801 mm	30.6 in/779 mm

In-line 6, 4-Stroke-Cycle Diesel

Aspiration	NA, TA	
Bore x Stroke	3.94 x 5.0 in	100 x 127 mm
Displacement	365 cu in	6.0 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	1312 lb	595 kg

C7

PROPULSION ENGINE



Electronic
Control
System

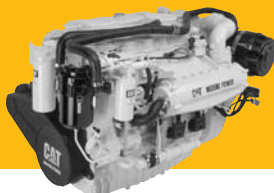
RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
A	255	250	187	2400	12.9	48.9	NC	RCD
B	280	275	205	2400	14.0	53.1	NC	RCD
C	320	315	235	2400	17.0	64.4	NC	RCD
D	375	370	276	2600	20.5	77.5	NC	RCD

C7

ACERT

PROPULSION ENGINE



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
E	461	455	339	2800	25.1	95.2	T2CR	NC

C7 ACERT began production with serial number C7D00150 (Greenville) and C7Z00200 (Gosselies).

	LE	H	WE
min.	48.1 in/1221.8 mm	36.1 in/916.9 mm	36.2 in/919.6 mm
max.	48.1 in/1221.8 mm	36.1 in/916.9 mm	36.2 in/919.6 mm

In-line 6, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	4.33 x 5.0 in	110 x 127 mm
Displacement	442 cu in	7.24 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	1760 lb	798 kg

Electronic
Control
System



C9 ACERT

PROPULSION ENGINE

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
D	510	503	375	2500	26.0	98.3	T2CR	IW/CC2
E	575	567	423	2500	29.2	110.5	T2R	RCD

C9 ACERT began production with serial number X9X00200 (Greenville) and Z9X00200 (Gosselies).

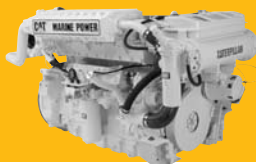
	LE	H	WE
min.	47.2 in/1198 mm	38.7 in/983 mm	38.3 in/974 mm
max.	47.2 in/1198 mm	38.7 in/983 mm	38.3 in/974 mm

In-line 6, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	4.41 x 5.87 in	112 x 149 mm
Displacement	538 cu in	8.8 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	2086 lb	946 kg

C12

PROPULSION ENGINE



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
A	345	340	254	1800	16.6	62.9	T2C	IW/CC2
B	390	385	287	1800	18.6	70.4	T2C	IW/CC2
C	460	454	339	2100	22.0	83.1	T2C	IW/CC2
C	497	490	366	2300	24.0	91.0	NC	RCD
D	578	570	425	2300	27.9	105.8	NC	RCD
E	609	600	448	2300	29.3	111.0	NC	RCD

C12

ACERT

PROPULSION ENGINE



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
E	669	660	492	2300	34.1	129.0	T2CR	IW/CC2
E	715	705	526	2300	36.5	138.1	T2CR	RCD

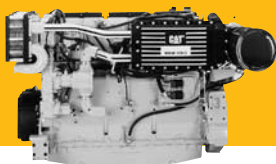
C12 ACERT began production with serial number C1Z00100.

	LE	H	WE
min.	62 in/1574 mm	39.5 in/1005 mm	38.1 in/969 mm
max.	62 in/1574 mm	39.5 in/1005 mm	38.1 in/969 mm

In-line 6, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	5.1 x 5.9 in	130 x 150 mm
Displacement	732 cu in	12 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	2588 lb	1174 kg

Electronic
Control
System



C15 ACERT

PROPULSION ENGINE

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
E	811	800	597	2300	40.6	153.5	NC*	RCD
E	865	853	636	2300	43.3	163.8	NC*	RCD

C15 ACERT began production with serial number RLA00100.

*Exemption expired Jan. 1, 2008.

LE	H	WE
60.7 in/1541 mm	46.4 in/1178 mm	37.5 in/954 mm

In-line 6, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	5.4 x 6.5 in	137 x 165 mm
Displacement	891 cu in	14.6 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	3226 lb	1464 kg

C18

PROPULSION ENGINE



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
A	460	454	339	1800	21.7	82.2	T1	RCD
A	596	587	438	1800	29.3	110.8	T1	RCD
B	486	479	357	1800	22.8	86.4	T1	RCD
B	560	553	412	2100	27.3	103.4	T1	RCD
B	609	600	448	1800	28.2	106.6	T1	RCD
B	680	671	500	2100	33.7	127.5	T1	RCD
C	725	715	533	2100	36.8	139.4	T1	RCD
D	885	873	651	2200	44.2	167.5	T1	RCD
E	1015	1001	747	2300	51.7	195.7	T1	RCD

LE

61.3 in/1558 mm

H

46.4 in/1178 mm

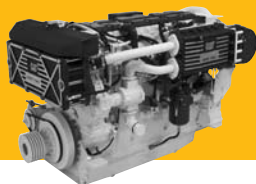
WE

41.6 in/1056 mm

In-line 6, 4-Stroke-Cycle Diesel

Aspiration	TA, TTA	
Bore x Stroke	5.7 x 7.2 in	145 x 183 mm
Displacement	1106 cu in	18.1 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx) – TTA	3788 lb	1718 kg
TA	3686 lb	1672 kg

Electronic
Control
System



C18 ACERT

PROPULSION ENGINE

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
A	460	454	339	1800	22.6	85.6	T2C	IW/CC2
A	485	479	357	1800	24.0	90.9	T2C	IW/CC2
B	560	553	412	2100	29.4	111.2	T2C	IW/CC2
B	608	600	447	1800	29.9	113.2	T2C	IW/CC2
B	680	670	500	2100	34.8	131.8	T2C	IW/CC2
C	725	715	533	2100	37.7	142.9	T2C	IW/CC2
D	885	873	651	2200	45.0	170.2	T2C	IW/CC2
E*	1015	1001	747	2300	NA	NA	T2R	NC
E*	1150	1136	847	2300	59.4	224.8	T2R	NC

*Contact local dealer for availability.

NA – not available at time of print.

	LE	H	WE
min.	59.2 in/1505 mm	45.0 in/1144 mm	42.1 in/1068 mm
max.	62.6 in/1591 mm	46.5 in/1182 mm	44.0 in/1118 mm

In-line 6, 4-Stroke-Cycle Diesel

Aspiration	TA, TTA	
Bore x Stroke	5.7 x 7.2 in	145 x 183 mm
Displacement	1106 cu in	18.1 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	3394-4093 lb	1539-1861 kg

C32

PROPULSION ENGINE



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
E	1572	1550	1156	2300	78.7	298.0	T1	RCD
E	1676	1652	1232	2300	86.4	327.0	T1	RCD

¹Wide operating speed range

LE

78.9 in/2004 mm

H

54.3 in/1378 mm

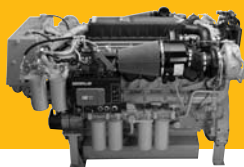
WE

55.6 in/1413 mm

Vee 12, 4-Stroke-Cycle Diesel

Aspiration	TTA, TA	
Bore x Stroke	5.7 x 6.4 in	145 x 162 mm
Displacement	1959 cu in	32.1 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	5617-5803 lb	2548-2632 kg

Electronic
Control
System



C32 ACERT

PROPULSION ENGINE

COMMERCIAL APPLICATIONS

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
A ¹	669	660	492	1800	32.3	122.2	T2CR	IW/CC2
A ¹	760	750	559	1800	36.2	137.0	T2CR	IW/CC2
A ¹	862	850	634	1800	41.0	155.1	T2CR	IW/CC2
A ²	964	950	709	1600	45.3	171.3	T2CR	IW/CC2
A ¹	1014	1000	746	1800	48.1	182.2	T2CR	IW/CC2
B	1319	1300	970	2100	64.4	247.3	T2CR	IW/CC2
C	1319	1300	970	1800	62.5	236.5	T2CR	IW/CC2
C ¹	1470	1450	1081	2300	77.4	292.9	T2CR	IW/CC2
D ¹	1622	1600	1193	2300	82.1	310.6	T2CR	IW/CC2

¹Wide Operating Speed Range (WOSR)

²EPAT2C1 — Variable Speed Engine/Variable Pitch Prop/Variable Speed Auxiliary

	LE	H	WE
min.	77.8 in/1976 mm	54.4 in/1381 mm	55.4 in/1408 mm
max.	81.6 in/2072 mm	59.9 in/1521 mm	56.8 in/1444 mm

Vee 12, 4-Stroke-Cycle Diesel

Aspiration	TTA, TA	
Bore x Stroke	5.71 x 6.38 in	145 x 162 mm
Displacement	1959 cu in	32.1 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	5616-7100 lb	2547-3220 kg

C32 ACERT

PROPULSION ENGINE



Electronic
Control
System

PLEASURE CRAFT APPLICATIONS

RATINGS AND FUEL CONSUMPTION

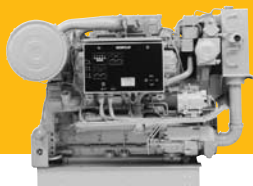
	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
C ¹	1470	1450	1081	2300	77.4	292.9	T2R	NC
D ¹	1622	1600	1193	2300	82.1	310.6	T2R	NC
E ¹	1723	1700	1267	2300	88.8	336.3	T2R	NC
E	1825	1800	1342	2300	93.2	352.9	T2R	NC
E	1825	1800	1342	2300	94.2	356.4	T1	RCD

¹Wide Operating Speed Range (WOSR)

	LE	H	WE
min.	77.8 in/1976 mm	54.4 in/1381 mm	55.4 in/1408 mm
max.	81.6 in/2072 mm	59.9 in/1521 mm	56.8 in/1444 mm

Vee 12, 4-Stroke-Cycle Diesel

Aspiration	TTA, TA	
Bore x Stroke	5.71 x 6.38 in	145 x 162 mm
Displacement	1959 cu in	32.1 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	5616-7100 lb	2547-3220 kg



RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
A	715	705	526	1200	35.9	136	NC	NC
A	867	855	637	1600	41.6	157	NC	NC
A	867	855	637	1800	43.5	165	NC	NC
B	816	805	600	1300	41.3	156	NC	NC
B	918	905	675	1600	43.8	166	NC	NC
B	973	960	716	1800	48.6	184	NC	NC
C	831	820	611	1300	42.1	159	NC	NC
C	1014	1000	746	1800	50.6	192	NC	NC
D	1166	1150	857	1800	58.7	222	NC	NC

These ratings do not meet the 2004 EPA emissions standards or the IMO regulation on NO_x emissions.

	LE	H	WE
min.	81.8 in/2077 mm	71.0 in/1803 mm	67.1 in/1703 mm
max.	81.8 in/2077 mm	71.0 in/1803 mm	67.1 in/1703 mm

Vee 8, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	6.7 x 7.5 in	170 x 190 mm
Displacement	2105 cu in	34.5 liter
Rotation (from flywheel end)	Counterclockwise or clockwise	
Engine dry weight (approx)	11,499 lb	5216 kg

3508B

PROPULSION ENGINE



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
A	786	775	578	1200	36.9	140	T1	NC
A	867	855	637	1600	40.8	154	T1	NC
A	867	855	637	1800	42.0	159	T1	NC
A	1014	1000	746	1600	47.3	179	T1	NC
A	1014	1000	746	1800	48.7	184	T1	NC
B	862	850	634	1200	40.7	154	T1	NC
B	973	960	716	1600	45.4	172	T1	NC
B	973	960	716	1800	46.7	177	T1	NC
B	1065	1050	783	1600	49.5	187	T1	NC
B	1065	1050	783	1800	50.9	193	T1	NC
C	913	900	671	1200	43.5	165	T1	NC
C	1014	1000	746	1600	47.3	179	T1	NC
C	1115	1100	820	1600	47.3	179	T1	NC
C	1115	1100	820	1800	53.3	202	T1	NC
Bhp ¹	1217	1200	895	1785	58.7	222	T1	NC
Chp ¹	1318	1300	969	1835	64.1	243	T1	NC
Dhp ¹	1420	1400	1044	1880	69.6	263	T1	NC
Ehp ¹	1521	1500	1118	1925	75.1	284	T1	NC

¹Fuel consumption tolerance +5%. Reflects European standards.

	LE	H	WE
min.	90.9 in/2310 mm	71.0 in/1803 mm	67.1 in/1703 mm
max.	90.9 in/2310 mm	71.0 in/1803 mm	67.1 in/1703 mm

Vee 8, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	6.7 x 7.5 in	170 x 190 mm
Displacement	2105 cu in	34.5 liter
Rotation (from flywheel end)	Counterclockwise or clockwise	
Engine dry weight (approx.)	10,181-11,499 lb	4618-5261 kg

Electronic
Control
System



3508C

PROPULSION ENGINE

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
A	786	775	578	1200	36.9	140.0	T2C	IW/CC2
A	1015	1000	746	1600	48.9	185.0	T2C	IW/CC2
B	862	850	634	1200	40.4	152.8	T2C	IW/CC2
B	1065	1050	783	1600	51.6	195.4	T2C	IW/CC2
C	913	900	671	1200	42.9	162.4	T2C	IW/CC2
C	1115	1100	820	1600	54.2	205.2	T2C	IW/CC2

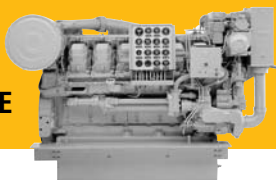
	LE	H	WE
min.	83.4 in/2117 mm	72.0 in/1829 mm	67.0 in/1703 mm
max.	83.4 in/2117 mm	72.0 in/1829 mm	67.0 in/1703 mm

Vee 8, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	6.7 x 7.5 in	170 x 190 mm
Displacement	2107 cu in	34.5 liter
Rotation (from flywheel end)	Counterclockwise or clockwise	
Engine dry weight (approx)	10,935 lb	4960 kg

3512

PROPULSION ENGINE



Mechanical
Control
System

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
A	1224	1207	900	1200	58.1	220	NC	NC
A	1298	1280	954	1600	64.2	243	NC	NC
A	1298	1280	954	1800	64.7	245	NC	NC
B	1318	1301	970	1200	62.8	238	NC	NC
B	1379	1360	1014	1600	68.3	259	NC	NC
B	1465	1445	1077	1800	72.2	273	NC	NC
C	1428	1408	1050	1200	68.6	260	NC	NC
C	1430	1410	1051	1600	73.1	277	NC	NC
C	1521	1500	1118	1800	76.3	289	NC	NC
D	1775	1750	1305	1800	92.8	351	NC	NC

These ratings do not meet the 2004 EPA emissions standards or the IMO regulation on NO_x emissions.

	LE	H	WE
min.	107 in/2715 mm	80.8 in/2053 mm	67.1 in/1703 mm
max.	107 in/2715 mm	80.8 in/2053 mm	67.1 in/1703 mm

Vee 12, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	6.7 x 7.5 in	170 x 190 mm
Displacement	3158 cu in	51.8 liter
Rotation (from flywheel end)	Counterclockwise or clockwise	
Engine dry weight (approx)	14,398-14,411 lb	6531-6537 kg

Electronic
Control
System



3512B

PROPULSION ENGINE

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
A	1115	1100	820	1200	52.0	197	T1	NC
A	1298	1280	954	1600	60.4	229	T1	NC
A	1318	1300	969	1200	62.2	236	T1	NC
A	1521	1500	1118	1600	69.8	264	T1	NC
A	1521	1500	1118	1800	72.6	275	T1	NC
A ²	1521	1500	1118	1200	74.3	281	T1	NC
A ³	1521	1500	1118	1800	73.5	278	T1	NC
A ²	1699	1675	1249	1600	75.8	287	T1	NC
A ²	1835	1810	1350	1600	88.0	333	T1	NC
B	1171	1155	861	1200	54.5	206	T1	NC
B	1278	1260	939	1200	59.7	226	T1	NC
B	1369	1350	1007	1200	64.6	244	T1	NC
B	1379	1360	1014	1600	63.4	240	T1	NC
B	1379	1360	1014	1800	65.2	247	T1	NC
B	1597	1575	1174	1600	72.9	276	T1	NC
B	1597	1575	1174	1800	75.9	287	T1	NC
B ²	1775	1750	1305	1600	78.9	299	T1	NC
B ²	1938	1911	1425	1600	92.8	351	T1	NC
C	1227	1210	902	1200	57.6	218	T1	NC
C	1318	1300	969	1200	61.8	234	T1	NC
C	1430	1410	1051	1600	65.7	249	T1	NC
C	1430	1410	1051	1800	67.3	255	T1	NC
C	1496	1475	1100	1200	71.3	270	T1	NC
C	1673	1650	1230	1600	76.3	289	T1	NC
C	1673	1650	1230	1800	79.3	300	T1	NC
C ²	1876	1850	1379	1600	83.4	316	T1	NC
C ²	2040	2012	1500	1600	97.1	368	T1	NC
Bhp ¹	1825	1800	1342	1785	87.2	330	T1	NC
Chp ¹	1977	1950	1454	1835	96.0	363	T1	NC
Dhp ¹	2129	2100	1566	1880	101.3	383	T1	NC
Ehp ¹	2282	2250	1678	1925	109.6	415	T1	NC

¹Fuel consumption tolerance +5%. Reflects European standards. ²High displacement engine (HD)

³Wide operating speed range

LE

H

WE

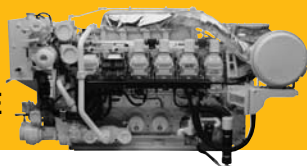
min.	111 in/2819 mm	71.1 in/1806 mm	67.1 in/1703 mm
max.	121 in/3067 mm	82.3 in/2091 mm	70.2 in/1785 mm
HD	120 in/3039 mm	81.7 in/2074 mm	78.3 in/1988 mm

Vee 12, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	6.7 x 7.5 in	170 x 190 mm
Bore x Stroke²	6.7 x 8.5 in	170 x 215 mm
Displacement	3158 cu in	51.8 liter
Displacement²	3576 cu in	58.6 liter
Rotation (from flywheel end)	Counterclockwise or clockwise	
Engine dry weight (approx.)	14,398-14,411 lb	6531-6537 kg

3512C

PROPULSION ENGINE



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

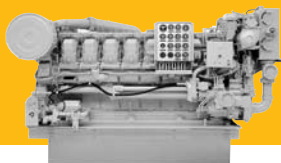
	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
A	1522	1500	1119	1800	70.3	266.0	T2C	IW/CC2
A ¹	1836	1810	1350	1600	84.7	321.0	T2C	IW/CC2
B	1597	1575	1174	1800	73.8	279.4	T2C	IW/CC2
B ¹	1938	1911	1425	1600	89.0	337.0	T2C	IW/CC2
B ¹	2282	2250	1678	1800	111.0	420.0	T2C	IW/CC2
C	1673	1650	1230	1800	77.2	292.1	T2C	IW/CC2
C ¹	2040	2012	1500	1600	93.7	355.0	T2C	IW/CC2
C ¹	2400	2365	1765	1800	119.2	451.3	T1	NC
C ¹	2400	2365	1765	1800	116.5	441.0	T2C	IW/CC2
D ¹	2577	2541	1895	1800	128.4	486.0	T1	NC
D ¹	2587	2551	1902	1800	124.4	471.0	T2C	IW/CC2

¹Ratings are high displacement (HD)

	LE	H	WE
min.	102.0 in/2590 mm	75.0 in/1904 mm	80.2 in/2037 mm
max.	105.1 in/2669 mm	88.3 in/2242 mm	87.9 in/2232 mm

Vee 12, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	6.69 x 8.46 in	170 x 215 mm
	6.69 x 7.48 in	170 x 190 mm
Displacement	3574 cu in	58.6 liter
	3161 cu in	51.8 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	15,139-16,338 lb	6867-7411 kg



RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
A	1622	1603	1195	1200	76.1	288	NC	NC
A	1734	1710	1275	1600	85.9	325	NC	NC
A	1734	1710	1275	1800	86.5	328	NC	NC
B	1698	1676	1250	1200	79.5	301	NC	NC
B	1835	1810	1350	1600	91.0	345	NC	NC
B	1947	1920	1432	1800	96.5	365	NC	NC
C	1774	1750	1305	1200	83.3	316	NC	NC
C	2028	2000	1491	1800	103.2	391	NC	NC
D	2231	2200	1640	1800	113.8	431	NC	NC

These ratings do not meet the 2004 EPA emissions standards or the IMO regulation on NO_x emissions.

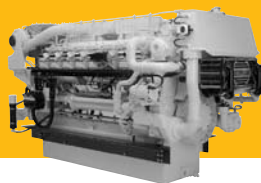
	LE	H	WE
min.	145.3 in/3690 mm	80.8 in/2053 mm	67.1 in/1703 mm
max.	145.3 in/3690 mm	80.8 in/2053 mm	67.1 in/1703 mm

Vee 16, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	6.7 x 7.5 in	170 x 190 mm
Displacement	4210 cu in	69 liter
Rotation (from flywheel end)	Counterclockwise or clockwise	
Engine dry weight (approx)	17,699 lb	8028 kg

3516B

PROPULSION ENGINE



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
A	1673	1650	1230	1200	77.1	292	T1	NC
A ²	1901	1875	1398	1200	87.9	333	T1	NC
A	2028	2000	1491	1600	95.0	360	T1	NC
A	2028	2000	1491	1800	94.0	356	T1	NC
A ³	2028	2000	1491	1800	103.9	393	T1	NC
A ²	2292	2260	1685	1600	102.6	388	T1	NC
A ²	2481	2447	1825	1600	112.8	427	T1	NC
B	1775	1750	1305	1200	81.7	309	T1	NC
B	2129	2100	1566	1600	99.5	377	T1	NC
B	2129	2100	1566	1800	98.6	373	T1	NC
B ²	2408	2375	1771	1600	106.9	405	T1	NC
B ²	2611	2575	1920	1600	112.8	427	T1	NC
C	1876	1850	1379	1200	86.6	328	T1	NC
C	2231	2200	1640	1600	104.4	395	T1	NC
C	2231	2200	1640	1800	103.4	391	T1	NC
C ²	2535	2500	1864	1600	111.9	424	T1	NC
C ²	2718	2682	2000	1600	122.8	465	T1	NC
Ahp ¹	2718	2682	2000	1925	128.9	488	T1	NC
Bhp ¹	2434	2400	1790	1785	110.4	418	T1	NC
Chp ¹	2636	2600	1939	1835	120.2	455	T1	NC
Dhp ¹	2839	2800	2088	1880	132.7	502	T1	NC
Ehp ¹	3042	3000	2237	1925	143.3	542	T1	NC

¹Fuel consumption tolerance +5%. Reflects European standards.

²High displacement engine (HD)

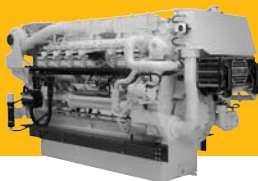
³Wide operating speed range

	LE	H	WE
min.	125.5 in/3187 mm	69.0 in/1753 mm	67.0 in/1703 mm
max.	126.8 in/3221 mm	82.3 in/2091 mm	80.8 in/2053 mm
HD	125.5 in/3187 mm	81.9 in/2082 mm	84.4 in/2144 mm

Vee 16, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	6.7 x 7.5 in	170 x 190 mm
Bore x Stroke ²	6.7 x 8.5 in	170 x 215 mm
Displacement	4210 cu in	69 liter
Displacement ²	4766 cu in	78 liter
Rotation (from flywheel end)	Counterclockwise or clockwise	
Engine dry weight (approx)	17,185-17,699 lb	7795-8028 kg

Electronic
Control
System



3516C

PROPULSION ENGINE

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
A	2028	2000	1492	1600	96.3	364.0	T2C	IW/CC2
A ¹	2482	2448	1825	1600	113.2	429.0	T2C	IW/CC2
B	2130	2100	1566	1600	100.4	379.9	T2C	IW/CC2
B ¹	2611	2575	1920	1600	118.6	449.0	T2C	IW/CC2
B ¹	3046	3004	2240	1800	148.3	561.3	T2C	IW/CC2
C	2231	2200	1641	1600	104.5	395.4	T2C	IW/CC2
C ¹	2720	2682	2000	1600	123.4	467.1	T2C	IW/CC2
C ¹	3196	3151	2350	1800	148.6	562.7	T1	NC
C ¹	3196	3151	2350	1800	154.7	586.0	T2C	IW/CC2
D ¹	3434	3386	2525	1800	159.8	604.9	T1	NC
D ¹	3434	3386	2525	1800	165.0	624.6	T2C	IW/CC2

¹Ratings are high displacement (HD)

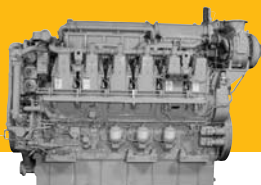
	LE	H	WE
min.	121.4 in/3084 mm	77.4 in/1967 mm	80.2 in/2037 mm
max.	125.4 in/3186 mm	84.6 in/2150 mm	84.3 in/2142 mm

Vee 16, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	6.69 x 7.48 in	170 x 190 mm
	6.69 x 8.46 in	170 x 215 mm
Displacement	4211 cu in	69 liter
	4765 cu in	78 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	17,921-20,649 lb	8129-9366 kg

C280-6

PROPULSION ENGINE



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
CS	2352	2320	1730	900	106	400	T2C	NC
CS	2515	2481	1850	1000	118	447	T2C	NC
MC	2583	2548	1900	900	116	439	T2C	NC
MC	2760	2722	2030	1000	128	483	T2C	NC

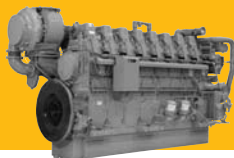
Additional ratings available for the above engines. Consult your Caterpillar representative.

C280-6 propulsion ratings listed above are also available in Tier 1 configurations.

	LE	H	WE
min.	158 in/4013 mm	108 in/2743 mm	71 in/1803 mm
max.	158 in/4013 mm	108 in/2743 mm	71 in/1803 mm

In-line 6, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	11.0 x 11.8 in	280 x 300 mm
Displacement	6773 cu in	111 liter
Rotation (from flywheel end)	Counterclockwise or clockwise	
Engine dry weight (approx)	34,496 lb	15 680 kg



C280-8

PROPULSION ENGINE

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
CS	3127	3084	2300	900	136	515	T2C	NC
CS	3345	3299	2460	1000	153	577	T2C	NC
MC	3440	3393	2530	900	150	567	T2C	NC
MC	3684	3634	2710	1000	168	635	T2C	NC

Additional ratings available for the above engines. Consult your Caterpillar representative.

C280-8 propulsion ratings listed above are also available in Tier 1 configurations.

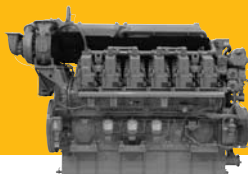
	LE	H	WE
min.	195 in/4953 mm	104 in/2642 mm	71 in/1803 mm
max.	195 in/4953 mm	104 in/2642 mm	71 in/1803 mm

In-line 8, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	11.0 x 11.8 in	280 x 300 mm
Displacement	9031 cu in	148 liter
Rotation (from flywheel end)	Counterclockwise or clockwise	
Engine dry weight (approx)	41,800 lb	19 000 kg

C280-12

PROPULSION ENGINE



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
CS 4704	4704	4640	3460	900	211	799	T2C	NC
CS 5031	5031	4962	3700	1000	236	893	T2C	NC
MC 5167	5167	5096	3800	900	232	878	T2C	NC
MC 5520	5520	5444	4060	1000	255	966	T2C	NC

Additional ratings available for the above engines. Consult your Caterpillar representative.

C280-12 propulsion ratings listed above are also available in Tier 1 configurations.

	LE	H	WE
min.	182 in/4623 mm	134 in/3404 mm	80 in/2032 mm
max.	182 in/4623 mm	134 in/3404 mm	80 in/2032 mm

Vee 12, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	11.0 x 11.8 in	280 x 300 mm
Displacement	13,546 cu in	222 liter
Rotation (from flywheel end)	Counterclockwise or clockwise	
Engine dry weight (approx)	57,276 lb	25 980 kg

Electronic
Control
System



C280-16

PROPULSION ENGINE

RATINGS AND FUEL CONSUMPTION

	mhp	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
CS	6255	6169	4600	900	272	1030	T2C	NC
CS	6690	6598	4920	1000	305	1153	T2C	NC
MC	6879	6785	5060	900	300	1133	T2C	NC
MC	7369	7268	5420	1000	336	1271	T2C	NC

Additional ratings available for the above engines. Consult your Caterpillar representative.

Arrangements are available with front mounted turbochargers or rear mounted turbochargers.

C280-16 propulsion ratings listed above are also available in Tier 1 configurations.

	LE	H	WE
min.	224 in/5690 mm	134 in/3403 mm	80 in/2032 mm
max.	224 in/5690 mm	134 in/3403 mm	80 in/2032 mm

Vee 16, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	11.0 x 11.8 in	280 x 300 mm
Displacement	18,062 cu in	296 liter
Rotation (from flywheel end)	Counterclockwise or clockwise	
Engine dry weight (approx)	62,832 lb	28 500 kg

Caterpillar Marine Generator Sets

Caterpillar has offered packaged power systems for over 65 years. We assure power and performance ratings, as advertised, through extensive factory testing.

Caterpillar Generator Sets typically exceed NEMA and IEEE standards for load acceptance. All rotor designs have been type tested at 150% overspeed for two hours at 338° F (170° C) ambient temperature.

- **Heat Exchanger/Keel Cooled** for ship's prime power, navigation, lighting, radio, propulsion, thrusters, (electric motor driven).
- **Radiator Cooled** for emergency power generation on deck, harbor unloading.

Rating Definition

Prime power for continuous electrical service – capable of 10% overload. Marine generator ratings are based on 194° F (90° C) temperature rise for the generator.

Rating Conditions

Ratings are based on SAE J3046 and J1349 standard conditions of 29.61 in. Hg (100 kPa) and 77° F (25° C). These ratings also apply at ISO8665, ISO3046-1:2002E, DIN6271-3, and BS5514 standard conditions of 29.61 in. Hg (100 kPa), 81° F (27° C), and 60% relative humidity.

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

If your plans call for diesel electric propulsion:

Reference the prime power marine generator set ratings for 3500 and smaller engines.

For C280 engines, reference the maximum continuous (MC) ratings on page 15 or pages 40-43 of this Selection Guide when the average load factor is less than 80%. Reference the continuous service (CS) ratings on page 11 or pages 40-43 for average load factors greater than 80%. These ratings have a 10% overload capability.

60 Hz Marine Generator Set Ratings

ekW @1.0pf	kV•A	Model
13.5	13.5	C1.5
21.5-29.5	21.5-29.5	C2.2

ekW @.8pf	kV•A	Model
14.5	18.0	C1.5
21.0-30.0	26.5-37.5	C2.2
44-99	55-123	C4.4
175-250	219-313	C9
260-320	325-400	3406C
340-550	425-688	C18
425-590	531-738	3412C
600-910	750-1138	3508B
1030-1360	1287-1700	3512B
1285-1825	1606-2281	3516B
1650-1820	2063-2275	C280-6
2200-2420	2750-3025	C280-8
3300-3640	4125-4550	C280-12
4400-4840	5500-6050	C280-16

Power factor (pf) is the ratio between Real Power and Apparent Power. It is also the ratio between the resistive part of impedance and total impedance. Power factor can be read directly with a power factor meter. It can also be calculated from voltage, current, and power meter readings.

$$\text{Power Factor} = \frac{\text{Real Power}}{\text{Apparent Power}} = \frac{\text{Watts}}{1 \times V} = \frac{1920 \text{ w}}{5a \times 480 \text{ v}} = .8$$

50 Hz Marine Generator Set Ratings

ekW @1.0pf	kV•A	Model
11.0	11.0	C1.5
18.0-24.5	18.0-24.5	C2.2

ekW @.8pf	kV•A	Model
12.0	15.0	C1.5
17.5-24.5	22.0-30.5	C2.2
36-86	45-107	C4.4
150-200	188-250	C9
215-245	269-306	3406C
275-450	344-563	C18
350-500	438-625	3412C
590-800	738-1000	3508B
880-1200	1000-1500	3512B
1180-1600	1475-2000	3516B
1760-1940	2200-2425	C280-6
2350-2600	2938-3250	C280-8
3520-3880	4400-4850	C280-12
4700-5200	5875-6500	C280-16

Power factor (pf) is the ratio between Real Power and Apparent Power. It is also the ratio between the resistive part of impedance and total impedance. Power factor can be read directly with a power factor meter. It can also be calculated from voltage, current, and power meter readings.

$$\text{Power Factor} = \frac{\text{Real Power}}{\text{Apparent Power}} = \frac{\text{Watts}}{1 \times V} = \frac{1920 \text{ w}}{5a \times 480 \text{ v}} = .8$$



C1.5

GENERATOR SET

RATINGS AND FUEL CONSUMPTION

	Gen Set			U.S. g/h	l/h	EPA regs.	EU regs.
	ekW @ .8pf	kV•A	rpm				
Maximum Continuous Rating							
60 Hertz	14.5	18.0	1800	1.3	5.0	NRT2	NST
50 Hertz	12.0	15.0	1500	1.1	4.2	NRT2	NST
Continuous Rating							
60 Hertz	13.0	16.5	1800	1.2	4.5	NRT2	NST
50 Hertz	11.0	13.5	1500	1.0	3.8	NRT2	NST

	Gen Set			U.S. g/h	l/h	EPA regs.	EU regs.
	ekW @ 1.0pf	kV•A	rpm				
Maximum Continuous Rating							
60 Hertz	13.5	13.5	1800	1.3	5.0	NRT2	NST
50 Hertz	11.0	11.0	1500	1.1	4.2	NRT2	NST
Continuous Rating							
60 Hertz	12.0	12.0	1800	1.2	4.5	NRT2	NST
50 Hertz	10.0	10.0	1500	1.0	3.8	NRT2	NST

Maximum Continuous Power: Power available at variable load with the average not exceeding 50%. No overload is permitted.

Continuous Power: Overload of 10% is permitted for one hour in twelve hours operational. The remaining operational time should be at varying loads with the average not exceeding 80% of continuous power in one day.

	L	H	WE
Single Phase			
Open Set	37.4 in/962 mm	27.5 in/699 mm	21 in/533 mm
Enclosed Set	40 in/1021 mm	28 in/710 mm	24 in/608 mm
3 Phase			
Open Set	41.9 in/1065 mm	28.7 in/733 mm	19.8 in/504 mm
Enclosed Set	46 in/1170 mm	30.8 in/783 mm	24 in/608 mm

In-line 3, 4-Stroke-Cycle Diesel

Aspiration	NA	
Bore x Stroke	3.31 x 3.5 in	84 x 90 mm
Displacement	91 cu in	1.5 liter
Rotation (from flywheel end)	Counterclockwise	
Generator set weight (approx)	703/908 lb	319/412 kg

C2.2

GENERATOR SET



Mechanical
Control
System

RATINGS AND FUEL CONSUMPTION

	Gen Set			U.S. g/h	l/h	EPA regs.	EU regs.
	ekW @ .8pf	kV•A	rpm				
Maximum Continuous Rating							
60 Hertz	21.0	26.5	1800	1.98	7.5	NRT2	NST
50 Hertz	17.5	22.0	1500	1.66	6.3	NRT2	NST
60 Hertz	30.0	37.5	1800	2.48	9.4	NRT2	NST
50 Hertz	24.5	30.5	1500	2.09	7.9	NRT2	NST

Continuous Rating

60 Hertz	19.5	24.0	1800	1.63	6.2	NRT2	NST
50 Hertz	16.0	20.0	1500	1.37	5.2	NRT2	NST
60 Hertz	27.0	34.0	1800	2.24	8.5	NRT2	NST
50 Hertz	22.5	28.0	1500	1.88	7.1	NRT2	NST

	Gen Set			U.S. g/h	l/h	EPA regs.	EU regs.
	ekW @ 1.0pf	kV•A	rpm				
Maximum Continuous Rating							
60 Hertz	21.5	21.5	1800	1.98	7.5	NRT2	NST
50 Hertz	18.0	18.0	1500	1.66	6.3	NRT2	NST
60 Hertz	29.5	29.5	1800	2.48	9.4	NRT2	NST
50 Hertz	24.5	24.5	1500	2.09	7.9	NRT2	NST

Continuous Rating

60 Hertz	19.0	19.0	1800	1.63	6.2	NRT2	NST
50 Hertz	16.0	16.0	1500	1.37	5.2	NRT2	NST
60 Hertz	27.0	27.0	1800	2.24	8.5	NRT2	NST
50 Hertz	22.5	22.5	1500	1.88	7.1	NRT2	NST

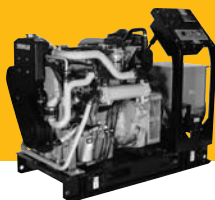
Maximum Continuous Power: Power available at variable load with the average not exceeding 50%. No overload is permitted.

Continuous Power: Overload of 10% is permitted for one hour in twelve hours operational. The remaining operational time should be at varying loads with the average not exceeding 80% of continuous power in one day.

	L	H	WE
Open Set	45 in/1147 mm	32 in/825 mm	20.5 in/521 mm
Enclosed Set	46 in/1170 mm	31 in/775 mm	24 in/608 mm

In-line 4, 4-Stroke-Cycle Diesel

Aspiration	NA, T	
Bore x Stroke	3.31 x 3.94 in	84 x 100 mm
Displacement	135 cu in	2.2 liter
Rotation (from flywheel end)	Counterclockwise	
Generator set weight (approx)	857/1027 lb	389/466 kg



C4.4

GENERATOR SET

RATINGS AND FUEL CONSUMPTION

	Gen Set					EPA	EU
	ekW @ .8pf	kV•A	rpm	U.S. g/h	l/h	regs.	regs.
60 Hertz	42.0R ¹	53.0	1800	3.4	13.0	T2C	NC
60 Hertz	44.0 ¹	55.0	1800	3.4	13.0	T2C	NC
60 Hertz	56.0R ¹	70.0	1800	4.5	16.9	T2C	NC
60 Hertz	58.5 ¹	73.0	1800	4.2	15.8	T2C	NC
60 Hertz	72.0R ¹	90.0	1800	5.8	22.0	T2C	NC
60 Hertz	76.0 ¹	95.0	1800	5.8	22.0	T2C	NC
60 Hertz	95.0R ¹	119.0	1800	7.3	27.7	T2C	NC
60 Hertz	99.0 ¹	123.0	1800	7.3	27.5	T2C	NC
50 Hertz	36.0R ¹	45.0	1500	2.9	11.0	NC	NC
50 Hertz	38.0 ¹	47.5	1500	2.9	11.0	NC	NC
50 Hertz	49.0R ¹	61.0	1500	3.9	14.8	NC	IW
50 Hertz	51.5 ¹	64.5	1500	3.9	14.8	NC	IW
50 Hertz	65.0R ¹	81.0	1500	4.9	18.6	NC	IW
50 Hertz	69.0 ¹	86.0	1500	4.9	18.6	NC	IW
50 Hertz	82.0R ¹	103.0	1500	6.5	24.6	NC	IW
50 Hertz	86.0 ¹	107.0	1500	6.5	24.6	NC	IW

R – Radiator cooled only.

¹ABS, BV, DnV, GL, LR, RINA, CCS approved generator set packages available.

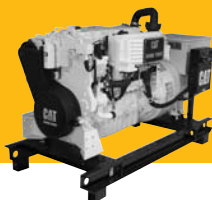
	L	H	WE
Open Min.	55.5 in/1409 mm	51.9 in/1318 mm	28.5 in/724 mm
Open Max.	62.6 in/1590 mm	55.3 in/1405 mm	28.5 in/724 mm
Enclosed	68.9 in/1750 mm	39.4 in/1000 mm	47.8 in/1215 mm

In-line 4, 4-Stroke-Cycle Diesel

Aspiration	NA, T, TA	
Bore x Stroke	4.13 x 5.0 in	105 x 127 mm
Displacement	269 cu in	4.4 liter
Rotation (from flywheel end)	Counterclockwise	
Generator set weight (approx)	1775-2238 lb	805-1015 kg

C9

GENERATOR SET



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

	Gen Set		rpm	U.S. g/h	l/h	EPA regs.	EU regs.
	ekW @ .8pf	kV•A					
60 Hertz	163R	204	1800	13.6	51.6	T2C	NC
60 Hertz	175	219	1800	13.7	51.8	T2C	NC
60 Hertz	203R	254	1800	16.8	63.5	T2C	CC2
60 Hertz	215	269	1800	16.9	63.8	T2C	CC2
60 Hertz	238R	298	1800	17.9	68.1	T2C	CC2
60 Hertz	250	313	1800	17.9	68.1	T2C	CC2
50 Hertz	142R	178	1500	10.8	41.6	T2C	NC
50 Hertz	150	188	1500	10.9	41.6	T2C	NC
50 Hertz	167R	208	1500	12.4	47.1	T2C	NC
50 Hertz	175	219	1500	12.9	47.7	T2C	NC
50 Hertz	192R	240	1500	14.2	53.7	T2C	NC
50 Hertz	200	250	1500	14.2	53.7	T2C	NC

R – Radiator cooled only.

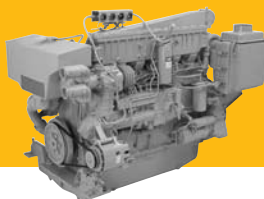
MCS approvable.

Now available on all C9 Generator Sets.

	LG	H	WE
min.	82.9 in/2106 mm	46.0 in/1169 mm	39.2 in/996.8 mm
max.	87.2 in/2216 mm	46.0 in/1169 mm	39.2 in/996.8 mm

In-line 6, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	4.41 x 5.87 in	112 x 149 mm
Displacement	538 cu in	8.8 liter
Rotation (from flywheel end)	Counterclockwise	
Generator set weight (approx)	3865-4195 lb	1753-1903 kg



3406C

GENERATOR SET

RATINGS AND FUEL CONSUMPTION

	Gen Set			U.S. g/h	l/h	EPA regs.	EU regs.
	ekW @ .8pf	kV•A	rpm				
60 Hertz	250R	313	1800	19.2	72.6	NC	NC
60 Hertz	260 ¹	325	1800	19.2	72.6	NC	NC
60 Hertz	315R	394	1800	22.6	85.5	NC	NC
60 Hertz	320 ¹	400	1800	22.6	85.5	NC	NC
50 Hertz	200R	250	1500	15.6	59.2	NC	NC
50 Hertz	215 ¹	269	1500	15.6	59.2	NC	NC
50 Hertz	240R ¹	300	1500	17.8	67.5	NC	NC
50 Hertz	245 ¹	306	1500	17.8	67.5	NC	NC

R – Radiator cooled only.

¹ABS, BV, DnV, GL, LR, RINA, CCS approved generator set packages available.

	LE	LG	H	WE
min.	62.6 in/1590 mm	114.3 in/2902 mm	55.1 in/1400 mm	39.2 in/996 mm
max.	62.6 in/1590 mm	117.3 in/2979 mm	58.0 in/1474 mm	39.2 in/996 mm

In-line 6, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	5.4 x 6.5 in	137 x 165 mm
Displacement	893 cu in	14.6 liter
Rotation (from flywheel end)	Counterclockwise	
Generator set weight (approx)	5300-5700 lb	2409-2591 kg

C18

GENERATOR SET



Electronic
Control
System

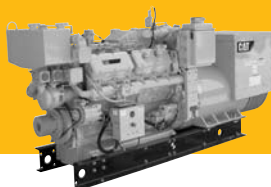
RATINGS AND FUEL CONSUMPTION

	Gen Set	EPA					EU
	ekW @ .8pf	kV•A	rpm	U.S. g/h	l/h	regs.	regs.
60 Hertz	340	425	1800	23.6	89.3	T1	NC
60 Hertz	425	531	1800	29.5	111.7	T1	NC
60 Hertz	500	625	1800	34.3	129.8	T1	NC
60 Hertz	550	688	1800	38.1	144.2	T1	NC
50 Hertz	275	344	1500	18.9	71.5	T1	NC
50 Hertz	350	438	1500	23.3	88.2	T1	NC
50 Hertz	400	500	1500	27.0	102.2	T1	NC
50 Hertz	450	563	1500	31.1	117.7	T1	NC

	L	H	W
min.	119.7 in/3040 mm	61.3 in/1557.5 mm	45.3 in/1150.9 mm
max.	119.7 in/3040 mm	61.3 in/1557.5 mm	45.3 in/1150.9 mm

In-line 6, 4-Stroke-Cycle Diesel

Aspiration	TA, TTA	
Bore x Stroke	5.7 x 7.2 in	145 x 183 mm
Displacement	1106 cu in	18.1 liter
Rotation (from flywheel end)	Counterclockwise	
Generator set weight (approx)	8375-10,064 lb	3799-4565 kg



3412C

GENERATOR SET

RATINGS AND FUEL CONSUMPTION

	Gen Set			U.S. g/h	l/h	EPA regs.	EU regs.
	ekW @ .8pf	kV•A	rpm				
60 Hertz	400R	500	1800	32.5	123.0	NC	NC
60 Hertz	425	531	1800	32.5	123.0	NC	NC
60 Hertz	500	625	1800	37.3	141.3	NC	NC
60 Hertz	550R	688	1800	43.9	166.1	NC	NC
60 Hertz	590 ¹	738	1800	43.9	166.1	NC	NC
50 Hertz	350	438	1500	26.3	99.7	NC	NC
50 Hertz	385R	481	1500	29.9	113.1	NC	NC
50 Hertz	405	506	1500	29.9	113.1	NC	NC
50 Hertz	480R	600	1500	36.1	136.8	NC	NC
50 Hertz	500 ¹	625	1500	36.1	136.8	NC	NC

R – Radiator cooled only.

¹ABS, BV, DnV, GL, LR approved generator set packages available.

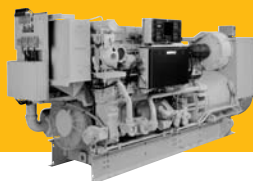
	LE	LG	H	WE
min.	71.7 in/1821 mm	130.9 in/3324 mm	61.3 in/1556 mm	49.9 in/1267 mm
max.	71.7 in/1821 mm	136.9 in/3477 mm	61.3 in/1556 mm	49.9 in/1267 mm

Vee 12, 4-Stroke-Cycle Diesel

Aspiration	TA		
Bore x Stroke	5.4 x 6.0 in		137 x 152 mm
Displacement	1649 cu in		27.0 liter
Rotation (from flywheel end)	Counterclockwise		
Generator set weight (approx)	9540 lb		4327 kg

3508B

GENERATOR SET



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

	Gen Set					EPA	EU
	ekW @ .8pf	kV•A	rpm	U.S. g/h	l/h	regs.	regs.
60 Hertz	600	750	1200	42.6	161.2	T1	NC
60 Hertz	715	894	1800	49.3	186.8	T1	NC
60 Hertz	910 ¹	1138	1800	66.9	253.1	T1	NC
50 Hertz	590	738	1000	41.9	158.6	T1	NC
50 Hertz	630	788	1500	44.2	167.4	T1	NC
50 Hertz	800 ¹	1000	1500	57.4	217.1	T1	NC

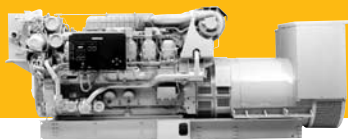
¹ABS, BV, DnV, GL, LR approved generator set packages available.

	LE	LG	H	WE
min.	82.7 in/2101 mm	145.8 in/3704 mm	71.1 in/1806 mm	67.1 in/1703 mm
max.	82.7 in/2101 mm	167.5 in/4256 mm	71.9 in/1826 mm	67.1 in/1703 mm

Vee 8, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	6.7 x 7.5 in	170 x 190 mm
Displacement	2105 cu in	34.5 liter
Rotation (from flywheel end)	Counterclockwise	
Generator set weight (approx)	16.940-19.640 lb	7684-8909 kg

Electronic
Control
System



3512B

GENERATOR SET

RATINGS AND FUEL CONSUMPTION

	Gen Set					EPA	EU
	ekW @ .8pf	kV•A	rpm	U.S. g/h	l/h	regs.	regs.
60 Hertz	1030	1287	1200	69.2	262.0	T1	NC
60 Hertz	1070	1338	1800	73.4	278.0	T1	NC
60 Hertz	1360	1700	1800	90.9	344.0	T1	NC
50 Hertz	880	1000	1000	60.3	228.2	T1	NC
50 Hertz	965	1212	1500	64.2	243.2	T1	NC
50 Hertz	1200	1500	1500	77.6	293.6	T1	NC

	LE	LG	H	WE
min.	104.0 in/2641 mm	178.6 in/4536 mm	80.8 in/2053 mm	67.1 in/1703 mm
max.	104.0 in/2641 mm	189.1 in/4804 mm	81.6 in/2072 mm	84.4 in/2144 mm

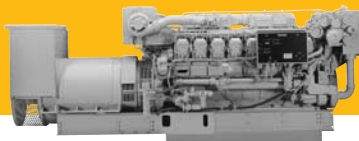
Vee 12, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	6.7 x 7.5 in	170 x 190 mm
Displacement	3158 cu in	51.8 liter
Rotation (from flywheel end)	Counterclockwise	
Generator set weight (approx)	22,120-24,661 lb	10 034-11 186 kg

3516B

GENERATOR SET

Electronic
Control
System



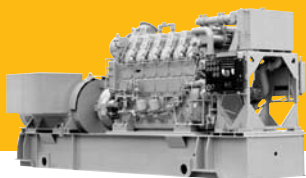
RATINGS AND FUEL CONSUMPTION

	Gen Set					EPA	EU
	ekW @ .8pf	kV•A	rpm	U.S. g/h	l/h	regs.	regs.
60 Hertz	1285	1606	1200	80.5	304.9	T1	NC
60 Hertz	1825	2281	1800	125.3	474.2	T1	NC
50 Hertz	1180	1475	1000	80.6	305.2	T1	NC
50 Hertz	1460	1825	1500	102.2	387.0	T1	NC
50 Hertz	1600	2000	1500	111.9	423.5	T1	NC

	LE	LG	H	WE
min.	125.2 in/3181 mm	199.8 in/5076 mm	80.8 in/2053 mm	67.1 in/1703 mm
max.	125.2 in/3181 mm	220.9 in/5611 mm	82.7 in/2100 mm	84.4 in/2144 mm

Vee 16, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	6.7 X 7.5 in	170 x 190 mm
Displacement	4210 cu in	69.0 liter
Rotation (from flywheel end)	Counterclockwise	
Generator set weight (approx)	25,030-29,845 lb	11 354-13 538 kg



C280-6

GENERATOR SET

RATINGS AND FUEL CONSUMPTION

	Gen Set					EPA	EU
	ekW @ .8pf	kV•A	rpm	U.S. g/h	l/h	regs.	regs.
60 Hertz	1650	2063	900	106.4	402.5	T2C	NC
60 Hertz	1820	2275	900	116.9	442.6	T2C	NC
50 Hertz	1760	2200	1000	116.4	440.4	T2C	NC
50 Hertz	1940	2425	1000	127.7	483.5	T2C	NC

C280-6 ratings listed above are also available in Tier 1 configurations.

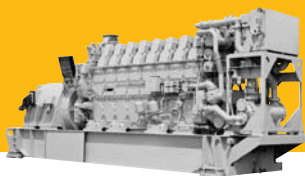
	LE	LG	H	WE
min.	145 in/3691 mm	280.3 in/7120 mm	154.9 in/3934 mm	77.2 in/1961 mm
max.	145 in/3691 mm	280.3 in/7120 mm	154.9 in/3934 mm	77.2 in/1961 mm

In-line 6, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	11.0 x 11.8 in	280 x 300 mm
Displacement	6773 cu in	111 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	34,500 lb	15 680 kg
Generator weight (approx)	18,000 lb	8165 kg

C280-8

GENERATOR SET



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

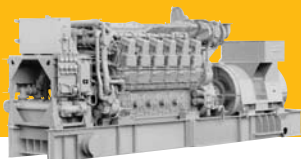
	Gen Set					EPA	EU
	ekW @ .8pf	kV•A	rpm	U.S. g/h	l/h	regs.	regs.
60 Hertz	2200	2750	900	136.5	516.5	T2C	NC
60 Hertz	2420	3025	900	150.1	568.2	T2C	NC
50 Hertz	2350	2938	1000	148.2	561.0	T2C	NC
50 Hertz	2600	3250	1000	161.4	610.9	T2C	NC

C280-8 ratings listed above are also available in Tier 1 configurations.

	LE	LG	H	WE
min.	178 in/4511 mm	316.5 in/8040 mm	155.0 in/3937 mm	77.2 in/1961 mm
max.	178 in/4511 mm	316.5 in/8040 mm	155.0 in/3937 mm	77.2 in/1961 mm

In-line 8, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	11.0 x 11.8 in	280 x 300 mm
Displacement	9031 cu in	148 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	41,800 lb	19 000 kg
Generator weight (approx)	25,000 lb	11 340 kg



C280-12

GENERATOR SET

RATINGS AND FUEL CONSUMPTION

	Gen Set					EPA	EU
	ekW @ .8pf	kV•A	rpm	U.S. g/h	l/h	regs.	regs.
60 Hertz	3300	4125	900	212.7	805.1	T2C	NC
60 Hertz	3640	4550	900	233.8	885.1	T2C	NC
50 Hertz	3520	4400	1000	232.7	880.8	T2C	NC
50 Hertz	3880	4850	1000	255.5	967.0	T2C	NC

C280-12 ratings listed above are also available in Tier 1 configurations.

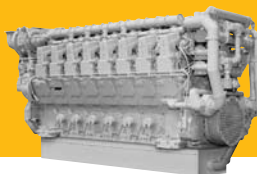
	LE	LG	H	WE
min.	161 in/4087 mm	316.5 in/8040 mm	160.8 in/4085 mm	78.7 in/2000 mm
max.	161 in/4087 mm	316.5 in/8040 mm	160.8 in/4085 mm	78.7 in/2000 mm

Vee 12, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	11.0 x 11.8 in	280 x 300 mm
Displacement	13,546 cu in	222 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	57,276 lb	25 980 kg
Generator weight (approx)	33,000 lb	14 970 kg

C280-16

GENERATOR SET



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

	Gen Set			U.S. g/h	l/h	EPA regs.	EU regs.
	ekW @ .8pf	kV•A	rpm				
60 Hertz	4400	5500	900	272.9	1033.1	T2C	NC
60 Hertz	4840	6050	900	300.2	1136.4	T2C	NC
50 Hertz	4700	5875	1000	296.4	1121.9	T2C	NC
50 Hertz	5200	6500	1000	322.8	1221.7	T2C	NC

C280-16 ratings listed above are also available in Tier 1 configurations.

	LE	LG	H	WE
min.	197 in/5007 mm	366.7 in/9314 mm	164.1 in/4167 mm	78.3 in/1990 mm
max.	197 in/5007 mm	366.7 in/9314 mm	164.1 in/4167 mm	78.3 in/1990 mm

Vee 16, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	11.0 x 11.8 in	280 x 300 mm
Displacement	18,062 cu in	296 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	62,832 lb	28 500 kg
Generator weight (approx)	40,000 lb	18 145 kg

Caterpillar Marine Auxiliary Engines

Marine Auxiliary Engines are mainly used as gen set engines; however, they can be used for electrically driven pumps, winches, conveyors, thrusters, when it is specified. Engines can be radiator cooled or heat exchanger/keel cooled.

- **Radiator Cooled**

Engines compliant with EPA T2 C1 may be used for pumps, winches, cranes, conveyors, etc., generally used on deck.

- **Heat Exchanger/Keel Cooled**

Engines compliant with EPA T2 C1 may be used for thrusters, pumps, winches, etc., generally used below deck.

C9 HEAT EXCHANGER/ KEEL COOLED

GENERATOR SET ENGINE



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
C9	253	189	1800	13.7	51.8	T2C	NC
C9	311	232	1800	16.9	63.8	T2C	CC2
C9	361	269	1800	17.9	68.1	T2C	CC2
C9	217	162	1500	10.9	41.6	T2C	NC
C9	253	189	1500	12.9	47.7	T2C	NC
C9	288	215	1500	14.2	53.7	T2C	NC

	LE	H	WE
min.	43.9 in/1116.5 mm	43.8 in/1113.7 mm	38.3 in/973.5 mm
max.	43.9 in/1116.5 mm	43.8 in/1113.7 mm	38.3 in/973.5 mm

In-line 6, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	4.41 x 5.87 in	112 x 149 mm
Displacement	538 cu in	8.8 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	2088 lb	947 kg

C18

HEAT EXCHANGER/
KEEL COOLED

GENERATOR SET ENGINE



Electronic
Control
System

RATINGS AND FUEL CONSUMPTION

	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
C18	499	372	1800	23.5	89	T1	NC
C18	624	465	1800	29.3	111	T1	NC
C18	733	547	1800	34.9	132	T1	NC
C18	806	601	1800	38.3	145	T1	NC
C18	404	301	1500	16.6	63	T1	NC
C18	514	383	1500	22.2	84	T1	NC
C18	587	438	1500	26.9	102	T1	NC
C18	660	492	1500	31.7	120	T1	NC

	LE	H	WE
min.	60.6 in/1540 mm	44.9 in/1140 mm	42.9 in/1089 mm
max.	62.4 in/1584 mm	46.2 in/1172 mm	46.3 in/1175 mm

In-line 6, 4-Stroke-Cycle Diesel

Aspiration	TA, TTA	
Bore x Stroke	5.7 x 7.2 in	145 x 183 mm
Displacement	1106 cu in	18.1 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	3462-3694 lb	1570-1676 kg

Electronic
Control
System

HEAT EXCHANGER/KEEL COOLED



C18 ACERT

GENERATOR SET ENGINE & AUXILIARY

RATINGS AND FUEL CONSUMPTION

	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
C18 ACERT	499	372	1800	25.4	96.0	T2C	NC
C18 ACERT	624	465	1800	31.5	119.1	T2C	NC
C18 ACERT	733	547	1800	35.2	133.2	T2C	NC
C18 ACERT	806	601	1800	38.3	145.1	T2C	NC

	LE	H	WE
min.	59.23 in/1506 mm	45.08 in/1145 mm	42.44 in/1078 mm
max.	59.23 in/1506 mm	45.08 in/1145 mm	42.44 in/1078 mm

In-line 6, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	5.7 x 7.2 in	145 x 183 mm
Displacement	1106 cu in	18.1 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	3974-4565 lb	1802-2070 kg

Electronic
Control
System



HEAT EXCHANGER/
KEEL COOLED

C32 ACERT

GENERATOR SET ENGINE & AUXILIARY

RATINGS AND FUEL CONSUMPTION

	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
C32 ACERT	791	590	1500	37.8	143.2	T2C	IW/CC2
C32 ACERT	923	688	1500	44.0	166.6	T2C	IW/CC2
C32 ACERT	1172	874	1500	56.6	214.2	T2C	IW/CC2
C32 ACERT	916	683	1800	44.4	168.2	T2C	IW/CC2
C32 ACERT	1047	781	1800	50.8	192.2	T2C	IW/CC2
C32 ACERT	1333	994	1800	54.5	244.1	T2C	IW/CC2

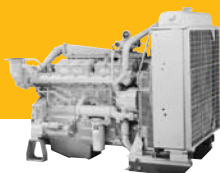
	LE	H	WE
min.	81.6 in/2072.6 mm	59.9 in/1521.5 mm	56.8-58.9 in/1442.7-1496.1 mm
max.	81.6 in/2072.6 mm	59.9 in/1521.5 mm	56.8-58.9 in/1442.7-1496.1 mm

Vee 12, 4-Stroke-Cycle Diesel

Aspiration	TTA	
Bore x Stroke	5.7 x 6.4 in	145 x 162 mm
Displacement	1959 cu in	32.1 liter
Rotation (from flywheel end)	Counterclockwise	
Engine dry weight (approx)	7100 lb	3220 kg

3400 Series

AUXILIARY



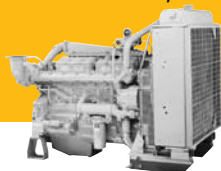
RATINGS AND FUEL CONSUMPTION

	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
3406C	306	228	1800	15.7	59.6	NC	NC
3406C	371	277	1800	19.2	72.6	NC	NC
3406C	462	345	1800	22.6	85.5	NC	NC
3408C	550	410	1800	27.8	105.4	NC	NC
3412C	603	450	1800	32.5	123.0	NC	NC
3412C	719	536	1800	37.3	141.3	NC	NC
3412C	831	620	1800	43.9	166.1	NC	NC
3406C	307	229	1500	15.6	59.2	NC	NC
3406C	349	260	1500	17.8	67.5	NC	NC
3412C	578	431	1500	29.9	113.1	NC	NC
3412C	716	534	1500	36.1	136.8	NC	NC

	LE	H	WE
3406 min.	62.6 in/1590 mm	49.6 in/1261 mm	37.4 in/950 mm
max.	63.9 in/1623 mm	52.6 in/1335 mm	39.2 in/996 mm
3412 min.	71.7 in/1822 mm	55.5 in/1410 mm	49.9 in/1267 mm
max.	71.7 in/1822 mm	60.1 in/1527 mm	60.1 in/1527 mm

In-line 6, Vee 8, Vee 12, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	5.4 x 6.0-6.5 in	137 x 152-165 mm
Displacement	3406 — 893 cu in	14.6 liter
	3412 — 1649 cu in	27 liter
Engine dry weight (approx)	3406 — 3015-3265 lb	1368-1481 kg
	3412 — 5050-5330 lb	2291-2418 kg



3400 Series

AUXILIARY

RATINGS AND FUEL CONSUMPTION

	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
3406C	358	267	1800	19.2	72.6	NC	NC
3406C	451	336	1800	22.6	85.5	NC	NC
3408C	531	396	1800	27.8	105.4	NC	NC
3412C	573	427	1800	32.5	123.0	NC	NC
3412C	782	583	1800	43.9	166.1	NC	NC
3406C	300	224	1500	15.6	59.2	NC	NC
3406C	341	254	1500	17.8	67.5	NC	NC
3412C	554	413	1500	29.9	113.1	NC	NC
3412C	688	513	1500	40.2	152.1	NC	NC

Ratings with fan

		LE	H	WE
3406	min.	76 in/1930 mm	59.6 in/1515 mm	39.4 in/1002 mm
	max.	77.9 in/1978 mm	66.8 in/1696 mm	50 in/1270 mm
3412	min.	85.3 in/2166 mm	75.7 in/1923 mm	50.6 in/1286 mm
	max.	98 in/2488 mm	84.8 in/2154 mm	67.2 in/1706 mm

In-line 6, Vee 8, Vee 12, 4-Stroke-Cycle Diesel

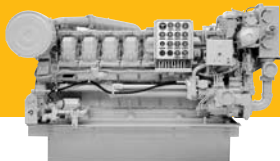
Aspiration	TA	
Bore x Stroke	5.4 x 6.0-6.5 in	137 x 152-165 mm
Displacement	3406 — 893 cu in	14.6 liter
	3412 — 1649 cu in	27 liter
Engine dry weight (approx)	3406 — 3261-3468 lb	1479-1573 kg
	3412 — 5743-6264 lb	2605-2841 kg

HEAT EXCHANGER COOLED

Mechanical Control System

3500 Series

AUXILIARY



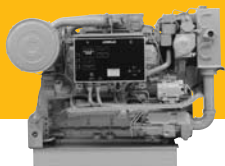
RATINGS AND FUEL CONSUMPTION

	bhp	bkW	rpm	EPA regs.	EU regs.
3508	804	599	1200	NC	NC
3508	1019	760	1800	NC	NC
3512	1281	955	1200	NC	NC
3512	1509	1125	1800	NC	NC
3516	1650	1230	1200	NC	NC
3516	2026	1511	1800	NC	NC
3508	598	446	1000	NC	NC
3508	903	673	1500	NC	NC
3512	1153	860	1000	NC	NC
3512	1368	1020	1500	NC	NC
3516	1475	1100	1000	NC	NC
3516	1817	1355	1500	NC	NC

		LE	H	WE
3508	min.	92.2 in/2350 mm	71.9 in/1826 mm	67.1 in/1703 mm
	max.	92.2 in/2350 mm	71.9 in/1826 mm	67.1 in/1703 mm
3512	min.	113.8 in/2890 mm	81.6 in/2072 mm	67.1 in/1703 mm
	max.	113.8 in/2890 mm	81.6 in/2072 mm	67.1 in/1703 mm
3516	min.	146.9 in/3730 mm	81.8 in/2078 mm	67.1 in/1703 mm
	max.	146.9 in/3730 mm	81.8 in/2078 mm	67.1 in/1703 mm

Vee 8, Vee 12, Vee 16, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	6.7 x 7.5 in	170 x 190 mm
Displacement	3508 — 2105 cu in	34.5 liter
	3512 — 3158 cu in	51.8 liter
	3516 — 4210 cu in	69 liter
Engine dry weight (approx)	3508 — 11,350 lb	5148 kg
	3512 — 14,250 lb	6464 kg
	3516 — 17,550 lb	7961 kg



3500B Series

GENERATOR SET ENGINE/AUXILIARY

RATINGS AND FUEL CONSUMPTION

	bhp	bkW	rpm	EPA regs.	EU regs.
3508B	915	682	1200	T1	NC
3508B	1019	760	1800	T1	NC
3508B	1298	968	1800	T1	NC
3512B	1478	1102	1200	T1	NC
3512B	1509	1125	1800	T1	NC
3512B	1910	1424	1800	T1	NC
3516B	1855	1383	1200	T1	NC
3516B	2549	1901	1800	T1	NC
3508B	870	649	1000	T1	NC
3508B	903	673	1500	T1	NC
3508B	1148	856	1500	T1	NC
3512B	1251	933	1000	T1	NC
3512B	1368	1020	1500	T1	NC
3512B	1686	1257	1500	T1	NC
3516B	1726	1287	1000	T1	NC
3516B	2303	1717	1500	T1	NC
3516B	2100	1566	1500	T1	NC

		LE	H	WE
3508B	min.	90.9 in/2310 mm	71.1 in/1806 mm	67.1 in/1703 mm
	max.	92.5 in/2350 mm	71.9 in/1826 mm	67.1 in/1703 mm
3512B	min.	114 in/2890 mm	80.8 in/2053 mm	67.1 in/1703 mm
	max.	120 in/3038 mm	81.7 in/2073 mm	78.3 in/1988 mm
3516B	min.	125.2 in/3181 mm	80.8 in/2053 mm	67.1 in/1703 mm
	max.	125.2 in/3181 mm	82.7 in/2100 mm	84.4 in/2144 mm

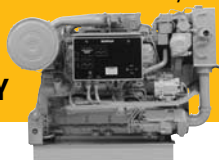
Vee 8, Vee 12, Vee 16, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	6.7 x 7.5 in	170 x 190 mm
Displacement	3508B — 2105 cu in	34.5 liter
	3512B — 3158 cu in	51.8 liter
	3516B — 4210 cu in	69 liter
	3508B — 11,276-11,500 lb	5115-5216 kg
Engine dry weight (approx)	3512B — 14,250-15,345 lb	6464-6960 kg
	3516B — 17,537-17,700 lb	7955-8029 kg

3500C Series

Electronic Control System

GENERATOR SET ENGINE/AUXILIARY



HEAT EXCHANGER/RADIATOR COOLED

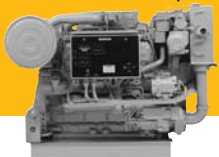
RATINGS AND FUEL CONSUMPTION

	bhp	bkW	ekW ²	rpm	EPA regs.	EU regs.
3512C ¹	2394	1786	1700	1800	T2C	NC
3512C ¹	2183	1628	1550	1800	T2C	NC
3516C ¹	3151	2350	2250	1800	T2C	NC

3500C Series

Electronic Control System

DIESEL ELECTRIC PROPULSION



HEAT EXCHANGER COOLED

RATINGS AND FUEL CONSUMPTION

	bhp	bkW	ekW ²	rpm	EPA regs.	EU regs.
3516C ¹	3151	2350	2250	1800	T2C	NC
3516C ¹	2809	2095	2000	1800	T2C	NC

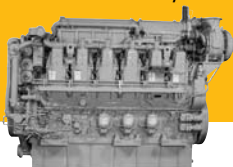
		LE	H	WE
3512C	min.	104.1 in/2644 mm	83.9 in/2131 mm	84.3 in/2142 mm
	max.	128.8 in/3272 mm	83.9 in/2131 mm	84.3 in/2142 mm
3516C	min.	125.4 in/3185 mm	83.9 in/2130 mm	84.3 in/2142 mm
	max.	125.4 in/3185 mm	83.9 in/2130 mm	84.3 in/2142 mm

Vee 12, Vee 16, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	6.69 x 8.46 in	170 x 215 mm
Displacement	3512C — 3574 cu in 3516C — 4765 cu in	58.57 liter 78.09 liter
Engine dry weight (approx)	3512C — 14,400 lb 3516C — 17,550-17,700 lb	6532 kg 7961-8029 kg

¹Ratings are high displacement (HD)

²ekW is based on a 95% generator efficiency.



C280 Series

AUXILIARY

RATINGS AND FUEL CONSUMPTION

	bhp	bkW	rpm	U.S. g/h	l/hr	EPA regs.	EU regs.
C280-6	2320	1730	900	107.4	407	T1	NC
C280-6	2481	1850	1000	118.9	450	T1	NC
C280-6	2548	1900	900	118.6	449	T1	NC
C280-6	2722	2030	1000	131.7	498	T1	NC
C280-8	3084	2300	900	143.7	544	T1	NC
C280-8	3299	2460	1000	153.2	580	T1	NC
C280-8	3393	2530	900	159.4	603	T1	NC
C280-8	3634	2710	1000	170.3	644	T1	NC
C280-12	4640	3460	900	214.9	813	T1	NC
C280-12	4962	3700	1000	237.7	900	T1	NC
C280-12	5096	3800	900	237.2	898	T1	NC
C280-12	5444	4060	1000	263.4	997	T1	NC
C280-16	6169	4600	900	287.4	1088	T1	NC
C280-16	6598	4920	1000	306.4	1159	T1	NC
C280-16	6785	5060	900	318.7	1206	T1	NC
C280-16	7268	5420	1000	340.6	1289	T1	NC

	L	LE	H	WE
C280-6 min.	168 in/4276 mm	145 in/3691 mm	108 in/2733 mm	68 in/1722 mm
max.	168 in/4276 mm	145 in/3691 mm	108 in/2733 mm	68 in/1722 mm
C280-8 min.	219 in/5561 mm	178 in/4511 mm	104 in/2641 mm	68 in/1722 mm
max.	219 in/5561 mm	178 in/4511 mm	104 in/2641 mm	68 in/1722 mm
C280-12 min.	191 in/4861 mm	161 in/4087 mm	140 in/3550 mm	69 in/1741 mm
max.	191 in/4861 mm	161 in/4087 mm	140 in/3550 mm	69 in/1741 mm
C280-16 min.	216 in/5482 mm	197 in/5007 mm	125 in/3171 mm	67 in/1704 mm
max.	216 in/5482 mm	197 in/5007 mm	125 in/3171 mm	67 in/1704 mm

In-line 6, Vee 8, Vee 12, Vee 16, 4-Stroke-Cycle Diesel

Aspiration	TA	
Bore x Stroke	11.0 x 11.8 in	280 x 300 mm
Displacement	C280-6 — 6773 cu in	111 liter
	C280-8 — 9031 cu in	148 liter
	C280-12 — 13,546 cu in	222 liter
	C280-16 — 18,062 cu in	296 liter
Engine dry weight (approx)	C280-6 — 34,496 lb	15 680 kg
	C280-8 — 41,800 lb	19 000 kg
	C280-12 — 57,276 lb	25 980 kg
	C280-16 — 62,832 lb	28 500 kg

MaK Marine Propulsion Engines



MaK Marine Propulsion Engines

With the objective of extending its diesel engine product line at the upper range, Caterpillar acquired MaK Motoren GmbH & Co. KG in 1997. The excellent reputation of the MaK brand is based on more than 80 years of experience in the development, manufacture, and service of diesel engines.

The current MaK product line is comprised of four medium-speed four-stroke diesel engine models ranging in power from 1,020 to 16,000 kW. MaK diesel engines feature a high level of reliability, low operating costs, simple installation and maintenance, and compliance with environmental emissions regulations.

Caterpillar Technology for Emissions Reduction in Medium-Speed Marine Engines

Step 1: FlexCam Technology (FCT)

- Maximum NO_x reduction and IMO Tier 2 compliant
- Invisible smoke in the whole operation range
- Updatable components to meet current and future regulations
- Proven design technology for smooth and reliable operation

Step 2: FlexCam Technology and Caterpillar Common Rail (CCR)

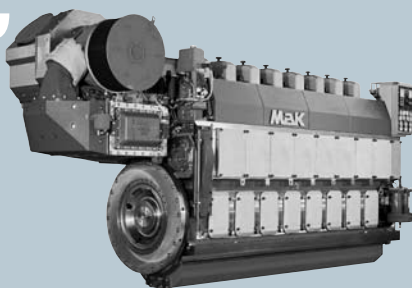
- IMO Tier 2 compliant proven design at competitive cost
- FCT and CCR can be retrofitted

MaK engines span a broad range of applications in the marine market. They provide reliable and economic propulsion for all types of vessels – ocean-going, offshore, coastal, or inland waterway. Our engineers provide total propulsion solutions for each customer’s unique requirements, whether single- or multi-engine installations or complete propulsion systems, whether for diesel-mechanical or diesel-electric drives.

All MaK engines can be operated with Heavy Fuel Oil (HFO) and are compliant with the NO_x limits according to IMO Code MARPOL 73/78, Annex VI.

M 20 C

Propulsion Engine

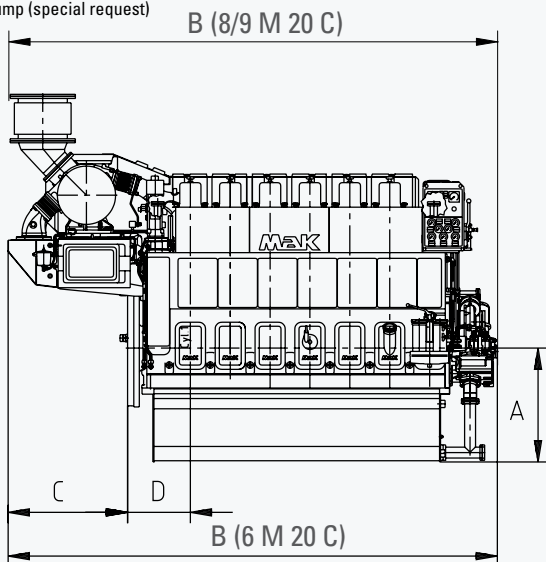


DIMENSIONS (mm) AND WEIGHTS (t)

Type	A	B	C	D	E	F	G	H	t
6 M 20 C	941	4049	988	520	1596	630	330	2099	10.7
8 M 20 C	941	4935	988	520	1731	630	330	2236	14.0
9 M 20 C	941	5176	988	520	1731	630	330	2236	15.0

A: Wet sump (standard)

F: Dry sump (special request)

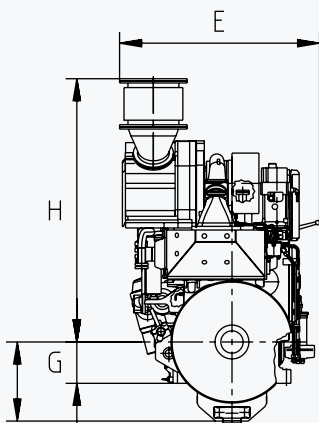


TECHNICAL DATA

Type	Output range		Speed	Mean eff. pressure	Mean piston speed	Bore	Stroke	Spec. fuel consumption	
								100%	85%
	kW	hp	rpm	bar	m/s	mm	mm	g/kWh	g/kWh
6 M 20 C	1020	1390	900	24.1	9.0	200	300	186	186
	1140	1550	1000	24.2	10.0	200	300	190	189
8 M 20 C	1360	1850	900	24.1	9.0	200	300	186	186
	1520	2070	1000	24.2	10.0	200	300	190	189
9 M 20 C	1530	2080	900	24.1	9.0	200	300	186	186
	1710	2330	1000	24.2	10.0	200	300	190	189

Specific lubricating oil consumption 0.6 g/kWh, ± 0.3 g/kWh

LCV = 42700 kJ/kg, without engine-driven pumps, tolerance 5%



Engine centre distance: 2010 mm

Removal of cylinder liner:

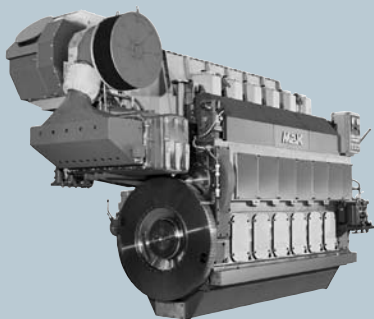
in transverse direction 1910 mm

in longitudinal direction 2085 mm

Nozzle position: ask for availability

Engine with turbocharger at free end
available, ask for dimensions

M 25 C



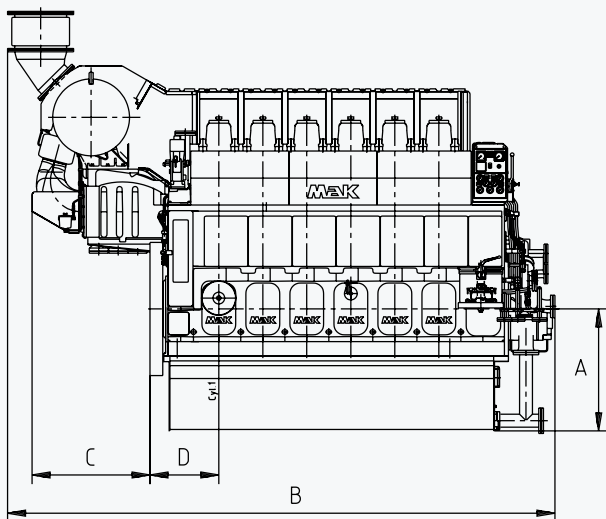
Propulsion Engine

DIMENSIONS (mm) AND WEIGHTS (t)

Type	A	B	C	D	E	F	G	H	t
6 M 25 C	1191	5345	1151	672	2261	861	460	2906	21.0
8 M 25 C	1191	6289	1151	672	2315	861	460	3052	28.0
9 M 25 C	1191	6719	1151	672	2315	861	460	3052	29.6

A: Wet sump (special request)

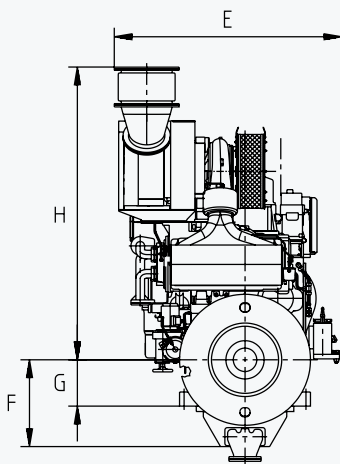
F: Dry sump (standard)



TECHNICAL DATA

Type	Output range		Speed	Mean eff. pressure	Mean piston speed	Bore	Stroke	Spec. fuel consumption	
								100%	85%
	kW	mhp	rpm	bar	m/s	mm	mm	g/kWh	g/kWh
6 M 25 C	1800	2450	720	24.5	9.6	255	400	183	183
	1900	2580	720	25.8	9.6	255	400	184	183
	1850	2520	750	24.2	10.0	255	400	183	183
	2000	2720	750	26.1	10.0	255	400	184	183
8 M 25 C	2320	3160	720	23.7	9.6	255	400	183	183
	2540	3450	720	25.8	9.6	255	400	184	183
	2400	3260	750	23.5	10.0	255	400	183	183
	2640	3590	750	25.8	10.0	255	400	184	183
9 M 25 C	2610	3550	720	23.7	9.6	255	400	183	183
	2850	3880	720	25.8	9.6	255	400	184	183
	2700	3670	750	23.5	10.0	255	400	183	183
	3000	4080	750	26.1	10.0	255	400	184	183

Specific lubricating oil consumption 0.6 g/kWh, ± 0.3 g/kWh
 LCV = 42700 kJ/kg, without engine-driven pumps, tolerance 5%



Engine centre distance:

6 M 25 C 2600 mm

8, 9 M 25 C 2700 mm

Removal of cylinder liner:

in transverse direction 2510 mm

in longitudinal direction 2735 mm

Nozzle position: ask for availability

Engine with turbocharger at free end available, ask for dimensions

M 32 C



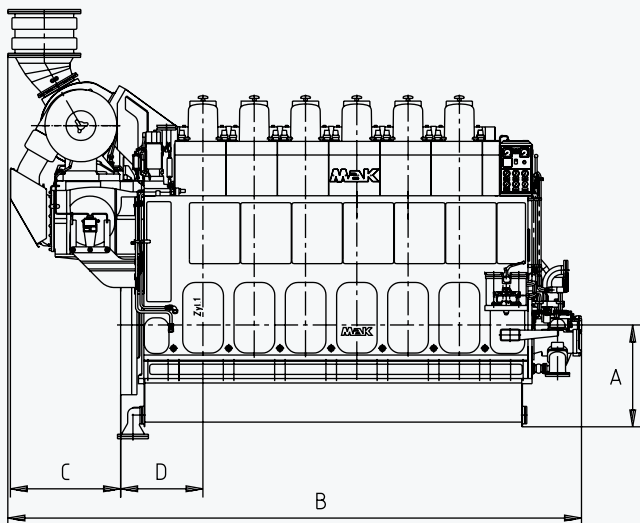
Propulsion Engine

DIMENSIONS (mm) AND WEIGHTS (t)

Type	A	B	C	D	E	F	G	H	t
6 M 32 C	1052	5931	1140	852	2369	1387	550	3258	37.5
8 M 32 C	1052	7135	1279	852	2180	1387	550	3319	46.4
9 M 32 C	1052	7827	1279	852	2180	1387	550	3513	49.4

A: Dry sump (standard)

F: Wet sump (special request)

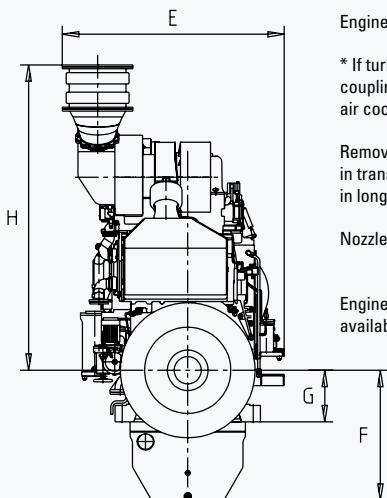


TECHNICAL DATA

Type	Output range		Speed	Mean eff. pressure	Mean piston speed	Bore	Stroke	Spec. fuel consumption	
								100%	85%
	kW	hp	rpm	bar	m/s	mm	mm	g/kWh	g/kWh
6 M 32 C	2880	3920	600	24.9	9.6	320	480	179	178
	3000	4080	600	25.9	9.6	320	480	179	178
8 M 32 C	3840	5220	600	24.9	9.6	320	480	178	177
	4000	5440	600	25.9	9.6	320	480	178	177
9 M 32 C	4320	5880	600	24.9	9.6	320	480	178	177
	4500	6120	600	25.9	9.6	320	480	178	177

Specific lubricating oil consumption 0.6 g/kWh, ± 0.3 g/kWh

LCV = 42700 kJ/kg, without engine-driven pumps, tolerance 5%



Engine centre distance: 2800 mm *

* If turbocharger is located on opposite coupling side, the water cover of the charge air cooler must be dismantled.

Removal of cylinder liner:

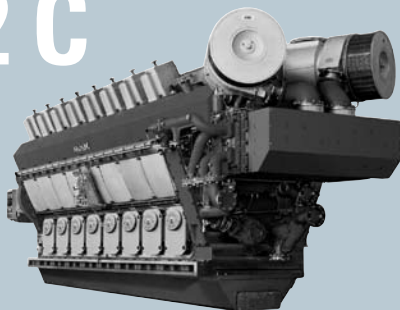
in transverse direction 3040 mm

in longitudinal direction 3405 mm

Nozzle position: ask for availability

Engine with turbocharger at free end available, ask for dimensions

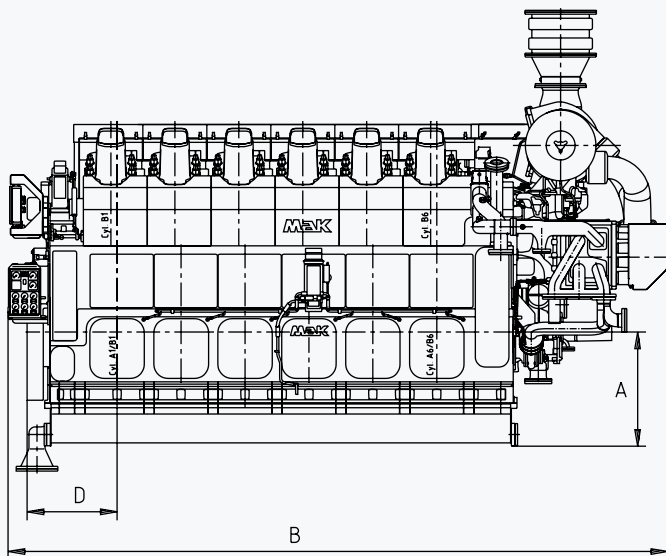
VM 32 C



Propulsion Engine

DIMENSIONS (mm) AND WEIGHTS (t)

Type	A	B	D	E	G	H	t
12 M 32 C	1205	6963	949	2985	750	3395	64.4
16 M 32 C	1205	8313	949	2985	750	3351	81.6

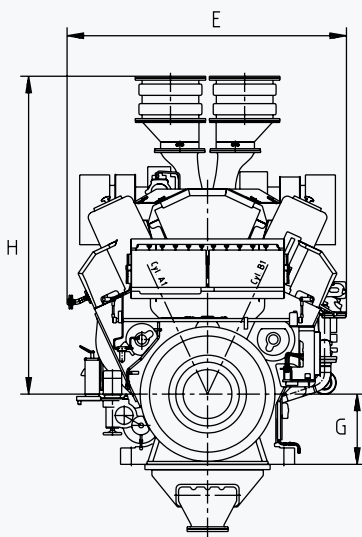


TECHNICAL DATA

Type	Output range		Speed	Mean eff. pressure	Mean piston speed	Bore	Stroke	Spec. fuel consumption	
								100%	85%
	kW	hp	rpm	bar	m/s	mm	mm	g/kWh	g/kWh
12 M 32 C	5760	7830	720	23.7	10.1	320	420	178	178
	6000	8160	750	23.7	10.5	320	420	179	179
16 M 32 C	7680	10450	720	23.7	10.1	320	420	178	178
	8000	10880	750	23.7	10.5	320	420	179	179

Specific lubricating oil consumption 0.6 g/kWh, ± 0.3 g/kWh

LCV = 42700 kJ/kg, without engine-driven pumps, tolerance 5%



Engine centre distance: 3500 mm

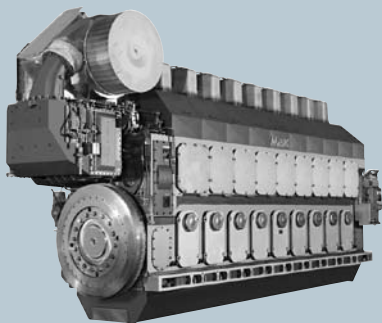
Removal of cylinder liner:
in transverse direction 2834 mm

Nozzle position: ask for availability

Engine with turbocharger at driving end
available, ask for dimensions

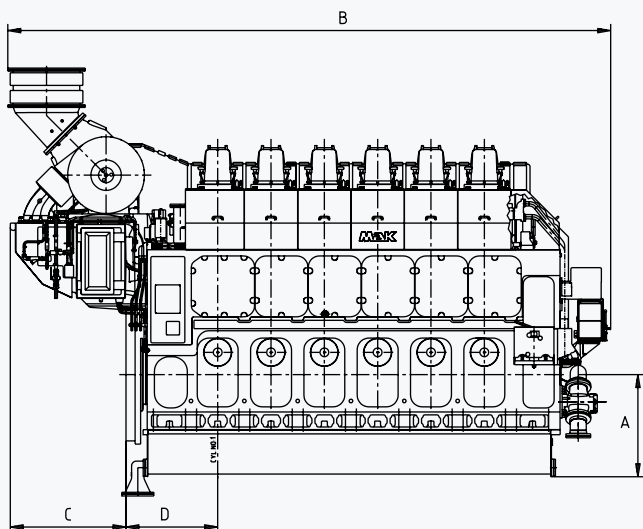
M 43 C

Propulsion Engine



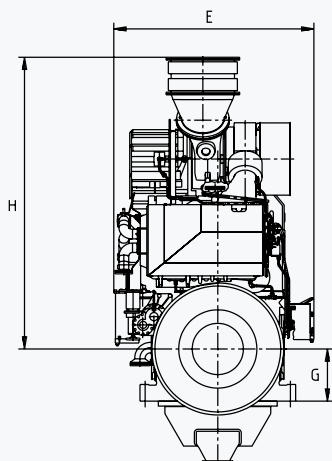
DIMENSIONS (mm) AND WEIGHTS (t)

Type	A	B	C	D	E	G	H	t
6 M 43 C	1396	8251	1583	1255	2878	750	4194	93.0
7 M 43 C	1396	8981	1583	1255	2878	750	4194	106.0
8 M 43 C	1396	9798	1583	1255	2878	750	4749	114.0
9 M 43 C	1396	10528	1583	1255	2878	750	4749	126.0



TECHNICAL DATA

Type	Output range		Speed	Mean eff. pressure	Mean piston speed	Bore	Stroke	Spec. fuel consumption	
								100%	85%
	kW	mhp	rpm	bar	m/s	mm	mm	g/kWh	g/kWh
6 M 43 C	5400	7340	500	24.4	10.2	430	610	176	175
	5400	7340	514	23.7	10.5	430	610	176	175
	6000	8160	500	27.1	10.2	430	610	177	176
	6000	8160	514	26.4	10.5	430	610	178	177
7 M 43 C	6300	8570	500	24.4	10.2	430	610	177	176
	6300	8570	514	23.7	10.5	430	610	177	176
	7000	9520	500	27.1	10.2	430	610	178	177
	7000	9520	514	26.4	10.5	430	610	179	178
8 M 43 C	7200	9790	500	24.4	10.2	430	610	176	175
	7200	9790	514	23.7	10.5	430	610	176	175
	8000	10880	500	27.1	10.2	430	610	177	176
	8000	10880	514	26.4	10.5	430	610	178	177
9 M 43 C	8100	11020	500	24.4	10.2	430	610	176	175
	8100	11020	514	23.7	10.5	430	610	176	175
	9000	12240	500	27.1	10.2	430	610	177	176
	9000	12240	514	26.4	10.5	430	610	178	177



Specific lubricating oil consumption

0.6 g/kWh, ± 0.3 g/kWh

LCV = 42700 kJ/kg, without engine-driven pumps, tolerance 5%

Engine centre distance: 3400 mm

Removal of cylinder liner:

in transverse direction 4165 mm

in longitudinal direction 4610 mm

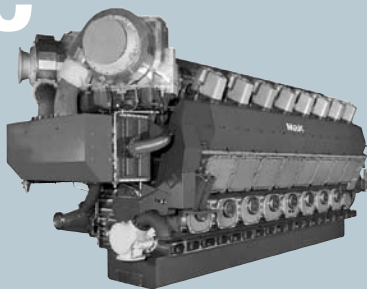
Nozzle position: ask for availability

This engine is only available with dry oil sump

Engine with turbocharger at free end available, ask for dimensions

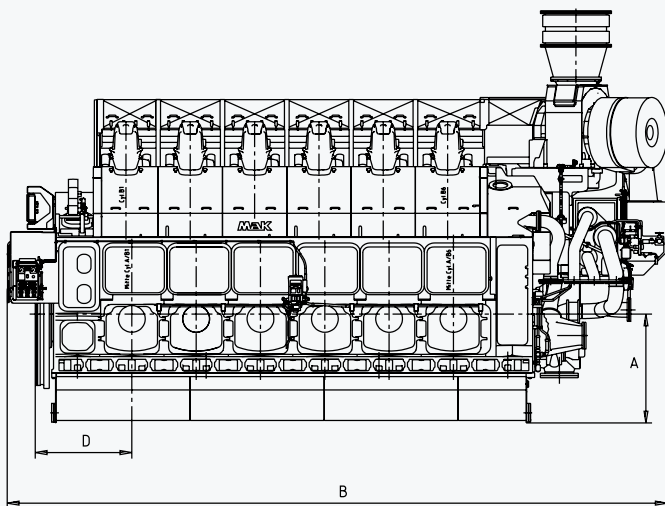
VM 43 C

Propulsion Engine



DIMENSIONS (mm) AND WEIGHTS (t)

Type	A	B	D	E	G	H	t
12 M 43 C	1625	9847	1440	3890	875	4524	162.0
16 M 43 C	1625	11943	1440	4027	875	4524	215.0

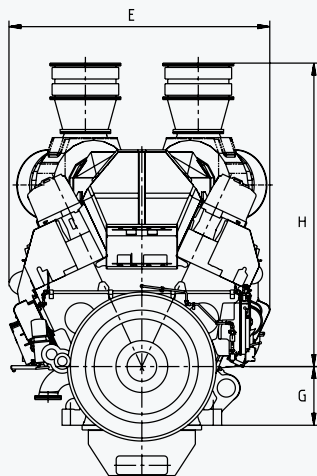


TECHNICAL DATA

Type	Output range		Speed	Mean eff. pressure	Mean piston speed	Bore	Stroke	Spec. fuel consumption	
								100%	85%
	kW	mhp	rpm	bar	m/s	mm	mm	g/kWh	g/kWh
12 M 43 C	10800	14690	500	24.4	10.2	430	610	176	175
	10800	14690	514	23.7	10.5	430	610	176	175
	12000	16320	500	27.1	10.2	430	610	177	176
	12000	16320	514	26.4	10.5	430	610	178	177
16 M 43 C	14400	19580	500	24.4	10.2	430	610	176	175
	14400	19580	514	23.7	10.5	430	610	176	175
	16000	21760	500	27.1	10.2	430	610	177	176
	16000	21760	514	26.4	10.5	430	610	178	177

Specific lubricating oil consumption 0.6 g/kWh, ± 0.3 g/kWh

LCV = 42700 kJ/kg, without engine-driven pumps, tolerance 5%



Engine centre distance: 4500 mm

Removal of cylinder liner:
in transverse direction 3700 mm

Nozzle position: ask for availability

This engine is only available with dry oil sump

Engine with turbocharger at free end available, ask for dimensions

MaK Marine Generator Sets

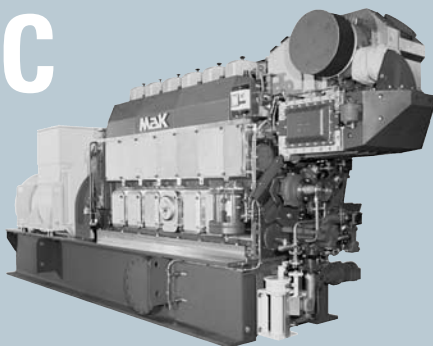


MaK Marine Generator Sets

The shipping industry today relies on dependable on-board electrical power generation. MaK auxiliary diesel engines ensure the availability of this electrical power, wherever and whenever needed. Whether for navigational equipment, monitoring installations, refrigerated containers, lighting, pumps, heating, or ventilation, MaK auxiliary engines are the right choice.

As with the MaK propulsion engines, these auxiliary engines can be operated with the economical Heavy Fuel Oil (HFO) option, and are compliant with the NO_x limits according to IMO Code MARPOL 73/78, Annex VI.

M 20 C

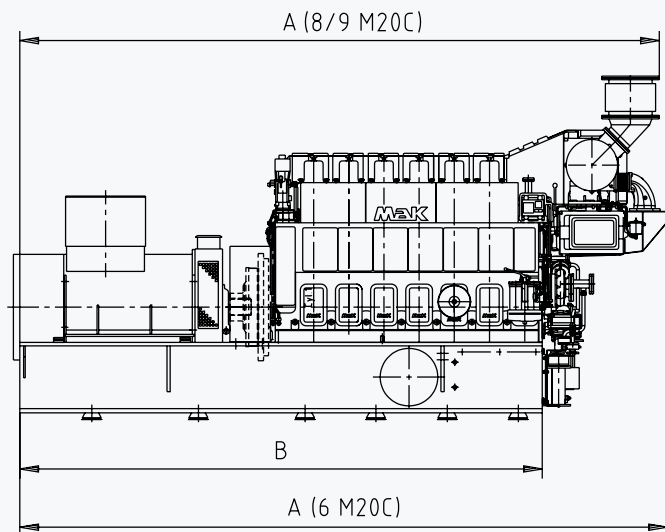


Generator Set

DIMENSIONS (mm) AND WEIGHTS (t)

Type	A	B	C	D	E	F	t
6 M 20 C	6073	4900	2164	1054	1680	1170	11.0
8 M 20 C	7098	5848	2335	1054	1816	1170	14.0
9 M 20 C	7128	5878	2335	1054	1816	1170	15.0

Total dry weight without generator



TECHNICAL DATA

Type	Engine rating	Generator rating 60 Hz		Generator rating 50 Hz		Mean eff. pressure	Mean piston speed
		Speed: 900 rpm		Speed: 1000 rpm			
	kW	kWe	kVA	kWe	kVA	bar	m/s
6 M 20 C	1020	970	1210			24.1	9.0
	1140			1080	1355	24.2	10.0
8 M 20 C	1360	1290	1615			24.1	9.0
	1520			1445	1805	24.2	10.0
9 M 20 C	1530	1450	1820			24.1	9.0
	1710			1625	2030	24.2	10.0

Bore: 200 mm

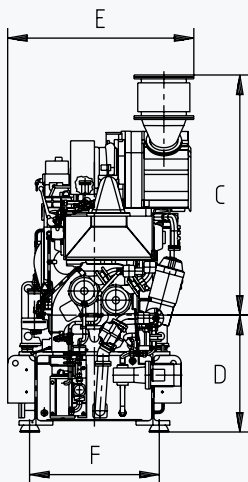
Stroke: 300 mm

Specific fuel consumption: see propulsion engines

Specific lubricating oil consumption 0.6 g/kWh, ± 0.3 g/kWh

LCV = 42700 kJ/kg, without engine-driven pumps, tolerance 5%

Generator efficiency: 0.96, $\cos \varphi$: 0.8



Genset centre distance: min. 2010 mm

Removal of cylinder liner:

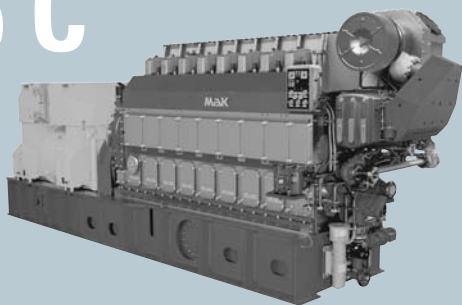
in transverse direction 2981 mm

in longitudinal direction 3156 mm

Nozzle position: ask for availability

Engine with turbocharger at driving end
available, ask for dimensions

M 25 C

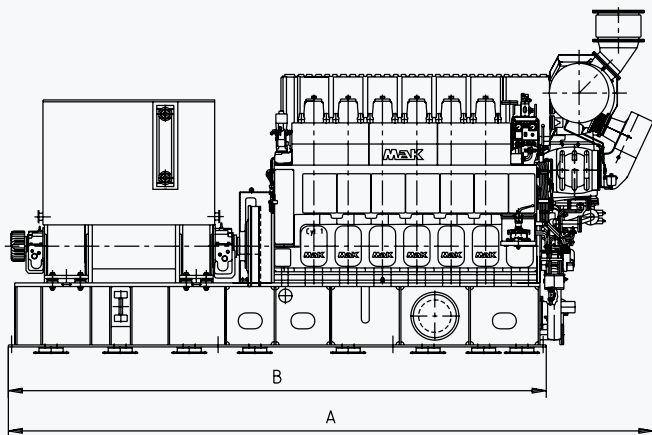


Generator Set

DIMENSIONS (mm) AND WEIGHTS (t)

Type	A	B	C	D	E	F	t
6 M 25 C	8070	6735	2951	1340	2479	1700	29.1
8 M 25 C	9130	7795	3097	1340	2534	1700	36.7
9 M 25 C	9460	8125	3097	1340	2534	1700	39.0

Total dry weight without generator



TECHNICAL DATA

Type	Engine rating	Generator rating 60 Hz		Generator rating 50 Hz		Generator rating 60 Hz		Generator rating 50 Hz		Mean eff. pressure	Mean piston speed
		Speed: 720 rpm		Speed: 750 rpm		Speed: 720 rpm		Speed: 750 rpm			
	kW	kWe	kVA	kWe	kVA	kWe	kVA	kWe	kVA	bar	m/s
6 M 25 C	1800	1710	2140							23.7	9.6
	1850			1760	2200					23.5	10.0
	1900					1800	2250			25.8	9.6
	1980							1880	2350	25.8	10.0
8 M 25 C	2320	2200	2750							23.7	9.6
	2400			2280	2850					23.5	10.0
	2540					2400	3000			25.8	9.6
	2640							2500	3130	25.8	10.0
9 M 25 C	2610	2480	3100							23.7	9.6
	2700			2570	3210					23.5	10.0
	2850					2700	3370			25.8	9.6
	2970							2820	3520	25.8	10.0

Bore: 255 mm

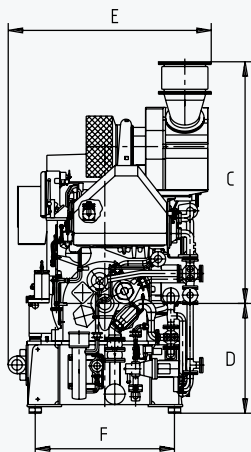
Stroke: 400 mm

Specific fuel consumption: see propulsion engines

Specific lubricating oil consumption 0.6 g/kWh, ± 0.3 g/kWh

LCV = 42700 kJ/kg, without engine-driven pumps, tolerance 5%

Generator efficiency: 0.96, $\cos \varphi$: 0.8



Genset centre distance: min. 2700 mm

Removal of cylinder liner:

in transverse direction 3850 mm

in longitudinal direction 4075 mm

Nozzle position:

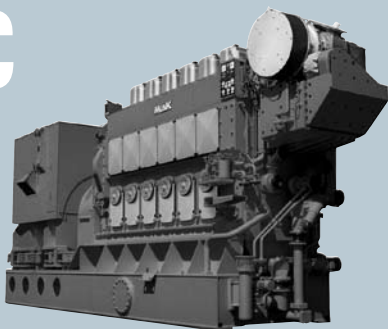
ask for availability

Engine with turbocharger at driving end

available, ask for dimensions

M 32 C

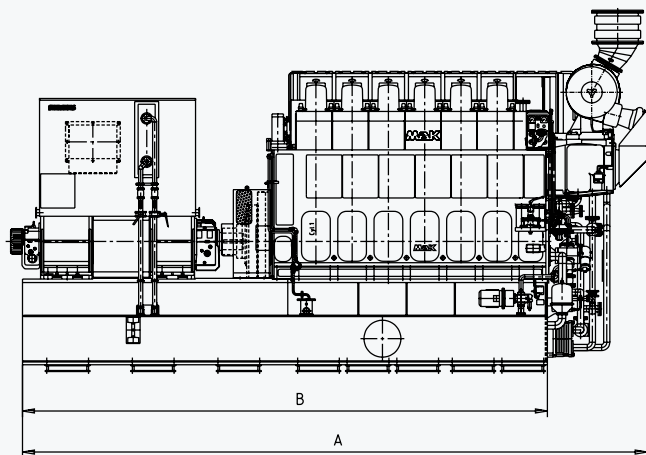
Generator Set



DIMENSIONS (mm) AND WEIGHTS (t)

Type	A	B	C	D	E	F	t
6 M 32 C	9128	7670	3375	1900	2639	1850	51.0
8 M 32 C	10556	8915	3319	1900	2600	1850	61.0
9 M 32 C	11419	9550	3513	1900	2600	1850	64.9

Total dry weight without generator



TECHNICAL DATA

Type	Engine rating	Generator rating 60/50 Hz		Generator rating 60/50 Hz		Mean eff. pressure	Mean piston speed
		Speed: 600 rpm		Speed: 600 rpm			
	kW	kWe	kVA	kWe	kVA	bar	m/s
6 M 32 C	2880	2765	3456			24.9	9.6
	3000			2880	3600	25.9	9.6
8 M 32 C	3840	3686	4608			24.9	9.6
	4000			3840	4800	25.9	9.6
9 M 32 C	4320	4147	5184			24.9	9.6
	4500			4320	5400	25.9	9.6

Bore: 320 mm

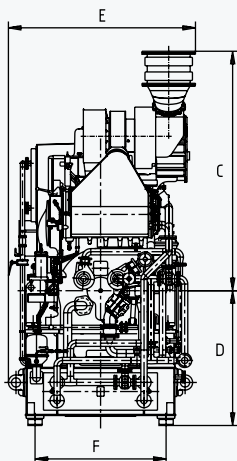
Stroke: 480 mm

Specific fuel consumption: see propulsion engines

Specific lubricating oil consumption 0.6 g/kWh, ± 0.3 g/kWh

LCV = 42700 kJ/kg, without engine-driven pumps, tolerance 5%

Generator efficiency: 0.96, $\cos \varphi$: 0.8



Genset centre distance: min. 3000 mm

Removal of cylinder liner:

in transverse direction 4940 mm

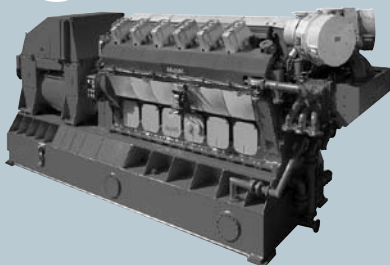
in longitudinal direction 5305 mm

Nozzle position: ask for availability

Engine with turbocharger at driving end
available, ask for dimensions

VM 32 C

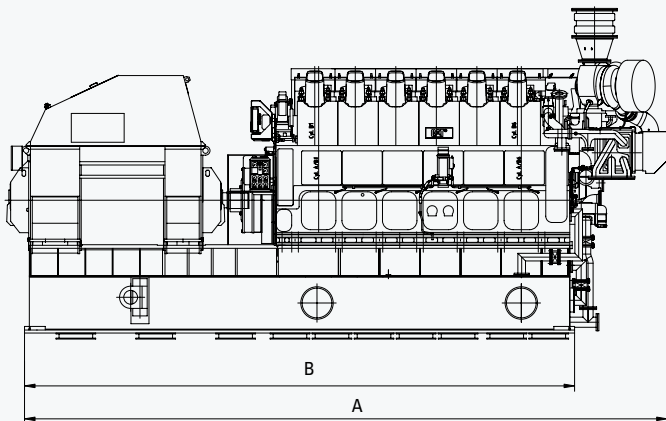
Generator Set



DIMENSIONS (mm) AND WEIGHTS (t)

Type	A	B	C	D	E	F	t
12 M 32 C	10710	9160	3395	2310	3142	2450	84.8
16 M 32 C	12060	10510	3351	2310	3000	2450	105.1

Total dry weight without generator



TECHNICAL DATA

Type	Engine rating	Generator rating 60 Hz		Generator rating 50 Hz		Mean eff. pressure	Mean piston speed
	kW	kWe	kVA	kWe	kVA	bar	m/s
12 M 32 C	5760	5530	6912			23.7	10.1
	6000			5760	7200	23.7	10.5
16 M 32 C	7680	7373	9216			23.7	10.1
	8000			7680	9600	23.7	10.5

Bore: 320 mm

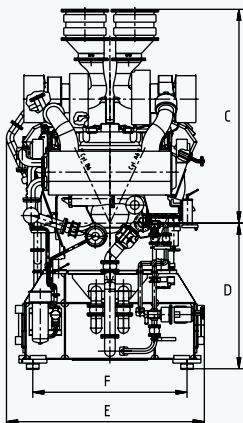
Stroke: 420 mm

Specific fuel consumption: see propulsion engines

Specific lubricating oil consumption 0.6 g/kWh, ± 0.3 g/kWh

LCV = 42700 kJ/kg, without engine-driven pumps, tolerance 5%

Generator efficiency: 0.96, $\cos \varphi$: 0.8



Genset centre distance: min. 3500 mm

Removal of cylinder liner:
in transverse direction 5135 mm

Nozzle position: ask for availability

Engine with turbocharger at driving end
available, ask for dimensions



Marine Engine Selection Guide

For more information please visit:

<http://marine.cat.com>

E-mail: cat_power@cat.com

Caterpillar follows a policy of continual product improvement. For this reason, some material and specifications could change without notice. Please reference TMI Web for most current information.

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