



C175-16 MARINE PROPULSION

2721-2948 mhp
(2683-2907 bhp)
2001-2168 kW

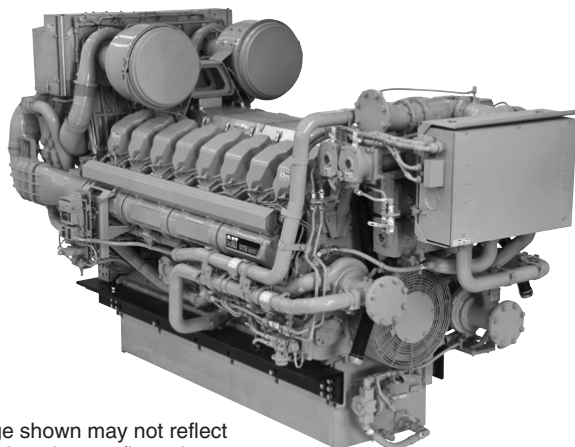


Image shown may not reflect
actual engine configuration

SPECIFICATIONS

V-16, 4-Stroke-Cycle-Diesel

Emissions EPA Marine Tier 3, IMO II Compliant
Displacement 84.67 L (5166.88 in³)
Rated Speed 1600 rpm
Bore 175 mm (6.9 in)
Stroke 220 mm (8.6 in)
Aspiration Turbocharged-Aftercooled
Governor A4 ECU
Cooling System Keel/Heat Exchanger
Weight, Dry 13 041 kg (28,750 lbs)
Refill Capacities
Cooling System 303.5 L (80.2 gal)
Lube Oil System 907 L (240 gal)
Oil Change Interval 1000 hours
Rotation (from flywheel end) Counterclockwise
Flywheel and Flywheel Housing SAE No. 00
Flywheel Teeth 183

STANDARD ENGINE EQUIPMENT

Air Inlet System

Corrosion-resistant aftercooler core (single pass JW, double pass SCAC), power-core air cleaners with electronic service indicator, dual turbochargers

Cooling System

Separate circuit auxiliary fresh water pump, gear-driven centrifugal jacket water pump, engine oil cooler, electronic thermostats

Control System

Dual A4 engine control modules provide engine control and monitoring, rigid wiring harness with plug and run connectors

Exhaust System

Dry gas-tight exhaust manifolds with SOLAS compliant thermo-laminated heat shields, dual turbochargers with heat shields, modular pulse exhaust manifold, vertical or horizontal single exhaust outlets

Fuel System

High pressure common rail system with electronically controlled unit injectors, duplex primary fuel filter with water separation, duplex secondary and tertiary fuel filters with service indicators, fuel transfer pump, electric fuel priming pump

Instrumentation

Remote-mounted instrument panel with Color Marine Power Display (Color MPD), three-position engine control switch, alarm horn, overspeed shutdown notification, emergency

stop notification, secondary ECU "Ready," secondary ECU "Active," graphic display unit for analog or digital display of oil and fuel pressure, oil and fuel filter differential, system DC voltage, exhaust and water temperature, air inlet restriction, service meter, engine speed, fuel consumption (total and instantaneous), high current power distribution (HCPD) box, low current power distribution (LCPD) box

Lube System

Pre-lube system, front housing-mounted dual crankcase breathers, duplex oil filter with service indicators, oil level gauge, oil filler, gear-type oil pump

Mounting System

Ledge rail mounts

Protection System

A4 electronic control unit (ECU) with customer programmable engine derate strategies, engine alarms, and diagnostics displayed on local and remote Color MPDs, emergency stop pushbutton, safety shutoff protection for oil pressure and water temperature, overspeed protection

General

Vibration damper and guard, Caterpillar yellow paint, lifting eyes

ISO Certification

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

OPTIONAL EQUIPMENT

Exhaust System

Horizontal or vertical exhaust outlets, exhaust adaptors, customer connection exhaust bellows

Fuel System

Secondary wall fuel collection or detection, left-hand or right-hand service duplex, secondary and tertiary fuel filters with service indicators

Instrumentation

Cat® alarm and protection system, PL1000E, additional Color MPDs, individual ports thermocouples, 10, 20, or 30 m harnesses

Lube System

Air or DC electric prelube, left-hand or right-hand service duplex oil filters

Mounting System

Rigid or isolated mounted ledge rail

Protection

Crankcase explosion relief valves, SOLAS spray shields

Starters

Right-hand mounted air, right-hand mounted dual electric

Barring Device

Manual barring device



C175-16 MARINE PROPULSION

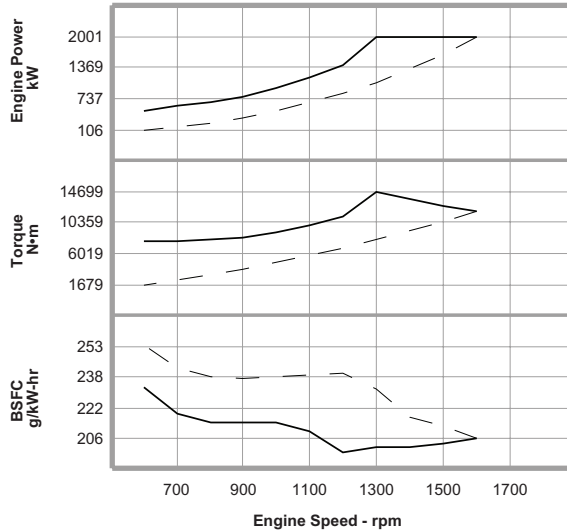
2721-2948 mhp (2683-2907 bhp) 2001-2168 bkW

MARINE ENGINE PERFORMANCE

C175-16 DITA

A Rating 2001 bkW @ 1600 rpm — DM8834-01

EPA Tier 3/IMO II Compliant

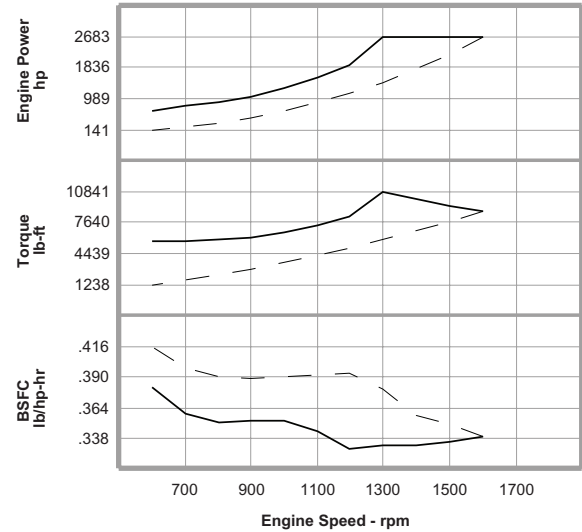


Metric Maximum Power Prop Demand 2001 kW

Performance Data

	Engine Speed rpm	Engine Power kW	Engine Torque N·m	BSFC g/kW-hr	Fuel Rate L/hr
Maximum Power Data	1600	2001.0	11943	206.2	491.8
	1500	2001.0	12739	203.5	485.5
	1400	2001.0	13649	201.4	480.5
	1300	2001.0	14699	201.5	480.5
	1200	1416.0	11268	199.4	336.5
	1100	1152.0	10001	209.1	287.2
	1000	942.0	8995	214.2	240.6
	900	767.0	8138	213.8	195.5
	800	676.0	8069	213.7	172.2
	700	575.0	7844	219.0	150.1
Prop Demand Data	600	481.0	7655	232.6	133.3
	1600	2001.0	11943	206.2	491.8
	1500	1648.8	10496	212.5	417.6
	1400	1340.5	9144	217.7	347.8
	1300	1073.3	7884	231.7	296.5
	1200	844.2	6718	239.6	241.1
	1100	650.2	5645	238.8	185.1
	1000	488.5	4665	237.6	138.4
	900	356.1	3779	236.6	100.5
	800	250.1	2986	237.7	70.9

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



English Maximum Power Prop Demand 2683 hp

Performance Data

	Engine Speed rpm	Engine Power hp	Engine Torque lb-ft	BSFC lb/hp-hr	Fuel Rate gph
Maximum Power Data	1600	2683.4	8808	.339	129.9
	1500	2683.4	9395	.335	128.3
	1400	2683.4	10066	.331	126.9
	1300	2683.4	10841	.331	126.9
	1200	1898.9	8310	.328	88.9
	1100	1544.9	7376	.344	75.9
	1000	1263.2	6634	.352	63.6
	900	1028.6	6002	.351	51.6
	800	906.5	5951	.351	45.5
	700	771.1	5785	.360	39.7
Prop Demand Data	600	645.0	5646	.382	35.2
	1600	2683.4	8808	.339	129.9
	1500	2211.1	7741	.349	110.3
	1400	1797.6	6744	.358	91.9
	1300	1439.3	5815	.381	78.3
	1200	1132.1	4955	.394	63.7
	1100	871.9	4163	.393	48.9
	1000	655.1	3441	.391	36.6
	900	477.5	2787	.389	26.5
	800	335.4	2202	.391	18.7

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



C175-16 MARINE PROPULSION

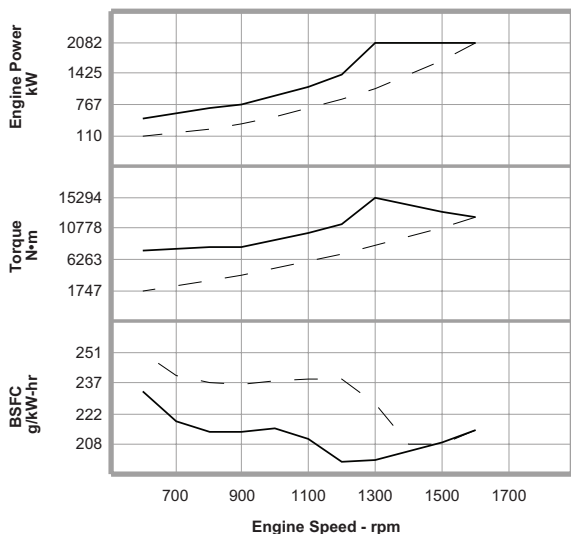
2721-2948 mhp (2683-2907 bhp) 2001-2168 bkW

MARINE ENGINE PERFORMANCE

C175-16 DITA

A Rating 2082 bkW @ 1600 rpm — DM8833-01

EPA Tier 3/IMO II Compliant



Metric

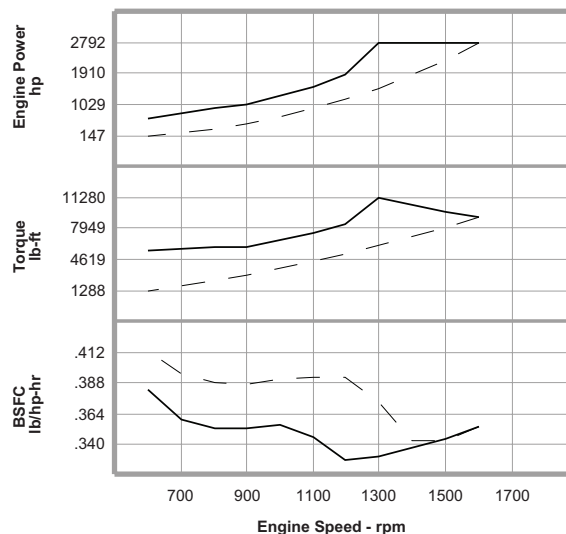
Maximum Power
Prop Demand

2082 kW

Performance Data

	Engine Speed rpm	Engine Power kW	Engine Torque N·m	BSFC g/kW-hr	Fuel Rate L/hr
Maximum Power Data	1600	2082.0	12426	214.5	532.3
	1500	2082.0	13254	208.9	518.5
	1400	2082.0	14201	204.4	507.3
	1300	2082.0	15294	200.9	498.5
	1200	1416.0	11268	199.4	336.5
	1100	1152.0	10001	209.9	288.2
	1000	942.0	8995	215.3	241.8
	900	765.0	8117	213.8	195.0
	800	677.0	8081	213.7	172.5
	700	576.0	7858	219.0	150.4
Prop Demand Data	600	481.0	7655	232.6	133.3
	1600	2082.0	12426	214.5	532.3
	1500	1715.5	10921	208.2	425.7
	1400	1394.8	9514	207.7	345.4
	1300	1116.7	8203	227.6	303.0
	1200	878.3	6990	238.7	249.9
	1100	676.5	5873	238.7	192.5
	1000	508.3	4854	237.6	143.9
	900	370.6	3932	235.8	104.1
	800	260.3	3107	236.5	73.4

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



English

Maximum Power
Prop Demand

2792 hp

Performance Data

	Engine Speed rpm	Engine Power hp	Engine Torque lb-ft	BSFC lb/hp-hr	Fuel Rate gph
Maximum Power Data	1600	2792.0	9164	.353	140.6
	1500	2792.0	9775	.343	137.0
	1400	2792.0	10474	.336	134.0
	1300	2792.0	11280	.330	131.7
	1200	1898.9	8310	.328	88.9
	1100	1544.9	7376	.345	76.1
	1000	1263.2	6634	.354	63.9
	900	1025.9	5986	.351	51.5
	800	907.9	5960	.351	45.6
	700	772.4	5795	.360	39.7
Prop Demand Data	600	645.0	5646	.382	35.2
	1600	2792.0	9164	.353	140.6
	1500	2300.5	8054	.342	112.5
	1400	1870.5	7017	.341	91.2
	1300	1497.5	6050	.374	80.0
	1200	1177.8	5155	.392	66.0
	1100	907.2	4331	.392	50.9
	1000	681.6	3580	.391	38.0
	900	497.0	2900	.388	27.5
	800	349.1	2291	.389	19.4

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



C175-16 MARINE PROPULSION

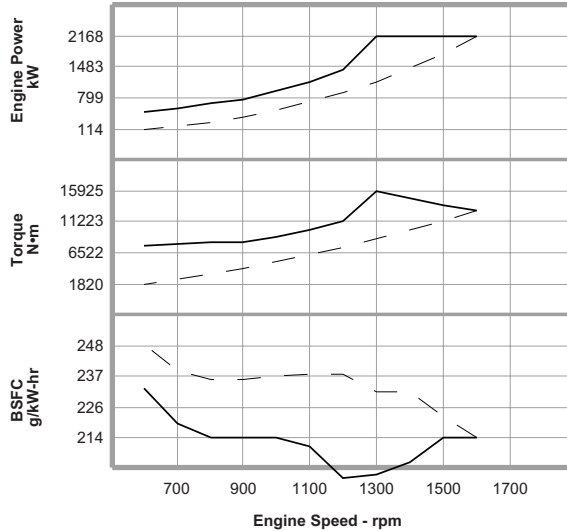
2721-2948 mhp (2683-2907 bhp) 2001-2168 bkW

MARINE ENGINE PERFORMANCE

C175-16 DITA

B Rating 2168 bkW @ 1600 rpm — DM8832-01

EPA Tier 3/IMO II Compliant

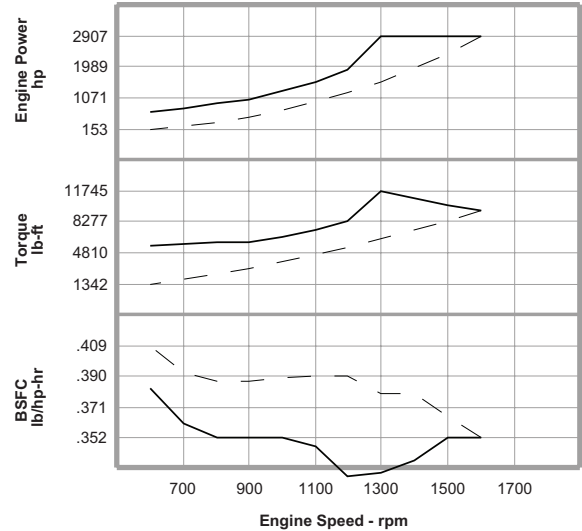


Metric Maximum Power Prop Demand 2168 kW

Performance Data

	Engine Speed rpm	Engine Power kW	Engine Torque N·m	BSFC g/kW-hr	Fuel Rate L/hr
Maximum Power Data	1600	2168.0	12939	214.1	553.2
	1500	2168.0	13802	213.7	552.2
	1400	2168.0	14788	205.2	530.3
	1300	2168.0	15925	200.8	519.0
	1200	1416.0	11268	199.4	336.5
	1100	1152.0	10001	210.7	289.4
	1000	942.0	8995	213.8	240.1
	900	764.0	8106	213.8	194.7
Prop Demand Data	800	677.0	8081	213.7	172.5
	700	575.0	7844	219.0	150.1
	600	481.0	7655	232.6	133.3
	1600	2168.0	12939	214.1	553.2
	1500	1786.4	11372	222.4	473.6
	1400	1452.4	9907	231.0	399.8
	1300	1162.9	8542	231.2	320.5
	1200	914.6	7278	237.5	258.9

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



English Maximum Power Prop Demand 2907 hp

Performance Data

	Engine Speed rpm	Engine Power hp	Engine Torque lb-ft	BSFC lb/hp-hr	Fuel Rate gph
Maximum Power Data	1600	2907.3	9543	.352	146.1
	1500	2907.3	10179	.351	145.9
	1400	2907.3	10906	.337	140.1
	1300	2907.3	11745	.330	137.1
	1200	1898.9	8310	.328	88.9
	1100	1544.9	7376	.346	76.5
	1000	1263.2	6634	.351	63.4
	900	1024.5	5978	.351	51.4
Prop Demand Data	800	907.9	5960	.351	45.6
	700	771.1	5785	.360	39.7
	600	645.0	5646	.382	35.2
	1600	2907.3	9543	.352	146.1
	1500	2395.6	8387	.366	125.1
	1400	1947.7	7307	.380	105.6
	1300	1559.5	6300	.380	84.7
	1200	1226.5	5368	.390	68.4

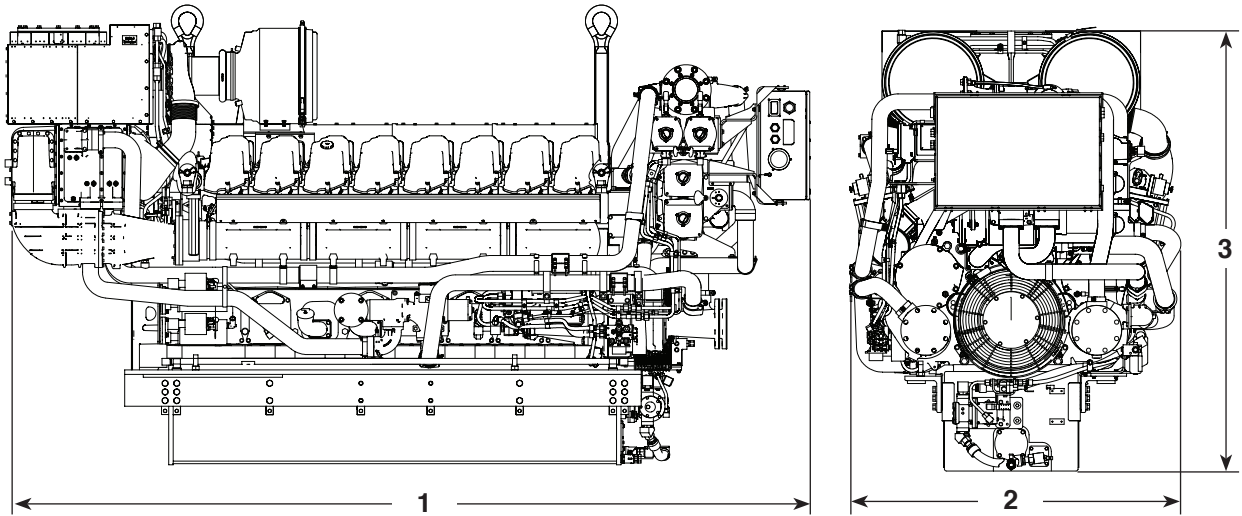
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2721-2948 mhp (2683-2907 bhp) 2001-2168 kW

ENGINE DIMENSIONS



Engine Dimensions		
(1) Overall Length	4515 mm	177.8 in
(2) Overall Width	1857 mm	73.1 in
(3) Overall Height	2478 mm	97.6 in
Weight, Net Dry (approx)	13 041 kg	28,750 lb

Note: Do not use for installation design. See general dimension drawings for detail.

RATING DEFINITIONS AND CONDITIONS

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.

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.

Ratings are based on SAE J1995/ISO3046 standard conditions of 100 kPa (29.61 in Hg), 25°C (77°F), and 30% relative humidity at the stated charge air cooler water temperature. Ratings also meet classification society maximum temperature requirements of 45°C (113°F) air temperature to the turbocharger and 32°C (90°F) seawater temperature without derate.

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

Fuel rates are based on 35° API, 16°C (60°F) fuel used at 29°C (85°F) with a density of 838.9 g/liter (7.001 lbs/U.S. gal). Lower Heat Value (LHV) of 42 780 kJ/kg (18,390 Btu/lb). Tolerance is +5%. Includes all engine mounted pumps. BSFC without pumps is 3% less.

Marine Certification — Marine classification society certifications for ABS, BV, CCS, DNV, GL, LRS, RS, NKK, and KR are pending.

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

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

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TMI Reference No.: DM8834-01, DM8833-01, DM8832-01

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