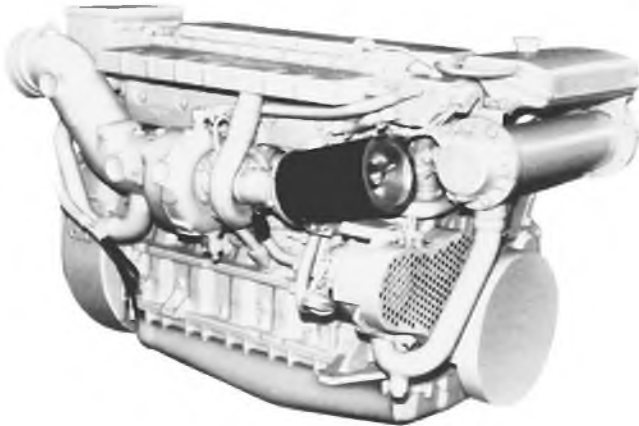




Marine Engine

3116

153-261 kW/205-350 bhp
2400-2800 rpm



Shown with
Accessory Equipment

CATERPILLAR® ENGINE SPECIFICATIONS

In-Line 6, 4-Stroke-Cycle-Diesel

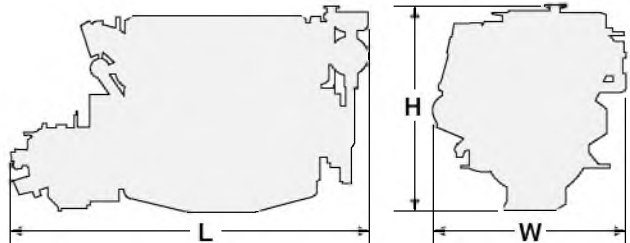
Bore — mm (in)	105 (4.13)
Stroke — mm (in)	127 (5.0)
Displacement — L (cu in)	6.6 (402)
Rotation (from flywheel end) ..	Counterclockwise
Compression Ratio	16:1
Capacity for Liquids — L (U.S. gal)	
Cooling System	28.0 (7.4)
Lube Oil System (refill)	25.0 (6.6)
Oil Change Interval	250 hrs
Engine Weight, Net Dry (approx) — kg (lb)	
Turbocharged-Aftercooled (TA)	681 (1500)

MARINE TRANSMISSION*

Marine Transmissions	Ratios	Dry Weight kg (lb)
MG5050	1.53:1, 2.04:1, 2.43:1	86 (189)
MG5061	1.48:1, 2.00:1, 2.43:1	98 (215)
MG506-1	1.5:1, 1.97:1, 2.5:1	100 (220)
MG506A	1.5:1, 1.97:1	125 (275)
MG507-1*	1.51:1, 1.98:1, 2.54:1, 2.99:1	159 (350)
MG5061A	1.54:1, 2.00:1, 2.47:1	95 (210)

*Transmission selection depends on input power, speed, ratio, and vessel application. Consult your Caterpillar dealer.

DIMENSIONS



TA Shown with Accessory Equipment

DIMENSIONS

	L		H		W	
	mm	in	mm	in	mm	in
MG5050	1605	63.2	860	33.8	816	32.1
MG5061	1663	65.5	860	33.8	816	32.1
MG506-1	1518	59.8	860	33.8	816	32.1
MG506A	1535	60.4	860	33.8	816	32.1
MG507-1*	1595	62.8	860	33.8	816	32.1
MG5061A	1663	65.5	860	33.8	816	32.1



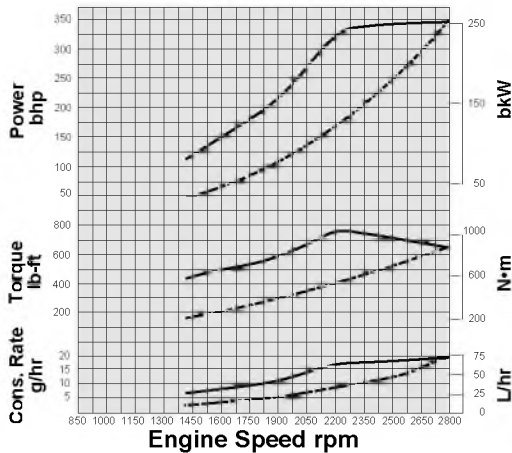
From the library of Barrington Diesel Club

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



PERFORMANCE CURVES

E Rating – 2800 rpm 261 bkW (350 bhp) 355 mhp



Prop Demand Curve Data				
Speed rpm	Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
2800	261	890	.233	72.5
2600	209	768	.218	54.3
2400	164	654	.218	42.7
2200	127	550	.220	33.2
2000	95	454	.223	25.2
1800	69	368	.225	18.6
1600	49	291	.231	13.4
1400	33	223	.246	9.6

Speed rpm	Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
2800	350	656	.383	19.2
2600	280	566	.358	14.3
2400	220	482	.358	11.3
2200	170	406	.362	8.8
2000	128	335	.366	6.7
1800	93	271	.370	4.9
1600	65	215	.379	3.5
1400	44	164	.404	2.5

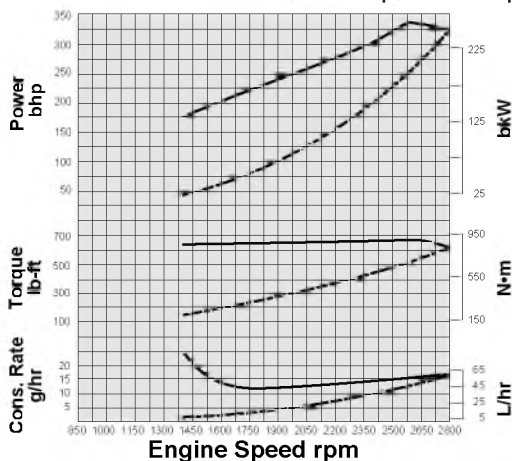
TMI — TM9693-00

Max Power Curve Data			
Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
260	886	.233	72.0
257	945	.221	67.9
255	1013	.221	67.0
243	1053	.221	64.0
187	891	.221	49.2
142	753	.222	37.6
114	682	.230	31.3
87	592	.238	24.6

Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
348	653	.383	19.0
345	697	.364	17.9
341	747	.363	17.7
325	777	.363	16.9
250	657	.363	13.0
190	555	.366	9.9
153	503	.377	8.3
116	437	.391	6.5

E RATING – Planing hull vessels such as pleasure craft, harbor patrol, harbor master, and some fishing and pilot boats.

E Rating – 2800 rpm 242 bkW (325 bhp) 330 mhp



Prop Demand Curve Data				
Speed rpm	Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
2800	242	825	.217	62.7
2600	194	712	.209	48.3
2400	152	606	.209	37.9
2200	117	510	.266	30.6
2000	88	421	.220	23.1
1800	64	341	.224	17.2
1600	45	270	.233	12.5
1400	30	206	.248	8.9

Speed rpm	Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
2800	325	608	.349	16.2
2600	260	525	.356	13.2
2400	204	447	.358	10.4
2200	157	376	.360	8.1
2000	118	311	.362	6.1
1800	86	252	.368	4.5
1600	61	199	.383	3.3
1400	41	152	.408	2.4

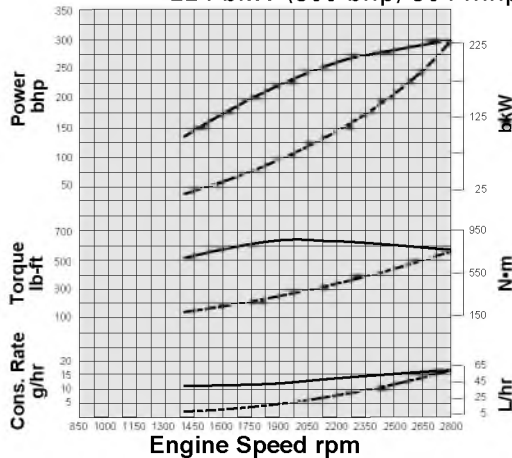
TMI — DM3308-00

Max Power Curve Data			
Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
242	825	.212	61.2
250	919	.211	63.0
228	905	.213	57.7
207	897	.214	52.7
188	897	.216	48.4
169	897	.222	44.7
150	897	.283	50.6
132	897	.606	95.0

Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
325	608	.349	16.2
336	678	.347	16.6
305	667	.350	15.2
277	662	.352	13.9
252	662	.355	12.8
227	662	.364	11.8
202	662	.465	13.4
176	662	.996	25.1

E RATING – Planing hull vessels such as pleasure craft, harbor patrol, harbor master, and some fishing and pilot boats.

E Rating – 2800 rpm 224 bkW (300 bhp) 304 mhp



Prop Demand Curve Data				
Speed rpm	Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
2800	224	764	.224	59.8
2600	179	659	.217	46.3
2400	141	561	.218	36.6
2200	109	472	.220	28.5
2000	82	390	.222	21.6
1800	60	316	.225	16.0
1600	42	249	.235	11.7
1400	28	191	.258	8.6

Speed rpm	Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
2800	300	563	.368	15.8
2600	240	486	.356	12.2
2400	189	414	.358	9.7
2200	146	348	.361	7.5
2000	109	288	.364	5.7
1800	80	233	.370	4.2
1600	56	184	.387	3.1
1400	38	141	.424	2.3

TMI — TM8446-02

Max Power Curve Data			
Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
224	764	.224	59.8
217	796	.217	56.2
209	831	.214	53.2
196	852	.213	49.7
182	868	.217	46.9
158	838	.241	45.4
131	783	.299	46.7
101	688	.362	43.5

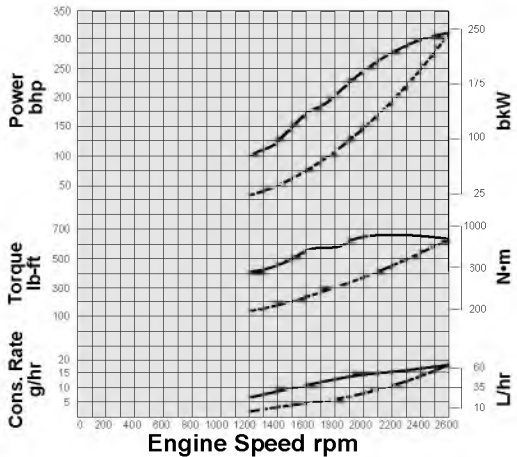
Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
300	563	.368	15.8
291	587	.357	14.8
280	613	.351	14.1
263	628	.350	13.1
244	640	.356	12.4
212	618	.396	12.0
176	578	.491	12.3
135	507	.595	11.5

E RATING – Planing hull vessels such as pleasure craft, harbor patrol, harbor master, and some fishing and pilot boats.

* Prop Demand ----- 3.0 Exponent
 • Engine Performance Parameters: Power +/- 3%;
 Specific Fuel Consumption +/- 3%; Fuel Rate +/- 5%.

PERFORMANCE CURVES

D Rating – 2600 rpm 231 bkW (310 bhp) 314 mhp



Prop Demand Curve Data

Speed rpm	Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
2600	231	848	234	64.4
2400	182	723	228	49.4
2200	140	607	229	38.1
2000	105	502	230	28.8
1800	77	407	232	21.2
1600	54	321	242	15.5
1400	36	246	257	11.1
1200	23	181	277	7.5

Speed rpm	Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
2600	310	625	.385	17.0
2400	244	533	.375	13.1
2200	188	448	.376	10.1
2000	141	370	.378	7.6
1800	103	300	.381	5.6
1600	72	237	.398	4.1
1400	48	181	.423	2.9
1200	30	133	.455	2.0

TMI — TM9694-00

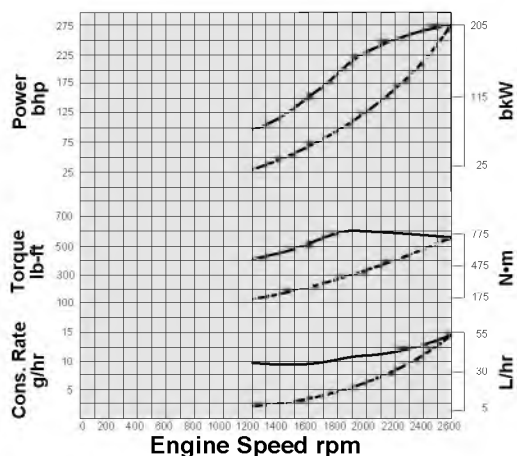
Max Power Curve Data

Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
231	848	234	64.4
219	872	232	60.6
205	889	235	57.3
186	888	245	54.2
146	776	260	45.3
128	767	262	40.1
88	599	292	30.5
69	551	297	24.5

Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
310	625	.385	17.0
294	643	.381	16.0
275	656	.386	15.1
249	655	.403	14.3
196	572	.427	12.0
172	566	.431	10.6
118	442	.480	8.1
93	406	.488	6.5

D RATING – Planing hull vessels such as offshore patrol boats, customs, police, and some fire and fishing boats. Also used for bow and stern thrusters.

D Rating – 2600 rpm 205 bkW (275 bhp) 279 mhp



Prop Demand Curve Data

Speed rpm	Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
2600	205	753	216	52.8
2400	161	642	217	41.7
2200	124	539	218	32.2
2000	93	446	218	24.3
1800	68	361	221	17.9
1600	48	285	231	13.1
1400	32	218	240	9.2
1200	20	160	277	6.7

Speed rpm	Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
2600	275	555	.355	13.9
2400	216	474	.357	11.0
2200	167	398	.358	8.5
2000	125	329	.358	6.4
1800	91	266	.363	4.7
1600	64	210	.380	3.5
1400	43	161	.395	2.4
1200	27	118	.455	1.8

TMI — TM8447-02

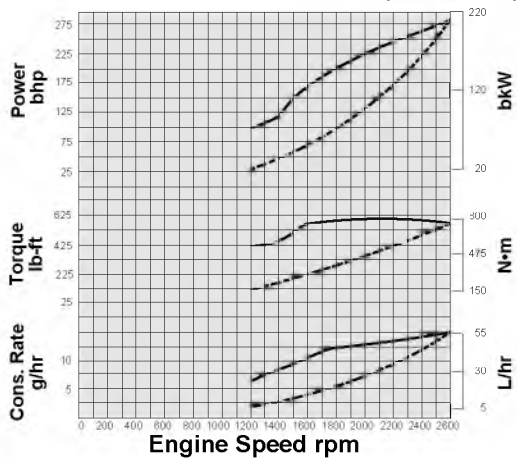
Max Power Curve Data

Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
205	753	216	52.8
194	773	214	49.6
183	793	214	46.5
170	810	216	43.6
148	787	220	38.9
116	692	230	31.7
85	578	319	32.1
68	543	433	35.2

Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
275	555	.355	13.9
261	570	.352	13.1
245	585	.352	12.3
228	597	.355	11.5
199	580	.362	10.3
155	510	.378	8.4
114	426	.524	8.5
92	400	.712	9.3

D RATING – Planing hull vessels such as offshore patrol boats, customs, police, and some fire and fishing boats. Also used for bow and stern thrusters.

C Rating – 2600 rpm 209 bkW (280 bhp) 284 mhp



Prop Demand Curve Data

Speed rpm	Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
2600	209	768	231	57.4
2400	164	654	227	44.6
2200	127	550	229	34.6
2000	95	454	231	26.2
1800	69	368	233	19.3
1600	49	291	246	14.3
1400	33	223	263	10.2
1200	21	164	286	7.0

Speed rpm	Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
2600	280	566	.380	15.2
2400	220	482	.373	11.8
2200	170	406	.376	9.1
2000	128	335	.380	6.9
1800	93	271	.383	5.1
1600	65	215	.404	3.8
1400	44	164	.432	2.7
1200	27	121	.470	1.8

TMI — TM9695-00

Max Power Curve Data

Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
209	768	231	57.4
198	788	229	54.2
185	804	231	51.0
169	806	238	47.8
146	776	260	45.3
127	759	264	40.1
88	599	292	30.5
69	551	297	24.5

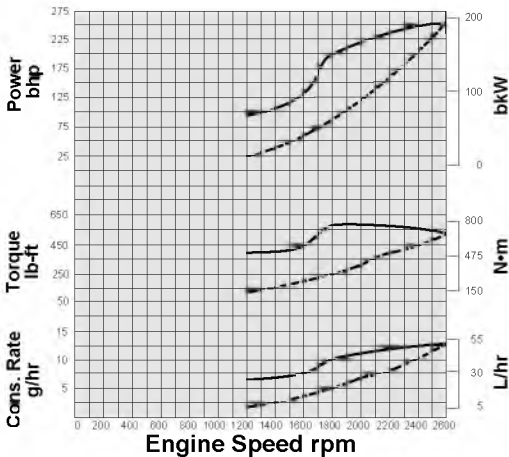
Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
280	566	.380	15.2
266	581	.376	14.3
248	593	.380	13.5
226	594	.391	12.6
196	572	.427	12.0
170	560	.434	10.6
118	442	.480	8.1
93	406	.488	6.5

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

- Prop Demand ----- 3.0 Exponent
- Engine Performance Parameters: Power +/- 3%; Specific Fuel Consumption +/- 3%; Fuel Rate +/- 5%.

PERFORMANCE CURVES

C Rating – 2600 rpm 190 bkW (255 bhp) 259 mhp



Prop Demand Curve Data

Speed rpm	Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
2600	190	698	217	49.2
2400	149	595	215	38.2
2200	115	500	217	29.7
2000	87	413	220	22.7
1800	63	334	224	16.9
1600	44	264	230	12.1
1400	30	202	241	8.5
1200	19	149	266	5.9

Speed rpm	Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
2600	255	515	.357	13.0
2400	200	439	.353	10.1
2200	154	369	.357	7.8
2000	116	305	.362	6.0
1800	84	246	.368	4.5
1600	59	195	.378	3.2
1400	40	149	.396	2.2
1200	25	110	.437	1.6

TMI — TM8448-02

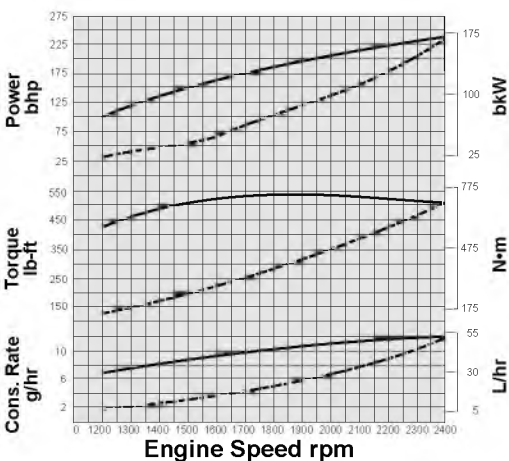
Max Power Curve Data

Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
190	698	217	49.2
186	741	212	47.1
174	757	211	43.9
161	768	215	41.2
146	776	221	38.5
97	581	228	26.4
79	536	264	24.7
66	522	311	24.3

Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
255	515	.357	13.0
250	547	.349	12.4
234	558	.347	11.6
216	566	.353	10.9
196	572	.363	10.2
131	429	.375	7.0
105	395	.434	6.5
88	385	.511	6.4

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

A, B Rating – 2400 rpm 172 bkW (230 bhp) 233 mhp



Prop Demand Curve Data

Speed rpm	Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
2400	172	682	220	45.0
2200	132	573	222	35.0
2100	115	522	226	30.9
2000	99	474	230	27.2
1800	72	384	218	18.8
1600	51	303	226	13.7
1400	34	232	243	9.9
1200	21	171	278	7.1

Speed rpm	Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
2400	230	503	.362	11.9
2200	177	423	.365	9.2
2100	154	385	.372	8.2
2000	133	350	.378	7.2
1800	97	283	.358	5.0
1600	68	223	.372	3.6
1400	46	171	.399	2.6
1200	29	126	.457	1.9

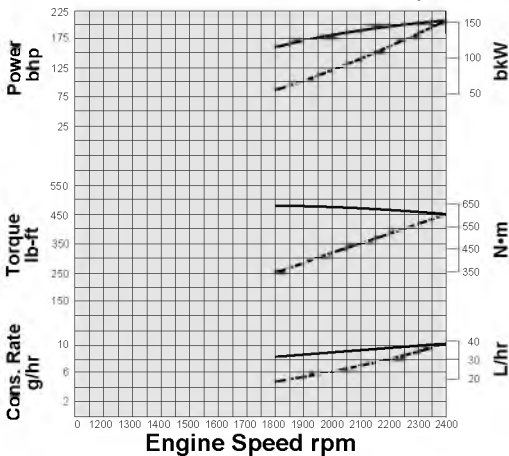
Max Power Curve Data

Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
172	682	220	45.0
163	707	218	42.3
158	717	220	41.3
152	725	223	40.3
138	733	230	37.9
119	713	250	35.6
97	664	273	31.6
72	572	292	25.0

Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
230	503	.362	11.9
218	521	.358	11.2
211	529	.362	10.9
204	535	.367	10.6
185	541	.378	10.0
160	526	.411	9.4
130	490	.449	8.3
96	422	.480	6.6

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

A, B Rating – 2400 rpm 153 bkW (205 bhp) 208 mhp



Prop Demand Curve Data

Speed rpm	Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
2400	153	609	212	38.7
2300	135	559	214	34.3
2200	118	512	215	30.3
2100	103	466	217	26.5
2000	89	423	219	23.1
1900	76	382	221	20.0
1800	65	342	226	17.4

Speed rpm	Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
2400	205	449	.349	10.2
2300	181	412	.352	9.1
2200	158	378	.353	8.0
2100	137	344	.357	7.0
2000	119	312	.360	6.1
1900	102	282	.363	5.3
1800	86	252	.372	4.6

TMI — TM8444-01

Max Power Curve Data

Power bkW	Torque N-m	Fuel Cons g/bkW-hr	Fuel Rate L/hr
153	609	212	38.7
149	618	212	37.7
145	628	213	36.7
140	637	213	35.6
135	644	214	34.5
129	646	216	33.1
122	648	219	31.9

Power bhp	Torque lb-ft	Fuel Cons lb/bhp-hr	Fuel Rate g/hr
205	449	.349	10.2
200	456	.349	10.0
194	463	.350	9.7
188	470	.350	9.4
181	475	.352	9.1
172	476	.355	8.7
164	478	.360	8.4

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

- Prop Demand ----- 3.0 Exponent
- Engine Performance Parameters: Power +/- 3%; Specific Fuel Consumption +/- 3%; Fuel Rate +/- 5%.

STANDARD ENGINE EQUIPMENT

Air intake
dry-type, single-stage air cleaner with service indicator

Alternator
belt driven, 12 volt, 51 ampere

Cooling
transmission oil cooler, heat exchanger, engine oil cooler, watercooled exhaust manifold, auxiliary sea water pump, expansion tank, low water level contactor thermostats

Flywheel and housing
SAE No. 3, rear-mounted starter

Fuel
filter, shutoff solenoid — energized to run, forward routed control cable bracket

Governor
mechanical

Lubricating
oil filter, filler, dipstick

Starting
electric

Torsional vibration damper

Tachometer drive
magnetic pickup

ACCESSORY EQUIPMENT

Air intake
walker airsep

Alternator
belt driven – 24 volt, 35 ampere; belt driven – 24 volt, 60 ampere; belt driven – 12 volt, 105 ampere

Cruise kit

Exhaust
6" watercooled elbow, 5" dry elbow

Flexible engine mounts

Flywheel and housing
SAE No. 3, front-mounted starter
SAE No. 2, front-mounted starter

Fuel
rear-routed control cable bracket, RH fuel filter, fuel/water separator, shutoff solenoid – energized to shutoff

Fuel
cooler, priming pump

Instruments and gauges
service meter, single and dual instrument panels

Lubrication
left hand mounted oil filter, filler, dipstick
top access oil filler and dipstick

Power takeoffs
front crankshaft mounted pulley, front mounted enclosed clutch, hydraulic pump drive pad

Protection devices
oil pressure and water temperature contactor

Support
flywheel housing mounted rear supports
front engine support
transmission mounted rear supports



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RATING DEFINITIONS AND CONDITIONS

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

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

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