

# MARINE ENGINE

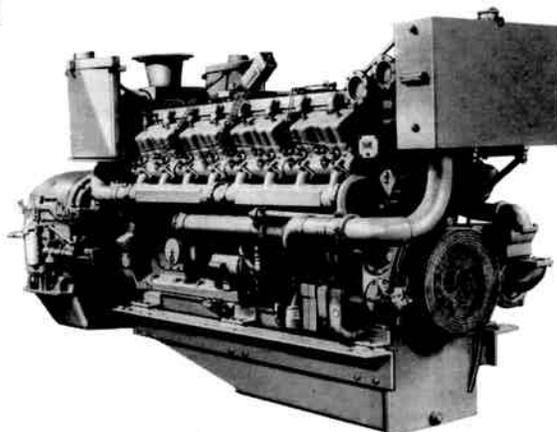
# CATERPILLAR

# D399

1000 hp @ 1225 rpm, 1380 hp @ 1300 rpm

## MARINE PROPULSION

Turbocharged-Aftercooled



### V16, 4-STROKE-CYCLE DIESEL

BORE—in (mm) .....	6.25 (159)
STROKE—in (mm) .....	8.00 (203)
DISPLACEMENT—cu in (liter) .....	3,927 (64.4)
ROTATION (from flywheel end) .....	Clockwise or Counterclockwise
ENGINE WEIGHT, Net Dry (approximate)—lb (kg)	
Separate Circuit Aftercooled (SCAC) (for keel cooling)	17,240 (7818)
Separate Circuit Aftercooled (SCAC) (for heat exchanger cooling)	17,250 (7823)
Jacket Water Aftercooled (JWAC)	17,150 (7778)
TRANSMISSION WEIGHT, Net Dry (approximate)—lb (kg)	
7251 .....	5,290 (2399)
7261 (weight varies with gear ratio) .....	6,340-6,635 (2875-3009)
7271 .....	8,000 (3628)

MARINE TRANSMISSION	CAT 7251	CAT 7261	CAT 7271
REDUCTION RATIOS	1.00:1	2.89:1 3.18:1 3.49:1 3.84:1 4.22:1	4.50:1 5.09:1 5.55:1 7.00:1

Note: Caterpillar Marine Engine and Transmissions are approved for certification by the following marine classification societies: ABS, BV, CBSI, DnV, GL, LR, NK, R.I.Na.

### STANDARD EQUIPMENT

#### Air Intake System:

Air Cleaner Adapters  
Air Cleaner Service Indicators  
Single-Stage Dry Air Cleaners

#### Control Systems:

Hydra-Mechanical Governor

#### Cooling System:

Coolant Expansion Tank  
Coolant Pump  
Coolant Thermostats  
Lube Oil Cooler  
Non-Self-Priming Fresh Water Pump (SCAC—KC)  
Self-Priming Sea Water Pump (SCAC—H/E)

#### Exhaust System:

Watercooled Exhaust Manifolds (continuous rating only)  
Watercooled Turbocharger Shield

#### Fuel System:

Fuel Filter  
Fuel Priming Pump  
Fuel Transfer Pump

#### Instruments and Gauges:

Instrument Panel with Ten Gauges  
SAE Standard Dual Tachometer Drive  
Service Meter

#### Lubricating System:

Emergency Connections  
Lube Oil Filter  
Lube Oil Pump

#### Manual Sump Pump

#### Prelube Pump

#### Mounting System:

Lifting Eyes  
Mounting Rails

#### Power Takeoffs:

Flywheel Housing, SAE No. 00  
Front Accessory Drive

#### Protection Devices:

Manual Shutoff Control  
Shutoffs—Oil Pressure and Coolant Temperature Contactors, Intake Manifold Temperature Contactor (SCAC), Overspeed and Engine Reversal Protection (1200-1300 rpm)

### ACCESSORY EQUIPMENT\*

#### Control Systems:

Engine Mounted  
Pilot House  
Woodward UG8 Governor

#### Cooling System:

Emergency Coolant Connections  
Heat Exchangers

#### Exhaust System:

Muffler

#### Fuel System:

Double Wall Fuel Lines  
Duplex Fuel Filter  
Flexible Fuel Lines

#### Instruments and Gauges:

Exhaust Pyrometer and Thermocouples  
Pilot House Panels  
Tachometer

#### Lubricating System:

Duplex Lube Oil Filters

#### Marine Transmissions:

Cat 7271, 7261, 7251  
Emergency Lube Oil Connections (7261)

Trolling Valve (7271, 7261)

#### Mounting System:

Sound Isolation Mounting (engine and 7261)

#### Power Takeoffs:

Auxiliary Drive Pulleys  
Front Enclosed Clutch

#### Protection Devices:

Overspeed Shutoff  
Rack Solenoid Shutoffs (24, 30-32V)

#### Spare Parts:

ABS, BV, DnV, GL, LR, NK, R.I.Na  
Approved Parts Kits (engine and 7271, 7261)

#### Starting Systems:

Air Starting  
Battery Chargers  
Battery Sets  
Charging Alternators (24, 30-32V)  
Electric Starting (24, 30-32V)  
Glow Plugs

\*Consult your Caterpillar Dealer for additional accessory equipment.

### RATINGS

	SEPARATE CIRCUIT AFTERCOOLED-85°F*			SEPARATE CIRCUIT AFTERCOOLED-110°F**			JACKET WATER AFTERCOOLED		
	rpm	hp	kW	rpm	hp	kW	rpm	hp	kW
<b>CONTINUOUS</b>	1225	1125	839	1225	1090	813	1225	1000	746
<b>Shaft Power</b>	1225	1091	814	1225	1057	788	1225	970	723
<b>Fuel Rate</b>	rpm	U.S. gph	liter/h	rpm	U.S. gph	liter/h	rpm	U.S. gph	liter/h
	1225	60.7	229.9	1225	59.3	224.5	1225	55.1	208.6
	1100	43.7	165.5	1100	42.7	161.7	1100	39.9	151.0
	1000	33.6	127.0	1000	32.2	121.8	1000	30.2	114.4
	900	23.9	90.6	900	23.7	89.9	900	22.2	83.9
<b>MEDIUM-DUTY COMMERCIAL</b>	rpm	hp	kW	Consult your Caterpillar Dealer or the factory for appropriate rating.			rpm	hp	kW
	1225	1240	925				1225	1100	821
	rpm	U.S. gph	liter/h				rpm	U.S. gph	liter/h
	1225	67.5	255.4				1225	61.9	234.2
<b>Shaft Power</b>	1225	1204	898				1225	1068	796
	rpm	U.S. gph	liter/h				rpm	U.S. gph	liter/h
	1100	48.4	183.0				1100	44.3	167.8
	1000	36.2	137.2				1000	32.9	124.4
<b>Fuel Rate</b>	900	26.2	99.8				900	24.2	91.6
							rpm	hp	kW
	1300	1380	1029				1300	1270	947
	rpm	U.S. gph	liter/h				rpm	U.S. gph	liter/h
<b>Shaft Power</b>	1300	1340	999				1300	1233	919
	rpm	U.S. gph	liter/h				rpm	U.S. gph	liter/h
	1200	58.3	220.8				1200	54.9	207.9
	1100	44.7	169.1				1100	42.1	159.4
<b>Fuel Rate</b>	1000	33.6	127.3				1000	31.8	120.3

\*85° (30°C) water to aftercooler.  
\*\*110°F (44°C) water to aftercooler.

### RATING DEFINITIONS

**Continuous:** For heavy-duty service where the engine is operated at rated load and speed without interruption or load cycling.

**Medium-Duty Commercial:** For service where engine load and speed are constant with some cycling. Full power operation is limited to four hour periods followed by one hour at continuous power levels and below. Synonymous with "maximum continuous" ratings used by marine classification societies.

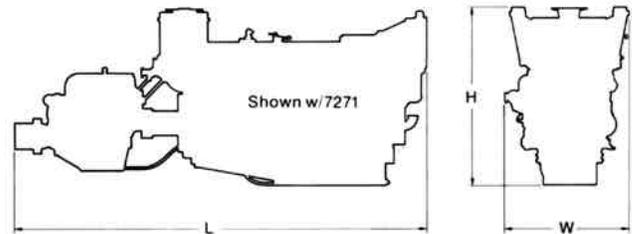
**Light-Duty Commercial:** For service where engine load and speed are cyclical. Full power operation is limited to one hour periods followed by one hour at continuous power levels and below.

### RATING CONDITIONS

Ratings are based on SAE J816 standard conditions of 29.38 in Hg (99.2 kPa) and 85°F (30°C). These ratings also apply at DIN 6270 standard conditions of 97.8 kPa (28.97 in Hg) and 20°C (68°F).

Shaft power represents power requirements of a typical fixed pitch propeller and 97 percent of gross engine horsepower.

Fuel rates are based on power requirements of a typical fixed pitch propeller and fuel oil having an HHV of 19,590 Btu/lb (45 570 kJ/kg) and weighing 7.076 lb/U.S. gal (848 g/liter).



	L	H	W
D399 w/7251, 7261	194.4 (4937)	89.8 (2282)	63.1 (1602)
D399 w/7271	209.9 (5332)	89.7 (2278)	63.1 (1602)