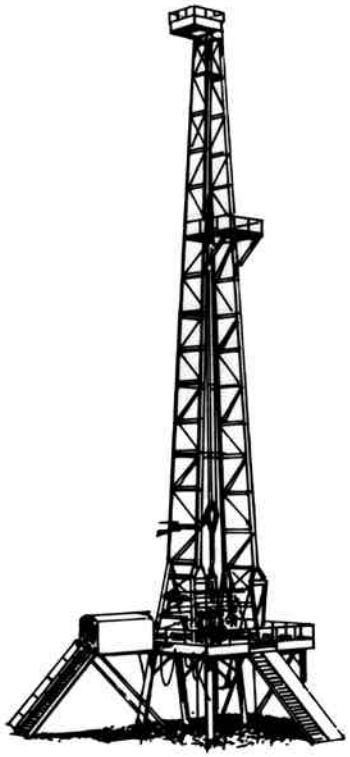
CATERPILLAR

LAND RIG SCR POWER MODULES

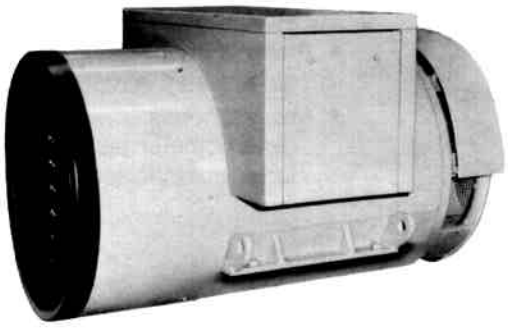
D379
D398
D399



The products briefly described here represent Caterpillar's offerings of power modules for use as prime rig power on SCR electric drill rigs. These Cat Engines, generators, radiators, and bases are a result of years of experience in the oilfields and an extensive design and testing program aimed at developing oilfield power modules that meet the demands of the drilling contractor.

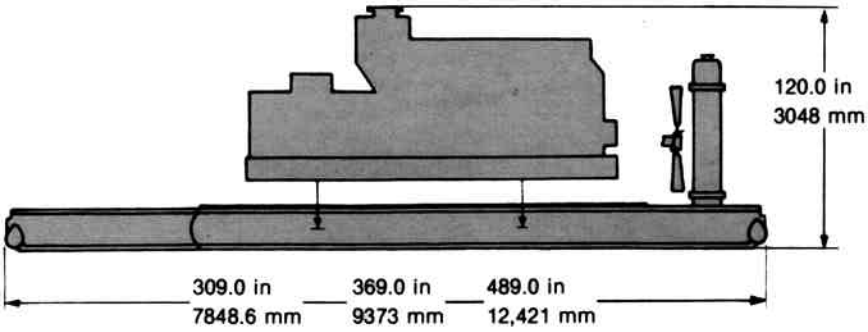
It is essential to have a properly designed base for diesel electric power modules used on drilling rigs. Misalignment between engine and generator can cause vibration and shorten the life of couplings and bearings. Caterpillar has recognized this fact and designed a base which provides a built-in three-point mounting system. The engine and generator are mounted by Caterpillar on this base and aligned to exacting tolerances at the factory.

The entire power module is manufactured and assembled by Caterpillar. This provides single source responsibility.



SR 4 Generator

- Designed, tested, and sized for SCR drill rig service
- 90°C over 40°C ambient temperature rise
- Insulated to Class F standards using temperature-resistant materials . . . 100% epoxy resin protection
- Embedded temperature detectors and generator space heater are standard
- Terminal box and copper bus bars for easy, dependable connections



Land Rig Base

- For use with Caterpillar single bearing or customer supplied two bearing generators (D398, D399)
- Built-in three-point mounting system maintains alignment of engine-generator on uneven surface and during rig moves
- Caterpillar radiators mounted to subbase or extra 5-foot setback available for vertical discharge type radiators

SCR Power Module

Standard Equipment

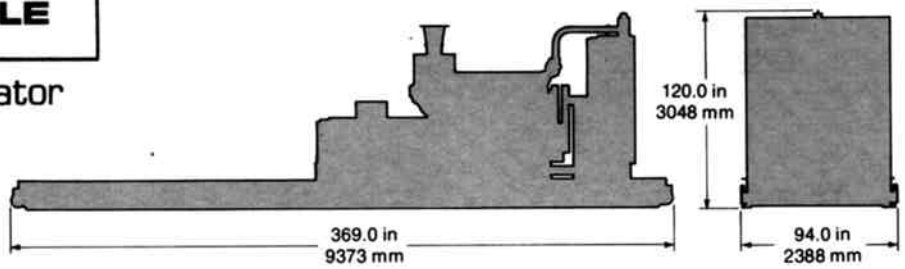
- Air and Exhaust System
  - air cleaner service indicators
  - air cleaners, single-stage, dry
  - exhaust manifolds, watershielded
  - flexible exhaust fittings
- Cooling System
  - jacket water pump
  - water connections
- Fuel System
  - flexible fuel lines
  - fuel filter
  - priming pump
  - transfer pump
- Lubrication System
  - oil cooler
  - oil filter
  - oil pan
- Premium Instrument Panel
  - exhaust stack temperature gauge
  - fuel pressure gauge
  - intake manifold temperature (2) gauges
  - lubricating oil pressure and temperature gauges
  - tachometer
  - water temperature gauge
- Protection Devices
  - alarm switch group
  - hydra-mechanical shutoffs
- Starting and Control System
  - air-driven prelube pump (D399)
  - air silencer and vapor arrestor
  - air starting motor
  - EG3P governor actuator
  - manual shutoff control
- Miscellaneous:
  - accessory drives
  - mounting rails—floor type
  - service hour meter
  - tachometer drive
  - vibration dampener
- Base Arrangement
  - oilfield subbase—18 in. beam, 7 ft. 10 in. wide, 25 ft. 9 in., 30 ft. 9 in. or 40 ft. 9 in. long
  - engine and generator three-point mounted into oilfield base
  - oil drain extension
  - tailboarding provisions
- Radiator
  - blower or suction fan
- Generator
  - SR 4, single bearing, 600 volt, 60 Hz, 3 phase, 10 wire, wye connected, brushless, drip proof
  - voltage regulator supplied by SCR system supplier
  - viscous-dampened driveline coupling (for customer-furnished two bearing generators)

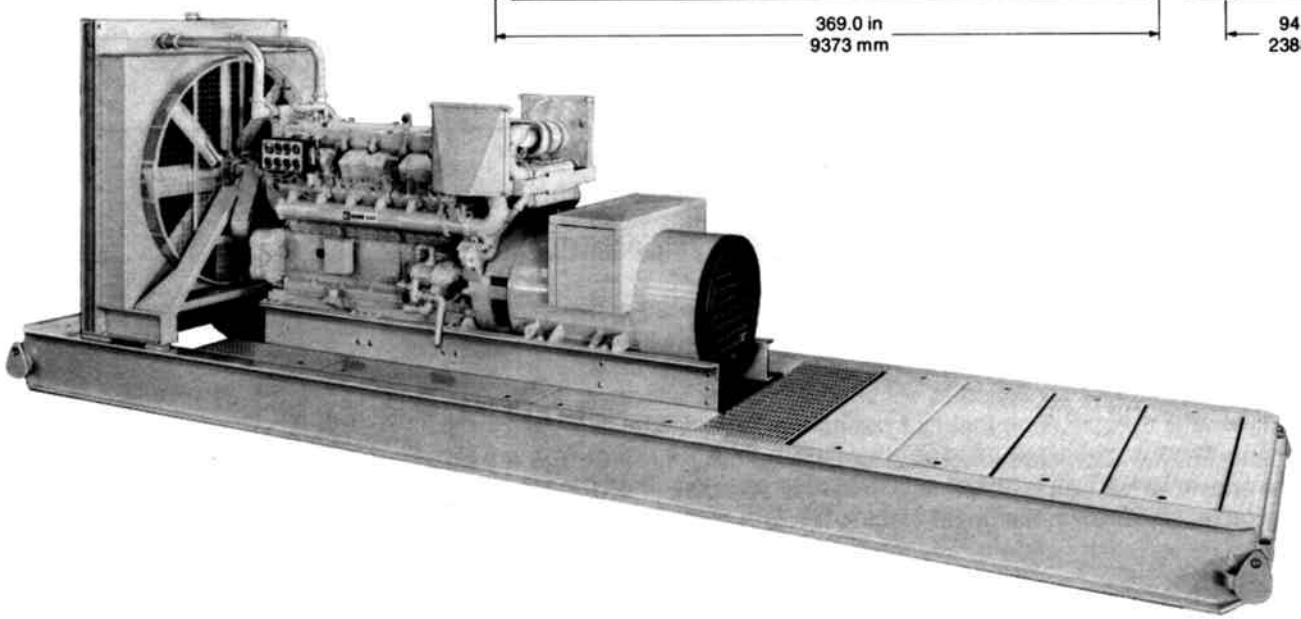
Accessory Equipment

- Air and Exhaust System
  - air cleaners, heavy-duty
  - turbocharger, watershielded
  - base modification for customer supplied vertical discharge radiator
- Cooling System
  - jacket water heaters
- Generator
  - SR 4 generators (D379, D398)
  - provision for use of customer-supplied two-bearing generator (D398, D399)
- Protection Devices:
  - air actuated remote shutoffs
- Miscellaneous
  - dynamometer test
  - torsional analyses

D398 POWER MODULE

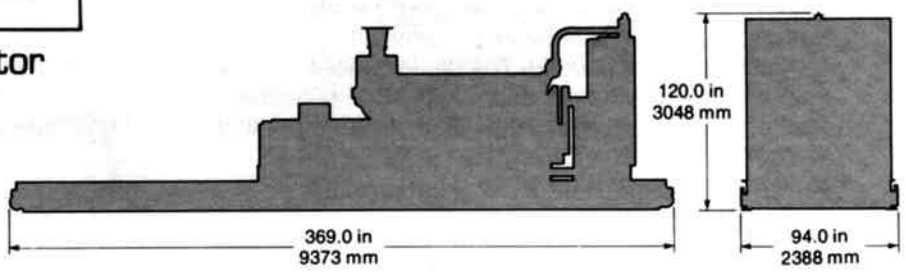
Caterpillar SR 4 AC Generator

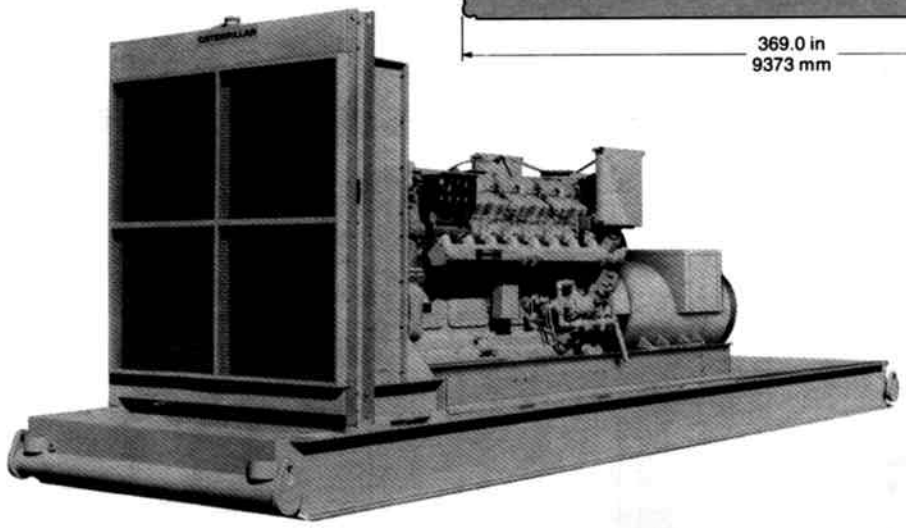




D399 POWER MODULE

Caterpillar SR 4 AC Generator





Ratings

	Pumping and Drilling Diesel Electric Drive without Fan (Jacket Water to Aftercooler)	SR 4 Generator @ 0.7 pf
D379—V8	610 hp (455 kW)* @ 1200 rpm	825 kV•A
D398—V12	912 hp (680 kW)* @ 1200 rpm	1200 kV•A
D399—V16	1215 hp (906 kW)* @ 1200 rpm	1500 kV•A

*mechanical kW

Rating Definitions

Electric Drive: The horsepower and speed capability of the engine which can be used to power mud pumps, rotary table, and drawworks on an electric drive drill rig.

Rating Conditions

Ratings are based on SAE J1349 standard conditions of 100 kPa (29.61 in Hg) and 25°C (77°F). These ratings also apply at ISO 3046/1, DIN 6271 and BS 5514 standard conditions of 100 kPa (29.61 in Hg), 27°C (81°F) and 60% relative humidity.

Caterpillar Parts and Service

You will find Caterpillar parts and service outlets in major oil producing areas worldwide. With the most comprehensive parts distribution system in the industry, most engine parts orders can be filled immediately over a dealer's counter. As a backup, dealers can quickly convey their parts needs to the nearest location in a network of Caterpillar parts facilities around the world. The dealer places an order with the Caterpillar parts depot and a computerized inventory control system helps fill that order, printing shipping instructions for any part in the system—wherever it might be.

While many oilfield contractors maintain a service department adept at handling repairs, they have the assurance that Caterpillar Engine dependability is backed by a force of factory-trained dealer servicemen worldwide—men who are specially trained to keep Cat Engines operating at peak efficiency. For all engine repairs—from minor work to a major overhaul or rebuild—expert attention is as near as your phone or radio. Work is fast and accurate. Downtime is minimized.

ASK ABOUT INSTALLATION AND STARTUP PROCEDURES OFFERED BY CATERPILLAR

LEHW3240 (5-83)
Supersedes LEHW2196