

# Solar Turbines

A Caterpillar Company

# C51

## Production Gas Compressors

Oil and Gas Applications

The Solar® C51 gas compressor is designed for applications with the *Taurus™ 60*, *Taurus 70*, *Mars® 90*, *Mars 100*, *Titan™ 130* and *Titan 250* gas turbines. This compressor combines high efficiency and wide flow range with a robust design and ease of restaging.

The C51 gas compressors have the latest state-of-the-art technology combined with the experience and reliability that comes with building and installing over 5000 compressors. These compressors are designed in compliance with API 617, a requirement for the severe environments and operating conditions this equipment may encounter.



**C51 Gas Compressor**

dsc51\_001



**Typical C51 Rotor**

dsc51\_002

### Typical Weights and Dimensions

Length	2.1 - 2.2 m (6' 11" - 7' 3")
Height	1.5 m (5' 1")
Width	2.2 m (7' 3")
Weight	17 327 - 24 449 kg (38,200 - 53,900 lb)

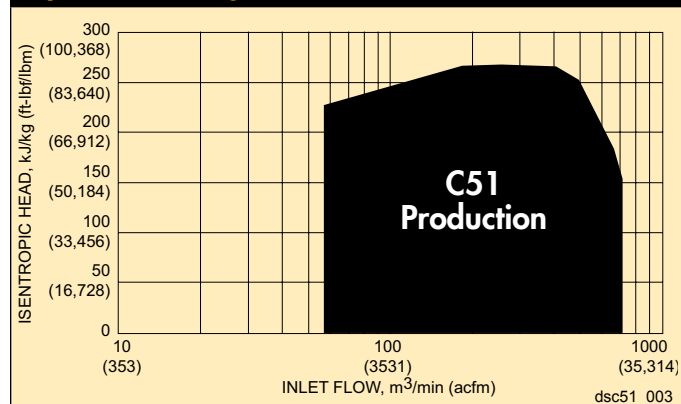
### Key Features

Number of Stages	1 - 10
Seals	Tandem dry gas
Bearings	Journal: Tilting-pad Thrust: Self-equalizing, tilting-pad
Inlet/Discharge Flanges	24/20 in. Class 900 20/16 in. Class 1500
Efficiency	> 85% isentropic
Maximum Speed	12,000 rpm
Maximum Flow	708 m <sup>3</sup> /min (25,000 acfm)
Maximum Total Head	269 kJ/kg (90,000 ft-lbf/lbm)
Maximum Casing Press.	15 515 kPag (2250 psig) and 20 685 kPag (3000 psig) models
Maximum Torque	31 070 Nm (275,000 lbf-in.)
Instrumentation	Fully instrumented with vibration, temperature, and pressure monitoring per API 617
Vibration Limits	Within API 617

### Materials

Impeller	15-5 PH E2 and E3: 15-5 PH < 9500 rpm E2 and E3: Titanium 9500 - 12,000 rpm
Casing	ASTM A216 GR WCC
Diaphragm/Guide Vane	ASTM 516/A36
Rotor Spacer	AISI 410
Stub Shafts	AISI 4140
Labyrinth Seals	Steel-backed Babbitt

### Operation Range (Head vs. Flow)



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DSC51PR/1109/EO

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