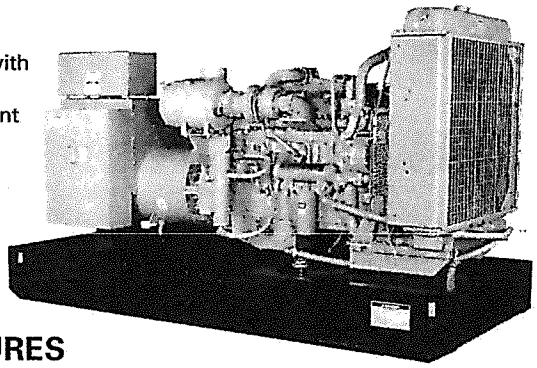
CATERPILLAR®

Generator Set

3406
1800 rpm
275-365 kW 60 Hz

Prime Power

Shown with Optional Equipment



FEATURES

- **CAT® DIESEL GENERATOR SETS**
  Factory designed, certified prototype tested with torsional analysis. Production tested and delivered to you in a package that is ready to be connected to your fuel and power lines. EPG Designer computer sizing available. Supported 100% by your Caterpillar dealer with warranty on parts and labor. Extended warranty available in some areas. The generator set was designed and manufactured in an ISO 9001 compliant facility. Generator set and components meet or exceed the following specifications: ABGSM TM3, AS1359, AS2789, BS4999, BS5000, BS5514, DIN6271, DIN6280, EGSA101P, IEC 34/1, ISO3046/1, ISO8528, JEM1359, NEMA MG1-22, VDE0530, 89/392/EEC, 89/336/EEC.
- **1996 EPA AND CARB NON-ROAD EMISSIONS CERTIFIED CONFIGURATION AVAILABLE**
- **RELIABLE, FUEL EFFICIENT DIESEL**
  The compact, four-stroke-cycle diesel engine combines durability with minimum weight while providing dependability and economy. The fuel system operates on a variety of fuels.
- **CATERPILLAR® SR4B GENERATOR**
  Single bearing, wye connected, static regulated, brushless self excited generator designed to match the performance and output characteristics of the Caterpillar diesel engine that drives it.
- **EXCLUSIVE CATERPILLAR VOLTAGE REGULATOR**
  Three-phase sensing and Volts per Hertz regulation give precise control, excellent block loading, and constant voltage in the normal operating range.

CATERPILLAR® ENGINE SPECIFICATIONS

I-6, 4-Stroke-Cycle Watercooled Diesel
Bore—mm (in) 137 (5.4)
Stroke—mm (in) 165 (6.5)
Displacement—L (cu in) 14.6 (893)
Compression ratio 14.5:1

CATERPILLAR® SR4B GENERATOR

Type ..... Static regulated, brushless
Excitation ..... Self excited
Construction ..... Single bearing, close coupled
Three phase ..... Wye connected
Insulation ..... Class H with tropicalization and antiabrasion
Enclosure ..... Drip proof IP 22
Alignment ..... Pilot shaft
Overspeed capability 150%
Wave form ..... Less than 5% deviation
Paralleling capability ..... With optional droop transformer
Voltage regulator ..... 3-phase sensing with Volts-per-Hertz
Voltage regulation .. Less than ± 1/2% (steady state)
Less than ± 1% (no load to full load)
Voltage gain ..... Adjustable to compensate for engine speed droop and line loss
TIF ..... Less than 50
THD ..... Less than 5%

CATERPILLAR CONTROL PANEL

24 Volt DC Control
Vibration isolated
NEMA 1, IP 22 enclosure
Electrically dead front
Lockable hinged door
Generator instruments meet ANSI C-39-1
Terminal box mounted

Voltages Available

See Price List

(Adjustable a minimum of ±10%)
Other voltages available –
consult your Caterpillar dealer.
Some voltages require derating.

CATERPILLAR ENGINE FACILITIES ISO 9001 CERTIFIED

STANDARD EQUIPMENT

Engine
Aftercooler
Air cleaner
  single element with service indicator
Base
Blower fan and drive
Breather, crankcase
Cooler, lubricating oil
Exhaust fitting and flange
Filters, right hand
  fuel, full flow
  lubricating oil, full flow
Flywheel housing
  SAE No.1
Governor
  hydra-mechanical
  Woodward 524 on emissions certified configuration
Lifting eyes
Linear vibration isolators
    between engine/generator and base
Manifold, exhaust, dry
Pumps, gear driven
  fuel transfer
  lubricating oil
  jacket water
Radiator
Shutoff, manual
Starting, electric, 24 Volt

Generator
SR4B brushless self excited with VR3 voltage regulator

ELECTRONIC MODULAR CONTROL PANEL (EMCP)

Standard Generator Controls and Monitoring:
Ammeter/voltmeter phase selector switch
Digital ammeter, voltmeter, and frequency meter
Voltage adjust rheostat

Standard Engine Controls and Monitoring:
Automatic/manual start-stop control
Cooldown timer
Cycle cranking
Emergency stop pushbutton
Engine control switch for:
  off/reset, auto start, manual start, stop
Shutdown protection and LED indicators for:
  high coolant temp.
  low oil pressure
  overcrank
  overspeed

PRIME POWER ATTACHMENTS

Engine
Air cleaner, heavy duty
Air precleaner
Base, narrow or wide, skidable
  fuel tank
    single wall and dual wall
Charging alternator
Cooling systems
Enclosure
  weatherproof and sound-attenuated
Exhaust fittings
Governor, Woodward 1724 or 2301
  load share
Muffler
  industrial
  residential
  critical
Protection devices
Tachometer drive

Generator
Extension terminal box
Manual voltage control
MIL Std. 461C, Part 9
Space heater

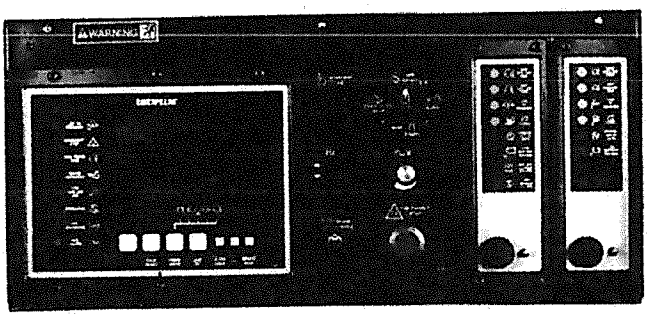
Switchgear
Automatic start-stop
Battery charger
Circuit breaker
  manual
  electric operated
Enclosure – floor standing NEMA 1
Main load buss
Paralleling
  manual
  permissive
Protective relays

Control Panel
Auxiliary relay
Enclosure, NEMA 12/IP 44
Governor speed switch
Illuminating lights
Installed speed sensing governor (Woodward)
Low coolant level
Provision for:
  alarm module NFPA 99
  alarm module NFPA 110
  custom alarm module (8 or 16 lights)
Over voltage relay
Over current relay
Reverse power relay
Starting aid switch
Synchronizing lights

CATERPILLAR® EMCP II

Electronic Modular Control Panel

The Electronic Modular Control Panel (EMCP II) is a generator-mounted control panel, available on all Caterpillar packaged generator sets. It utilizes an environmentally sealed, solid-state, microprocessor-based module for engine control and AC metering. This new application of mature, high-tech electronics to gen set control and monitoring provides more features, accuracy and reliability than present electromechanical and many competitive panel systems.



The EMCP II provides these standard control and monitoring features, many of which are options on other panels:

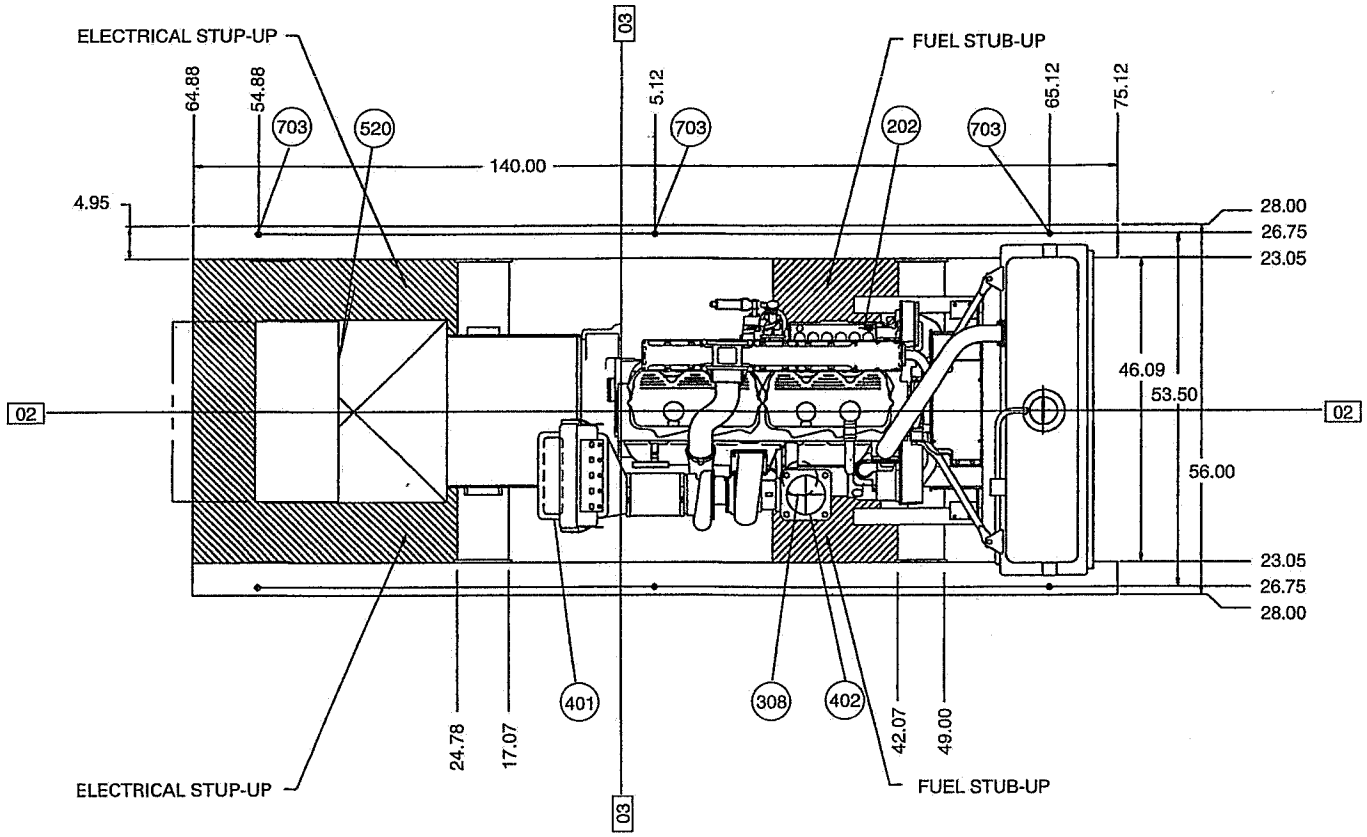
- Automatic/manual start-stop engine control with programmable safety shutdowns and associated flashing LED indicators for low oil pressure, high coolant temperature, overspeed, overcrank and emergency stop.
- Cycle cranking–adjustable 1-60 second crank/rest periods
- Cooldown timer–adjustable 0-30 minutes
- Energized to run or shutdown fuel control systems
- LCD digital readout for: Engine oil pressure; coolant temperature; engine rpm; system DC volts; engine running hours; system diagnostic codes; generator AC volts; generator AC amps; and generator frequency
- Engine control switch
- Ammeter-voltmeter phase selector switch
- Emergency stop pushbutton
- Indicator/display test switch
- Voltage adjust potentiometer
- Rugged NEMA 1/IP 22 cabinet.

TECHNICAL DATA

3406 Prime Power Generator Sets – 1800 rpm				
Power Rating @ 0.8 PF with Fan	kW	275	320	365
Power Rating @ 0.8 PF with Fan	kV•A	344	400	456
Engine hp without Fan		414	475	536
Aspiration		TA	TA	TA
Generator Frame Size		448	449	450
Engine Lubricating Oil Capacity	qt	40	40	40
System Backpressure (Max Allowable)	in water	27	27	27
Exhaust Flange Size — (Internal Diameter)	in	6.0	6.0	6.0
Length	in	140	140	140
Width	in	56	56	56
Height	in	80.3	80.3	80.3
Shipping Weight	lb	6815	7000	7180
Engine Coolant Capacity with Radiator	gal	24.0	24.0	24.0
Engine Coolant Capacity without Radiator	gal	9.0	9.0	9.0
Standard Radiator Arrangement Data Air Flow (Max @ Rated Speed)	cfm	21 200	21 200	21 200
Air Flow Restriction (After Radiator)	in water	0.25	0.25	0.25
Ambient Air Temperature (Consult T.M.I.)	Deg F	140	134	117
100% Load Fuel Consumption (100% load) with Fan	gph	20.8	24.3	26.0
75% Load Fuel Consumption (75% load) with Fan	gph	16.3	18.6	19.1
Combustion Air Inlet Flow Rate	cfm	804	889	1065
Exhaust Gas Flow Rate	cfm	2254	2551	3066
Heat Rejection to Coolant (Total)	BTU/min	10 350	11 942	12 739
Heat Rejection to Exhaust (Total)	BTU/min	16 663	19 279	19 392
Heat Rejection to Atmosphere from Engine	BTU/min	3384	4123	4561
Heat Rejection to Atmosphere from Generator	BTU/min	1160	1223	1308
Exhaust Gas Stack Temperature	Deg F	981	1011	1004

Note: Consult TMI for performance and emissions data for 1996 EPA and CARB non-road certified generator sets.

PRIME POWER GEN SET PACKAGE — TOP VIEW



(202) Excess Fuel Return
(308) Oil Filter
(401) Air Inlet
(402) Exhaust
(520) Control and Power Panel
(703) Customer Mounting Holes

For overall dimensions see technical data section (page 3).

Note: General configuration not to be used for installation. See general dimension drawings for detail. All dimensions are in inches.

CONDITIONS AND DEFINITIONS

Prime — Output available with varying load for an unlimited time. Prime power in accordance with ISO8528. 10% overload power in accordance with ISO3046/1, AS2789, DIN6271, and BS5514 available on request.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046/1, DIN6271, and BS5514 standard conditions.

Fuel rates are based on fuel oil of 35° API (16° C or 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 details.