



Model 1625 RD 1625 kW Diesel Generator Set

Generator Set Rating

Three Phase	60 Hz kW/KVA	50 Hz kW/KVA
Continuous		
Standby 130°C	1625/2031	1525/1906
Prime Power 105°C	1475/1843	1400/1750

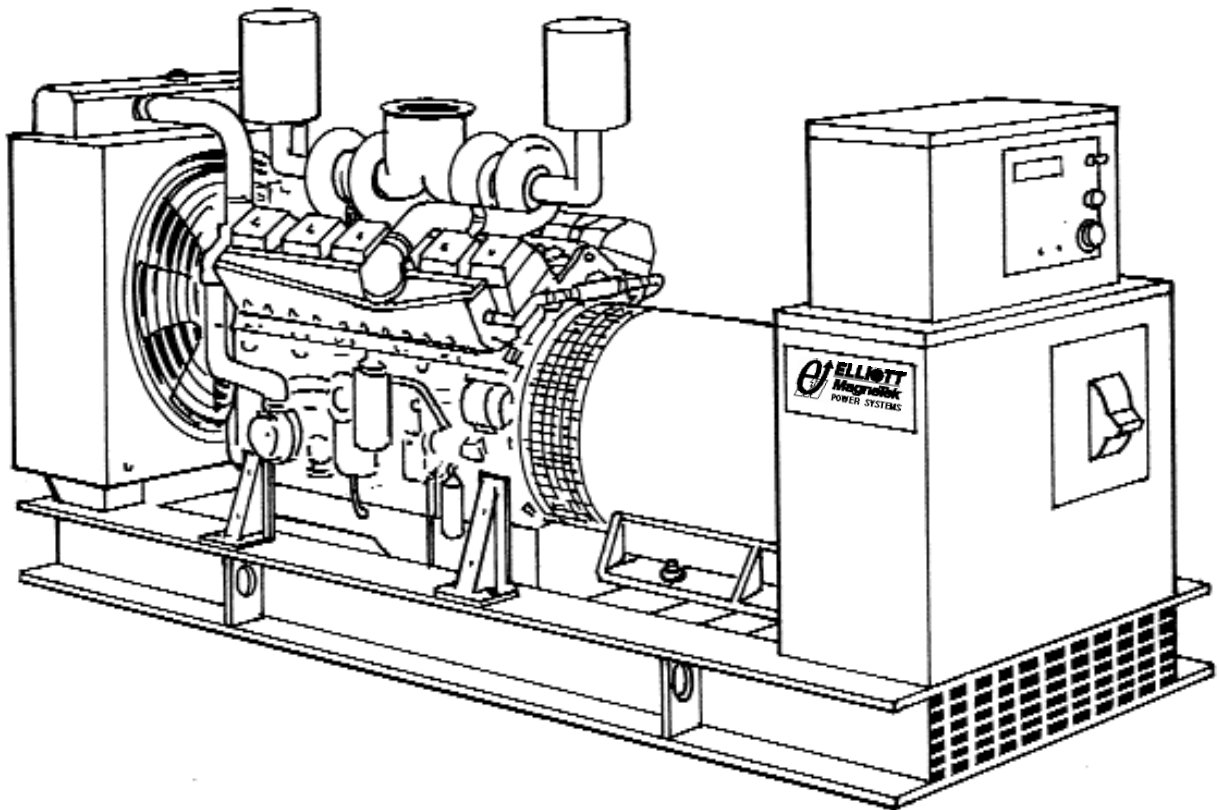
Single Phase

Consult Factory

Quality Power Producing Equipment

is our business at Elliott MagneTek Power Systems, Inc.. Our power systems offer solutions to requirements for reliable, quality electrical power.

- 100% full load tested.
- Performance supported by prototype testing.
- 12 lead re-connectable AC synchronous generators.
- Solid state automatic voltage regulator.
- 50 or 60 Hz operational.
- Standard Digital Control Panel meeting standards set by NFPA-110.



Product Features

System Reliability and Longevity

begin with design experience and integrity. EMPS was formed by two companies with over one hundred years experience producing state-of-the-art power generation equipment. This experience is designed into our generator sets.

Single Source Responsibility:

Product service, support and parts available through EMPS network of distributors.

Accessories and Flexibility

are designed into EMPS' generator sets at the factory level to meet specific application needs.

Organizational Commitment

to innovative, leading edge technology and environmentally friendly electrical products and services.

Generator Set Design Features

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Standard Equipment

- * 4 Cycle engine.
- * AC synchronous brushless alternator.
- * Structural "C" channel base.
- * Generator mounted terminal and meter /control box.
- * Circuit breaker-mounting provisions.
- * Connection area for main AC terminals and all control wiring
- * 24 volt DC engine electrical system.
- * 24 volt starter motor.
- * Battery charging alternator.
- * Battery rack and cables.
- * Flexible fuel lines.
- * Most metallic parts incorporate our powder paint primer base coat with UV inhibitive enamel top coat.
- * Single stage dry type air cleaner.
- * Corrosion resistant hardware.
- * Oil drain extension plumbed to base rail for convenient connection.
- * Microprocessor based auto start meter/ control panel.
- * Digital read out control system rated to operate from -30° C to 75° C with the following standard displays, shown continuously:
 - ** Generator AC voltage.
 - ** AC amperage:
 - Phase 1-2
 - Phase 2-3
 - Phase 3-1
 - ** Frequency
 - ** Oil Pressure
 - ** Engine Temperature
 - ** Battery Voltage
 - ** Fuel Level (Diesel Only)
- * The following can be displayed using the scroll lock function:
 - ** Run time
 - ** Safety set point for over speed
 - ** Over crank
 - ** High water temperature
 - ** Low oil pressure
- * Voltage adjust rheostat
- * Auto/ off /run switch

Generator Specifications

Manufacturer: MagneTek

Insulation: The main stator, main rotor, exciter stator and exciter rotor are all insulated with Class H materials and rated Class F per NEMA MG1 -1.65 and 852757 definition. All materials are non-hygroscopic to prevent fungus growth. A polyester and epoxy combination offers maximum environmental protection.

Main Stator: 2/3 pitch and one slot skewing minimize voltage harmonics and meets telephone influence factor (TIF) per NEMA MG1-22.43. Twelve lead re-connectable design. Coated with anti-abrasive sealer.

Main Rotor: Four pole single piece lamination with full amortisseur windings and coil supports. Winding is precision wet layer wound with epoxy resin and dynamically balanced to two mil in two planes. Production over speed tested at 125% for 15 minutes. All materials are non-hygroscopic to prevent fungus growth.

Exciter: Brushless, three phase, six-pole rotor, and production over speed tested at 125% operating speed.

Rotating Diode: Sealed full wave with metal oxide surge suppressor

Bearing: Double-sealed, permanently lubricated, 50,000 hour B-10 life including magnetic pull.

Drive Coupling: Positive alignment, flexible drive discs.

Automatic Voltage Regulator Specifications

Operation: Volts per hertz, three phase sensing with overload and loss of sensing protection.

Construction: Solid state, modular: fully sealed and potted design provides component protection from corrosive environments and vibration.

Voltage Regulation: +/- 1% voltage regulation no load to full rated load: +/- 1/2% voltage regulation at steady state conditions.

Radio Interference (RFI): Integral filter provides suppression of conducted electromagnetic interference to levels meeting most commercial requirements.

Voltage Selections and Full Load Amperages at Standby Rating

Three Phase

60 Hz Amperage	50 Hz Amperage
120/208 5638	110/190 5792
120/240 4886	120/208 5291
277/480 1954	230/400 2751

For other voltages, contact your EMPS distributor. All output amperage ratings listed above are at standby rating.

Application and Performance Data

MagneTek Alternator Model MTG81 is standard with this package. Larger generators may be required to meet certain application specific requirements such as Single Phase, Motor Starting and Non Linear Loads. The Maximum Generator rating available in this package is MTG85.

Technical Specifications

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Engine Specifications

Manufacturer	Mitsubishi	
Model	S16R-PTA	
Type	4 Cycle Water Cooled	
Aspiration	Turbo/Aftercooler (Jacket water to cooler)	
Cylinders	60° V12	
Displacement	3989 In ³ . (65.37L)	
Bore and Stroke,	6.69 in x 7.09 in. (170 mm x 180 mm)	
Compression Ratio	13.5:1	
Minimum C.C.A. at 5°C	300 Ah	
RPM	1800 rpm	1500 rpm
BHP Minimum REQ'D		
at Rated kW	2245	2107
BMEP	247 psi	278 psi

Generator Set Deration Factors

Temperature:

- 4% for every 18° F above 104° F
- 4% for every 10°C above 40°C

Altitude

- 2.5% for every 383 feet above 4918 feet
- 2.5% for every 167 meters above 1499 meters

Cooling System

High Ambient 104°F (40°C) System
Coolant Capacity with Radiator
44.9 US gal. (170L)

Maximum restriction on discharge side of radiator
.4 In wc (99 Pa)

	1800 rpm	1500 rpm
Coolant Flow		
	489 GPM (1850 LPM)	436 GPM (1650 LPM)
Heat Rejection to Coolant at Full Load	59147 Btu/min (6240 MJ/min)	53651 Btu/min (5660 MJ/min)
Heat Rejection to Room at Rated Full Load	7098 Btu/min (749 MJ/min)	6438 Btu/min (679 MJ/min)

Air System

	1800 rpm	1500 rpm
Maximum Air Intake Restriction		25.0 In wc (6.2 kPa)
Radiator Cooling Air Flow	68855 cfm (1949 m ³ /min)	68855 cfm (1949 m ³ /min)
Combustion Air Flow	5049 cfm (143 m ³ /min)	4555 cfm (129 m ³ /min)
Generator Cooling Air Flow	5256 cfm (148.7 m ³ /min)	4380 cfm (124 m ³ /min)

Exhaust System

Exhaust
Outlet Size 8.35 in. dia. (21.2cm)
Maximum Allowable Back Pressure
23.6 In wc (5.9 kPa)

Exhaust Gas Flow
at Standby
Rating 13312 cfm 12076 cfm
(377 m³/min)(342 m³/min)

Exhaust Temp at
Standby Rating 950°F 1013°F
(510°C) (545°C)

Fuel System

Consumption at Standby Rating:

Load	1800 RPM		
	kW	US gal/h	Litre/h
1/4	406	26.9	101.8
1/2	812	53.8	203.7
3/4	1218	80.6	305.1
Full	1625	107.5	406.9
Load	1500 RPM		
	kW	US gal/h	Litre/h
1/4	350	22.3	84.4
1/2	700	44.7	169.2
3/4	1050	66.7	252.5
Full	1400	89.2	337.7

Governor Type Electric
Governor Regulation: +/- .25%

Generator

Manufacturer	MagneTek
Model	MTG81
Motor Starting KVA, 240/480 Volt WYE at 35% Voltage Dip, 100% Voltage Recovery	3833 SKVA
Maximum Motor Starting KVA, 35% Voltage Dip Oversized Generator MTG85	6704 SKVA

Reactances

	480 V	400 V
at 105°C rise	60Hz	50Hz
Synchronous Xd	3.52	3.38
Direct Axis Transient X'd	.280	.269
Direct Axis Subtransient X'd	.190	.182
Zero Sequence Xo	.0107	.0103

Lubrication System

Engine Oil Capacity with Filters
60.8 US gal. (230L)
Oil Filter Type Spin On

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Options:

Generator

- * Upsized
- * Tropical winding protection
- * Space heater
- * Series boost
- * UL listed mainline circuit breaker

Control

- * Remote alarm annunciator
- * Emergency stop
- * Multi-point dry contact board.
- * NFPA 110 Compliance
- * Low Temperature Display Heater

Engine

- * Battery/Battery heater
- * Battery charger
- * Engine pre-heater
- * Fuel/ water separator
- * Isochronous governor

Generator Set

- * EMPS automatic transfer switch
- * Industrial silencer
- * Residential silencer
- * Critical silencer
- * Weather protective enclosure
- * Sound attenuation
- * Sub-base fuel tank

Consult Factory for Current Design

58 Elliott Power Drive
P.O. Box 403
Lexington, TN 38351
Tel: 901-967-9393
Fax: 901-968-0161

Distributed by:



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