



Model 600 RD 600 kW Diesel Generator Set

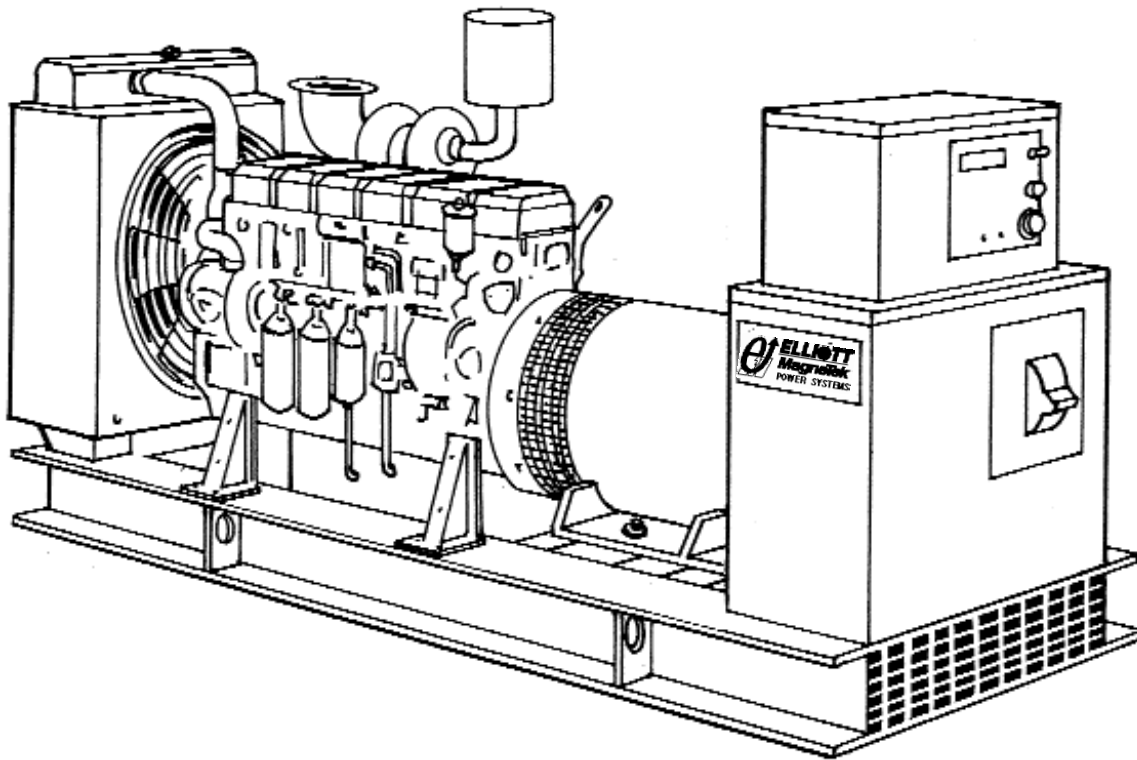
Generator Set Rating

Three Phase	60 Hz kW/KVA	50 Hz kW/KVA
Continuous		
Standby 150°C	600/750	524/655
Prime Power 105°C	540/675	472/590
Single Phase	60 Hz kW/KVA	50 Hz kW/KVA
Continuous		
Standby 150°C	358/358	409/409
Prime Power 105°C	308/308	348/348

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 12 lead re-connectable 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 2081	110/190 1990
120/240 1804	120/208 1818
277/480 902	230/400 945
347/600 722	240/415 911

*Single Phase

60 Hz Amperage	50 Hz Amperage
120/240 1492	110/220 1859

All voltages listed are available and/or re-connectable with the exception of the three phase, 60 Hz, 347/600 volt generator which is application specific. For other voltages, contact your EMPS distributor. All output amperage ratings listed above are at standby rating.

*Single Phase amperage based on standard generator and unity power factor.

Application and Performance Data

MagneTek Alternator Model MTG51 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 MTG63.

Technical Specifications

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Engine Specifications

Manufacturer	Mitsubishi	
Model	S6R-PTA	
Type	In line 4 Stroke	
Aspiration Turbo/ Water to Air After cooled		
Cylinders	6	
Displacement	1496 In ³ . (33.93L)	
Bore and Stroke,	6.69 in x 7.09 in. (170 mm x 180 mm)	
Compression Ratio	14.0:1	
Minimum C.C.A. at 5°C	200 Ah	
RPM	1800 rpm	1500 rpm
BHP Minimum REQ'D		
at Rated kW	851	744
BMEP	259 psi	270 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
40.2 US gal. (152L)

Maximum restriction on discharge side of radiator
.5 In wc (125 Pa)

1800 rpm **1500 rpm**

Coolant Flow	211 GPM (798.7 LPM)	177 GPM (670 LPM)
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Heat Rejection to Coolant at Full Load	21650 Btu/min (2284 MJ/min)	18462 Btu/min (1948 MJ/min)
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Heat Rejection to Room at Rated Full Load	2692 Btu/min (284 MJ/min)	2296 Btu/min (242 MJ/min)
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Air System

	1800 rpm	1500 rpm
Maximum Air Intake Restriction		25.0 In wc (6.2 kPa)
Radiator Cooling Air Flow	25423 cfm (719 m ³ /min)	20550 cfm (582 m ³ /min)
Combustion Air Flow	1907 cfm (54.0 m ³ /min)	1624 cfm (46.0 m ³ /min)
Generator Cooling Air Flow	5256 cfm (148.7 m ³ /min)	4380 cfm (124 m ³ /min)

Exhaust System

Exhaust Manifold 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
5049 cfm 4308 cfm
(142.89 m³/min) (1121.91 m³/min)

Exhaust Temp at Standby Rating
1022°F (550°C) 1094°F (590°C)

Fuel System

Consumption at Standby Rating:

Load	1800 RPM		
	kW	US gal/h	Litre/h
1/4	150	12.7	48
1/2	300	23.3	88
3/4	450	31.7	120
Full	600	42.3	160

Load	1500 RPM		
	kW	US gal/h	Litre/h
1/4	131	10.3	39
1/2	262	17	64
3/4	393	27.7	105
Full	524	35.7	135

Governor Type Electric
Governor Regulation: +/- .2%

Generator

Manufacturer	MagneTek
Model	MTG51
Motor Starting KVA, 240/480 Volt WYE at 35% Voltage Dip, 100% Voltage Recovery	1080 SKVA
Maximum Motor Starting KVA, 35% Voltage Dip Oversized Generator MTG63	3947 SKVA

Reactances

	480 V	400 V
at 105°C rise	60Hz	50Hz
Synchronous Xd	3.89	4.09
Direct Axis Transient X'd	.332	.316
Direct Axis Subtransient X"d	.240	.228
Zero Sequence Xo	.0136	.0129

Lubrication System

Engine Oil Capacity with Filters 21.1 US gal. (80L)
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

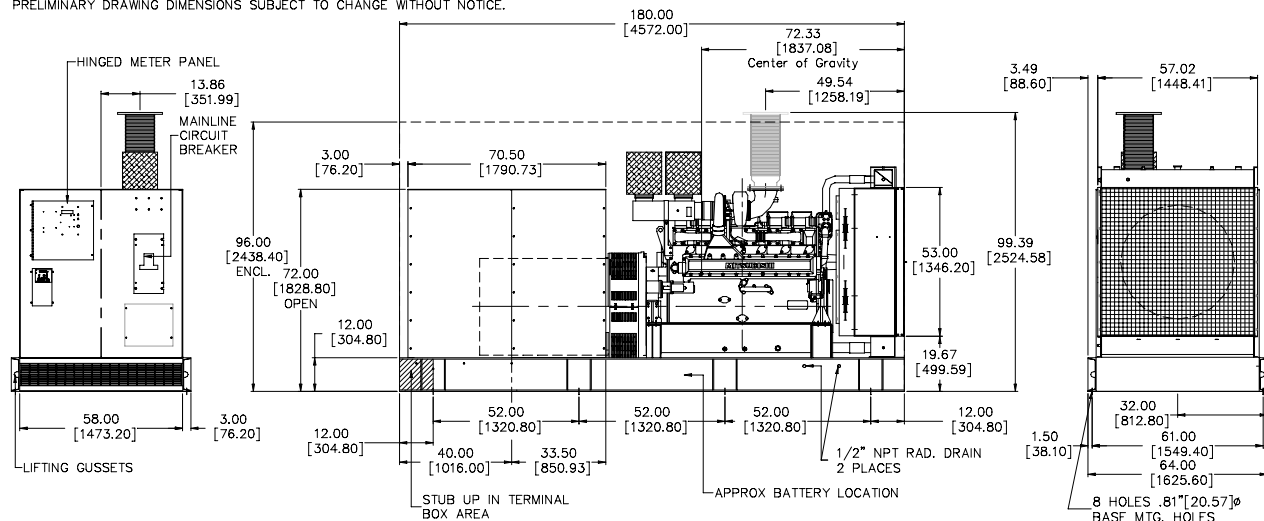
Generator Set

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

DOOR SWING:
ENGINE DOOR: 28.75
SECURITY DOOR: 27.12

MACHINE WEIGHT:
OPEN DRY WEIGHT 11,950 LBS [1356 KG]
ENCLOSED DRY WEIGHT 13,350 LBS [1356 KG]

NOTES:
PRELIMINARY DRAWING DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.



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