



Model 1000 RD 1000 kW Diesel Generator Set

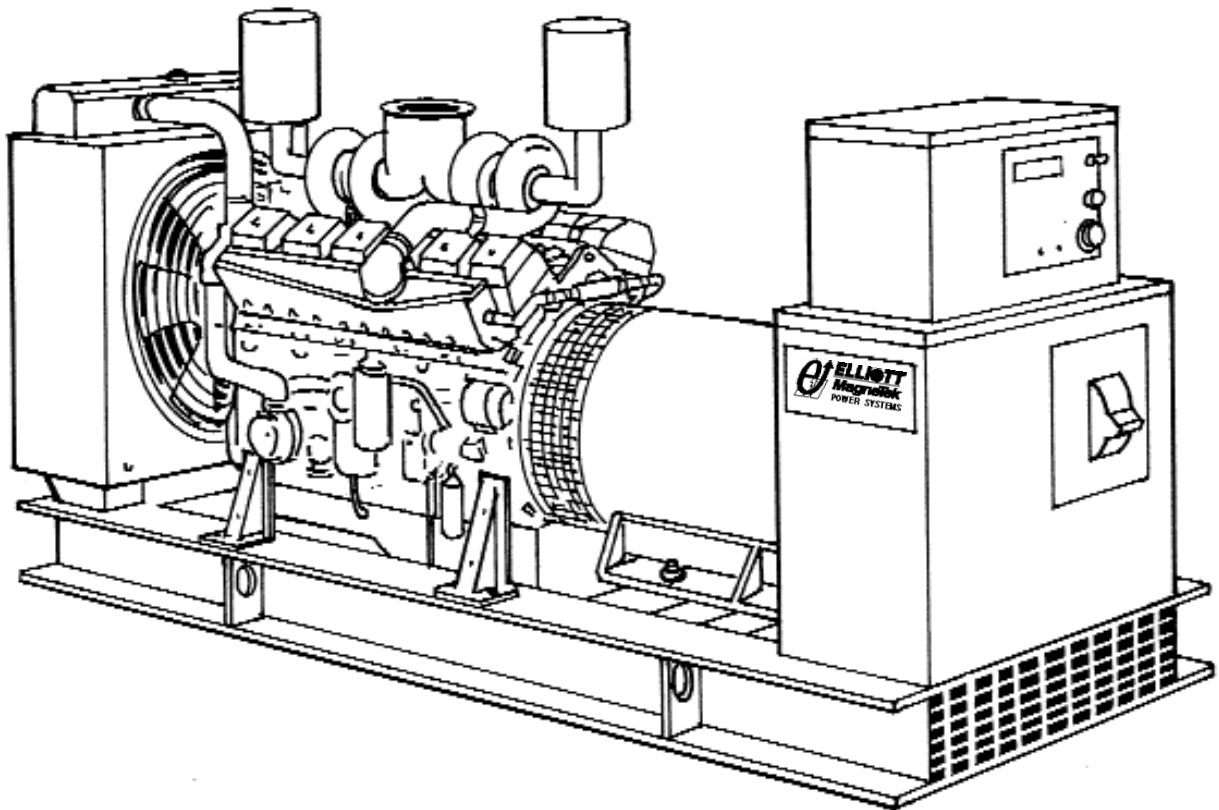
Generator Set Rating

Three Phase	60 Hz	50 Hz
	kW/KVA	kW/KVA
Continuous		
Standby 150°C	1000/1250	921/1151
Prime Power 105°C	921/1151	837/1046
Single Phase	60 Hz	50 Hz
	kW/KVA	kW/KVA
Continuous		
Standby 150°C	600/600	670/670
Prime Power 105°C	496/496	536/536

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

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 3470	110/190 3498
120/240 3007	120/208 3195
277/480 1503	230/400 1662
347/600 935	240/415 1602

*Single Phase

60 Hz Amperage	50 Hz Amperage
120/240 2500	110/220 3045

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 MTG58 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 MTG82.

Technical Specifications

Model 1000 RD

1000 kW Diesel Generator Set

Engine Specifications

Manufacturer	Mitsubishi	
Model	S12H-PTA	
Type	4 Stroke	
Aspiration Turbo/ Water to Air After cooled		
Cylinders	60° V12	
Displacement	2263 In ³ . (37.09L)	
Bore and Stroke,	5.91 in x 6.89 in. (150 mm x 175 mm)	
Compression Ratio	14.0:1	
Minimum C.C.A. at 5°C	300 Ah	
RPM	1800 rpm	1500 rpm
BHP Minimum REQ'D		
at Rated kW	1427	1314
BMEP	277 psi	332 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
 70.4 US gal. (266.5L)

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

1800 rpm **1500 rpm**

Coolant Flow
 383 GPM 317 GPM
 (1450 LPM) (1200 LPM)

Heat Rejection
 to Coolant at
 Full Load
 37132 Btu/min 33150 Btu/min
 (3918 MJ/min) (3498 MJ/min)

Heat Rejection
 to Room at Rated
 Full Load
 4617 Btu/min 4122 Btu/min
 (487 MJ/min) (435 MJ/min)

Air System

	1800 rpm	1500 rpm
Maximum		
Air Intake		
Restriction		25.0 In wc (6.2 kPa)
Radiator Cooling		
Air Flow	63558 cfm (1799 m ³ /min)	52963 cfm (1499 m ³ /min)
Combustion		
Air Flow	3272 cfm (93 m ³ /min)	2921 cfm (83 m ³ /min)
Generator Cooling		
Air Flow	5256 cfm (148.7 m ³ /min)	4380 cfm (73.2 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 8660 cfm 7731 cfm
 (245 m³/min)(219 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	250	22.5	85.2
1/2	500	37.7	142.6
3/4	750	55.0	209
Full	1000	72.4	274

Load	1500 RPM		
	kW	US gal/h	Litre/h
1/4	230	19.4	73.2
1/2	460	35.2	133.1
3/4	691	51.7	195.6
Full	921	68.9	260.9

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

Generator

Manufacturer	MagneTek
Model	MTG58
Motor Starting KVA, 240/480 Volt WYE at 35% Voltage Dip, 100% Voltage Recovery	2660 SKVA
Maximum Motor Starting KVA, 35% Voltage Dip Oversized Generator MTG82	5057 SKVA

Reactances

	480 V	400 V
at 105°C rise	60Hz	50Hz
Synchronous Xd	3.03	3.04
Direct Axis		
Transient X'd	.221	.285
Direct Axis		
Subtransient X'd	.147	.157
Zero Sequence Xo	.0101	.0097

Lubrication System

Engine Oil Capacity with Filters
 52.8 US gal. (200L)

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

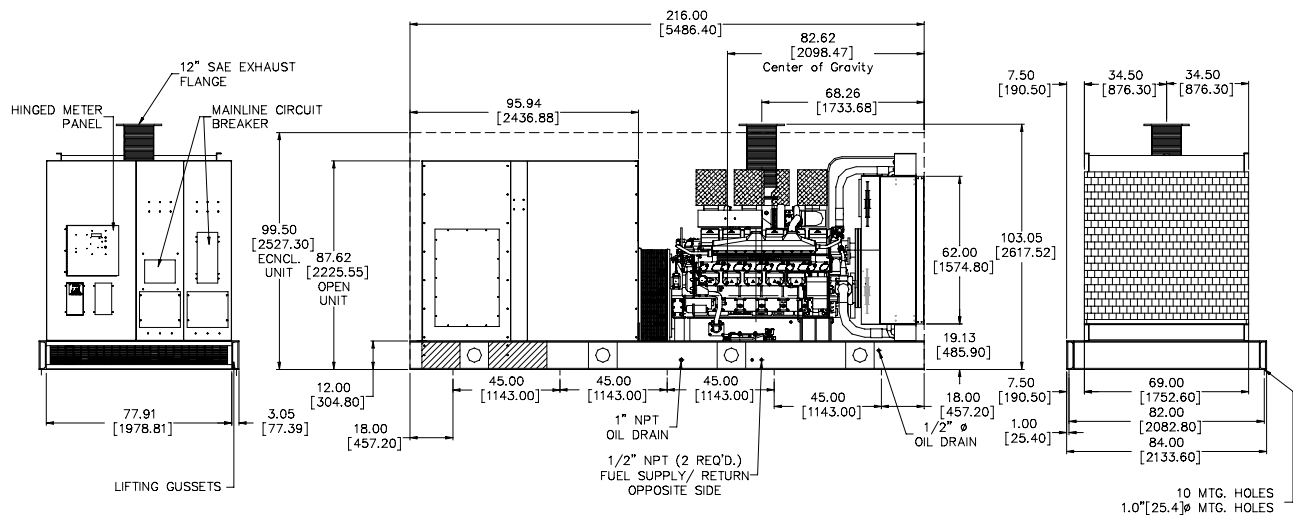
- * Battery/Battery heater
- * Battery charger
- * Engine pre-heater
- * Fuel/ water separator
- * Isochronous governor

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: DBL. DOOR 34.25 SECURITY DOOR: 34.25
MACHINE WEIGHT: OPEN DRY WEIGHT 18,889 LBS [8567.9 KG] ENCLOSED DRY WEIGHT 21,589 LBS [9792.6 KG]

NOTES:
PRELIMINARY DRAWING DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.



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