



Model 350 RD 350 kW Diesel Generator Set

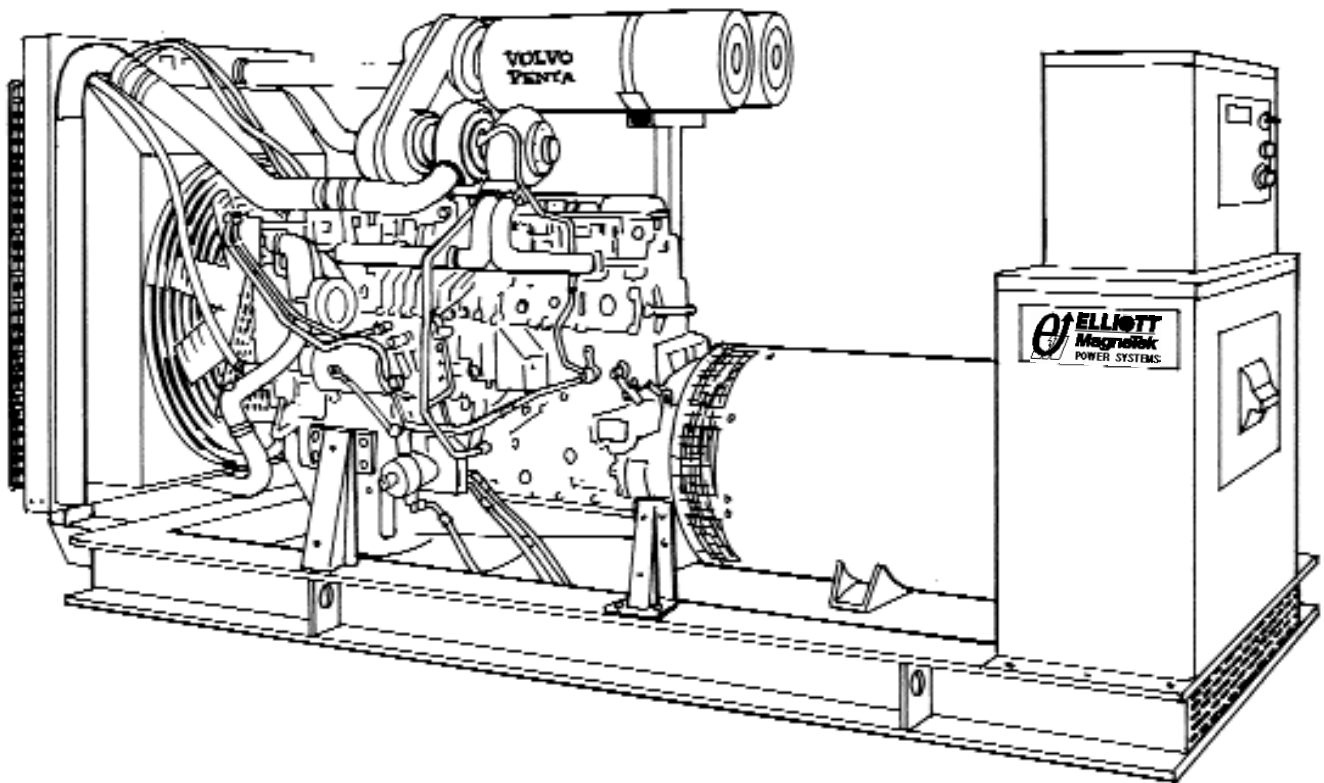
Generator Set Rating

Three Phase	60 Hz kW/KVA	50 Hz kW/KVA
Continuous		
Standby 150°C	350/437	330/412
Prime Power 105°C	310/387	300/375
Single Phase	60 Hz kW/KVA	50 Hz kW/KVA
Continuous		
Standby 150°C	235/235	241/241
Prime Power 105°C	201/201	201/201

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.
- * Steel base with vibration isolators between engine, generator and 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 1214	110/190 1253
120/240 1052	120/208 1145
277/480 526	230/400 595
347/600 421	240/415 574

*Single Phase

60 Hz Amperage	50 Hz Amperage
120/240 979	110/220 1095

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. For full single phase output use generator model MTG51.

Application and Performance Data

MagneTek Alternator Model MTG45 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 MTG55.

Technical Specifications

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Engine Specifications

Manufacturer	Volvo	
Model	TAD 1232 GE	
Type	In line 4 Stroke	
Aspiration	Turbo/ Air to Air Inter cooled	
Cylinders	6	
Displacement	731 In ³ . (12 L)	
Bore and Stroke,	5.12 in x 5.91 in. (130 mm x 150 mm)	
Compression Ratio	14.1:1	
Minimum Ah. at 5°C	2 X 105	
RPM	1800 rpm	1500 rpm
BHP Minimum REQ'D		
at Rated kW	526	481
BMEP	317 psi	347 psi

Generator Set Deration Factors

Temperature:
1.5% for every 10° F above 104° F
1.5% for every 5.5°C above 40°C

Altitude
6% for every 1650 feet above
3300 feet
6% for every 503 meters above
1006 meters

Cooling System

High Ambient 104°F (40°C) System
Coolant Capacity with Radiator
63.4 qt. (60.0L)

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

1800 rpm **1500 rpm**

Coolant Flow
116 GPM 101 GPM
(439 LPM) (382 LPM)

Heat Rejection
to Coolant at
Full Load
6940 Btu/min 6830 Btu/min
(732 MJ/min) (721 MJ/min)

Heat Rejection
to Room at Rated
Full Load
1300 Btu/min 1250 Btu/min
(137 MJ/min) (132 MJ/min)

Air System

	1800 rpm	1500 rpm
Maximum Air Intake Restriction		20.1 In wc (5 kPa)
Radiator Cooling Air Flow	13985 cfm (395.8 m ³ /min)	11442 cfm (323.8 m ³ /min)
Combustion Air Flow	1030 cfm (87.8 m ³ /min)	880 cfm (24.9 m ³ /min)
Generator Cooling Air Flow	3104 cfm (87.8 m ³ /min)	2587 cfm (73.2 m ³ /min)

Exhaust System

Exhaust
Outlet Size 3.25 in. dia. (8.25cm)
Maximum Allowable Back Pressure
28.1 In wc (5.0 kPa) 20.1(5.0 kPa)
Exhaust Gas Flow
at Standby
Rating 2822 cfm 2592 cfm
(79.9 m³/min) (73.4 m³/min)

Exhaust Temp at
Standby Rating

1004°F 1072°F
(540°C) (578°C)

Fuel System

Consumption at Standby Rating:

Load	1800 RPM			
	kW	US gal/h	Litre/h	
1/4	87.5	6.8	25.7	
1/2	175	12.3	46.6	
3/4	262.5	18.1	68.5	
Full	350	24.9	87.4	

Load	1500 RPM			
	kW	US gal/h	Litre/h	
1/4	82	6.2	23.6	
1/2	165	11.7	44.4	
3/4	247	18.0	68.1	
Full	330	24.2	91.6	

Governor Type GAC
Governor Regulation:
+/- .25% Steady State

Generator

Manufacturer MagneTek
Model MTG45
Motor Starting KVA,
240/480 Volt WYE at
35% Voltage Dip, 100%
Voltage Recovery 790 SKVA

Maximum Motor
Starting KVA, 35% Voltage Dip
Oversized Generator
MTG55 1744 SKVA

Reactances

	480 V	400 V
at 105°C rise	60Hz	50Hz
Synchronous Xd	3.13	2.91
Direct Axis Transient X'd	.305	.283
Direct Axis Subtransient X"d	.175	.162
Zero Sequence Xo	.0038	.0035

Lubrication System

Engine Oil Capacity with Filters
10 US gal. (38 L)
Oil Filter Type Spin On

Engine Exhaust Emissions Certification Values

Exhaust Emissions (g/bhp-hr.)	*CARB	350RD
HC:	1	.4
CO:	8.5	.8
NOx:	6.9	6
PM:	.4	.1

Smoke Opacity (%)		
Acceleration	20	N/A
Lugging	15	4
Peak	50	N/A

* California Air Resources Board Standards.

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Options:

Generator

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

Control

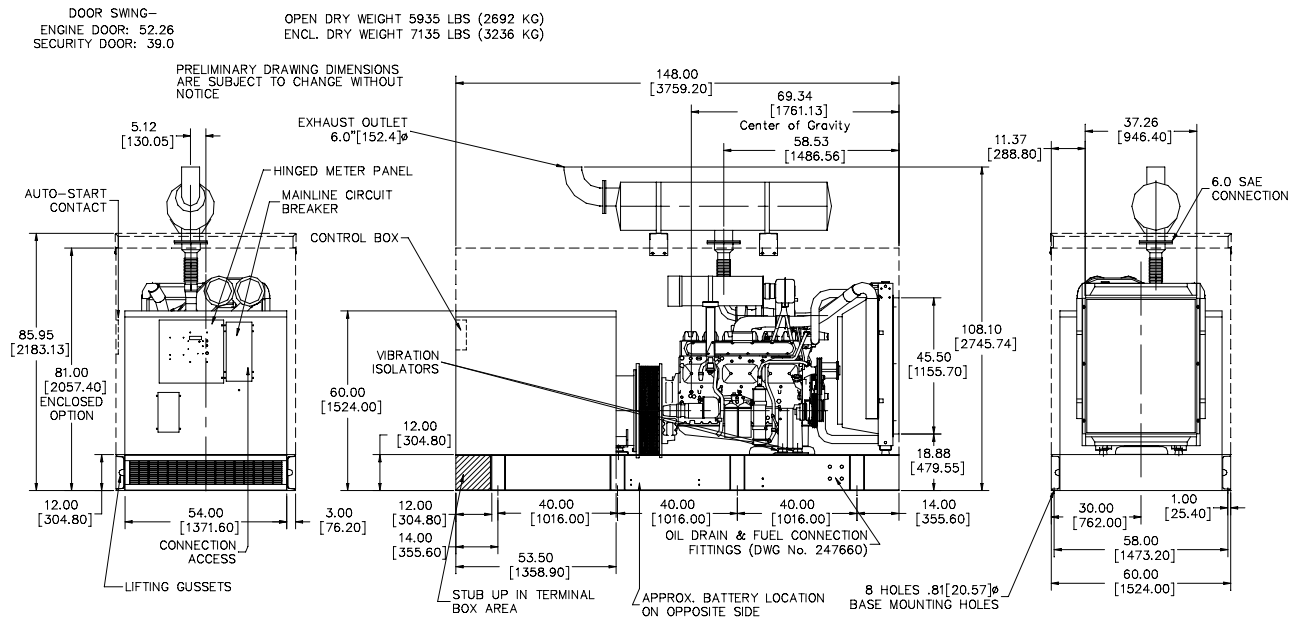
- * Remote alarm annunciator
- * Emergency stop
- * Multi-point dry contact board.
- * NFPA 110 Compliance
- * Low Temperature Display
- * Heater

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



58 Elliott Power Drive
Lexington, TN 38351
Tel: 901-967-9393
Fax: 901-968-0161

Distributed by:



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