



Model 125 RN 125 kW Natural Gas Generator Set

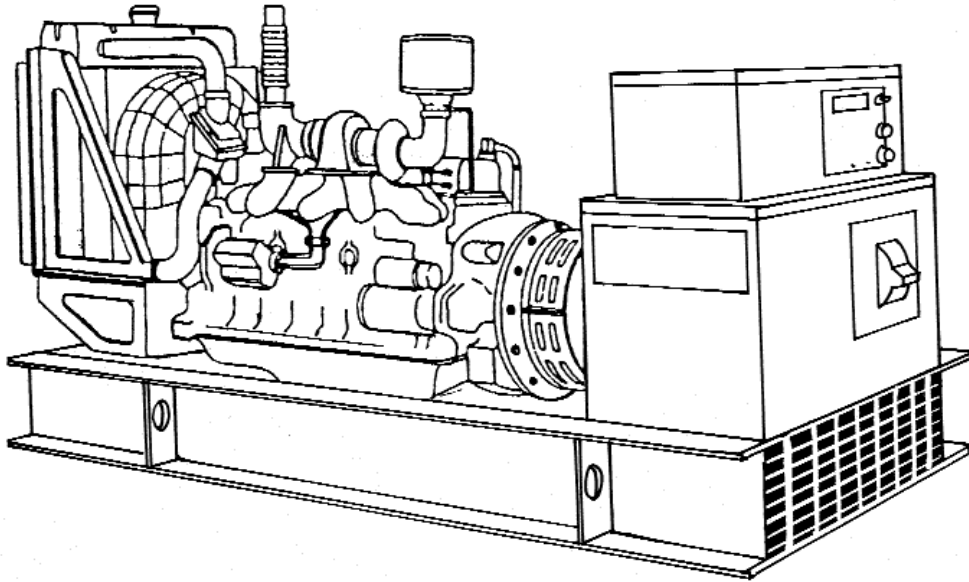
Generator Set Rating

Three Phase	60 Hz	50 Hz
	kW/KVA	kW/KVA
Continuous		
Standby 150°C	125/156	100/125
Prime Power 105°C	113/141	90/113
Single Phase	60 Hz	50 Hz
	kW/KVA	kW/KVA
Continuous		
Standby 150°C	74/74	80/80
Prime Power 105°C	64/64	68/68

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

Model 125 RN 125 kW Generator Set

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	434 110/190 380
120/240	376 120/208 347
277/480	188 230/400 180
347/600	150 240/415 174

*Single Phase

60 Hz Amperage	50 Hz Amperage
120/240	308 110/220 364

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 MTG42.

Application and Performance Data

MagneTek Alternator Model MTG35 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 MTG47.

Technical Specifications

Model 125 RN 125 kW NG Generator Set

Engine Specifications

Manufacturer	Cummins	
Model	GTA-8.3 GS1	
Type	4 Cycle	
Aspiration	Turbo/ After cooled	
Cylinders	6	
Displacement	504.5 In ³ . (8.2 L)	
Bore and Stroke,	4.49 in x 5.32 in. (114 mm x 135 mm)	
Compression Ratio	10.5:1	
Minimum C.C.A. at 5°C	900	
RPM	1800 rpm	1500 rpm
BHP Minimum REQ"D at Rated kW	193	154
BMEP	168 psi	161 psi

Altitude and Ambient

Temperature Requirements

The engine may be operated at the STANDBY RATING up to 3000ft. (914m) altitude and 100°F (38°C) inlet air temperature and at the PRIME AND CONTINUOUS POWER RATING up to 5000ft. (1524m) altitude and 100°F (38°C) inlet air temperature. For sustained operation at higher altitudes and temperatures, please contact the factory.

Cooling System

Coolant Capacity with Radiator	28 US Gal. (86.5 L)	
Maximum restriction on discharge side of radiator	.5 In wc	
	1800 rpm	1500 rpm
Coolant Flow	55 GPM (207 LPM)	45 GPM (170 LPM)
Heat Rejection to Coolant at Rated		
Full Load	6419 Btu/min	5575 Btu/min
Nat. Gas	(6.8 MJ/min)	(5.9 MJ/min)
Heat Rejection to Room at Rated		
Full Load	802 Btu/min	697 Btu/min
Nat. Gas	(.85 MJ/min)	(.74 MJ/min)
Heat Rejection to Charge Aftercooler at Rated		
Full Load	688 Btu/min	597 Btu/min
Nat. Gas	(.85 MJ/min)	(.74 MJ/min)

Air System

	1800 rpm	1500 rpm
Maximum Air Intake Restriction	25 In wc (6.25 kPa)	15 In wc (3.75 kPa)
Radiator Cooling Air Flow	16000 cfm (453 m ³ /min)	18000 cfm (509 m ³ /min)
Combustion Air Flow	477 cfm (13.5 m ³ /min)	338 cfm (9.6 m ³ /min)
Generator Cooling Air Flow	1581 cfm (44.8 m ³ /min)	1318 cfm (37.3 m ³ /min)

Exhaust System

Exhaust Manifold Outlet Size	3.5 in. dia. (99 cm)	
Maximum Allowable Back Pressure	2 in. Hg. (50mm Hg)	
Exhaust Gas Flow at Standby Rating	1377 cfm (39 m ³ /min)	918 cfm (26 m ³ /min)
Maximum Exhaust Temp. (Stack Temp.)	1100°F (593°C)	

Fuel System

Consumption at Standby Rating		
Load	1800 RPM	Natural Gas
	kW	CFH(m ³ /hr.)
1/4	32	550(15.6)
1/2	63	800(22.7)
3/4	88	1090(30.9)
Full	125	1420(40.2)
Load	1500 RPM	Natural Gas
	kW	CFH(m ³ /hr.)
1/4	29	480(13.6)
1/2	57	650(18.4)
3/4	80	900(25.5)
Full	115	1180(33.4)

Governor Type Isochronous Electronic
Governor Regulation: +/- .5 % Steady State

Generator

Manufacturer	MagneTek
Model	MTG35
Motor Starting KVA, 240/480 Volt WYE at 35% Voltage Dip,100% Voltage Recovery	288 SKVA
Maximum Motor Starting KVA,35% Voltage Dip Oversized Generator	780 SKVA
MTG47	

Reactances

	480 V	400 V
at 105°C rise	60Hz	50Hz
Synchronous Xd	3.09	2.75
Direct Axis Transient X'd	.233	.207
Direct Axis Subtransient X'd	.154	.137
Negative Sequence X ₂	.165	.147
Zero Sequence X ₀	.0026	.0023

Lubrication System

Engine Oil Capacity with Filters	36 qts. (34.1 L)
Oil Filter Type	Spin On

Engine Exhaust Emissions

Per Cummins Emission Data Sheet			
	@SB	@Prime	@Contin.
THC	3.19	3.1	2.06
NMHC	0.5	0.48	0.32
NEHC	0.21	0.2	0.13
NOX	14.75	14.95	14.73
CO	2.13	2.19	2.22
CO ₂	8.30%	8.20%	8.50%
O ₂	5.80%	5.80%	5.80%

Model 125 RN 125 kW NG Generator Set

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

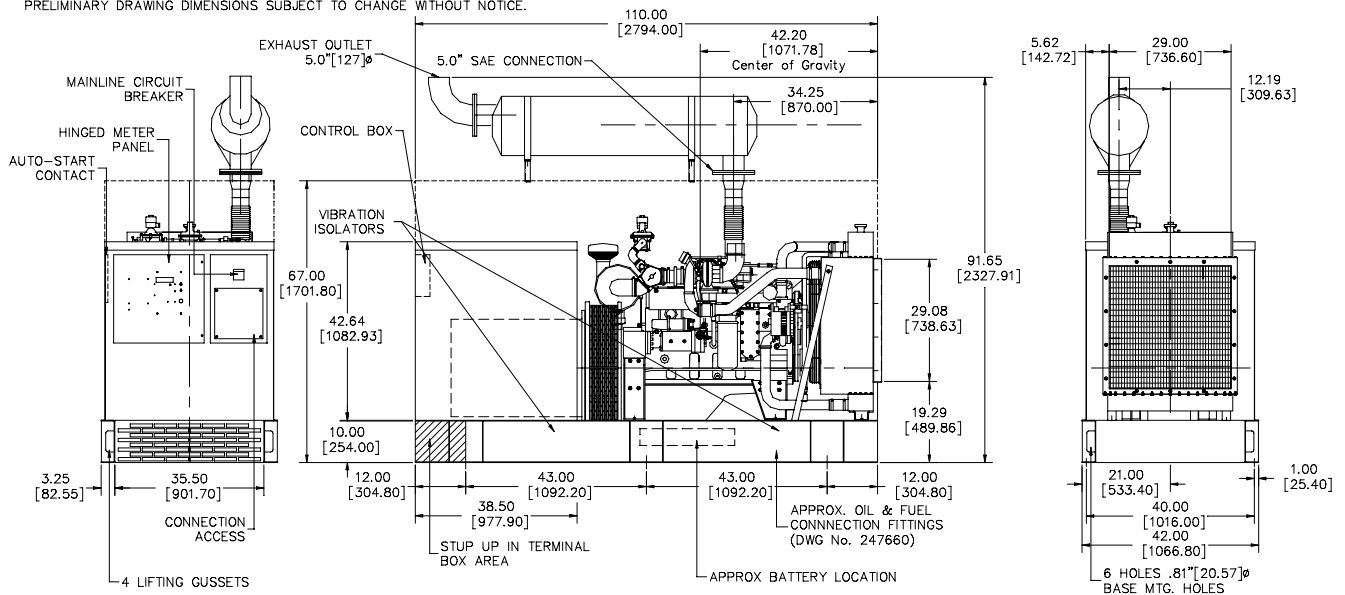
Engine

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

Generator Set

- * EMPS automatic transfer switch
- * Industrial silencer
- * Residential silencer
- * Critical silencer
- * Weather protective enclosure
- * Sound attenuation

DOOR SWING: ENGINE DOOR: 40.68 SECURITY DOOR: 33.62
 MACHINE WEIGHT: OPEN DRY WEIGHT 2998 LBS [1359 KG] ENCLOSED DRY WEIGHT 3688 LBS [1672.9 KG]
 NOTES: PRELIMINARY DRAWING DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.



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

Distributed by:



All specifications subject to change without notice. Printed in the USA

Updated 2/00