

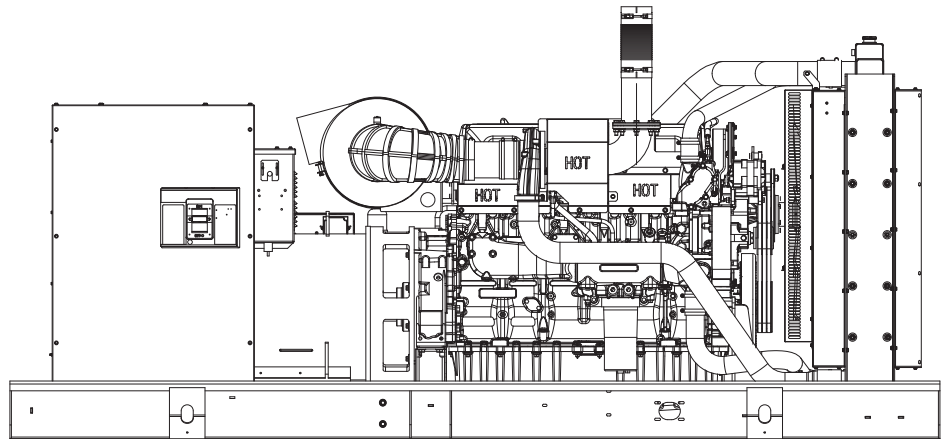
# MD500

PARALLELING UNIT

## Industrial Diesel Generator Set

EPA Certified Stationary Emergency

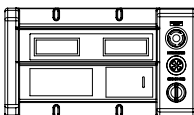
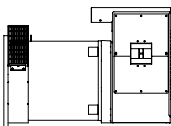
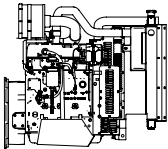
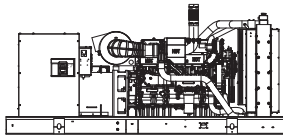
Standby Power Rating  
625kVA 500kW 60Hz



Generator image used for illustration purposes only

### features

### benefits



#### Generator Set

- PROTOTYPE & TORSIONALLY TESTED
- UL2200 TESTED
- RHINOCOAT PAINT SYSTEM
- WIDE RANGE OF ENCLOSURES AND TANKS
- ▶ PROVIDES A PROVEN UNIT
- ▶ ENSURES A QUALITY PRODUCT
- ▶ IMPROVES RESISTANCE TO ELEMENTS
- ▶ PROVIDES A SINGLE SOURCE SOLUTION

#### Engine

- EPA COMPLIANT
- INDUSTRIAL TESTED, GENERAC APPROVED
- POWER-MATCHED OUTPUT
- INDUSTRIAL GRADE
- ▶ MEETS EPA STANDARDS
- ▶ ENSURES INDUSTRIAL STANDARDS
- ▶ ENGINEERED FOR PERFORMANCE
- ▶ IMPROVES LONGEVITY AND RELIABILITY

#### Alternator

- TWO-THIRDS PITCH
- LAYER WOUND ROTOR & STATOR
- CLASS H MATERIALS
- DIGITAL 3-PHASE VOLTAGE CONTROL
- ▶ ELIMINATES HARMFUL 3RD HARMONIC
- ▶ IMPROVES COOLING
- ▶ HEAT TOLERANT DESIGN
- ▶ FAST AND ACCURATE RESPONSE

#### Controls

- ENCAPSULATED BOARD W/ SEALED HARNESS
- 4-20mA VOLTAGE-TO-CURRENT SENSORS
- SURFACE-MOUNT TECHNOLOGY
- ADVANCED DIAGNOSTICS & COMMUNICATIONS
- ▶ EASY, AFFORDABLE REPLACEMENT
- ▶ NOISE RESISTANT 24/7 MONITORING
- ▶ PROVIDES VIBRATION RESISTANCE
- ▶ HARDENED RELIABILITY

### primary codes and standards



## MD500

## application and engineering data

### ENGINE SPECIFICATIONS

#### General

|                          |                          |
|--------------------------|--------------------------|
| Make                     | Perkins                  |
| EPA Emissions Compliance | Stationary Emergency     |
| EPA Emissions Reference  | See Emissions Data Sheet |
| Cylinder #               | 6                        |
| Type                     | In-Line                  |
| Displacement - L         | 15.2                     |
| Bore - mm (in.)          | 137 (5.39)               |
| Stroke - mm (in.)        | 171 (6.73)               |
| Compression Ratio        | 16.0:1                   |
| Intake Air Method        | Turbocharged/Aftercooled |
| Cylinder Head Type       | 4 Valve                  |
| Piston Type              | Aluminum                 |
| Connecting Rod Type      | I-Beam Section           |

#### Engine Governing

|                                     |                        |
|-------------------------------------|------------------------|
| Governor                            | Electronic Isochronous |
| Frequency Regulation (Steady State) | ± 0.25%                |

#### Lubrication System

|                              |                     |
|------------------------------|---------------------|
| Oil Pump Type                | Gear                |
| Oil Filter Type              | Full-Flow Cartridge |
| Crankcase Capacity - L (Gal) | 60 (15.8)           |

#### Cooling System

|                                 |                               |
|---------------------------------|-------------------------------|
| Cooling System Type             | Closed Recovery               |
| Water Pump                      | Centrifugal Type, Belt-Driven |
| Fan Type                        | Pusher                        |
| Fan Speed (rpm)                 | 1658 rpm                      |
| Fan Diameter mm (in.)           | 927 (36.5)                    |
| Coolant Heater Standard Wattage | 1500                          |
| Coolant Heater Standard Voltage | 120VAC                        |

#### Fuel System

|                             |                            |
|-----------------------------|----------------------------|
| Fuel Type                   | Ultra Low Sulfur Diesel #2 |
| Fuel Specifications         | ASTM                       |
| Fuel Filtering (microns)    | Primary 10 - Secondary 2   |
| Fuel Injection              | Electronic                 |
| Fuel Pump Type              | Engine Driven Gear         |
| Injector Type               | MEUI                       |
| Engine Type                 | Pre-Combustion             |
| Fuel Supply Line - mm (in.) | 12.7 (½"NPT)               |
| Fuel Return Line - mm (in.) | 12.7 (½"NPT)               |

#### Engine Electrical System

|                             |                |
|-----------------------------|----------------|
| System Voltage              | 24VDC          |
| Battery Charging Alternator | 70 Amps at 24V |
| Battery Size (at 0°C)       | 1155 CCA       |
| Battery Group               | 8D             |
| Battery Voltage             | (2) - 12VDC    |
| Ground Polarity             | Negative       |

### ALTERNATOR SPECIFICATIONS

|                                     |                         |
|-------------------------------------|-------------------------|
| Standard Model                      | WEG                     |
| Poles                               | 4                       |
| Field Type                          | Revolving               |
| Insulation Class - Rotor            | H                       |
| Insulation Class - Stator           | H                       |
| Total Harmonic Distortion           | < 3%                    |
| Telephone Interference Factor (TIF) | < 50                    |
| Standard Excitation                 | Permanent Magnet        |
| Bearings                            | Single Sealed Cartridge |
| Coupling                            | Direct, Flexible Disc   |
| Load Capacity - Standby             | 100%                    |
| Prototype Short Circuit Test        | Yes                     |

|                                    |         |
|------------------------------------|---------|
| Voltage Regulator Type             | Digital |
| Number of Sensed Phases            | All     |
| Regulation Accuracy (Steady State) | ± 1%    |

### CODES AND STANDARDS COMPLIANCE (WHERE APPLICABLE)

|             |                     |
|-------------|---------------------|
| NFPA 99     | BS5514              |
| NFPA 110    | SAE J1349           |
| ISO 8528-5  | DIN6271             |
| ISO 1708A.5 | IEEE C62.41 TESTING |
| ISO 3046    | NEMA ICS 1          |

### PARALLELING CONTROLS

Auto-Synchronization Process  
 Isochronous Load Sharing  
 Reverse Power Protection  
 Maximum Power Protection  
 Electrically Operated, Mechanically Held Paralleling Switch  
 Sync Check System  
 Independent On-Board Paralleling  
 Optional Programmable Logic Full Auto Back-Up Control (PLS)

#### Rating Definitions:

Standby – Applicable for a varying emergency load for the duration of a utility power outage with no overload capability. (Max. load factor = 70%)

Prime – Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. (Max. load factor = 80%) A 10% overload capacity is available for 1 out of every 12 hours.

# MD500

## operating data (60Hz)

### POWER RATINGS (kW)

#### STANDBY

|                               |        |           |
|-------------------------------|--------|-----------|
| Three-Phase 277/480VAC @0.8pf | 500 kW | Amps: 752 |
| Three-Phase 346/600VAC @0.8pf | 500 kW | Amps: 601 |

### STARTING CAPABILITIES (sKVA)

#### sKVA vs. Voltage Dip

| Alternator | kW  | 480VAC |      |      |      |      |      |
|------------|-----|--------|------|------|------|------|------|
|            |     | 10%    | 15%  | 20%  | 25%  | 30%  | 35%  |
| Standard   | 500 | 457    | 686  | 914  | 1143 | 1371 | 1600 |
| Upsize 1   | 642 | 471    | 707  | 943  | 1179 | 1414 | 1650 |
| Upsize 2   | 832 | 757    | 1136 | 1514 | 1893 | 2271 | 2650 |

### FUEL

#### Fuel Consumption Rates\*

|                         |
|-------------------------|
| Fuel Pump Lift - m (ft) |
| 3.7 (12)                |

#### STANDBY

| Percent Load | gph  | lph   |
|--------------|------|-------|
| 25%          | 10.5 | 39.7  |
| 50%          | 19.5 | 73.8  |
| 75%          | 23.7 | 89.7  |
| 100%         | 31.2 | 118.1 |

\* Refer to "Emissions Data Sheet" for maximum fuel flow for EPA and SCAQMD permitting purposes.

### COOLING

#### STANDBY

|                                    |                     |              |
|------------------------------------|---------------------|--------------|
| Coolant Flow per Minute            | gpm (lpm)           | 114.1 (432)  |
| Heat Rejection to Coolant          | BTU/hr              | 1,198,080    |
| Inlet Air                          | cfm (m3/min)        | 30,582 (866) |
| Max. Operating Radiator Air Temp   | F° (C°)             | 122 (50)     |
| Max. Operating Ambient Temperature | F° (C°)             | 104 (40)     |
| Coolant System Capacity            | gal (L)             | 13 (49)      |
| Maximum Radiator Backpressure      | in H <sub>2</sub> O | 0.5          |

### COMBUSTION AIR REQUIREMENTS

#### STANDBY

|                     |              |           |
|---------------------|--------------|-----------|
| Flow at Rated Power | cfm (m3/min) | 1483 (42) |
|---------------------|--------------|-----------|

### ENGINE

#### STANDBY

|                          |        |      |
|--------------------------|--------|------|
| Rated Engine Speed       | rpm    | 1800 |
| Horsepower at Rated kW** | hp     | 762  |
| Piston Speed             | ft/min | 2020 |
| BMEP                     | psi    | 366  |

\*\* Refer to "Emissions Data Sheet" for maximum bHP for EPA and SCAQMD permitting purposes.

### EXHAUST

#### STANDBY

|                                   |                           |            |
|-----------------------------------|---------------------------|------------|
| Exhaust Flow (Rated Output)       | cfm (m <sup>3</sup> /min) | 3955 (112) |
| Max. Backpressure (Post Silencer) | inHg (Kpa)                | 2.01 (6.8) |
| Exhaust Temp (Rated Output)       | °F (°C)                   | 1022 (550) |
| Exhaust Outlet Size (Open Set)    |                           | 5"         |

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.

## MD500

## standard features and options

### GENERATOR SET

|                                    |     |
|------------------------------------|-----|
| ● Genset Vibration Isolation       | Std |
| ○ IBC/OSHDP Seismic Certified      | Opt |
| ○ Extended warranty                | Opt |
| ○ Gen-Link Communications Software | Opt |
| ○ Steel Enclosure                  | Opt |
| ○ Aluminum Enclosure               | Opt |
| ○ Enclosure Lighting Kits          | Opt |

### ENGINE SYSTEM

|   |     |
|---|-----|
| General                                       |     |
| ● Oil Drain Extension                         | Std |
| ○ Oil Heater                                  | Opt |
| ● Air cleaner                                 | Std |
| ● Fan guard                                   | Std |
| ● Radiator duct adapter                       | Std |
| ● Stainless steel flexible exhaust connection | Std |
| ○ Critical Exhaust Silencer                   | Opt |

|                         |     |
|-------------------------|-----|
| Fuel System             |     |
| ● Secondary fuel filter | Std |
| ○ Flexible fuel lines   | Opt |
| ● Primary fuel filter   | Std |
| ○ UL 142 Fuel Tank      | Opt |

|                                  |     |
|----------------------------------|-----|
| Cooling System                   |     |
| ● 120VAC Coolant Heater          | Std |
| ● Closed Coolant Recovery System | Std |
| ● UV/Ozone resistant hoses       | Std |
| ● Factory-Installed Radiator     | Std |
| ● Radiator Drain Extension       | Std |

|   |     |
|---|-----|
| Engine Electrical System                      |     |
| ● Battery charging alternator                 | Std |
| ● Battery cables                              | Std |
| ○ Battery heater                              | Opt |
| ● Solenoid activated starter motor            | Std |
| ○ 10A UL float/equalize battery charger       | Opt |
| ● Rubber-booted engine electrical connections | Std |

### ALTERNATOR SYSTEM

|   |     |
|---|-----|
| ● GENprotect™ Alternator Protection Algorithm | Std |
| ● Main Line Circuit Breaker                   | Std |
| ○ Alternator Upsizing                         | Opt |
| ○ Anti-Condensation Heater                    | Opt |
| ○ Tropical coating                            | Opt |
| ● Permanent Magnet Generator                  | Std |

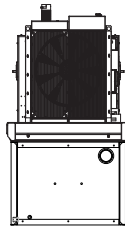
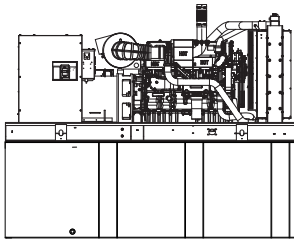
### CONTROL SYSTEM

|   |     |
|---|-----|
| Control Panel   |     |
| ○ Digital H Control Panel – Dual 4x20 Display           | na  |
| ● Digital G-200 Paralleling Control Panel - Touchscreen | Std |
| ● Programmable Crank Limiter                            | Std |
| ○ 21-Light Remote Annunciator                           | Opt |
| ○ Remote Relay Panel (8 or 16)                          | Opt |
| ● 7-Day Programmable Exerciser                          | Std |
| ● Special Applications Programmable PLC                 | Std |
| ● RS-232  | Std |
| ● RS-485  | Std |
| ● All-Phase Sensing DVR                                 | Std |
| ● Full System Status                                    | Std |
| ● Utility Monitoring (Req. H-Transfer Switch)           | Std |
| ● 2-Wire Start Compatible                               | Std |
| ● Power Output (kW)                                     | Std |
| ● Power Factor  | Std |
| ● Reactive Power  | Std |
| ● All phase AC Voltage                                  | Std |
| ● All phase Currents                                    | Std |
| ● Oil Pressure  | Std |
| ● Coolant Temperature                                   | Std |
| ● Coolant Level   | Std |
| ○ Oil Temperature                                       | Opt |
| ● Engine Speed  | Std |
| ● Battery Voltage                                       | Std |
| ● Frequency   | Std |
| ● Date/Time Fault History (Alarm & Event Log)           | Std |
| ○ Low-Speed Exercise                                    | -   |
| ● Isochronous Governor Control                          | Std |
| ● -40deg C – 70deg C Operation                          | Std |
| ● Waterproof Plug-In Connectors                         | Std |
| ● Audible Alarms and Shutdowns                          | Std |
| ● Not in Auto (Flashing Light)                          | Std |
| ● Auto/Off/Manual Switch                                | Std |
| ● E-Stop (Red Mushroom-Type)                            | Std |
| ○ Remote E-Stop (Break Glass-Type, Surface Mount)       | Opt |
| ○ Remote E-Stop (Red Mushroom-Type, Surface Mount)      | Opt |
| ○ Remote E-Stop (Red Mushroom-Type, Flush Mount)        | Opt |
| ● NFPA 110 Level I and II (Programmable)                | Std |
| ● Remote Communication - RS232                          | Std |
| ○ Remote Communication - Modem                          | Opt |
| ○ Remote Communication - Ethernet                       | Opt |
| ○ 10A Run Relay   | Opt |

|  |     |
|--|-----|
| Alarms (Programmable Tolerances, Pre-Alarms and Shutdowns) |     |
| ○ Low Fuel   | Opt |
| ● Oil Pressure (Pre-programmed Low Pressure Shutdown)      | Std |
| ● Coolant Temperature (Pre-programmed High Temp Shutdown)  | Std |
| ● Coolant Level (Pre-programmed Low Level Shutdown)        | Std |
| ○ Oil Temperature  | Opt |
| ● Engine Speed (Pre-programmed Overspeed Shutdown)         | Std |
| ● Voltage (Pre-programmed Overvoltage Shutdown)            | Std |
| ● Battery Voltage  | Std |

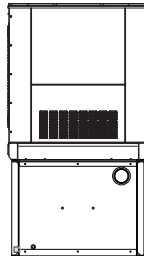
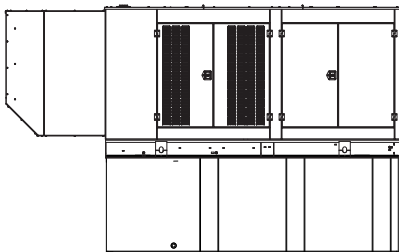
# MD500

## enclosure and tank configurations



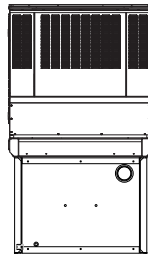
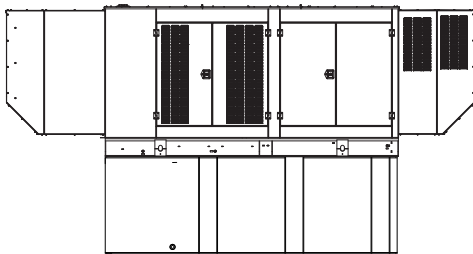
### OPEN SET

| RUN TIME HOURS | USABLE CAPACITY (GAL) |
|----------------|-----------------------|
| NO TANK        | -                     |
| 10             | 334                   |
| 32             | 1001                  |
| 32             | 1001                  |
| 64             | 2002                  |



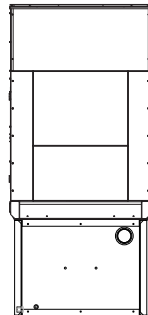
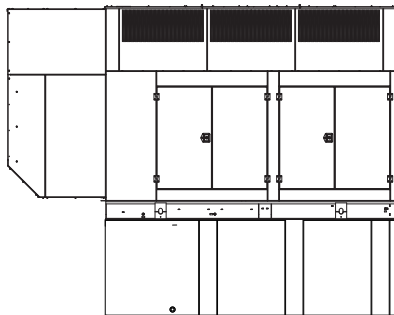
### STANDARD ENCLOSURE

| RUN TIME HOURS | USABLE CAPACITY (GAL) |
|----------------|-----------------------|
| NO TANK        | -                     |
| 10             | 334                   |
| 32             | 1001                  |
| 32             | 1001                  |
| 64             | 2002                  |



### LEVEL 1 SOUND ENCLOSURE

| RUN TIME HOURS | USABLE CAPACITY (GAL) |
|----------------|-----------------------|
| NO TANK        | -                     |
| 10             | 334                   |
| 32             | 1001                  |
| 32             | 1001                  |
| 64             | 2002                  |



### LEVEL 2 SOUND ENCLOSURE

| RUN TIME HOURS | USABLE CAPACITY (GAL) |
|----------------|-----------------------|
| NO TANK        | -                     |
| 10             | 334                   |
| 32             | 1001                  |
| 32             | 1001                  |
| 64             | 2002                  |

\*All measurements are approximate and for estimation purposes only. Weights and dBA are available on install drawings and sound data sheets, respectively.

#### Tank Options

|   |      |
|---|------|
| <input type="radio"/> MDEQ              | OPT  |
| <input type="radio"/> Florida DERM/DEP  | OPT  |
| <input type="radio"/> Chicago Fire Code | OPT  |
| <input type="radio"/> IFC Certification | CALL |
| <input type="radio"/> ULC               | CALL |

Other Custom Options Available from your Generac Industrial Power Dealer

#### YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.