GENERAC® | INDUSTRIAL POWER

MD400

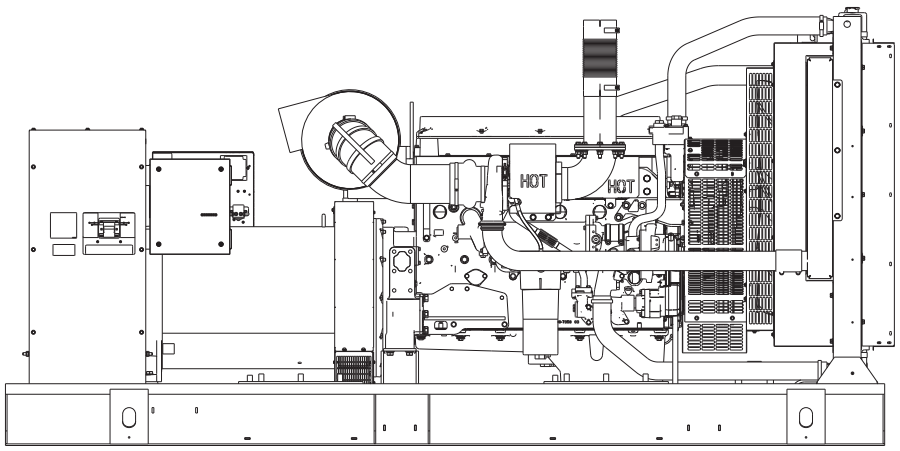
PARALLELING UNIT

Industrial Diesel Generator Set

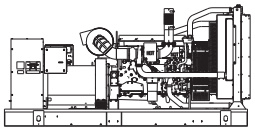
EPA Certified Stationary Emergency

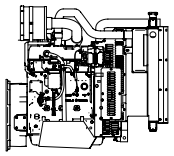
Standby Power Rating

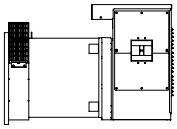
500kVA 400kW 60Hz

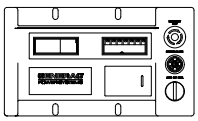


Generator image used for illustration purposes only









features benefits

Generator Set	
• PROTOTYPE & TORSIONALLY TESTED	› PROVIDES A PROVEN UNIT
• UL2200 TESTED	› ENSURES A QUALITY PRODUCT
• RHINOCOAT PAINT SYSTEM	› IMPROVES RESISTANCE TO ELEMENTS
• WIDE RANGE OF ENCLOSURES AND TANKS	› PROVIDES A SINGLE SOURCE SOLUTION
Engine	
• EPA COMPLIANT	› MEETS EPA STANDARDS
• INDUSTRIAL TESTED, GENERAC APPROVED	› ENSURES INDUSTRIAL STANDARDS
• POWER-MATCHED OUTPUT	› ENGINEERED FOR PERFORMANCE
• INDUSTRIAL GRADE	› IMPROVES LONGEVITY AND RELIABILITY
Alternator	
• TWO-THIRDS PITCH	› ELIMINATES HARMFUL 3RD HARMONIC
• LAYER WOUND ROTOR & STATOR	› IMPROVES COOLING
• CLASS H MATERIALS	› HEAT TOLERANT DESIGN
• DIGITAL 3-PHASE VOLTAGE CONTROL	› FAST AND ACCURATE RESPONSE
Controls	
• ENCAPSULATED BOARD W/ SEALED HARNESS	› EASY, AFFORDABLE REPLACEMENT
• 4-20mA VOLTAGE-TO-CURRENT SENSORS	› NOISE RESISTANT 24/7 MONITORING
• SURFACE-MOUNT TECHNOLOGY	› PROVIDES VIBRATION RESISTANCE
• ADVANCED DIAGNOSTICS & COMMUNICATIONS	› HARDENED RELIABILITY

primary codes and standards

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MD400

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	12.5
Bore - mm (in.)	130 (5.12)
Stroke - mm (in.)	157 (6.18)
Compression Ratio	16.3:1
Intake Air Method	Turbocharged/Aftercooled
Cylinder Head Type	4 - Valve
Piston Type	Aluminium
Connecting Rod Type	Drop Forged Steel

Engine Governing

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

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full-Flow
Crankcase Capacity - L (qts)	38 (40.15)

Cooling System

Cooling System Type	Closed Recovery
Water Pump	Pre - Lubed, Self Sealing
Fan Type	Pusher
Fan Speed (rpm)	1656 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	Std
Battery Size (at 0ºC)	1155 CCA
Battery Group	8D
Battery Voltage	(2) - 12VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	520 mm Generac
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	< 5%
Telephone Interference Factor (TIF)	< 50
Standard Excitation	Permanent Magnent
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
NFPA 110
ISO 8528-5
ISO 1708A.5
ISO 3046
cETL

BS5514
SAE J1349
DIN6271
IEEE C62.41 TESTING
NEMA ICS 1

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.

MD400 operating data (60Hz)

POWER RATINGS (kW)

	STANDBY	
Three-Phase 277/480VAC @0.8pf	400 kW	Amps: 602
Three-Phase 346/600VAC @0.8pf	400 kW	Amps: 481

STARTING CAPABILITIES (sKVA)

sKVA vs. Voltage Dip

		480VAC						208/240VAC					
Alternator	kW	10%	15%	20%	25%	30%	35%	10%	15%	20%	25%	30%	35%
Standard	400	387	581	775	968	1162	1356	-	-	-	-	-	-
Upsize 1	555	457	686	914	1143	1371	1600	-	-	-	-	-	-
Upsize 2	642	471	707	943	1179	1414	1650	-	-	-	-	-	-

FUEL

Fuel Pump Lift - in (mm)
36 (900)

Total Fuel Pump Flow (Combustion + Return)
32 gph

Fuel Consumption Rates*

	STANDBY	
Percent Load	gph	lph
25%	9.8	37.1
50%	16.7	63.2
75%	23.1	87.4
100%	27.8	105.4

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

COOLING

		STANDBY
Coolant Flow per Minute	gpm (lpm)	106.2 (402)
Heat Rejection to Coolant	BTU/hr	1,067,520
Inlet Air	cfm (m3/min)	18,685 (529.1)
Max. Operating Radiator Air Temp	F° (C°)	122 (50)
Max. Operating Ambient Temperature	F° (C°)	104 (40)
Coolant System Capacity	gal (L)	13 (49.2)
Maximum Radiator Backpressure	in H_2O	0.5

COMBUSTION AIR REQUIREMENTS

		STANDBY
Flow at Rated Power	cfm (m3/min)	1180 (33.41)

ENGINE

		STANDBY
Rated Engine Speed	rpm	1800
Horsepower at Rated kW**	hp	619
Piston Speed	ft/min	1854
BMEP	psi	334

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

EXHAUST

		STANDBY
Exhaust Flow (Rated Output)	cfm (m^3/min)	3044 (86.2)
Max. Backpressure (Post Silencer)	inHg (Kpa)	1.5 (5.1)
Exhaust Temp (Rated Output)	°F (°C)	1256 (680)
Exhaust Outlet Size (Open Set)	NPT (male)	127 (5.0)

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.

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standard features and options

GENERATOR SET

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

ENGINE SYSTEM

	General	
●	Oil Drain Extension	Std
○	Oil Make-Up System	Opt
○	Oil Heater	Opt
●	Air cleaner	Std
●	Fan guard	Std
●	Radiator duct adapter	Std
●	Stainless steel flexible exhaust connection	Std
●	Industrial Exhaust Silencer	Std
○	Critical Exhaust Silencer	Opt
	Fuel System	
●	Secondary fuel filter	Std
○	Flexible fuel lines	Opt
●	Primary fuel filter	Std
○	Single Wall Tank (Export Only)	-
○	UL 142 Fuel Tank	Opt
	Cooling System	
●	120VAC Coolant Heater	Std
○	208VAC Coolant Heater	Opt
○	240VAC Coolant Heater	Opt
○	Other Coolant Heater	-
●	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 tray	Std
○	Battery box	Opt
○	Battery heater	Opt
●	Solenoid activated starter motor	Std
○	10A UL float/equalize battery charger	Opt
●	Rubber-booted engine electrical connections	Std

ALTERNATOR SYSTEM

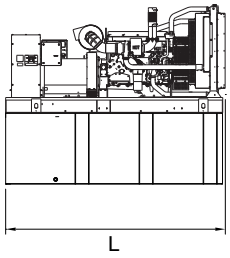
●	GENprotect™	Std
○	Main Line Circuit Breaker	Opt
○	Alternator Upsizing	Opt
○	Anti-Condensation Heater	Opt
○	Tropical coating	Opt
●	Permanent Magnet Generator	Std

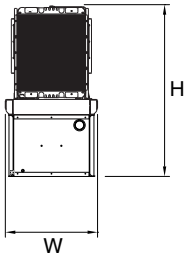
CONTROL SYSTEM

	Control Panel	
○	Digital H Control Panel - Dual 4x20 Display	na
○	Digital G-100 Control Panel - Touchscreen	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
●	Special Applications Programmable PLC	Std
●	RS-232	Std
●	RS-485	Std
●	All-Phase Sensing DVR	Std
●	Full System Status	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
○	PLS Full Auto Back-Up for PM-SC	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	Std
●	Engine Speed (Pre-programmed Overspeed Shutdown)	Std
●	Voltage (Pre-programmed Overvoltage Shutdown)	Std
●	Battery Voltage	Std

MD400

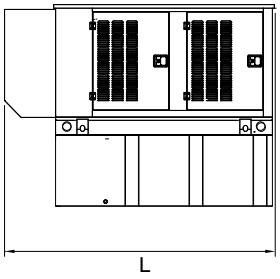
dimensions, weights and sound levels

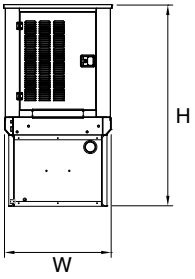




OPEN SET

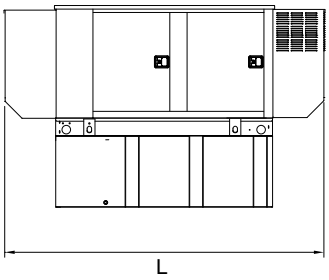
RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT
NO TANK	-	136	58	65	6155
6	183	136	58	78	7103
15	438	136	58	90	7415
23	693	136	58	102	7718
32	946	208	58	105	9362
45	1325	278	58	105	10195

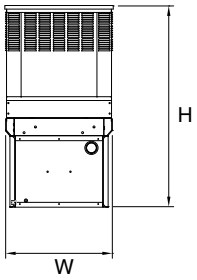




STANDARD ENCLOSURE

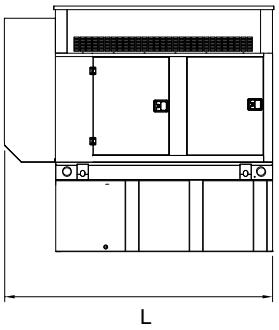
RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT
NO TANK	-	175	58	78	8173
6	183	175	58	91	9121
15	438	175	58	103	9433
23	693	175	58	115	9736
32	946	208	58	118	11380
45	1325	278	58	118	12213

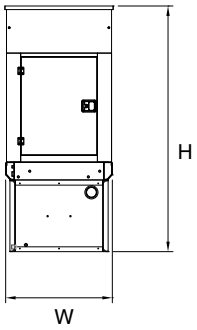




LEVEL 1 SOUND ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT
NO TANK	-	200	58	78	8546
6	183	200	58	91	9494
15	438	200	58	103	9806
23	693	200	58	115	10109
32	946	234	58	118	11753
45	1325	304	58	118	12586





LEVEL 2 SOUND ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT
NO TANK	-	181	58	107	8055
6	183	181	58	120	9003
15	438	181	58	132	9315
23	693	181	58	144	9618
32	946	208	58	147	11262
45	1325	278	58	147	12095

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

Tank Options

○	MDEQ	OPT
○	Florida DERM/DEP	OPT
○	Chicago Fire Code	OPT
○	IFC Certification	CALL
○	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.