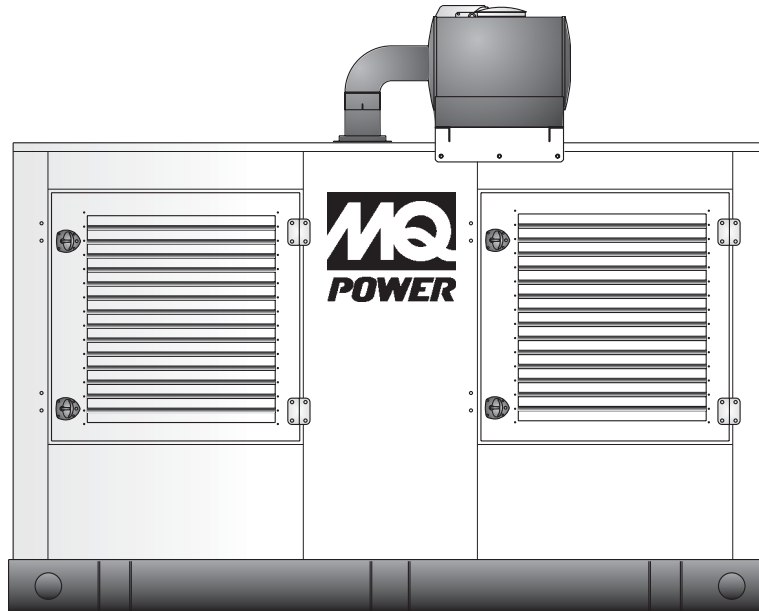




450kW Diesel On-Site Power Industrial Generator

Model	Emissions	Standby Rating	Prime Rating
MQP450VO	EPA Certified	60 Hertz	
		450kW (562.50kVA)	400kW (500kVA)



Standard Features

Heavy Duty Engine

- Heavy duty, 4-cycle, diesel engine; direct injection.
- Electronic speed control governor.
- Meets EPA Tier 2 emissions standards.

Alternator

- Brushless, 4-pole, synchronous, 12 lead design.
- Temperature rise standards meets Class H insulation system.

Electronic Voltage Regulator

- Encapsulated electronic voltage regulator precisely regulates the current into the exciter field.
- Voltage regulation of 0.25% no load to full load.

Full Load Acceptance

- Accepts 100% of standby nameplate rating in one step, in compliance with NFPA, para 5-13.2.6.

Cooling System

- Closed circuit, pressurized system with ambient temperature rating of 40°C (104°F).
- Low coolant shutdown safety.

Generator Control Panel

- MEC 20™ microprocessor-based, digital control panel; vibration isolated and NFPA110 compliant.
- Liquid crystal display screen with alphanumeric readout for display and programming.
- Self-diagnostic feature continuously verifies processing, memory circuits and input/output.

Skid and Housing

- Generator available as skid-mount or sub-base tank mount design.
- Integral vibration isolators.
- Outdoor weather-protective or sound-attenuated housings.
- Steel battery rack and battery cables

Warranty

- Engine-generator sets are covered by an express written 2-year/2000 hour (whichever occurs first) limited warranty.
- Optional extended warranties available.

Agency Approval

- UL 2200 certification.
- CSA standard C22.2 No. 100-04



450kW Diesel On-Site Power Industrial Generator

Alternator Specifications	Standard 3-Phase Generator	Optional 600 VAC 3-Phase Generator
Manufacturer/Model	Marathon Magnamax 572RSL4027	Marathon Magnamax 572RSS4270
Type	4-Pole, Rotating Field	4-Pole, Rotating Field
Exciter Type	Brushless, PMG	Brushless, PMG
Number of Leads	12 Lead, Reconnectable	4 Lead
Voltage Regulator	DVR2000E, Solid State, Volts-per-Hz	DVR2000E, Solid State, Volts-per-Hz
Insulation	NEMA MG1-1.66	NEMA MG1-1.66
Material	Class H	Class H
Temperature Rise	125°C, Standby Rating	125°C, Standby Rating
Bearing, Number, Type	Single, Sealed	Single, Sealed
Coupling	Flexible Disk Type	Flexible Disk Type
Amortisseur Windings	Full	Full
Cooling Air Volume	1520 cfm	1520 cfm
Voltage Regulation (no load to full load)	0.25%	0.25%
Single Step Load Acceptance per NFPA 110	100% of Rating	100% of Rating

Engine Specifications

Manufacturer/Model	Volvo / TAD1641GE
Type	4-cycle, direct injection, turbocharged, charge air cooled, ECM
Cylinder Arrangement	6 In-Line
Displacement	984 in ³ (16.12L)
Bore	5.67 in. (144mm)
Stroke	6.50 in. (165mm)
Compression Ratio	16.5 : 1
Piston Speed	32.5 ft./sec. (9.9m/sec)
Cylinder Block	Cast iron with wet, replaceable liners
Cylinder Head	Cast iron
Crankshaft	Forged steel; 7-main bearings
Brake Mean Effective Pressure (BMEP)	339 psi (2.3 Mpa)
Rated RPM	1800 RPM
SAE Gross Horsepower	757 hp
Governor: Type; Make/Model	Electronic, Volvo/EMS 2
Frequency Regulation: No load to full load	Isochronous under varying loads from no load to 100% rated load
Frequency Regulation: Steady State	±0.25% of mean value for constant loads from no load to full load
Air Cleaner Type	Single stage replacement paper cartridge

Rating Guidelines

STANDBY POWER: Rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying standby electrical power at variable load in areas with well established electrical networks in the event of normal utility power failure. No overload capability is available for this rating.

PRIME POWER: Rating corresponds to ISO Standard Power for continuous operation. It is applicable for supplying electrical power at variable load for an unlimited number of hours instead of commercially purchased power. A 10% overload capability is available for this rating.

SINGLE PHASE OUTPUT: Broad range alternators can supply single phase output up to 2/3 set rated 3-phase kW at 1.0 P.F. Refer to Amperage chart.

MQP450VO Rev 3

Amperage

Voltage	Phase	Wire	Amperage
120/208 Volt	3	4	1561
120/240 Volt	3	4	1353
277/480 Volt	3	4	677
600 vac	3	4	521

Fuel System

Fuel Injection Pump Make	Delphi E1
Recommended Fuel	ASTM-D975/No.1-D & No.2-D
Feed Pump Maximum Suction Head	9.8 feet (3 meter)
Fuel Filters	Replaceable Primary/Secondary
Maximum Fuel Flow	50 gal/hr (190 L/hr)
Fuel Consumption	
Diesel Fuel At % of Load	gal/hr (L/hr)
100%	36.8 (139.2)
75%	27.6 (104.4)
50%	18.4 (69.6)
25%	9.9 (37.0)

Exhaust System

Exhaust Flow at Rated kW	4117 cfm (116.5 m ³ /min)
Exhaust Temperature at Rated kW	1035°F (557°C)
Maximum Allowable Backpressure	40.1 in/H ₂ O (10 kPa)
Heat Rejection To Exhaust	25136 Btu/min (442 kW)



450kW Diesel On-Site Power Industrial Generator

Lubrication System

Type	Full Pressure System
System Capacity - Less Filters	10.8 gallons (41 liters)
System Capacity - With Filters	12.7 gallons (48 liters)
Oil Filter	Full flow disposable spin-on
Oil Pressure At Rated Speed	44-94 psi (300-650 kPa)
Maximum Oil Temperature	266°F (130°C)

Cooling System

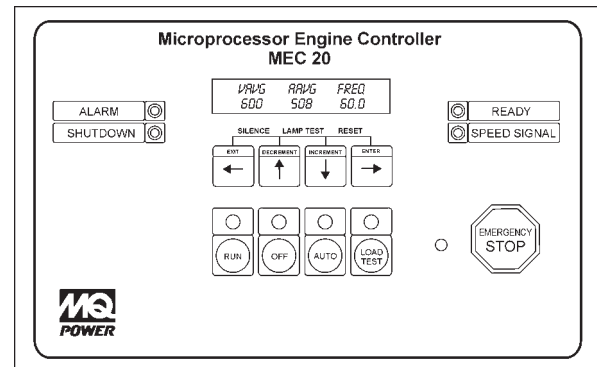
Exhaust Manifold Type	Dry
Radiator Design	Horizontal discharge
Ambient Temperature Rating	104°F (40°C)
Coolant Capacity - Engine Only	8.7 gallons (33 L)
Coolant Capacity - with Radiator	15.8 gallons (60 L)
Water Pump Design/Type	Gear driven, Centrifugal
Coolant Flow	122.4 gal/min (463 L/min)
Radiator Cooling Air	14620 cfm (414 m³/min)
Heat Rejection To Coolant	13137 Btu/min (230 kW)
Heat Rejection From Engine	1365 Btu/min (23.9 kW)
Fan Diameter	35 in. (890 mm)
Fan Horsepower	19 hp (26 kW)
High Water Temperature Indication	217°F (103°C)
Pressure Cap Setting	10.8 psi (75 kPa)

Engine Electrical System

Battery Charging Alternator - Make	Bosch
Ground Type	Negative
Volts (DC)	24VDC
Ampere Rating	80A
Starter Motor Make/Model	Melco 105P70
Starter Motor Rated Voltage	24VDC
Starter Motor Battery Capacity	2 x 225 Ah Max.

Derating Factors

	Altitude	Ambient Temperature
The engine may be operated up to 1000m altitude and 40°C ambient temperature at the Standby rating, without derating. For operation at higher altitudes and ambient temperatures, the power should be derated according to the following factors:	<3000m=4%/500m	1.5%/5°C>40°C
	>3000m=6%/500m	



GENERATOR CONTROLLER

- MEC 20™ microprocessor-based digital generator controller.
- 12 or 24 Volt DC compatible.
- Meets all NFPA 110 requirements for emergency power systems Level I installations.
- Backlit LCD display screen with alphanumeric readout.
- Front panel keypad provides password protected programming.
- Self diagnostic features continuously verify processing, input/output and memory circuits.
- Metering accurate to ±1% within temperature range of 0°C to +50°C.
- EMI/RFI noise immunity and surge performance per IEEE C62.41.
- Certified to UL508 and CSA 22.2 #14 Industrial Control Equipment Standards.

Standard Controller Features

AC Metering Display:

- Voltage/Amperage/ Frequency
- Generator Phase Voltage / Current
- Generator Frequency

Engine Information Display:

- Engine Temperature / Oil Pressure (psi)
- Battery Voltage (DC) / Tachometer
- Hourmeter

Minor Fault Warning Display:

- Switch Not In Auto
- Low Fuel Level
- Low Oil Pressure Alarm
- Low Engine Temperature
- High Engine Temperature Alarm
- Low Battery Voltage
- High Battery Voltage
- Weak Battery Condition
- Battery Charger Input Fail
- Undervoltage
- Over / Underfrequency
- Overcurrent

Major Fault Shutdown Display:

- Overvoltage
- Emergency Stop
- Loss Of Speed
- Overcrank
- Overspeed
- Low Oil Pressure
- High Engine Temperature
- Low Coolant Level
- Spare Programmable Digital Faults

Switches And Operating Controls:

- Run / Off / Auto / Load Test Buttons
- Decrement / Increment / Previous (Exit) /Next (Enter) Program Buttons
- Emergency Stop Button
- Audible Alarm Horn – 80 dB(A) at 2 ft.
- Alarm Horn Silence Button
- Lamp Test Button
- Fault Reset Function
- RJ45 Remote Communications, External Expansion Module Ports

Timer Countdown Display:

- Engine Start Delay
- Oil Bypass
- Overcrank
- Cycle Crank
- Starter Re-engage Delay
- Bypass Delay

Control LED Indicators:

- Switch Position (Run,Off,Auto,Test)
- Common Alarm (Minor Fault)
- Common Shutdown (Major Fault)
- Generator Ready (When in Auto)
- Speed Signal
- Emergency Stop

Diagnostic LED Indicators:

- Run Output Energized
- Crank Output Energized
- Remote Start Signal Initiated
- Common Fail Output Energized
- Watchdog - CPU Running
- Programmable Output Contacts



450kW Diesel On-Site Power Industrial Generator

Generator Set Options

Alternator

- Generator Strip Heater

Control Panel

- Remote Monitoring and Generator Network Communications Link
- Voltage Adjusting Rheostat
- Frequency Adjust Potentiometer

Engine

- Engine Crankcase Ventilation Filter
- Engine Block Heater

Enclosed Unit

- Outdoor Weather-protective Housing
- Outdoor Sound-Attenuated Housing
- Critical Grade Exhaust Silencer
- Exhaust Mounting Package
- Rain Cap

Open Unit

- Critical Exhaust Silencer
- Exhaust Mounting Package

Electrical System

- Battery
- Environmental Plastic Battery Box with Lid
- Battery Tender® Charger, Float Type, 5 Amperes @ 12VDC / (2.5A@24 VAC)
- Battery Charger, Equalize/Float Type 3.5 Amperes
- Battery Charger w/Alarms, Equalize/Float Type, 10 Amperes

Fuel System

- Fuel/Water Separator
- Sub-base Fuel Tank (12-hr / 500 gal), Double Wall, UL142
- Sub-base Fuel Tank (24-hr / 1000 gal), Double Wall, UL142

Cooling System

- Coolant Heater
- Radiator Duct Flange

Miscellaneous

- Main Line Circuit Breaker
 - 120/208 Volt, 3 Phase, 3 Pole
 - 120/240 Volt, 3 Phase, Delta, 3 Pole
 - 139/240 Volt, 3 Phase, 3 Pole
 - 277/480 Volt, 3 Phase, 3 Pole
- Main Line Circuit Breaker Options
 - Auxiliary Contacts
 - DC Shunt Trip
- Remote Annunciator Panel
- Remote Emergency Stop Kit
- Vibration Isolators, Spring Type
- 5-Year Extended Warranty

Automatic Transfer Switch

- Amperage _____
- No. Poles _____
- Type Enclosure _____
- Options _____

Weights and Dimensions

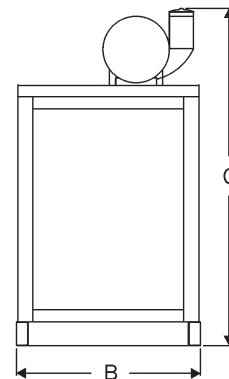
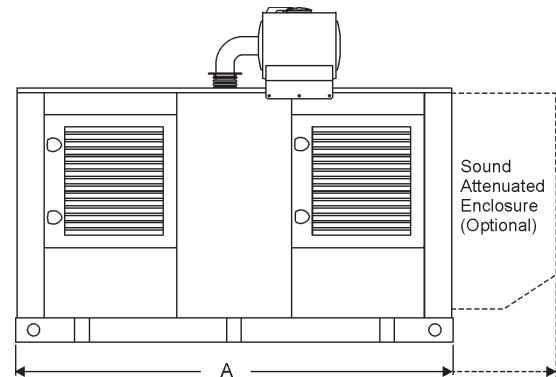
Housing Options	A	B	C		
			Skid-mount	12hr fuel tank*	24hr fuel tank*
Open Genset	145 in. (3,683 mm)	61 in. (1,549 mm)	93 in. (2,368 mm)	110 in. (2,794 mm)	121 in. (3,080 mm)
	Weight ¹		7,507 lbs (3,405 kg)	9,085 lbs (4,120 kg)	10,135 lbs (4,597 kg)
Standard	145 in. (3,683 mm)	61 in. (1,549 mm)	111 in. (2,819 mm)	128 in. (3,251 mm)	139 in. (3,530 mm)
	Weight ¹		8,587 lbs (3,895 kg)	10,165 lbs (4,610 kg)	11,215 lbs (5,087 kg)
Sound Attenuated	184 in. (4,675 mm)	61 in. (1,549 mm)	111 in. (2,819 mm)	128 in. (3,251 mm)	139 in. (3,530 mm)
	Weight ¹		8,887 lbs (4,031 kg)	10,465 lbs (4,747 kg)	11,515 lbs (5,223 kg)

* Optional

1. Weights are approximate and based on dry gensets with standard equipment. The total weight may vary according to fluid additions and/or optional equipment ordered with the unit.

Backfeed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device. Specifications are subject to change without notice.

Your MQ Power dealer is:



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