

SPECIFICATIONS

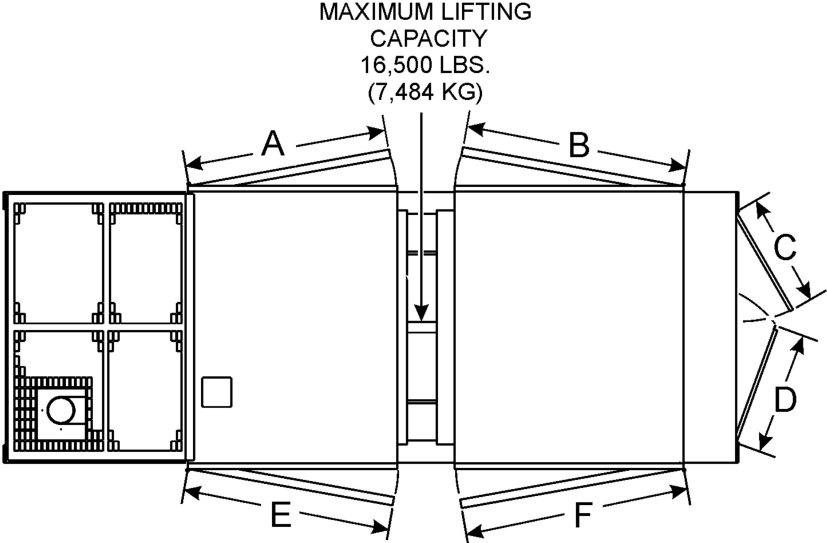
Table 1. Generator Specifications

Model	DCA300SSC/DCA300SSCU
Type	Revolving field, self ventilated, open protected type synchronous generator
Armature Connection	Star with Neutral
Phase	3
Standby Output	264 KW (330 kVA)
Prime Output	240 KW (300 kVA)
3Ø Voltage (L-L/L-N) Voltage Change-Over Bd. at 3Ø 240/139	208Y/120, 220Y/127, 240Y/139
3Ø Voltage (L-L/L-N) Voltage Change-Over Bd. at 3Ø 480/277	416Y/240, 440Y/254, 480Y/277
1Ø Voltage (L-L/L-N) Voltage Change-Over Bd. at 1Ø 240/120	240/120
Power Factor	0.8
Frequency	60 Hz
Speed	1800 rpm
Aux. AC Power	Single Phase, 60 Hz
Aux. Voltage/Output	4.8 Kw (2.4 kW x 2)
Dry Weight	8,644 lbs. (3,920 kg)
Wet Weight	9,769 lbs. (4,430 kg)

Table 2. Engine Specifications

Model	Cummins QSL9-G3 Tier 3	
Type	4 cycle, water-cooled, direct injection, turbo-charged with air to air after-cooler	
No. of Cylinders	6 cylinders	
Bore x Stroke	4.49 in. x 5.69 in. (114 mm x 145 mm)	
Displacement	543 cu. in. (8900 cc)	
Rated Output	363 HP at 1800 rpm	
Starting	Electric	
Coolant Capacity	11.3 gal. (43.0 liters)	
Lube Oil Capacity	7.0 gal. (26.5 liters)	
Fuel Type	#2 Diesel Fuel	
Fuel Tank Capacity	129 gal. (490 liters)	
Fuel Consumption	19.0 gal. (72.0 L)/hr at full load	15.5 gal. (58.6 L)/hr at 3/4 load
	11.1 gal. (41.9 L)/hr at 1/2 load	5.9 gal. (22.4 L)/hr at 1/4 load
Battery	150 Ah x 2 (24V System)	

TOP VIEW



SIDE VIEW

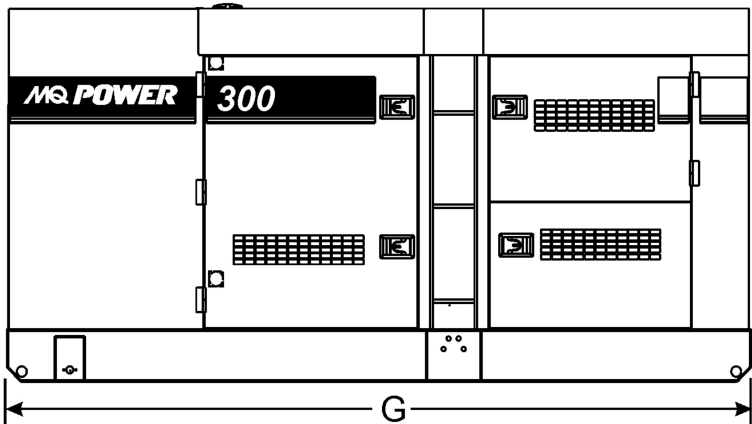


Figure 1. Dimensions

FRONT VIEW

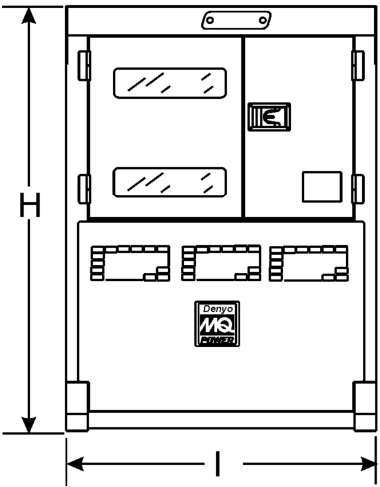


Table 3. Dimensions			
Reference Letter	Dimension in. (mm)	Reference Letter	Dimension in. (mm)
A	39.76 in. (1,010 mm)	F	43.90 in. (1,115 mm)
B	43.90 in. (1,115 mm)	G	149.61 in. (3,800 mm)
C	23.03 in. (585 mm.)	H	70.87 in. (1,800 mm)
D	25.20 in. (640 mm)	I	55.12 in. (1,400 mm)
E	39.76 in. (1,010 mm)		

GENERAL INFORMATION

GENERATOR

The MQ Power DCA300SSC and DCA300SSCU generators (Figure 3) are designed as a high quality portable (requires a trailer for transport) power source for telecom sites, lighting facilities, power tools, submersible pumps and other industrial and construction machinery.

ENGINE OPERATING PANEL

The “Engine Operating Panel” is provided with the following:

- Tachometer
- Emergency Stop Switch
- Water Temperature Gauge
- Oil Pressure Gauge
- Charging Ammeter Gauge
- Fuel Level Gauge
- Pre-Heat Lamp
- Engine Speed Switch
- Battery Switch
- Engine Alarm Lamps (5)

GENERATOR CONTROL PANEL

The “Generator Control Panel” is provided with the following:

- Frequency Meter (Hz)
- AC Ammeter (Amps)
- AC Voltmeter (Volts)
- Ammeter Change-Over Switch
- Voltmeter Change-Over Switch
- Voltage Regulator
- Panel Light/Panel Light Switch
- 3-Pole, 800 amp Main Circuit Breaker
- “Control Box” (located behind the Gen. Control Panel)
 - Automatic Voltage Regulator
 - Current Transformer
 - Over-Current Relay
 - Starter Relay
 - Engine Controller (Computer Controlled)

OUTPUT TERMINAL PANEL

The “Output Terminal Panel” is provided with the following:

- Three 120/240V output receptacles (CS-6369), 50A
- Three auxiliary circuit breakers, 50A
- Two 120V output receptacles (GFCI), 20A
- Two GFCI circuit breakers, 20A
- Eight output terminal lugs (3Ø power)
- Battery Charger (Optional)
- Water Heater (Optional)

OPEN DELTA EXCITATION SYSTEM

Each generator is equipped with the state of the art “**Open-Delta**” excitation system. The open delta system consist of an electrically independent winding wound among stationary windings of the AC output section.

There are four connections of the open delta A, B, C and D. During steady state loads, the power from the voltage regulator is supplied from the parallel connections of A to B, A to D, and C to D. These three phases of the voltage input to the voltage regulator are then rectified and are the excitation current for the exciter section.

When a heavy load, such as a motor starting or a short circuit occurs, the automatic voltage regulator (AVR) switches the configuration of the open delta to the series connection of B to C. This has the effect of adding the voltages of each phase to provide higher excitation to the exciter section and thus better voltage response during the application of heavy loads.

The connections of the AVR to the AC output windings are for sensing only. No power is required from these windings. The open-delta design provides virtually unlimited excitation current, offering maximum motor starting capabilities. The excitation does not have a “**fixed ceiling**” and responds according the demands of the required load.

ENGINE

Both generators are powered by a 6 cylinder, 4-cycle water cooled, direct injection, turbocharged, charge air cooled Cummins QSL9-G3 diesel engine. This engine is designed to meet every performance requirement for the generator. Reference Table 2 for engine specifications.

In keeping with MQ Power’s policy of constantly improving its products, the specifications quoted herein are subject to change without prior notice.

ELECTRIC GOVERNOR SYSTEM

The electric governor system controls the RPMs of the engine. When the engine demand increases or decreases, the governor system regulates the frequency variation to $\pm 0.25\%$.

EXTENSION CABLES

When electric power is to be provided to various tools or loads at some distance from the generator, extension cords are normally used. Cables should be sized to allow for distance in length and amperage so that the voltage drop between the generator and point of use (load) is held to a minimum. Use the cable selection chart (Table 6) as a guide for selecting proper extension cable size.

MAJOR COMPONENTS

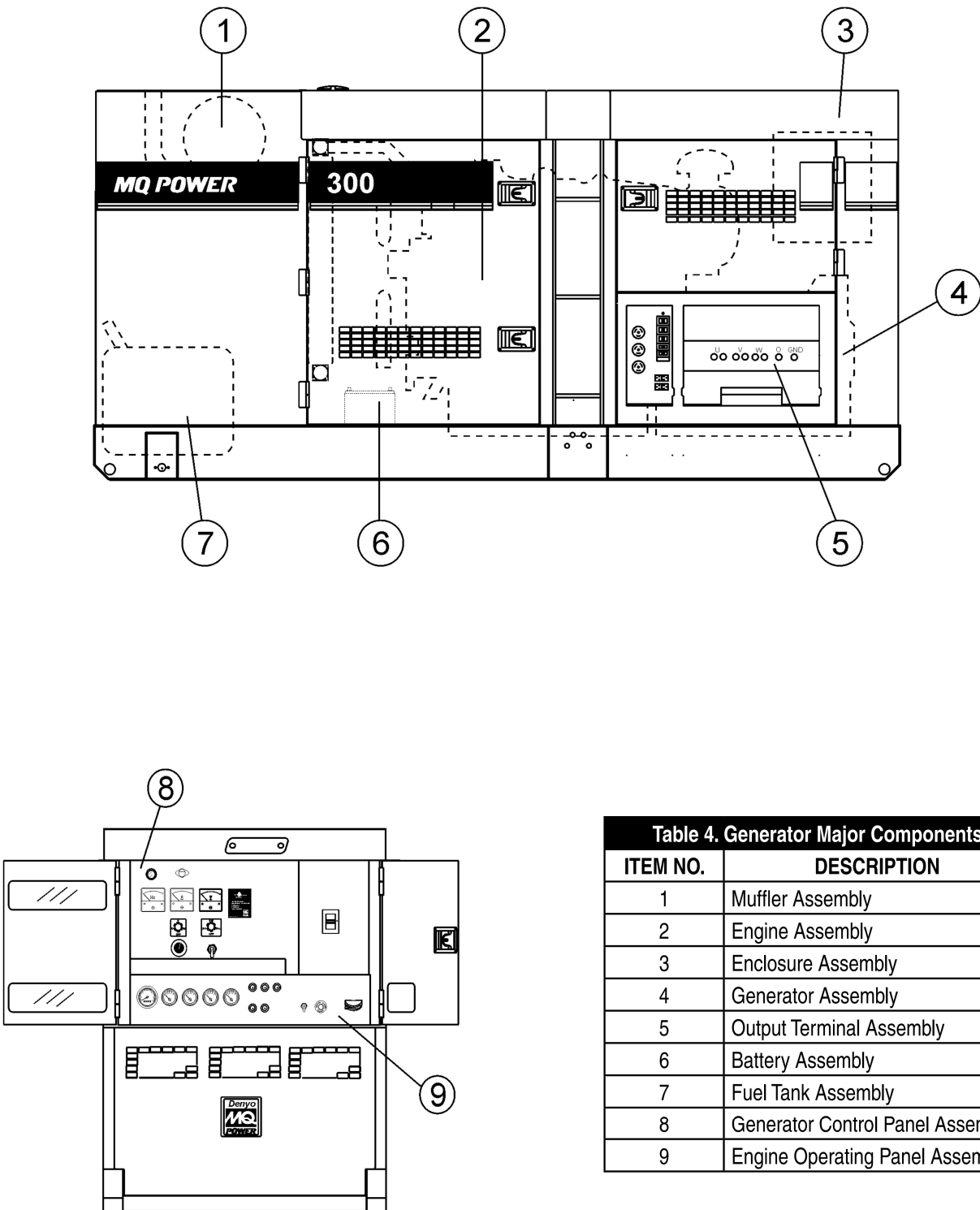


Figure 3. Major Components

GENERATOR CONTROL PANEL

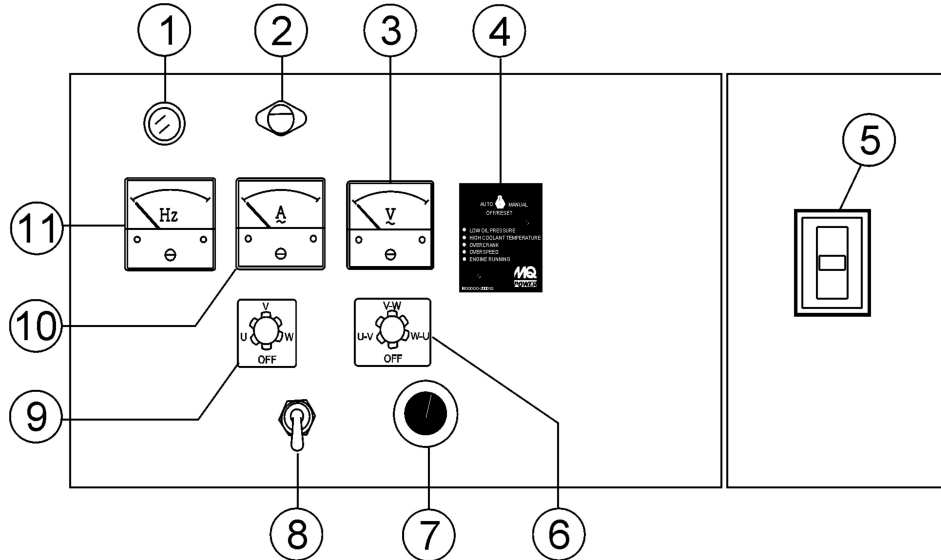
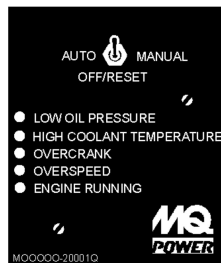


Figure 4. Generator Control Panel

The definitions below describe the controls and functions of the Generator Control Panel (Figure 4).

1. **Pilot Lamp** — Indicates the system is running.
2. **Panel Light** — Normally used in dark areas or at night time. When activated, panel lights will illuminate. When the generator is not in use be sure to turn the panel light switch to the **OFF** position.
3. **AC Voltmeter** — Indicates the output voltage present at the **U,V, and W Output Terminal Lugs**.
4. **Auto On/Off Engine Controller (MPEC)** —

This controller has a vertical row of status LED's (inset), that when lit, indicate that an engine malfunction (fault) has been detected. When a fault has been detected the engine controller will evaluate the fault and all major faults will shutdown the generator. During **cranking cycle**, The MPEC will attempt to crank the engine for 10 seconds before disengaging.



If the engine does not engage (start) by the third attempt, the engine will be shutdown by the engine controller's **Over Crank Protection** mode. If the engine engages at a speed (RPM's) that is not safe,

the controller will shutdown the engine by initializing the **Over Speed Protection** mode.

5. **Main Circuit Breaker** — This three-pole, 800 amp main breaker is provided to protect the **U,V, and W Output Terminal Lugs** from overload.
6. **Voltmeter Change-Over Switch** — This switch allows the AC voltmeter to indicate phase to phase voltage between any two phases of the output terminals or to be switched off.
7. **Voltage Regulator Control** — Allows $\pm 15\%$ manual adjustment of the generator's output voltage.
8. **Panel Light Switch** — When activated will turn on control panel light.
9. **Ammeter Change-Over Switch** — This switch allows the AC ammeter to indicate the current flowing to the load connected to any phase of the output terminals, or to be switched off. This switch does not effect the generator output in any fashion, it is for current reading only.
10. **AC Ammeter** — Indicates the amount of current the load is drawing from the generator per leg selected by the ammeter phase-selector switch.
11. **Frequency Meter** — Indicates the output frequency in hertz (Hz). Normally 60 Hz