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ISO 9001
CERTIFIED

shindaiwa

**LOW-NOISE DIESEL-POWERED
AC GENERATOR**

DG450UMI-QD (200/400)

SPECIFICATIONS

CHAPTER 1: GENERAL
CHAPTER 2: EQUIPMENT SPECIFICATIONS
ATTACHED DRAWINGS

- APPEARANCE
- GENERATOR WIRING
- ENGINE WIRING

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Chapter 1 General

1. Standards

The designs and the productions are in conformity with:

- (1) Japan Industrial Standards
- (2) Electricity Academy Corporation - Electricity Standard Research Association Standard (JEC)
- (3) Japan Electric Industries Corporation Standard (JEM)
- (4) Japan Combustion Generating Equipment Corporation
- (5) Ministry of Construction (Low Noise Type Construction Machinery Standard)
- (6) Ministry of Construction (Construction Machinery Gas Emission Regulation Standard)

2. Design Conditions

- (1) Installation Place: Inside/Outside
- (2) Ambient Temperature: -15-+40°C
- (3) Humidity: Less than 80%
- (4) Altitude: Less than 300meter (Sea Level)

3. Test and Check

The test shall be done for the complete workable unit of Diesel Engine and Portable Generating Unit.

- (1) Checking Items
 - a) Insulation and Dielectric Tests
 - b) Starting
 - c) Protection Devices Working Test
 - d) Voltage Deviation and Speed Variation: 1/4, 2/4, 3/4 and 4/4 Load
 - e) Load Test: 4/4 Load 30 minutes

4. Painting

- (1) Painting specifications and color are the manufacturer's standard

SPECIFICATION

Item	Model	DG450UMI-QD	
AC generator		Brushless, 3-Phase synchronous AC generator	
Frequency	(Hz)	50/60	
Rated output	(k VA)	37/45	
	(kW)	29.6/36.0	
Rated voltage	(V)	200/220, 400/440	
Rated amperage	(A)	107/108, 53.5/59	
Number of polarity	—	4	
Rated power factor	—	0.8 (lagging)	
Single Phase output	(V)	100/110	
	(A)	Terminal 75, 38x2	
	(A)	Receptacle 15Ax4	
Engine Model	—	ISUZU BB-4JG1T	
Type	—	4-cycle, water-cooled, direct injection type	
Air induction system		Exhaust turbocharger	
Number of cylinder	—	4	
Bore x stroke	(mm)	95.4x107	
Displacement	(L)	3.059	
Rated output	(kW)	35.4/42.6	
Rated revolution speed	(min ⁻¹)	1500/1800	
Fuel	—	Diesel fuel (JIS K2204, class 1 to 3)	
Fuel consumption Note1	(L/hour)	6.6/7.9	
Lubricating oil type	—	Class CD or better, SAE30	
Lubricating oil capacity	(L)	10 (Effective 3)	
Lubricating oil consumption Note2	(L/hour)	0.018	
Coolant capacity	(L)	13	
Battery	—	95D31R	
5-hour capacity	(Ah)	64	
Fuel tank capacity	(L)	124	
Equipment dimension L×W×H	(mm)	1770×920×1350	
Mass	Dry weight	(kg)	1130
	Amount weight		1260

Note1, 2: The indicated values were obtained under normal operating condition at 75% load.
Use the numerical value as reference.

Chapter 2 Equipment Specifications

1. Diesel Engine

Model: ISUZU BB-4JG1T

Displacement: 3.050 L

Rated Output/Rated Speed: 35.4kW {48.10PS}/42.6kW{57.9PS}
: 1500/1800min⁻¹{rpm}

Fuel: Diesel Fuel ASTM No. 2 or Equivalent

Fuel Filter: Paper Filter

Automatic Air Extraction: Standard Accessory

External Fuel Changeover: Standard Accessory

Battery: 95D31R (12V-64AH)

2. 3-Phase Synchronous Generator

1) Alternator

Model: Rotating Field, Self-Ventilation (JCO), Protection (JP20)

Output: 37.0/45.0kVA (29.6/36.0kW)

Rate: Continuous

Voltage: 400/440V

Current: 53.4/59.0A

Frequency: 50/60Hz

Speed: 1500/1800min⁻¹

Pole: 4 Poles

Power Factor: 0.8 Lagging

Exciting Method: Brushless, AC Exciter

Wiring: Star, 3-Phase 4-Wire

Insulation: Stator Wiring Class F

: Rotor Wiring Class B

Standard: JIS, JEM, JEC

2) Characteristic

Voltage Deviation: Less than $\pm 1.0\%$ for the nominal value

: Transient Values to be less than 20% (100%kVA, Power Factor 0.4)

Over-speed Endurance: 2 minutes of 120% of the rated speed

Wave Distortion: Less than 2% (3-Phase, Line to Line, No Load)

Generator Efficiency: More than 85%

Insulation Resistance: More than 5M Ω

Dielectric Insulation: 1500V for 1 minute or 1800V 1 second

3. Structure

1) Beds (bottom columns) and Vibration Proof Device

Alternator is coupled directly with engine and they are installed on the bed through vibration proof device (Rubber Pad and Angle).

2) Low Noise Sound-Proof Enclosure (Bonnet)

The structure is that the inside of the bonnet is sound-proof treated and you can lift up the alternator and the engine together with the beds by using a lifting lug.

Sound Level: 51/53dB (A)/7m (No Load 1500/1800 min⁻¹)

3) Fuel Tank

The fuel tank is made of steel and incorporated with the electric type gauge.

Capacity: 124L

4. Control Devices, Gauges and Protection Devices

1) Control Device

Breaker: Circuit Breaker (Rate 600V 125A)

: Circuit Breaker (Rate 600V 75A)

Exciter Circuit: Automatic Voltage Regulator (F/V Characteristic)

Current Leakage Shut Off Device: 30mA 0.1 second

2) Gauges (Displays)

AC Volt Meter: 0-600V

AC Ampere Meter: 0-75/150A

Frequency Meter: 45-65Hz

Hour Meter: 9999.9Hr

Oil Pressure Gauge

Water Temperature Gauge

Preheat Lamp

Disorder Display Lamps: High Water Temperature, Low Oil Pressure, Insufficient Charging

Voltage Adjuster: Adjustable Range; Below-10%- and over +5%

Panel Light

Emergency Stop Button

3) Protection Device

Item	Set Value	Display	Trip	Shut-Down
Low Oil Pres.	98.1kPa	○	-	○
High Water Temp.	105°C	○	-	○
Insufficient Charging	-	○	-	-
Over Current (Thermal relay)	120%	-	○	-
Current Leakage	30mA 0.1sec.	○	○	-

4) Output Terminals Plate

R, S, T and O output terminals, 4 (four) receptacles of auxiliary power 100/110V 15A x 4 and 2 (two) 37.5A 1-Phase output terminal set

5. Dimension and Weight

Length: 1770mm

Width: 920mm

Height: 1350mm

Dry Weight: 1130kg

Outfitted Weight: 1260kg

6. Accessories

Grounding Rod: 1 piece

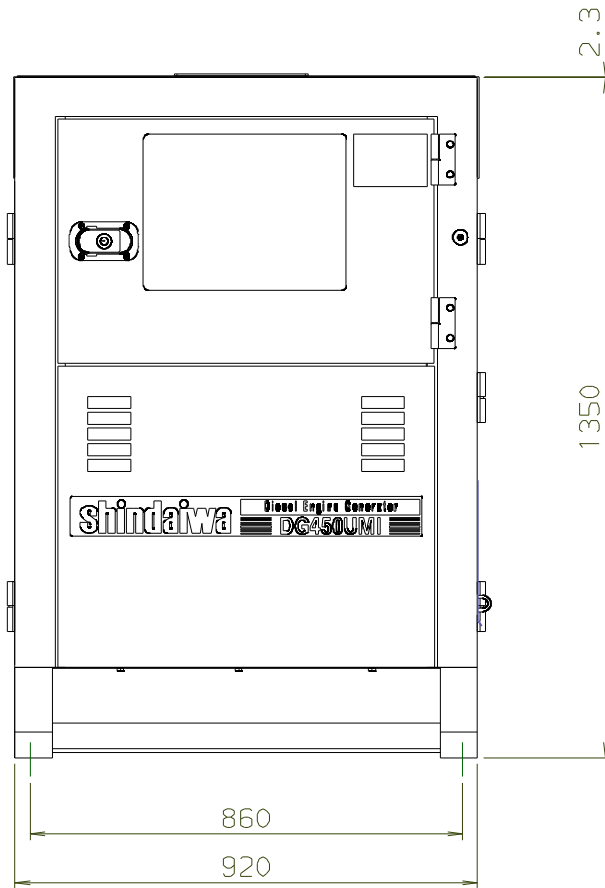
Fuse: 10A 1 piece

Instruction manual

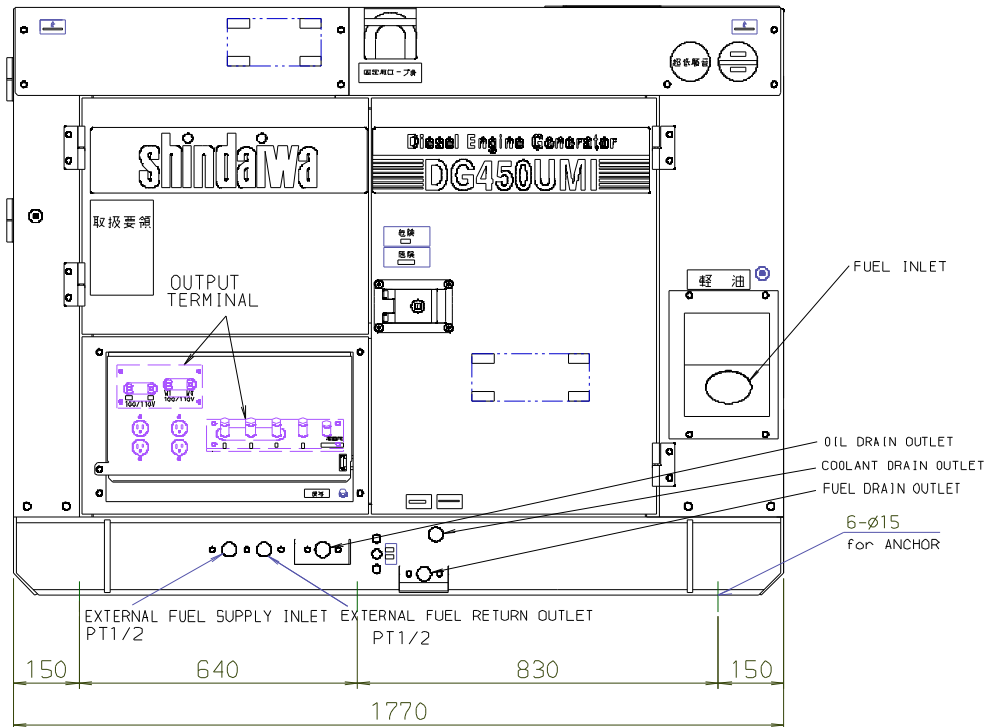
Manual, engine

• **APPEARANCE**

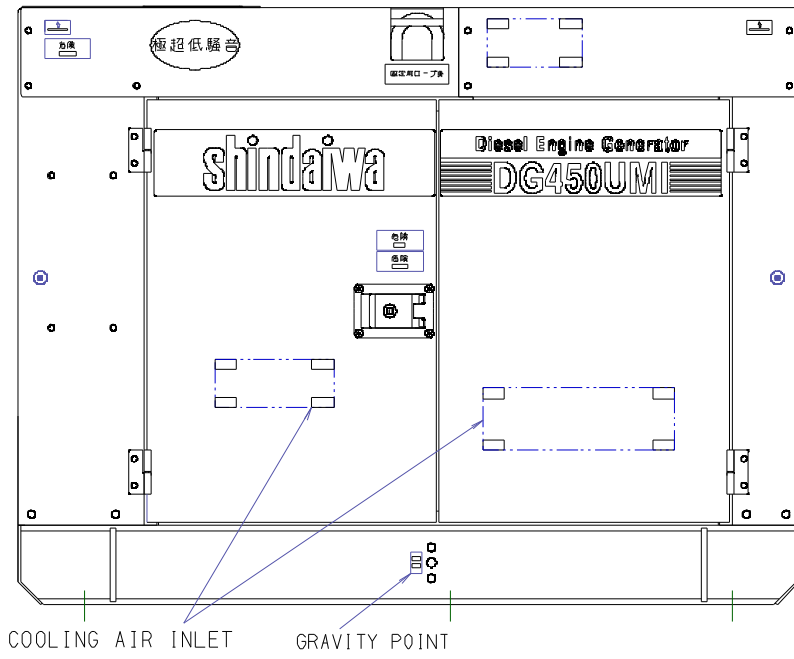
FRONT VIEW



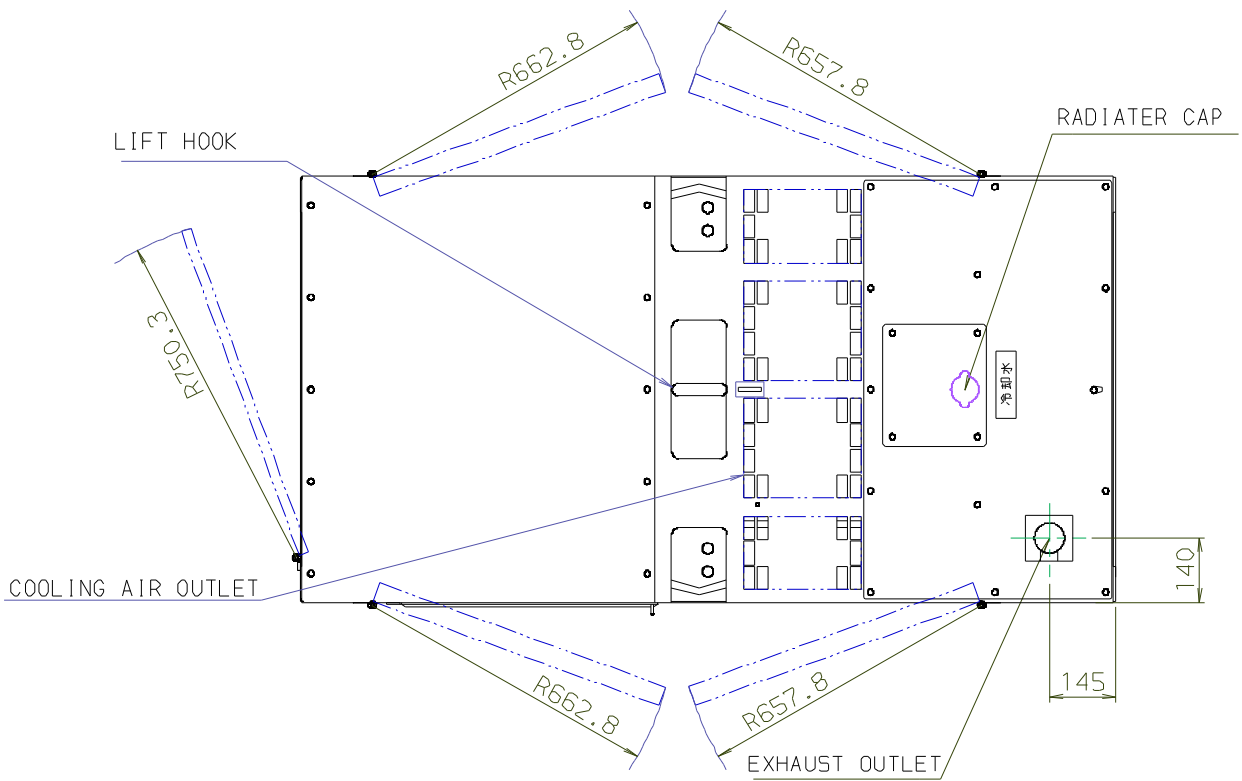
RIGHT SIDE VIEW



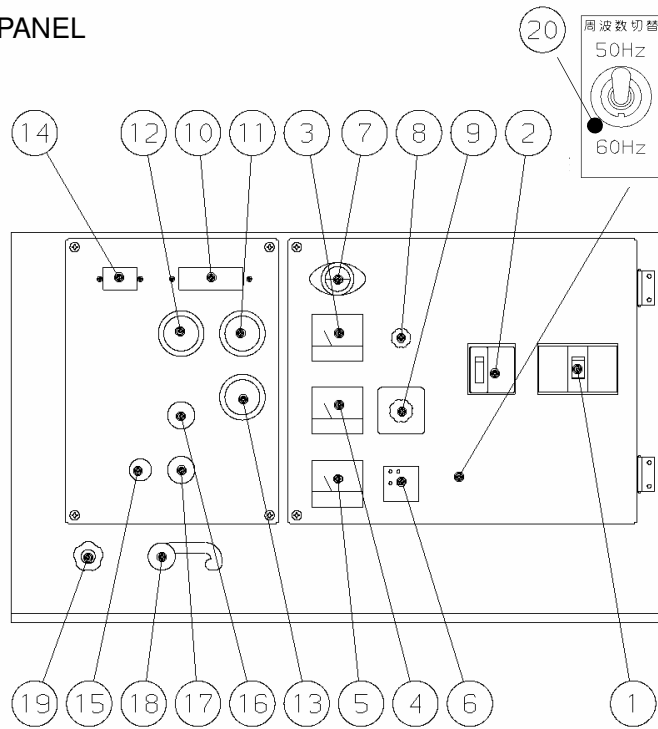
LEFT SIDE VIEW



TOP VIEW



CONTROL PANEL

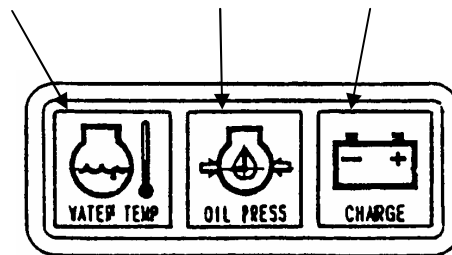


NO.	Name	Description of function
1	3-phase circuit breaker	Turns the power supply to load equipment ON (closed) and OFF (open).
2	1-Phase circuit breaker	Turns the power supply to load equipment ON (closed) and OFF (open).
3	Voltage meter	Indicates voltage.
4	AC ampere meter	Indicates phase current.
5	Frequency meter	Indicates electricity frequency.
6	Earth leakage relay	Detects electric leakage in the 3 phase,4wire output, and turns the circuit breaker OFF when activated
7	Panel light	Illuminates control panel surface and Indicates generated electricity when the engine is in operation and generating.
8	Voltage adjustment dial	Used to adjust voltage.
9	Volt meter change over switch	Used to change the display voltage between phases
10	Warning indicator : NOTE	Lights when an equipment malfunction occurs.
11	Coolant temperature gauge	Indicates temperature of the engine coolant.
12	Oil pressure. gauge	Indicates lubricating oil pressure.
13	Fuel meter	Indicates remaining fuel.
14	Hour meter	Indicates operating hours of the generator unit.
15	Emergency stop switch	When the switch is pressed, stops an engine operation.

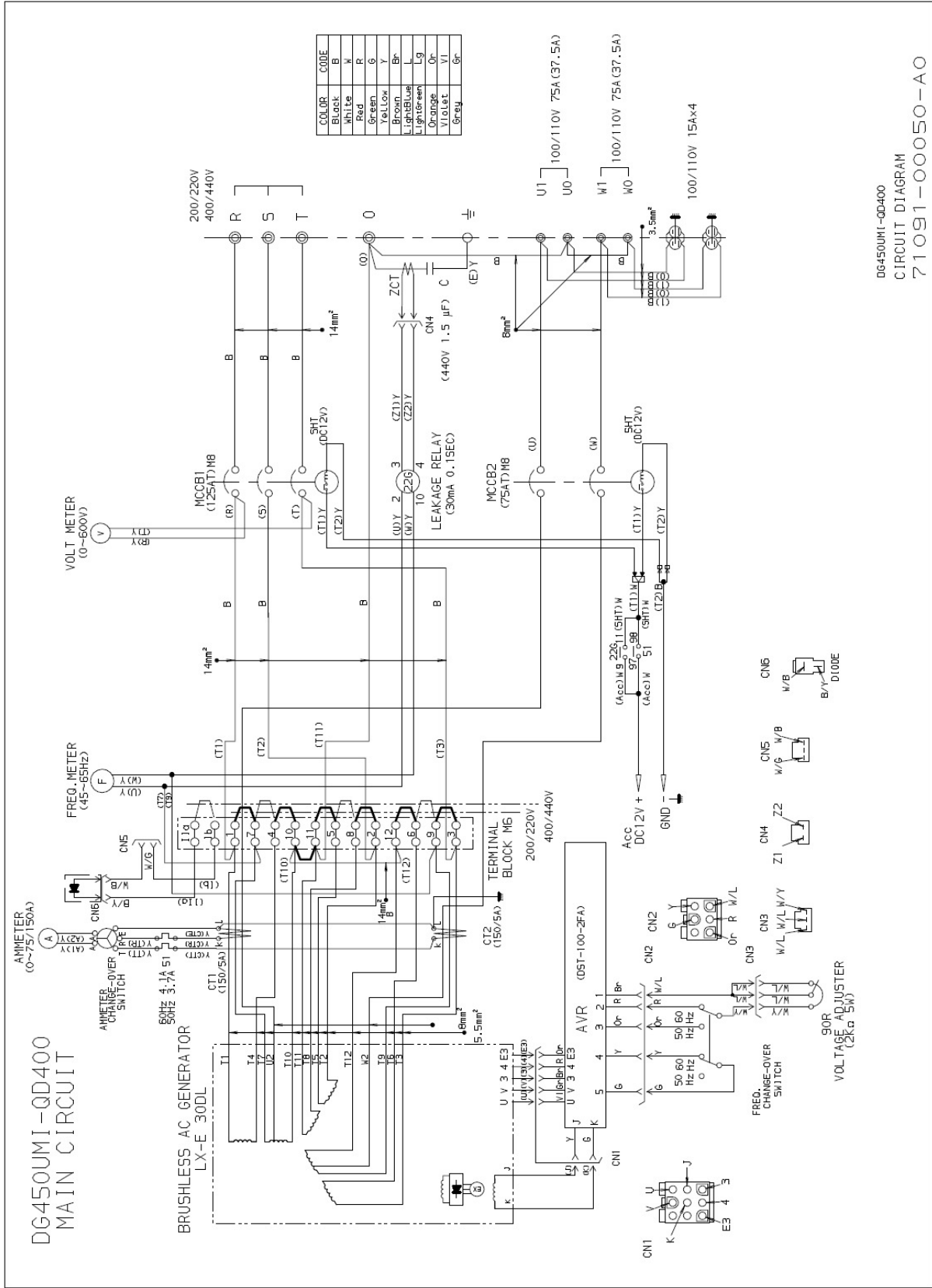
NO	Name	Description of function
16	Pre-heat indicator	The indicator lights when the key switch is set to the [ON] position, and starts pre-heating.
17	Starter switch	OFF: stops engine operation. ON: supplies electricity for control operation, and starts pre-heating. START: starts an engine operation
18	Throttle lever	Low idling or rated speed selecting lever.
19	Frequency (Speed) adjusting knob	Used to fine adjustment of frequency
20	Frequency select switch	Select the rated speed of engine.

NOTE

High water temp. Low oil press. Charge fault

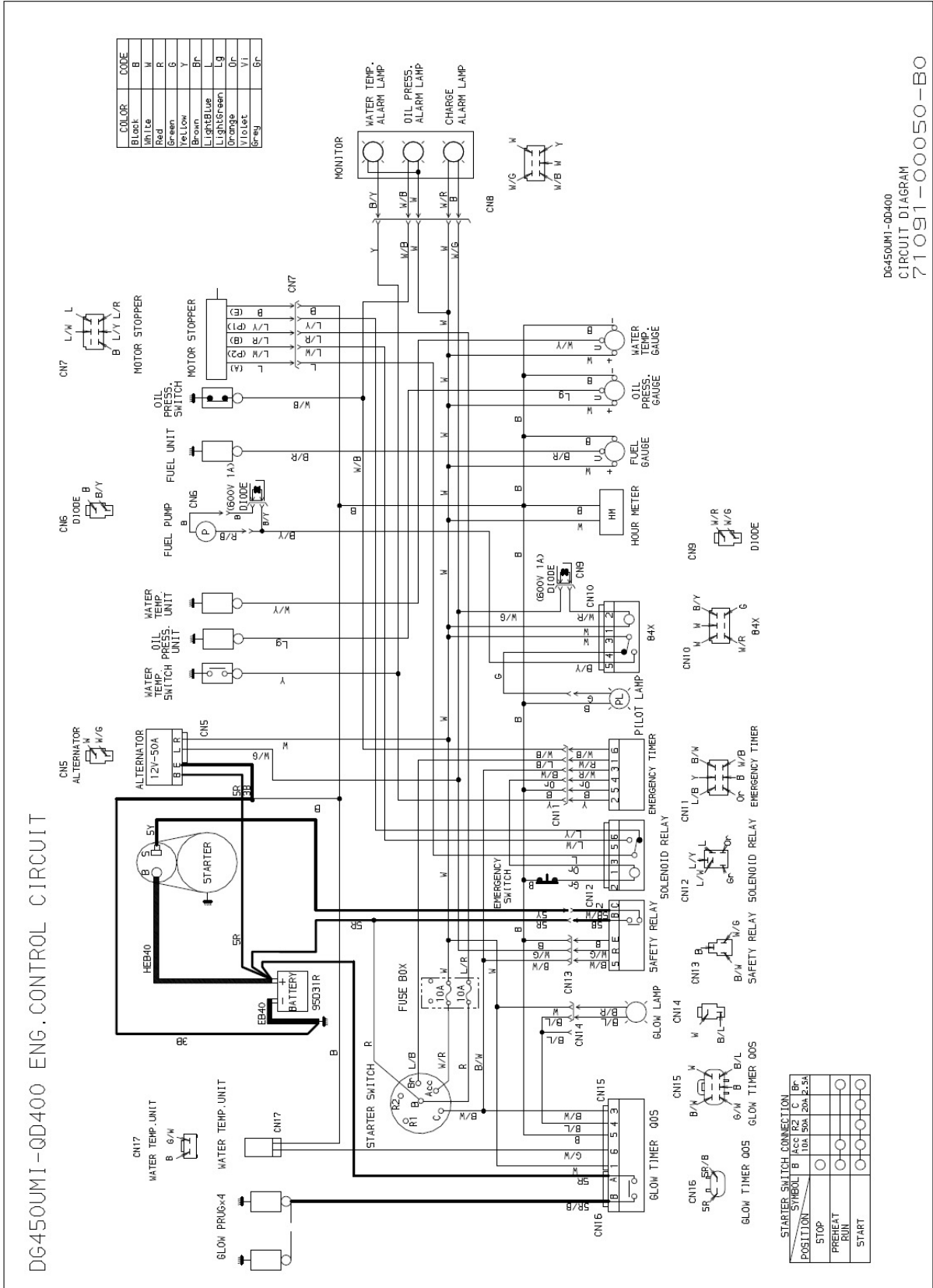


● GENERATOR WIRING



DG450UMI-QD400
CIRCUIT DIAGRAM
71091-00050-A0

● ENGINE WIRING



DG450UMI-QD400
CIRCUIT DIAGRAM
71091-00050-B0

MENO