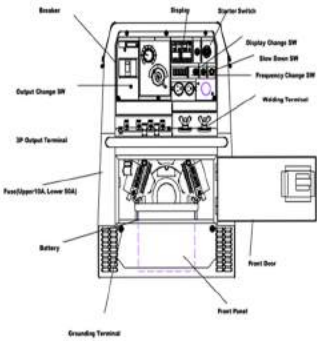


# shindaiwa



**DGW310MC-220**



**Operation  
manual**

**DATE:**  
**TO:**

*ISO 9001*  
**CERTIFIED**

**shindaiwa**

**LOW-NOISE DIESEL-POWERED  
DC WELDER and GENERATOR**

**DGW310MC-220**

**SPECIFICATIONS**

CHAPTER 1: GENERAL

CHAPTER 2: EQUIPMENT and FEATURES

ATTACHED DRAWINGS

- APPEARANCE
- WELDER and GENERATOR WIRING
- ENGINE WIRING

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## Chapter1. General

### 1. Standards

The designs and the productions are in conformity with:

- (1) Japan Industrial Standards
- (2) Ministry of Construction (Low Noise Type Construction Machinery Standard)
- (3) Ministry of Construction (Construction Machinery Gas Emission Regulation Standard)

### 2. Design Conditions

- (1) Installation Place: Inside
- (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 Unit.

- (1) Checking Items
  - a) Insulation and Dielectric Tests
  - b) Starting
  - c) Protection Devices Working Test
  - d) Voltage Deviation and Speed Variation: 0-4/4 Load
  - e) Load Test: Welding and generating 4/4 Load

### 4. Painting

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

### 5. 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: 63/65dB (A)/7m (No Load 1500/1800 min<sup>-1</sup>)
- (3) Fuel Tank  
The fuel tank is made of steel and incorporated with the electrical level gauge.

SPECIFICATION

Item		Model	DGW310MC-220		
Generating Method		Rotating field synchronous generating			
DC Welder	Rated output current [50Hz/60Hz]		(A)	DC260/280	
	Rated output voltage [50Hz/60Hz]		(V)	30.4/31.2	
	Rated duty cycle		(%)	100	
	Rated speed [50Hz/60Hz]		(min <sup>-1</sup> )	3000/3600	
	No load voltage		(V)	MAX 85	
	Output change	Eco	Current Adj. range	(A)	30-160
			Welding Rod	(φ mm)	2.0-4.0
Output change	Single	Current Adj. Range [50Hz/60Hz]	(A)	DC70-280/85-310	
		Welding Rod	(φ mm)	2.6-6.0	
Generator	Phase		-	3-Phase, 1-Phase	
	Rated voltage		(V)	200/220	
	Frequency		(Hz)	50/60	
	Rated output	3-Phase: 200/220V		(k VA)	9.9
		1-Phase: 100/110V		(k VA)	Receptacle Terminal total 6
	Rated speed		(min <sup>-1</sup> )	3000/3600	
	Power factor		-	3-Phase: 0.8, 1-Phase: 1.0	
Rate		-	Continuous		
Engine	Model		-	Kubota D722	
	Type		-	Vertical, Water-cooled 4 cycle 3 cylinder	
	Displacement		(L)	0.719	
	Rated Output			(kW)	11.7
				(min <sup>-1</sup> )	3000
	Fuel			Diesel Fuel (ASTM No.2-D) or Equivalent	
	Lubricating oil type			API Class CC or Better	
	Lubricating oil capacity		(L)	3.8 (Effective 1.4)	
	Coolant capacity		(L)	3.0	
Starting method		-	Starter motor		
Battery		-	46B24L		
5-hour capacity		(Ah)	36		
Fuel tank capacity		(L)	37		
Dimension	Length		(mm)	1410	
	Width		(mm)	566	
	Height		(mm)	760	
Mass	Dry weight		(kg)	333	
	Full weight		(kg)	377	

## Chapter2. Equipment and Features

### 1. Equipment

#### (1) Generator

Digital display .....	1 piece
• Voltage meter	
• Ampere meter	
• Hour meter	
Frequency 50/60Hz selector switch.....	1 piece
Breaker .....	1 piece
With Leakage Shut off Device: 30mA 0.1 second	
1-P 100/110V Receptacle.....	2 sets
3-Phase 200/220Y Terminal .....	1 set
Voltage adjuster (option) .....	1 piece
Earth leakage grounding terminal .....	1 piece

#### (2) Welder

Current Adj. Dial .....	1 piece
Output selector switch .....	1 piece
Welding current output terminal .....	1 set

#### (3) The others

Slow down switch .....	1 piece
Starter switch .....	1 piece
Electrical fuel level meter .....	1 piece
Bonnet grounding terminal .....	1 piece
Disorder Display Lamps .....	1 set
• High Water Temperature.	
• Low Oil Pressure	
• Insufficient Charging	

### 2. Features

#### (1) Sound level

Eco (Slow-down, 2200 min <sup>-1</sup> ) .....	57dB
50Hz .....	63dB
60Hz .....	65dB

No load Rated speed, Distance: 7meter, Height: 1.5 meter A scale

#### (2) Protection Device

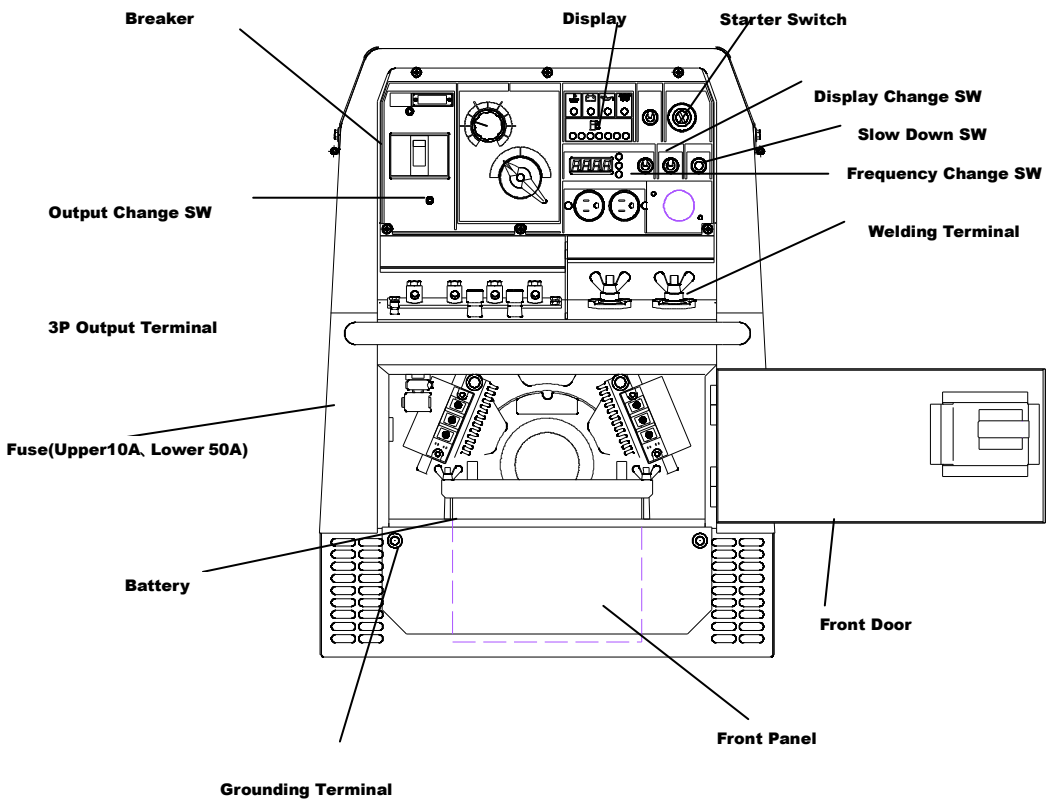
Item	Set Value	Display	Trip	Engine Shut-Down
Low Oil Pres.	98.1kPa	○	-	○
High Water Temp.	110°C	○	-	○
Insufficient Charging	-	○	-	○
Over Current	15A	○	○	-
Current Leakage	30mA 0.1sec.	○	○	-

#### (3) Accessories

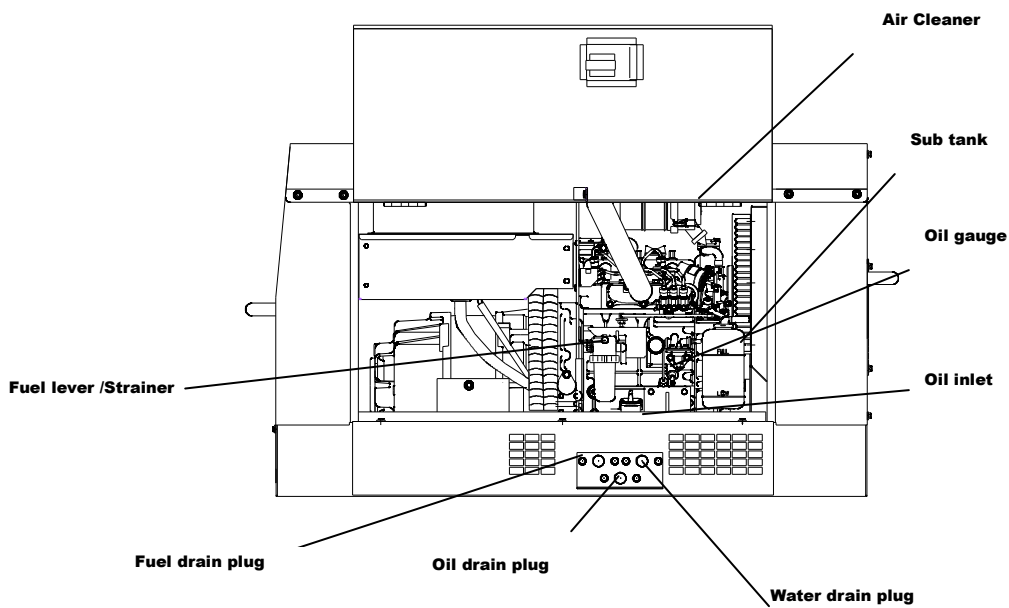
Grounding Rod: 1 piece  
 Instruction manual  
 Engine manual

• **APPEARANCE**

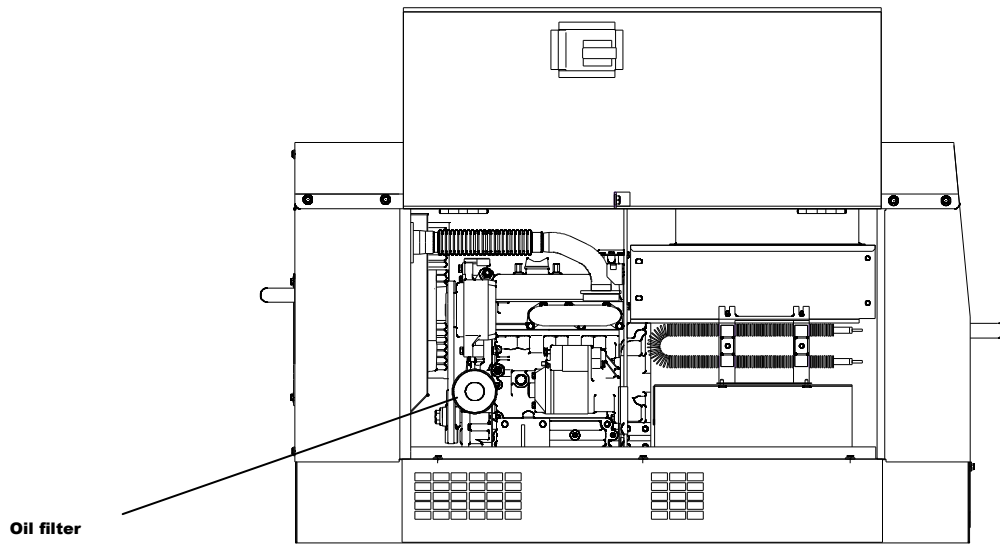
FRONT VIEW



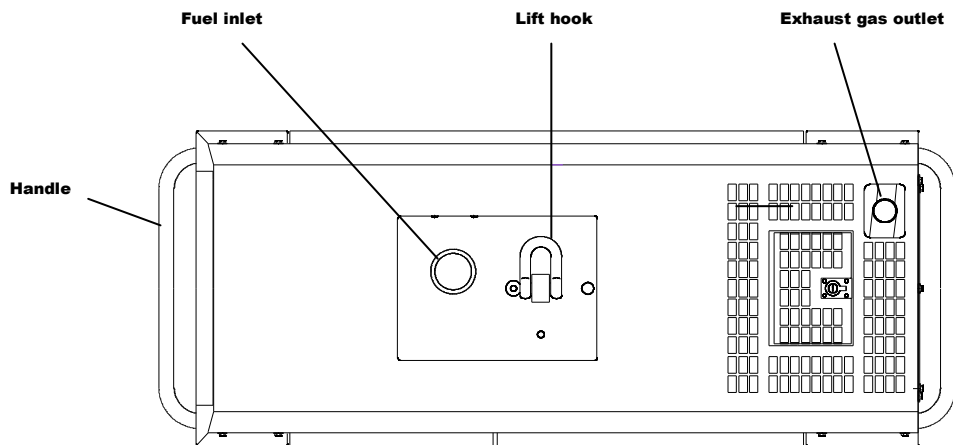
RIGHT SIDE VIEW



LEFT SIDE VIEW

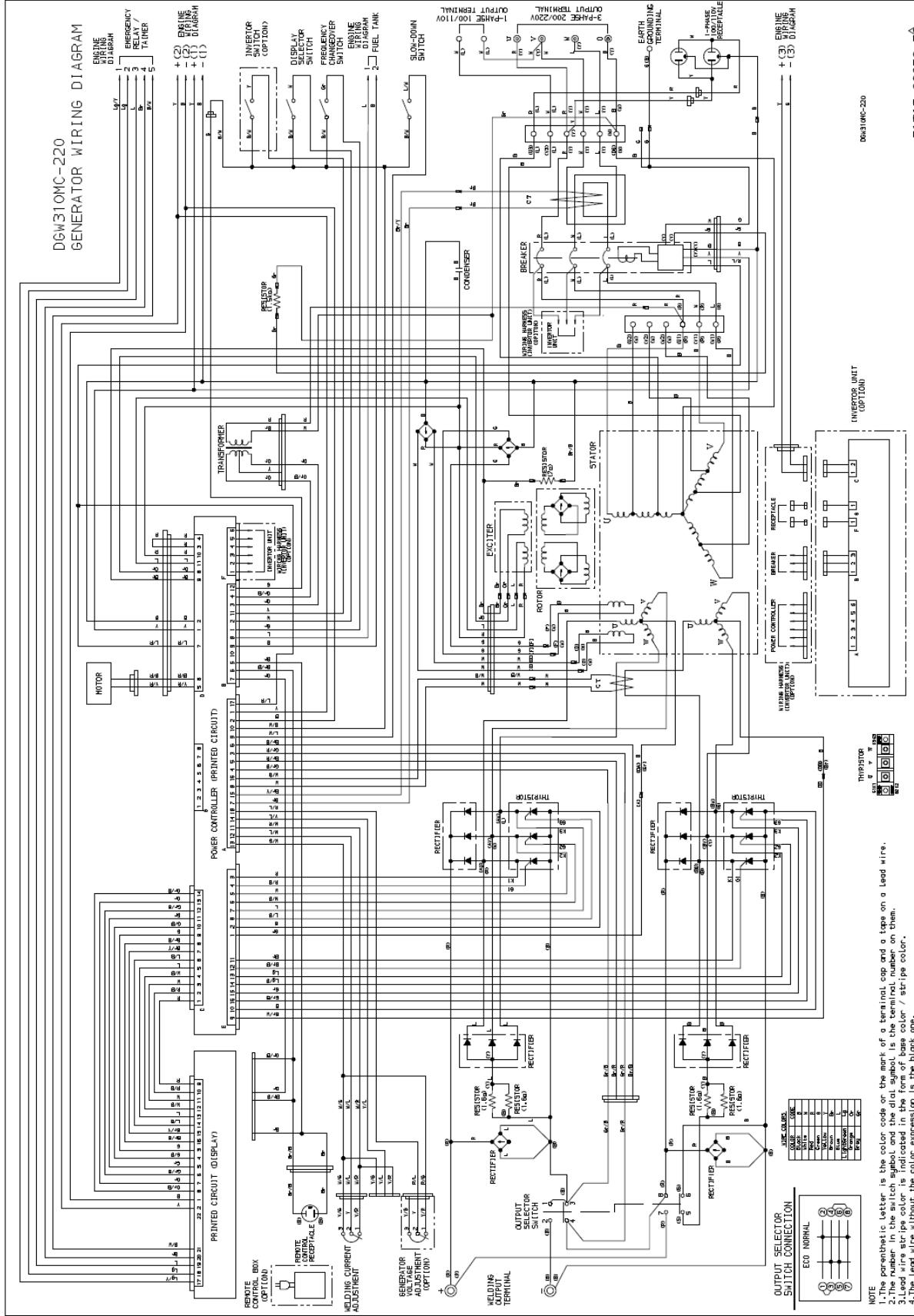


TOP VIEW



- WELDER and GENERATOR WIREING

# DGW310MC-220 GENERATOR WIRING DIAGRAM



DGW310MC-220

7191B-00050-B0

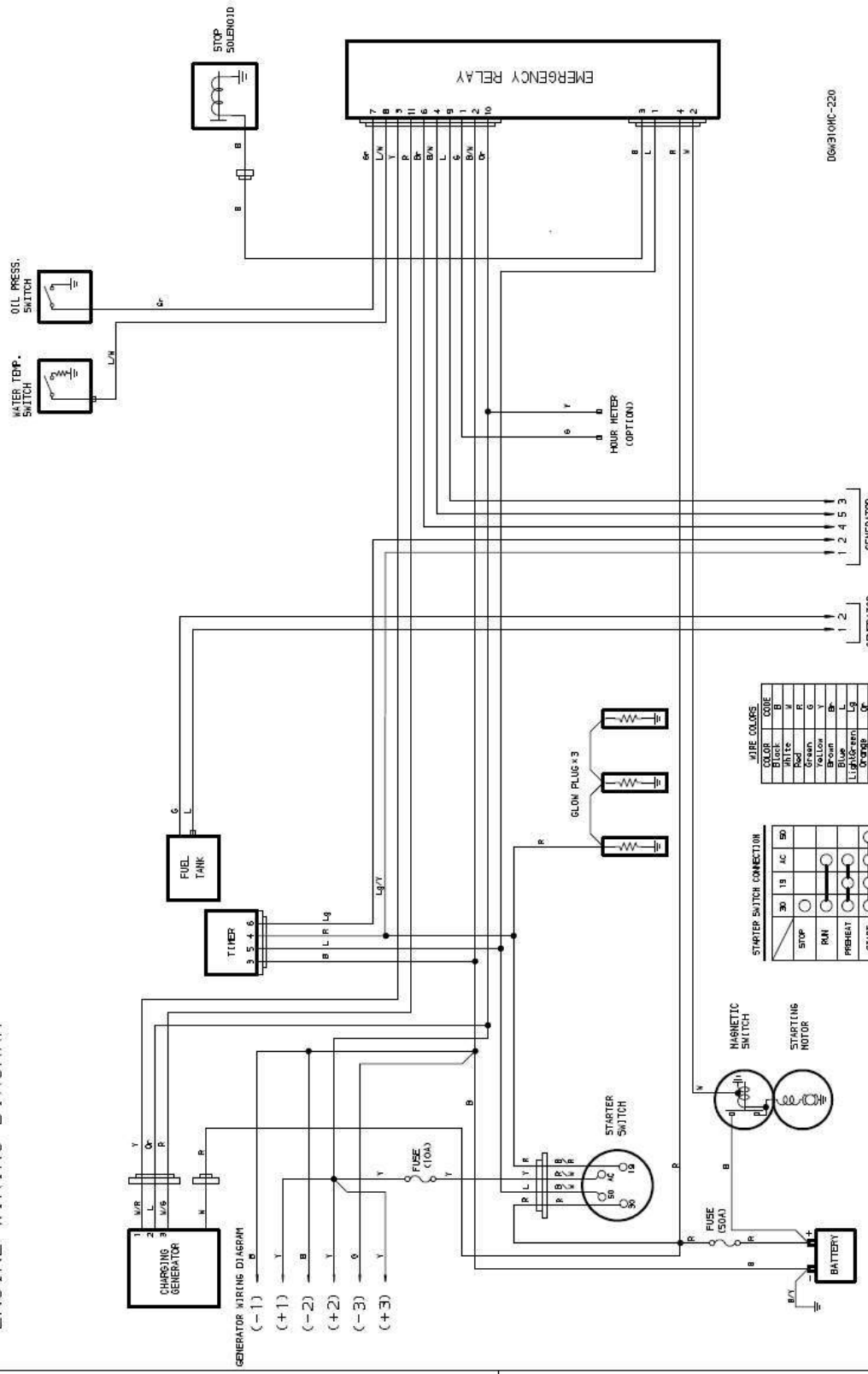
**NOTE**

1. The parenthesis letter is the color code on the mark of a terminal cap and a tape on a lead wire.
2. The number in the switch symbol and the dial symbol is the terminal number on them.
3. Lead wire stripe color is indicated in the form of base color / stripe color.
4. The Lead wire without the color expression is the black one.



ENGINE WIRING

DGW310MC-220  
ENGINE WIRING DIAGRAM



GENERATOR WIRING DIAGRAM

(-1)	B
(+1)	Y
(-2)	B
(+2)	Y
(-3)	B
(+3)	Y

STARTER SWITCH CONNECTION

	30	13	AC	50
STOP	○	○	○	○
RUN	○	○	○	○
PREHEAT	○	○	○	○
START	○	○	○	○

WIRE COLORS

COLOR	CORE
Black	B
White	W
Red	R
Green	G
Yellow	Y
Brown	Br
Light Blue	Ls
Orange	Or
Grey	Gr

NOTE  
1. Lead wire stripe color is indicated in the form of base color/stripe color.

DGW310MC-220  
POWER CONTROLLER PRINTED CIRCUIT BOARD WIRING DIAGRAM (DISPLAY)  
71918-00050-A0

**MENO**

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