

GLW-180H — GENERATOR OPERATING INSTRUCTIONS

Before Starting

1. Be sure to disconnect the electrical load and switch the main circuit breaker to the "OFF" position prior to starting the engine.
2. Never start the engine with the main circuit breaker "ON".
3. Check the lubricating oil level prior to starting the engine. Make sure the generator is level. The oil level must be maintained between two notches on the dipstick.
4. When there is not enough lubricating oil, fill the crankcase with high grade motor oil. Use a high quality detergent oil classified SC, SD or SE. (See Table 3 on page 15)

CAUTION:



- NEVER start the engine when the oil level is below the lower mark on the dipstick.
- Check the fuel level on the fuel GLWuge. When fuel is low, fill the fuel tank with clean fresh unleaded automotive GLWsoline.
- If GLWsoline spillage occurs, completely wipe up the spilled GLWsoline.

Starting

1. Place the idle control switch in the "ON" (up) position.
2. Close the choke. Adjust the opening of the choke valve according to operating conditions. When the engine is warm or the air temperature is high, close the choke valve halfway or open it all the way.
3. Confirm that the main circuit breaker on the generator control box is "OFF".
4. Set the operation switch to the "ON" position and grasp the starting rope and slowly pull it out. The resistance becomes hardest at a certain position, corresponding to the compression point. Rewind the rope a little from that point and pull out sharply.
5. If the engine fails to start, repeat the procedure.

CAUTION:



- DO NOT pull the starter rope all the way to the end.
- DO NOT release the starter rope after pulling. Allow it to rewind as soon as possible.

Warm up

1. When the engine starts, open the choke slowly.
2. Run the engine at low speed for 3 minutes without load until the engine warms up.
3. Turn the idle control switch to the "OFF" (down) position and check the voltage by referring to the voltmeter on the control box.

CAUTION:



DO NOT change the engine speed control lever which has been set at the factory prior to shipping.

1. Check the generator for abnormal noise and smells. Then connect the load to the receptacles of the generator.
2. Switch the main circuit breaker to the "ON" position and turn the idle control switch to the "ON" (down) position for normal (load) engine operation.

Operation

Check the voltage by referring to the voltmeter on the control box. When the voltmeter indicates 120 volts, 120 volts from the 120V receptacles and 240 volts from the 240V receptacle can be obtained at the same time. Refer to Figure 1, Controls and Indicators, item 4 on page 10.

Stopping the Engine

CAUTION:



NEVER stop the engine suddenly while running at high speeds.

1. Remove the load from the generator. Place the circuit breaker in the "OFF" position. Refer to Figure 1, item 5 on page 10. Run the engine (no-load) with the idle control switch set to the ON position for three to five minutes, then stop the engine.
2. Turn the START/STOP switch to the "STOP" position.
3. Never stop the engine suddenly while running at high speed.
4. Close the fuel cock.

GLW-180H — WELDER OPERATING INSTRUCTIONS

Welding Cables and Polarities

Connect the welding cables (Figure 4) to the welder's output terminals located on the control panel. The output terminals have (+) and (-) polarities. Select the appropriate polarities according to the application (See Welding Application, Table 5).

NOTE
Attach terminal connectors at the end of each cable. **NEVER** connect exposed wires (Figure 5) directly to the terminal. Exposed wiring may cause shocks or di-electric breakdown from poor contact.

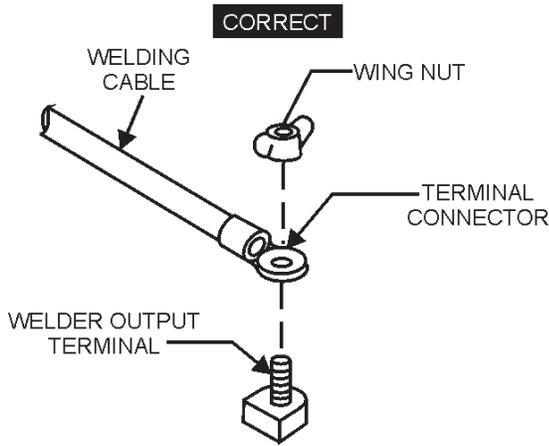


Figure 4. Welding Cable Connection (Correct)

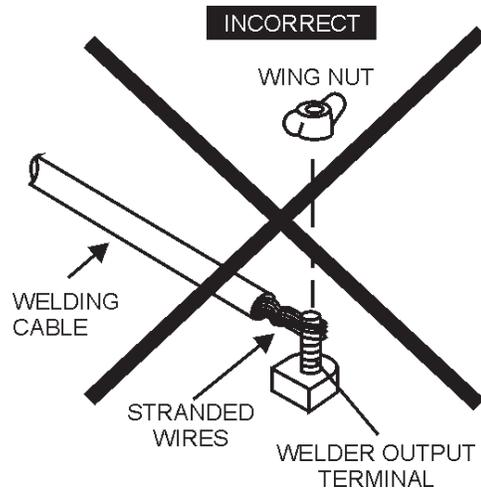


Figure 5. Welding Cable Connection (Incorrect)

Table 4. Welding Applications

POLARITY	WELDING METHOD	TYPICAL APPLICATIONS
Straight Polarity	(+) ... Grounding (Base Metal)	Welding steel materials for general structures, and thickness plates.
	(-) ... Welder Holder	Arc welding for copper alloy
Reverse Polarity	(+) ... Welder Holder	Build-up welding, ARC welding of thin plates
	(+) ... Grounding (Base Metal)	Arc welding of stainless steel

Note: Regarding the selection of the polarity in the CV characteristics, follow the instructions from the wire maker.

GLW-180H — WELDER OPERATING INSTRUCTIONS

Welding Cables

The required cable welding size is governed by this simple rule: The longer the welding cable, or the greater the welding current, the thicker (copper strands) the cable must be.

Select a welding cable with adequate thickness according to the cable length and welding amperage (current) as listed in Table 5.

Welder Output Current	Cable Length	Cable Size
100	50	No. 3
	100	No. 3
	125	No. 3
	150	No. 3
	200	No. 3
	250	No. 3
	300	No. 3
150	50	No. 3
	100	No. 3
	125	No. 3
	150	No. 3
	200	No. 2
	250	No. 1
	300	No. 1
200	50	No. 3
	100	No. 3
	125	No. 3
	150	No. 2
	200	No. 1
	250	No. 1/0
	300	No. 1/0

CAUTION:



To prevent serious accidents, **ALWAYS** turn off the generator/welder (operation switch) and set the main circuit breaker to the **OFF** position.

Duty Cycle

The duty cycle for the generator/welder is based on 10 minute intervals. See Table 6 below.

Welding Current	110 or Less	125	145	160	180
Duty Cycle%	100	80	60	50	40

CAUTION:



NEVER switch the **current range selector switch** during any welding operation.

1. Connect the welding cables (electrodes) to the generator's output terminals (Figure 4). For **minimum** welding current (min-130 amps), use an eyelet terminal connector with a 5/64" to 1/8" diameter, for **maximum** welding current (110 - max amps), use an eyelet terminal connector with a 3/32" to 5/32" diameter
2. Set the current **regulator control switch** on the control panel (Figure X) to the desired setting. The **inner** scale is for **low** current, the **outer** scale is **high** current output.

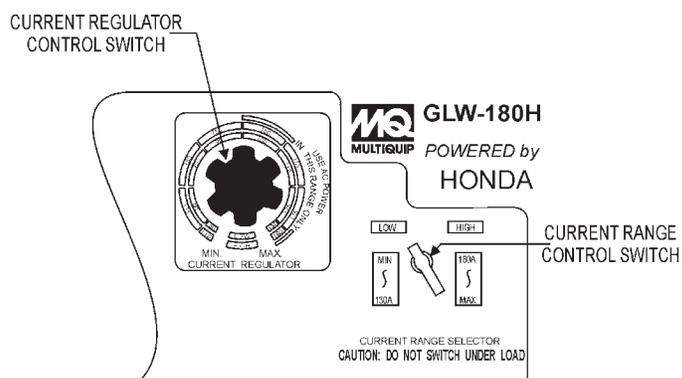


Figure 6. Current Regulator/Range Switches

3. Set the current **range control switch** (Figure 7) to either **low** or **high**. **DO NOT** change the position of this switch while welding.