

Model No. PGD16iSCO

# 1600 WATT INVERTER GENERATOR OPERATOR'S MANUAL



**WARNING:** This product, its exhaust and other substances that may become airborne from its use may contain chemicals, including lead, known to the State of California to cause cancer, birth defects, or other reproductive harm. Wash hands after handling. For more information, visit [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov).

	<b>DO NOT RETURN TO STORE!</b>
	<b>HAVE QUESTIONS OR NEED SERVICE?</b>
	866-591-8921
	support@pulsar-products.com

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# Introduction

Thank you for choosing Pulsar Products!  
This manual provides instruction on how to operate and use your generator safely and correctly; be sure to read and understand this manual before using your generator. If you have ANY questions, please phone 866.591.8921 M-F or support@pulsar-products.com BEFORE using your generator.

All details and images in this Operator's Manual are believed to be accurate at the time of publication.

Pulsar Products reserves the right to make updates to this manual at any time.

Please contact Pulsar Support at 866.591.8921 or support@pulsar-products.com for the latest updates.

This manual is a permanent part of the generator set. If the generator is resold, kindly include this manual with the generator.

# Safety Warnings and Notices



DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



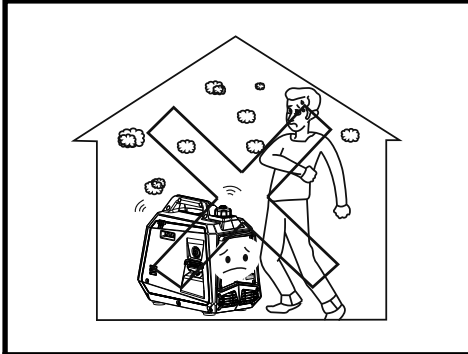
CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



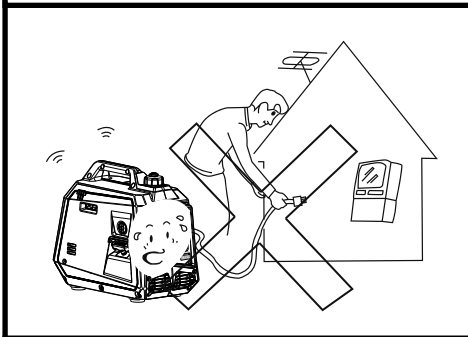
Failure to follow the instruction may result in the damage to your generator and other property.

# Safety Instructions

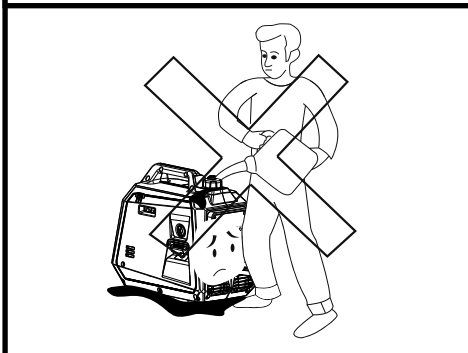
Before operating your generator, you must read and understand the manual and familiarize yourself with the safe operation practices.



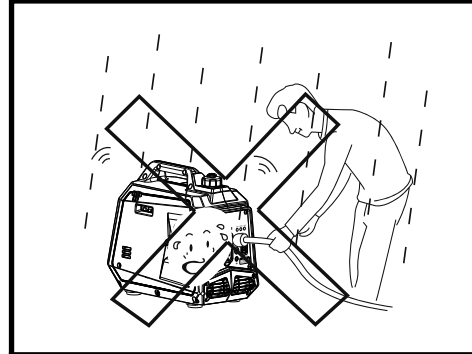
**NEVER use a generator indoors! Exhaust and Carbon Monoxide can KILL YOU in minutes.**



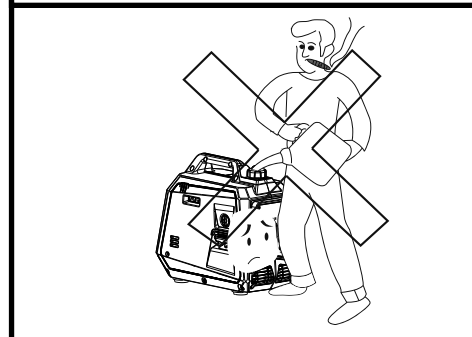
**This is a portable generator, DO NOT attempt to connect it to any mains panel.**



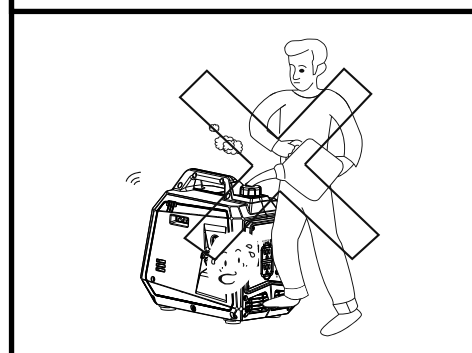
**Take care not to spill any gasoline and wipe up any accidental spills at once.**



**Avoid running the generator in the rain or very high, condensing humidity.**



**Never smoke or allow any heat source near the generator while refueling it.**



**Always shut down the generator and allow it to cool before refueling!**

# Safety Instructions

## NOTE

Improper treatment of the generator could damage it and shorten its life.

- Use generator only for intended applications.
- If you have questions about intended use, ask a dealer or contact your local Pulsar service center.
- Operate generator only on solid, level surfaces.
- DO NOT expose the generator to excessive moisture, dust, dirt, or corrosive vapors.
- DO NOT insert any objects through cooling slots.
- If connected devices overheat, turn them off and disconnect them from the generator.

Shut off the generator if:

- Electrical output is lost.
- Equipment sparks, smokes, or emits flames.
- Unit vibrates excessively.

## Parallel Kit Precautions



To prevent serious injury, death, and generator and/or equipment damage from electric shock and fire:

1. Follow Parallel Kit instructions provided with it for connection and use of a Parallel Kit.
2. Only connect two identical Inverter Generators together using a Parallel Kit.
3. Connect Parallel Kit only to terminals marked "Parallel" on the front of the Generator.
4. Do not remove or connect a Parallel Kit while the Generator is running.
5. Do not use a Parallel Kit that is attached to only one Generator.

## Carbon Monoxide Safety

### Carbon Monoxide

Generators are very convenient, but they can also be very dangerous. All fuel-burning appliances and equipment release a poisonous gas called carbon monoxide. Carbon monoxide (also known as CO) can be dangerous for humans and pets, even in small amounts, because it blocks oxygen from getting into your body. Carbon monoxide poisoning can lead to death in a very short time. It is odorless, tasteless and invisible, so you may be exposed without knowing it. That is why carbon monoxide is sometimes called "the silent killer."

## CO Sentry

The CO Sentry system was created to protect from dangerous carbon monoxide. Just like the detector for your home the CO Sentry tests the air for dangerous levels of carbon monoxide. If dangerous levels of carbon monoxide are detected this generator will automatically shut off.



Automatic shutoff accompanied with a flashing RED light in the CO Sentry portion of the control panel is an indication that the generator was improperly located. If you start to feel sick, dizzy, weak, or carbon monoxide detectors in your home indicate an alarm, get to fresh air immediately. Call emergency services. You may have carbon monoxide poisoning.

## CO Sentry Indicator Lights

### RED

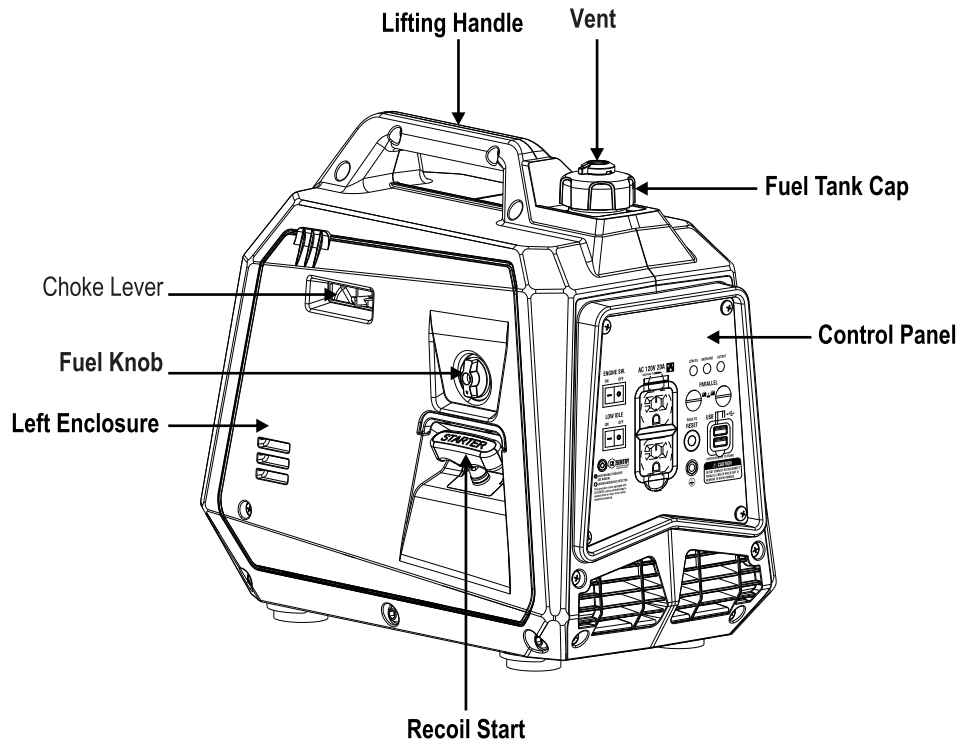
Carbon monoxide has accumulated around the generator. After shut-off, the RED indicator light in the CO Sentry area of the control panel will flash to provide notification that the generator was shut off due to an accumulating CO hazard. The RED light will flash for at least five minutes after a CO shut-off. Move the generator to an open, outdoor area far away from occupied spaces with exhaust pointed away. Once relocated to a safe area, the generator can be restarted. Introduce fresh air and ventilate the area where the generator had shut down.

### YELLOW

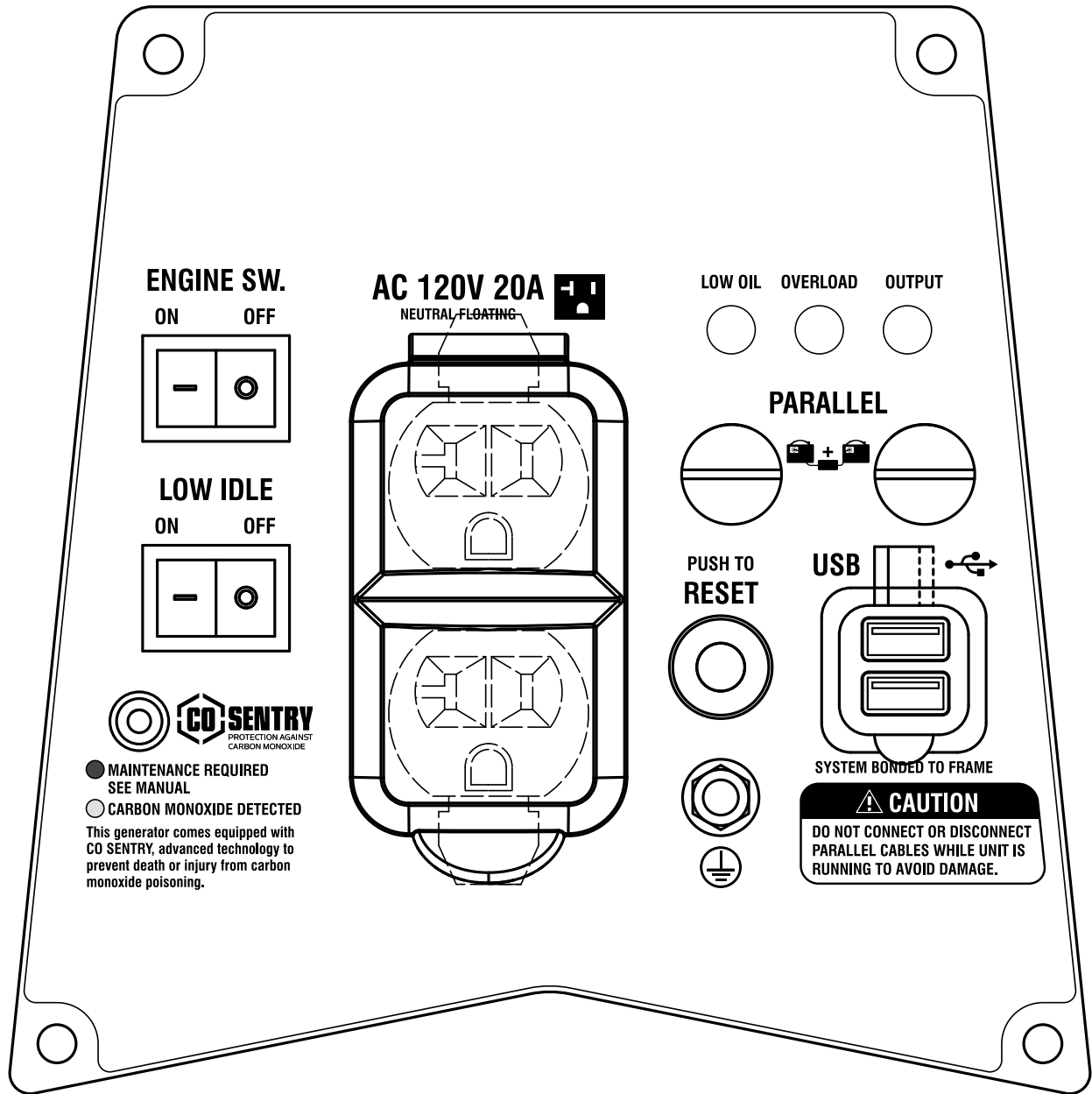
A CO Sentry system fault occurred. When a system fault occurs, the generator is automatically shut down and the YELLOW indicator light in the CO auto-shutoff area of the control panel will flash to provide notification that a fault has occurred. The YELLOW light will flash for at least five minutes after a fault. The generator can be re-started, but may continue to shutoff.

# Names of Components

Before operating your generator, you must read and understand the manual and familiarize yourself with the safe operation practices.



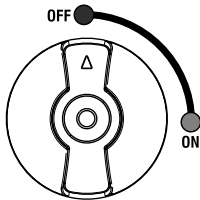
# Control Panel



# Control Functions

## Fuel Knob

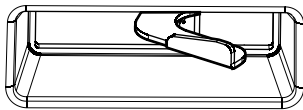
OFF - With the fuel valve closed, the engine will not run.  
ON - With the fuel valve open, the engine can start normally.



FUEL KNOB

## Choke Lever

START (CHOKE) - (only used for cold starting) Ignition circuit is on, fuel valve is open, choke is closed.

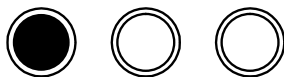


## NOTICE

If the engine is hot, do not use the choke.

## Oil Indicator (Yellow)

### INDICATOR LIGHT



LOW OIL OVERLOAD OUTPUT

When the engine oil level drops too low the engine will automatically shut down and the oil indicator illuminates. The engine can be restarted only after the engine oil is filled correctly.

**Tip:** If the engine does not start, turn the fuel switch to the "ON" position and pull the recoil handle. If the oil lamp flashes for a few seconds, it indicates that the oil is insufficient. Fill the oil to the high mark of the dipstick and restart it.

## Overload Indicator (Red)

### INDICATOR LIGHT



LOW OIL OVERLOAD OUTPUT

When the overload indicator illuminates, the generator has detected excess electrical load and the circuit breaker may open (trip).

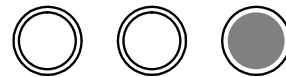
If the overload indicator illuminates and the generator has no electrical output, perform the following:

- 1) Disconnect all electrical loads then and shut down the generator.
- 2) Reduce total draw of electrical loads connected, less than rated output.
- 3) Confirm there is no debris blocking the air inlet, correct as necessary.
- 4) Next, restart the engine and add electrical load in gradual steps.

**Tip:** When using electrical equipment with high starting current (such as compressors, saws, pumps, etc.), the overload indicator may illuminate for a few seconds, this is normal.

## AC Indicator (Green)

### INDICATOR LIGHT

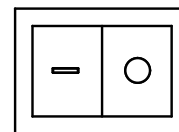


LOW OIL OVERLOAD OUTPUT

The AC indicator illuminates when electrical output is stable.

## Low Idle (Fuel Saving) Switch

### LOW IDLE



ON OFF

1) "ON"

When low idle switch is switched to "ON" position engine speed is reduced when the generator is under light load. This feature will reduce fuel consumption and noise.

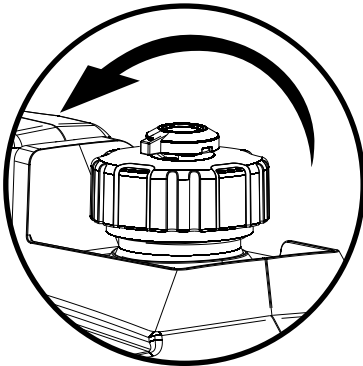
## Control Functions

### 2) "OFF"

When low idle switch is set to the "OFF" position, the engine will run at rated speed, regardless of connected load.

### Fuel Tank Cap

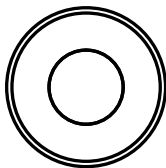
Remove fuel tank cap by unscrewing it counterclockwise.



### RESET

If the inverter is overloaded, the reset breaker will trip. The engine will continue to run, but there will be no output from the inverter. Unplug the devices and reduce the load. Push in the reset breaker to reset it.

**PUSH TO  
RESET**



### Grounding Terminal

If grounding is required by code or application, follow the guidelines on page 9.



## Preparing Your Generator

### Fuel

**⚠ DANGER**

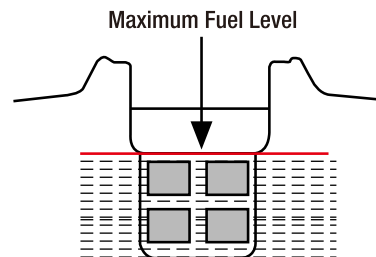
Gasoline is highly flammable and toxic. You must read and understand ALL safety instructions before fueling your generator.

Do not overfill the fuel tank! Heat and vibration can cause fuel to leak from an over-filled fuel tank.

After refueling, confirm that the fuel tank cap has been tightened.

**NOTICE**

Remove fuel tank cap and add gasoline to the red horizontal line.



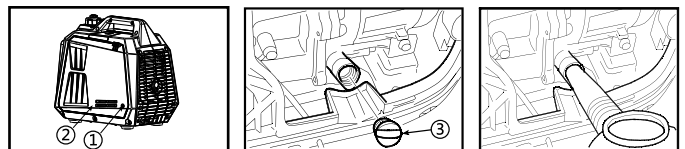
After fueling, wipe up any gasoline residue with a soft cloth to prevent damage to the plastic enclosures.

Fuel tank capacity: 0.63 US gallon

### Engine Oil

Your generator ships without engine oil. Do not attempt to start the generator without sufficient engine oil in the crankcase.

- 1) Place your generator on a flat, stable surface.
- 2) Screw out the bolts ① on the right service access panel counterclockwise and remove the right service access panel ②.
- 3) Unscrew oil dipstick ③.





## Preparing Your Generator

- 4) Use a funnel to add 11 fluid ounces (0.33 L) of 10W-30 engine oil to the crankcase, verify oil level with the dipstick.
- 5) Reassemble oil access cover and tighten the bolts.

### Pre-use inspection

## NOTICE

Even when not in use the generator is potentially hazardous. Follow the checklist below before starting the generator. If any problems are found, do not use the generator until it has been repaired by an authorized Pulsar Products service center.

### Fuel

Check fuel level; add if necessary.

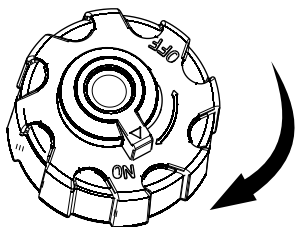
### Oil

Check oil level; add if necessary.

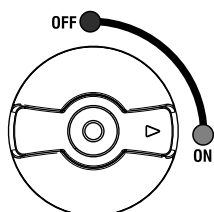
Check for any oil leaks.

## Starting The Generator

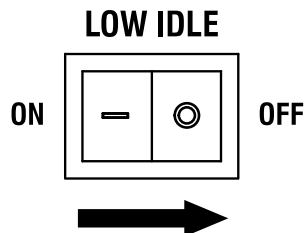
- 1) Disconnect all electrical loads.
- 2) Turn ventilation knob of fuel tank cap to "ON".



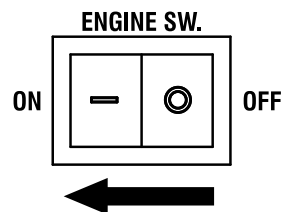
- 3) Turn the fuel knob to "ON".
- 4) Move Low Idle (Energy Saving) Switch to "OFF".



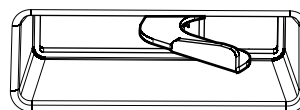
FUEL KNOB



- 5) Move engine switch to "ON".

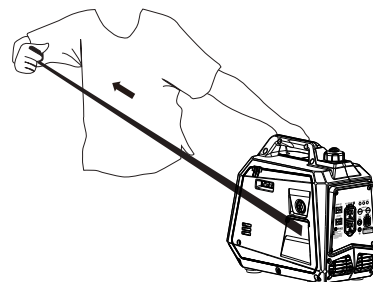


- 6) Move the choke lever to "START".

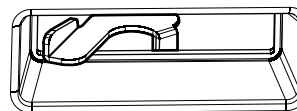


**Tip:** When the engine is warm, choke is not necessary.

- 7) When starting the generator, grasp the handle firmly with your free hand to stabilize the generator.
- 8) First gently pull the recoil rope until resistance is felt, then let it retract, then pull it swiftly at once.



- 9) After starting, move choke lever to "RUN".

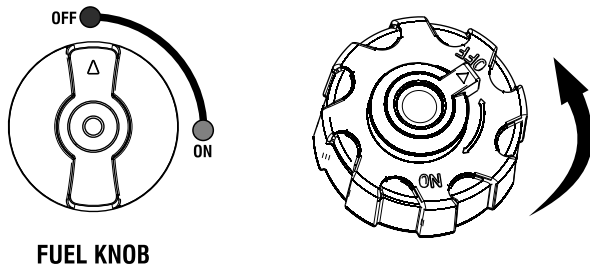


## Shutting Down the Generator

- 1) Remove any connected electrical loads.
- 2) Move engine switch to "OFF".
- 3) Turn the fuel knob to "OFF".

## Shutting Down the Generator

- 4) After the generator has completely cooled, turn ventilation knob of fuel tank cap to "OFF".



FUEL KNOB

## Using the Generator

### Operating Range of the Generator

- Ambient air temperature: 23F-104F (-5~40°C)
- Relative humidity <95%
- Recommended elevation <5,000 feet (1,500m)

### Ideal Atmospheric Conditions

- Ambient air temperature: 77F (25°C)
- Relative humidity: 30%
- Atmospheric pressure: 1,000 millibars

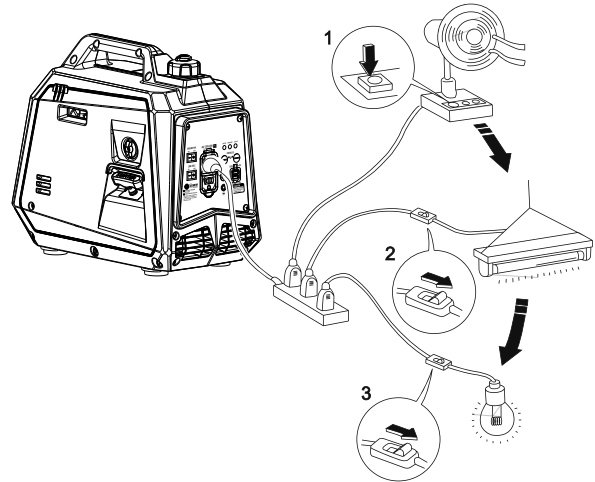
### Standard Deration:

- Every 9°F (5°C) increase in ambient air temperature will reduce generator output by about 2%
- Every 30% of increase in relative humidity of air will reduce generator output by about 1.5%
- Every 1,000 feet, (300m) elevation increase will reduce generator output by about 4.5%

### Connecting Loads to the Generator

- ① Start the engine
- ② Move Low Idle Switch to "OFF"
- ③ Insert the plug(s) into AC outlet(s)
- ④ Make sure the AC indicator is illuminated
- ⑤ Switch on electrical equipment

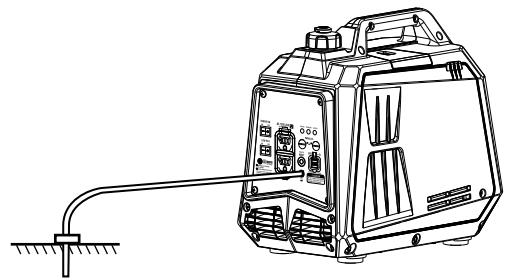
**Tip:** If total load is less than half rated capacity, move the Low Idle Switch to 'ON'. If the generator supplies power to multiple devices plug-in those devices in from large to small according to rated electrical load.



### Generator Grounding

If grounding is required by code or application, follow the guidelines below. If you have ANY doubt, contact a licensed electrician.

- ① Use grounding wire of minimum 12 gauge
- ② Connect one end of grounding wire to the grounding bolt on the control panel.
- ③ Connect the other end of the grounding wire to a suitable ground point.



### Range of Application

Before using the generator, please make sure that total load is within rated load range of the generator, otherwise the generator may be damaged.

# Service and Maintenance

Good maintenance is essential for safe, economical operation and long service life. The maintenance schedule is below:

Maintenance Cycle		Each Week	Break-In, then Maintenance at 1 Month or 50 Hours Use	Quarterly Maintenance every 3 months or 50 Hours Use	Annual Maintenance or 100 Hours Use
Item					
Engine oil	Check - Fill	√			
	Replace		√	√	√
Air Cleaner Element	Inspection	√			
	Clean		√		
	Replace			√	√
Carburetor Float Bowl	Clean				√
Spark Plug	Clean - Adjust				√*
Spark Arrester	Clean			√	
Idle Speed	Clean - Adjust				√
Valve Clearance **	Clean - Adjust				√
Fuel Tank and Fuel Filter **	Clean				√
Fuel Hose	Inspection	Every Two Years			
Cylinder Head, Piston	Remove Carbon Deposit **	Displacement <225cc, every 125 hours; displacement ≥225c, every 250 hours.			
** These tasks should be completed by an authorized Pulsar service center.					

# Service and Maintenance

## NOTICE

If the generator is used in high temperature or under high load, change the oil every 25 hours.

If the generator is used in a dusty or abrasive environment, service the air filter element every 10 hours; replace it every 25 hours.

If you miss a maintenance cycle, perform the maintenance as soon as possible per the table above.

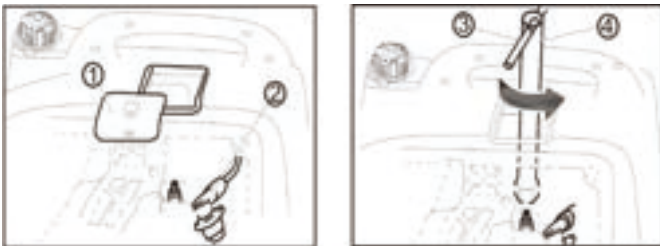
## ! DANGER

Shut down the engine and allow it to cool before performing any service. Place the generator on a flat, stable surface. Remove the spark plug boot to prevent accidental engine start.

NEVER USE ANY GENERATOR INDOORS or in any poorly ventilated area. Engine exhaust contains carbon monoxide which can KILL you and others in the area.

## Spark Plug

- 1) Remove access cover and spark plug boot.
- 2) Use the (included) thin-wall T-socket wrench to remove the spark plug by turning it counter-clockwise.



- 3) Inspect spark plug for discoloration and remove carbon deposits; replace if necessary.
- 4) Adjust the gap 0.7-0.8mm.

Spark Plug #NGK C7HSA  
Gap: 0.7-0.8mm



- 5) Install new or serviced spark plug in reverse order.

Spark Plug torque: 13-15 Nm; 115-133 in lbs.

**Tip:** If no torque wrench is available turn the spark plug  $\frac{1}{4}$  -  $\frac{1}{2}$  turn after the gasket contacts the cylinder head.

## Adjustment of the Carburetor

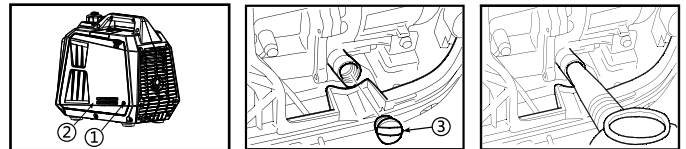
This carburetor is not adjustable, only maintenance and cleaning are possible. We strongly recommend leaving this work to an authorized Pulsar Service center.

## Oil Change

## ! WARNING

Do not drain the oil immediately after turning off the generator; allow it to cool completely before servicing it.

- 1) Raise the generator up on support blocks on a flat, stable surface.
- 2) Screw out the bolts ① on the right service access panel counterclockwise and remove the right service access panel ②.
- 3) Unscrew oil dipstick ③.
- 4) Place an oil pan under the engine, tilt the generator toward the oil pan until all oil has drained; wipe up any spills.



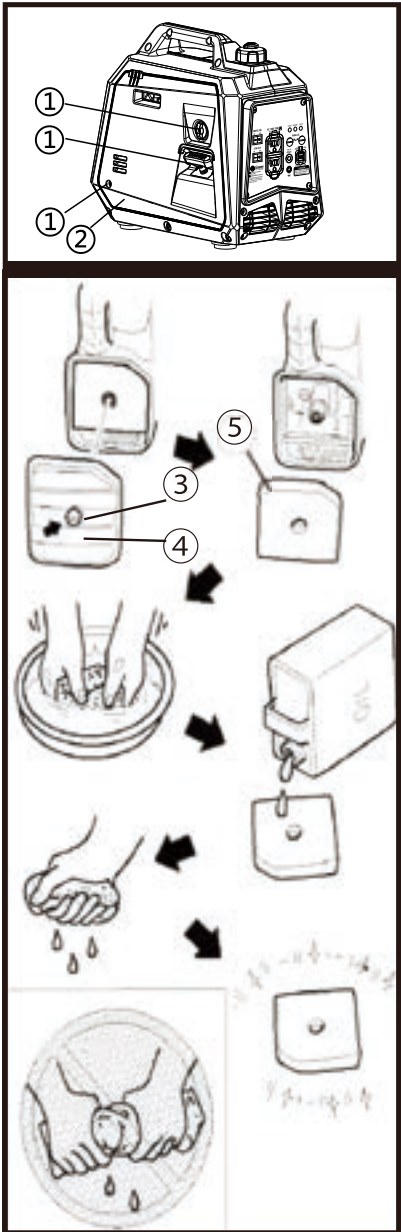
- 6) Refill crankcase with 11 ounces (0.33L) 10w-30 engine oil; check with dipstick.
- 7) Tighten oil dipstick, replace oil access cover, and tighten the bolts.

## Air Filter

A dirty air filter can cause poor performance and engine damage. Perform inspection and cleaning per the maintenance schedule on page 9.

# Service and Maintenance

- 1) Remove the left service access panel bolts ①, fuel knob bolt ①, recoil handle cover bolts ①, remove the left service access panel ②.
- 2) Remove screws ③, to remove air filter housing ④;
- 3) Remove foam filter element ⑤;
- 4) Clean foam filter element with a mild soap solution, rinse well and let it dry.
- 5) Place a few drops of engine oil on the foam filter element and squeeze gently to distribute the oil film evenly.
- 6) Reinstall the air filter element in reverse order.

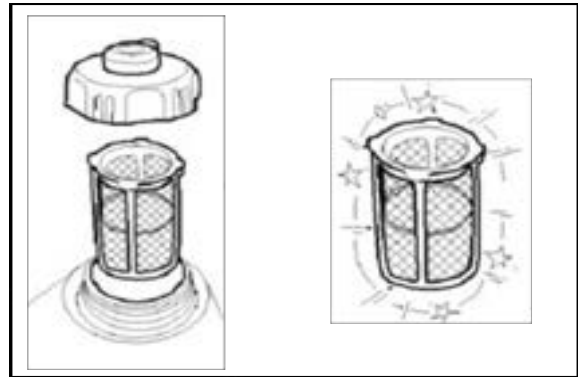


## Fuel Filter Screen



**NEVER** approach the generator while smoking or with any ignition source!

1. Remove fuel tank cap and fuel tank filter screen.
2. Clean fuel tank filter screen of any debris or deposits
3. Replace fuel cap tightly.



## Storage and Transport

### Generator Long Term Storage

- 1) Turn off the generator and allow it to cool completely.
- 2) Remove the spark plug boot to prevent accidental engine start.
- 3) Remove bolts and right service access panel.
- 4) Using a Phillips screwdriver, open fuel drain valve on the carburetor, and drain remaining fuel into an approved gasoline container.
- 5) Tighten fuel drain valve.
- 6) Change engine oil per page 9.
- 7) Remove spark plug and instill one teaspoon (5ml) new engine oil into combustion chamber. Pull the recoil a few times, to distribute oil, then reinstall the spark plug.
- 8) Replace right service access panel.
- 9) Gently pull recoil handle until you feel resistance, indicating the intake and exhaust valves are closed.
- 10) Store the generator in a clean and dry area.

# Storage and Transport

## Generator Transport

Pulsar Products recommends that the generator should be empty of fuel when transported unless the generator is secured in an open truck bed and secured from tipping. In this case, follow the guidelines below:

- Do not completely fill the fuel tank, leave some expansion space.
- Do not run the generator while transporting.
- Protect from direct sunlight.
- Do not transport the generator across rough terrain.

# Troubleshooting

## Engine No-Start

### Fuel System

- 1) There is no fuel.
- 2) Fuel doesn't reach combustion chamber.
- 3) Contaminated or old fuel.
- 4) There is debris in the fuel valve.
- 5) Carburetor is fouled, service carburetor.

## Insufficient Engine Oil

Oil level is too low.

## Ignition System

- 1) Verify that the engine switch is ON.
- 2) No spark from ignition coil failure.
- 3) Spark plug is fouled, service it per page 11.

## Low Compression

- 1) Worn out engine.
- 2) Cylinder head bolts have loosened, have an authorized Pulsar Service Center re-torque them properly.
- 3) Head gasket leak.

## Engine Runs, No Power Output

- 1) Ensure all circuit breakers are pushed in.
- 2) If generator was exposed to moisture or rain, move it to a dry location for several hours.
- 3) Vibration may have caused one or more connectors to loosen over time, check with Pulsar Technical Support for guidance.
- 4) Check electrical receptacles for damage.
- 5) Generator may be overloaded. Remove load, shut down, then restart the engine.

# Technical Parameters

	Item	Parameter
Engine	Engine Model	145F/P
	Engine Type	Single-cylinder, four-stroke, air-cooled, overhead valve
	Bore size x Stroke (mm)	45×36
	Displacement (cc)	57
	Compression Ratio	8.5±0.2
	Cylinder Head	OHV
	Cooling Mode	Forced Air
	Output Power (kW/r/min)	1.4/5000
	Starting Method	Recoil
	Fuel Tank Volume	0.63 Gallon (2.4L)
	Fuel Type	Gasoline
	Lubricating Oil Capacity	11 Ounces (0.33L)
	Engine Oil Type	SAE 10w-30
	Lubrication Mode	Splash Lubrication
	Noise dB (@7m)(1/4 load)	56
Generator	Rated Power (kW)	1.2
	Rated Voltage (V)	120
	Rated Frequency (Hz)	60
	Rated Power Factor	1
	Phase Number	Single Phase
Configuration	Motor	Brushless (Permanent Magnet)
	Voltage Regulation	Inverter Regulation
	Frequency Regulation	Inverter Regulation
	Overall Dimension	17.1"x9.6"x15.7" (454 x 244 x 400)
	Net Weight	27.5lbs.(12.5kg)

# Electrical Schematic

## 60Hz, 120V Electrical Schematic Diagram

