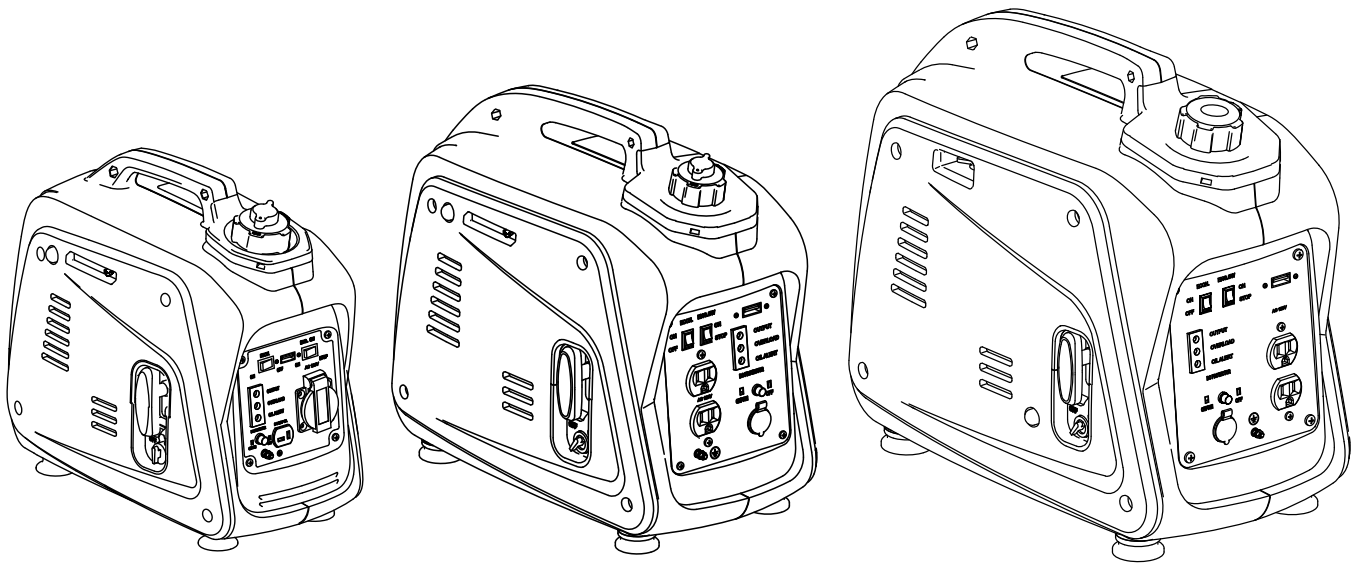




**DIRTY HAND
TOOLS**

**950 Watts (104609) / 1200Watts (104610) / 2000Watts (104611)
PORTABLE INVERTER GENERATORS**



MODELS #104609, #104610 and #104611

Operation Manual



This safety alert symbol identifies important safety messages in this manual. Failure to follow this important safety information may result in serious injury or death.

Part # 104827 Rev C

Designed & Engineered in Colorado, USA



Assembled with Foreign & Domestic Components

For Service or Questions

Call 1-877-487-8275

720-287-5182

www.dirtyhandtools.com

Dirty Hand Tools® is a brand of



FrictionlessWorld

1100 W 120th Ave, Suite 600
Westminster, CO 80234 • 720-287-5182

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Important Safety Information



WARNING

WARNING: Read and thoroughly understand all instructions and safety information before operating this portable power generator. Failure to do so may cause serious injury or death. Do not allow anyone to operate this portable power generator who has not read this manual. As with all power equipment, a portable power generator can be dangerous if used improperly. Do not operate this portable power generator if you have doubts or questions concerning safe operation.



Call our customer service department at **720-287-5182**, **1-877-487-8275**, or visit www.dirtyhandtools.com if you have any questions or concerns about the safe operation of this equipment.



DANGER

Intended Use

Do Not Use the portable power generator for any purpose other than for which it was designed. Any other use is unauthorized and may result in serious injury or death.

Personal Protective Equipment

While this portable power generator operates at a relatively low noise level, about 60 dB, you may want to wear ear plugs or noise deafening headphones when using.



CAUTION

People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to a heart pacemaker could cause pacemaker interference or pacemaker failure. Caution is necessary when near the engine's magneto or recoil starter.

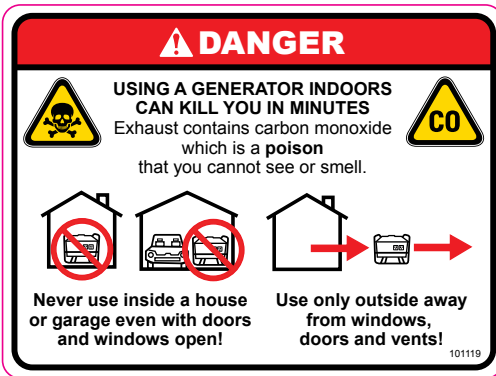
CALIFORNIA PROPOSITION 65 WARNING

Engine exhaust, some of its constituents and certain product components contain or emit chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.

Important Safety Information

General Safety

Failure to follow warnings, cautions, assembly and operation instructions in the Operation Manual may result in serious injury or death.



READ THE OPERATION MANUAL BEFORE OPERATION.

- **Do not** permit children to operate this equipment at any time. Do not permit others that have not read and understood the complete Operation Manual to operate this equipment.
- **Do not** operate the portable power generator when under the influence of alcohol, drugs or medication.
- **Do not** allow a person who is tired or otherwise impaired or not completely alert to operate the portable power generator.



NEVER OPERATE INDOORS

Exhaust fumes contain Carbon Monoxide, a deadly poison.

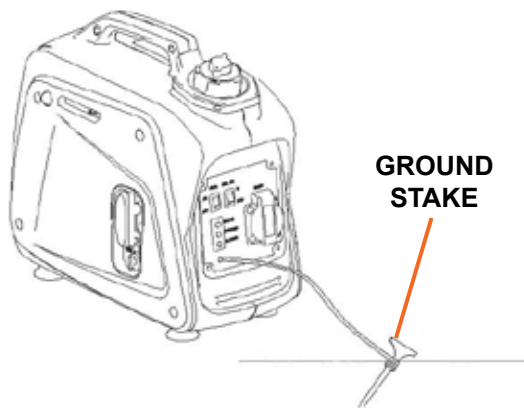


Figure 1

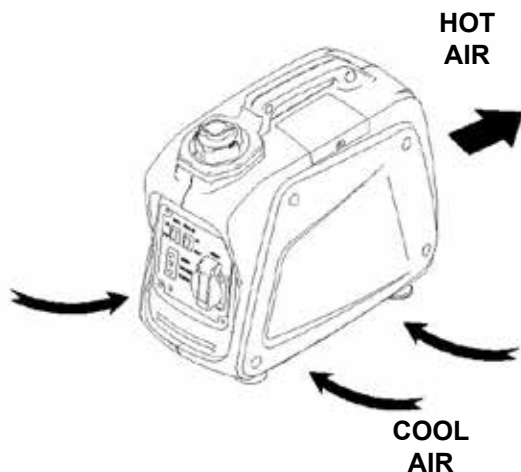


Figure 2


- Attach a grounding wire and stake before starting the generator (see Figure 1).
- Operate the generator on a level, flat surface in a well ventilated, dry location, away from other equipment (see Figure 2).
- Keep all safety guards in place and in proper working order.
- Do not transport the generator with the engine running.
- Do not tilt the machine while the engine is running.
- Do not leave the generator unattended when it is running.
- Never operate the generator when exposed to rain, snow or other moisture.
- Never touch the generator with wet hands or wet clothing.
- Operate at least 3 feet away from other equipment, walls, buildings or anything that would block access to cool air.
- Do not connect the generator to any other power system including other generators.
- Avoid touching the muffler as it may be hot.
- Always turn the engine off when refueling.
- Transport only by using the carrying handle.

Important Safety Information

- Never run the engine in an enclosed area or without proper ventilation as the exhaust from the engine contains carbon monoxide, which is an odorless, tasteless, and deadly poisonous gas.
- Fill the gasoline tank outdoors with the engine off and allow the engine to cool completely.
- Do not operate the engine without an air cleaner or with the side cover removed.
- The muffler and engine become very hot with use and can cause a severe burn; do not touch. Allow the engine to cool before refueling, doing maintenance, or making adjustments.

Safety Decals


Safety labels on the portable power generator are to remind you of important information while you are operating the unit. Make sure all safety warning decals are attached and in readable condition. Replace missing or defaced decals. Contact Dirty Hand Tools at **1-877-487-8275** for replacement decals.



WARNING

This product can expose you to chemicals including CARBON MONOXIDE, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

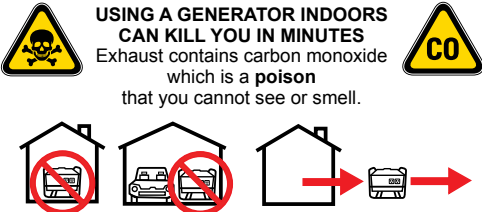
108275



WARNING

This product can expose you to chemicals including CARBON MONOXIDE, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

108276



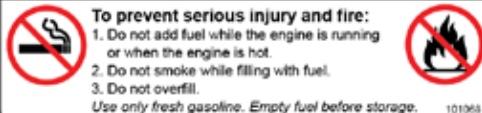
⚠ DANGER

USING A GENERATOR INDOORS CAN KILL YOU IN MINUTES
Exhaust contains carbon monoxide which is a **poison** that you cannot see or smell.

Never use inside a house or garage even with doors and windows open!

Use only outside away from windows, doors and vents!

101119




⚠ WARNING

To prevent serious injury and fire:

1. Do not add fuel while the engine is running or when the engine is hot.
2. Do not smoke while filling with fuel.
3. Do not overfill.

Use only fresh gasoline. Empty fuel before storage.

101061





⚠ WARNING

To prevent serious injury, electric shock and property damage:

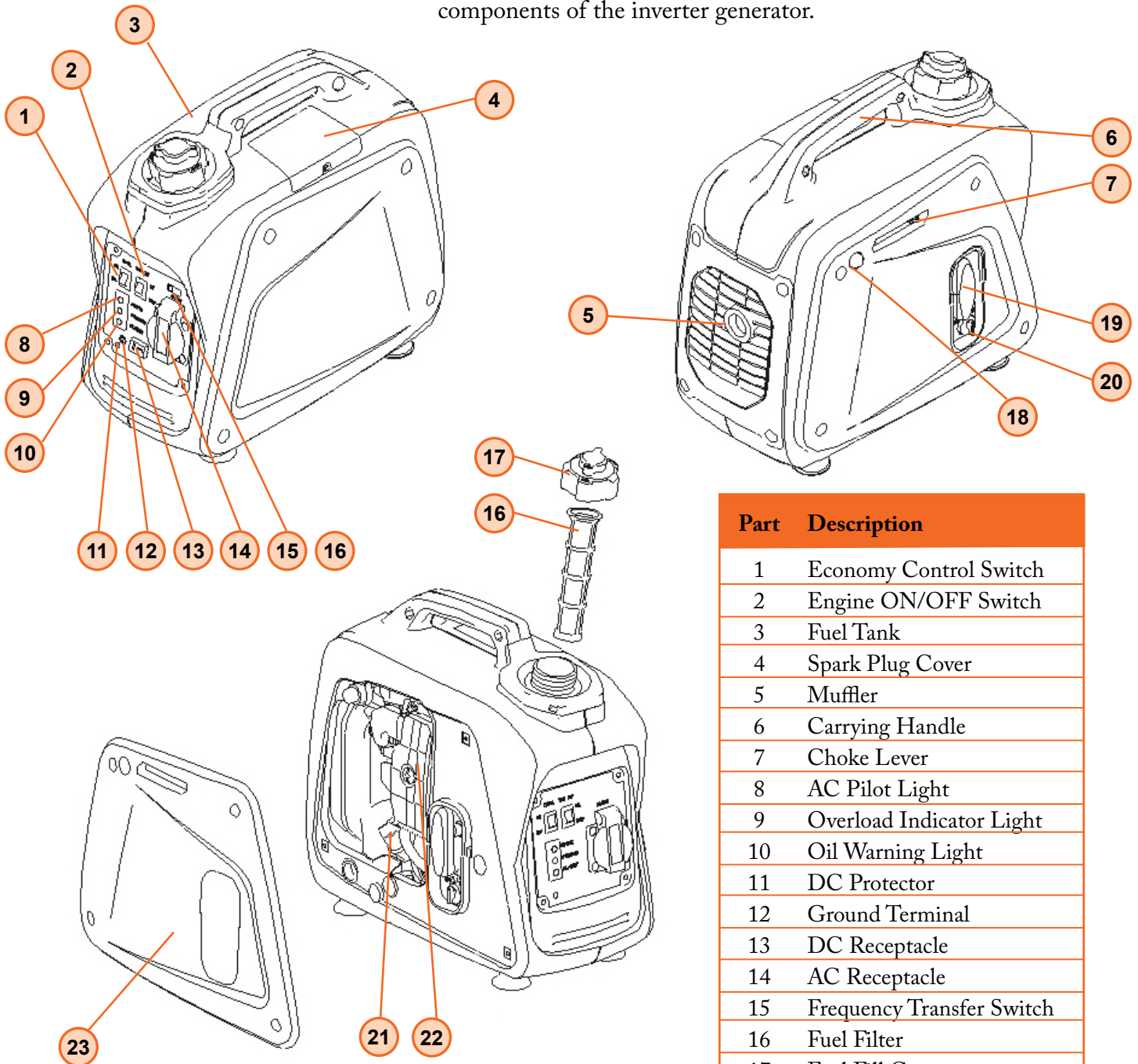
1. Keep access doors on enclosures locked.
2. Have licensed electrician do all electric work including ground connection and maintenance.
3. Keep dry.
4. Keep all guards in place and in proper working condition.
5. Wear ANSI-approved safety goggles during setup and maintenance.
6. Turn switch off and remove key after use.
7. Read Operator's Manual before setup or use.
8. **Add engine oil before starting.** Starting without oil will ruin the engine and void warranty. Read maintenance information in the Operator's Manual.
9. Unconditioned electrical equipment can damage sensitive equipment. Do not use to power sensitive electric equipment without appropriate line conditioner sold separately.

101130

 <p>⚠ WARNING</p> <p>To prevent serious injury: Operation of this equipment may create sparks that can start fires around dry vegetation or flammable materials. A spark arrestor may be required. Operator should contact local fire agencies for laws and regulations regarding fire prevention requirements.</p>	 <p>⚠ CAUTION</p> <p>HOT MUFFLER! TO PREVENT BURNS, DO NOT TOUCH MUFFLER OR OTHER EXHAUST COMPONENTS.</p> <p>101131</p>
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Components

The portable power generator is assembled at the factory. Illustrated below are the operational controls and maintenance components of the inverter generator.



Part	Description
1	Economy Control Switch
2	Engine ON/OFF Switch
3	Fuel Tank
4	Spark Plug Cover
5	Muffler
6	Carrying Handle
7	Choke Lever
8	AC Pilot Light
9	Overload Indicator Light
10	Oil Warning Light
11	DC Protector
12	Ground Terminal
13	DC Receptacle
14	AC Receptacle
15	Frequency Transfer Switch
16	Fuel Filter
17	Fuel Fill Cap
18	Fuel Primer Bulb
19	Recoil Starter Handle
20	Fuel ON/OFF Lever
21	Oil Fill/Dipstick
22	Air Filter Cover
23	Access Cover

Operation Precautions

Sensitive electronic equipment, including but not limited to audio/video equipment, television sets, computers, and printers, can be operated on this inverter type generator. However, if the plugged in product operates abnormally or unusually slow, immediately stop using the generator as a power source.

1. Before connecting an appliance or power cord to the generator make sure that it is in good working order. Faulty appliances or power cords can create a potential for electrical shock.
2. If an appliance begins to operate abnormally, becomes sluggish or stops suddenly, turn it off immediately. Disconnect the appliance, and determine whether the problem is the appliance, or if the rated load capacity of the generator has been exceeded.
3. Make sure that the electrical rating of the tool or appliance does not exceed that of the generator. Never exceed the maximum power rating of the generator. Power levels between rated and maximum may be used for no more than 30 minutes.
4. Substantial overloading will open the circuit breaker. Exceeding the time limit for maximum power operation or slightly overloading the generator may not switch the circuit breaker OFF, but will shorten the service life of the generator.
5. Connect the generator only to an electrical system (120V~) that is compatible with the electrical characteristics and rated capacities of the generator.
6. Set up the generator outdoors in a well-ventilated, dry area, away from building air intakes. The generator should be protected from direct exposure to rain and snow. Do not set up the generator on a conductive surface such as a metal deck.

Operation

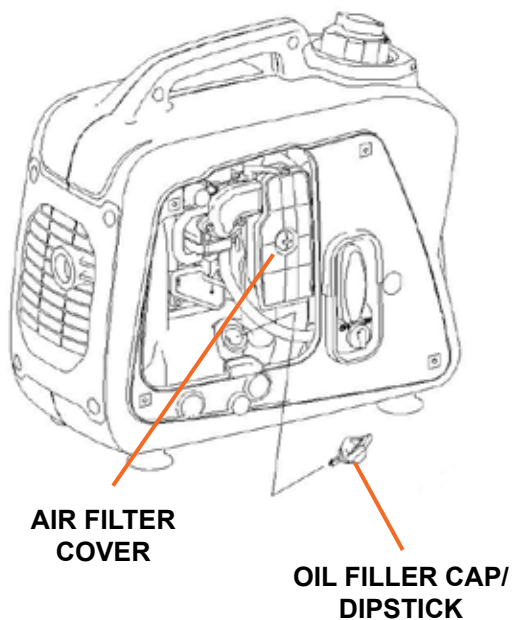


Figure 3



WARNING

ADD OIL TO THE GENERATOR BEFORE OPERATION.

1. Place the portable power generator on a level surface. Check the oil level with the dipstick (see Figure 3). Do not screw in the oil filler cap when checking oil level.
2. Add 89+ octane gasoline to the fuel tank. Do not add fuel while the generator is running or is hot. Allow the engine to cool down for several minutes before refueling. Do not overfill.



WARNING

DO NOT ADD FUEL INDOORS OR NEAR ANY SOURCE OF POSSIBLE COMBUSTION. DO NOT SMOKE WHILE FUELING.

Oil Warning System

When the oil level falls below the lower level, the engine stops automatically. Unless you refill with oil, the engine will not start.

Engine Switch

The engine switch controls the ignition system. “ON”(run) Ignition circuit is switched on. The engine can be started. “OFF”(stop) Ignition circuit is switched off. Engine will not run.

Economy Control Switch

When the economy control switch is turned “ON”, the economy control unit control the engine speed according to the connected load. The results are better fuel connection and less noise.

DC Circuit Protector

The DC circuit protector turns off automatically when the load exceeds the generator rated output.

CAUTION

Reduce the load to within specified generator rated output if the DC circuit protector turn off.

Fuel Tank Air Vent

The fuel tank cap is provided with an air vent knob to stop fuel flow. (see Figure 4). The air vent knob must be turned once clockwise from the closed position. This will allow fuel to flow to the carburetor and the engine to run. When the engine is not in use, tighten the air vent knob counterclockwise until it is finger-tight to stop fuel flow.

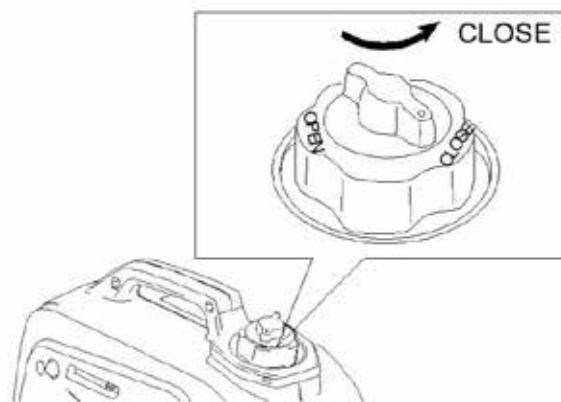


Figure 4



Operation

Starting the Generator

1. Remove all connected devices.
2. Open the fuel tank air vent to the “OPEN” position.
3. Turn the fuel On/Off lever to the “ON” position.
4. Turn the engine switch to the “ON” position
5. Press the primer bulb 5 - 6 times.
6. Turn the choke lever to the “CHOKE” position when starting a cold engine.
7. Grasp the carrying handle firmly to prevent the generator from falling over when pulling the recoil starter. Pull the recoil starter handle slowly until resistance is felt. Return the handle to its original position and pull swiftly. Do allow the rope recoil handle to snap back into position. After the engine starts, allow the starter handle to return to its original position.
8. Allow the engine to run and warm up, then turn the choke lever back to the “RUN” position.
9. Allow the generator to run for several minutes before connecting electronic devices. minutes.



CAUTION

ONLY AFTER THE GENERATOR IS RUNNING SMOOTHLY SHOULD AN APPLIANCE OR TOOL BE PLUGGED INTO THE AC OUTLET OF THE GENERATOR.

Attaching Electronic Devices

1. Check the AC pilot lamp for proper voltage.
2. Turn off the switch(es) of the electrical appliance(s) before connecting to the generator.
3. Be sure the total load is within generator rated output.
4. The economy control switch must be turned to “OFF” when using electric devices that require a large starting current, such as a compressor or a submergible pump.

Operation

Overload Indicator Light

The total combined load through the outlet on the generator must not exceed the rated maximum power of the unit.

Calculating Power Draw

Power draw can be calculated by multiplying volts and amps. The resulting number is wattage. Never exceed the rated maximum wattage for the generator or outlet.

Note: Long power cords and extension cords draw additional power. Keep cord length at a minimum

The overload indicator light comes on when an overload of a connected electrical device is detected, the inverter unit overheats, or the AC output voltage rises. The electronic breaker will activate, stopping power to the generator and any connected electric devices. The output pilot light (green) will flicker and the overload indicator light (red) will turn on, then the engine will stop running.

If this occurs, please follow the following steps:

1. Turn off any connected electric devices and stop the engine
2. Reduce the total wattage of connected electric devices within the application range.
3. Check for blockages in the cooling air inlet and around the control unit. If any blockages are found, remove.
4. After checking, restart the engine.



CAUTION

The generator AC output automatically resets when the engine is stopped and then restarted.

The overload indicator light may come on for a few seconds at first when using electric devices that require a large starting current.

Stopping The Engine

1. Turn off the power switch(es) of connected electronic devices and disconnect electric devices from the generator.
2. Turn the engine switch to “STOP” position.
3. Turn the fuel On/Off lever to “OFF”.
4. Turn the fuel tank cap air vent counterclockwise to the “CLOSED” position.
5. Allow a few minutes for cool down before transporting, avoiding the muffler area which may be hot.

Maintenance



WARNING

BEFORE PERFORMING ANY MAINTENANCE PROCEDURE STOP THE ENGINE, WAIT FIVE (5) MINUTES TO ALLOW ALL PARTS TO COOL.

Disconnect the spark plug wire, keeping it away from the spark plug.

Regular maintenance is the way to ensure the best performance and long life of your machine. Please refer to this manual and the engine manufacturer's owner's manual for maintenance procedures.

Maintenance Checklist

Maintenance Procedure	Before Each Use	Every 3 Mo./ 50 Hours	Every 6 Mo./ 100 Hours	Annually/ 200 Hours
Check Engine Oil Level	X	X	X	X
Change Engine Oil			X	X
Check Air Cleaner	X	X	X	X
Clean/Replace Air Filter*			X	X
Check/Clean Spark Plug		X	X	X
Check/Clean Fuel Filter			X	X
Check/Fuel Line	X	X	X	X
Replace Fuel Lines**			X	X
Clean/Replace Muffler Screen				X
Check Cooling System Fan				X
Check all fittings/tighten/replace			X	X

* Change/clean air filter more frequently if in dusty environment

** Service performed by qualified technician

Maintenance

REMOVE
SCREWS
4 PLACES

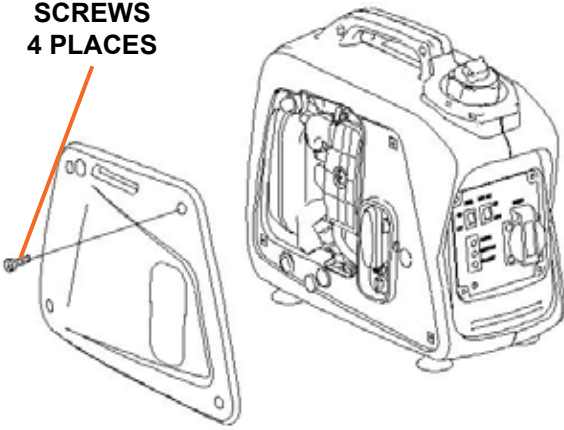
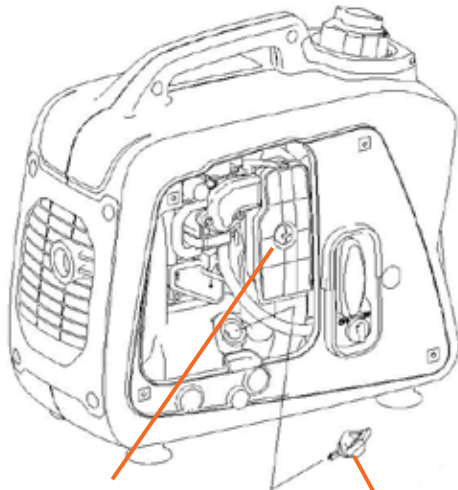


Figure 5



AIR FILTER
COVER

OIL FILLER CAP/
DIPSTICK

Figure 6

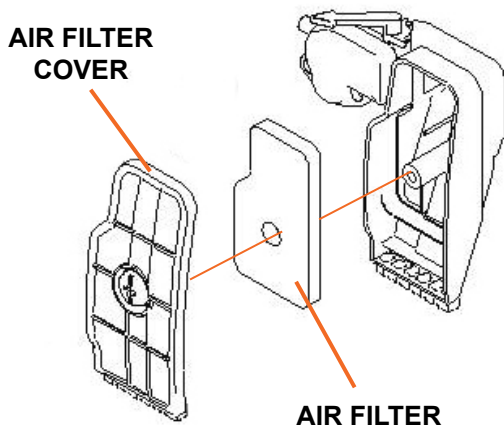


Figure 7

Engine Oil Replacement

1. Place the machine on a level surface and warm up the engine for several minutes. Then stop the engine and turn the fuel On/Off switch to "OFF". Turn the fuel tank cap air vent clockwise.
2. Loosen four screws and remove the cover on the left side of the generator with recoil handle (see Figure 5).
3. Remove the oil filler cap/dipstick. (see Figure 6)
4. Tilt the generator to drain the oil into an oil pan or container.
5. Replace the generator on a level surface.
6. Add SAE10/30W engine oil to the fill level and replace the oil filler cap/dipstick.
7. Reinstall the cover and tighten the four screws.

Air Filter

Maintaining an air cleaner reduces engine damage and wear.

1. Loosen four screws and remove the cover on the left side of the generator with recoil handle (See Figure 5).
2. Remove the large screw that holds the air filter cover in place then remove the air filter (see Figure 7).
3. Wash the air filter in warm water and mild detergent several times. Rinse. Squeeze out excess water and allow it to dry completely. Soak the filter in lightweight oil briefly, then squeeze out the excess oil. The element should be wet but not dripping.
4. Reinstall the filter, the air filter cover and the generator cover.



CAUTION

The engine should never run without the air filter, excessive piston and/or cylinder wear may result.



WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL STARTING TURN THE ENGINE POWER SWITCH TO THE “OFF” POSITION.

Wait for the engine to cool, and remove the spark plug wire before performing any inspection, maintenance, or cleaning.

Spark Plug Maintenance:

1. Remove screw from side of spark plug access cover (see Figure 8). Disconnect spark plug wire from end of plug. Clean out any debris from around the spark plug.
2. Using a spark plug wrench, remove the spark plug. Inspect the spark plug (see Figure 9). If the electrode is oily, clean it using a clean, dry rag. If the electrode has deposits on it, polish it using emery paper. or a fine wire brush. If the white insulator is cracked or chipped, replace the spark plug.
3. When installing a new spark plug, adjust the plug's gap to the specification on the technical specification chart (see Figure 10). Do not pry against the electrode or the insulator, the spark plug can be damaged.
4. Install the new spark plug or the cleaned spark plug into the engine. Gasket style spark plugs should be finger-tightened until the gasket contacts the cylinder head, then turned about 1/2 to 2/3 more rotation. Non-gasket-style spark plugs should be finger-tightened until the plug contacts the head, then about 1/16 turn more.

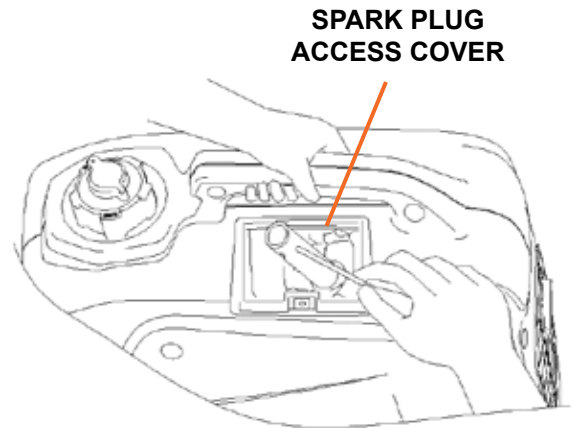


Figure 8

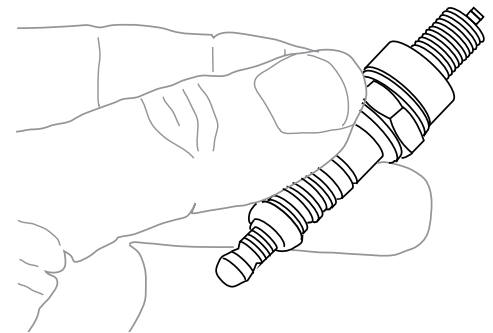
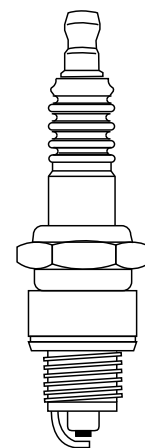


Figure 9



Spark Plug Gap
0.024" - 0.028"
(0.6 - 0.7mm)

Figure 10

Maintenance

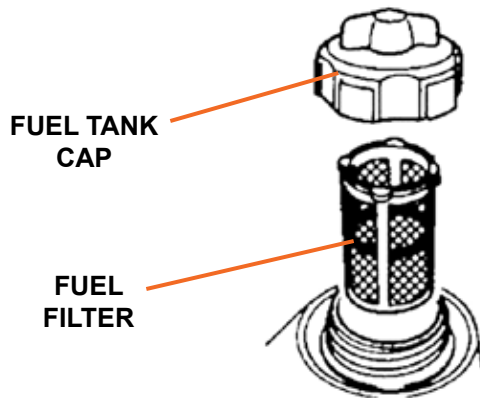


Figure 11

Cleaning the Fuel Tank Filter

1. Remove the fuel tank cap and filter (see Figure 11).
2. Clean the filter with solvent. If damaged, replace.
3. Wipe the filter clean and insert it.



TIGHTEN TANK CAP SECURELY

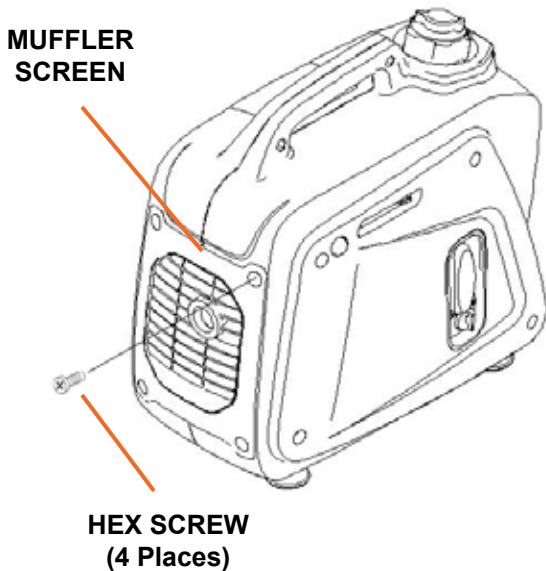


Figure 12

Muffler Screen

Avoid touching the engine and muffler while they are still hot with any part of your body or clothing during inspection or repair.



THE ENGINE AND MUFFLER WILL BE VERY HOT AFTER THE ENGINE HAS BEEN RUN.

1. Remove the muffler cover (see Figure 12).
2. Use a flathead screw driver to remove the screw that holds the spark arrester in place.
3. Remove the carbon deposits on the muffler screen and spark arrester using a wire brush (see Figure 13).
5. Reinstall the muffler screen.
6. Reinstall the cover.

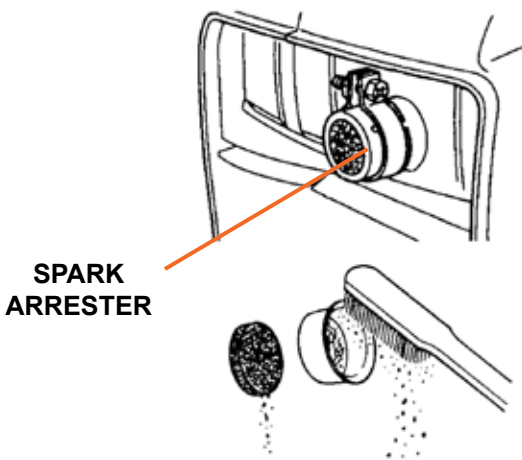


Figure 13



Troubleshooting



WARNING

BEFORE PERFORMING ANY MAINTENANCE PROCEDURE STOP THE ENGINE, WAIT FIVE (5) MINUTES TO ALLOW ALL PARTS TO COOL.

Disconnect the spark plug wire, keeping it away from the spark plug.

PROBLEM	SOLUTION
<p>The engine will not start.</p> <ul style="list-style-type: none"> • Fuel On/Off Switch not ON. • No fuel in tank. • No or low oil in crankcase. • Choke not in start position. • Low quality or deteriorated, old gasoline. • Dirty fuel passageways blocking fuel flow. • Too much fuel in chamber. • Spark plug wire not connected securely. • Spark plug electrode wet or dirty. • Incorrect spark plug gap. • Spark plug wire or spark plug broken. • Cylinder not lubricated after long storage. 	<ul style="list-style-type: none"> • Turn the Fuel On/Off Switch to the ON position. • Add fuel. • Add oil, check dipstick. Do not overfill. • Place choke in START position and pull recoil starter. • Drain fuel. Add new fresh 89+ octane. • Clean out fuel lines using fuel additive. • Turn choke to RUN position. • Connect spark plug wire securely to spark plug. • Remove and clean spark plug. Reinstall spark plug and restart. • Reset spark plug gap according to specifications. • Replace spark plug and/or spark plug wire. • Remove spark plug. Pour tablespoon of SAE10W30 engine oil into spark plug hole. Replace spark plug. Crank engine a few times and try to start. • If you continue to have problems starting the engine, visit our web site at www.dirtyhandtools.com or call 1-877-487-8275 for assistance.
<p>Engine misfires, backfires or knocks.</p> <ul style="list-style-type: none"> • Spark plug wire loose. • Incorrect spark plug gap. • Spark plug wire or spark plug broken. • Low quality or deteriorated, old gasoline. • Engine too cold. • Engine knocks. 	<ul style="list-style-type: none"> • Tighten spark plug wire. • Reset spark plug gap according to specifications. • Replace spark plug and/or spark plug wire. • Drain fuel. Add new fresh 89+ octane unleaded gasoline. • Use cold weather fuel and oil additives. • Engine overloaded, do not exceed recommended load rating.
<p>Engine stops suddenly.</p> <ul style="list-style-type: none"> • Low quality or deteriorated, old gasoline. • Defective fuel cap creates vacuum. • Improper idle speed. • Incorrect timing, deposit buildup, worn engine or other mechanical problem. 	<ul style="list-style-type: none"> • Drain fuel. Add new fresh 89+ octane unleaded gasoline. • Test and replace fuel cap. • Move choke to RUN position. • Requires qualified technician.

Storage

1. Wait for the engine to cool, then clean the engine with a clean cloth.
2. When the generator is to be stored for longer than 20 days, prepare the engine for storage by emptying the fuel tank and draining all fuel lines. Clean out area around spark plug and remove. Pour one tablespoon of SAE10W30 engine oil into the cylinder through the spark plug hole. Reinstall the spark plug, but leave the spark plug wire disconnected. Pull recoil starter handle to distribute oil in the cylinder. Stop after one or two revolutions when you feel the piston start the compression stroke (when you start to feel resistance).
3. Cover and store in a dry, well-ventilated area out of reach of children.
4. Keep the generator in an upright position. Do not store the generator on its side.

Notes



Warranty & Specifications

IMPORTANT NOTICE

We, the manufacturer, reserve the right to change the product and/or specifications in this manual without notification. The manual is for information usage only and the pictures and drawings depicted herein are for reference only.

Warranty Repair and Service

Do not return this product to the store for warranty issues or repair. Call our customer service department at **720-287-5182**, **1-877-487-8275**, or visit www.dirtyhandtools.com for the location of the nearest service center.

Record the information below for future reference.

Model No. _____

Serial No. _____

Date of Purchase _____

Place of Purchase _____

Specifications

SKU/Part No.	104609	104610	104611
Description	950W Inverter Generator	1200W Inverter Generator	2000W Inverter Generator
Peak Wattage	950 Watts	1200 Watts	2000 Watts
Continuous Wattage	800 Watts Maximum	1000 Watts Maximum	1700 Watts Maximum
Circuit Breaker	5.8 Amps	8.3 Amps	14.2 Amps
Power Receptacles	1-120V AC, 1-USB	1-120V AC, 1-USB	2-120V AC, 1-USB
Engine	1.4HP 40cc, 4 Cycle* EPA/CARB Approved	1.9HP 60cc, 4 Cycle* EPA/CARB Approved	2.9HP 99cc, 4 Cycle* EPA/CARB Approved
Fuel Type	Unleaded Gasoline	Unleaded Gasoline	Unleaded Gasoline
Spark Plug Gap	0.024"-0.028" (0.6-0.7mm)	0.024"-0.028" (0.6-0.7mm)	0.024"-0.028" (0.6-0.7mm)
Run Time @ 50% Load	5 Hours	9 Hours	7 Hours
Sound Rating	58 dB	58 dB	60 dB
Dimensions	17"L x 9"W x 14"H	19"L x 10"W x 17"H	22"L x 12"W x 19"H
Weight	20 Lbs.	27 Lbs.	41 Lbs.

*As rated by engine manufacturer

** Unleaded Gasoline, 89+ Octane

Dirty Hand Tools® is a brand of
 **FrictionlessWorld**
1100 W 120th Ave., Suite 600
Westminster, CO 80234 • 720-287-5182

For Service or Questions
Call 1-877-487-8275
720-287-5182
www.dirtyhandtools.com