YANMAR

OPERATION MANUAL

DIESEL POWERED GENERATOR

YDG2700N
YDG3700N
YDG5500N
YDG6600TN

California
Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the state of California to cause cancer, birth defects, and other reproductive harm.

California
Proposition 65 Warning

Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer and reproductive harm.
Wash hands after handling.

Disclaimers:

All information, illustrations and specifications in this manual are based on the latest information available at the time of publishing. The illustrations used in this manual are intended as representative reference views only. Moreover, because of our continuous product improvement policy, we may modify information, illustrations and/or specifications to explain and/or exemplify a product, service or maintenance improvement. We reserve the right to make any change at any time without notice. YANMAR and **YANMAR** are registered trademarks of YANMAR CO., LTD. in Japan, the United States and/or other countries.

All Rights Reserved:

OPERATION MANUAL	MODEL	YDG2700N, YDG3700N, YDG5500N, YDG6600TN
	CODE	0AYDG-G00404

YANMAR WARRANTIES

YANMAR LIMITED WARRANTY

What is Covered by this Warranty?

YANMAR warrants to the original retail purchaser that a new YANMAR YDG diesel generator will be free from defects in material and/or workmanship for the duration of the warranty period.

This warranty is provided in lieu of all other warranties, express or implied. YANMAR specifically disclaims any implied warranties of merchantability or fitness for a particular purpose, except where such disclaimer is prohibited by law. If such disclaimer is prohibited by law, then implied warranties shall be limited in duration to the life of the express warranty.

How Long is the Warranty Period?

The YANMAR standard limited warranty period begins on the date of the delivery of the new YANMAR YDG diesel generator to the first retail purchaser and extends for a period of **twenty-four (24) months or two-thousand (2000) engine operation hours**, whichever occurs first. The warranty period (by duration or operation hours) begins on the date of delivery to the original retail purchaser and is valid only until the applicable warranted duration has passed or the operation hours are exceeded, whichever comes first.

YANMAR limited warranty - continued

What the Generator Owner must Do:

If you believe your YANMAR generator has experienced a failure due to a defect in material and/or workmanship, you must contact an authorized YANMAR industrial engine dealer or distributor within thirty (30) days of discovering the failure. You must provide proof of ownership of the generator, proof of the date of the generator purchase and delivery, and documentation of the generator operation hours. Acceptable forms of proof of delivery date include, but are not limited to: the original warranty registration or sales receipts or other documents maintained in the ordinary course of business by YANMAR dealers and/or distributors, indicating the date of delivery of the YANMAR product to the original retail purchaser. This information is necessary to establish whether the YANMAR product is still within the warranty period. Thus, YANMAR strongly recommends you register your generator as soon as possible after purchase in order to facilitate any future warranty matters.

You are responsible for the transportation of the generator to and from the repair location as designated by YANMAR.

To Locate an Authorized YANMAR Industrial Engine Dealer or Distributor:

You can locate your nearest authorized YANMAR industrial engine dealer or distributor by visiting the YANMAR CO., LTD. website at:

http://global.yanmar.com (The English language page will be displayed.)

- “Click” on “Dealer Locator” in the website heading to view the “Dealer Locator” menu.
- Choose the Country from the pull down menu.
- Choose the Product Category from the pull down menu.
- “Click” on “Search” to browse YANMAR dealer or distributor.

You may also contact YANMAR by clicking on “Contact” icon in the website heading and typing in your question or comment.

What YANMAR will Do:

YANMAR warrants to the original retail purchaser of a new YANMAR generator that YANMAR will make such repairs and/or replacements at YANMAR’s option, of any part(s) of the YANMAR product covered by this warranty found to be defective in material and/or workmanship. Such repairs and/or replacements will be made at a location designated by YANMAR at no cost to the purchaser for parts or labor.

YANMAR limited warranty - continued

What is not Covered by this Warranty?

This warranty does not cover parts affected by or damaged by any reason other than defective materials or workmanship including, but not limited to, accident, misuse, abuse, "Acts of God," neglect, improper installation, improper maintenance, improper storage, the use of unsuitable attachments or parts, the use of contaminated fuels, the use of fuels, oils, lubricants, or fluids other than those recommended in your YANMAR Operation Manual, unauthorized alterations or modifications, ordinary wear and tear, and rust or corrosion. This warranty does not cover the cost of parts and/or labor required to perform normal/scheduled maintenance on your YANMAR generator. This warranty does not cover consumable parts such as, but not limited to filters, fuel injector nozzle, lubricants and cleaning fluids. This warranty does not cover the cost of shipping the product to or from the warranty repair facility.

Warranty Limitations:

The foregoing is YANMAR's only obligation to you and your exclusive remedy for breach of warranty. Failure to follow the requirements for submitting a claim under this warranty may result in a waiver of all claims for damages and other relief. **In no event shall YANMAR or any authorized industrial engine dealer or distributor be liable for incidental, special or consequential damages.** Such consequential damages may include, but not be limited to, loss of revenue, loan payments, cost of rental of substitute equipment, insurance coverage, storage, lodging, transportation, fuel, mileage and telephone costs. The limitations in this warranty apply regardless of whether your claims are based on breach of contract, tort (including negligence and strict liability) or any other theory. Any action arising hereunder must be brought within one (1) year after the cause of action accrues or it shall be barred. Some states and countries do not allow certain limitations on warranties or for breach of warranties. **This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and country to country.** Limitations set forth in this paragraph shall not apply to the extent that they are prohibited by law.

Warranty Modifications:

Except as modified in writing and signed by the parties, this warranty is and shall remain the complete and exclusive agreement between the parties with respect to warranties, superseding all prior agreements, written and oral, and all other communications between the parties relating to warranties. **No person or entity is authorized to give any other warranty or to assume any other obligation on behalf of YANMAR, either orally or in writing.**

Questions:

If you have any questions or concerns regarding this warranty, please call or write to the nearest authorized YANMAR industrial engine dealer or distributor or other authorized facility.

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INTRODUCTION

Welcome to the world of YANMAR!

YANMAR has been the leader in industrial diesel engines for over 90 years. We developed the world's first practical small-sized diesel engine in 1933. Our engineers are continuously developing new technology to keep YANMAR on the leading-edge of the industry. The diesel-powered generator is only one example of the new technology we have developed. We are committed to maintaining our environment, and are proud of our history of innovation, quality and respect for operator safety.

To help you enjoy your YANMAR diesel generator (YDG) for many years to come, please follow these recommendations:

- Read and understand this Operation Manual before you operate the machine to ensure that you follow safe operating practices and maintenance procedures.
- Keep this Operation Manual in a convenient place for easy access.
- If this Operation Manual is lost or damaged, order a new one from your authorized YANMAR industrial engine dealer or distributor.
- Make sure this manual is transferred to subsequent owners. This manual should be considered a permanent part of the generator and remain with it.
- Constant efforts are made to improve the quality and performance of YANMAR products, so some details included in this Operation Manual may differ slightly from your generator. If you have any questions about these differences, please contact your authorized YANMAR industrial engine dealer or distributor.

RECORD OF OWNERSHIP

Take a few moments to record the information you need when you contact YANMAR for service, parts or literature.

YDG model:_____

YDG serial No.:_____

Date purchased:_____

Dealer:_____

Dealer phone:_____

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SAFETY

YANMAR considers safety of great importance and recommends that anyone that comes into close contact with its products, such as those that install, operate, maintain or service YANMAR products, exercise care, common sense and comply with the safety information in this manual and on the machine's safety decals. Keep the decals from becoming dirty or torn and replace them if they are lost or damaged. Also, if you need to replace a part that has a decal attached to it, make sure you order the new part and decal at the same time.

This safety alert symbol appears with most safety statements. It means attention, become alert, your safety is involved! Please read and abide by the message that follows the safety alert symbol.

⚠ DANGER

Indicates a hazardous situation which, if not avoided, *will* result in death or serious injury.

⚠ WARNING

Indicates a hazardous situation which, if not avoided, *could* result in death or serious injury.

⚠ CAUTION

Indicates a hazardous situation which, if not avoided, *could* result in minor or moderate injury.

NOTICE

Indicates a situation which can cause damage to the machine, personal property and/or the environment or cause the equipment to operate improperly.

SAFETY PRECAUTIONS

There is no substitute for common sense and careful practices. Improper practices or carelessness can cause burns, cuts, mutilation, asphyxiation, other bodily injury or death. This information contains general safety precautions and guidelines that must be followed to reduce risk to personal safety. Special safety precautions are listed in specific procedures. Read and understand all of the safety precautions before operation or performing repairs or maintenance.

⚠ DANGER

- **Never permit anyone to install or operate the generator set without proper training.**

- **Read and understand this Operation Manual before you operate or service the generator set to ensure that you follow safe operating practices and maintenance procedures.**
- **Safety signs and decals are additional reminders for safe operating and maintenance techniques.**
- **See your authorized YANMAR dealer or distributor for additional training.**

⚠ DANGER

Exhaust Hazard

Never operate the generator in an enclosed area. Operating a generator indoors can kill you in minutes. Generator exhaust contains carbon monoxide. This is a poison you cannot see or smell. Only operate the generator outside and far away from windows, doors and vents.

⚠ DANGER

Explosion Hazard

- **Always place the diesel fuel container on the ground when transferring the diesel fuel from the pump to the container. Hold the hose nozzle firmly against the side of the container while filling it. This prevents static electricity buildup which could cause sparks and ignite fuel vapors.**
- **Diesel fuel is flammable and explosive under certain conditions. Always store any containers containing fuel in a well-ventilated area, away from any combustibles or sources of ignition. Wipe up all spills immediately and never use a shop rag to catch spilled fuel.**
- **Before you operate the engine, check for fuel leaks.**
- **Avoid serious personal injury. Never jump-start the engine. Sparks caused by shorting the battery to the starter terminals may cause a fire or explosion. Only use the key switch or manual starter (if equipped) to start the engine.**
- **Avoid serious personal injury or equipment damage. While the engine is running or the battery is charging, hydrogen gas is being produced and can be easily ignited. Always keep the area around the battery well-ventilated and keep sparks, open flames and any other form of ignition out of the area.**
- **Never place diesel fuel, flammable material such as oil, hay or dried grass or chemical gases or fumes close to the engine during engine operation or shortly after shut down.**
- **Never use metal pipe that carries combustible materials or gases to ground the generator.**

⚠ DANGER

Electric Shock Hazard

- Always have a licensed electrician connect the generator to the utility circuit. Improper installation can cause the generator to back-feed into the utility power line. This may electrocute a power company line repair person. Also, if the generator is powering electrical circuits, the chance of an electrical fire exists.
- Never use if the generator is wet or damp.
- Never use the generator in a location exposed to rain, snow, water spray or standing water. If the generator must be used outside, protect it from the weather. Moisture or ice can cause a malfunction or short circuit in the electrical components which could result in electrocution.
- Never operate the generator in rain or a floodplain unless proper precautions are taken to avoid being subject to rain or a flood.
- Never use any worn or damaged electrical cords. Electric shock or damage to the generator may result.
- Always have a licensed electrician connect the generator to the utility circuit.
- Never touch the generator with wet hands or when the generator is wet.
- Never use the generator in highly conductive areas. These areas include metal decking and steelwork.
- Always use grounded extension cords. Always use three-wire or double-insulated power tools.
- Never handle live terminals or bare wires.
- Always ground the generator. Connect a length of heavy wire between the generator ground terminal and an external ground.

⚠ DANGER

Fire Hazard

- Never use metal pipe that carries combustible materials or gases to ground the generator.
- Do not put the generator indoors while the engine is still hot.
- Never jump-start the engine. Sparks caused by shorting the battery to the starter terminals may cause a fire or explosion.
- Never operate the generator if powered items overheat, electrical output drops, there is sparking, flames or smoke coming from the generator or if the receptacles are damaged.
- Never operate the generator closer than 3.3 ft (1 m) away from buildings and other equipment or sources of combustion during operation.

⚠ DANGER

Falling Hazard

Avoid injury or equipment damage due to the generator set falling. Always secure the generator set to prevent the generator set from falling during maintenance.

⚠ WARNING

Explosion Hazard

- Avoid serious personal injury or equipment damage. While the engine is running or the battery is charging, hydrogen gas is being produced and can be easily ignited. Keep the area around the battery well-ventilated and keep sparks, open flame and any other form of ignition out of the area.
- Avoid serious personal injury or equipment damage. Always turn off the battery switch (if equipped) or disconnect the negative battery cable before servicing the equipment.

⚠ WARNING

Fire Hazard

- Avoid personal injury or equipment damage. Have appropriate safety equipment available.
- Keep fire extinguishers handy in case of fire. Clearly indicate the location of the fire extinguishers with a safety sign.
- Ensure that the type of fire extinguishers are appropriate for material that might catch fire. Check with local authorities.
- Have all fire extinguishers checked periodically for proper operation and/or readiness.
- Post evacuation routes prominently. Periodically conduct fire drills.

⚠ WARNING

Avoid personal injury. Always read and follow safety-related precautions found on containers of hazardous substances like parts cleaners, primers, sealants and sealant removers.

⚠ WARNING

Always wipe up all spills immediately.

⚠ WARNING

Entanglement Hazard

- Rotating parts can cause severe injury or death. Never wear jewelry, unbuttoned cuffs, ties or loose fitting clothing and always tie long hair back when working near moving/rotating parts such as the flywheel or PTO shaft. Keep hands, feet and tools away from all moving parts.
- Avoid personal injury. Never leave the key in the key switch when servicing the generator set. Someone may accidentally start the engine and not realize you are servicing it. Attach a "Do Not Operate" tag near the key switch while performing maintenance on the equipment.

⚠ WARNING

Sever Hazard

- Avoid personal injury. Rotating parts can cause severe injury or death. Never operate the generator set without the guards in place.
- Never operate the generator without the guards in place.

⚠ WARNING

Lifting Hazard

- Avoid serious personal injury. Additional equipment is necessary to lift the generator set. Always use lifting equipment with sufficient capacity to lift the generator.
- When you need to transport a generator set for repair, have a helper assist you when attaching it to a hoist and loading it on a truck.

⚠ WARNING

Electrical Hazard

- Make welding repairs safely.
- Always turn off the battery switch (if equipped) or disconnect the negative battery cable and the leads to the alternator when welding on the equipment.
- Connect the weld clamp to the component to be welded and as close as possible to the welding point.
- Never connect the weld clamp to the generator set or in a manner which would allow current to pass through a mounting bracket.
- When welding is completed, reconnect the leads to the engine charging system prior to reconnecting the battery.

⚠ WARNING

Shock Hazard

- Check the electrical harnesses for cracks, abrasions and damaged or corroded connectors. Always keep the connectors and terminals clean.
- Avoid serious personal injury or equipment damage. Always turn off the battery switch (if equipped) or disconnect the negative battery cable before servicing the equipment.
- Avoid personal injury or equipment damage. Always keep the electrical connectors and terminals clean. Check the electrical harnesses for cracks, abrasions, and damaged or corroded connectors.

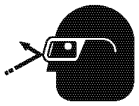
⚠ WARNING

Alcohol and Drug Hazard

Never operate the generator set while you are under the influence of alcohol or drugs or are feeling ill.

⚠ WARNING

Exposure Hazard



To avoid injury, always wear personal protective equipment including appropriate clothing, gloves, work shoes, eye and hearing protection as required by the task at hand.

⚠ WARNING

Slip and Trip Hazard

Keep the generator free of oil, mud and other foreign matter.

⚠ WARNING

Remove anything that creates slippery areas around the generator.

⚠ WARNING

Sudden Movement Hazard

- Never attach tools or appliances to the generator before it is started. Starting the generator may cause sudden movement of the equipment. Disconnect any tools and appliances from the generator before starting.
- Before you start the engine make sure that all bystanders are clear of the area.
- Check before starting the engine that any tools or shop rags used during maintenance have been removed from the area.
- Always remove anything that creates slippery areas around the generator.
- Avoid personal injury. Always stop the engine before beginning service.

⚠ WARNING

Burn Hazard

- Avoid serious injury. Some of the generator set surfaces become very hot during operation and shortly after shut down. Always keep hands and other body parts away from hot generator set surfaces.
- Always handle hot components with heat-resistant gloves.

⚠ WARNING

Tool Hazard

Avoid personal injury or equipment damage. Always remove any tools or shop rags used during maintenance from the area before operation.

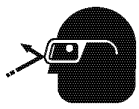
⚠ WARNING

Exhaust Hazard

Avoid serious injury or death. Always ensure that all connections are tightened to specifications after repair is made to the exhaust system. All internal combustion engines create carbon monoxide gas during operation and special precautions are required to avoid carbon monoxide poisoning.

⚠ CAUTION

Flying Object Hazard



- Avoid personal injury. Always wear eye protection when servicing the generator set or when using compressed air or high-pressure water. Dust, flying debris, compressed air, pressurized water or steam may injure your eyes.
- Avoid personal injury. Always wear eye protection when servicing the engine or when using compressed air or high-pressure water. Dust, flying debris, compressed air, pressurized water or steam may injure your eyes.

⚠ CAUTION

Poor Lighting Hazard

Avoid personal injury or equipment damage. Ensure that the work area is adequately illuminated. Always install wire cages on portable safety lamps.

⚠ CAUTION

Tool Hazard

Avoid personal injury or equipment damage. Always use tools appropriate for the task at hand and use the correct size tool for loosening or tightening machine parts.

⚠ CAUTION

Before starting the engine, always turn the switches on the working appliances (lighting apparatus, motor, etc.) to their OFF position. If the switches are not OFF, the sudden application of load when the engine is started could be very dangerous.

NOTICE

Never attempt to modify the generator set design or safety features such as defeating the engine speed limit control or the diesel fuel injection quantity control.

NOTICE

Modifications may impair the generator set's safety and performance characteristics and shorten the generator set's life. Any alterations to this generator set may void its warranty. Always use YANMAR genuine replacement parts.

NOTICE

Always be environmentally responsible.
Follow the guidelines of the governmental agencies for the proper disposal of hazardous materials such as engine oil, and diesel fuel. Consult the local authorities or reclamation facility.

NOTICE

Contact your authorized YANMAR industrial engine dealer or distributor if you need to operate the engine at high altitudes. At high altitudes the engine will lose power, run rough, and produce exhaust gases that exceed the design specifications.

NOTICE

When you install a battery:

- Always use correct polarity when you connect battery cables to the battery. This generator uses a negative ground, 12 V DC starting system.
- Make sure battery terminals are clean.
- Make sure cable connections are tight.
- Always shut down engine before removing or attaching battery cables.

NOTICE

If you remove battery from generator, insulate the terminal on the end of the red, positive (+) battery cable. If the terminal is not insulated, it may spark when generator runs. Sparks may cause damage to the generator's electronic circuits

NOTICE

Never operate the generator if it vibrates at high levels, if engine speed changes greatly or if the engine misfires often.

NOTICE

Never use an engine starting aid such as ether. Engine damage will result.

NOTICE

Always make sure the generator is operated on a level surface. If operated at an angle greater than 20° (in any direction) the battery could leak fluid. The generator must be on a flat level surface when checking the battery fluid level. If an engine runs for short periods of time (less than three minutes) at an angle greater than 25° in any direction, engine oil may enter the combustion chamber causing excessive engine speed and generate white smoke. This may cause serious engine damage.

NOTICE

Always run the engine at full speed. Never run engine at lower speeds. At full speed, the engine runs at 3600 (or 3000) min^{-1} (rpm) under load. The engine must maintain 3600 (or 3000) min^{-1} (rpm) for generator to create correct voltage. Running engine at lower speeds will damage generator and powered items.

NOTICE

Never attach tools or appliances to the generator before it is started. Always disconnect tools and appliances from the generator before starting.

NOTICE

Observe the following environmental operating conditions to maintain engine performance and avoid premature engine wear:

- The standard range of ambient temperatures for the normal operation of YANMAR engines is from +5 °F (-15 °C) to +113 °F (+45 °C).
- If the ambient temperature exceeds +113 °F (+45 °C) the engine may overheat and cause the engine oil to break down.
- If the ambient temperature is below +5 °F (-15 °C) the engine will be hard to start and the engine oil may not flow easily.

Contact your authorized YANMAR industrial engine dealer or distributor if the engine will be operated outside of this standard temperature range.

NOTICE

Observe the following environmental operating conditions to maintain generator set performance and avoid premature engine wear:

- Avoid operating in extremely dusty conditions.
- Avoid operating in the presence of chemical gases or fumes.
- Avoid operating in a corrosive atmosphere such as salt water spray.

NOTICE

Any part which is found defective as a result of inspection or any part whose measured value does not satisfy the standard or limit must be replaced.

NOTICE

Always tighten components to the specified torque. Loose parts can cause equipment damage or cause it to operate improperly.

NOTICE

Only use replacement parts specified. Other replacement parts may affect warranty coverage.

NOTICE

If any indicator illuminates during engine operation (if equipped), stop the engine immediately. Determine the cause and repair the problem before you continue to operate the engine.

Never operate the generator if:

- Engine speed changes greatly
- Engine misfires often
- Powered items overheat
- Electrical output drops
- It is sparking
- It produces smoke or flames
- It vibrates at high levels
- It has a damaged receptacle

NOTICE

Always Protect the air cleaner and electric components from damage when you use steam or high pressure water to clean the generator.

NOTICE

Always turn battery switch OFF (if equipped) or disconnect the negative battery cable before servicing the electrical system.

NOTICE

Never operate the generator set while wearing a headset to listen to music or radio because it will be difficult to hear warning signals.

NOTICE

When the engine is operated in dusty conditions, clean the air cleaner element more frequently. Never operate the engine with the air cleaner element(s) removed. This may cause foreign material to enter the engine and damage it.

NOTICE

Children must stand on a safe place from the generator.

NOTICE

An insulated cables must be used or similar other cables.

NOTICE

Should not used for more than specified loading capacity.

NOTICE

Reducing loading capacity (in hot weather or humidity) exceeding normal natural circumstances.

NOTICE

The generator should not be connected to any power source or to the net of the Saudi Electricity Company.

NOTICE

It is very essential that the electrical breaker should coincide with the design of the generator so as to protect it from electrical shocks.

NOTICE

Whenever the need so requires to replace the electrical breaker, it should be replaced with a similar breaker of the same technical specifications.

NOTICE

Instructions for the moving/transporting of the generator.

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PRODUCT OVERVIEW

YANMAR YDG DIESEL GENERATOR FEATURES AND APPLICATIONS

To achieve the highest performing miniaturized and light-weight diesel engines, YANMAR Co., Ltd. developed the LN series single cylinder, air-cooled, diesel engine for applications such as YANMAR YDG generators.

YANMAR's series of LN engines use one of the most advanced single cylinder technologies available.

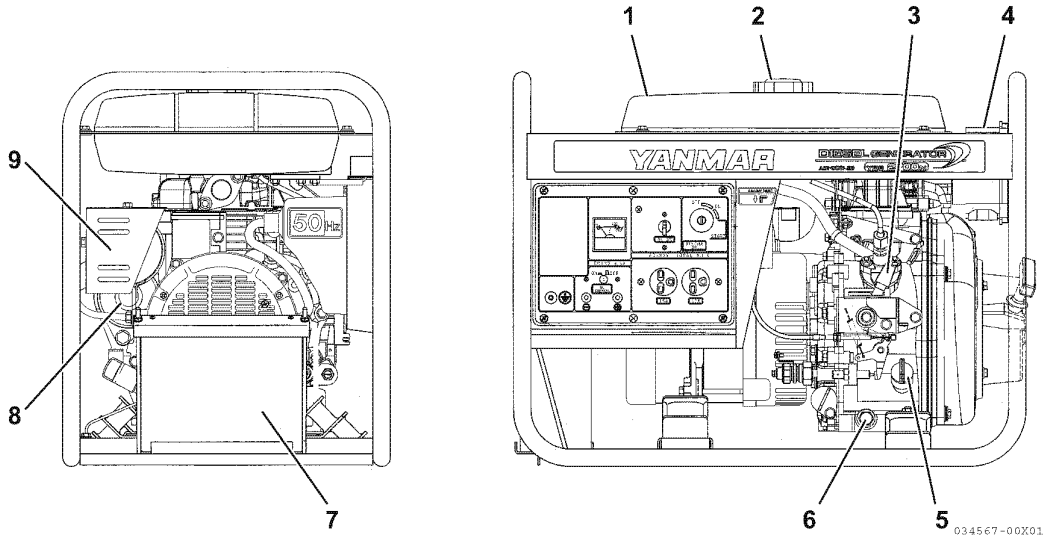
YANMAR YDG generators are designed to supply power to a wide variety of applications including:

- Construction
- Agriculture
- Household

We are sure that you will agree these features provide excellent value in an industrial diesel generator.

COMPONENT IDENTIFICATION

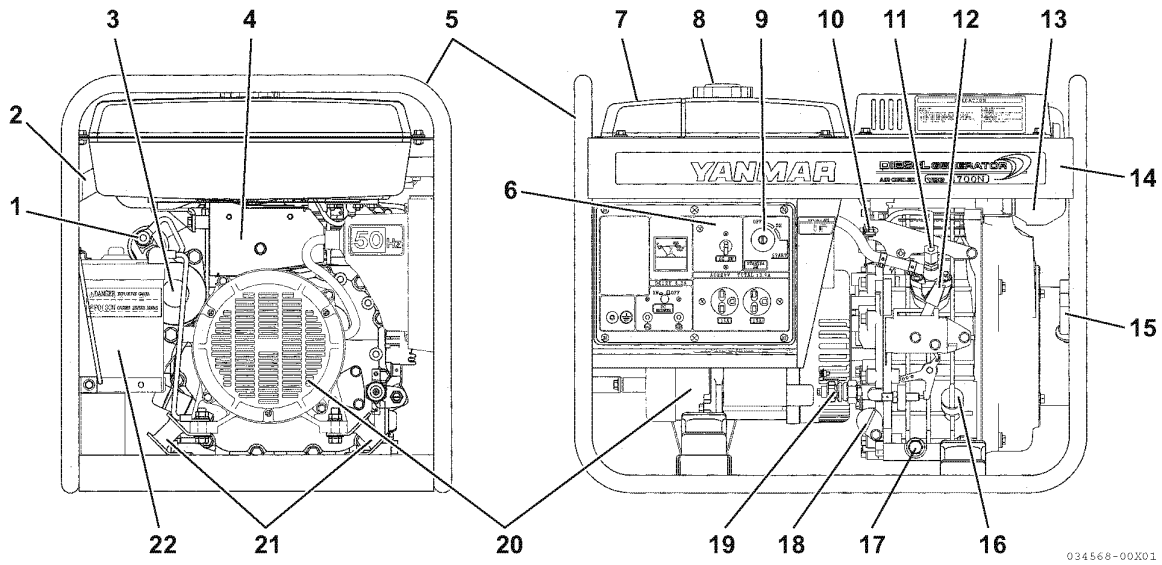
YDG2700N-5EB (Typical Model)



1 – Fuel tank
2 – Fuel filler cap
3 – Engine control lever
4 – Air cleaner
5 – Oil filler cap/dipstick
6 – Oil drain plug (one located on each side of engine)
7 – Battery
8 – Starter motor
9 – Muffler

Figure 1

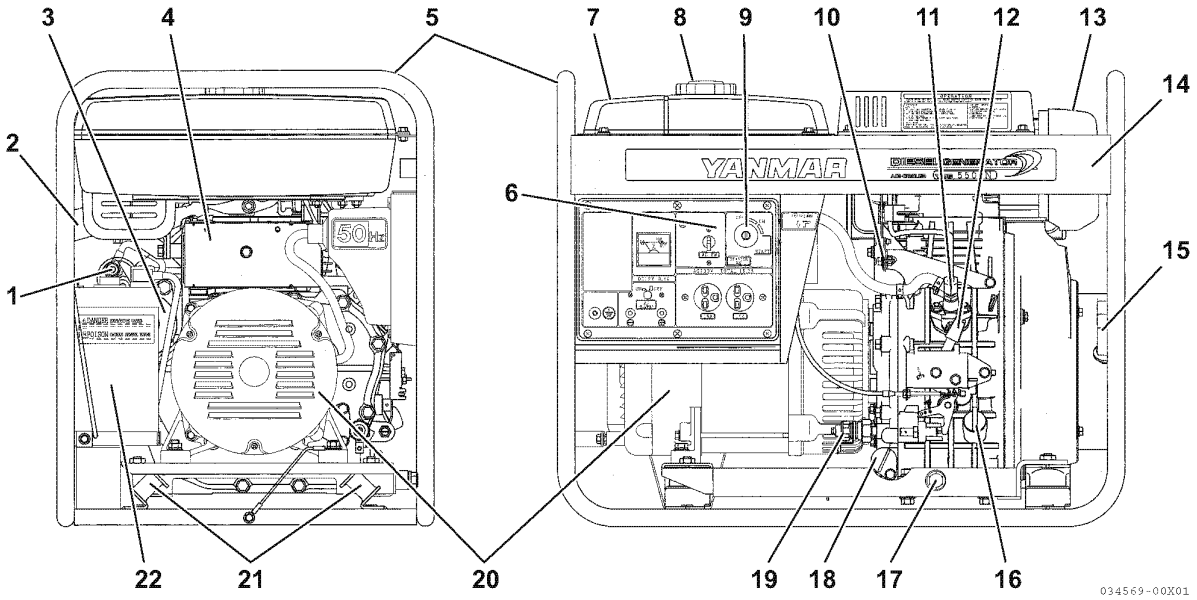
YDG3700N-5EB (Typical Model)



1 – Starter solenoid
2 – Muffler
3 – Starter motor
4 – Engine nameplate decal
5 – Frame
6 – Control panel
7 – Fuel tank
8 – Fuel filler cap
9 – Starter switch
10 – Compression release lever
11 – Fuel injection pump
12 – Engine control lever
13 – Air cleaner
14 – Generator set model and serial number decal (behind upper frame rail)
15 – Recoil starter
16 – Oil filler cap/dipstick
17 – Oil drain plug (one located on each side of engine)
18 – Oil filter
19 – Oil pressure switch
20 – Generator unit
21 – Generator/engine damper mounts
22 – Battery

Figure 2

YDG5500N-5EB (Typical Model)



1 – Starter solenoid
2 – Muffler
3 – Starter motor
4 – Engine nameplate decal
5 – Frame
6 – Control panel
7 – Fuel tank
8 – Fuel filler cap
9 – Starter switch
10 – Compression release lever
11 – Fuel injection pump
12 – Engine control lever
13 – Air cleaner
14 – Generator set model and serial number decal (behind upper frame rail)
15 – Recoil starter
16 – Oil filler cap/dipstick
17 – Oil drain plug (one located on each side of engine)
18 – Oil filter
19 – Oil pressure switch
20 – Generator unit
21 – Generator/engine damper mounts
22 – Battery

Figure 3

YDG6600TN-5EB (Typical Model)

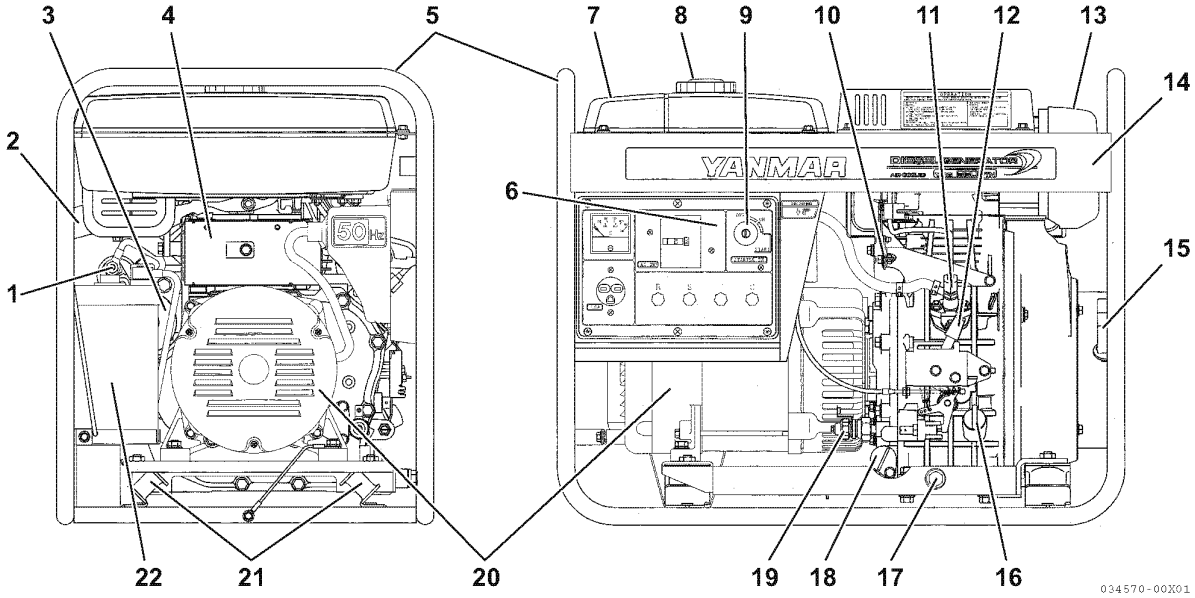


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Figure 4

LOCATION OF LABELS

Safety Decals YDG2700N-5(E)A, 5(E)B, 5(E)F, 6(E)B, 6(E)C

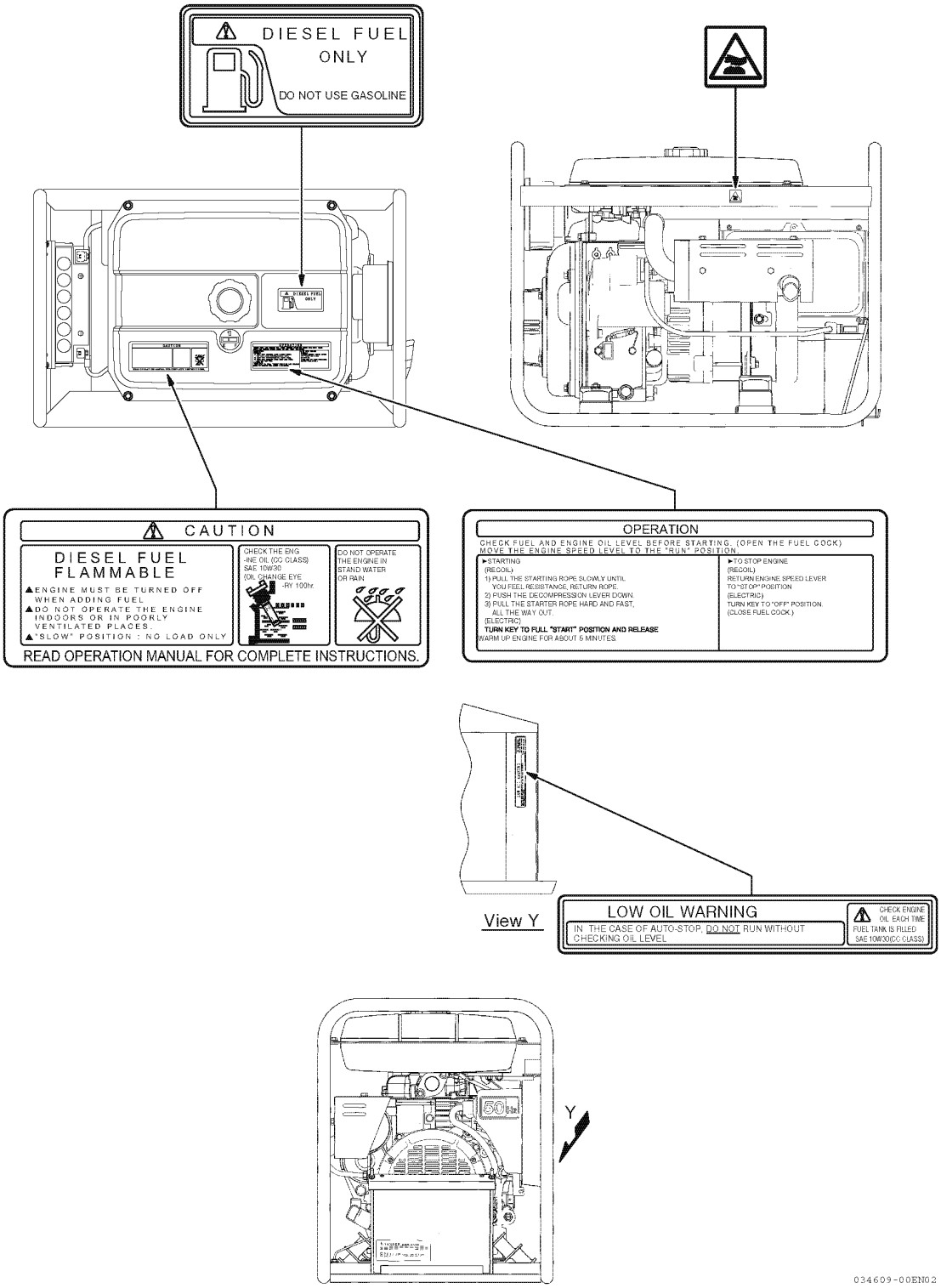


Figure 5

Safety Decals YDG2700N-6CS

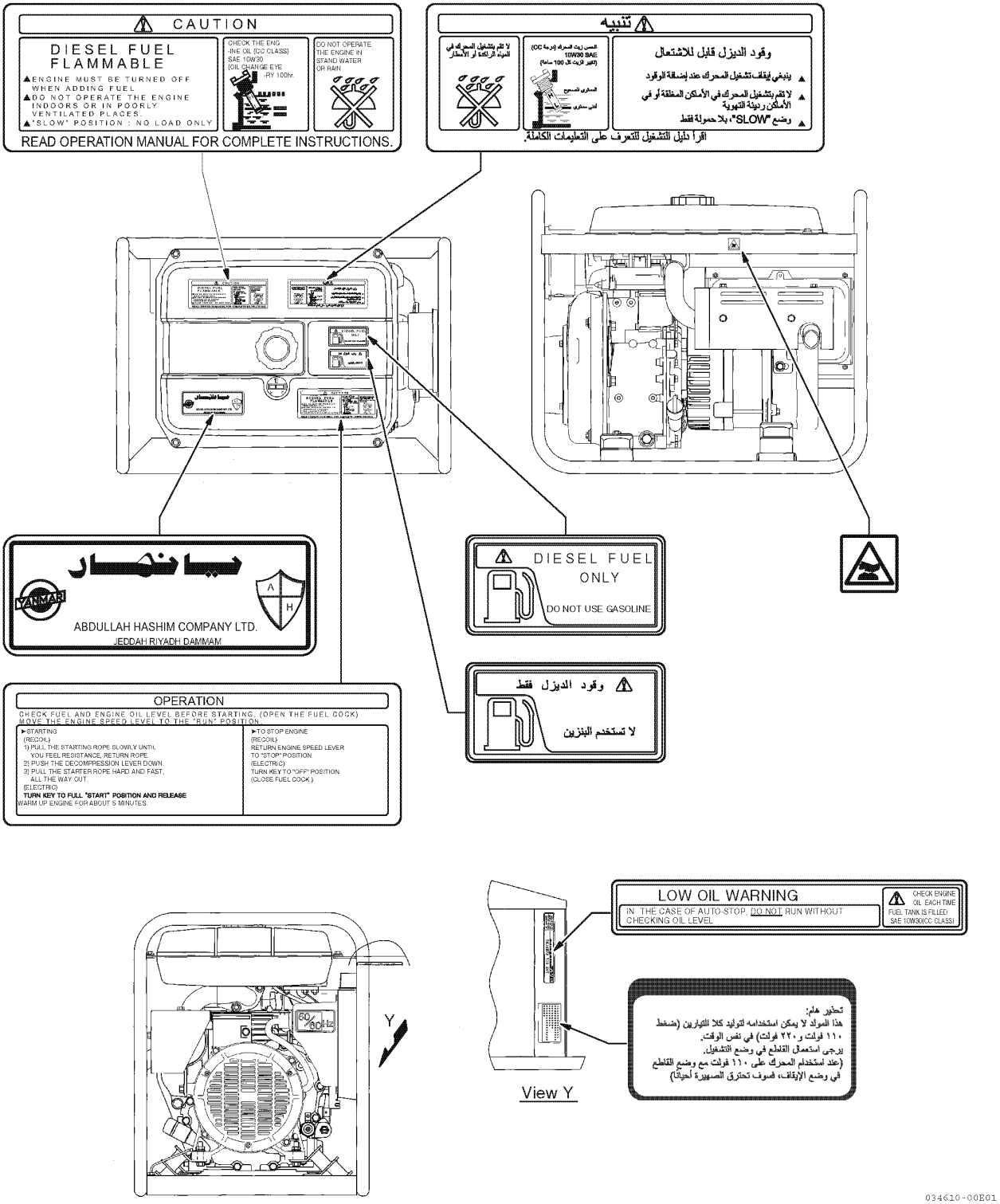


Figure 6

Safety Decals YDG3700N-5(E)A, 5(E)B, 5(E)F, 6(E)B, 6(E)C

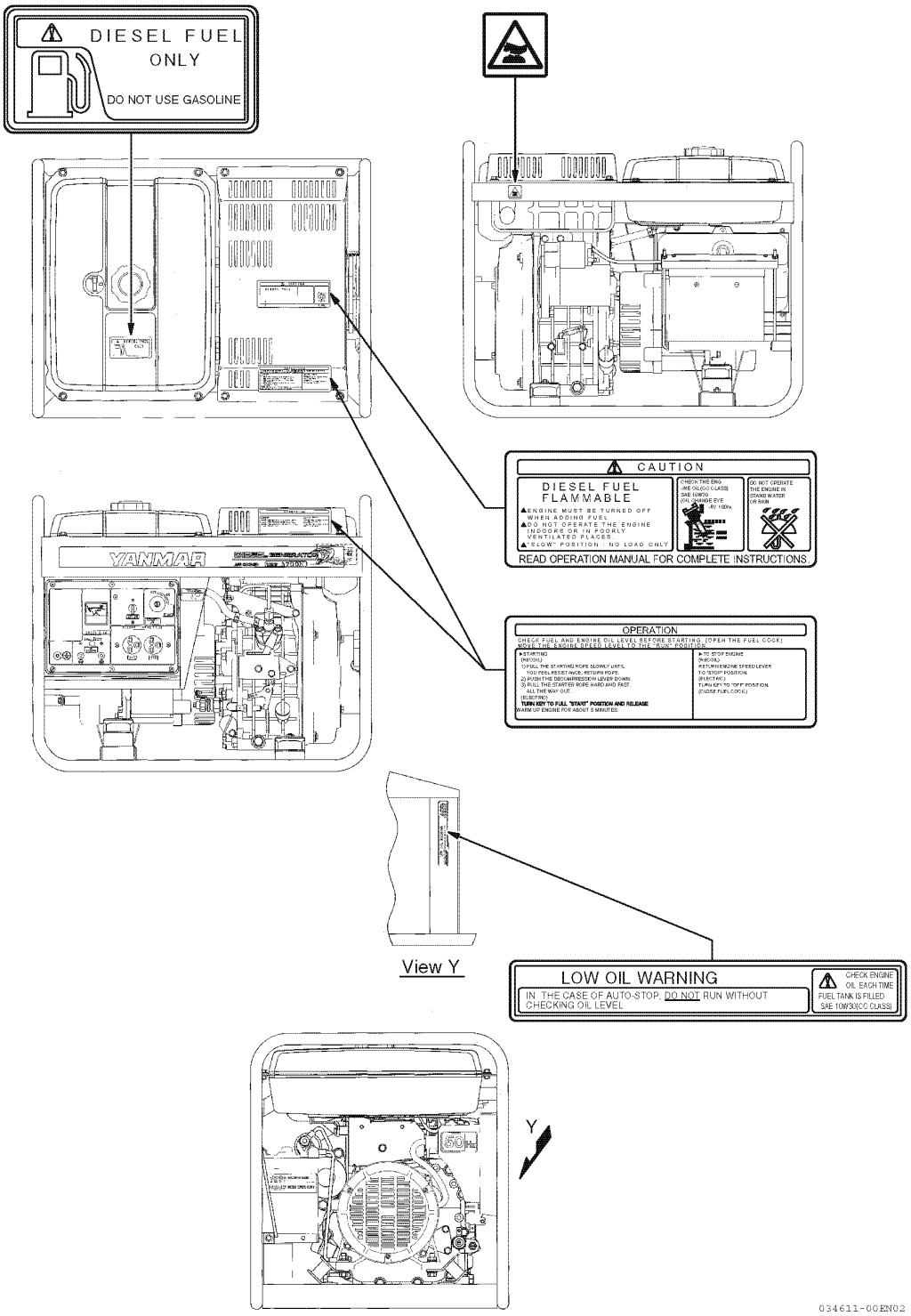


Figure 7

Safety Decals YDG3700N-6CS

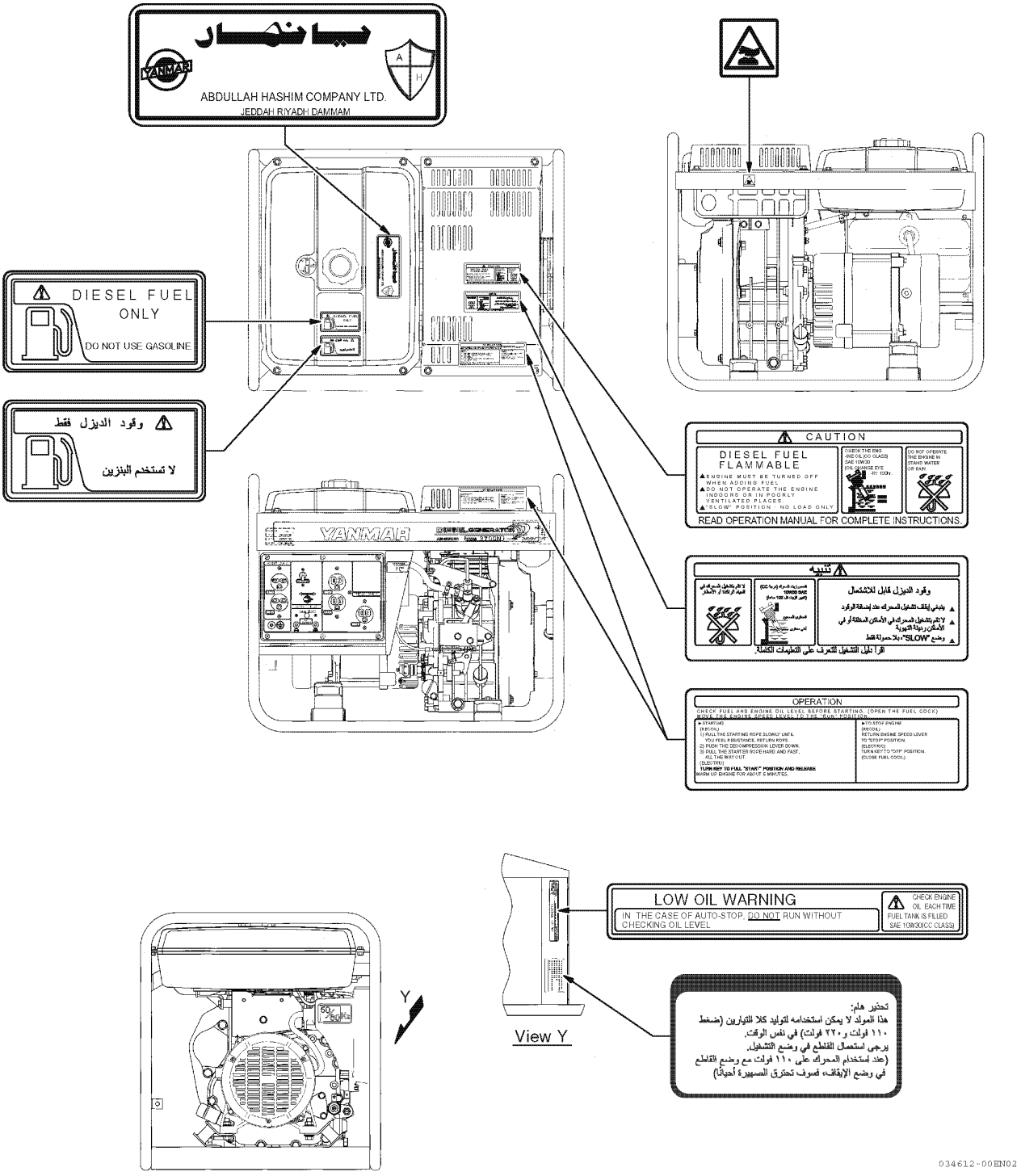


Figure 8

Safety Decals YDG5500N-5(E)A, 5(E)B, 5(E)F, 6(E)B, 6(E)C

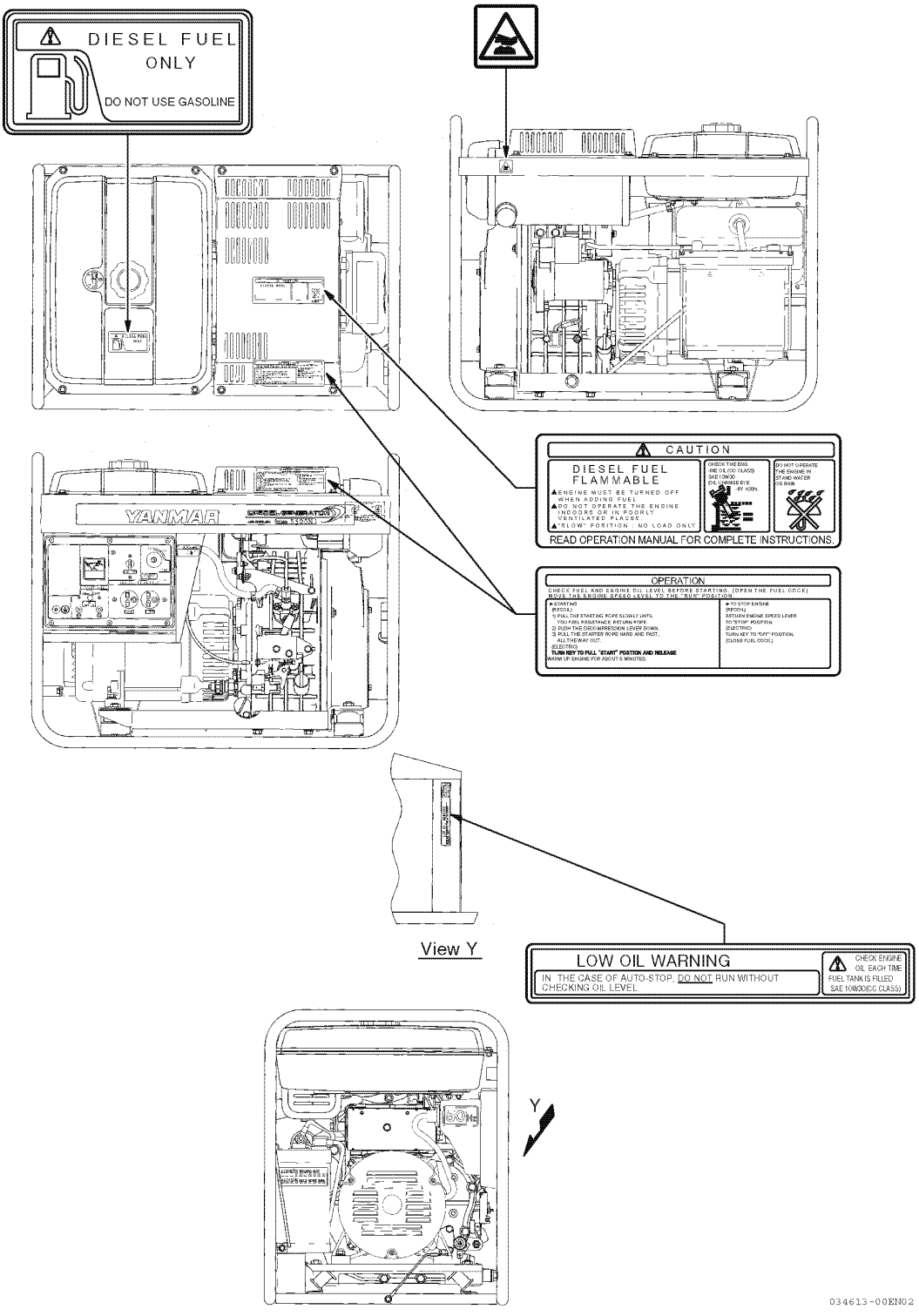


Figure 9

Safety Decals YDG5500N-6ECS

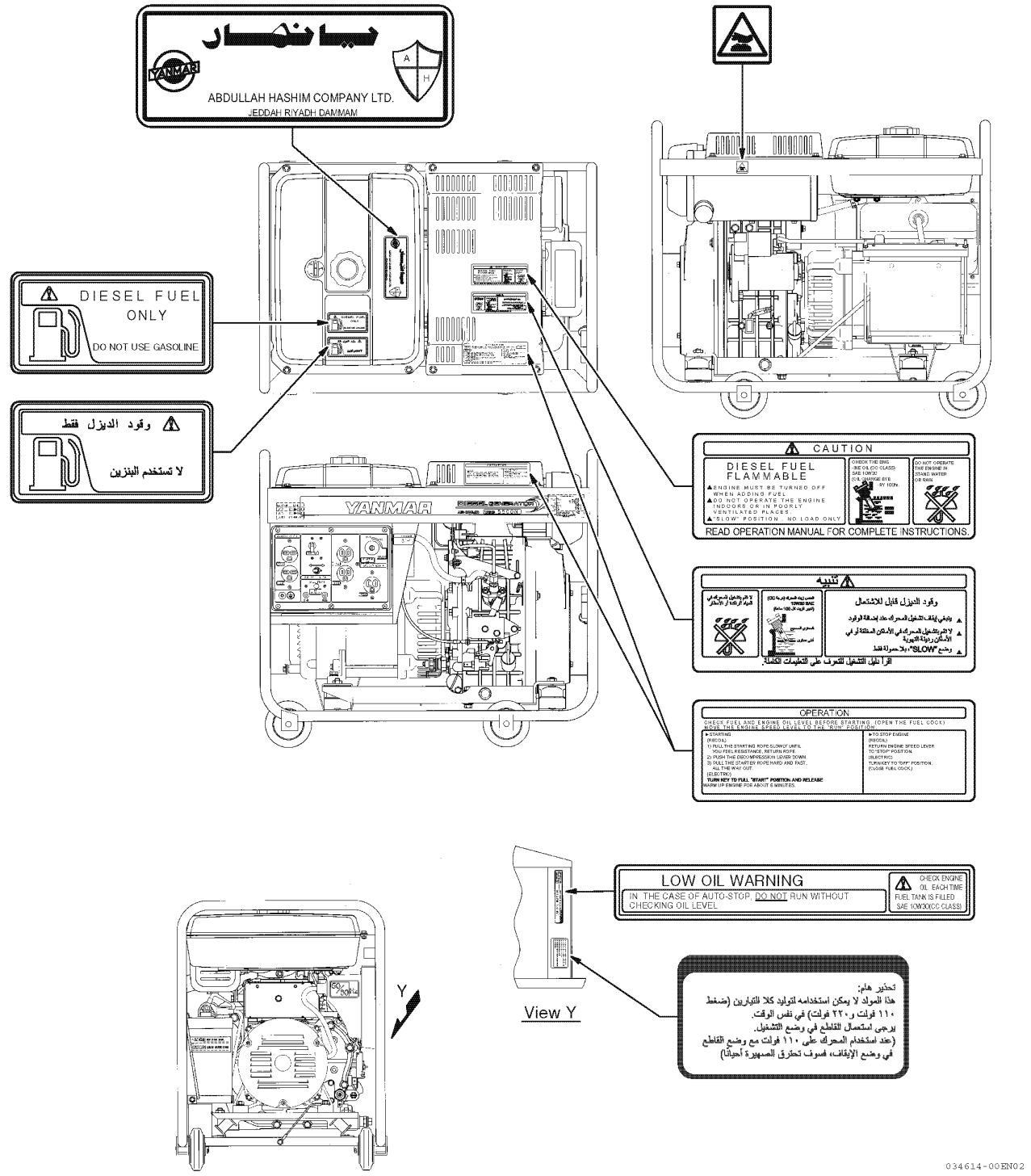


Figure 10

Safety Decals YDG6600TN-5EB, 6EB

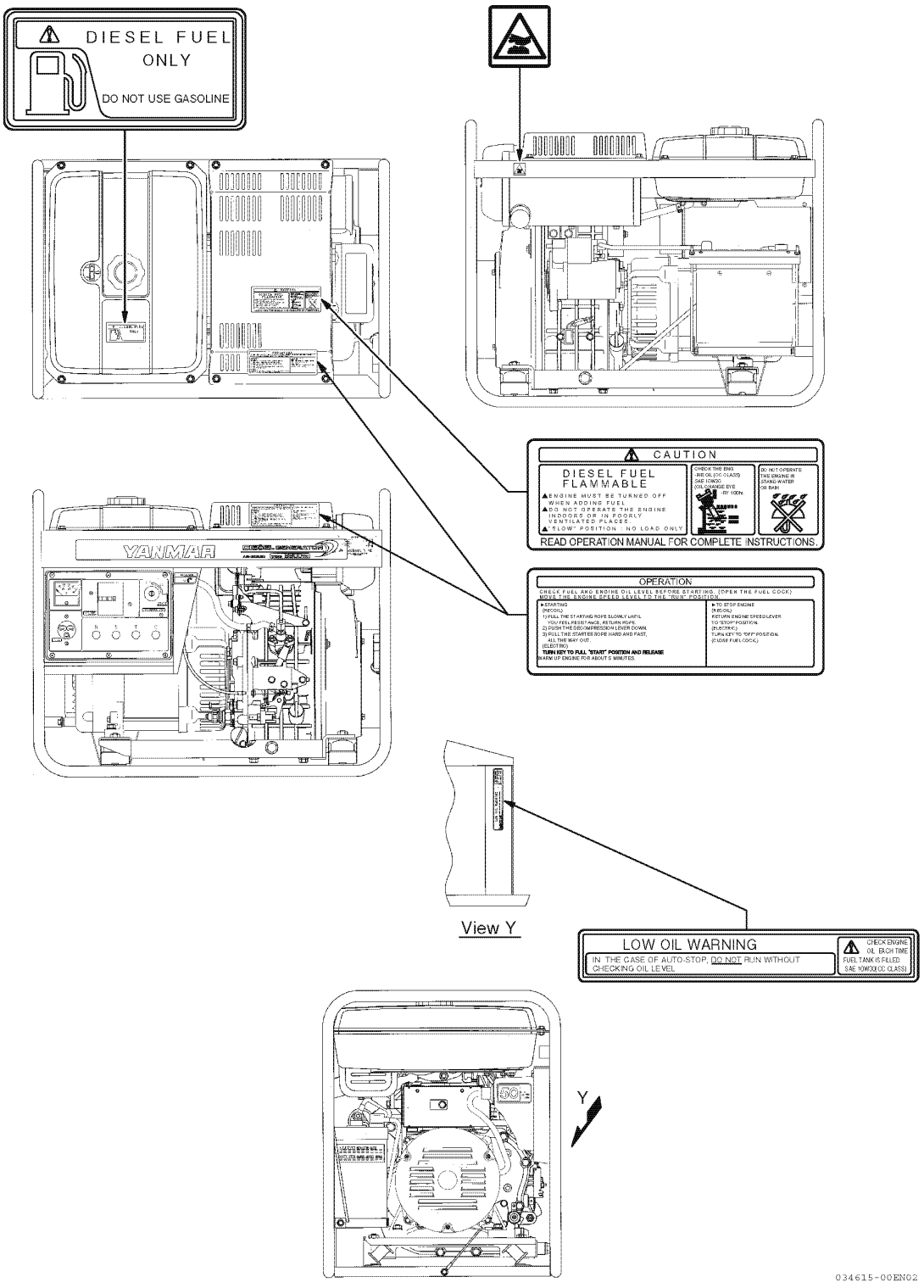


Figure 11

Generator Set Decal (Typical)

The YDG generator set model and serial number information decal is located inside the top front frame rail.

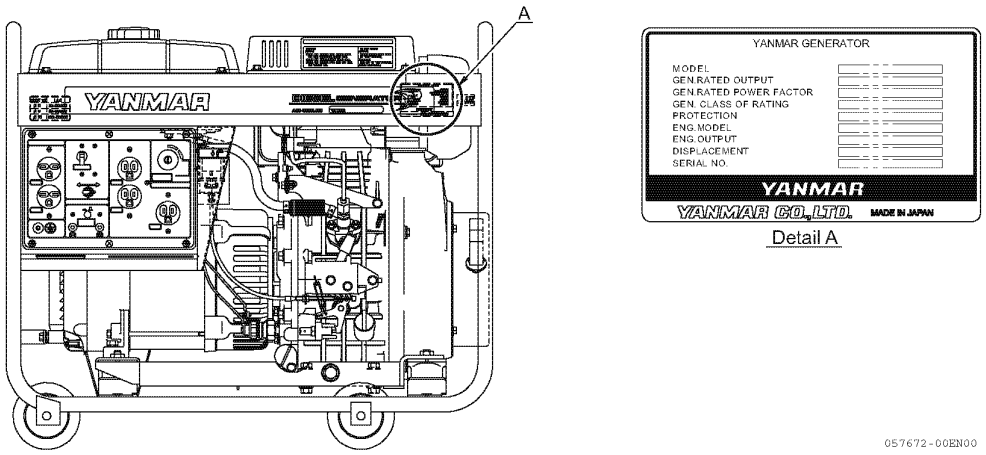


Figure 12

Description of Generator Set Model Number

YDG 5500 N 5 E B

- Destination
  - B: Utility
  - A: Nigeria
  - F: Australia
  - K: Kuwait
  - C: Taiwan
  - CS: Saudi Arabia
- Starting System
  - E: Electric
  - n/a: Manual
- Frequency
  - 5: 50 Hz
  - 6: 60 Hz
- Phase
  - N: Single phase
  - TN: 3-phase
- Rated output (at 60 Hz (W))

Generator Decal

The generator decal is located on the top of the generator body.

Note: Added "RATED OUTPUT (50/60 Hz)" and "POWER FACTOR".

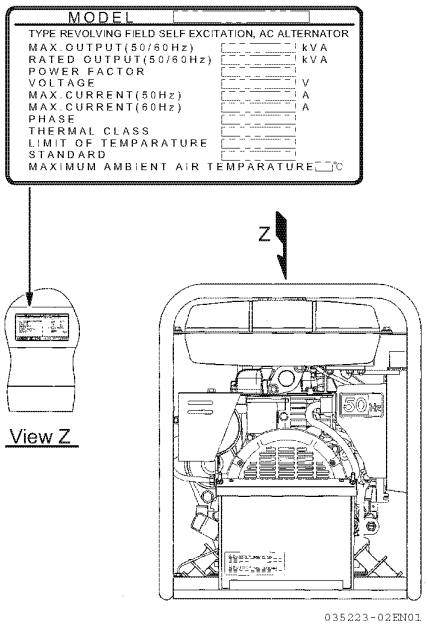


Figure 13

Engine Nameplate

The engine nameplate **(Figure 15)** is located on the cooling shroud on the PTO side of engine above the starter **(Figure 14, (1))**.

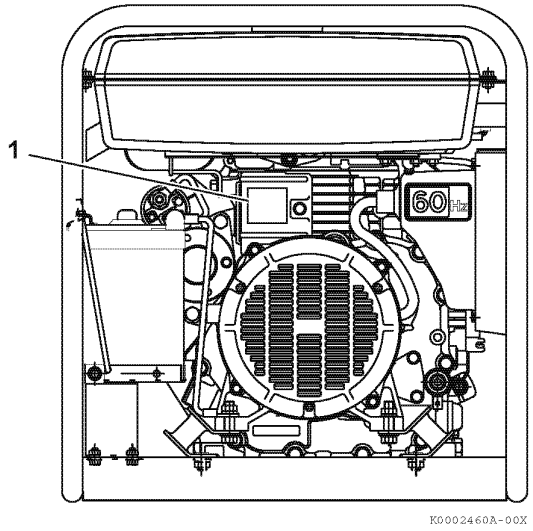
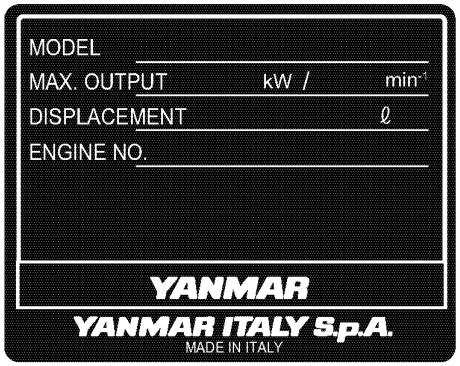
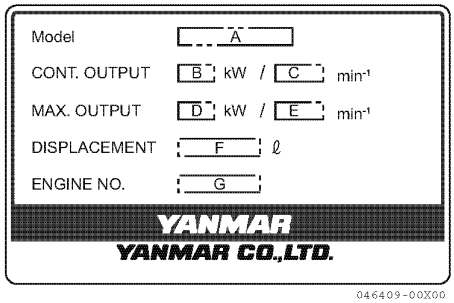


Figure 14



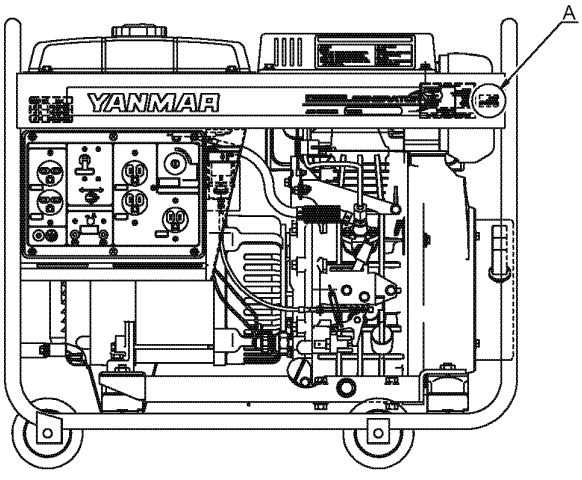
(made in Italy)

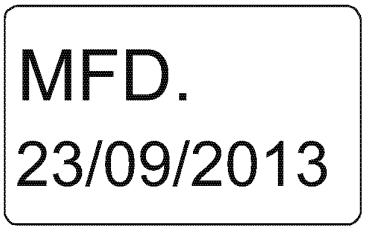


(made in Japan)

Figure 15

■ YDG2700N-6CS, YDG3700N-6CS, YDG5500N-6ECS





057673-00EN00

Figure 16

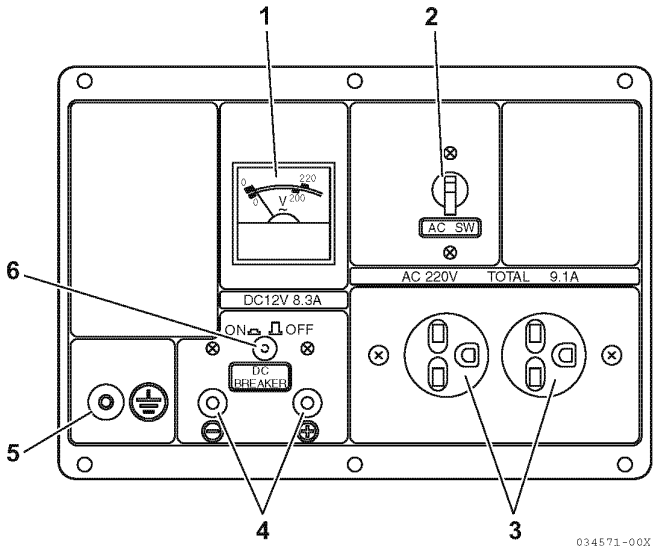
FUNCTION OF MAJOR COMPONENTS

Components	Functions
Air cleaner	The air cleaner prevents airborne contaminants from entering the engine. Periodic replacement of the air cleaner filter element is necessary. *See Periodic Maintenance Schedule on page 74* for the replacement frequency.
Dynamo	If the engine is equipped with electric start, a charging dynamo is located under the engine flywheel. The dynamo supplies regulated electricity to the engine systems and charges the battery while the engine is running.
Low engine oil shutdown	The generator is equipped with a low oil shutdown feature. If the engine is run when it is low on oil, the oil pressure will drop. The oil pressure switch will sense the drop in pressure and activate the stop solenoid, which will shut the engine down. Once the oil level is corrected, and pressure is normal, the engine can be run again.
Engine oil filter	The engine oil filter removes contaminants and sediment from the engine oil. Periodic cleaning of the oil filter is necessary. *See Periodic Maintenance Schedule on page 74* for the frequency of cleaning.
Side filler ports (engine oil)	You can fill the crankcase with engine oil from either side of the engine depending upon which filler port is most convenient.
Fuel filters	Inlet and outlet fuel filters are provided to remove contaminants and sediment from the diesel fuel. Periodic cleaning/replacement is required. *See Periodic Maintenance Schedule on page 74.*
Fuel tank	The fuel tank is a reservoir that holds diesel fuel. Fuel is gravity-fed to the fuel injection pump. Since fuel is used to keep fuel system components cool and lubricated, more fuel than is necessary for combustion enters the fuel system. Any fuel that is not used for combustion is returned to the fuel tank.
Oil cap/dipstick (engine oil)	The engine oil cap/dipstick combines the oil cap and dipstick in one assembly. The dipstick part of the assembly is used to determine the amount of engine oil in the crankcase.
Starter motor	The starter motor is powered by the battery. When you turn the key switch to the START position, the starter motor engages with the ring gear installed on the flywheel and starts the flywheel in motion.
Control panel	The control panel houses all the controls, switches, terminals, outlets and meters for the generator. All electrical power created by the generator is directed to the control panel and output is sent through various outlets and terminals located on the control panel.
Generator	The generator is coupled to the engine to produce electrical power to operate various loads and or machines. The generator is constructed as a self-exciting single phase A/C, and is comprised of a stator, rotor, automatic voltage regulator, rectifier and housing components.

GENERATOR CONTROL PANEL

■ YDG2700N-5A, YDG2700N-5B, YDG2700N-6B

Panel (Typical)

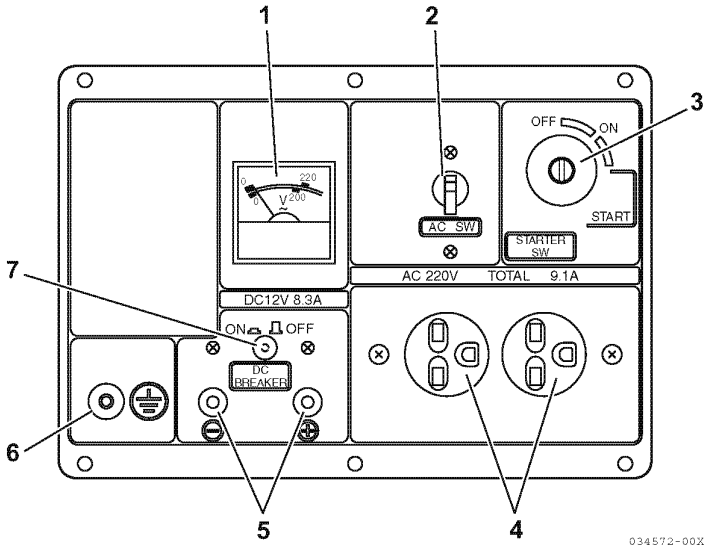


1 – Voltage meter
2 – AC circuit breaker (generator main switch - circuit breaker)
3 – Output socket (250 V)
4 – 12 V DC output terminal (for 12 V DC battery charging only)
5 – Grounding terminal
6 – DC circuit breaker (12 V DC output)

Figure 17

■ YDG2700N-5EA, YDG2700N-5EB, YDG2700N-6EB

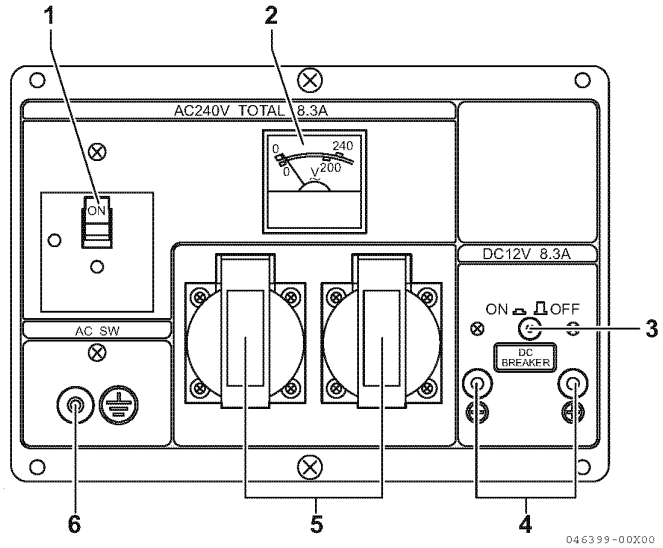
Panel (Typical)



1 – Voltage meter
2 – AC circuit breaker (generator main switch - circuit breaker)
3 – Engine start key switch
4 – Output socket (250 V)
5 – 12 V DC output terminal (for 12 V DC battery charging only)
6 – Grounding terminal
7 – DC circuit breaker (12 V DC output)

Figure 18

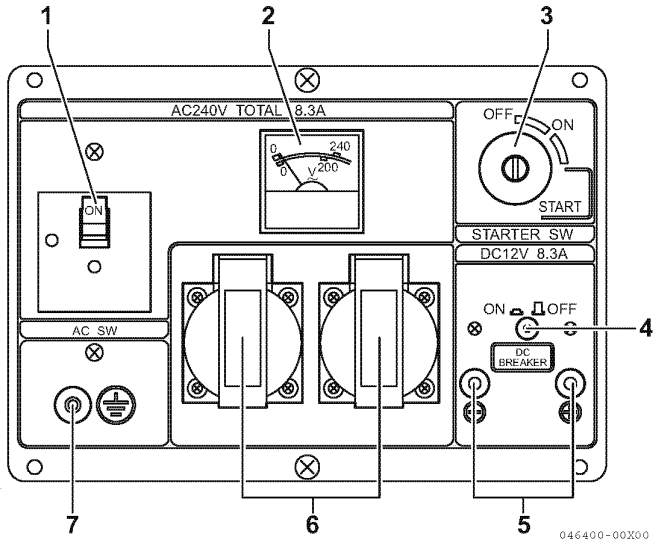
■ YDG2700N-5F



1 – AC circuit breaker (generator main switch - circuit breaker)
2 – Voltage meter
3 – DC circuit breaker (12 V DC output)
4 – 12 V DC output terminal (for 12 V DC battery charging only)
5 – Output socket (250 V)
6 – Grounding terminal

Figure 19

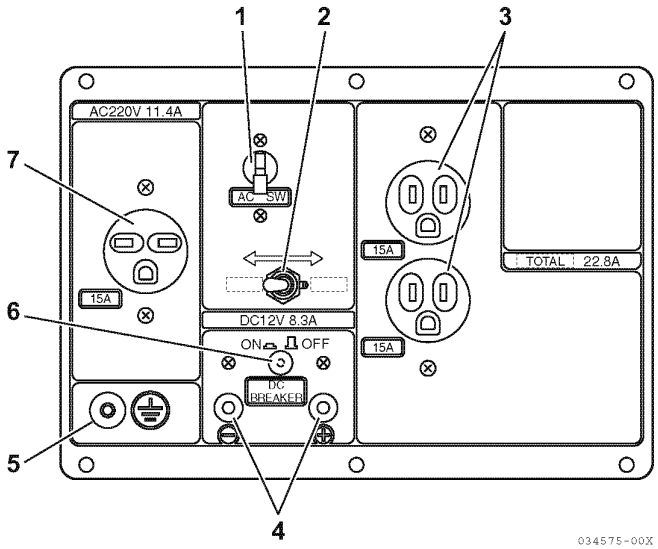
■ YDG2700N-5EF



1 – AC circuit breaker (generator main switch - circuit breaker)
2 – Voltage meter
3 – Engine start key switch
4 – DC circuit breaker (12 V DC output)
5 – 12 V DC output terminal (for 12 V DC battery charging only)
6 – Output socket (250 V)
7 – Grounding terminal

Figure 20

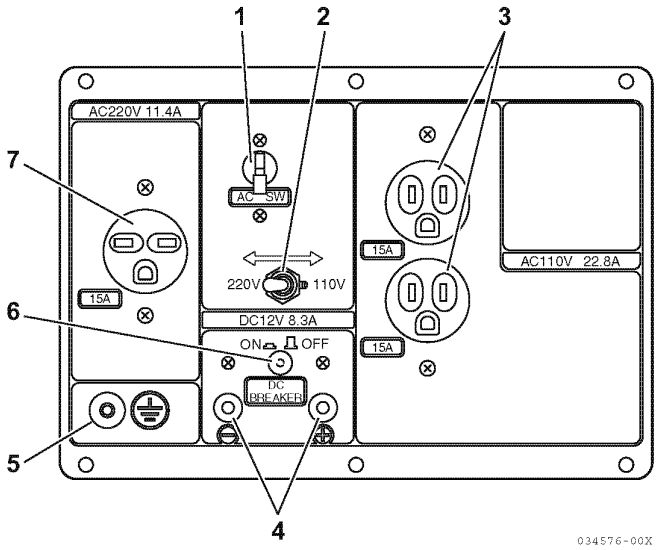
■ YDG2700N-6CS



1 – AC circuit breaker (generator main switch - circuit breaker)
2 – Voltage selector switch (110/220 V AC)
3 – Output socket (125 V)
4 – 12 V DC output terminal (for 12 V DC battery charging only)
5 – Grounding terminal
6 – DC circuit breaker (12 V DC output)
7 – Output socket (220 V)

Figure 21

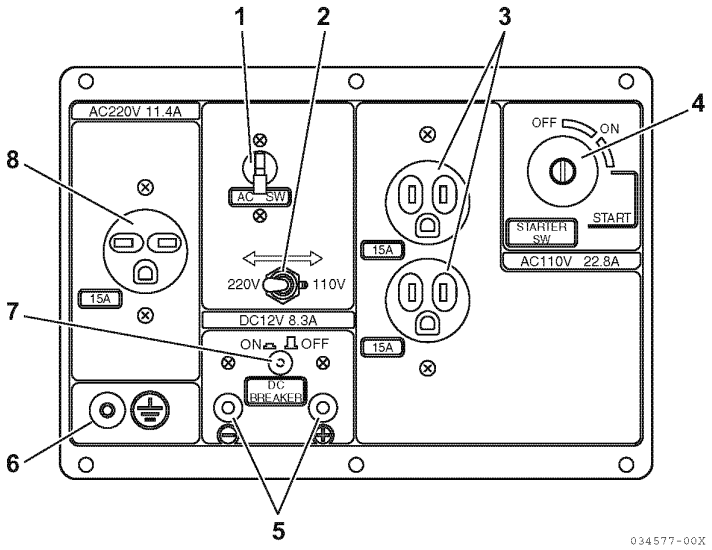
■ YDG2700N-6C



1 – AC circuit breaker (generator main switch - circuit breaker)
2 – Voltage selector switch (110/220 V AC)
3 – Output terminal (125 V)
4 – 12 V DC output terminal (for 12V DC battery charging only)
5 – Grounding terminal
6 – DC circuit breaker (12 V DC output)
7 – Output terminal (220 V)

Figure 22

■ YDG2700N-6EC

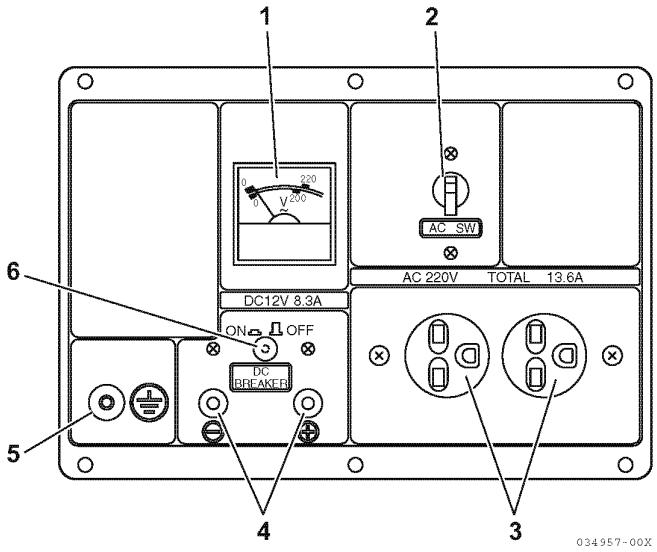


1 – AC circuit breaker (generator main switch - circuit breaker)
2 – Voltage selector switch (110/220 V AC)
3 – Output socket (125 V)
4 – Engine start key switch
5 – 12 V DC output terminal (for 12 V DC battery charging only)
6 – Grounding terminal
7 – DC circuit breaker (12 V DC output)
8 – Output socket (220 V)

Figure 23

■ YDG3700N-5A, YDG3700N-5B, YDG3700N-6B, YDG5500N-5A, YDG5500N-5B, YDG5500N-6B

Panel (Typical)

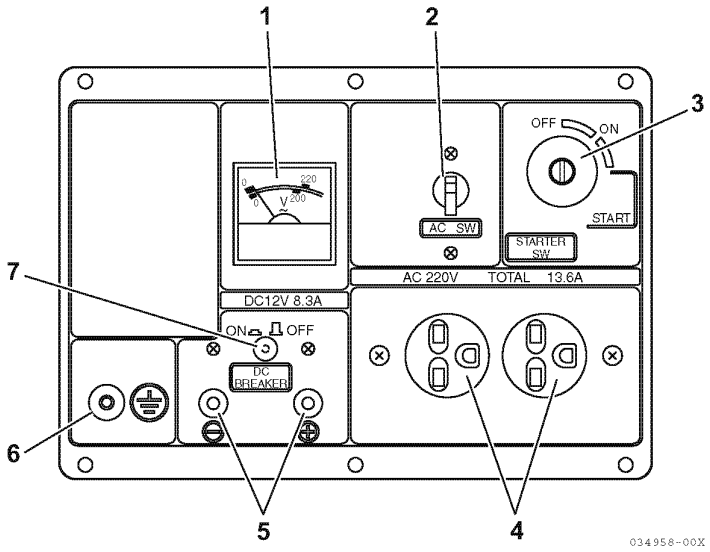


1 – Voltage meter
2 – AC circuit breaker (generator main switch - circuit breaker)
3 – Output socket (220 V)
4 – 12 V DC output terminal (for 12 V DC battery charging only)
5 – Grounding terminal
6 – DC circuit breaker (12 V DC output)

Figure 24

■ YDG3700N-5EA, YDG3700N-5EB, YDG3700N-6EB, YDG5500N-5EA, YDG5500N-5EB, YDG5500N-6EB

Panel (Typical)

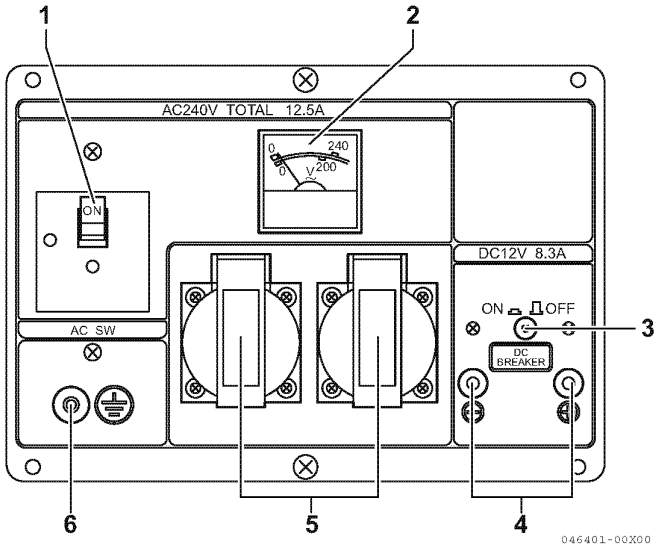


1 – Voltage meter
2 – AC circuit breaker (generator main switch - circuit breaker)
3 – Engine start key switch
4 – Output socket (220 V)
5 – 12 V DC output terminal (for 12 V DC battery charging only)
6 – Grounding terminal
7 – DC circuit breaker (12 V DC output)

Figure 25

■ YDG3700N-5F

(Typical)

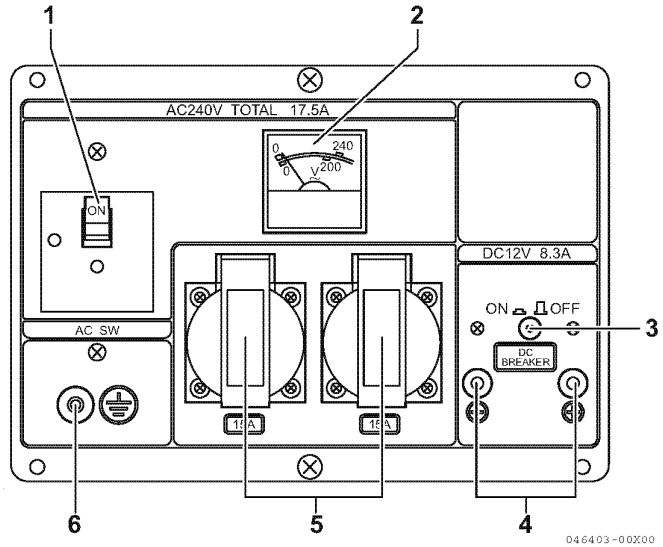


1 – AC circuit breaker (generator main switch - circuit breaker)
2 – Voltage meter
3 – DC circuit breaker (12 V DC output)
4 – 12 V DC output terminal (for 12 V DC battery charging only)
5 – Output socket (240 V)
6 – Grounding terminal

Figure 26

■ YDG5500N-5F

(Typical)

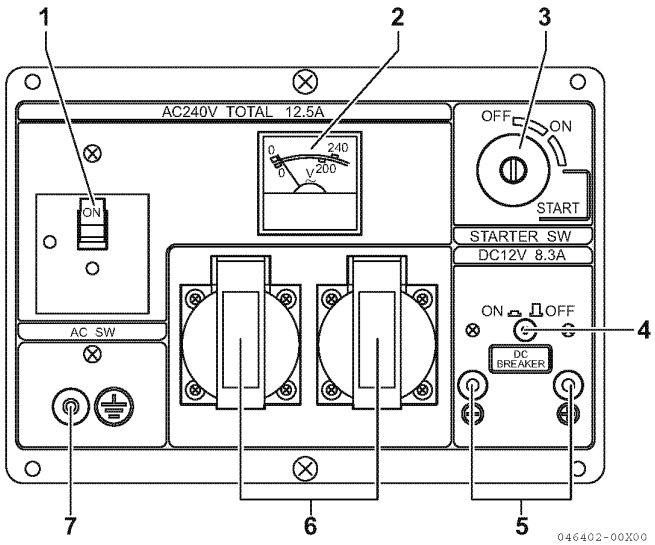


1 – AC circuit breaker (generator main switch - circuit breaker)
2 – Voltage meter
3 – DC circuit breaker (12 V DC output)
4 – 12 V DC output terminal (for 12 V DC battery charging only)
5 – Output socket (240 V)
6 – Grounding terminal

Figure 27

■ YDG3700N-5EF

(Typical)

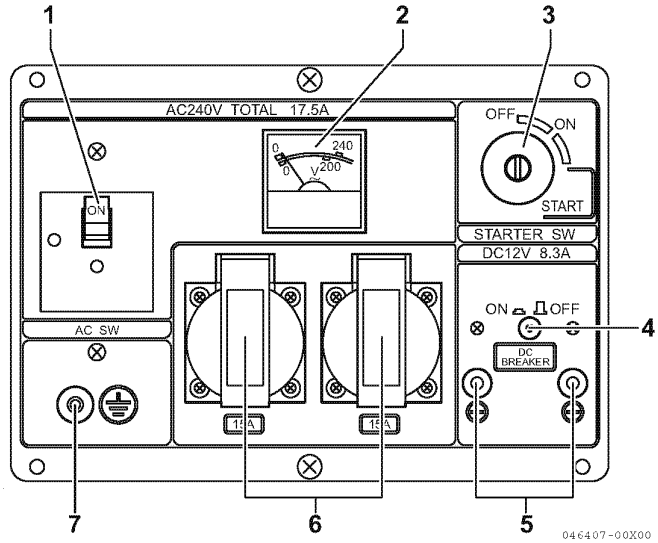


1 – AC circuit breaker (generator main switch - circuit breaker)
2 – Voltage meter
3 – Engine start key switch
4 – DC circuit breaker (12 V DC output)
5 – 12 V DC output terminal (for 12 V DC battery charging only)
6 – Output socket (240 V)
7 – Grounding terminal

Figure 28

■ YDG5500N-5EF

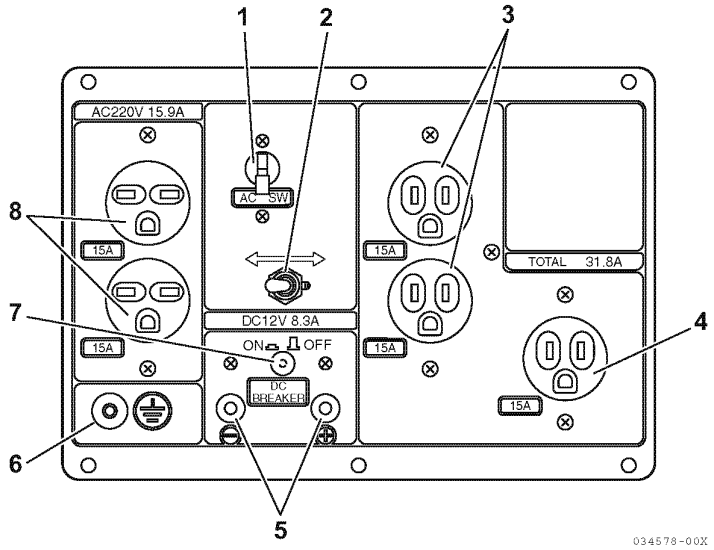
(Typical)



1 – AC circuit breaker (generator main switch - circuit breaker)
2 – Voltage meter
3 – Engine start key switch
4 – DC circuit breaker (12 V DC output)
5 – 12 V DC output terminal (for 12 V DC battery charging only)
6 – Output socket (240 V)
7 – Grounding terminal

Figure 29

■ YDG3700N-6CS

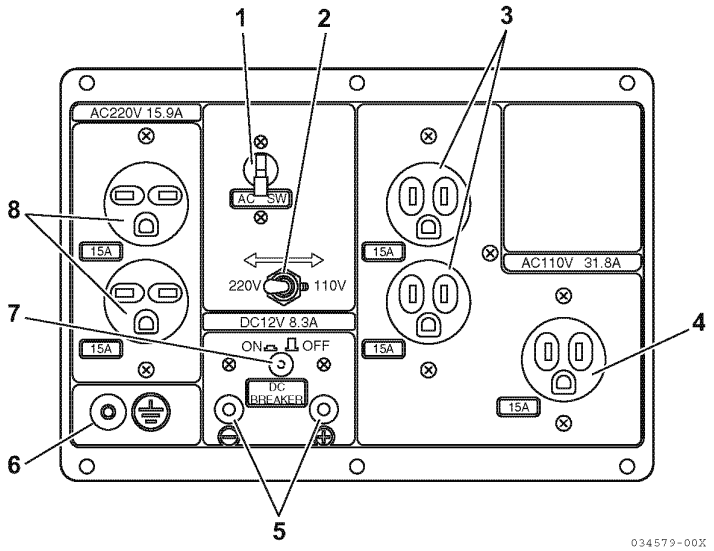


1 – AC circuit breaker (generator main switch - circuit breaker)
2 – Voltage selector switch (110/220 V AC)
3 – Output socket (125 V)
4 – Output socket
5 – 12 V DC output terminal (for 12 V DC battery charging only)
6 – Grounding terminal
7 – DC circuit breaker (12 V DC output)
8 – Output socket (220 V)

Figure 30

■ YDG3700N-6C, YDG5500N-6C

(Typical)

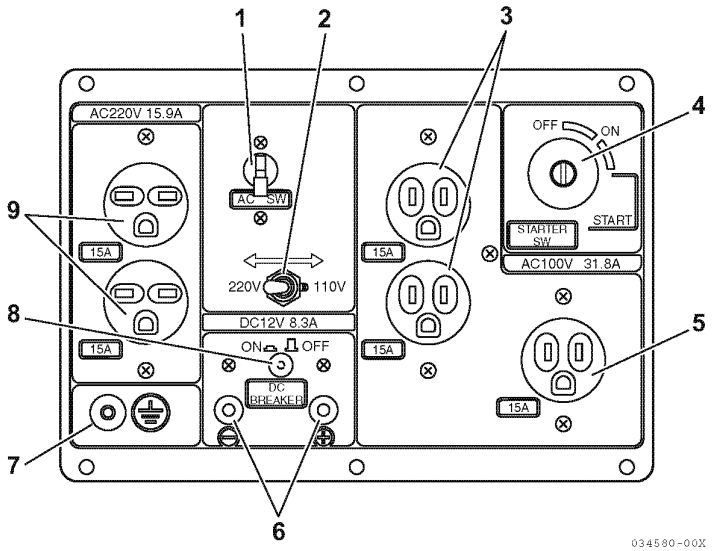


1 – AC circuit breaker (generator main switch - circuit breaker)
2 – Voltage selector switch (110/220 V AC)
3 – Output socket (125 V)
4 – Output socket
5 – 12 V DC output terminal (for 12 V DC battery charging only)
6 – Grounding terminal
7 – DC circuit breaker (12 V DC output)
8 – Output socket (220 V)

Figure 31

■ YDG3700N-6EC, YDG5500N-6EC

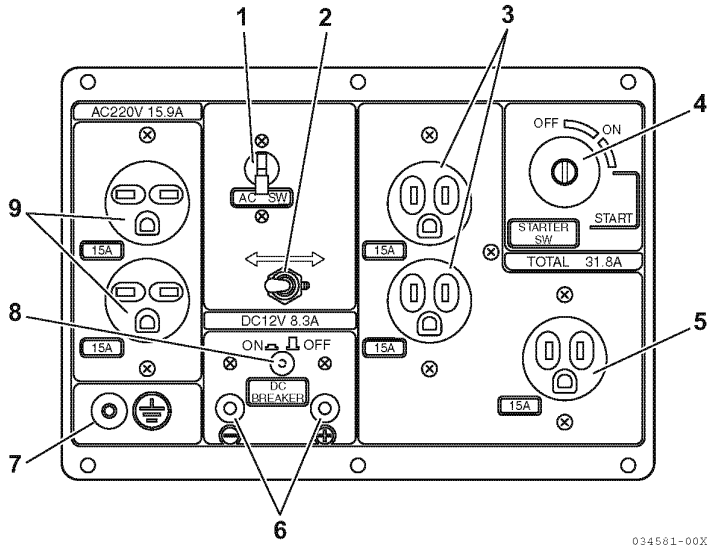
(Typical)



1 – AC circuit breaker (generator main switch - circuit breaker)
2 – Voltage selector switch (110/220 V AC)
3 – Output socket (125 V)
4 – Engine start key switch
5 – Output socket
6 – 12 V DC output terminal (for 12 V DC battery charging only)
7 – Grounding terminal
8 – DC circuit breaker (12 V DC output)
9 – Output socket (220 V)

Figure 32

■ YDG5500N-6ECS

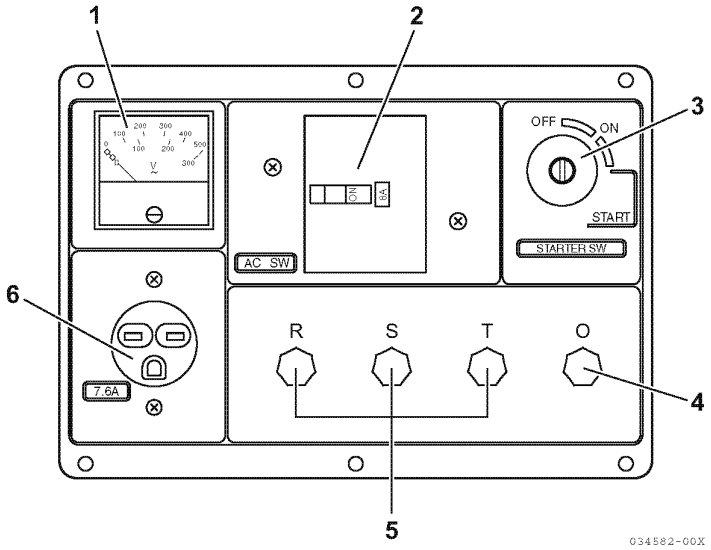


1 – AC circuit breaker (generator main switch - circuit breaker)
2 – Voltage selector switch (110/220 V AC)
3 – Output socket (125 V)
4 – Engine start key switch
5 – Output socket
6 – 12 V DC output terminal (for 12 V DC battery charging only)
7 – Grounding terminal
8 – DC circuit breaker (12 V DC output)
9 – Output socket (220 V)

Figure 33

■ YDG6600TN-5EB, YDG6600TN-6EB

(Typical)



1 – Voltage meter
2 – AC circuit breaker (generator main switch - circuit breaker)
3 – Engine start key switch
4 – Terminal (black)
5 – Terminal (red)
6 – Output socket

Figure 34

AIR COOLED ENGINE

The engine is air-cooled by a cooling fan. The cooling system consists of a fan attached to the flywheel. The fan blows air past the cooling fins on the cylinder head and cylinder, which are enclosed by shrouds that direct the air flow.

ENGINE CONTROLS - RECOIL STARTER

The engines are equipped with a recoil and an electric starter. This section explains the controls available with the recoil starter.

Recoil Starter

A recoil starter allows you to manually start an engine by pulling on the recoil starter handle **(Figure 35, (1))**. When you pull on the handle you set the flywheel and crankshaft in motion. The recoil starter is spring-loaded so the handle and attached rope automatically return to the recoil starter assembly.

Decompression Lever

Pressing the decompression lever **(Figure 35, (2))** helps you start the engine by reducing the effort needed to pull the recoil starter handle. The decompression lever will automatically return to the original position when the engine starts.

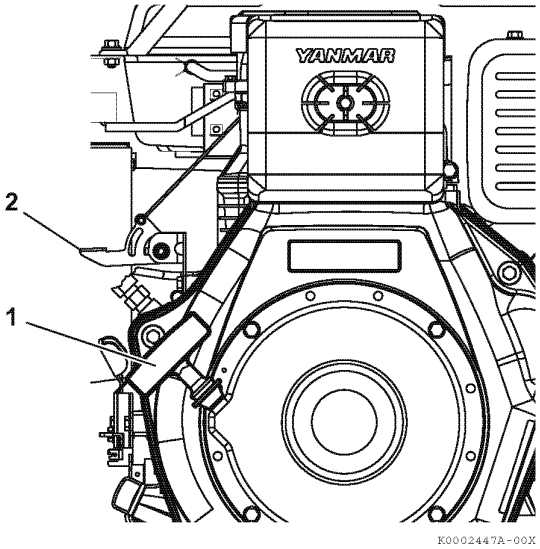


Figure 35

ENGINE CONTROLS - ELECTRIC STARTER

Key Switch

The generator is equipped with a three position key switch - OFF, ON, and START.

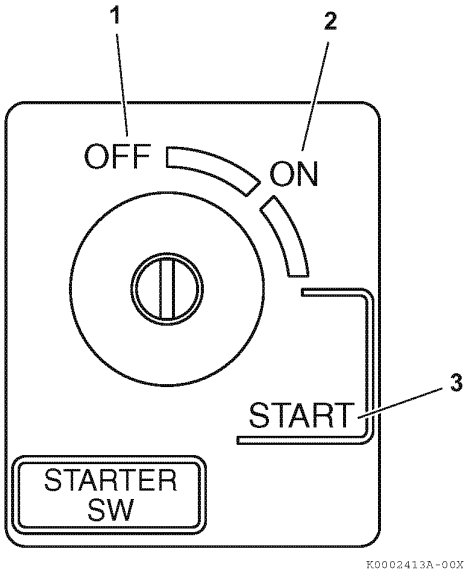


Figure 36

OFF (key straight up and down) **(Figure 36, (1))** - When you turn the key to this position the engine shuts down. Electric current to the battery, low engine oil shutdown device and other electric devices is shut off. The key can be inserted and removed from this position.

ON **(Figure 36, (2))** - This is the position the key will be in when the engine is running. After starting engine, key switch will automatically return to this position.

START **(Figure 36, (3))** - Turn the key to this position to start the engine. As soon as the engine starts, release the key and it will automatically return to the ON position.

NOTICE

Never hold the key in the START position for longer than 15 seconds or the starter motor will overheat.

Engine Speed Control Lever

NOTICE

If using the stop lever to shut-down the engine, be sure to return the key switch to the OFF position to prevent discharging of the battery.

The engine speed control lever **(Figure 37, (1))** is moved to the run position **(Figure 37, (2))** for generator operation. To stop the generator, turn the key switch to the OFF position, or push down on the stop lever **(Figure 37, (3))** and the speed control lever **(Figure 37, (1))**, which is spring-loaded, will move back to the stop position.

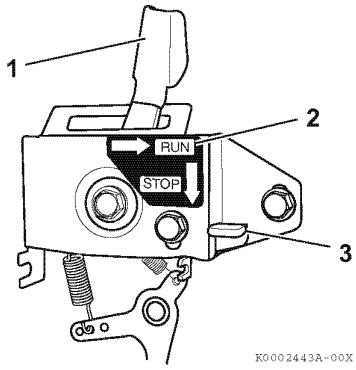


Figure 37

SPARK ARRESTER

A spark arrestor **(Figure 38, (1))** is installed in the outlet port of the muffler. A spark arrester is required if using the generator in a national forest and other designated state and local areas. Check local codes.

The spark arrester needs periodic cleaning. A dirty spark arrester reduces engine output and increases fuel consumption. It also makes starting difficult.

NOTICE

A clogged spark arrester hinders the flow of exhaust gas. This reduces engine output, increases fuel consumption and makes starting difficult.

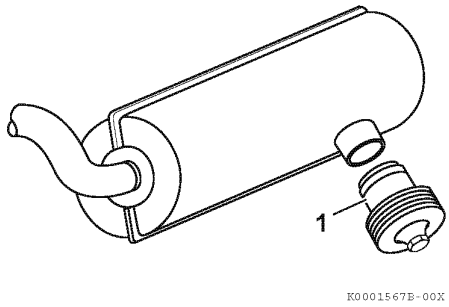


Figure 38

BEFORE YOU OPERATE

INTRODUCTION

This section of the Operation Manual describes activating a new battery, diesel fuel and engine oil specifications and how to replenish them. It also describes the proper way to connect the electrical loads to the generator and the daily engine checkout.

Before performing any storage procedures within this section, review the *Safety* section on *page 1*.

BATTERY

Activating the Battery

NOTICE

Do not remove the aluminum foil or sealing tape **(Figure 39, (3))** from the battery until it is ready to be filled with electrolyte. Removing the foil or sealing tape will cause the battery to lose its dry charge.

1. Loosen nuts **(Figure 39, (1))** that secure the battery hold-down **(Figure 39, (2))**.
2. Loosen nuts enough so battery hold-down can be moved off the top of battery. The nuts just need to be loosened; they do not need to be removed.
3. Lift battery out of frame onto a work bench.

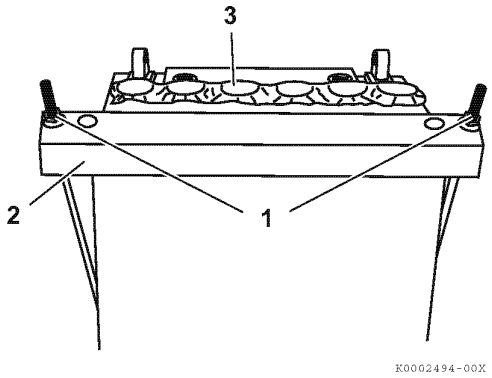


Figure 39

4. Fill the battery with electrolyte.

NOTICE

The battery is shipped dry and needs to be filled with electrolyte. The battery will require approximately 1.9 qt (1.8 ℓ) of electrolyte to be filled. See your local auto parts store to purchase electrolyte for your battery.

5. Remove the aluminum foil or sealing tape from the top of the battery.
6. Carefully fill the battery with electrolyte up to the upper level line **(Figure 40, (1))**.

⚠ WARNING

Batteries contain sulfuric acid. Never allow battery fluid to come in contact with clothing, skin or eyes. Severe burns could result. Always wear safety goggles and protective clothing when servicing the battery. If battery fluid contacts the eyes and/or skin, immediately flush the affected area with a large amount of clean water and obtain prompt medical treatment

7. Let battery stand for half an hour to allow any trapped gases to escape.
8. After letting battery stand, top off battery with electrolyte, if needed, so it is at the upper level line **(Figure 40, (1)).** Battery level should never be below the lower level line **(Figure 40, (2))**.

NOTICE

Always keep the electrolyte level between the upper and lower lines on the battery.

9. If battery was filled with electrolyte immediately after aluminum foil or sealing tape was removed, battery does not need to be charged. If battery needs to be charged, *See Charging the Battery on page 51.*

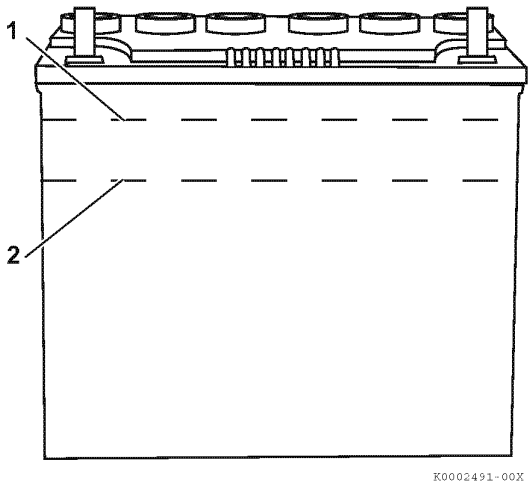


Figure 40

10. Install caps **(Figure 41, (1))** onto battery. Hand-tighten caps. Do not over-tighten.

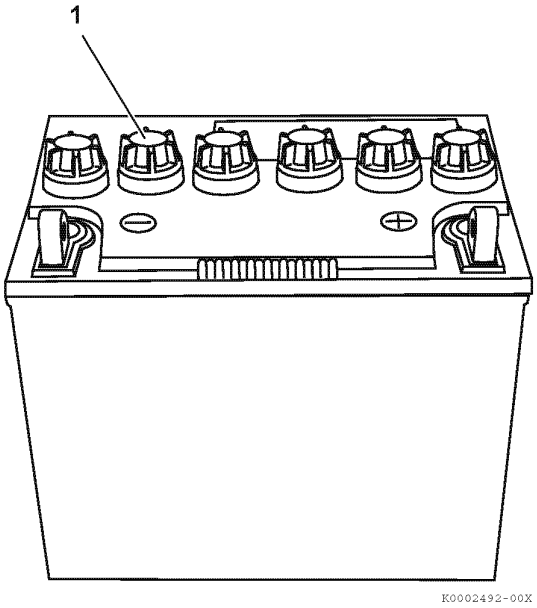


Figure 41

11. Install battery into generator.
12. Reinstall battery hold-down **(Figure 42, (1))** onto battery.
13. Tighten nuts **(Figure 42, (2))** until battery hold-down is tight. Do not over-tighten nuts.
14. Connect battery cables to battery. *See Disconnecting and Connecting Battery Cables on page 51.*
15. Install boot **(Figure 42, (3))** onto the positive (+) terminal of the battery.

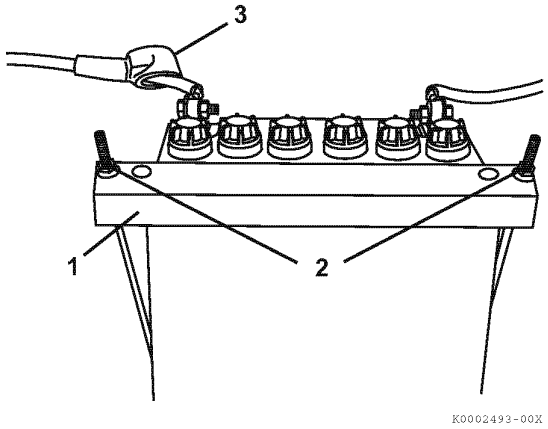


Figure 42

Checking Battery Electrolyte Level

⚠ DANGER

Never check the remaining battery charge by shorting out the terminals. This will result in a spark and may cause an explosion or fire. Use a hydrometer to check the remaining battery charge.

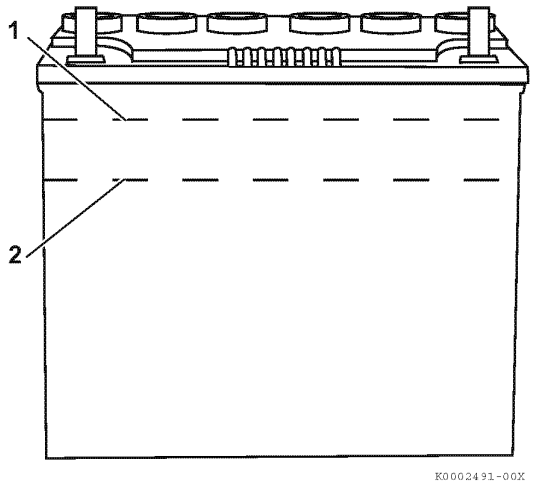


Figure 43

- When the amount of fluid nears the lower limit line **(Figure 43, (2))**, remove caps and fill with distilled water so it is at the upper limit line **(Figure 43, (1))**. If operation continues with insufficient battery fluid, the battery life is shortened, and the battery may overheat and explode. During the summer, check the fluid level more often than specified.

⚠ WARNING

Batteries contain sulfuric acid. Never allow battery fluid to come in contact with clothing, skin or eyes. Severe burns could result. Always wear safety goggles and protective clothing when servicing the battery. If battery fluid contacts the eyes and/or skin, immediately flush the affected area with a large amount of clean water and obtain prompt medical treatment.

- If the engine cranking speed is so slow that the engine does not start, recharge the battery.
- If the engine still will not start after charging, have your authorized YANMAR industrial engine dealer or distributor check the battery and the engine's starting system.
- If operating the machine where the ambient temperature could drop to 14 °F (-10 °C) or less, remove the battery from the machine at the end of the day. Store the battery in a warm place until the next use. This will help start the engine easily at low ambient temperatures.

Charging the Battery

1. Disconnect the battery cables from the battery. *See Disconnecting and Connecting Battery Cables on page 51.*
2. Clean terminals on the battery and clamps on the end of the cables.
3. Connect the positive (+) clamp from the charger to the positive (+) terminal on the battery.

⚠ DANGER

- **If the electrolyte is frozen, slowly warm the battery before you recharge it.**
- **Avoid serious personal injury or equipment damage. Before charging, remove the cap from each cell of the battery and always make sure there is plenty of ventilation when charging battery. Discontinue charging if the electrolyte temperature exceeds 117 °F (45 °C). While the engine is running or the battery is charging, hydrogen gas is being produced and can be easily ignited. Always keep the area around the battery well-ventilated and keep sparks, open flames and any other form of ignition out of the area.**
- **Never charge the battery while connected. The diodes will be damaged by the high voltage. Connect the (+) lead of the charger to the (+) terminal of the battery, and the (–) lead to the (–) terminal. Reversed polarity will damage the charger rectifier or the battery. After charging is completed, connect the battery cables correctly to the battery. Reversed polarity wiring will damage the diodes. Quick-charging should only be done in an emergency; slow charging is recommended.**

4. Connect the negative (–) clamp from the charger to the negative (–) terminal on the battery.

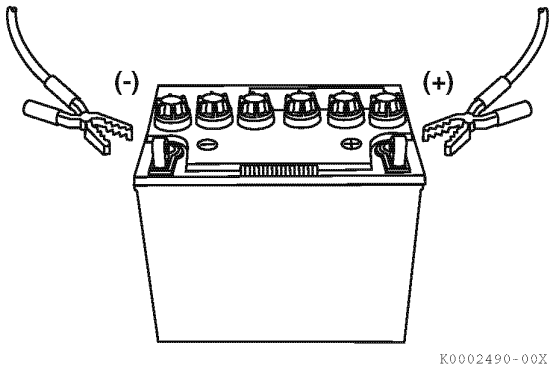


Figure 44

5. When finished charging the battery, unplug the charger before disconnecting clamps from the battery. *See Disconnecting and Connecting Battery Cables on page 51.*

Disconnecting and Connecting Battery Cables

⚠ CAUTION

This generator uses a negative ground 12 V DC starting system. Always shut down the engine before removing or attaching battery cables. Always remove the negative (–) cable first. Always attach the negative (–) cable last

1. When disconnecting cables, loosen and disconnect negative (–) cable **(Figure 45, (1))** first from battery.
2. Disconnect positive (+) cable **(Figure 45, (2))** from battery last.

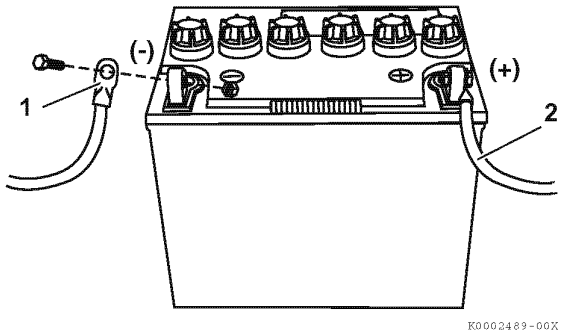


Figure 45

3. When connecting cables to battery connect the positive (+) cable **(Figure 46, (1))** first.

⚠ CAUTION

When you install a battery, always use correct polarity when you connect battery cables to the battery. Always make sure the battery terminals are clean and tight.

4. Connect the negative (–) cable **(Figure 46, (2))** to the battery last.

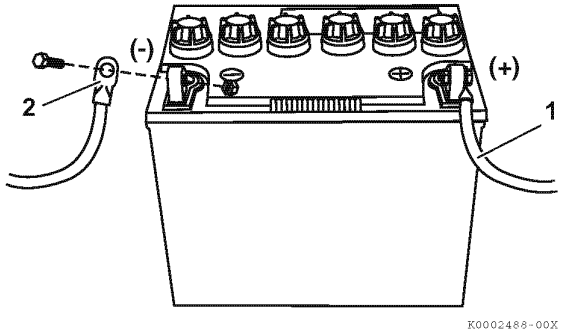


Figure 46

DIESEL FUEL

Diesel Fuel Specifications

Diesel fuel should comply with the following specifications. The table lists several worldwide specifications for diesel fuels.

NOTICE

Always use diesel fuels recommended by YANMAR for the best engine performance, to prevent engine damage and to comply with EPA/ARB warranty. Only use clean diesel fuel.

Diesel fuel specification	Location
EN590:96	European Union
ISO 8217 DMX	International
BS 2869-A1 or A2	United Kingdom
KSM-2610	Korea
GB252	China

■ Additional technical fuel requirements

- The fuel cetane number should be equal to 45 or higher.
- The sulfur content must not exceed 0.5 % by volume. Less than 0.05 % is preferred.
- Bio-Diesel fuels. *See Bio-diesel fuels on page 53.*
- Never mix kerosene, used engine oil, or residual fuels with the diesel fuel.
- Water and sediment in the fuel should not exceed 0.05 % by volume.
- Keep the fuel tank and fuel-handling equipment clean at all times.
- Poor quality fuel can reduce engine performance and/or cause engine damage.
- Fuel additives are not recommended. Some fuel additives may cause poor engine performance. Consult your YANMAR industrial engine dealer or distributor for more information.
- Ash content not to exceed 0.01 % by volume.
- Carbon residue content not to exceed 0.35 % by volume. Less than 0.1 % is preferred.
- Total aromatics content should not exceed 35 % by volume. Less than 30 % is preferred.
- PAH (Polycyclic Aromatic Hydrocarbons) content should be below 10 % by volume.
- Metal content of Na, Mg, Si, and Al should be equal to or lower than 1 mass ppm. (Test analysis method JPI-5S-44-95)
- Lubricity: Wear mark of WS1.4 should be Max. 0.018 in. (460 µm) at HFRR test.

■ Bio-diesel fuels

In Europe and in the United States, as well as some other countries, non-mineral oil based fuel resources such as RME (Rapeseed Methyl Ester) and SOME (Soybean Methyl Ester), collectively known as FAME (Fatty Acid Methyl Esters), are being used as extenders for mineral oil derived diesel fuels.

YANMAR approves the use of bio-diesel fuels that do not exceed a blend of 7 % (by volume) of FAME with 93 % (by volume) of approved mineral oil derived diesel fuel. Such bio-diesel fuels are known in the marketplace as B7 diesel fuels.

These B7 diesel fuels must meet certain requirements.

1. The bio-fuels must meet the minimum specifications for the country in which they are used.
   - In Europe, bio-diesel fuels must comply with the European Standard EN14214.
   - In the United States, bio-diesel fuels must comply with the American Standard ASTM D-6751.
2. Bio-fuels should be purchased only from recognized and authorized diesel fuel suppliers.

Precautions and concerns regarding the use of bio-fuels:

1. Free methanol in FAME may result in corrosion of aluminum and zinc FIE components.
2. Free water in FAME may result in plugging of fuel filters and increased bacterial growth.
3. High viscosity at low temperatures may result in fuel delivery problems, injection pump seizures, and poor injection nozzle spray atomization.
4. FAME may have adverse effects on some elastomers (seal materials) and may result in fuel leakage and dilution of the engine lubricating oil.
5. Even bio-diesel fuels that comply with a suitable standard as delivered, will require additional care and attention to maintain the quality of the fuel in the equipment or other fuel tanks. It is important to maintain a supply of clean, fresh fuel. Regular flushing of the fuel system, and/or fuel storage containers, may be necessary.
6. The use of bio-diesel fuels that do not comply with the standards as agreed to by the diesel engine manufacturers and the diesel fuel injection equipment manufacturers, or bio-diesel fuels that have degraded as per the precautions and concerns above, may affect the warranty coverage of your engine. *See YANMAR Limited Warranty on page i.*

Filling the Fuel Tank

⚠ DANGER

Only fill the fuel tank with diesel fuel. Filling the fuel tank with gasoline may result in a fire and will damage the engine, never refuel with the engine running.

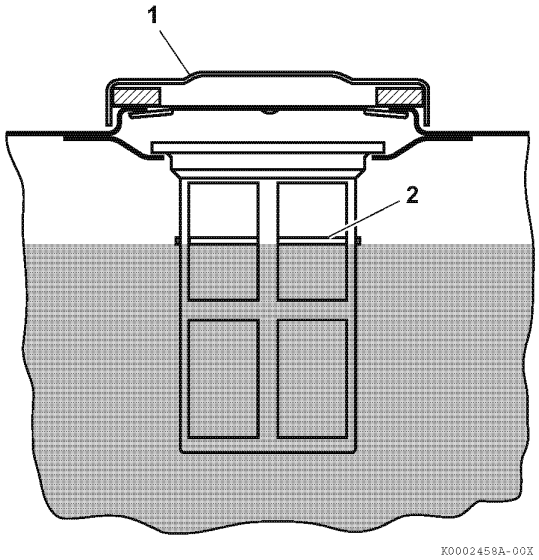


Figure 47

1. Clean the area around the fuel cap.
2. Remove the fuel cap **(Figure 47, (1))** from the fuel tank.

⚠ CAUTION

Never remove inlet fuel screen from the filler port when filling the fuel tank. If removed, dirt and debris could get into the fuel system causing it to clog.

3. Stop fueling when the fuel is at the same level as the red ring **(Figure 47, (2))** at the bottom of the inlet fuel screen.

⚠ DANGER

Never overfill the fuel tank.

4. Replace the fuel cap and hand-tighten. Over-tightening the fuel cap will damage it.

ENGINE OIL

The YANMAR YDG generators are equipped with a low oil pressure stop device. This device stops the engine automatically when the oil pressure falls below the specified level and prevents engine seizure when engine oil is low.

Engine Oil Specifications

NOTICE

Never mix different types of engine oil. This may adversely affect the lubricating properties of the engine oil. Only use the engine oil specified. Other engine oils may affect warranty coverage, cause internal engine components to seize, and/or shorten engine life.

Use an engine oil that meets or exceeds the following guidelines and classifications:

■ Service categories

- API service categories CD or higher
- ACEA service categories E-3, E-4, and E-5
- JASO service category DH-1

■ Definitions

- API classification (American Petroleum Institute)
- ACEA classification (Association des Constructeurs Européens d'Automobilies)
- JASO (Japanese Automobile Standards Organization)

Note:

- *Be sure the engine oil, engine oil storage containers, and engine oil filling equipment are free of sediments and water.*
- *Change the engine oil after the first 50 hours of operation and then every 200 hours thereafter.*
- *Select the oil viscosity based on the ambient temperature where the engine is being operated. See the SAE Service Grade Viscosity Chart* **(Figure 48).**
- *YANMAR does not recommend the use of engine oil "additives."*

■ Additional technical engine oil requirements:

The engine oil must be changed when the Total Base Number (TBN) has been reduced to 2.0. TBN (mgKOH/g) test method; JIS K-201-5.2-2 (HCl), ASTM D4739 (HCl).

Engine Oil Viscosity

Select the appropriate engine oil viscosity based on the ambient temperature using the SAE Service Grade Viscosity Chart in **(Figure 48)**.

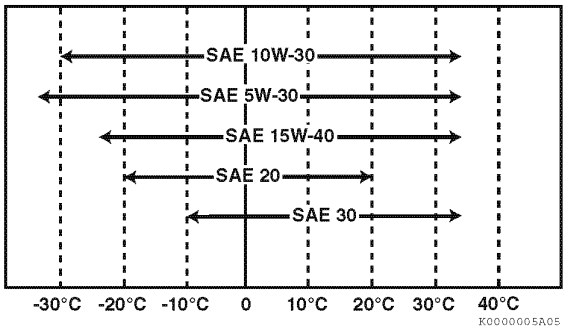


Figure 48

Checking Engine Oil

1. Make sure engine is level.
2. Remove oil cap/dipstick **(Figure 49, (1))** from either location and wipe with clean cloth.

NOTICE

Prevent dirt and debris from contaminating the engine oil. Always clean the oil cap/dipstick and the surrounding area before you remove the cap.

3. Reinsert oil cap/dipstick into crankcase and turn clockwise for one-half revolution to engage the first thread in the crankcase opening.
4. Remove oil cap/dipstick. The oil level should be between upper **(Figure 49, (2))** and lower **(Figure 49, (3))** lines on the oil cap/dipstick.

NOTICE

Always keep the oil level between the upper and lower lines on the oil cap/dipstick.

5. Fully reinsert oil cap/dipstick **(Figure 49, (1))** and hand-tighten. Over-tightening the oil cap/dipstick will damage it.

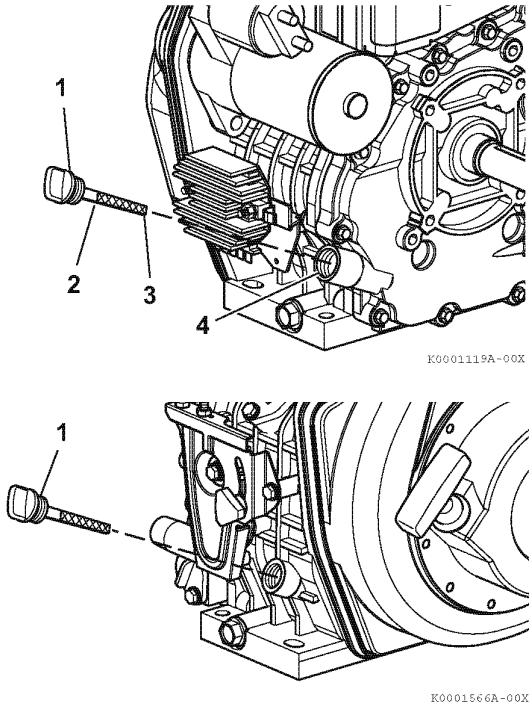


Figure 49

Adding Engine Oil

1. Make sure engine is level.
2. Remove oil cap/dipstick **(Figure 49, (1))**.
3. Add indicated amount of engine oil at either one of the engine oil filler ports **(Figure 49, (4))**.
4. Wait one minute and check oil level.
5. Add engine oil as needed until the level is between the upper **(Figure 49, (2))** and lower **(Figure 49, (3))** lines on the oil cap/dipstick.

NOTICE

Never overfill. Overfilling may result in white exhaust smoke, engine overspeed or internal damage.

6. Fully reinsert oil cap/dipstick and hand-tighten. Over-tightening the oil cap/dipstick will damage it.

Engine Oil Capacity

The following table shows engine oil capacities for YANMAR YDG generators.

Engine/generator model	Dipstick upper limit/lower limit
Engine-L48N (Generator-YDG2700)	0.85/0.58 qt (0.80/0.55 ℓ)
Engine-L70N (Generator-YDG3700)	1.11/0.69 qt (1.05/0.65 ℓ)
Engine-L100N (Generator-YDG5500)	1.7/1.06 qt (1.6/1.0 ℓ)

GENERATOR CHECK

⚠ WARNING

Always have a licensed electrician connect the generator to the utility circuit. Improper installation can cause the generator to back-feed into the utility power line. This may electrocute a power company line repair person. Also, if the generator is powering electrical circuits, the chance of an electrical fire exists.

1. Only use grounded extension cords. Be sure to use an extension cord with the proper wire gauge size. See the following table.

Recommended minimum wire gauges (AWG) for extension cords

Ampere load	AWG for length of cord ft (m)		
	50 (15)	100 (30)	150 (46)
2	18	18	18
3	18	18	18
4	16	16	16
5	16	16	16
6	16	16	14
8	16	14	12
10	16	14	12
12	14	14	12
14	14	12	10
16	12	12	10
20	10	10	8

2. Properly ground the unit:
   - Attach a # 10 stranded-copper ground wire to the ground lug.
   - Drive a grounding point into the ground. The grounding point can be a stake, grounding rod or pipe. The grounding point should be copper or brass.

⚠ CAUTION

Never use metal pipe that carries combustible materials or gases to ground the generator. Always ground the generator. Connect a length of heavy wire between the generator ground terminal and an external ground.

   - Attach the ground wire to the grounding point **(Figure 50, (1))**. You must supply the ground wire and grounding point. These are not supplied with the generator. Follow the national electrical code and all state and local codes. Consult your power company or a licensed electrician.

Model YDG3700N-5EB

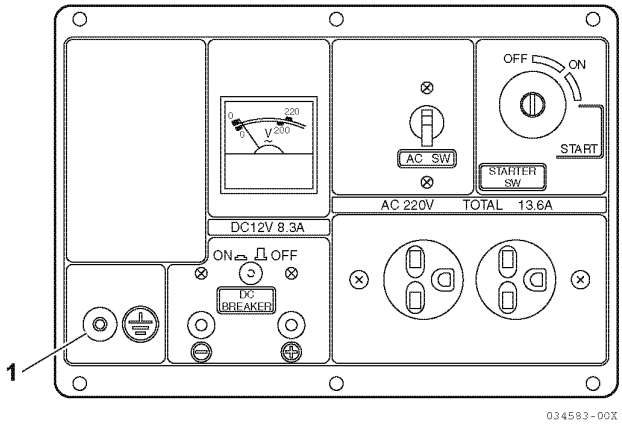


Figure 50

3. Select the proper load for use with the generator set. *See Selecting the Proper Load on page 59.*

4. Before starting the engine **(YDG 3700 and 5500 models only)**, place the change-over switch **(Figure 51, (1))** in the correct position for the rated voltage of the working appliances.

⚠ CAUTION

When using a 120 V system, push the change-over switch to the right (120 V).

Model YDG3700N-6C

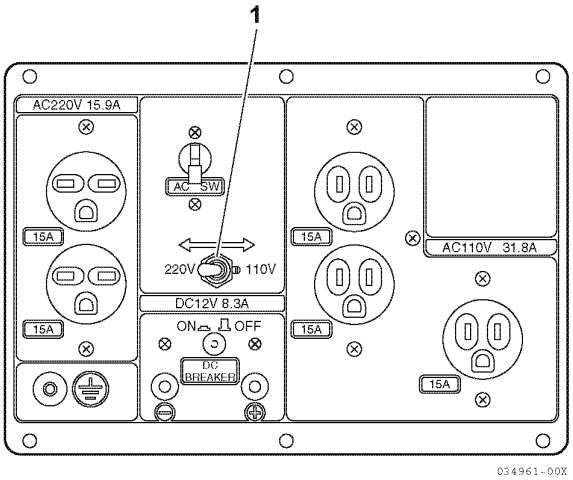


Figure 51

5. Before starting, always turn OFF the main AC switch of the generator **(Figure 52, (1))** or **(Figure 53, (1))** and any other loads. Make sure nothing is plugged into or connected to the generator.

⚠ CAUTION

Do not start two or more appliances simultaneously and always start them one at a time. Never use floodlights with other appliances.

Figure 52, (1) shows the main AC switch on the YDG2700 generator.

Model YDG2700N-5EB

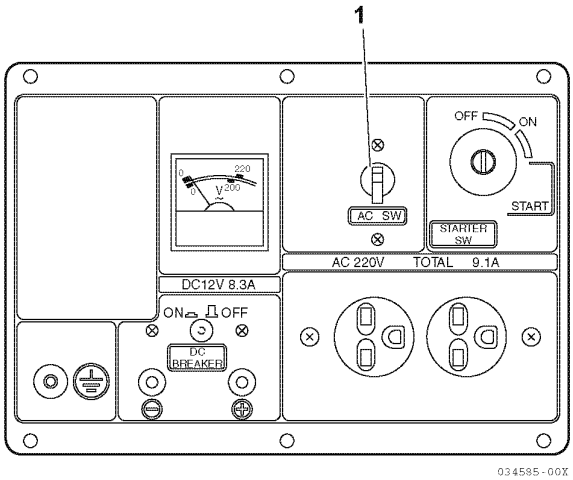


Figure 52

Figure 53, (1) shows the main AC switch on the YDG3700 and YDG5500 generators.

Model YDG3700N-5EB

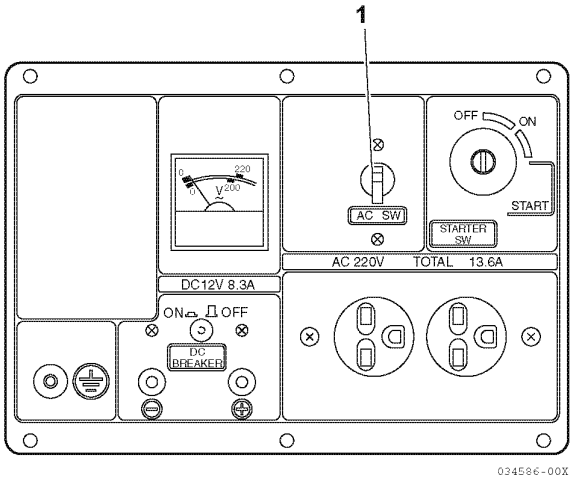


Figure 53

Figure 54, (1) shows the main AC switch on the YDG6600 generators.

Model YDG6600TN-5EB

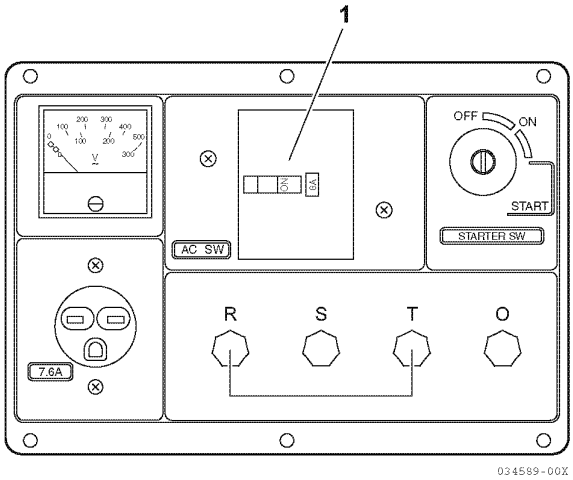


Figure 54

Selecting the Proper Load

⚠ CAUTION

- **Never exceed the specified current limit for any one electrical terminal.**
- **Most home utility electric service is more than 60 amps. This generator will not power your entire home. This will exceed generator output. Only power items needed during a power outage. Always ensure total wattage of electrical load does not exceed rated wattage of generator.**

NOTICE

Most electric appliances require more than their rated wattage for start-up.

The following appliance wattage table shows wattage of some common household appliances. This should be used as a generic guide only. Different manufacturers of certain products may require more wattage. See your authorized YANMAR industrial engine dealer or distributor with any questions.

Decide what electrical load your generator can power. Do this before using the generator. Use the following four step method. It will help to select a load that is not too large. Make sure total wattage of all electrical loads does not exceed the rated output capacity of your generator.

1. Make two lists of items you want powered by the generator. List all motors and motor powered appliances in one. List all lights and small appliances in the other. For standby service to home or building, only include items you must power.

   ⚠ CAUTION

   Do not start two or more appliances simultaneously and always start them one at a time. Never use floodlights with other appliances.

2. Enter running watts of each item except electric motors. The light bulb or appliance nameplate lists its wattage. Remember, 1 kW = 1000 watts.

   Note: The nameplate may not list wattage. It may only list volts and amps.

   - The formula for finding wattage is: volts × amps = watts.
   - For example, an appliance nameplate states 3 amps at 120 volts: 3 amps × 120 volts = 360 watts.

3. Electric motors present a special problem when figuring load as they require up to three times their rated wattage to start.

   - For example, an electric motor nameplate states 5 amps at 120 volts.

   5 amps × 120 volts = 600 watts: **Running Watts**

   Multiply this by 3. This will show the starting watts needed.

   600 watts × 3 = 1800 watts: **Starting Watts**

   NOTICE

   When figuring the generator load for motors, you must use the **Starting Watts** and not the **Running Watts**.

   Note: Some motors require nearly the same wattage to run as to start. These items include saws, drills, hair dryers and food mixers.

4. Add running watts and starting watts of all items. This total must not exceed the rated output capacity of your generator. It is a good idea to have up to 25 % extra capacity for future needs or extra equipment.

■ Typical electrical appliance wattages

Application/equipment	Running/rated watts	Starting/surge watts
Light bulb (100 W)	100	100
AM/FM radio	50 - 200	50 - 200
CB radio	50	50
Fan	200	600
Television	300 - 400	300 - 400
Microwave oven	700	1000
Air conditioner (12,000 BTU)	3250	5000
Furnace fan (1/3 hp blower motor)	600	1800
Vacuum cleaner	600	750
Sump pump (1/3 hp)	700	2100
Refrigerator/freezer	800	2400
Deep freezer	500	1500
Circular saw	1000 - 2500	2300 - 4600
Circular saw 6 in.	800	1000
Floodlight	1000	1000
Drill 1/2 in. electric	1000	1250
Toaster	1200	1200
Coffee maker	1200	1200
Skillet	1200	1200
Chain saw 14 in. electric	1200	1500
Water well pump (1/2 hp)	1000	3000
Hot plate/range (per burner)	1500	1500
Table saw 10 in.	2000	6000
Water heater (storage type)	5000	5000
12 V DC battery charger	120	120

INITIAL ENGINE START UP

NOTICE

On the initial engine start-up, allow the engine to run without a load for approximately 15 minutes while you check for abnormal noises or vibration, diesel fuel leaks, engine oil leaks, and for proper operation.

Avoid continuous operation at maximum load for the remainder of the first hour of operation.

During the first 10 hours of operation, check the engine oil level frequently. *See Checking Engine Oil on page 56.*

DAILY CHECKS

Before you operate, make sure the YANMAR YDG generator is in good operating condition. Make sure you check the following items before you start your generator and have any repairs completed before starting the generator.

⚠ CAUTION

It is important to perform daily checks as periodic maintenance prevents unexpected downtime, reduces the number of accidents due to poor engine performance and helps extend the life of the engine.

- **Visual checks**
- **Check battery electrolyte level**
- **Check diesel fuel and engine oil levels**
- **Check spark arrester**

Visual Checks

⚠ CAUTION

If any problem is noted during the visual check, the necessary corrective action should be taken before you operate the generator set.

---

1. Check for engine oil leaks.
2. Check for fuel leaks.

⚠ WARNING

Always wear eye protection when servicing the generator set. Never check for a fuel leak with your hands. Always use a piece of wood or cardboard. Have your authorized YANMAR dealer or distributor repair the damage.

---

3. Check for damaged or missing parts.
4. Check for loose, missing or damaged fasteners.
5. Check the electrical harnesses for cracks, abrasions and damaged or corroded connectors.
6. Check hoses for cracks, abrasions and damaged, loose or corroded clamps.

Check Battery Electrolyte Level

Follow the procedures in *Checking Battery Electrolyte Level on page 50* to check the battery levels.

Check Diesel Fuel and Engine Oil Levels

Follow the procedures in *Filling the Fuel Tank on page 54* and *Checking Engine Oil on page 56* to check these levels.

Check Spark Arrester

Check the spark arrester for clogging and clean as necessary. *See Check spark arrester on page 76.*

GENERATOR OPERATION

INTRODUCTION

This section of the Operation Manual describes the procedures for starting the generator, checking generator performance during operation and shutting the generator down.

Before performing any storage procedures within this section, review the *Safety* section on *page 1*.

STARTING THE GENERATOR

Recoil Start

Use the following procedure to start the engine using the recoil starter.

1. Make sure you follow the procedures stated in *Daily Checks on page 62*.
2. Fill fuel tank with clean, fresh fuel. *See Filling the Fuel Tank on page 54*.
3. Before starting, always turn OFF the main AC switch of the generator and any other loads. Make sure nothing is plugged into or connected to the generator. *See Generator Check on page 57*.
4. Turn the key clockwise from the OFF position **(Figure 55, (1))** to the ON position **(Figure 55, (2))**.

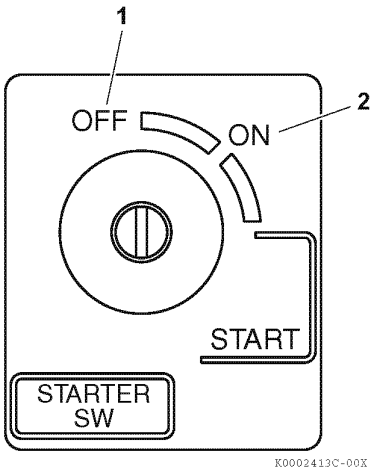


Figure 55

5. Move the engine control lever **(Figure 56, (1))** to the RUN position **(Figure 56, (2))**.

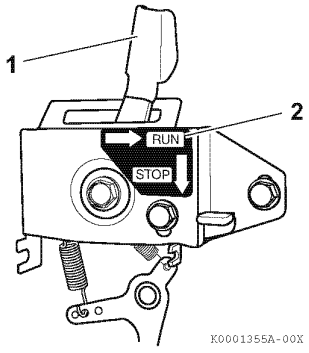


Figure 56

6. Grasp the recoil starter handle **(Figure 57, (1))**.
7. Pull the handle out slowly until you feel strong resistance.
8. Slowly return the recoil starter handle to the initial position.
9. Push the decompression lever **(Figure 57, (2))** down until it locks in place and then release it.

⚠ CAUTION

Always depress the decompression lever to allow the engine to start more quickly and prevent damage to the recoil starter.

The decompression lever will automatically return to the original position when the engine starts.

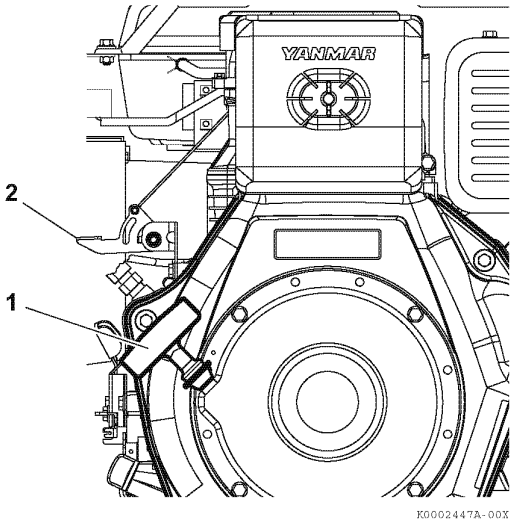


Figure 57

10. Grasp the recoil starter handle **(Figure 57, (1))**.
11. Pull the handle all the way out with a strong and even motion. Use two hands if necessary.

NOTICE

Always pull recoil starter handle all the way out or the engine will not start. Pulling out the recoil starter handle too hard or fast will damage the equipment. Never allow the recoil starter handle to snap back against the engine. Return the handle to the starting position gently to prevent damage to the recoil starter.

---

12. Slowly return the recoil starter handle to the initial position.
13. If the engine does not start, repeat this procedure from Step 5.

Electric Start

Use the following procedure to start the engine using the electric starter.

1. Make sure you follow the procedures stated in *Daily Checks on page 62*.
2. Fill fuel tank with clean, fresh fuel. *See Filling the Fuel Tank on page 54*.
3. Before starting, always turn OFF the main AC switch of the generator and any other loads. Make sure nothing is plugged into or connected to the generator. *See Generator Check on page 57*.
4. Move the engine speed control lever **(Figure 58, (1))** to the RUN position **(Figure 58, (2))**.

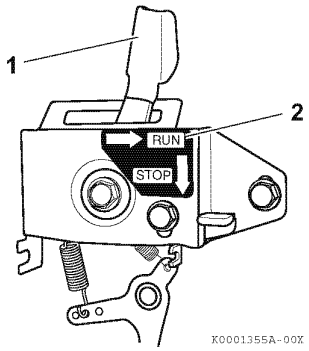


Figure 58

5. Insert the key into the key switch.
6. Turn the key clockwise to the START position **(Figure 59, (1))**. Release the key as soon as the engine starts. It will return to the ON position **(Figure 59, (2))**.

NOTICE

Never hold the key in the START position for longer than 15 seconds or the starter motor will overheat.

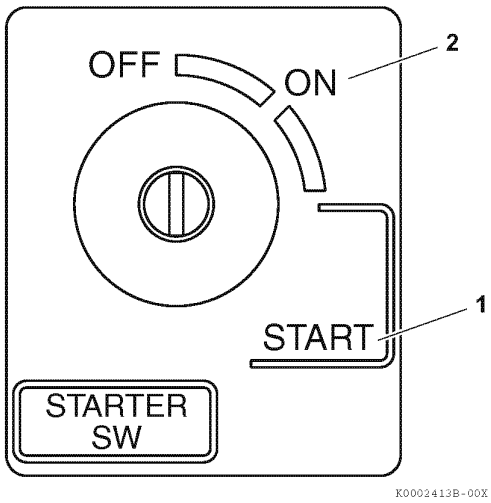


Figure 59

7. If the engine fails to start:
   - Wait until the engine comes to a complete stop before you attempt to start it again.

NOTICE

Engaging the starter while the engine is still rotating will result in damage to the starter motor and flywheel.

- Wait at least 30 seconds before you attempt to start the engine again.

NOTICE

Waiting 30 seconds will allow the battery voltage to recover to prevent damage to the starter motor due to the low battery voltage.

CHECKING THE GENERATOR SET DURING OPERATION

1. Check for fuel or engine oil leaks. If any leaks are found, shut down the engine and have the necessary repairs performed.
2. Check for abnormal sounds or vibration. If the abnormal sounds or vibration cannot be resolved, shut down the engine and have the necessary repairs performed. Contact your authorized YANMAR industrial engine dealer or distributor.
3. Check for white or black smoke from the exhaust system. A small amount of white exhaust smoke is normal on start-up of a cold engine. Black exhaust smoke could mean the engine is overloaded or is being over-fueled. If either of these conditions persists, contact your authorized YANMAR industrial engine dealer or distributor.
4. Check the fuel level during operation. If the fuel level runs low, stop the engine and refuel. *See Filling the Fuel Tank on page 54.*
5. If the oil pressure falls below the specified minimum, the low oil pressure shutdown will automatically stop the engine. Check the oil level and refill. *See Checking Engine Oil on page 56.*

Low Load Operation

Avoid low load operation as much as possible. Always operate at 1/4 load or greater when possible.

NOTICE

Always run the engine at full speed. Never run engine at lower speeds. At full speed, the engine runs at 3600 (or 3000) min^{-1} (rpm) under load. The engine must maintain 3600 (or 3000) min^{-1} (rpm) for generator to create correct voltage. Running engine at lower speeds will damage generator and powered items.

Operating at 1/4 load or less for extended periods will cause carbon to mix with unburned fuel, clogging the head of the injection nozzle and piston head and fouling the muffler. Carbon buildup can be recognized by bluish white smoke being emitted from the engine. To avoid this, run the engine at 3/4 load or greater for 30 minutes or longer every 50 hours operation.

SHUTTING DOWN THE GENERATOR

NOTICE

For maximum engine life, YANMAR recommends that when shutting the engine down, you allow the engine to run, without load, for five minutes. This will allow the engine components that operate at high temperatures, such as the exhaust system, to cool slightly before the engine itself is shut down

---

Follow these steps to shut down the engine:

1. Turn the generator main AC switch **(Figure 60, (1))** OFF.
2. With the engine speed lever in the RUN position, operate the engine without load for about five minutes.
3. Turn the generator key switch **(Figure 60, (2))** to OFF.

Model YDG3700N-5EB

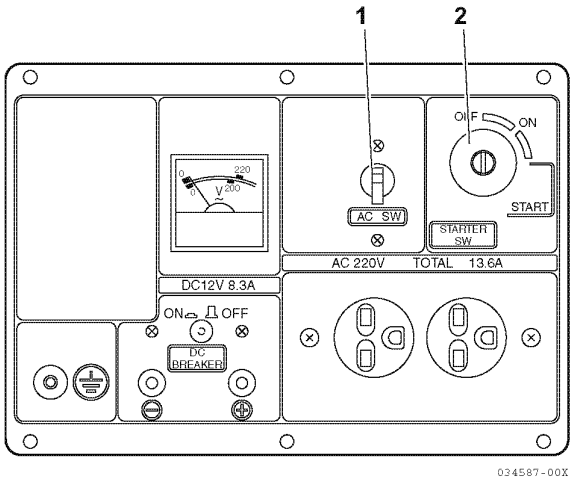


Figure 60

4. If the engine will not be used for six months or longer, follow the additional instructions in *Long-Term Storage on page 105*.

AC APPLICATION

1. Start the engine. *See Starting the Generator on page 64*. Once the engine is started, make sure the voltage meter **(Figure 61, (1))** or **(Figure 62, (1))** or **(Figure 63, (1))** or **(Figure 64, (1))** indicates the voltage. If it does not, STOP the generator as the generator or voltage meter may be damaged.

Model YDG2700N-5EB

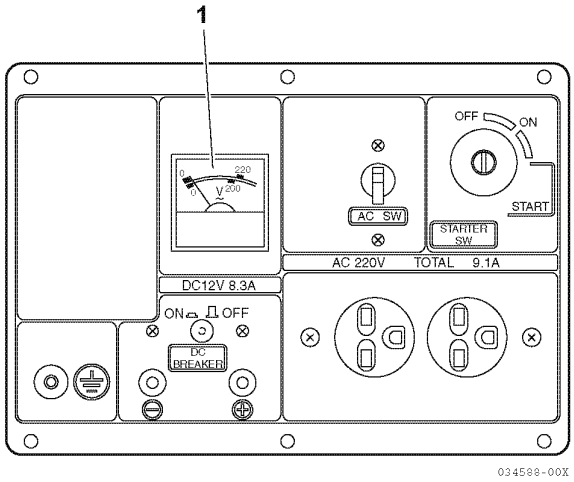


Figure 61

Model YDG3700N-5EB

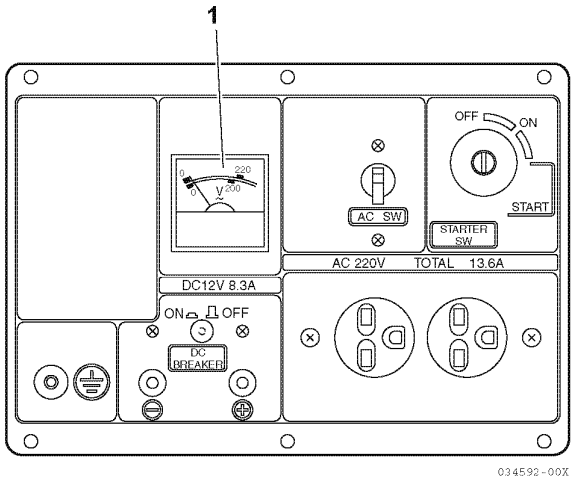


Figure 62

Model YDG5500N-5EB

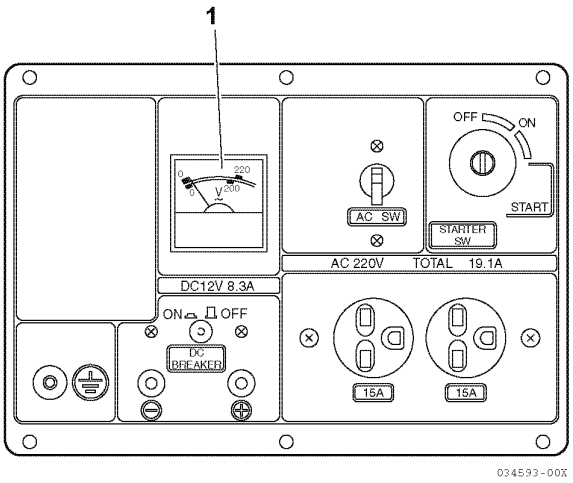


Figure 63

Model YDG6600TN-5EB

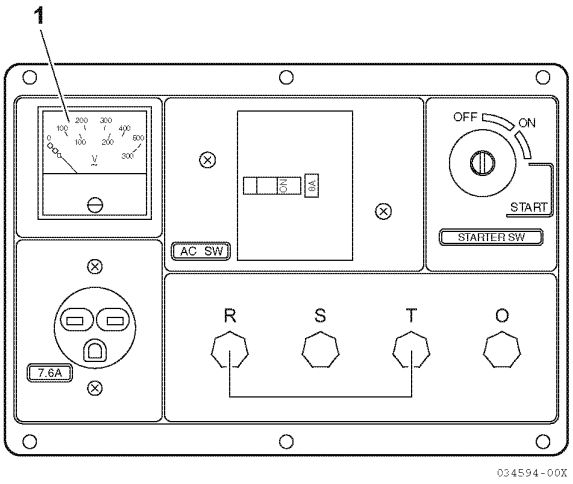


Figure 64

2. Plug in the appliance.

⚠ CAUTION

Always ensure that all appliances are in good working order before connecting them to the generator. If an appliance begins to operate abnormally, becomes sluggish or stops suddenly, turn off the generator main AC switch immediately. Then disconnect the appliance and examine it for malfunction.

3. Turn the main AC switch to the ON position.

NOTICE

If an overload trips the AC circuit protector, reduce the electrical load on the circuit and wait a few minutes before resuming operation.

DC APPLICATION

NOTICE

DC terminals should be used for charging 12 V DC batteries only. Using the DC terminals for any other type of 12 V DC appliance may cause damage to generator and appliance.

The DC terminal **(Figure 65, (1))** may be used for charging 12 volt automotive-type batteries only. (Other loads may not be used.)

NOTICE

Never use the 12 V DC terminals at the same time as the AC terminals.

1. Always disconnect the negative (–) battery cable (if connected) from the battery to be charged before charging.

   ⚠ WARNING

   Never allow the free ends of the cables to touch each other. If this occurs the battery will short circuit.

2. Start the generator set.
3. Connect the charging cable to the battery terminals and to the DC output terminals of the generator.

   NOTICE

   Always connect the positive battery terminal to the positive DC terminal on the generator. Never reverse the charging cables or serious damage to the generator and or battery may occur. Do not attempt to start an automobile engine while the generator is still connected to the battery as the generator may be damaged.

   NOTICE

   - The DC output is used only for charging the battery.
   - Do not use the AC output and DC output simultaneously.

Model YDG3700N-5EB

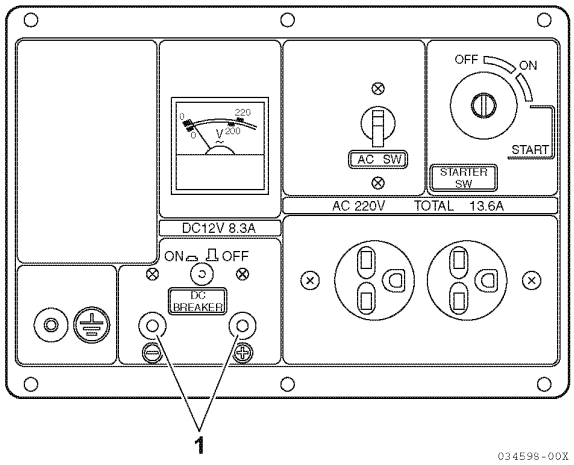


Figure 65

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PERIODIC MAINTENANCE

INTRODUCTION

This section of the Operation Manual describes the procedures for proper care and maintenance of the generator set.

Before performing any storage procedures within this section, review the *Safety* section on *page 1*.

PRECAUTIONS

The Importance of Periodic Maintenance

Engine deterioration and wear occurs in proportion to length of time the generator has been in service and the conditions the generator is subject to during operation. Periodic maintenance prevents unexpected downtime, reduces the number of accidents due to poor machine performance and helps extend the life of the engine.

⚠ CAUTION

Establish a periodic maintenance plan according to the engine application and make sure you perform the required periodic maintenance at intervals indicated. Failure to follow these guidelines will impair the engine's safety and performance characteristics, shorten the engine's life and may affect the warranty coverage on your engine. ***See YANMAR Limited Warranty on page i.*** **Consult your authorized YANMAR industrial engine dealer or distributor for assistance when checking items marked with a ●.**

Performing Periodic Maintenance

Perform periodic maintenance procedures in an open, level area free from traffic. If possible, perform the procedures indoors to prevent environmental conditions, such as rain, wind, or snow, from damaging the machine.

The Importance of Daily Checks

Periodic Maintenance Schedules assume that the daily checks are performed on a regular basis. Make it a habit of performing daily checks before the start of each shift. *See Daily Checks on page 62.*

⚠ CAUTION

It is important to perform daily checks. Periodic maintenance prevents unexpected downtime, reduces the number of accidents due to poor engine performance and helps extend the life of the engine.

Keep a Log of Generator Hours and Daily Checks

Keep a log of the number of hours the generator is run each day and a log of the daily checks performed. Also note the date, type of repair, and parts needed for any service needed between the periodic maintenance intervals. Periodic maintenance intervals are every 50, 200, 400, 1000, 1500 and 2000 hours of generator operation. Failure to perform periodic maintenance will shorten the life of the generator.

YANMAR Replacement Parts

YANMAR recommends that you use genuine YANMAR parts when replacement parts are needed. Genuine replacement parts help ensure long generator life.

Tools Required

Before you start any periodic maintenance procedure make sure you have the tools you need to perform all of the required tasks.

Ask Your Authorized YANMAR Industrial Engine Dealer or Distributor For Help

YANMAR professional service technicians have the expertise and skills to help you with any maintenance or service related procedures.

Tightening Fasteners

Use the correct amount of torque when you tighten fasteners on the machine. Applying excessive torque may damage the fastener or component and not enough torque may cause a leak or component failure.

TIGHTENING TORQUES FOR STANDARD BOLTS AND NUTS

Use the correct amount of torque when you tighten fasteners on the machine. Applying excessive torque may damage the fastener or component and not enough torque may cause a leak or component failure.

NOTICE

The tightening torque in the following chart should be applied only to the bolts with a "7" head. (JIS strength classification: 7T) Apply 60 % torque to bolts that are not listed. Apply 80 % torque when tightened to aluminum alloy.

Item	Nominal thread diameter × Pitch	Tightening torque	Remarks
Hexagon bolt (7T) and nut	M6 × 1.0 mm	7 - 9 lb-ft (87 - 104 lb-in., 9.8 -11.8 N·m, 1.0 - 1.2 kgf·m)	Use 80 % of the value at left when the tightening part is aluminum. Use 60 % of the value at left for 4T bolts and locknuts.
	M8 × 1.25 mm	17 - 21 lb-ft (200 - 251 lb-in., 22.6 - 28.4 N·m, 2.3 - 2.9 kgf·m)	
	M10 × 1.5 mm	33 - 40 lb-ft (44.1 - 53.9 N·m, 4.5 - 5.5 kgf·m)	
	M12 × 1.75 mm	58 - 72 lb-ft (78.4 - 98.0 N·m, 8.0 - 10 kgf·m)	
	M14 × 1.5 mm	94 - 108 lb-ft (127.5 - 147.1 N·m, 13 - 15 kgf·m)	
	M16 × 1.5 mm	159 - 174 lb-ft (215.7 - 235.4 N·m, 22 - 24 kgf·m)	
PT plug	1/8	7 lb-ft (87 lb-in., 9.8 N·m, 1.0 kgf·m)	–
	1/4	14 lb-ft (173 lb-in., 19.6 N·m, 2.0 kgf·m)	
	3/8	22 lb-ft (29.4 N·m, 3.0 kgf·m)	
	1/2	43 lb-ft (58.8 N·m, 6.0 kgf·m)	
Pipe joint bolt	M8	9 - 12 lb-ft (112 - 148 lb-in., 12.7 - 16.7 N·m, 1.3 - 1.7 kgf·m)	–
	M10	14 - 19 lb-ft (173 - 225 lb-in., 19.6 - 25.4 N·m, 2.0 - 2.5 kgf·m)	
	M12	18 - 25 lb-ft (24.5 - 34.3 N·m, 2.5 - 3.5 kgf·m)	
	M14	29 - 36 lb-ft (39.2 - 49.0 N·m, 4.0 - 5.0 kgf·m)	
	M16	36 - 43 lb-ft (49.0 - 58.8 N·m, 5.0 - 6.0 kgf·m)	

Note: Torque values shown in this manual are for clean, non-lubricated fasteners unless otherwise specified.

PERIODIC MAINTENANCE SCHEDULE

Daily and periodic maintenance is important to keep the engine in good operating condition. The following is a summary of maintenance items by periodic maintenance intervals. Periodic maintenance intervals vary depending on engine application, loads, diesel fuel and engine oil used and are hard to establish definitively. The following should be treated only as a general guideline.

○: Check ◇: Replace ●: Contact your authorized YANMAR industrial engine dealer or distributor for these maintenance services.

System	Check item	Daily	Periodic maintenance interval					
			Every 50 hours	Every 200 hours	Every 400 hours	Every 1000 hours	Every 1500 hours	Every 2000 hours
Air intake	Clean or replace air cleaner element - (may need more frequent service in dusty conditions)			○				
Cylinder head	Adjust intake/exhaust valve clearance				●			
	Check compression					●		
Electrical equipment	Check battery (if equipped) and add water as necessary	○ before operation						
	Check battery indicator (If equipped) and other driven machine indicators (if equipped)	○ when engine is started						
	Wiring harness				●			
	Voltmeter				●			
Emission control warranty	Inspect, clean and test fuel injection nozzle						●	
Engine oil	Check engine oil level and add engine oil as necessary	○ before operation						
	Drain and refill engine oil		◇ 1st time	◇ 2nd and after				
	Clean engine oil filter - replace if damaged				◇ 2nd and after			
	Check for engine oil leakage	○ before and after operation						
Engine speed control	Check for proper operation verify adjustment	○ 1st time		○ 2nd and after				

○: Check ◇: Replace ●: Contact your authorized YANMAR industrial engine dealer or distributor for these maintenance services.

System	Check item	Daily	Periodic maintenance interval					
			Every 50 hours	Every 200 hours	Every 400 hours	Every 1000 hours	Every 1500 hours	Every 2000 hours
Exhaust system	Check spark arrester for clogging (if equipped)	○ before operation						
Fuel	Check fuel tank level and add fuel as necessary	○ before operation						
	Drain and clean fuel tank			○				
	Clean inlet fuel screen		○					
	Replace outlet fuel filter			○	◇			
	Check for fuel leakage	○ before and after operation						
Hoses	Replace fuel system hose(s)							● or every 2 years whichever comes first
Generator	Check brushes for wear or damage				●			
	Check slip rings for wear or damage				●			
	Check coils and automatic voltage regulator (AVR) for correct operation.				●			
Frame	Check main and sub frames for damage				●			
	Check engine/frame dampers for wear, damage and tightness.					●		
	Check all fasteners for damage and tightness.				●			

Note: These procedures are considered normal maintenance and are performed at the owners expense.

PERIODIC MAINTENANCE PROCEDURES

Daily, Before Operation

Before performing periodic maintenance procedures, read the complete procedure including safety information.

Perform the following maintenance daily before operation.

- **Check battery**
- **Check battery indicator**
- **Check engine oil level**
- **Check for engine oil leakage**
- **Check engine speed control (first time only)**
- **Check spark arrester**
- **Check fuel level**
- **Check for fuel leakage**

■ Check battery

Check the battery electrolyte level. *See Checking Battery Electrolyte Level on page 50.*

■ Check battery indicator

Visually check the battery indicator (if equipped) and any other indicator provided by the driven machine manufacturer.

■ Check engine oil level

Before you operate the engine check the engine oil level. *See Checking Engine Oil on page 56.*

■ Check for engine oil leakage

Before you operate the engine check for any engine oil leaks. If you discover any engine oil leaks, contact your authorized YANMAR industrial engine dealer or distributor for service.

■ Check engine speed control

Before you operate the driven machine check the engine speed control. *See Check and adjust engine speed control on page 83.*

■ Check spark arrester

Clean the spark arrester regularly.

⚠ WARNING

If the engine has been running, the muffler and the spark arrester will be very hot. Allow these to cool before proceeding.

Clean the spark arrester **(Figure 66, (1))** as follows.

NOTICE

A clogged spark arrester hinders the flow of exhaust gas. This reduces engine output, increases fuel consumption and makes starting difficult.

1. Remove the lock nut **(Figure 66, (2))**, end cap **(Figure 66, (3))** and diffuser discs **(Figure 66, (4))** from the spark arrester.

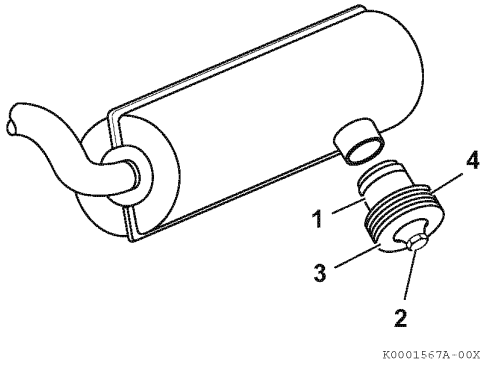


Figure 66

2. Clean any carbon deposits from the spark arrester.
3. Reinstall the diffuser discs and end cap on the spark arrester and secure with the lock nut.

■ Check fuel level

Before you operate the engine, check the fuel level. *See Filling the Fuel Tank on page 54.*

■ Check for fuel leakage

Before you operate the engine, check for any fuel leaks.

⚠ DANGER

Avoid personal injury. Always wear eye protection when checking for fuel leaks and never check for a fuel leak with your hands. Always use a piece of wood or cardboard. Have your authorized YANMAR dealer or distributor repair the damage.

Daily, After Operation

- **Check for engine oil leakage**
- **Check for fuel leakage**

■ Check for engine oil leakage

After you shut down the engine check for any engine oil leaks.

⚠ WARNING

Avoid being burned by contact with hot engine oil.

■ Check for fuel leakage

After you shut down the engine check for any fuel leaks.

⚠ DANGER

Avoid personal injury. Always wear eye protection when checking for fuel leaks and never check for a fuel leak with your hands. Always use a piece of wood or cardboard. Have your authorized YANMAR dealer or distributor repair the damage.

After Initial 50 Hours of Operation

Perform the following maintenance after the initial 50 hours of operation.

- **Replace engine oil**
- **Clean/inspect engine oil filter**

■ Replace engine oil

NOTICE

The engine oil on a new engine becomes contaminated from the initial break-in of internal parts. The initial 50 hour oil change and filter cleaning is very important.

Drain the engine oil as follows:

1. Make sure the engine is level.
2. Start the engine and bring it up to operating temperature.
3. Stop the engine.
4. Position a container under the engine to collect waste oil.
5. Remove one of the drain plugs located on the bottom of the cylinder block **(Figure 67, (2))**. Allow oil to drain.

⚠ WARNING

The engine oil will be hot after engine operation, stay clear of the hot engine oil to avoid being burned. Always wear eye protection.

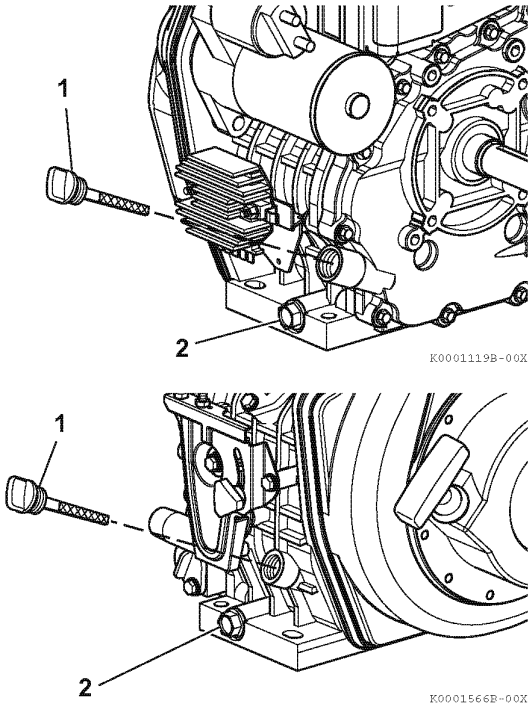


Figure 67

6. Remove the oil cap/dipstick **(Figure 67, (1))** to allow the engine oil to drain more easily.

NOTICE

Prevent dirt and debris from contaminating the engine oil. Carefully clean the oil cap/dipstick and the surrounding area before you remove the cap.

---

7. After all oil has been drained from the engine, reinstall the drain plug **(Figure 67, (2))** and tighten to 173 - 208 lb-in. (19.6 - 23.5 N·m, 2.0 - 2.4 kgf·m).

8. Dispose of used oil properly.

NOTICE

Always be environmentally responsible. Follow the guidelines of the EPA or other governmental agencies for the proper disposal of hazardous materials such as engine oil, diesel fuel and engine coolant. Consult the local authorities or reclamation facility. Never dispose of hazardous materials by dumping them into a sewer, on the ground or into ground water or waterways.

9. Inspect engine oil filter. *See Clean/inspect engine oil filter on page 80.*
10. Add engine oil until the level is between the upper **(Figure 68, (2))** and lower **(Figure 68, (2))** lines on the oil cap/dipstick **(Figure 68, (2))**. *See Adding Engine Oil on page 56.*

NOTICE

Never overfill. Overfilling may result in white exhaust smoke, engine overspeed or internal damage.

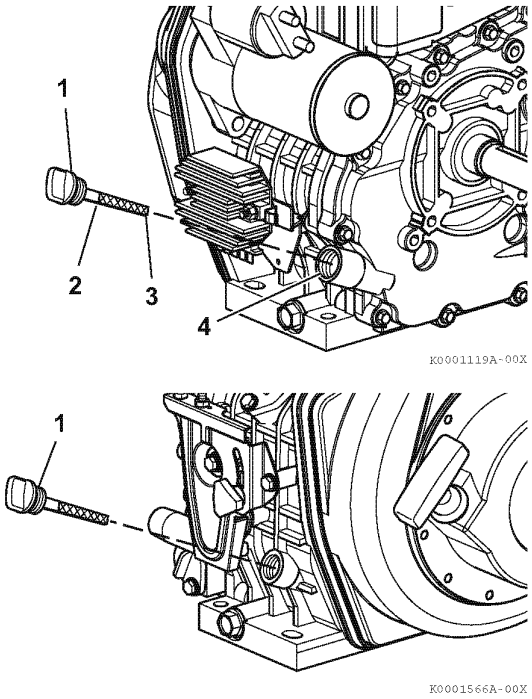


Figure 68

11. Warm up the engine by running it for five minutes and check for any engine oil leaks.
12. After engine is warm, shut it off and let it sit for 10 minutes.
13. Recheck the engine oil level by reinserting the oil cap/dipstick into the crankcase and turn clockwise for one-half revolution to engage the first thread in the crankcase opening. *See Checking Engine Oil on page 56.*
14. Add oil if necessary.

NOTICE

Always keep the oil level between the upper and lower lines on the oil cap/dipstick.

15. Replace the oil cap/dipstick and tighten by hand. Over-tightening may damage the cap. If any engine oil is spilled, wipe it away with a clean cloth.

■ Clean/inspect engine oil filter

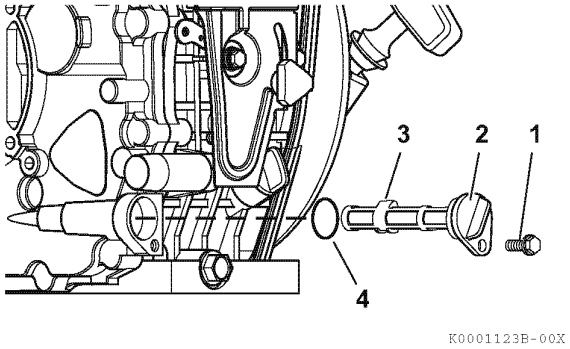


Figure 69

NOTICE

It is recommended that this procedure be performed at the same time as the *Replace engine oil procedure on page 78*.

1. Remove the oil filter retaining bolt **(Figure 69, (1))**.
2. Drain engine oil. *See Replace engine oil on page 78*.
3. Pull the oil filter cap **(Figure 69, (2))** out and remove the oil filter **(Figure 69, (3))**.
4. Clean the oil filter in suitable parts cleaner or replace if damaged.
5. Lubricate the O-ring **(Figure 69, (4))** with oil and reinstall the oil filter **(Figure 69, (3))**.

Applicable engine oil filter Part No.	
L48N, L70N and L100N	114250-35070

6. Make sure the oil filter cap **(Figure 69, (2))** is fully seated.
7. Reinstall and tighten the oil filter retaining bolt **(Figure 69, (1))**.
8. Add new engine oil to the engine as specified in *Adding Engine Oil on page 56.*

NOTICE

Never overfill. Overfilling may result in white exhaust smoke, engine overspeed, or internal damage.

9. Warm up the engine by running it for five minutes and check for any engine oil leaks.
10. After engine is warm, shut it off and let it sit for 10 minutes.
11. Recheck the engine oil level by reinserting the oil cap/dipstick into the crankcase and turn clockwise for one-half revolution to engage the first thread in the crankcase opening. *See Checking Engine Oil on page 56*.
12. Add oil if necessary.

NOTICE

Always keep the oil level between the upper and lower lines on the oil cap/dipstick.

13. Replace the oil cap/dipstick **(Figure 68, (1))** and tighten by hand. Over-tightening may damage the cap. If any engine oil is spilled, wipe it away with a clean cloth.

Every 50 Hours of Operation

Perform the following maintenance every 50 hours of operation.

- **Clean inlet fuel screen**

■ Clean inlet fuel screen

1. Clean the area around the fuel cap **(Figure 70, (1))**.
2. Remove the fuel cap from the fuel tank.

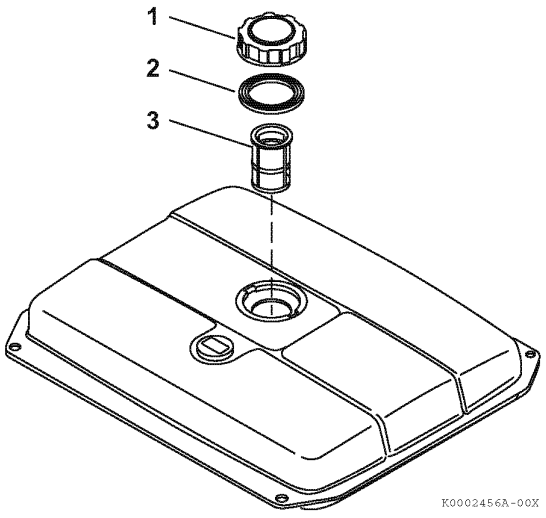


Figure 70

3. Lift out the inlet fuel screen **(Figure 70, (3))**.

⚠ CAUTION

Wipe up all spills immediately.

4. Clean the inlet fuel screen using suitable parts cleaner or replace it if damaged.
5. Inspect fuel cap gasket **(Figure 70, (2))** and replace if damaged.
6. Reinstall the inlet fuel screen.
7. Reinstall the fuel cap and hand-tighten. Over-tightening the fuel cap will damage it.

Every 200 Hours of Operation

Perform the following maintenance every 200 hours of operation.

- **Clean air cleaner element**
- **Replace engine oil and clean/inspect engine oil filter**
- **Check engine speed control**
- **Drain the fuel tank and replace outlet fuel filter**

■ Clean air cleaner element

NOTICE

Engine performance is adversely affected when the air cleaner element is clogged with dust. Be sure to clean or replace the air cleaner element periodically.

Avoid operating in extremely dusty conditions. When the engine is operated in dusty conditions, clean the air cleaner element more frequently. Never operate the engine with the air cleaner element(s) removed. This may cause foreign material to enter the engine and damage it.

Clean or replace the air cleaner element if the air intake restriction exceeds the following specifications:

(L48N: 0.10 psi (0.69 kPa; 70 mm Aq) or less), (L100N: 0.21 psi (1.47 kPa; 150 mm Aq) or less), (L70N: 0.20 psi (1.37 kPa; 140 mm Aq) or less).

L48N models

The L48N model engines use a "wet" type air filter element. The air filter element is sealed inside a metal housing and coated in a light coat of oil to help filter debris. This type of air filter element is **not washable** and should be replaced every 200 hours or earlier if found excessively dirty.

1. Remove the wing nut **(Figure 71, (5))** and gasket **(Figure 71, (4))**.
2. Remove the air cleaner cover **(Figure 71, (3))**.
3. Remove the air cleaner element **(Figure 71, (2))**.
4. Visually inspect the element and determine if replacement is needed. If there is any doubt the element is usable, it should be replaced.

Air cleaner element Part No.	
L48N	114250-12581

5. Clean the inside and outside of the air cleaner housing and cover **(Figure 71, (1, 3))**.
6. Reinstall (or install the new) air cleaner element **(Figure 71, (2))** into the air cleaner housing.
7. Reinstall the air cleaner cover.
8. Reinstall the wing nut and gasket and hand-tighten. Over-tightening the wing nut will damage the air cleaner assembly.

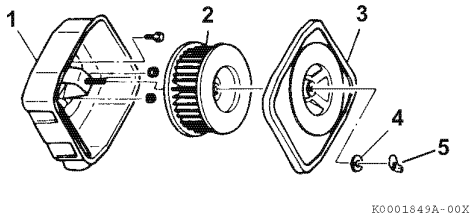


Figure 71

L70N and L100N models

The L70N and L100N model engines use a "dry" type air filter element. The air filter element is an open paper type element. This type of air filter element should be cleaned or replaced every 200 hours or earlier if found excessively dirty.

⚠ CAUTION

Avoid personal injury. Always wear eye protection when servicing the engine or when using compressed air or high pressure water. Dust, flying debris, compressed air, pressurized water or steam may injure your eyes.

1. Remove the wing nut **(Figure 72, (1))**.
2. Remove the air cleaner cover **(Figure 72, (2))**.
3. Remove the wing nut **(Figure 72, (3))**.
4. Remove the air cleaner element **(Figure 72, (4))** and outer foam element **(Figure 72, (5))**.
5. Blow air through both elements using 42 - 71 psi (0.29 - 0.49 MPa, 3.0 - 5.0 kgf/cm^2) compressed air to remove any debris. Blow air from the inside to the outside of the filter element using the lowest possible air pressure to remove dust without damaging the elements.
6. Check the condition of the air filter element by shining a flashlight from the back of the air filter element. If light is not visible on the outside of the air filter element, replace the air filter element.

Air cleaner element Part No.	
L70N and L100N	114210-12590

7. If either element is damaged replace both of them. (They are not sold individually.)
8. Clean the inside of the air cleaner cover **(Figure 72, (2))**.

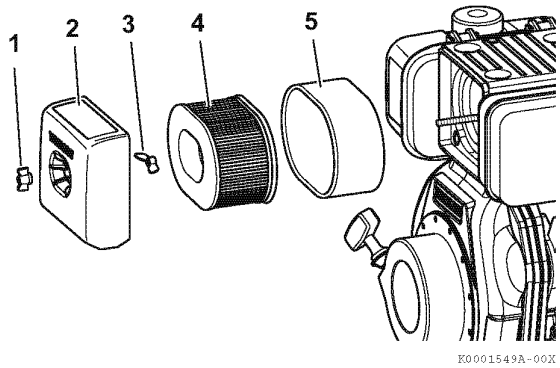


Figure 72

9. Reinstall the air cleaner element **(Figure 72, (4))** into the air cleaner housing.
10. Slide the outer foam element **(Figure 72, (5))** over the air cleaner element **(Figure 72, (4))**.
11. Reinstall the wing nut **(Figure 72, (3))** and hand-tighten. Over-tightening the wing nut will damage the air cleaner assembly.
12. Reinstall the air cleaner cover **(Figure 72, (2))**.
13. Reinstall the wing nut **(Figure 72, (1))** and hand-tighten. Over-tightening the wing nut will damage the air cleaner assembly.

■ Replace engine oil and clean/inspect engine oil filter

Change the engine oil every 200 hours of operation after the initial change at 50 hours. Clean and inspect the engine oil filter at the same time. *See Replace engine oil on page 78* and *Clean/inspect engine oil filter on page 80.*

■ Check and adjust engine speed control

After you operate the engine for 200 hours, check the engine speed control.

NOTICE

Never attempt to adjust the low or high idle speed limit screw. This may impair the safety and performance of the machine and shorten its life. If adjustment is ever required, contact your authorized YANMAR industrial engine dealer or distributor.

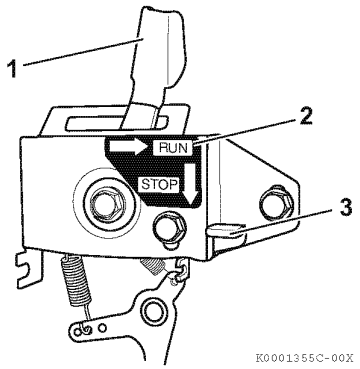
A constant speed control device is used on YDG generator sets, to govern the engine speed to a pre-set constant engine speed under various loads. When moved to the full throttle position, the speed control lever "locks" at full throttle.

Never force the throttle lever to move. This may deform the governor lever and cause irregular operation of the engine speed control.

NOTICE

Always run the engine at full speed. Never run engine at lower speeds. At full speed, the engine runs at 3600 (or 3000) min^{-1} (rpm) under load. The engine must maintain 3600 (or 3000) min^{-1} (rpm) for generator to create correct voltage. Running engine at lower speeds will damage generator and powered items.

1. Check that the speed control lever **(Figure 73, (1))** operates smoothly and locks into the full speed RUN position **(Figure 73, (2))** when advanced and returns to the stop position when the stop lever **(Figure 73, (3))** is actuated. If the speed control lever does not operate as indicated or adjustment is needed, see your authorized YANMAR industrial engine dealer or distributor for service.



1 – Speed control lever
2 – RUN position
3 – Stop lever

Figure 73

■ Drain the fuel tank and replace outlet fuel filter

1. Position an approved container under the fuel tank to collect the fuel.

⚠ DANGER

Always wipe up all spills immediately. Diesel fuel is flammable and explosive under certain conditions. Store any containers containing fuel in a well-ventilated area, away from any combustibles or sources of ignition. Wipe up all spills immediately and never use a shop rag to catch spilled fuel.

2. Remove the fuel cap **(Figure 74, (1))**.
3. Remove the fuel tank drain plug **(Figure 74, (8))** and gasket **(Figure 74, (9))** to drain the fuel. Inspect the gasket and replace if damaged.

NOTICE

Always be environmentally responsible. Follow the guidelines of the EPA or other governmental agencies for the proper disposal of hazardous materials such as engine oil, diesel fuel and engine coolant. Consult the local authorities or reclamation facility.

4. Remove clamps **(Figure 74, (2))** and disconnect fuel supply **(Figure 74, (3))** and return lines **(Figure 74, (4))**.
5. Remove the fuel tank mounting bolts and remove the fuel tank from the generator frame.
6. Remove the three fuel filter nuts **(Figure 74, (5))** and pull the fuel filter **(Figure 74, (6))** out through bottom of the tank.

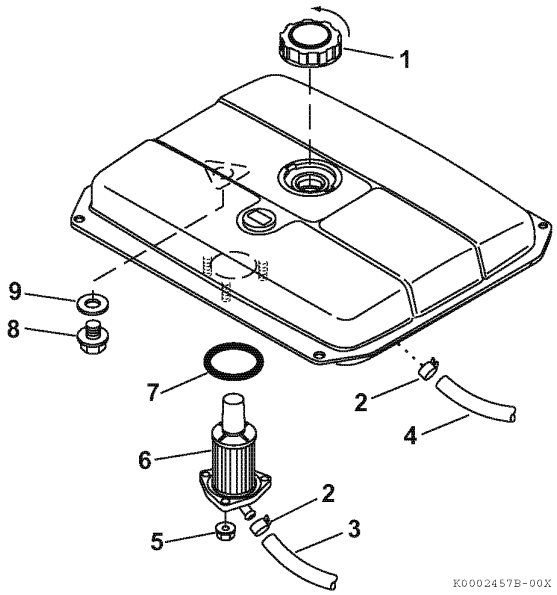


Figure 74

7. Install a new filter into the tank using a new O-ring **(Figure 74, (7))**.
8. Reinstall the three fuel filter nuts and tighten securely.
9. Reinstall the drain plug and gasket.
10. Reinstall the fuel tank into the generator frame and secure with mounting bolts.
11. Reconnect the fuel supply and return lines to the tank with clamps.
12. Fill the fuel tank with fuel and inspect for leaks. Repair or replace components as necessary.

Every 400 Hours of Operation

Perform the following maintenance every 400 hours of operation.

- **Adjust intake and exhaust valve clearance**
- **Check brushes for wear or damage**
- **Check slip rings for wear or damage**
- **Check coils and automatic voltage regulator (AVR) for correct operation**
- **Check main and sub-frames for damage**
- **Check all fasteners for damage and tightness.**

■ Adjust intake and exhaust valve clearance

Proper adjustment is necessary to maintain the correct timing for opening and closing the valves. Improper adjustment will cause the engine to run noisily, resulting in poor engine performance and engine damage. See your authorized YANMAR industrial engine dealer or distributor for this service.

■ Check brushes for wear or damage

Check the generator brushes for wear and damage. Generator brushes wear with normal use of the generator over time. It is important to check the condition of the brushes to ensure generator performance is maintained at an optimum. See your authorized YANMAR industrial engine dealer or distributor for this service.

■ Check slip rings for wear or damage

Check the generator slip rings for wear and damage. Generator slip rings wear with normal use of the generator over time. It is important to check the condition of the slip rings to ensure generator performance is maintained at an optimum. See your authorized YANMAR industrial engine dealer or distributor for this service.

■ Check coils and automatic voltage regulator (AVR) for correct operation

Check the generator coils and AVR for correct operation and output. It is important to check the condition of the generator coils and AVR to ensure generator performance is maintained at an optimum. See your authorized YANMAR industrial engine dealer or distributor for this service.

■ Check main and sub-frames for damage

Check the main frame and sub-frames for damage. The main and sub-frames are the structural support for the engine, generator, fuel tank and all other generator controls and components. Any damage to the frames, including corrosion may compromise the structural integrity of the frame and should be repaired or replaced to avoid costly repairs and/or personal injury. See your authorized YANMAR industrial engine dealer or distributor for service and replacement parts.

■ Check all fasteners for damage and tightness

Check all fasteners used on the generator set. All fasteners should be properly installed and tightened to the specified value given in the *YDG Service Manual*. See your authorized YANMAR industrial engine dealer or distributor for service and replacement parts.

Every 1000 Hours of Operation

Perform the following maintenance every 1000 hours of operation.

- **Check compression**
- **Check engine/frame dampers for wear, damage and tightness**

■ Check compression

An engine compression check is required every 1000 hours to obtain optimum engine performance. See your authorized YANMAR industrial engine dealer or distributor for this service.

■ Check engine/frame dampers for wear, damage and tightness

Inspect all frame components for damage and repair or replace as required.

The damper mount butyl rubber has excellent shock absorption performance. Prevent contamination of the damper with diesel oil or gasoline as much as possible during operation, to prevent deterioration of the rubber damper. See your authorized YANMAR industrial engine dealer or distributor for service and replacement parts.

1. Check for separation at rubber baked portion **(Figure 75, (1))**.
2. Check the damper rubber material **(Figure 75, (2))** for cracks and deformation. Replace the damper if cracked or deformed.

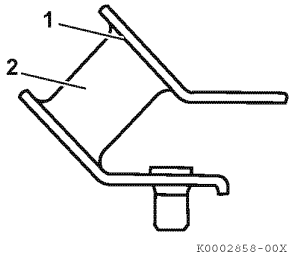


Figure 75

Every 1500 Hours of Operation

Perform the following maintenance every 1500 hours of operation.

- **Inspect, clean and test fuel injection nozzle**

■ Inspect, clean and test fuel injection nozzle

Proper operation of the fuel injectors is required to obtain the optimum injection pattern for full engine performance. See your authorized YANMAR industrial engine dealer or distributor for this service.

Every 2000 Hours of Operation

Perform the following maintenance every 2000 hours of operation.

- **Check and replace fuel hoses**

■ Check and replace fuel hoses

Regularly check the fuel system hoses. If they are cracked or degraded, replace them. Replace rubberized fuel hoses every two years or every 2000 hours of engine operation, whichever comes first, even if the engine has been out of service. Rubberized fuel lines tend to dry out and become brittle after two years or 2000 hours of engine operation, whichever comes first.

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TROUBLESHOOTING

TROUBLESHOOTING INFORMATION

If your generator does not operate properly, refer to the *Troubleshooting Chart on page 90* or see your authorized YANMAR industrial engine dealer or distributor.

Provide the authorized YANMAR industrial engine dealer or distributor with the following information:

1. Model name and serial number of your generator.

   The YDG generator set model and serial number information label is located inside the top front frame rail. *See Generator Set Decal (Typical) on page 23*.

2. Model name and serial number of your engine.

   The engine nameplate is located on the cooling shroud on the PTO side of engine above the starter. *See Engine Nameplate on page 24*.

3. How long the generator has been in service (the number of generator hours or the number of calendar months).

4. Operating conditions when problem occurs:
   - Load on engine
   - Color of exhaust smoke
   - Type of diesel fuel
   - Type of engine oil
   - Any abnormal noises or vibration
   - Operating environment such as high altitude or extreme ambient temperatures
5. Maintenance history and previous problems.
6. Other factors that contribute to the problem.

TROUBLESHOOTING CHART

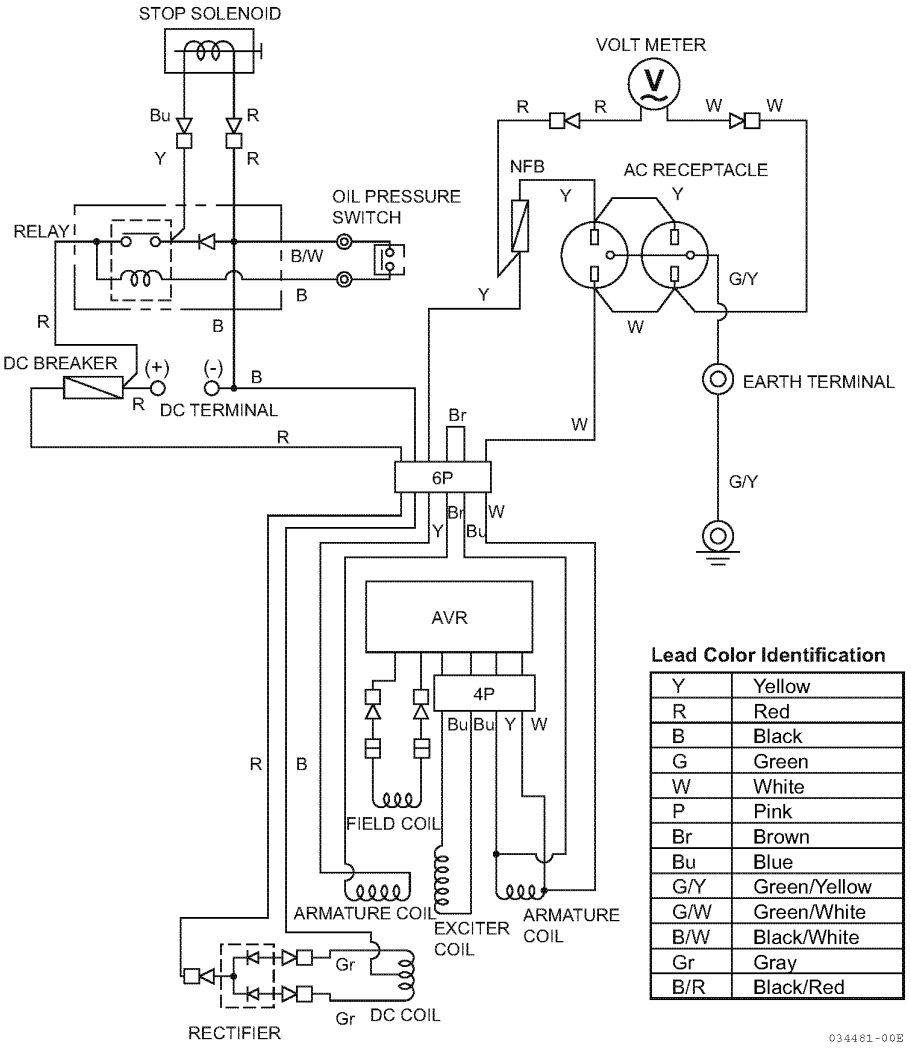
If a problem occurs, stop the engine immediately. Refer to the symptom column in the chart below to identify the problem.

Symptom	Probable cause	Action	Refer to
Engine does not start			
Starter motor operates but engine does not start	No diesel fuel	Refuel fuel system	*Filling the Fuel Tank on page 54*
	Engine control lever not in the RUN position	Move engine control lever to the RUN position	–
	Engine oil level low	Check and fill oil to proper level	–
	Improper diesel fuel	Replace with recommended diesel fuel	*Diesel Fuel Specifications on page 53*
	Clogged engine oil filter	Replace engine oil filter	–
	Clogged fuel filter	Replace fuel filter	*Drain the fuel tank and replace outlet fuel filter on page 84*
	Poor fuel injection	See authorized YANMAR industrial engine dealer or distributor	–
	Compressed air leakage from intake/exhaust valves		–
	Faulty engine stop solenoid		–
Engine starts with recoil starter but then stops	Key switch not in the ON position	Turn key to the ON position	–
Starter motor does not operate or rotates too slowly (engine can be turned manually)	Battery needs charging	Check electrolyte, recharge	*Battery on page 48*
	Faulty cable connection at battery terminals	Clean terminals, retighten	*Disconnecting and Connecting Battery Cables on page 51*
	Faulty starter switch	See authorized YANMAR industrial engine dealer or distributor	–
	Faulty starter motor		–
Engine cannot be turned manually	Inner parts seized or damaged		–
White or black exhaust smoke			
Black exhaust smoke	Engine overloaded	Reduce load	–
	Clogged air cleaner element	Clean element or replace	*Clean air cleaner element on page 81*
	Improper diesel fuel	Replace with recommended diesel fuel	*Diesel Fuel Specifications on page 53*
	Faulty spraying of fuel injection	See authorized YANMAR industrial engine dealer or distributor	–
	Excessive intake/exhaust valve clearance		–
White exhaust smoke	Improper diesel fuel	Replace with recommended diesel fuel	*Diesel Fuel Specifications on page 53*
	Faulty spray pattern of fuel injection	See authorized YANMAR industrial engine dealer or distributor	–
	Fuel injection timing delay		–
	Engine burning oil		–

Symptom	Probable cause	Action	Refer to
Generator			
No electricity generated	Main switch is off	Turn main switch on	*Generator Check on page 57*
	Equipment incorrectly connected to generator	Connect the equipment correctly	–
	Defective capacitor	See authorized YANMAR industrial engine dealer or distributor	–
	Winding short circulated or loose connections		–
	Electrical load too high	Reduce electrical load	–
	Loss of residual magnetism	See authorized YANMAR industrial engine dealer or distributor	–
	Engine speed too low		–
	Clogged spark arrester	Clean arrester	*Check spark arrester on page 76*
	Defective rotor diode	See authorized YANMAR industrial engine dealer or distributor	–
	Defective stator		–
	Defective rotor		–
	Engine not running properly		–

ELECTRICAL WIRING DIAGRAM

■ YDG2700N-5A, YDG2700N-5B, YDG2700N-6B



Lead Color Identification

Y	Yellow
R	Red
B	Black
G	Green
W	White
P	Pink
Br	Brown
Bu	Blue
G/Y	Green/Yellow
G/W	Green/White
B/W	Black/White
Gr	Gray
B/R	Black/Red

Figure 76

■ YDG2700N-5EA, YDG2700N-5EB, YDG2700N-6EB

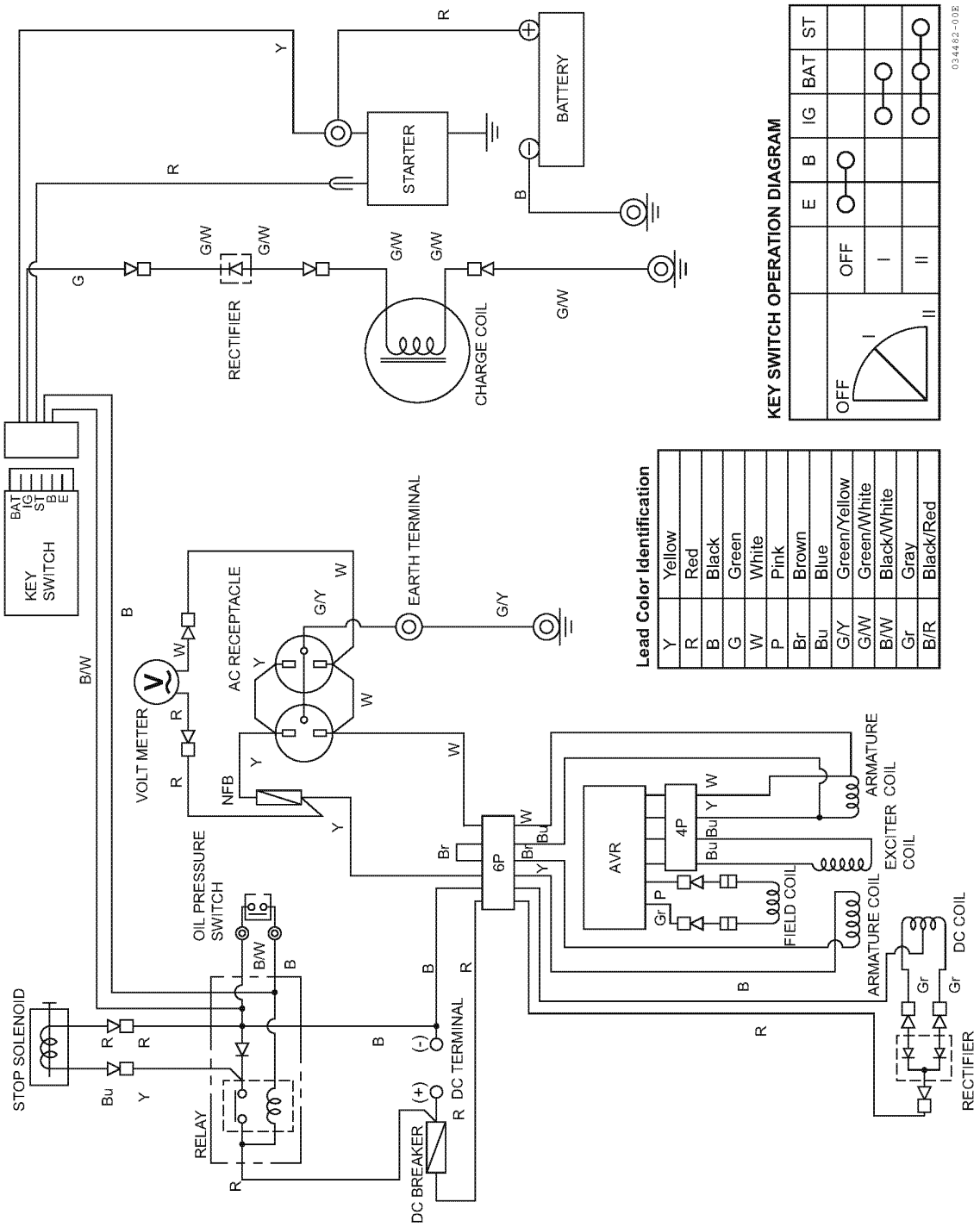
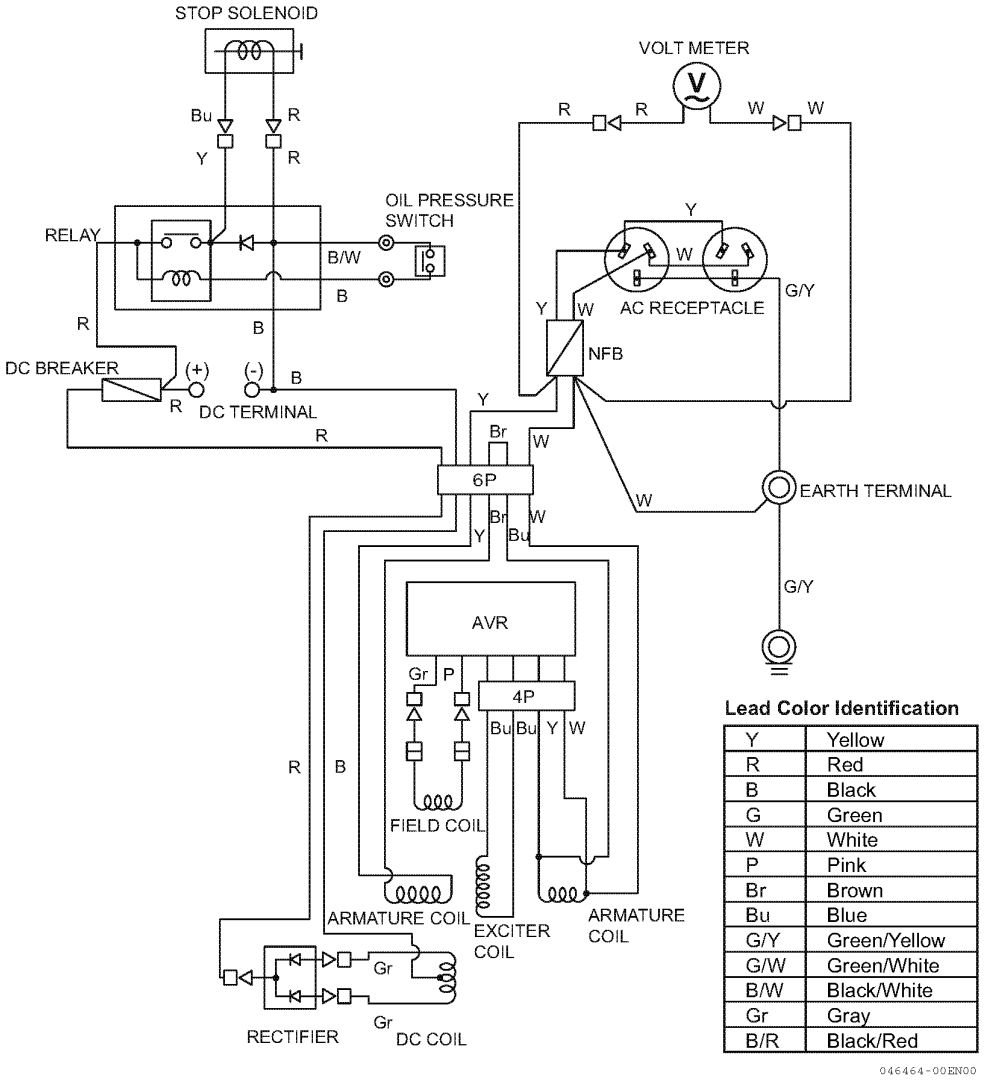


Figure 77

■ YDG2700N-5F



Lead Color Identification

Y	Yellow
R	Red
B	Black
G	Green
W	White
P	Pink
Br	Brown
Bu	Blue
G/Y	Green/Yellow
G/W	Green/White
B/W	Black/White
Gr	Gray
B/R	Black/Red

Figure 78

■ YDG2700N-5EF

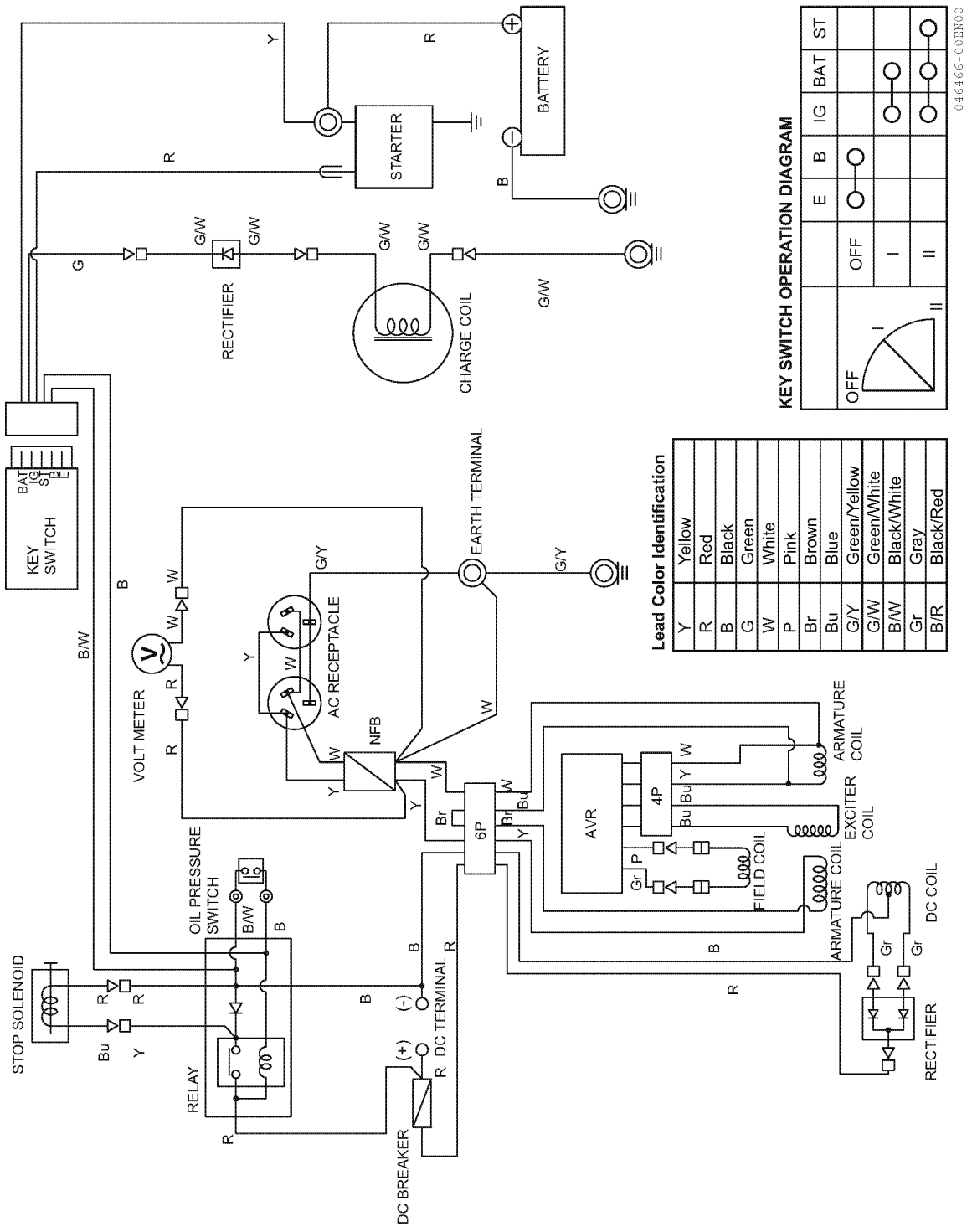


Figure 79

■ YDG2700N-6CS, YDG2700N-6C

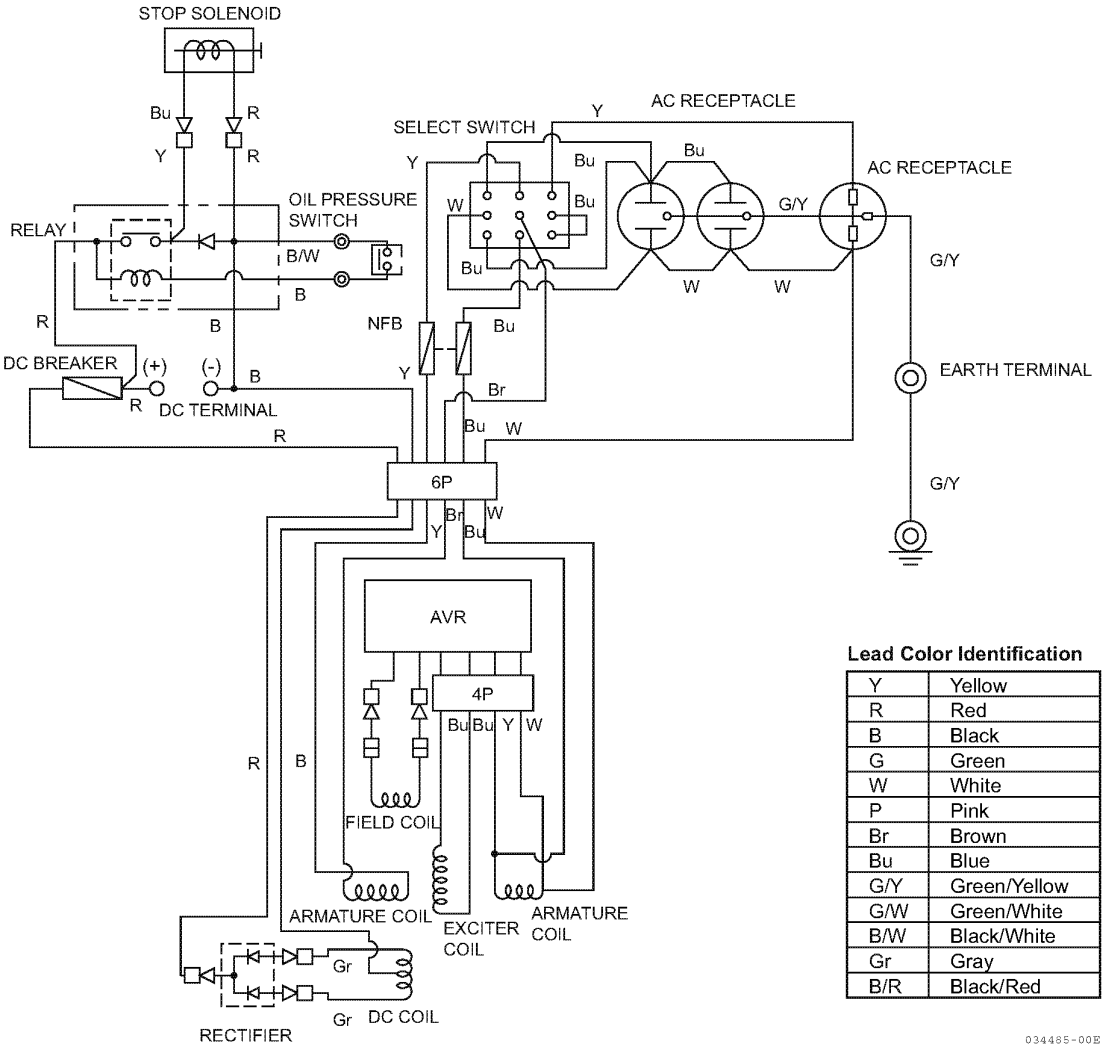


Figure 80

■ YDG2700N-6EC

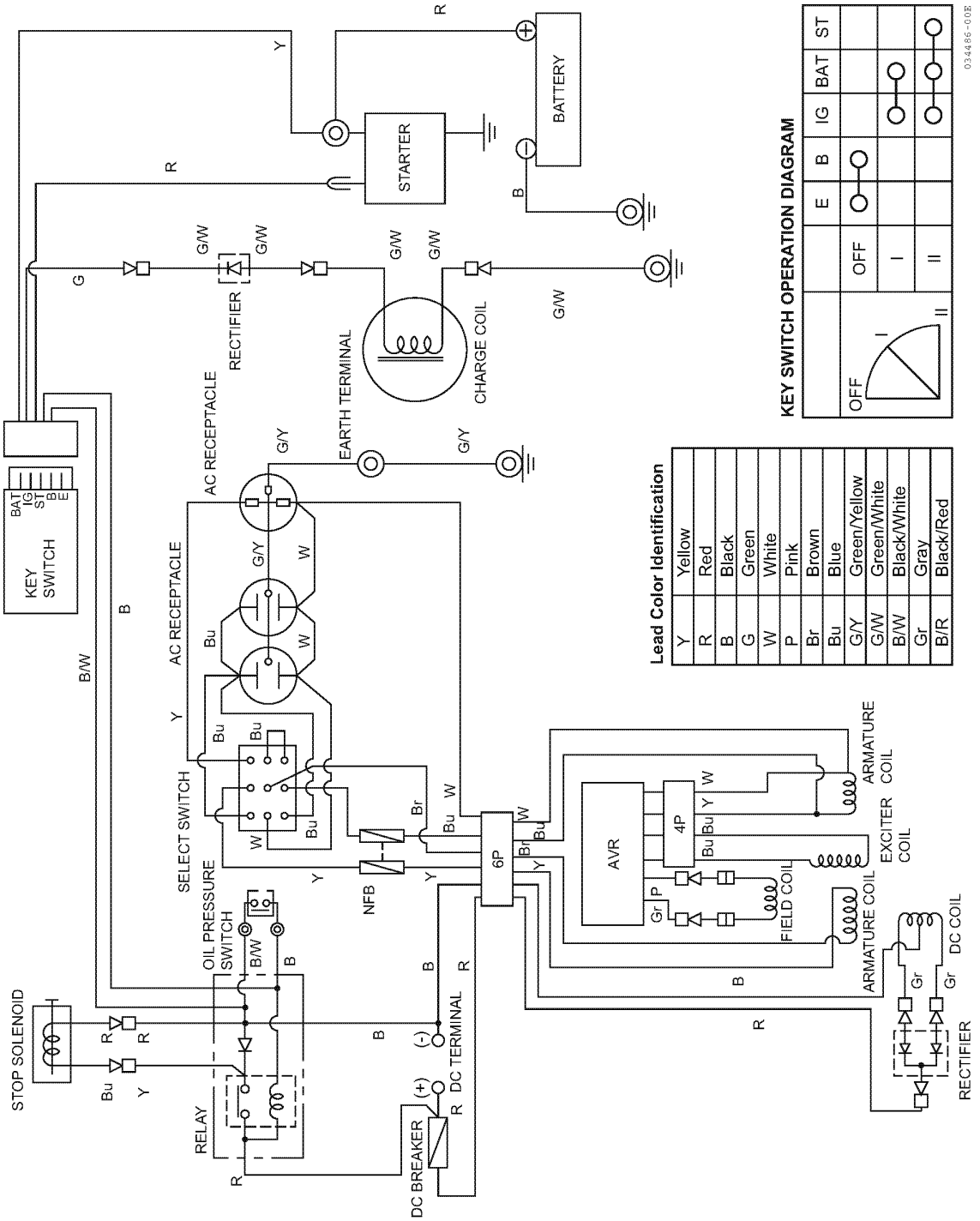
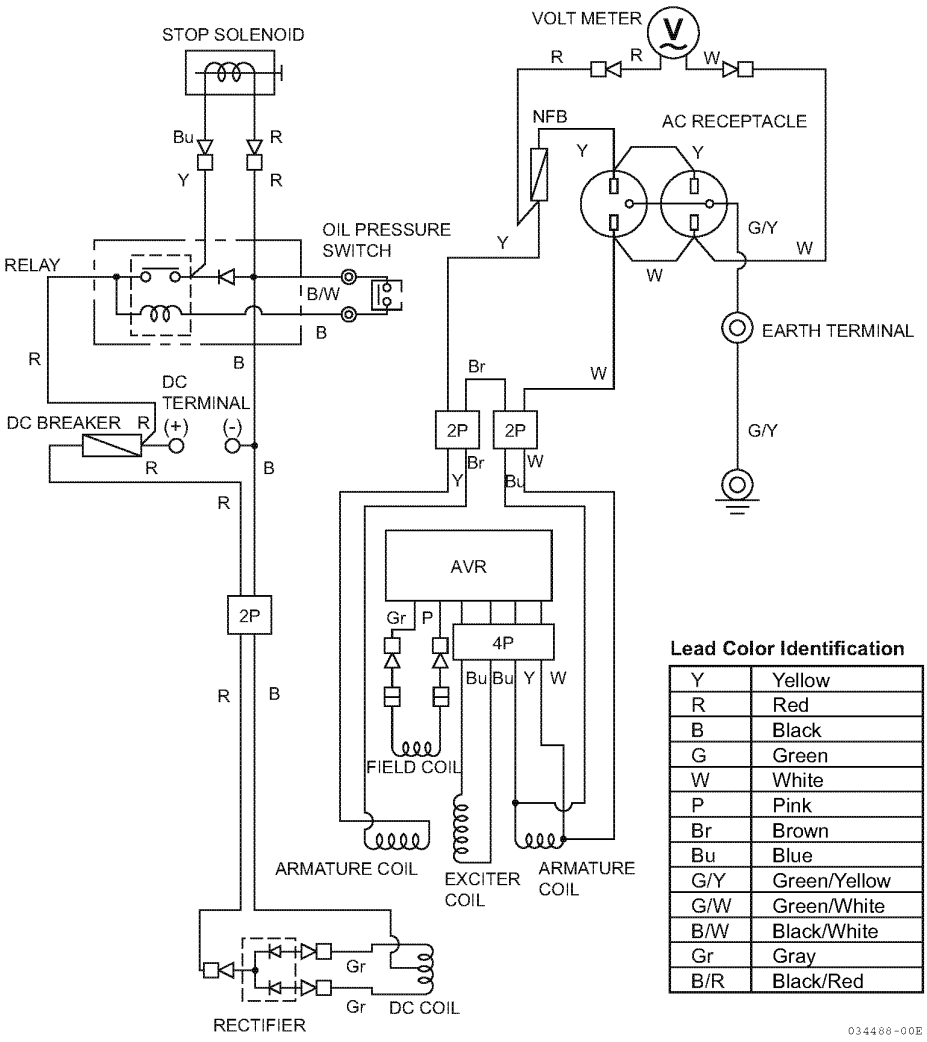


Figure 81

■ YDG3700N-5A, YDG3700N-5B, YDG3700N-6B, YDG5500N-5A, YDG5500N-5B, YDG5500N-6B



Lead Color Identification

Y	Yellow
R	Red
B	Black
G	Green
W	White
P	Pink
Br	Brown
Bu	Blue
G/Y	Green/Yellow
G/W	Green/White
B/W	Black/White
Gr	Gray
B/R	Black/Red

Figure 82

■ YDG3700N-5EA, YDG3700N-5EB, YDG3700N-6EB, YDG5500N-5EA, YDG5500N-5EB, YDG5500N-6EB

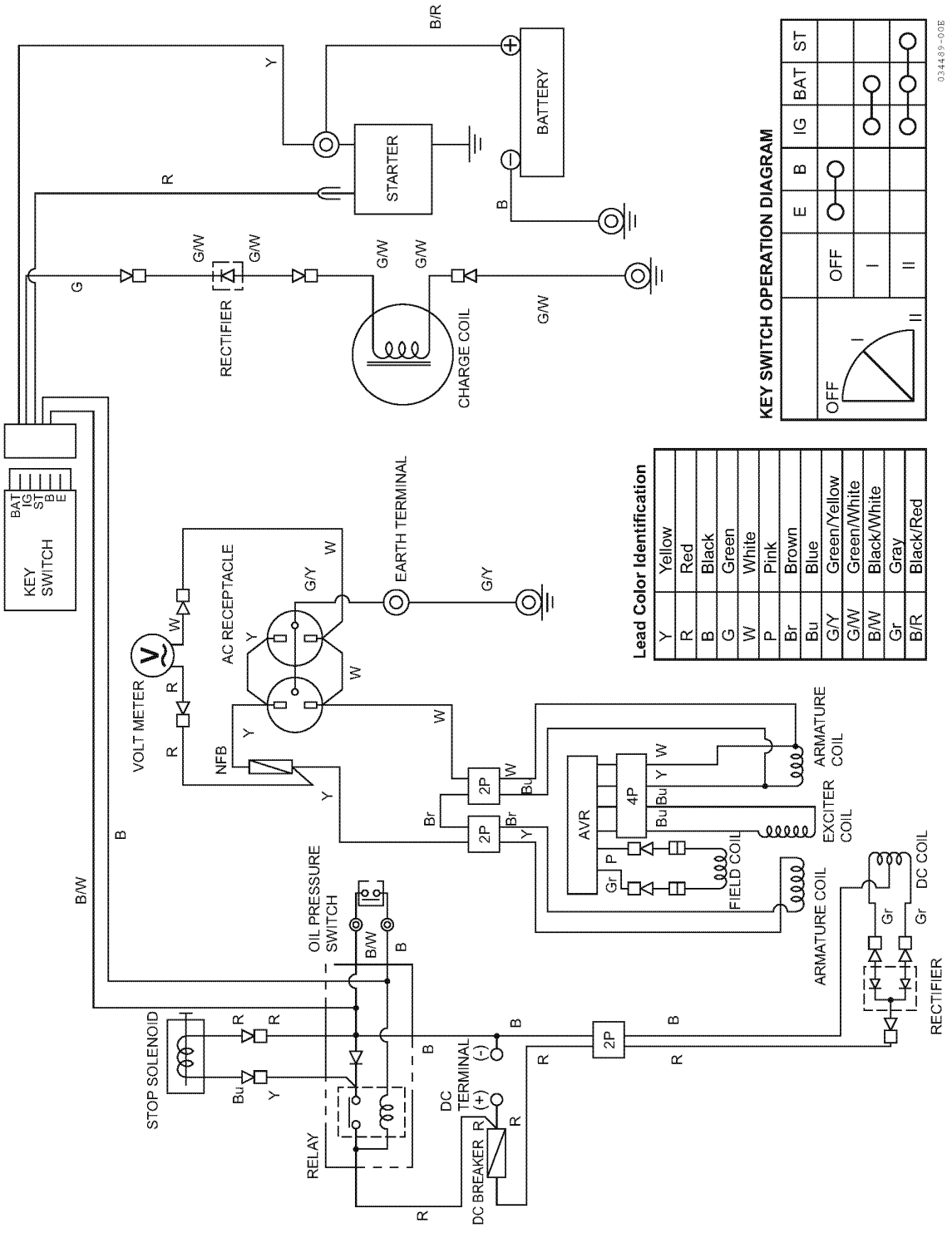


Figure 83

■ YDG3700N-5F, YDG5500N-5F

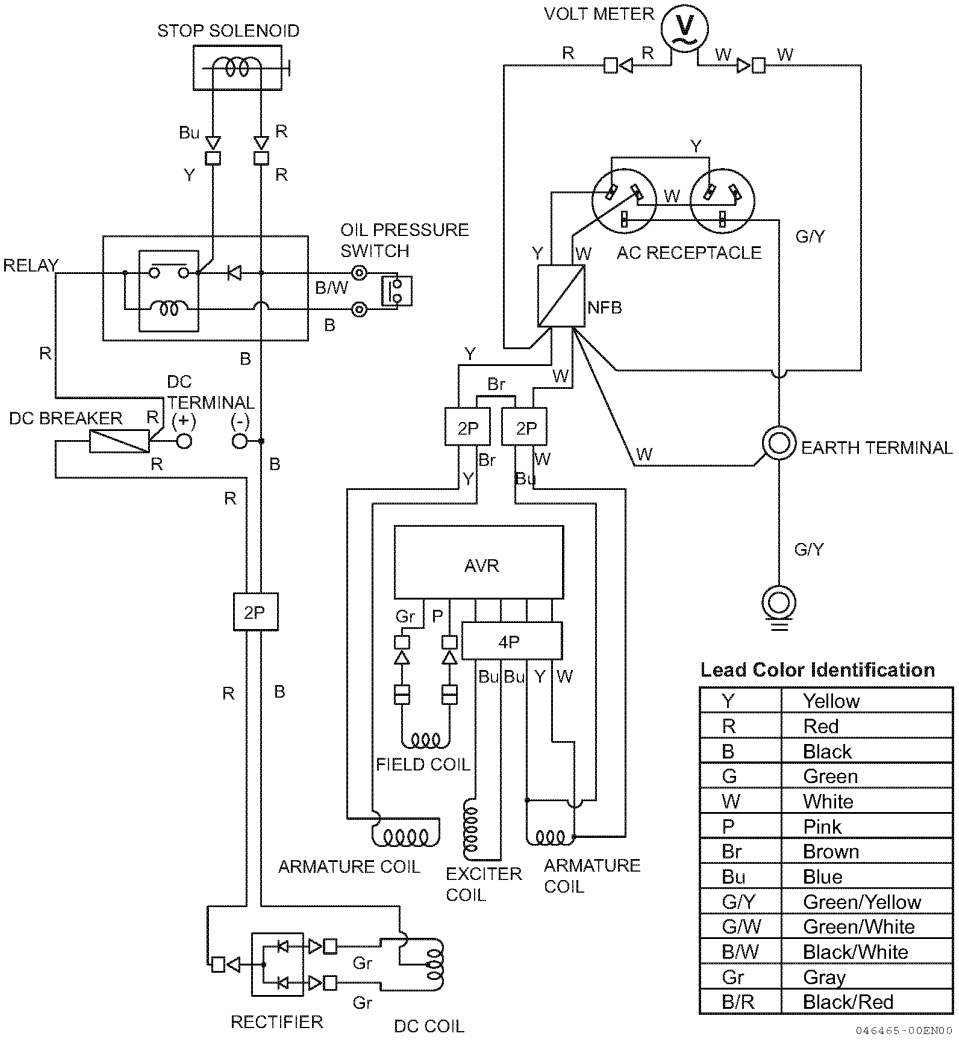


Figure 84

■ YDG3700N-5EF, YDG5500N-5EF

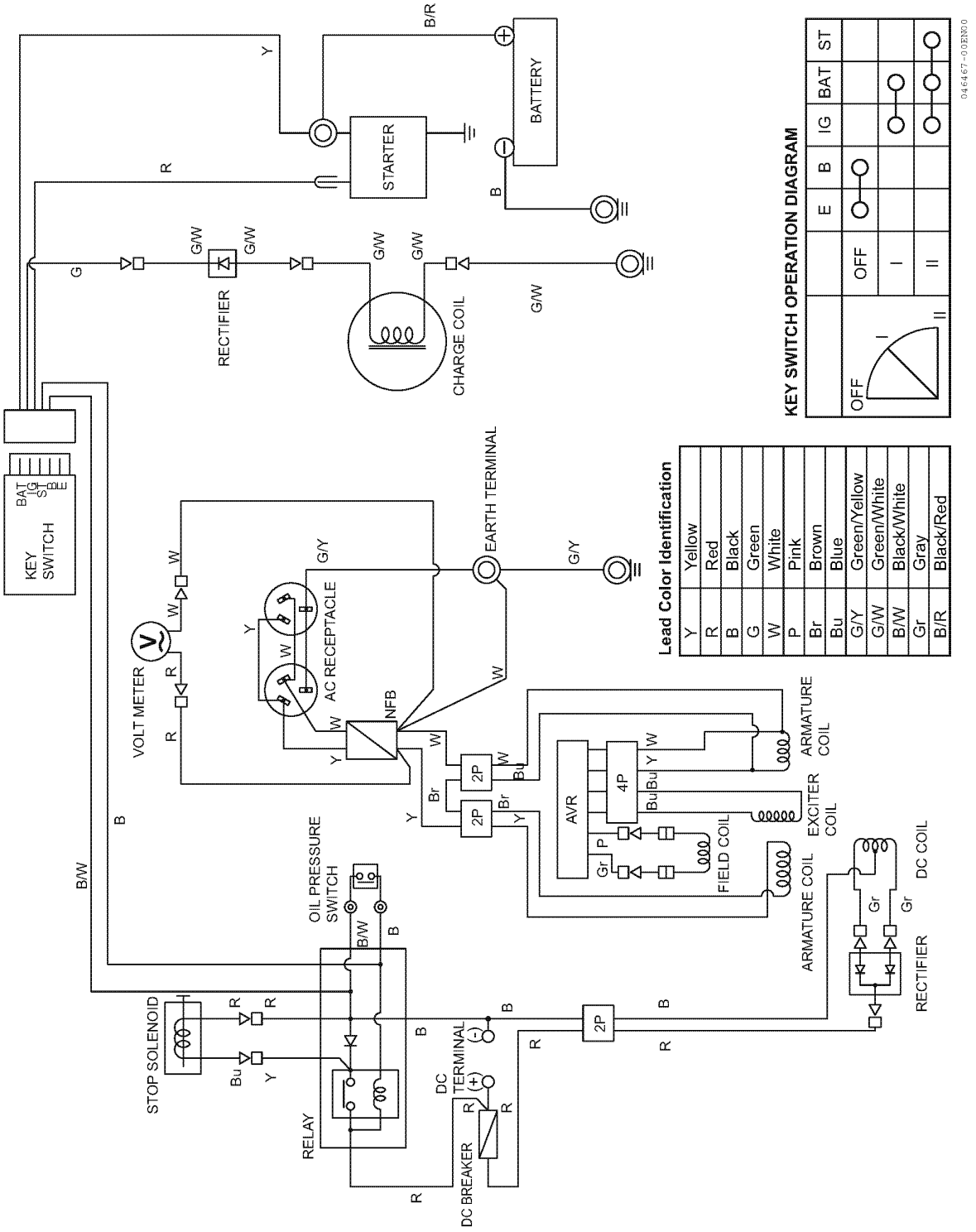


Figure 85

■ YDG3700N-6CS, YDG3700N-6C, YDG5500N-6C

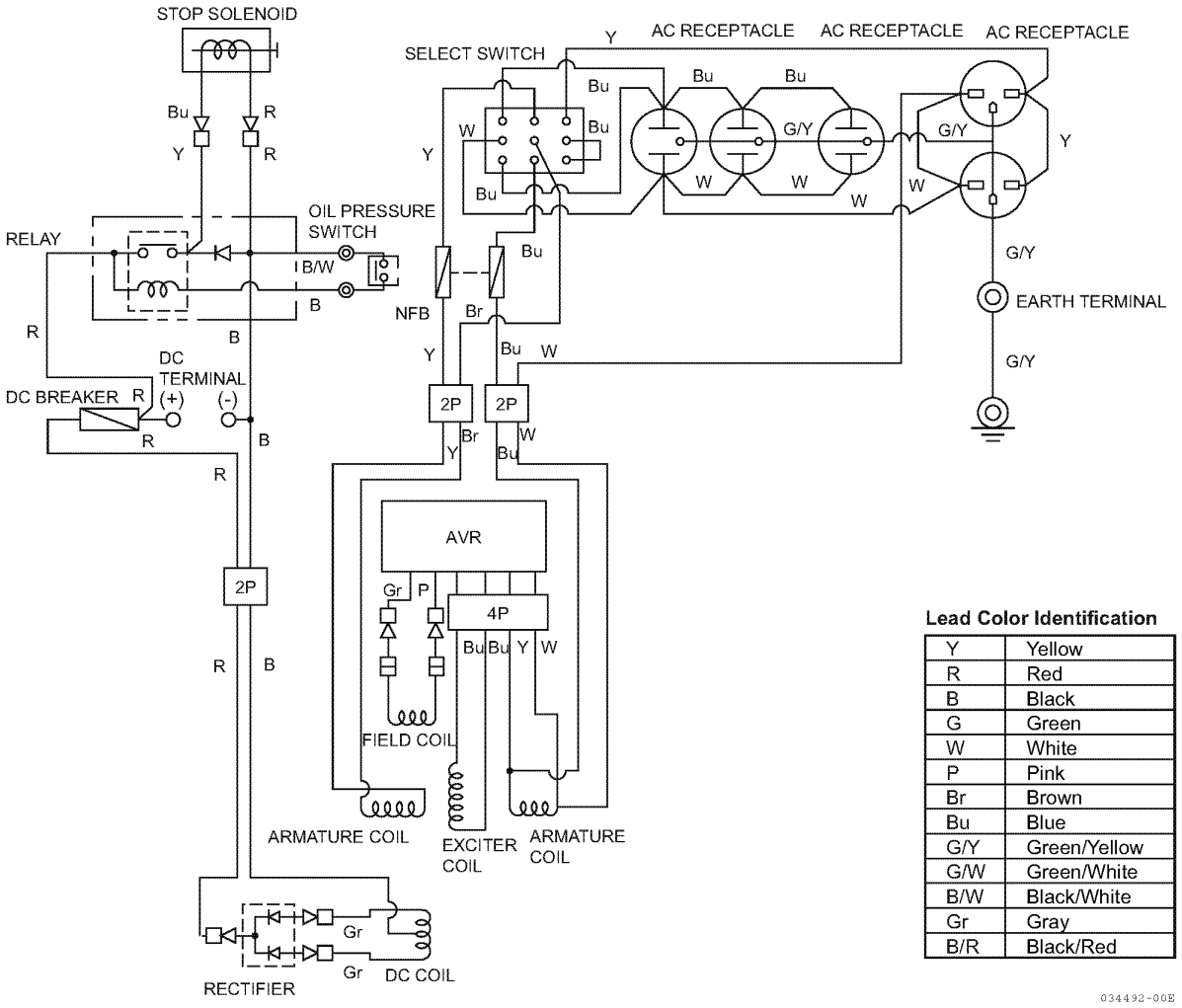


Figure 86

■ YDG3700N-6EC, YDG5500N-6ECS, YDG5500N-6EC

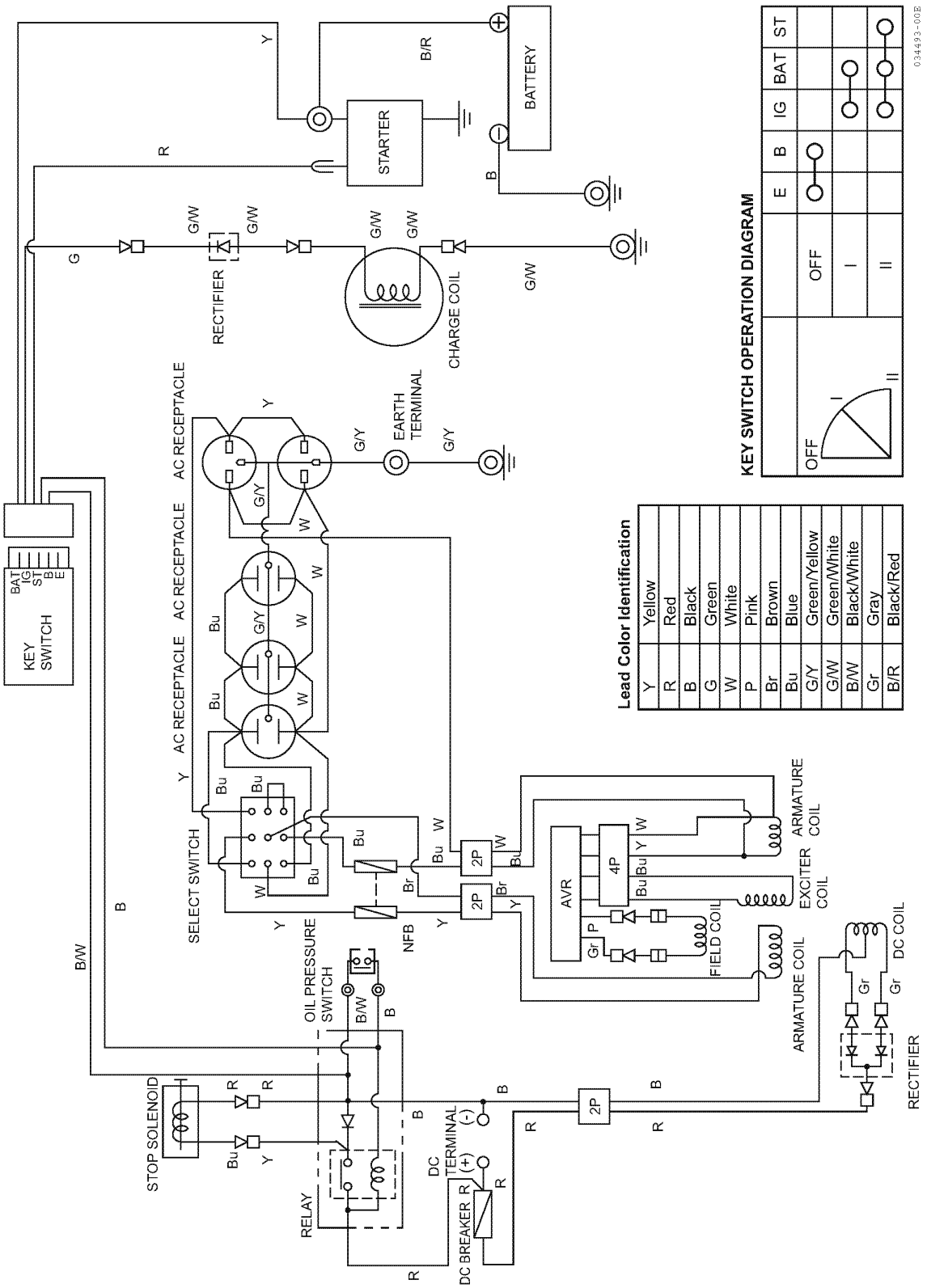


Figure 87

■ YDG6600TN-5EB, YDG6600TN-6EB

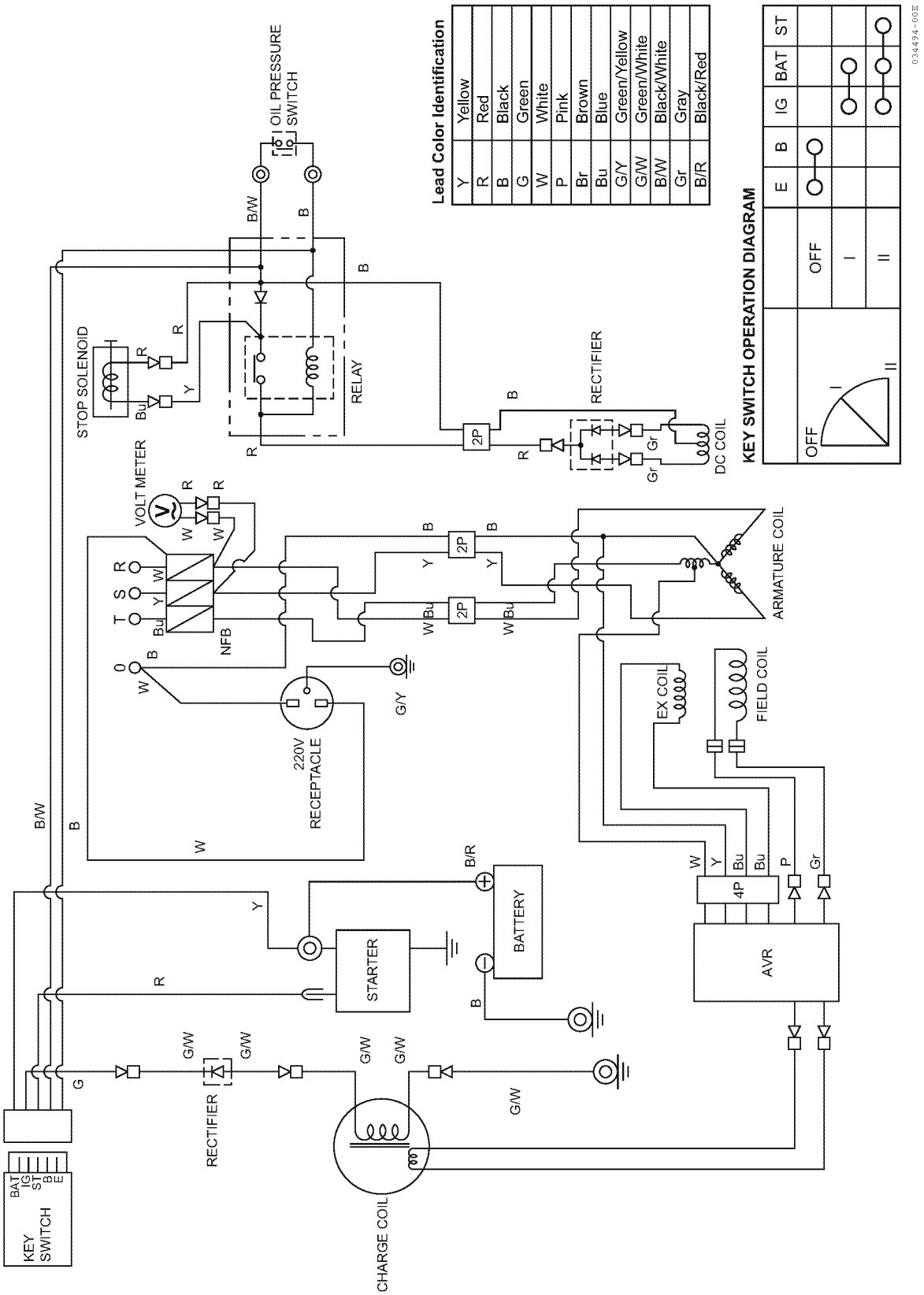


Figure 88

LONG-TERM STORAGE

INTRODUCTION

This section of the Operation Manual describes the procedures necessary to place the generator into long-term storage (three months or longer) and how to prepare it for operation.

BEFORE YOU PLACE THE GENERATOR IN LONG-TERM STORAGE

1. Perform the next periodic maintenance procedure. For example, if there are 10 hours remaining before the 200 hour maintenance, you should do the maintenance before you place the engine in storage. *See Periodic Maintenance Schedule on page 74.*
2. Start the engine. Allow the engine to run without load for approximately five minutes and then stop the engine.
3. Drain the engine oil while the engine is still warm and fill with new oil. *See Replace engine oil on page 78.*
4. Push the decompression lever down and hold it while slowly pulling the recoil starter two or three times. Do not start the engine.
5. Pull the decompression lever up. Pull the recoil starter slowly and stop when there is resistance. This procedure closes the intake and exhaust valves in the compression position and helps prevent rust.
6. Allow the engine to completely cool then drain the fuel tank or fill it completely.
7. Protect the air cleaner, muffler and electrical components (dynamo, starter motor, switches) from water and dust.
8. Disconnect the negative (–) battery cable to prevent the battery from discharging.
9. Check the battery fluid and add distilled water as required. *See Check Battery Electrolyte Level on page 62.*
10. Charge the battery once a month during storage. *See Charging the Battery on page 51.*
11. Clean the generator and store it in a dry place.

NOTICE

Always protect the air cleaner and electric components from damage when you use steam or high pressure water to clean the generator.

RETURNING THE ENGINE TO SERVICE

1. Perform the *Daily Checks on page 62.*
2. Start the engine. Allow the engine to run without load for approximately 5 to 10 minutes while you check for:
   - abnormal noises or vibration
   - fuel and engine oil leaks

⚠ DANGER

Avoid personal injury. Always wear eye protection when checking for fuel leaks and never check for a fuel leak with your hands. Always use a piece of wood or cardboard. Have your authorized YANMAR dealer or distributor repair the damage.

3. Avoid prolonged operation at maximum load for the remainder of the first hour of operation.

SPECIFICATIONS

PRINCIPAL SPECIFICATIONS

	Model	Unit	YDG2700N		YDG3700N		YDG5500N		YDG6600TN	
Generator	Type	–	Revolving field type 2 pole generator							
	Frequency	Hz	50	60	50	60	50	60	50	60
	Max. AC output	kVA	2.2	2.7	3.2	3.7	4.6	5.5	5.5	6.6
	Cont. AC output	kVA	2.0	2.5	3.0	3.5	4.2	5.0	5.0 (1.7)	6.0 (2.0)
	DC output (generator and charger)	V-A	12 - 8.3						–	
	Generator class	–	Rating BR							
	Voltage	V	120, 220, 230, 240, 110/220, 120/240						380 (220)	
	Rated power factor	%	100						80 (100)	
	Phase	–	Single phase						3-phase (single)	
	Excitation system	–	Self-excitation						Self and separate excitation	
	Insulation	–	Type B							
Engine	Model	–	L48N5/6-G(E)Y (2*2)		L70N5/6-G(E)Y (2*2)		L100N5/6-G(E)Y (2*2)		L100N5/6-GEYT (2*2)	
	Type	–	Vertical, 4-cycle, air-cooled diesel engine							
	Displacement	cc	219		320		435		435	
	Cont. output	kW/min^{-1}	2.8/3000	3.1/3600	4.1/3000	4.4/3600	5.7/3000	6.6/3600	5.7/3000	6.6/3600
	Starting system	–	Recoil or recoil/electric						Electric	
	Combustion system	–	Direct injection							
	Governor system	–	All speed by centrifugal weight							
	Fuel oil	–	Diesel fuel oil							
	Fuel tank capacity	ℓ	7.2		13					
	Lube oil capacity	ℓ	0.8		1.1		1.65			
	Operation capacity (one tankful)*1 approx.	ℓ	7.0	6.5	9.5	8.0	7.0	6.0	5.5	4.9

SPECIFICATIONS

	Model	Unit	YDG2700N		YDG3700N		YDG5500N		YDG6600TN	
Unit	Noise level at 7 m (approx.)	dB (A)	79	80	81	82	84	85	84	85
	Dimensions L × W × H (Recoil)	mm	590 × 416 × 500		650 × 496 × 530		720 × 480 × 578		–	
	Dry weight (Recoil)	kg	54		68		99		–	
	Dimensions L × W × H (Electric)	mm	649 × 416 × 500		650 × 496 × 530		720 × 480 × 578		720 × 480 × 578	
	Protection	–	IP20							
	Dry weight (Electric)	kg	63		82		112 (114: 6ECS(2) only)		113	

** 1 Estimate only, besed on rated load*
***2 The engine is produced by YANMAR Italy*

Note:

Engine rating conditions are as follows (SAE J1349, ISO 3046/1):

- *Atmospheric condition: room temperature 77 °F (25 °C), atmospheric pressure 29.53 in. Hg (100 kPa, 750 mm Hg), relative humidity 30 %*
- *Fuel temperature at fuel injector pump inlet: 104 °F (40 °C)*
- *With cooling fan, air cleaner, muffler: YANMAR standard*
- *After engine break-in period. Output allowable deviation: ±3 %*
- *1 PS = 0.7355 kW*
- *1 hp SAE (Society of Automotive Engineers) = 0.7457 kW*

Ambient condition for -6(E)CS

- *However the performance is shown at 40 degree (°C) ambient temperature the generator is able to use until 50 °C*

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As of January 1st, 2015

OPERATION MANUAL

YDG2700N, YDG3700N,
YDG5500N, YDG6600TN

1st edition: May 2010
3rd edition: May 2012
4th edition: April 2013
5th edition: September 2013
5th edition 1st rev.: January 2015

Issued by: YANMAR CO., LTD.
Edited by: YANMAR TECHNICAL SERVICE CO., LTD.

DIESEL POWERED
GENERATOR

YANMAR

YANMAR CO., LTD.

http://yanmar.com

0AYDG-G00404
PRINTED IN JAPAN