

OPERATORS MANUAL & ILLUSTRATED PARTS LIST



WL18000VE/B

Read and understand all instructions in the manual before starting and operating the generator set.

USING THIS MANUAL

Congratulations on your choice of a WINCO generator set. You have selected a high-quality, precision-engineered generator set designed and tested to give you years of satisfactory portable service.

To get the best performance from your new engine generator set, it is important that you carefully read and follow the operating instructions in this manual.

Should you experience a problem please follow the "Things To Check" near the end of this manual. The warranty listed in this manual describes what you can expect from WINCO should you need service assistance in the future.

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PROPER USE AND INSTALLATION

You must be sure your new engine generator set is:

- * Properly serviced before starting
- * Operated in a well ventilated area
- * Exhaust gases are dispersed safely
- * Wired by a qualified electrician
- * Operated only for its designed purposes
- * Used only by operators who understand its operation
- * Properly maintained

COPY YOUR MODEL AND SERIAL NUMBER HERE

No other WINCO generator has the same serial number as yours. It is important that you record the number and other vital information here, if you should ever need to contact us on this unit it will help us to respond to your needs faster.

MODEL _____

SERIAL NUMBER _____

PURCHASE DATE _____

DEALER _____

UNIT SPECIFICATIONS WL18000VE/B

GENERATOR

	Rotating Field W/External
	Voltage regulation
Surge Watts	18,000
Continuous Watts	15,000
Volts	120/240
Amps	125/62.5

ENGINE

Type	Briggs & Stratton OHV
Model Number	5434777 - 0140 - E1
Fuel Capacity	15 Gallons
Run Time - Full Load	10.5 Hours
Run Time - Half Load	6.8 Hours
Starting System	12V Electric Start
Stop System	Key Switch

RECEPTACLES

Nema 5-20R GFCI (120V)	2 (20A Duplex)
Nema L5-20R GFCI Protected (120V)	2 (20A Twistlock)
Nema 5-50R (120V)	1 (50A Straight Blade)
Nema L6-30R (240V)	1 (30A Twistlock)
Nema 14-60R (120/240V)	1 (60A - 4 Wire)

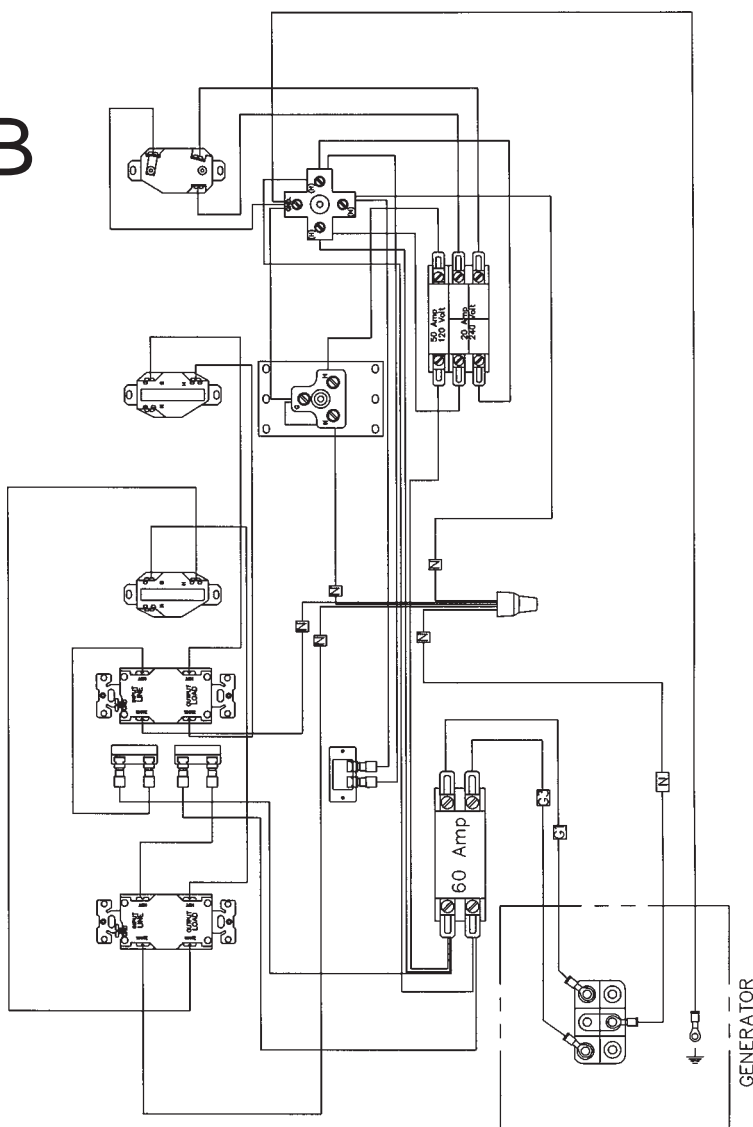
COMPLETE UNIT

Weight	550 lbs.
Dimensions LxWxH	41" X 26.75" X 29"

WARRANTY

Generator & Control	2 Years
Engine (B & S Wty)	2 Years

WL18000VE/B WIRING DIAGRAM



This engine generator set has been designed and manufactured to allow safe, reliable performance. Poor maintenance, improper or careless use can result in potential deadly hazards; from electrical shock, exhaust gas asphyxiation, or fire. Please read all safety instructions carefully before installation or use. Keep these instructions handy for future reference. Take special note and follow all warnings on the unit labels and in the manuals.

ANSI SAFETY DEFINITIONS

DANGER:

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

WARNING:

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

CAUTION:

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

NOTE:

CAUTION is also used on the unit labels and in this manual to indicate a situation that could result in serious damage or destruction of the equipment and possible personal injury.

1. **ELECTRIC SHOCK-** The output voltage present in this equipment can cause a fatal electric shock. This equipment must be operated by a responsible person.
 - a. Do not allow anyone to operate the generator without proper instruction.
 - b. Guard against electric shock.
 - c. Avoid contact with live terminals or receptacles.
 - d. Use extreme care if operating this unit in rain or snow.
 - e. Use only three-prong grounded plugs and extension cords.
 - f. Be sure the unit is properly grounded to an external ground rod driven into the earth.
2. **FIRE HAZARD-** Gasoline and other fuels always present a hazard of possible explosion and/or fire.
 - a. Do not refuel when the engine is running or hot. Allow the engine to cool at least two minutes before refueling.
 - b. Keep fuel containers out of reach of children.
 - c. Do not smoke or use open flame near the generator set or fuel tank.

- d. Keep a fire extinguisher nearby and know its proper use. Fire extinguishers rated ABC by NFPA are appropriate.
- e. Store fuel only in an approved container, and only in a well-ventilated area.

3. **DEADLY EXHAUST GAS** - Exhaust fumes from any gasoline engine contain carbon monoxide, an invisible, odorless and deadly gas that must be mixed with fresh air.
 - a. Operate only in well ventilated areas.
 - b. Never operate indoors.
 - c. Never operate the unit in such a way as to allow exhaust gases to seep back into closed rooms (i.e. through windows, walls or floors).
4. **NOISE HAZARD** - Excessive noise is not only tiring, but continual exposure can lead to loss of hearing.
 - a. Use hearing protection equipment when working around this equipment for long periods of time.
 - b. Keep your neighbors in mind when permanently installing this equipment.
5. **CLEANLINESS-** Keep the generator and surrounding area clean.
 - a. Remove all grease, ice, snow or materials that create slippery conditions around the unit.
 - b. Remove any rags or other material that could create potential fire hazards.
 - c. Carefully wipe up any gas or oil spills before starting the unit.
 - d. Never allow leaves or other flammable material to build up around the engine exhaust area.
6. **SERVICING EQUIPMENT-** All service, including the installation or replacement of service parts, should be performed only by a qualified technician.
 - a. Use only factory approved repair parts.
 - b. Do not work on this equipment when fatigued.
 - c. Never remove the protective guards, cover, or receptacle panels while the engine is running.
 - d. Use extreme caution when working on electrical components. High output voltages from this equipment can cause serious injury or death.
 - e. Always avoid hot mufflers, exhaust manifolds, and engine parts. They all can cause severe burns instantly.
 - f. Installing a home-standby generator is not a "do-it-yourself" project. Consult a qualified, licensed electrician or contractor. The installation must comply with all national, state, and local codes.

INTENDED USES

These engine generator sets have been designed primarily for portable use. Both 120, 240 and 120/240 volt AC receptacles are provided in the 'control panel' to plug in your loads (lights, portable tools, and small appliances). These units are dual wound generators, therefore the 120 Volt loads must be equally split between the two power feeds not to exceed 60 amps on either side. See unit capabilities for further explanation.

These portable units require large quantities of fresh air for cooling of both the engine and the generator. Fresh air is drawn from both the engine end and the generator end and is exhausted at the center of the unit. For safety, long life and adequate performance, these units should never be run inside or in small compartments (such as pickup truck beds) which can restrict fresh air flow.

RESTRICTED USES

DO NOT remove from the cradle assembly. Removal of the generator from the cradle assembly may cause excessive vibration and damage to the engine generator set.

DO NOT install and operate these portable generators in a small compartment or the bed of a pickup truck. These compartments will not allow enough free flow fresh air to reach the engine generator set for cooling and will cause the unit to overheat, damaging both the engine and the generator. Small compartments will also develop hot spots where there is very little air flow and may cause a fire.

DO NOT attempt to operate at 50 cycles. These units are designed and governed to operate at 60 Cycles only.

UNPACKING

CAUTION: EQUIPMENT DAMAGE

THIS UNIT HAS BEEN SHIPPED WITHOUT OIL.

Failure to maintain the engine oil at the proper level will result in serious engine damage.

When you unpack your new ENGINE GENERATOR be sure to remove all the information sheets and manuals from the carton.

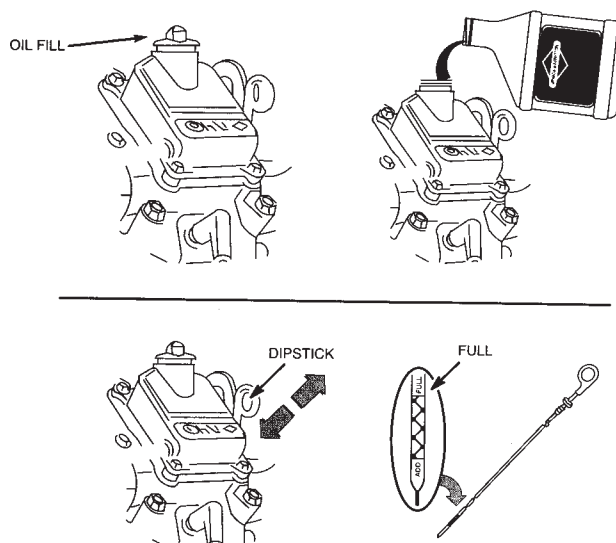
1. This generator set was in good order when shipped. Inspect the power plant promptly after receiving it. If damage is noted, notify the transportation company immediately, request proper procedures for filing a "concealed damage" claim. Title to the equipment and responsibility for filing a claim rests with you when a generator is sent F.O.B. shipping point. Only you can legally file a claim.
2. Before proceeding with the preparation of your new engine generator set for operation, take a couple of minutes to insure that the unit you have received is the correct model and review the specification pages in this manual to insure that this unit fits your job requirements.
3. After removing the engine generator from the carton locate and remove the shipping strap attached to the generator shock mount. See attached tag for removal instructions.

UNIT PREPARATION

Before your engine generator was shipped from our factory it was fully checked for performance. The generator was load tested to its full capacity, and the voltage and frequency were carefully checked and adjusted.

LUBRICATION

Before starting the engine, fill the crankcase to the proper level with a good quality oil. **The recommended grade of oil and quantity of oil required is listed in the engine operator's manual shipped with your unit.** The necessity of using the correct oil, and keeping the crankcase full cannot be overemphasized. Engine failures resulting from inadequate or improper lubricant are considered abuse and are not covered by the generator or the engine manufacturer's warranty.



LOW OIL LEVEL SHUTDOWN SYSTEM

This Industrial engine/generator set is equipped with a low oil pressure shutdown system. This low oil pressure system will automatically stop the engine when the oil pressure becomes too low. This feature is designed to reduce costly repairs and downtime.

CAUTION: EQUIPMENT DAMAGE

Allowing the engine to shutdown repeatedly on low oil level may cause excessive wear which can be cumulative.

GASOLINE FUEL

Always use a good grade of unleaded fuel with a minimum of 85 octane. Some fuels, called oxygenated or reformulated gasoline, are gasoline blended with alcohol or ethers. Excessive amount of these blends can damage the fuel system or cause performance problems. If any undesirable operation symptoms occur, use a gasoline with a lower percentage of alcohol or ether. **DO NOT use gasoline containing methanol.** Always insure that the fuel is clean and free of all impurities.

WARNING: FIRE DANGER

Gasoline and its fumes are VERY explosive when proper precautions are not taken.

Never use fuel that has been stored for an extended period of time as the fuel will lose its volatile properties and you will be left with only the varnish residue. This varnish like substance will clog the carburetor or injectors and will not burn properly. The use of a fuel additive, such as STA-BIL, or an equivalent will minimize the formation of fuel gum deposits. If a unit has been out of operation for an extended period of time it is best to drain old fuel from the fuel tank and replace with fresh fuel before attempting to start.

BATTERY INSTALLATION

These engine generator sets are shipped with a battery rack, and battery cables installed. A battery tie down kit is shipped loose with each unit.

You will need to purchase and install a battery to operate this engine generator set. A twelve volt battery, group 26 rated at 500 CCA or larger is recommended for this electric start engine generator set. Follow the battery manufacturers recommendations for servicing and charging prior to use. Connect the battery to the electric start system using the cables provided.

CAUTION: EQUIPMENT DAMAGE

These electric start engines are NEGATIVE GROUND. Use extreme caution when connecting the battery. Connect the NEGATIVE battery terminal to GROUND.

For your safety always connect the positive battery cable to the "bat+" terminal first. Then connect the negative battery cable to the "bat-" terminal. Make sure all connections are clean and tight. Reverse the sequence when disconnecting, disconnect the negative cable first. These engines produce enough direct current to keep a battery charged under normal operating conditions, but were not intended to be used as a battery charger.

WARNING: PERSONAL INJURY

Lead acid batteries produce explosive hydrogen gas when charging. Keep sparks, flames, and burning cigarettes away from the battery. Ventilate the area when charging or using the battery in an enclosed space. Lead acid batteries contain sulfuric acid, which causes severe burns. If acid contacts eyes, skin or clothing, flush well with water. For contact with eyes, get immediate medical attention.

Battery Charging

Units equipped with electric start have a small flywheel charger built into the engine flywheel assembly for recharging the starting battery. This flywheel charger generates a small AC current that passes through a diode assembly to produce a DC charging current of about 1 to 3 AMP. This circuit is not designed to be used as a battery charging circuit to recharge dead batteries.

4 WHEEL DOLLY KIT

The WL18000 ships with a 4 wheel dolly kit as standard equipment. The dolly kit comes with instructions and parts list. After installing the dolly kit, file the instructions and parts list in the back of this manual for future reference.

CAUTION: EQUIPMENT DAMAGE

This is a four wheel dolly kit be sure to chock the wheels properly before operating the generator. Failure to properly restrict unit movement will allow the unit to move causing damage to the unit, drop cords or loads.

INITIAL START UP

Use the following checklist to verify the correct preparation of the engine generator before starting.

Before Starting always Check:

1. Engine oil, fill as required with correct grade and quantity.
2. Fuel level, fill as required with clean fresh fuel.
3. Visually check for loose or broken parts.

STARTING

The throttle control on these generators is preset and locked to operate at 3600 RPM (nominal) with no load speed set at 3690 RPM. Only a trained service technician should be allowed to adjust this speed setting. See "Operating Speed" section for additional information.

NOTICE: ENGINE

*These units **may not start** if the oil is low. The lubricating oil level must be at the **full** mark before the engine will start.*

ELECTRIC STARTING

1. Turn on the fuel supply.
2. Pull the choke to the full "on" position. A warm engine will require less choking than a cold engine.
3. Engage the engine start switch briefly to the START position. The starter life is improved by using shorter starting cycles with time to cool off between cranking cycles. Do not operate the starter more than 5 seconds during each minute. Repeat if necessary.
4. When the engine starts, open the choke gradually.
5. The engine should promptly come up to operating speed.

CAUTION: EQUIPMENT DAMAGE

Never permit the choke to remain on after the engine has run for a short time. It is not necessary to choke the engine when it is warm. Avoid over-choking.

STARTING HINTS

1. Cold weather
 - a. Use the proper oil for the temperature expected.
 - b. Use fresh winter grade fuel. Winter grade gasoline is blended to improve starting. Do not use summer gasoline.

2. Hot weather
 - a. Use the proper oil for the temperature expected.
 - b. Use only summer blended gasoline. Using gasoline left over from winter may cause the unit to vapor lock.
 - c. DO NOT over-choke the unit.

STOPPING AND STORAGE

1. Turn key to stop position.
2. Close the fuel shut-off valve. Always shut the fuel off whenever the engine is stopped to prevent fuel leakage from carburetor.
3. Before extended storage (over 30 days) certain precautions must be taken to ensure the fuel doesn't deteriorate and clog the fuel system.
 - a. Remove the remaining fuel from the fuel tank.
 - b. Start the engine and allow it to run until all the fuel in the carburetor and the fuel lines has been used up and the engine stops.
 - c. While the engine is warm, drain the oil and refill with fresh oil.
 - d. Remove the spark plug, pour approximately 1/2 ounce (15 cc) of engine oil into the cylinder and crank slowly to distribute oil. Replace spark plug.
 - e. Clean dirt and chaff from cylinder, cylinder head fins, blower housing, rotating screen and muffler areas.
 - f. Store in a clean and dry area.

Note: The use of a fuel additive, such as STA-BIL, or an equivalent, will minimize the formation of gum deposits during storage. Such an additive may be added to gasoline in the engine's fuel tank or to gasoline in a storage container.

OPERATING SPEED

The engine-generator must be run at the correct speed in order to produce the proper electrical voltage and frequency.

CAUTION: EQUIPMENT DAMAGE

The output voltage should be checked to insure the generator is working properly prior to connecting a load to the generator. Failure to do so could result in damage to equipment plugged into the unit and possible injury to the individual.

All engines have a tendency to slow down when a load is applied. When the electrical load is connected to the generator, the engine is more heavily loaded, and as a result the speed drops slightly. Because these generators are externally regulated the voltage is going to remain at a constant level (about 120/240). The slight variation in speed affects the frequency of the output current. This frequency variation has no appreciable effect in the operation of motors, lights and most appliances. However, electronic equipment and clocks will be affected if correct RPM is not maintained. See Load vs. Output chart.

Although individual units may vary slightly, the normal voltage and frequency of the WL18000 are approximately as follows, under varying loads:

LOAD vs. OUTPUT

Generator Load Applied*	Frequency Speed (RPM)	Frequency (HZ)	Voltage 120V Recpt.
None	3690	61.5	120V
Half	3600	60.0	120V
Full	3510	58.5	120V

*Portion of plant's rated output current.

The speed of the engine was carefully adjusted at the factory so that the generator produces the proper frequency. For normal usage, the speed setting should not be changed. Whenever making any speed adjustments check the unit with frequency meter or tach and be sure the speed is correct.

Output voltage should be checked periodically to ensure continued proper operation of the generating plant and appliances. If the generator is not equipped with a voltmeter, it can be checked with a portable meter. Frequency can be checked by using an electric clock with a sweep second hand. Timed against a wrist watch or a stop watch the clock should be correct within +/- 2 seconds per minute.

CONNECTING THE LOADS

Applying The Load

Allow the engine to warm up for two or three minutes before applying any load. This will allow the engine to reach normal operating temperature and oil to circulate throughout the engine. A short warm-up time will permit the engine to work more efficiently when the load is applied and will reduce the wear in the engine, extending its life.

Receptacles have been provided to allow loads to be connected to the generator. The loads should be added one at a time. If a large motor is being started or multiple motors are being started, they should be started individually and the largest should be started first.

CAUTION: EQUIPMENT OVERLOAD

Keep the generator load within the generator and receptacle nameplate rating. Overloading may cause damage to the generator and/or the loads.

Most electric tools and appliances will have the voltage and amperage requirements on their individual nameplates. When in doubt consult the manufacturer or a local electrician. The nameplate amperage rating for electric motors can be misleading. Motors require a much higher amperage to get them running, generally 5 to 7 times the running amperage.

These engine generator sets are externally regulated by an automatic voltage regulator. The engine governor will automatically adjust itself to the load. No harm to the generator will result if it is operated with no load connected.

Proper utilization of the receptacles located on the control panel is necessary to prevent damage to either the receptacles or the generator. The generator is a limited source of electrical power, therefore pay special attention to the receptacle and generator ratings. The nameplate rating can be obtained through a single receptacle as long as the receptacle amperage rating is not exceeded.

Grounding

All units must be grounded. Drive a 3/4 or 1" copper pipe or rod into the ground close to the engine-generator set. The pipe must penetrate moist earth. Connect an approved ground clamp, to the pipe. Run a no. 10 Awg wire from clamp to the generator ground lug on the "receptacle panel". Do not connect to a water pipe or to a ground used by a radio system.

The engine-generators covered in this manual were designed for portable use. **DO NOT OPERATE INDOORS.** The unit should be stored in a warm dry location. **Move the unit outdoors** to a flat dry location for use.

WIRING

Plug your tools such as drills, saws, blowers, sump pump and other items to be powered directly into the generator receptacles. Before plugging in all the tools and cord sets, recheck the rating of the generator set. Be sure it can handle the intended load and is compatible with the voltage, phase, and current ratings.

'Hard Wiring' this unit directly into a temporary construction site electrical system is NOT A SIMPLE DO-IT-YOURSELF JOB. For your safety all wiring must be done by a qualified electrician and conform to the National Electric Code and comply with all state and local codes and regulations. Check with local authorities before proceeding.

WARNING: PERSONAL DANGER

A fully isolated, double pole double throw manual transfer switch must be installed any time a generator is being connected to an existing distribution system.

1. These engine generator sets are designed for portable heavy duty commercial use. Receptacles are provided on the control panel to permit 120 and 240 volt portable appliances and tools to be plugged directly into them. Please note that the 3 wire 240 volt receptacle(s) on these units are designed to power only 240 volt tools. There are 2 hots and a ground wire, but no neutral connection, in the 3 wire 240 volt receptacle. A 4 wire receptacle (2 hot, 1 ground, and 1 neutral) has been provided on the control panel for use in temporary power applications requiring 120/240 volt power. Consult a licensed electrician for wiring the TemPower plug and connecting it as temporary service.

To connect these units directly to an un-powered, isolated construction site TemPower panel, have your electrician connect to the control panel using a 120/240 volt, four wire plug (Nema 14-60P), the matching receptacle is installed on the control panel.

2. If the generator set is to be connected to existing distribution system a fully isolated manual transfer switch must be installed. The transfer switch prevents damage to the generator and other circuit components if main line power is restored while the generator is connected. Installing a transfer switch also permits the use of normal fusing.

3. Many homes and construction sites are wired for at least 100 Amp entrance service, much greater than the capacity of these portable generators. When installing the generator at these sites, a secondary emergency distribution panel may have to be installed. The emergency distribution panel must be installed by a licensed electrician according to all applicable codes. The electrician will move the critical circuits to be powered during the outage to the emergency panel. Keep in mind only a limited amount of amperage is available from the generator set. Some circuit breakers may still have to be turned off to prevent an overload on the generator during the initial start up. See the nameplate on your generator for the amperage capabilities of your unit.

CAUTION: EQUIPMENT DAMAGE

Failure to properly limit and balance the load applied to the generator will cause the generator to produce low voltage and may damage the engine generator set. It may also cause severe damage to the loads connected to the generator at that time. Improper loading of the generator set constitutes abuse and will not be covered by warranty.

ENGINE CARE

If major engine service or repair is required contact an authorized engine service center. The manufacturer of these engines has established an excellent worldwide engine service organization. Engine service is very likely available from a nearby authorized dealer or distributor. Check the yellow pages of your local telephone directory under "Engines-Gasoline" for the closest engine repair center or ask the dealer from whom you purchased the power plant.

Change the oil

After the first fifty hours of operation the oil should be changed. For oil change intervals and a complete maintenance schedule consult the engine manual you received with your generator. Change engine oil more often if the engine is operated under heavy load, or in high ambient temperatures. Generators should be considered heavy use when determining oil change intervals

- Remove oil drain plug at base of the engine and drain the oil with the engine warm.
- Replace oil drain plug.
- Change the oil filter.
- Remove oil filler plug and refill with new oil.
- Replace filler plug.

Refer to the table in the engine manual for the proper grade of oil based on your operating temperature.

Checking the Oil Level

The oil level must always be checked before the engine is started. Take care to remove any dirt or debris from around the oil fill plug before removing. Be sure the oil level is maintained to the "FULL" mark, on the dipstick.

Cartridge Air Cleaner

Remove and clean cartridge yearly or after every 400 hours, whichever occurs first. Service more often if necessary.

Do not use petroleum solvents, such as kerosene, to attempt to clean the cartridge. They may cause deterioration of the cartridge. **DO NOT OIL CARTRIDGE, DO NOT USE PRESSURIZED AIR TO CLEAN OR DRY.**

Dual Element Air Cleaner

Clean and re-oil foam pre-cleaner at three month intervals or every 25 hours, whichever occurs first. Service more often under dusty conditions.

- a. Remove knob and cover.
- b. Remove foam pre-cleaner by sliding it off the paper cartridge.
- c. Wash foam pre-cleaner in kerosene or liquid detergent and water.
- d. Wrap foam pre-cleaner in cloth and squeeze dry.
- e. Saturate foam pre-cleaner in engine oil. Squeeze to remove excess oil.
- f. Install foam pre-cleaner over paper cartridge. Reassemble cover and screw down tight.

Replace the cartridge included with Dual Element Air Cleaner yearly or every 100 hours. Service more often if necessary.

Spark Plug

Clean and reset gap at .020" every 100 hours of operation. Do not blast clean spark plug. Clean by scraping or wire brushing and washing with a commercial solvent. Poor spark will occur if terminal does not fit firmly on spark plug. If this happens reform the terminal to fit firmly on spark plug tip.

GENERATOR CARE

Proper care and maintenance of the generator is necessary to insure a long trouble free life.

Exercising The Generator

The generator should be operated every three to four weeks. It should be operated for a period of time sufficient to warm the unit up and to dry out any moisture that has accumulated in the windings (15 to 20 minutes). If left, this moisture can cause corrosion in the winding. Frequent operation of the engine generator set will also insure that the set is operating properly should it be needed in an emergency.

Generator Maintenance

Any major generator service including the installation or replacement of parts should be performed only by a qualified electrical service technician. **USE ONLY FACTORY APPROVED REPLACEMENT PARTS.**

- a. Bearing - The bearing used in these generators is a heavy duty double sealed ball bearing. They require no maintenance or lubrication.
- b. Receptacles - Quality receptacles have been utilized. If a receptacle should become cracked or otherwise damaged, replace it. Using damaged or cracked receptacles can be both dangerous to the operator and destructive to the equipment.

CLEANING

Remove dirt and debris with a cloth or brush. DO NOT use high pressure spray to clean either the engine or the generator. This high pressure spray could contaminate the fuel system and the generator components.

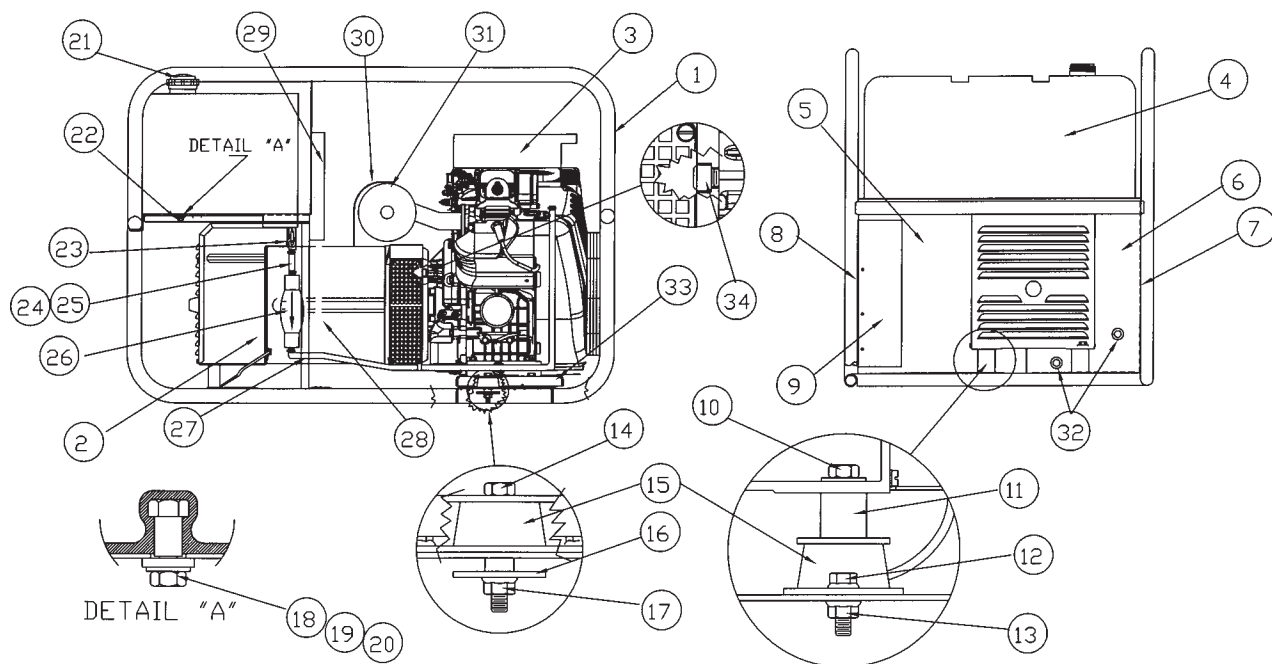
1. Keep the air inlet screen on both the engine and generator free of any dirt or debris to insure proper cooling. At least yearly remove the blower housing on the engine and clean the chaff and dirt out of the engine cooling fins and flywheel. Clean more often if necessary. Failure to keep these areas clean may cause overheating and permanent damage to the unit.
2. Periodically clean muffler area to remove all grass, dirt and combustible debris to prevent a fire.
3. On engine mufflers equipped with spark arresters, the spark arrester must be removed every 50 hours for cleaning and inspection. Replace if damaged.

TROUBLESHOOTING HINTS

PROBLEM (SYMPTOMS) POSSIBLE CAUSES

Won't Start	*Low Oil Level. *Fouled spark plug. *Out of fuel. *Stop switch in stop position. *Engine won't turn over. *Fuel supply turned off. *Plugged air cleaner. *Dead Battery.
Voltage too low	*Engine speed is too low. *Generator overloaded. *Defective voltage regulator. *Defective stator. *Defective rotor (field).
Voltage too high	*Voltage regulator improperly adjusted.
Circuit Breaker Trips	*Defective load. *Defective receptacle. *Overloaded circuit breaker.
Generator overheating	*Overloaded. *Insufficient ventilation.
No output voltage	*Short in load (disconnect). *Broken or loose wire. *Defective receptacle. *No residual magnetism (in generator). *Defective stator. *Defective rotor (field). *Defective voltage regulator. *Open or tripped circuit breaker. *Engine RPM below 3600 RPM.

Engine Generator Assembly



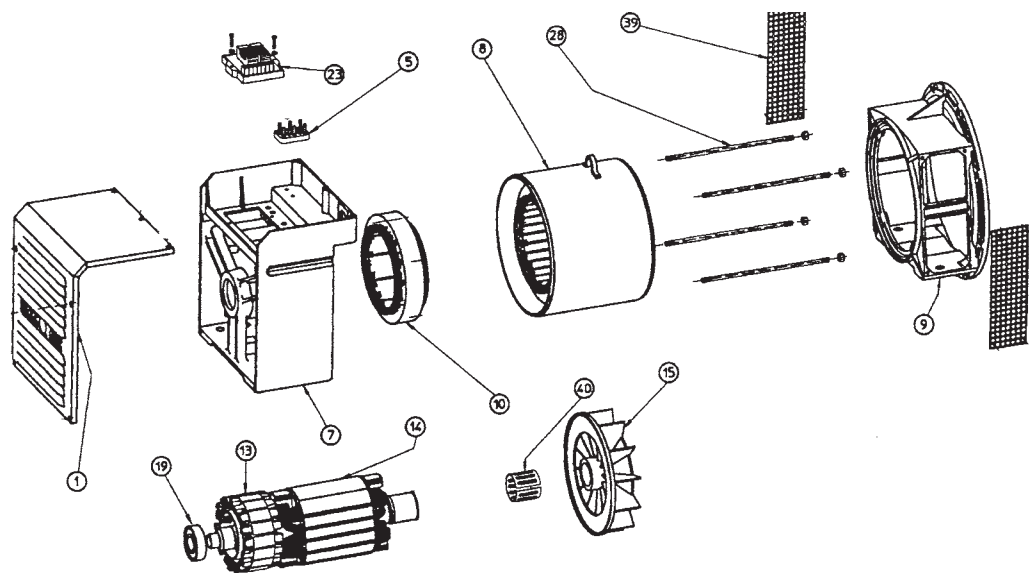
REF Part Number QTY Description

1	63073-024	1	Cradle
2	16428-000	1	Generator
3	16427-001	1	Briggs & Stratton 543477 0140-E!
4	16316-001	1	Fuel Tank
5	15464-402	1	Divider Panel LH
6	15464-401	1	Divider Panel RH
7	98101-006	1	Side Panel
8	300175-5	1	Receptacle Panel
9	300146-5	1	Back Cover
10	91658-004	2	Hex Head Bolt 3/8"
11	300040-3	2	Spacer
12	467-000	12	Hex Head Bolt 5/16"
13	16249-000	16	Flangenut 5/16"
14	91658-006	4	Hex Head Bolt 3/8"
15	98807-000	6	Shockmount
16	98806-000	6	Flat Washer 3/8"
17	16250-000	6	Flangenut 3/8"
18	91658-011	4	Hex Head Bolt 3/8"
19	20604-000	4	Flat Washer 3/8"
20	16133-001	4	Leather Washer

REF Part Number QTY Description

21	62396-006	1	Tank Cap
22	15462-028	1	Tank Tray
23	98771-002	1	Fuel Valve
24	62999-001	4	Hose Clamp
25	40078-000	2"	Fuel Hose 1/4"
26	62391-000	1	primer Buld
27	40078-000	24"	Fuel Hose 1/4"
28	15287-000	17"	Air Seal
29	15687-002	1	Heat Shield
30	16356-002	1	Muffler Shield
31	98602-000	1	Muffler – B & S
32	23917-000	1	Grommet
33	16411-002	1	Engine Support
34	93704-000	4	Socket Head Bolt 3/8"
NI	22097-006	1	Negative Battery Cable
NI	22097-004	1	Positive Battery Cable
NI	300430-1	1	Battery Tray
NI	300143-2	1	Battery Hold Down Kit
	98478-000	1	Decal, Winco
	15209-000	1	Warning Decal
	63941-001	1	Hot Warning Decal

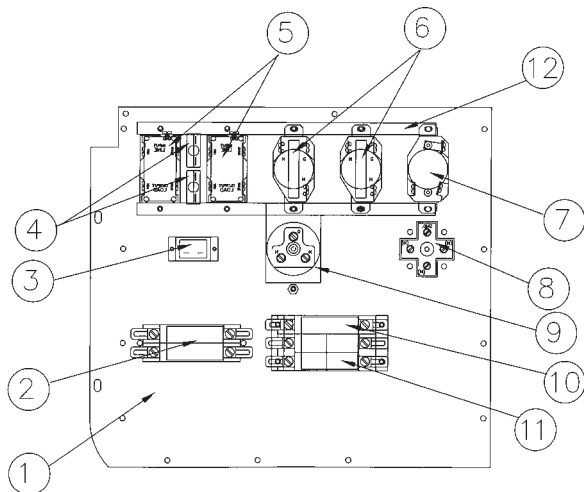
Generator Assembly



REF	Part Number	QTY	Description
1	16428-401	1	Generator Cover
5	16428-402	1	Terminal Block
7	16428-403	1	End Bracket & Housing
8	16428-404	1	Stator Assembly
9	16428-405	1	Engine Adapter Bracket
10	16428-406	1	Exciter Stator
13	16428-407	1	Exciter Rotor
14	16428-408	1	Rotor Assembly

REF	Part Number	QTY	Description
15	16428-409	1	Fan
19	16428-410	1	Rear Bearing
23	16428-411	1	Voltage Regulator
28	16428-412	4	Stator Bolts
39	16428-413	2	Air Screens
40	16428-413	1	Tolerance Ring
NI	16428-414	1	Rotor Thru-Bolt
NI	16428-415	2	Diode
NI	16428-416	2	Varistor

Receptacle Panel Assembly



REF	Part Number	QTY	Description
1	99055-007	1	Bare Panel
2	57030-005	1	Circuit Breaker 60 Amp 240 V
3	58166-001	1	Running Time Meter
4	91286-001	2	Circuit Breaker 20 Amp 120 V
5	15147-001	1	GFCI Receptacle 120 V
6	56279-000	2	Receptacle L5-20 120 V
7	57324-000	1	Receptacle L6-30 240 Volt
8	300136	1	Receptacle 14-60 120/240 Volt
9	54545-000	1	Receptacle 5-50 120 V
10	91977-003	1	Circuit Breaker 50 Amp 120 V
11	57030-002	1	Circuit Breaker 30 Amp 240 V

WINCO, Inc.

Limited Warranty

WINCO, Incorporated warrants to the original purchaser for 24 months that goods manufactured or supplied by it will be free from defects in workmanship and material, provided such goods are installed, operated and maintained in accordance with **Winco** written instructions.

WINCO's sole liability, and Purchaser's sole remedy for a failure under this warranty, shall be limited to the repair of the product. At **WINCO's** option, material found to be defective in material or workmanship under normal use and service will be repaired or replaced. For warranty service, return the product within 24 months from the date of purchase, transportation charges prepaid, to your nearest **WINCO** Authorized Service Center or to **WINCO, Inc.** at Le Center Minnesota.

THERE IS NO OTHER EXPRESS WARRANTY.

To the extent permitted by law, any and all warranties, including those of merchantability and fitness for a particular purpose, are limited to 24 months from date of purchase. In no event is **WINCO** liable for incidental or consequential damages.

Note: Some states do not allow limitation on the duration of implied warranty and some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply in every instance. This warranty gives you specific legal rights which may vary from state to state.

WINCO reserves the right to change or improve its products without incurring any obligations to make such changes or improvement on products purchased previously.

EXCLUSIONS:

WINCO does not warrant Engines. Engines are covered exclusively by the warranties of their respective manufacturers, see enclosed warranties.

WINCO does not warrant Batteries, Receptacles or Other Component Parts that are warranted by their respective manufacturers.

WINCO does not warrant modifications or alterations which were not made by WINCO, Inc.

WINCO does not warrant products which have been subjected to misuse and/or negligence or have been involved in an accident.

This warranty does not include travel time, mileage or labor for removal or reinstallation of a **WINCO** product from its application.

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