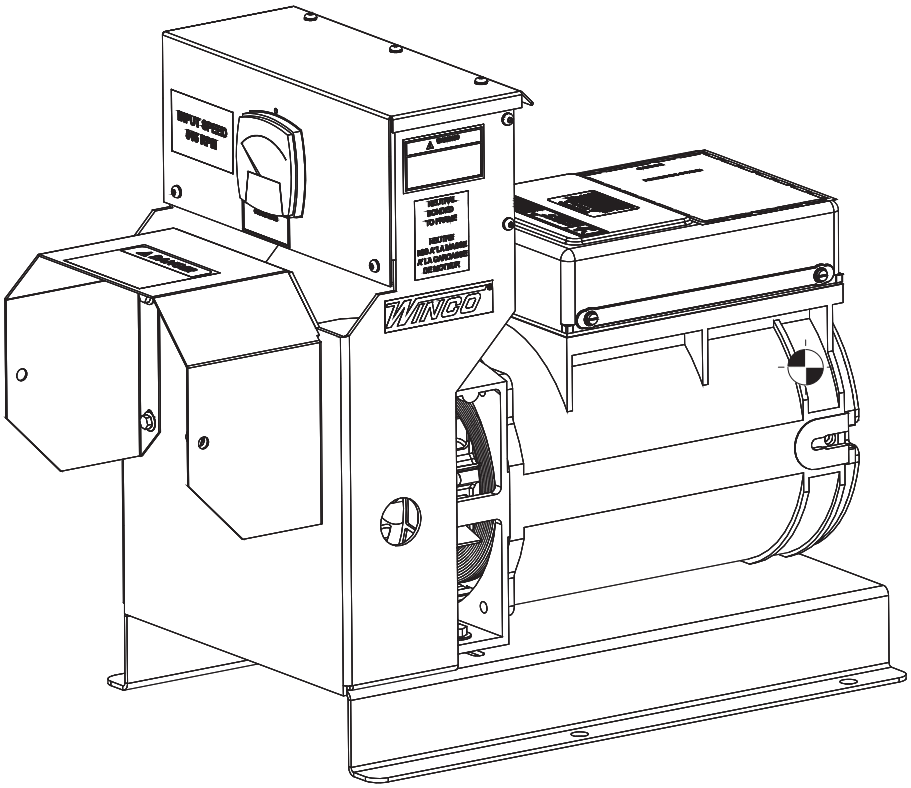
WINCO®
GENERATORS
AN AMERICAN COMPANY

W10PTOS/A
W10PTOS/B
W15PTOS/F
W15PTOS/G
GENERATORS

INSTALLATION AND OPERATORS MANUAL



COPY YOUR MODEL AND SERIAL NUMBER HERE
No other WINCO generator has the same serial number as yours. 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 NAME _____

DEALER PHONE # _____

TABLE OF CONTENTS

SAVE THESE INSTRUCTIONS

This manual contains important instructions that should be followed during installation and maintenance of the generator. Read and understand all instructions in the manual before starting and operating the generator.

USING THIS MANUAL

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

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

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

SAFETY INFORMATION

IMPORTANT SAFETY INSTRUCTIONS

This engine generator set has been designed and manufactured to allow safe, reliable performance. Poor maintenance, improper or careless use can result in potentially 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.

CALIFORNIA PROPOSITION 65

WARNING: This product contains crude oil, gasoline, diesel fuel and other petroleum products, Antifreeze to which can expose you to chemicals including toluene and benzene, Ethylene glycol (ingested) which are known to the State of California to cause cancer, birth defects or other reproductive harm and developmental issues.
For more information go to www.P65Warning.ca.gov.

SAFETY DEFINITIONS

DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

DANGER: ELECTRICAL SHOCK

The output voltage present in this equipment can cause 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-pronged grounded receptacles and extension cords.
F. Be sure the unit is properly grounded, installation must meet the national electrical code.

DANGER: FIRE HAZARD

Keep a fire extinguisher nearby and know its proper use. Fire extinguishers rated ABC by NFPA are appropriate.

CAUTION: NOISE HAZARD

Excessive noise is not only tiring, but continual exposure can lead to loss of hearing.

A. Use hearing protection when working around this equipment for long periods of time.
B. Keep your neighbors in mind when using this equipment.

CAUTION

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 materials that could create a potential hazard.
C. Carefully clean up any oil spills before starting the unit.
D. Do Not use the generator area as a storage closet.

CAUTION

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, covers, or receptacle panels while the engine is running.
D. Use extreme caution when working on electrical components. High output voltage from this equipment can cause serious injury or death.
E. Always avoid hot mufflers, exhaust manifolds, and engine parts. They can cause severe burns instantly.
F. The use of the engine-generator set must comply with all national, state, and local codes.

CAUTION

Installing a PTO 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.

A. Never operate the PTO drive generator without having it properly mounted to a concrete base or approved trailer.
B. Never connect the PTO generator to an existing electrical system without installing an isolation transfer switch.
C. Always insure the drive shaft is straight and level before operating the generator.

DANGER

PTO drive shafts (tumbling bars) have many inherent dangers, extreme caution must be exercised when using them.

A. NEVER allow children around the drive shaft when it is in operation.
B. Keep all safety guards and shields in place and securely tightened.
C. Never operate a drive shaft that has been damaged or had the safety shield removed.
D. Never step over a drive shaft while it is running.
E. Never wear a necktie, loose articles of clothing, or anything else that can be caught in moving parts.
F. Never try to stop drive shaft with your hand or your foot.

SPECIFICATIONS

W10PTOS

Watts	10,000
Amps	41.6
Input Speed	515 RPM
Generator Speed	3600 RPM
Input Shaft	1 3/8" - 6 spline
Required Tractor PTO	20HP
Gear Lube	
Volume	16 oz
Type	85/90W-140

W15PTOS

Watts	15,000
Amps	62.5
Input Speed	515 RPM
Generator Speed	3600 RPM
Input Shaft	1 3/8" - 6 spline
Required Tractor PTO	30HP
Gear Lube	
Volume	16 oz
Type	85/90W-140

INTRODUCTION

TESTING POLICY

Before any generator is shipped from the factory, it is fully checked for performance. The generator is loaded to its full capacity, and the voltage, current, and frequency are carefully checked.

Rated output of generator is based on engineering tests of typical units, and is subject to, and limited by, the temperature and altitude.

PRODUCT DESCRIPTION

The WINCO rotating field power take-off generators are designed primarily for hobby/small farm use as a standby electrical power supply, utilizing the power take-off of a tractor or truck as the prime mover. This PTO drive generator will provide 120/240V single phase, 60Hz electrical service when properly driven.

NOTE: The prime mover which drives the generator must be capable of delivering approximately 2 HP per 1000 watts output from the generator. Observe input RPM specifications.

This generator may be mounted in many different fashions. The three most popular are foundation mounted, trailer mount or 3-point hitch mounted. Your application will dictate how you may want to mount it.

This generator includes a color coded voltmeter to warn against high or low voltage, and two output power receptacles with individual circuit breakers for your protection. To reduce maintenance problems, the coupling between the generator input shaft and rotor consists of precision helical gearing rather than a chain link drive.

IMPORTANT:
THE MANUFACTURER STRONGLY RECOMMENDS RUNNING THE GENERATOR UNDER LOAD AT LEAST ONCE A MONTH IN ORDER TO EVAPORATE ANY ACCUMULATED MOISTURE CONDENSATION AND TO KEEP THE UNIT IN GOOD WORKING ORDER.

PREPARING THE UNIT

UNPACKING

CAUTION: EQUIPMENT DAMAGE

When you unpack your new generator, be sure to remove all of the information sheets and manual from the carton.

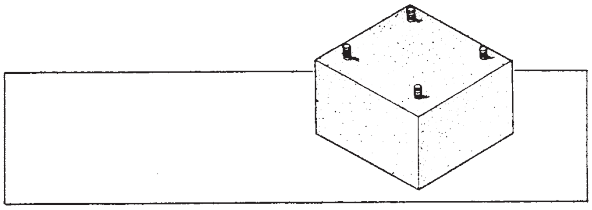
1. As you receive your unit, it is critical to check it for any damage. If any damage is noted, it is always easiest to refuse the shipment and let WINCO take care of the freight claim. If you sign for the unit, the transfer of the ownership requires that you file the freight claim

2. Before proceeding with the preparations of your new generator for operation, take a couple of minutes to ensure the unit you have received is the correct model and review the specification pages in this manual to ensure that this unit meets your job requirements.

INSTALLATION

FOUNDATION MOUNTING

Mount the generator on a foundation if it is to be used as a permanent or standby power source. When planning a foundation consider the following points:



A. The foundation location should enable aligning the drive shaft (tumbling bar) in a straight or nearly straight line between the power take-off and the generator input shaft. Misalignment must be less than 5 degrees during generator operation, even though the mechanical design of the tumbling bar would allow greater misalignment.

B. The foundation must be solid enough to absorb generator starting and reflected load torque during operation.

C. The foundation surface should be flat.

D. Space is required around the generator for mounting switching devices, making connections, and for servicing.

E. For dimensions needed for install for your specific generator, please refer to it's outline drawing. The hardware needed is dependent on your distinct application.

F. The generator mounting bracket must rest evenly and firmly on the foundation. Install shims if necessary to even out the foundation under the mounting pads then bolt the generator firmly in place.

TRAILER MOUNTING

Optional Trailer Part Number TDM76

Mount the generator on a trailer if you plan to use it as a portable power source. When selecting or building a trailer to mount the generator, consider the following points:

A. The trailer construction must be strong enough to support the generator.

B. The design of the trailer must enable the trailer to remain stable during operation, and to resist tipping caused by generator starting and reflected load torque.

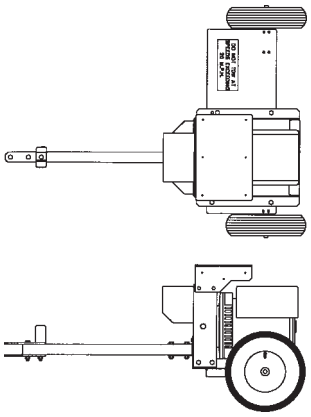
C. The trailer height and mounting position of the generator on the trailer should enable aligning the drive shaft (tumbling bar) in a straight or nearly straight line between the power take-off and generator input shafts. Misalignment must be less than 5 degrees during generator operation, even though the mechanical design of the tumbling bar would allow greater misalignment.

D. The generator mounting area of the trailer bed should be flat.

All four generator mounting pads must rest firmly on the trailer bed. Install shims if necessary to even out the bed under the mounting pads, then bolt the generator firmly in place.

WARNING: PERSONAL INJURY & EQUIPMENT DAMAGE

Trailer may tip over and cause injuries if wheels are not spaced far enough apart.



THREE-POINT HITCH KIT

Optional 3-Point Hitch Part Number TPH241

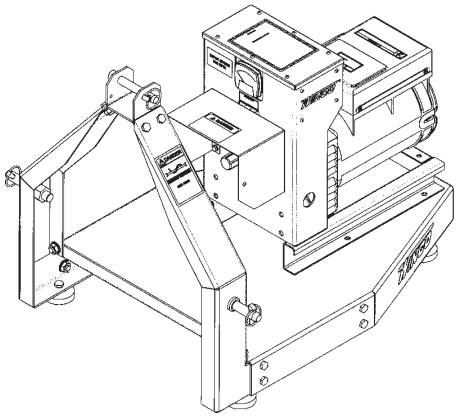
WARNING: PERSONAL INJURY & EQUIPMENT DAMAGE

When using the 3-point hitch assembly all three points must be attached to the tractor. Failure to do so will cause the generator to tip when lifting it damaging both the t-bar and the generator.

A. The three point hitch must be attached to the tractor at all times during operation.

B. When operating the generator the three point hitch and generator must be sitting on flat level ground. All four deck pads must be in constant contact with the ground at all times. This will reduce the vibration in both the generator and the tumbling bar.

C. For safety the generator must be bolted to the three point hitch deck using all four mounting bolts.



ELECTRICAL CONNECTIONS

GROUNDING

Proper grounding of your generator is application dependent. Carefully evaluate your planned use of your generator to understand which grounding you require. If you are not sure what to do, contact a competent professional to assist you. The NFPA 70 250:34-35 are good technical references.

STANDARD PORTABLE GENERATOR

Your WINCO PTO generator ships with a bonded neutral. You can safely use this generator without external grounding as long as all loads are powered through the receptacle panel.

VEHICLE-MOUNTED GENERATOR

Your WINCO portable generator ships with a bonded neutral. When mounted to a vehicle to safely distribute power it is necessary that the generator frame is bonded to the vehicle frame. The generator should only supply equipment that is cord and plug connected through receptacles mounted on the generator or the vehicle.

PERMANENTLY INSTALLED GENERATORS

This WINCO portable generator ships with a bonded neutral and overcurrent protection. NFPA 70 refers to this as a "separately derived system." When connecting it to a building a transfer switch specifically designed for GFCI and bonded neutral generators is required.

CAUTION

Only qualified electricians should install electrical wiring. Wiring must conform to all applicable national, state, and local codes. (Reference: National Fire Protection Association Manual No. 70, National Electrical Code.)

DANGER

A manual transfer switch must be installed to separate the generator and the commercial power lines. The switch must isolate the generator from the commercial power lines and the load when the generator is on standby, and must isolate the commercial power lines from the load and the generator when the generator is supplying power. See the following diagrams.

A properly rated and installed double throw manual power isolation transfer switch must be used with a standby generator. The transfer switch isolates the load from the power line and allows you to safely operate your loads without endangering the power line repair crew. See previous diagrams

The load, connected to the normal terminals of the transfer switch, is energized by the normal power line when the switch is in the normal position. The generator, connected to the emergency terminals of the switch, furnishes power when the switch is in the emergency mode position.

There are two ways to install a manual transfer switch. The first is to install the switch between the watt-hour meter and the normal distribution panel. As with any system you must install an entrance rated breaker before the manual transfer switch. The manual transfer switch must in all cases be equal to or greater than the rating of the entrance rated breaker.

The second way to install the system is to purchase and install an emergency distribution panel and move the circuits you wish to back up to the new distribution panel. In this case the manual transfer switch only has to be sized to the amperage of the circuit breaker in the main distribution panel that is feeding it.

Before deciding which system to install, first determine which loads you can safely run on your PTO generator and the cost of buying a large manual transfer switch versus the cost of a smaller switch and the additional distribution panel.

The final item that you are going to have to assemble/wire is the plug that will be used to connect the generator to the manual transfer switch. You should have found this load plug in a small box when you unpacked the PTO generator. If you need additional plugs for multiple sites you can order additional plugs from your Winco dealer.

WARNING: PERSONAL INJURY

Always disconnect power and test to verify that voltage is not present before wiring.

IMPORTANT

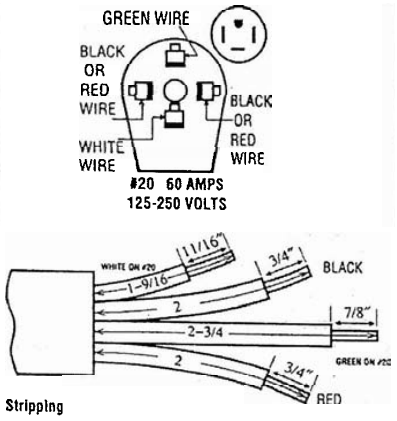
Use copper wire only. Do NOT use tinned conductors. Sizing cable - see NEC 400-5.

PLUG WIRING

WARNING: PERSONAL INJURY

Failure to wire as instructed may cause personal injury or damage to device or equipment. To be installed or checked by an electrician or qualified person only.

Cord size: #4/4 conductor cord SO, 1.25" dia. max.

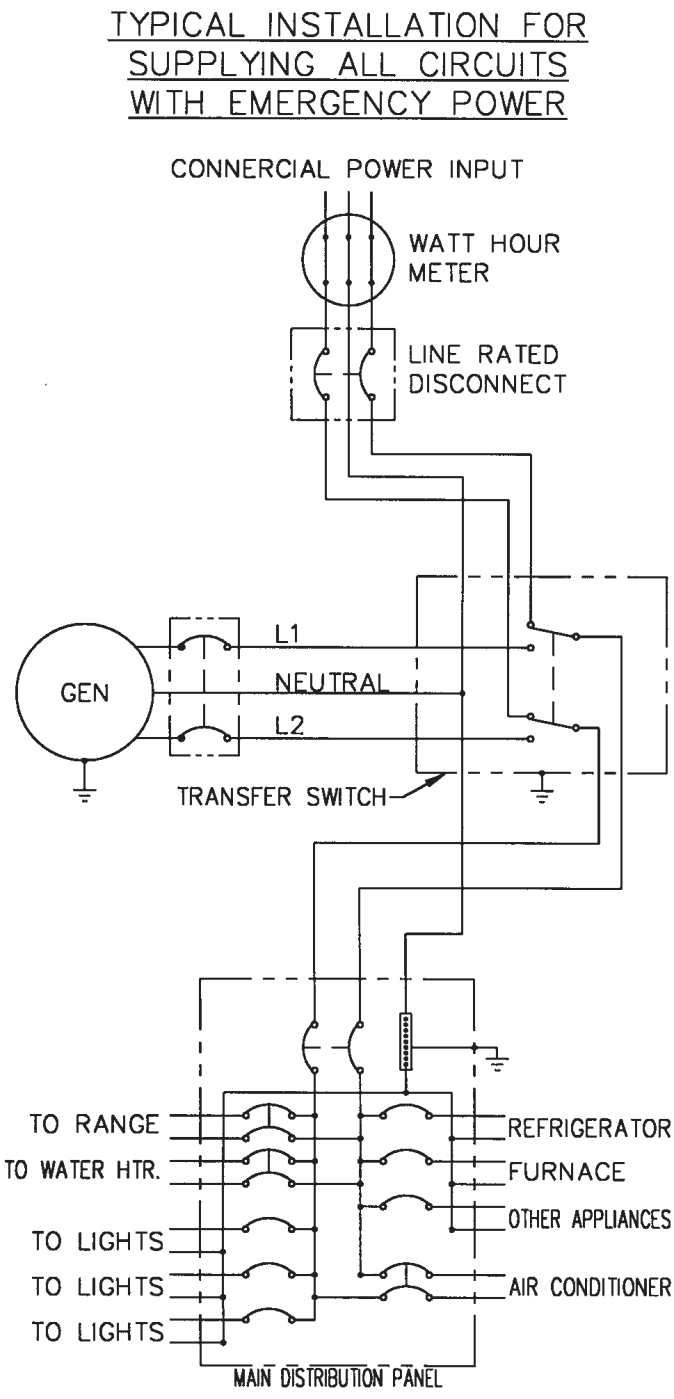


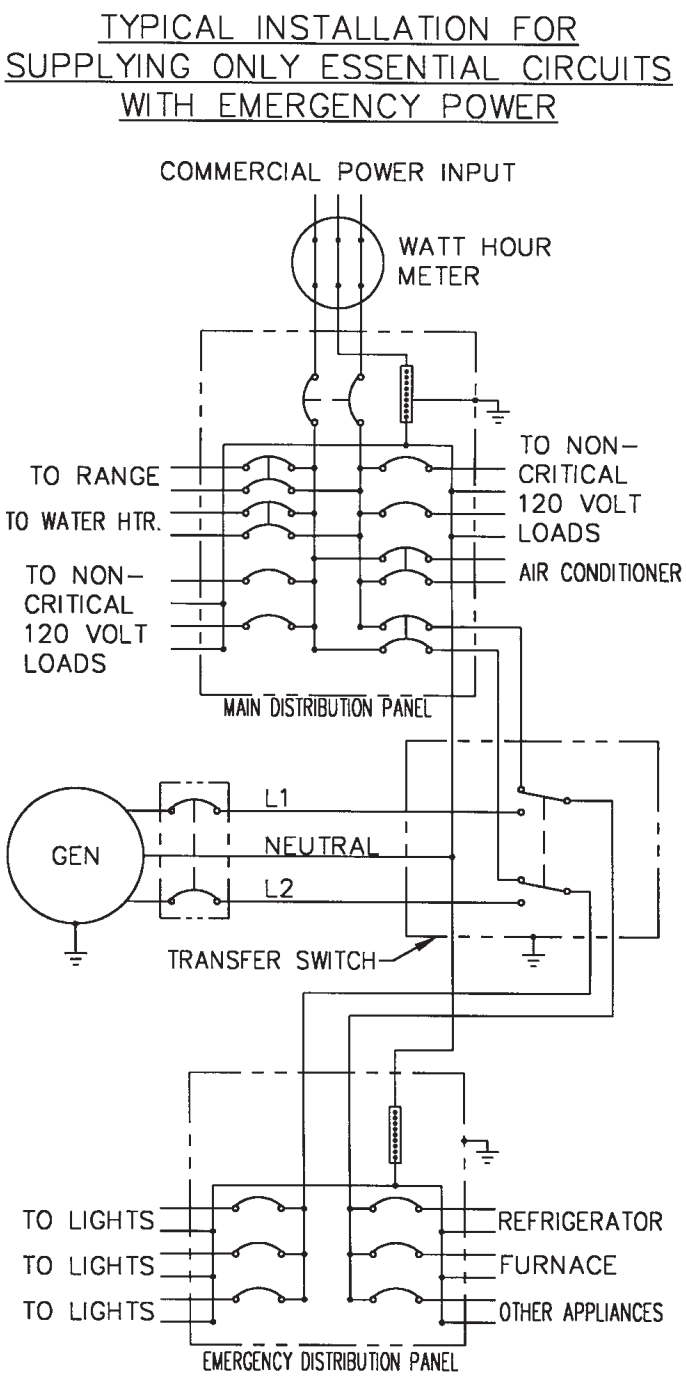
To assemble and wire the load disconnect plug, proceed as follows:

1. Strip outer jacket 3-5/8".
2. Cut and strip leads to lengths specified for the

particular plug.
3. Disassemble cable clamp and top cover.
4. Remove one blade at a time, insert the stripped end of the appropriate colored wire designated above, and tighten the set screw.
5. Fit blades through slots in bottom cover and push down until home. Please note: Make sure blades are in correct slots and oriented in accordance with the diagram above or you will not be able to close the top cover fully.
6. Place top plastic cover over assembly and partially tighten the bakelite assembly screw. Realign blades straight (so they fit into the top bakelite housing properly) and tighten the assembly screw.
7. Assemble cable clamp over the outer jacket of the wire and tighten the two clamp screws. Special Note: For small size round (less than 3/4") and flat cables, the wire clamp may be inverted.

Typical Connection Methods for Generator Power Service





PRE-START CHECKS

WARNING: PERSONAL INJURY

When working on or around these generators, do NOT wear loose fitting clothing or any articles that may get caught in moving parts.

1. Visually inspect the generator. Check for:
   a. Correct mounting.
   b. Physical damage.
   c. Debris in cooling vents and screens. (Could cause generator to overheat)

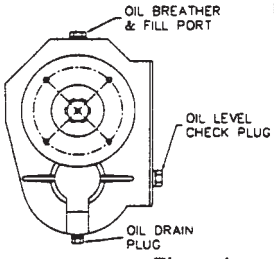
IMPORTANT

The manufacturer recommends that, if the generator has been stored for any length of time, before using it, the operator remove the control box cover and cooling fan screen, then inspect the generator for rodent nests or other objects that could cause generator binding and/or overheating. See 'Cleaning' portion of the Maintenance section.

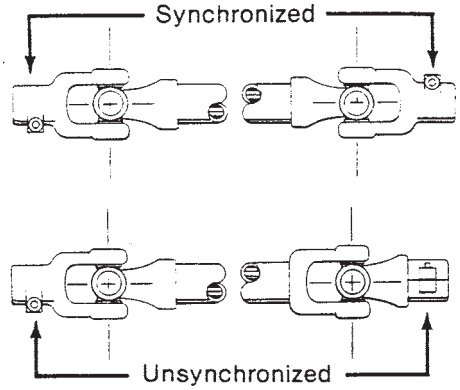
2. Check Gearcase oil level. (See drawing) Case should be filled with oil to plug marked 'OIL LEVEL'. Fill or remove oil as required.

NOTE: Either too little or too much oil can harm the equipment.

See 'Lubrication" portion of Maintenance for oil specifications.



3. Make sure the drive shaft (tumbling bar) is assembled with its universal joint knuckles "synchronized," as illustrated in Figure 7. If knuckles are not synchronized, the bar will chatter when rotating, which will cause the generator output voltage to flicker. Drive shafts shipped new from Winco are always synchronized and tethered so they can not be taken apart.



DANGER: PERSONAL INJURY

Power take-off must be disengaged at this time.

4. Couple the tractor to the generator with the drive shaft (tumbling bar). Couple the tumbling bar to the generator input shaft first, then to the power take-off shaft. Check alignment, tractor, power take-off shaft (tumbling bar), and generator input shaft should form a straight (or nearly straight) line, with less than 5° misalignment between the shafts. Misalignment will cause generator output voltage to flicker.

WARNING: PERSONAL INJURY

Make sure that all tumbling bar lock pins are engaged and that all safety shields are in place before operating the PTO generator.

5. Make sure no binding exists in generator or gear box. If binding is found, locate the cause and correct it before proceeding.

6. Make sure that the electrical loads to be driven by the generator will not draw more current than the ratings of the generator receptacle or cord set which will supply the current.

7. Check all electrical connections in the system to be energized by the generator. Make sure the connections are correct and are tight.

8. Make sure all loads are turned off. Do not start the generator under load.

9. Verify any special conditions specific to your application.

STARTING & STOPPING

STARTING

1. Set the manual transfer to mid or normal (up) position.

2. With the power take-off drive disengaged, start the engine which will drive the generator. Run the engine long enough to warm it up before proceeding, so that it will run smoothly and achieve full power under generator load.

3. With engine idling, engage the power take-off drive.

4. Watch the voltmeter on the generator and slowly increase engine speed until the output reaches approximately 240 to 245 volts, in green portion of voltmeter scale.

CAUTION: EQUIPMENT DAMAGE

Most electrical equipment in North America operates satisfactorily at frequencies between 59 and 61 Hz (cycles per second). Operating the generator at frequencies outside that range may cause damage to the generator and/or to electrical equipment driven by the generator.

5. Plug 4 wire load cord set into receptacle. Place transfer switch in the emergency position.

6. Place the load circuit breaker in the "on" position. If the breaker trips, move manual transfer switch to "off" or normal position. Check for short circuit or grounded connection in the load cable to the double throw switch and repair. A breaker that trips from overload or short circuit must be reset by moving to "off" before re-closing.

7. With engine and generator running smoothly, switch on the electrical load while watching the voltmeter. Readjust engine throttle to keep generator output under load at 240V (in green portion of voltmeter scale). If engine is equipped with speed governor, it may automatically readjust the throttle as the load changes and keep the generator output at the proper level. However, some governors are not sensitive enough to maintain proper output under changing load, and in such cases the throttle will have to be manually readjusted.

NOTICE: EQUIPMENT DAMAGE

If the load includes motors turn them on one at a time, highest starting current motor first, next highest second, etc.

8. The return of normal power will be indicated by the lamp on the front of transfer switch; (applicable only when the transfer switch is equipped with indicating lamps or your electrician has installed them). After sufficient time to assure that power restoration isn't temporary, return the transfer switch to normal power (10 - 20 minutes).

STOPPING

1. Place the alternator circuit breaker in "off" position. Do not remove plug before opening the breaker.

CAUTION: EQUIPMENT DAMAGE

Slowly reduce power take-off speed to a minimum and disengage the power take-off. Some tractors have a brake on the power take-off that stops the shaft instantly. Stopping the alternator rotor instantly from rated speed may result in a broken shaft or other drive line failures.

WARNING: PERSONAL INJURY

Never try to manually stop the generator. Always let it coast until it stops.

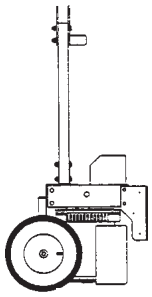
2. Shut off the engine.

3. Disconnect drive shaft (tumbling bar) power take-off end first, then generator end.

STORAGE & MAINTENANCE

If the generator is mounted on an off-highway trailer, such as the Winco trailer, it should be stored in a garage, barn or machine shed in a dry and clean location. The generator should be covered with a tarp to prevent the entrance of dust, chaff, and/or moisture.

The generator may be stored on end (as pictured), provided the generator is on a clean, dry elevated surface such as a board. Do not have it resting on a dirty surface.



MAINTENANCE REQUIREMENTS

LUBRICATION

A. Check the generator gear case oil level before each use of the generator. See Figure 4. Maintain the oil level before each use of the generator. Maintain the oil level at oil level plug height. The generator is shipped with lubricant in the gear case. Specifications for gear case lubricant are: API Service: GL-5 EP Rated, Grade: SAE 85W-90-140, Amount: 1 pint.

The following kinds of oil are recommended for use in the generator gear case:

Mobil SAE 85W90-140 API Service GL-5
Sunoco/DX XL80W90-140
Kendal Three Star 85W-140
Amoco 85W140 or equivalent

CAUTION: EQUIPMENT DAMAGE

Do not overfill generator gear case. Overfilling causes overheating and oil seal failure.

B. The generator bearings are factory lubricated and sealed, and require no further lubrication.

C. The splined generator input shaft should be cleaned and lubricated with a thin film of grease before and after each use of the generator. See Figure 6 for lubrication schedule.

D. The drive shaft (tumbling bar) requires greasing. Keep the universal joints in the coupling shaft free from grease and dirt buildup.

E. Exercise PTO alternator for one hour under load at least twice a year.

NOTE: Do not over lubricate the universal joints.

CLEANING

WARNING: EQUIPMENT DAMAGE

Do not clean the generator while it is running.

A. Inspect for loose or broken wiring connections. Make sure that wiring connections are not loose at the generator end, circuit breakers, and receptacles.

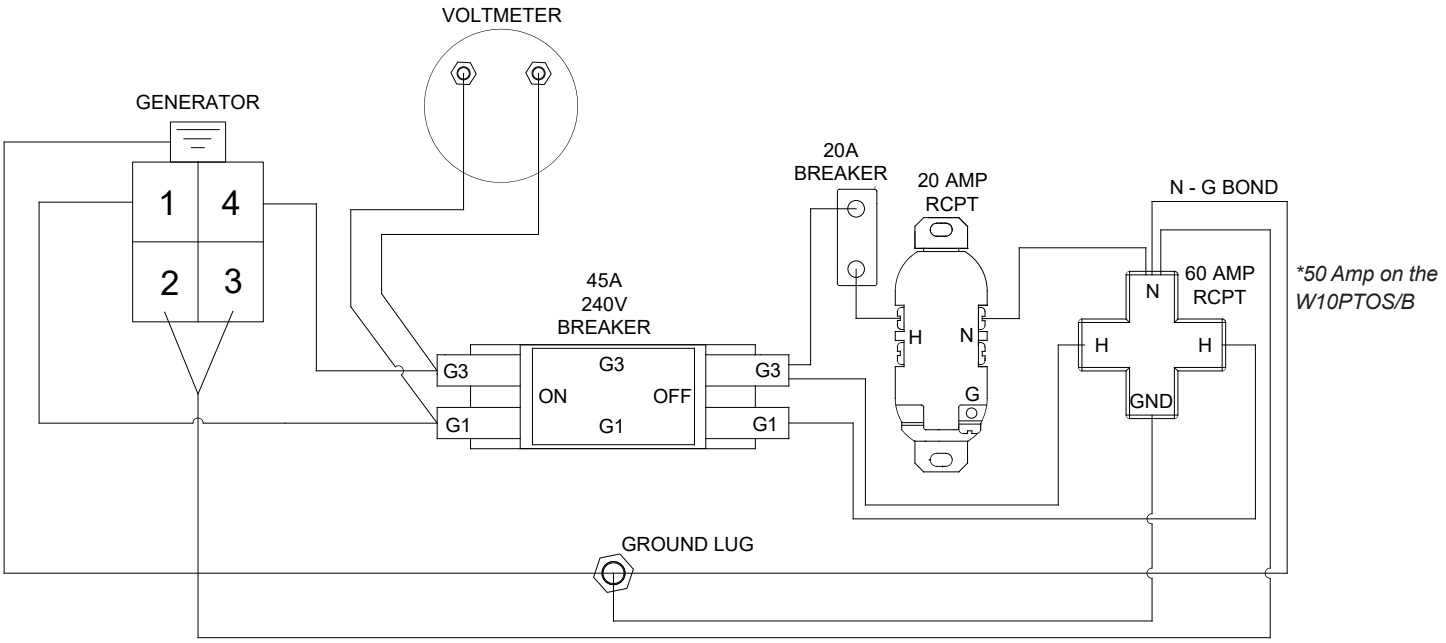
B. Do not allow dirt or chaff to collect in the interior of the generator or the ventilation openings. Inspect for indication of the entrance of mice or insects into the generator. The inlet and outlet openings are louvered, but possible damage to the louvers could occur. Mice can destroy the generator winding.

TROUBLE SHOOTING TABLE

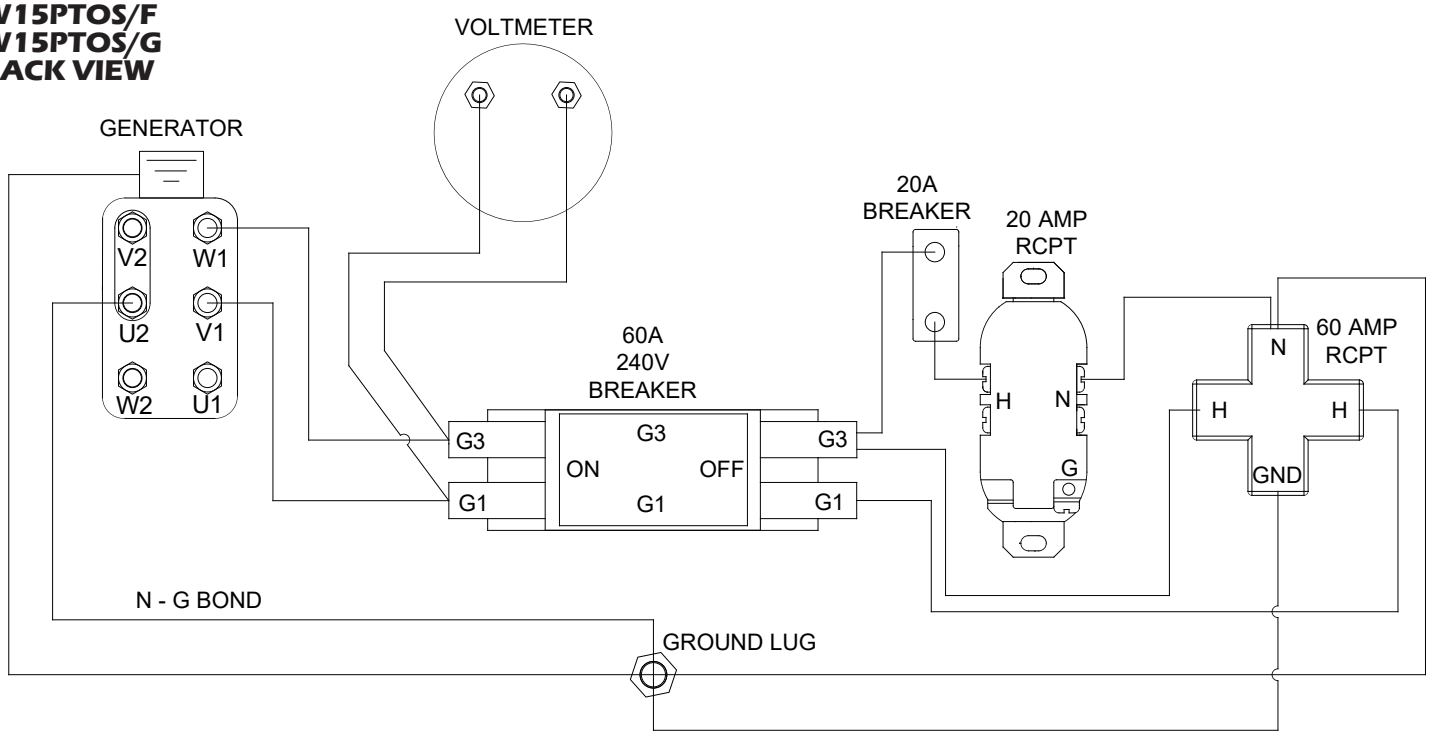
SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
Low Output Voltage	1. Undersized/overloaded. 2. Defective governor. 3. Low power - worn engine. 4. High line loss. Indicated by lower voltage at load than at generator terminals. 5. Shorted or grounded rotor coil. 6. Defective stator. 7. Underspeed	1.Check for overload on the tractor or undersized. 2. Check tractor governor. Tight or defective throttle levers and joints. 3. Worn or defective tractor engine. 4. Increase size of line wiring. Might also be the result of loose connection indicated by excessive heating at the loose connection terminal. 5. Test and replace if defective. 6. Repair or replace as required. 7. Verify frequency is between 59-61 Hz
High Output Voltage	Generator is spinning too fast, slows prime mover down.	Readjust or replace as required.
Excessive Heating	Clogged ventilating inlet and/or outlet	Clean screens, make sure interior of generator is unobstructed.
No Output Voltage	1. Broken or corroded connection 2. Defective diode(s) on rotor. 3. Open exciter circuit in stator. 4. Grounded or shorted rotor winding. 5. Loss of residual magnetism. Usually occurs only after disassembly of field frame or severe mechanical stress/abuse. 6. Shorted stator winding. This can be identified by the use of an internal "growler" at a competent rewinding shop. 7. Grounded stator. Check winding by test lamp or high potential tester from stator leads to lamination. 8. Open stator circuit. Measure circuit between leads with an ohmmeter. Should have a circuit between any pair of leads. 9. Defective Capacitors.	1. Clean and tighten generator and receptacle connections. 2. Replace defective diode(s). 3. Repair or replace stator assembly. 4. Replace grounded rotor assembly. 5. Back flash the 120 Volt circuit with 12 Volts DC 6. Replace generator end. (Include generator model and serial number on the order). 7. Same as #6. 8. Same as #6. 9. Test and replace if defective.
Voltage Unsteady/Lights Flickering	1. PTO drive line off alignment. 2. Drive line knuckles out of sync.	1. Realign driveshaft within 5 degrees. 2. Re-sync drive line halves.

WIRING DIAGRAMS

W10PTOS/A
W10PTOS/B
BACK VIEW



W15PTOS/F
W15PTOS/G
BACK VIEW



LIMITED WARRANTY

WINCO Incorporated warrants to the original purchaser for the warranty period 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, contact a Winco Authorized Service Center within the warranty period from date of purchase.

*NOTE: Units that are resold by original owner are not covered under this warranty. Any further warranty, whether expressed or implied, rests solely with the reseller.

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 the warranty period 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, INC. WARRANTY EFFECTIVE DATE

Air cooled units purchased for stock have 1 year to be sold. The warranty to the original retail customer commences on the date of sale of the product to them. All liquid cooled units have 180 days from the Winco invoice to submit a start up date. If no startup form is submitted, then warranty period starts on the Winco invoice date unit was sold.
Date of sale is defined as the day the customer takes delivery of the product. This warranty shall remain in effect to the original purchaser for the period stated on the sales literature. The warranty is not transferable and the retail customer must retain his original bill of sale as proof of purchase date.

WINCO, Inc. agrees to the following obligations during the warranty period:

1. To warrant any defect in material or workmanship of products sold under the WINCO and DYNA brand names in accordance with the warranty statements in the operator's manuals.
2. To reimburse authorized WINCO, Inc. Service Centers/Dealers for the cost of parts plus standard ground UPS shipping charges for all valid warranty repairs and to reimburse same said service centers/dealers for reasonable labor charges based on WINCO's current warranty labor reimbursement rate.
3. To furnish its authorized service centers/dealers with the necessary parts to make the repairs. WINCO Generator Warranty Periods & Restrictions

WINCO GENERATOR WARRANTY PERIODS & RESTRICTIONS

Industrial Portables
WL Models - 3 Years, See Notes 1 & 2
W Models - 3 Years, See Notes 1, 2, & 5
DP Models - 3 Years, See Notes 1 & 2
HPS Models - 2 Years, Home Use ONLY; Commercial use* is 90 Day Warranty, See Note 1

EMERGEN-C (EC) Series

2 Years, See Note 1

DE Series

1 Year/2000 hours, No Travel Time
Mobile Diesel Series
1 Year/2000 hours, No Travel Time

PTO Series

15kW & 10kW - 1 Year, Limited Farm Standby Only
25kW thru 165kW - 3 Years, Limited Farm Standby Only/Commercial use* 1 Year

Two Bearing Series

1 Year, Bench Labor and Parts only

Gaseous/Packaged Standby Series (PSS)

Air-Cooled Models (PSS8, PSS12, & PSS20) – 2 Years/2000 Hours Standby Only See Notes 3 & 4 Prime Power use 1 Year/2000 Hours See Notes 3 & 4
Liquid-Cooled Models (PSS21 - PSS150) - 2 Years/2000 Hours Standby Only See Notes 3 & 4 Prime Power use 1 Year/2000 Hours See Notes 3 & 4

Diesel Standby Series (DR)

Liquid-Cooled Models (DR12 - DR600) - 2 Years/2000 Hours Standby Only See Notes 3 & 4
Prime Power use 1 Year/2000 Hours See Notes 3 & 4
Accessories (Installed on Generator or shipped loose)
1 Year from factory invoice or 2000 Hours (whichever occurs first)

Automatic Transfer Switches (ATS)
See ATS Manufacturer's Warranty

NOTES
Note 1: First 2 years of warranty coverage includes Parts and Bench Labor Only, no travel time or labor allowance for removal or reinstallation of the product from its application.
Note 2: 3rd Year warranty coverage is parts only/no labor.
Note 3: Round trip mileage is limited to 200 miles per trip and a total of 2 trips per repair unless authorized in writing by the WINCO Service Dept.
Note 4: Mileage allow on permanently installed units only. Trailer mount units is bench labor only.
Note 5: W3000 is a 1 Year Warranty.

*Commercial use is defined as Construction, Rental, Prime Power, or use in a business of any type including agricultural and hobby. Prime Power use is defined as any application where the generator set is being used 'off-grid' where there is no utility power present. Standby use is defined as an application where utility power is present -and- the generator set is used as emergency backup during utility power outages.

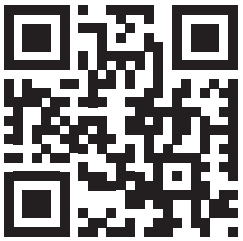
WINCO reserves the right to change or improve it's products without incurring any obligations to make such changes or improvements on products purchased previously.

EXCLUSIONS:
WINCO does not warrant Engines. Engines are covered exclusively by the warranties of their respective manufacturers.
WINCO does not warrant Batteries, 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 WINCO product from its application, unless specifically authorized.

WHAT IS COVERED BY WARRANTY
1. Generator end including rotor, stator, end brackets, and bearing.
2. Control box including transformers, circuit breakers, wiring, resistors, and switches.
3. LP/NG fuel system including fuel solenoid, demand regulator, carburetor, and hoses.
4. Cradle assembly including cradle, cross member, and shock mounts that fail. Shock mounts damaged from rough handling are not covered.
5. Reasonable travel time for the PSS & DR series generators only, that are permanently installed.
6. Ground shipping charges for warranty parts, no premium service, domestic US shipments only.

WHAT IS NOT COVERED BY WARRANTY
1. Products which have been subjected to alteration, modification, neglect or unauthorized repairs not approved in writing by Winco, Inc.
2. Products no longer owned by the original purchaser.
3. Products with shipping or freight damage. File a freight claim with the delivery carrier.
4. Products suffering normal wear, accidents, improper maintenance or improper protection in storage. Products damaged by rough handling, such as shock mounts on cradle assemblies.
5. Pressure or steam cleaning of products, cleaning of fuel system, or flushing of cooling system.
6. Replacement of filter, belts, antifreeze, or lubricants.
7. Electrical items, such as light bulbs, receptacles, spark plugs, or any items damaged by welding or jump starting.
8. Any repeat or shop come-back repairs resulting from poor service work or improper diagnosis and testing. Replacement of parts as a trial-and-error method of diagnosis will not be considered for warranty.
9. Replacement parts other than those sold by Winco, Inc.
10. Damage caused by fire, flood, lightning or any other natural disaster.
11. Damage caused by improper protection during installation, (i.e. not protecting contactor in the ATS panel and getting wire trimming or debris from drilling the box in the contactor coil or contacts.)
12. Damage caused by over loading of the generator and failure to adequately provide overload protection.
13. LP/NG fuel adjustments or conversion from one fuel to another.
14. Adjustment of any kind, all units are 100% load tested before shipping.
15. Any damage caused by the use of the equipment for purposes other than for which it was designed.
16. Engines - All engines used by Winco, Inc. are warranted by their respective manufacturer's.
17. Batteries - Must be returned to original battery manufacturer.
18. Damage caused by improper installation or failure to provide adequate ventilation.
19. Cosmetic repairs, such as repainting.
20. Freight charges for transportation to and from a Warranty Service Center.
21. Rental costs of renting replacement generators.
22. Travel time or service calls unless specifically authorized by Winco, Inc. in writing.

GENERAL INFORMATION
The WINCO, Inc. Service Department is open from 7:30 AM to 4:30 PM Central Standard time.
It is located at 225 South Cordova Ave., Le Center, MN, 56057-1805.
Phone Numbers: Service Department - 507-357-6831 FAX Line - 507-357-4857. Email address is service@wincogen.com
The phone number to for the General Switchboard/Sales Department is 507-357-6821.



WINCO®
GENERATORS
AN AMERICAN COMPANY

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