

GENERAC[®]
POWER SYSTEMS, INC.

1.6

***CHERY
GAS
ENGINE***

***SERVICE
MANUAL***

FOREWORD

This manual has been published by GENERAC[®] POWER SYSTEMS, INC. to aid our dealers' mechanics, company service personnel and general consumers when servicing the products described herein.

It is assumed that these personnel are familiar with the servicing procedures for these products, or like or similar products, manufactured and marketed by GENERAC[®] POWER SYSTEMS, INC. It is also assumed that they have been trained in the recommended servicing procedures for these products, which includes the use of mechanics hand tools and any special tools that might be required.

Proper service and repair is important to the safe, economical and reliable operation of the products described herein. The troubleshooting, testing, service and repair procedures recommended by GENERAC[®] POWER SYSTEMS, INC. and described in this manual are effective methods of performing such operations. Some of these operations or procedures may require the use of specialized equipment. Such equipment should be used when and as recommended.

We could not possibly know of and advise the service trade of all conceivable procedures or methods by which a service might be performed, nor of any possible hazards and/or results of each procedure or method. We have not undertaken any such wide evaluation. Therefore, anyone who uses a procedure or method not recommended by the manufacturer must first satisfy himself that neither his safety, nor the product's safety, will be endangered by the service or operating procedure selected.

All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication. However, GENERAC[®] POWER SYSTEMS, INC. reserves the right to change, alter or otherwise improve the product at any time without prior notice.

Some components or assemblies of the product described in this manual may not be considered repairable. Disassembly, repair and reassembly of such components may not be included in this manual.

The engines described herein may be used to power a wide variety of products. Service and repair instructions relating to any such products are not covered in this manual. For information pertaining to use of these engines with other products, refer to any owner's or service manuals pertaining to said products.

SERVICE RECOMMENDATIONS 2
OTHER CONTENTS.....

This engine has been engineered for use in Generac Power Systems products. The contents of this manual have been reprinted from the original manufacturer's service and repair manual.

1.6 Liter Gas Engine Service Recommendations

◆ ENGINE OIL RECOMMENDATIONS

The unit has been filled with “break in” engine oil at the factory. Use a high-quality detergent oil classified “For Service CC, SD, SE or SF.” Detergent oils keep the engine cleaner and reduce carbon deposits. Use oil having the following SAE viscosity rating, based on the ambient temperature range anticipated before the next oil change:

Temperature	Oil Grade (Recommended)
Above 75° F (24° C)	SAE 30W
40° to 75° F (4.4° to 24° C)	SAE 20W or 15W-40
10° to 40° F (-12° to 4.4° C)	SAE 10W or 15W-40
Below 10° F (-12° C)	SAE 5W-30 (Synthetic) or 5W-20

Crankcase Oil Capacity.....0.875 U.S. Gallons (w/filter)

◆ COOLANT

Use a mixture of half low silicate, ethylene glycol base antifreeze and half soft water. Use only soft water and only low silicate antifreeze. If desired, you may add a high quality rust inhibitor to the recommended coolant mixture. When adding coolant, always add the recommended 50-50 mixture.

Coolant Capacity.....2.25 U.S. gallons



Do not remove the radiator pressure cap while the engine is hot or serious burns from boiling liquid or steam could result.



DANGER



Ethylene glycol base antifreeze is poisonous. Do not use your mouth to siphon coolant from the radiator, recovery bottle or any container. Wash your hands thoroughly after handling. Never store used antifreeze in an open container because animals are attracted to the smell and taste of antifreeze even though it is poisonous to them.



CAUTION



Do not use any chromate base rust inhibitor with ethylene glycol base antifreeze, or chromium hydroxide (“green slime”) will form and cause overheating. Engines that have been operated with a chromate base rust inhibitor must be chemically cleaned before adding ethylene glycol base antifreeze. Using any high silicate antifreeze boosters or additives also will cause overheating. We also recommend that you DO NOT use any soluble oil inhibitor for this equipment.

8 KW - 35 KW SMALL STANDBY GENERATOR SETS

Following is a recommended maintenance schedule for Generac small standby and residential generator sets from 8 kW to 35 kW in size, and applies to both diesel engine and gas engine driven units. The established intervals in the schedule are the *maximum* recommended when the unit is used in an average service application. They will need to be decreased (performed more frequently) if the unit is used in a severe application. Use the unit hour meter or calendar time, whichever occurs first, from the previous maintenance interval to determine the next required maintenance interval.

Service Maintenance Interval Information:

The various service maintenance intervals are designated by interval numbers as follows:

- 1 An early inspection of the generator set to insure it is ready to operate when required and to identify any potential problem areas.

Performed monthly or following each 10 hours of operation of the unit and requires approximately .5 man-hours per unit to complete.

This inspection may be performed by the end user providing the following safety steps are taken to prevent the engine from starting automatically without warning:

To prevent injury, perform the following steps in the order indicated before starting any maintenance:

- **Disable the generator set from starting and/or connecting to the load by setting the control panel Auto-Off-Manual switch to the "OFF" position.**
- **Remove the control panel fuse.**
- **Turn off the battery charger.**
- **Remove the negative battery cable.**



The battery charger must be turned off **BEFORE** removing the battery cable to prevent an over current condition from burning out sensitive control panel components and circuits.

Following all maintenance, reverse these steps to insure the unit is returned to standby setup for normal operation when required.

- 2 A break-in service inspection of the generator set to insure it is ready to operate and carry the load when required, and to identify any potential problem areas.

*Performed **ONLY ONCE** following the first three months or the first 30 hours of operation after purchase of the unit and requires approximately 2.5 man-hours per unit to complete.*

This inspection contains some maintenance tasks which require special tools, equipment, and/or knowledge to accomplish and should be performed only by an authorized Generac Service Dealer.

- 3 An operational inspection of the generator set to insure it is ready to operate and carry the load when required, and to identify any potential problem areas.

Performed semi-annually or following each 50 hours of operation of the unit and requires approximately 1.5 man-hours per unit to complete.

This inspection contains some maintenance tasks which require special tools, equipment, and/or knowledge to accomplish and should be performed only by an authorized Generac Service Dealer.

- 4 A mid-level inspection of the generator set to insure it is ready to operate and carry the load when required, and to identify any potential problem areas.

Performed annually or following each 100 hours of operation of the unit and requires approximately 4.0 man-hours per unit to complete.

This inspection contains some maintenance tasks which require special tools, equipment, and/or knowledge to accomplish and should be performed only by an authorized Generac Service Dealer.

Liter Gas Engine Service Recommendations

Maintenance Tasks	Level 1		Level 2		Level 3		Level 4	
	Recommended to be done monthly/ 10 hrs.	Task Comp. (Date-Initials)	Required to be done 3 months/ Break-in /30 hrs.	Task Comp. (Date-Initials)	Required to be done Semi-Annually/50 hrs.	Task Comp. (Date-Initials)	Required to be done Annually/ 100 hrs.	Task Comp. (Date-Initials)
1.Disable the unit from operating per the first page warning.	●		●		●		●	
2.Check the engine oil level. Adjust as necessary.	●		●		●		●	
3.Check the engine coolant level. Adjust as necessary.	●		●		●		●	
4.Check the engine coolant thermal protection level. Correct as necessary.							●	
5.Check the natural gas delivery system on gas engine driven units. Tighten connections as necessary.			●		●		●	
6.Check the diesel fuel supply level for diesel engine driven units. Fill as necessary.	●		●		●		●	
7.Drain water and sediment from the diesel fuel tank on diesel engine driven units.			●		●		●	
8.Drain water from the fuel line water separator on diesel engine driven units if the unit is equipped with one.			●		●		●	
9.Check the air inlets and outlets for debris. Clean as necessary.	●		●		●		●	
10.Check the battery electrolyte level if accessible. Adjust as necessary.	●		●		●		●	
11.Check the battery posts, cables, and charger for loose connections, corrosion, and proper operation. Correct as necessary.	●		●		●		●	
12.Check the unit wiring for loose connections, corrosion, and damage. Correct as necessary.							●	
13.Check the engine accessory drive belts for wear, weather cracking, and damage. Replace as necessary.							●	

1.6 Liter Gas Engine Service Recommendations

Maintenance Tasks	Level 1	Task Comp. (Date-Initials)	Level 2	Task Comp. (Date-Initials)	Level 3	Task Comp. (Date-Initials)	Level 4	Task Comp. (Date-Initials)
	Recommended to be done monthly/ 10 hrs.		Required to be done 3 months/ Break-in /30 hrs.		Required to be done Semi-Annually/50 hrs.		Required to be done Annually/ 100 hrs.	
14.Visually inspect the unit looking for leaks, wear or damage, loose connections or components, and corrosion. Correct as necessary.	●		●		●		●	
15.Test the engine and transfer switch safety devices. Correct and/or adjust as necessary.							●	
16.Initiate an automatic start and transfer of the unit to site load and exercise it for at least 1 hour looking for leaks, loose connections or components, and abnormal operating conditions. Correct as necessary.			●		●			
17.Start and exercise the unit at full rated load (use a load bank if the site load is not enough) for at least 2 hours looking for leaks, loose connections or components, and abnormal operating conditions. Correct as necessary.							●	
18.Change the engine oil.							●	
19.Replace the engine oil filter(s).			●				●	
20.Replace the engine air filter(s).			●				●	
21.Replace the engine fuel filter(s) on diesel engine driven units and re-prime the fuel system.			●				●	
22.Check the engine spark plugs on gas engine driven units. Clean and re-gap or replace as necessary.			●				●	
23.Perform a 5 minute no-load operational run of the unit looking for any post service problems.			●				●	
24.Return the unit to standby setup for operation when required.	●		●		●		●	