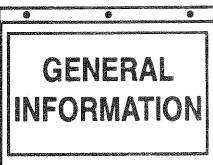


GENERAC® ENGINES

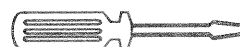
Overhead Valve Industrial

Owner's Manual

SAFETY RULES



OPERATION



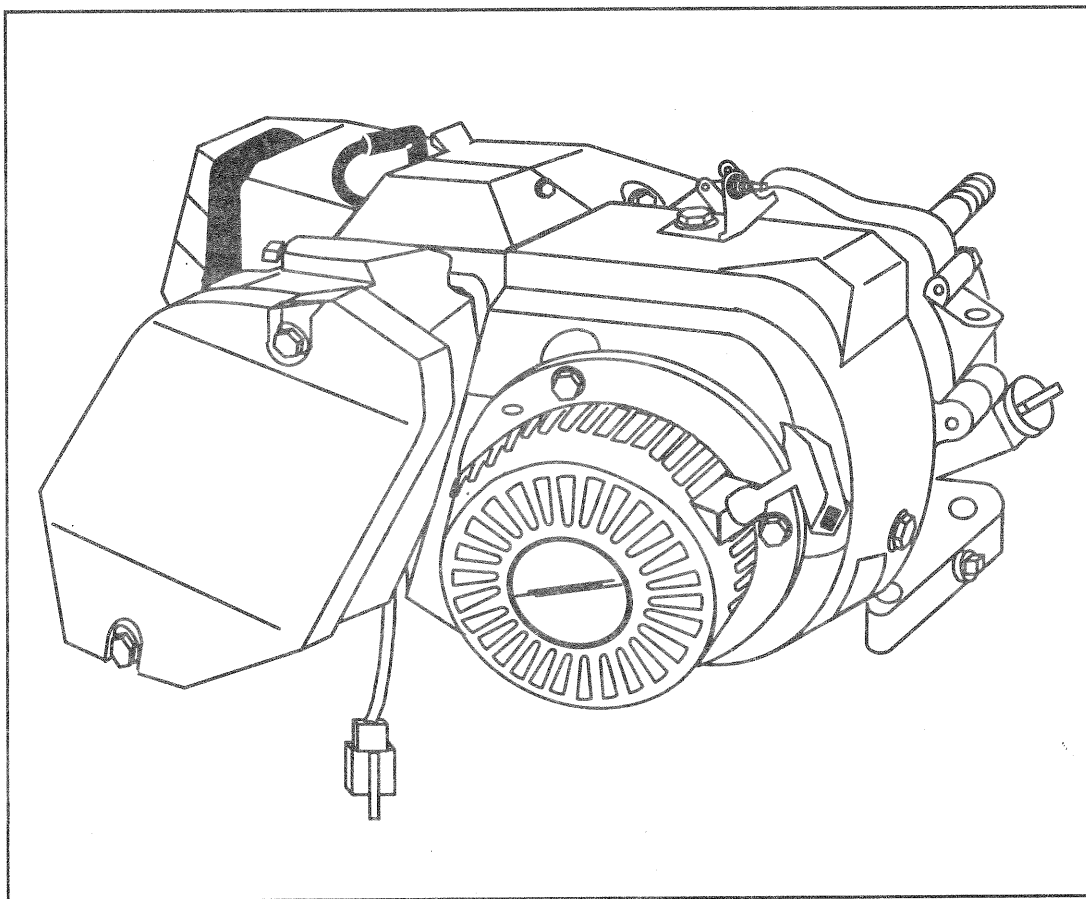
MAINTENANCE



TROUBLESHOOTING



PARTS LISTS



Model No. GN - 320/360/410 (11/13/15 Horsepower)



THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS, WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOU AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THE MANUAL BEFORE ATTEMPTING TO OPERATE THIS UNIT.



If you don't understand any portion of this manual, contact Generac for a demonstration of actual starting, operating and servicing procedures.

Throughout this publication and on tags and decals affixed to the generator, **DANGER**, **WARNING** and **CAUTION** blocks are used to alert you to special instruction about a particular operation that may be hazardous if performed incorrectly or carelessly. Observe them carefully.

These safety warnings cannot eliminate the hazards that they indicate. Strict compliance with the special instructions while performing the service plus "common sense" are major measures to prevent accidents.

The following definitions apply to **DANGER**, **WARNING**, **CAUTION** and **NOTE** blocks found throughout the manual.

These safety symbols indicate the following:



DANGER: After this heading you can read handling, installing, operating or servicing instructions that, if not strictly complied with, will result in personal injury.



WARNING: After this heading you can read handling, installing, operating or servicing instructions that, if not strictly complied with, may result in personal injury.



CAUTION: After this heading you can read instructions for handling, installing, operating or servicing the generator that, if not strictly complied with, may result in damage to equipment and/or property.

NOTE: After this heading you can read explanatory statements that require special emphasis.

These symbols indicate the following:



Points out important safety information and, if not followed, could endanger personal safety and/or property of yourself and others.



Potential explosion hazard.



Potential fire hazard.



Potential electrical shock hazard.

RULES FOR SAFE OPERATION

Study these **RULES FOR SAFE OPERATION** carefully before operating or servicing this equipment. Become familiar with the **OWNER'S MANUAL** and with the engine. The engine can operate safely, efficiently and reliably only if it is properly operated and maintained. Many accidents are caused by failing to follow simple and fundamental rules or precautions.

Generac cannot possibly anticipate every possible circumstance that might involve a hazard. The warnings in this manual and on tags and decals affixed to the equipment, are therefore, not all-inclusive. If you use a procedure, work method or operating technique Generac does not specifically recommend, you must satisfy yourself that it is safe for you and others. You must also make sure the procedure, work method or operating technique that you choose does not render the engine to be unsafe.



DANGER: Do not tamper with the engine governed speed. High operating speeds are dangerous and increase the risk of personal injury or damage to the equipment. Operating at low speeds with heavy load may shorten the engine's life.

BEFORE OPERATING

- Gasoline is highly **FLAMMABLE** and its vapors are **EXPLOSIVE**. Do not permit smoking, open flames, sparks or heat in the area while handling gasoline. Avoid spilling gasoline on a hot engine. Comply with all of the laws regulating storage and handling of gasoline.
- Store gasoline and other fuels only in containers designed and approved for the storage of such materials.
- Pressure can build up in the fuel tank. Loosen the fuel tank slowly to relieve any pressure in the tank.
- Add gasoline and other fuels in a clean, well-ventilated area. Wipe up any spilled gasoline immediately. If gasoline has been spilled, let it dry completely before starting the engine.



WARNING:



The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.



- Do not overfill the fuel tank. Always allow room for fuel expansion. If the tank is overfilled, the fuel can overflow onto a hot engine and cause a **FIRE** or an **EXPLOSION**.
 - Allow at least two (2) feet of clearance on all sides of the engine, even while operating it outdoors, or you could damage the engine.
 - Thoroughly inspect the engine for loose or damaged parts before each use. Do not use the engine until adjustments or repairs are made.
 - Check the oil level in the engine before each use.
 - Inspect the engine periodically. Repair or replace all damaged or defective parts immediately.
 - Inspect fuel system frequently for leaks or damage. Repair or replace any damaged or leaking component immediately. Never attempt to change, alter or modify the engine fuel system in any way that might affect safety or compliance with applicable codes and standards.
- **WHILE OPERATING**
- **This engine was designed and manufactured for specific applications. Do not attempt to modify the equipment or use it for any application for which it was not designed.**
 - Engine exhaust gases contain **DEADLY** carbon monoxide gas. This dangerous gas, if breathed in sufficient concentrations, can cause unconsciousness or even death. Operate this equipment only in the open air where adequate ventilation is available.
 - Do not insert any object through the cooling slots of the engine. You could damage the equipment or injure yourself.
 - Do not operate the engine faster than the speed necessary to operate the equipment. Do not run the engine at high speed when not operating the equipment.
 - This engine requires an adequate flow of cooling air for its continued proper operation. Never operate the equipment inside any room or enclosure where the free flow of cooling air into and out of the equipment might be obstructed. Without sufficient cooling air flow, the engine quickly overheats, damaging the engine or nearby property.
 - Do not smoke around the engine. Wipe up any fuel or oil spills immediately. Never leave oily or fuel soaked rags around the engine. Keep the area around the engine clean and free of debris.
 - Keep hands, feet, clothing, etc., away from moving parts of this engine.
 - Never operate the engine (a) in the rain; (b) in any enclosed compartment; (c) if the engine speed changes; (d) if the engine sparks; (e) if flame or smoke is observed while the engine is running.
 - Never work on this engine or handle any electrical device while standing in water, while barefoot, or while hands or feet are wet. **DANGEROUS ELECTRIC SHOCK** will result.

This engine meets the 1998 and later California emissions regulations. To ensure that your engine continues to meet these regulations, refer to the following information and instructions in this owner's manual.

SERVICE INFORMATION

Service on this engine within and after the warranty period can be performed by any authorized service dealer. Service technicians are factory trained and capable of handling all service needs.

When contacting an authorized service dealer or the factory about parts and service, always supply the complete model number and serial number of your unit as given on its data plate decal.

The warranty and replacement parts for this engine are included in the owner's manual.

When ordering engine components, you must provide the authorized service dealer with the engine identification number, which is located on the engine identification decal. See the illustration below for the location of the decal.

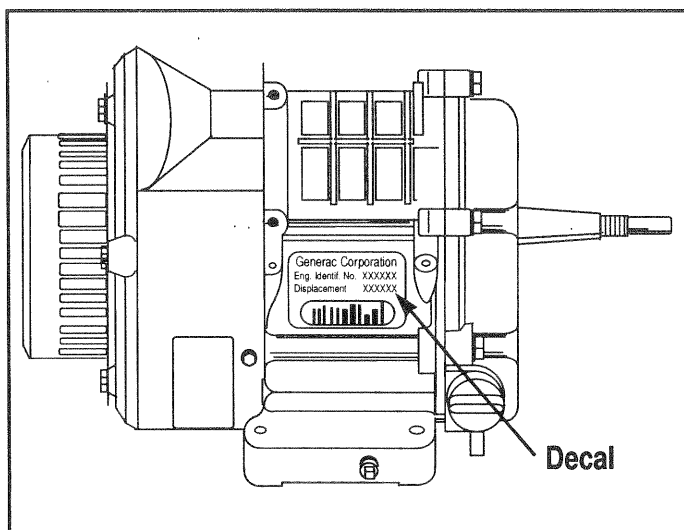


TABLE OF CONTENTS

RULES FOR SAFE OPERATION.....2-3

GENERAL INFORMATION.....4-5

Service Information4

Engine Identification Decal Location4

Oil and Fuel Information5

OPERATION6-7

Before Starting the Engine6

Starting the Engine6-7

Stopping the Engine7

Low Pressure Shutdown System7

MAINTENANCE8-13

General Maintenance Recommendations8

Service and Adjustments8-10

Carburetor Adjustments11

Checking/Adjusting Valve to Rocker Arm Clearance11

Retorquing Head Bolts11-12

Maintenance Schedule12

Storage Instructions13

Specifications13

PARTS LISTS & EXPLODED VIEWS14-21

WARRANTIES22-24

California Emission Control Warranty Statement22

Emission Control System Warranty23

Generac Engine WarrantyBack Cover

OIL AND FUEL INFORMATION

NOTE: BE SURE TO READ THESE INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO START OR OPERATE THIS EQUIPMENT. Using old or improper oil or fuel can cause engine damage.



CAUTION: Any attempt to crank or start the engine before it has been properly serviced with the recommended oil may result in engine damage.

■ RECOMMENDED OIL TYPE

Using the proper type and weight of oil in the crankcase is extremely important. Check the oil before each use and change the oil regularly. Failure to use the correct oil, or using dirty oil, can cause premature engine wear and failure.

Use only high quality detergent oil rated with API service classification SF, SG or SH. The recommended oil weights include the following:

- During summer months: SAE 30. An acceptable substitute is SAE 10W-30.
- During winter months: SAE 5W-30. **DO NOT USE SAE 10W-40.**

The crankcase oil capacity is about 1500 ml (51 oz.) with the oil filter. Without the filter, the oil capacity is 1350 ml (46 oz.). Use no special additives. Make sure that the unit is level when filling with oil. **DO NOT OVERFILL.**

■ RECOMMENDED FUEL TYPE

Use clean, fresh, regular **UNLEADED** gasoline with this engine.



CAUTION: Do not overfill the fuel tank. Always allow room for fuel expansion.



WARNING: NEVER FILL THE FUEL TANK INDOORS. OR WHEN THE ENGINE IS RUNNING OR HOT. DO NOT LIGHT A CIGARETTE OR SMOKE WHEN FILLING THE FUEL TANK.



OPERATION AND MAINTENANCE

It is the owner's/operator's responsibility to perform all safety checks; to make sure that all maintenance for safe operation is performed promptly; and to have the engine checked by an authorized dealer periodically. Normal maintenance service and replacement of parts are the responsibility of the owner/operator and, as such, are not considered defects in materials or workmanship within the terms of the warranty. Individual operating habits and usage contribute to the need for maintenance service.

Proper maintenance and care of your engine assures a minimum number of problems and keeps your operating expenses at a minimum. See your authorized dealer/distributor for service aids and accessories.

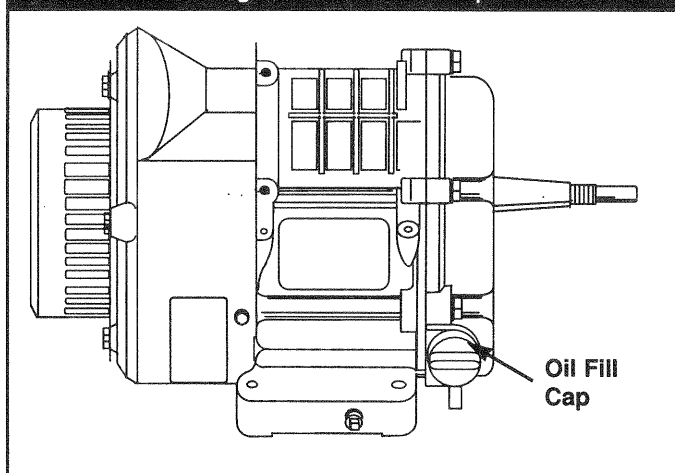
BEFORE STARTING THE ENGINE

Perform the following tasks before trying to start the engine:

■ ADDING ENGINE OIL

1. Remove the yellow oil fill cap from the crankcase (Figure 1).
2. Add engine oil until the oil level is to the point of overflowing.

Figure 1 — Oil Fill Cap



■ CHECKING ENGINE OIL

1. Check the engine oil level before starting the engine each time after the initial start. If the oil level is below the point of overflowing, fill to the proper level.

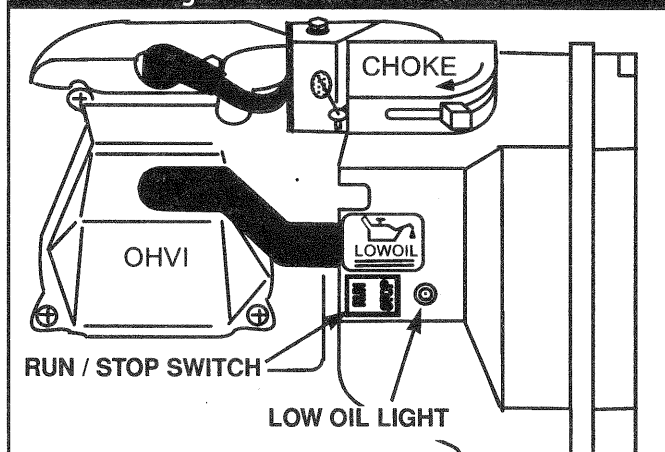
■ ADDING FUEL

1. Fill the fuel tank using clean, fresh **UNLEADED** gasoline.

STARTING THE ENGINE

1. Open the fuel shut-off valve, if so equipped.
2. If your unit is equipped with the IDLE/CONTROL feature, locate the IDLE/CONTROL ON/OFF SWITCH on the control panel, and set it to the OFF (O) position.
3. Locate the **RUN/STOP SWITCH** (Figure 2) next to the engine cylinder head and push it to **RUN**.

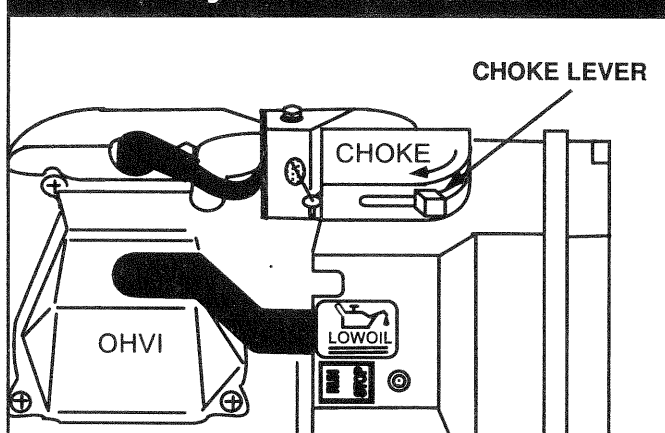
Figure 2 — RUN/STOP SWITCH



If your engine is equipped with a choke, use the following instructions:

1. Place the choke lever in the **FULL CHOKE POSITION** (Figure 3) by sliding it to the left (towards the valve cover), in the direction indicated by the arrow.

Figure 3 — Choke Position

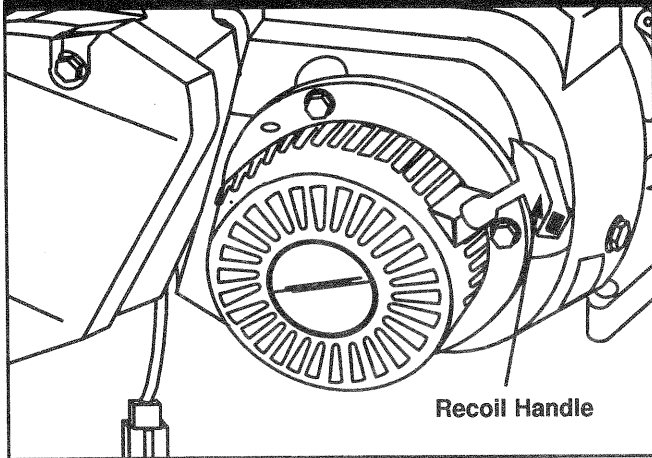


2. Grasp the recoil handle (Figure 4) and pull it slowly until you feel slight resistance, then **PULL QUICKLY**.



- A If the engine **FAILS TO START**, go to Step 3.
B. If the engine **STARTS**, go to Step 4.

Figure 4 — Recoil Handle



3. Move the choke lever to the **HALF CHOKE POSITION**, and pull the recoil handle (Figure 4) two (2) times.
 - If the engine **STILL FAILS TO START**, repeat Steps 1-3.
4. Move the choke lever to the **RUN POSITION** by sliding it to the right (away from the valve cover and under the arrow).
5. Allow the engine to warm up for two (2) minutes before using the equipment.

STOPPING THE ENGINE

1. Remove the load on the engine, and let it run for 30 seconds.
2. Turn off the engine by moving the **RUN/STOP SWITCH** to the **STOP** position.
3. Close the fuel shut-off valve, if so equipped.

LOW PRESSURE SHUTDOWN SYSTEM

The engine is equipped with a low oil pressure sensor that shuts down the engine automatically when the oil pressure drops below 8 psi). If the engine shuts down by itself and the fuel tank has enough gasoline, check the engine oil level.

■ INITIAL STARTUP

A delay built in the shutdown system allows oil pressure to build during starting. The delay allows the engine to run for about 10 seconds before sensing oil pressure.

■ SENSING LOW PRESSURE

If the system senses low oil pressure during operation, the engine shuts down. As the system shuts down, the low oil light comes **ON** (see Figure 2, page 6). However, once the engine stops rotating, this light will go **OFF**.

■ RESTARTING THE ENGINE

If you try to restart the engine within (five) 5 seconds after it shuts down, the engine may NOT start. The system needs 5 to 10 seconds to reset.

NOTE: If you do restart engine after a shutdown and have not corrected the low oil pressure, the engine will run for about 10 seconds as described above, and then it will stop.

GENERAL MAINTENANCE RECOMMENDATIONS

The owner/operator is responsible for making sure that all periodic maintenance tasks are completed on a timely basis; that all discrepancies are corrected; and that the equipment is kept clean and properly stored. Never operate a damaged or defective engine.



CAUTION: Disconnect the spark plug wire from the spark plug, and place the wire where it cannot come in contact with the spark plug before working on this engine.

■ CHECKING THE OIL LEVEL

See the BEFORE STARTING THE ENGINE section on page 6 for information on checking the oil level. The oil level should be checked before each use, or at least **every eight (8) hours** of operation. Keep the oil level maintained.

■ CHANGING THE OIL AND OIL FILTER

Your engine may be equipped with an oil filter. Change the oil and filter after the **first eight (8) hours** of operation. Change the oil and oil filter (if so equipped) **every 50 hours** thereafter. If you are using this engine under dirty or dusty conditions, or in extremely hot weather, change the oil more often.

Use the following instructions to change the oil while the engine is still warm:

1. Clean the area around the oil drain plug, remove the plug and drain the oil completely into a suitable container (Figure 5).

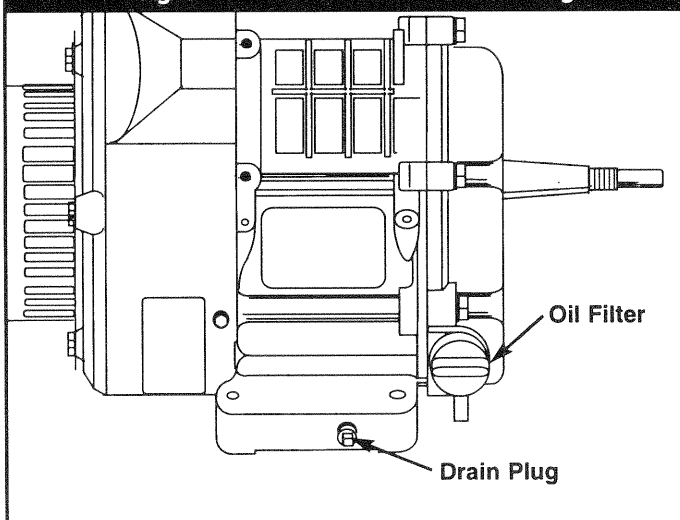
2. When the oil is drained, install and tighten the oil drain plug.
3. **If your engine is equipped with an oil filter, use the following instructions:**
 - A. Place a suitable container beneath the oil filter and turn the filter **counterclockwise** to remove the filter.
 - B. Coat the gasket of a new filter with engine oil. Turn the new filter **clockwise** until the gasket contacts the filter adapter, then tighten an additional **3/4 turn**.
4. Remove the oil fill plug and insert a clean funnel into the plug opening. Fill the crankcase with the recommended oil until the oil level is at point of overflowing. Approximately 1350ml (46 oz.) are required without an oil filter; 1500ml (51 oz.) with an oil filter. **POUR SLOWLY**.
5. When the crankcase is filled to the proper level, install and tighten the oil fill plug.

■ SERVICING THE AIR CLEANER.

Your equipment's air cleaner is one of the most important areas to maintain. This engine will not run properly and may get damaged if it is run with a dirty air cleaner system.

Clean or replace the paper air filter (Figure 6) **every 50 hours of operation** or once a year, whichever comes first. Clean or replace the filter more often if the engine is operated under dusty or dirty conditions. Clean the foam pre-filter **every 25 hours of operation**, or sooner under dusty or dirty conditions.

Figure 5 — Oil Filter and Drain Plug



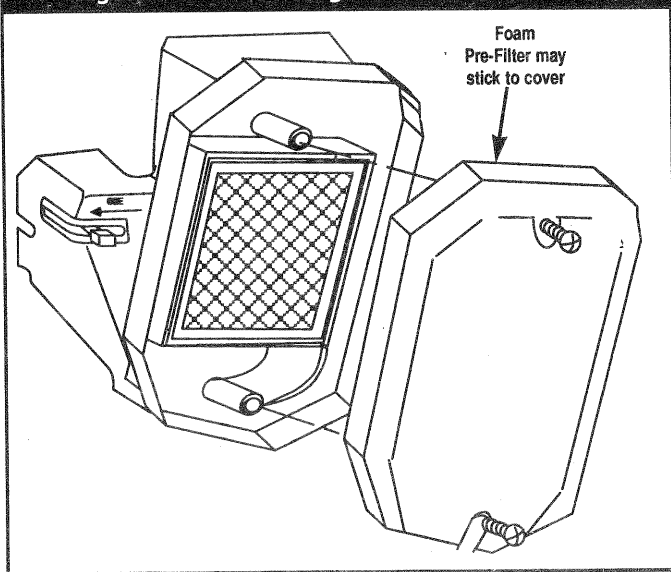


CAUTION: Never run this equipment **without** the complete air cleaner system installed on the engine. This could result in premature wear to the engine.

Use the following instructions to clean or replace the air cleaner components.

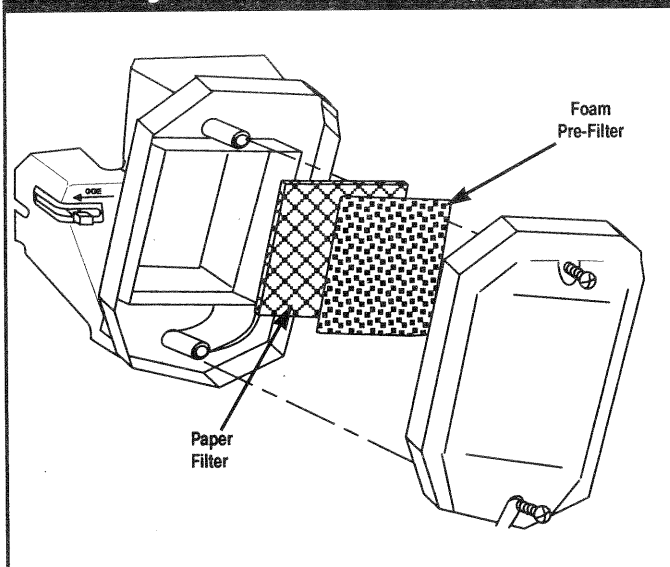
1. Loosen the two screws on the air cleaner cover. Remove the air cleaner cover (Figure 6).

Figure 6 — Removing the Air Cleaner Cover



2. Remove the paper air filter and the foam pre-filter from the air cleaner cover (Figure 7).

Figure 7 — Air Cleaner Components



3. To clean or replace the foam pre-filter:

- A. Wash the pre-filter in soapy water.
- B. Squeeze the pre-filter dry with a clean cloth. **DO NOT TWIST.**

NOTE: If the pre-filter is still dirty after washing and drying it, replace it with a new one.

- C. Apply enough clean engine oil to saturate the pre-filter.
- D. Wrap the pre-filter in a clean dry cloth and squeeze out the excess oil. **DO NOT TWIST.** Set the pre-filter aside.

4. To clean or replace the paper air filter:

- A. Clean the air filter by tapping it gently on a solid surface.

NOTE: If the filter is too dirty, replace it with a new one. Dispose of the old filter properly.

5. Clean the air cleaner cover.
6. Insert the pre-filter into the cover, then the paper air filter (see Figure 7).
7. Reinstall the air cleaner cover and tighten the two (2) screws (see Figure 6).

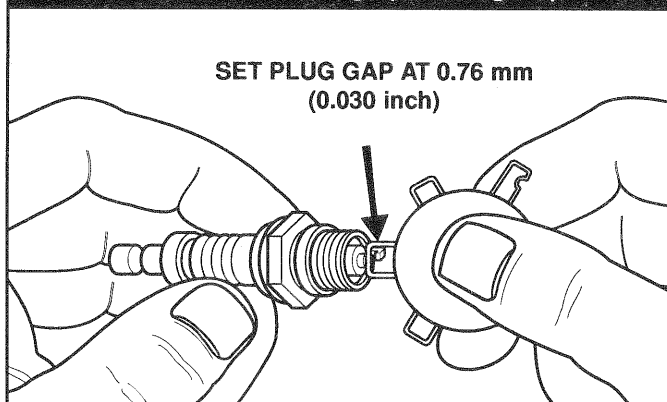
■ REPLACING THE SPARK PLUG

Use a Champion RC12YC spark plug or equivalent. The correct air gap is 0.76mm (0.030 in.). Remove the plug every **100 hours of operation** or once each year, whichever comes first. This will help your engine to start easier and run better.

1. Stop the engine and pull the spark plug wire off of the spark plug.
2. Clean around the spark plug and remove it from the cylinder head.

- Set the spark plug gap (Figure 8) to 0.76mm (0.030 in.). Install a correctly gapped spark plug into the cylinder head.

Figure 8 — Setting Spark Plug Gap



■ CLEANING THE SPARK ARRESTOR SCREEN

The engine exhaust muffler has a spark arrestor screen. Inspect and clean the screen **every 100 hours** of operation or once each year, whichever comes first.

NOTE: If you use your engine on any forest-covered, brush-covered or grass-covered unimproved land, it must have a spark arrestor. The spark arrestor must be maintained in good condition by the owner/operator.

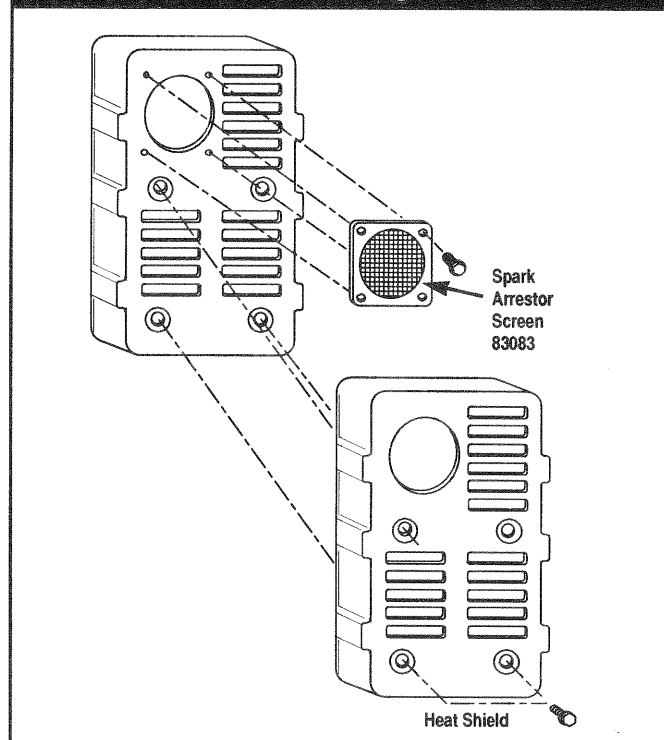
Clean and inspect the spark arrestor screen as follows:

Inspect the screen and replace if it is torn, perforated or otherwise damaged (see Steps 1-4 below). **DO NOT USE** a defective screen. If the screen is not damaged, clean it with a commercial solvent.

If the spark arrestor is found to be damaged or defective, replace it as follows:

- Remove the four (4) screws that connect the heat shield to the muffler (Figure 9).
- Remove the four (4) screws that attach the spark arrestor screen (Figure 9).
- Replace damaged screen with new screen (Part No. 83083).
- Reattach the screen and the heat shield with the four (4) screws. Resinstall the heat shield to the muffler with the four (4) screws.

Figure 9 — Removing Heat Shield



SERVICE AND ADJUSTMENTS

■ ENGINE SPEED



CAUTION: The engine speed was properly adjusted at the factory and should require no additional adjustment. Do not attempt to change engine speed. If you believe the engine is running too fast or too slow, take your engine to an authorized service center for repair and adjustment.

CHANGING THE ENGINE GOVERNED SPEED WILL VOID THE ENGINE WARRANTY.

Your engine runs at a constant speed. This constant operating speed is maintained by a mechanical, flyweight type, fixed speed governor. **DO NOT** try to adjust the governed speed setting for the following reasons:

- Operating the engine at high engine speeds is dangerous and increases the risk of personal injury or damage to the equipment.
- Operating the engine at low engine speeds with heavy loads may shorten the engine's life.

CARBURETOR ADJUSTMENTS

The carburetor of your engine is pre-set at the factory. The carburetor should not be tampered with because this will **VOID THE EMISSION CONTROL SYSTEM WARRANTY**. If you experience problems and your engine is used at an altitude in excess of 5000 feet, contact the nearest authorized dealer regarding high altitude setting changes.

CHECKING/ADJUSTING VALVE TO ROCKER ARM CLEARANCE

After the first 50 hours of operation, remove the rocker cover and check the valve to rocker arm clearance.

When adjusting the clearance, the engine should be at room temperature, and the piston should be at Top Dead Center (TDC) of its compression stroke (both valves are closed). The correct clearance is 0.05-0.1mm (0.002-0.004 in.). Check and adjust the valve to rocker arm clearance as follows:

1. Remove the four (4) screws from the rocker cover (Figure 10).
2. Remove the rocker cover and rocker cover gasket.

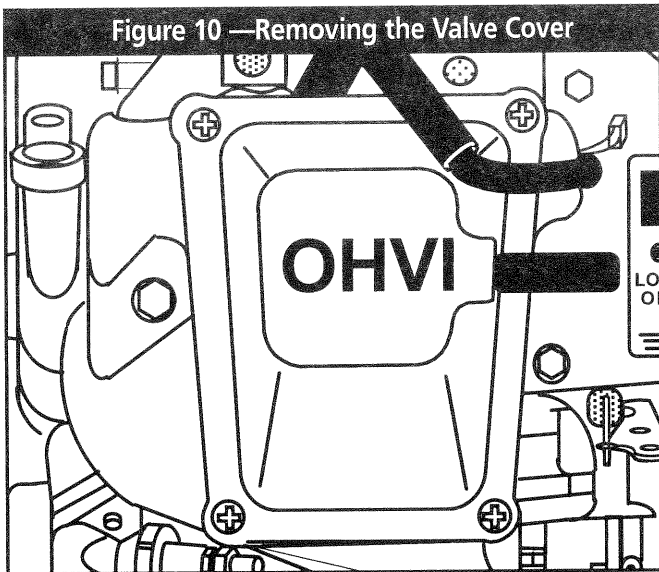
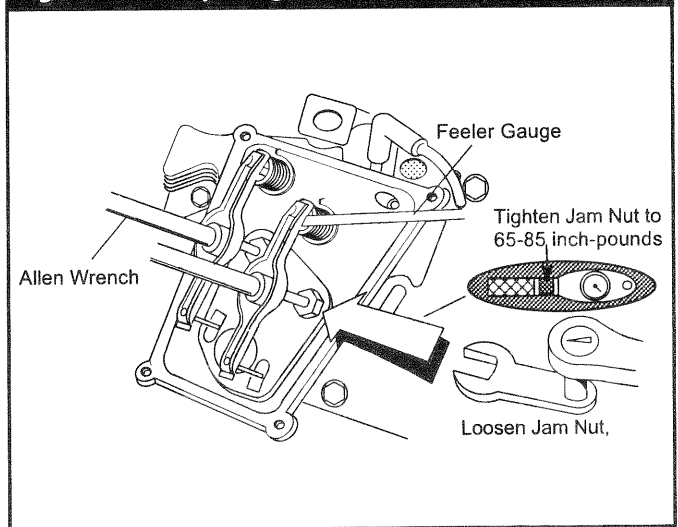


Figure 10 — Removing the Valve Cover

3. Loosen the rocker arm jam nut. Using an allen wrench to turn the pivot ball stud, check the clearance between the rocker arm and the valve stem with a flat feeler gauge (Figure 11).

Figure 11 — Adjusting Valve to Rocker Arm Clearance



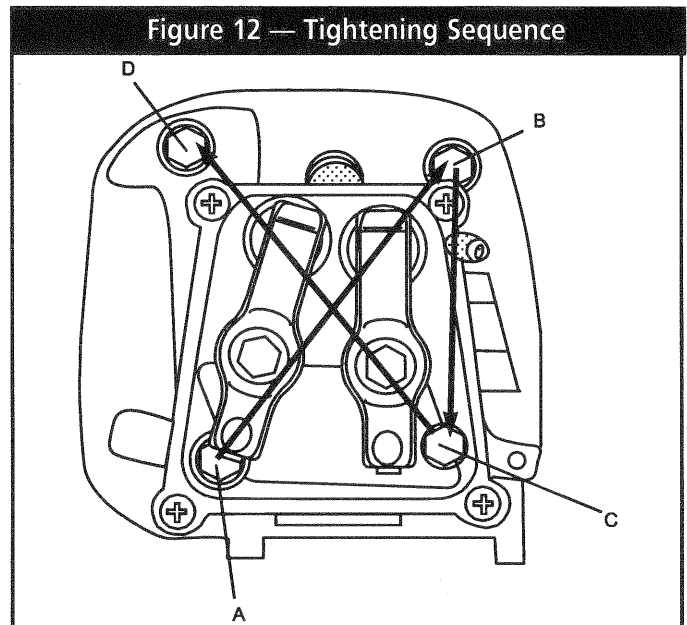
4. When the valve clearance is correct, hold the pivot ball stud with the allen wrench and tighten the rocker arm jam nut. Torque the jam nut to **7.15-9.35 N-m (65-85 in-lb)**. After tightening the jam nut, recheck the valve clearance to make sure it did not change (see Figure 11).
5. Reinstall the rocker cover gasket, rocker cover and the four (4) screws (see Figure 10).

RETORQUING THE HEAD BOLTS

After the first 50 hours of operation, retorque the head bolts.

NOTE: Only perform this adjustment after the first 50 hours of operation. The head bolts will need no further adjustment.

1. Remove the four (4) screws from the rocker cover (see Figure 10).
2. Remove the rocker cover and rocker cover gasket.
3. Torque the bolts to 6.9 kg-m. (44 ft-lb).
4. Torque the bolts in the following sequence: A, B, C, D, (star pattern). See Figure 12.



MAINTENANCE SCHEDULE				
MAINTENANCE OPERATION	Every 8 Hours or or Daily	25 Hours or Every Season	50 Hours or Every Season	100 Hours or Every Season
Check Oil Level	X			
Change Oil			See Note 1	
Change Oil Filter (if so equipped)			See Note 1	
Service Air Filter		Foam Pre-Filter	Paper Filter (Note 2)	
Replace or Clean Spark Plug				X
Clean Spark Arrestor Screen				X
Adjust Valve Clearance			X	
Retorque Head Bolts			See Note 3	
NOTE 1: Change oil and filter after first 8 hours of operation and then every 50 hours thereafter. Change sooner when operating under heavy load or in dusty or dirty environment or in high ambient temperature.				
NOTE 2: Clean more often when operating under dirty or dusty conditions.				
NOTE 3: Perform this task ONLY after first 50 hours of operation. Head bolts will NOT need further retorquing.				

STORAGE INSTRUCTIONS

This engine should be started at least once a week and run for at least 30 minutes. If this cannot be done and the equipment must be stored for more than 30 days, use the following guidelines to prepare it for storage.



WARNING: Never store the engine with the fuel in the tank indoors or in an enclosed, poorly ventilated areas, where fumes can reach an open flame spark or pilot light as on a furnace, water heater, or clothes dryer.

1. Run the engine for about five (5) minutes to warm it.

NOTE: Alcohol-blended fuel, or "gasohol", attracts moisture which can lead to the separation and formation of acids during storage. This acidic gas can damage internal engine parts. Methanol, ethanol and grain alcohol all are forms of gasohol. If you did use "gasohol," drain the fuel tank, then run the engine until it stops from lack of fuel.



WARNING: Drain the fuel into approved container outdoors, away from open flame. Be sure the engine is cool.

NOTE: Using a fuel additive such as STA-BIL® fuel stabilizer, or an equivalent, will prevent gum deposits from forming in the engine's fuel system.

2. While the engine is still warm, drain the oil from the crankcase. Refill with it with fresh oil. See BEFORE STARTING ENGINE on Page 6 for oil recommendations.
3. Remove spark plug and pour about 1/2 ounce (15ml) of engine oil into the cylinder. Crank slowly to distribute oil.



CAUTION: Avoid spray from the spark plug hole when cranking the engine slowly.

4. Install the spark plug. Do not connect the spark plug wire.
5. Clean the dirt, oil and grease from the cylinder, cylinder head, fins, blower housing, rotating screen and muffler area.
6. Close the fuel shut-off valve.

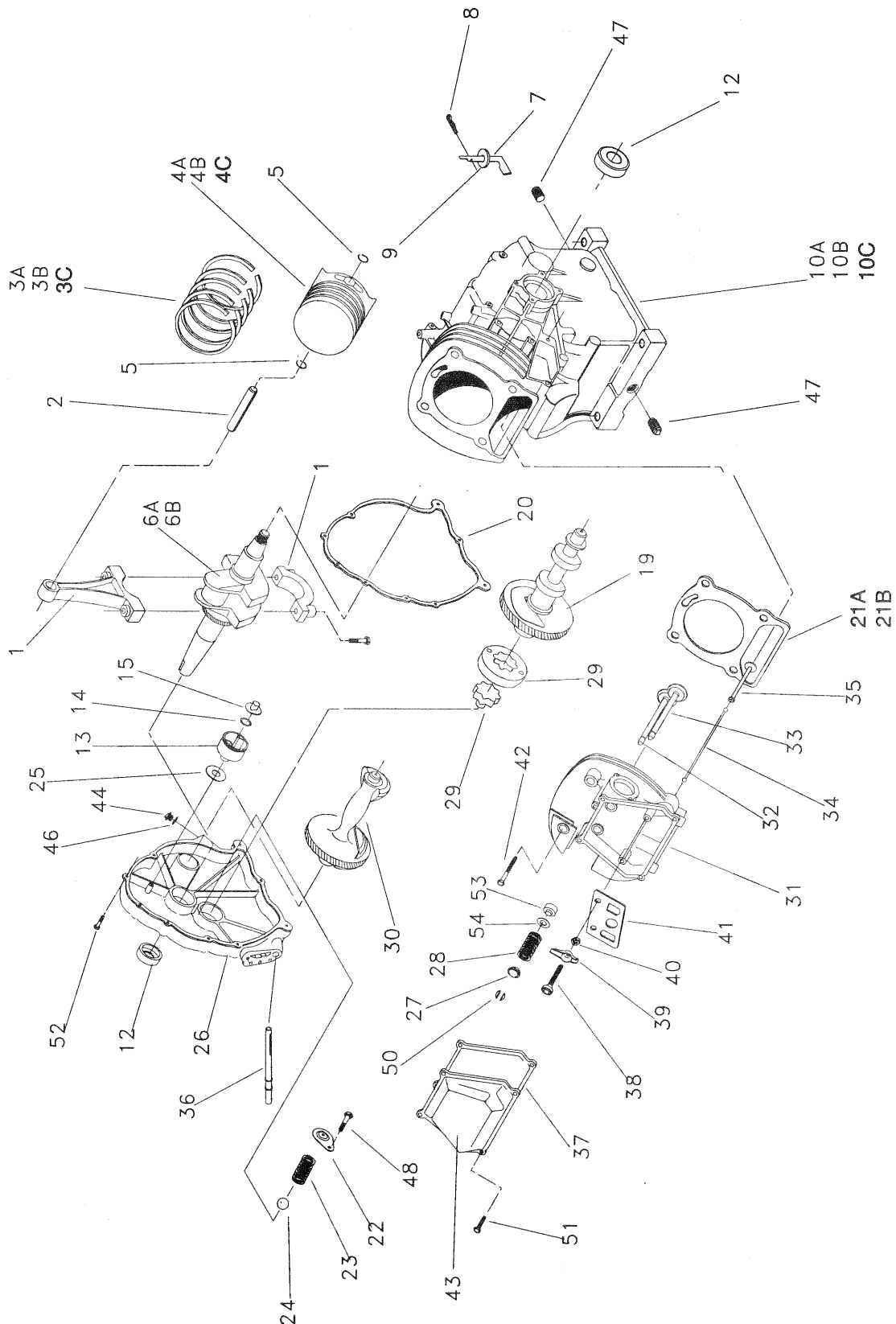
■ OTHER STORAGE TIPS

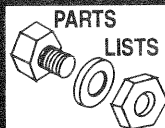
1. Do not store gasoline from one season to another.
2. Replace the gasoline can if it starts to rust. Rust and/or dirt in a gasoline can cause problems when you use that fuel with this equipment.
3. Store the equipment in a clean and dry area.

SPECIFICATIONS

Model	GN-320	GN-360	GN-410
Bore	80mm	85mm	90mm
Stroke	64mm	64mm	64mm
Valve Clearance	0.05–0.10mm	0.05–0.10mm	0.05–0.10mm
Displacement	321cc	363cc	407cc
Maximum Tilt Angle While Operating	15°	15°	15°
Oil Capacity with Oil Filter	1500ml (51 oz.)	1500ml (51 oz.)	1500ml (51 oz.)
Oil Capacity without Oil Filter	1350 ml (46 oz.)	1350 ml (46 oz.)	1350 ml (46 oz.)

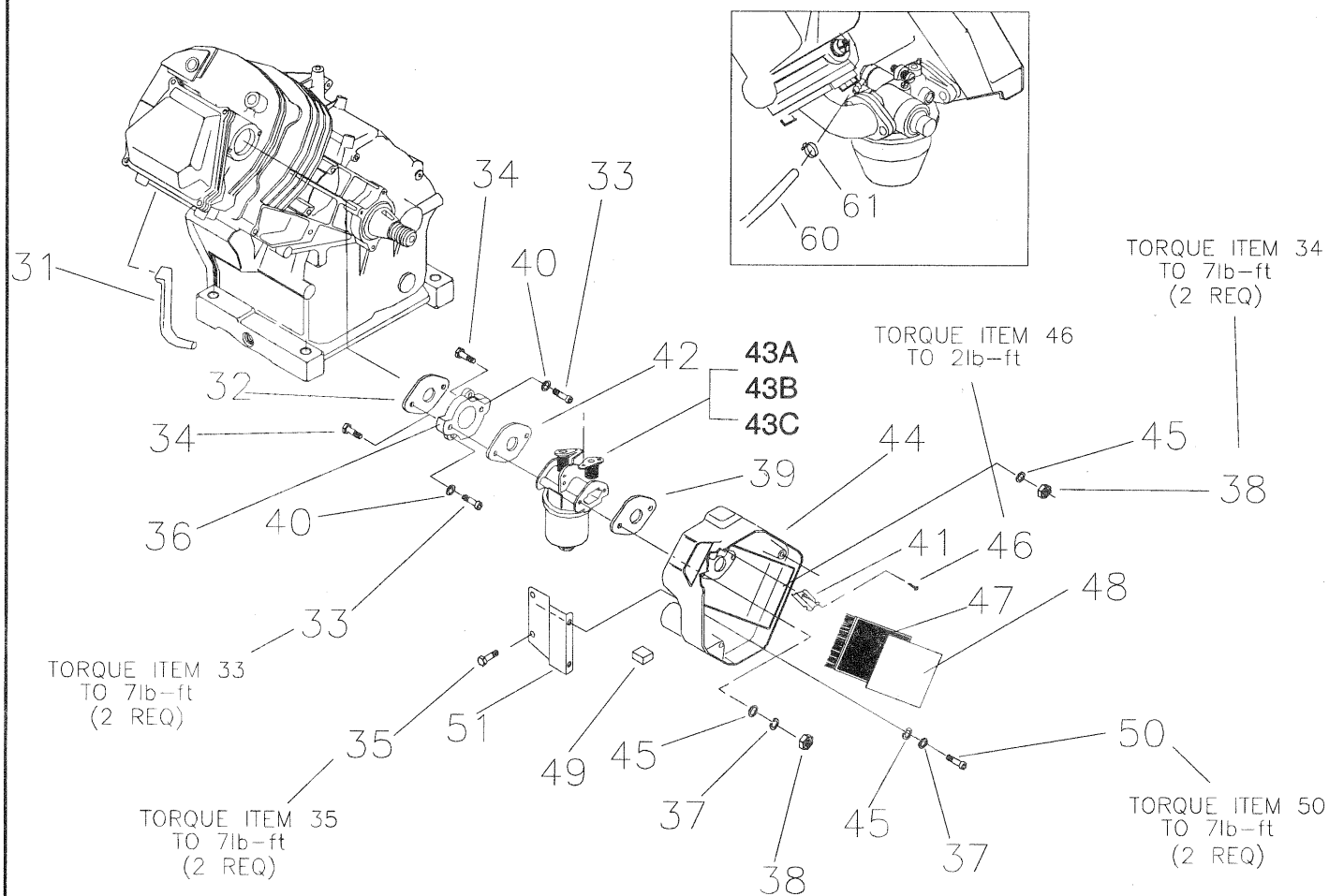
EXPLODED VIEW — LONG BLOCK (GN-320/360/410)

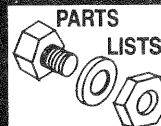



REPAIR PARTS LIST — LONG BLOCK (GN-320/360/410)

ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	71978	1	Connecting Rod With Cap and Bolt	29	86025	1	Gerotor Set
2	71980	1	Piston Pin	30	84430	1	Balancer
3A	89291	1	Piston Ring Set 80 MM (320)	31	21714	1	Cylinder Head With Valve Seats & Guides
3B	71977	1	Piston Ring Set 85 MM (360)	32	86516	1	Exhaust Valve
3C	21533	1	Piston Ring Set 90 MM (410)	33	86517	1	Intake Valve
4A	89217	1	Piston 80 MM (320)	34	88396B	2	Push Rod
4B	76339	1	Piston (360)	35	83897	2	Tappet
4C	96699	1	Piston (410)	36	77158	1	Oil Pick-Up Assembly
5	71983	2	Piston Pin Retainer	37	71987	1	Rocker Cover Gasket
6A	78666A	1	Crankshaft Assembly With Gears (Small Taper)	38	72694	2	Pivot Ball Stud
6B	76378A	1	Crankshaft Assembly With Gears (Straight Shaft)	39	83907	2	Rocker Arm
7	A7628	1	Governor Arm	40	72696	2	Jam Nut (Rocker Arm)
8	78658	1	Governor Arm "R" Pin	41	78694	1	Push Rod Guide Plate
9	78659	2	Governor Arm Washer	42	21742	4	M10-1.5 x 105 Head Bolt
10A	88261D	1	Crankcase H.S. W/Taper Plugs (320)	43	83938	1	Rocker Cover Breather Assembly
10B	88261C	1	Crankcase H.S. W/Taper Plugs (360)	44	76329	1	Oil Fill Plug
10C	88261E	1	Crankcase H.S. W/Taper Plugs (410)	46	86254	1	O-Ring 17.8 I.D. x 2.4 THK.
12	72655	2	Crankshaft Seal	47	26925	2	3/8" NPT Pipe Plug
13	A8930	1	Gov. Gear Assembly	48	74908	1	M5-0.8 x 8MM Screw (Thread Forming)
14	78645	1	Governor Retainer ("C" Ring)	50	86515	4	Valve Spring Keeper
15	A7811	1	Governor Spool	51	78606	4	M6-1 x 12MM Pan Head Screw & Lockwasher
19	A9877	1	Camshaft Assembly	52	A1442	8	Hex Head Flange Bolt M8-1.25 x 42MM
20	76701	1	Crankcase Gasket	53	78672	1	Valve Stem Seal
21A	21713A	1	Cylinder Head Gasket (320-360)	54	89673	2	Valve Spring Washer
21B	21713B	1	Cylinder Head Gasket (410)	N/A	C2610	1	Long Block Assm. (320cc w/item 6A)
22	78691	1	Oil Pressure Relief Cover	N/A	C2611	1	Long Block Assm. (360cc w/item 6A)
23	A5771	1	Pressure Relief Spring	N/A	C2612	1	Long Block Assm. (360cc w/item 6B)
24	A5776	1	Pressure Relief Ball	N/A	C2613	1	Long Block Assm. (410cc w/item 6A)
25	76361	1	Thrust Washer	N/A	C2614	1	Long Block Assm. (410cc w/item 6B)
26	A8898B	1	Gear Cover				
27	86514	2	Valve Spring Retainer				
28	91308	2	Valve Spring				

EXPLODED VIEW — AIR CLEANER AND CARBURETOR

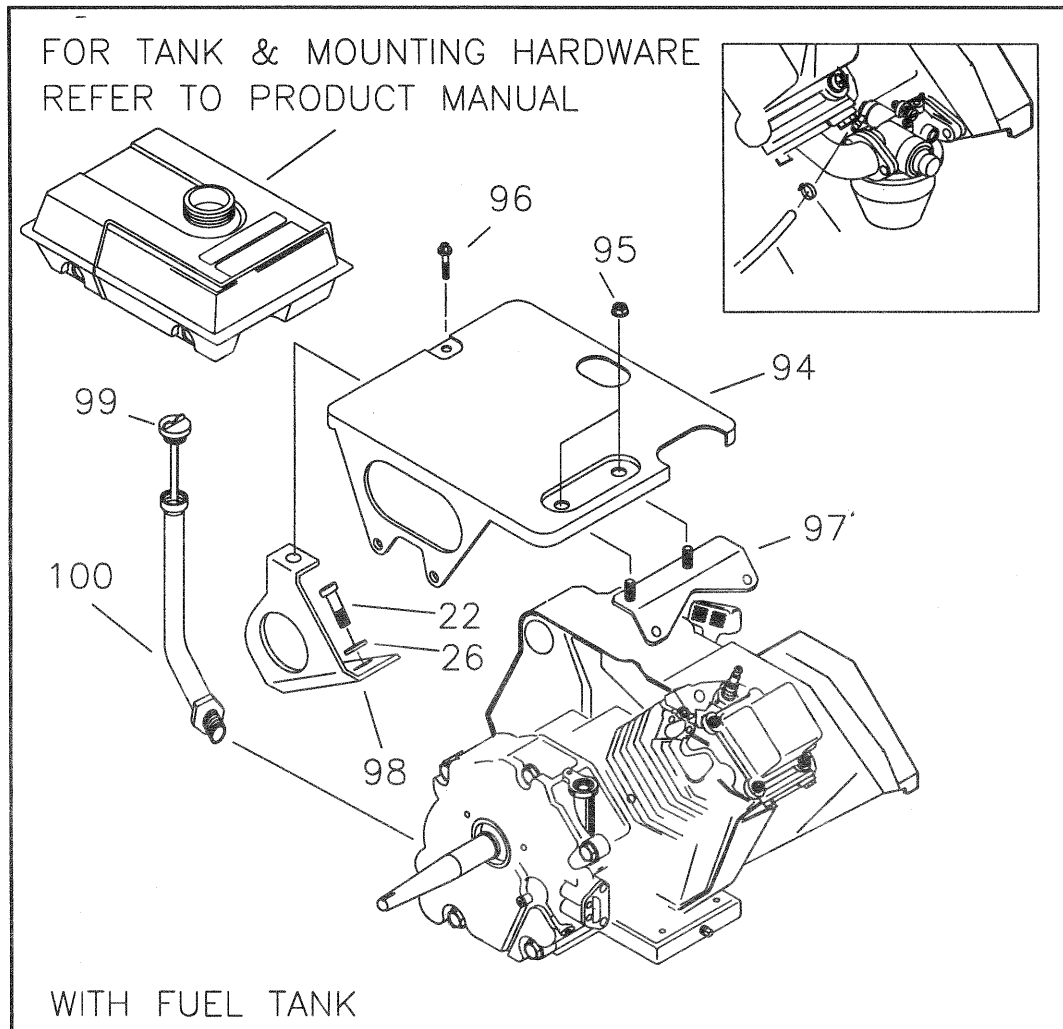


**AIR CLEANER AND CARBURETOR**

ITEM	DESCRIPTION	PART NO.	QTY.
31	Breather Hose	72745	1
32	Manifold Head Gasket	91039	1
33	M6 x 20 SHCS	40945	2
34	Carburetor Bolt	81647	2
35	M6 x 12 HHCS	66476	2
36	K Adapter	91028	1
37	M6 Lock Washer	22097	3
38	M6 Hex Nut	49813	2
39	Carburetor/Air Box Gasket	90970	1
40	M6 Ribbed Lock- washer	93873	2
41	Spitback Plate	91204	1
42	Carburetor/Manifold Gasket	89228	1
43A	320 Nikki Carburetor	93302A	1
43B	360 Nikki Carburetor	91187A	1
43C	410 Nikki Carburetor	A4600	1

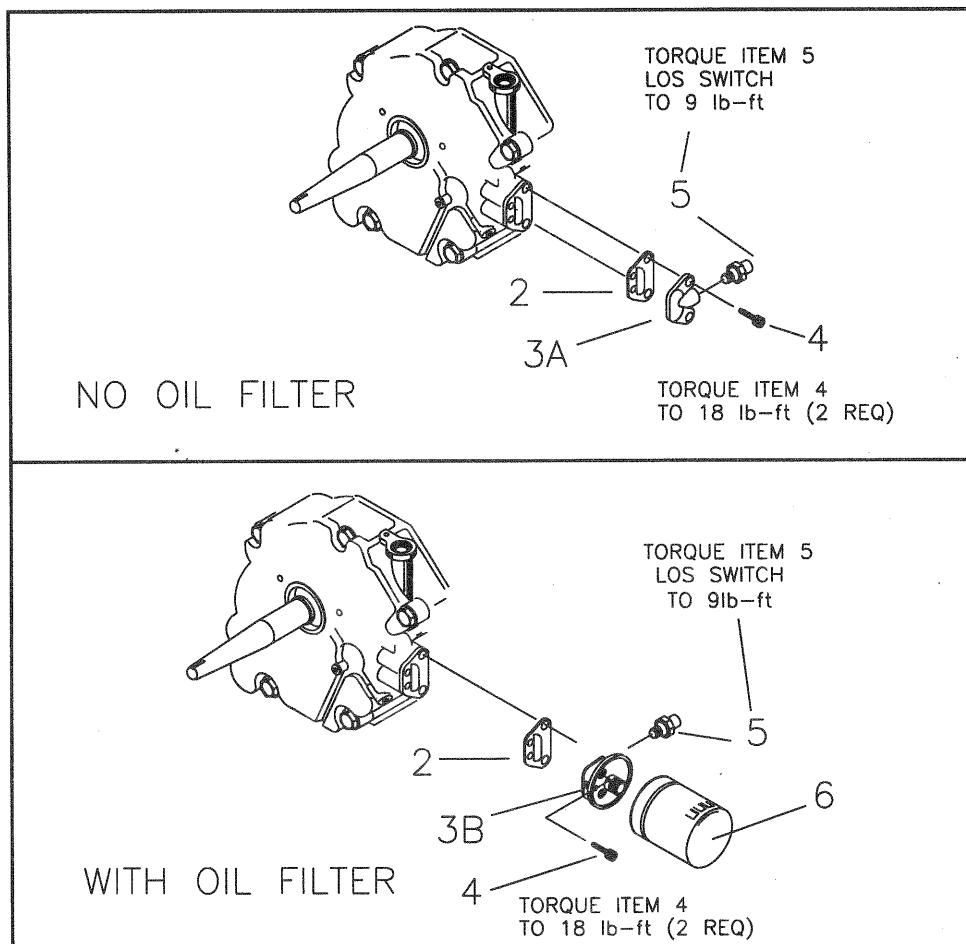
ITEM	DESCRIPTION	PART NO.	QTY.
44	Air Cleaner Base	73108A	1
45	M6 Flatwasher	49811	4
46	#8 x 3/8" Plastite Screw	59635	1
47	Air Filter	73111	1
48	Precleaner	81646	1
49	Choke Knob	83504	1
50	M6 x 16 HHCS	47411	2
51	Bracket Air Box	90827	1
60	1/4" ID Hose	30340	12"
61	Hose Clamp	48031C	1

EXPLODED VIEW — GAS TANK MOUNTING HARDWARE



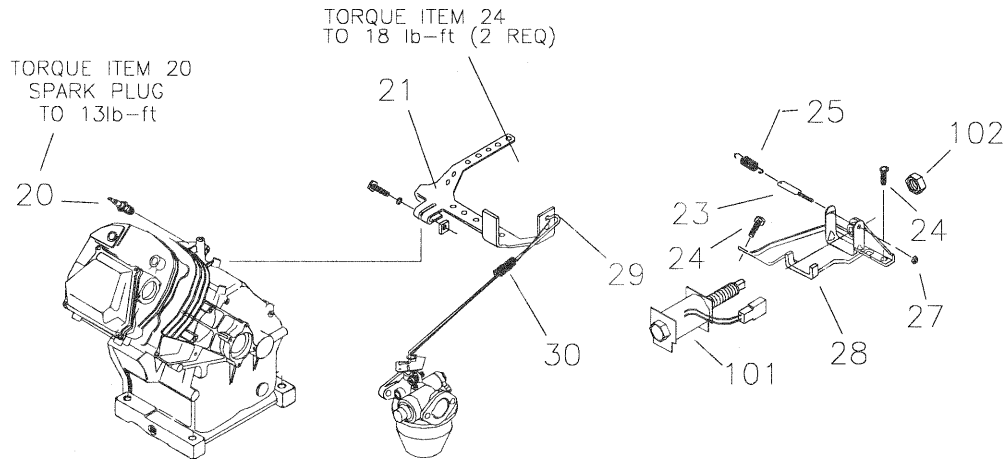
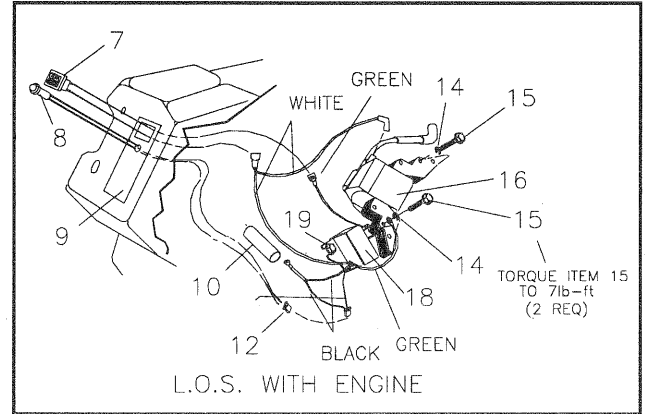
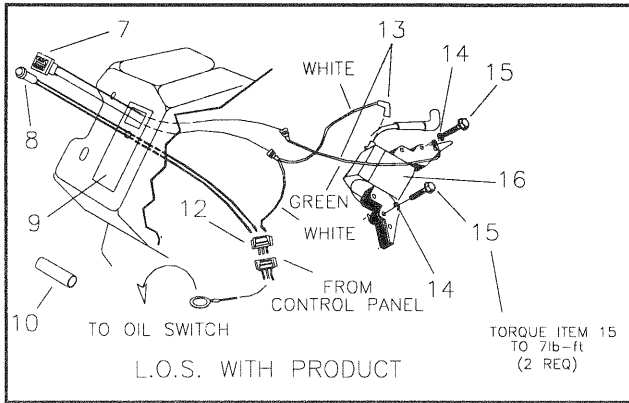
ITEM	PART #	QTY.	DESCRIPTION
22	40976	2	SHCS M8-1.25 X 20
26	22129	2	Lock Washer M8
94	B2348	1	Tank Cradle
95	52858	2	M8 Lock Nut
96	59012	2	M8 X 20 FLHCS
97	96083	1	Front Tank Bracket
98	96084	1	Rear Tank Bracket
99	89263	1	Dipstick ASM
100	A6558	1	Oil Fill/Check Tube

EXPLODED VIEW — OIL FILTER AND OPTIONAL OIL FILL TUBE



ITEM	PART #	QTY.	DESCRIPTION
2	86999	1	Oil Filter Gasket
3A	72709	1	Oil Blockoff
3B	94683	1	Oil Filter Adapter
4	49821	2	M8 X 30 SHCS
5	99236	1	Oil Press Switch
6	70185	1	Oil Filter

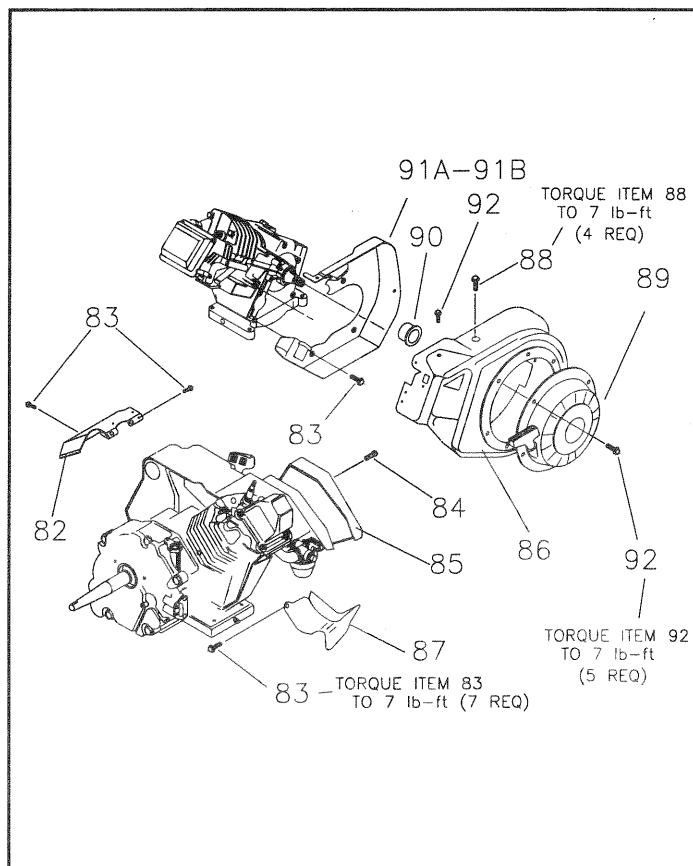
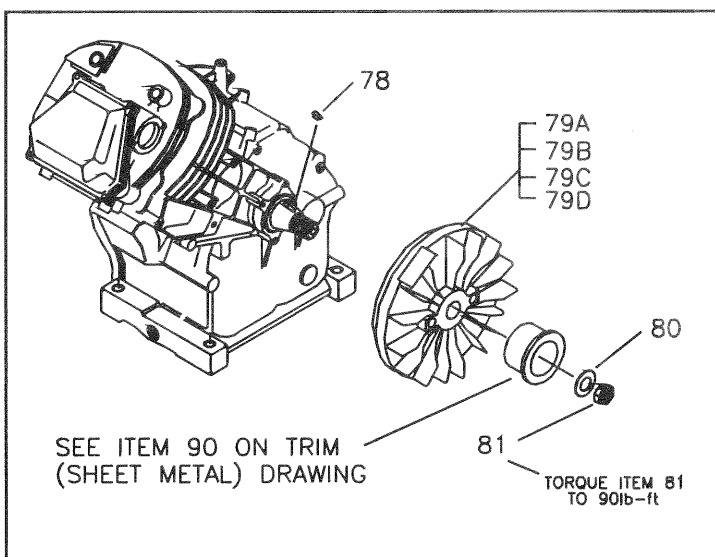
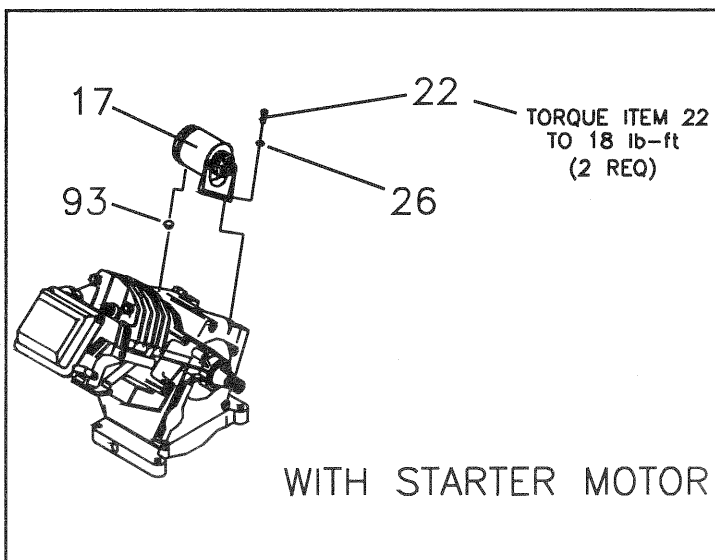
EXPLODED VIEW — LOW OIL SHUTDOWN AND GOVERNOR



ITEM	PART #	QTY.	DESCRIPTION
7	78653	1	Run/Stop Switch
8	85272	1	LED Assembly
9	93104	1	L.O.S. Decal
10	93611	1	Black Sleeving
12	84329	1	3 Pin Male HSG
13	92981	1	Wire Assembly
14	22097	2	M6 Lockwasher
15	92079	2	M6 X 30 Taptite
16	84542	1	Ignition Coil
18	87221B	1	L.O.S. Module
20	72347	1	Sparkplug

ITEM	PART #	QTY.	DESCRIPTION
21	72734	1	Governor Lever
23	83502	1	Adjust Screw
24	83512	2	M8 X 15 Taptite
25	73100	1	60Hz Gov. Spring
27	83503	1	M5 Lock Nut
28	73101	1	Governor Brkt.
29	72735	1	Governor Rod
30	72789	1	Anti-Lash Spring
101	83782	1	Idle Coil ASM
102	66311	1	M8 — 1.25 Jam Nut

EXPLODED VIEW — STEPPER MOTOR, FLYWHEEL, RECOIL STARTER



ITEM	PART #	QTY.	DESCRIPTION
17	21544	1	Starter Motor Assm.
22	40976	2	SHCS M8 — 1.25 X 20
26	22129	2	Lock Washer M8
78	82774	1	Woodruff Key
79A	SRV77147A	1	360 Flywheel
79B	SRV91222B	1	320/360 Flywheel Ring Gear
79C	SRV91222C	1	410 Flywheel Ring Gear
79D	SRV21745G	1	410 Flywheel
80	67198N	1	Conical Washer

ITEM	PART #	QTY.	DESCRIPTION
81	67890	1	M20 Hex Nut
82	88433	1	Top Wrapper
83	45756	7	M6 X 10 Taptite
84	78609	2	Cover Bolts
85	73104B	1	Air Box Cover
86	92437	1	Blower Housing
87	88434	1	Lower Wrapper
88	66476	4	M6 X 12 HHCS
89	96195	1	Recoil Assembly
90	96196	1	Recoil Cup
91A	73116C	1	Backplate
91B	73116A	1	Backplate, E. SRT
92	81668	5	M6 X 10 HHCS
93	B2160	1	Rubber Spacer



CALIFORNIA AND FEDERAL EMISSION CONTROL WARRANTY STATEMENT

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board (CARB) and the United States Environmental Protection Agency (EPA), together with Generac Power Systems, Inc. (Generac), are pleased to explain the Emission Control System Warranty on your new engine.* New utility, and lawn and garden equipment engines must be designed, built and equipped to meet stringent anti-smog standards for the state of California and the federal government. Generac will warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect, unapproved modification or improper maintenance of your engine.

Your emission control system may include parts such as the carburetor, ignition and exhaust systems. Generac will repair your engine at no cost to you for diagnosis, replacement parts and labor, should a warrantable condition occur.

MANUFACTURER'S EMISSION CONTROL SYSTEM WARRANTY COVERAGE:

Emissions control systems on 1997 and later model year engines are warranted for two years as hereinafter noted. If, during such warranty period, any emission-related component or system on your engine is found to be defective in materials or workmanship, repairs or replacement will be performed by a Generac Authorized Warranty Service Facility.

PURCHASER'S/OWNER'S WARRANTY RESPONSIBILITIES:

As the engine purchaser/owner, you are responsible for the completion of all required maintenance as listed in your factory supplied *Owner's Manual*. For warranty purposes, Generac recommends that you retain all receipts covering maintenance on your engine. However, Generac cannot deny warranty solely because of the lack of receipts or for your failure to ensure the completion of all scheduled maintenance.

As the engine purchaser/owner, you should, however, be aware that Generac may deny any and/or all warranty coverage or responsibility if your engine, or a part/component thereof, has failed due to abuse, neglect, improper maintenance or unapproved modifications, or the use of counterfeit and/or "grey market" parts not made, supplied or approved by Generac.

You are responsible for presenting your engine to a Generac Authorized Warranty Service Facility as soon as a problem occurs. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

Warranty service can be arranged by contacting either your selling dealer or a Generac Authorized Warranty Service Facility. To locate the Generac Authorized Warranty Service Facility nearest you, call our toll-free number:

1-800-333-1322

IMPORTANT NOTE: This warranty statement explains your rights and obligations under the Emission Control System Warranty (ECS Warranty), which is provided to you by Generac pursuant to California and federal law. See also the "Generac Limited Warranties for Generac Power Systems, Inc.," which is enclosed herewith on a separate sheet, also provided to you by Generac. The ECS Warranty applies **only** to the emission control system of your new engine. If there is any conflict in terms between the ECS Warranty and the Generac Warranty, the ECS Warranty shall apply except in circumstances where the Generac Warranty may provide a longer warranty period. Both the ECS Warranty and the Generac Warranty describe important rights and obligations with respect to your new engine.

Warranty service can be performed only by a Generac Authorized Warranty Service Facility. When requesting warranty service, evidence must be presented showing the date of the sale to the original purchaser/owner. The purchaser/owner shall be responsible for any expenses or other charges incurred for service calls and/or transportation of the product to/from the inspection or repair facilities. The purchaser/owner also shall be responsible for any and/or all damages or losses incurred while the engine is being transported/shipped for inspection or warranty repairs.

If you have any questions regarding your warranty rights and responsibilities, you should contact Generac at the following address:

ATTENTION WARRANTY DEPARTMENT
GENERAC POWER SYSTEMS, INC.
P.O. BOX 8
WAUKESHA, WI 53187

**EMISSION CONTROL SYSTEM WARRANTY**

Emission Control System Warranty (ECS Warranty) for 1997 and later model year engines:

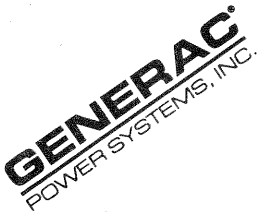
- (a) **Applicability:** This warranty shall apply to 1997 and later model year engines. The ECS Warranty Period shall begin on the date the new engine or equipment is purchased by/delivered to its original, end-use purchaser/owner and shall continue for 24 consecutive months thereafter.
- (b) **General Emissions Warranty Coverage:** Generac warrants to the original, end-use purchaser/owner of the new engine or equipment, and to each subsequent purchaser/owner, that each of its engines is ...
- (1) Designed, built and equipped so as to conform with all applicable regulations adopted by the EPA and CARB pursuant to their respective authority, and
 - (2) Free from defects in materials and workmanship which, at any time during the ECS Warranty Period, may cause a warranted emissions-related part to fail to be identical in all material respects to the part as described in the engine manufacturer's application for certification.
- (c) The ECS Warranty only pertains to emissions-related parts on your engine, as follows:
- (1) Any warranted, emissions-related parts that are not scheduled for replacement as required maintenance in the *Owner's Manual* shall be warranted for the ECS Warranty Period. If any such part fails during the ECS Warranty Period, it shall be repaired or replaced by Generac according to Subsection (4) below. Any such part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period.
 - (2) Any warranted, emissions-related part that is scheduled only for regular inspection as specified in the *Owner's Manual* shall be warranted for the ECS Warranty Period. A statement in such written instructions to the effect of "repair or replace as necessary" shall not reduce the ECS Warranty Period. Any such part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period.
 - (3) Any warranted, emissions-related part that is scheduled for replacement as required maintenance in the *Owner's Manual* shall be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part shall be repaired or replaced by Generac according to Subsection (4) below. Any such emissions-related part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period prior to the first scheduled replacement point for such emissions-related part.
 - (4) Repair or replacement of any warranted, emissions-related part under this ECS Warranty shall be performed at no charge to the owner at a Generac Authorized Warranty Service Facility.
 - (5) When the engine is inspected by a Generac Authorized Warranty Service Facility, the owner shall not be held responsible for diagnostic costs if the repair is deemed warrantable.
 - (6) Generac shall be liable for damages to other original engine components or approved modifications proximately caused by a failure under warranty of any emission-related part covered by the ECS Warranty.
 - (7) Throughout the ECS Warranty Period, Generac shall maintain a supply of warranted emission-related parts sufficient to meet the expected demand for such emission-related parts.
 - (8) Any Generac authorized and approved emission-related replacement part may be used in the performance of any ECS Warranty maintenance or repairs and will be provided without charge to the purchaser/owner. Such use shall not reduce Generac's ECS Warranty obligations.
 - (9) Unapproved, add-on, modified, counterfeit and/or "grey market" parts may not be used to modify or repair a Generac engine. Such use voids this ECS Warranty and shall be sufficient grounds for disallowing an ECS Warranty claim. Generac shall not be held liable hereunder for failures of any warranted parts of a Generac engine caused by the use of such an unapproved, add-on, modified, counterfeit and/or "grey market" part.

EMISSION RELATED PARTS INCLUDE THE FOLLOWING:

- | | |
|---|---|
| 1) Fuel Metering System: | 2) Air Induction System including: |
| 1.1) Gasoline carburetor assembly and its internal components (if so equipped). | a) Intake pipe/manifold |
| a) Fuel filter (if so equipped) | b) Air cleaner |
| b) Carburetor gaskets | 3) Ignition System including: |
| c) Fuel pump (if so equipped) | a) Spark plug |
| 1.2) LPG carburetion assembly and its internal components (if so equipped). | b) Ignition module |
| a) Fuel controller (if so equipped) | 4) Catalytic Muffler Assembly (if so equipped) including: |
| b) Mixer and its gaskets (if so equipped) | a) Muffler gasket |
| c) Carburetor and its gaskets (if so equipped) | b) Exhaust manifold |
| d) Primary gas regulator (if so equipped) | 5) Crankcase Breather Assembly including: |
| e) LP liquid vaporizer (if so equipped) | a) Breather connection tube |

*Generac engine types covered by this warranty statement include the following:

- 1) Utility
- 2) Lawn and Garden Equipment
- 3) Recreational Vehicle (RV) Generator
- 4) Industrial Mobile (IM) Generator



Generac GN-320/360/410 Engine



GENERAC POWER SYSTEMS, INC.

TWO YEAR LIMITED WARRANTY FOR "GN" ENGINES

Generac Power Systems, Inc. warrants to the original purchaser that the engine will be trouble free from defects in material or workmanship for the items and period set forth below from the date of original purchase. This warranty is not transferable. This warranty pertains to "GN" engines utilized to power equipment within the lawn and garden industry. Examples are, but not limited to generators, pressure washers, air compressors, welders, lawn tractors, snow blowers, mowers, edgers and pumps.

ENGINE COVERAGE

CONSUMER*

COMMERCIAL*

2 YEARS (2 YEAR PARTS ONLY)

1 YEAR

With the exception of European Community Countries, all engines bound for export shall be warranted for one (1) year in consumer applications, and 90 days in commercial applications as defined below.

NOTE: For the purpose of this warranty, "consumer use" means personal residential household use by original purchaser. This does not apply to engines used in generators used for prime power in place of utility. "Commercial use" means all other uses, including rental, construction and income producing purposes. Once an engine has experienced commercial use, it shall thereafter be considered a commercial use for the purpose of this warranty.

DURING SAID WARRANTY PERIOD, GENERAC POWER SYSTEMS, INC. WILL, AT ITS OPTION, REPAIR OR REPLACE ANY PART WHICH, UPON EXAMINATION BY GENERAC POWER SYSTEMS, INC. IS FOUND TO BE DEFECTIVE UNDER NORMAL USE AND SERVICE. Starting batteries are not warranted by Generac Power Systems, Inc. All transportation costs under warranty, including return to the factory if necessary, are borne by the purchaser and paid by him. This warranty does not include normal maintenance and service and does not apply to engines or parts which have been subjected to improper or unauthorized installation, misuse, negligence, accident, overloading, over speeding, improper maintenance, improper repair or improper storage so as, in Generac Power Systems, Inc.'s judgement, to adversely affect its performance and reliability.

NORMAL WEAR: As with all mechanical devices, the "GN" Series engines requires periodic service and parts replacement (example: oil filter) in accordance with the owner's manual schedules maintenance to insure proper performance of the engine. This warranty will not cover repair when normal use has exhausted the life of a part or engine.

There is no other expressed warranty. GENERAC POWER SYSTEMS, INC. HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE TO THE EXTENT PERMITTED BY LAW. The duration of any implied warranties which cannot be disclaimed is limited to the time period (one year) as specified in the expressed warranty. Liability for consequential, incidental, or special damages under any and all warranties is excluded to the extent permitted by law. Some states do not allow limitations on how long an implied warranty lasts, or the exclusions or limitations of consequential or incidental damages, so the limitations or exclusions do not apply. This warranty provides the original purchaser specific legal rights and the original purchaser may also have other rights, which vary state to state.

For service, please see your nearest Generac Power Systems, Inc. Authorized Service Dealer or call (800) 333-1322. Warranty service can only be performed by a Generac Power Systems, Inc. Authorized Service Dealer. This warranty does not apply to service performed at any other facility or dealership. At the time of requesting warranty service, evidence of the original purchase date must be presented.

GENERAC POWER SYSTEMS, INC.

P.O. BOX 8

WAUKESHA, WI 53187