One BOB-CAT Lane, P.O. Box 469
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INFORMATION BULLETIN

Propane System Maintenance Checklist

Date: 3/11/2013

Bulletin No: JC-13-09

Product Type: BOB-CAT PREDATOR PRO 30 GENERAC LP

Customer Issue: Unfamiliarity with Propane engine and system maintenance.

Action Required: As with all of our BOB-CAT mowers, each respective engine OEM provides Service and Warranty support for the engines that we choose to utilize on our equipment. We do this because each engine OEM offers the most knowledgeable expertise.

Any type of engine requires a good maintenance program. The next two pages contain general maintenance and daily operation tips that will keep your propane powered BOB-CAT PREDATOR PRO running as designed.

For more specific engine related questions and specs not mentioned here please contact your GENERAC Dealer support line by dialing 800-883-7535. If you're not a certified GENERAC Dealer already, you can become one by calling this number. They will help you locate your regional GENERAC Distributor that can get your store setup.

Important Notice: Be sure to check your local and state regulations before servicing, for any special licensing and safety requirements.

Products Involved: 942255F, 942256F, 942509G, 942509J, 942510G, 942510J, 942511G & 942511J, 942524J.

If you have any questions, please contact our Customer Service Department at 920-699-2000.

This bulletin is relevant to the departments checked below. Please circulate as appropriate.

SERVICE	WARRANTY	SALES	PARTS
X	X	X	X

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Following are items that effect performance on the GENERAC Guardian Propane engines.

1. Compression ratio and spark advance: Propane units have a 9.5:1 compression ratio and a 33° timing advance versus 8.5:1 and 29° for the gasoline version. Propane has a higher octane rating which allows the increase in compression and timing advance. There is no compression release so the increase in compression ratio increases the demand on the starter which requires a well maintained battery.

2. Battery: A minimum of 525 cold cranking amps (CCA) is required; 525CCA @ 0 and 630 @ 32 degrees is the specification. The battery needs to be in good condition. Keep in mind a relatively new battery that has sat or been treated badly, may not deliver its rated output. The reason for the high CCA requirement is the high compression ratio and the relative difficulty in firing off propane. A minimum cranking speed of 300 rpm is required to start. If cranking speed drops below 270 rpm, auto ignition can occur and cause reverse rotation or backfire through the air cleaner.

3. Temperature: 45°F is the dividing line between cold and warm for starting. Below 45°, starting is more affected and having the engine and starting system in good tune becomes most important.

4. The fuel regulator is solenoid operated by both the key and engine oil pressure. The engine needs to turn over several times, fast enough to produce oil pressure, which activates the fuel solenoid and permits the proper flow of fuel. When the engine is shut off, the regulator discontinues delivering fuel once the engine flywheel comes to a complete stop.

5. There is no choke. Starting should only be attempted with the throttle lever at the ½ position. The ½ throttle lever setting will provide some choking action to help draw the proper fuel/air mixture ratio into the manifold.

6. Valve adjustment: Solid lifters are employed in this engine. If lifters are not adjusted correctly, a path can exist for the flame front to travel from the cylinder into the intake manifold and result in backfire through the throttle body. Valves need to be adjusted after the first 50 hours of operation and every 100 hours thereafter. Proper valve adjustment also creates proper vacuum to open the regulator diaphragm and flow fuel.

7. Propane has oil added to it. The oil carries the 'gas' smell. For the most part it is mixed with the propane and gets burned as the propane is used. Sometimes too much oil can be added or there is residual oil left at the bottom of the tank. The regulator vaporizes liquid propane. To feed liquid to the regulator, the pickup tube is angled toward the bottom of the tank as mounted on the machine. If the operator tries to run until the engine totally stops from lack of fuel, this oil can be drawn into the regulator. Too much oil in the regulator can rupture the diaphragm. It can also get in the intake system and cause backfire or poor performance. Operators should switch tanks as soon as the engine starts sputtering from lack of fuel.

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There is a kidney shaped cover on the engine's throttle body (carburetor) held on with 3 screws. This can be removed and some machined passages will be visible. These passages are part of the idle circuit. A film of oil is normal. If liquid oil is pooling, that indicates excess oil has gotten into the regulator. The regulator cover can also be removed. Again a film of oil is normal, but pooling oil is not. Pooled oil should be removed.

Following is the Propane System Maintenance checklist to be noted and maintained:

1. Adjust valve lash after the first 50 hours of operation and every 100 hours thereafter. (GENERAC provides this specification)

2. Check battery for 525 CCA delivery potential (525CCA @ 0 and 630 @ 32 degrees), engine cranking startup speed will then be at the minimum needed 300 rpm.

3. Set spark plug gap to .025 for easier starting.

4. Use 5W-30 Synthetic when performing an engine oil change.

5. Instruct operators to start engine at 1/2 throttle position.

6. Instruct operators to change tanks as soon as the engine starts to sputter from lack of fuel to prevent excess oil from entering the regulator.

7. Replace the serviceable filter in the fuel shutoff solenoid valve as needed. The periodic replacement of this filter will depend on many variables including running completely out of fuel before changing tanks.

8. Check for pooling oil in the throttle body and regulator. If pooling oil is present then the excess amount should be removed. If uncomfortable with cleaning oil from the regulator, replace it. Replacement of regulator would not be covered by warranty under this circumstance.

NOTE: BOB-CAT does provide service and warranty support for the propane/fuel regulator and the shut off solenoid filter assembly.