

Limited Warranty

AltFuel LLC.,
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Warrants:

That all equipment manufactured by it be free from defects in material and workmanship under normal use and service when installed and used in accordance with all applicable state and local laws and regulations.

Defects in material or workmanship shall be corrected, at the option of AltFuel LLC, by repair, replacement or refund. In the event a repair is not commercially practicable or cannot be timely made, the item will be replaced, or with the consent of the consumer, a refund may be made.

This warranty does not cover damage resulting from abuse, misuse, negligence or accident; nor from problems resulting from failure to comply with all applicable state and local laws and regulations or problems caused, in whole or in part, by alteration or modification to the product.

This warranty does not cover transportation to and from service locations, loss of time, inconvenience, commercial loss, loss of use, incidental charges, or other consequential damages.

This warranty shall be for the term of five years from the date of sale by the consumer to the customer. Upon demand by AltFuel LLC the consumer shall produce the original contract or receipt to identify the date of purchase.

Disclaimer

Purchase of this kit is at your own risk, and we are not liable for any damage or consequential damage that may be caused by inappropriately or appropriately installed kits. We are not responsible for any injury or harm caused by the use of this kit. We are not responsible for any engines or engine damage caused by inappropriately or appropriately installed kits or due to modification by other parties. Also, it is important to check your manufacturers engine warranty, which may be voided. We are not liable nor responsible for anything that may occur while operating the AltFuel conversion kit.

AltFuel products are not endorsed or supported by any third party manufacturers or vendors.



WARNING: These products contain a chemical known to the state of California to cause cancer and birth defects or reproductive harm



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Green Conversion Kit® for Small Engines MODEL 1

Model 1-A is designed for use on engines that have an accessible fuel intake barb on the carburetor, or a similar way to deliver the propane fuel into the engine. You should see a fuel line running from the gas tank to the fuel intake barb on the carburetor. This line will need to be replaced with the certified 1/4" rubber LP hose during installation (Pages 3-5).



Model 1-B

Model 1-B is designed for engines without an accessible fuel barb, such as engines with carburetors mounted to the gas tank. Model 1-B includes a fitting to thread into a suitable area on the carburetor (Pages 6-8).



- * If you do not see pictures of the specific engine you are converting, do not be alarmed. Please follow the text in these instructions. The conversion process is similar on most engine types.
- ** If your engine utilizes an OHC/OHV system, you will need to use our Model 2 kit.

** PATENT PENDING **

Tips Prior To Installation

This kit will not work on two-cycle engines and engines that require a gasoline and oil mix.

This conversion kit will not work on cars.

This conversion kit is not designed to work on riding mowers.

Do not use mapp gas cylinders (tall slender tanks) on the AltFuel Green Conversion Kit.

Do not modify conversion kit by any means.

The AltFuel Green Conversion Kit is designed to be fueled with a 1lb disposable propane fuel cylinder. These are the short, fat green cylinders that are typically used on camp stoves and other small grills. The tall, slender 1lb cylinders that are used for torches will not perform as well, due to their smaller surface area and the unique characteristics of liquid propane. Optional larger cylinders, mounts and supply lines are also supported and available from AltFuel.

Thank you for purchasing the AltFuel Green Conversion Kit

Included in the Model 1 kit:

The AltFuel Green Conversion Kit Model 1 is made up of two key components:

- 1) Regulator Assembly
 - 1 – Governor spring
 - 1 – Bail spring
 - 1 – Line clamp (Model 1-A only)
 - 3 – Zip-ties
 - 1 – AltFuel “No Gas” sticker
 - 1 – Set of Model 1 instructions
- 2) 1/4” certified rubber LP fuel line (custom length dependent on application)

Model 1-A: Prior to Installation

For best engine life and performance, we recommend that you check your oil and replace it with a high-grade synthetic blend of motor oil applicable to your engine before installing the AltFuel Green Conversion Kit. Also, it is recommended that you check the spark plug on the engine you intend to convert. Clean or replace the spark plug to ensure proper and easy startup. Make sure the engine air filter is new or clean and free of dirt and debris. Any engine that you intend on converting to propane fuel should be in good running condition before attempting to install this kit.

Tools needed:

- 1 – Siphon
- 1 – Gas tank to siphon gasoline into
- Socket set with 10mm socket
- Utility Knife/Scissors
- Flat head screw driver and hex head screw driver
- 1 – Needle nose pliers
- 1 – Flat nose pliers
- 1 – 1 lb propane canister (We recommend buying 2 propane cylinders)

Dual Fuel Options

If you happen to run out of propane, you have the option to run your engine on gasoline. You will need to refer to installation Step 4 in the instruction manual. Simply disconnect the propane fuel line and reattach the gasoline fuel line. Installation Step 6, in the instruction manual, will also need to be reversed by reinstalling the original spring.

The engine can now run on gasoline.

DO NOT RUN PROPANE AND GASOLINE AT THE SAME TIME!

To return to propane fuel: Siphon all gasoline from the fuel tank and follow Installation steps 1-7 again.

WE ONLY RECOMMEND REVERTING BACK TO GASOLINE IN AN EMERGENCY.



REFUELING THE ENGINE

NEVER ALLOW SMOKING OR BE NEAR AN OPEN FLAME WHEN MAINTAINING THE FUEL SYSTEM ON THIS ENGINE.

Always handle LP with care. LP is a safe but highly flammable fuel.

- Always close valves on cylinders when not in use.
- Use only cylinders that meet Code #49 of the federal regulations #173.34.
- Use only LP fuel.
- Never attempt to remove an LP cylinder while mower is running.
- Cylinders must be filled by trained personnel only.

When removing and replacing fuel lines on the LP tank, make sure the nozzle is free of any debris that might clog or cause damage to the nozzle. Damage to or debris in the nozzle may cause a failure of the check valve, which may result in seal compromise and fire hazard.

Removing Fuel Tank For Refueling

Ensure that the fuel supply valve is turned off before removing tank for refueling. Remove fuel line from tank by turning coupling in a counter clockwise direction. This is a good time to inspect washers on the coupling for wear. If wear or damage is visible, replace worn parts to prevent leakage. Release the straps (2) which secure the tank to the machine. Carefully lift cylinder straight up to remove from machine. Transport tank to an authorized LP fuelling station for refueling. If exchanging tanks, be sure to use cylinders that meet codes and regulations referenced above.

CAUTION: Ensure tanks are properly secured and positioned where damage cannot occur to the tank and valves during transportation.

Installing Fuel Tank

Reverse the above procedure. Be sure to check for leaks after installing tank. Leaks must never be checked with a flame. Always check for seal compromise with a spray bottle filled with soapy water and look for bubbles.

Transporting Fuel Tank(s)

The owner/operator is responsible for transporting the propane cylinder in accordance with local, state, and federal laws.



Alternate Model 1-A Installation

Step A: Remove the air filter cover and air filter from the engine (fig 19 & 20).



Fig 19



Fig 20

Step B: Remove air filter mounting plate from the carburetor (fig 21 & 22).



Fig 21



Fig 22

Step C: Disconnect the gasoline fuel line from the fuel intake barb (fig 23 & 24).



Fig 23



Fig 24

Step D: Secure the AltFuel Green Conversion Kit regulator system to the handlebar in desired position. The regulator system may be placed on the left or right side of the handlebar. Secure tightly with supplied clamps. The supplied propane fuel line may be a little long, this is to ensure that you have the option to fold and transport the mower without crimping the line. Once the regulator system is secured in place, Attach the propane fuel line to the conversion kit and run it down the handlebar to the fuel intake barb. Make sure there is enough slack in the line to fold the handlebar, and then carefully cut the excess propane line with a utility knife or scissors. When the line is cut to the desired length, secure it to the fuel intake barb with supplied hose clamp. The propane fuel line must be securely and tightly clamped to the fuel intake barb for safe and proper operation.

Step E: Reassemble the air filter mounting plate, air filter, and cover.

Step F: Attach spring to lever on the shutoff valve and bail by securely bending around the bail.
(This conversion kit's default configuration is designed to be mounted on the left-side of your mower. In some applications it may be required to rotate the kit and bail valve to fit the right-side of your mower.)

** RESUME with Step 8 on page 5



1-A Installation

Step 1: Siphon any gasoline out of the fuel tank. (fig 3)



Fig 3

Step 2: Start engine in order to consume all gasoline in the carburetor. Run engine until it stalls, then attempt to restart the engine until it will no longer run. This is done to ensure all gasoline is used and none remains in the carburetor.

** Supplemental Model 1-A installation steps on page 12 for alternate intake options.

Step 3: Remove the air filter cover and air filter from the engine (fig 4 & 5). Carefully remove the 3 bolts, and pull off the air filter mounting plate to access the carburetor. (Be careful not to strip the bolts or damage any seals!)



Fig 4



Fig 5

Step 4: Disconnect the gasoline fuel line from the gas tank and carburetor with a pair of pliers. (Be sure to keep this fuel line in a safe place for the dual fuel option. See "Dual Fuel Option" for more details.)

Step 5: Secure the AltFuel Green Conversion Kit regulator system to the handlebar in desired position (fig 6). The regulator system may be placed on the left or right side of the handlebar. Secure tightly with supplied clamps. The supplied propane fuel line may be a little long; this is to ensure that you have the option to fold and transport the mower without crimping the line. Attach the supplied propane fuel line to the regulator system and run it down the handlebar to the fuel intake barb (fig 7). Make sure there is enough slack in the line to fold the handlebar, and then carefully cut the excess propane line with a utility knife or scissors. When the line is cut to desired length, secure it to the fuel intake barb with supplied hose clamp. Propane fuel line must be securely and tightly clamped to the fuel intake barb for safe and proper operation.



Fig 6



Fig 7

Step 6: Attach spring to lever on the shutoff valve and bail by securely bending around the bail.
(This conversion kit's default configuration is designed to be mounted on the left-side of your mower. In some applications it may be required to rotate the kit and bail valve to fit the right-side of your mower.)



Step 7: (Does not apply to alternate installation) Remove engine cover to adjust the air/fuel ratio. You will see a black spring connected to the choke control arm and running to a plate on the side of the engine (*fig 8*). This spring must be replaced with the governor spring supplied in the kit. Attach the replacement spring exactly the same way as the original (*fig 9*). This stronger spring will keep the choke closed during operation thus lowering the air-to-fuel ratio to that needed by propane fuel. (Be sure to keep the original spring in a safe place for the dual fuel option. See “Dual Fuel Option” for more details.)

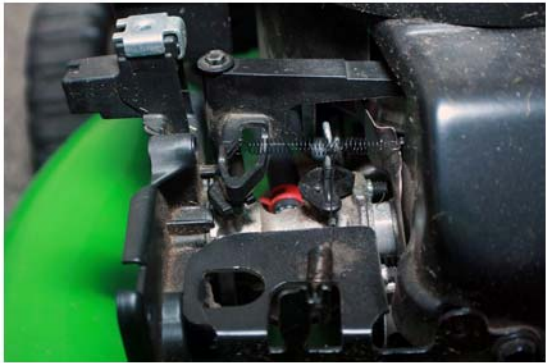


Fig 8

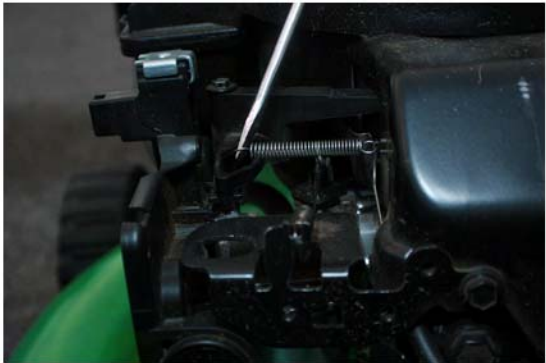


Fig 9

Step 8: Reassemble the air filter mounting plate by replacing the 3 bolts removed in step 3. Be sure to reattach the air circulation hose behind the air filter mounting plate. Replace the air filter and air filter cover. (Be careful not to strip the bolts or damage any seals!)



Fig 10



Fig 11

Step 9: Secure the propane fuel line to the handlebar with supplied zip-ties.

Step 10: Place “No Gasoline” sticker (*fig 12*) on fuel tank cap or in a visible location.



Fig 12

If you choose to remove the AltFuel Green Conversion Kit from the engine, you will need to follow Step 4 and Step 6 in the installation instructions. Reconnect the original fuel line and replace the governor spring with the original spring. (YOU DO NOT HAVE TO DISCONNECT AND CONNECT THE CONVERSION KIT AFTER EVERYTIME YOU USE YOUR ENGINE. THIS IS ONLY IF YOU DO NOT WANT THE CONVERSION KIT ON THE ENGINE.)



Cold Start

Step 1: Attach propane cylinder to the conversion kit and open the cylinder valve.

Step 2: Depress bail on mower to open the safety valve.

Step 3: Turn the fuel control valve on 1 full turn for 5 seconds to purge the regulator and line of air.

Step 4: Turn the fuel control valve off.

Step 5: Turn the fuel control valve on ¼ of a turn.

Step 6: Pull starting cord hard and fast or engage electric starter. As the engine fires, increase the amount of fuel to the engine by slowly opening the fuel control valve. If engine does not start, adjust the fuel control valve higher or lower and repeat. The amount of fuel needed to start the engine will vary depending on engine size and model.

Step 7: After engine has started and is up to speed, lean out the fuel flow as low as possible by adjusting the fuel control valve lower while maintaining engine speed.

Warm Start

Step 1: Attach propane cylinder to the conversion kit and open the cylinder valve.

Step 2: Turn the fuel control valve on ¼ of a turn.

Step 3: Pull starting cord hard and fast or engage electric starter. As the engine fires, increase the amount of fuel to the engine by slowly opening the fuel control valve. If engine does not start, adjust the fuel control valve higher or lower and repeat. The amount of fuel needed to start the engine will vary depending on engine size and model.

Step 4: After engine has started and is up to speed, lean out the fuel flow as low as possible by adjusting the fuel control valve lower while maintaining engine speed.

How To Stop Your Newly Converted Propane Engine

Step 1: Turn off the engine.

Step 2: Shut off fuel flow by releasing the bail and closing the fuel control valve.

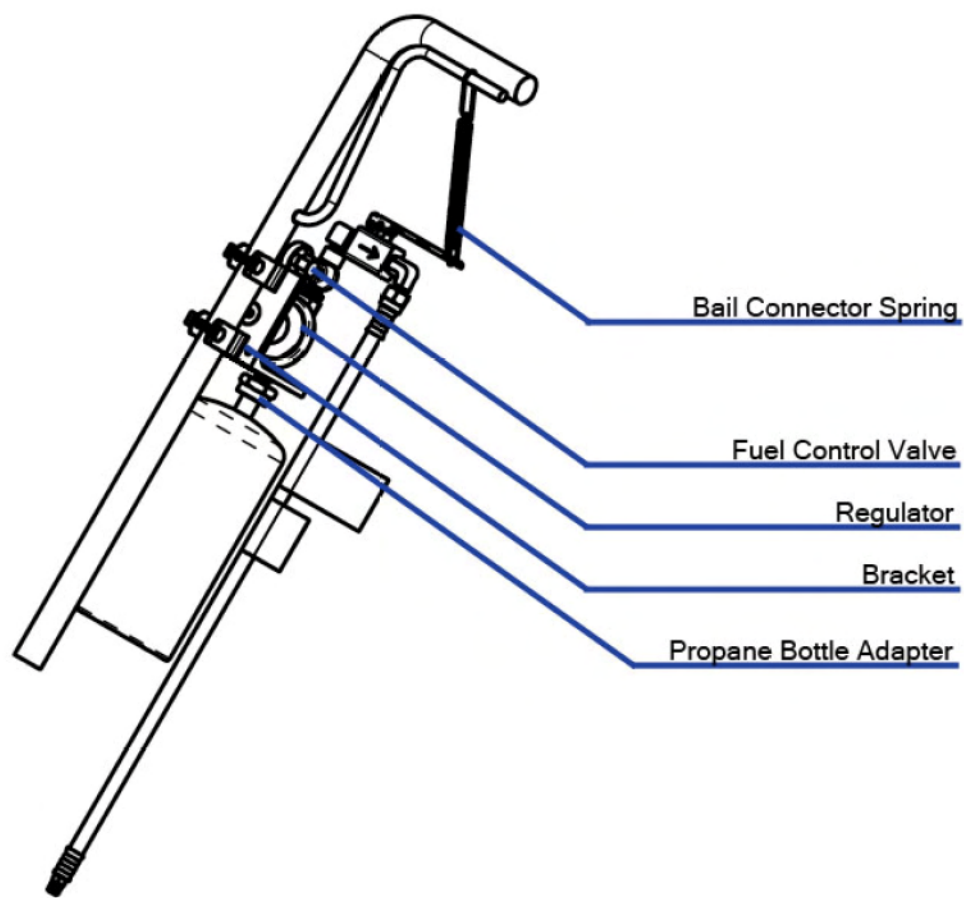
Step 3: Disconnect the propane cylinder and store it in a safe place.
(Please read the back of the propane cylinder for storing and applicable Federal laws.)

WARNING: Fuel control valve must be closed immediately when engine is not in operation.



Quick Checklist Before Starting Your New Propane Engine:

- Make sure you have read and fully understand all warnings and disclaimers concerning converting and operating your mower with the AltFuel Green Conversion Kit.
- Make sure you have put the “No Gasoline” sticker onto the gas tank or in a visible location on the mower.
- Make sure oil is in new or good condition.
- Make sure spark plug has been cleaned or is brand new.
- Make sure air filter is new or clean and free of dirt and debris.
- Make sure all seals are in their original positions and are in good, clean condition.
- Make sure that the conversion kit is in a desirable position for starting and stopping purposes.
- Make sure every part has been returned to its proper position and is secured tightly.
- Be sure to test any newly installed components for leaks by spraying with soapy water.
- Watch for growing bubbles on the conversion kit. If any leaks are detected please contact AltFuel.



MODEL 1-B: Prior to Installation

For best engine life and performance, we recommend that you check your oil and replace it with a high-grade synthetic blend of motor oil applicable to your engine before installing the AltFuel Green Conversion Kit. Also, it is recommended that you check the spark plug on the engine you intend to convert. Clean or replace the spark plug to ensure proper and easy startup. Make sure the engine air filter is new or clean and free of dirt and debris. Any engine that you intend on converting to propane fuel should be in good running condition before attempting to install this kit.

Tools Needed:

- 1 – Siphon
- 1 – Gas tank to siphon gasoline into
- Flat head screw driver and hex head screw driver
- 1 – 1 lb propane canister (We recommend buying 2 propane cylinders)
- 1 – Drill
- 1 – 3/8” drill bit

** IF YOUR CARBURETOR IS METAL, a tap is required for Step 4 of these instructions.

Tap options could include either:

- 3/8” straight
- 1/4” NPT

Dual Fuel Options

If you happen to run out of propane, you have the option to run your engine on gasoline. You will need to carefully remove the thread fitting from the carburetor then cover the 3/8 inch hole with a piece of heavy duty tape. Your mower will now be back to its original setup.

The engine can now run on gasoline.

DO NOT RUN PROPANE AND GASOLINE AT THE SAME TIME!

To return to propane fuel: Siphon all gasoline from the fuel tank and follow Installation steps 1-7 again.

WE ONLY RECOMMEND REVERTING BACK TO GASOLINE IN AN EMERGENCY.



1-B Installation

Step 1: Siphon any gasoline out of the fuel tank. (*fig 13*)

Step 2: Start engine in order to consume all gasoline in the carburetor. Run engine until it stalls, then attempt to restart the engine until it will no longer run. This is done to ensure all gasoline is used and none remains in the carburetor.

Step 3: Remove the air filter in order to access the carburetor.

Step 4: Drill a hole into the carburetor with a 3/8 inch drill bit between the primer and air circulation tube (*fig 14*). Make sure when drilling the 3/8 inch hole into the carburetor that it is in a secure spot on the carburetor. (Alternately, a tap may be needed as mentioned in the 'Tools Needed' section on page 6.)

Step 5: Use a shop vacuum and be sure to completely clean out all debris from the drilling out the carburetor so that debris does not make its way into the engine.

Step 6: Thread the fitting on the end of the certified propane line into the newly drilled hole. (*fig 15*)

Step 7: Reattach the air filter and air filter cover. Make sure all parts are secured properly before moving on to the next step. (*fig 16*)

Step 8: Secure the AltFuel Green Conversion Kit regulator system to the handlebar in desired position. The regulator system may be placed on the left or right side of the handlebar. Secure tightly with supplied clamps. Attach the propane fuel line to the conversion kit and secure it to the handlebar with the supplied zip-ties. Be sure to leave enough slack so that the handlebar can be folded. The propane line may be a little long, this is to ensure that you have the option to fold and transport the mower without crimping the line (*fig 17*)



Fig 13



Fig 14



Fig 15



Fig 16



Fig 17

Step 9: Attach spring to lever on the shutoff valve and bail by securely bending around the bail. (This conversion kit's default configuration is designed to be mounted on the left-side of your mower. In some applications it may be required to rotate the kit and bail valve to fit the right-side of your mower.)

Step 10: Place “No Gasoline” sticker on the fuel cap or in a visible location.



Fig 18

If you choose to remove the AltFuel Green Conversion Kit from the engine, you will need to carefully remove the thread fitting from the carburetor then cover the 3/8 inch hole with a piece of heavy duty tape. Your mower will now be back to its original setup. (YOU DO NOT HAVE TO DISCONNECT AND CONNECT THE CONVERSION KIT AFTER EVERYTIME YOU USE YOUR ENGINE. THIS IS ONLY IF YOU DO NOT WANT THE CONVERSION KIT ON THE ENGINE.)