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CASSAVA PROCESSING MILL USER GUIDE

PEOPLE, RULES, AND ORGANIZATIONS SUPPORTING
THE PROTECTION OF ECOSYSTEM RESOURCES
(PROSPER) PROJECT



JANUARY 2015

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DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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FOREWARD

This Cassava Processing Mill User Guide has been developed by the USAID People, Rules and Organizations Supporting the Protection of Ecosystem Resources (USAID-Liberia/PROSPER).

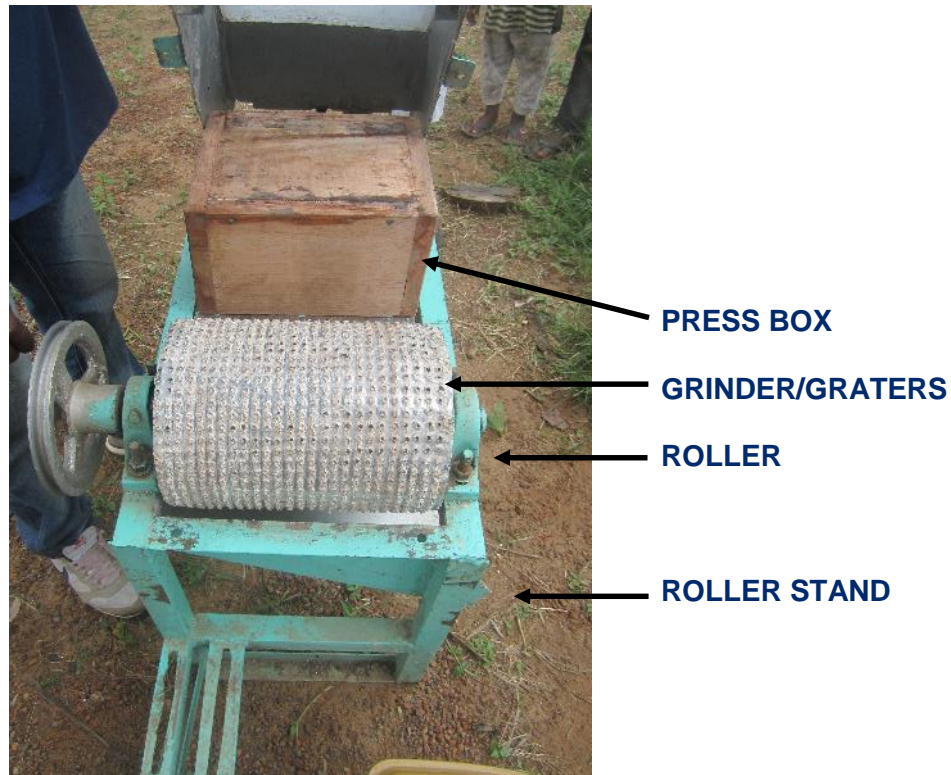
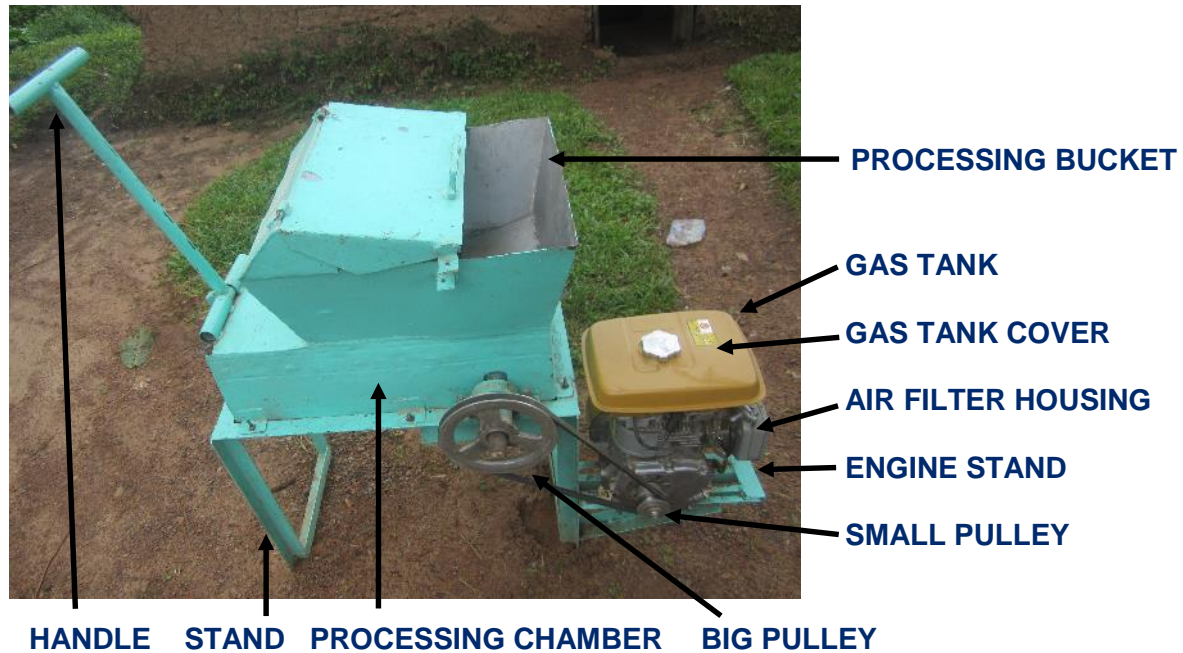
USAID-Liberia/PROSPER project has established 10 cassava processing groups in Northern Nimba. Training in maintenance and operational procedures will have to be an ongoing effort in order to keep the Cassava Processing Mills well maintained and running. This guide has been developed to support the training of local operators, and to be used as reference guide for operators.

This Cassava Processing Mill User Guide has been developed to help the operators of the Cassava Processing Mill to grind their cassava in the most efficient way. By assembling, operating and maintaining the Cassava Processing Mill in the correct way, the users of this machine will be enjoying the cassava processing capabilities for many years.

If you have any questions, or need help in purchasing spare parts for your Cassava Processing Mill, please contact your manufacturer or machine seller.

The certified Cassava Processing Mill manufacturer that can provide spare parts and repair services is Moonlight Garage & Metal Works in Gbarnga (Phone: 0886-562-568).

1.0 IDENTIFYING AND NAMING OF VARIOUS PARTS OF THE CASSAVA GRINDER



2.0 PRE-OPERATION STEPS: WHAT I NEED TO DO BEFORE STARTING THE ENGINE OF THE MACHINE?



Step 1: Open the gas tank and check the gasoline level.

Step 1: Open the gas tank and check the gasoline level. If there is little gasoline in tank top it up. Make sure the area around the gasoline cap is clean before you open the fuel tank. Make sure you use clean gasoline.



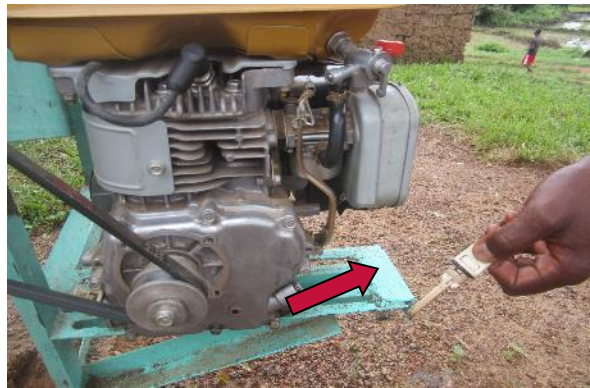
Step 2: Check the gasoline line. Make sure that the gasoline is flowing.

Step 2: Pull the gasoline line from the fuel valve to see if gasoline is flowing.

Step 3: Insert the gasoline line back on the fuel valve.



Step 3: Insert the gasoline tube properly after checking.



Step 4: Check the engine oil.

Step 4: Check the engine oil level by pulling out the engine oil stick. If engine oil level is not visible on the stick, please add oil until the amount is correct. **Do not overfill.**

3.0 PRE-OPERATION STEPS: WHAT I NEED TO DO BEFORE STARTING THE GRINDER?



CLEAN the area in which the cassava will be put for grinding. Pour clean water in the milling chamber to clear all insects and dirt. Make sure all chambers are cleaned.

Make sure that the machine is very clean before the milling of the cassava begins.

4.0 PRE-OPERATION STEPS: WHAT I NEED TO DO BEFORE STARTING THE GRINDER?

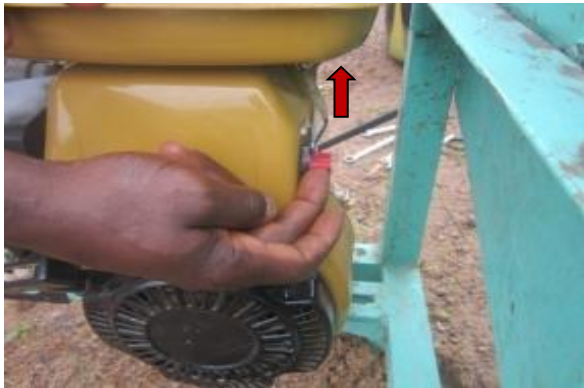
Start the engine by following the next steps in the numbered order:



Step 1: Open the gasoline valve by turning the lever down.



Step 2: Open the choke half-way.



Step 3: Turn the **RED** lever switch up.



Step 4: Put the pulley rope around the start pulley and pull to start the engine.



Step 5: When the engine starts, slowly open the choke valve all the way.

IMPORTANT:

When the engine does NOT start, follow the trouble shooting instructions on page 9.

5.0 CASSAVA MILLING

Follow the following steps after you have started the engine successfully:



Step 1: After opening the choke fully, do not increase the speed immediately. Allow the machine to run without cassava for few minutes.



Step 2: Put some pieces of cassava gradually in the processing chamber for grinding.



Step 3: You will notice a change in the sound of the engine – increase the speed of the engine by moving the speed handle to the right.



Step 4: Continue processing all the peeled cassava until finished.



Step 5: When the cassava is finished, reduce the speed of the machine to “self-beat” (idle) by moving the lever to the left.



Step 6: While the grinder is still running, pour **CLEAN** water in the processing chamber to clean it.



Step 7: After washing the grinder, switch the engine off by turning the **RED** lever down.



Step 8: When the engine has stopped, close the gas valve by turning the lever up.

6.0 CLEANING OF THE CASSAVA MILL

The cassava mill should be well cleaned regularly to ensure proper operation and to avoid problems that can come from dirty machinery. Cleaning regularly will prolong the operational life of the machine.



Make sure the engine is OFF when you do the big wash.

Use clean water and a cup to splash the water in the processing chamber.

Use a piece of cloth to rub all the surfaces clean. You can also use a brush.

Step 1: Clean the machine with clean water.



Step 2: Clean the chute with clean water. Make sure no cassava particles stay behind.



Step 3: Remove the processing chamber by lifting it up and clean it thoroughly with clean water.



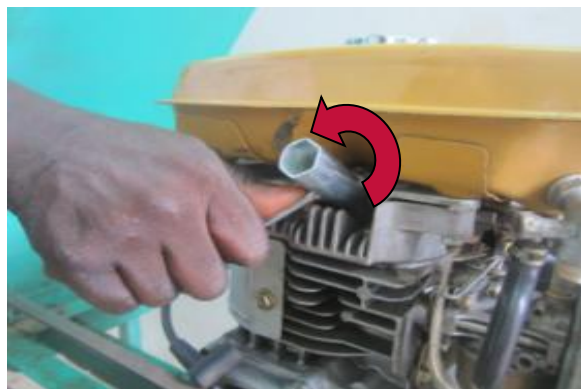
Step 4: Clean the grinder drum with plenty of clean water.

TROUBLE SHOOTING THE ENGINE OF YOUR CASSAVA MILL

Your engine does not start?? Follow the instructions below:



Step 1: Pull the sparkplug cable off the sparkplug.



Step 2: Use a sparkplug wrench to unscrew the sparkplug. Rotate in the direction of the arrow to loosen the sparkplug.



Step 3: Dip the head of the plug in gasoline to remove the carbon on the plug head.



Step 4: Clean the carbon around the head of the sparkplug.



Step 5: Put the sparkplug back in the hole and use the sparkplug wrench to tighten, Rotate in the direction of the arrow.



Step 6: Put the sparkplug cable back on the sparkplug and try to start the engine again.

7.0 MAINTENANCE: CHANGING THE DIRTY OIL

After hours of running the cassava mill, the engine oil will become dirty. You can see that when you check the oil each time before you start the engine. When it becomes really black, you have to change the oil in order to keep your engine in a good running condition. If you do not change the oil, the engine might break down beyond repair. So it is in your own interest to change the oil regularly. Use regular clean new engine oil (W40).

When you have drained the old dirty black oil, close the drain hole with drain hole plug. Then slowly add oil. Measure the level by using the dip-stick that is on the oil-cap plug. **DO NOT OVERFILL.** Below here are the steps you have to follow when changing the oil. **REMEMBER:** By changing the oil regularly you will keep your engine running for a very long time!!



Step 1: Before you change the dirty oil, run the engine for 5 minutes to make the oil thin.



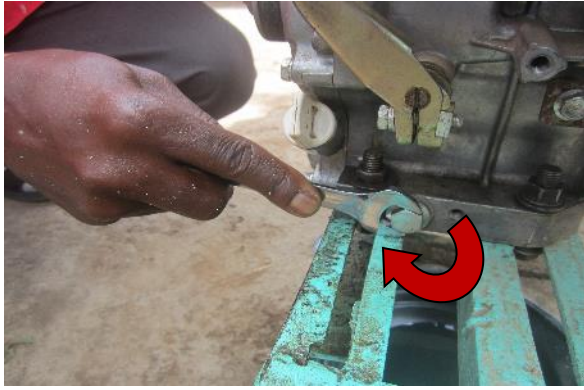
Step 2: Loosen the oil-drain bolt with a wrench.



Step 3: Remove the oil-plug dip stick so that the oil can drain out from the oil-drain bolt.



Step 4: Loosen the oil drain bolt and let the dirty oil drain out.



Step 5: Close the oil drain by putting the oil-drain bolt back. Use a wrench to tighten the nut.



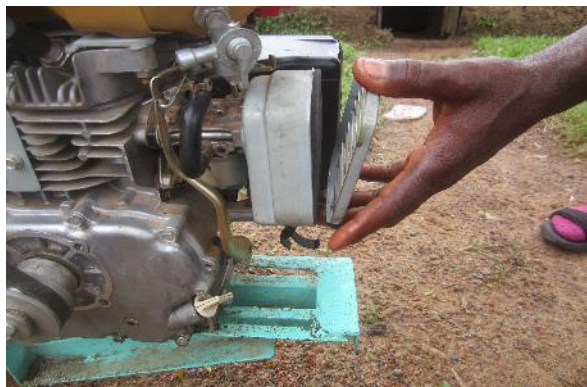
Step 6: Pour the new engine oil through the narrow dipstick hole. Use a funnel.



Step 7: After adding the new clean oil, close the dip-stick plug.

8.0 MAINTENANCE: CLEANING THE AIR FILTER

It is very important to keep the air filter clean. Clean the air filter once a month. Make a note in your maintenance journal with the date of cleaning. Wash the filter carefully and let it dry before re-installing the filter in the air filter housing.



Step 1: remove the metal cover from the air filter box.



Step 2: Take the sponge filter out of the air filter housing.



Step 3: Wash the air filter in some gasoline.



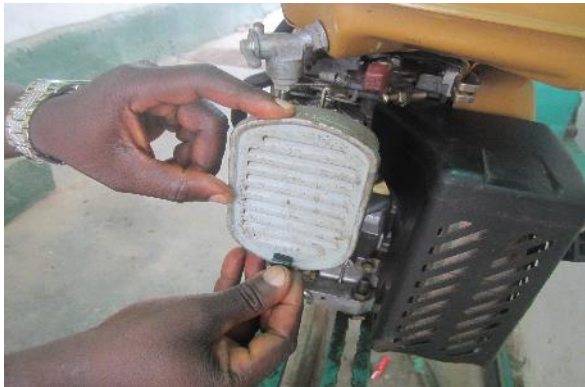
Step 4: Squeeze the filter to get the dirt out and repeat a few times.



Step 5: Let the filter dry and air out.



Step 6: Place the air filter back into the air filter housing.



Cleaning the air filter regularly will keep your engine in good running condition.

When your air filter is worn out because of the frequent washing, buy a new one from the mill manufacturer.

DO NOT operate the machine without an air filter.

Step 7: Put the cover for the air filter back in place.

9.0 MAINTENANCE: CLEANING THE GASOLINE STRAINER

The gasoline strainer is a small screen that prevents dirt particles to get into the engine. This screen (the strainer) can get clogged and the engine will not run. You should clean the gasoline strainer once a month. The gasoline strainer is located underneath the gasoline valve unit. The following pictures will tell you how to clean the gasoline strainer.



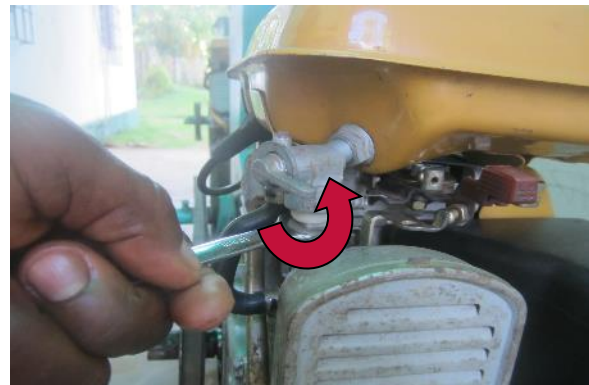
Step 1: Loosen the gasoline strainer.



Step 2: Remove all dirt from the strainer mesh screen.



Step 3: Carefully put the strainer back, using your pointer fingers first.



Step 4: After you align the thread, use spinner #10 to tighten it.

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