

The Makutu is designed to apply herbicide to cut stems and trunks of woody vegetation **no more than 1 1/2 in. in diameter** while minimizing herbicide use and collateral damage. It also may be used for basal bark treatment of small trees and shrubs such as grey dogwood, buckthorn and sumac and for treatment of basal rosettes of herbaceous vegetation using water soluble herbicides. We suspect that some Makutu fittings have been broken on either end of the valve because there is a tendency to use more force to apply herbicide on larger cuts, especially during cold temperatures. Therefore **we recommend that a small pump sprayer set to trickle be used to treat cuts of woody vegetation larger than 1 1/2 inches.**

Assembly

Long Makutus: insert bottom half (cap on one end and fitting on the other) of primary reservoir into the top half so that the clear pipe is at the top and **hand-tighten**. Then insert the whole assembly into the bottom of the valve and **hand-tighten**. Finally insert the two piece wick assembly and **hand-tighten**. **Short Makutus:** insert reservoir into bottom of valve and **hand-tighten**. In both cases **the plastic threads should easily turn on entering the valve. Cross-threading will ruin the threads of the plastic fitting.**

Filling

1. Open the valve by turning the control handle anti-clockwise (it should be parallel to body of wand).
2. Remove wick holder (top half of wick assembly) and open valve by turning the control handle anti-clockwise (it should be parallel to body of wand). **The fittings inside each end of the valve should remain in place at all times.**
3. Use a funnel to fill the primary reservoir (the clear section of PVC pipe will show when reservoir is full).
4. Replace the wick holder.
5. Close valve by turning the valve handle clockwise.
6. While yellow gas line tape is applied to the threads of wick holder, it may not be necessary to replace it unless you notice leakage. The tape is available in most places that sell plumbing supplies. To apply firmly press the end of the tape to the threads and wrap the tape while overlapping it as little as possible.

Use

Note: While you can use herbicides mixed with basal oil in the Makutu, **do not use diesel fuel or kerosene as a carrier**, as it will clog and possibly damage the PVC fittings.

1. Open valve to fill the secondary reservoir/wick assembly and point wick toward the ground.
2. Close valve when wick is wet. Leaving valve fully open can lead to dripping. Sometimes, one will need to keep valve **slightly** open to provide better flow of herbicide. You will have good flow when herbicide **wets** the surface of the cut and **trickles** down the sides of the stem.
3. Place wick on **oil absorbent cloth or shop towel** when laying the wand on the ground. We **do not recommend** leaning the wand against a tree or other object. If it falls to the ground in frigid temperatures or onto a hard surface, you may break the wand.
4. When finished for the day, hold wand so that wick is pointing upward. Open the valve to transfer herbicide from the secondary reservoir to the primary reservoir and close valve.
5. Unscrew the wick holder (**not the entire wick assembly**) leaving the wick in place and put wick holder/wick in a leakproof container if you are transporting the Makutu in a vehicle. **Note:** you may want to obtain a small threaded PVC plug (3/4" for the long Makutu and 1/2" for the short Makutu). It can be obtained from any business that sells plumbing supplies. Insert the plug into the part of the wick assembly that remains attached to the valve.
6. Use rag to wipe off herbicide residue from wand and place rag in a leakproof container.
7. When re-attaching the wick assembly, hand-tighten **only until the wick assembly is snug**. Ideally, the valve control handle should face up (in line with the tip of the wand which should be facing down).
8. **Note: in cold weather extra care is required as the brass valve becomes much colder than the PVC fittings. A hard knock or too much downward pressure under these circumstances can break the fittings that attach to the valve.**

Replacing The Wick

1. Purchase Varathane Brand Applicator Refill **For Oil Based Finishes**. You can find the pads at Home Depot or possibly at your local hardware store. **NOTE:** There are two versions of the pad: the older USA-made version was produced by Flecto (#9731); the newer version is produced in China for Rustoleum (#989731) and creates a superior wick.
2. Use a **sharp** scissors to cut the pad into five **lateral** strips of 2 inches x 5 inches.
3. Remove the wick retaining screw.
4. Roll the strip into a **tight** cylinder and insert it into the wick holder using a twisting motion and downward pressure.
5. Replace and tighten the retaining screw **until it is snug; exercise care to avoid over-tightening.**

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