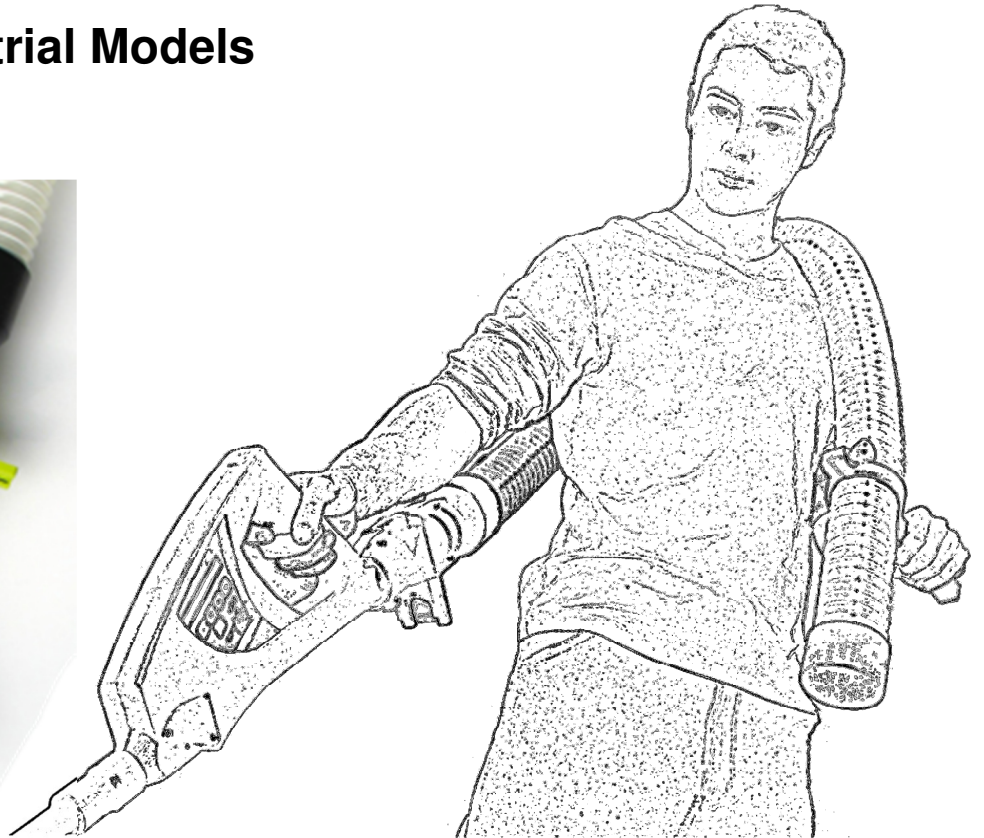
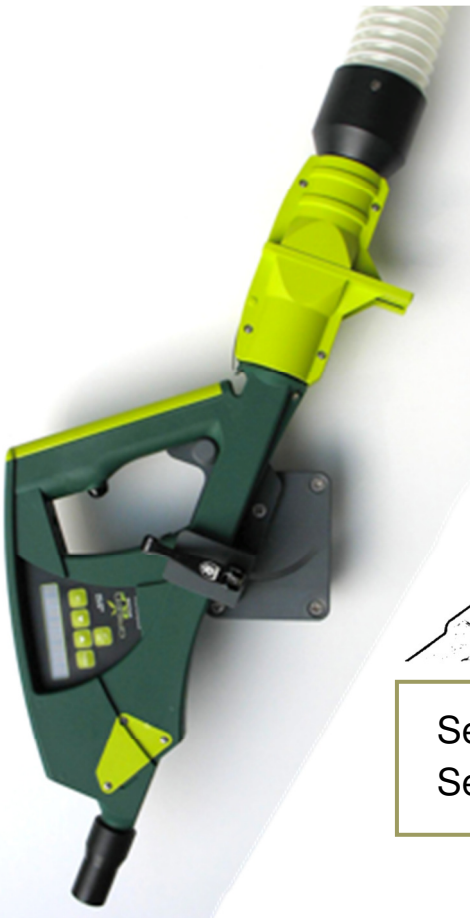


# GREEN ELF<sup>®</sup> APPLICATOR

## User Guide

**Hand-Held Models**

**Automated-Industrial Models**



Series **ECO – 501**

for Dry Hard-Grain prills

Series **ECO – 301**

for Dry Fines

V3.0

GREEN  
ELF<sup>®</sup>WORKS





the *Tool of Choice*

# Quick Reference

to key information about using the GreenElf® Applicator

<b>Material</b>	Use DRY GRANULAR material of the correct type and size range. This is a Warranty Requirement.	⇒ page 7
<b>Care</b>	Keep both the applicator and material DRY.	⇒ page 7
<b>Filling</b>	Always DUMP-FILL material into the into the Main Module by opening the Isolation Shutter with a single quick action.	⇒ page 8-9
<b>Dose</b>	Set and test the DOSE for your own particular material.	⇒ page 11
<b>On / Off &amp; Menu</b>	Control the dose & access other features using the MENU buttons.	⇒ pages 12-13
<b>Battery</b>	CHARGE in the Applicator on. CHARGE overnight every-night.	⇒ pages 14-17

Read this User Guide to become familiar with all the features and recommendations for care of your GreenElf® Applicator and ensure you obtain the full benefits of the warranty.



GreenElf® Applicator User Guide  
© 2005 - 2009



This GreenElf® Applicator User Guide  
may not be transmitted or reproduced in whole  
or part without the permission of GreenElf Works®

GreenElf Works®  
GreenElf® Applicator  
Osmocote®  
Polyon®  
Rout®  
Nutricote®  
Ronstar®  
Eneloop®

are Trademarks of their  
respective owners

The intellectual property resident in or demonstrated by  
the GreenElf® Applicator resides with the manufacturer  
and is subject to Patent Applications.  
This property may not be copied or transferred.



## Introduction

This User Guide contains important information about how to use your applicator and how to make sure you receive the full benefits of the 2-Year Warranty.

Your applicator is a valuable tool and asset. We suggest that you always store it in a safe place and keep a permanent record of your applicator identification. The Model and Serial Number of your applicator are found on the right hand decal of the main module.

<i>Owner's Name</i>	
<i>Date of Purchase</i>	
<i>Model</i>	
<i>Serial #</i>	

Due to continued product development, some minor improvements in the supplied applicator may not be described in this User Guide. If in doubt about any feature or behavior, please contact GreenElf Works.



## Assurance

GreenElf Works wants your business to gain maximum benefit and savings from using the applicator and we expect it to be a key and dependable part of your operations. We support the applicator with the warranty and a continuing support service.

Do not hesitate to phone or email GreenElf Works with inquiries or suggestions as to how we can improve our products or service and help your business be as efficient and productive as possible.

## Warranty

The GreenElf Applicator has a 2-Year Warranty.

The warranty covers repair or other remedy in the event of significant compromise of the working capability of the applicator when due to manufacturing defect or component failure.

- ⇒ See the heading Conditions (page 34 of this User Guide) for more information about your GreenElf Works product Warranty and making sure you receive its full benefits.
- ⇒ See the heading Problem Reporting (page 43 of this User Guide) for all the details about what information we require to service a query effectively and how to contact GreenElf Works.
- ⇒ See the heading The Service Process (page 44 of this User Guide) for the steps you should follow to obtain workshop service from GreenElf Works.





## Applicator Series

This User Guide describes the features and use of two different GreenElf® Applicator series. Most information is the same between series. Important differences are identified using **Green** and **Dark Red**.

### Series ECO – 501

The series **501 GreenElf® Applicator** is intended for use with free-flowing *large-grained* dry materials, like Osmocote® and Nutricote® fertilizer and other quality products with similar characteristics and grain size.

### Series ECO – 301

The series **301 GreenElf® Applicator** is intended for use with free-flowing *fine-grained* dry materials, like Rout® and Ronstar® herbicide and other quality products with similar characteristics and grain size.

See Page 7 of this User Guide for the material characteristics and grain sizes required for use in applicators of each series.

## Applicator Models

This User Guide describes Hand-Held (HH) and Automated-Industrial (AI) models for both series of the GreenElf® Applicator.

- Section 1 Hand-Held & General Information  
Usage requirements and features for both HH and AI models
- Section 2 Automated Industrial Models  
Specific information for AI remote triggering models  
used on Potting Machines or moving vehicles
- Section 3 Warranty, Maintenance & Service  
Maintenance, Warranty, Trouble-shooting and Service

# Table of Contents

## SECTION 1 Hand-Held Models & General Information ..... 1

### Know Your GreenElf Applicator ..... 2

#### Standard Components..... 2

Documentation..... 2

Applicator and Accessories..... 2

#### Identification of Components ..... 3

#### Familiarization ..... 4

Assembling the Applicator..... 4

Standard Pickup..... 5

Standard Usage Position ..... 6

### Before Using the GreenElf Applicator..... 7

#### Appropriate Materials ..... 7

Types of Material..... 7

Required Material Characteristics ..... 7

#### Care ..... 7

#### Filling the Applicator with Material ..... 8

#### Making Material Available for Use ..... 9

#### Emptying the Applicator of Material ..... 10

#### Dose Control ..... 11

Meaning of Dose..... 11

Dose Control..... 11

Dose Settings..... 11

Test your Own Material ..... 11

#### The Control Panel..... 12

#### The Menu ..... 13

### About the Battery and Charging..... 14

#### Description ..... 14

Pre-Conditioned Battery..... 14

#### Battery Charging..... 14

Correct Equipment and Environment ..... 14

Charging Procedure..... 15

Recommendations ..... 15

Seasonal Use..... 15



Battery Display Messages .....	16
During Use.....	16
While Charging .....	16
Checking the Battery Charge % .....	17
Check the Charge % .....	17
Availability of % Charge.....	17
Removing / Replacing the Battery .....	17
Accessing the Battery .....	17
Replacement Battery .....	17
<b>Using the GreenElf Applicator.....</b>	<b>18</b>
Comfortable Use .....	18
Upright Stance.....	18
Delivery Tube .....	18
Angle of Delivery .....	18
Use of Storage Tube Handle .....	18
Straight to Work.....	19
<b>Pace Firing™ .....</b>	<b>20</b>
To Use Pace Firing.....	21
To Change the Pace Firing Interval .....	21
Other Uses for Pace Firing .....	21
<b>Other Tips for Efficiency .....</b>	<b>22</b>
Getting Under Foliage .....	22
Correct Material Spread .....	22
Faster Pace.....	22
<b>Additional Features .....</b>	<b>23</b>
Automatic Obstruction Removal .....	23
Inspection Cover .....	23
Automatic Power-Off .....	24
Open Gate.....	24
Left-Right-Handed Usage.....	24
Angled Delivery Nozzle .....	25
Storage Tube Ends .....	25
Storage End-Cap.....	25
Storage Swivel Connector .....	25
Monitoring Applicator Usage .....	26
Shot Count Recording .....	26
Useful Values .....	26
And Purpose.....	26

<b>SECTION 2 Automated-Industrial Models .....</b>	<b>27</b>
<b>Know Your GreenElf Applicator .....</b>	<b>28</b>
Standard Components.....	28
Documentation.....	28
Applicator and Accessories.....	28
Identification of Components .....	29
<b>Before Using the GreenElf Applicator.....</b>	<b>30</b>
<b>About the Battery and Charging.....</b>	<b>30</b>
<b>Setting Up the GreenElf Applicator .....</b>	<b>31</b>
Mounting the Applicator .....	31
Material Supply.....	32
Remote Trigger .....	32
Infra-Red Container Detection .....	32
<b>SECTION 3 Warranty, Maintenance &amp; Service.....</b>	<b>33</b>
<b>Conditions.....</b>	<b>34</b>
Warranty.....	34
Working Capability of the Applicator .....	34
Warranty Conditions.....	34
Not Covered by Warranty.....	35
Liability .....	35
Software License .....	35
Intellectual Property.....	35
<b>Maintenance.....</b>	<b>36</b>
Is there any Periodic Maintenance ?.....	36
What if the Applicator gets Wet ?.....	36
<b>Technical Specifications .....</b>	<b>37</b>
<b>TroubleShooting .....</b>	<b>38</b>
Troubleshooting Table.....	38
<b>Problem Reporting .....</b>	<b>43</b>
<b>The Service Process.....</b>	<b>44</b>

# SECTION 1

## Hand-Held Models & General Information

## Know Your GreenElf Applicator

### **Standard Components**

A complete Hand-Held GreenElf Applicator consists of the components listed below. Please make sure you have received all relevant components.

### **Documentation**

User Guide (this document)

CD-ROM including:

- Digital PDF of User Guide
- Videos of Applicator in use
- Advice documents / other useful information

### **Applicator and Accessories**

Main Module

Operating Module

Battery Cover

Battery

Inspection Cover

Delivery Connector

Storage Assembly

Supply Coupling

Swivel Connector

Draw-Latch

Isolation Shutter

Storage Tube

Storage Handle

Storage End-Cap

Delivery Tube Kit

Black Delivery tubes (X 3)

PVC rigid Delivery tube (400mm length)

Angled Delivery Nozzle

Battery Charger

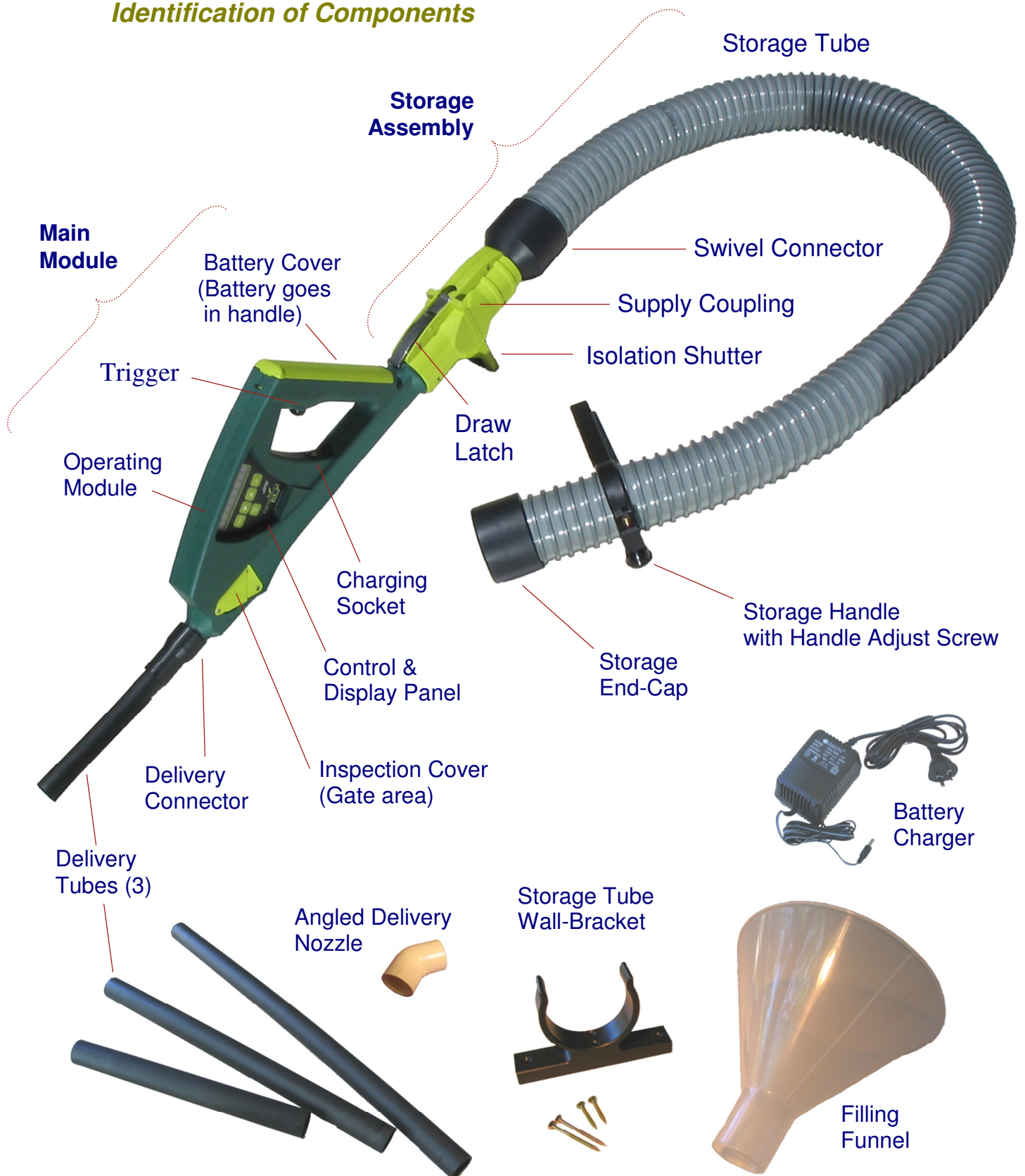
Filling Funnel

Storage Tube Wall-Bracket (& screws)

Many components are available for purchase as sub-kits.

See Section 2 for AI model GreenElf Applicator component information.

## **Identification of Components**



## ***Familiarization***

### **Assembling the Applicator**

- (1) If the Battery has been supplied removed from the applicator  
REMOVE Battery Cover and insert battery. RE-CONNECT battery with care and REPLACE cover. See P17 of this guide for assistance.



- (2) INSERT Main Module into the Storage Assembly



- (3) SECURE the coupling using the Draw-Latch



- (4) INSERT a Delivery Tube (as required) into Delivery Connector on the Main Module



## Standard Pickup

- (1) PICK UP the applicator with the Storage Tube in a U-SHAPE in front of you.



- (2) LIFT the applicator Up-and-Over your head, so that the Storage tube rests over the shoulder

## Standard Usage Position

- (3) DROP your hands into comfortable holding positions. HOLD the applicator main module handle with the Storage Tube positioned **BEHIND** the holding arm.



This is the standard usage position for using the GreenElf Applicator.



## Before Using the GreenElf Applicator

### Appropriate Materials

#### Types of Material

The GreenElf Applicator is designed to be used for rapid top-dressing with dry granular materials, such as fertilizers and herbicides. Other materials may also be used in the applicator as long as they have the required characteristics.

#### Required Material Characteristics

The material used must be:

Series ECO – 501
<ul style="list-style-type: none"> <li>* DRY SOLID GRAINS</li> <li>* NOT CRUMBLY</li> <li>* WITHOUT FINES</li> <li>* FREE-FLOWING</li> </ul> <p><b>GRANULAR SIZE</b></p> <p><u>Dominantly</u> 2 to 4 mm</p> <p><u>Avoid</u> &lt; 0.7 mm or &gt; 4.5 mm</p> <p>Always test your material.</p>

Series ECO – 301
<ul style="list-style-type: none"> <li>* DRY PARTICLES</li> <li>* FINE GRAINED</li> <li>* FREE-FLOWING</li> </ul> <p><b>GRANULAR SIZE</b></p> <p><u>Dominantly</u> 0.5 to 1 mm</p> <p><u>Never</u> &gt; 1.5 mm</p> <p>Always test your material.</p>

- NEVER USE Sticky, Lumpy or Magnetic materials.  
Avoid materials which have a tendency to compaction, moisture absorption or loss of their free-flowing characteristic.

The material's size specification and free-flowing characteristic are key to continuing performance of the applicator and to consistent dose results. The GreenElf Applicator is not warranted for out-of-spec materials.

### Care

- Always keep both Applicator and Material dry.
- Always take steps to minimize the possibility of condensation or moisture of any kind affecting your material. Store in a moderate / warm and dry place. At the end of each day's work, empty the applicator.
- Never insert rigid objects into the Inspection Cover area or into either end of the Main Module, as this could damage the gate mechanism.

## Filling the Applicator with Material

### (1) SETUP

- DISCONNECT the Storage Assembly from the Main Module
- HOLD this Storage Assembly in a VERTICAL position
- OPEN the Isolation shutter



### (2) FILLING

- INSERT the Funnel
- FILL the Storage Tube with material to just below the Isolation Shutter
- CLOSE the Isolation Shutter

**Isolation Shutter Open**  
(Close it when finished filling)

Fill to below shutter

### (3) RE-ASSEMBLY

- LIFT the Storage Assembly over your head so that it rests comfortably in the operational position
- SECURE the Main Module with the Draw-Latch

#### Note

The procedure of re-assembling the Hand-Held applicator *after* the Storage Assembly has been taken on-board (over your shoulder, in the normal operating position) can become very fast and quite natural.

## ***Making Material Available for Use***

### **(1) MATERIAL IS IN THE STORAGE**

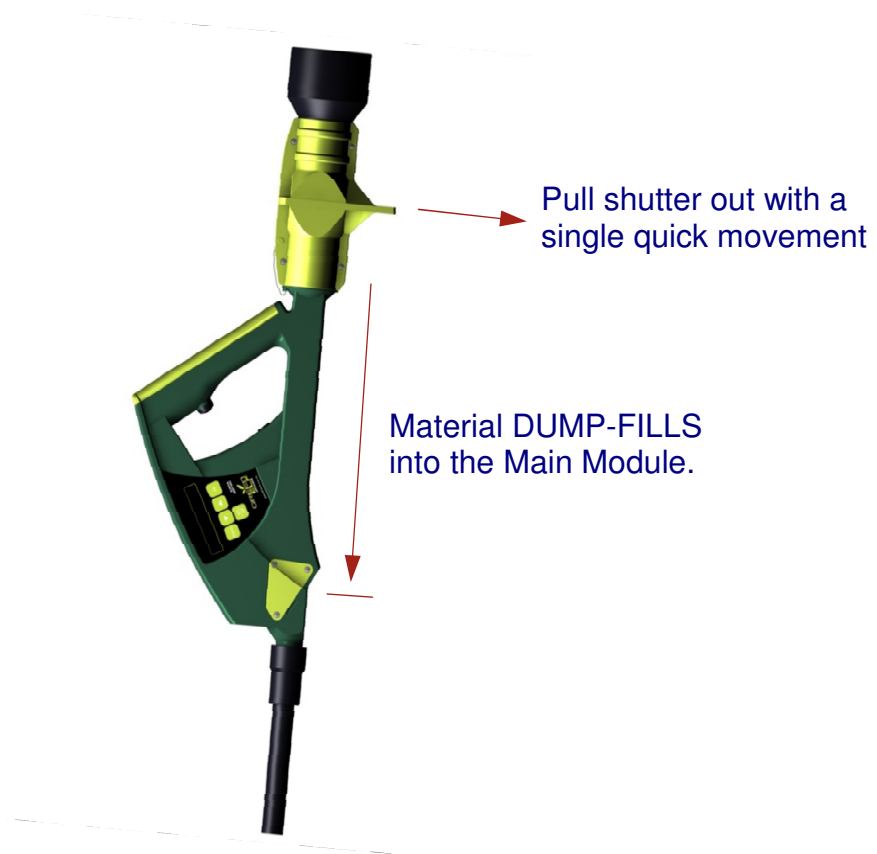
- The Isolation Shutter is CLOSED  
There is material above the isolation shutter and in the storage (supply).

### **(2) MAKING MATERIAL AVAILABLE FOR USE**

- Switch the applicator ON and fire the manual trigger once, to ensure that the gate in the Main Module is CLOSED.
- Open the Isolation Shutter with a SINGLE QUICK ACTION to allow material to DUMP FILL into the Main Module ready for use.

#### Note

Do not dribble material directly into the Main Module, as some material may flow straight through. ALWAYS DUMP FILL from the supply by opening the Isolation Shutter.



## Emptying the Applicator of Material

You do not have to disassemble the applicator to empty it.

### (1) AIM APPLICATOR INTO A SUITABLE CONTAINER

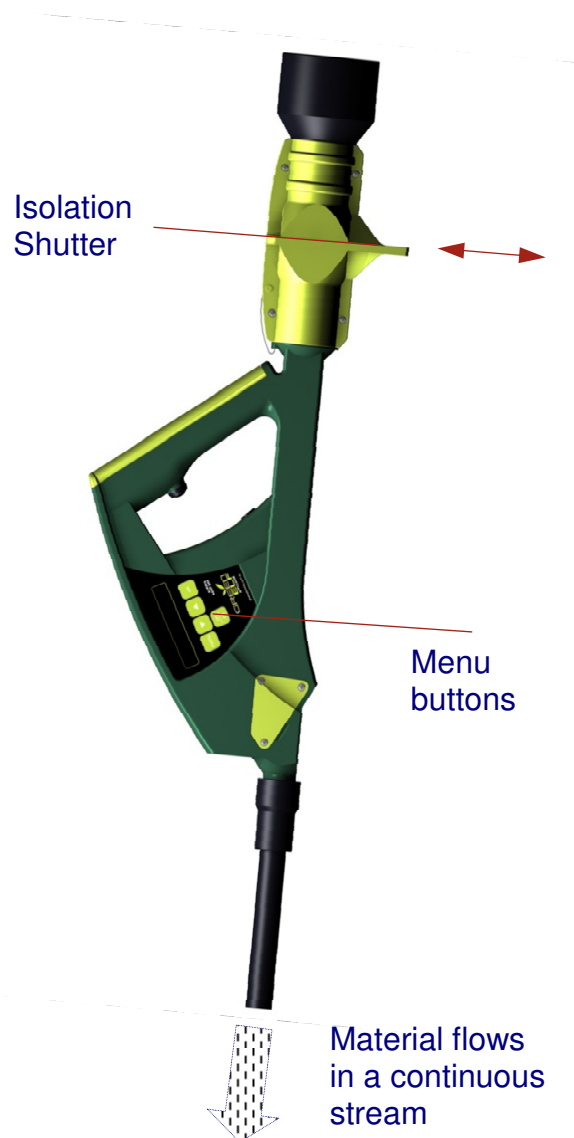
- Place the applicator in a normal operating position
- AIM the applicator into a suitable storage container

### (2) OPEN THE GATE

- Use the MENU item **Open Gate** to empty the applicator, as follows:  
With the applicator **on**, press the **menu** button a number of times until it displays **Open Gate** and press the **ok** button. This will immediately start a continuous flow and will empty the applicator of all material.

#### Note

- While the gate is open, the display will flash **Gate is Open** every 5 seconds
- CLOSE the gate at any time just by firing the trigger



### (3) CLOSE THE GATE

- CLOSE the gate (fire the trigger) when you have finished.  
(You do not want the next fill to go straight through ! )

See later section for more detailed information about using the **menu**.

## Dose Control

The GreenElf Applicator electronic menu item **Dose** allows you to set and maintain an accurate and consistent measure of material that will be released each time the applicator fires.

### Meaning of Dose

The **Dose** scale is from 1 to 500.

These numbers are setting indicators only and do not indicate any particular weight of material. For a given material, steep consistent slope and a regular firing pattern, a **Dose** setting will yield a reliable weight of material.

### Dose Control

With the applicator **on**, press the menu button to display **Dose** and then the **ok** button. This will show the current **Dose** value. You have 10 seconds to start using the ▼ ▲ (up and down arrows) to modify the setting. The selected **Dose** setting is retained even when the applicator is turned off or the battery disconnected.

### Dose Settings

The following tables contain approximate EXAMPLES-ONLY of Dose-versus-Weight values using Osmocote Exact® and Rout®.

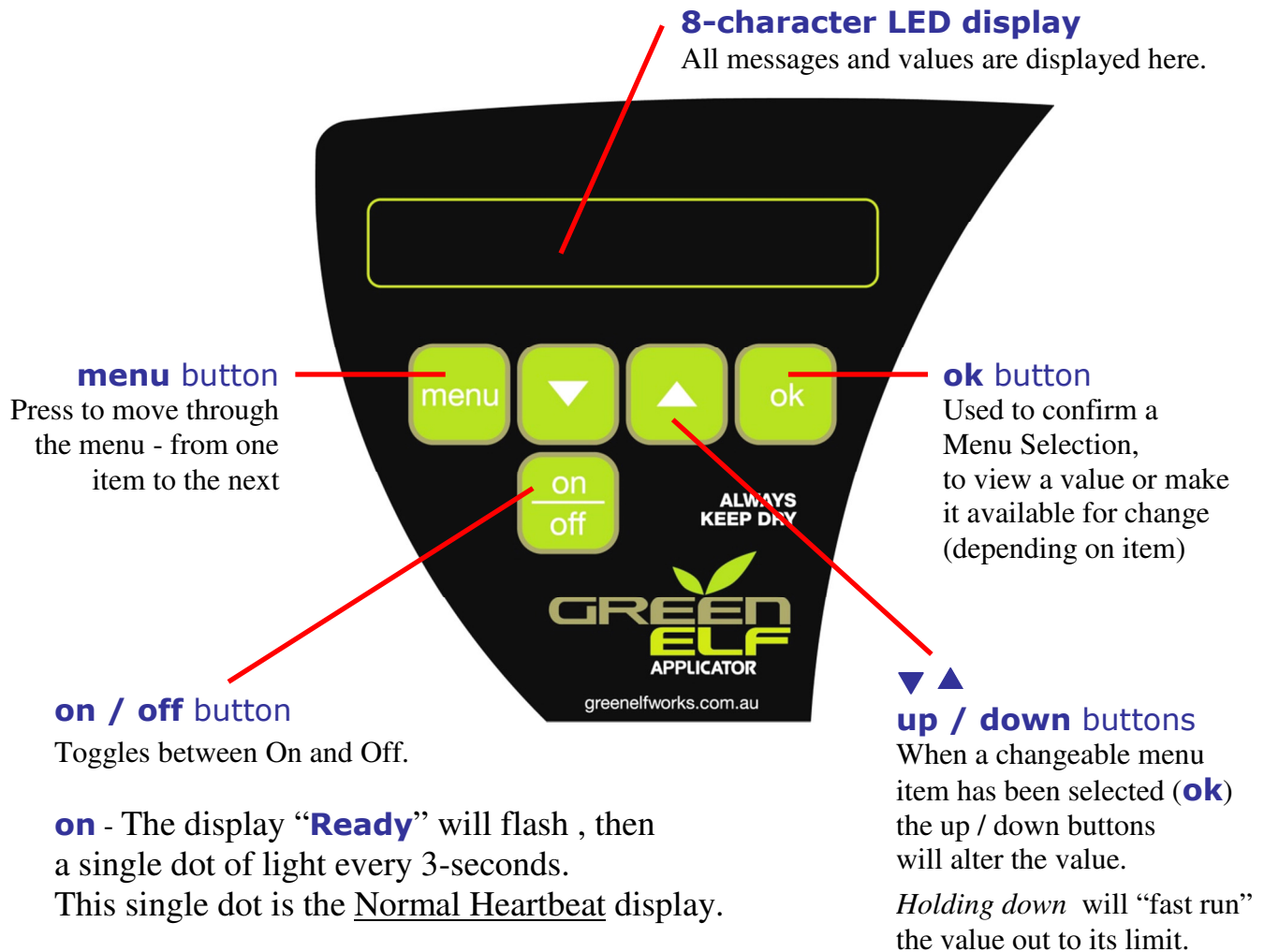
Series ECO – 501	
Dose	Osmocote® ~ gm
1	3
10	5
25	9
50	17
...	...
150	47
250	77
500	148

Series ECO – 301	
Dose	Rout® ~ gm
1	0.15
10	0.3
25	0.6
50	1.2
...	...
150	3.5
250	6.5
500	14

### Test your Own Material

You should always test **Dose** settings with the actual material that you use. When testing, use a typical steep and consistent applicator slope and fire every second or so, as you would during real use. When you are happy that you are getting the required amount of material, note the setting(s) for reference.

## The Control Panel



**on** - The display "**Ready**" will flash , then a single dot of light every 3-seconds. This single dot is the Normal Heartbeat display.

**off** – This is the Off or Sleep mode.

Note - If the applicator is **on** but not used for 5 minutes, it goes into the sleep mode automatically. Nothing is lost ... just press the **on** button.

### 10 Seconds to Use the **ok** button

When you have found a **menu** item that you want ... you have 10 Seconds to use the **ok** button ... to either view or initiate change to the item. If you do nothing, the display returns to the Normal Heartbeat (single dot).

### 10 Seconds to Use ▼ ▲ buttons

When you have selected **ok** on a menu item whose value can be adjusted up or down ... you have 10 Seconds ... to start using the ▼ ▲ buttons. If you do nothing, the display returns to the Normal Heartbeat (single dot).

## The Menu

The following table lists the Menu items available. With the applicator **on**, scroll through them simply by pressing the **menu** button a number of times.

Menu Item	Item Description	<b>ok</b> results in ...	▼ ▲ Usage ?
<b>Dose</b>	Dose control setting. Number between 1 and 500	Display of current <b>Dose</b> setting.	Yes
<b>Battery</b>	Battery Charge % (useful % remaining before <b>Recharge Now</b> occurs)	Display of current <b>Battery</b> % (if available)	-
<b>JobCount</b>	The number of dose shots (trigger activations) since it was last zeroed [ Maximum 999 999 ]	Display of current <b>JobCount</b>	-
<b>JobReset</b>	Zero the <b>JobCount</b>	<u>Immediate</u> Reset and Display of <u>zero</u> <b>JobCount</b>	-
<b>TotCount</b>	A count of the total dose shots (trigger activations) since manufacture	Display of the <b>TotCount</b> to date.	-
<b>RecycInt</b>	The time interval (seconds) between shots when in Pace-Firing™ mode	Display of <b>RecycInt</b>	Yes
<b>OpenGate</b>	Ability to open the control gate and keep it open. [ Use trigger to close ]	<u>Immediate</u> opening of the gate and the recurring display <b>Gate is Open</b>	-
<b>Software</b>	System Software Version	Display of <b>Software</b> Version.	-

More information can be found elsewhere in this User Guide, where the purpose of some of these menu items are described in context.

## About the Battery and Charging

### Description

The GreenElf Applicator may be supplied to you with the battery already installed in the main module handle. If not, it needs to be installed. See P17 for general instructions. Normally, there is no need to remove the battery cover or the battery itself.

### Pre-Conditioned Battery

The battery supplied with the applicator has been through “conditioning” cycles to bring it to optimal condition - and is shipped charged. Charge prior to use and follow the general charging routine recommendations.

### Battery Charging

#### Correct Equipment and Environment

Please observe the following:

- a) Always use the correct Charger
 

All charging must be done using the Charger supplied with the applicator. Please check that your charger has the correct voltage and plug-type for your country.
- b) Battery Must be in the Applicator
  - The battery can only be properly charged when it is in the applicator. The charging process controlled by software resident in the applicator.
  - Battery charging and charge reporting is valid only when the battery is charged in the applicator.
  - Other charging methods may damage the battery and could cause overheating or even personal injury.
- c) Correct Environment
 

Choose a dry location for the charging of the battery.  
For best charging behavior, the ambient (room) temperature should be:

AVOID below	<b>BEST BETWEEN</b>	AVOID above
0 ° C (32 ° F)	<b>10 ° – 30 ° C (50 ° – 86 ° F)</b>	40 ° C (104 ° F)



## Charging Procedure

1. Plug the supplied Charger into an active AC power source and connect to the Charging Socket on the applicator.
2. Turn the applicator **on**. Wait a few moments; **Charging** should display about every 5 seconds. If there is no Charging display, turn Off and On again and wait for the display.
3. When the battery is charged, the display will switch over to **Trickle**.

### NOTE

Always keep the power supply (or any other source of heat, such as a floor heater or even direct sunlight) away from the battery compartment during charging. It is normal and *required* that the battery will warm during charging. Detection of an increase in battery temperature is one factor used in the decision as to when the charging cycle will switch to **Trickle**.

4. Typically, the battery will reach **Trickle** in 1-3 hours. You may leave the applicator on **Trickle** charge until you actually want to use it - for example, overnight in readiness for the following day.

## Recommendations

- For top battery and field performance when the applicator is in use

### **CHARGE OVERNIGHT EVERY NIGHT**

This will ensure that a full day of work can always be had without power interruption. For a healthy and fully charged battery, up to 40,000 shots should be possible before any recharging is necessary.

## Seasonal Use

- Disconnect the battery during storage.
- After long storage, the battery is likely to have very little charge. One good recharge cycle should be sufficient to reach charge. This is expected to take up to 4 hours.

## Battery Display Messages

### During Use

The GreenElf Applicator is designed to continue working in excess of a full day of use and to be charged every day. If this routine has not been followed or for whatever reason the battery is running down, the applicator will give appropriate charge warnings in time for suitable action to be taken. The following are normal battery messages that could appear:

Display Message during Use	Meaning	What you should do ...
<b>Batt.Low</b> (every 5 sec)	The battery will need recharging soon.	Continue Work if required but do not expect much more than a few thousand shots remaining.
<b>Recharge Now</b> (every 5 sec)	The applicator may stop quite soon	Recharge the battery.
<b>Stopped Batt.Low</b>	Applicator has stopped. After a minute the display will read <b>Recharge Now</b>	Recharge the battery.

### While Charging

The following are normal charging messages:

Display Message during Charging	Meaning	What you should do ...
<b>Charging</b>	The battery is <b>Charging</b> ✓	Something else. If there is no display see <u><a href="#">Troubleshooting</a></u> .
<b>Trickle</b>	Charging has dropped back to trickle and battery is no longer being actively charged. ✓	Applicator may be used when required.

## Checking the Battery Charge %

### Check the Charge %

To check the Battery charge level, use the **menu** button to obtain the item **Battery** and press **ok**. The remaining useful battery capacity (% remaining before **Recharge Now** occurs) will be displayed - for example **80%**. Please note that this % is unreliable as a measure of *capacity to do work* if the battery is not properly conditioned.

### Availability of % Charge

In some circumstances the display may read **NotAvail**. This means that due to the recent charge / discharge history, a calculation of the battery reserve is not available until after the next full recharging. This display is unlikely if the regular overnight charging routine is being followed and the battery is in good condition. The battery capacity % display will return after the next recharge.

## Removing / Replacing the Battery

### Accessing the Battery

- (i) Remove the battery cover on the applicator handle.  
The battery cover is a user-removable part. To remove, gently insert a small screwdriver or similar into the release slot at the top of the handle. The battery cover is then pulled away from the top.
- (ii) To check the connectors, pull the top of the battery with its connecting wires away and into view. Ensure that the connections are firm.
- (iii) Always switch the applicator **off** before disconnecting the battery.
- (iv) To remove the battery, gently pry-apart the electrical connection (at the white marks) and then lift the battery out of its resting position.
- (v) To restore the battery, reverse the procedure; ensure a firm electrical connection (matching the white marks) and slip the battery cover back into position. Insert at the bottom first and then gently press the tongue into place at the top.

### Replacement Battery

- When charged over-night as recommended, the battery should last at least 3 years. A new battery is recommended after 4 years.
- Order a replacement battery from GreenElf Works at any time. The GreenElf Applicator battery is manufactured from quality NiMH cells in series and contains Thermistor and Thermoswitch control.

## Using the GreenElf Applicator

### *Comfortable Use*

#### **Upright Stance**

At all times the user of the GreenElf Applicator should adopt a comfortable upright posture that minimizes or eliminates bending and strain. Aim to work so that the arm holding the trigger handle is relaxed in a nearly-straight position and without tension.

#### **Delivery Tube**

If the adoption of a comfortable upright posture means that the applicator delivery tube is at the wrong height for the work being undertaken - then the delivery tube should be replaced with one of a different length.

#### **Angle of Delivery**

The applicator itself should be held at a near-to / slightly sloped-to-vertical position. The free running of the granular material is thus ensured. A slightly increased angle during a “reach” action still results in a reliable flow of material.

#### **Use of Storage Tube Handle**

The Storage Tube Handle:

- (1) Acts as a balancing “hand-rest” which also prevents the upper end of the Storage tube flopping about during normal use.
- (2) Allows the upper end of the Storage tube to be raised and material to flow to the other end (above the Main Module) where it can be used.
- (3) Provides positive-action reach-control. When the applicator is placed into a “reach” position the handle helps the storage tube itself to be correspondingly shifted so that the reach is not hindered. This becomes an automatic action very quickly. This flexibility for reaching more-distant targets is a key design feature of the GreenElf Applicator.

The Storage Tube Handle should be adjusted to the most comfortable position. The arm or elbow angle should not be strained or uncomfortable.



### ***Straight to Work***

With the GreenElf Applicator held comfortably and the Storage Tube containing material, you can commence work. Start slowly at first and experiment with manual trigger and action. Speed and efficiency will come quickly and naturally.

## Pace Firing™

The Single-Shot or Manual Firing mode of operation is normal for most situations. The shot rate or *pace* is driven by your guiding the applicator into position ready for a shot. To deposit a dose of material, the trigger is fired.

### **SINGLE SHOT (Manual Firing)**

Use this mode when you need  
to navigate to each target

You choose to fire when you are ready

For example, your firing rate may vary  
around 1 – 3 seconds per shot depending  
on the amount of navigation required

The Pace-Firing mode of operation makes the pace the controlling factor. The applicator is set to fire automatically every so many seconds and you must move into position for each shot. This is a mode suitable for situations where navigation is easy and constant from target to target.

### **PACE-FIRING™**

Use this mode with clear open targets  
in a close-packed regular layout

You set the firing rate to dictate the pace

For example, your firing rate is fixed  
at 1 second per shot and you must  
navigate into position in this time

### **To Use Pace Firing**

- To START, press the hand-trigger and hold down
- After about 3 seconds, Pace-Firing will start and continue so long as you hold down the trigger.
- To STOP Pace-Firing, just release the Trigger.  
When the trigger is released, the applicator will return to the normal manual single-shot mode.  
To RECOMMENCE, just hold the trigger down again.

(AI) The Pace-Firing mode of operation is NOT actuated by constant closure of the AI model Remote Trigger. So if a potting machine or conveyor stops in a fixed position, or the remote trigger is for any reason kept on, no more than a single dose is applied.

### **To Change the Pace Firing Interval**

The time interval between shots when using Pace-Firing is governed by the **menu** item **RecycInt**. Change this value to suit your requirement.  
To set the Pace-Firing interval:

- Select the **menu** item **RecycInt** and press **ok**
- Use ▼ ▲ to adjust the value up or down
- The **RecycInt** is adjustable in increments of 0.1 seconds up to a maximum of 10 seconds.

### **Other Uses for Pace Firing**

Some situations do not necessarily require material to be deposited at specific or highly accurate locations. For example, a long row of vegetables may need to receive an evenly distributed dose of material along the row.

A worker will adopt a comfortable and even walking pace down the rows. The GreenElf Applicator is used in Pace-Firing mode so that the required amount of material is deposited at suitable intervals. Of course, using (say) half the material dose, at a firing rate that is twice as fast, gives the same amount of material per row. You should experiment to obtain a Dose & Firing Interval that is suitable for your own situation.

## Other Tips for Efficiency

It is very much easier to obtain high shot counts when the targets are evenly spaced and free of obstructing foliage. The following tips may assist you to obtain greater efficiency.

### *Getting Under Foliage*

Low or thick foliage can sometimes restrict navigation.

In such cases, consider using the rigid delivery tube, to enhance your ability to 'brush aside' foliage and gain quicker access to the target surface. Additional delivery tubes can be made from standard irrigation tubing if required.

### *Correct Material Spread*

Sometimes, a high spread over the surface of a container is desirable. The spread pattern is dependent on material flow characteristics, the height of the delivery tube above the surface, and to some extent the angle. It is important that the correct length delivery tube be used, so that workers can proceed without needing to raise or lower the applicator to achieve the correct height.

If necessary cut the delivery tube(s) so that length is optimal.

### *Faster Pace*

Be aware that there is a short Drop-Time between firing the trigger and when material exits the end of the delivery tube. The Drop-Time depends on the length of the delivery tube and the material being used.

Generally the Drop-Time for **301 Series** materials (lighter and more powdery) is slightly longer than for **501 Series** materials (heavier and hard-grained).

Good workers quickly learn to anticipate the Drop-Time by adopting a pattern of firing "on-approach" to the target surface – so that material is deposited right on target without any delay. A worker can obtain a minimum of delay between arriving at one target and initiating the move onto the next. Generally, workers improve their pace considerably after a few days work, particularly once they start to adopt this on-approach firing technique.



## Additional Features

### *Automatic Obstruction Removal*

When using quality on-spec materials, the likelihood of materials jamming in the GreenElf Applicator is low. The applicator's automatic obstruction removal feature further reduces the likelihood of such problems.

- In the event that the gate is unable to reach its closed position, the applicator will know this and invoke its automatic obstruction-removal cycle to break up any possibly offending material. You would experience this as a very quick “tapping” or “rat-tat-tat” while the applicator clears the obstruction. An obstruction (most likely some clumped material) is often cleared on a single attempt - and may not even be noticed by the operator.
- In the unlikely event that a problem remains even after this automatic action, the applicator will give up (after 25 attempts) and report this on the display, with the words ...

#### **Gate Not Moving**

- There is an Inspection Cover covering the gate area. See below.

### *Inspection Cover*

It is unlikely that the GreenElf Applicator will require manual clearance of an obstruction if you are using a good quality free-flowing material and keeping it dry. If there is an obstruction that has not been automatically cleared:

- **Remove the Inspection Cover**

The Inspection Cover is a user-removable part of the applicator. Remove the cover and if able, extract any foreign materials or debris. If the gate is in the closed position, you may gently raise (open) it manually. Avoid forces that could bend or damage the gate.

If you have been using the applicator for a long time you may notice some dust build-up. Whether or not this could be a problem depends on the nature of the material. Remove or blow out any build-up. If it is available, use dry compressed air.

Keeping fingers away from the gate area, test before re-securing the cover.

### **Automatic Power-Off**

If the GreenElf Applicator is not used and is not under charge, it will automatically turn off after 5 minutes. Nothing is lost and turning it back on is a simple push of the **on / off** button. Automatic Power-Off prevents unnecessary loss of battery charge in the event that the applicator is left on.

Automatic power-off will not occur during charging.

#### **(AI) CAUTION**

If you are using an AI model applicator on a potting machine without continuous charging, the applicator will auto power-off during a break in the work that lasts longer than 5 minutes. It must be turned back on at re-commencement of work.

### **Open Gate**

There are circumstances where you may wish to open the gate fully and leave it open. For example, this action allows you to empty the applicator without the need to disconnect the Storage Assembly.

- To Open the Gate ... Select the **menu** item **Open Gate** and press **ok**.
- The display **Gate is Open** will continue to flash every 5 seconds while the gate is open.
- To Close the Gate ... Fire the trigger.
- If the applicator has been turned off (deliberately or automatically) with the gate in the Open position ... and then it is turned back on again ... the gate will still be open and the **Gate is Open** message will continue to display.

### **Left-Right-Handed Usage**

By design, the GreenElf Applicator is essentially symmetric. All flexibility dimensions have equal left and right orientation. The only part needing adjustment if changing between sides is the Storage Handle. Using the handle adjusting screw, the handle should be loosened and rotated. As usual, its position should be adjusted to suit the individual user.

### Angled Delivery Nozzle

- The Angled Delivery Nozzle is supplied as an addition to the end of the Delivery Tube.
- The typical angle of the Delivery Tube during use can mean that the granular materials hit the target surface at a slight angle, causing scatter. This is not normally a problem – and may be desirable depending on your requirements.
- The purpose of the Angled Delivery Nozzle, if it is required, is to direct the granular materials into a near vertical drop-position and thus minimize material scatter.

### Storage Tube Ends

The applicator Storage Tube is made of flexible material with a ribbed pattern or spiral “thread” along its full length. At each end there is a component which joins to the tube:

#### Storage End-Cap

- The Storage End-Cap closes off the Storage Tube and is meant to be left on. A securing screw is in place to prevent looseness. You should not use this end for filling the applicator with material.
- You should not normally have reason to remove the end-cap from the Storage Tube. If you do need to access *inside* and *through* the Storage Tube, the Storage End-Cap can be removed. First, undo the securing screw. When replacing, ensure firmness and re-use the securing screw.

#### NOTE

If the Storage Tube is **CLEAR** or **BLACK**

Tube has a Right-Hand thread (to tighten End-Cap, rotate clockwise).

If the Storage Tube is **GREY**

Tube has a Left-Hand thread (to tighten End-Cap , rotate anti-clockwise).

#### Storage Swivel Connector

- The Storage Coupling has a Swivel Connector that is an integral part of the Storage Coupling itself, within which it rotates.
- The Swivel Connector is internally threaded and joins to the Storage Tube in the same fashion as the Storage End-Cap.

## Monitoring Applicator Usage

### Shot Count Recording

The GreenElf Applicator counts the shots as it is used. The **TotCount** is a value incremented for every trigger activation since manufacture. The **JobCount** on the other hand is a count of the number of shots since last zeroed.

Both **TotCount** and **JobCount** are viewed by selecting the respective **menu** item and pressing the **ok** button.

### Useful Values

The following three values, obtainable directly from the menu, can be useful for tracking purposes:

**Dose**  
**JobCount**  
**TotCount**

It is suggested that at the end of each work session it could be a standard part of the job instructions to enter the values onto a logging sheet, depending on your requirements. A very simple example ...

Name	Applicator Serial #	Date	Time Start	Time End	---	<b>Dose</b>	<b>Job Count</b>	<b>Tot Count</b>	---
	123456	22-Mar				25	18,755	1,523,778	
	123456	23-Mar				17	22,101	1,545,879	

### And Purpose

If these numbers are recorded efficiently, it becomes possible to:

1. track dressing rates
2. track material usage

# SECTION 2

## Automated-Industrial Models

## Know Your GreenElf Applicator

### **Standard Components**

An Automated-Industrial GreenElf Applicator consists of the components listed below. Please make sure you have received all relevant components, including any custom parts that may have been ordered.

### **Documentation**

User Guide (this document)

CD-ROM including:

- Digital PDF of User Guide
- Videos of Applicator in use
- Advice documents / other useful information

### **Applicator and Accessories**

Applicator Mounting Bracket  
& Quick Release clamp

Main Module

Operating Module  
Battery Cover  
Battery  
Inspection Cover  
Delivery Connector

Supply Coupling

Swivel Connector  
Draw-Latch  
Isolation Shutter

Remote Trigger Line  
(Trigger Device depending on specified requirement)

Delivery tubes (X 3)

Battery Charger

Many components are available for purchase as sub-kits.

## Identification of Components



## Before Using the GreenElf Applicator

See Section 1 for important general information.

In particular see the headings:

Appropriate Materials

Making Material Available for Use

Dose Control

The Control Panel and Menu

About the Battery and Charging

Additional Features

## About the Battery and Charging

For an applicator mounted on a Potting Machine or Conveyor belt, charging may proceed at any time, even when the applicator is in use. In fact it is usually preferable to have power permanently connected.

- Always have the battery in the applicator when in use.
- You may leave the charger plugged in and continuously charging.
- If you do not have the charger plugged in and active during normal use (i.e. if you use battery only) it is recommended to:

### **CHARGE OVERNIGHT EVERY NIGHT**

This will maintain optimum battery condition and ensure that a full day of work can always be had without power interruption. For a healthy and fully charged battery, at least 40,000 shots should be possible before recharging is necessary.



## Setting Up the GreenElf Applicator

### *Mounting the Applicator*

The Automated-Industrial GreenElf Applicator is able to be used on a variety of Potting machines, Conveyor Belts or even attached to a side-boom on a moving vehicle.

The following are guidelines for mounting on a potting machine:

1. Use the GreenElf Mounting Bracket & Quick Release clamp



2. The applicator is mounted in a vertical position, preferably with a slight slope away from vertical as in this picture ...
3. Do not drill holes in or otherwise apply any destructive pressures to any part of the applicator. Do use the supplied bracket.

## **Material Supply**

The GreenElf Applicator Supply Coupling is provided with a black Swivel Connector. It must be set up so that a material hopper or other material source feeds into this connector. The arrangement must provide for free-flow of material into the supply end of the applicator.

## **Remote Trigger**

The GreenElf Applicator is supplied with at least one Remote trigger line which plugs into the Remote Trigger socket on the applicator itself. The other end is to be connected to a micro-switch or other method of closing the circuit. Whenever this circuit is closed, a single shot is fired.

The arrangement of the remote trigger depends on the intended method of triggering and how that will be synchronized with the target. The best configuration uses infrared detection of container presence. Or it could be as simple as a manual footswitch.

## **Infra-Red Container Detection**

A pair of infrared detectors are placed so that a container will break the beam between them. When the beam is broken a shot is initiated. A second shot cannot be triggered until the beam is unbroken and then broken again. The correct positioning of the sensors depends on the container approach-speed and height of the applicator, to allow for the drop-time. The correct position will be found after a little experimentation.



Consult GreenElf Works or your solution supplier for further information.

# SECTION 3

## Warranty, Maintenance & Service

## Conditions

### Warranty

#### Working Capability of the Applicator

The GreenElf Applicator is designed specifically for top-dressing or dibbling with dry granular materials. By firing the applicator's electronic trigger, a small individually-measured dose of suitable material is dropped to the target area. The applicator is able to be fired in succession from one target to the next.

#### Warranty Conditions

The GreenElf Applicator Warranty commences from date of shipment and continues for 2 years from that date. Warranty covers repair or other remedy in the event of significant compromise of the Working Capability of the Applicator when due to manufacturing defect or component failure. Warranty includes any labor needed to carry out the remedy and return freight costs. The following conditions apply:

1. GreenElf Works must be fully advised of the owner's Name, Shipping Address and applicator Model Number and Serial Number.
2. All instructions and cautions contained in this User Guide must be observed. Warranty may be void if specific recommendations given to ensure capability or longevity are not followed.
3. The applicator must not be "tampered with". Warranty may be void if the unit is serviced other than as advised in this User Guide or other than as advised by GreenElf Works.
4. You the Owner must cover outbound Shipping costs to GreenElf Works.
5. GreenElf Works will cover shipping costs inbound to you for all repairs under Warranty. However, for inbound shipping to you, any additional tariffs, duties, taxes or other imposts that may be levied by authorities or agencies in the country of destination must be paid by you.
6. Remedy under warranty is at the sole discretion GreenElf Works. If we deem a warranty request valid, we may remedy by any of repair, refund, component replacement or whole-unit replacement.
7. GreenElf Works will address any warranty difficulties or concerns with goodwill and fairness. In the unlikely event that a dispute requires formal resolution the jurisdiction and laws applying shall be those of the State of New South Wales, AUSTRALIA.

## **Not Covered by Warranty**

The GreenElf Applicator is constructed from quality robust materials for long life and is made to work. However, Warranty does not cover:

- (i) Breakage due to mishandling, falls, being run over by utility vehicles or other such misadventure
- (ii) Ripping or cracking due to abnormal, excessive or repeated compression, piercing by sharp objects or other mishandling
- (iii) Surface wear-and-tear as may occur over time
- (iv) Malfunction due to exposure to any liquids, corrosive chemicals, wet materials, rain or immersion. Do not operate the GreenElf Applicator in wet or damp conditions unless it is fully protected from moisture entry.
- (v) Lack of function due to the use of fertilizer, herbicide or other material with characteristics contrary to that as advised in this User Guide as suitable for the GreenElf Applicator series / model as supplied.
- (vi) Lack of function due to bending or other damage to the gate or its environment caused by the insertion of any rigid object into the Inspection Cover area or into either end of the Main Module.
- (vii) Fitness for particular purpose.

## **Liability**

At all times GreenElf Works® and manufacturer liability is limited to the Warranty commitment, up to a maximum of the actual price paid. At no time does liability or obligation extend to any other type of incidental or consequential damages or costs which may be incurred by the owner or any other party.

## **Software License**

The GreenElf® Applicator is sold with imbedded software and a perpetual License for its use in the applicator. The ownership of the software in the applicator resides with the manufacturer. The software may not be removed, copied, reverse-engineered, transferred or used other than in the applicator.

## **Intellectual Property**

The intellectual property resident in or demonstrated by the GreenElf® Applicator resides with the manufacturer and is subject to Patent Applications. This property may not be copied or transferred.

## Maintenance

### *Is there any Periodic Maintenance ?*

The GreenElf Applicator is designed to operate for extended periods without the need to carry out special maintenance. Emptying the applicator each day, charging overnight in a warm dry location and use of materials that are of good quality, dry and on-spec will all help to ensure trouble free operation.

During periods of heavy use there could be some cleaning required in the gate area. It is recommended that every few weeks the inspection cover be removed and any residues cleaned out. Dry compressed air can be effective at blowing out dust. It is also possible – depending on material - for a residue to build up on the gate or gate-guide. A fine blade can assist removal of any such residue. The gate must always be able to move freely through the gate-guide.

### *What if the Applicator gets Wet ?*

Water in any form is the enemy of any device handling fertilizers, herbicides or similar materials. If the applicator does get wet, through being left out in the rain or other misadventure, the following is recommended:

1. Remove the whole unit to a dry warm place
2. Completely empty the applicator of all granular materials.
3. Separate the Storage Assembly, Delivery tubes and Main Module.  
Inspect all areas for signs of water entry or caked material.
4. If inspection confirms the worst and water penetration is significant, if there is caked material still in the applicator or the damage is unknown ...
  - a) Remove the Storage End-Cap from the Storage Tube and ensure that no caked or moist material remains in the Storage Tube.
  - b) Remove the Inspection Cover, Battery Cover and Battery
5. Thoroughly clean out and dry all areas.
6. **Allow the applicator to remain in a dry warm place for an extended period to ensure that all components dry out completely.**  
**Do not apply power until all components are dry.**  
**If in doubt, please contact Greenlf Works before applying power.**
7. Connect battery and test for menu display.
8. Fully assemble and reuse the applicator only when all functions including Battery Charging, Menu and Trigger are operating normally.

## Technical Specifications

Technical Data and Specifications of the GreenElf Applicator ...

Item	Specifications	Comments
<b>Main Module</b> Material	Nylon	UV stabilized
<b>STORAGE TUBE (HH)</b> <b>STANDARD</b> Length Inside Diameter Tube Capacity  <b>LARGE</b> Length Inside Diameter Tube Capacity	1.5m (59") 63mm (2.6") ~ 5 L (5.5 Kg ~ 11 lbs)  1.5m (59") 82mm (3.25") ~ 8.3 L (9.5 Kg ~ 21 lbs)	Weight depends on material
<b>DELIVERY TUBES</b> Outer Diameter (OD)	Black polyethylene supplied. ~ 21.7mm (0.85 in). Equivalent to standard PVC ½ -inch irrigation tubing (sometimes called "15" )	For insertion into Delivery Connector.
<b>FIRING RATE</b> Single-Shot Pace-Firing™	As Triggered 0.5 to 10 sec range (increments of 0.1 sec)	
<b>BATTERY</b> Type Voltage  <b>&amp; CHARGER</b> Output  Shots from Full Charge Re-Charge Time Battery Lifetime	NiMH (Eneloop) Nominal 14.4V  24V DC <u>Un</u> regulated output ~ 18 V under load ~ 30 V free-measured  ~ 40,000 + ~ 1 - 4 hours ~ at least 500 full charge / discharge cycles	With thermistor and thermoswitch.  Values are for battery in good condition  If the daily charging routine is followed, life is likely to exceed 3 years of daily use.



## TroubleShooting

### Troubleshooting Table

#	Problem	Description	Actions / Remedy
1	<b>The applicator turns itself off</b>	This is a feature. Power is conserved when the applicator is not being used. See <u>Automatic Power-Off</u> .	Just use the <b>on</b> button. Nothing has been lost.
2	<b>Holding down the trigger, the Applicator keeps firing</b>	This is a feature. See <u>Pace-Firing</u> .	Do not hold the trigger down unless you want continuous firing.
3	<b>The applicator unexpectedly "made a sudden noise" or even went "rat-tat-tat" as if firing many times</b>	This is a feature. The applicator was clearing some lumpy material or other obstruction. See <u>Automatic Obstruction Removal</u> .	If the applicator is now working properly, Automatic Obstruction Removal has done its job and there is no concern. If the applicator has stopped working and you have the display message <b>Gate Not Moving</b> <u>see troubleshooting item 8 below</u> .
4	<b>The applicator Battery Charge % is NotAvail</b>	This is a feature. It means that due to a recent charge / discharge pattern, a calculation of the % charge could be misleading.  See the sub-section <u>Checking the Battery Charge %</u> .	Battery charge % readings will return after the next full charge.
5	<b>Material Grains fall straight through the applicator</b>	There is a flow of grains straight through the applicator, even when the gate is closed (no firing).	<ol style="list-style-type: none"> <li>1. The occasional release of a few grains is a feature of the special Dynamic Bridging which enables positive flow control while ensuring that CRF grains are not damaged.</li> <li>2. Note that a sudden "jolt" may also release a small (un-measured) number of grains</li> </ol>



			<p>from the applicator. This is also expected due to the above mentioned design.</p> <ol style="list-style-type: none"> <li>3. If the flow is excessive, check that you are using material that is in correct size range for your applicator. See section headed <u><i>Appropriate Materials.</i></u></li> <li>4. Be aware that material must be “bulk-dropped” into the applicator Main Module. If you just “dribble” material into the Main Module, some can be expected to fall through. The proper method is via the sequence of Filling the Storage Tube and with Applicator in the normal position, Open Shutter with one quick action for a DUMP FILL of the Main Module. This ensures proper fill without flow-through. See the section <u><i>Filling the Applicator with Material</i></u></li> </ol>
6	<p><b>The applicator will not turn on</b></p> <p><b>Nothing happens on the display when the applicator is turned on using the on / off button</b></p>	<p>Either there is a serious fault, or – more likely - there is an electrical connection or charging problem with your battery.</p>	<p>Check the following items:</p> <ol style="list-style-type: none"> <li>1. Confirm that the battery is connected. See the guide section headed <u><i>Accessing the Battery.</i></u></li> <li>2. Fully charge the battery as described in the section <u><i>About the Battery and Charging / Charging Procedure.</i></u></li> <li>3. If there is still no display at all, even when attempting to charge the battery, <u><i>see the next troubleshooting item.</i></u></li> <li>4. If after checking all options to ensure a fully charged and properly connected battery you still have no display, follow the <u><i>Problem Reporting</i></u> procedure.</li> </ol>

7	<b>While charging the battery, Charging is not displayed.</b>	The battery is not being charged.	<p>Check the following items:</p> <ol style="list-style-type: none"> <li>1. Check that the AC power source is on and working at the wall</li> <li>2. Ensure that the correct Charger is plugged into the AC power source and connected to the normal Charge Socket on the applicator.</li> <li>3. Press the <b>on / off</b> button on the applicator to ensure that the applicator is <b>on</b> and the display shows it is active. After a few moments <b>Charging</b> should display.</li> <li>4. If there is still no Charging display, try <b>on / off</b> and wait for the display once more.</li> <li>5. If there is still no Charging display, remove the battery cover (see the section headed <i>Accessing the Battery</i>), ease out the battery and check that the connectors are firmly joined. Carefully return the battery to position and replace the battery cover. Check behavior again.</li> <li>6. If the applicator is not even turning on, a possibly more serious fault is indicated. If the battery is old and has not been used for some time, a new battery may be required.</li> <li>7. If you do not suspect the battery as faulty or have replaced the battery and there is still no Charging display - follow the <i>Problem Reporting</i> procedure.</li> </ol>
---	---	-----------------------------------	---

8	<p><b>Display message</b></p> <p><b>Gate Not Moving</b></p>	<p>Read the section titled <u>Inspection Cover</u>.</p> <p>The most likely cause of this message is an actual obstruction which prevents gate action.</p>	<ol style="list-style-type: none"> <li>1. Remove the cover and check for obstructions.</li> <li>2. Thoroughly clean the Gate area, using dry compressed air (if available) to loosen any particles.</li> </ol> <p><u>Caution</u></p> <p><b>DO NOT place your fingers in the gate area at the same time as firing the trigger.</b></p> <ol style="list-style-type: none"> <li>3. If after removing all obstructions, and blowing out all dust and particles you still get the <b>Gate Not Moving</b> display, follow the <u>Problem Reporting</u> procedure.</li> </ol>
9	<p><b>Gate operates, but sluggishly</b></p>	<p>This is most likely caused by an Obstruction or “gumming up” of the Gate area due to use of poorer quality or wet materials.</p> <p>It could possibly be caused by damage to the Gate itself, such as if a rigid object was inserted into this area.</p> <p>See the section headed <u>Care</u></p>	<p>Check the following items:</p> <ol style="list-style-type: none"> <li>1. If the display has any mention of the <b>Batt</b> or <b>Battery</b> then fully charge the battery as described in the <u>Charging Procedure</u>.</li> <li>2. Otherwise proceed on the assumption that there is an obstruction or the applicator needs cleaning in the Gate area. <u>Note</u> the relevant steps and instructions under the troubleshooting item 8 ... Display message <b>Gate Not Moving</b>.</li> <li>3. Check for damage to the Gate itself. In the unlikely event that the gate is bent or damaged, repair is required. Follow the <u>Problem Reporting</u> procedure.</li> </ol>

10	<b>Swivel Connector has reduced rotational freedom in the Supply Coupling</b>	There may be some grit build up between the (internal) rotational surfaces of the Supply Coupling and Swivel Connector.	<p>The Supply Coupling may need to be disassembled and cleaned out.</p> <p>Note carefully how the Isolation shutter and the draw-latch are placed and sit.</p> <p>Disassemble and clean.</p> <p>When re-assembling, hold both sides of the coupling tightly together <u>by hand</u> and make sure the Isolation Shutter is free to move. Only then insert the screws and tighten.</p> <p>Do not over-tighten the screws. Continue to check all parts for freedom of movement.</p>
11	<b>Any misbehavior when the applicator may have become wet</b>	Wet materials or water inside the applicator itself could be the cause of poor or incorrect function.	See the section headed <u>What if the Applicator gets Wet ?</u>

12	<b>Apparent scrambling or wrong values seen on the Display.</b>	<p>This is a very rare condition. If for some reason a transient current has been placed across the charging input - perhaps a spike etc when the applicator is on or charging – current settings and other dynamic values in the applicator could become corrupted.</p> <p>However, default values that are important for the applicator's correct function are also stored permanently in the applicator's software code and the applicator can be requested to restore these values.</p>	<p><b>Full Reset</b> <b>(for all applicators with Software Version V3.16 and higher)</b></p> <p>This is the procedure to re-initialize all applicator settings and values:</p> <ul style="list-style-type: none"> <li>- Start with applicator <b>off</b>.</li> <li>- Press &amp; hold the <b>Menu</b> button and then at the same time ...</li> <li>- Press &amp; hold the <b>on</b> button.</li> <li>- Keep holding both buttons until the display <b>Full Reset?</b> appears (you may now stop holding the buttons)</li> <li>- press <b>ok</b> to reset ALL values.</li> </ul> <p>Warning: Existing Dose settings and Shot-Counts will be reset.</p>
----	---	---	--

## Problem Reporting

If you have a problem that you feel should be corrected under warranty or would just like to ask a question about your applicator, GreenElf Works would appreciate that you communicate supplying the following information:

**Contact Name & Company Name**

**Shipping Address**

**Contact number(s) (including Area Codes)**

**Applicator Serial #**

**TotCount \***

**A clear problem description or question.**

\* If you are unable to collect some of this information because the applicator itself is not turning on, supply what you can from your own records.

To contact GreenElf Works:

(A) You may phone at any time if required.

(B) A better communication is to email us at GreenElf Works

Email at the Web-Site [www.greenelfworks.com](http://www.greenelfworks.com)

Email direct [service@greenelfworks.com](mailto:service@greenelfworks.com)

Phone Phone +61 (0)2 9418 6925

Fax +61 (0)2 8212 8155

Mobile +61 (0)412 255 065

Having the necessary information in an email is good for your own records, is more likely to be accurate and helps us provide you a better service.

## The Service Process

- (a) Follow all recommendations and procedures in this User Guide
- (b) If you have a problem, ensure that you are familiar with the relevant recommendations and information in this Guide and have studied the Troubleshooting descriptions and remedies.
- (c) Advise GreenElf Works of any apparent problem. It may be resolved over the phone or through email. Always supply as much information as possible, as per the Problem Reporting section above.
- (d) If we agree that service attention is required at our workshop, ship the applicator (or part as may be agreed) direct to GreenElf Works.
  - ⇒ Use the original packing materials or equivalent protection.
  - ⇒ If you have a specific or changed shipping address you must inform us.
  - ⇒ Please Remember ...  
You the Owner must cover Outbound Shipping costs to us and  
GreenElf Works will cover Inbound Shipping costs to you  
for all valid Warranty Repairs.

### Send by pre-paid freight to:

GreenElf Works  
15 Landers Road  
LANE COVE NSW  
AUSTRALIA 2066

- (e) Upon repair or remedy, your applicator will be shipped back to you air-freight.