

USER MANUAL: BRAWNDO TS SYSTEM



TERRA VERA

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MANUFACTURER AND CONTACT INFORMATION

Manufactured By:

Terra Vera

4 Anasazi Trails Loop,

Placitas, NM 87043

For product information, sales, service, and technical assistance:

<https://terravera.com/>

support@terravera.com




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SAFETY SYMBOLS

Table 1: Safety Symbols used in this manual

SYMBOL	MEANING
	Refer to the user manual for warning information to avoid hazard or personal injury to the operator or device.
	Fire Safety Warning.
	Electrical Safety Warning.
WARNING	General indication to take note of the information marked with this symbol.

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GENERAL SAFETY SUMMARY

No Smoking



The Brawndo TS system generates a small amount of flammable, hydrogen gas during operation. The Brawndo TS is designed to safely dissipate this gas below combustible concentrations when used as intended. However, it is always best practice to not smoke or have any ignition sources (lighters, space heaters, etc.) near the unit during operation, or storage of active chemistries. It is also critical that the unit only be used as intended/directed to avoid trapping gas within the system. Contact Terra Vera Support if there are ever any questions.

Do Not Over-Fill



The Brawndo TS is not designed to be filled beyond the RED marked line on the outside of the storage tank. Doing so may cause liquid to overflow through the vent and will flood/damage the controller and may lead to a hazard. Terra Vera Warranties do not cover damage due to overfilling the Brawndo TS unit.

General Precautions

Electrical Safety



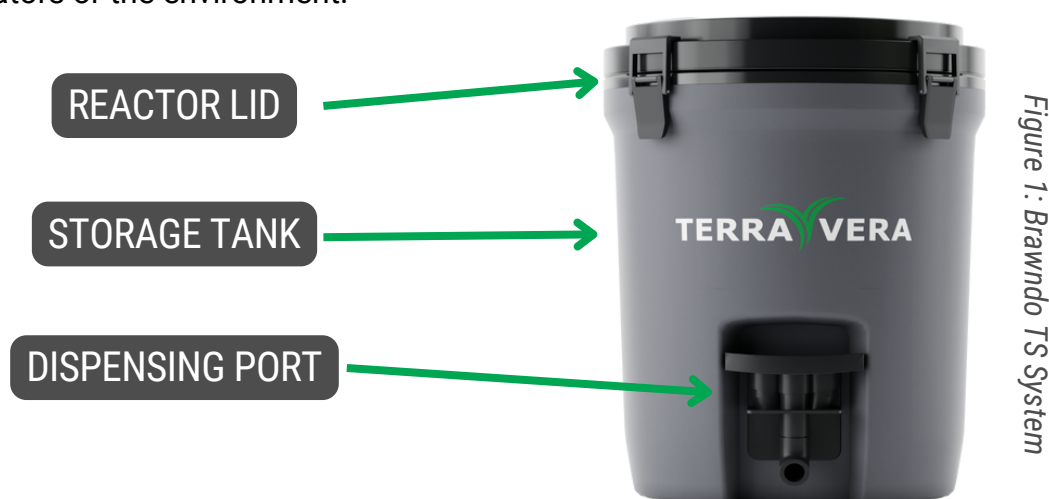
The Brawndo TS unit inherently operates in an environment where liquids and electricity are present. The unit is designed to protect the operator from coming into contact with hazardous electricity from the device or power supply. However, it is important that an appropriate AC electrical connection with a properly installed outlet be used when operating the system. While not required, Terra Vera recommends using a GFCI outlet when operating the Brawndo TS system as a further safeguard against electrical hazards.

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SYSTEM DESCRIPTION

System Overview

The Brawndo TS produces 2 gallons (7.5 liters) of active Terra Vera chemistry that can replace many traditional pesticides and fertilizers. The premium reactor cell ensures a long life in agricultural conditions with a wide tolerance of inputs. The system requires minimal maintenance and, when used appropriately, presents little to no hazard to operators or the environment.



Description of Components

Reactor Lid – The Control Box and Electrolytic Cell for the TS system is integrated into the lid of the storage tank. This lid is designed to activate Terra Vera chemistries with the press of a button and track the shelf-life of active chemistry (so long as there is no interruption of power to the TS system).

Storage Tank – The reactor enclosure doubles as the storage tank for prepared/active Terra Vera chemistries.

Dispensing Port – The dispensing port allows for the convenient filling of spray bottles, buckets, and fogger systems directly from the Brawndo TS unit.

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Environmental Requirements

The Brawndo TS is designed to be portable and can be set up and used to generate/mix active chemistry anywhere from a test laboratory to a garden shed. However, the control unit is not weatherproof or waterproof. Please store the Brawndo TS in a clean, dry place when not in use to prevent damage to the system.

GETTING STARTED

Receiving the BRAWNDO TS

Re-Tightening the Dispensing Port

The Brawndo TS dispensing port ships tightened and sealed to the tank; however, the nut on the inside of the storage tank may come loose during shipment. Before first use, it is important to hand-tighten the nut on the inside of the storage tank to ensure a proper seal between the tank and dispensing port to avoid spills/leaks.

Operating the BRAWNDO TS

Refer to the included Quick-Start Guide for details on Operating the Brawndo TS system.



Figure 2: QR Link to Brawndo TS Quick-Start Guide

Tracking Chemistry Shelf Life

Once done generating active chemistry, the Brawndo TS will track the shelf-life of the active chemistry stored within. The GREEN RUN light will remain illuminated for the duration of the time the active chemistry is ready for use. Once the chemistry has expired, the GREEN and RED lights will alternate signaling it is time to dispose of the remaining liquid and prepare a new batch of active chemistry. **Note that the controller will not maintain the tracking if disconnected from power after generating. If the unit must be disconnected from power before the chemistry has expired, it is recommended that the chemistry be used within 2 weeks of when it was generated.**

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Refer to Application Guide for Use of Chemistry

Contact Terra Vera Customer Success with any questions regarding application of Terra Vera Chemistries.



Figure 3: QR Link to Brawndo TS Application Guide

SYSTEM CONTROL PANEL

Control Panel Overview

The control panel for the Brawndo TS system is operated by pressing a single button on the top of the unit. One press turns the unit on. The GREEN PWR LED light will illuminate. The next press will cause the system to attempt to generate chemistry. The BLUE RUN LED light will illuminate. The RED ERR LED Light assists in diagnosing the status of the system should the system require attention. Refer to *Table 2* for details on the LED Meanings.

Description of Function

On/Standby – The system is on and awaiting instruction to begin generating active Terra Vera chemistry (solid GREEN LED after first button-press with power to the unit).

Run – The system is actively generating a batch of chemistry. During this time the cell is energized and producing chemistry (solid BLUE LED after second button press with power to the unit).

On/Tracking Shelf-Life – Similar to On/Standby, the system is not actively generating chemistry. However, it is tracking the time since the Run cycle was completed. Refer to Tracking Chemistry Shelf Life for additional details and limitations of this functionality.

On/Chemistry Expired – The system indicates that the chemistry from the last Run is expired and should be disposed of properly.

Error – The system has experienced a criteria that is outside of the allowed operating conditions. Refer to the Troubleshooting Guide for assistance in diagnosing errors.







Reset – Pressing the control button and holding for ~5 seconds will reset the Controller. This is useful when using the reactor to generate multiple batches of chemistry in a row.

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TROUBLESHOOTING GUIDE

Error codes and what they mean

Table 2 Control Panel LED Meanings

LED COLOR	CAUSE	INSTRUCTIONS
 Solid	On/Ready	Ensure ELMNTs and water in tank
 Solid	Activating Chemistry	Do not remove lid until cycle complete
 Solid	Chemistry Ready	Dispense chemistry into applicator
 Alternating	Expired Chemistry	Dispose of chemistry, repeat Step 1
 Blinking	Low Water/ELMNTs Error	Check water level or if ELMNTs dissolved
 Solid	Too Much ELMNTs Error	Empty tank and reset system

CARE AND MAINTENANCE

Proper Storage

Store the Brawndo TS in a clean, dry location to prevent damage and prolong the life of your system.

Cleaning the Tank

The Brawndo TS tank must be rinsed between all batches of generated chemistry. This will ensure the proper ratios are present in each batch and the efficacy of the Terra Vera chemistry.

Cleaning the Cell

The Brawndo TS cell should require no maintenance so long as low hardness (i.e., Softened, De-ionized, Reverse Osmosis (RO) water is used to generate chemistries. However, if the unit is operated with water that contains minerals, scale will eventually begin to form on the electrode plates. This scale can be easily cleaned by periodically soaking the cell in vinegar or citric acid until the scale/residue breaks down. Always rinse the cell thoroughly after soaking in a cleaning solution.

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FREQUENTLY ASKED QUESTIONS

Q: Does the system track chemistry even if I unplug it?

A: No, the system's tracking clock will reset if unplugged after generating a batch of chemistry. Refer to Tracking Chemistry Shelf Life for more information on how to track shelf-life through a power cycle.

Q: The system is portable. Can I carry it around with liquid inside?

A: NO! This is not recommended. The unit is designed to be portable when not in use or storing chemistry. If the unit must be moved while holding liquid, care must be taken not to splash liquid up the vent and onto the controller. Terra Vera Warranties do not cover damage due to liquid on the controller.

Q: Can I "re-activate" expired chemistry?

A: NO! Never attempt to re-activate expired chemistry. Doing so may create other chemistries that may have unintended consequences.

Q: Can we be friends?

A: YES!!! We love to connect with our customers and share a community with each other. Find us on social media:

Linkedin: @terra-vera-corp

Instagram: @tryterravera

Facebook: @tryterravera

Twitter: @terraveratweets

YouTube: @tryterravera

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WARRANTY INFORMATION

The Brawndo TS system is made in the USA and comes with a 1-year warranty for factory defects. This warranty requires product registration and does not cover damage due to misuse or mis-storage of the unit. Contact Terra Vera Support with any questions or concerns regarding system warranties.

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