

Introduction

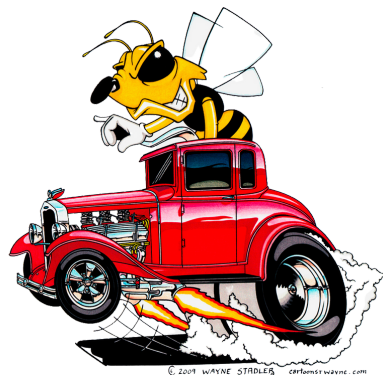
We are proud to have you as a customer and feel you will be proud to be a Turf Tech equipment owner.

The intent of this manual is to provide you with the knowledge to install and operate a B&B Sprayer, so the operator and environment are safe. These sprayers are designed to handle a large variety of turf chemicals applied with either a boom or spray gun application.

Any piece of equipment needs, and must have a certain amount of service and maintenance to keep it in top running condition. We have attempted to cover all the adjustments required to fit most conditions; however, there may be time when special care must be taken to fit a condition. Correct operation and maintenance will insure the safest and longest life of the sprayer.

Study this operator's manual carefully and become acquainted with all the adjustments and operating procedures before attempting to operate your new equipment. Remember, it is a machine and has been designed and tested to do an efficient job in most operating conditions and will perform in relation to the service it receives. Keep this manual in an accessible place for future usage.

Do not hesitate to call your Dealer or B&B at 402-374-2575 with any questions.



ATTENTION! BECOME ALERT!

YOUR SAFETY IS INVOLVED!



TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHTOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

TAKE TIME FOR SAFETY

BE A SAFE OPERATOR
AVOID ACCIDENTS BY
THINKING BEFORE ACTING
AND BY READING YOUR OPERATOR'S MANUAL

NOTE: Some illustrations in this manual show units with optional equipment installed. This optional equipment may be purchased from your local B&B dealer.

CAUTION: Some photographs in this manual my show shields or cover panels removed for purposes of clarity. NEVER OPERATE: Unit without all shields and cover panels in place.



AVOID ACCIDENTS



Most accidents, whether they occur in industry, on the farm, at home, or on the highway, are caused by the failure of some individuals to follow simple and fundamental safety rules or precautions. For this reason most accidents can be prevented by recognizing the real cause and doing something about it before the accident occurs.

Regardless of the care used in the design and construction of any type of equipment, there are many conditions that can not be completely safe guarded against without interfering with reasonable accessibility and efficient operations.

A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT.

THE COMPLETE OBSERVANCE OF ONE SIMPLE RULE WOULD PREVENT MANY THOUSAND SERIOUS INJURIES EACH YEAR THAT RULE IS:

NEVER ATTEMPT TO CLEAN, OIL OR ADJUST A MACHINE WHILE IT IS IN MOTION!

Warranty Policies

WARRANTY INFORMATION

Products manufactured by B & B Technologies are covered by a standard one-year warranty from the original date of purchase or two-years if the Warranty Registration Form is returned. This warranty covers only defective material or workmanship. It does not cover normal wear or maintenance or repair resulting from accident, improper use, chemical damage, or alteration of the product. The cost of normal maintenance, service and repair items shall be paid by the owner.

Under this warranty, B&B shall at its option, either repair or replace, free of charge, any defective part or parts. The part or parts must be returned to B&B within thirty days from the date of failure through the dealer or distributor from whom the product was purchased, transportation charges prepaid.

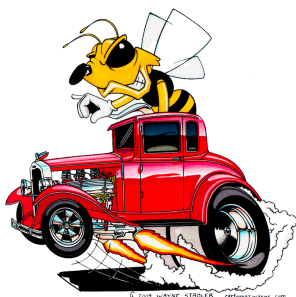
Every item to be considered for warranty requires warranty authorization from B&B.

Call B&B for specific procedures before part is returned or service work begins.

B&B will make all final decisions regarding warranty reimbursement.

LIQUID CARRYING VESSEL WARRANTY

Liquid-carrying vessels are subject to the applicable warranty only. The loss of chemicals within the vessel is not covered by warranty. Expenses, inconveniences, or other damages that may occur are not subject to warranty consideration. Warranty is void if the vessel or vessel lining failed because of inadequate support of the vessel, misuse or lack of reasonable care, or use of chemical formulations not recommended by the vessel manufacturer. User shall determine the suitability of the product for his intended use and assume all risks and liability in connection therewith.



EQUIPMENT SAFETY GUIDELINE



Safety of the operator was the main concern when we were designing and developing this sprayer. We designed and manufactured in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with your, or for you, follow them.

In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.

Replace any **CAUTION, WARNING, DANGER** or instruction safety decal that is not readable or is missing.

Do not attempt to operate this equipment under the influence of drugs or alcohol.

Review the safety instructions with all users annually.

This equipment is dangerous to children or persons unfamiliar with its operation. The operator should be a responsible adult familiar with equipment and trained in this equipment's operations. Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and how it works.

Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question —**DON'T TRY IT.**

SAFETY SIGN CARE



- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Replaced parts that displayed a safety sign should also display the current sign.
- Safety signs are available from your Distributor or Dealer Parts Department or the factory.

How to Install Safety Signs:

- Be sure that the installation area is clean and dry.
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of decal backing paper.

TIRE SAFETY



- Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
- Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
- Inflating or servicing tires can be dangerous. Whenever possible, trained personnel should be called to service and/or mount tires.
- Always order and install tires and wheels with appropriate capacity to meet or exceed the anticipated weight to be placed on the equipment.

PERSONAL SAFETY



- Always mix and handle pesticides very carefully to prevent accidental spills or poisoning. (if a spill should occur, clean it up in accordance with state, federal, and local laws. If ingestion of the pesticide occurs read the label and call a doctor immediately.)
- Wear protective clothing and other devices (gloves, goggles, respirators, etc.) as specified on the pesticide label.
- Do not breathe mists, vapors or dust from pesticides when handling, mixing or applying them.
- Wash hands and face thoroughly after handling any pesticides and especially before eating, drinking, or smoking.
- Treat all clothing worn while handling or applying pesticides as contaminated!
Handle ALL contaminated clothing with gloves.
Wash clothing daily and separately from the family wash.
Pre-rinse, presoak, pretreat with a stain remover.
Use HOT water.
Use the highest water level.
Use the longest wash cycle.
Use heavy-duty liquid detergent.
Line dry.
Washing clothing 2-3 times if heavily soiled or if pesticides are highly toxic, or consider discarding
After washing, run the machine through a complete cycle with detergent.
- Proper handling of pesticides results in safety for you and your environment.
Remember—**ALWAYS READ AND FOLLOW THE PESTICIDE LABEL!**

PESTICIDE PRECAUTIONS



- Read the label.....read the label.
- Re-read the label.
- Use the pesticides strictly following the directions on the label.
- Store all pesticides in original containers with labels attached in a dry, well vented room or building.
- Post warning signs for pesticide storage in accordance with existing laws.
- Never leave pesticides open near children, pets or unauthorized personnel.
- Always triple rinse containers.
- Empty and dispose of containers according to existing laws.
- Be sure to keep required records of all pesticide applications.

REMEMBER:

Your best assurance against accidents is a careful and responsible operator. If there is any portion of this manual or function you do not understand, contact your local authorized dealer or manufacturer.

BEFORE OPERATION:



- Carefully study and understand manual.
- Do not wear loose-fitting clothing which may catch in moving parts.
- Always wear protective clothing and substantial shoes.
- It is recommended that suitable protective hearing and (eye protection) sight protectors be worn.
- The operator may come in contact with certain materials which may require specific safety equipment, relative to the handling of such materials (examples: extremely dusty, molds, fungus, fertilizers, etc.)
- Keep wheel lug nuts or bolts tightened to specified torque.
- Assure that tires are inflated evenly.
- Give the unit a visual inspection for any loose bolts, loose straps, worn parts or cracked welds, and make necessary repairs. Follow the maintenance safety instructions included in this manual.
- Be sure that there are no tools lying on or in the equipment.
- Do not use the unit until you are sure that the area is clear, especially children and animals.
- Because it is possible that this equipment may be used in dry areas or in the presence of combustibles, special precautions should be taken to prevent fires and fire fighting equipment should be readily available.

Add · Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with your new equipment.

- Practice operation of your equipment and its attachments. Completely familiarize yourself and other operators with its operation before using.

DURING OPERATION:



- NO PASSENGERS ALLOWED—Do not carry passengers anywhere on the equipment, except as required for operation.
- Keep hands and clothing clear of moving parts.
- Do not clean, lubricate or adjust your equipment while it is moving.
- When halting operation, even periodically, set the towing vehicles brakes, disengage the PTO, shut off the engine and remove the ignition key.
- Be especially observant of the operating area and terrain—watch for holes, rocks or other hidden hazards. Always inspect the area prior to operation.

· DO NOT MAKE SHORT TURNS AT HIGH SPEEDS!! BE EXTRA CAREFUL ON SLOPES

- Be sure sprayer is turned on only to spray targeted areas.
- When spraying always be careful of the temperature, wind and wind direction to avoid possible drift or volatilization of target areas.
- Be sure to clean sprayer thoroughly before switching from herbicides to insecticides to fungicides.

· WARNING The shifting of water on slopes may cause the vehicle to overturn—never make sharp turns at accelerated speeds on slopes.

- Avoid overhead wires or other obstacles. Contact with overhead lines could cause serious injury or death.
- Never stand alongside of unit with engine running or attempt to start engine and/or operate machine while standing alongside of unit.

FOLLOWING OPERATION:



- Clean sprayer thoroughly before switching from herbicides to insecticides to fungicides.
- Store the unit in an area away from human activity.
- Do not permit children to play on or around the unit.
- Make sure all parked machines are on a hard, level surface and engage all safety devices.

PERFORMING MAINTENANCE:

- Make sure there is plenty of ventilation. Never operate the vehicle in a closed building. The exhaust fumes may cause asphyxiation.
- Before working on this machine, stop the vehicle, set the brakes, disengage the PTO and all power drives, shut off the engine and remove the ignition keys.
- Be certain all moving parts on attachments have come to a complete stop before attempting to perform maintenance.
- Always use a safety support and block the wheels. Never use a jack to support the machine.
- Always use the proper tools or equipment for the job at hand.
- Use extreme caution when making adjustments.
- Never use your hands to locate a hydraulic leak on attachments. Use a small piece of cardboard or wood. Hydraulic fluid escaping under pressure can penetrate the skin.
- When disconnecting hydraulic lines, shut off hydraulic supply and relieve all hydraulic pressure.
- Openings in the skin and minor cuts are susceptible to infection from hydraulic fluid. If injured by escaping hydraulic fluid, see a doctor at once. **Gangrene can result. Without immediate medical treatment, serious infection and reactions can occur.**
- Replace all shields and guards after servicing and before moving.
- After servicing, be sure all tools, parts and service equipment are removed.
- Do not allow grease or oil to build up on any step or platform.
- Never replace hex bolts with less than grade five bolts unless otherwise specified. Refer to bolt torque chart for head identification marking.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use.
- If equipment has been altered in any way from original design, the manufacturer does not accept any liability for injury or warranty.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance.

WINTERIZING YOUR SPRAYER

When winterizing your sprayer, dispose of any unused chemical according to chemical manufacturer's recommendations. Flush out tank and pump, preferably with a neutralizing solution. Then pump a 50-50 mixture of RV anti-freeze and water throughout the system until it comes out the handgun and/or boom. Your sprayer is now ready for winter. Do NOT use motor oil, diesel fuel, etc., to lubricate your sprayer as these can damage the pump seals and gaskets throughout the sprayer.

CALIBRATION GUIDE FOR NEW SPRAY TIPS

Step 1 TO SELECT CORRECT SIZE SPRAY TIP

1. Pick MPH (miles per hour) to suit equipment and field conditions.
2. Select GPA (gallons per acre) - referring to chemical label for recommended application rates.
3. Look on the left side of the Spray Tip Calibration Table to get the GPM (gallons per minute) required for your application.
4. Choose a spray tip from any tip manufacturer's selection table that delivers the required GPM.

Step 2 TO ADJUST SPRAYER WITH NEW SPRAY TIPS FOR ACCURATE APPLICATION

1. With the sprayer parked, the new tips installed on the sprayer, and the tank full of water, run the engine at the same speed to be used when spraying.
2. Collect water from one tip in a measuring jar or flask, and adjust the sprayer's pressure regulating valve until the tip delivers the required GPM that was selected in STEP 1. This may be measured in fluid ounces per minute as given on the Spray Tip Calibration Table. For a 30 second collection period multiply the collected ounces by two. For a 15 second collection period multiply the collected ounces by four.
3. Adjust the spray boom height for correct spray pattern overlap as shown on the Spray Tip Selection Table. (Minimum 30% overlap)

Worn spray tips may over apply chemicals, possibly causing turf damage and resulting in excess chemical cost. Clogged tips or screens can result in under application and lessen the effectiveness of your spraying program

TO CALIBRATE SPRAYER WITH USED TIPS

- Select correct size spray tip as in Step 1 above
- With the sprayer parked, a new tip installed on the sprayer along with the old tips, and the tank full of water, run the engine at the same speed to be used when spraying
- Collect water from the new tip and adjust the pressure regulating valve until the tip delivers the required GPM for your application. This may be measured in fluid ounces per minute as given on the Spray Tip Calibration Table. For a 30 second collection period multiply the collected ounces by two. For a 15 second collection time multiply the collected ounces by four. Now take the same measurement from each of the used tips and record the results for each one. Note any tips that need replacement or cleaning by whether they vary noticeably from a new tip or from each other in pattern or output.

- Now, with all good tips and screens installed, readjust the pressure regulating valve until the tips all deliver the required GPM for your application as taken from a nozzle chart.
- Adjust the spray boom height for correct spray overlap as shown on the Spray Tip Selection Table. (30% minimum overlap)
- Refer to the Trouble Shooting Guide if there are any problems

ACTUAL SPEED

ACTUAL SPEED is an important element in determining application rates. Wheel slippage makes it difficult for your speedometer to measure field speed accurately, especially when hauling a load, but here is a simple method.

Time your speed in the field, after a 'running start', over a measured distance of 88 ft., with spray tank 1/2 full of water. Take the measured time and divide into 60. This equals miles per hour, example table below.

Compare to this table:

Time (sec.)	30	20	15	12	10	8.5
Speed (mph)	2	3	4	5	6	7

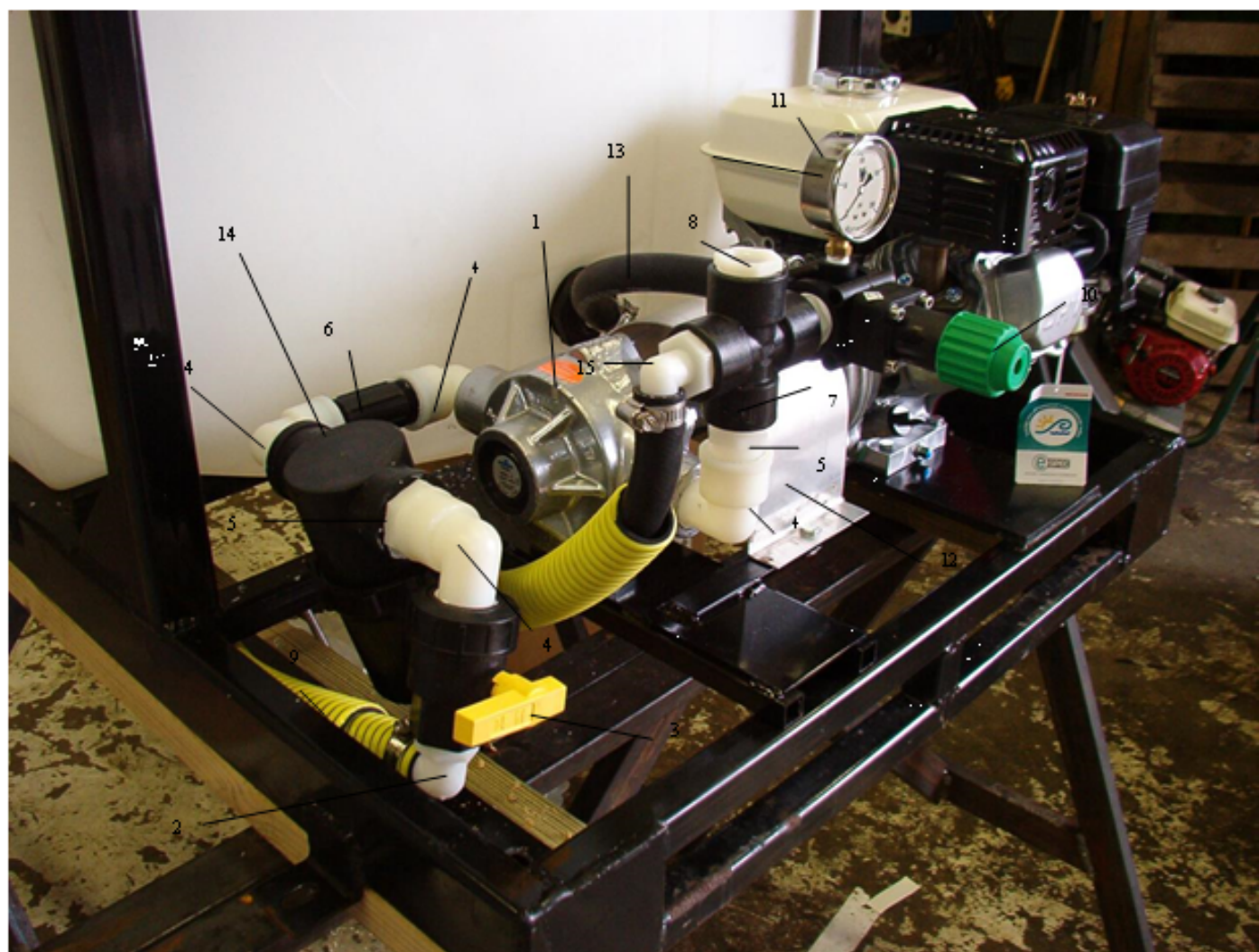
TROUBLE-SHOOTING GUIDE

COMMON PROBLEMS	POSSIBLE CAUSES
Streaks or voids in spray pattern	<ul style="list-style-type: none">• Clogged or damaged tips (see below)
Nozzle spray pattern is narrower and heavier in the middle than a new tip and/or has heavier edges	<ul style="list-style-type: none">• Tip worn enough to cause uneven application and should be replaced.
A sprayer tankful covers more acres than before at the same PSI and speed	<ul style="list-style-type: none">• Clogged tips or screens (see below)• Field speed faster than before because of less wheel slippage• Pump losing capacity/volume• Inner wall of pump hose collapsed
A sprayer tankful covers fewer acres than before at the same pressure PSI and speed	<ul style="list-style-type: none">• Worn spray tips: Check flow in GPM against a new tip before spraying• Field speed slower than before because of more wheel slippage• Leaks through hoses or connections
Measured GPM noticeably less than from a new tip of the same size at the same pressure setting	<ul style="list-style-type: none">• Clogged tips or screens (see below)
Measured GPM noticeably more than from a new tip of the same size at the same pressure setting	<ul style="list-style-type: none">• Spray tip is worn enough that it should be replaced
Streaks of weeds or crop damage	Uneven chemical application caused by: <ul style="list-style-type: none">• Worn spray tips• Clogged tips or screens (see below)• A wrong size tip• Incorrect spray pattern overlap• Boom height adjusted too low• Boom not parallel to the ground
NOTE: Clean spray tips and screens with a toothbrush or toothpick. If the problem remains, the spray tip is probably damaged and should be replaced.	WARNING: Cleaning spray tips with a metal object may change the spray pattern and flow rate (GPM).

LAWN TECH w/ HONDA ENGINE



LAWN TECH w/ ELECTRIC HOSE REEL



LAWN TECH PLUMBING

NUMBER	PART	DESCRIPTION	QUANTITY
1	HY1700CR	HYPRO PUMP	1
2	NYEL10012	1" IPT x 3/4" BARB ELBOW	1
3	BV100	1" BALL VALVE	1
4	NYSE100	1" STREET ELBOW	4
5	NYM100	1" CL x NIP	2
6	NYM1004	1" NIPPLE 4" LONG	1
7	NYCC100	1" CROSS	1
8	NYA3412	3/4" x 1/2" BUSHING	1
9	HES100	1" SUCTION HOSE 43" LONG	1
10	PR463080N	PRESSURE RELIEF VALVE	1
11	PRGG200	PRESSURE GAUGE	1
12	HY1323-0054	COUPLER ENGINE TO PUMP	1
13	HE342	3/4"ID HOSE 18" LONG	1
14	AMLS114	1 1/4" LINE STRAINER	1
15	NYEL10034	1" IPT x 3/4" BARB ELBOW	1