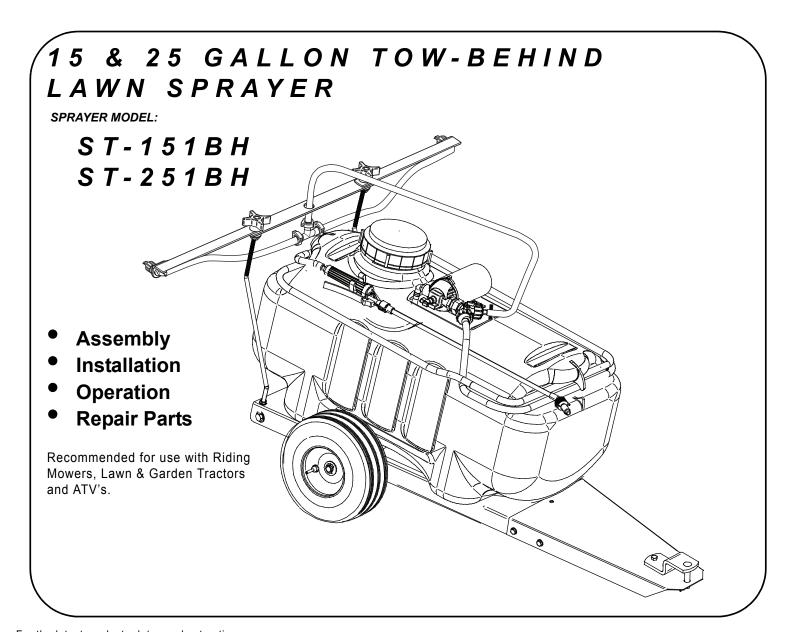
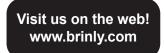


OWNER'S MANUAL



For the latest product udates and setup tips:



Important: This manual contains information for the safety of persons and property. Read it carefully before assembly and operation of the equipment!

L-1914 Rev. B

INTRODUCTION

CONGRATULATIONS on the purchase of your new lawn sprayer! Your lawn sprayer is designed, engineered and manufactured to give you the best possible dependability and performance.

CUSTOMER RESPONSIBILITIES

Please read and retain this manual. The instructions enables you to assemble and maintain your lawn sprayer properly. And please, always observe the "Safety" instructions.

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PRODUCT IDENTIFICATION

PRODUCT COMPATIBLIITY

This lawn sprayer is designed for use with lawn tractors, garden tractors and ATV's.

RECORD PURCHASE INFORMATION

Record your purchase information in the spaces provided below.

DATE OF PURCHASE:	
COMPANY NAME:	
COMPANY PHONE: _	
SERIAL NUMBER:	

SAFETY LABELS

UNDERSTANDING THE MACHINE SAFETY LABELS



Safety-Alert Symbol

The machine safety labels shown in this section are placed in important areas on your machine to draw attention to potential safety hazards.

On your machine safety labels, the words DANGER, WARNING, and CAUTION are used with this safety-alert symbol. DANGER identifies the most serious hazards.

The operator's manual also explains any potential safety hazards whenever necessary in special safety messages that are identified with the word, CAUTION, and the safety-alert symbol.





SAFETY

TO HELP PREVENT BODILY INJURY DUE TO LOSS OF STABILITY OR CONTROL:

- Do not exceed maximum towing capacity of towing vehicle listed in the vehicle operator's manual.
- · Do not exceed 5 mph.
- Do not tow this machine behind a motor vehicle such as a car or truck.
- Do not tow this machine behind a ZTR (Zero Turn Radius) Mower.

SAFETY

Read the general safety operating precautions in your towing vehicle operator's manual for additional safety information.

Operate Safely

Use this machine for intended purpose only.

This machine is intended for use in lawn care and home applications. Do not tow behind a vehicle on a highway or in any high speed applications. Do not tow at speeds higher than maximum recommended towing speed.

Towing speed should always be slow enough to maintain control. Travel slowly over rough ground.

Do not let children or an untrained person operate machine.

Do not let anyone, especially children, ride on this machine or the towing vehicle. Riders are subject to injury such as being struck by foreign objects and being thrown off. Riders may also obstruct the operator's view, resulting in this machine being operated in an unsafe manner.

Check towing vehicle brake action before you operate. Adjust or service brakes as necessary.

Keep all parts in good condition and properly installed. Fix damaged parts immediately. Replace worn or broken parts. Replace all worn or damaged safety and instruction decals.

Do not modify the machine or safety devices. Unauthorized modifications to the towing vehicle or machine may impair its function and safety, and void the warranty.

Keep all nuts, bolts and screws tight.

Caution should always be exercised whenever working on or near batteries. Heavy gloves and eye protection show be worn when making connections to a battery.

TOWING SAFELY

Stopping distance increases with speed and weight of towed load. Travel slowly and allow extra time and distance to stop.

Total towed weight must not exceed limits specified in towing vehicle operator's manual.

Excessive towed load can cause loss of traction and loss of control on slopes. Reduce towed weight when operating on slopes.

Never allow children or others in or on towed equipment.

Use only approved hitches. Tow only with a machine that has a hitch designed for towing. Do not attach this machine except at the approved hitch point.

Follow the manufacturer's recommendations for weight limits for towed equipment and towing on slopes. Use counterweights or wheel weights as described in the towing vehicle operator's manual.

Do not turn sharply. Use additional caution when turning or operating under adverse surface conditions. Use care when reversing. To avoid jack-knifing, do not allow towing vehicle wheels to contact drawbar.

Do not shift to neutral and coast downhill.

Protect Bystanders

Keep bystanders away when you operate this machine

Before you back look carefully behind for bystanders.

Before you operate any feature of this machine, observe your surroundings and look for bystanders.

Keep Riders Off Towed Attachment

Keep riders off towed attachment.

Riders on a towed attachment are subject to injury, such as being struck by objects and being thrown off the attachment during sudden starts, stops and turns.

Riders obstruct the operator's view, resulting in the attachment being used in an unsafe manner.

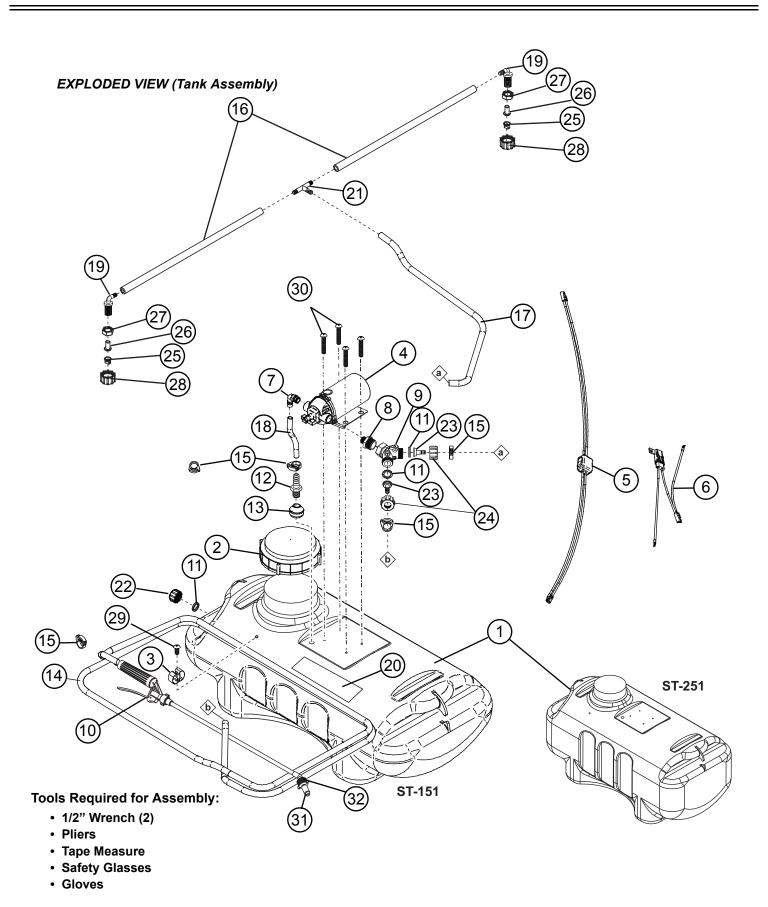
Keep riders off of hitch bracket.

Keep Body Parts From Under Drawbar

Before disconnecting this machine from towing vehicle hitch plate:

- Stop on level ground.
- Stop towing vehicle engine.
- Lock towing vehicle park brake.
- · Block wheels of the machine.
- Make sure body parts are not under drawbar.

PARTS REFERENCE



L-1914 Rev. B

3.

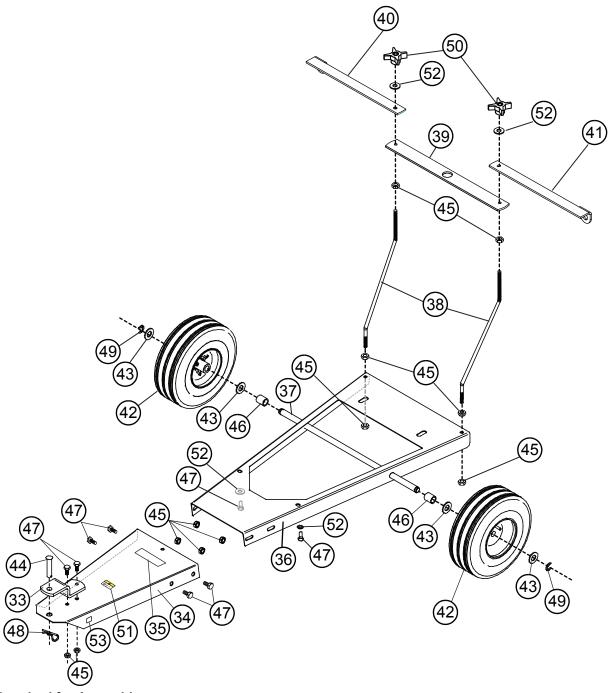
PARTS REFERENCE

PARTS LIST (Tank Assembly)

REF NO.	ST-151 PART NO.	ST-251 PART NO.	DESCRIPTION	QTY.
1.	B-6026	B-6025	Sprayer Tank	1
2.	B-6028	B-6028	Tank Cap	1
3.	B-6511	B-6511	Clip, Wand Holder	1
4.	B-6027	B-6027	Pump, 2.0 GPM CE rated	1
5.	B-6030	B-6030	Wiring Harness w/switch	1
6.	B-6031	B-6031	Wiring Harness, Battery Connection	1
7.	B-6046	B-6046	Elbow 90 deg., 3/8 Inch MPT. x 3/8 Inch H.B.	1
8.	B-6513	B-6513	Nipple, Reducing, 3/8" MPT. x 3/4" MGHT	1
9.	B-6512	B-6512	Valve, Dual Ball Tee, F.M.P.T.	1
10.	B-6400	B-6400	Hand Wand (B-6583 - Tip only for service)	1
11.	B-6054	B-6054	Washer, Black Vinyl 1" OD x 3/4 Inch ID	3
12.	B-6598	B-6598	Adapter, 1/4 Inch M.P.T. x 3/8 Inch H.B.	1
13.	B-6597	B-6597	Strainer, 1/4 Inch, #40 mesh	1
14.	B-6033	B-6033	Hose, 3/8" ID x 12 ft.	1
15.	B-6047	B-6047	Hose Clamp	*5
16.	B-6035	B-6035	Hose, 3/8" ID x 22 Inch	2
17.	B-6034	B-6034	Hose, 3/8" ID x 30 Inch	1
18.	B-6088	B-6087	Hose, 3/8" ID x 12 or 17 Inch	1
19.	B-6043	B-6043	Nozzle Body, 90 deg, 3/8 Inch H.B.	2
20.	B-6020	B-6020	Caution Decal	1
21.	B-6045	B-6045	Hose Barb, 3/8 Inch to 3/8 Inch	1
22.	B-6578	B-6578	Drain Cap 3/8 Inch	1
23.	B-6055	B-6055	Hose Barb, Flat Seat, 3/8 inch H.B.	2
24.	B-6056	B-6056	Nut, Hose Swivel, 3/4 inch F.G.H.T.	2
25.	S-1148	S-1148	Tip, Sprayer 90°	2
26.	B-6040	B-6040	Strainer, Nozzle	2
27.	B-6041	B-6041	Jamb Nut, Nozzle Fitting	2
28.	B-6042	B-6042	Nut, Tip Fitting	2
29.	22M0606P	22M0606P	Screw, #10-24 x 3/8 Inch	1
30.	22M0616P	22M0616P	Screw, #10-24 x 1 Inch	4
31.	B-6583	B-6583	Tip, Hand Wand	1
32.	B-6584	B-6584	Nut, Hand Wand	1

^{*} Extra hose clamp included.

EXPLODED VIEW (Trailer Assembly)



Tools Required for Assembly:

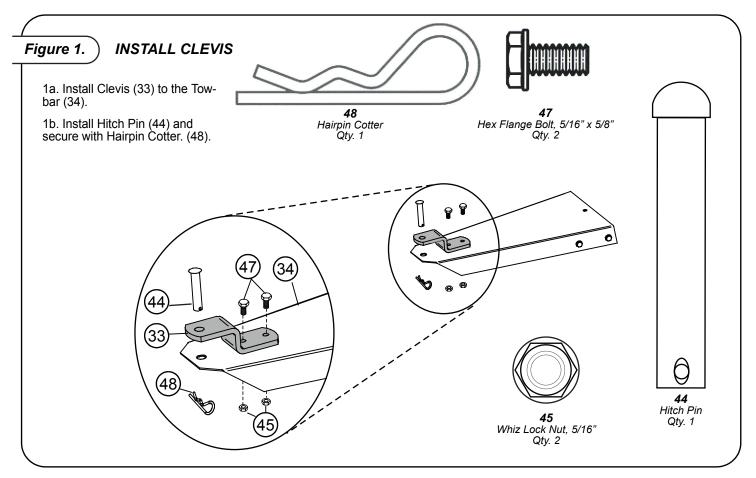
- 1/2" Wrench (2)
- Pliers
- Tape Measure
- Safety Glasses

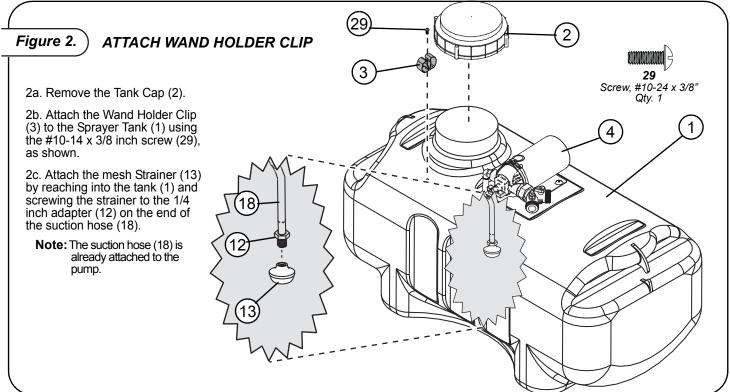
PARTS REFERENCE

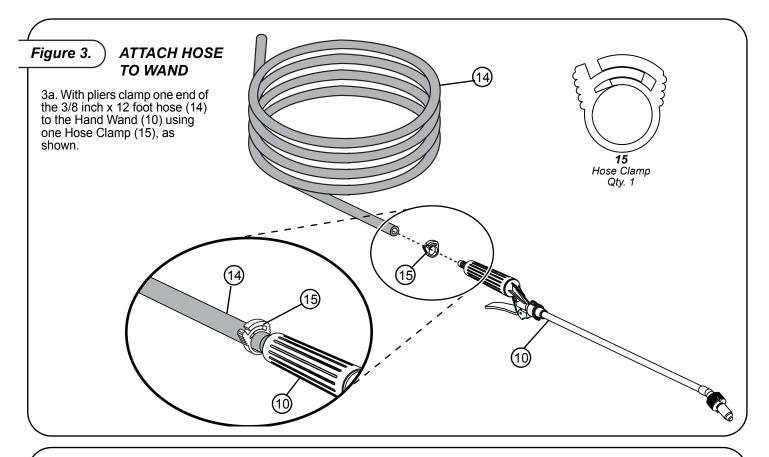
PARTS LIST (Trailer Assembly)

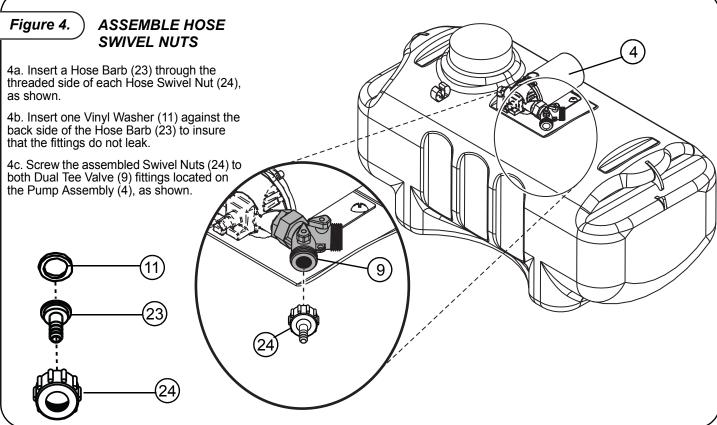
REF NO.	ST-151 PART NO.	ST-251 PART NO.	DESCRIPTION	QTY.
33.	B-3034-10	B-3034-10	Clevis	1
34.	B-6322F-10	B-6322F-10	Towbar	1
35.	B-5922	B-5922	Logo, Decal	1
36.	B-6322R-10	B-6322R-10	Base, Rear	1
37.	B-5684-01	B-5684-01	Axle	1
38.	S-1142	S-1142	Boom Support	2
39.	S-1141-10	S-1141-10	Boom Center Bar	1
40.	B-7761R-10	B-7761R-10	Boom Extension, RH	1
41.	B-7761L-10	B-7761L-10	Boom Extension, LH	1
42.	B-5692	B-5692	Wheel	2
43.	45M2121P	45M2121P	5/8" Flat Washer	4
44.	B-3861	B-3861	Hitch Pin, 1/2 x 2-1/2 Inch	1
45.	B-4355	B-4355	5/16" Whiz Lock Nut	12
46.	B-5691	B-5691	Axle Spacer	2
47.	B-5695	B-5695	5/16" x 5/8" Hex Flange Bolt	10
48.	D-146P	D-146P	Hairpin, Cotter	1
49.	F-577	F-577	5/8" E-Ring	2
50.	F-782	F-782	Knob	2
51.	R-1946	R-1946	Decal, Instruction	1
52.	R-618	R-618	Washer, Special	4
53.	L-1744-4	L-1744-4	Label, Serial Number	1

6.









8.

Figure 5.

ATTACH WAND HOSE TO PUMP

5a. Attach the Wand Hose (14) to the Hose Barb (23) previously installed to the Dual Tee Valve (9) as shown.

5b. Clamp the hose in place using a pliers to secure the Hose Clamp (15) over the Hose barb.

5c. Stow the wand and hose by wrapping it around the top of the sprayer tank, then secure the wand to the wand holder clip.

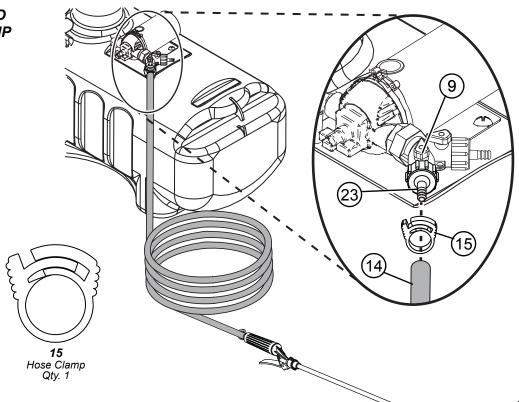
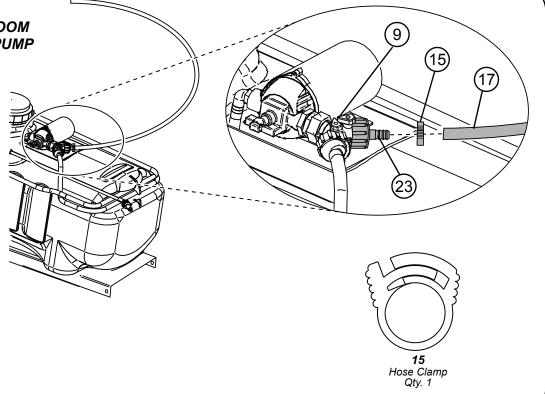


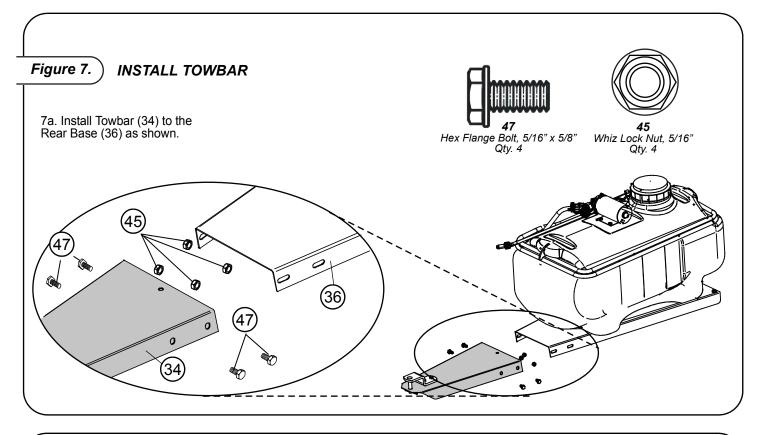
Figure 6.

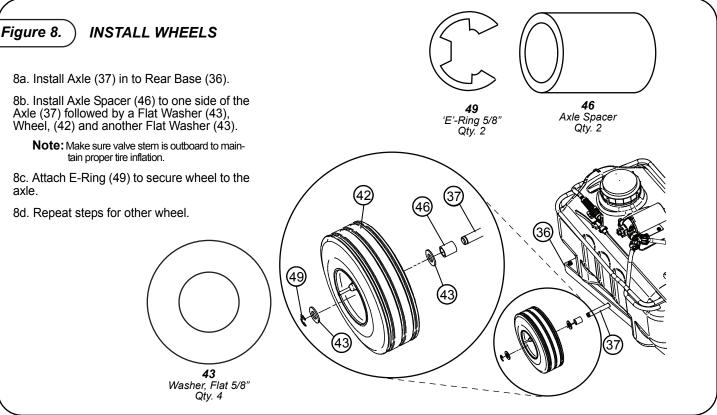
ATTACH BOOM HOSE TO PUMP

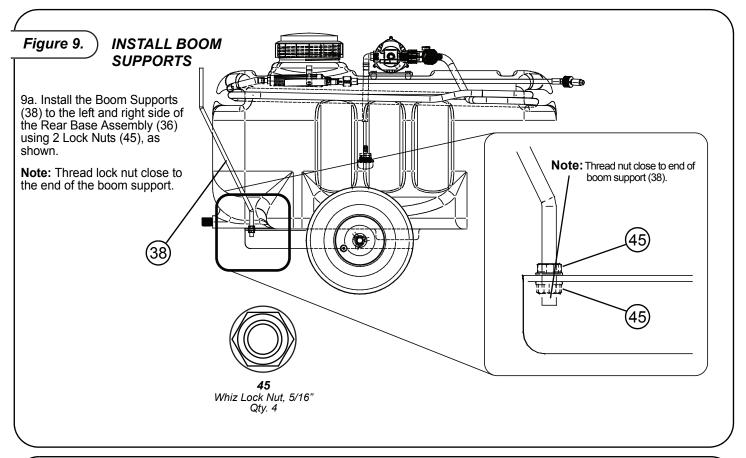
6a. Attach the 30 inch Hose (17) to the remaining Hose Barb (23) installed to the Dual Tee Valve (9) as shown.

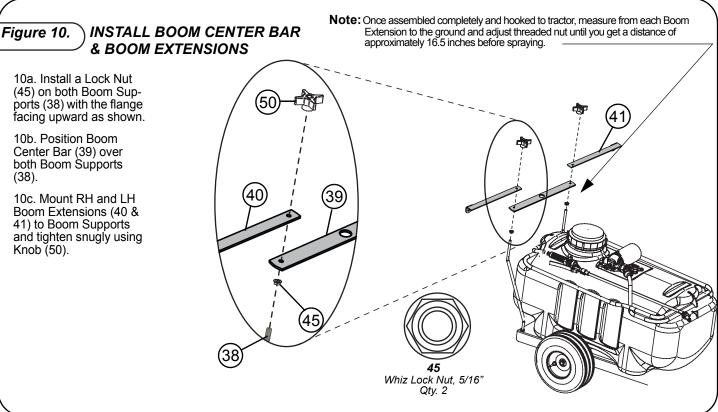
6b. Clamp the hose in place using a pliers to secure the Hose Clamp (15) over the Hose barb (23).

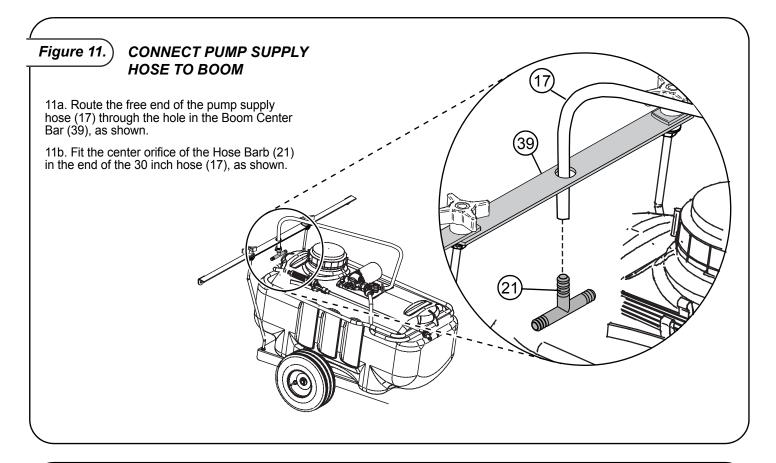


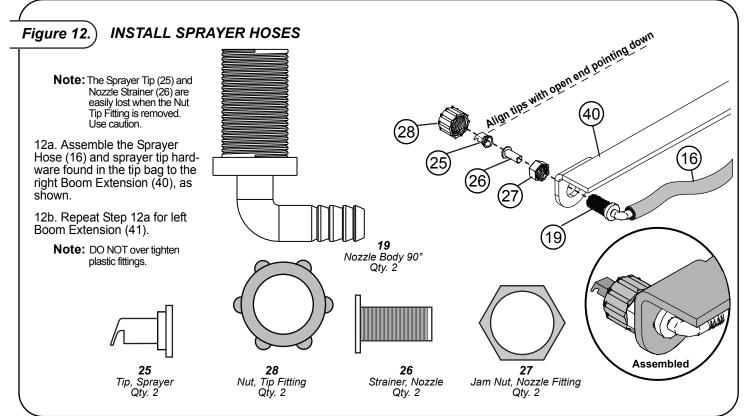


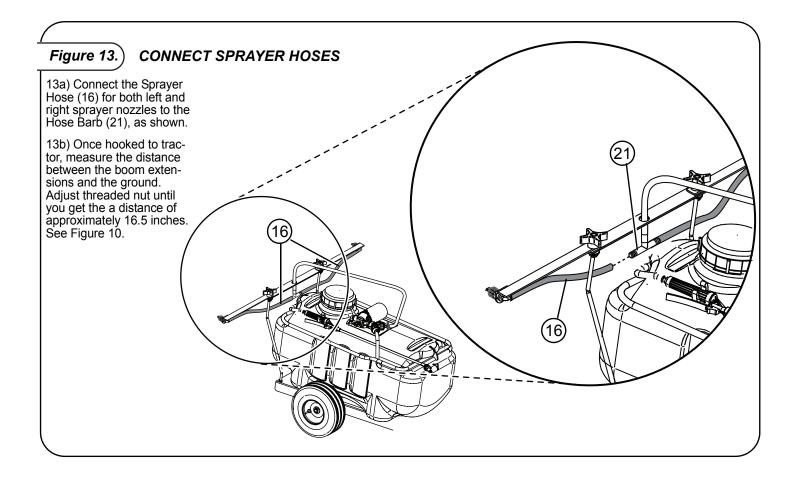










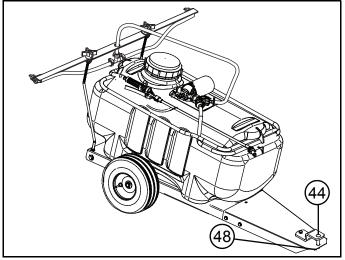


OPERATION

INSTALLING SPRAYER



CAUTION: Avoid injury! Before installing sprayer, make sure the towing vehicle is parked safely.



- 1. Park machine safely. (See Towing Machine manual.)
- 2. Align sprayer drawbar with towing machine drawbar.
- Install Hitch Pin (44) through sprayer drawbar and machine drawbar. Secure Hitch Pin with Hairpin Cotter (48).

REMOVING SPRAYER

Note: Refer to illustrations in the Installing Section, earlier in this manual.

- 1. Park machine safely. (See Towing Machine manual.)
- Unload sprayer tank before disconnecting hitch towing vehicle.



CAUTION: Avoid injury! Keep body parts away from underneath towbar.

- Remove hairpin cotter and hitch pin.
- 4. Push sprayer away from machine. Block sprayer wheels.
- Install hitch pin and hairpin cotter pin in sprayer drawbar for storage.

OPERATING

Determining Weight for Sprayer



CAUTION: Avoid injury! Excessive towed load can cause loss of traction and loss of control on slopes. Stopping distance increases with speed and weight of towed load.

Total towed weight must not exceed combined weight of pulling machine, ballast and operator.

The following maximum loaded weight capacity is the average weight loaded with water to the 15 gallon or 25 gallon mark on the sprayer tank.

Model Sprayer	Weight Capacity
ST-151BH	125 lbs. load
	188 lbs. Towed Weight
ST-251BH	207 lbs. load
	260 lbs. Towed Weight



CAUTION: Avoid injury! If additional weight is required when towing, add weight at or forward of the rear wheels. Adding weight behind the rear wheels can affect machine steering. Refer to your towing machine manual.

Towing capacity will vary with weight of towing machine and operator.

Example:

If Towing Machine Weighs: 400 lbs.

Add Your Weight: 200 lbs.

Combined Weight Equals: 600 lbs.

To maintain stability using the machine in this example, you cannot safely tow more than 600 lbs. without first adding additional ballast to the towing machine.

INSTALLING ELECTRICAL CONNECTIONS



CAUTION: Avoid Injury! Avoid injury! Care should be used when working around batteries

Use insulated tools when making battery connections

Heavy gloves and eye protection should be worn when making battery connections.

 Select the proper tools to remove the leads to the battery terminals.

Note: If you do not have insulated tools, use electrical tape to wrap all exposed non-working surfaces of the tools. It is important to take steps to reduce the risk of causing an electrical spark.

- Put on gloves and eye protection.
- Verify that the read lead is attached to the positive (+) battery terminal and the black lead is attached to the negative (-) battery terminal.

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OPERATION

INSTALLING ELECTRICAL CONNECTIONS (Cont'd)

- 4. Remove the battery leads.
- Using the Battery Connection Wiring Harness (6) attach the black lead and the black lead from your engine to the negative (-) battery terminal.
- Attach the red lead (with the fuse) of the Battery Connecting Wiring Harness and the red lead from your engine to the positive (+) battery terminal.

Note: The Battery Connection Wiring Harness contains a 15 amp blade type fuse

Note: If the battery is underneath the seat, ensure that both battery terminals and battery leads do not make contact with seat.

 Attach the Wiring Harness with Switch (5) to the connector terminal end of the Battery Connection Wiring Harness (6).

Note: In most instances the terminal connector with the shorter leads from the Wiring Harness with Switch (5) are connected to the terminal connector on the Battery Connection Wiring Harness (6). Most users like the switch to lie in their laps or be convenient to the towing vehicle operator. The Wiring Harness with Switch (5) terminal connectors can be reversed to suit the need of the user.



CAUTION: Avoid Injury! Avoid injury! Care should be when routing the wiring harness to the sprayer.

Do not place the wiring harness in areas that the wires can be pinched or damaged.

Place the wires to minimize a tripping hazard when getting on or off the towing vehicle.

 Attach the other end of remaining terminal lead connector from the Wiring Harness with Switch (5) to the terminal lead connector coming from the Pump (4). If the pump begins to run, use the switch to turn the pump off.

Note: The Battery Connection Wiring Harness (6) can remain connected to the battery of the towing vehicle when spraying operations are complete. Simply detach the Wiring Harness with Switch (5) terminal connector from the Battery Connection Wiring Harness (6) terminal connector.

PUMP OPERATIONS

The pump motor supplied with your sprayer is a "demand flow" type pump. An internal pressure switch in the pump turns the pump off when the pressure reaches approximately 60psi. When the pump senses that pressure has dropped (by triggering the wand) the pump will again start and continue to run until 60psi is reached.

Note: Pump surge should be avoided. It can cause the pump motor to overheat resulting in damage to the pump. Refer to the Wand Operations Section for tips on how to avoid pump surge.

WAND OPERATIONS

The wand can be used for spraying in various applications from a steady stream to a fine mist. Adjust the spray pattern by turning the Wand Tip (31) clockwise for a fine mist or counterclockwise for a course spray.



CAUTION: Avoid Injury! Always turn pump off when making adjustments to the Wand Tip. Wear eye protection.

Pump Surge

Pump surge may occur when using the wand for fine mist applications. Do not allow this to occur. The pump is designed for continuous duty. Intermittent starting and stopping will cause the pump motor to overheat. To eliminate pump surge:

- a) Open the wand tip to a higher flow rate
- b) Create a by-pass that allows the pump to run continuous by removing one of the boom hoses near the tip (See Step 11). Remove the tank fill cap and place the hose in the tank. Open the valve for the boom slowly until the pump runs continuously. Adjust the wand tip to the desired mist.

BOOM OPERATIONS

Boom spraying is the normal spraying configuration and is controlled by the operator in the seated position.

For spraying in a vertical orientation such as along fences or hedges, use the wand operation.

APPLICATION RATE

Wand

Understanding the following information about your sprayer will help to calibrate the application rate. The sprayer operates at a fixed pressure of 60 psi. This results in actual spraying time of 30 minutes using the handgun.

Boom

Table 1:

	Gallons Per Acre MPH			
Product				
	2	3	4	5
ST-151BH	56.5	37.5	28.0	22.5
ST-251BH	56.5	37.5	28.0	22.5
	Gallons Per 1000 Square Feet			
	Ga	Illons Per 10	00 Square F	eet
Product	Ga		00 Square F PH	eet
Product	Ga 2			eet 5
Product ST-151BH		M		_

OPERATION

TOWING VEHICLE REQUIREMENTS

The lawn sprayer requires towing equipment with a 12-volt battery and charging system, and a towbar hitch in order to operate properly.

The towing equipment should have operable brakes capable of controlling the loaded sprayer and towing vehicle.

CALIBRATION OF SPEED

By measuring off a distance of 50 or 100 feet, the speed of the towing vehicle can be calibrated by selecting a gear and throttle position to cover the prescribed distance in the specified time as shown:

Speed (mph)	Seconds required to travel	
	50 feet	100 Feet
2	17	34
3	11	22
4	9	17
5	7	14

CALCULATION PROCEDURE FOR SPRAYER APPLICATION

Chemical labels normally show application rates in gallons per acre or gallons per square feet. Using the following method, one can determine the appropriate amount of water to use and speed to travel to adequately follow the manufactures recommended instructions.

 Based on the size of your yard, select the amount of water to be used. Use the formula:

Application Rate x Area to be sprayed = Amount of water (from the Table1).

Example 1 Example 2

Yard Size= 4 acresYard Size= 20,000 sf

Using the Table 1 and the above formula:

56.5 gal/ acre x 4acres= 225.6 gal@ 2mph
37.5 gal/ acre x 4acres= 149.6 gal@ 3mph
28.0 gal/ acre x 4acres= 112.0 gal@ 4mph
22.5 gal/ acre x 4acres= 90.00 gal@ 5mph
0.5 gal/ 1000 x 20,000sf= 12 gal@ 4mph
0.5 gal/ 1000 x 20,000sf= 10 gal@ 5mph
0.5 gal/ 1000 x 20,000sf= 10 gal@ 5mph

2. Choose the speed / amount of water you want to use.

Choice = 149.6 ~ 150 gal@ 3mph

Example 1 Example 2

A comfortable speed Since 18 gallons can be for a lawn tractor is done with only one filling: 3 mph.

Choice = 18 gallons @ 3mph

3. Determine how many tanks are required to complete the total iob:

Amount of Water / Tank Capacity = Number of tanks from Step 1.

If the number of tanks is less than 1.0 use 1.0

Example 1 Example 2

150 gal/ 25 = 6.0 tanks 18 gal/ 25 = 0.7 tanks use 1.0 tank

4. Determine how much chemical is to be used:

Rate From Manufacturer's Label	X	Area to be Sprayed	Amount of = Chemical Required
Example 1			Example 2
Label = 20 ounces/acre			Label = 1/2 pint/ 1000 sq. ft.
20 oz. x 4 acres = 80 oz.			$1/2$ pt/ $1000 \times 20,000 \text{ sf} = 10 \text{ pints}$

5. Determine how much chemical per tank:

Amount of Chem (from Step 4.)	# of Tanks (from Step 3.)	Amount of Chemical per tank
Example 1		Example 2
80oz / 6 0 tanks = 13	3 oz /tank	10 pints/ 1 tank = 10 pints

MAINTENANCE

MAINTENANCE

Lubricating Wheel Bearings

Lubricate each wheel bearing with multipurpose grease or an equivalent.

SPECIFICATIONS

31 LOII ICATIONS	
Maximum Towing Speed	5 mph
Tank Capacity	15 or 25 gal
Maximum Pump Pressure	60 psi
Fuse (Blade Type)	15 amp.
Empty Weight	53 lbs.
Maximum Towed Weight	260 lbs.
Tires	
Size	10.5 x 3.5 in
Inflation Pressure	14 psi

Getting Quality Service

Quality Continues with Quality Service

We provide a process to handle your questions or problems.

Follow the steps below to get answers to any questions you may have

about your product.

- 1. Refer to your attachment and machine operator manuals.
- In North America or Canada, call 1-877-728-8224 and provide product serial number (if available) and model number.

NOTES

MANUFACTURER'S LIMITED WARRANTY FOR



Pull Behind Accessories

The limited warranty set forth below is given by Brinly-Hardy Company with respect to new merchandise purchased and used in the United States, its possessions and territories.

Brinly-Hardy Company warrants the products listed below against defects in material and workmanship, and will at its option, repair or replace, free of charge, any part found to be defective in materials or workmanship. This limited warranty shall only apply if this product has been assembled, operated, and maintained in accordance with the Operator's manual furnished with the product, and has not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water, or damage because of other peril or natural disaster.

Normal Wear Parts or components thereof are subject to separate terms as follows: All normal wear parts or component failures will be covered on the product for a period of 90 days.

Parts found to be defective within the warranty period will be replaced at our expense. Our obligation under this warranty is expressly limited to the replacement or repair, at our option, of parts found to be defective in material and workmanship.

HOW TO OBTAIN SERVICE: Warranty parts replacements are available, ONLY WITH PROOF OF PURCHASE, through our Pull Behind Accessories Customer Service Department. Call 877-728-8224.

This limited warranty does not provide coverage in the following cases:

- a) Routine maintenance items such as lubricants and filters.
- b) Normal deterioration of the exterior finish due to use or exposure.
- c) Transportation and/or labor charges.
- d) The warranty does not include commercial and/or rental use.

No implied warranty, including any implied warranty of merchantability of fitness for a particular purpose, applies after the applicable period of express written warranty above as to the part as identified below. No other express warranty whether written or oral, except as mentioned above, given by any person or entity, including a dealer or retailer, with respect to any product, shall bind Brinly-Hardy Co. During the period of the warranty, the exclusive remedy is repair or replacement of the product as set forth above.

The provisions as set forth in this warranty provide the sole and exclusive remedy arising from the sale. Brinly-Hardy Co. shall not be liable for incidental or consequential loss or damage including, without limitation, expenses incurred for substitute or replacement lawn care services or for rental expenses to temporarily replace a warranted product.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

During the warranty period, the exclusive remedy is replacement of the part. In no event shall recovery of any kind be greater that the amount of the purchase price of the product sold. Alteration of safety features of the product shall void this warranty. You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the misuse or inability to use this product.

This limited warranty shall not extend to anyone other than the original purchaser or to the person for whom it was purchased as a gift.

HOW STATE LAW RELATES TO THIS WARRANTY: This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

IMPORTANT: The Warranty period stated below begins with the PROOF OF PURCHASE. Without the proof of purchase, the Warranty period begins from the date of manufacture determined by the serial number manufacturing date.

SPRAYER WARRANTY PERIOD:

The warranty period for this sprayer is as follows: Steel frame parts – 2 Years. Tires, and wheels are normal wear parts - 90 days.

Brinly-Hardy Company, 3230 Industrial Parkway, Jeffersonville, IN 47130

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