Form No. 3365-863 Rev C

Eductor Kit

Multi-Pro® 5800 Turf Sprayer

Model No. 41612—Serial No. 311000001 and Up

Installation Instructions

The Eductor Kit is designed to aide in the mixing of chemicals in preparation for turf spray applications on well-maintained lawns in parks, golf courses, sports fields, and on commercial grounds. It is a dedicated attachment for a turf spray application vehicle and is intended to be used by professional, hired operators in commercial applications.

This product complies with all relevant European directives, for details please see the separate product specific Declaration of Conformity (DOC) sheet.

Note: If installing kit model numbers 41604 Pro Control XP Spray Kit, 41612 Eductor Kit, 41613 Electric Hose Reel Kit, and 41614 Tank Rinse Kit, it is advisable to assemble them into the manifold valve assembly at the same time.

Read this manual carefully to learn how to operate and maintain your product properly. The information in this manual can help you and others avoid injury and product damage. Although Toro designs and produces safe products, you are responsible for operating the product properly and safely.

You may contact Toro directly at www.Toro.com for product and accessory information, help finding a dealer, or to register your product.

Whenever you need service, genuine Toro parts, or additional information, contact an Authorized Service Dealer or Toro Customer Service and have the model and serial numbers of your product ready. Figure 1 illustrates the location of the model and serial numbers on the product.

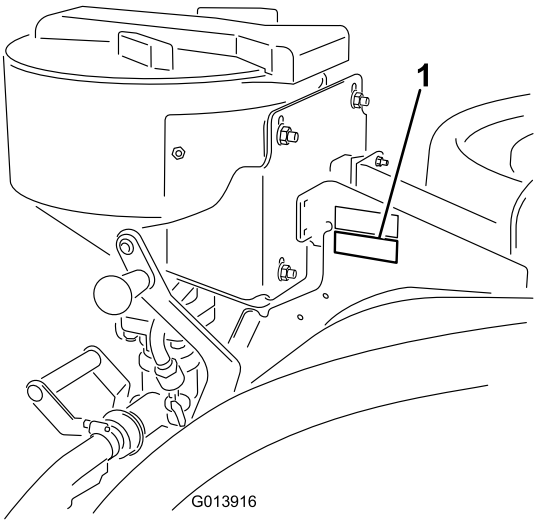


Figure 1

1. Model and serial number plate

Model No. _____

Serial No. _____

8111 Lyndale Avenue South
Bloomington, MN 55420

Register at www.Toro.com.

Safety

This manual identifies potential hazards and has safety messages identified by the safety alert symbol (Figure 2), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.

Figure 2

1. Safety alert symbol

This manual uses 2 other words to highlight information. **Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

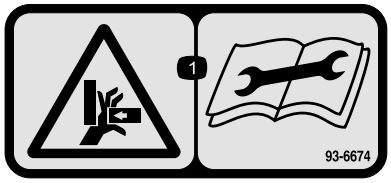
⚠ WARNING

Chemical substances used in the spray system may be hazardous and toxic to you, bystanders, animals, plants, soils or other property.

- **Carefully read and follow the chemical warning labels and Material Safety Data Sheets (MSDS) for all chemicals used and protect yourself according to the chemical manufacturer's recommendations. For example, use appropriate Personal Protective Equipment (PPE) including face and eye protection, gloves, or other equipment to guard against personal contact with the chemical.**
- **Keep in mind that there may be more than one chemical used and information on each should be assessed.**
- ***Refuse to operate or work on the sprayer if this information is not available!***
- **Before working on a spray system make sure the system has been triple rinsed and neutralized according to the recommendations of the chemical manufacturer(s).**
- **Verify there is an adequate supply of clean water and soap nearby, and immediately wash off any chemicals that contact you.**

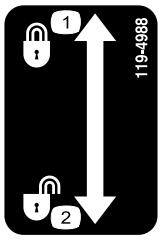
Safety and Instructional Decals

Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or lost.



93-6674

1. Crushing hazard, hand—read the instructions before servicing or performing maintenance.



119-4988

1. Lock
2. Unlock

Installation

Loose Parts

Use the chart below to verify that all parts have been shipped.

Procedure	Description	Qty.	Use
1	Eductor valve assembly O-ring Bolt (M8 -1.25 x 146 mm) Bracket (Bracket may already be installed from a previous kit installation)	1 1 4 1	Installing the eductor valve.
2	Support frame assembly Lock nut (5/16 inch) Back plate assembly Cradle arm, right Cradle arm, left Bushing, small Pivot pin Jam nut (3/8 inch) Handle Bolt (3/8 x 1-1/4 inches) Set screw Hair pin Flat washer	1 1 1 1 1 2 2 2 2 2 2 2 2	Assemble the frame.
3	Spring	2	Instal the latching components.
4	Eductor Handle Bolt Spring clamp Bolt (#10-24 x 1/2 inch) Lock nut (#10-24) Bolt (3/8 x 1 inch) Lock nut (3/8 inch)	1 1 2 1 2 2 4 4	Install the eductor.
5	Bulkhead, S93 O-ring, large Locking ring Retaining fork R-clamp Carriage bolt (5/16 x 1 inch) Lock nut (5/16 inch) Forward hose assembly	1 1 1 1 1 1 1 1	Prepare the tank.
6	Supply hose assembly Hose clamp	1 1	Install the supply hose.
7	Switch, eductor 10 amp fuse	1 1	Install the dash switch.
8	Suction lance and hose	1	Finish the installation.

Note: Determine the left and right sides of the machine from the normal operating position.

1

Installing the Eductor Valve

Parts needed for this procedure:

1	Eductor valve assembly
1	O-ring
4	Bolt (M8 -1.25 x 146 mm)
1	Bracket (Bracket may already be installed from a previous kit installation)

Procedure

1. Move to the rear of the machine and locate the boom valve assembly on the boom valve mount bracket.
2. Loosen, but do not remove, the bolts securing the boom valve assembly to the mounting bracket (Figure 3).

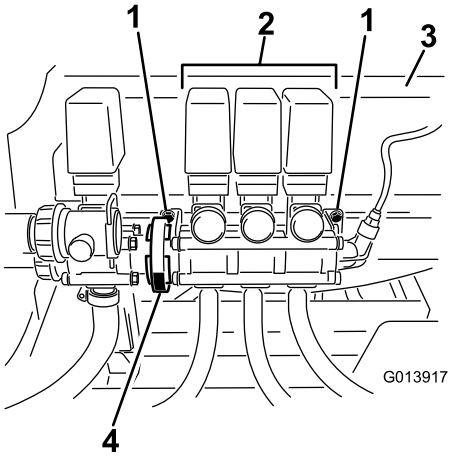


Figure 3

1. Bolts, securing boom valve assembly
2. Boom valve assembly
3. Boom mount bracket
4. Worm clamp

3. Loosen the existing worm clamp to the right of the agitation valve and move the valve assemblies away from the agitation valve. Retain the gasket.
4. Locate the fly-nut securing the agitation hose to the agitation valve body. Loosen the fly-nut to allow space for the valve body fasteners to be removed (Figure 4).

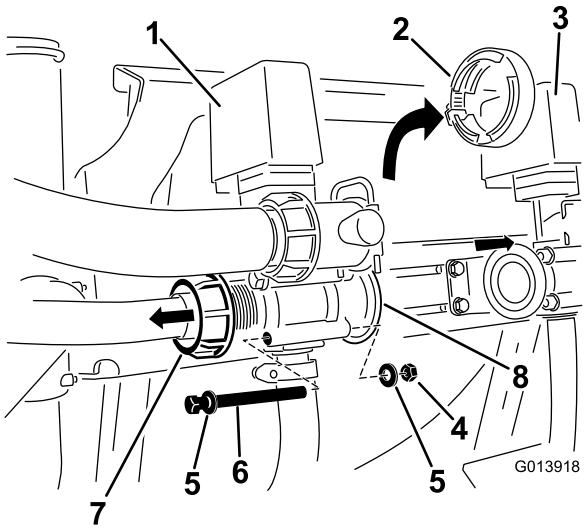


Figure 4

1. Agitation valve
2. Worm clamp
3. Boom valve assembly
4. Lock nut, existing
5. Washer, existing
6. Bolt, existing
7. Fly-nut
8. Adapter

5. Remove the fasteners securing the agitation valve body to the adapter. Retain the lock nuts and washers for use later in the installation.

   Note: The long bolts can be retained in the event of the removal of the eductor kit.
6. Remove the adapter from the valve body (Figure 4).
7. Located the eductor valve in loose parts. Install the valve in line, to the right of the agitation valve (Figure 5).

   Note: Make sure the existing O-ring is present in the agitation valve before mating the male side of the eductor valve to it.

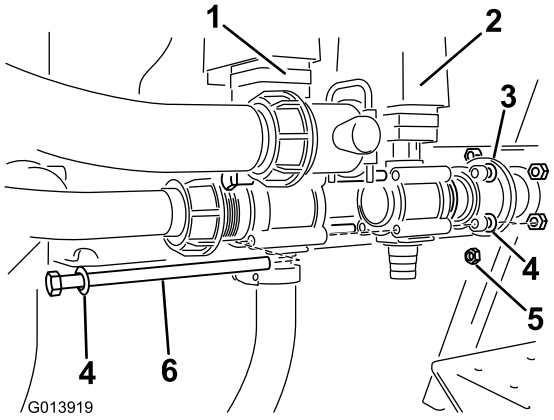


Figure 5

1. Agitation valve
2. Eductor valve
3. Adapter
4. Washer, existing
5. Lock nut, existing
6. Bolt (M8 -1.25 x 146 mm)

8. Install an O-ring from loose parts to the open side of the eductor valve (Figure 6).

Note: The O-rings must be installed properly to ensure there are no leaks.

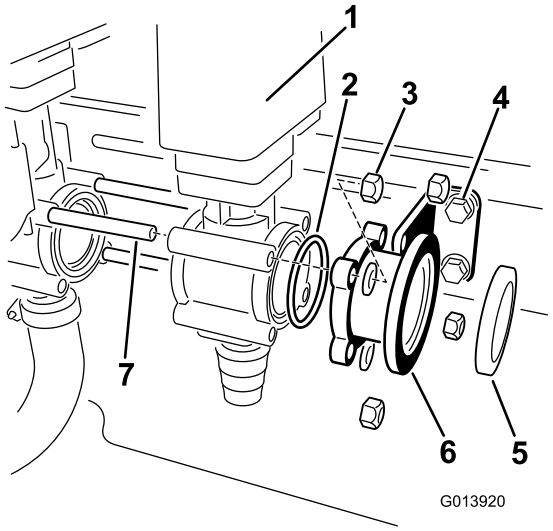


Figure 6

1. Eductor valve
2. O-ring
3. Lock nut, existing
4. Bracket and fasteners
5. Gasket, existing
6. Adapter, existing
7. Bolt (M8 -1.25 x 146 mm)

9. Locate the four long bolts (M8 -1.25 x 146 mm) in loose parts. Place a washer, removed previously, over two of the four long bolts.
10. Insert two long bolts, from the left side of the machine, through the mount bracket, at the top and bottom holes in the valve bodies of the agitation and the eductor valves closest to the mounting rail.
11. Use the bolts with washers to secure the valve assemblies at the open holes in the valve bodies not mounted to the bracket.
12. Insert the adapter removed previously to the open side of the eductor valve over the exposed ends of the bolts.
13. Install a bracket to the mount rail. Secure it with two bolts and two lock nuts but do not tighten them at this time.

    Note: Bracket may already be installed from a previous kit installation.
14. Slide the bracket over the exposed threads of the bolts closest to the mount rail. Secure the bracket to the valve assembly with two lock nuts. Do not tighten at this time.
15. Install a washer over each of the remaining bolts. Secure the assembly with two remaining lock nuts. Do not tighten at this time.

    Note: The bolts securing the mount bracket to the mount rail still loose and therefore allowing the bracket to move on the rail.
16. Tighten all the bolts in a crisscrossing pattern a little at a time to ensure the O-ring seats properly and to avoid leads. Make sure the bracket is free to adjust as the valves are mated (Figure 7). The maximum torque is 24-30 in-lbs (271-339 N-cm).

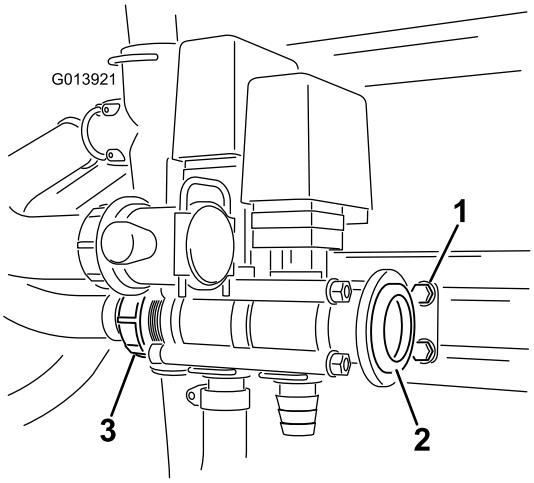


Figure 7

1. Bracket fasteners
2. Gasket
3. Fly-nut

17. Install the fly-nut over the threads of the agitation valve body and tighten.
18. Tighten the bracket fasteners to lock in the position on the mount rail.
19. Insert the gasket into the adapter and place the loosened worm clamp over the adapter body (Figure 7).
20. Slide the boom valve assembly back toward the new eductor valve until the two adapters are flush with the gasket in between them (Figure 8).

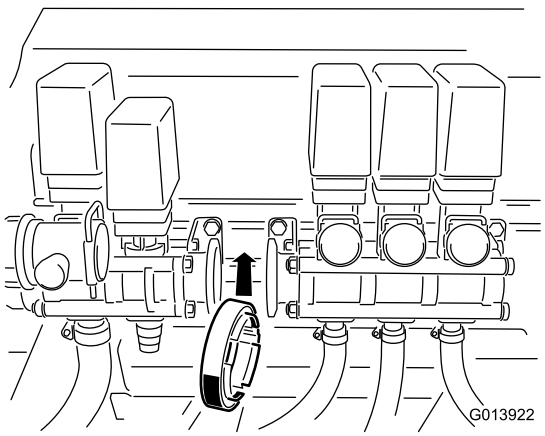


Figure 8

21. Move the worm clamp into position over the adapters and tighten to create the seal between them.
22. Locate the connector on the main wiring harness labeled 'eductor'. Connect the eductor valve to the main harness using the labeled connector.

2

Assembling the Frame

Parts needed for this procedure:

1	Support frame assembly
1	Lock nut (5/16 inch)
1	Back plate assembly
1	Cradle arm, right
1	Cradle arm, left
2	Bushing, small
2	Pivot pin
2	Jam nut (3/8 inch)
2	Handle
2	Bolt (3/8 x 1-1/4 inches)
2	Set screw
2	Hair pin
2	Flat washer

Procedure

1. Remove the lock nuts securing the wire lid stop to the strap. Remove the wire lid stop. Retain all parts.
2. Locate the main support frame in loose parts.
3. Install the frame over the tank strap aligning the lower hole in the frame with the exposed bolt in the side of the tank strap and the upper hole with the upper bolt in the tank strap as shown in Figure 9.

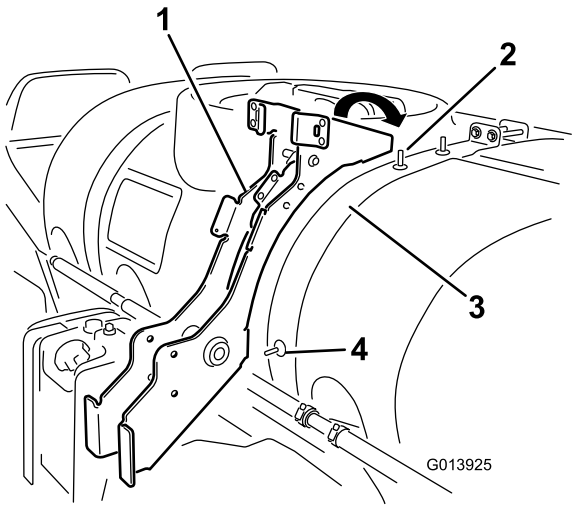


Figure 9

1. Main support frame assembly
2. Exposed bolt, top
3. Tank strap, rear
4. Exposed bolt, side

4. Install a lock nut over the lower exposed bolt passing through the frame to secure it to the tank strap (Figure 10).

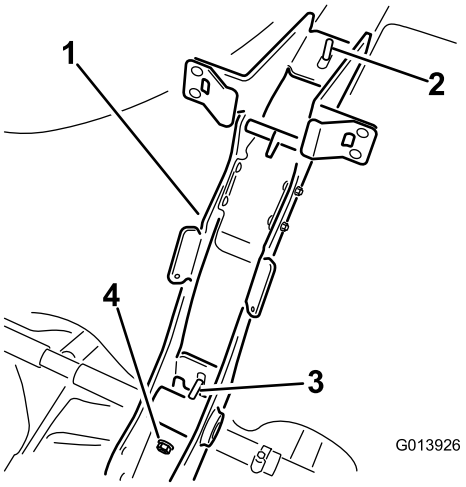


Figure 10

1. Main support frame assembly
2. Exposed bolt, top
3. Exposed bolt, side
4. Lock nut (5/16 inch)

5. Install the wire tank lid stop removed previously over the protruding threads of the carriage bolts in the upper portion of the tank strap. The bow should face forward to catch the main tank lid when opened.
6. Secure the lid stop and the upper portion of the eductor frame to the tank assembly with two lock nut removed previously. Torque the fasteners to 14-18 ft-lb (19-24 N-m).
7. Assemble the eductor cradle to the frame:

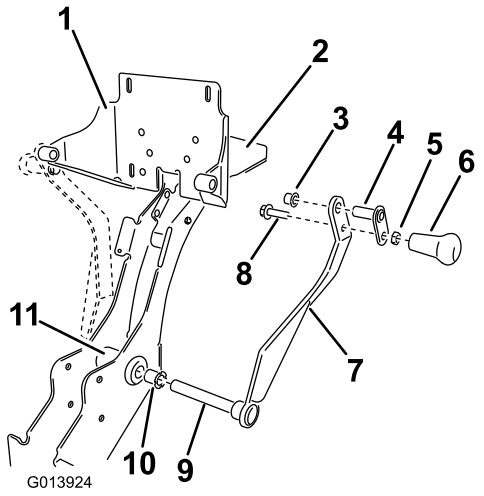


Figure 11

1. Back plate assembly
2. Main support frame assembly
3. Bushing, small
4. Pivot pin
5. Jam nut (3/8 inch)
6. Handle
7. Cradle arm, right
8. Bolt (3/8 x 1-1/4 inches)
9. Axle, cradle arm
10. Bushing, large
11. Pivot housing

A. Start by installing the right cradle arm to the frame. The right cradle arm is denoted by have the long axle.

B. Insert the axle through the hinge shaft.

C. Loosely mate the left arm to the exposed axle on the other side of the frame.

D. Install a bushing into the outside hinge holes of the back plate assembly.

E. Move the back plate assembly into position between the upper holes in each arm.

F. Install a pivot pin through the upper hole in the arm and the hinge hole with the bushing in the back plate assembly.

G. Install the handles to the lower holes in the arms. Secure with a bolt (3/8 x 1-1/4 inches) and jam nut (3/8 inch).

H. Repeat for the opposing arm.

I. Install a set screw to the left arm at the lower hinge point (Figure 12). Do not tighten at this time to allow for adjustment of the cradle system.

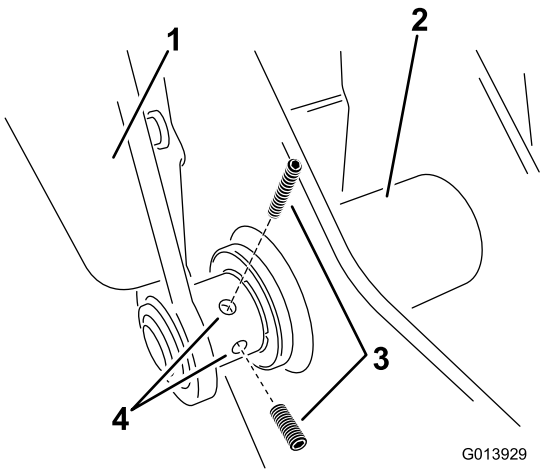


Figure 12

1. Cradle arm, left
2. Pivot housing
3. Set screw
4. Holes in cradle arm.

3

Installing the Latching Components

Parts needed for this procedure:

2	Spring

Installing the Springs

1. Install the spring to the hole in the lower end of the angled tab on the side of the frame assembly (Figure 13).

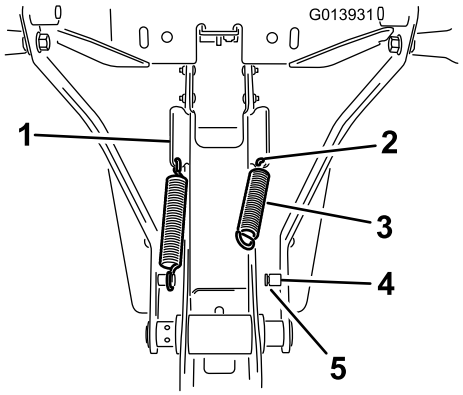


Figure 13

1. Angled tab
2. Hole in tab
3. Spring
4. Post
5. Groove

2. Hook one end of the spring into the hole. Using an appropriate tool to stretch the spring so that the

opposing end reaches the protruding post on the cradle arm (Figure 13).

3. Make sure the spring end is seated properly in the groove in the post (Figure 13).
4. Repeat for the other side.
5. Tighten the two set screws.

Adjust the Tongue Position

Move the cradle assembly into the upper, "transport" position to adjust the tongue.

- Lift up on the handles to raise the assembly while at the same time slightly tipping it toward the tank.
- Guide the tongue under the cross bar with the welded tab in the upper portion of the frame assembly.
- Let the assembly pivot down, toward the tank.

1. Making sure the plastic stops are in contact with the spring tabs, apply enough pressure against the back plate assembly of the cradle to compress the spring tabs midway (Figure 14).

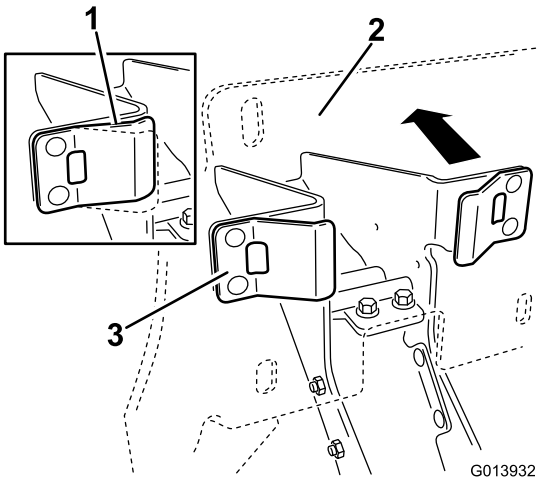


Figure 14

1. Spring tab, under pressure
2. Back plate, transparent for clarity
3. Spring tab

2. While maintaining the pressure on the back plate, slide the tongue toward you until the lip of the tongue plate makes contact with the cross bar(Figure 15).

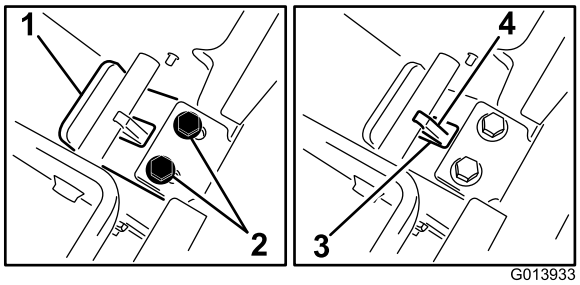


Figure 15

1. Tongue plate lip
2. Fasteners
3. Slot in plate
4. Welded tab

3. Tighten the fasteners in the tongue to secure its position, then release pressure on the back plate.

Check to see if there is any play in the cradle. It should be held snug to the frame assembly. The procedure can be repeated once the eductor is installed to adjust the locked position.

4

Installing the Eductor

Parts needed for this procedure:

1	Eductor
1	Handle
2	Bolt
1	Spring clamp
2	Bolt (#10-24 x 1/2 inch)
2	Lock nut (#10-24)
4	Bolt (3/8 x 1 inch)
4	Lock nut (3/8 inch)

Procedure

1. Locate the handle assembly and spring clamp in loose parts.
2. Locate and loosen the two bolts. Install the handle assembly to the eductor and secure it using two bolts (Figure 16).

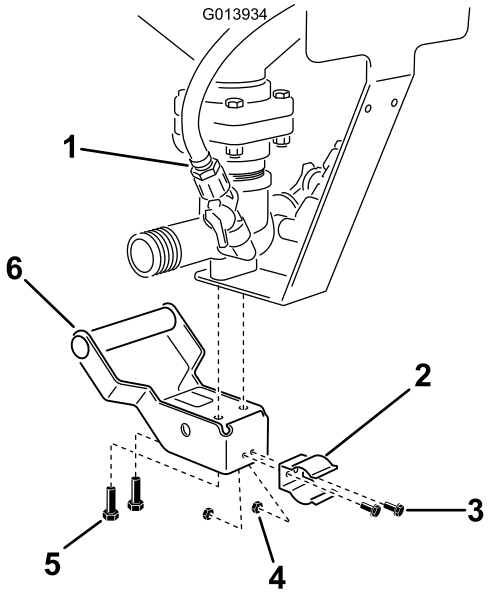


Figure 16

1. Eductor
2. Spring clamp
3. Bolt (#10-24 x 1/2 inch)
4. Lock nut (#10-24)
5. Bolt
6. Handle

3. Lower the cradle into the down position.
4. Align the holes in the eductor assembly mount plate with the slotted holes in the back plate of the cradle assembly (Figure 17). Install four bolts (3/8 x 1 inch), and four lock nuts (3/8 inch) to mount the eductor. Do not tighten at this time.

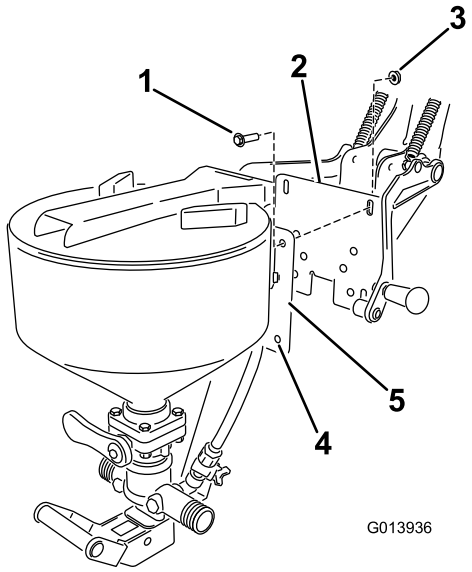


Figure 17

1. Bolt (3/8 x 1 inch)
2. Back plate
3. Lock nut (3/8 inch)
4. Hole, eductor assembly mount
5. Eductor assembly mount

The fasteners need to be loose enough so that they can travel in the slot when eductor is initially raised up into the transport position. This will allow for further adjustment.

5. Carefully raise the eductor in the cradle assembly up to the transport position:

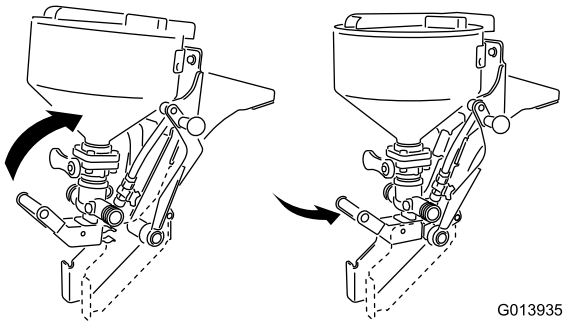


Figure 18

A. Lift the lower handle to raise the eductor while at the same time slightly tipping it toward the tank (Figure 18).

B. Guide the tongue under the cross bar with the welded tab in the upper portion of the frame assembly (Figure 18).

C. Then pivot the assembly toward the tank taking care to line up the spring clamp with the large pivot housing in the lower portion of the frame (Figure 18).

D. Push until the clamp snaps over the pivot housing as shown in Figure 19.

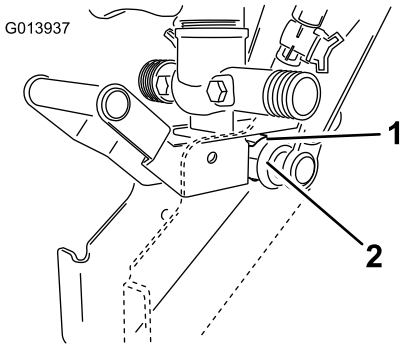


Figure 19

1. Spring clamp
2. Pivot housing

6. Check the eductor height on the cradle back plate and adjust as necessary. Tighten the fasteners securing the eductor to the cradle. Torque the fasteners to 27-33 ft-lb (36-45 N-m).
7. Check the over all position of the eductor assemby on the tank strap. The eductor should be upright, in the transport position. Loosen the lower lock nut on the frame assembly securing it to the tank. Do not remove. Adjust the position as necessary and tighten

the lock nut. Make sure the strap is secure to the tank.

5

Installing the Forward Hose

Parts needed for this procedure:

1	Bulkhead, S93
1	O-ring, large
1	Locking ring
1	Retaining fork
1	R-clamp
1	Carriage bolt (5/16 x 1 inch)
1	Lock nut (5/16 inch)
1	Forward hose assembly

Drilling the Tank

1. Locate the forward location on the top of the tank as shown in Figure 20. Locate the drill mark in the center of the molded circle.

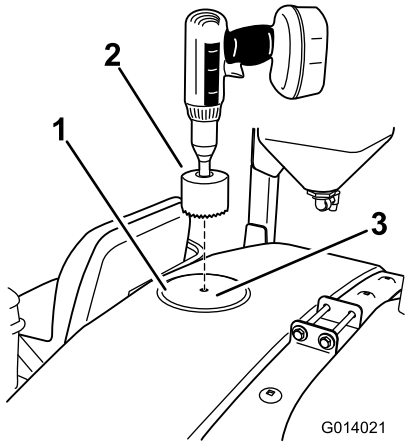


Figure 20

1. Molded circle
2. Drill with hole saw
3. Drill point, center of molded circle

2. Use a 3-5/8 inch (~9 cm) hole saw to drill a hole at the drill mark (Figure 20). The hole will need to increased in diameter slightly to accommodate the bulkhead.
3. After drilling the hole, remove any rough edges in the cut. Remove any debris that entered the main tank during the cutting process.

Installing the Bulk Head

1. Locate the S93 bulkhead in loose parts.
2. Open the main tank lid and remove the filter screen.
3. Install the bulkhead as shown in Figure 21.

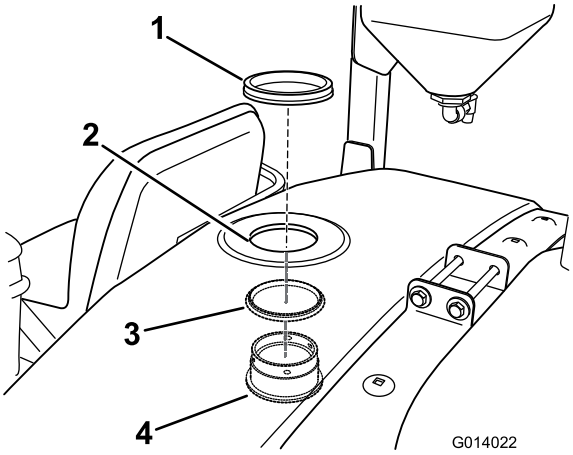


Figure 21

1. Locking ring
2. Hole, cut previously
3. O-ring
4. Bulkhead

A. Install the O-ring over the bulk head base.

B. Install the bulk head and O-ring up from inside the tank through the opening cut previously.

C. Secure the bulk head to the tank with plastic fly-nut

Installing the R-clamp

1. Move the front tank strap on the left side of the machine. Remove and retain the fasteners securing the strap at the top of the tank. Retain all parts.
2. Lift the strap away from the tank enough to install a new bolt at the hole in the strap a quarter of the way down the left side of the tank as shown in Figure 22.

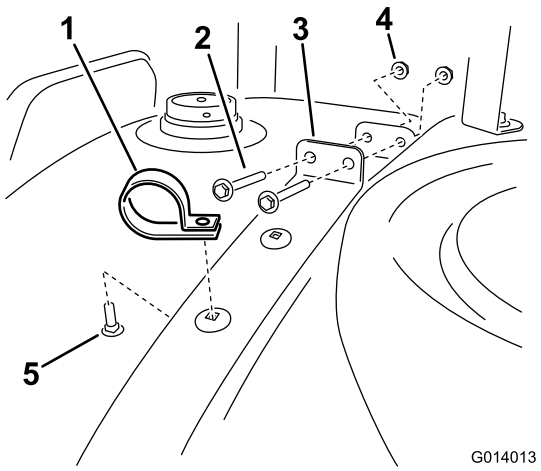


Figure 22

1. R-clamp
2. Long bolt
3. Forward strap
4. Lock nut
5. Carriage bolt (5/16 x 1 inch)

3. Move the strap back into position on the tank. Use the bolts removed previously to tighten the strap to the tank (Figure 22). Make sure the strap is secure to the tank. **Do not overtighten.**
4. Install an R-clamp over the exposed threads of the bolt previously installed.

Installation

1. Install the hose end with the 90 degree fitting to the bulkhead previously installed at the top, front of the tank (Figure 23).

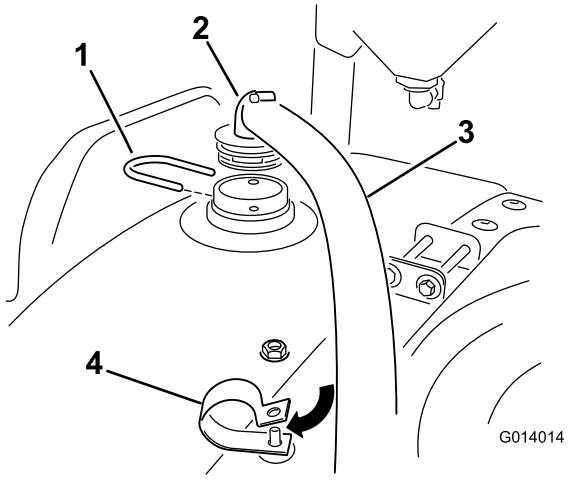


Figure 23

1. Retaining fork
2. Fitting
3. Forward hose assembly
4. R-clamp and lock nut (5/16 inch)

2. Use a fork to secure it to the tank as shown Figure 23.
3. Feed the open end of the hose down and through the R-clamp to the eductor. Install a lock nut over the bolt in the R-clamp and finger tighten at this time (Figure 23). This will allow for later adjustment.
4. Route the open end of the hose rearward toward the front facing opening of the valve on the eductor assembly

Connecting to the Eductor

1. Install the remainder of the hose to forward facing, threaded opening of the eductor (Figure 24). Secure it to the eductor assembly with the plastic nut.

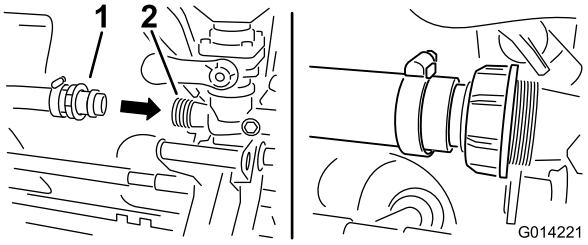


Figure 24

1. Open end of the hose
2. Threaded opening of the eductor

2. Tighten the fly nut over the threads of the eductor to secure the hose (Figure 24).
3. Review the hose arrangement. Make sure it lays with enough slack as shown inFigure 25 to allow for the eductor to be lowered.

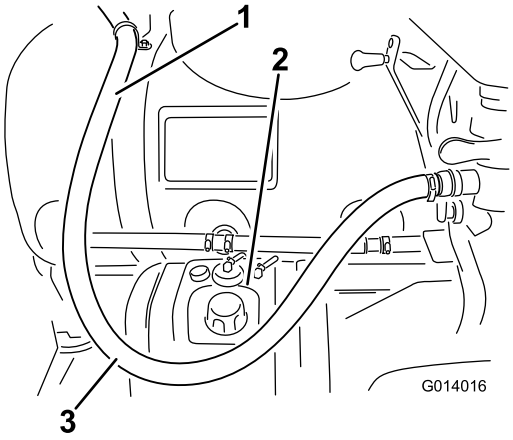


Figure 25

1. Forward hose
2. Tank
3. Enough slack to allow for eductor

6

Installing the Supply Hose

Parts needed for this procedure:

1	Supply hose assembly
1	Hose clamp

Connecting to the Eductor

1. Locate the supply hose in loose parts. Find the end with the straight barbed connector, plastic nut and hose clamp assembled to it.
2. Install the assembled end of the hose to the rear facing opening on the eductor valve (Figure 26). Secure it to the eductor assembly with the plastic nut.

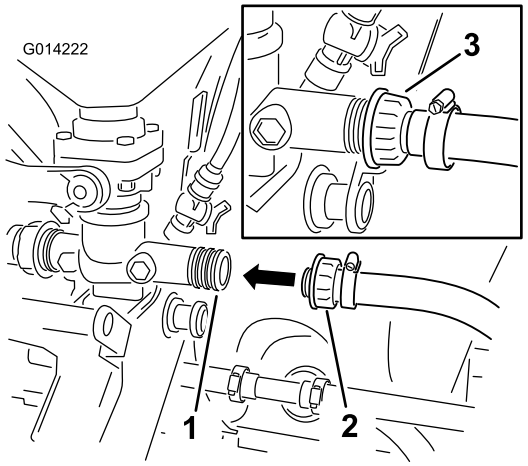


Figure 26

1. Open end of the hose
2. Threaded opening of the eductor
3. Fly-nut tightened

Connecting the Valve Assembly

1. Route the open end of the supply hose rearward . The hose pass the pump and turn back toward the valve assembly under the relief valve (Figure 27).

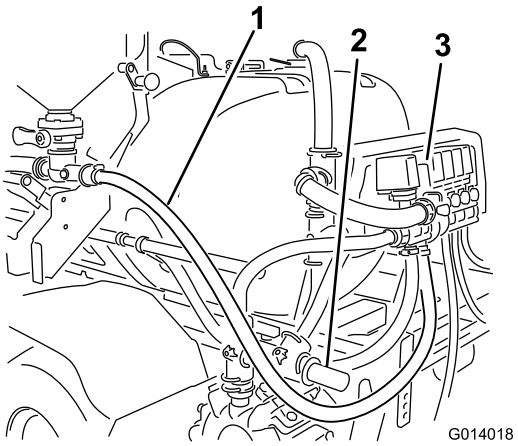


Figure 27

1. Rear hose
2. Relief valve
3. Eductor valve

2. Staying under the agitation hose but above the left side mount for the center boom, route the hose upward to the eductor valve assembly (Figure 27).
3. Slide a loosened hose clamp over the open end of the hose (Figure 28).

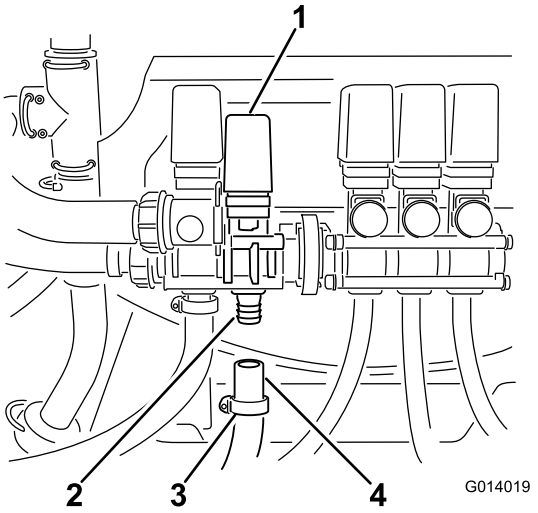


Figure 28

1. Eductor valve
2. Barb
3. Hose clamp
4. Hose end

4. Install the open end of the hose over the exposed barb pointing down from the eductor valve.

   Note: Lightly lubricating the barbed end of the hose fitting with a non-petroleum based lubricant such as vegetable oil can ease the process of installation.
5. Slide the hose clamp over the fitting barb and tighten to secure the fitting to the hose.

7

Installing the Dash Switch

Parts needed for this procedure:

1	Switch, eductor
1	10 amp fuse

Procedure

1. Locate the plug for the eductor switch on the dash (Figure 29). It second plug over from the ignition key.

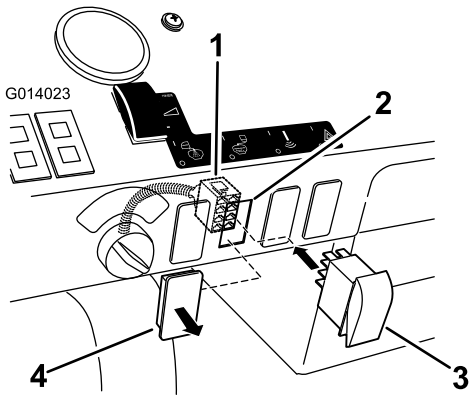


Figure 29

1. Connector for eductor, from main harness
2. Hole in dash
3. Dash switch
4. Plug

2. Remove the plug from the dash (Figure 29).
3. From below the dash, locate the box connector labeled eductor in the main harness. Remove the plastic tie securing it and route it toward the open hole in the dash.
4. Install the switch to the box connector, through the dash with the LED on the switch in the upper position(Figure 29).
5. Push the switch into the dash to mount.
6. Install a 10 Amp fuse into the fuse block (Figure 30).

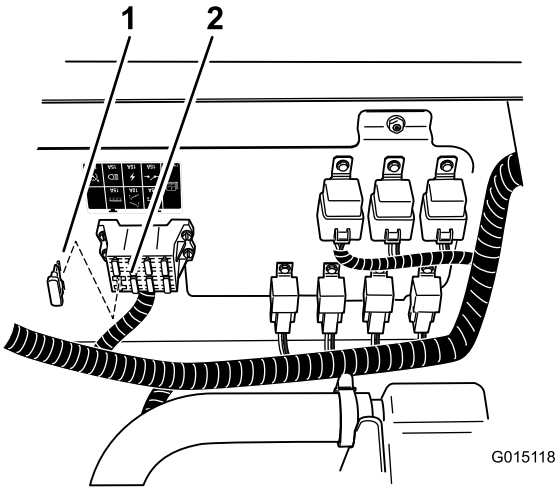


Figure 30

1. Fuse block
2. 10 Amp fuse

7. Adjust the agitation bypass valve as outlined in your *Operator's Manual*.

8

Finishing the Installation

Parts needed for this procedure:

1	Suction lance and hose

Procedure

Retain the suction lance and hose for later use. Read and retain the remaining documentation on using the Eductor kit.

Operation

⚠ CAUTION

Chemicals are hazardous and can cause personal injury.

- **Read the directions on the chemical labels before handling the chemicals and follow all manufacturer recommendations and precautions.**
- **Keep chemicals away from your skin. Should contact occur, wash the affected area thoroughly with soap and clean water.**
- **Wear goggles and any other protective equipment recommended by the chemical manufacturer.**

Controls

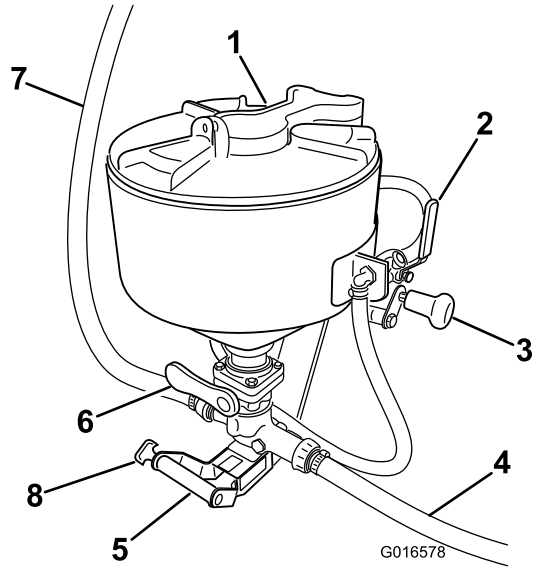


Figure 31

1. Lid
2. Flush valve
3. Upper handle
4. Supply hose
5. Lower handle
6. Main valve
7. Tank hose
8. Transport Strap

Lid

Rotate the lid counter clockwise to open. Close the lid completely before turning clockwise to lock. Lid must be closed and locked before it is raised to the transport position.

Handles and Transport Strap

Upper and lower handles are used to raise and lower the eductor and lock it into transport position.

Main Valve

Use the main valve to introduce chemicals from the eductor into hose leading to the main tank.

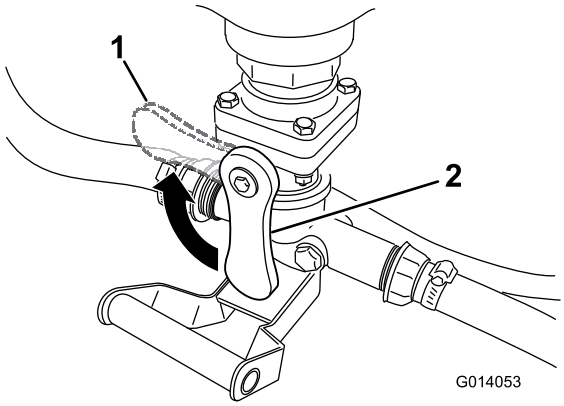


Figure 32

1. Main valve, closed position
2. Main valve, open position

Bottle Rinse

The bottle rinse is located inside the eductor tank. Once the eductor switch is On the bottle rinse has pressure and is supplied by the contents of the main tank. To use, invert the chemical container over the spout and use the rim of the container to depress the rinse. Press down to actuate the spout and rinse the interior of the chemical container.

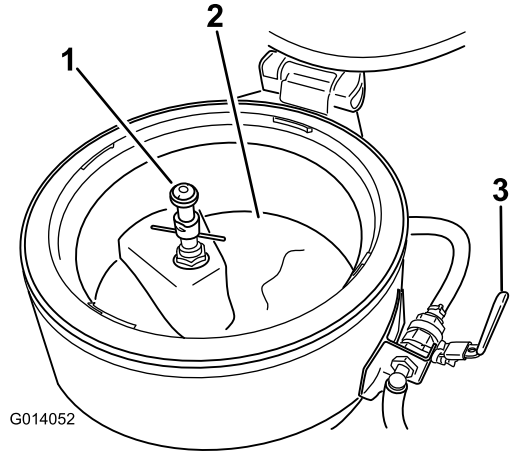


Figure 33

1. Bottle rinse
2. eductor tank
3. Flush valve

Flush Valve

The flush valve can rinse the inside of the eductor tank. Once the eductor switch is On, the flush valve will have pressure and is supplied by the contents of the main tank. To use, turn the handle counter clockwise, 90 degrees. This will in introduce water to the tank. Turn the handle clockwise, 90 degrees to close.

Eductor Switch

The eductor switch is located on the dash board and actuates the eductor valve on the valve assembly block. This introduces pressure from the pump and liquids from the tank to the eductor. It is recommended that the switch is turned on only after the eductor has been lowered to the operating position. It should be turned off before the eductor is raised into the transport position.

Important: Do not activiate the eductor while in the tranport position. Turning the eductor switch on while the eductor is in its raised, tranport postion can damage the components of the machine.

Raising and Lowering the Eductor

Lowering the Eductor

1. Unlatch the rubber transport strap.
2. Place on hand on the lower handle and the other on the upper handle.
3. Lift the Eductor away from the vehicle until the spring clamp disengages.
4. Guide the Eductor as it lowers to the operation position.

Raising the Eductor

1. Lift the lower handle to raise the Edcutor while at the same time slightly tipping it toward the tank.
2. Guide the tongue under the cross bar with the welded tab in the upper portion of the frame assembly.
3. Then pivot the assembly toward the tank taking care to line up the spring clamp with the large pivot housing in the lower portion of the frame.
4. Push until the clamp snaps over the pivot housing.
5. Secure the handle with the transport strap.

Turf Care Precautions While Operating in Stationary Modes

Important: Under some conditions, heat from the engine, radiator, and muffler can potentially damage grass when operating the sprayer in a stationary mode. Stationary modes include tank agitation, hand spraying, or using a walking boom.

Use the following precautions:

- **Avoid** stationary spraying when conditions are very hot and/or dry, as turf can be more stressed during these periods.
- **Avoid** parking on the turf while stationary spraying. Park on a cart path whenever possible.
- **Minimize** the amount of time the machine is left running over any particular area of turf. Both time and temperature affect how much the grass may be damaged.
- **Set the engine speed as low as possible** to achieve the desired pressure and flow. This will minimize the heat generated and the air velocity from the cooling fan.
- **Allow heat to escape** upward from the engine compartment by raising the engine guard/seat assemblies during stationary operation rather than being forced out under the vehicle. Refer to your Operator's Manual for more information on raising the seat assemblies.

Note: Use a heat shield blanket underneath the vehicle during stationary operation if additional heat protection is desired. Contact your Authorized Toro Dealer to obtain a Toro Heat Shield Blanket kit, for turf sprayers.

Using the Eductor

The following procedure assumes the following operational states exist for the standard tank agitation: The sprayer is started and running, the pump is engaged and set to the desired pressure, the throttle is mid range position.

Startup

1. All Eductor valves must be closed prior to starting: hopper valve and hopper rinse ball valve(s).
2. Open lid to check for foreign objects which may hinder performance or contaminate the system.
3. Close and lock lid by turning cover clockwise.
4. Turn Eductor switch on dash to the on position in order to divert pump flow to the Eductor tank inlet line.
5. Turn Pro-Control XP to manual mode if equipped. Use rate switch on dash to set the pressure range between 50-80 PSI. If higher PSI is required (example: suction lance), slowly turn the agitation throttling valve located on the top of the pump toward the closed position.

   Note: Closing this valve will increase system pressure above the maximum PSI recommended and is not advised.

6. Open hopper valve (red handle) located on the bottom of hopper.
7. Unlock and open lid slowly by turning cover counterclockwise.

Loading Liquid or Powdered Chemical into Hopper

1. Pour required amount of chemical into hopper. Avoid splashing liquids or powdered chemicals outside of hopper.
2. Rinse empty chemical containers if applicable. Place container opening over container rinse valve and press down. This will activate the rinse valve and rinse container.
3. Close and lock lid by turning cover clockwise. Release the safety locking band on the hopper rinse ball valve and turn on for 20 seconds to rinse the hopper. Close ball valve and return locking band to locked position.
4. Open lid and inspect for chemical residue. Repeat step 3 as necessary.
5. Close hopper valve (red handle).

Loading Liquid and/or Powdered Chemical with Suction Lance

Note: Lance suction is dependent upon Eductor pressure and flow. For best results, use pressure up to 150 PSI maximum.

1. Insert the suction lance body into Eductor until the o-ring seals on the hopper drain.

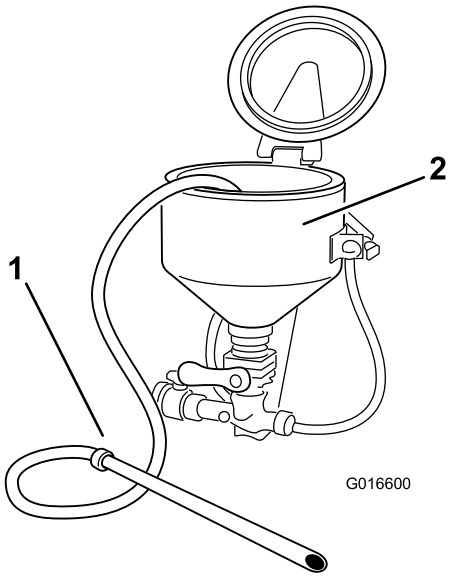


Figure 34

1. Suction lance
2. Eductor

2. Use the free end of the lance to pierce bag or container to vacuum powdered or liquid chemical.
3. Place lance end into a clean container of water to rinse lance assembly.
4. Remove lance body from Eductor and drain any remaining fluid into hopper.
5. Close hopper valve (red handle).

Shutdown

1. Ensure that:
   - All valves are closed. Be sure to close hopper valve first.
   - Chemical residue has been cleaned.
   - Hopper lid is closed and locked by turning cover clockwise.
   - Agitation throttling valve is returned to the full open position.
2. Turn off Eductor switch.
3. Return the Eductor to the transport position and lock with the transport strap.

Troubleshooting

Problem	Possible Cause	Corrective Action
Low eduction rate	1. Lack of flow and pressure to the eductor system	1. Increase pump speed. Turn agitation throttling toward the closed position.
	2. Outlet/Inlet hose obstruction.	2. Disassemble and remove any obstructions.
	3. Fittings with elbows or other flow-restrictions are in the eductor outlet.	3. Use only sweeping turns with flexible hoses.
No rinsing or flushing action	1. Plugged or clogged bottle rinse nozzle.	1. Disassemble rotary portion of nozzle from lower valve assembly and back flush until nozzle ports are clear of debris.
	2. Plugged or clogged flush tee.	2. Diassemble flush tee and clean until nozzle ports are clear of debris.
Leaks at the fittings	1. Fittings are damaged.	1. Check for cracks in fitting. Replace fitting if necessary.
	2. Thread sealant is worn.	2. Disassemble and reseal joint with joint seal compound if leak occurs on threads.

Notes:

Notes:

Count on it.