



**Count on it.**

**Operator's Manual**

**Enclosed Boom**

**For Multi-Pro Turf Sprayers and  
Workman 200 Spray Systems**

**Model No. 41355—Serial No. 260000001 and Up**

# Introduction

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](http://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. The serial plate is located on there front side of the center covered boom assembly.

<b>Model No.</b> _____ <b>Serial No.</b> _____
---------------------------------------------------

This manual identifies potential hazards and has safety messages identified by the safety alert symbol (Figure 1), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.



**Figure 1**

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.

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# Safety

## Before Operating

1. Operate this machine only after reading and understanding the contents of this manual.
2. Learn how to operate the Sprayer and how to use the controls properly. **Do Not** let anyone operate this equipment without first receiving thorough instructions.
3. Keep all shields, safety devices and decals in place. If a shield, safety device or decal is malfunctioning, illegible or damaged, repair or replace it before operating the machine.
4. Chemicals can injure persons, animals, plants, soils or other property. To eliminate environmental damage and personal injury.
  - A. Select the proper chemical for the job.
  - B. Follow manufacturer's instructions on chemical container labels. Apply and handle chemicals as recommended.
  - C. Handle and apply chemicals with care. Wear goggles and other necessary protective equipment. Handle chemicals in well ventilated areas. Never smoke while handling chemicals.
5. Drive the Vehicle slowly.

**Note:** If installing this boom on a Workman® be aware that the boom adds additional weight to the sprayer. Refer to the Setup Section of this manual for maximum tank fill capacities.

## While Operating

1. **Do Not overload the vehicle.** Failure to position loads carefully can result in their shifting or tipping over. Distribute loads evenly, keeping them as low as possible to prevent them from becoming too top heavy.
2. Make certain everyone is clear of the machine before starting the engine to move the vehicle or to engage the sprayer pump drive.
3. This attachment adds extra height to the vehicle when the booms are in the raised position. Drive the vehicle safely:
  - A. Always slow the vehicle when approaching and while making a turn.
  - B. Always slow the Vehicle when driving in unfamiliar areas or over rough terrain.

- C. Always slow the Vehicle when changing direction of travel or preparing to stop.
  - D. When turning or driving on slopes, always slow the Vehicle, then turn the Vehicle to prevent loss of control and possible upset.
  - E. Do not make sudden or sharp turns. Do not suddenly change direction of travel on an incline, ramp, grade, slope or similar surface.
  - F. Always adjust the vehicle speed to allow for existing conditions such as wet or slick surfaces, low visibility, etc.
  - G. Be especially careful when driving a heavily loaded vehicle down an incline or slope. Drive the vehicle up and down the face of the slopes, inclines or grades whenever possible. Do not drive across the face if at all possible. There is a risk of upsetting the vehicle, which can result in serious injury or death.
4. Before backing up, look to the rear and assure no one is behind. Back up slowly.
  5. Watch out for traffic when near or crossing roads. Always yield the right of way to pedestrians and other vehicles.
  6. If equipment begins to vibrate abnormally, stop immediately. Shut off the vehicle engine and disengage all power. Repair all damage before commencing operation.
  7. Before servicing or making any adjustments to the Sprayer:
    - A. Stop the vehicle and set the parking brake.
    - B. Shut off the vehicle's engine and remove key from ignition.
    - C. Disengage all power and wait until all moving parts have stopped.
    - D. In order to avoid electrical shock, inspect the area overhead for wires before raising booms.
    - E. Always use caution while operating the booms near low clearance areas.
  8. Keep all nuts, bolts and other fasteners tightened securely. Replace any shields removed during servicing or adjustments.
  9. To assure optimum performance and continued safety of this product, always use genuine Toro replacement parts and accessories. Replacement parts and accessories

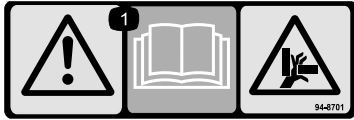
made by other manufacturers may affect the product's operation, performance or durability.

Such use could also void the warranty of The Toro® Company.

## Safety and Instructional Decals

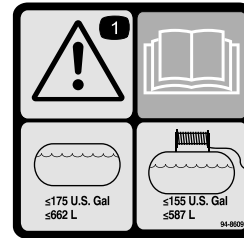


Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or lost.



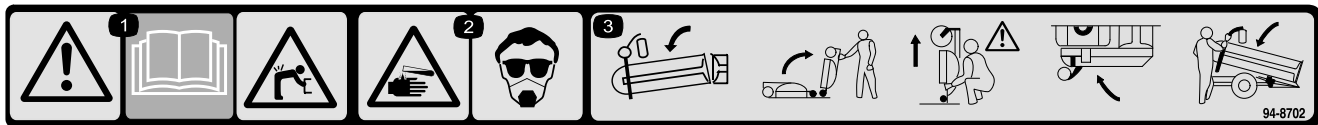
**94-8701**

1. Warning—read the *Operator's Manual*; crushing hazard of hand.



**94-8609**

1. Warning—read the *Operator's Manual*; gross vehicle weight without hose reel kit less than or equal to 175 U.S. Gal (662 L); gross vehicle weight with hose reel kit less than or equal to 155 U.S. Gal (587 L).



**94-8702**

1. Warning—read the *Operator's Manual*; heavy lifting hazard.
2. Chemical hazard—wear eye and breathing protection.
3. Move the covered boom rearward to release breakaway, pivot the boom upright, lift the boom carefully, move it back toward the machine, lower the boom into the retainer slot and secure it with the fasteners.

# Setup

## Loose Parts

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

Step	Description	Qty.	Use
<b>1</b>	Center boom assembly	1	Assemble the center boom.
	Bolt (1/2 x 3 inches)	6	
	Lock nut (1/2 inch)	10	
	Straight castor	2	
	Carriage bolt (1/2 x 3 inches)	2	
	Wheel assembly	2	
	Castor fork, long	2	
	Axle bolt (1/2 x 7-1/2 inch)	2	
	Wheel bearing	2	
	Spring	2	
Cotter pin	2		
<b>2</b>	Left extension boom	1	Assembly the left and right boom.
	Right extension boom	1	
	Curved castor arm	2	
	Carriage bolt (1/2 x 4-1/2 inch)	4	
	Lock nut (1/2 inch)	6	
	Wheel assembly	2	
	Castor fork, long	2	
	Axle bolt (1/2 x 7-1/2 inch)	2	
	Wheel bearing	2	
	Cotter pin	2	
	Nylon bushing, flagged	8	
	Break away retainer collar	2	
	Pivot retainer washer	2	
Jam nut	2		
<b>3</b>	Center flow monitor	1	Install the flow monitor.
	Plastic plate	1	
	Bolt (1/4 x x 2 inch)	2	
	Lock nut (1/4 inch)	2	
<b>4</b>	Actuator link	2	Install the actuators.
	Bolt (1/2 x 8-1/2 inch)	2	
	Actuator assembly	2	
	Bolt (1/2 x 5 inch)	2	
	Extension harness	2	
	Bolt (1/2 x 2 inches)	2	
	Lock nut (1/2 inch)	2	
Lift switches (CE models only)	2		
<b>5</b>	No parts required	–	Route the extension boom hoses.
<b>6</b>	Hose (34 inches)	1	Connect the hoses.
	Hose clamp, small	3	
	Hose clamp, large	6	

<b>Step</b>	<b>Description</b>	<b>Qty.</b>	<b>Use</b>
<b>7</b>	Plastic ties	12	Secure the hoses and wiring harnesses.
<b>8</b>	Center boom drift seal, front (68 inch) Center boom drift seal, hood (30-3/8 inch) Center boom drift seal, rear (19 inch) Extension boom drift seal, front (7-1/2 inch) Extension boom drift seal, hood (65-1/2 inch) Extension boom drift seal, rear (113 inch) Retainer screw	1 1 2 2 2 2 12	Install the drift seals.
<b>9</b>	Decal 94-8609	3	Install the gross vehicle weight decal (Workman® Spray Systems Only).
<b>10</b>	No parts required	–	Installing the foam marker (optional).
<b>11</b>	No parts required	–	Complete the setup.

The Enclosed Boom kit can be installed on a variety of machines and models. The contents of this section are to be used after the successful installation of a enclosed boom mounting kit specific to the machine or model you are currently working on. Therefore, some procedures may not apply to your specific application.

# Step 1

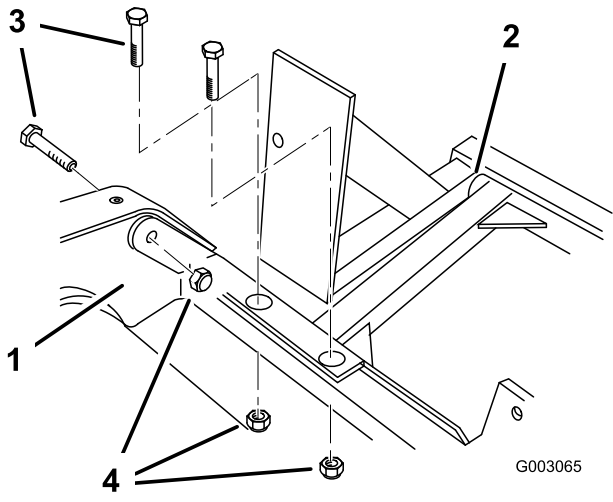
## Assembling the Center Boom

### Parts needed for this step:

1	Center boom assembly
6	Bolt (1/2 x 3 inches)
10	Lock nut (1/2 inch)
2	Straight castor
2	Carriage bolt (1/2 x 3 inches)
2	Wheel assembly
2	Castor fork, long
2	Axle bolt (1/2 x 7-1/2 inch)
2	Wheel bearing
2	Spring
2	Cotter pin

### Procedure

1. Locate the left, right and center enclosed boom assemblies. Remove the center enclosed boom assembly and align it directly behind the boom mount frame.
2. Install the center boom to the boom mount frame using 6 bolts (1/2 x 3 inches) and 6 lock nuts (1/2 inch) as shown in Figure 2.



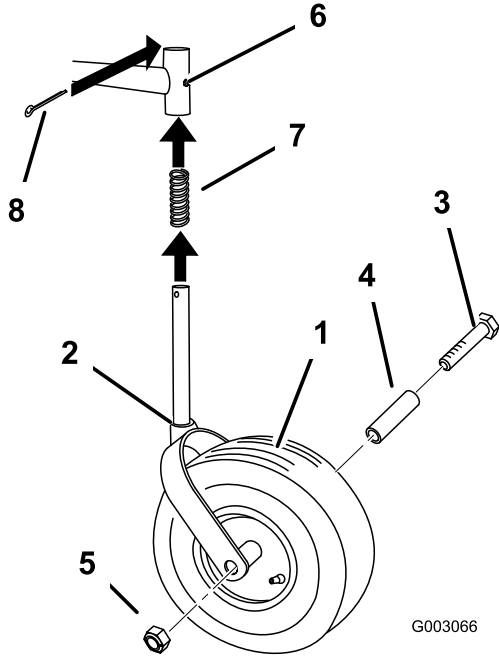
**Figure 2**

Left side shown

- |                        |                          |
|------------------------|--------------------------|
| 1. Center boom         | 3. Bolt (1/2 x 3 inches) |
| 2. Boom mount assembly | 4. Lock nut (1/2 inch)   |

3. Install a wheel assembly to each long castor fork using an axle bolt (1/2 x 7-1/2 inch), wheel bearing and lock nut (1/2 inch) (Figure 3).

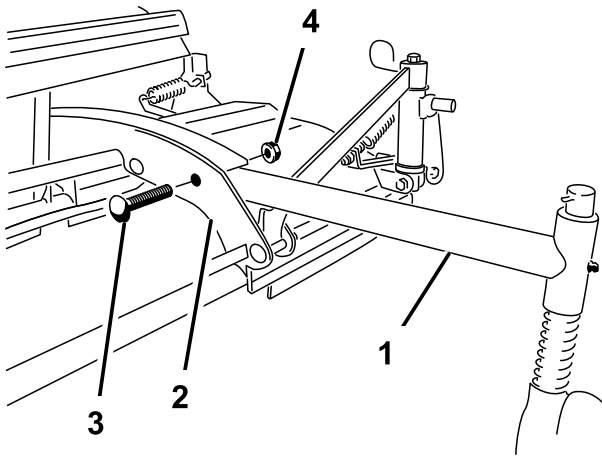
**Important:** Make sure to use the castor fork with the long shaft when assembling the center boom castor wheels.



**Figure 3**

- |                                 |                         |
|---------------------------------|-------------------------|
| 1. Wheel assembly               | 5. Lock nut (1/2 inch)  |
| 2. Castor fork, long            | 6. Castor arm, straight |
| 3. Axle bolt (1/2 x 7-1/2 inch) | 7. Spring               |
| 4. Wheel bearing                | 8. Cotter pin           |

4. Place a spring over each castor fork assembly shaft and install it to a straight castor arm. Secure the assembly to the arm with a cotter pin (Figure 3).
5. Install a straight castor arm/wheel assembly into each the bumper strip of center boom section using two carriage bolts (1/2 x 3 inches) and two lock nuts (1/2 inch). The carriage bolts should be installed from the inside to the outside to allow the center flap to open and close without contact with the fasteners.



**Figure 4**

Right straight castor shown

- |                                           |                                   |
|-------------------------------------------|-----------------------------------|
| 1. Center boom                            | 3. Carriage bolt (1/2 x 3 inches) |
| 2. Straight castor arm and wheel assembly | 4. Lock nut (1/2 inch)            |

**Step**

**2**

## Assembling the Left and Right Booms

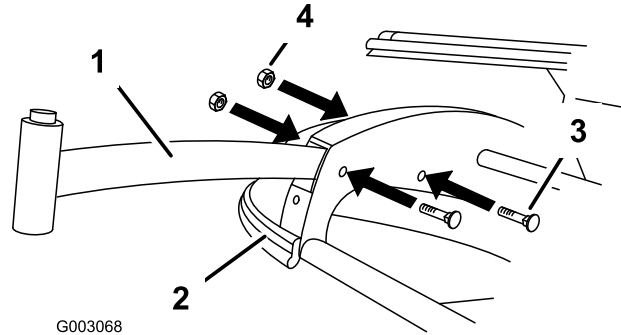
### Parts needed for this step:

1	Left extension boom
1	Right extension boom
2	Curved castor arm
4	Carriage bolt (1/2 x 4-1/2 inch)
6	Lock nut (1/2 inch)
2	Wheel assembly
2	Castor fork, long
2	Axle bolt (1/2 x 7-1/2 inch)
2	Wheel bearing
2	Cotter pin
8	Nylon bushing, flagged
2	Break away retainer collar
2	Pivot retainer washer
2	Jam nut

### Procedure

1. Lay an extension boom to the right and left of the center boom with the small guide wheels to the rear. Open the hoods on the front face of each enclosed extension boom.

2. Install a curved castor arm to each bumper strip in the left and right booms so it extends forward from the front of the boom and curves inward, toward the machine
3. Secure the castor arms to the bumper strips as shown in Figure 5 using two carriage bolts (1/2 x 4-1/2 inch) and 4 lock nuts (1/2 inch). The carriage bolts should be installed from the inside to the outside to allow the center flap to open and close without contact with the fasteners.

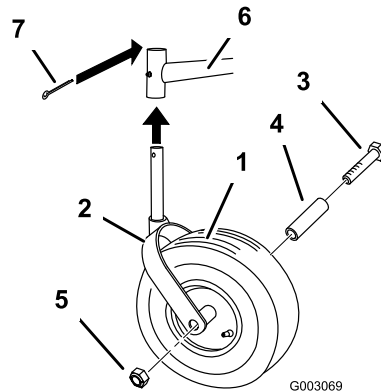


**Figure 5**

Right boom extension

- |                       |                            |
|-----------------------|----------------------------|
| 1. Castor arm, curved | 3. Bolt (1/2 x 4-1/2 inch) |
| 2. Boom extension     | 4. Lock nut (1/2 inch)     |

4. Install the wheel assembly to the short castor fork using an axle bolt (1/2 x 7-1/2 inch), wheel bearing and lock nut (1/2 inch) (Figure 6).

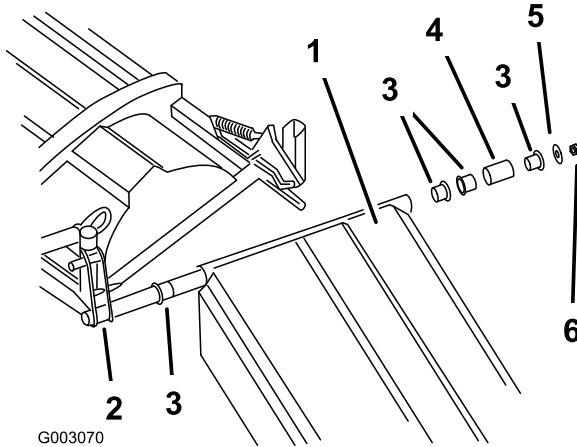


**Figure 6**

- |                                 |                        |
|---------------------------------|------------------------|
| 1. Wheel assembly               | 5. Lock nut (1/2 inch) |
| 2. Castor fork, short           | 6. Castor arm, curved  |
| 3. Axle bolt (1/2 x 7-1/2 inch) | 7. Cotter pin          |
| 4. Wheel bearing                |                        |



- Secure the castor fork/wheel assemblies to each castor arm with a cotter pin (Figure 6).
- Install the left and right boom to the center boom as shown in Figure 7



**Figure 7**

Right side shown

- Extension boom, right
- Pivot joint
- Nylon bushing, flagged
- Breakaway retainer collar
- Pivot retainer washer
- Jam nut

### Step 3

# 3

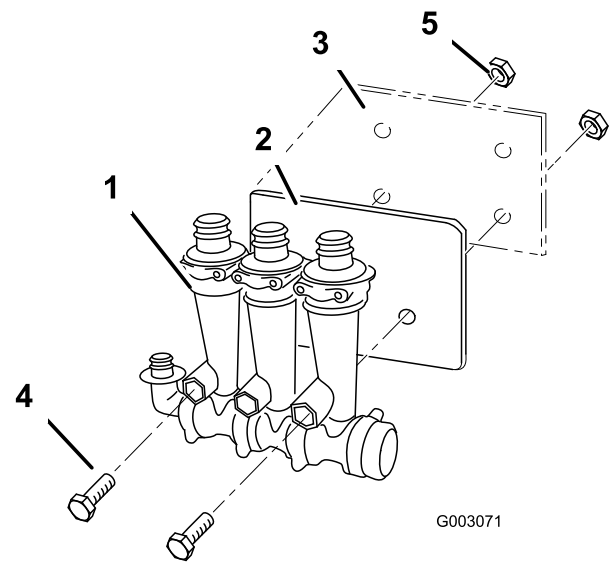
## Installing the Center Boom Flow Monitor

### Parts needed for this step:

1	Center flow monitor
1	Plastic plate
2	Bolt (1/4 x x 2 inch)
2	Lock nut (1/4 inch)

### Procedure

Install the flowmeter to bracket with two bolts (1/4 x 2 inch), a plastic plate and two lock nuts (1/4 inch) to the mount plate as shown in Figure 8.



**Figure 8**

- Flowmeter
- Plastic plate
- Mount bracket, flowmeter
- Bolt (1/4 x 2 inch)
- Lock nut (1/4 inch)

### Step 4

# 4

## Installing the Actuators

### Parts needed for this step:

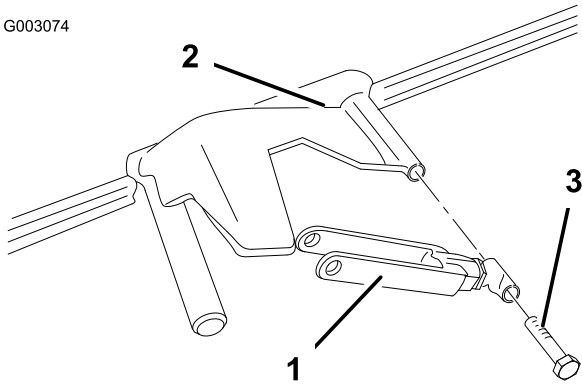
2	Actuator link
2	Bolt (1/2 x 8-1/2 inch)
2	Actuator assembly
2	Bolt (1/2 x 5 inch)
2	Extension harness
2	Bolt (1/2 x 2 inches)
2	Lock nut (1/2 inch)
2	Lift switches (CE models only)

### Procedure

Use the following instructions to install one boom extension actuator and then repeat them for the opposite side.

- Install the actuator link to the boom extension as shown in Figure 14 using the bolt (1/2 x 8-1/2 inch).

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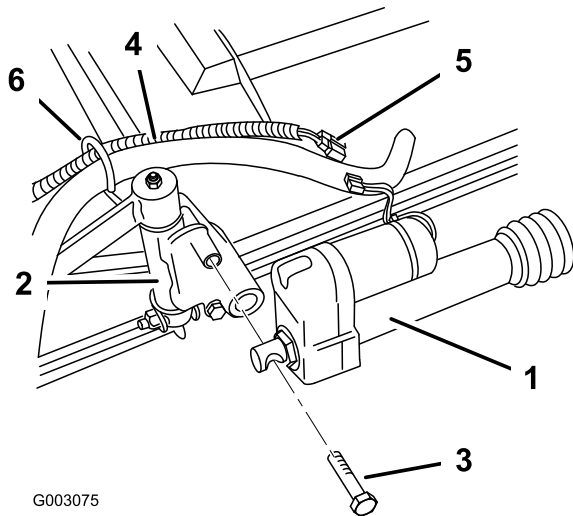


**Figure 9**

Right side shown

- |                   |                            |
|-------------------|----------------------------|
| 1. Actuator link  | 3. Bolt (1/2 x 8-1/2 inch) |
| 2. Boom extension |                            |

2. Install the actuator assembly to the breakaway pivot mount using a bolt (1/2 x 5 inch) as shown in Figure 10. Connect the 6 inch extension harness to each of the actuators.



G003075

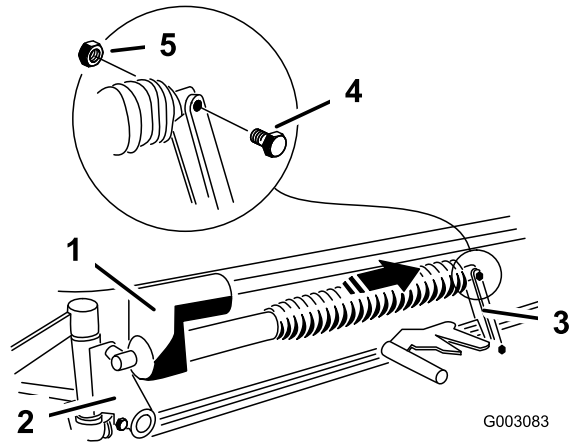
**Figure 10**

Right side shown

- |                          |                      |
|--------------------------|----------------------|
| 1. Actuator assembly     | 4. Extension harness |
| 2. Breakaway pivot mount | 5. Connect here      |
| 3. Bolt (1/2 x 5 inch)   | 6. Retainer ring     |

3. Locate the boom lift connections on the machine's electrical harness. The connectors for the left are marked with orange and blue wires, and the right are marked by the yellow and green wires.
4. Make sure to route the wiring along the boom feed hose and through the retainer ring (Figure 10).

5. Power the actuator to extend the rod to reach the link (Figure 11).
6. Secure the actuator assembly to the link using a bolt (1/2 x 2 inches) and lock nut as shown in Figure 11.



G003083

**Figure 11**

Right side shown

- |                          |                          |
|--------------------------|--------------------------|
| 1. Actuator assembly     | 4. Bolt (1/2 x 2 inches) |
| 2. Breakaway pivot joint | 5. Lock nut (1/2 inch)   |
| 3. Link                  |                          |

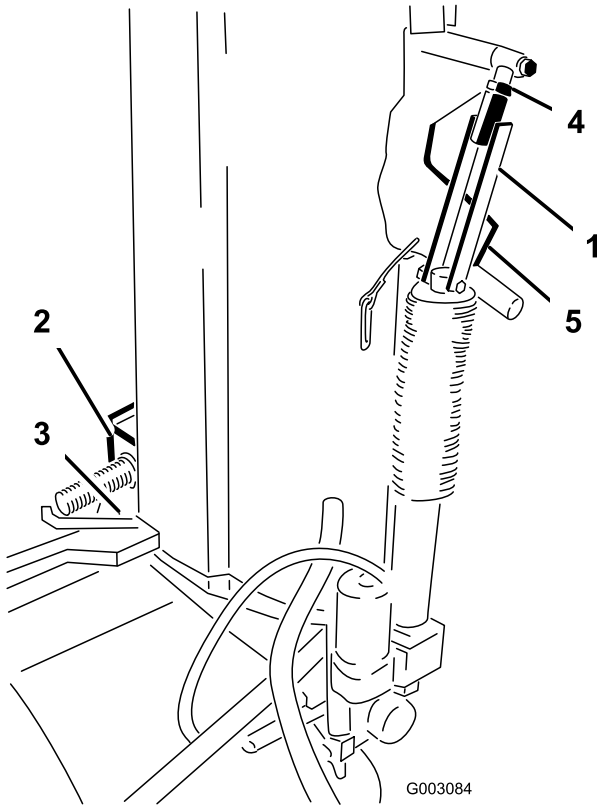
7. Use the plastic ties to secure any loose wiring to the center boom frame and boom extensions.
8. If boom lift switches exist in the control panel, proceed to the next step. If necessary, install 2 rocker switches to control the boom lift actuators:

- A. Locate and remove the plastic plugs at the boom lift locations on the control panel.
- B. Remove the fasteners securing the control panel to the machine. Retain all fasteners.
- C. Install the switches to the control panel at the boom lift switch locations.

**Note:** The notch in the switch should be at the lower, left corner of the control panel opening when the switch is installed.

- D. In the control panel, locate the connectors labeled for the left and right boom actuators and plug them into the back of the corresponding switches.
  - E. Stow the wires inside the control panel and replace the control panel. Secure it with the fasteners removed previously
9. Use the Up/Down switches to raise the boom extension to the upright position until the Stop on the front corner of the boom extension just

makes contact with the center boom contact pad (Figure 12).



**Figure 12**

Right side shown

- |                             |                       |
|-----------------------------|-----------------------|
| 1. Actuator link            | 4. Jam nut            |
| 2. Stop, boom extension     | 5. Actuator link stop |
| 3. Contact pad, center boom |                       |

10. Measure the length of the Actuator and adjustment link . It should be 30-1/8 inch,  $\pm 1/16$  inch from the center of the actuator assembly bolt to the center of the actuator link bolt (Figure 12).
11. If the length of the assembly needs to be corrected, remove the bolt and locknut connecting the actuator link to the actuator arm, loosen the jam nut and rotate the actuator link to adjust the length.
12. Install actuator link to actuator arm using the bolt and locknut removed previously. Tighten the jam nut to secure the assembly and ensure the link rests square on the actuator link stop (Figure 12).

**Important:** If the length of the actuator assembly is less than specified above the frame can bend when the actuator is fully contracted. If the length is greater than specified above, the boom can be damaged due to excessive movement when in the transport position.

## Step 5

### Routing the Extension Boom Hoses

#### No Parts Required

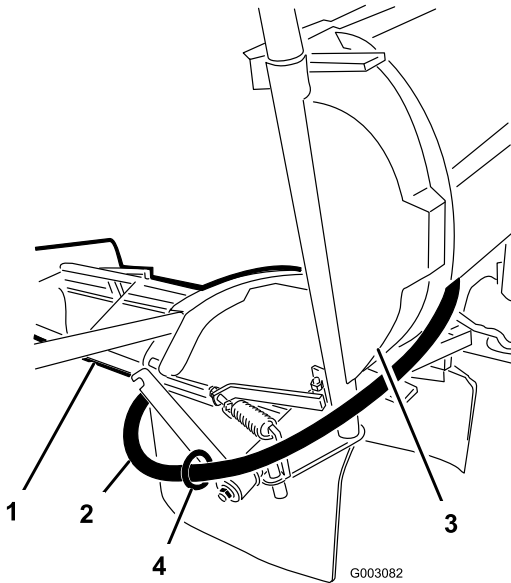
#### Procedure



Use proper lifting procedures when lifting the extension boom into the forward fold position. Failure to follow proper lifting procedures could result in personal injury.

- Follow the forward fold instructions decal located near the end of the boom extension.
- Also read and understand the instructions in the Operator's Manual.

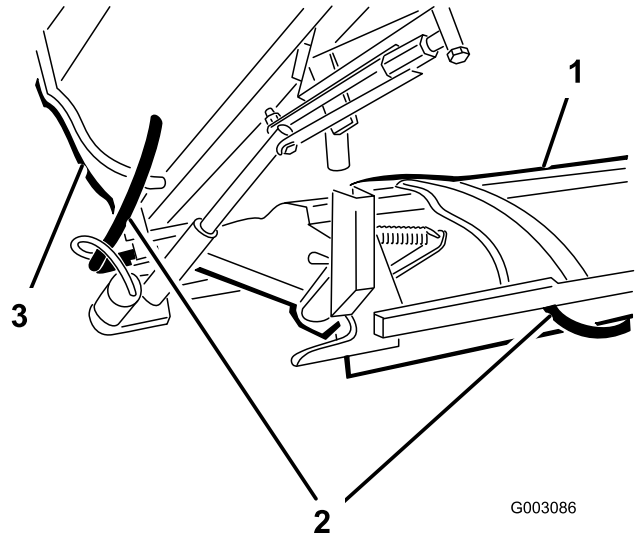
1. Route the extension boom hose through the retainer ring at pivot joint on the center boom. Be sure to leave enough length in the hoses to allow for the extension boom to be folded into the storage position without kinking (Figure 13).



**Figure 13**

Right side shown

- 1. Boom center section
- 2. Extension boom feed hose
- 3. Boom extension
- 4. Retainer ring

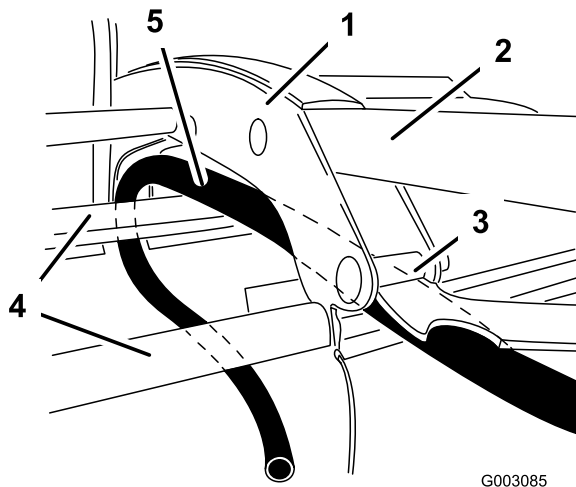


**Figure 15**

Right side shown

- 1. Boom Center Section
- 2. Boom Extension Feed Hose
- 3. Boom Extension

2. Thread the extension boom hose through the nearest bumper strip, below the castor arm and pivot hardware and above the center boom frame as shown in . Feed the hose forward and above the front center boom frame.



**Figure 14**

Right side shown

- 1. bumper strip, center boom
- 2. Castor arm
- 3. Pivot hardware
- 4. Center boom frame
- 5. Extension boom hose

**Step**  
**6**

**Connecting the Hoses**

**Parts needed for this step:**

1	Hose (34 inches)
3	Hose clamp, small
6	Hose clamp, large

**Procedure**

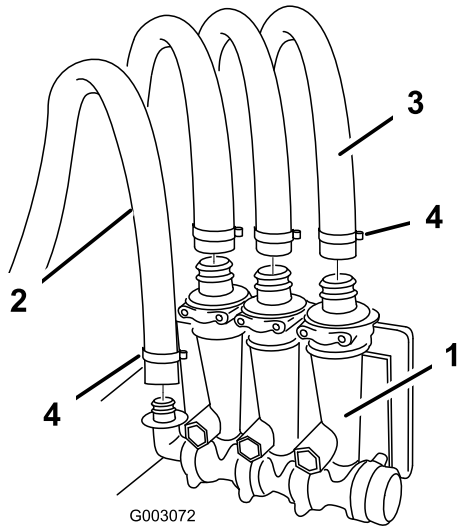
**!**

Chemicals are hazardous and can cause personal injury.

Securely tighten all sprayer hose clamp connections during initial set-up to prevent leaks and hose blow-offs while spraying system is in operation.

**Note:** When installing on the Workman®, the Flow Monitor Extender bracket is not used and the center boom feed hoses from flow monitor can be trimmed 17 inches.

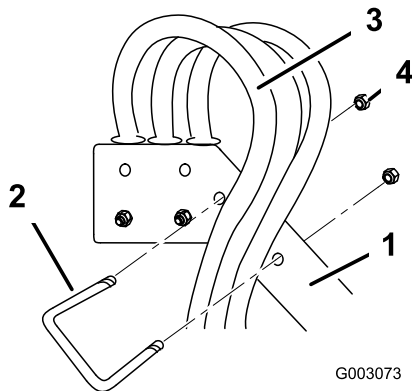
1. Connect the three hoses from the center boom to the flow monitor so that the monitor indicators correspond to the Spray Nozzles on the Center Boom (i.e. left nozzle on left flow indicator, etc.).. Use a hose clamp to secure each hose (Figure 16).



**Figure 16**

- |                            |                         |
|----------------------------|-------------------------|
| 1. flowmeter               | 3. Extension boom hoses |
| 2. Center boom supply hose | 4. Hose clamp           |

2. Leaving a gentle loop in hoses, to relieve stress from the hose and flow monitor connection and hose restriction, secure the center boom hoses to the machine frame using a U-bolt and two lock nuts (3/8 inch) as shown in Figure 17.



**Figure 17**

- |                    |                                      |
|--------------------|--------------------------------------|
| 1. Flowmeter mount | 3. Lock nut (3/8 inch)               |
| 2. U-bolt          | 4. Hoses, length left to avoid kinks |

The boom supply hose connection will depend on the type of control valve system used on the machine.

### Sprayers With Electric Control Valve System:

1. Connect one end of the 34 inch center boom supply hose to the flow monitor at the 90 degree elbow barb (Figure 16) and the other end to the outlet on the center control valve. Use 2 large hose clamps to secure the hose at each end.
2. Connect the boom supply hoses routed from the left and right boom extensions to the corresponding outlets on the control valves so the boom are controlled by the correct boom control switches/control valves. Secure with hose clamps.

### Sprayers With Manual Control Valve System:

1. Connect one end of the 34 inch center boom supply hose to the flow monitor at the 90 degree elbow barb (Figure 16) and the other end to the outlet on the center control valve. Use 2 large hose clamps to secure the hose at each end.
2. Insert the two 3/4 inch plastic hose connectors supplied into boom supply hoses routed from the left and right boom extensions. Secure with hose clamps. Connect these with the existing hoses coming from the left and right boom control valves to the plastic hose connectors, trimming excess hose, but allowing enough hose length for boom movement. Secure with hose clamps.

**Note:** If flow monitors are equipped with swivel nuts they should be tightened at this time. Be careful not to overtighten.

## Step 7

### Securing the Hoses and Wiring Harnesses

#### Parts needed for this step:

12	Plastic ties
----	--------------

#### Procedure

1. Tie boom supply hose and actuator wiring harness together with plastic ties. Ensure the ties do not pinch hose. Where Hoses and

wiring go through center boom, secure to boom frame so hoses cannot interfere with spray pattern or boom operation.

2. At the boom extension pivot-fold joint ensure that the hose does not collapse or interfere with boom movement in the field, vertical transport or forward fold transport positions.
3. Tie and secure all other hose and wiring so that it will not interfere with boom operation.

**Step**

**8**

## Installing the Drift Seals

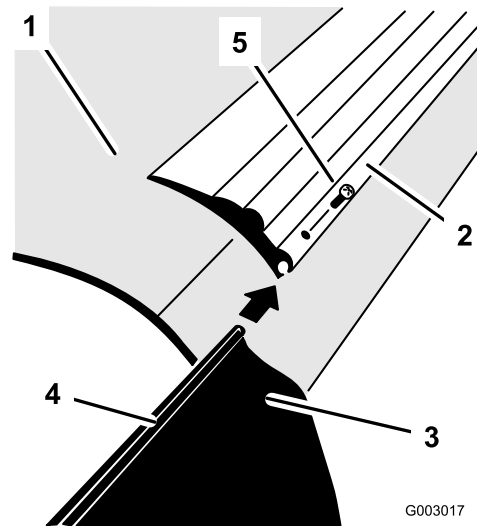
### Parts needed for this step:

1	Center boom drift seal, front (68 inch)
1	Center boom drift seal, hood (30-3/8 inch)
2	Center boom drift seal, rear (19 inch)
2	Extension boom drift seal, front (7-1/2 inch)
2	Extension boom drift seal, hood (65-1/2 inch)
2	Extension boom drift seal, rear (113 inch)
12	Retainer screw

### Procedure

**Note:** If the enclosed boom must be transported at highway speeds to the end use location the drift seal should be installed at the end use location to prevent wind damage.

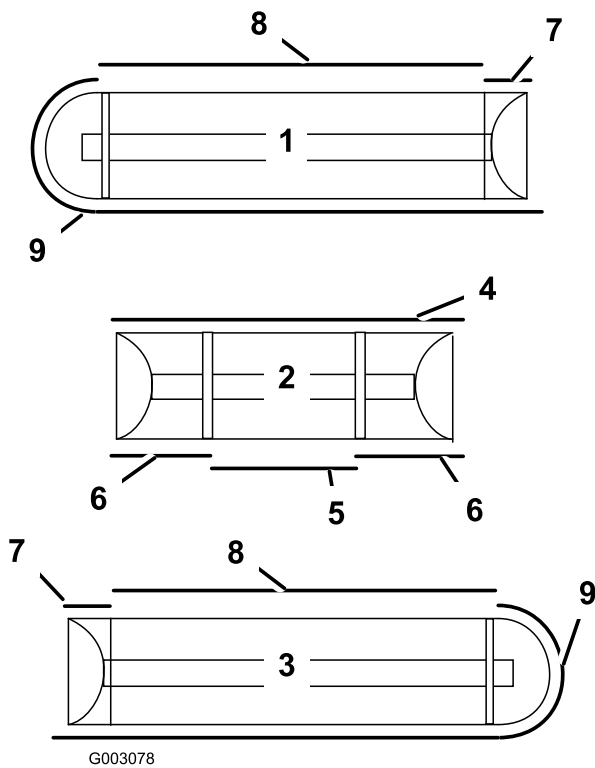
1. Assemble the drift seal sections into the retainer molding slots located on the lower edge of the boom. The longer pieces will be easier to install if a light lubricant such as liquid soap or a silicone based product is used. The end of the drift seal at the hood opening should be flush with the drift seal retainer molding.



**Figure 18**

1. Boom
2. Retainer molding slot
3. Drift seal
4. Lubricate here
5. Retainer screw (#10 x 2 inch)

2. Screw twelve drift seal retainer screws (#10 x 2 inch) into ends of curtain, setting head of screw flush with retainer molding. Where screws can not be used, crimp the end of the retainer molding 1/8 inch using vice grip pliers with tape on jaws to prevent scuffing of the molding.



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**Figure 19**

- |                                               |                                                  |
|-----------------------------------------------|--------------------------------------------------|
| 1. Left boom extension                        | 6. Center boom drift seal, rear (19 inch)        |
| 2. Center boom                                | 7. Extension boom drift seal, front (7-1/2 inch) |
| 3. Right boom extension                       | 8. Extension boom drift seal, hood (65-1/2 inch) |
| 4. Center boom drift seal, front (68 inch)    | 9. Extension boom drift seal, rear (113 inch)    |
| 5. Center boom drift seal, hood (30-3/8 inch) |                                                  |

## Step

# 9

## Installing the Gross Vehicle Weight Decal (Workman® Spray Systems Only)

### Parts needed for this step:

3	Decal 94-8609
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### Procedure



This attachment may cause the overall gross vehicle weight to be exceeded when used in combination with other attachments. Exceeding the gross vehicle weight can cause injury or death due to reduced handling, braking and stability.

- Always reduce payload to maintain vehicle weight within gross vehicle weight rating.
- See Operator's Manual for additional information.

**Important:** When the enclosed boom is installed on a Workman® spray system the gross vehicle weight decal (Part No. 94-8609) must be applied at up to three locations to warn the operator of possible vehicle overload conditions. A vehicle overload condition could lead to serious injury or death.

Apply one decal on each side of the rear Spray Tank Band and one decal on the hose reel if necessary.

## Step

# 10

## Installing the Foam Marker (Optional)

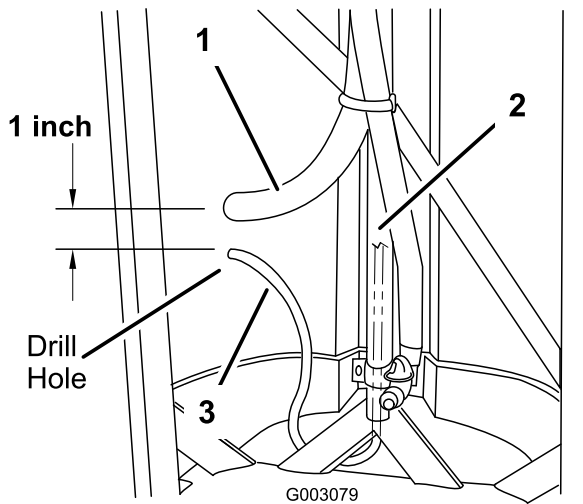
### No Parts Required

### Procedure

Follow the instructions included with the Foam Marker Kit except for the applicable steps as follows:

1. Drill a hole (3/8 inch) in the plastic shroud 1 inch over from the boom extension supply hose on each extension boom (Figure 20).

**Note:** Remove silicone plug from nozzle tube if present.



**Figure 20**

1. Boom extension feed hose
2. Nozzle tube
3. Foam marker hose

2. Route the foam marker hose through nozzle tube on each extension boom.
3. Install the punched hole boom caps to nozzle tubes
4. Connect foam marker boom supply hoses coming from compressor to the boom hoses using 1/4 inch hose connectors and hose

clamps supplied with the Enclosed Boom Mounting Kit.

5. Route the foam marker hoses with the right and left boom supply hoses and actuator wiring harness to the front of the center boom, securing the foam marker hose to boom supply hose and wiring with plastic ties, ensuring that ties do not pinch the hoses.

## Step

# 11

## Complete the Setup

### No Parts Required

### Procedure

Before operating, perform the following:

- Grease inside surfaces of transport pin receivers. Also grease castor fork bushings, wheel bushings and boom mount.
- Refer to the Operation section for proper operating procedures.
- Insert *Parts Catalog* and *Operator's Manual* into manual tube on the machine.



# Operation



This attachment may cause the overall gross vehicle weight to be exceeded when used in combination with other attachments. Exceeding the gross vehicle weight can cause injury or death due to reduced handling, braking and stability.

- Always reduce payload to maintain vehicle weight within gross vehicle weight rating.
- See the Operator's Manual for additional information.

## Maximum Payload (Workman® Spray Systems only)



This attachment may cause the overall gross vehicle weight to be exceeded when used in combination with other attachments. Exceeding the gross vehicle weight can cause injury or death due to reduced handling, braking and stability.

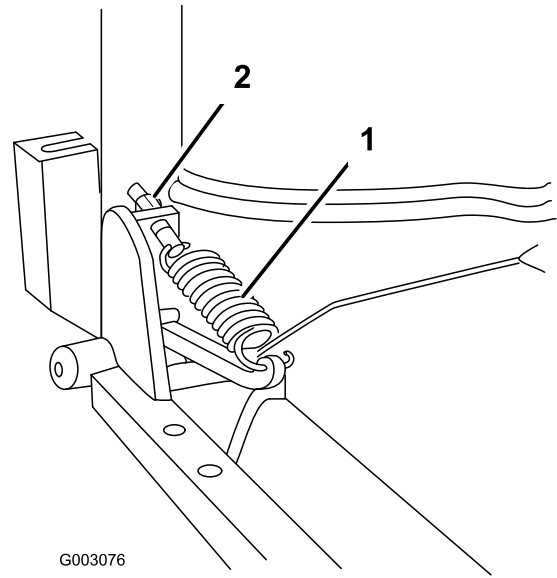
- Always reduce payload to maintain vehicle weight within gross vehicle weight rating.
- See Operator's Manual for additional information.

**Note:** The following applies to the Workman spray systems only.

1. Only fill the spray tank to 175 U.S. gallons (662L) total. When using an Enclosed Boom with the Workman spray system.
2. If the Workman spray system vehicle is equipped with a Hose Reel reduce the spray tank capacity an additional 20 U.S. gallons to 155 U.S. gallons (587L) total.

## Using the Boom Extension Breakaway

1. The Breakaway Latch is spring loaded to provide the required tension to keep the extension rigid until severe impact dislodges it.
2. If the Extension Boom releases too easily the tension can be increased by tightening the nut (Figure 21).



**Figure 21**

1. Spring
2. Nut

## Transporting the Enclosed Boom in the Vertical Position



Improper Boom Extension lifting or lowering procedure could cause personal injury or death to the operator or a bystander.

- When lifting the Boom Extensions, always be aware of your surroundings. Do Not operate near bystanders or other equipment. Be aware of overhead power lines which could cause electrical shock.
- On slopes the Boom Extensions should only be lowered with the vehicle facing up or down the slope.
- Do not attempt to lower Boom Extensions on a slope with the Enclosed Boom oriented parallel to slope (vehicle perpendicular) for they can drop suddenly.

Use the Boom Lift switches to raise or lower the right or left booms.

## Stowing the Boom in the Forward, Folded Position



Use proper lifting procedures when lifting the Extension Boom into the forward fold position.

- Failure to follow proper lifting procedures could result in personal injury.
- Follow the Forward Fold Instructions Decal located near the end of the Boom Extension.
- Also read and understand the instructions in Operator's Manual..



Chemical residue may be on the Boom Extension.

- Chemicals are hazardous and can cause personal injury.
- Wear appropriate safety equipment when forward folding Boom Extension.

**Note:** The actuators must be fully extended for the booms to fold forward.

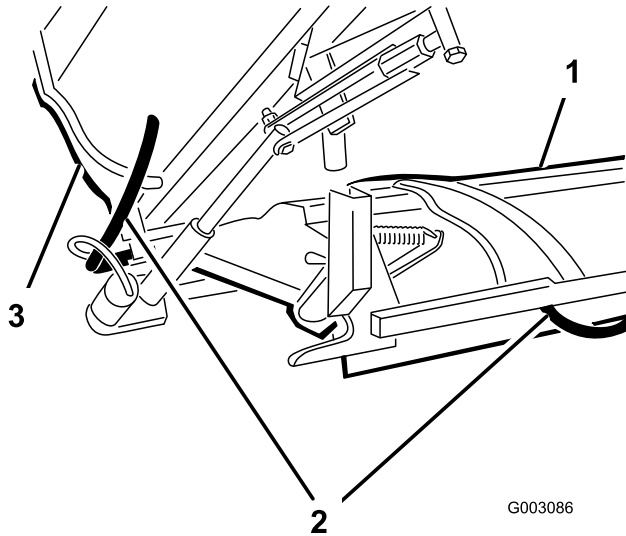
1. Stand at the end of the boom facing the center of the machine. Grasp the Castor Arm and give a pull towards the rear. This will release the breakaway.
2. Grasp the Castor Arm and lift to rotate back to stop.
3. Use your other hand to grasp the bottom of the shroud and lift the boom to chest height.
4. Walk with the boom towards the sprayer. Insert the transport pin into the receiver. Be sure to secure the safety clip to the forward loop (Figure 21).



Failure to secure the Safety Clip to the Safety Clip Anchor while transporting the Extension Booms in forward fold could allow the Boom Extension transport pin to come out of the pin receiver and the Boom Extension to be unsecured.

- An unsecured Boom Extension could cause personal injury or death to a bystander or other machine operator.
- Ensure that the Safety Clip is secured to the Safety Clip Anchor.

**Note:** A pictorial Forward Fold instruction Decal is located on the Boom Extension Castor Arm Mount.



**Figure 22**

- 1. Boom Center Section
- 2. Boom Extension Feed Hose
- 3. Boom Extension

1. If all the balls cannot be made to come up to the same level, check the flow in the lines to see if the flow is equal in all lines.

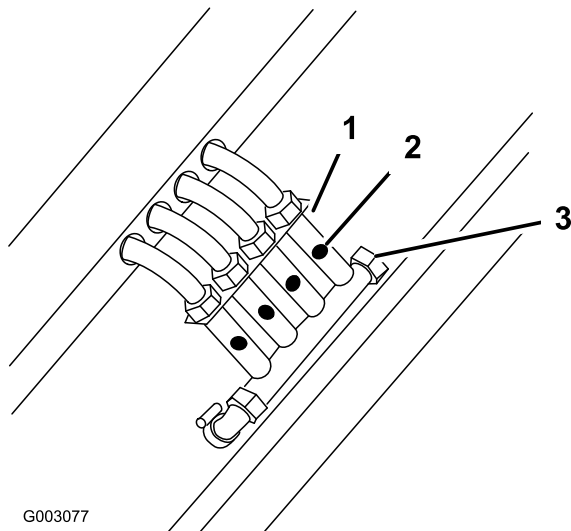
**Important:** Freezing temperatures will damage the monitors if the water is not drained completely.

2. To drain the Flow Monitor remove the cap on the end of the Flow Monitor.

## Using the Flow Monitor

Each boom section has a flow monitor mounted in the operator's view. The monitors have sight tubes; each tube contains a weighted ball that floats when there is flow to the corresponding nozzle.

When there is flow, all the floating balls should be at the same level. If a ball is lower than the others, this indicates a clogged nozzle (Figure 23).



**Figure 23**

- 1. Flow monitor
- 2. Stainless steel ball
- 3. Cap

# Maintenance

## General Maintenance

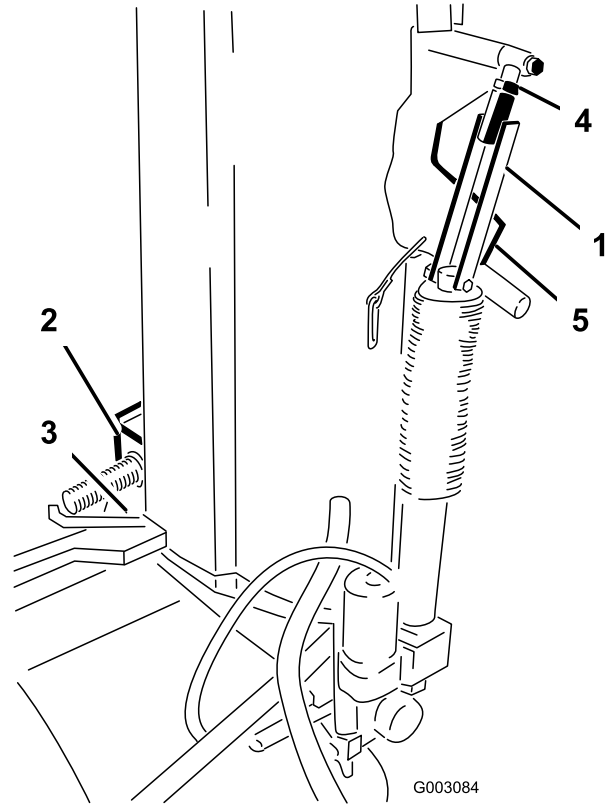
- Grease fittings on Boom Mount, Castor Mounts and Castor Wheels daily.
- Tighten Hose Clamps every 200 hours, or annually.

## Boom Extension Adjustment

After every 200 operating hours or annually, check movement of Extension Boom while in vertical transport position.

**Important:** The Electric Boom Extension Lifts must be properly adjusted to operate correctly. Improper adjustment could damage the Boom.

1. Use the Up/Down switches to raise the Boom to the upright position until the Stop on the front corner of the Boom Extension just makes contact with the contact pad on the Center Boom.
2. Measure the length of the Actuator and Adjustment Link . It should be  $30\text{-}1/8'' + 1/16''$  from the center of the Actuator Bolt to the center of the Adjustment Link Bolt. (Figure 24)



**Figure 24**

1. Actuator link
2. Stop, boom extension
3. Contact pad, center boom
4. Jam nut
5. Actuator link stop

**The adjustment of the Electric Boom Extension Lifts requires that the Actuator be separated from the Actuator Adjustment Link which leaves the Boom Extension unsupported.**

- **An unsupported Boom Extension could fall and cause personal injury or death.**
- **Use additional support for the Boom Extension when adjusting the Electric Boom Extension.**
- **It is recommended that the Boom Extension Electric Lift adjustments be done with two people.**

3. Use the Up/Down switches to raise the Boom to the upright position until the Stop on the front corner of the Boom Extension just makes contact with the contact pad on the Center Boom.
4. Measure the length of the Actuator and Adjustment Link . It should be  $30\text{-}1/8'' + 1/16''$  from the center of the Actuator Bolt to the center of the Adjustment Link Bolt (Figure 24).
5. If the measurement is incorrect, remove the hex hd screw that attaches the Actuator Adjustment Link to the Actuator, loosen the Jam Nut and rotate the Adjustment Link to change the length to the specification. Replace the hex hd screw and nut ensuring that the Adjustment Link can pivot freely. Retighten the Jam Nut, ensuring that the Link rests squarely on the Actuator Link Stop in the raised position.

**Note:** If the Actuator has less than the above specification this will bend the frame of the Extension Boom when the Actuator is fully contracted. More than specification will cause excessive movement during vertical transport.

6. Re-torque the wing retainer lock nuts to 15 ft-lbs. If no torque wrench is available, tighten till snug.

# Storage

## Flush the Boom

1. Flush the entire system with a solution that will chemically neutralize the liquid in the monitors. Mix according to manufacturers directions. This will dissolve most residue remaining in the monitor.

**Note:** The flow monitors will discolor if proper flushing procedures are not adhered to.

2. The flow monitor is susceptible to discoloration if exposed to direct sunlight for several years. To reduce the effect of sunlight, store the monitor indoors or cover when not in use.

**Important:** Freezing temperatures will damage the monitors if the water is not drained completely. See the flow monitor section in Operation for draining procedure.





**Count on it.**