Form No. 3479-842 Rev A

Ultra Sonic Boom™ Leveling Kit

Multi-Pro 5800, 1750 and WM Turf Sprayers and Workman® 200 Spray System

Model No. 41237—Serial No. 400000000 and Up

Installation Instructions

Introduction

This attachment maintains consistent distances from the boom nozzles to the ground when spraying over uneven surfaces and is intended to be used by professional, hired operators in commercial applications. It is primarily designed for spraying golf course applications, parks, sports fields, and on commercial grounds. It is designed to only be used in conjunction with machines designated by the manufacturer.

This product complies with all relevant Europedan directives. For details, please see the separate product specific Declaration of Incorporation (DOI) sheet.

Installation

Loose Parts

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

Procedure	Description	Qty.	Use
1	No parts required	–	Prepare the machine.
2	No parts required	–	Adjust the boom-hinge springs.
3	No parts required	–	Prepare the booms.
4	Hydraulic manifold block Straight-hydraulic fitting	1 4	Replace the lift-cylinder manifold.
5	Sonic-boom sensor Bracket Bolt (#10 x 3/4 inch) Bolt (1/4 x 5/8 inch) Locknut (#10) Locknut (1/4 inch) Cable tie	2 2 8 4 4 4 10	Install the sonic-boom sensors.
6	No parts required	–	Connect the wire harness at the boom lift manifold.
7	Electronic controller Bolt (1/4 x 1-1/8 inch) Locknut (1/4 inch)	1 4 4	Mount the electronic controls.
8	Rocker switch (illuminated) Cable tie	1 12	Install the controls.

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Original Instructions (EN)
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Procedure	Description	Qty.	Use
9	No parts required	–	Connect the boom-lift switches to the sonic-boom harness.
10	No parts required	–	Finish the installation of the ultra-sonic boom leveling kit.
11	No parts required	–	Calibrate the sonic booms.

Important: **To install of this kit, you must purchase and install the separate ultra sonic boom finishing kit.**

MultiPro 5800—Finishing Kit 164-1050

MultiPro 1750—Finishing Kit 164-1051

MultiPro Workman—Finishing Kit 164-1052

Important: **For Multi Pro Machines Model Year 2023 and before, you must purchase and install the boom cradle kit 161-4170.**

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

1

Preparing the Machine

No Parts Required

Procedure

1. Clean the exterior of the machine and sprayer; refer to the *Operator's Manual* for your machine.
2. Move the machine to a level surface, shut off the engine, set the parking brake, and remove the key.

⚠ CAUTION

If you leave the key in the ignition switch, someone could accidently start the engine and seriously injure you or other bystanders.

Remove the key from the ignition switch before you install the kit.

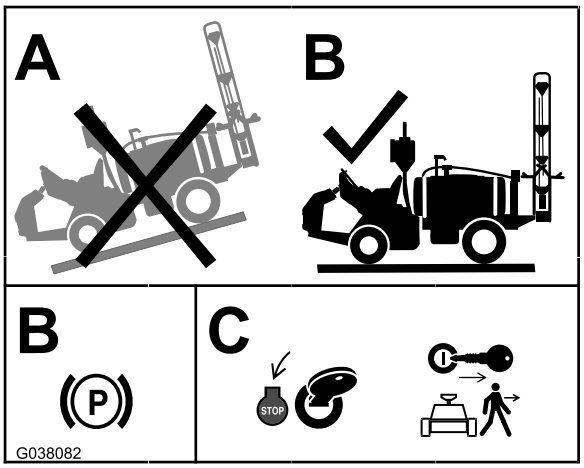

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Figure 1

3. Disconnect the negative-battery cable from the battery; refer to the *Operator's Manual* for your machine.

2

Adjusting the Boom-Hinge Springs

No Parts Required

Procedure

Important: **Operating the spray system with the boom-hinge springs under the incorrect compression could damage the boom assembly. Measure the springs and use the jam nut to compress the springs to 36 mm (1.40 inches), if necessary.**

Use another person or lifting equipment to support the boom while adjusting the spring height of the boom hinge.

1. Extend the outer booms to the spray position (horizontal).
2. Support the booms while you are adjusting the spring height.
3. At the pivot bracket and hinge for the outer boom, adjust the jam nut for the upper spring until the compressed spring height measures 36 mm (1.40 inches).
4. Adjust the jam nut for the lower spring until the compressed spring height measures 36 mm (1.40 inches).
5. Repeat steps 3 and 4 for the upper and lower springs at the other outer boom.
6. At the boom hinge, measure the compression of the upper and lower springs while the booms are in the extended position (Figure 2).
   A. Compress all springs until they measure 36 mm (1.40 inches).
   B. Use the jam nut to compress any spring that measures greater than 36 mm (1.40 inches).

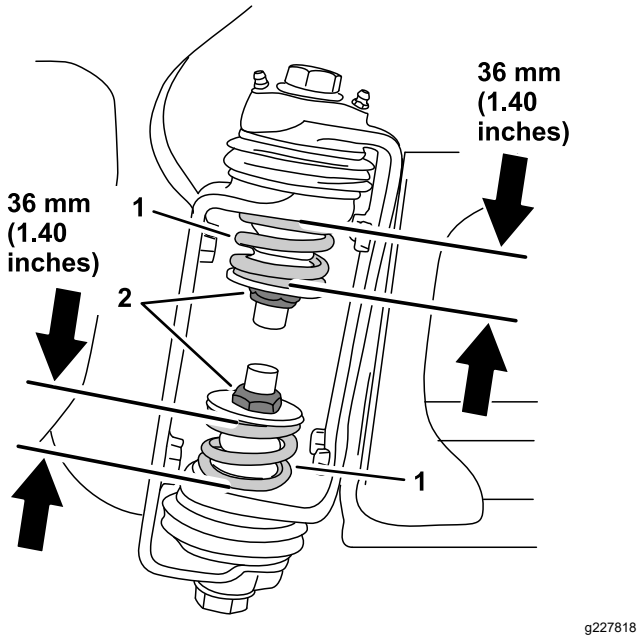

Figure 2

1. Boom-hinge spring
2. Jam nut

3

Adjusting the Booms

No Parts Required

Procedure

Note: You will need 2 wooden blocks about 10 cm (4 inches) in height for this procedure.

The booms are set at the factory to travel downward no farther than the horizontal position. To enable the ultrasonic boom kit to maintain a consistent distance between the nozzles and the ground when the ground slopes downward from the machine, you must adjust the boom support system to allow the booms to travel below the horizontal position to maintain a constant nozzle-to-ground distance.

1. Raise the booms and have them rest in the transport cradle.
2. At the pivot brackets of the outer-boom sections, remove the hairpin and clevis pin that secures the rod end for the lift cylinder to the pivot bracket (Figure 3).

   Note: There should be no more than 16 mm (5/8 inch) of exposed thread on the eyelet to prevent the engaged threads from stripping and the rod from pulling away.

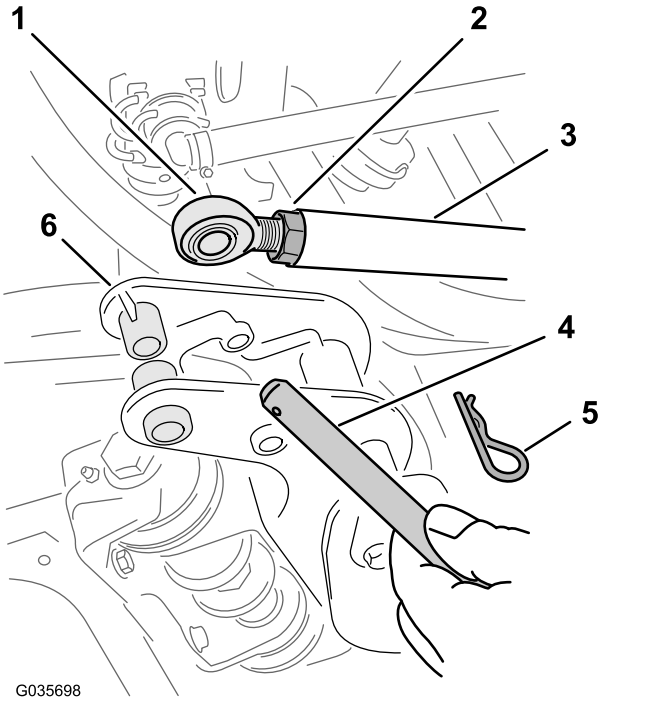

Figure 3

1. Rod end—16 mm (5/8 inch) or less of thread exposed
2. Jam nut
3. Lift cylinder
4. Clevis pin
5. Hairpin
6. Pivot bracket (outer-boom section)

3. Carefully lower the outer-boom sections onto wooden blocks about 10 cm (4 inches) high as shown in Figure 4.

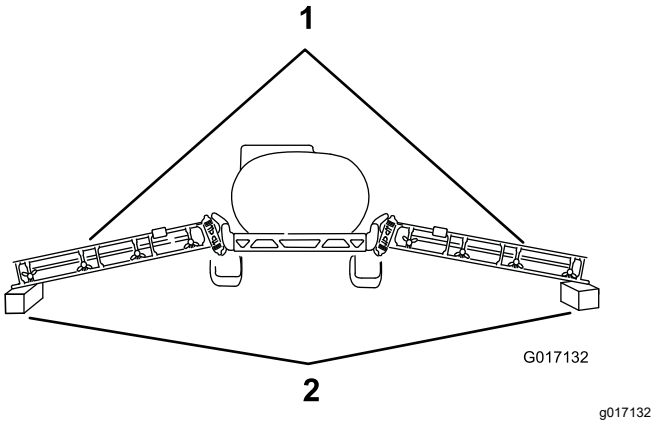

Figure 4

1. Outer-booms sections
2. Wooden blocks—10 cm (4 inches) high

4. Start the machine and fully extend the lift cylinders.
5. Loosen the jam nuts at the rod ends for each lift cylinder (Figure 3).
6. Adjust the rod end for the lift cylinders end until the hole in the rod ends align with the holes in the pivot brackets for the boom sections (Figure 3).
7. At each pivot bracket, secure the rod end to the bracket with the clevis pin that you removed in step 2.
8. Secure the cotter pins to the pivot brackets with the hairpin cotters (Figure 3) that you removed in step 2.
9. Tighten the jam nut at each rod until the nuts are snug (Figure 3).

4

Replacing the Lift-Cylinder Manifold

Parts needed for this procedure:

1	Hydraulic manifold block
4	Straight-hydraulic fitting

Assembling the Cylinder-Lift Manifold

1. At the back of the sprayer, label the hoses at port-P and port-T of the lift-cylinder manifold (Figure 5).

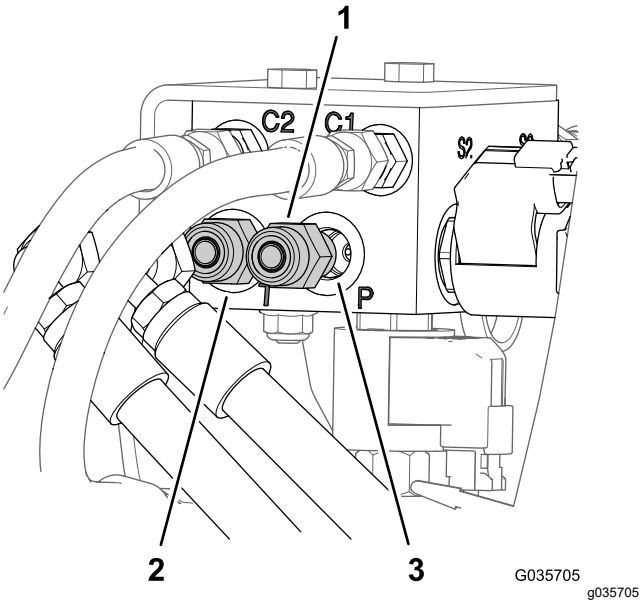

Figure 5

1. Port-T (lift-cylinder manifold)
2. Port P (lift-cylinder manifold)
3. Straight-hydraulic fitting (3/8 inch)

2. Remove the hoses from the straight-hydraulic fittings at port-P and port-T of the lift-cylinder manifold (Figure 5).
3. Remove the straight-hydraulic fittings from port-P and port-T of the old lift-cylinder manifold (Figure 5).
4. Remove the diagnostic fitting and cap from port-G of the old lift-cylinder manifold (Figure 6)

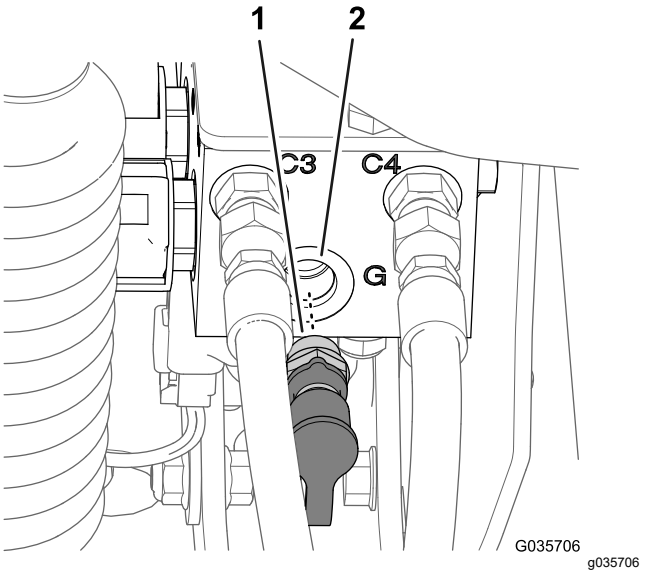

Figure 6

1. Diagnostic fitting and cap
2. Port-G (lift-cylinder manifold)

5. At the new lift-cylinder manifold, assemble the straight-hydraulic fittings (Figure 7) that you removed in step 3 into port-P and port-T.

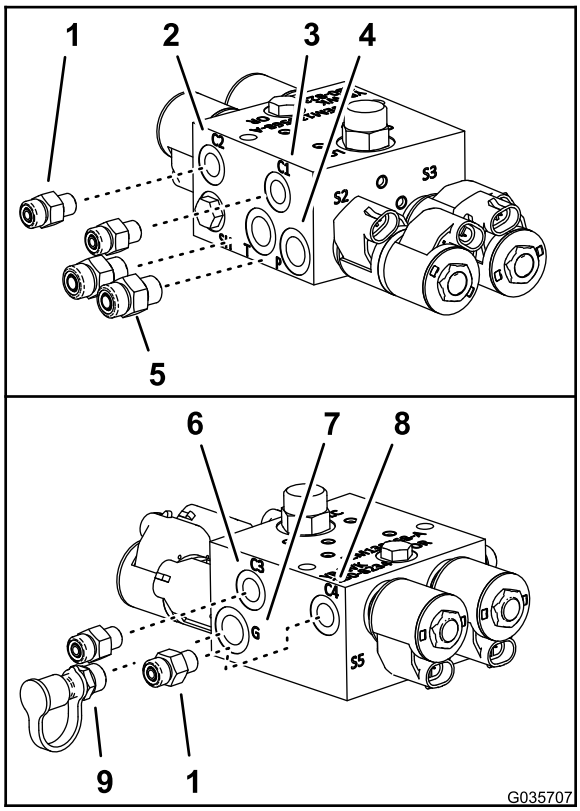

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Figure 7

1. Straight-hydraulic fitting (1/2 inch)
2. Port-C1 (lift-cylinder manifold)
3. Port-C2 (lift-cylinder manifold)
4. Port-P (lift-cylinder manifold)
5. Straight-hydraulic fitting (3/8 inch)
6. Port-C3 (lift-cylinder manifold)
7. Port-G (lift-cylinder manifold)
8. Port-C4 (lift-cylinder manifold)
9. Diagnostic fitting and cap

6. Assemble the 4 straight-hydraulic fitting from the ultra sonic boom leveling kit into ports C1, C2, C3, and C4 of the new lift-cylinder manifold (Figure 7).
7. Assemble the diagnostic fitting and cap that you removed in step 4 into port-G of the new lift-cylinder manifold (Figure 7).

Replacing the Cylinder-Lift Manifold

1. If installed, remove the hydraulic block cover plate from the lift-cylinder manifold.
2. Label all the hoses connected to the lift-cylinder manifold (ports C1, C2, C3, and C4), and disconnect them from the cylinder manifold (Figure 8).

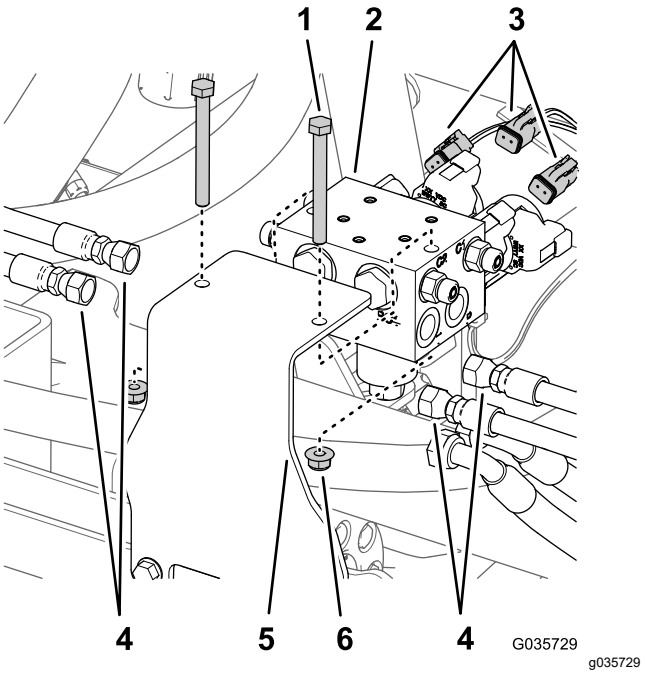

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Figure 8

1. Bolt
2. Lift-cylinder manifold
3. Electrical connectors (rear-wire harness)
4. Lift-cylinder hoses
5. Mounting bracket
6. Locknut

3. Disconnect the rear-wire harness connectors from the solenoids of the lift-cylinder manifold (Figure 8).
4. Remove the lift-cylinder manifold from the mounting bracket by removing 2 bolts and 2 locknuts (Figure 8).

   Note: Save the 2 bolts and 2 locknuts.
5. Replace the mounting bracket for the lift-cylinder manifold; refer to the installation instructions for the ultra sonic boom finishing kit.
6. Install the new lift-cylinder manifold onto the mounting bracket with the 2 bolts and 2 locknuts that you in step 4.

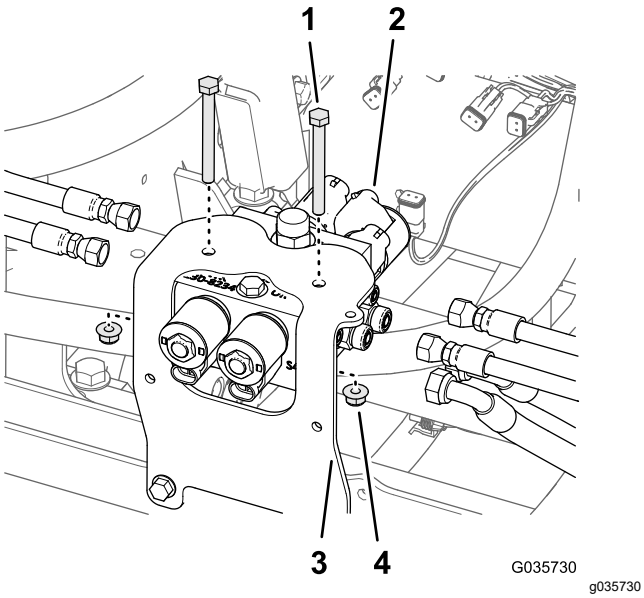

Figure 9

1. Bolt
2. Lift-cylinder manifold
3. Mounting bracket (ultra sonic boom finishing kit)
4. Locknut

7. Install all the hoses onto the fittings of the lift-cylinder manifold as follows:
   - The tank hose (3/8 inch) from the return filter connects to the “T” port
   - The pressure hose (3/8 inch) connects to the “P” port.
   - The hoses (1/4 inch) from the extend ports of the boom-lift cylinders connect to C1 and C3 ports of the lift-cylinder manifold.
   - The hoses (1/4 inch) from the retract ports of the boom-lift cylinders connect to C2 and C4 ports of the lift-cylinder manifold.

   Important: **Ensure that you install the hoses correctly.**
8. Purge the hydraulic system. Refer to the *Operator’s Manual*.

Note: You will connect the wire harness from the ultra sonic boom kit to the solenoids of the lift-cylinder manifold in 6 Connecting the Wire Harness at the Boom-Lift Manifold (page 10).

5

Installing the Sonic-Boom Sensors

Parts needed for this procedure:

2	Sonic-boom sensor
2	Bracket
8	Bolt (#10 x 3/4 inch)
4	Bolt (1/4 x 5/8 inch)
4	Locknut (#10)
4	Locknut (1/4 inch)
10	Cable tie

Installing the Sensor and Bracket

1. Secure the sensors to the brackets using 2 bolts (M10) and 2 locknuts (M10).

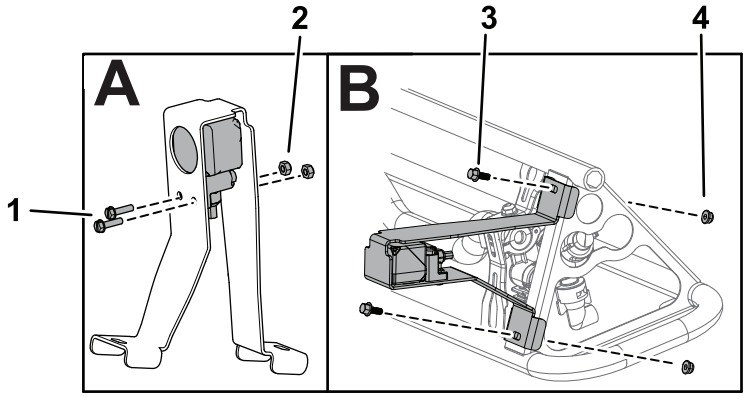

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Figure 10

1. Bolt (M10)
2. Nut (M10)
3. Bolt (1/4 x 5/8 inch)
4. Nut (1/4 inch)

2. Secure the assembly to the booms using 2 bolts (1/4 x 5/8 inch) and 2 locknuts (1/4 inch).

   Important: **Ensure that you install the correct sensor on the correct side.**

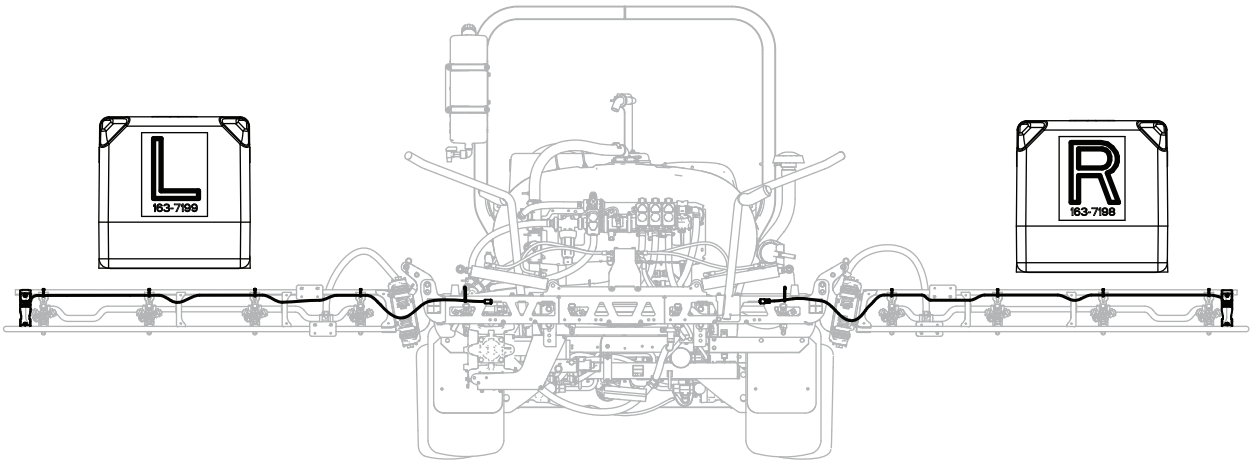

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Figure 11

Routing the Wire Harness

1. Route the wire harness on each boom and secure with cable ties.

   Important: **Allow enough slack in the wire around the sensor so that the sensor can freely pivot on the hinge without pulling on the wire.**

2. Connect the 4-pin connectors for the left and right sensor-wire harnesses to the 4-socket connector of the wire harness for the ultra sonic boom finishing kit labeled LEFT SONIC SENSOR and RIGHT SONIC SENSOR.

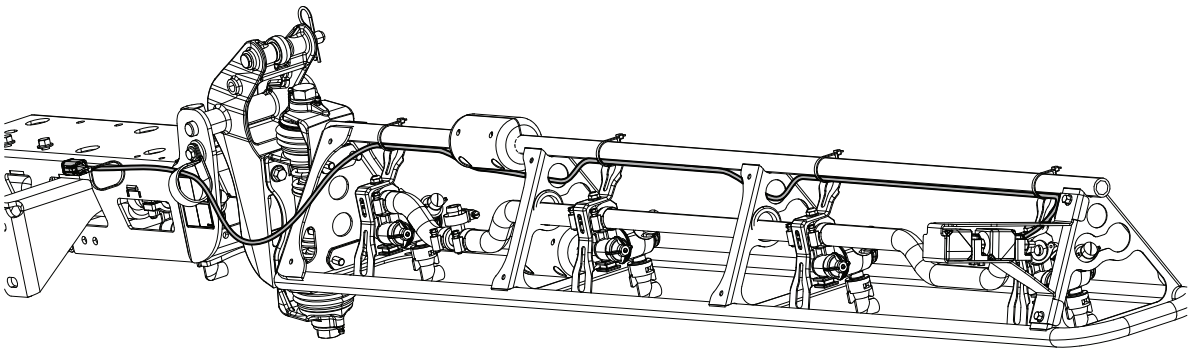

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Figure 12

6

Connecting the Wire Harness at the Boom-Lift Manifold

No Parts Required

Procedure

1. At the front of the lift-cylinder manifold, connect the 4 electrical connectors of the wire harness for the sonic boom to the solenoids for controlling boom lift as shown in Figure 13.

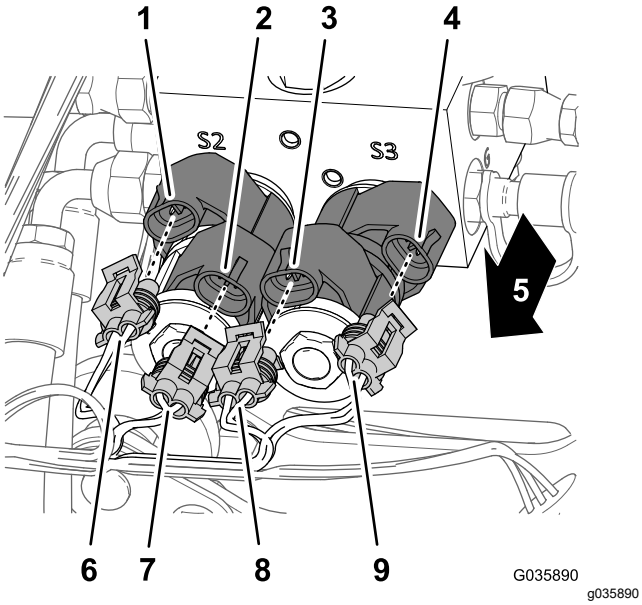

Figure 13

1. 2-pin connector—right boom down (solenoid S2)
2. 2-pin connector—right boom up (solenoid S2)
3. 2-pin connector—right boom up (solenoid S3)
4. 2-pin connector—right boom down (solenoid S3)
5. Front of the machine
6. 2-socket connector—RIGHT BOOM DOWN (sonic boom wire harness)
7. 2-socket connector—RIGHT BOOM UP (sonic boom wire harness)
8. 2-socket connector—LEFT BOOM UP (sonic boom wire harness)
9. 2-socket connector—LEFT BOOM DOWN (sonic boom wire harness)

2. At the back of the lift-cylinder manifold, connect the 2 electrical connectors of the wire harness for the sonic boom to the solenoids for controlling sonic enable as shown in Figure 14.

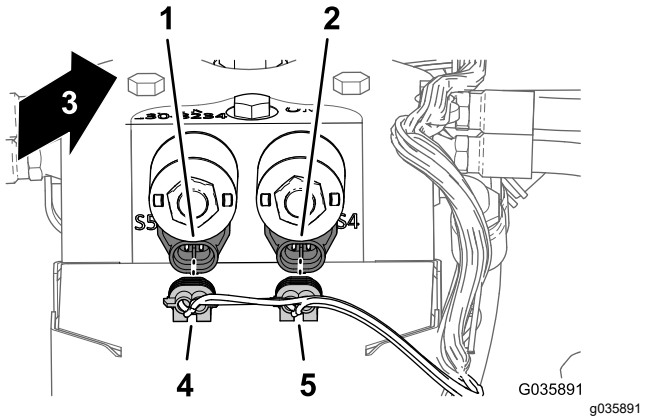

Figure 14

1. 2-pin connector (solenoid S5)
2. 2-pin connector (solenoid S4)
3. Front of the machine
4. 2-socket connector—LEFT ENABLE (sonic boom wire harness)
5. 2-socket connector—RIGHT ENABLE (sonic boom wire harness)

7

Mounting the Electronic Control

Parts needed for this procedure:

1	Electronic controller
4	Bolt (1/4 x 1-1/8 inch)
4	Locknut (1/4 inch)

Connecting the Wire Harness to the Electronic Controller

Multi Pro 1750 and Multi Pro WM Machines

1. Route the wire harness for the sonic boom to the hydraulic manifold.
2. Connect the 50-socket connector of the wire harness for the sonic boom to the 50-pin connector of the electronic controller, and secure the connectors with the socket-head screw (Figure 15).

   Note: The controller electrical connection is keyed and can be connected only 1 way.

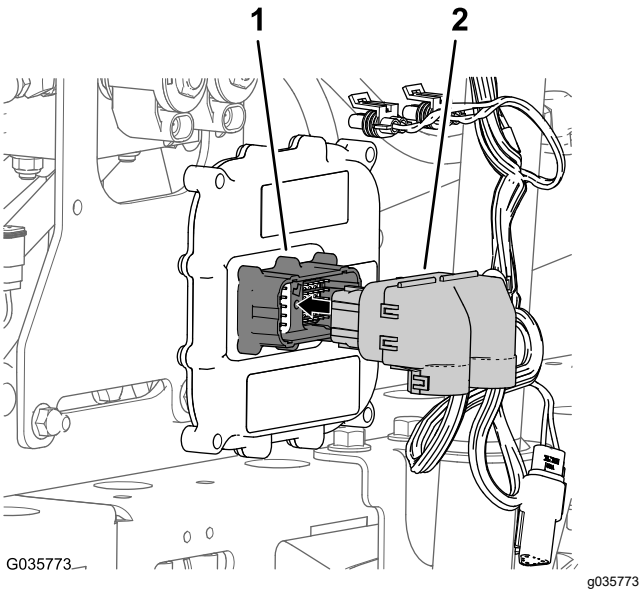

Figure 15

1. 50-pin connector (electronic controller)
2. 50-socket connector (sonic boom-wire harness)

3. Torque the socket-head screw to 2.7 to 3.2 N-m (24 to 28 in-lb).

Installing the Controller to the Machine

Multi Pro 1750 and Multi Pro WM Machines

1. Align the electronic controller to the interior of the controller cover with the lower outboard mounting holes of the controller aligned with the holes in the lower rear flange of the cover (Figure 16)

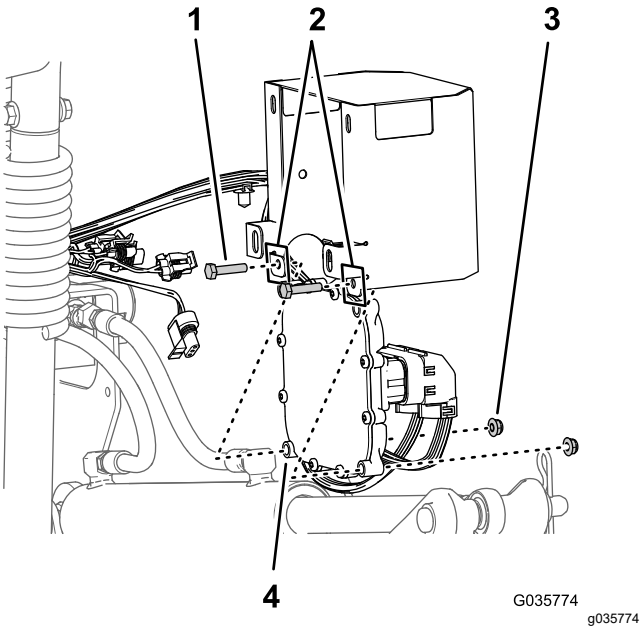

Figure 16

1. Bolt (1/4 x 1-1/8 inches)
2. Lower rear flanges (controller cover)
3. Flange locknut (1/4 inch)
4. Electronic controller

2. Assemble the controller to the cover with 2 bolts (1/4 x 1-1/8 inches) and 2 flange locknuts (1/4 inch) as shown in Figure 16.
3. Remove the 2 flange locknuts (5/16 inch) that secure the mounting bracket of the ultra sonic boom finishing kit from the cylinder mount (Figure 17).

   Note: Leave the mounting bracket assembled to the cylinder mount.

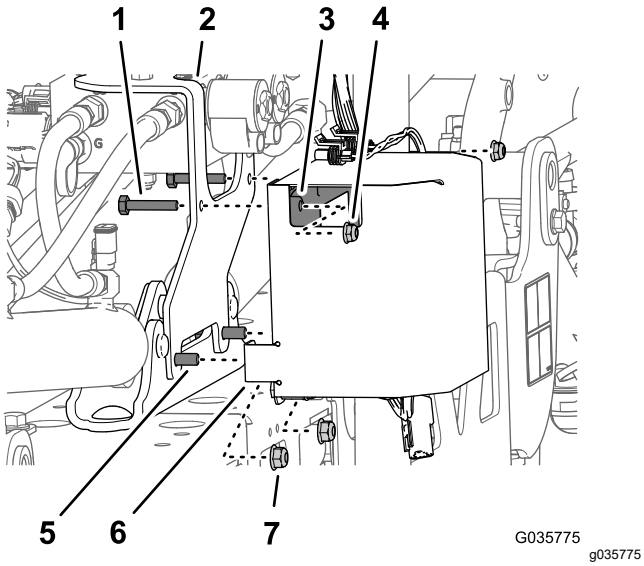

Figure 17

1. Bolt (1/4 x 1-3/8 inches)
2. Mounting bracket (ultra sonic boom finishing kit)
3. Electronic controller
4. Flange locknut (1/4 inch)
5. Flange-head bolt (5/16 x 1 inch)
6. Lower forward flange (controller cover)
7. Flange locknut (5/16 inch)

4. Assemble the controller cover (Figure 17) onto the flange-head bolt (5/16 x 1 inch) at the lower forward holes in the cover, and loosely secure the cover, bracket and mount with the 2 flange locknuts (5/16 inch) that you removed in 3.
5. Assemble the 2 bolts (1/4 x 1-3/8 inches) through the upper holes in the mounting bracket (ultra sonic boom finishing kit), rear flange (controller cover), and controller (Figure 17) with the 2 flange locknuts (1/4 inch).
6. Torque the 5/16 flange-head bolt and flange nuts to 1978 to 1243 N·cm (175 to 225 in-lb).
7. Torque the 1/4 flange-head bolt and flange nuts to 1017 to 2542 N·cm (90 to 110 in-lb).

Installing the Controller to the Machine

Multi Pro 5800 Machines

1. Rotate the operator and passenger seats forward and secure the seats with the prop rods.
2. **For 2015 and before machines**—locate the knockout plug between the inboard operator and passenger seat-belt halves, and remove the knockout plug from the console base (Figure 19).

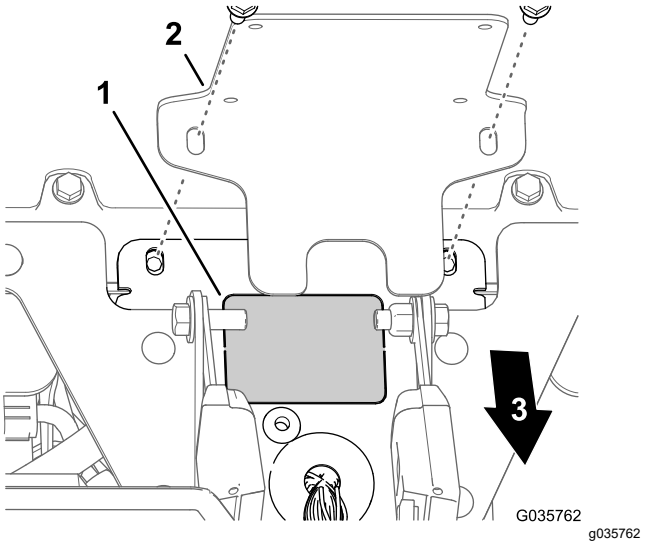

Figure 18

1. Knockout plug (console base)
2. Electronic controller mount (ultra sonic boom finishing kit)
3. Front of the machine

3. Assemble the electronic controller to the mounting bracket (Figure 19) with the 4 bolts (1/4 x 1-1/8 inch) and 4 locknuts (1/4 inch).

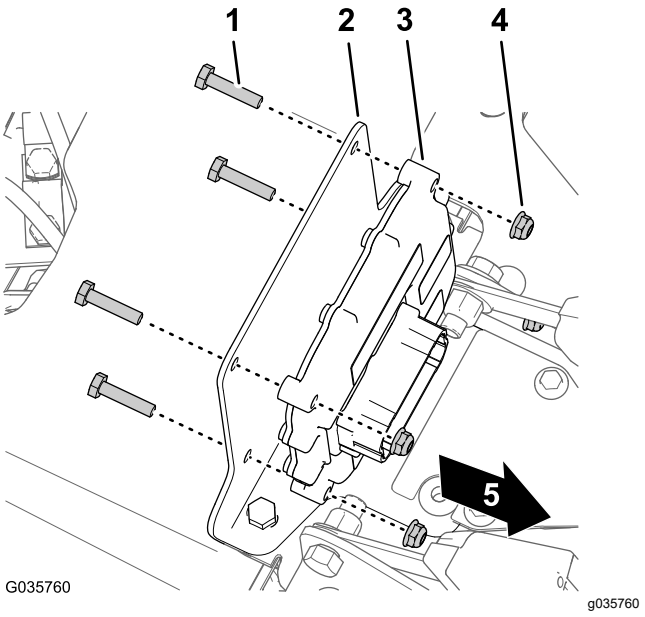

Figure 19

1. Bolt (1/4 x 1-1/8 inch)
2. Mounting bracket
3. Electronic controller
4. Locknut (1/4 inch)

4. Torque the nuts and bolts to 1017 to 1243 N·cm (90 to 110 in-lb)

Connecting the Wire Harness to the Electronic Controller

Multi Pro 5800 Machines

1. Route the 50-socket connector of the wire harness for the sonic boom as follows:
   - **For 2015 and before machines**—the branch of the wiring harness with the 50-socket connector is routed through the opening in the console base that you made in step 2; refer to the installation instructions for the ultra sonic boom finishing kit.
   - **For 2015 and after machines**—the branch of the wiring harness with the 50-socket connector is routed through the large grommet in the console base; refer to the installation instructions for the ultra sonic boom finishing kit.
2. Connect the 50-socket connector of the wire harness for the sonic boom to the 50-pin connector of the electronic controller, and secure the connectors with the socket-head screw (Figure 20).

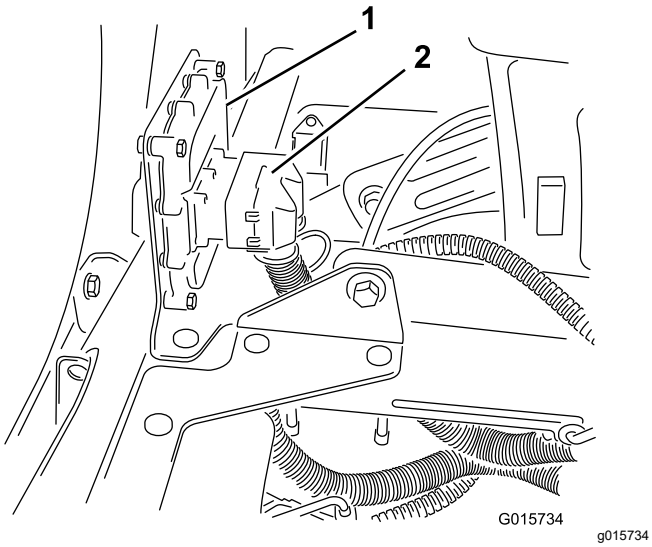

Figure 20

1. Electronic controller
2. Terminal

Note: The electrical connection for the controller is keyed and can be connected only 1 way.

3. Torque the socket-head screw to 2.7 to 3.2 N-m (24 to 28 in-lb).

8

Connecting the Wiring Harness and Switches

Parts needed for this procedure:

1	Rocker switch (illuminated)
12	Cable tie

Installing the Ultra Sonic-Mode Switch

Multi Pro 1750 Machines

1. If installed, remove the 4 flange-head bolts (1/4 x 1/2 inch) that secure the panel cover to the top of the console as shown in Figure 21.

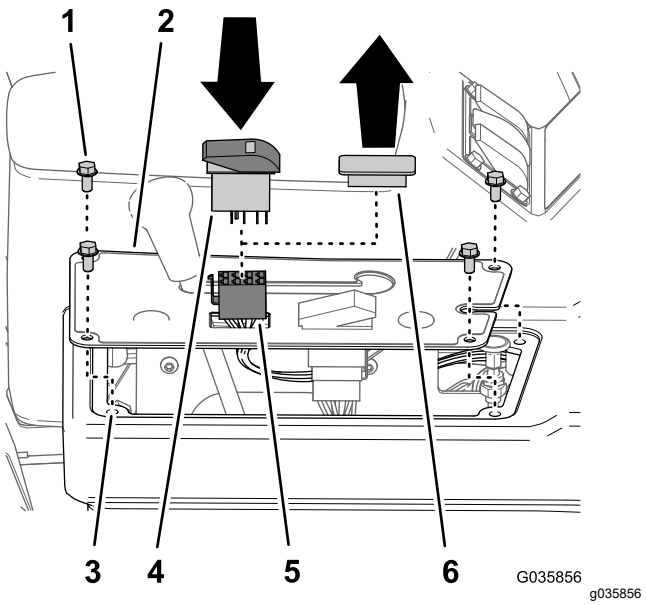

Figure 21

1. Flange-head bolts (1/4 x 1/2 inch)
2. Panel cover
3. Console
4. Rocker switch (8 pin)
5. 8-socket connector (wire harness—ultra sonic boom finishing kit)
6. Switch plug (panel cover)

2. Remove the switch plug from the panel cover of the console (Figure 21).
3. Align the Connect the 8-socket connector of the wiring harness of the ultra sonic boom finishing kit through the opening in panel cover (Figure 21).

4. Connect the 8-socket connector of the wiring harness of the ultra sonic boom finishing kit labeled SONIC MODE MANUAL VS. AUTO to the rocker switch (Figure 21).
5. Insert the rocker switch in the dash panel opening until the switch snaps securely (Figure 21).
6. Align the holes in the panel cover to the holes in the top of the console (Figure 21).
7. Secure the panel to the console with the bolts (Figure 21) that you removed in step 1.

Installing the Ultra Sonic-Mode Switch

Multi Pro 5800 Machines

1. Remove the switch plug in the dash panel at the location shown in Figure 22.

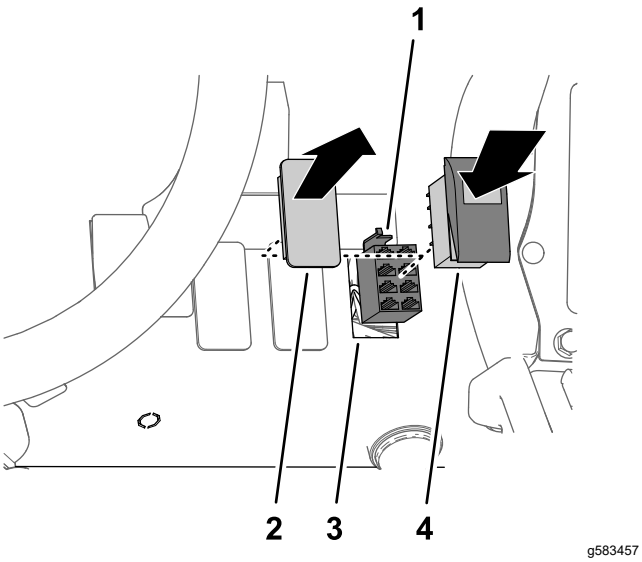

Figure 22

1. 8-socket connector (wire harness—ultra sonic boom finishing kit)
2. Switch plug (dash panel)
3. Opening (dash panel)
4. Rocker switch (8 pin)

2. Connect the 8-socket connector of the wiring harness of the ultra sonic boom finishing kit labeled SONIC MODE MANUAL VS. AUTO to the rocker switch (Figure 22).
3. Insert the rocker switch in the dash panel opening until the switch snaps securely (Figure 22).

   Note: Align the tail of the switch down.

Installing the Ultra Sonic-Mode Switch

Multi Pro WM Machines

1. If installed, remove the 4 flange-head bolts (1/4 x 1/2 inch) that secure the control panel to the console as shown in Figure 23.

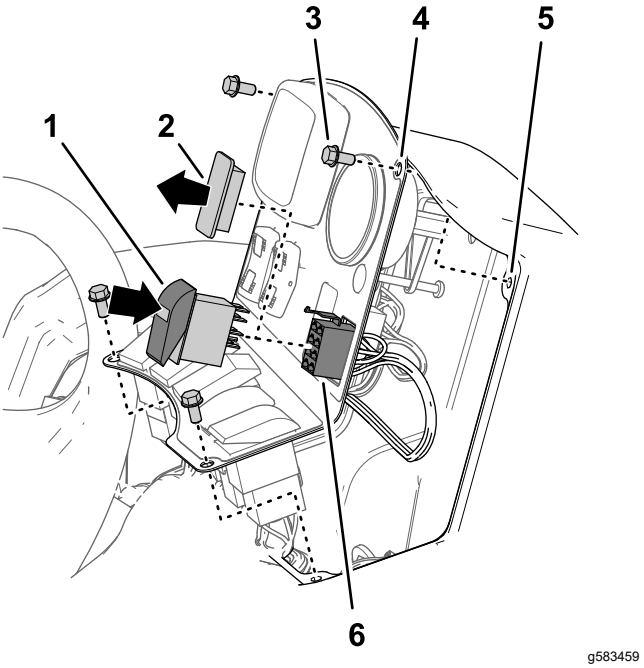

Figure 23

1. Rocker switch (8 pin)
2. Switch plug (control panel)
3. Flange-head bolts (1/4 x 1/2 inch)
4. Control panel
5. Console
6. 8-socket connector (wire harness—ultra sonic boom finishing kit_

2. Remove the switch plug from the control panel of the console (Figure 23).
3. Align the Connect the 8-socket connector of the wiring harness of the ultra sonic boom finishing kit through the opening in control panel (Figure 23).
4. Connect the 8-socket connector of the wiring harness of the ultra sonic boom finishing kit labeled SONIC MODE MANUAL VS. AUTO to the rocker switch (Figure 23).
5. Insert the rocker switch in the control panel opening until the switch snaps securely (Figure 23).

   Note: Align the tail of the switch down.
6. Align the holes in the control panel to the holes in the top of the console (Figure 23).
7. Secure the panel to the console with the bolts (Figure 23) that you removed in step 1.

9

Connecting the Boom-Lift Switches to the Sonic-Boom Harness

No Parts Required

Connecting the Switches to the Harness

Multi Pro 1750 or Multi Pro WM Machines

1. Remove the 4 flange-head bolts (1/4 x 1/2 inch) that secure the switch panel to the center console, and lift the panel (Figure 24 or Figure 15).

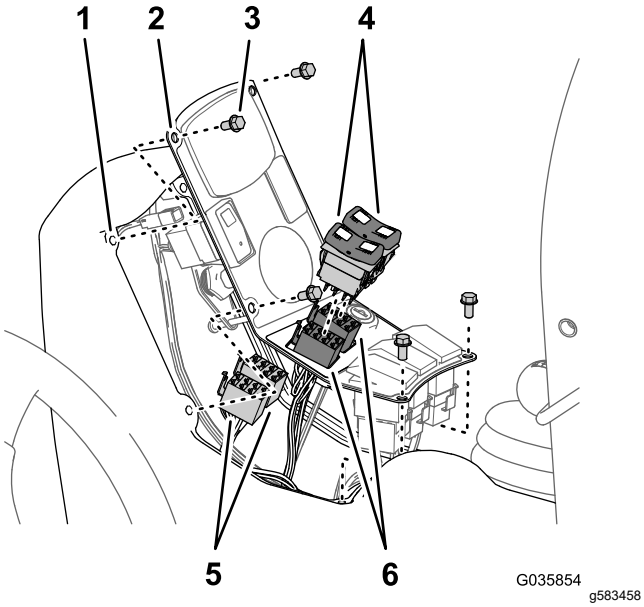

Figure 24

Multi Pro 1750 machines

1. Console
2. Switch panel
3. Flange-head bolt (1/4 x 1/2 inch)
4. Boom-lift switches (8-pin—machine component)
5. 8-socket connectors (sonic boom-wire harness)
6. 8-socket connectors (machine-wire harness)

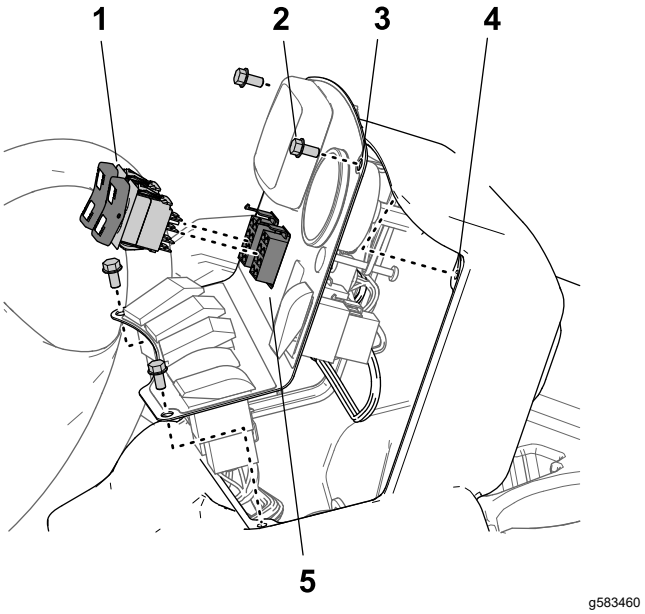

Figure 25

Multi Pro WM machines

1. Boom-lift switch (8-pin—machine component)
2. Flange-head bolts (1/4 x 1/2 inch)
3. Control panel
4. Console
5. 8-socket connector (wire harness—ultra sonic boom finishing kit)

2. Disconnect the 8-socket connectors of the machine-wire harness from the boom-lift switches (Figure 24 or Figure 25).

   Note: If additional clearance is needed, remove the boom-lift switches from the switch panel.

3. Connect the rocker switches into the 8-socket connectors of the wiring harness for the ultra sonic boom finishing kit (Figure 24 or Figure 25).

   Note: Ensure that the sonic-boom harness connector labeled LEFT ACTUATOR SWITCH is aligned with the left switch opening in the switch panel.

4. If you removed the switch(es) from the switch panel, insert the boom-lift switch(es) into the openings in the center-console panel until the switch(es) snaps securely.

5. Align the holes in the switch panel with the frame of the console (Figure 24 or Figure 25).

6. Secure the side cover on the center console with the 4 flange-head bolts (1/4 x 1/2 inch) (Figure 24 or Figure 25) that you removed in step 1.

Connecting the Switches to the Harness

Multi Pro 5800 Machines

1. Remove the 5 flange-head bolts (1/4 x 3/4 inch) that secure the right-side cover to the center console (Figure 26).

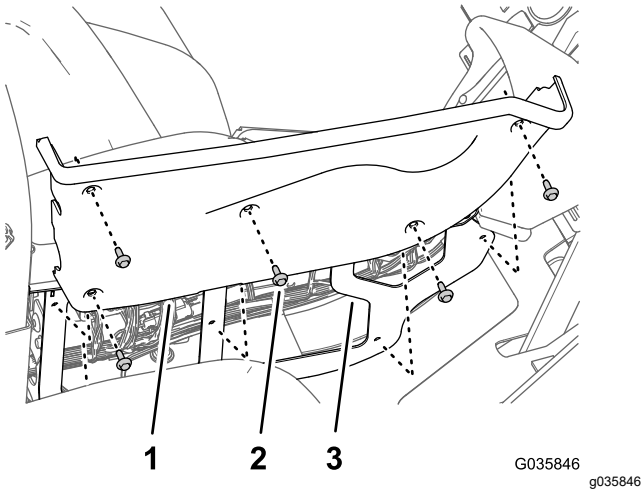

Figure 26

1. Right-side cover (center console)
2. Flange-head bolt (1/4 x 3/4 inch)
3. Frame (center console)

2. Remove the rocker switches for the left and right boom-lift controls from the center-console panel (Figure 26).

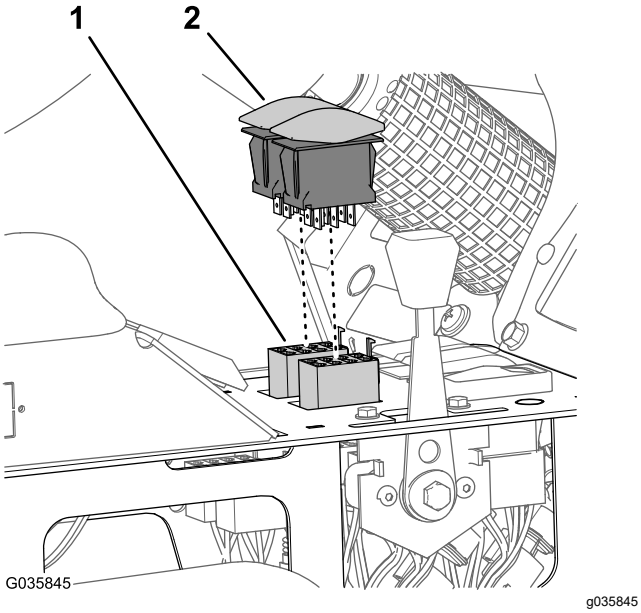

Figure 27

1. 8-socket connector (wire harness)
2. Boom-lift switches (8-pin—machine component)

3. Disconnect the 8-socket connectors of the wiring harness for the machine from the boom-lift switches for the left and right boom-lift control circuits (Figure 27).

   Note: Tuck the connectors for the wire harness for the machine alongside the harness.

4. Connect the rocker switches into the 8-socket connectors of the wiring harness for the ultra sonic boom finishing kit (Figure 27).

   Note: Ensure that the sonic-boom harness connector labeled LEFT ACTUATOR SWITCH is aligned with the left switch opening in the center-console panel.

5. Insert the boom-lift switches in the openings in the center-console panel until the switches snap securely (Figure 27).
6. Align the holes in the right-side cover with the frame of the center console (Figure 26).
7. Secure the side cover on the center console (Figure 26) with the 5 flange-head bolts (1/4 x 3/4 inch) that you removed in step 1.

10

Finishing Installation of the Ultra Sonic Boom Leveling Kit

No Parts Required

Procedure

1. Connect the negative-battery cable to the battery; refer to the *Operator's Manual* for your machine.
2. For Multi Pro 1750 and Multi Pro 5800 machines, rotate down the seats.

11

Calibrating the Sonic Booms

No Parts Required

Procedure

Once you initiate the controller processor for calibration, you will have 20-seconds to calibrate the sensors on the booms. The distance you set between the sensor on each boom and the ground after the 20-second calibration period is the boom height setting in automatic mode until the next time you calibrate the sensor.

Note: For uncovered booms: The default height setting is 51 cm (20 inches) from the nozzle to the ground. If, after setting a boom to a height different from that of the factory default setting, you wish to restore the calibration to the factory-default setting, calibrate the boom with the boom in the cradle. **For covered booms:** The default height setting of 51 cm (20 inches) is for uncovered booms only. You must calibrate the sensors on covered booms.

1. Ensure that the turf sprayer is parked and away from any trees, buildings, vehicles, debris, and underground utilities and plumbing.

   Note: For best results, park the turf sprayer on dry grass.

2. Lower the booms to the horizontal position.
3. Turn off the ignition key.
4. Press the sonic-boom switch to the ON position (Figure 28, Figure 29, or Figure 30).

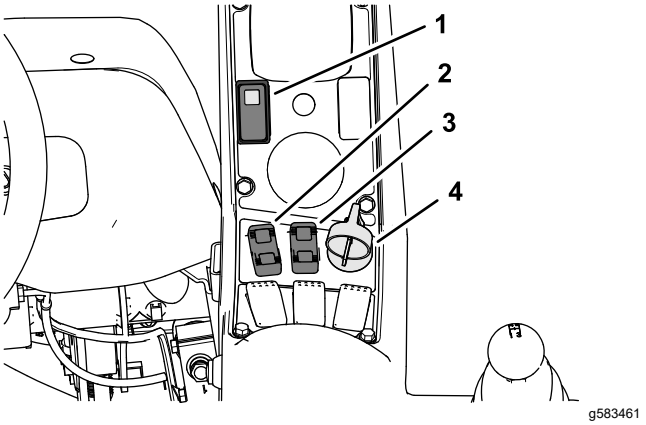

Figure 28
Multi Pro 1750 Machines

1. Sonic-boom switch (with indicator light)
2. Left boom-lift control switch
3. Right boom-lift control switch
4. Ignition key

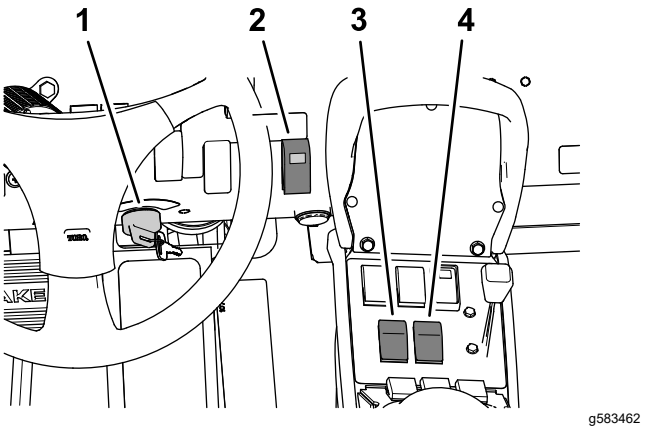

Figure 29
Multi Pro 5800 Machines

1. Ignition key
2. Sonic-boom switch (with indicator light)
3. Left boom-lift control switch
4. Right boom-lift control switch

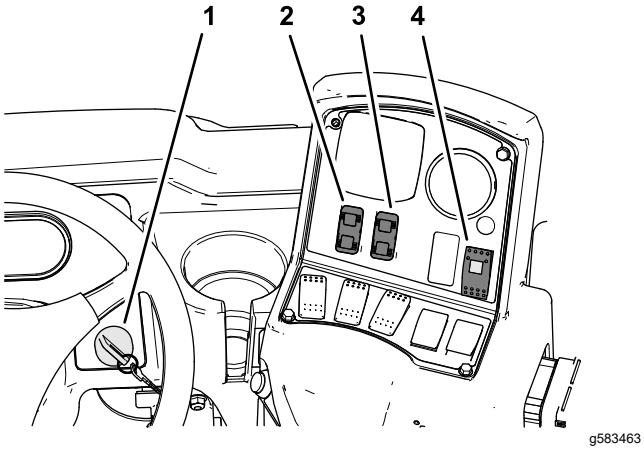

Figure 30
Multi Pro WM Machines

1. Ignition key
2. Left boom-lift control switch
3. Right boom-lift control switch
4. Sonic-boom switch (with indicator light)

5. While pressing and holding both the left boom-lift control switch to the LOWER position and the right boom-lift control switch to the RAISE position, turn the ignition key and start the machine.
6. Release the boom switches.

   Note: The indicator light on the sonic-boom switch will flash rapidly, indicating that the sonic boom system is in calibration mode. You now have 20 seconds to use the Raise and Lower boom switches to set the desired distance between the booms to the ground. After the 20 seconds, the indicator light flashes slowly.
7. Raise and lower the outer-boom sections using the boom-lift control switches to adjust the height of each boom until you achieve the desired distance between the tip of the boom and the ground.

Operation

Important: **Raise the booms one at a time. This prevents the booms contacting each other preventing any possible damage to the sensors mounted on the booms.**

Using the Controls

The sonic-boom switch is located on the dashboard and has 2 settings: automatic mode and manual mode.

- The automatic mode enables the machine to control the outer boom position, thereby continually positioning the boom-tip height at the desired distance from the ground.
- The manual mode turns off the automatic boom-position adjustment, and allows you to change the booms boom height manually.

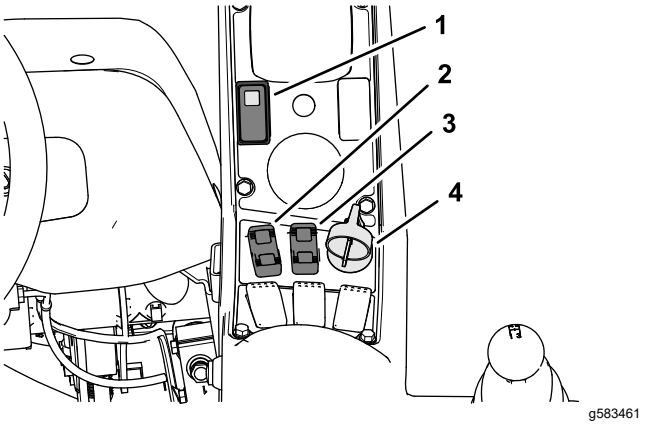

Figure 31
Multi Pro 1750 Machines

1. Sonic-boom switch (with indicator light)
2. Left boom-lift control switch
3. Right boom-lift control switch
4. Ignition key

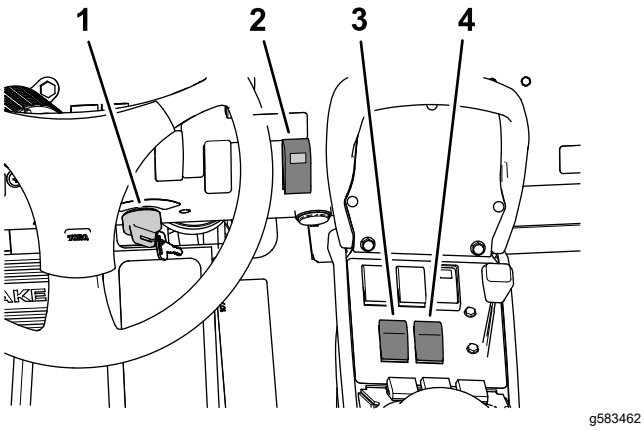

Figure 32

Multi Pro 5800 Machines

1. Ignition key
2. Sonic-boom switch (with indicator light)
3. Left boom-lift control switch
4. Right boom-lift control switch

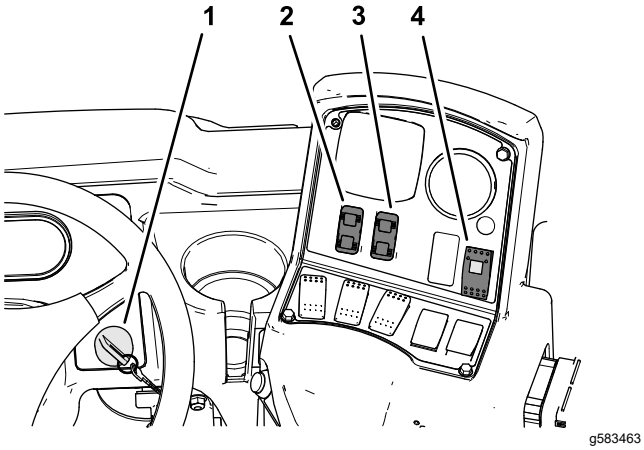

Figure 33

Multi Pro WM Machines

1. Ignition key
2. Left boom-lift control switch
3. Right boom-lift control switch
4. Sonic-boom switch (with indicator light)

The Sonic Boom Indicator Light

Note: The sonic boom indicator light (Figure 31, Figure 32, or Figure 33) illuminates on the sonic-boom switch, and indicates the status of the sonic boom system as follows:

- **On continuously:** The sonic boom system is active and operating normally.
- **Flashing quickly:** The system is in calibration mode, which lasts for 20 seconds.
- **Flashing slowly:** There is either an error in the system or you have overridden the automatic mode by operating a boom or both booms manually while the system is in automatic mode.

Note: If there is a fault in the sonic boom system (e.g., there is no signal coming from a sensor), the boom raises for a few seconds and then stops, and the light on the boom switch (located on the dashboard) flashes slowly—indicating that control of a boom or both booms has stopped.

Sensor Lights

Yellow LED

On	Object detected in the evaluation area.
Off	No object detected in the evaluation area.

Green LED

On	The device is in the OPERATIONAL mode.
Off	The device is in the RESET mode or there is no electric power supply.
Rapid Flashing	The sensor is not programmed, wait for programming (flashing frequency of 10 Hz); Contact your local Distributor.
Flashing	The sensor is initializing (Flashing at a frequency of 2.5 Hz).
1 short flash	The sensor has stopped operating; this will be followed by another LED status.

Red LED

On	The device is receiving power, but no CAN communication.
Off	The device is operating without errors.
Flashing	General error, contact your local Distributor.
1 short flash	The TEC controller has an error.

Controlling the Outer Booms using the Automatic Mode

1. Press the sonic-boom switch (Figure 31, Figure 32, or Figure 33) to the ON position.

   Note: The light on the sonic-boom switch illuminates.
2. Use the boom-lift control switch (Figure 31, Figure 32, or Figure 33) to lower boom to the desired distance from the ground.
3. To override the automatic mode boom position, perform the following:

   Note: You can temporarily override the automatic operation of the booms using the boom-lift control switches (Figure 31, Figure 32, or Figure 33) to raise or lower a boom or both booms.

   - Lower the boom(s) manually, by pressing and holding the boom-lift control switch(s) to

the LOWER position until the outer boom(s) lowers to the desired height.

- Raise the boom(s) manually by pressing and holding the boom-lift control switch(s) to the RAISE position until the outer boom(s) raises to the desired height.

  Note: If you adjust only 1 boom, the other boom continues to function in the automatic mode.

4. To resume the automatic mode, momentarily press the boom-lift control switch(s) to the LOWER position (Figure 31, Figure 32, or Figure 33) to allow the sonic-boom controller to position the boom-tip height at the desired distance from the ground.

Controlling the Outer Booms while using the Manual Mode

1. Press the sonic-boom switch (Figure 31, Figure 32, or Figure 33) to the OFF position.

   Note: The light on the sonic-boom switch shuts off.

2. Use the left and right boom-lift control switches to change the height of the outer booms (Figure 31, Figure 32, or Figure 33).

Operating the Sprayer

Important: **When operating the machine over especially uneven terrain, reduce the ground speed to prevent the booms from striking the ground.**

Maintenance

Cleaning

Clean the sensors periodically with a damp cloth. If a sensor is damaged or excessively dirty, replace it.

Important: **Do not spray pressurized water at or on the sensors. Household pressure is recommended to minimize direct exposure of water to the sensors for cleaning.**

Troubleshooting

Note: Refer to the service manual for additional diagnostic information. Product electrical schematics may be found at www.Toro.com.

Problem	Possible Cause	Corrective Action
1 or both boom(s) are malfunctioning, and the sonic boom indicator light is off.	1. A fuse is blown. 2. The light is burned out. 3. The electronic controller or wiring is damaged.	1. Replace the fuse. 2. Replace the light. 3. Contact an authorized Toro distributor.
1 or both boom(s) are malfunctioning, and the sonic boom indicator light flashes slowly.	1. There is a minor system error. 2. There is a system error that repeats after clearing the error. 3. There is a hydraulic or mechanical failure.	1. Lower the affected boom(s) using the boom switch(es) to clear the error. 2. If the error repeats, contact an authorized Toro distributor. 3. Repair the hydraulic or mechanical problem.
1 or both boom(s) are malfunctioning, and the sonic boom indicator light is on.	1. The sensor covers are blocking or swinging into the sensor path	1. Remove the cover(s) from the lower sensor housing. Install cover to the top side of the sensor.
The Green LED is not lit up.	1. The plug is not connected to the connector of the sensor. 2. The supply cable to the sensor is damaged.	1. Connect the plug to the sensor and tighten the union nut by hand. 2. Replace the sensor and cable.
There is no CAN connection to the device.	1. The sensor is not connected to the CAN bus.	1. Connect the sensor to the kit harness.

Notes:

Notes:

Count on it.