



Form No. 3396-867 Rev A

Count on it.

Operator's Manual

Pro Control™ XP Spray System Multi-Pro 5800 Turf Sprayer

Model No. 41604—Serial No. 315000001 and Up



⚠ WARNING

CALIFORNIA Proposition 65 Warning

This product contains a chemical or chemicals known to the State of California to cause cancer, birth defects, or reproductive harm.

Use of this product may cause exposure to chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

This product complies with all relevant European directives; for details, please see the Declaration of Incorporation (DOI) at the back of this publication.

Introduction

The Pro Control™ XP Spray System console computer automatically controls the spray application rate for varying vehicle speeds. You set the target volume per unit area to spray and the console computer automatically maintains the flow within the proper range of the vehicle speed and continually displays the actual volume of material per area sprayed. The console computer also monitors the area sprayed, the speed of the vehicle, and the total volume of material sprayed.

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.

Note: If you are installing this kit (the Pro Control XP Spray System Kit) along with one or more other kits, such as the Eductor Kit (Model 41612), the Electric Hose Reel Kit (Model 41613), or the Tank Rinse Kit (Model 41614), we recommend that you assemble the kits into the manifold valve assembly at the same time.

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.

Model No. _____

Serial No. _____

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 words to highlight information.

Important calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

Contents

Safety	3
Setup	4
1 Installing the Console Computer	4
2 Installing the Flowmeter	5
Product Overview	7
Controls	7
Operation	9
Initially Programming the Console Computer	9
Displaying Data	10
Self-Testing the Console Computer	10
Activating the Data Lock	10
Changing the Data Lock	10
Entering the Mode Sequence with the Data Lock Activated	10
Setting the Power Down Delay Time	11
Using the Console-Computer Alarm	11
Setting up the System	11
Initially Field-Testing the System	12
Maintenance	13
Recommended Maintenance Schedule(s)	13
Cleaning the Flowmeter	13
Programming the Console Computer	13
Calibrating the Flowmeter	15
Testing the Flowmeter Cable	15
Troubleshooting	16

Safety

Read and understand the contents of this manual before operating the console computer.

- Keep this document with the *Operator's Manual* for the Multi Pro® 5800 Turf Sprayer.
- Ensure that you have ready access to these instructions.
- Read these instructions and the instructions in the *Operator's Manual* for the Multi Pro® 5800 Turf Sprayer carefully. Be familiar with the controls and the proper use of the equipment.
- Never allow children or people unfamiliar with these instructions to use the controls.
- Never spray while people, especially children, or pets are nearby.
- Chemicals can injure people, animals, plants, soils, or other property. To avoid personal injury and environmental damage:
 - Select the proper chemicals for the job.
 - Follow the manufacturer's instructions on the chemical container labels. Apply and handle chemicals as recommended.
 - Handle and apply the chemicals with care.
 - Wear all necessary protective equipment.
 - Handle chemicals in well-ventilated areas.
 - Never smoke when handling chemicals.
 - Properly dispose of unused chemicals and containers.
- Keep in mind that you are responsible for accidents or hazards occurring to other people or for damage to property.

Installation

Loose Parts

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

Procedure	Description	Qty.	Use
1	Mounting bracket	1	Install the console computer.
	Carriage bolt (5/16 x 3/4 inch)	3	
	Locknut (5/16 inch)	3	
	Console computer	1	
	Hand knob	2	
2	Flowmeter	1	Install the flowmeter.
	Gasket	1	
	Hose clamp	1	

1

Installing the Console Computer

Parts needed for this procedure:

1	Mounting bracket
3	Carriage bolt (5/16 x 3/4 inch)
3	Locknut (5/16 inch)
1	Console computer
2	Hand knob

Installing the Console Computer

1. Install the mounting bracket to the dashboard and secure it with 2 carriage bolts (5/16 x 3/4 inch) and locknuts (5/16 inch) as shown in [Figure 2](#).

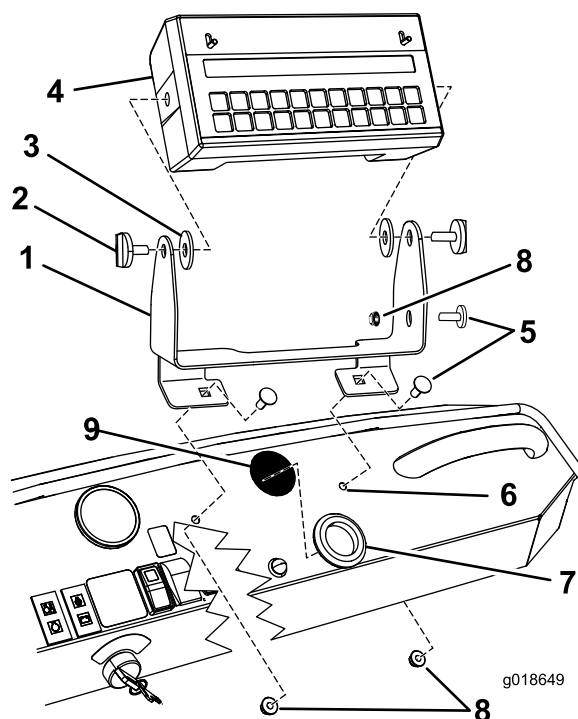


Figure 2

- | | |
|------------------------------------|--|
| 1. Mounting bracket | 6. Mounting hole in dashboard (existing) |
| 2. Hand knob (2) | 7. Large grommet |
| 3. Rubber washer (2) | 8. Locknuts (5/16 inch) |
| 4. Console computer | 9. Knocked-out hole in dash |
| 5. Carriage bolt (5/16 x 3/4 inch) | |

2. Locate the round, multi-pin console computer connectors on the main harness secured to the right frame member under the dashboard.
3. Cut the plastic tie that secures the console computer wiring to the frame under the dashboard.
4. Remove the 2 protective caps from the cable ends.

- Route the console computer cables from under the dashboard through the hole with the large grommet.
- Plug the cables into their corresponding inputs on the rear of the console computer ([Figure 3](#)), and secure the cables by rotating the locking rings.

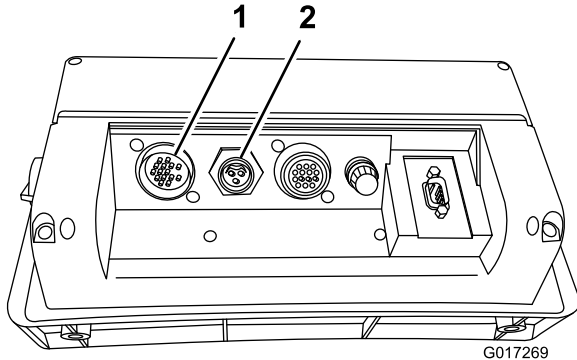


Figure 3

Rear of Console Computer

- Flowmeter cable connection
- Speed sensor cable connection

- Assemble the computer console to the mounting bracket with 2 hand knobs ([Figure 2](#)).
- Adjust the pivot angle of the console face to the desired position, and tighten the hand knobs on either side console to secure the position.

2

Installing the Flowmeter

Parts needed for this procedure:

1	Flowmeter
1	Gasket
1	Hose clamp

Procedure

- Move to the rear of the machine and locate the boom-valve assembly on the boom-valve mounting bracket.
- Loosen, but do not remove, the bolts that secure the boom-valve-assembly to the mounting bracket ([Figure 4](#)).

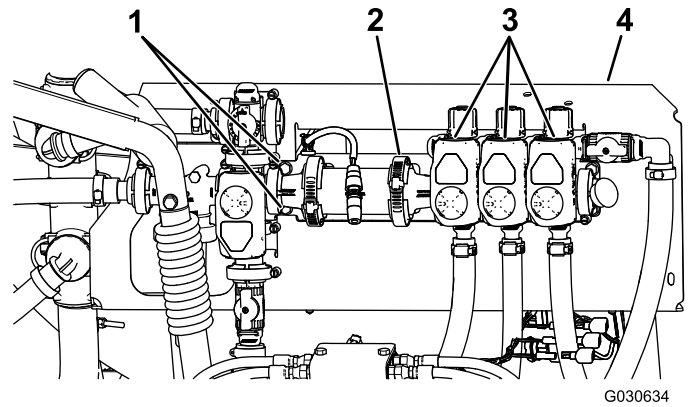


Figure 4

- Bolts
- Hose clamp
- Boom-valve assembly
- Boom mount

- Loosen the existing hose clamp that secures the KZ valve to the boom-valve assembly ([Figure 4](#)).
- Carefully move the boom-valve assembly away from the KZ valve ([Figure 5](#)).

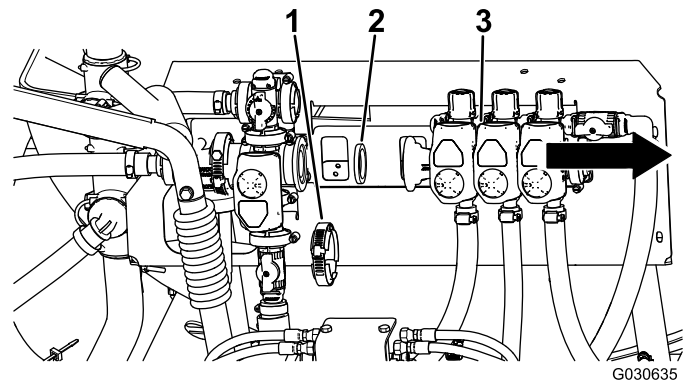


Figure 5

- Hose clamp
- Gasket
- Boom-valve assembly

- Remove the existing gasket in the valve body ([Figure 5](#)).

Note: Retain both the clamp and gasket.

- Locate the flowmeter, gasket, and worm clamp in loose parts.
- Install the flowmeter in-line between the KZ and boom valve assemblies with the flow arrow pointing toward the 3 boom valves ([Figure 6](#)).

Note: Ensure that both gaskets are properly installed.

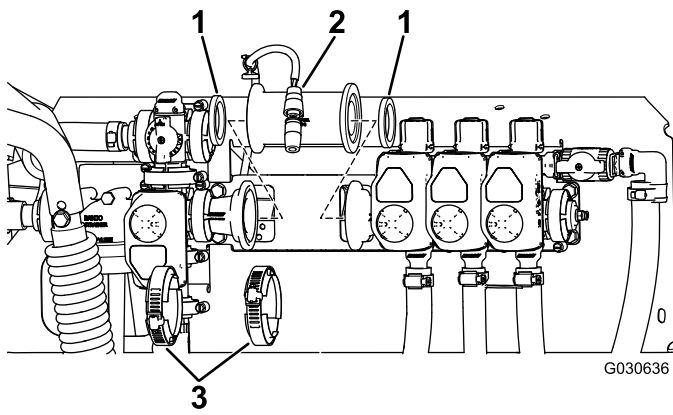


Figure 6

- 1. Gasket
- 2. Flowmeter
- 3. Hose clamps

- Install the existing gasket into the flowmeter side that mates with the KZ valve (Figure 6).
- Install the existing hose clamp over the flowmeter.
- Move the flowmeter into position flush with the KZ valve body.

Note: Secure the flowmeter to the KZ valve body by tightening the clamp.

- Install the new gasket into the open side of the flowmeter body.
- Install the new hose clamp over the open end of the flowmeter.
- Carefully move the boom-valve assembly into the position flush with the flowmeter body (Figure 7).

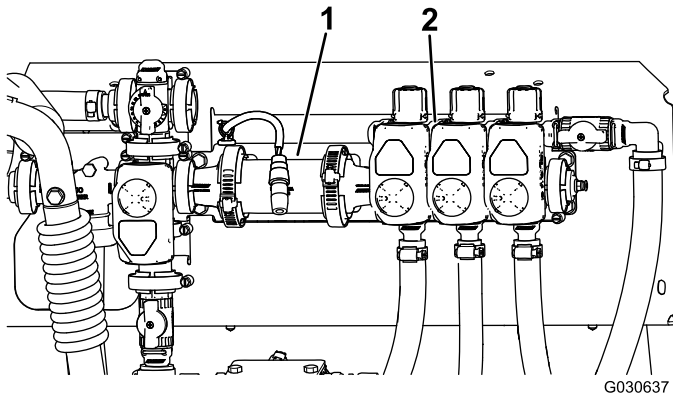


Figure 7

- 1. Flowmeter
- 2. Boom-valve assembly

- Secure the flowmeter to the boom-valve assembly by tightening the clamp.
- Tighten the bolts that secure the boom bypass valve assembly to the mounting bracket.
- Locate the spray system wiring harness routed to the boom-valve manifold.
- Locate the capped round flowmeter connector.

- Remove the cap to expose the 3-pin plug and connect it to the wire coming from the flowmeter.
- Secure the locking rings if available.
- Inspect all work to ensure that all hose clamps are tightened.
- Close the bypass valves and inline valve (after the individual bypass valves) by rotating the red bypass knobs clockwise until you feel resistance, indicating that the valve is completely closed.

Note: The knob may require 3 to 4 rotations (360° equals 1 rotation) to completely close.

Note: To save the bypass valve positions, shut off the single inline valve.

Note: The numbers printed on the bypass knob are for reference only. Setting the knob to “0” does not ensure that the valve is closed. You must continue turning the knob until you feel rotational resistance—this indicates that the valve is closed.

Product Overview

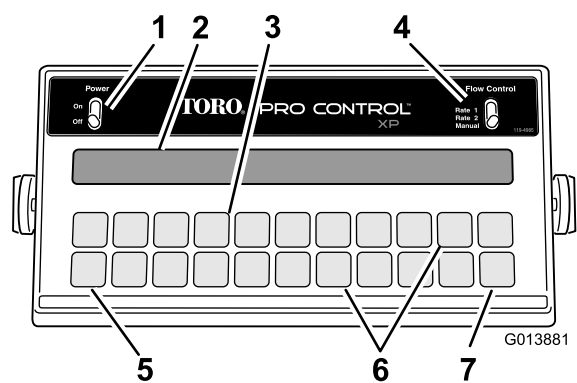


Figure 8

- | | |
|------------------------|------------------|
| 1. Power switch | 5. CE key |
| 2. Display | 6. Function keys |
| 3. Calibration keys | 7. Enter key |
| 4. Flow-control switch | |

Controls

The ProControl™ System consists of a computer-based control console, a speed sensor, and a turbine-type flowmeter.

Become familiar with the controls (Figure 8) before you start the engine and operate the sprayer.

Power Switch

This switch turns the console power on and off. Turning off the console computer does not affect the data stored in the computer.

The Console Keys

The keypad for the console computer is shown in Figure 9.

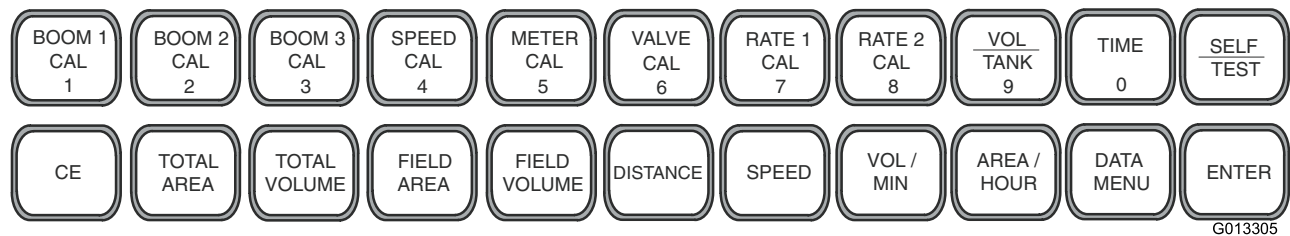


Figure 9

Flow-Control switch

This switch allows you to automatically or manually control the spray system. There are 2 automatic positions and 1 manual position.

Display

The display shows the function and calibration data.

Calibration Keys

These keys allow the operator to enter data into the console computer to calibrate the spray system.

Function Keys

These keys display needed data, such as the total area sprayed, the total volume of material sprayed, the vehicle speed, and the volume of material remaining in the tank.

Enter Key

This key allows you to enter data into the console computer.

CE Key

This key clears the data shown in the display; it also enables you to toggle through the options found in certain function keys.

The console computer allows the following parameters: Area: US (acres); SI (hectares) or TU (1000 ft²).

Keypad Reference Table

Key	Description	Function*
BOOM 1 CAL (1)	Length of boom 1	It calculates the length of the boom by multiplying the number of nozzles by the spacing between them in inches (cm) of the left boom. 204 centimeters (80 inches) is set as the default.
BOOM 2 CAL (2)	Length of boom 2	It calculates the length of the boom by multiplying the number of nozzles by the spacing between them in inches (cm) of the center boom. 152 centimeters (60 inches) is set as the default.
BOOM 3 CAL (3)	Length of boom 2	It calculates the length of the boom by multiplying the number of nozzles by the spacing between them in inches (cm) of the right boom. 204 centimeters (80 inches) is set as the default.
SPEED CAL (4)	Speed calibration number	148 (US or TU) or 38 (SI) is set as the starting point for all Toro sprayers.
METER CAL (5)	Flowmeter calibration number	Enter the number found on the flowmeter label or the tag on the flowmeter cable (Gal# for US or TU, or Liter# for SI).
VALVE CAL (6)	Control valve response time	It sets the system response. Enter 23 is set as the starting point.
RATE 1 CAL (7)	Target application rate 1	It is the first application rate.
RATE 2 CAL (8)	Target application rate 2	It is the second application rate. If there is only 1 application rate, use the Rate 1 value again.
VOL / TANK (9)	Volume of material remaining in the tank	It displays the volume of material in the sprayer tank. Reset the volume when you refill the tank.
TIME (0)	24-hour clock	It is a 24-hour clock or an elapsed timer. You reset it when you turn off the console computer.
SELF TEST (←)	Simulation of vehicle speed	It is used to simulate the vehicle speed to allow the operator to check and calibrate the system operation while the vehicle is stationary.
CE	Clear Entry	It clears a wrong entry; enables you to toggle between settings during initial programming; and enables you to select functions and settings.
TOTAL AREA	Total area sprayed	It monitors the total area covered until you clear it to zero.
TOTAL VOLUME	Total volume of material sprayed	It monitors the volume of material sprayed until you clear it to zero.
FIELD AREA	Field area sprayed	It monitors the total area covered until you clear it to zero.
FIELD VOLUME	Volume of material sprayed onto a field or specific area	It monitors the volume of material applied until you clear it to zero.
DISTANCE	Distance of vehicle travel	It measures the distance the vehicle travels until you clear it to zero.
SPEED	Vehicle speed	It displays the vehicle speed.
VOL / MIN	Volume of material sprayed per minute at vehicle speed	It displays the volume/minute that the system is currently using.
AREA / HOUR	Area sprayed per hour at vehicle speed	It displays acres, hectares, or 1,000 sq ft covered per hour at the vehicle speed driven.
DATA MENU	Area sprayed per hour at vehicle speed. Preset agitation can be selected by pressing the Data Menu until Preset Agitation is displayed.	This allows you to adjust agitation pressure when the booms are off. The setting is preset at 105. Note: When the number increases, the agitation pressure increases. The number is not the agitation pressure.
ENTER	Enter data	It allows you to enter data into the console computer.

*The calibration numbers listed are **for reference only**. Before spraying, check your sprayer to ensure that the numbers you are using are correct.

Operation

The console computer automatically controls the spray application rate for varying vehicle speeds. You set the target volume per unit area to spray and the console computer automatically maintains the flow within the proper range of the vehicle speed and continually displays the actual volume of material per area sprayed. The console computer also monitors the area sprayed, the speed of the vehicle, and the total volume of material sprayed.

Important: A manual override switch allows the operator to manually control the flow for system inspection and spot spraying.

In this section, the procedure will use the following naming convention:

- The labels on the console computer keys are enclosed in brackets. For example: Press the [ENTER] key.
- The data you enter is in boldface type preceded by the word **Press**. For example: Press **123**.
- The data shown in the display is in normal type, with letters in all caps.

Initially Programming the Console Computer

You must first program the console computer before you can use it to operate the spray system. You need to perform this operation only when you turn on the console computer for the first time.

Turn the power switch to the ON position.

Note: The console screen shows the message CAL in the display.

Selecting US, SI, or TU

To select the units for US (volume per acre), SI (volume per hectare), or TU (volume per 1,000 sq ft):

1. Press the [CE] key until you see your desired code (US, SI, TU) in the display.
2. Press the [ENTER] key.

Note: If you make a data entry error, reset the console computer by turning the power switch to the OFF position and, while pressing and holding the [CE] key, turning the power switch to the ON position.

Entering the Meter Cal Number

Use the gallon calibration number for US gallons per acre or US gallons per 1000 sq ft or a liter calibration number for liters per hectare.

1. Press the [METER CAL] key.

2. Press the [ENTER] key.
3. Enter the Meter Cal calibration number.

Note: The Meter Cal (or flowmeter) calibration number is stamped on the tag attached to the flowmeter or meter cable (Figure 10).

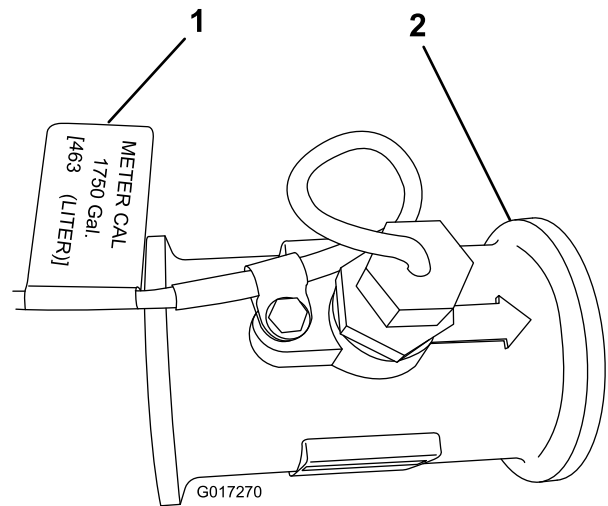


Figure 10

1. Tag
2. Flowmeter

4. Press the [ENTER] key.

Entering Rate 1 and Rate 2 Data

Enter the spray application rate (with decimal) in Rate 1 and Rate 2. Enter the rates in US gallons per acre (US mode), US gallons per 1,000 sq ft (TU mode), or liters per hectare (SI mode) depending on the base measurement you select.

1. Press the [RATE 1 CAL] key.
2. Press the [ENTER] key.
3. Enter the target application rate (in gallons per acre, liters per hectare, or US gallons per 1,000 sq ft) that you want to spray.
4. Press the [ENTER] key.
5. Press the [RATE 2 CAL] key.
6. Press the [ENTER] key.
7. Enter a second target application rate (in US gallons per acre, liters per hectare, or US gallons per 1,000 sq ft) that you want to spray, if you desire.
8. Press the [ENTER] key.

Note: Rate 2 should not differ more than 20% from Rate 1 unless there is a change in nozzle size. If you do not use a second rate, enter the same rate for Rate 1 and Rate 2.

Note: You have now completed programming the console computer. The flashing CAL in the display should stop. If not, repeat the procedures for programming the console computer.

Displaying Data

To display the following data, do the following:

Total Area

Press the [TOTAL AREA] key.

Total Volume

Press the [TOTAL VOLUME] key.

Note: To change the total volume to 0: press the [ENTER] key, then 0, then press the [ENTER] key again.

Field Area

Press the [FIELD AREA] key.

Field Volume

Press the [FIELD VOLUME] key.

Note: To change the field volume to 0: press the [ENTER] key, then 0, then press the [ENTER] key again.

Distance

Press the [DISTANCE] key.

Note: The distance is displayed in meters or feet. To change the total distance to 0: press the [ENTER] key, then 0, then press the [ENTER] key again.

Speed

Press the [SPEED] key.

Vol/Min

Press the [VOL/MIN] key.

Area/Hour

Press the [AREA/HR] key.

US, SI, or TU

1. Press and hold the [SELF TEST] key.
2. Press the [TOTAL AREA] key.

Note: These parameters will alternately appear on the display.

Data Menu

The data menu allows you to adjust agitation pressure when the booms are off. Start with the setting of 95. Press the [DATA MENU] key once, preset agitation will display. Press the [ENTER] key, then 95, then the [ENTER] key again.

Note: Do not change the other values for the PWM (pulse width modulation); they are preset for the system.

Self-Testing the Console Computer

The self test allows you to simulate the speed for testing the system when the vehicle is not moving.

1. Press the [SELF TEST] key.
2. Press the [ENTER] key.
3. Enter the speed in mph or km/h.
4. Press the [ENTER] key.
5. Press the [SPEED] key to verify the speed.
The speed shows in the display.

Note: The self test speed clears itself when the speed sensor detects that the vehicle is moving or when the controller is turned off.

Activating the Data Lock

The data lock is an optional feature that prohibits users from entering data without first entering the data lock code.

1. Press the [DATA MENU] key several times until you see PRESS ENTER FOR DATA LOCK on the display.
2. Enter a 4-digit code and press the [ENTER] key within 15 seconds.

Changing the Data Lock

1. Press the [DATA MENU] key several times until you see the PRESS ENTER FOR DATA LOCK in the display.
2. Press the [ENTER] key.
Note: The display shows OLD CODE E.
3. Enter a 4-digit code and press the [ENTER] key within 15 seconds.
4. Press the [ENTER] key.

Entering the Mode Sequence with the Data Lock Activated

1. Press the key in which you wish to enter day.
2. Press the [ENTER] key.
Note: The display shows CODE.
3. Enter your data lock code.
Note: If the code is correct, the display will show an E.
4. Enter your data as you normally do.

Note: You may clear the data lock code by entering a code of 0 or by resetting the console. Set the power switch to the OFF position and hold the [CE] key down while you set the power switch to the ON position to reset the console.

Setting the Power Down Delay Time

To conserve the 12-volt battery on the vehicle, set the power down delay. In this power down mode, all the data is retained but the time of day clock does not operate. The power down day is initially set to 10 days.

1. Press the [TIME] key 5 times.

Note: The display shows POWER DOWN DAY.

2. Press the [ENTER] key.
3. Change the power down day setting.
4. Press the [ENTER] key.

Using the Console-Computer Alarm

This is an optional feature.

The console alarm sounds if the application rate is 30% or more away from the target application rate for 5 seconds.

1. Press the [DATA MENU] key several times.

Note: The display shows ALARM ON. The alarm is enabled.

2. Press the [CE] key.

Note: The display shows ALARM OFF. The alarm is disabled.

Setting up the System

Before operating the spray system, perform this procedure.

1. Read through the following instructions before starting.
2. Attach the supply hose to the anti-siphon tube and fill the tank half full of clean water.

Important: Inspect and clean all system components before spraying, including the tank, strainer, pump, valves, and nozzles.

3. Start the engine; refer to the *Operator's Manual* for the Multi-Pro® 5800 Turf Sprayer.
4. Move the throttle lever to the maximum setting.
5. Turn the Boom On/Off switches to the OFF position.
6. Turn the Man/Rate switch to Man.
7. Turn the Power On/Off switch to the ON position.
8. Turn the Spray Pump Control switch to the ON position.
9. Ensure that you have entered the proper values for the correct boom width and calibrations for Meter Cal, Rate 1, and Rate 2.

10. Use the self-test feature as described in the *Operator's Manual* for the Multi-Pro 5800 Turf Sprayer for testing the spray system while the vehicle is not moving.

Note: The self-test feature simulates speed so that the system may be tested without moving. This feature will clear itself when the speed sensor detects that the vehicle is in motion. A speed calibration value greater than or equal to 900 (US or TU) or 230 (SI) is recommended when operating in this mode.

To set the self-test feature, do the following:

Note: To prevent the self-test speed from clearing itself out automatically, disconnect the speed connector on the back of the console when you use the radar speed sensors.

- A. Press the SELF TEST button.
- B. Enter the desired simulated speed value.
- C. Verify the speed of the vehicle by pressing the SPEED button.

11. Turn the boom switches to the ON position.

Note: If the switch lights don't turn on, the foot switch is off. Turn the foot switch to the ON position.

12. Use the Pressure Adjust switch to increase the pressure to 20 psi, then decrease it back to 0 psi.

13. Turn the Man/Rate switch to Rate 1.

Note: The pump should increase the pressure until it reaches the desired rate with the proper nozzle size.

14. Turn the Master Boom Control (foot) switch to the OFF position.

15. Turn the Agitation switch to the ON position.

Note: The system starts the pump and increases the pump speed until the pump reaches the preset agitation pressure. The system goes to this pressure when the booms are off and the pump and agitation are on.

Note: For the initial system setting, note the pressure on the pressure gauge. Turn the agitation bypass valve to the same pressure as it was before. If you want to reduce the agitation or increase the supply to the boom for large application rates, you can also partially close the agitation ball valve.

16. Turn the agitation switch and the pump switch to the OFF position.

Initially Field-Testing the System

Before operating the spray system, perform this procedure.

1. Drive the vehicle at the desired spraying speed with the sprayer booms off.
2. Press the [SPEED] key to verify the speed readout.
3. Turn the Spray pump control switch to the ON position.
4. Turn the Pro Control XP Power switch to the ON position.
5. Turn the foot switch to the ON position.

Note: Use the foot switch when all the booms are to be turned on.

6. Ensure that the Boom 1, Boom 2, and Boom 3 switches are in the ON position.
7. Set the Man/Rate switch to Rate 1.
8. Increase or decrease the vehicle speed by 1 mph (2 km/h).

Note: The system should automatically correct the target application rate. If the system does not correct the application rate, review the [Initially Programming the Console Computer \(page 9\)](#); then refer to [Troubleshooting \(page 16\)](#).

9. After spraying a swath, switch the foot switch to the OFF position to shut off the spray flow to all booms.

Note: This also shuts off the area calculations.

10. Verify the area covered and the volume of material sprayed.

Maintenance

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
Every 200 hours	<ul style="list-style-type: none"> Clean the flowmeter (More often when using wettable powders).
Yearly	<ul style="list-style-type: none"> Calibrate the flowmeter.

Cleaning the Flowmeter

Service Interval: Every 200 hours

- Thoroughly rinse and drain the entire spraying system.
- Remove the flowmeter from the sprayer and flush it with clean water.
- Remove the retainer ring on the upstream side ([Figure 11](#)).

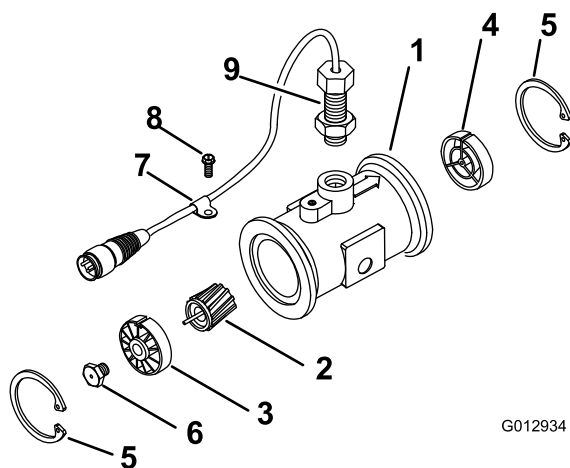


Figure 11

- | | |
|----------------------------------|--------------------------|
| 1. Modified flanged body | 6. Turbine-stud assembly |
| 2. Rotor or magnet assembly | 7. Cable clamp |
| 3. Hub or bearing assembly | 8. Thread screw |
| 4. Hub assembly (with keyway up) | 9. Sensor assembly |
| 5. Retainer ring | |

- Clean the turbine and the turbine hub to remove metal filings and any wettable powders.
- Inspect the turbine blades for wear.

Note: Hold the turbine in your hand and spin it. It should spin freely with very little drag. If it does not spin freely, replace it.

- Assemble the flowmeter.
- Install the sensor until it gently touches the bottom of the housing.
- Carefully tighten the sensor retaining nuts.

- Use a low pressure (50 kPa or 5 psi) air jet to ensure that the turbine spins freely.

If it does not spin freely, loosen the hex stud on the bottom of the turbine hub by 1/16 of a turn until the turbine spins freely.

Programming the Console Computer

With the controller power off, press and hold the CE button and move the power switch on the console computer to the ON position.

Note: Turning the power switch to the OFF position or disconnecting the console cables does not erase the data stored in the console computer memory.

Important: The calibration figures given are guidelines only; you should perform calculations for your particular machine and spraying application situation and conditions.

Note: Refer to [Figure 9](#) and the [Keypad Reference Table \(page 8\)](#) for the description and function of the keys on the console computer.

To program the computer console, refer to [Initially Programming the Console Computer \(page 9\)](#).

Note: All the data is retained when you turn the power switch to the OFF position.

Calculating the Boom Cal Data

The settings in the Pro Control XP are automatically set to the default settings. However, you can change the values if the nozzle spacing has changed.

Calculate the Boom Cal by multiplying the number of spray tips by the tip spacing.

Note: Boom 1 is the left boom (from the operating position), Boom 2 is the center boom, and Boom 3 is the right boom.

- Press the [BOOM 1 CAL] key.
- Press the [ENTER] key.

3. Enter **80** (US or TU) or **204** (SI).
4. Press the [ENTER] key.
5. Press the [BOOM 2 CAL] key.
6. Press the [ENTER] key.
7. Enter **60** (US or TU) or **152** (SI).
8. Press the [ENTER] key.
9. Press the [BOOM 3 CAL] key.
10. Press the [ENTER] key.
11. Enter **80** (US or TU) or **204** (SI).
12. Press the [ENTER] key.

Entering the Speed Cal Number

The Speed Cal number is critical to the performance of the spray system. Ensure that the tires are properly inflated and that the tank is half full before performing this procedure.

1. Press the [SPEED CAL] key.
2. Press the [ENTER] key.
3. Enter the correct Speed Cal number for your current selected unit of measurement (US, SI, TU).
 - When using US units, enter: **148**.
 - When using SI units, enter: **38**.
 - When using TU units, enter: **148**.
4. Press the [ENTER] key.

Note: These number allow the machine to operate with reasonable accuracy. Fine tuning is necessary for maximum accuracy.

Fine-Tuning the Speed Cal Number

The following procedure requires buttons 1 through 8 to have been populated with data and the CAL to stop flashing. Use the following procedure to further fine-tune the Speed Cal number:

1. Measure 152 m (500 feet) on a flat ground surface.
2. Set the distance readout to **0**.
3. Press the [DISTANCE] key.
4. Press the [ENTER] key.
5. Enter **0**.
6. Press the [ENTER] key.
7. Drive the vehicle 152 m (500 feet).
8. Ensure that the distance readout on the console computer reads between 149 m and 155 m (490 feet and 510 feet).
9. If the readout is not between 149 m and 155 m (490 feet and 510 feet), calibrate the Speed Cal using the following equation:

- New Speed Cal number = $148 \times 500 / \text{Distance readout (for US or TU units)}$
- New Speed Cal number = $38 \times 152 / \text{Distance readout (for SI units)}$

10. Enter the new Speed Cal number using the Entering the Speed Cal Number procedure.

Entering the Valve Cal Number

The Valve Cal number controls the response of the spray system to meet the changes of the vehicle speed.

Important: Running the control valve too fast (a number greater than 0) will cause the system to oscillate.

To enter the Valve Cal number:

1. Press the [VALVE CAL] key.
2. Press the [ENTER] key.
3. Enter the Valve Cal calibration number.

Note: The initial valve calibration number for Valve Cal is **023**. We recommend that you use this number for most spray applications; **046** may be helpful for small application rates (1.5 liters/minute or 0.4 gallons/minute).

4. Press the [ENTER] key.

Entering Optional Calibration Values

You may also want to enter the following data, but it is not required for operating the spray system.

Volume Tank

This number represents the volume of material in the tank and must be entered each time you fill the tank. The function monitors the tank volume while you are spraying based on the total amount applied.

1. Press the [VOL/TANK] key.
2. Press the [ENTER] key.
3. Enter the amount of material in the tank.
4. Press the [ENTER] key.

Time

Enter the time of day based on a 24-hour day. For example, 1:30 p.m. is 13:30. You can also enter 0 to measure elapsed time.

To set the date, do the following:

1. Press the [TIME] key. The display shows MONTH.
2. Press the [ENTER] key to change the month.
3. Press the [TIME] key. The display shows DAY.
4. Press the [ENTER] key to change the day.
5. Press the [TIME] key. The display shows YEAR.

6. Press the [ENTER] key to change the year.
7. Press the [TIME] key. The display shows POWER DOWN DAY.

Calibrating the Flowmeter

Service Interval: Yearly—Calibrate the flowmeter.

1. Press the [METER CAL] key.
2. Press the [ENTER] key.
3. Enter the Meter Cal number.

Note: The Meter Cal (or flowmeter) calibration number is stamped on the tag attached to the flowmeter or meter cable (Figure 10).

4. Press the [ENTER] key.
5. Press the [TOTAL VOLUME] key.
6. Press the [ENTER] key.
7. Enter 0.
8. Press the [ENTER] key.
9. Fill the tank with a predetermined amount of water.

Note: For best results, measure the water using an independent method. For the best accuracy, determine the amount of water ahead of time so that the applicator tank is full.

10. Empty the tank by boom spraying under normal conditions.

Note: The vehicle does not need to be in motion to perform this step, but you must enter a test speed.

11. After emptying the water from the tank, check the Total Volume number.

This number should equal the predetermined amount of water. If it does not, calculate the Meter Cal number using the formula that follows. Under normal conditions, the Meter Cal number should be within $\pm 3\%$ of the number stamped on the tag of the flowmeter.

See the example below:

Meter Cal (from tag) = 1660

Total Volume = 103

Amount of water = 100

Corrected Meter Cal = (Meter Cal x Total Volume) / Amount of Water

Corrected Meter Cal = (1660 x 103) / 100

Corrected Meter Cal = 1710.

Note: Repeat this procedure several times to confirm that the corrected Meter Cal number is accurate.

Testing the Flowmeter Cable

1. Disconnect the console control cable from the flowmeter cable.
2. Hold the cable so that the keyway is in the 12 o'clock position (Figure 12).

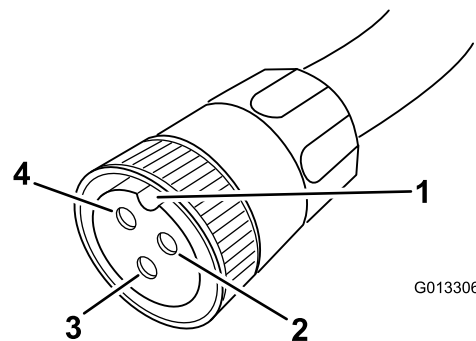


Figure 12

- | | |
|--------------------------------|--------------------------------|
| 1. Keyway | 3. Signal (6 o'clock position) |
| 2. Ground (2 o'clock position) | 4. Power (10 o'clock position) |

3. Enter a Meter Cal number; refer to [Entering the Meter Cal Number \(page 9\)](#).
 4. Press the [TOTAL VOLUME] key.
 5. Turn the pump, foot, and boom switches to the ON position.
 6. Use a small jumper wire or a paper clip to create a short between the 2 o'clock and 6 o'clock sockets.
- Note:** Each time you make contact, the Total Volume should increase by 1 or more counts.
7. If the Total Volume number does not increase, replace the defective cable.
 8. Perform the voltage checks: 2 o'clock to 6 o'clock (+5 VDC); and 2 o'clock to 10 o'clock (+5 VDC).
 9. If all the cables are good, replace the flow sensor.

Note: After testing the flowmeter cables, enter the correct Meter Cal number before spraying.

Troubleshooting

Note: If the console computer malfunctions or needs repair, you can resume spraying in manual mode by unplugging the cables from the rear of the console computer. You can then control the system using the center console controls.

Problem	Possible Cause	Corrective Action
The display lights do not illuminate when the power turned on.	<ol style="list-style-type: none"> 1. The fuse on the back of the console computer is blown. 2. The battery connections are loose. 3. The power switch is not operating properly. 4. There is a problem with the processor board assembly. 	<ol style="list-style-type: none"> 1. Replace the fuse. 2. Secure the battery connections. 3. Repair or replace the power switch. 4. Have an Authorized Distributor replace the processor board assembly.
All of the keyboard lights are illuminated at the same time	<ol style="list-style-type: none"> 1. There is a problem with the face plate sub assembly. 	<ol style="list-style-type: none"> 1. Have an Authorized Distributor replace the face plate sub assembly.
You cannot enter a digit using the keyboard.	<ol style="list-style-type: none"> 1. There is a problem with the face plate sub assembly. 	<ol style="list-style-type: none"> 1. Have an Authorized Distributor replace the face plate sub assembly.
An indicator on a key does not illuminate.	<ol style="list-style-type: none"> 1. There is a problem with the face plate sub assembly. 	<ol style="list-style-type: none"> 1. Have an Authorized Distributor replace the face plate sub assembly.
The console computer displays a flashing Cal indicator whenever you start the engine.	<ol style="list-style-type: none"> 1. The battery connections are loose. 2. The battery is not providing sufficient voltage. 3. One or more of the Console keys 1 through 8 do not have a value. 	<ol style="list-style-type: none"> 1. Secure the battery connections. 2. Check the battery voltage. 3. Ensure that Console keys 1 through 8 are assigned a value.
The console computer displays a flashing Cal indicator whenever you turn the master switch to the ON or OFF position.	<ol style="list-style-type: none"> 1. The battery connections are loose. 2. The battery is not providing sufficient voltage. 3. One or more of the Console keys 1 through 8 do not have a value. 	<ol style="list-style-type: none"> 1. Secure the battery connections. 2. Check the battery voltage. 3. Ensure that Console keys 1 through 8 are assigned a value.
The console computer displays a flashing Cal indicator whenever you change the speed.	<ol style="list-style-type: none"> 1. The battery connections are loose. 2. The battery is not providing sufficient voltage. 3. One or more of the Console keys 1 through 8 do not have a value. 	<ol style="list-style-type: none"> 1. Secure the battery connections. 2. Check the battery voltage. 3. Ensure that Console keys 1 through 8 are assigned a value.
One of the display digit has one or more missing segments.	<ol style="list-style-type: none"> 1. There is a problem with the LCD display board assembly. 	<ol style="list-style-type: none"> 1. Have an Authorized Distributor replace the LCD display board assembly.
The speed display indicates 0.	<ol style="list-style-type: none"> 1. The pins on the speed sensor cable connector and the plug on the back of the console computer are loose. 2. The pins and the sockets on the speed sensor cable are dirty. 3. There is a problem with the speed sensor switch assembly. 	<ol style="list-style-type: none"> 1. Have an Authorized Distributor repair or replace the connector or the plug on the back of the console computer. 2. Clean the pins and sockets on the speed sensor cable connectors. 3. Have an Authorized Distributor replace the speed sensor switch assembly.
The speed indication that is displayed is inaccurate or unstable.	<ol style="list-style-type: none"> 1. The wheel drive setting is not set to SP3. 2. The Speed Cal number is incorrect. 	<ol style="list-style-type: none"> 1. Set the wheel drive setting to SP3. 2. Enter the correct Speed Cal number.
The rate display indicates 0000.	<ol style="list-style-type: none"> 1. The Speed Cal is 0. 2. The wheel drive setting is not set to SP3. 3. The Total Volume is not registering the flow. 	<ol style="list-style-type: none"> 1. Enter the correct Speed Cal number. 2. Set the wheel drive setting to SP3. 3. Ensure that the flowmeter is pointing in the direction of flow and is operating properly.

Problem	Possible Cause	Corrective Action
The rate indication that is displayed is inaccurate or unstable.	<ol style="list-style-type: none"> 1. You incorrectly entered a number in the console computer. 2. The wheel drive setting is not set to SP3. 3. The Speed Cal number is incorrect. 4. The Rate 1 or Rate 2 display is not constant when the speed is constant. 5. The pressure cannot be adjusted in manual mode with the agitation on and the booms off in the high end of the pressure range. 6. The Valve Cal number is not properly set. 7. There is a problem with the processor board assembly. 	<ol style="list-style-type: none"> 1. Verify that all the numbers entered in the console computer are correct. 2. Set the wheel drive setting to SP3. 3. Enter the correct Speed Cal number. 4. Ensure that the flowmeter is pointing in the direction of flow and the nozzles are appropriate for the rate setting. 5. Verify that there is voltage at the valve connector by placing the Master switch to the MAN position with the booms in the OFF position and the power switch to the ON position. Manually operate the Incr/Decr switch to verify the voltage. 6. Enter proper the Valve Cal number. 7. Have an Authorized Distributor replace the processor board assembly.
You cannot vary the rate in either the manual mode or automatic mode.	<ol style="list-style-type: none"> 1. There are breaks in the cable leading to the hydraulic control valve. 2. The connections in the cable line are dirty. 3. There is no voltage at the valve connector. 4. The Rate Inc/Dec switch is faulty. 	<ol style="list-style-type: none"> 1. Replace the cable. 2. Clean or replace the cable line. 3. Verify that there is voltage at the valve connector by placing the Master switch to the MAN position with the booms in the OFF position and the power switch to the ON position. Manually operate the Incr/Decr switch to verify the voltage. 4. Replace the Rate Inc/Dec switch.
The total volume does not register.	<ol style="list-style-type: none"> 1. There are breaks or shorts in the flowmeter cable. 2. The inside of the flowmeter is dirty or not properly adjusted. 3. The flowmeter transducer is not operating properly. 	<ol style="list-style-type: none"> 1. Test the flowmeter cable and repair or replace it if necessary; refer to Testing the Flowmeter Cable. 2. Clean and make any necessary adjustments inside the flowmeter. 3. Replace the flowmeter transducer.
The total volume inaccurately registers flow.	<ol style="list-style-type: none"> 1. The flowmeter is not pointing in the direction of the flow. 2. The flowmeter is faulty. 	<ol style="list-style-type: none"> 1. Install the flowmeter in the direction of the flow. 2. Test the flowmeter cable and repair or replace it if necessary. Refer to Testing the Flowmeter Cable.

Declaration of Incorporation

The Toro Company, 8111 Lyndale Ave. South, Bloomington, MN, USA declares that the following unit(s) conform(s) to the directives listed, when installed in accordance with the accompanying instructions onto certain Toro models as indicated on the relevant Declarations of Conformity.

Model No.	Serial No.	Product Description	Invoice Description	General Description	Directive
41604	315000001 and Up	Pro Control XP Spray System, Multi-Pro 5800 Turf Sprayer	PRO CONTROL XP	Spray System Controller	2006/42/EC, 2004/108/EC

Relevant technical documentation has been compiled as required per Part B of Annex VII of 2006/42/EC.

We will undertake to transmit, in response to requests by national authorities, relevant information on this partly completed machinery. The method of transmission shall be electronic transmittal.

This machinery shall not be put into service until incorporated into approved Toro models as indicated on the associated Declaration of Conformity and in accordance with all instructions, whereby it can be declared in conformity with all relevant Directives.

Certified:



David Klis
Sr. Engineering Manager
8111 Lyndale Ave. South
Bloomington, MN 55420, USA
June 8, 2015

EU Technical Contact:

Peter Tetteroo
Toro Europe NV
B-2260 Oevel-Westerloo
Belgium

Tel. 0032 14 562960
Fax 0032 14 581911

International Distributor List

Distributor:	Country:	Phone Number:	Distributor:	Country:	Phone Number:
Agrolanc Kft	Hungary	36 27 539 640	Maquiver S.A.	Colombia	57 1 236 4079
Balama Prima Engineering Equip.	Hong Kong	852 2155 2163	Maruyama Mfg. Co. Inc.	Japan	81 3 3252 2285
B-Ray Corporation	Korea	82 32 551 2076	Mountfield a.s.	Czech Republic	420 255 704 220
Casco Sales Company	Puerto Rico	787 788 8383	Mountfield a.s.	Slovakia	420 255 704 220
Ceres S.A.	Costa Rica	506 239 1138	Munditol S.A.	Argentina	54 11 4 821 9999
CSSC Turf Equipment (pvt) Ltd.	Sri Lanka	94 11 2746100	Norma Garden	Russia	7 495 411 61 20
Cyril Johnston & Co.	Northern Ireland	44 2890 813 121	Oslinger Turf Equipment SA	Ecuador	593 4 239 6970
Cyril Johnston & Co.	Republic of Ireland	44 2890 813 121	Oy Hako Ground and Garden Ab	Finland	358 987 00733
Equiver	Mexico	52 55 539 95444	Parkland Products Ltd.	New Zealand	64 3 34 93760
Femco S.A.	Guatemala	502 442 3277	Perfetto	Poland	48 61 8 208 416
ForGarder OU	Estonia	372 384 6060	Pratoverde SRL.	Italy	39 049 9128 128
G.Y.K. Company Ltd.	Japan	81 726 325 861	Prochaska & Cie	Austria	43 1 278 5100
Geomechaniki of Athens	Greece	30 10 935 0054	RT Cohen 2004 Ltd.	Israel	972 986 17979
Golf international Turizm	Turkey	90 216 336 5993	Riversa	Spain	34 9 52 83 7500
Guandong Golden Star	China	86 20 876 51338	Lely Turfcare	Denmark	45 66 109 200
Hako Ground and Garden	Sweden	46 35 10 0000	Solvart S.A.S.	France	33 1 30 81 77 00
Hako Ground and Garden	Norway	47 22 90 7760	Spypros Stavrinides Limited	Cyprus	357 22 434131
Hayter Limited (U.K.)	United Kingdom	44 1279 723 444	Surge Systems India Limited	India	91 1 292299901
Hydroturf Int. Co Dubai	United Arab Emirates	97 14 347 9479	T-Markt Logistics Ltd.	Hungary	36 26 525 500
Hydroturf Egypt LLC	Egypt	202 519 4308	Toro Australia	Australia	61 3 9580 7355
Irrimac	Portugal	351 21 238 8260	Toro Europe NV	Belgium	32 14 562 960
Irrigation Products Int'l Pvt Ltd.	India	0091 44 2449 4387	Valtech	Morocco	212 5 3766 3636
Jean Heybroek b.v.	Netherlands	31 30 639 4611	Victus Emak	Poland	48 61 823 8369

European Privacy Notice

The Information Toro Collects

Toro Warranty Company (Toro) respects your privacy. In order to process your warranty claim and contact you in the event of a product recall, we ask you to share certain personal information with us, either directly or through your local Toro company or dealer.

The Toro warranty system is hosted on servers located within the United States where privacy law may not provide the same protection as applies in your country.

BY SHARING YOUR PERSONAL INFORMATION WITH US, YOU ARE CONSENTING TO THE PROCESSING OF YOUR PERSONAL INFORMATION AS DESCRIBED IN THIS PRIVACY NOTICE.

The Way Toro Uses Information

Toro may use your personal information to process warranty claims, to contact you in the event of a product recall and for any other purpose which we tell you about. Toro may share your information with Toro's affiliates, dealers or other business partners in connection with any of these activities. We will not sell your personal information to any other company. We reserve the right to disclose personal information in order to comply with applicable laws and with requests by the appropriate authorities, to operate our systems properly or for our own protection or that of other users.

Retention of your Personal Information

We will keep your personal information as long as we need it for the purposes for which it was originally collected or for other legitimate purposes (such as regulatory compliance), or as required by applicable law.

Toro's Commitment to Security of Your Personal Information

We take reasonable precautions in order to protect the security of your personal information. We also take steps to maintain the accuracy and current status of personal information.

Access and Correction of your Personal Information

If you would like to review or correct your personal information, please contact us by email at legal@toro.com.

Australian Consumer Law

Australian customers will find details relating to the Australian Consumer Law either inside the box or at your local Toro Dealer.



Toro General Commercial Product Warranty

A Two-Year Limited Warranty

Conditions and Products Covered

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrant your Toro Commercial product ("Product") to be free from defects in materials or workmanship for two years or 1500 operational hours*, whichever occurs first. This warranty is applicable to all products with the exception of Aerators (refer to separate warranty statements for these products). Where a warrantable condition exists, we will repair the Product at no cost to you including diagnostics, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.

* Product equipped with an hour meter.

Instructions for Obtaining Warranty Service

You are responsible for notifying the Commercial Products Distributor or Authorized Commercial Products Dealer from whom you purchased the Product as soon as you believe a warrantable condition exists. If you need help locating a Commercial Products Distributor or Authorized Dealer, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Toro Commercial Products Service Department
Toro Warranty Company
8111 Lyndale Avenue South
Bloomington, MN 55420-1196

952-888-8801 or 800-952-2740
E-mail: commercial.warranty@toro.com

Owner Responsibilities

As the Product owner, you are responsible for required maintenance and adjustments stated in your *Operator's Manual*. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim.

Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This warranty does not cover the following:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, or modified non-Toro branded accessories and products. A separate warranty may be provided by the manufacturer of these items.
- Product failures which result from failure to perform recommended maintenance and/or adjustments. Failure to properly maintain your Toro product per the Recommended Maintenance listed in the *Operator's Manual* can result in claims for warranty being denied.
- Product failures which result from operating the Product in an abusive, negligent, or reckless manner.
- Parts subject to consumption through use unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, brake pads and linings, clutch linings, blades, reels, rollers and bearings (sealed or greasable), bed knives, spark plugs, castor wheels and bearings, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, and check valves, etc.
- Failures caused by outside influence. Conditions considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved fuels, coolants, lubricants, additives, fertilizers, water, or chemicals, etc.
- Failure or performance issues due to the use of fuels (e.g. gasoline, diesel, or biodiesel) that do not conform to their respective industry standards.

- Normal noise, vibration, wear and tear, and deterioration.
- Normal "wear and tear" includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, etc.

Parts

Parts scheduled for replacement as required maintenance are warranted for the period of time up to the scheduled replacement time for that part. Parts replaced under this warranty are covered for the duration of the original product warranty and become the property of Toro. Toro will make the final decision whether to repair any existing part or assembly or replace it. Toro may use remanufactured parts for warranty repairs.

Deep Cycle and Lithium-Ion Battery Warranty:

Deep cycle and Lithium-Ion batteries have a specified total number of kilowatt-hours they can deliver during their lifetime. Operating, recharging, and maintenance techniques can extend or reduce total battery life. As the batteries in this product are consumed, the amount of useful work between charging intervals will slowly decrease until the battery is completely worn out. Replacement of worn out batteries, due to normal consumption, is the responsibility of the product owner. Battery replacement may be required during the normal product warranty period at owner's expense. Note: (Lithium-Ion battery only): A Lithium-Ion battery has a part only prorated warranty beginning year 3 through year 5 based on the time in service and kilowatt hours used. Refer to the *Operator's Manual* for additional information.

Maintenance is at Owner's Expense

Engine tune-up, lubrication, cleaning and polishing, replacement of filters, coolant, and completing recommended maintenance are some of the normal services Toro products require that are at the owner's expense.

General Conditions

Repair by an Authorized Toro Distributor or Dealer is your sole remedy under this warranty.

Neither The Toro Company nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of the Toro Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty. Except for the Emissions warranty referenced below, if applicable, there is no other express warranty. All implied warranties of merchantability and fitness for use are limited to the duration of this express warranty.

Some states do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Note regarding engine warranty:

The Emissions Control System on your Product may be covered by a separate warranty meeting requirements established by the U.S. Environmental Protection Agency (EPA) and/or the California Air Resources Board (CARB). The hour limitations set forth above do not apply to the Emissions Control System Warranty. Refer to the Engine Emission Control Warranty Statement supplied with your product or contained in the engine manufacturer's documentation for details.

Countries Other than the United States or Canada

Customers who have purchased Toro products exported from the United States or Canada should contact their Toro Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the Toro importer.