

TeeJet®

834-P Sprayer Control User Guide (Y1.04) 98-70028-R0

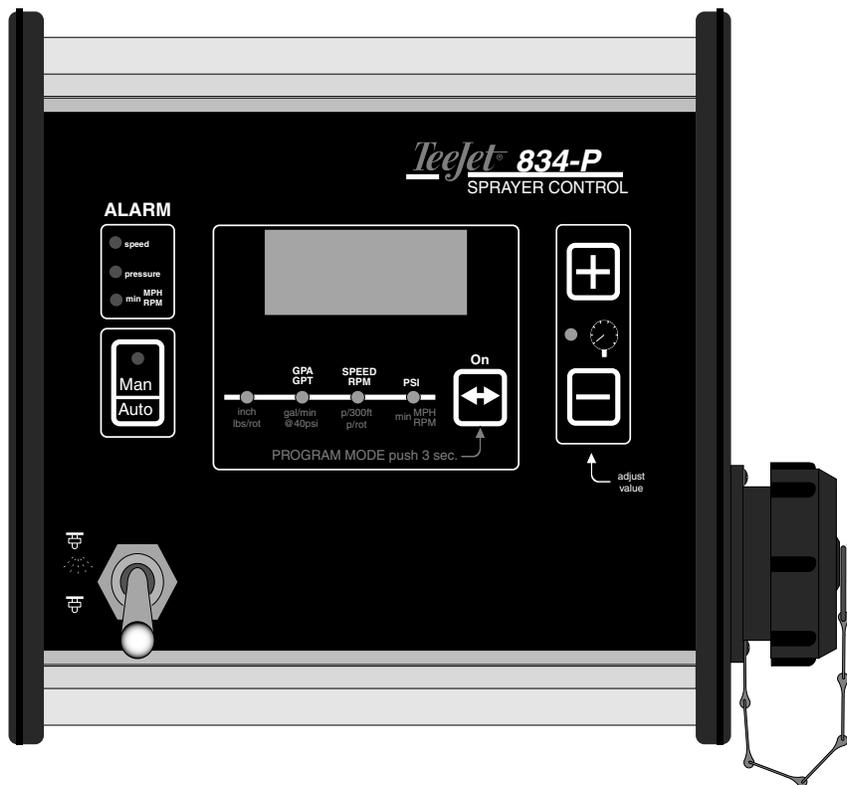


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Normal Working Mode (GPT Mode)

Note: This section covers operation of the 834-P in Gallons Per Ton mode. Operating instructions for Gallons Per Acre mode can be found on page 6.

INTRODUCTION

In the Gallons Per Ton (GPT) normal working mode, the display can show three different pieces of information indicated by the LED's below the display e.g.:

- Application rate in GPT
- Shaft RPM
- Pressure in PSI

Use of the keys during normal working mode is summarized as follows:

 key is used to power ON and to select the information display

Auto/Man &  key combination is used to power OFF (when not spraying)

 and  keys are used for changing the target application.

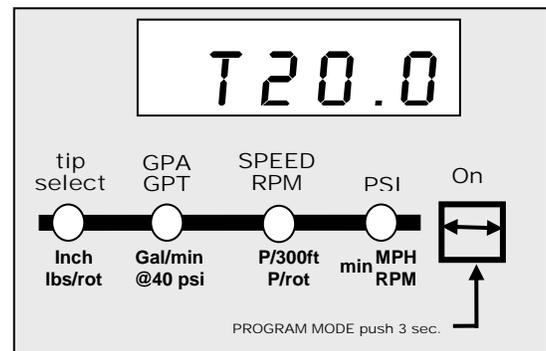
In manual mode the  and  keys drive the regulating valve to adjust pressure.

TARGET APPLICATION RATE DISPLAY

In this display the application rate in gallons per ton (GPT) is shown. The target application rate will be displayed any time the master boom switch is in the off position (a "t" is on the display when the target application rate is displayed). When the master switch is on, no "t" is on the display and the actual application rate is displayed.

Press the  or  keys to select another target application rate. This can be done before the spraying operation begins with the Master switch off or can be done on the go while spraying in Auto mode.

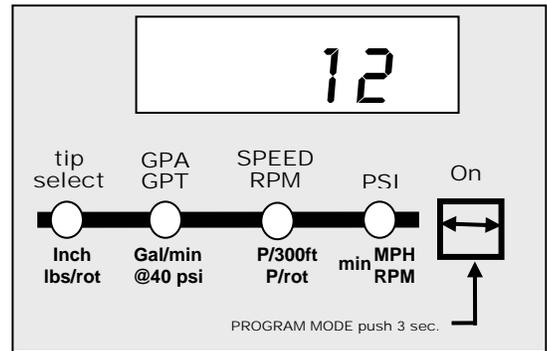
Press the  key to advance to the speed/rpm display.



SPEED/RPM DISPLAY (GPT MODE)

In this display the shaft RPM is shown on the display.

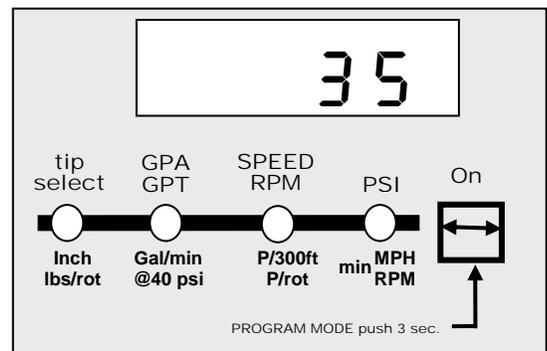
Press the key to advance to the pressure display.



PRESSURE DISPLAY (GPT MODE)

In this display the pressure is shown in PSI.

Press the key to advance back to the rate display.



Normal Working Mode (GPA Mode)

Note: This section covers operation of the 834-P in Gallons Per Acre mode. Instructions for Gallons Per Ton mode can be found on page 3.

INTRODUCTION

In the Gallons Per Acre (GPA) normal working mode, the display can show three different pieces of information indicated by the LED's below the display e.g.:

- Application rate in GPA
- Ground Speed
- Pressure in PSI

Use of the keys during normal working mode is summarized as follows:

key is used to power ON and to select the information display

Auto/Man & key combination is used to power OFF (when not spraying)

and keys are used for changing the target application. In manual mode the

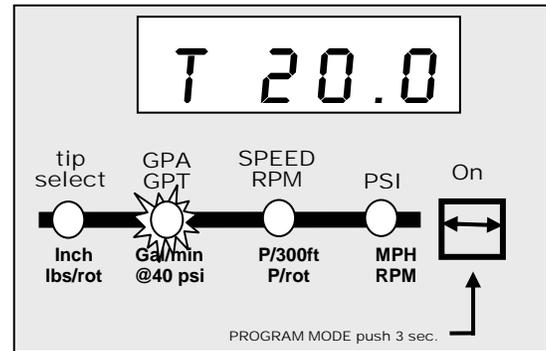
and keys drive the regulating valve to adjust pressure.

TARGET APPLICATION RATE DISPLAY

In this display the application rate in gallons per acre (GPA) is shown. The target application rate will be displayed any time the master boom switch is in the off position (a "t" is on the display when the target application rate is displayed). When the master switch is on, no "t" is on the display and the actual application rate is displayed.

Press the or keys to select another target application rate. This can be done before the spraying operation begins with the Master switch off or can be done on the go while spraying in Auto mode.

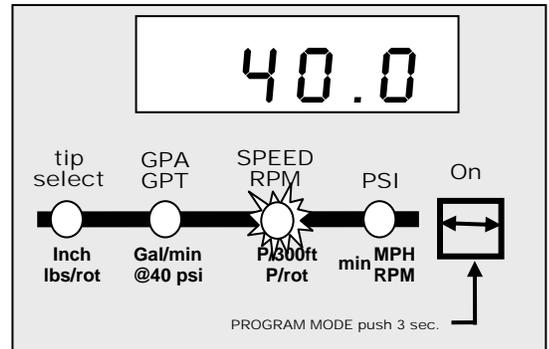
Press the key to advance to the speed display.



SPEED/RPM DISPLAY (GPA MODE)

In this display the vehicle speed is shown in MPH.

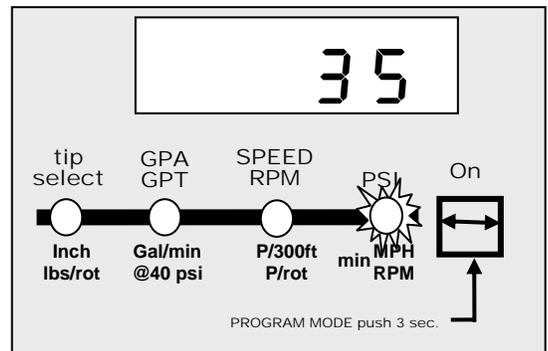
Press the  key to advance to the pressure display.



PRESSURE DISPLAY (GPA MODE)

In this display the pressure is shown in PSI.

Press the  key to advance back to the rate display.



Operating Instructions

THE SPRAYING OPERATION

Fill the sprayer tank and thoroughly mix the chemical(s). Your application rate should be determined as well as the spray tip you will be using, with the sprayer data programmed into the computer.

Switch the computer on by pressing the  key on the display panel.

While spraying with the Master switch "ON", you can scroll through the different displays using the  key until the information you want is on the display :

- ◆ actual application rate in GPT or GPA
- ◆ vehicle speed in MPH or shaft RPM
- ◆ pressure in PSI

Adjust the target application rate with the  and  keys.

Switch the Master boom switch to "ON" position to start spraying. Maintain your usual vehicle speed for spraying. Use the  or  keys to boost the application rate if needed. Small changes in vehicle speed are compensated by the automatic rate controller while spraying in Auto mode. Manual mode allows the operator to manually adjust system pressure by using the  and  keys.

If for any reason you need to stop, turn the MASTER BOOM SWITCH to "OFF."

Automatic Power Down

The TeeJet 834-P Sprayer Monitor has an automatic power down feature. With the Master switch in the "OFF" position, the Console will automatically shut down after 10 minutes of no inputs (when in normal working mode). This prevents possible battery drainage. Note that the console will not power down while in programming mode.

You can also power down the controller by the following key combination: press simultaneously the **Auto** and  keys and the Console will power down immediately (only with the Master switch OFF).

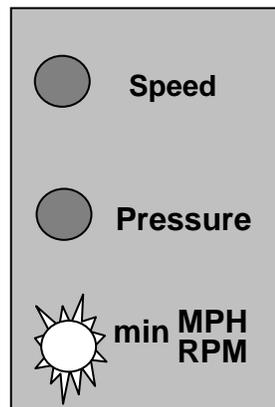
Warning: Do not switch off the console by removing the main cable!

Alarms and Warnings

On the 834-P Console there are three LED's for indication of alarms or warnings.

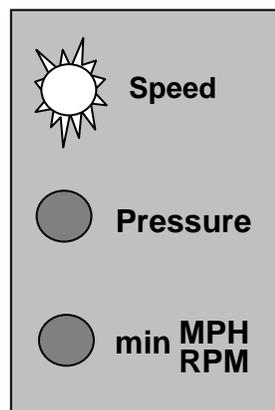
- The **Speed alarm** LED flashes when no speed pulses are received during spraying (Master in the ON position). This indicates that there is something wrong with the speed sensor or that you are standing still while spraying.

Note: When this alarm is triggered, the display will automatically switch the application display to view speed (if not currently viewing speed) and the speed display will flash off and on as well. This allows the operator to immediately determine the location of the problem.

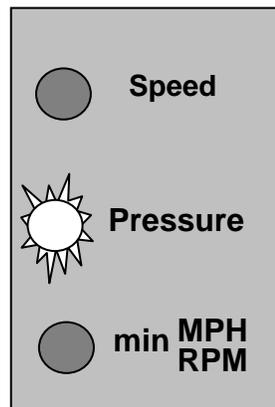


- The **Pressure alarm** LED flashes when the signal from the pressure sensor is absent while spraying (Master in the ON position). This indicates that the pressure sensor is not working properly, or that the connection with the sensor has been lost.

Note: When this alarm is triggered, the display will automatically switch the application display to view pressure (if not currently viewing pressure) and the pressure display will flash off and on as well. This allows the operator to immediately determine the location of the problem.



- The minimum RPM/MPH LED is lit when the programmed minimum speed or RPM has been reached. When this LED is lit, the pump has been switched off.



Programming Guidelines

Make sure that all hardware components are properly installed and tested. Before you start the programming process you should first check if the console and all sensors are working properly.

Important Preliminary Information

Before you begin, we recommend that you review the following Programming Guidelines that control the programming process:

The  key is used to power the console ON

Auto &  simultaneous key combination is used to power OFF (Master boom switch must be in the off position)

Holding  key for 3 seconds is used to enter programming mode

The white text above the indicator LEDs on the front panel refers to the data displayed in normal working mode. Look at the white colored text labels while in normal operating mode.

The gold text below the indicator LEDs on the front panel refers to the value being set in programming mode. Look at the gold colored text labels while in programming mode.

Pressing the  key saves the current parameter and advances to the next programming step during programming mode

The value of a parameter is changed with the  and  keys. Holding the  or  key changes the parameter rapidly.

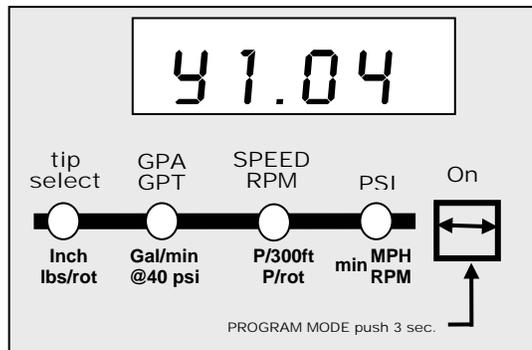
Console Programming (GPT Mode)

To begin the programming process:

Be sure the Master boom switch is "OFF."

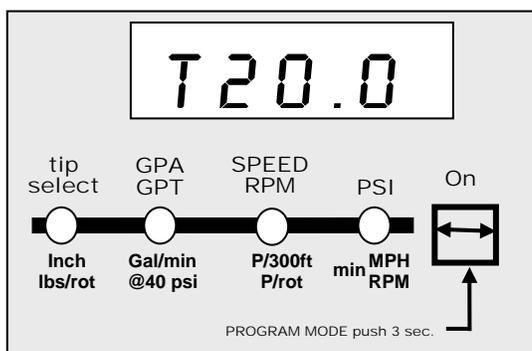
Turn console "ON" by pressing the  key. When the control console is turned on, the software version will be displayed for approximately 5 seconds. At the same time all LED's will be ON.

The software version and serial number of the console will be needed when calling for support. The serial number is located on a sticker on the back of the console.



Example: the software version is Y1.04.

After a short time the console will change to the target application rate display.



System Setup Mode (GPT mode)

The System Setup Mode contains the programming steps that customize the controller to the sprayer or sprayer components. These include calibration steps and parameters that, once programmed, are not likely to change.

To enter the System Setup Mode:

First be sure that the console is ON (if not turn it on by pressing the  key and wait until the normal display is visible).

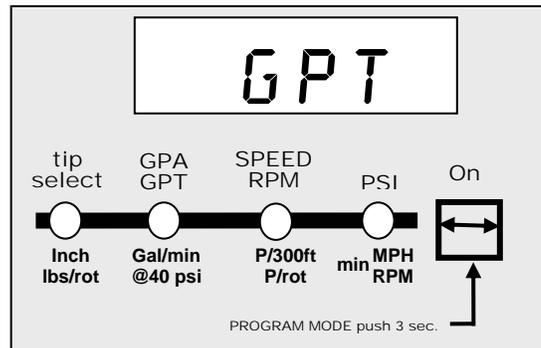
Ensure the Master boom switch is OFF.

Then press and hold the  key for 3 seconds to enter the Program Mode.

OPERATING MODE

The 834-P can operate in either of two modes. They are GPT (gallons per ton), used for pre-wetting applications, or GPA (gallons per acre) used for agricultural or anti-icing applications.

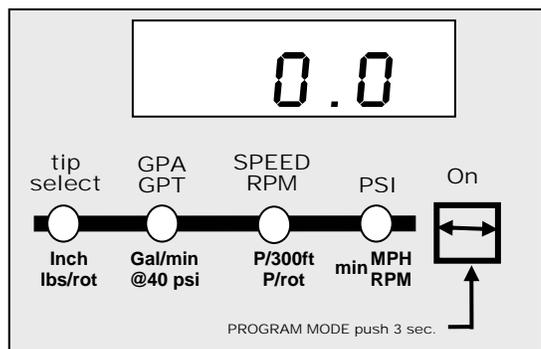
Use the  or  keys to adjust this value. Once the correct mode has been selected, press the  key to advance to the next step. If operating in GPA mode, skip ahead to page 14.



MINIMUM RPM

The 834-P can be set to automatically switch off the flow of liquid when the salt/sand auger shaft slows below a minimum speed. This feature prevents liquid from being applied when the salt/sand spreader is switched off.

Use the  or  keys to adjust this value to the shaft RPM below which the pre-wetting spray should be switched off.



SHAFT SENSOR CALIBRATION

The shaft speed sensor needs to be calibrated in order to provide the proper speed reading. The value for this step is the number of pulses generated by the shaft speed sensor in one revolution. For example, if the shaft speed sensor is mounted to sense the teeth of a sprocket, enter the number of teeth on that sprocket.

SPRAY TIP CAPACITY

Enter the combined capacity of all nozzles on the system. This should be measured in Gallons Per Minute at 40 PSI. These capacities can be obtained from the nozzle manufacturer's catalog..

Use the  or  keys to adjust this value. Once the correct units have been selected, press the  key to advance to the next step.

Example: Two 8004 nozzles would have a combined capacity of .8 GPM at 40 PSI.

POUNDS PER ROTATION

In order to apply liquid at a fixed proportion to the dry material being applied, the controller must be able to associate the amount of dry material applied with each rotation of the shaft. To determine this number, operate the dry spreader. Allow the shaft to turn several revolutions and weight the material applied. Divide the total weight by the number of shaft rotations to determine pounds per rotation (lbs/rot).

Auto-Calibration

This value can be determined by an automatic calibration sequence. To perform this operation:

- a) Push the  and  keys simultaneously. The display will show a blinking CAL.
- b) Press the  key to start calibration.
- c) Dispense exactly 100 lbs of material, then press  again to stop calibration. The controller will automatically calculate the number of lbs/rot.
- d) Press select key to accept value and conclude programming.

This concludes the programming of your 834-P for prewetting applications. The target application rate in Gallons per Ton (GPT) can be set any time the master switch is off by pressing the  or  keys.

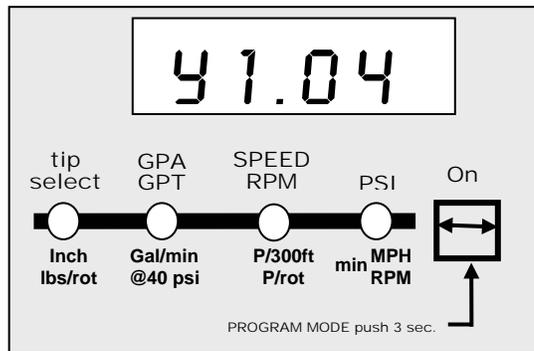
Console Programming (GPA Mode)

To begin the programming process:

Be sure the Master boom switch is “OFF.”

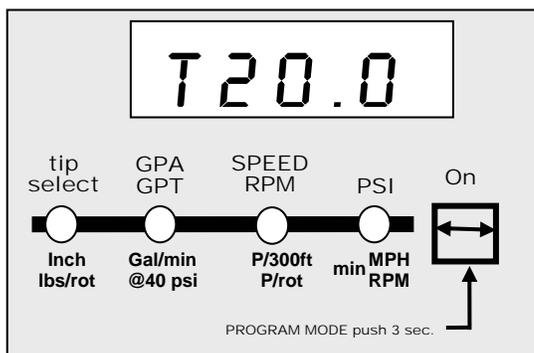
Turn console “ON” by pressing the  key. When the control console is turned on, the software version will be displayed for approximately 5 seconds. At the same time all LED’s will be ON.

The software version and serial number of the console will be needed when calling for support. The serial number is located on a sticker on the back of the console.



Example: the software version is Y1.04.

After a short time the console will change to the target application rate display.



System Setup Mode (GPA mode)

The System Setup Mode contains the programming steps that customize the console to the sprayer or sprayer components. These include calibration steps and parameters that, once programmed, are not likely to change.

To enter the System Setup Mode:

First be sure that the console is ON (if not turn it on by pressing the  key and wait until the normal display is visible).

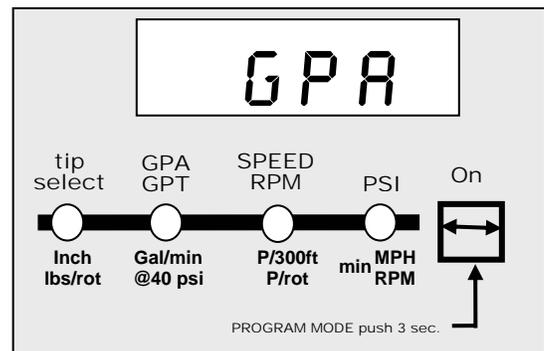
Ensure the Master boom switch is OFF.

Then press and hold the  key for 3 seconds to enter the Program Mode.

OPERATING MODE

The 834-P can operate in either of two modes. They are GPT (gallons per ton), used for pre-wetting applications, or GPA (gallons per acre) used for agricultural or anti-icing applications.

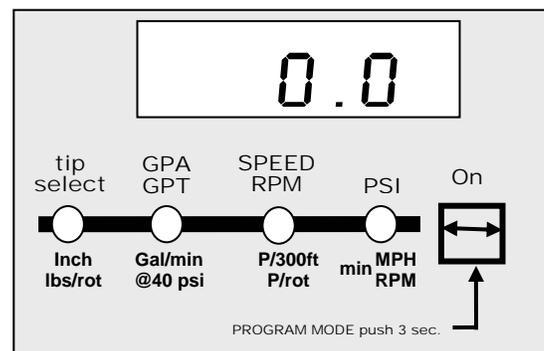
Use the  or  keys to adjust this value. Once the correct mode has been selected, press the  key to advance to the next step. If operating in GPT mode, see page 10.



MINIMUM MPH

The 834-P can be set to automatically switch off the flow of liquid when the machine slows below a minimum speed. This feature automatically prevents liquid from being applied when the machine is stopped.

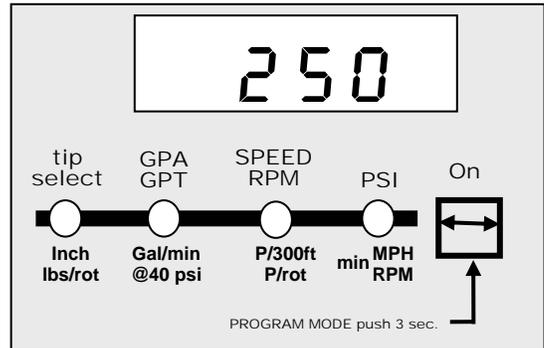
Use the  or  keys to adjust this value to the machine speed below which spray should be switched off.



SPEED SENSOR CALIBRATION

Default = 250 pulses/300ft

The speed sensor needs to be calibrated in order to provide the proper speed reading. The value for this step is the number of pulses generated by the speed sensor in 300 feet. For example, if the speed sensor is mounted to sense lug bolts on a sprayer wheel, this value would reflect the number of bolts passing the sensor over a 300 foot distance.



Auto Calibration

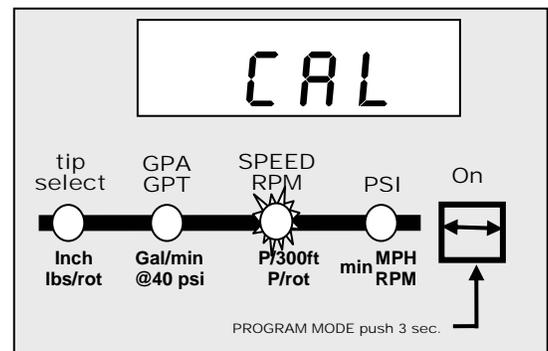
The speed sensor can be automatically calibrated by driving 300 feet. The console will automatically detect a RADAR sensor (if used).

To start the auto calibration procedure, press simultaneously on the **+** and **-** keys. The display now will show CAL.

Now you have to drive to the starting point of the 300ft distance. Push the **+** key to start counting speed pulses as you cross the start point.

Drive 300ft and press **+** again to stop the pulse counting as you cross the finish point.

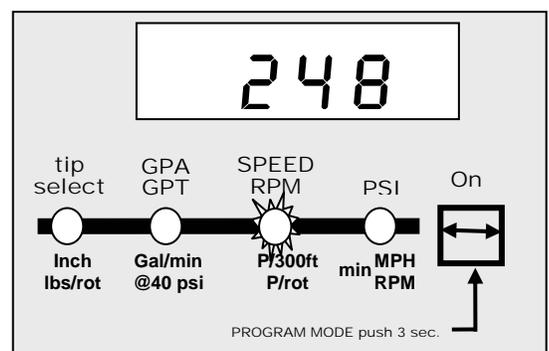
Note: During Auto Calibration the Man LED will flash.



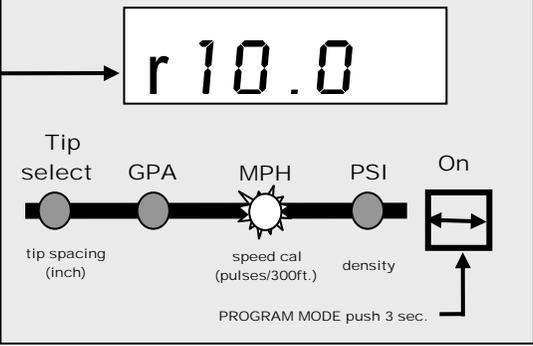
The number now on the display is the number of pulses corresponding to 300ft.

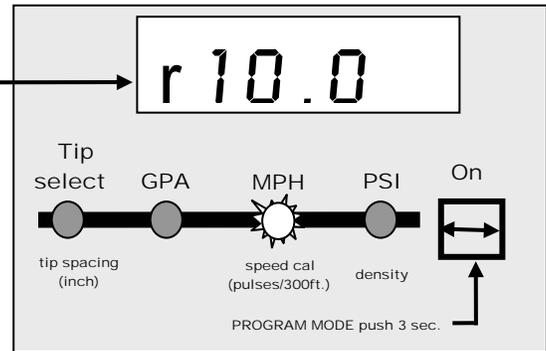
The auto calibration procedure can be escaped with the **↔** key. The console will then return to the previous calibration value.

Note: The auto speed calibration should be repeated at least twice and an average of the calibration numbers should be entered.



Radar

A radar speed sensor will be indicated with an "r" on the display e.g. . The "r" will automatically appear during the auto calibration process when the console has determined that a radar is being used. When manually entering a radar calibration number the "r" must be turned on by pushing the **Auto/Man** key. With this key you can toggle between radar or wheel sensor. The calibration value itself is adjusted with the  and  keys.



Manual Calculation

To manually calculate the proper value for Wheel Speed Sensor pulses, you need to know the circumference of the wheel to which the sensor is mounted. It can be measured by marking the tire and measuring the distance covered as that mark makes one full revolution. Then use the following formula:

$$\frac{3,600 \times \# \text{ Pulses per rotation}}{\text{Wheel Circumference In Inch}} = \text{e.g. } \frac{3,600 \times 4}{58} = 248$$

Use the  or  keys to adjust the value. Press the  key to validate the value and advance to the next programming step.

Note: The wheel calibration should be repeated if you are changing to another wheel diameter.

Simulated Speed

If you enter 0 in the speed calibration step, then the console always works with a simulated speed. This simulated speed can be used to test out the sprayer at stand still.

The simulated speed feature allows you to check out the sprayer at a certain speed without actually moving the sprayer. This can be done prior to any spraying activity. The simulated speed value can be changed with the  and  keys when the speed is shown on the display in normal working mode.

SPRAY TIP CAPACITY

Enter the combined capacity of all nozzles on the system. This should be measured in Gallons Per Minute at 40 PSI. These capacities can be obtained from the nozzle manufacturer's catalog.

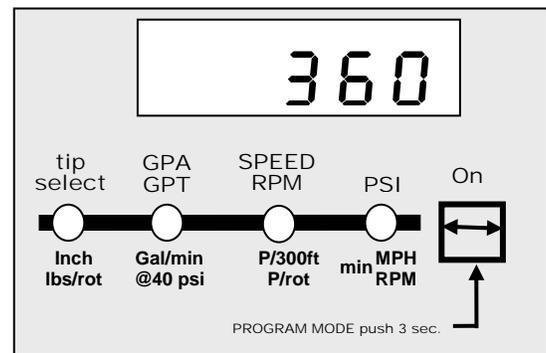
Use the or keys to adjust this value. Once the correct units have been selected, press the key to advance to the next step.

Example: Two 8004 nozzles would have a combined capacity of .8 GPM at 40 PSI.

SWATH WIDTH

Enter the total swath width of the sprayer in inches.

Use the or keys to adjust this value. Once the correct units have been selected, press the key to advance to the next step.





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