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MATRIX PRO 840GS

SETUP MANUAL

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Manual Contents

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Introduction

The following manual is designed as a quick setup and operations manual for a Matrix Pro 840GS console, tailored to work with a Norstar RS6000 Roadside Sprayer. This manual does not completely describe all of the features of the Matrix Pro 840GS console. Please see the Teejet manual for complete details.

Installation

The Matrix Pro 840GS console should be installed in the chassis cab and wired per the diagram shown on page 17.

General Settings

Power up the Matrix console. Once the Matrix completes the startup the home screen shown in Figure 1 will be displayed.

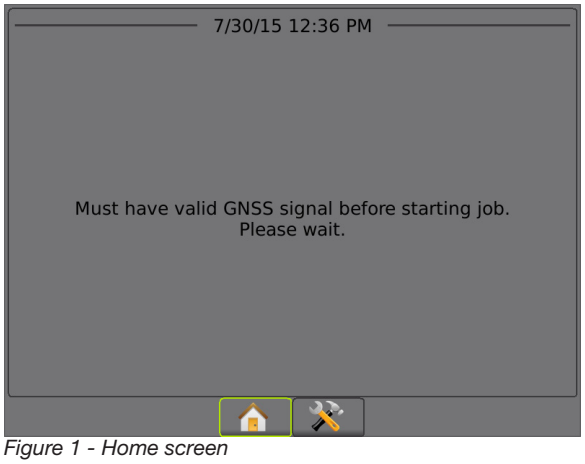


Figure 1 - Home screen

Guidance Settings

1. Press the bottom button to access the configuration screens.

2. Press the right button to access the Configuration tab.

3. Press the Guidance button to view the Guidance configuration screen, Figure 2.

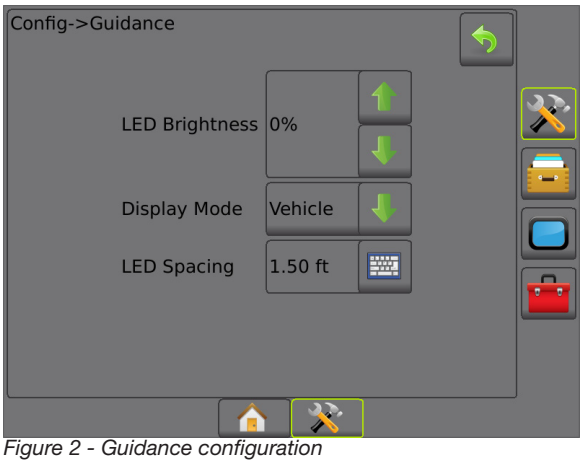


Figure 2 - Guidance configuration

4. Set the options listed in this section to the following values:

LED Brightness:	0%
Display Mode:	Vehicle
LED Spacing:	N/A - Ignore

Job Mode

1. Press the bottom button to access the configuration screens.

2. Press the button to show the Data screen, Figure 3.

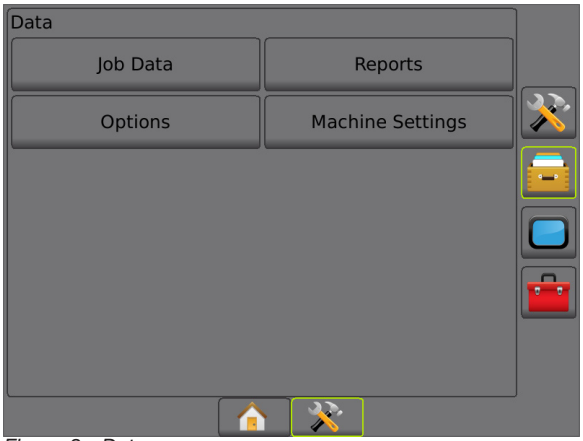


Figure 3 - Data screen

3. Press the Options button to show the Job Mode screen, Figure 4.

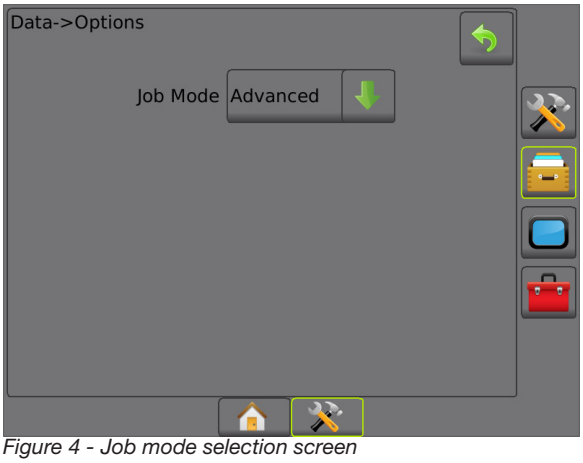


Figure 4 - Job mode selection screen

4. Press the ▼ next to the Job Mode field and select Advanced.

NOTE: *The console will display a warning that all data must be deleted to change the job mode. Press the yes button in the warning box.*

Units and Time Zone

1. Press the bottom 🔧 button to access the configuration screens.

2. Press the 🖥 button to display the console settings tab, Figure 5.

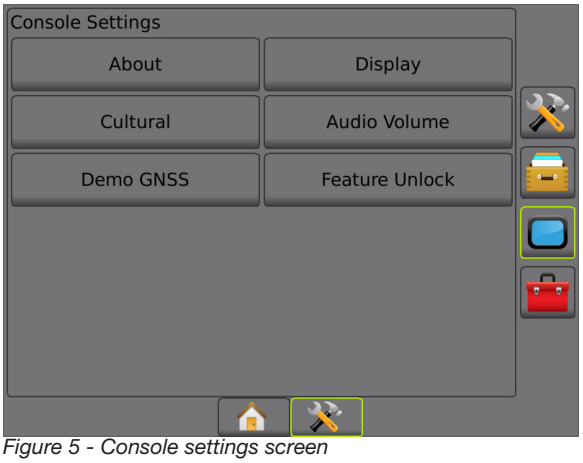


Figure 5 - Console settings screen

3. Press the Cultural button to access the cultural settings screen, Figure 6.

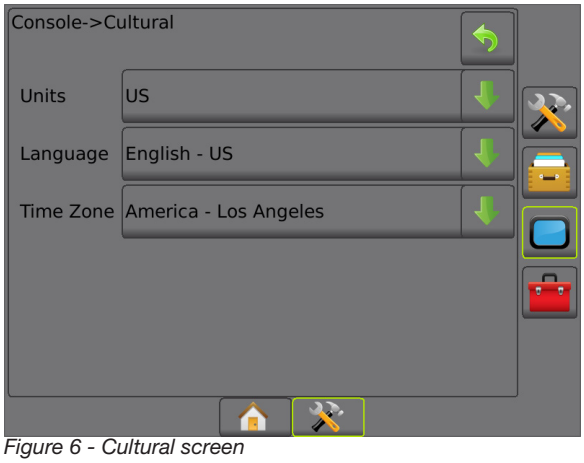


Figure 6 - Cultural screen

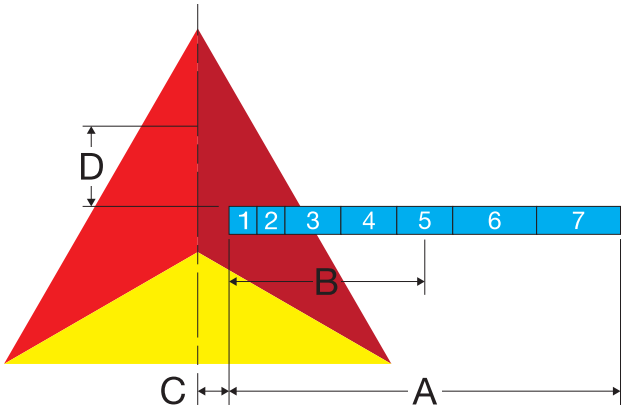
4. Set the Units, Language, and Time Zone settings to the appropriate values for you.

Implement Setup

The implement setup is used to tell the Matrix console where the sprayer physically applies product in relation to the GPS antenna.

General Considerations

In order to configure the implement you need to find a few pieces of information.



A. Full spray width of all used boom sections in feet (W_N: Width of section number N).

$$A = W_1 + W_2 + W_3 + \cdots + W_N$$

B. Distance to mid-point of full spray width in feet.

$$B = \frac{A}{2}$$

C. Lateral distance from the GPS antenna to the closest edge of the spray pattern in feet.

D. Longitudinal distance from the GPS antenna to the spray boom(s) in feet.

Using this information the boom application can be configured in the implement setting screen shown in Figure 7.

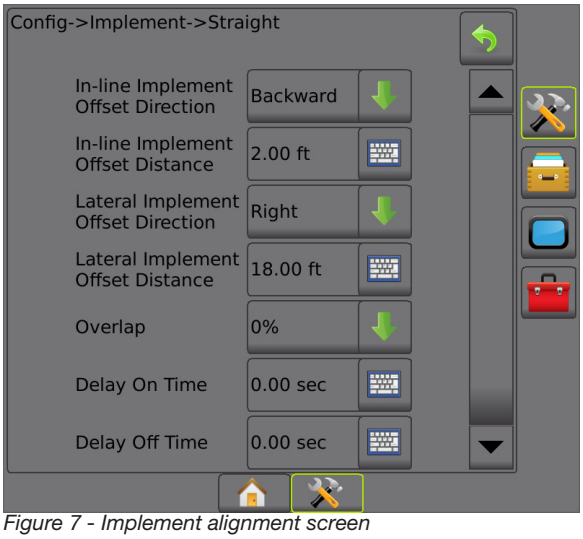


Figure 7 - Implement alignment screen

The options listed here are used to position the spray implement. Below is a description of each item.

In-line Implement Offset Direction:
Indicates the direction along the longitudinal axis of the chassis (Backward/Forward) from the GPS antenna to the spray boom.

In-line Implement Offset Distance:
The measured longitudinal distance between the GPS antenna and the spray boom, ***Dimension D***.

Lateral Implement Offset Direction:
Indicates the lateral direction (Left/Right) from the GPS antenna to the centerline of the total width of the boom sections.

Lateral Implement Offset Distance:
The measured lateral distance between the GPS antenna and centerline of the total width of the boom sections, ***Dimension B+Dimension C.***

NOTE: *Norstar's standard sprayhead pattern has a width of 28 feet (Dimension A). The distance to the mid-point of the spray section is then 14 feet (Dimension B). The GPS antenna is usually located on the centerline of the chassis so the typical distance to the first spray section is 4 feet (Dimension C). The resulting lateral offset is 18 feet (Dimension B + Dimension C).*

Overlap:
Not used, ignore.

Delay On Time:
Not used, ignore.

Delay Off Time:
Not used, ignore.

Manage Machine Settings

Due to the way the Matrix console handles boom layout configurations, all of the possible sections cannot always be configured into one profile. The Matrix can keep different spray configurations in the built-in memory. The profiles stored in the Matrix can be quickly recalled and loaded when the need arises to change spray operations.

Create New Implement Settings

Complete the necessary implement settings so it reflects the real world configuration of your sprayer.

1. Press the bottom button to access the configuration screens.

2. Press the button to display the Data screen, Figure 8

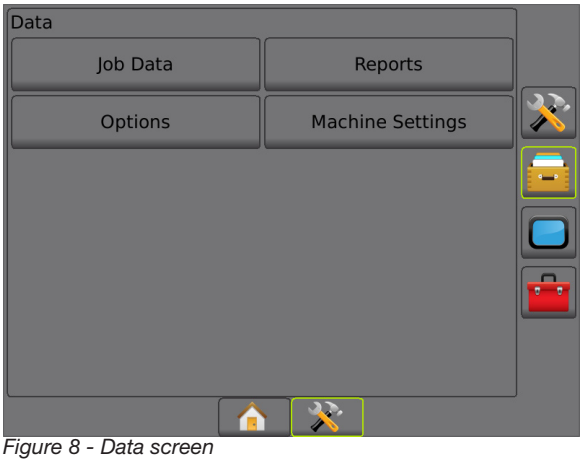


Figure 8 - Data screen

3. Press the Machine Settings button in to display the Machine Settings Screen, Figure 9.

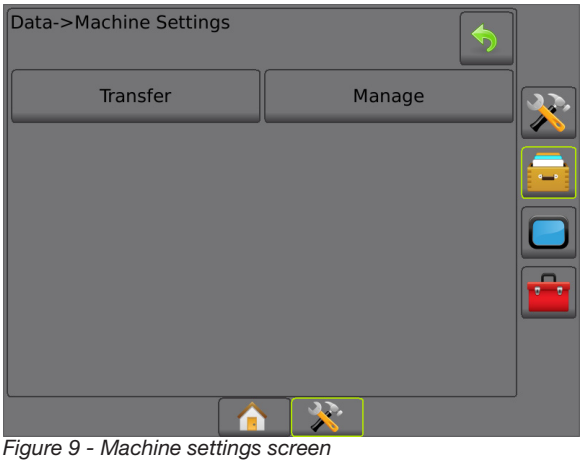


Figure 9 - Machine settings screen

4. Press the Manage button to display the Machine Settings Management screen, Figure 10.

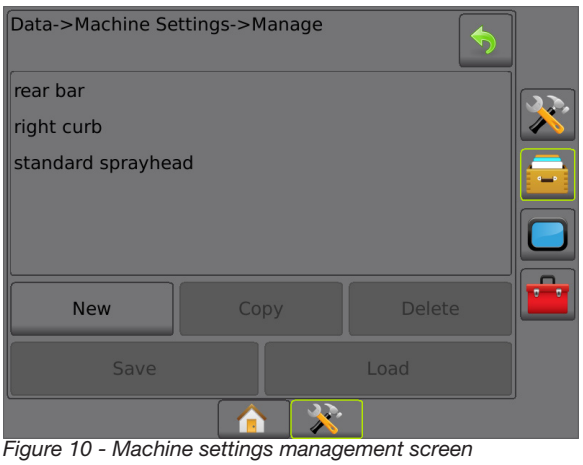


Figure 10 - Machine settings management screen

5. Press the New button.

6. Enter a memorable name for the machine settings and then press the button.

A new setting profile will be created with the current implement settings.

Load Saved Implement Settings

1. Press the bottom configuration button .

2. Press the button.

3. Press the Machine Settings button.

4. Press the Manage button.

5. Select the Machine Settings you want to load in the list box shown.

6. Press the Load button.

NOTE: *You may encounter a warning message about the AutoSteer feature. Ignore the warning and press the Yes button.*

Edit Existing Implement Settings

1. Load the desired configuration to edit.

2. Press the right button.

3. Press the Implement button.

4. Make the desired changes to the implement configuration.

5. Press the button.

6. Press the Machine Settings button.

7. Press the Manage button.

8. Select the machine settings you previously selected to edit.

9. Press the Save button.

Delete Saved Implement Settings

1. Press the bottom button.
2. Press the button.
3. Press the Machine Settings button.
4. Press the Manage button.
5. Select the machine settings you want to delete in the list box shown.
6. Press the Delete button.

Norstar Standard Configurations

The following sections describe the procedure to setup standard configurations for a Norstar RS6000 Roadside Sprayer.

7-Section Sprayhead

1. Press the bottom button to access the configuration screens.
2. Press the right button to access the Configuration tab, Figure 11.

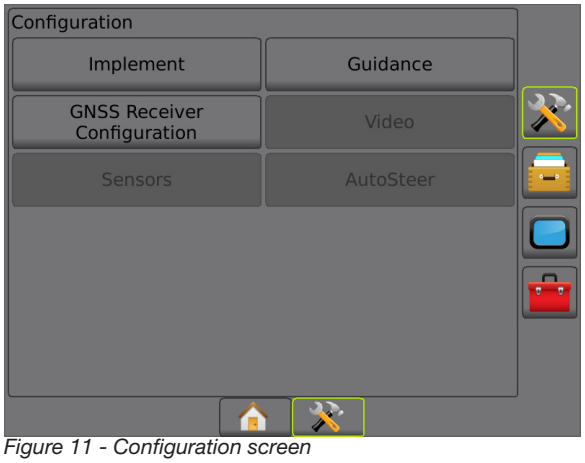


Figure 11 - Configuration screen

3. Press the Implement button to access the implement configuration, Figure 12.

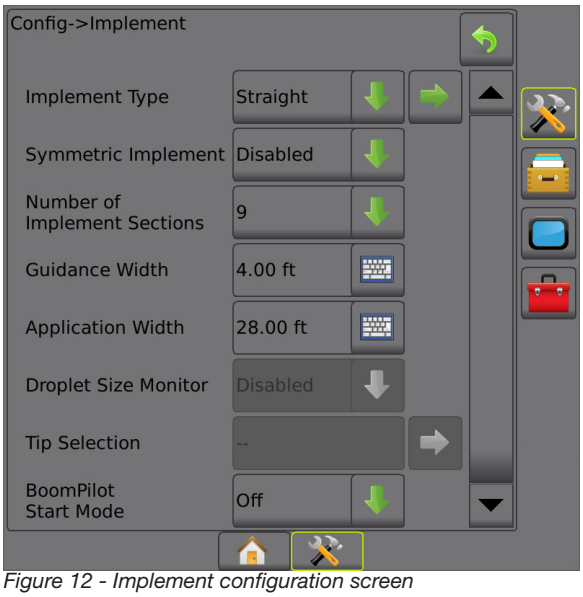
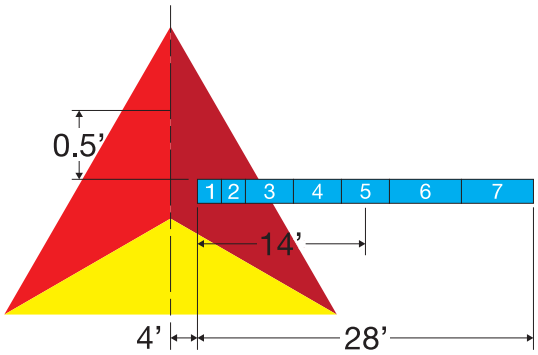


Figure 12 - Implement configuration screen

4. Set the options listed in this section to the following values:

Implement type:	Straight
Symmetric Implement:	Disabled
Implement Sections:	7
Guidance Width:	N/A - Ignore
Application Width:	See step 11
Droplet Size Monitor:	N/A - Ignore
Tip Selection:	N/A - Ignore
BoomPilot Start Mode:	N/A - Ignore



5. Press the button next to the implement type field to access the implement alignment screen, Figure 13.

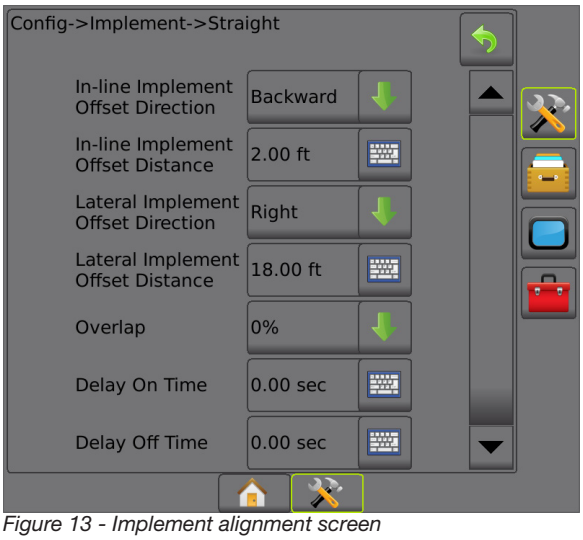


Figure 13 - Implement alignment screen

6. Press the button next to the In-line Implement Offset direction field and select Backward.

7. Press the button next to the In-line Implement Offset Distance field and enter 0.5 ft and press the button.

8. Press the button next to the Lateral Implement Offset Direction field and select Right.

9. Press the button next to the Lateral Implement Offset Distance and enter 18 ft and press the button.

10. Press the button to return to the implement configuration screen.

11. Press the button next to the application width field. The section width screen will be displayed, Figure 14.

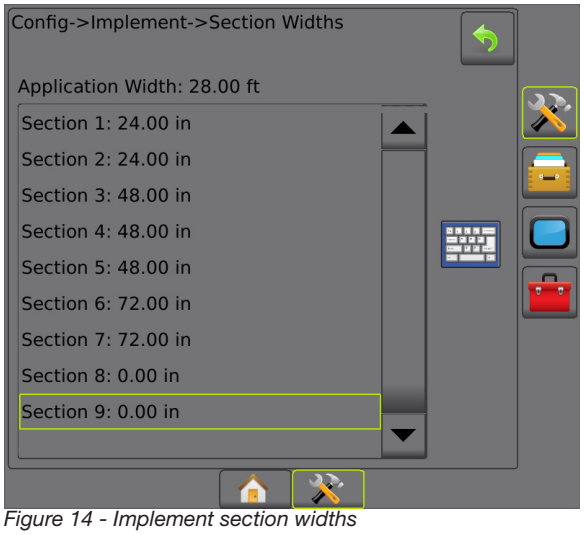


Figure 14 - Implement section widths

12. Press and highlight section 1 in the application width list box.

13. Press the button next to the list box. Type in 24 and then press the button to accept the entry.

14. Repeat steps 12 - 13 for the remaining sections, 2-7. Enter the appropriate values according to the table below.

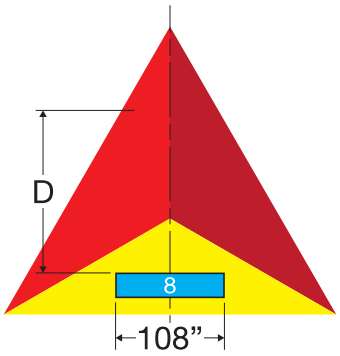
Section 1:	24	inches
Section 2:	24	inches
Section 3:	48	inches
Section 4:	48	inches
Section 5:	48	inches
Section 6:	72	inches
Section 7:	72	inches

15. Press the button to return to the Configuration screen.

Rear Spray Bar

1. Press the bottom button to access the configuration screens.
2. Press the right button to access the Configuration tab.
3. Press the Implement button to access the implement configuration.
4. Set the options listed in this section to the following values:

Implement type:	Straight
Symmetric Implement:	Enabled
Implement Sections:	15
Guidance Width:	N/A - Ignore
Application Width:	See step 10
Droplet Size Monitor:	N/A - Ignore
Tip Selection:	N/A - Ignore
BoomPilot Start Mode:	N/A - Ignore



5. Press the button next to the implement type field to access the implement alignment screen.
6. Press the button next to the In-line Implement Offset direction field and select Backward.
7. Press the button next to the In-line Implement Offset Distance field and enter the distance from the GPS antenna to the rear spray bar in feet and press the button.
8. Press the button next to the Lateral Implement Offset Distance and enter 0 ft and press the button.
9. Press the button to return to the implement configuration screen.
10. Press the button next to the application width field. The section width screen will be displayed.
11. Press and highlight section 1 in the application width list box.
12. Press the button next to the list box. Type in 0 and then press the button to accept the entry.
13. Repeat steps 11 - 12 for the remaining sections, 2 - 8. Enter the appropriate values according to the table below.

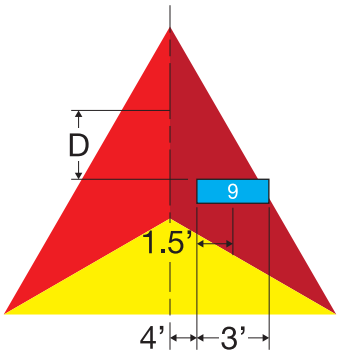
Section 1:	0 inches
Section 2:	0 inches
Section 3:	0 inches
Section 4:	0 inches
Section 5:	0 inches
Section 6:	0 inches
Section 7:	0 inches
Section 8:	108 inches

14. Press the button to return to the Configuration screen.

Drop Curb Nozzle

1. Press the bottom button to access the configuration screens.
2. Press the right button to access the Configuration tab.
3. Press the Implement button to access the implement configuration.
4. Set the options listed in this section to the following values:

Implement type:	Straight
Symmetric Implement:	Disabled
Implement Sections:	9
Guidance Width:	N/A - Ignore
Application Width:	See step 12
Droplet Size Monitor:	N/A - Ignore
Tip Selection:	N/A - Ignore
BoomPilot Start Mode:	N/A - Ignore



5. Press the button next to the implement type field to access the implement alignment screen.
6. Press the button next to the In-line Implement Offset direction field and select Backward.
7. Press the button next to the In-line Implement Offset Distance field and enter the distance from the GPS antenna to the drop curb nozzle in feet and press the button.
8. Press the button next to the Lateral Implement Offset Direction field and select Right.
9. Press the button next to the Lateral Implement Offset Distance and enter 5.5 ft and press the button.
10. Press the button to return to the implement configuration screen.
11. Press the button next to the application width field. The section width screen will be displayed.
12. Press and highlight section 1 in the application width list box.
13. Press the button next to the list box. Type in 0 and then press the button to accept the entry.
14. Repeat steps 12 - 13 for the remaining sections, 2-9. Enter the appropriate values according to the table below.

Section 1:	0 inches
Section 2:	0 inches
Section 3:	0 inches
Section 4:	0 inches
Section 5:	0 inches
Section 6:	0 inches
Section 7:	0 inches
Section 8:	0 inches
Section 9:	36 inches

15. Press the button to return to the Configuration screen.

Longshot Boom

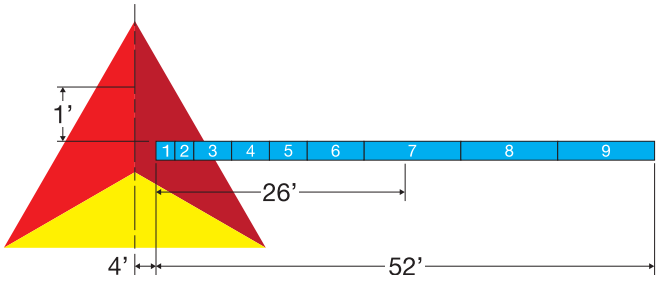
1. Press the bottom button to access the configuration screens.

2. Press the right button to access the Configuration tab.

3. Press the Implement button to access the implement configuration.

4. Set the options listed in this section to the following values:

Implement type:	Straight
Symmetric Implement:	Disabled
Implement Sections:	9
Guidance Width:	N/A - Ignore
Application Width:	See step 12
Droplet Size Monitor:	N/A - Ignore
Tip Selection:	N/A - Ignore
BoomPilot Start Mode:	N/A - Ignore



5. Press the button next to the implement type field to access the implement alignment screen.

6. Press the button next to the In-line Implement Offset direction field and select Backward.

7. Press the button next to the In-line Implement Offset Distance field and enter the distance from the GPS antenna to the Longshot boom turret in feet and press the button.

8. Press the button next to the Lateral Implement Offset Direction field and select Right.

9. Press the button next to the Lateral Implement Offset Distance and enter 26 ft and press the button.

10. Press the button to return to the implement configuration screen.

11. Press the button next to the application width field. The section width screen will be displayed.

12. Press and highlight section 1 in the application width list box.

13. Press the button next to the list box. Type in 24 and then press the button to accept the entry.

14. Repeat steps 12 - 13 for the remaining sections, 2-9. Enter the appropriate values according to the table below.

Section 1:	24 inches
Section 2:	24 inches
Section 3:	48 inches
Section 4:	48 inches
Section 5:	48 inches
Section 6:	72 inches
Section 7:	120 inches
Section 8:	120 inches
Section 9:	120 inches

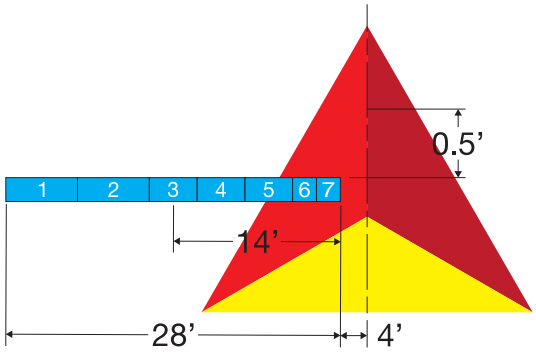
15. Press the button to return to the Configuration screen.

Left Sprayhead

NOTE: *The left sprayhead configuration requires special sense wire configuration. See "Wiring / Hookup Drawing" on page 17.*

1. Press the bottom button to access the configuration screens.
2. Press the right button to access the Configuration tab.
3. Press the Implement button to access the implement configuration.
4. Set the options listed in this section to the following values:

Implement type:	Straight
Symmetric Implement:	Disabled
Implement Sections:	7
Guidance Width:	N/A - Ignore
Application Width:	See step 12
Droplet Size Monitor:	N/A - Ignore
Tip Selection:	N/A - Ignore
BoomPilot Start Mode:	N/A - Ignore



5. Press the button next to the implement type field to access the implement alignment screen.
6. Press the button next to the In-line Implement Offset direction field and select Backward.
7. Press the button next to the In-line Implement Offset Distance field and enter the distance from the GPS antenna to the sprayhead in feet and press the button.
8. Press the button next to the Lateral Implement Offset Direction field and select Left.
9. Press the button next to the Lateral Implement Offset Distance and enter 14 ft and press the button.
10. Press the button to return to the implement configuration screen.
11. Press the button next to the application width field. The section width screen will be displayed.
12. Press and highlight section 1 in the application width list box.
13. Press the button next to the list box. Type in 72 and then press the button to accept the entry.
14. Repeat steps 12 - 13 for the remaining sections, 2-7. Enter the appropriate values according to the table below.

Section 1:	72 inches
Section 2:	72 inches
Section 3:	48 inches
Section 4:	48 inches
Section 5:	48 inches
Section 6:	24 inches
Section 7:	24 inches

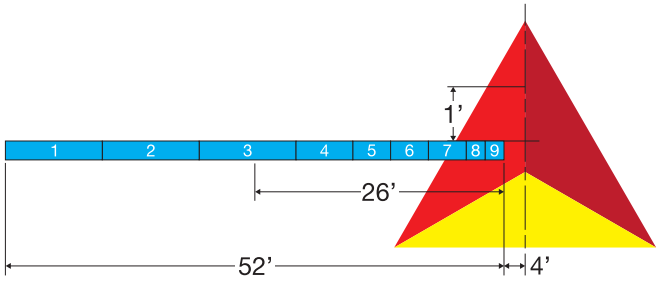
15. Press the button to return to the Configuration screen.

Left Longshot Boom

NOTE: *The left s prayhead configuration requires special sense wire configuration. See “Wiring / Hookup Drawing” on page 17.*

1. Press the bottom button to access the configuration screens.
2. Press the right button to access the Configuration tab.
3. Press the Implement button to access the implement configuration.
4. Set the options listed in this section to the following values:

Implement type:	Straight
Symmetric Implement:	Disabled
Implement Sections:	9
Guidance Width:	N/A - Ignore
Application Width:	See step 12
Droplet Size Monitor:	N/A - Ignore
Tip Selection:	N/A - Ignore
BoomPilot Start Mode:	N/A - Ignore



5. Press the button next to the implement type field to access the implement alignment screen.
6. Press the button next to the In-line Implement Offset direction field and select Backward.
7. Press the button next to the In-line Implement Offset Distance field and enter the distance from the GPS antenna to the center of the Longshot turret in feet and press the button.
8. Press the button next to the Lateral Implement Offset Direction field and select Left.
9. Press the button next to the Lateral Implement Offset Distance and enter 26 ft and press the button.
10. Press the button to return to the implement configuration screen.
11. Press the button next to the application width field. The section width screen will be displayed.
12. Press and highlight section 1 in the application width list box.
13. Press the button next to the list box. Type in 120 and then press the button to accept the entry.
14. Repeat steps 12 - 13 for the remaining sections, 2-9. Enter the appropriate values according to the table below.

Section 1:	120 inches
Section 2:	120 inches
Section 3:	120 inches
Section 4:	72 inches
Section 5:	48 inches
Section 6:	48 inches
Section 7:	48 inches
Section 8:	24 inches

Section 9: 24 inches

15. Press the button to return to the Configuration screen.

Start Up

When you first power up the Matrix you will see the screen shown in Figure 15. Once the Matrix has acquired a GPS signal you will see the screen shown in Figure 16 and be able to create a new job or continue an existing job.

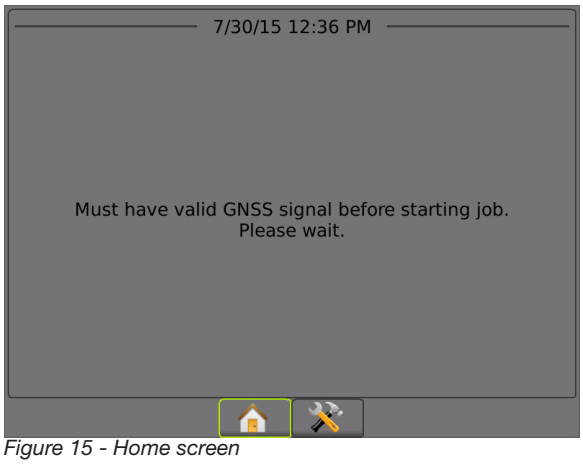


Figure 15 - Home screen

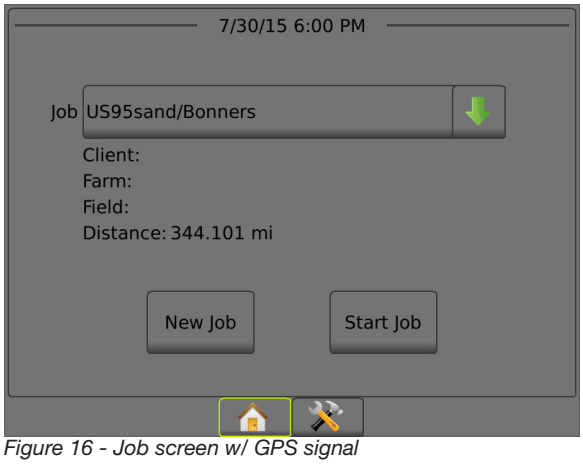


Figure 16 - Job screen w/ GPS signal

Create A New Job

1. Click the New Job button.

2. The Matrix will ask if you would like it to automatically generate the session name.

   If you answer yes it will use the current date and time for the session name.

   If you answer no you will be prompted with an on-screen keyboard to enter your own custom name.

3. Once satisfied with the custom name press the button and the job will load and start.

Continue An Existing Job

1. Press the button to display the list of jobs in the console memory.

2. Select the job you would like to continue.

3. Once the job is selected press the Start Job button and the selected job will load and continue.

Once the job has been started you will be presented with the Vehicle View Guidance screen, Figure 17. Start normal spray operations and the Matrix will record where you spray.

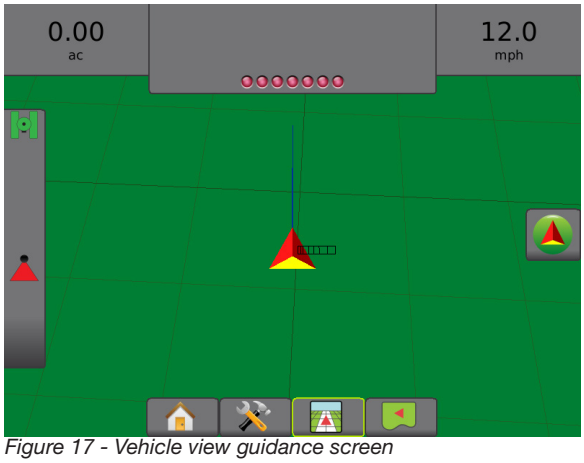


Figure 17 - Vehicle view guidance screen

Finishing A Job

When finished with your spray operation:

1. Press the button at the bottom of the screen. You will see the home screen shown in Figure 18.

2. Press the Close Job button. You will be asked if you would like to create a report.

NOTE: *A USB memory stick must be plugged into the Matrix to generate a report.*

If you answer yes a dialog box with the available report types will be presented for you to select. If you answer no the report is skipped, you still will be able to create a report later.

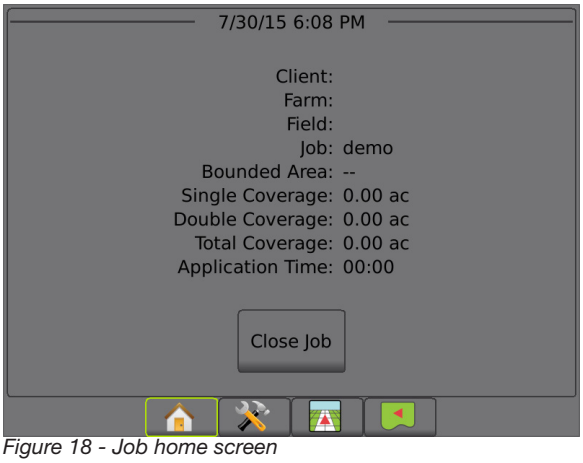


Figure 18 - Job home screen

The Matrix will then be ready to start a new job or continue an existing job.

Generate Reports

1. Plug a USB drive in the side port of the Matrix console.

2. From the home screen press the bottom button.

3. Press the button.

4. Press the Reports button. You will see the reports screen as shown in Figure 19.

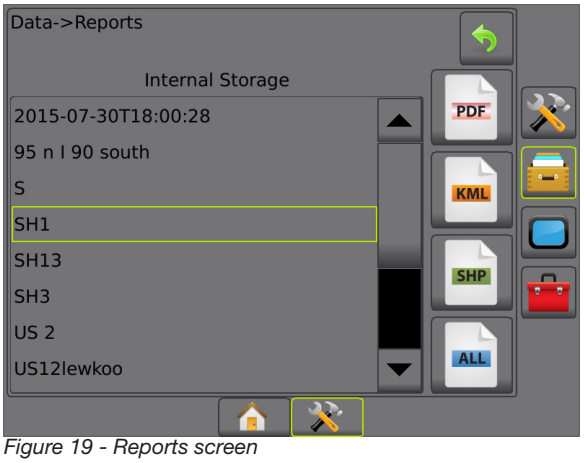


Figure 19 - Reports screen

5. Select the job from the list that you would like to generate a report for.

6. Once the job is selected press the button of the report type(s) you want to generate.

   PDF: Generates a PDF document that lists basic session information. A sample report is shown on page 18

   KML: Generates a KML file which can be viewed in Google Earth.

   SHP: Generates ESRI shape file(s) that can be imported into commercial GIS systems.

   ALL: All above report types will be generated on the USB drive.

NOTE: *A USB memory stick must be plugged into the Matrix to generate a report.*

Transfer Job Data

The Job Data Transfer screen will allow you to copy Jobs from the internal memory to a USB drive. Jobs can be copied back to the internal memory to create reports as needed.

1. From the home screen press the bottom button.
2. Press the button on the right side of the screen.
3. Press the Job Data button to show the Job Data screen, Figure 20.

Figure 20 - Job data screen

4. Press the Transfer button to show the Job Data Transfer screen, Figure 21.

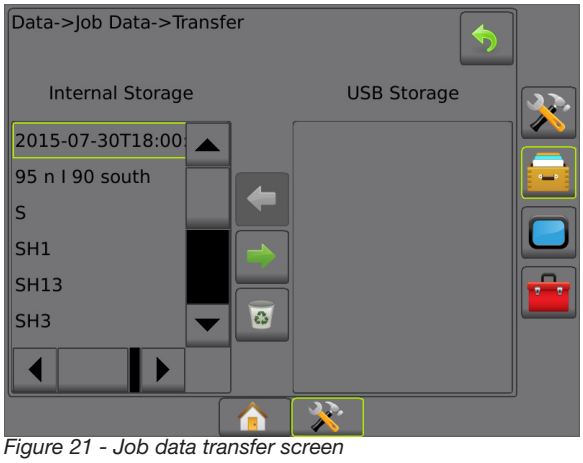


Figure 21 - Job data transfer screen

5. Select a job listed on either the Internal Storage or USB storage list boxes.
6. Press the appropriate arrow button to transfer the job to the other storage location.

Check Console Storage

1. Press the bottom button .
2. Press the button on the right side of the screen.
3. Press the About button do display the About screen shown in Figure 22.

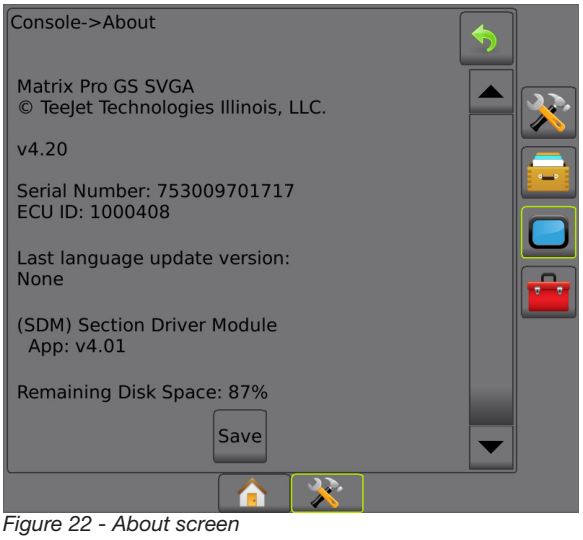


Figure 22 - About screen

4. Scroll to the bottom of the About window and the remaining disk space will be displayed as a percentage.

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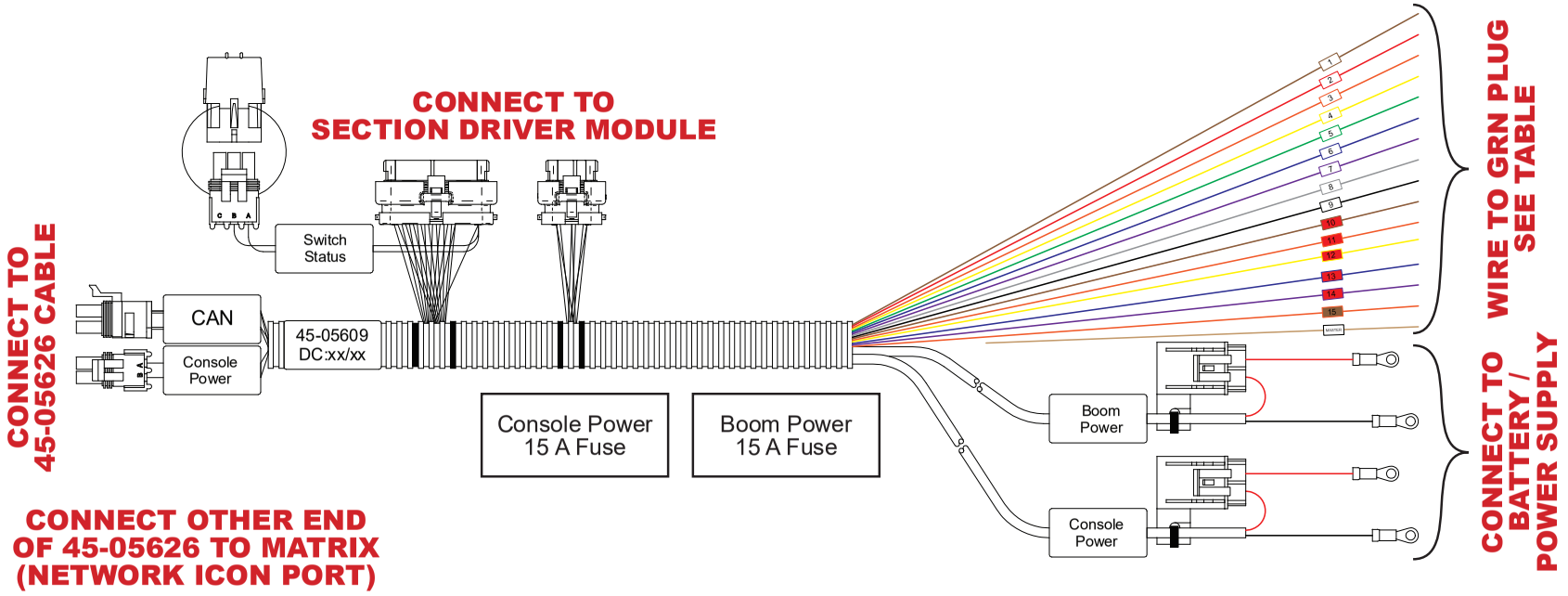
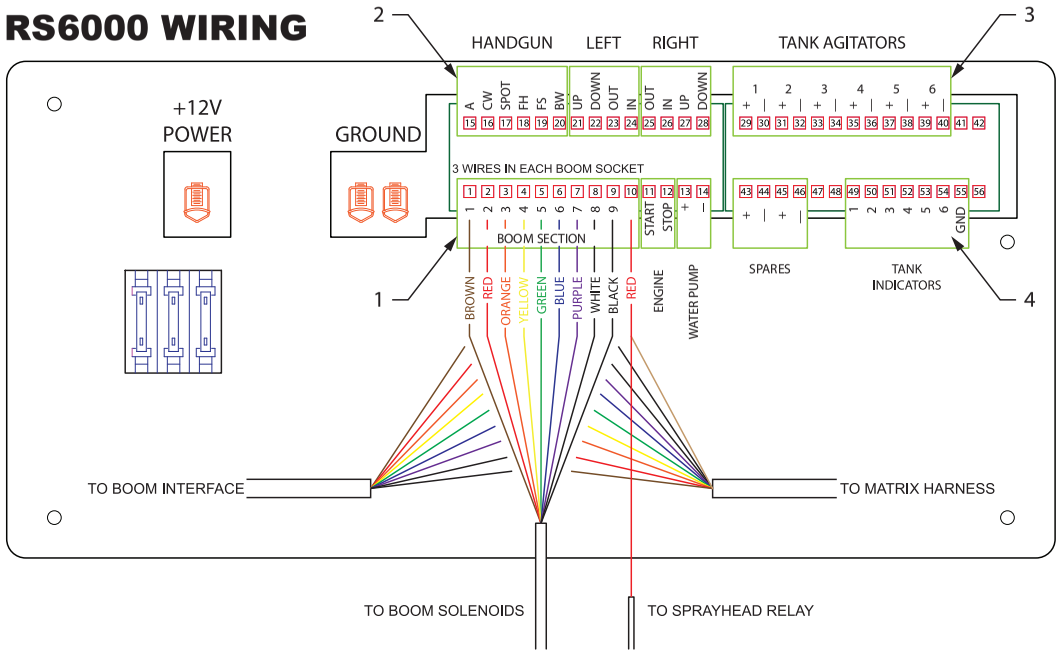
DO NOT USE 45-05765 MATRIX SPEED CABLE



RS6000 WIRING



SECTION	45-05626 HARNESS COLOR RIGHT SPRAYHEAD	45-05626 HARNESS COLOR LEFT SPRAYHEAD	RS6000 COLOR
1	BRN	WHT	BRN
2	RED	GRY	RED
3	ORG	PUR	ORG
4	YEL	BLU	YEL
5	GRN	GRN	GRN
6	BLU	YEL	BLU
7	PUR	ORG	PUR
8	GRY	RED	WHT
9	WHT	BRN	BLK
10	BRN/RED		-
11	ORG/RED		-
12	YEL/RED		-
13	BLU/RED		-
14	PUR/RED		-
15	ORG/BRN		-
MASTER	TAN		RED

Sample PDF Report

TeeJet® TECHNOLOGIES

Application Report

Report Created: 7/30/15 at 6:09 PM

Customer	Applicator	Supervisor
Client:		
Farm:		
Field:		
Job: Demo		

Application Statistics		
Start Date: 7/30/15	Total Run Time: 1.4 (minutes)	Implement Width: 28.00 (ft)
Start Time: 6:07 PM	Total Application Time: 1.0 (minutes)	Area of Boundary:
End Date: 7/30/15	Latitude: 46	Applied Area / hr: 15.0 (ac/hr)
End Time: 6:09 PM	Longitude: -109.996	Area Applied: 0.2 (ac)

Product Name	EPA Reg#	Area Applied	Total Amount	Accumulated Distance
		0.2 (ac)		

Weather	Crop	Soil Conditions
Wind Speed:	Name:	Moisture:
Wind Direction:	Growth:	Texture:
Temp/Humidity:		Tillage:
Sky:		Condition:

Additional Notes

Coverage Map