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Operation Guide



Cruizer II™
(Software Version 2.2)

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Kit Contents



Cruizer II Console
(P/N 063-0173-090)



RAM Mount Arm
(P/N 103-0159-011)



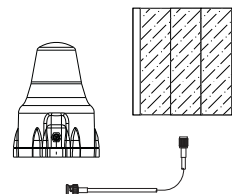
Accessory Power Cable
(P/N 420-1011-008)

AND EITHER:



Patch Antenna
(P/N 063-0172-101)

OR



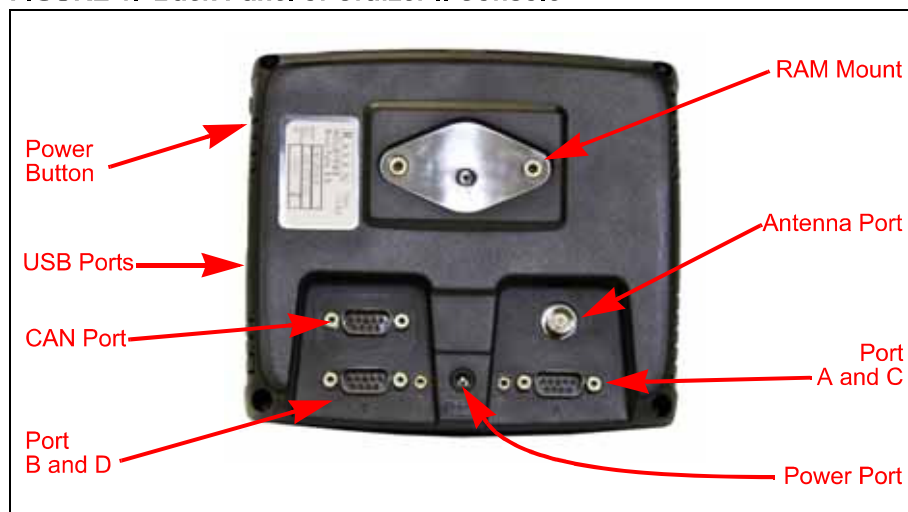
Helix Antenna, Cable,
and Mounting Plate
(P/N 117-0171-141)

Overview

The Cruiser II™ guidance system offers advanced guidance with an easy-to-use touch screen. In addition, the Cruiser II simulates radar for speed-compensated applications and supplies Differential GPS data to other controllers or optional systems. The Cruiser II may be used with:

- Raven SmarTrax™ or SmartSteer™ automated steering control systems.
- Raven TM-1™ Tilt Module for tilt-corrected guidance.
- Raven automatic section control products such as AccuBoom™, SmartBoom™, AccuRow™, and SmartRow™.

FIGURE 1. Back Panel of Cruiser II Console



Warning: Cruiser II consoles with P/N 063-0173-090 are NOT weather resistant.

This manual is designed for use with Cruiser software version 2.2. Updates for Raven manuals are available at the Applied Technology Division website:

www.ravenprecision.com/Support/index2.jsp

Sign up for e-mail alerts to receive notification when updates for Raven products are available on the Raven website.

Care and Maintenance

- Harsh chemicals may damage the touch screen. Clean the touch screen and console exterior as needed with a soft cloth dampened with glass cleaner. Apply the cleaner to the cloth and then wipe the screen gently.
- To avoid scratching the touch screen, do not use any type of sharp instrument. Only a fingertip or an approved stylus should be used.
- Do not expose the Cruiser II console to precipitation, condensation, or other liquids. Store the console in a dry environment when not in use.

- The suction cup is not meant as a permanent mounting solution. It is recommended that the suction mount only be used when the console is in operation. Clean the mounting surface with alcohol or a similar cleaner prior to attaching the suction mount. Clean the mounting surface and suction cup periodically.

Warning: Raven Industries is not liable for damage to the Cruiser II console, or any other in cab items, due to failure of the suction mount.

- Route cables to prevent tripping hazards and to keep wires from pinching or breaking.
- When temperatures are expected to be 10° F (-12° C) or lower, remove the console from the vehicle and store it in a climate controlled environment.
- Even when powered down, the Cruiser II console will draw a small amount of power from the vehicle battery. If the machine will not be in operation for an extended period of time, disconnect the power cable from the back of the console.

Installation

1. Mount the antenna on the centerline of the tallest point of the vehicle (usually on the top of the cab) using the magnetic mount. Make sure that the antenna has a clear, 360° view of the sky. If the mounting location is not metallic, use a mounting plate (supplied with helix style antenna) to mount the antenna.
2. Route the antenna cable to the back of the Cruiser II console and connect it to the antenna port.
3. Connect the power cable to the power port on the Cruiser II and plug the adaptor into the vehicle accessory port or cigarette lighter socket.

Warning: Do not cut off accessory plug or modify the power cable in any way. The accessory plug offers fuse protection. Modification of any of the supplied parts could result in injury or death.

4. Using the RAM mount arm, mount the Cruiser II inside the cab to a clean surface.

For additional cabling and connection assistance, see the **System Connection Diagrams** section on page 23. Additional system diagrams are available on the Raven website:



<http://www.ravenprecision.com/Support/ApplicationDrawings>

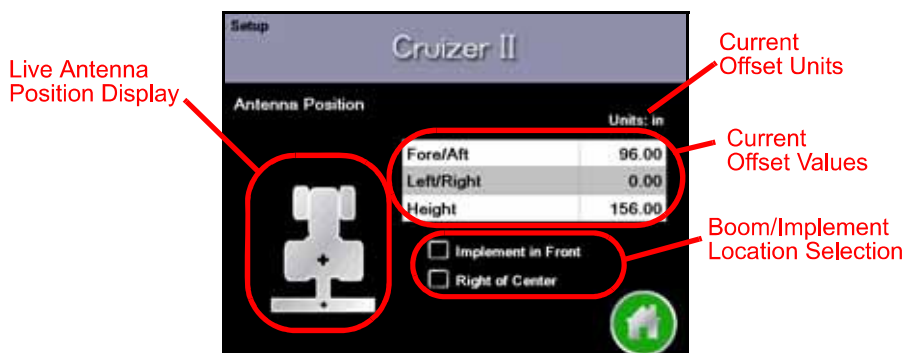
Note: Throughout this manual, certain words are either in **blue** or **bolded**. The **blue** words are references to section headings or the Raven website. Refer to these sources for more information. The **bolded** words are names of Cruiser II icons.

Initial Startup

The first time that the console is powered up, a Setup Wizard will step through the initial setup and calibration. The Setup Wizard helps with the configuration process and is only required the first time the Cruiser II is started. Any settings selected or calibration values entered in the Setup Wizard may be adjusted at any time via the **Tools Menu**. See the **Tools Menu** section on page 14 for more information.

Note: If the touch screen does not properly power up, refer to the **Troubleshooting** section on page 21.

1. On the first screen, select the language and display units. Select either U.S. (inches) or Metric (meters). Touch **Next**  to accept the displayed settings and to advance to Width Setup screen.
2. Use the displayed keypad to enter the overall implement, equipment, or boom width in the units selected on the previous screen. Touch **Next**  to accept the displayed selection and to advance to the Antenna Position screen.



Use the Antenna Position screen to set the position of the GPS antenna with respect to the center of the boom or implement width.

The left side of the Antenna Position screen displays a visual reference of the location of the boom or implement and DGPS antenna. After the antenna offsets are programmed, the antenna position display should show a general representation of the actual machine configuration.

To set the Antenna Position offsets, touch the desired offset value and use the on-screen keypad to enter the new value.

The following offset values may be modified on the Antenna Position screen:


- **Fore/Aft** - The fore/aft offset is the distance of the boom or implement in front or behind the GPS antenna.

Note: The fore/aft offset must be measured perpendicular to the boom or implement width.

- **Left/Right** - The left/right offset is the distance from the GPS antenna to the center line of the boom or implement.

Note: The left/right offset must be measured parallel to the boom or implement width.

- **Height** - Touch this area and use the on-screen keypad to enter the height (in inches or centimeters) of the DGPS antenna above ground. This value is only required if terrain compensation or a tilt correction device is used with the Cruiser II console.

3. Touch **Home**  to complete the Initial Setup Wizard and view the Home screen.

Home Screen

The version of firmware currently loaded on the Cruiser II console is displayed in the upper, right corner of the **Home Screen**.



Touch the following icons displayed on the **Home Screen** to:



Start Job - Begins a new job or return to the guidance screen for a job already in progress.



Tools Menu - Accesses the **Tools Menu**. The **Tools Menu** is only available from the **Home Screen**.



Shutdown - Powers down the Cruiser II console. The Shutdown icon is displayed each time the console is powered up or when Guidance is not active. Shutdown the console before toggling the power switch off.



End Job - Ends the open job. If Guidance is running, the End Job icon appears on the **Home Screen**.

GPS Status Icon - When the following icon appears:



DGPS is O.K.



(Flashing yellow/red) GPS is initializing.



Cruizer II has encountered a DGPS warning condition.



No DGPS position is available.

Optional Shields - Refer to the operation manual for the optional system or feature for information regarding these products.



Steering Shield



Applicator or Planter Shield



Note: Arrows (→) within the following sections indicate a series of icons that must be selected to complete the procedure.


Starting Guidance

After completing the initial setup, the Cruiser II may be used to provide Guidance.

Note: Settings may need to be adjusted within the [Tools Menu](#) before proceeding with an actual guidance application. See the [Tools Menu](#) section on page 14 for more information.

Start a New Job

1. From the [Home Screen](#), touch **Start Job** .
2. To begin a new job with a clear coverage map, select the **New Job** option and touch **Next**  to continue.

Note: Touch **Cancel**  at any time to return to the [Home Screen](#) without beginning the job.

3. Cruiser II displays the following Guidance Pattern options:



Last Pass - Uses previously applied or covered areas to provide guidance. Last Pass provides guidance around curves and within irregular field areas (implement history must be turned on).

Note: An applied area must be present from a previous swath before Cruiser II will display the next guidance path in Last Pass mode.



Straight (A-B) Mode - Allows the operator to select a starting (A) point and an ending (B) point or heading angle through which Cruiser II draws a straight line as the guidance path. Subsequent guidance paths will be parallel to the initial A-B line. Check the "Load Line" box to reload the previous straight A-B line.



Pivot - Allows the operator to set an A and B point through which Cruiser II draws a circular guidance path. While in Pivot mode, Cruiser II provides guidance paths from the outside of the pattern toward the center in increments of the programmed width.



Fixed Contour - Allows the operator to record an irregular curved A-B line pattern. Subsequent guidance paths will be based upon the initial contour path.

4. Select the Guidance Pattern best suited for the field and application or touch the "Load Job Features" button to use a saved guidance path and/or field boundary from a previous job.
5. If a guidance pattern is selected, the Cruiser II **Guidance Screen** is displayed.
6. If the "Load Job Features" button is selected, the **Load Job Features** screen displays a list of the saved guidance features with the age and coverage area of each job as well as the distance from the current vehicle location to the saved feature.





Note: Touch the red 'x' displayed at the right of the feature distance to delete the job. The job coverage map as well as the saved job feature will be deleted.


Touch the desired job feature to use with the new job file and touch

Next to display the Cruiser **Guidance Screen**.

Resume a Saved Job

1. From the **Home Screen**, touch **Start Job** .
2. To open the job with coverage history and guidance information from the last job opened on the Cruiser II console, select the **Resume** option and touch **Next** .

Note: The Guidance Pattern used during the previous job will be used when the job is reopened. To use a different Guidance Pattern, a new job must be started.


Touch **Cancel**  to return to the **Home Screen** without starting the job.

3. The **Resume Job** screen displays a list of jobs saved on the Cruiser II console or a USB flash drive connected to the USB ports on the console.



To help identify saved jobs, the **Resume Job** screen displays the age and coverage area of each job as well as the distance from the current vehicle location to the saved job.

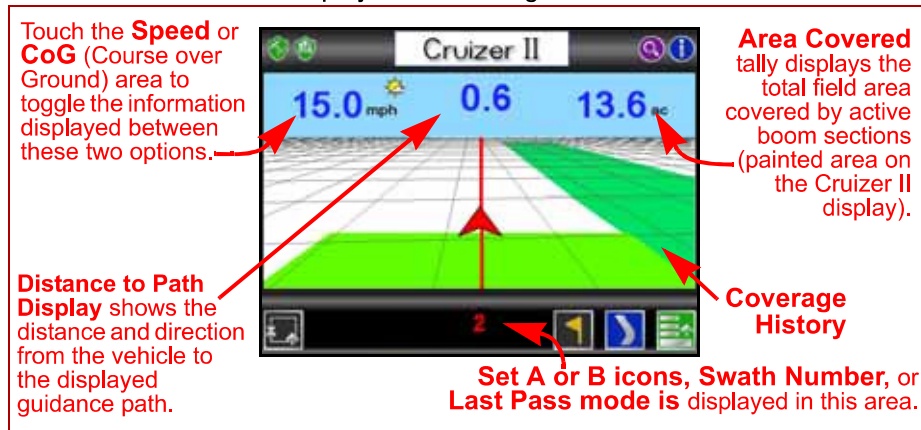
Note: Touch the red 'x' displayed at the right of the distance to delete the job. The job coverage map as well as and saved guidance features will be deleted.

4. Touch the desired job feature to use with the new job file and touch **Next**  to display the Cruiser **Guidance Screen**.













Guidance Screen

Once a Pattern is selected for the job, the **Guidance Screen** is displayed on the Cruiser II touch screen.

The **Guidance Screen** displays the following information:





The following icons are available from the **Guidance Screen** to access different features or tools during an active job.

-  **GPS Status** - Touch the GPS status icon to view the GPS Status screen.
-  or  **History** - Touch either of these icons to start or stop recording coverage history.
-  or  **Day or Night** - Touch the day or night icon to switch between Day or Night display mode.
-  **Information** - Touch to view a brief explanation of the icons displayed or accessible on the **Guidance Screen**.
-  **Zoom** - Zooms in each time it is pressed until maximum zoom is reached then zooms out.
-  **Menu** - Touch to access other guidance views, available path tools, or return to the Cruiser II **Home Screen**.
-  **Field Markers** - Touch the icon to place a field marker at the current vehicle location. Refer to the **Field Markers** section on page 13 for more information.
-  or  **Alternate Guidance** - Touch the alternate guidance pattern icon to toggle to the displayed pattern.
-  **Boundary Mapping Menu** - Select this icon to access available boundary mapping tools.

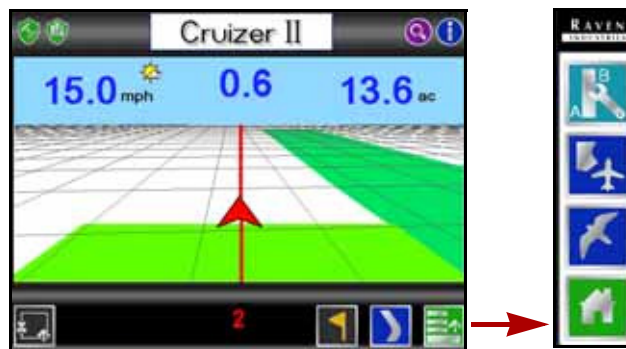
To Start A-B Guidance:

Touch **Set A**  once to set the first point at the current vehicle location.

Touch the **Set by Heading**  or drive to the swath end point and press **Set B**  to set the second point. To set a 'B' point by heading, enter a value between 0 (due north) and 359 (180 is due south).

Menu

Touch the **Menu** icon to access other guidance views, available path tools, or return to the Cruiser II **Home Screen**.



Home Screen - Touch to return to the Cruiser II **Home Screen**.

Guidance Screen Modes



3-D View - Displays a down field view of the vehicle position.



2-D View - Displays a bird's eye view of the vehicle position.



Field Review Mode - Displays an overview of field coverage. This mode may be used to view areas away from the current vehicle position.

A-B Tools:



A-B Line Tools - Select this icon to access the available A-B line tools and features. This icon is only displayed when an A-B line is set.



Reset A-B Line - Clear the displayed A-B line. Touch this icon to set a new Guidance path.



Recalibrate A-B Line - Adjust the displayed A-B line to the current vehicle location.





Nudge A-B Line - Touch these icons to nudge the A-B line to the left or right in 1 inch [2 cm] increments. This feature especially useful when used with an automated steering system to adjust the guidance path for actual field conditions.




Recording a Field Boundary









Recording a field boundary allows the operator to define the field area. Once a field boundary is completed, the Cruiser II displays the shape of the field and will also calculate the total acreage within the field boundary.

To record a field boundary:

1. Begin with the vehicle stopped at the beginning of the field boundary.
2. From the [Home Screen](#), touch **Start Guidance** .
3. Select **New Job** to start a new coverage map or select **Resume** to add to an existing coverage map. Touch **Next**  to continue.
4. If **Clear History** is selected, choose a pattern to use during the job. See the [Starting Guidance](#) section on page 6 for a detailed description of patterns.



5. Next, touch **Boundary Mapping Menu**   and **Record** .
6. Begin driving along the desired field boundary. Cruiser II will record the field boundary path according to the vehicle position.

7. While recording, touch **Boundary Mapping Menu**  to access the **Pause** , **Stop**  and **Reset**  boundary icons.
8. While Recording a field boundary, touch **Pause**  to pause recording of a field boundary.
This feature is useful when refilling tanks or when the vehicle path is not part of the boundary. When paused, touch the **Boundary Mapping Menu**  button and select **Record**  to resume recording the boundary.
9. Touch **Stop**  when ready to complete the field boundary.

Note: The Cruiser II automatically completes the field boundary if the vehicle returns to within one boom width of the starting point.





Field Area Display

After completing a field boundary, the Cruiser II displays the calculated total field area in either the lower panel of the Field Review Screen or by opening the **Boundary Mapping Menu**.




Other Field Review Mode Icons

The following icons and features may be used while operating in the Field Review Mode:


- **Touch the Zoom**   icons to zoom in or out in the Field Review Mode.
- The **Pan Lock**  feature automatically scrolls the Field Review display to follow the vehicle indicator as it moves off of the screen. To enable the Pan Lock feature, touch the **Pan**  icon until the Pan Lock icon is displayed.

Field Markers


While a job is in progress, **Field Markers** may be added to locate things such as well heads, rock piles or other points of interest. During the application, Cruiser II will display the distance between each marker and the current vehicle location.

To place a field marker, touch the **Marker**  at the bottom of the screen. Cruiser II will set a field marker at the current vehicle location.

Moving Markers

To move a marker, touch the base of the marker and select **Move** . Touch the desired location for the marker to place the marker in the new location.

Delete Markers

To delete a marker, touch the base of the marker and select **Delete** . The marker will be removed.





Ending a Job

Use the following steps to end a Job:

1. Touch **Menu**  → **Home**  → **End Job** .
2. To save a report for the job, see the **Coverage Maps** section on page 18.

Powering Down the Cruiser II

Use the following steps to power down and shut off the Cruiser II. From the **Home Screen**:

1. Touch the **End Job**  icon if a job is in progress.
2. Select **Shut Down**  → and **Accept** .
3. Select the **Accept**  icon again to power down the Cruiser II.

Standby Mode

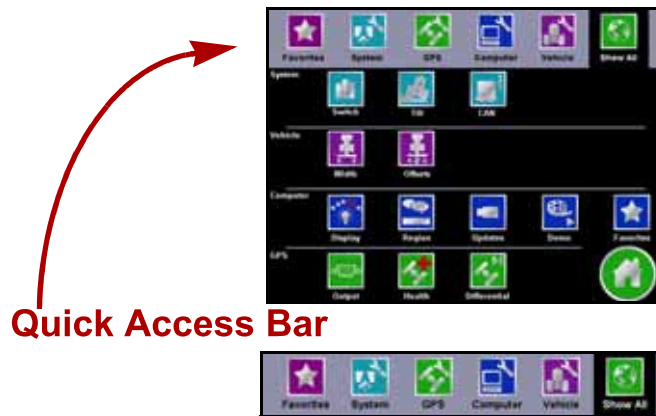
Use the standby mode to conserve power for short periods such as breaks or refilling tanks. This mode allows the operator to quickly resume a job in progress without shutting down the Cruiser II console.

Momentarily press the power button to set the console to standby mode and switch the Cruiser II display off. Press the power button again to toggle the display back on and resume the Cruiser II system.

Note: Cruiser II will resume and will be ready for use again in approximately 15 seconds.

When the Cruiser II is restarted from this state, it may take several seconds to reinitialize GPS reception. Verify that the GPS status indicator displays **GPS O.K.**  before resuming application.

Tools Menu



Quick Access Bar

While viewing the **Tools Menu**, the Quick Access Bar remains at the top of the screen and allows quick access the **Favorites**, **System**, **GPS**, **Computer**, and **Vehicle** menus. Touch the **Show All** icon to view all menus within the **Tools Menu**.

The following pages offer descriptions of each menu found within the **Tools Menu**.

Favorites





Favorites Icon - Refer to the **Favorites Menu** section on page 16 to set up the **Favorites Menu**.


System



Switch - Select the source for toggling history on or off. Install and connect the optional external switch wire to a source of +12V power to utilize the **Hardware** setting.

If **Touch Screen** is selected, touching  or  on the **Guidance Screen** will toggle coverage history recording On or Off.



Tilt - The Tilt icon is only displayed if an optional TM-1 Tilt Module is connected to the console. Select the Tilt icon to setup and calibrate the TM-1 Tilt Module. Touch the **Information**  icon for detailed information for this feature.

Note: The baud rate for Port B must be set to 19200 to allow Cruizer II to communicate with the TM-1. See the **Baud Rate Settings** section on page 19 for information on other configurations with SmarTrax.



CAN - If the Cruiser II console is connected to a CANbus system, touch the CAN icon to review CAN diagnostic information such as firmware version of connected nodes. CAN communication and node addresses may also be reset on this screen. See the [CAN Diagnostics](#) section on page 20 for more information.



AccuBoom or AccuRow - The icons for these optional systems will be displayed in the System menu if the Cruiser II console detects the proper hardware connected to the CANbus system. For more information on operation of these systems on using Cruiser II, refer to the *AccuBoom or AccuRow for Cruiser II Consoles Operation Guide*.

Vehicle



Width - Set the guidance width (width of boom or implement). Cruiser II uses this setting, along with the selected guidance pattern, to determine the displayed guidance path.



Offsets - Select the Offsets icon to set the position of the GPS antenna with respect to the center of the boom or implement.

Computer



Display - Select the mode (Day or Night) for the [Guidance Screen](#) display. Use the Screen and Lights slider to adjust the brightness of the touch screen and built-in light bar LED's. Use the Light Bar slider in the lower section of the Display screen to adjust the desired LED indicator sensitivity. See the [Display](#) section on page 17 for more information about the built-in light bar settings.



Region - Select the language and units displayed by Cruiser II during operation.



Updates - The Updates screen allows the operator to:

- Select a software update stored on a connected USB drive to load on the Cruiser II console.
- Enter an authorization code for the e-Dif or L-Dif correction signal.
- Enable or disable Coverage Map Outputs. See the [Coverage Maps](#) section on page 18 for details.
- Select and authorize the operating region for the Cruiser II console.



Demo - While in Demo Mode, the [Guidance Screen](#) and [Tools Menu](#) may be displayed in a simulation mode without receiving a DGPS signal. For actual jobs, make sure the Demo Mode is Off before beginning the job.



Favorites - Select frequently viewed configuration screens for quick and easy access.

GPS



GPS Output - The GPS Output screen displays available output messages and the current output rates for each message. Baud rate settings for Port A and B are also accessed via this screen. See the [Baud Rate Settings](#) section on page 19 for details.

Set all output messages to zero if connecting an optional SmarTrax, SmartSteer or TM-1 system to the Cruiser II using the recommended cables shown in the [System Connection Diagrams](#) section on page 23.



Health - Displays DGPS signal and status information. Touch a point shown in the satellite constellation display to view signal information for each satellite currently used by the Cruiser II.



Differential - Select the differential satellite PRN for GPS guidance. If an e-Dif or L-Dif authorization code has been entered, the operator may select the desired correction source for use with the Cruiser II guidance system.

Favorites Menu

The [Favorites Menu](#) allows the operator to select frequently used tools for easy access during operations. Once set up, Cruiser II will display the [Favorites Menu](#) when the [Tools Menu](#) icon is selected.

To setup the [Favorites Menu](#):

1. From the [Home Screen](#), select

[Tools Menu](#)  → [Computer](#)  → [Favorites Menu](#) .

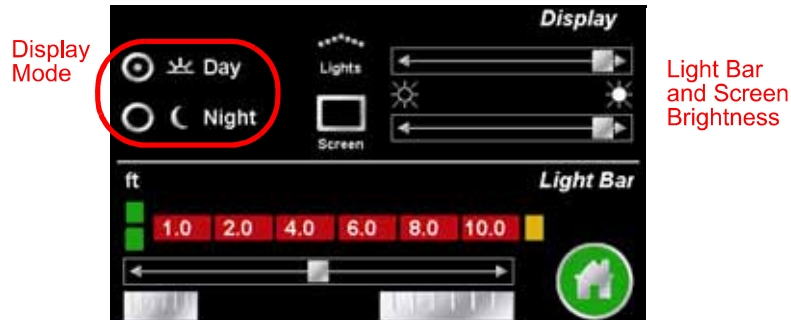
2. On the Organize Favorites screen, select a category to view available tools screens.



3. In the Favorites area, select the tools screen to display within the [Favorites Menu](#).

Display

During a job, the built-in light bar indicates the distance and direction to the current guidance path.



1. From the **Home Screen**, select:

Tools Menu  → **Computer**  → **Display** .

2. Select the **Day** or **Night** mode for the **Guidance Screen** display.
3. Use the **Lights** and **Screen** sliders to adjust the brightness of the touch screen and built-in light bar LED's.
4. Adjust the Light Bar slider in the lower section of the Display screen to set the light bar sensitivity. Select one of the following available sensitivities:

- Fine



- Medium



- Coarse



The lower-center **green** LED illuminates when receiving a DGPS signal.

The upper-center **green** LED illuminates when guidance is in progress and the vehicle is on the currently displayed guidance path. See the **Starting Guidance** section on page 6 to begin guidance.

If an optional SmarTrax system has been installed, the outside **orange** LEDs will illuminate when the SmarTrax system is engaged.

Coverage Maps

The coverage map for the job currently stored on the console may be saved to a flash drive which may then be transferred to a home or office PC. When output of coverage map files is enabled, maps are saved to a flash drive inserted in the USB port on the side of the Cruiser II console.

Enabling Coverage Map Output

To setup output of coverage map files:

1. From the **Home Screen**, select:

Tools Menu  → **Computer**  → **Updates** .

2. Select the desired “Coverage” output format (.bmp, .shp or .kml) from the list on the left of the screen. Below are definitions of the different formats:
 - Bitmap, or .bmp files, can be opened on nearly any computer without special software.
 - The shapefile format requires specialized software to view the coverage map on a home or office PC. Shapefiles consist of three separate files, each with the same name. The .shp, .shx and .dbf files created for each report are essential for the shapefile format to function correctly.
 - The .kml file is an XML grammar and file format that can be opened with software like Google Earth®.
3. After selecting the desired output format, touch ‘**On**’ to the right. Once an output format is turned on, Cruiser II will automatically output the coverage map in the selected formats when the job ends.

Coverage Map Output


Coverage maps may be transferred to a flash drive either:

- At the end of a job on the **Home Screen**.
- When the **New Job** option is selected while setting up a new job.

To save the coverage map files, insert a USB drive when prompted and select

Accept .

Note: If a USB drive is inserted prior to ending or clearing a job, the Coverage Map data automatically saves to the USB drive.

To cancel transfer of a coverage map, select **Cancel** . Cruiser II will continue with the operation, but the coverage map files will not be transferred to the USB flash drive.

Baud Rate Settings

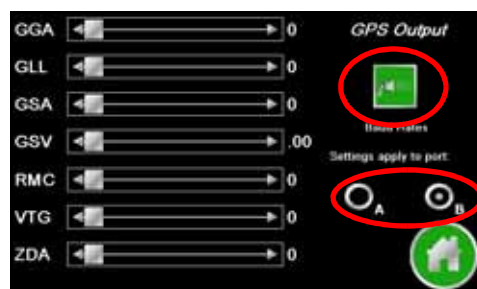
Baud rate settings allow the Cruiser II console to communicate with other equipment such as steering, section control or DGPS systems or components.

1. From the **Home Screen**, select:

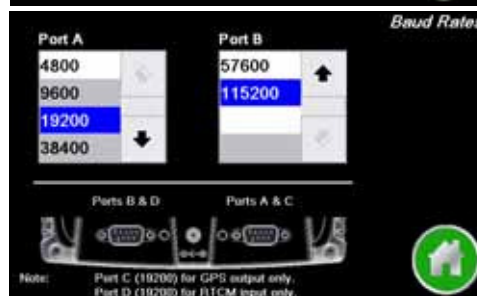
Tools Menu  → **GPS**  → **Output** .

2. When connecting the products listed below, ensure that the appropriate port is selected and all **messages are set to zero**.

| Product | Port |
|---|--------|
| SmartBoom/SmartRow | A or B |
| TM-1 Tilt Sensor | B |
| SmarTrax (software version 4.1 or older) | B |
| Steering Node | B |



3. Touch **Baud Rates** .



4. Use the following table to enter the correct baud rate settings for each port.

| Product | Port A | Port B |
|--|--------|-----------------------|
| TM-1 Tilt Sensor | ----- | 19200 |
| SmarTrax (software version 3.2 or older) | ----- | 38400 Recommended |
| SmarTrax (software versions 4.0 or newer) | ----- | 115200 Recommended |
| Steering Node | 115200 | 115200 |
| SmartBoom/SmartRow ^a | 19200 | 19200 |

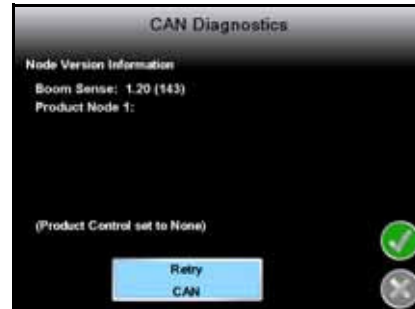
a. SmartBoom and SmartRow will forward the GGA and VTG messages a 5 Hz when initializing the connection.

CAN Diagnostics

If the Cruiser II console is connected to a Raven CANbus system, the **CAN Diagnostics** screen displays information about CAN nodes detected by the Cruiser II console.

Retry CAN

If the Cruiser II does not detect specific nodes, or if a “No CAN Communication” message is displayed on the **CAN Diagnostics** screen, troubleshoot the node(s) and touch the **Retry CAN** button to re-initialize CAN communication.







Updates

Software updates for the Cruiser II console are available periodically on the Raven website:

<http://www.ravenprecision.com/Support/Software/>






To download the latest version of Cruiser II software, unzip or extract the download to a flash drive.

Note: Cruiser II will not locate the update files if the files are moved on the flash drive. Un-zip the files to the root directory (X:\ where X represents the letter of the flash drive), making sure to preserve the directory structure of the zipped archive.

1. With the console powered on, insert a flash drive into the USB port on the Cruiser II console.
2. From the **Home Screen**, select:
Tools Menu  → **Computer**  → **Updates** .
3. Select the desired update from the list and touch .
4. Allow the Cruiser II to apply the software update before restarting the console to complete the update procedure.

Troubleshooting

The following information addresses some potential issues which may be encountered with the Cruiser II guidance system.

| Issue | Solution |
|---|--|
| Touch screen does not properly power up or does not respond to touch | <ul style="list-style-type: none"> • Turn the Cruiser II console power off, wait a few seconds and turn the power back on. When the Cruiser II logo appears, touch the screen to start the recalibration process. Follow the instructions on the screen. After the last mark appears, double tap the screen to accept the touch screen configuration. • Press and hold the power button for 5 seconds to power off the Cruiser II console. Restart the console and retry touch commands. |
| Cruizer II does not start up when powered on | <ul style="list-style-type: none"> • Ensure +12V DC to the Cruiser II console. If the Cruiser II turns on, but does not start-up properly or has a partially blank screen, ensure that voltage to the Cruiser II system is at least +9.5V DC and no greater than +15V DC. • The LED on the Accessory Power Adaptor Plug should be lit green when inserted. If the LED is not lit, check that the plug is fully inserted in the machine's accessory port or cigarette lighter. Check the fuse in the Adaptor Plug and replace if necessary. |
| No GPS (yellow or red status) | <ul style="list-style-type: none"> • Check the antenna cable connection on the Cruiser II console and antenna. Tighten any loose connections. • Check the antenna port on the back of the Cruiser II console for a 5V signal (use the metal surround of the antenna port as ground). If a helix style antenna is used, connect the antenna cable and test voltage at the antenna end using the same procedure. • Ensure that the antenna has a clear 360° view of the sky. The machine should not be inside or near buildings, trees, and other objects that may interfere with reception. |
| Unauthorized Region error | <ul style="list-style-type: none"> • Cruiser II consoles must be authorized for the region of operation (North/South Americas, Europe, Asia, Africa or Australia). Contact a local Raven dealer if the console is not authorized for the correct region. |
| Screen does not record path history | <ul style="list-style-type: none"> • When a boom toggle switch is being used, verify that Hardware is checked, by selecting Tools Menu  → System  → Switch  . • If a boom toggle switch is not being used, touch  or  to toggle the history recording On and Off. |
| Field boundary recording never finishes or when finished, is not the shape of the field | <ul style="list-style-type: none"> • After beginning the recording of a field boundary, press stop to complete the boundary or drive back to the boundary starting point. • If stop is pressed beyond one boom length from the end of the boundary, the field boundary will auto complete in a straight line from the boundary start to the current location. |
| TM-1 not recognized | <ul style="list-style-type: none"> • Check Port Settings. • Refer to the Baud Rate Settings section on page 19. • Refer to Tilt on page 12. |

CANbus Troubleshooting

| Issue | Possible Cause | Solution |
|-------------------------------------|--|---|
| CANbus cannot read the product node | The node is not connected to the CANbus | •Connect the node and re-initialize the console to read the product node. |
| | Node is not properly powered | •Connect the clean power - 16 gauge red wire and high current power - 12 gauge red wire from the product node to a 12V DC power source that is capable of supplying power to all nodes connected to the CANbus system. |
| | Node is not properly grounded | •Connect the clean ground - 16 gauge white wire and the high current ground - 12 gauge white wire to a good, quality ground source. Raven recommends grounding the wires to the negative terminal of the battery. |
| | The boom/speed node share power and ground connections | •Make sure that each node has a separate power and ground connection. |
| | CANbus ends not terminated | •Make sure that both ends of the CANbus system are properly terminated. |
| | Corroded pins in CANbus connections | •Check CANbus cable connectors for any highly corroded pins. •Ensure dielectric grease has been applied to all cable connections exposed to weather and field conditions. |
| | Moisture in connection | •Check CANbus cable connectors for any corroded pins. •Ensure dielectric grease has been applied to all cable connections exposed to weather and field conditions. |
| | Connectors not seated properly | •Check that all CANbus cable connectors are inserted fully (until the locking tab is engaged). •Be sure to remove any moisture in connections which were not properly seated. Check for corroded pins and apply dielectric grease when reconnecting CANbus cables. |

<http://www.ravenprecision.com/Support/ApplicationDrawings>

FIGURE 2. Cruiser II with SmartSteer 3D

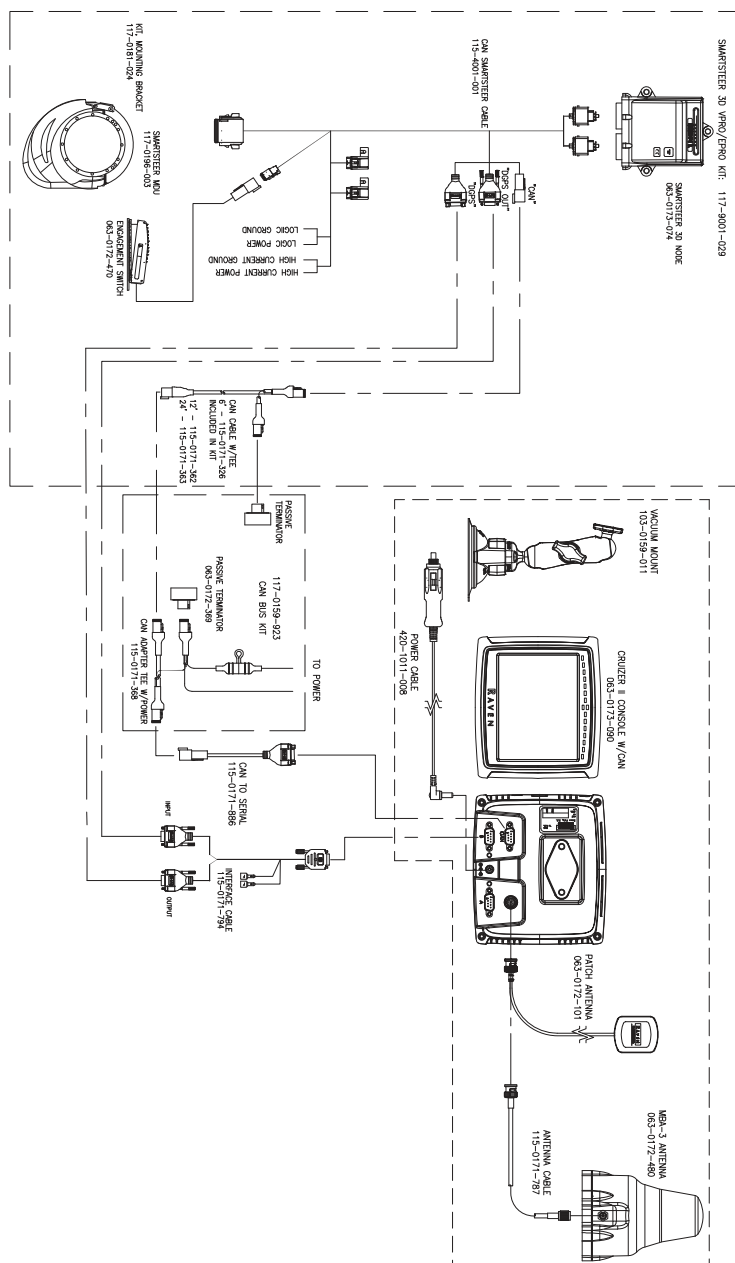
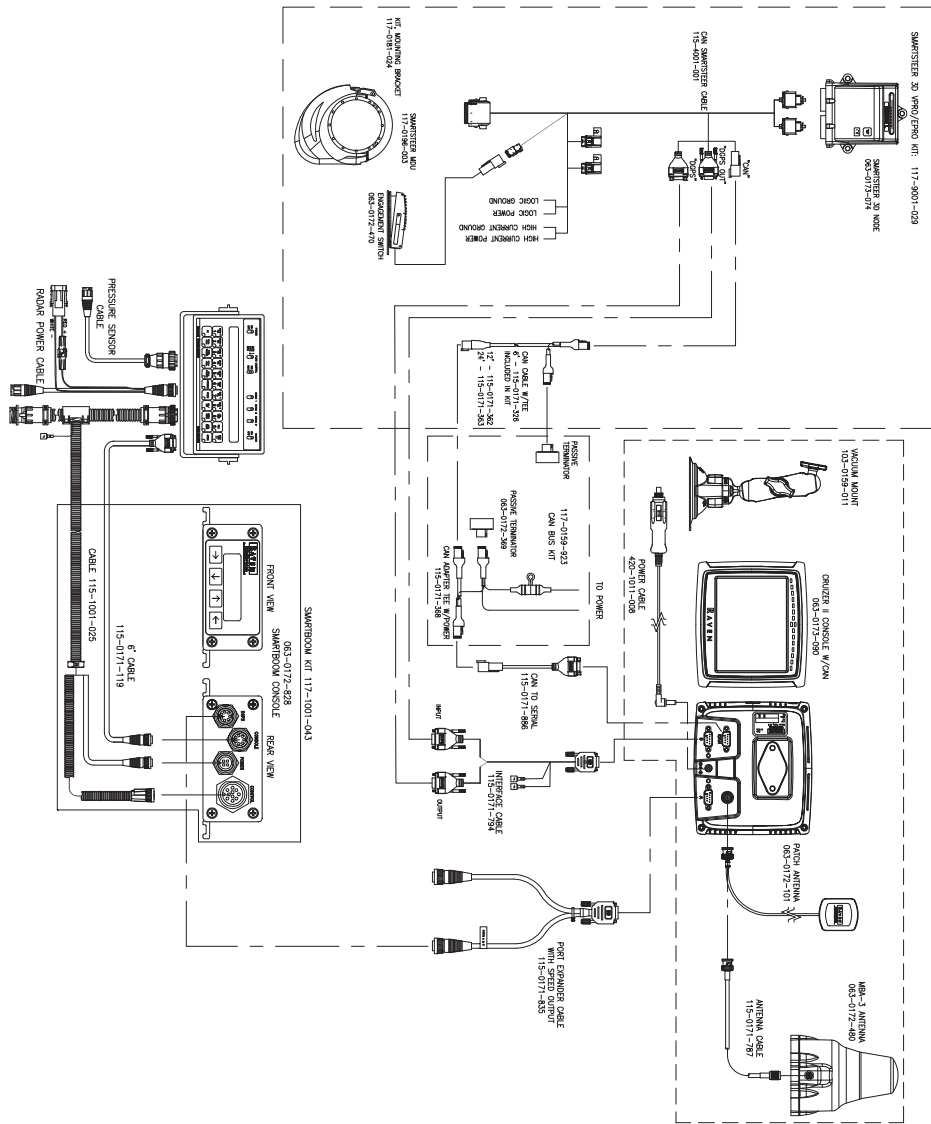


FIGURE 3. Cruiser II with SmartSteer 3D, SmartBoom and SCS 440



R A V E N

RAVEN INDUSTRIES

Limited Warranty

What Does this Warranty Cover?

This warranty covers all defects in workmanship or materials in your Raven Applied Technology Division product under normal use, maintenance, and service.

How Long is the Coverage Period?

Raven Applied Technology Division products are covered by this warranty for 12 months after the date of purchase. This warranty coverage applies only to the original owner and is nontransferable.

How Can I Get Service?

Bring the defective part and proof of purchase to your Raven dealer. If your dealer agrees with the warranty claim, the dealer will send the part and proof of purchase to their distributor or to Raven Industries for final approval.

What Will Raven Industries Do?

Upon confirmation of the warranty claim, Raven Industries will, at our discretion, repair or replace the defective part and pay for return freight.

What is not Covered by this Warranty?

Raven Industries will not assume any expense or liability for repairs made outside our facilities without written consent. Raven Industries is not responsible for damage to any associated equipment or products and will not be liable for loss of profit or other special damages. The obligation of this warranty is in lieu of all other warranties, expressed or implied, and no person or organization is authorized to assume any liability for Raven Industries.

Damages caused by normal wear and tear, misuse, abuse, neglect, accident, or improper installation and maintenance are not covered by this warranty.



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Cruizer II™
(Software Version 2.2)
Operation Guide
(P/N 016-0171-415 Rev B 11/10 E16870)



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