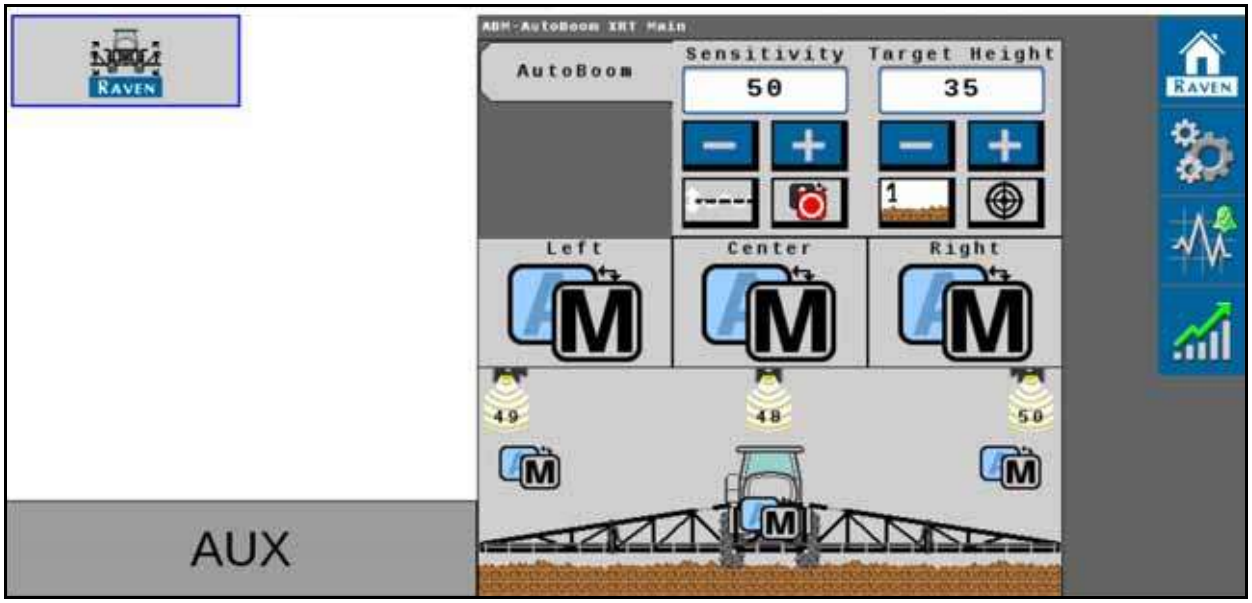
CHAPTER 3 AUTOBOOM XRT HOME SCREEN AND OPERATION

UT OPERATION

Pressing the **UT** widget on the run screen will open the UT interface. From this screen it is possible to adjust machine settings, view diagnostic information, and adjust **Sensitivity** and **Target Height**.

FIGURE 1. UT Run Screen Interface

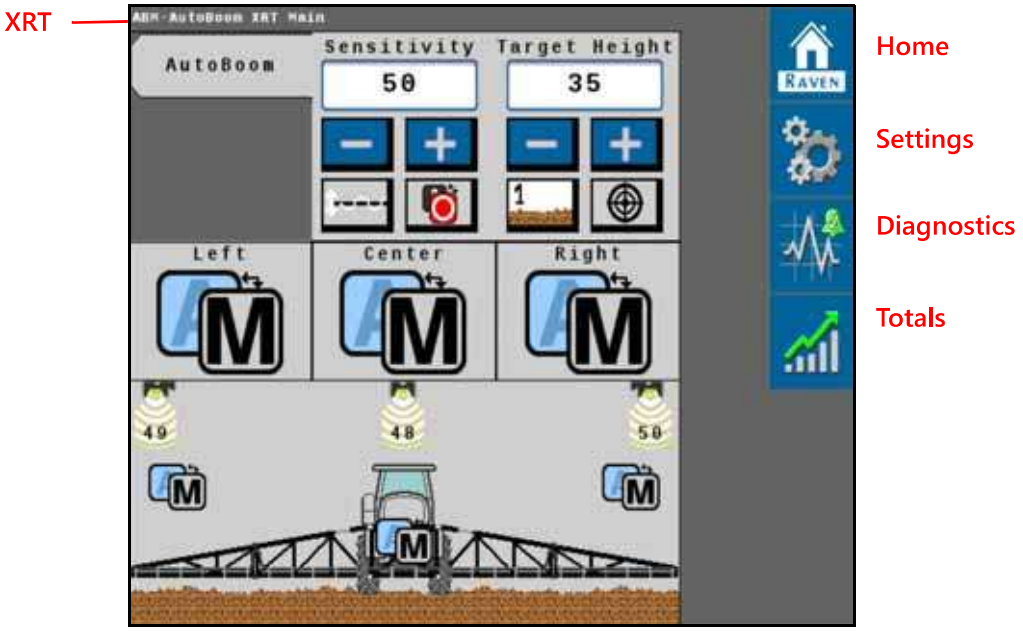


HOME SCREEN

AutoBoom XRT is a UT based application. To access AutoBoom XRT screens:

1. Press the **UT** icon.

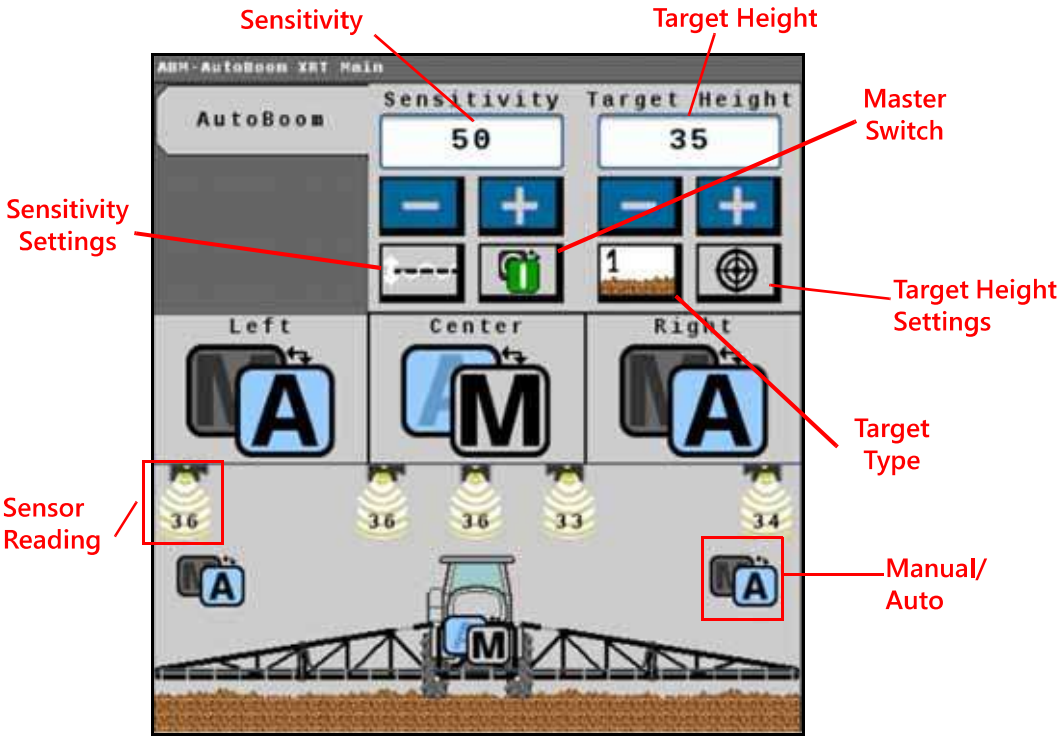
FIGURE 2. Home Screen



2. Select the **XRTworking set**  icon.

XRT HOME SCREEN OPERATION

FIGURE 3. XRT Home Screen



MASTER SWITCH

Press the **Master Switch**  to toggle between enabled and disabled states. If enabled, the system is ready to transition to auto mode. If disabled, auto mode is locked out.

NOTE: The Master Switch status will automatically toggle On after completing an AutoFold Out cycle to the spray position. The status will automatically toggle to Off when AutoFold begins to fold booms to the transport position. Without AutoFold, the status will automatically toggle to Off when the booms are near the folded position.

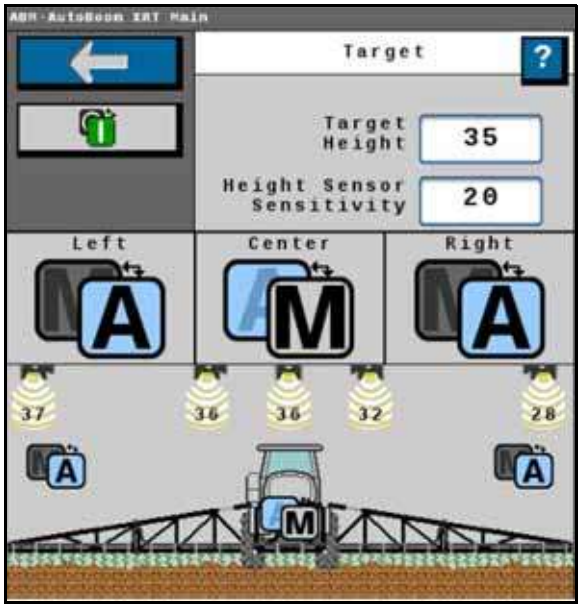
SENSITIVITY SETTINGS

Use the **Sensitivity Settings**  buttons to increase or decrease the system sensitivity. Increasing the sensitivity will increase how quickly the boom responds to the sensor target. Increasing the sensitivity too high may result in unnecessary or excessive movement. Decreasing the sensitivity will result in less boom movement but will make the booms slower to respond to an error in boom height.

TARGET HEIGHT SETTINGS

Press the **Target Height**  button to set the distance from the boom to the target. This screen also allows the user to select the Height Sensor Sensitivity. This information can also be changed on the *XRT Home* screen using the +/- buttons or typing the value into the **Target Height** field.

FIGURE 4. Target Height



HEIGHT SENSORY SENSITIVITY

Height Sensor Sensitivity can be adjusted by typing the value into the Height Sensory Sensitivity field. This value affects the ability of the radar sensor to distinguish between spray, crop, and ground.

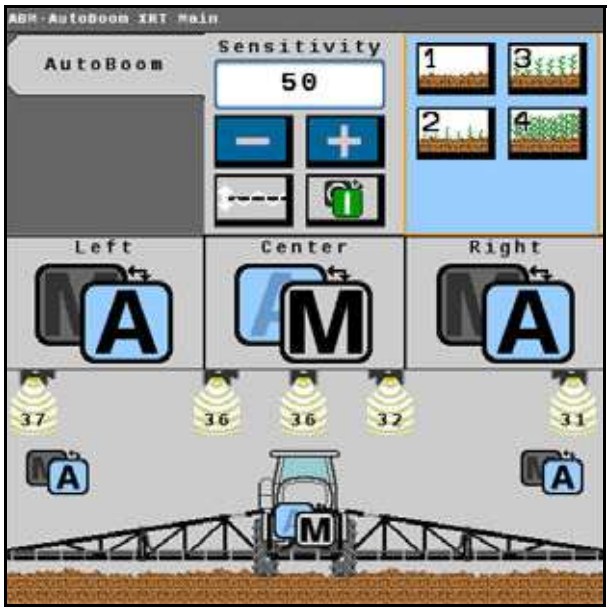
NOTE: A Height Sensory Sensitivity range of 1-20 is ideal for reduced canopy detection or high spray drift suppression.

A Height Sensory Sensitivity range of 20-100 allows the sensor to be more sensitive in detecting a canopy, however, as the Height Sensory Sensitivity value increases, drift suppression decreases.

The Height Sensory Sensitivity value is set to 45 by default.

TARGET TYPE

FIGURE 5. Target Type



Press the **Target Type** to select betweenthe desired measurement target:

- **Ground**  : This target type will use the ground signal as the primary target, but will use the canopy signal if it has a higher confidence level.
- **Ground Locked**  : This target type will only use the ground signal as a target.
- **Canopy**  : This target type will use the canopy signal as the primary target, but will use the ground signal if it has a higher confidence level.
- **Canopy Locked**  : This target type will only use the canopy signal as a target.

MANUAL/AUTO

Depending on the machine configuration, there can be up to three **Manual/Auto** toggle buttons. Each **Manual/Auto** toggle button controls a boom (left/right) or the center rack. If the center rack only displays a **Manual** button, center rack control is not enabled. Pressing this button will still transition the left and right booms into Auto mode. When in Auto  mode, the XRT system will continually move the boom position to reach the target position. When in Manual  mode with the Master Switch on, the system is ready to engage. Another way to switch from Manual/Auto is to press on the desired boom section.

SENSOR READING

Sensor Height displays the height for each of the sensors. The number of sensors displayed will match the number of sensors on the machine. The table below describes the Sensor Height reading in more detail.

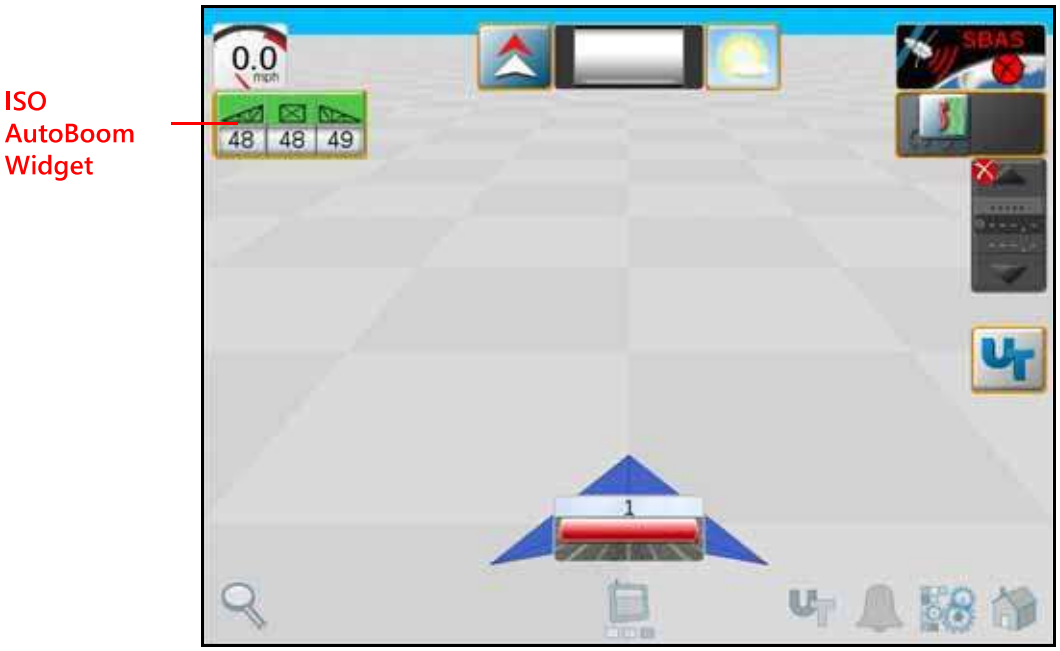
TABLE 1. Sensor Reading States

Image	Status	Description
	Sensor Working/Reading	Indicates the sensor is functioning properly and reading the desired target.
	Sensor Not Reading/ Malfunctioning	If there is an X through the sensor, the sensor is not reading a target or is malfunctioning.
	Sensor Offline/Disabled	If there isn't a number below the sensor location, the sensor may be offline or was disabled by the user.

AUTOBOOM XRT OPERATION ON RAVEN OPERATING SOFTWARE (ROS)

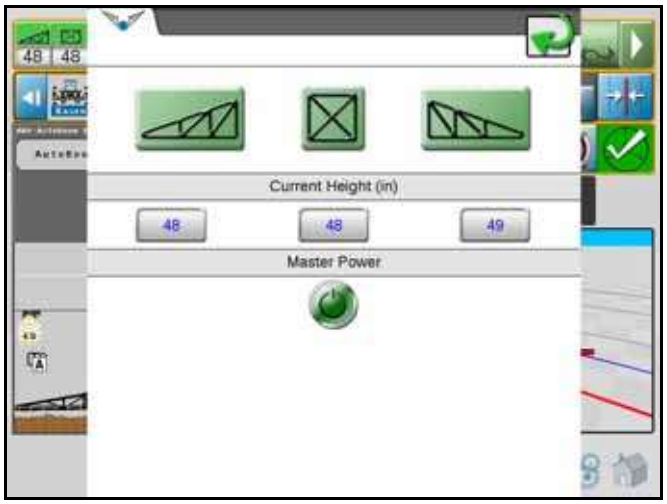
RUN SCREEN OPERATION

FIGURE 6. Run Screen



1. Press the desired boom on the XRT widget to enable or disable AutoBoom XRT.
2. Press and hold the desired widget to open additional boom information. Pressing and holding also allows the user to turn on or off the master switch.

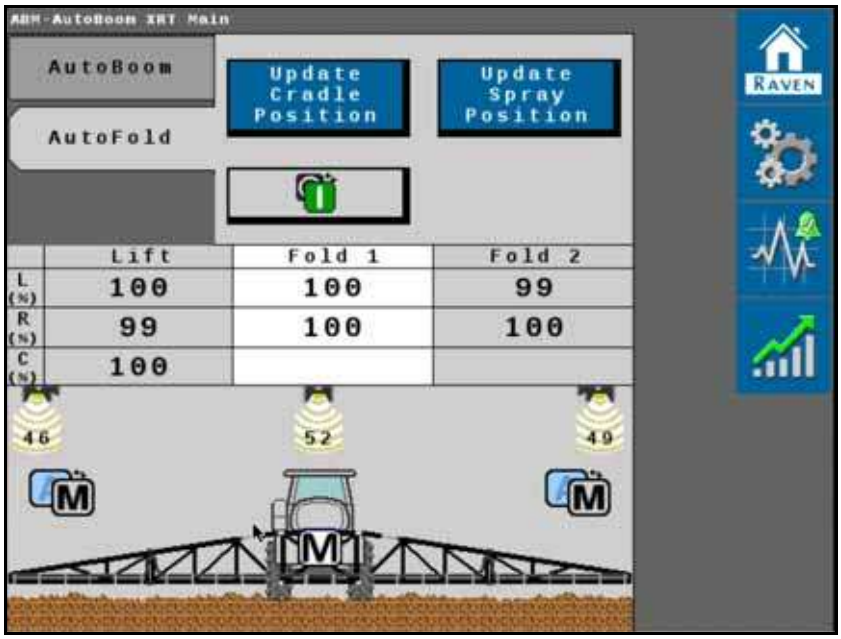
FIGURE 7. XRT Widget Long Hold



AUTOFOLD OPERATION

NOTE: Initiating the AutoFold operation varies from machine manufacturers. Refer to the OEM machine operating manual for instructions in initiating AutoFold.

FIGURE 8. AutoFold Operation Main Screen



NOTE: It is not necessary to view the *AutoFold Operation Main* screen to perform automatic folding or unfolding functions.

Update Boom Height Limit. Adjusts the boom height limit above the cradle to prevent contacting the mirrors.

Update Spray Position. Saves the current boom tilt position as the new target for folding OUT operation. This setting affects tilt only. The target positions for inner/outer fold joints and the center rack position are not updated.

Update Cradle Position. Saves the current boom tilt position as the new target for folding IN operation. This only affects tilt. The target positions for inner/outer fold joints and the center rack position are not updated.

FIGURE 9. Set Cradle Position