

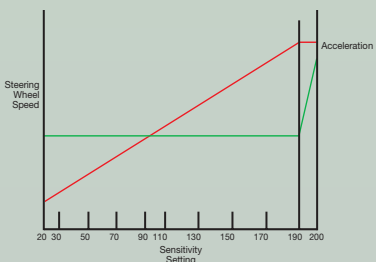
SET-UP AUTOTRAC PAGE 1

Vehicle Type

Select Vehicle Type

Steer Wheel Speed

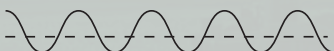
Determines the maximum speed steering wheel turns to make corrections. Higher gains will turn the steering wheel faster. Lower gains are required for vehicles with slower hydraulic systems. **Note:** This setting does not apply to AutoTrac Universal Steering Kit 200.



Steer Wheel Speed will increase linearly until 190. After 190 Steer Wheel Speed is constant and acceleration is increased.

Acquire Sensitivity

Determines how aggressively the vehicle acquires the track. This setting affects performance while acquiring the track only.



Acquire Sensitivity Too high



Acquire Sensitivity Too Low

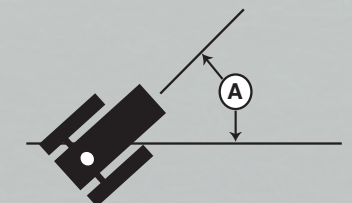
Line Sensitivity – Tracking

Determines how aggressively ATU responds to tracking errors while the vehicle is on the track. This setting affects performance while on track only. See pictures below.



Line Sensitivity – Heading

Determines how aggressively ATU responds to heading errors while the vehicle is on the track. This setting affects performance while on track only. See pictures below.



Line Sensitivities Too Low



Line Sensitivities Too High

Curve Sensitivity Determines how aggressively ATU responds to a curve in the track.



Curve Sensitivity Too high



Curve Sensitivity Too Low

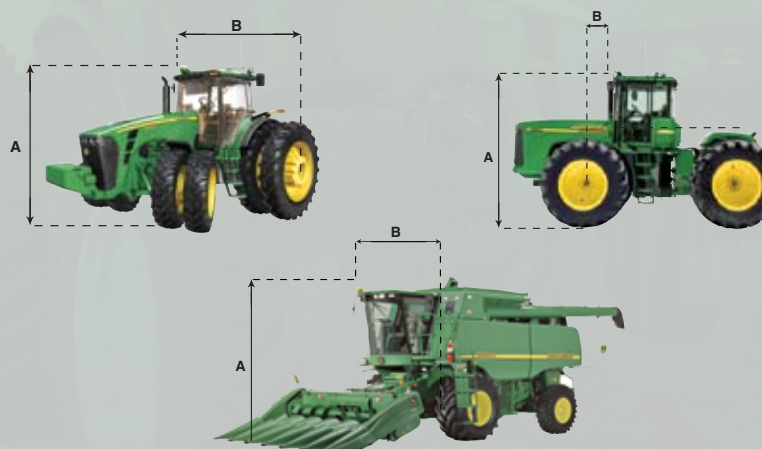
SET-UP AUTOTRAC PAGE 2

StarFire Height (in) (A)

Enter the height of the StarFire receiver. Height is measured from the ground to the top of the dome.

StarFire Fore-Aft (in) (B)

Enter the Fore-Aft measurement.



Operator Presence

Select seat switch or operator activity monitor to detect operator presence.

Steer Play

This setting will control the distance that the steering wheel turns in order to take up play. This setting should only be used on vehicles with excess play in their steering system. This number should be set to 0 on most vehicles, except windrowers.

Steer Asymmetry

In certain vehicles, the hydraulic steering system does not steer the same in each direction. See vehicle's platform specific document for the appropriate Steering Asymmetry value. If your vehicle is not an asymmetric vehicle a value of 100 should be used.

ATU Set Up Quick Reference Guide

Recommended Starting Adjustments

Vehicle Type	Steering Speed*	Acquire Sensitivity	Line Sensitivity - Tracking	Line Sensitivity - Heading
Row Crop Tractor	190	90	180	90
Track Tractor	180	80	190	110
Articulated Tractor	190	90	180	90
Sprayer	190	150	190	150
Windrower	190	100	180	110
Harvester	190	120	200	100

When operating in curves, start with Curve Sensitivity equal to Acquire Sensitivity.

These recommended settings are a good starting point for most vehicles. Each setting can be adjusted to try and optimize performance.

Optimizing AutoTrac Universal Performance

Optimizing AutoTrac Settings – Begin with recommended settings first time

Step 1) Tune Steer Wheel Speed*

Tune speed by operating parallel to and 4 ft. off of the A-B Line

- Engage AutoTrac Universal and observe performance
- Tune steer wheel speed down until the system no longer disengages while acquiring the line
- While tuning, adjust in increments of 10 between Steer wheel speeds 20 – 190 and in increments of 2 between 190-200.
- In general optimum performance will be achieved when steer wheel speed is set at higher settings

Step 2) Tune Acquire Sensitivity

- Tune speed by operating parallel to and 4 ft. off of the A-B Line
- Engage AutoTrac Universal and observe performance
- Tune Acquire Sensitivity until machine acquires the line smoothly

Step 3) Tune Line Sensitivities

A) Line Sensitivities – Tracking

- Tune Line Sensitivity Tracking while operating on the A-B Line
- If machine wanders too far from the A-B Line adjust Line Sensitivity – Tracking higher.
- If machine becomes unstable around A-B Line adjust Line Sensitivity – Tracking lower.



B) Line Sensitivities – heading

- Tune Line Sensitivity Heading while operating on the A-B Line
 - If the front of the machine wanders too far from the track direction adjust Line Sensitivity – Heading higher.
 - If machine becomes unstable adjust Line Sensitivity – Heading lower
- Line Sensitivities work together – If both are set too high the vehicle will become unstable. If both are set too low, the vehicle will wander around the A-B line. Operator may need to readjust Line Sensitivity – Heading and Line Sensitivity – Tracking for best results. Increase or decrease settings to change aggressiveness as desired.*

Step 4) Tune Curve Sensitivity – if running curve Track

- Tune Curve Sensitivity while operating in Curve Track
- If vehicle turns outside of the curve adjust sensitivity higher
- If vehicle turns inside of the curve adjust sensitivity lower.

Step 5) Tune Steer Play – system has excess play or on windrower

- Steer Play is only used for vehicles that have excess tolerance in the steering system.
- If overall performance is unacceptable due to high tolerance in the steering system, adjust steer play setting higher until effects of loose steering system are minimized.
- If Steer Play is set too high, system will become unstable.

Step 6) Tune Steering Asymmetry

- Steering Asymmetry is only for vehicles that do not steer in the same in each direction
- See platform specific document for your vehicle for the appropriate Steering Asymmetry value
- If your vehicle is not an asymmetric vehicle a value of 100 should be used

Use AutoTrac Universal only on Vehicles approved by John Deere – see Stellar Support at www.stellarsupport.com for list of approved vehicles

Excessive wear on steering components may impact accuracy. Make sure steering system components have proper tolerances. Steer Play setting may improve performance on some machines, but can not compensate for all wear. After installing AutoTrac Universal Steering Kit check steering system every 500 hours for proper tolerance and wear.

Operator needs to tighten nut on steering wheel to manufacturer's specified torque. It is recommended to check and adjust after 10 hours of use.

ATU Diagnostic Quick Reference Guide



Info AutoTrac Universal can be found under the Diagnostic icon.

Info Page:

1. Software Version: Version of AutoTrac Universal
2. Hardware Version: Hardware Version number
3. Serial Number: Serial number of the AutoTrac Universal
4. Mode: Status of AutoTrac: Disabled, Enabled, or Active
5. Total Hours: Hours the system has been powered up
6. AutoTrac Hours: Number of hours AutoTrac has been engaged
7. Resume Switch: Shows Resume Switch state. It will change from OFF to ON when resume switch is pressed.
8. Encoder: Represents the location of the steering wheel.
IMPORTANT: Encoder should be within +/- 500 when front wheels are straight ahead for proper performance. If wheels are straight and encoder is outside this range operator should drive straight until encoder is within these settings.
9. Direction: Indicates vehicle direction determined by AutoTrac Universal.
IMPORTANT: Operator must drive at least 1 mph and turn steering wheel 45 degrees in one direction with at least SF1 signal. Direction should be determined within 5 seconds.
10. Stop Code: Indicates why the system is not working or why AutoTrac disengaged. (See stop code list next column.)
11. Test Motor Left: By pressing the “E” button the AutoTrac Universal motor will turn the steering wheel to the left. Used to test basic system functionality.
12. Test Motor Right: By pressing the “F” button the AutoTrac Universal motor will turn the steering wheel to the right. Used to test basic system functionality.

Stop Code	Description
None	Nothing has been checked yet
Steering Wheel	Steering wheel has moved to disengage AutoTrac
Too Slow	Vehicle Speed too slow to use AutoTrac
Too Fast	Vehicle Speed too high to use AutoTrac
Unknown Direction	Unknown direction
Track Changed	Track number changed
Lost Dual GPS	SF1, SF2 or RTK signal was lost
SSU Error	A SSU fault severe enough to disable AutoTrac
OK	Last state upgrade was successful
No GSD	Bad GSD messages
PT Turned Off	Tracking not turned on
No KeyCard	AutoTrac Keycard or AutoTrac Key missing
Heading Error	Heading error is out of range
Lateral Error	Lateral error is out of range
No Operator	Operator presence switch is open
No TCM	Either no TCM present or TCM is turned off
Voltage Unstable	Voltage Too Low
Reverse Timeout	Reverse Timeout
0 Speed Timeout	0 Speed Timeout
Tracking on Line	Vehicle is driving on line
Acquiring Line	Vehicle is acquiring line
ATU Temperature (ATU 200 only)	ATU temperature has exceeded temperature threshold

AutoTrac Universal—Troubleshooting

Symptom	Problem	Solution
Tractor turns right or left unexpectedly when the resume switch is pressed and the vehicle is already lined up on the line.	Encoder out of range when wheels are pointed forward	With front wheels pointed forward encoder should be +/- 500. Drive forward with wheels pointed straight ahead until encoder is in limit.
ATU disengages	Anti-rotation device too tight causing misalignment of ATU with the steering shaft. Steering Wheel speed too high on a vehicle with high steering resistance. Looseness or rotation in the Steering console Steering Wheel turns hard after ATU installed. Disengagement force set too low for a vehicle with high steering resistance.	Re-position ATU so it slides easily on steering shaft then adjust anti-rotation device Lower Steering wheel speed Insert shims to take out tolerance in Steering console Lubricate Steering Shaft where it goes through console Set disengagement force setting from normal to high.
ATU unstable when entering track	Acquire sensitivity too high	Decrease acquire sensitivity
ATU takes too long to enter next track	Acquire sensitivity too low	Increase acquire sensitivity
ATU constantly weaves in the row	StarFire Height or Fore-Aft not properly set StarFire Receiver not in front of or even with Fixed Axle (Even with or Behind for Articulated) Line sensitivities incorrect StarFire mount direction in SETUP different from actual mount direction ATU did not establish direction correctly Looseness or rotation in the Steering console Loose Soil Vehicle with symmetric steering has the wrong asymmetric steering setting	Enter correct StarFire Height and Fore-Aft dimension Position StarFire in front of or even with Fixed Axle (Even with or Behind for Articulated) Optimize line sensitivities - See Setup AutoTrac Universal Correctly match TCM SETUP mount direction to actual mount direction Drive Forward at a speed greater than 1 mph and turn steering wheel greater than 45 degrees in one direction Insert shims to take out play in Steering console Add Ballast Set the asymmetric steering setting to 100
AutoTrac Universal won't engage or resume.	Stop Code encountered	See list of stop codes to find issue
AutoTrac Universal does not appear on INFO or SETUP screens	System not recognizing AutoTrac Universal on CAN bus line	Ensure AutoTrac Universal is connected to GreenStar Harness and receiving power Check for blown fuses in ATU wiring harness
Direction can not be determined	Old TCM Software No differential Correction No GPS ATU did not establish direction correctly	Update TCM Software to newest software (Version 1.08 or greater) Establish differential correction Establish signal Drive Forward at a speed greater than 1 mph and turn steering wheel greater than 45 degrees in one direction
AutoTrac Universal drives inside curve	Curve Sensitivity too high	Lower curve sensitivity
AutoTrac Universal drives outside curve	Curve Sensitivity too low	Increase curve sensitivity
AutoTrac Universal works away from the line	Vehicle with symmetric steering has the wrong asymmetric steering setting	Set the asymmetric steering setting to 100
AutoTrac Universal hangs off the line after headland turn	Vehicle with symmetric steering has the wrong asymmetric steering setting Vehicle with asymmetric steering has the wrong asymmetric setting	Set the asymmetric steering setting to 100 Refer to the vehicle's platform specific document for asymmetric setting