

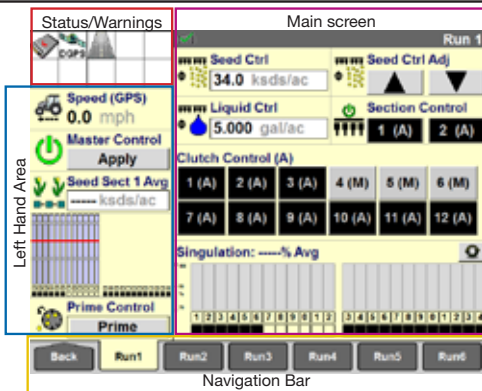
AFS AccuControl Planting AFS Pro 700 Quick Reference Card (v28.* and after)

REQUIREMENTS

The following actions are required for proper operation. Working thru this document in order will properly set up your planter systems for planting. This guide is to be used as quick reference only, please refer to the Operator's Manual for specific information and procedures. Insert a data card in the display before turning the display on.

1 – GENERAL NAVIGATION

1.1 Main Screens



2 – SET-UP SCREENS

2.1 Operator

Toolbox>Oper

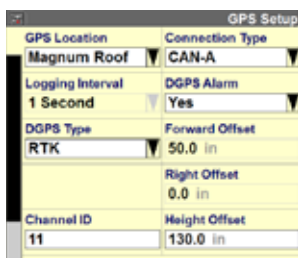
- Create an operator.
- Select preferred units of measurement.



2.2 GPS Setup

Toolbox>GPS

- Verify GPS Location
- Verify Offsets
- Verify DGPS Type



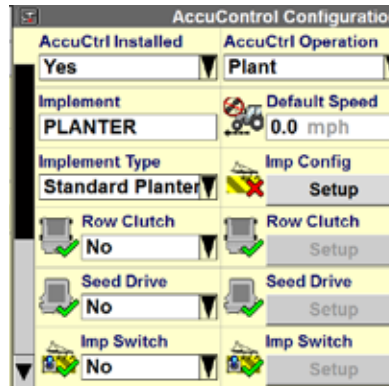
3 – PLANTER CONFIGURATION

Toolbox>AccuCtrl

Note: Activation is required (Toolbox>Activate) prior to these steps.

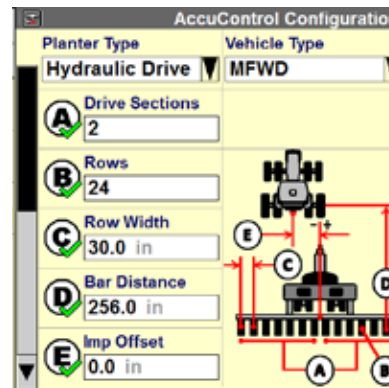
3.1 Basic Setup

- Select AccuCtrl Operation [Plant]
- Select AccuCtrl Installed [Yes]
- Create New Implement
- Select Implement Type [Standard Planter]



3.2 Implement Configuration

- Press 'Setup'
- Select Planter Type
- Select Vehicle Type
- Enter number of driven sections [A]
- Set Number of Rows [B]
- Enter Row width [C]
- Enter Bar Distance in Inches (axle to seed tube) [D]



NOTE! Verify GPS Offset (Toolbox>GPS)

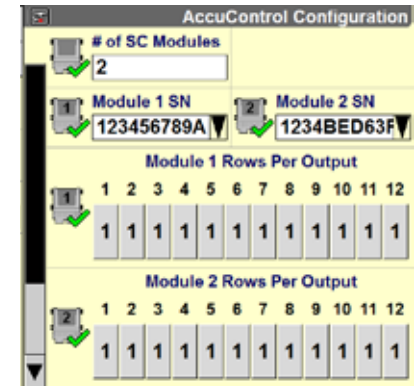
- Measure Implement Right/Left Offset [E]
- Enter Rows Per Drive Section
- Press 'Done'

NOTE: The next setup steps may or may not be needed. The configuration of the Planter determines the need for set-up. If the planter is not equipped with this capability, leave the setup as 'No'.

3 – PLANTER CONFIGURATION (continued)

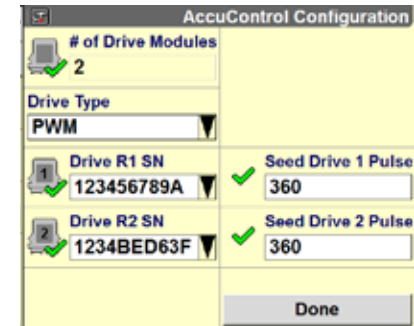
3.3 Row Clutch Setup (If equipped with Row Clutches)

- Select Row Clutch [Yes]
- Press 'Setup'
- Select number of Control Modules (up to 4)
- Assign Module Serial Numbers (starting w/modules on LH side)
- Assign Module Rows Per Output (Number of Rows per Group)
- Select Control Polarity ('Active Off' for TruCount Clutches)
- Select Off When Out of Work [No]
- Select 'Done'



3.4 Seed Drive Set-up (If equipped w/ hydraulic drive)

- Select Seed Drive [Yes]
- Press 'Setup'
- Select number of Control Modules (up to 4)
- Select Drive Type
- Assign Module Serial Numbers (starting w/modules on LH side)
- Enter Seed Drive Pulses per Revolution (if PWM)



Note: If using PWM, "Seed Drive Pulses" will be found on the seed drive speed sensor/encoder.

3.5 Implement Switch (If equipped with Planter Mounted Implement Switch)

- Select Imp Switch [Yes]
- Press 'Setup'
- Select Imp Switch Serial Number
- Select Switch Polarity (see note below)
- Press 'Done'



Note: Determine by raising and lowering the planter and watch the Implement Status Arrow in Status/Warning Area for proper operation.

3 – PLANTER CONFIGURATION (continued)

3.6 Seed Monitor (If equipped with a Seed Monitoring System)

- Select Seed Monitor [Yes]
- Press 'Setup'
- Select Number of Seed Monitoring Modules
- Select the Rows in Use

Note: Even or Odd used in Split-Row applications, new Implement required

- Assign Module Serial numbers
- Press 'Done'

3.7 Liquid Drive (If equipped with a Liquid Fertilizer System)

- Select Liquid Drive [Yes]
- Press 'Setup'
- Select Number of Drive Modules
- Select Liquid Drive Pump Type
- Select Drive Type
- Select number of Control Modules (up to 2)
- Assign Module Serial Numbers (starting w/modules on LH side)
- Enter Liquid Drive Pulses (PWM and Servo)
- Assign Plumbing Type (Servo only)
- Enable or Disable Liquid Priming (option to prime liquid system prior to operation)
- Select if Liquid Blocking Valves are installed

Note: LiquiBlock valves can only be used with Tru Count Air Clutches

- Press 'Done'

3.8 Master Switch Box (If equipped with External Switch Box)

- Select Master Switch Box [Yes]
- Press 'Setup'
- Verify Serial Number of Switch Box
- Select Footswitch (if installed)
- Press "Done"

3 – PLANTER CONFIGURATION (continued)

3.9 Row Switch Box (If equipped with External Row Switch Box or desire Manual Clutch Control through Run Screens)

- Select Row Switch Box [Yes]
- Press 'Setup'
- Select Config Mode [Auto]
- Verify Switch Box Serial Number (if equipped w/ external switchbox)

Note: If no switchbox is installed, User Defined Windows can be assigned to a Run Screen (**Toolbox>Layout**)

4 – WORK CONDITION – REQUIRED FOR OPERATION



Work Condition>Layer

IMPORTANT! The settings below are linked to a work condition. These must be selected or checked whenever a work condition is created/changed: product type, application rate, seed drive settings, product delay (w/ as applied), product layer control (w/ as applied), and product control.

NOTE! A work condition name could be for a crop type (corn, soybeans, etc), seed size, field condition, or weather condition, etc.

NOTE! This setup is required for logging/ mapping data and using Overlap & Boundary Control.

4.1 Preparation

- Insert a data card in the display
- Create/select a Grower/Farm/Field/Task and Crop Type (**Performance > Profile**)

4 – WORK CONDITION (continued)

4.2 Product Setup



Toolbox>Product

- Name the product (ex . Hybrid #)
- Select form type for product.
- Select Crop Type.
- Enter plant population: default application rate
- Enter minimum application rate & maximum application rate

NOTE! Population will not be able to be adjusted outside of this range

- Create additional products (liquid, etc.) as needed.

4.3 Product Layer Assignment



Work Condition>Layer

Assign a product to a control section of the planter.

- Select/create a work condition.
- Select Layer 1 product control type.
- Select product for layer 1 control.
- Assign additional layers as needed.

4.4 Controller Setup – Seed Row Clutch Control and/or Hyd Drive planters



Work Condition>Control

- Verify Implement
- Verify Work Condition
- Select Controller [Seed]
- Press 'Gear Ratios' Setup
 - Enter Number of Gear Sets
 - Enter Number of Teeth per Drive/Driven Gear
 - Press "Done"
- Use 'Speed Range' to understand ground speed limitations, 'Done' to exit
- Enter value for Alarm Limit [20%]
- Enter Seeds Per Disk
- Product Delay – Default 0.7 sec (see section 7 for Product Delay Measurement)

4 – WORK CONDITION (continued)

4.5 Controller Setup – Liquid (if equipped)



Work Condition> Control

AccuControl Controller Setup	
Implement	Work Condition
PLANTER	CORN-HIGH POPUL
Controller Liquid	
Gear Ratios	Speed Range
Setup	Calculate
Default Rate 5.000 gal/ac	Alarm Limit 20 %
Delta Rate 1.000 gal/ac	Pump Disp/Rev 0.023 gal/rev
Product Delay 2.0 sec	Gear Ratio 1.000 : 1

- Verify Implement
- Verify Work Condition
- Select Controller [Liquid]
- Press 'Gear Ratio' Setup
 - Enter Number of Gear Sets
 - Enter Number of Teeth per Drive/Driven Gear
 - Press "Done"
- Use 'Speed Range' to understand ground speed limitations
- Enter value for Alarm Limit [20%]
- Enter Pump Displacement/Rev.
- Product Delay – Default 2.0 sec.

5 – CALIBRATIONS (If equipped with seed and/or liquid)

5.1 Valve Calibration



Work Condition> Valve Cal

AccuControl Valve Calibration	
Clear Performance from around the Implement. Please Start Button to initiate Calibration. Press Advance Calibration Button to Manually Enter Values to Fine Tune operation.	
Drive Number 123456789A	Drive Mar 30, 2015 2:24 pm
Valve Calibration Start	Product 10
Advanced Calibration	Gain 0
	Disc/Rev 2

Note: Tractor should be at normal operating temperature for this calibration

- Select Drive Number to Calibrate
- Press 'Start'
- Repeat for other drives

5.2 Seed Calibration (If equipped with Seed Rate Control)



Work Condition> Seed Cal

AccuControl Seed Calibration	
Check Applicable Settings. Red "X" indicates setup value that needs attention. Set Gear Ratio on Work Condition>Control page if required.	
Implement	Work Condition
PLANTER	CORN-HIGH POPUL
Default Rate 34.0 kds/ac	Simulated Speed 5.0 mph
Seeds Per Disk 48	Num Meter Turns 5.0 revs
Row Width 30.0 in	Gear Ratio 4.000 : 1
Back	Next

- Verify Implement
- Verify Work Condition
- Verify Cal Adjust [100%]
- Press 'Next'
- Verify # of Seeds per Disk
- Verify Row Width
- Enter target planting speed.
- Enter number of Meter Turns (Default '5')
- Press 'Next'
- Change Planter Op Mode to 'Plant'

5 – CALIBRATIONS (If equipped with seed and/or liquid) – continued

5.2 Seed Calibration (If equipped with Seed Rate Control) – continued

- Turn Master Apply 'On'
- Prime Meters
- Press 'Next'
- Place Catch Pans Under Sections to be Calibrated and Press 'Start'
- Successful cal = Green Check Marks
- Press 'Next'
- Manually Count Seeds and Enter Actual per Section
- Press 'Next'
- Repeat if necessary or validate results

5.3 Liquid Calibration (If equipped with Liquid Rate Control)



Work Condition> Liquid Cal

AccuControl Liquid Calibration	
Check Applicable Settings. Red "X" indicates setup value that needs attention. Set Gear Ratio on Work Condition>Control page if required.	
Implement	Work Condition
PLANTER	CORN-HIGH POPUL
Default Rate 5.000 gal/ac	Simulated Speed 5.0 mph
Pump Disp/Rev 0.023 gal/rev	Num Pump Turns 5.0 revs
Row Width 30.0 in	Gear Ratio 1.000 : 1
Back	Next

- Verify Implement
- Verify Work Condition
- Verify Cal Adjust [100%]
- Press 'Next'
- Verify Gal per Revolution
- Verify Spacing
- Enter target Planting Speed
- Enter number of Pump Turns (Default '5')
- Press 'Next'
- Change Planter Op Mode to 'Plant'
- Turn Master Apply 'On'
- Prime system
- Press 'Next'
- Place Catch Pans Under Sections to be Calibrated and Press Start
- Successful cal = Green Check Marks
- Press 'Next'
- Manually Measure Collected Fertilizer and Enter Actual per Section
- Press 'Next'
- Repeat if necessary or to Validate results

6 – OPERATION

6.1 – Enable Planting



Run screens

Note: Most windows will need to be placed on the run screen (**Toolbox>Layout**)

- Planter Op Mode - Select 'Plant'
- Read Safety message & press 'Accept' if agreed
- Master Control – Press 'Apply' on display or switch on master switch on switchbox (if equipped)

Planter Op Mode Plant
Master Control Apply

6.2 Seed Rate Control (If equipped)

- 'Seed Ctrl' Defaulted to 'On'
- Increase or decrease rate, if needed
- Automatic rate control (prescription) assigned in **Performance>Rx Setup**

Note: Liquid Ctrl Similar

Current Rate

Exit to save change

Use Default Rate

Product On / Off

Increase

Decrease

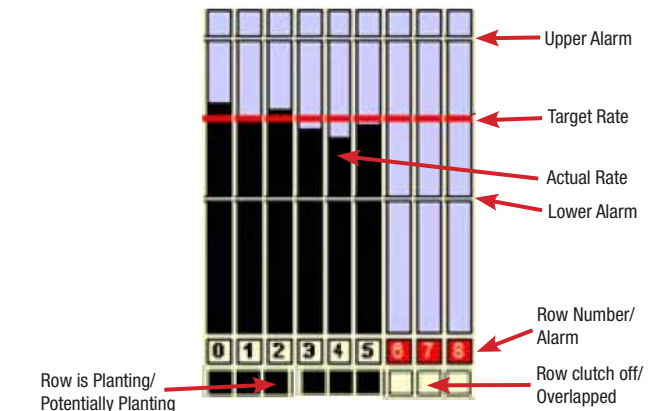
Reset

On

34.0 kds/ac

34.0

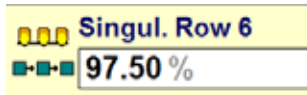
6.3 Seed Graph (If equipped with Seed Monitoring)



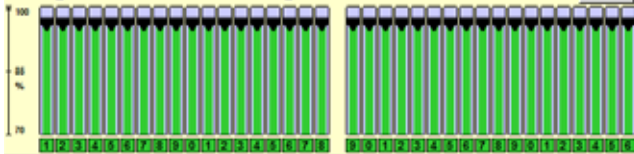
6 – OPERATION (continued)

6.4 Advanced Seed Monitoring (Corn, Popcorn, Sugar Beets, & Sunflower crop types only)

- View Singulation Quality %, Multiples Scan, Skips, Spacing CV
- View Graph comparing section & row performance.



Singulation: -----% Avg



- Press cycle button to see next parameter (Skips, Multiple, etc)
- Press bar graph to “Zoom” in to section and/or row.
- Adjust Seed Monitor “warning thresholds” in **Toolbox>SeedMon**

6.5 Prime Control (If equipped w/ Seed Ctrl)

Prime is used to fill the seed disks and prime liquid fert so no gap is left in the field when starting



- Press the Prime button for 3 sec.
- If Icon continues to flash, press the prime button again for 3 sec.
- Wait for prime icon in warning area to stop flashing

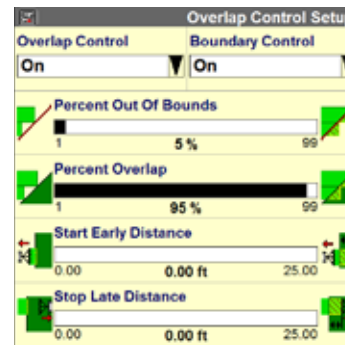
7 - OVERLAP/BOUNDARY CONTROL

7.1 Section Control



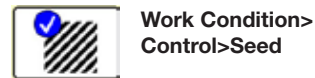
Toolbox>
Overlap

- Turn overlap control on.
- Turn boundary control on (requires a created boundary)
- Set % for out of bounds.
- Set % of overlap for shutoff.
- Set start early distance to 0 ft
- Set stop late distance to 0 ft.



IMPORTANT! Product delay must be measured and set correctly before adjusting start early/stop late values.

7.2 Product Delay Adjustment



Work Condition>
Control>Seed

Before making any adjustments to the Product Delay, make sure GPS offsets (2.2) & Bar Distance (3.2) is entered correctly.

To check performance:

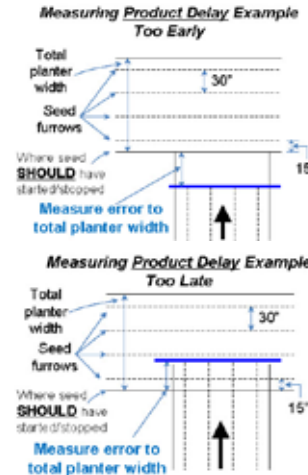
- Test Overlap Performance at headland (keep a consistent speed!)
- Measure the error (Distance between where seed SHOULD have been and where seed ACTUALLY is.)

NOTE! Final product delay adjustment should result in a gap from the first headland row (approx. 1/2 the row width)

- Calculate the change in existing Product Delay (PD):

$$\text{change in PD (sec)} = \frac{\text{In. of error}}{\text{mph} \times 17.52}$$

- Too Early = DECREASE PD by calculated amount
Too Late = INCREASE PD by calculated amount
- Once Product Delay is set, adjustments can now be made to the Start Early/Stop Late Distances if intentional overlap is desired. (**Toolbox>Overlap**)



7 - OVERLAP/BOUNDARY CONTROL (continued)

7.3 Running Overlap/Boundary Ctrl



NOTE! The following windows can be located on the Run screens.

Enables/Disables Overlap Control (disable before backing)



Quickly switch between Auto and Manual control



Enables/Disables Boundary Control



Section is “On” when the button is black (1), and “Off” when the button is grey (2)



NOTE! (A) must be present for Auto Overlap and Boundary Control to function. If (M) is present, Auto Overlap and Boundary control will not work!

TIPS

- A data card must be inserted in to the display
- Check GPS Offset, Bar Distance, Product Delay, and check that a product is assigned to a layer for Overlap & Boundary control to function properly (4.3).
- Perform multiple passes, average the error and check adjustments to Product Delay on straight headland.
- “(A)” must be present in a window for Auto mode (section ctrl, seed ctrl, etc)
- Disable Overlap Ctrl before backing into corners, etc. Re-enable after moving fwd

AFS-8033-13e Replaces: None

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