

<b>NOTE: Indented items indicate parts included in an assembly listed above</b>		
<b>Part Name/Description</b>	<b>Part Number</b>	<b>Quantity</b>
<b>Clutch Control Module Kit</b>	<b>4100533</b>	<b>1</b>
Cable Installation Kit	2000901-1	1
Alcohol swab packet	2002811	2
Cable clamps – gray plastic	2002812	6
Cable tie – 15 in.	2002817-15	20
Cable tie – 6 in.	2002817-6	50
Adhesive mounting base	2002821-2	6
Rubber grommet – 3/4 in. I.D. X 1-7/16 in. P.H.D.	2002825-75	1
Hardware Kit – Large Module	2001354-1	1
Cap screw – SS – 1/4 x 3/4 in.	2002007-25075	4
Cap screw – SS – 1/4 x 1-3/4 in.	2002007-25175	4
Hex nut – SS – 1/4 in.	2002056-25	8
Split lock washer – SS – 1/4 in.	2002065-25	8
Flat washer – SS – 1/4 in.	2002078-28	8
Mounting Kit – Large Module	2001358	1
Carriage bolt – 5/16 x 7 in.	2002021-31700	4
Lock nut – 5/16 in.	2002055-31	4
Flat washer – 5/16 in.	2002071-31	4
Mounting plate	4000954	1
Mounting strap	4001062	2
Hex nut – SS – 1/4 in.	2002056-25	4
Flat washer – SS – 1/4 in.	2002078-25	4
Quick Reference Card	2002831-40	1
Dust Receptacle – 2 pin	2002871-2	2
Dielectric Grease	2002872	1
Installation Instructions	2005864	1
Implement Cable	4000726-12	1
CAN Bus Stub – 16 in.	4001045	1
Clutch Control Module	4001083	1
Implement Plug	4001389-1	1
Implement Adapter Cable	4001979-3	1
Power Cable – Guidance/High Current (12 ft.)	4002016-12	1




This page intentionally left blank

## Important Notices

Please carefully follow these step-by-step instructions. If you have questions, contact **Ag Leader Technology** at 515-232-5363 x 1.

Direction words (LEFT and RIGHT) are commonly used when describing an installation procedure. Interpret direction words as if standing behind equipment facing forward.

Signal words (**DANGER**, **WARNING**, **CAUTION** and *NOTE*) are provided to draw attention to information that is important for the safe/correct installation and operation of this product.

-  **DANGER** – Indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death.
-  **WARNING** – Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death.
-  **CAUTION** – Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.
- **CAUTION** – Indicates practices that may result in property damage, but do not involve personal injury.
- **NOTE** – The preferred signal word to address practices not involving property damage, or personal injury.

SectionContents	Page
Preliminary Installation Requirements	4
Layout for SureStop System	5
Layout for Tru-Count Air Clutch System	6
Layout for Tru-Count Electric Clutch System	7
Layout for John Deere RowCommand Clutch System	8
Layout for Multiple Module System	9
Implement Switch Hierarchy	10
Installing Switch Console and Display Bracket	11
Installing Cables Inside Cab	12
Installing Power Cable(s)	14
Installing Clutch Control Module and Implement Cables	15
Installing Implement Switch	21
Final Installation Procedures	22

## **Preliminary Installation Requirements**

### **⚠ WARNING**

- **Implement must be lowered to ground or resting on hydraulic safety stops before beginning installation. Do not rely on hydraulic system alone to support implement. Hydraulics can fail – resulting in serious injury or death.**
- **Clutch system should be installed and electric solenoids mounted.**
- **Read these instructions completely before beginning installation. They cover multiple clutch setups, so a thorough understanding is essential before beginning. Pay particular attention to Figures 1-5. They may help to clarify any questions that arise about the installation.**

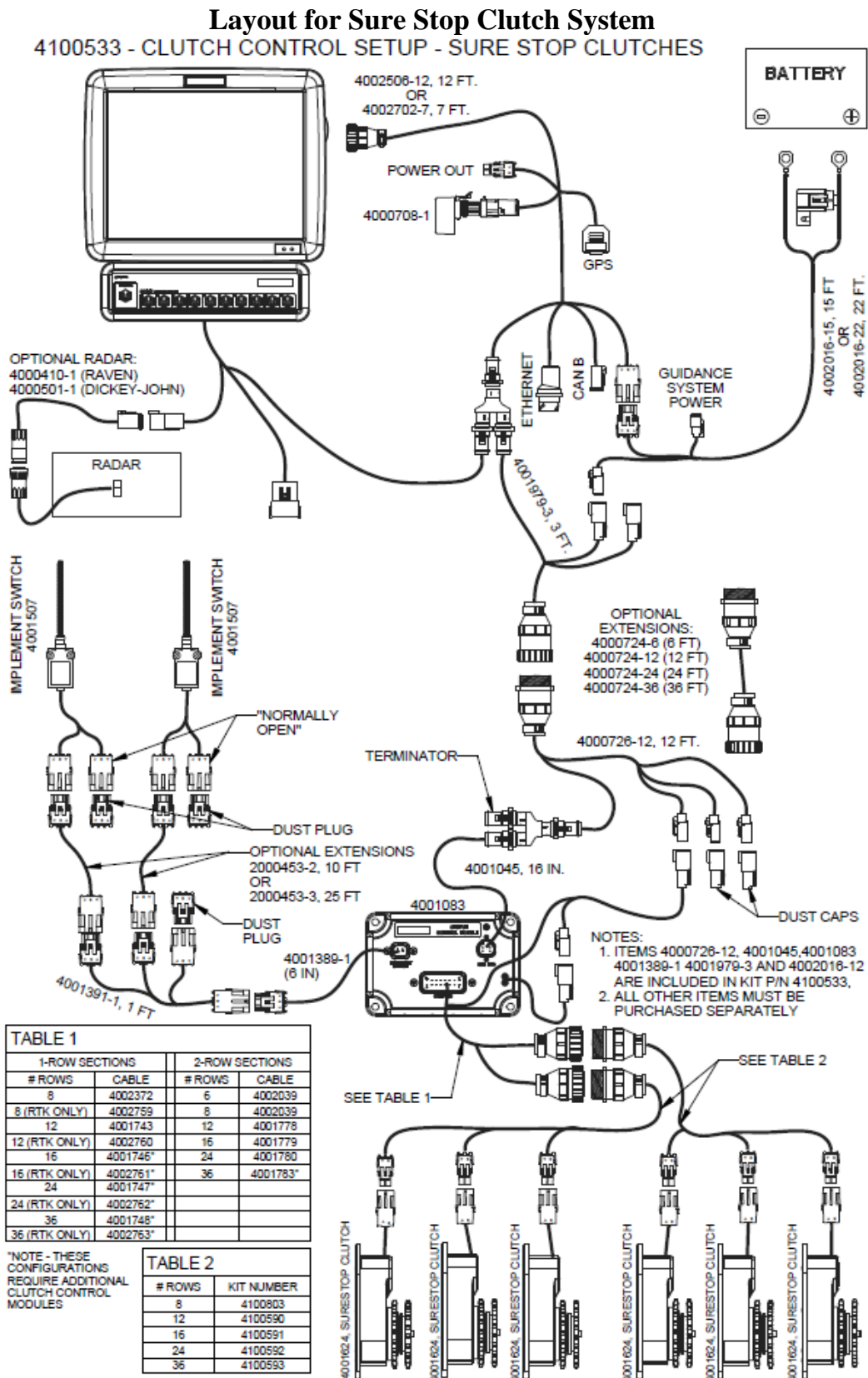


Figure 1. Ag Leader SureStop Clutch configuration

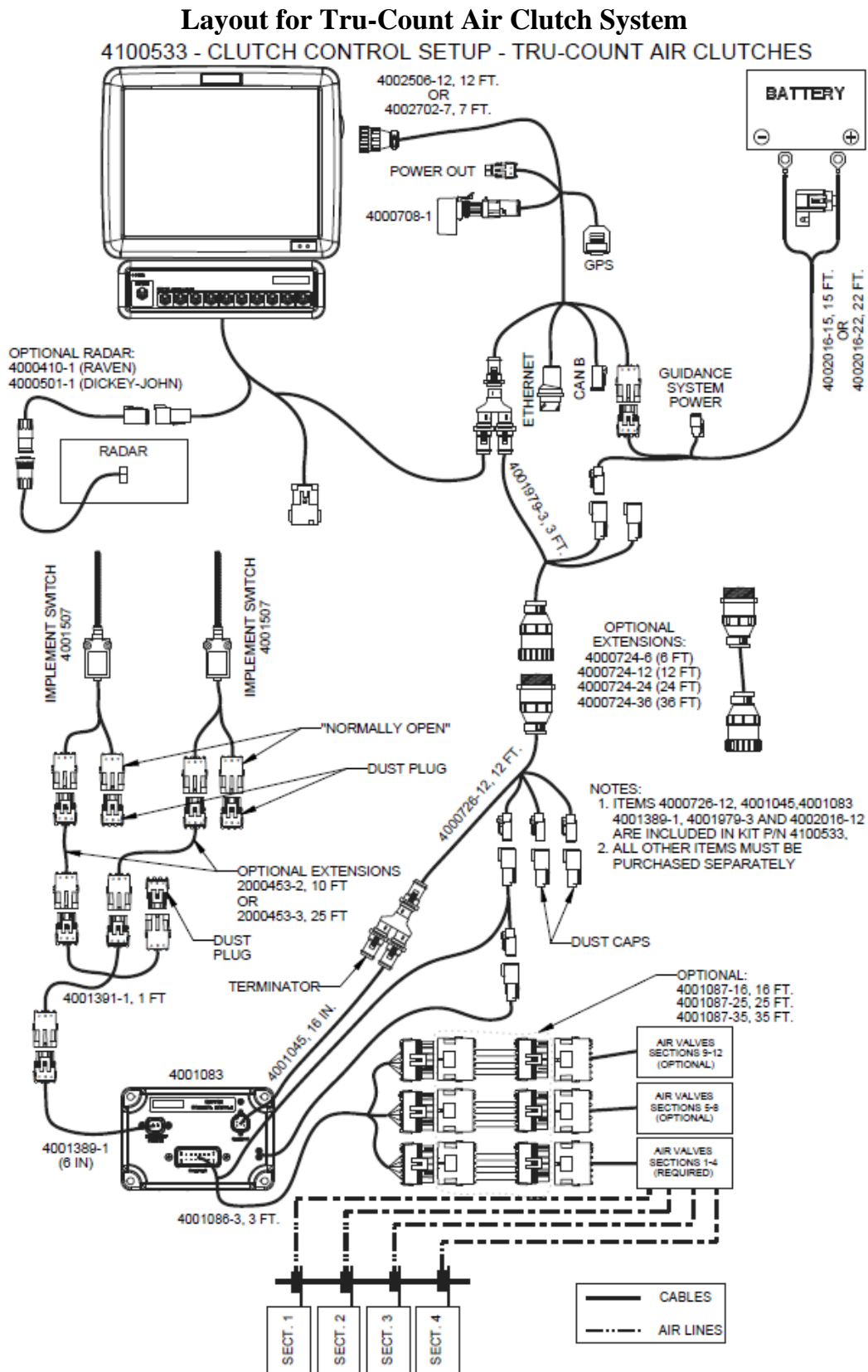


Figure 2. Tru-Count Air clutch configuration

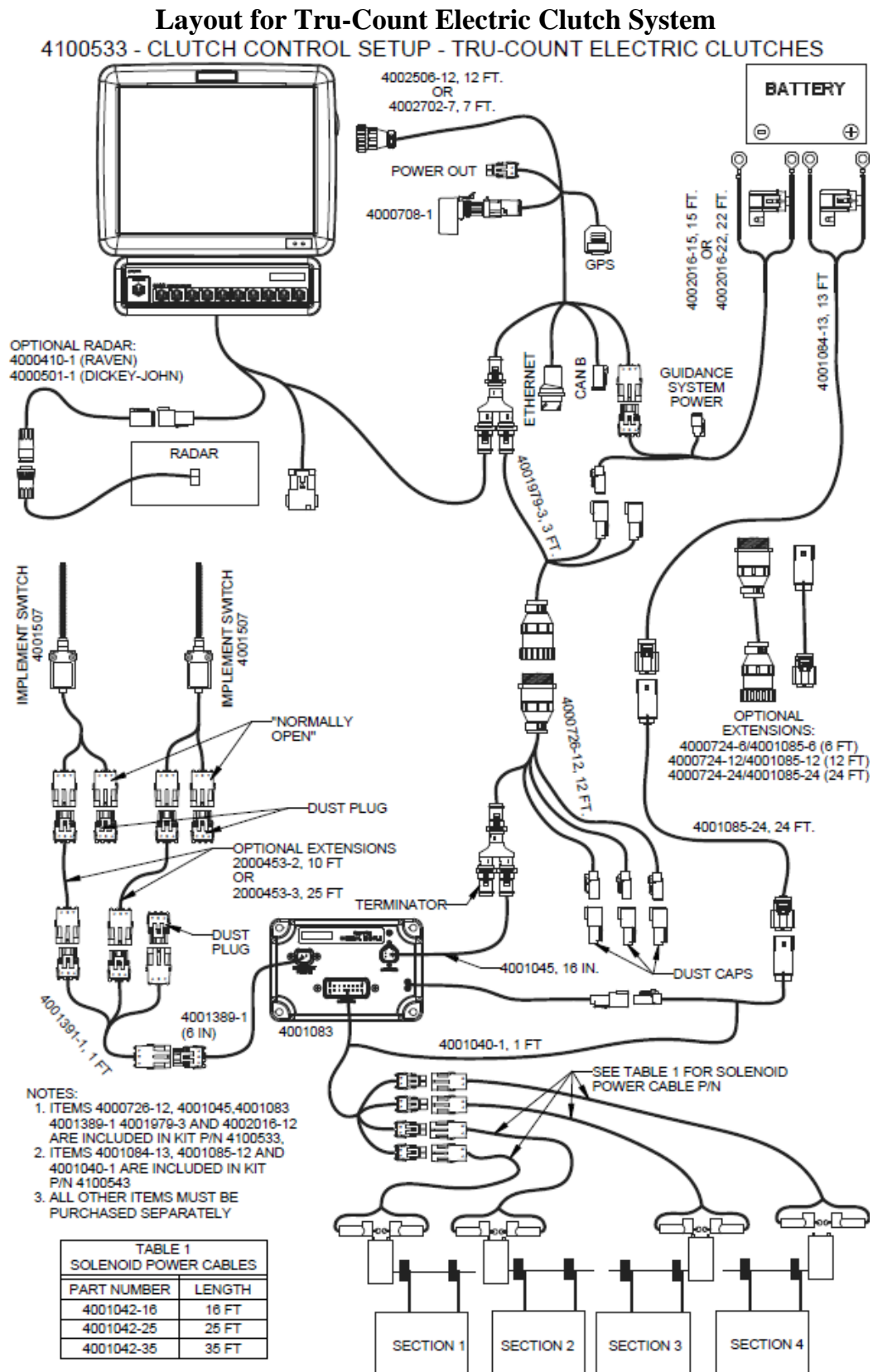


Figure 3. Tru-Count Electric clutch configuration

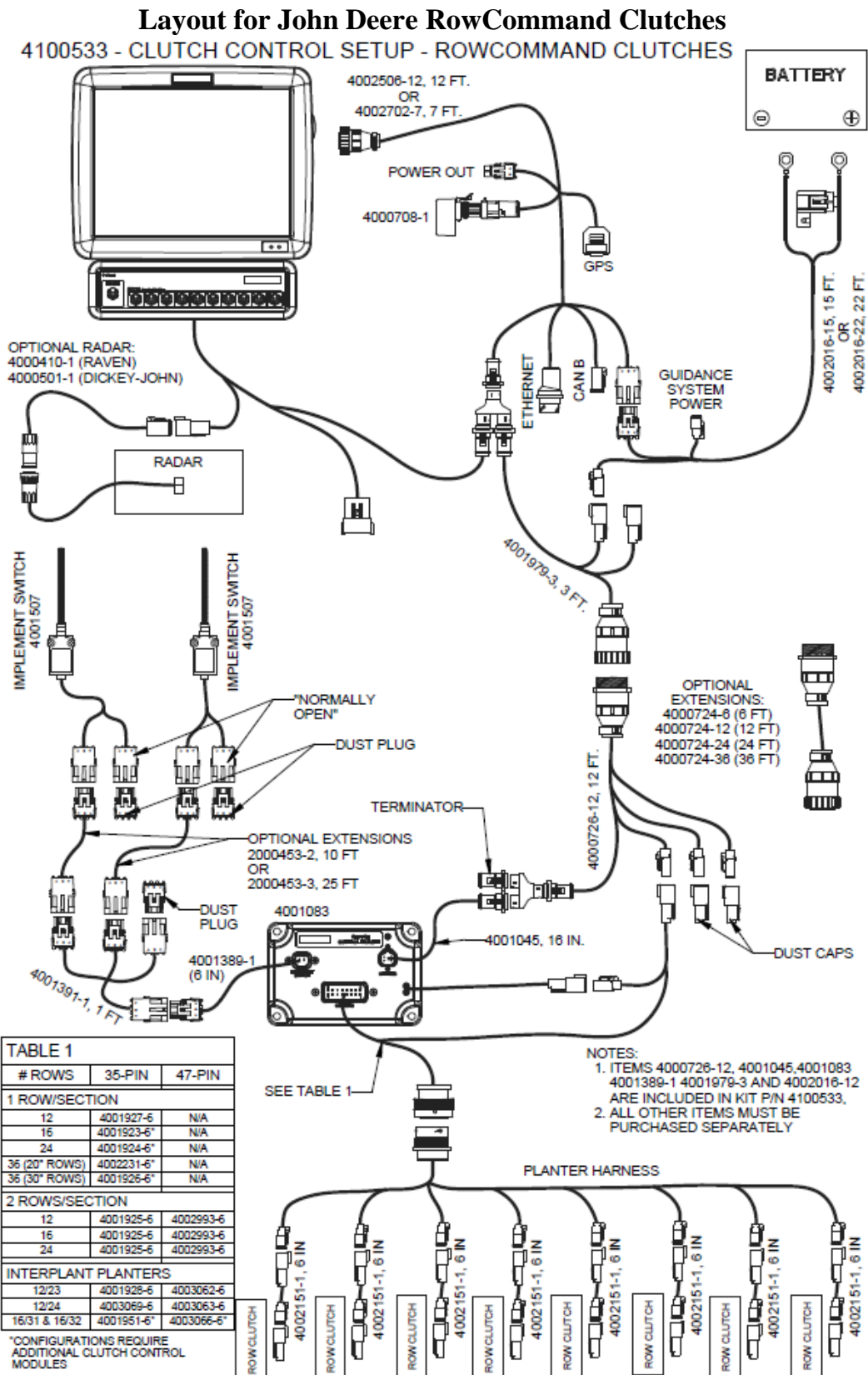


Figure 4. John Deere RowCommand clutch configuration



## Layout for Multiple Clutch Control Modules using SureStop Clutches

4100588 - SURE STOP CLUTCHES - 3 MODULES

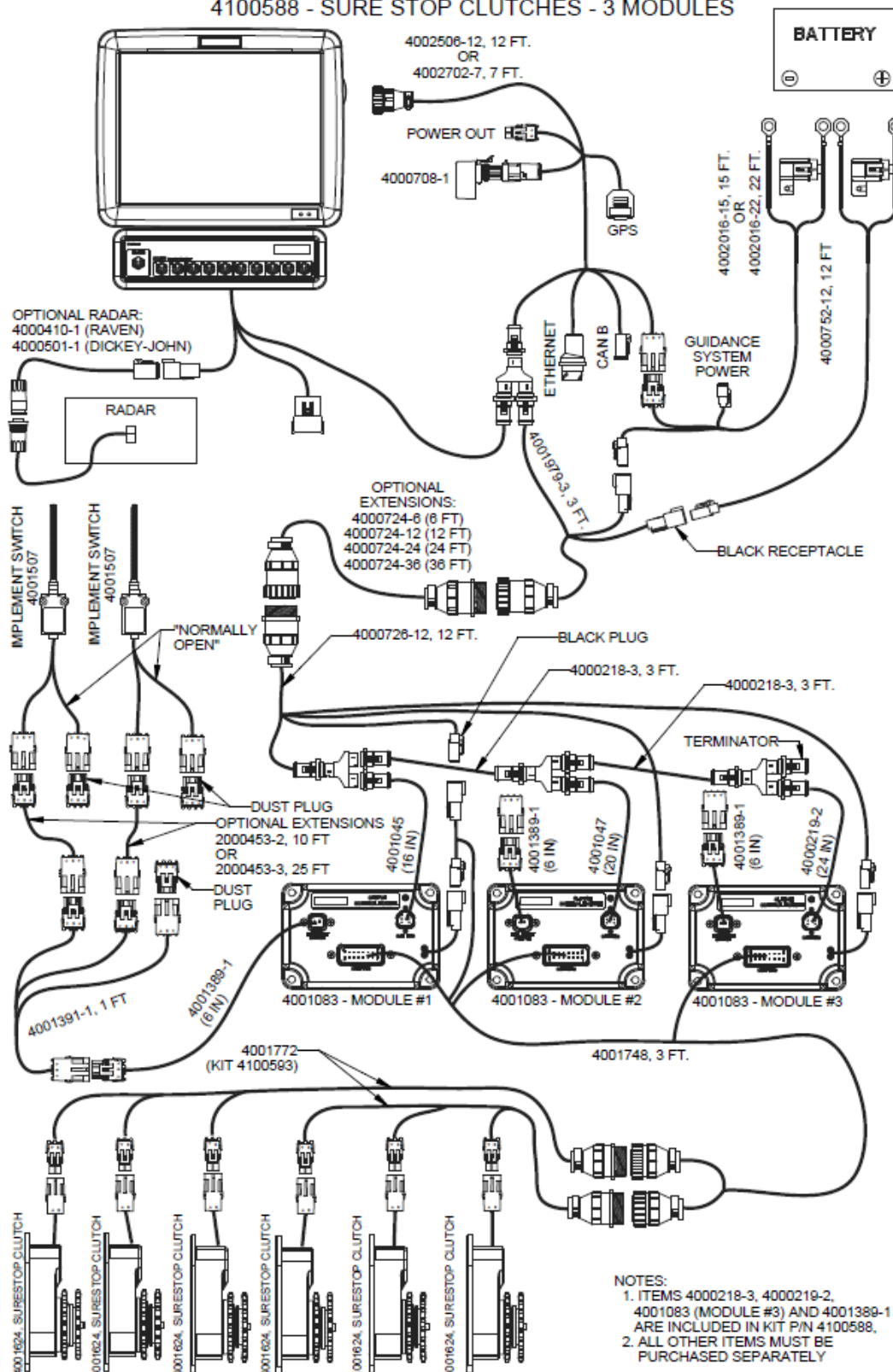
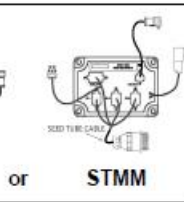
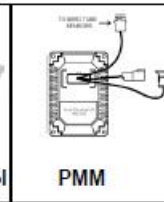
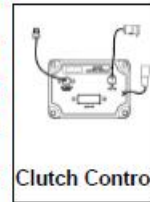
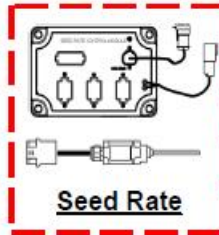


Figure 5. Multiple Clutch Control Modules using SureStop Clutches

## SeedCommand Implement Switch Hierarchy

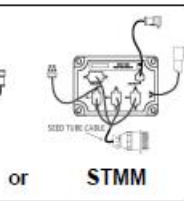
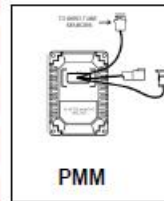
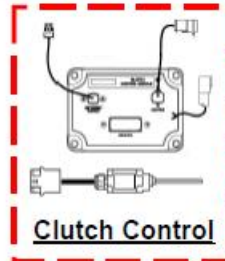
Planter Equipped with a Seed Rate, Clutch Control & PMM or STMM Module.

Seed Rate Module receives the implement switch.



Planter Equipped with a Clutch Control & PMM or STMM Module.

Clutch Control Module receives the implement switch.



Planter Equipped with only a STMM Module.

STMM requires a implement switch.

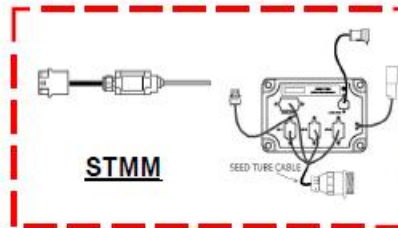


Figure 6. Implement Switch Hierarchy

Installing Switch Console & Display Bracket	Required Parts:	Part Number:
	(1) Display	
	(1) Switch console	4000400
	(1) Switch console bracket	4001657
	(1) Display bracket	4000280
	(6) Phillips pan head screw – 6 x 16 mm	2002435-06016
	(6) Split lock washer – 6 mm	2002065-25
	Optional Parts:	
	(2) Angle bracket	4000486
	(4) Sheet metal screw – #14 x 3/4 in.	2002232-14075

1. See Figure 7. Place display front side down on a stable surface. Align (4) mounting holes of metal switch console bracket with (4) threaded inserts of display. Place display bracket on top of switch console bracket so that mounting holes are aligned with threaded inserts.

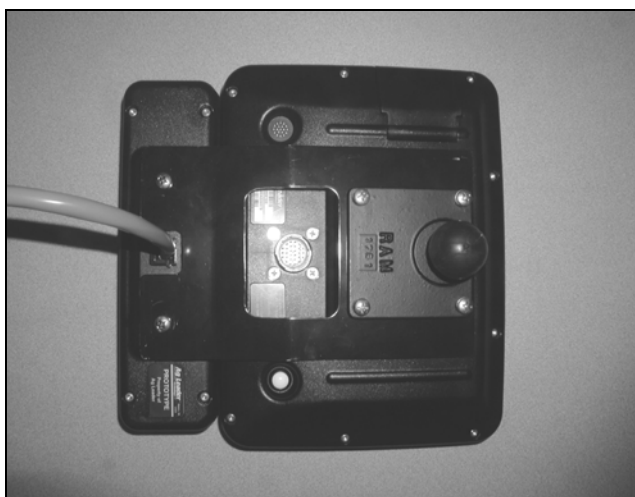


Figure 7. Switch console installed (optional RAM mount base also shown)

2. Install a 6mm pan head screw with lock washer into each of (4) threaded inserts and tighten firmly.
3. Position switch console so that threaded inserts are aligned with mounting holes of metal bracket as shown in Figure 7.
4. Install a 6mm pan head screw with lock washer into each of (2) threaded inserts and tighten firmly.

**NOTE:** Switch console can be mounted independently using angle brackets included in kit if that mounting method is preferred.

<b>Installing Cables Inside Cab</b>	<b>Required Parts:</b>	<b>Part Number:</b>
	(1) Display cable	
	(1) CAN Switch Console	4000400
	(1) Implement Adapter cable	4001979-3
	(1) CAN A Y-splice	4000137
	(1) Power control relay	4000708-1
	(1) Dust plug – 6-position	2002899-6
	(1) Dust plug – 12-position	2002899-12N
	<b>Optional Parts:</b>	
	(1) Radar adapter cable – RAVEN	4000410-1
	(1) Radar adapter cable – DICKEY-john	4000501-1
	(1) Null-modem cable	2000819

**CAUTION:** Never use force to mate electrical connectors. If connectors do not mate easily, they are not aligned properly.

1. Connect display cable as follows:
  - a. Connect the display cable 28-position to the connector labeled “MAIN” on the back of an Ag Leader® Integra or Versa display.
  - b. Route opposite end of display cable to rear of cab, or wherever cables enter/exit the cab. Route display cable along cab pillars, window frames, or elsewhere that it can be routed to maintain an orderly installation. Use provided cable ties and adhesive-backed cable clips as necessary.
  - c. Connect single end of provided Y-splice to mating 4-position connector of display cable.
  - d. Connect 9-position serial receptacle of display cable to mating serial plug of GPS receiver (if applicable). ParaDyme and GeoSteer do not connect in this manner. Consult the installation instructions of the respective system for details.

**CAUTION:** If using a non-Ag Leader branded GPS receiver, use null-modem cable that has been provided in display kit to connect GPS to display. Null-modem cable will prevent electrical damage to either device. Power will not pass through null-modem cable.

2. Connect CAN Switch Console cables as follows:
  - a. Connect black 4-position round receptacle of CAN Switch Console to light colored plug of Y-Splice on display cable.
  - b. If utilizing radar signal, connect gray 6-position plug of radar adapter cable to mating receptacle CAN Switch Consol. Connect opposite end of adapter cable to radar cable. If radar signal will not be used, plug receptacle with provided 6-position dust plug.
  - c. If utilizing an external auxiliary input switch, connect 12 pin receptacle of CAN Switch Console to the mating plug of the external switch. If an external auxiliary switch will not be used, plug receptacle with provided 12-position dust plug.
3. Connect the round 4-pin CAN Bus Connection on the Implement Adapter cable to the black side of the Y-Splice.
4. Route large, round, 16-position connector of Implement Adapter Cable through cab wall or floor so that it is accessible at rear of tractor, near the hitch point.
5. Connect 4-position plug of power control relay to mating receptacle of display cable.

<b>Installing Power Cables</b>	<b>Required Parts:</b>	<b>Part Number:</b>
	(1) System power cable	4002016-15
	<b>Optional Parts:</b>	
	(1) Multiple module power cable	4000752-12
	(1) Molex power cable	4001084-13

1. Connect system power cable to battery as detailed in the following steps. If (3) or more modules will be installed on toolbar, install multiple module power cable. If installing on a planter with Tru Count electric clutches, install Molex power cable at this time.
  - a. Connect ring terminal of fused wires to positive post.
  - b. Connect ring terminal of black wires to negative post.
  - c. Check for 12-volt nominal power across battery posts.

**CAUTION:** If battery voltage is anything other than 12-volt nominal, damage to electrical components may occur.

2. Route power cable(s) into the tractor cab where display cable has been routed.
3. Connect gray 2-position plug of system power cable to gray mating receptacle of implement adapter cable. This connection provides up to 30 amps to the modules.
4. Connect the 3-position tower of the system power cable to the mating shroud on the display cable. This connection provides up to 5 amps to the display.

**NOTE:** *The black 2-position plug of the system power cables is only used when an Ag Leader guidance system is installed. If a guidance system is not installed, leave the dust cap in place.*

5. If applicable, connect black 2-position plug of multiple module power cable to black mating receptacle of the implement adapter cable. Multiple module power cable provides up to 30-amps to additional modules. It does not provide power to display.
6. If applicable, leave electric clutch Molex power cable routed at rear of tractor for now. It will be connected to clutch solenoids in the following section.

Installing Clutch Control Module & Implement Cables	Required Parts:	Part Number:
	(1) Clutch Control Module (CCM)	4001083
	(1) Module mounting kit	2001358
	(1) CAN Bus stub – 16 in.	4001045
	(1) Implement cable	4000726-12
	(1) Implement switch plug cable	4001389-1
	High Current Power Splitter	4001013
	CAN Bus/Power Extension – 6 ft (optional)	4000724-6
	CAN Bus/Power Extension – 12 ft (optional)	4000724-12
	CAN Bus/Power Extension – 24 ft (optional)	4000724-24
	Additional Parts:	
	Additional cables are required to connect swath control clutches to Ag Leader modules. Due to the wide variety of supported clutches and method of use, part numbers of available cables are not listed.	

**NOTE:** Up to (3) Clutch Control Modules and a total of (36) channels are supported. The exception to this rule is planters equipped with Tru Count electric clutches. In that case, only (1) CCM and a total of (4) channels are supported. If multiple CCMs will be installed, refer to Figure 5 for proper layout.

1. Install Clutch Control Module(s) (CCM) on planter frame. Hardware necessary for this procedure can be found in module mounting kit. If multiple modules will be installed, find a location where all modules can be installed close together. Installing module(s) close to an air clutch valve box (if applicable) may be desirable to allow for direct connection from module to valve box.

**CAUTION:** Install module in a location that is clear of moving parts and will not be damaged by folding action of planter.

**CAUTION:** Do not drill holes through toolbar mainframe. High stress loads on toolbar may result in cracking where holes have been drilled.

2. Install implement cable as follows:

- a. Secure multiple connector end of implement cable to planter frame within 1 ft. of module(s).

**NOTE:** *If installing on a planter with Tru-Count electric solenoid clutches, a dedicated power cable must be installed and routed forward to tractor as detailed in steps 7c through 7e. If applicable, it is recommended to route power cable forward with implement cable as described in step 2b to save time.*

**NOTE:** *If installing on a 36-row John Deere RowCommand Equipped Planter, a multi module power cable must be installed. The remainder of the installation is detailed in step 9.*

- b. Route single connector end of implement cable toward hitch. Keep in mind additional length requirements for telescoping hitches. Install CAN Bus power extension cables as necessary for length. Route cables along hydraulic hoses or existing harnesses when possible to avoid pinch points and moving parts.
  - c. At rear of tractor, connect CAN Bus power extension cable to mating receptacle of implement adapter cable.
3. Locate CAN Bus stub that is 16 in. long. Connect gray 4-position plug of CAN Bus stub to mating receptacle of CCM labeled “CAN BUS.”
4. Connect black 4-position round receptacle on opposite end of CAN Bus stub to mating light colored plug of Y-Splice on implement cable.

**NOTE:** *The following instructions are for the different supported planter configurations. Find the appropriate step for the planter configuration being used. When finished with that step, skip to Step 10 for all planters*



5. Install cabling for **SureStop** clutch systems as follows:

- a. Install two 1/2 planter harnesses on the planter, so that there is a clutch connection available at each row unit. Route cables along hydraulic hoses or existing harnesses when possible to avoid pinch points and moving parts.
- b. On interplant planters only, connect the 2-position Weatherpack (WP) shroud of the Interplant cable to the mating tower on the 1/2 planter harness, and route one lead towards the rear row unit and one towards the front row unit.
- c. Connect a clutch to each 2-position WP tower connection on the 1/2 planter harness or interplant cable.
- d. Connect black 16-position Molex receptacle of clutch control cable to mating plug of CCM.
- e. Connect the 24-position AMP plug on the clutch control cable labeled “Left” to the 1/2-planter harness going to the left half of the planter.
- f. Connect the 24-position AMP plug on the clutch control cable labeled “Right” to the 1/2-planter harness going to the right half of the planter.
- g. Connect the 2-position Deutsch plug on the clutch control cable to the mating receptacle on the CCM.
- h. Connect the 2-position Deutsch receptacle on the clutch control cable to one of the two gray mating plugs of the implement cable.
- i. If a second CCM is used, connect the 2-pin Deutsch receptacle of the module to the second gray plug on the implement cable.
- j. If a third CMM is used, connect the 2-pin Deutsch receptacle of the module to the black 2-pin Multiple Module power plug on the implement cable. Ensure the Multiple Module Power Cable is connected to the Implement Adapter Cable at the tractor. Use the High Current Power Splitter (4001013) to supply power to any additional modules.

6. Install cabling for **Tru-Count Air** clutch systems as follows:
- Connect black 16-position Molex receptacle of clutch control cable to mating plug of CCM.
  - Connect 2-position Deutsch receptacle on tee section of air clutch cable to mating gray plug on implement cable. There are (2) identical 2-position gray plugs on implement cable. Air clutch cable can be plugged into either one.
  - Connect remaining 2-position Deutsch plug on tee section of air clutch cable to mating high current power receptacle of CCM.
  - Install provided dust cap receptacle onto remaining gray 2-position plug of implement cable. It will not be used at this time.
  - Connect pneumatic valve boxes to air clutch cable. Make sure that valve boxes are connected to appropriate connectors of air clutch cable. Extension cables will be required unless air box is located near CCM.

**NOTE:** *Each air box will control (4) sections. Each CCM will support (3) air boxes.*

7. Install cabling for **Tru-Count Electric** clutch systems as follows:
- Connect black 16-position Molex receptacle of clutch control cable to mating plug of CCM.
  - Connect 2-position Deutsch plug on tee section of electric clutch cable to mating high current power receptacle of CCM.
  - Connect remaining 2-position Molex plug on tee section of electric clutch cable to mating receptacle of Molex power extension cable (4001085-X).
  - Route power extension cable toward hitch along same route as implement cable. Keep in mind additional length requirements for telescoping hitches. Install power extension cables as necessary for length. Route cables along hydraulic hoses or existing harnesses when possible to avoid pinch points and moving parts.
  - Connect power extension cable to 2-position Molex mating receptacle of power cable that was routed in an earlier section and left at rear of tractor.
  - Connect 2-position weather pack plugs of clutch control cable to mating receptacles of electric clutch extension cables.
  - Connect ring terminals of electric clutch extension cables to individual clutch solenoids. Make sure that ring terminals are connected in correct polarity. Use provided dielectric grease on ring terminal connections and fill boots with grease before replacing over terminals.

8. Install cabling for **John Deere RowCommand** equipped systems for 8-24 row planters and interplant planters as follows:
- a. Connect black 16-position Molex receptacle of clutch control cable to mating plug of CCM(s)
  - b. Connect 2-position Deutsch plug on tee section of clutch cable to mating high current power receptacle of the first CCM.
  - c. Connect remaining 2-position Deutsch receptacle on tee section of clutch cable to one of the two identical mating receptacles on the implement cable.
  - d. Connect the second gray 2-position Deutsch plug on the implement cable to the mating receptacle on the second CCM.
  - e. Connect the Round 35-position Deutsch plug to the mating connector of the planter harness.
  - f. If using the factory installed RowCommand clutches, install a RowCommand Clutch adapter cable between the clutch and planter harness on each row unit.

**CAUTION:** The John Deere system uses a common ground for the clutches and switches a 12-volt signal to turn the clutch on and off. The Ag Leader CCM uses a common 12-volt power source and switches a ground signal to turn the clutch on and off. Due to this difference, the clutch adapter cable is required to correct the polarity going into the RowCommand clutch, if this adapter is not used when a CCM is installed, a short circuit will occur, permanently damaging the clutch.

- g. If using factory installed RowCommand cables with SureStop clutches, adapter cable (4001922-4) will be used. Connect the 6-position Deutsch receptacle to the planter at each row unit. Connect the 3-position Weatherpack shroud to the seed tube sensor, and the 2-position tower to the SureStop clutch.
9. Install cabling for **John Deere RowCommand** equipped systems for 36 row planters as follows:
- a. Multiple Module Power Cable must be used.
  - b. Connect Deutsch to Molex power adapter cable (4003855-008) to black 2-position Deutsch plug of implement cable.
  - c. Connect the (3) 16-position Molex receptacles of the clutch control cable to the appropriate CCM.
  - d. Connect the 2-position Deutsch plug labeled Clutch Module 1 to the mating receptacle on the CCM for Sections 1-12.
  - e. Connect the 2-position Deutsch plug labeled Clutch Module 2 to the mating receptacle on the CCM for Sections 13-24.

- f. Connect the 2-position Deutsch plug labeled Clutch Module 3 to the mating receptacle on the CCM for Sections 25-36.
- g. Connect the (3) 2-position Molex plugs on the clutch control cables to the 3 Molex connections of the power adapter cables used in *step b*.
- h. Connect the 3-24 position Amp receptacles labeled “Planter Left”, “Planter Center” and “Planter Right” to the appropriate connections on the planter harness.
- i. If using the factory installed RowCommand clutches, install a RowCommand Clutch adapter cable between the clutch and planter harness on each row unit.

**CAUTION:** The John Deere system uses a common ground for the clutches and switches a 12-volt signal to turn the clutch on and off. The Ag Leader CCM uses a common 12-volt power sources and switches a ground signal to turn the clutch on and off. Due to this difference, the clutch adapter cable is required to correct the polarity going into the RowCommand clutch, if this adapter is not used when a CCM is installed, a short circuit will occur, permanently damaging the clutch.

- j. If using factory installed RowCommand cables with SureStop clutches, adapter cable (4001922-4) will be used. Connect the 6-position Deutsch receptacle to the planter at each row unit. Connect the 3-position Weatherpack shroud to the seed tube sensor, and the 2-position tower to the SureStop clutch.
10. On all planters, connect the ground ring terminal of black wire from implement cable to planter chassis.

Connect 2-position receptacle of implement switch plug cable to mating plug of CCM labeled “IMPLEMENT SWITCH.”

<b>Installing Implement Switch</b>	<b>Required Parts:</b>	<b>Part Number:</b>
	Implement switch installation kit – Kinze	4100830
	Implement switch installation kit – John Deere	4100831
	Implement switch installation kit – White	4100832
	Implement switch installation kit – Case IH	4100833
	Implement switch extension cable – 10 ft.	2000453-2
	Implement switch extension cable – 25 ft.	2000453-3
	<i>Above quantities are dependent on planter configuration</i>	
	<b>Optional Parts:</b>	
	(1) Implement switch tee cable (required if using 2 switches)	4001391-1

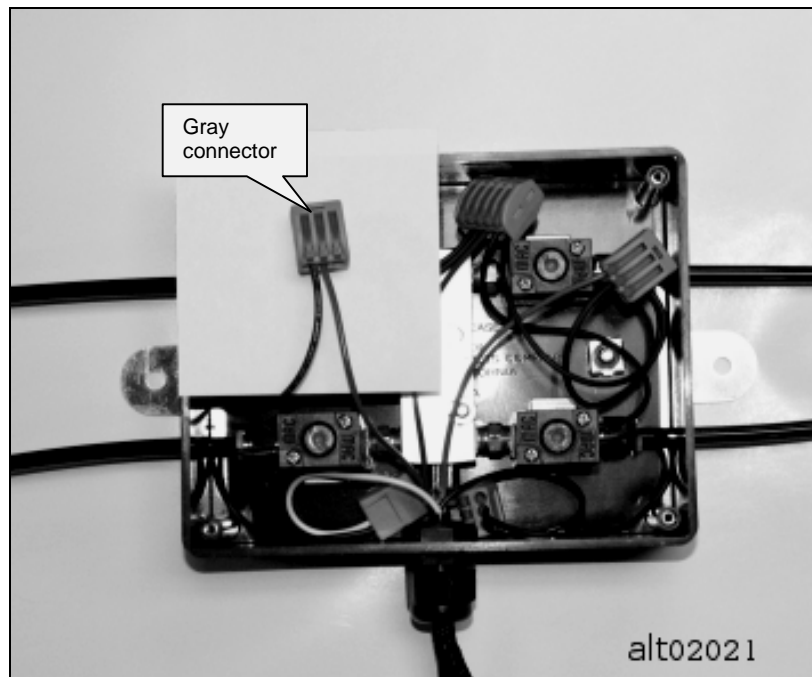
1. Install implement switch on row unit. Detailed instructions for installing an implement switch along with appropriate brackets and hardware for each make of planter are provided in the kits listed above.
2. With implement switch properly installed, connect implement switch extension cable to implement switch and route extension cable to appropriate module as dictated by the SeedCommand implement switch hierarchy in figure 6.

**NOTE:** *Implement switches have (2) 3-position weather pack connectors. From the factory, the “normally open” connector is plugged and the “normally closed” connector is unplugged. Use the connector that is more appropriate and make sure the plug is installed in the unused connector.*

3. Connect extension cable to mating 3-position implement switch connector of appropriate module. If using (2) implement switches on separate row units, optional implement switch tee cable (P/N: 4001391-1) is required.

## Final Installation Procedures

1. For an **Air Clutch Installation**, unused valves within air box must be disconnected. This can be done as follows in steps (a-d).
  - a. Remove (4) screws from top of valve box and remove cover.
  - b. Locate gray 3-position connector for each unused air valve as shown in Figure 8. Lift orange lever and remove black wire that runs to valve.
  - c. Put orange lever back into locked position.
  - d. Reinstall cover on valve box.



*Figure 8. Internal valve box components*

2. For an all clutch installations, verify that planter sections turn on/off properly with correct switches.
3. Carefully fold and unfold planter while watching for interference with cables, air lines etc... If interference exists, modify installation as necessary.
4. Secure all cabling and equipment with cable ties to keep it clear of moving parts and field debris.

Refer to provided quick reference card for proper setup of display.

<b>Revision History</b>			
<b>Date</b>	<b>Revision</b>	<b>Initials</b>	<b>Changes</b>
Nov 2006	N/C	TVD	- Production release
Nov 2007	A	SLH	- Various content changes and updates
Oct 2008	B	SLH	- Added comments to power cable installation - Added support for multiple Clutch Control Modules - Added Edge display to header and parts list
Dec 2009	C	JAB	- Removed InSight display from header and parts list - Added Ag Leader® Integra to parts list - Change EDGE display kit from 4100228 to 4100233 in parts list - Added support for SureStop Clutches - Added support for JD RowCommand Clutches - Change display cable from 4000727-10 to 4001608-12, power cable from 4000411-12 to 4002016-12 - Added implement adapter cable
Oct 2013	D	BB	- Removed parts list for items not included in CCM kit 4100533 - Updated line art to show CAN Switch Console SC110 - Updated cable connection instructions to support CAN Switch Console SC110 - Added support for cable PN 4003855-008, simplifying 36 row RowCommand with CCM installation - Removed <b>additional cables</b> list from <b>Installing Clutch Control Module and Implement Cables</b> section
Nov 2013	E	CAR	- Update branding