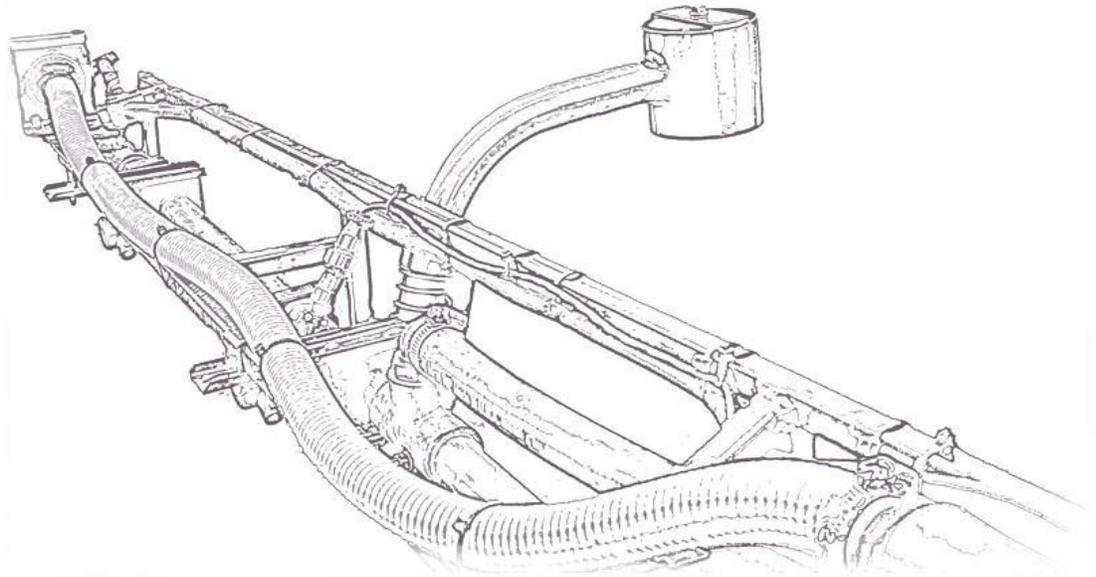




UC5TM CAN BUS Spray Height Control System



Case IH (20 & 30 Series)
Prop ML & Active Wing Roll
Installation Manual

Printed in Canada

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Reorder P/N: UC5-BC-CS05A-INST Rev C (Case IH (20 & 30 Series) Prop ML & Active Wing
Roll)

NOTICE: NORAC Systems International Inc. reserves the right to improve products and their specifications without notice and without the requirement to update products sold previously. Every effort has been made to ensure the accuracy of the information contained in this manual. The technical information in this manual was reviewed at the time of approval for publication.

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I Introduction

Congratulations on your purchase of the NORAC UC5 Spray Height Control System. This system is manufactured with top quality components and is engineered using the latest technology to provide operating reliability unmatched for years to come.

When properly used the system can provide protection from sprayer boom damage, improve sprayer efficiency, and ensure chemicals are applied correctly.

Please take the time to read this manual completely before attempting to install the system. A thorough understanding of this manual will ensure that you receive the maximum benefit from the system.

Your input can help make us better! If you find issues or have suggestions regarding the parts list or the installation procedure, please don't hesitate to contact us.

Important

Every effort has been made to ensure the accuracy of the information contained in this manual. All parts supplied are selected to specially fit the sprayer to facilitate a complete installation. However, NORAC cannot guarantee all parts fit as intended due to the variations of the sprayer by the manufacturer.

Please read this manual in its entirety before attempting installation.

2 Technical Specifications



This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

This Class A digital apparatus complies with Canadian ICES-003.

Pursuant to EMC Directive – Article 9, this product is not intended for residential use.

Table 1: System Specifications

Supply Voltage (rated)	12VDC
Supply Current (rated)	10A
Hydraulic Pressure (maximum)	3300 psi
Baud Rate	250 kbps
Clock Frequency (maximum)	96 MHz
Solenoid Valve PWM Frequency	300 Hz
Ultrasonic Sensor Transmit Frequency	50 kHz
Operating Temperature Range	0°C to 80°C

3 General UC5 System Layout

Figure 1 illustrates the general layout of the UC5 system components:

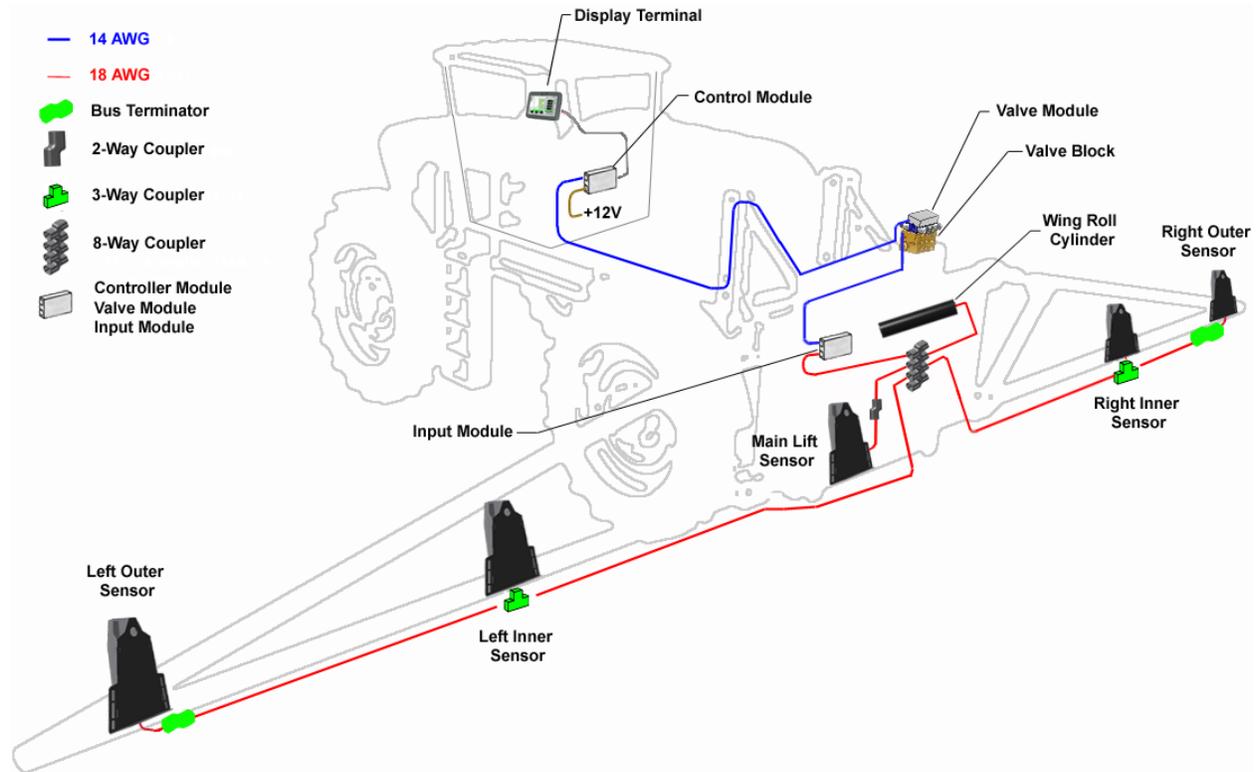


Figure 1: General UC5 System Layout

4 Kit Parts

4.1 Kit Overview

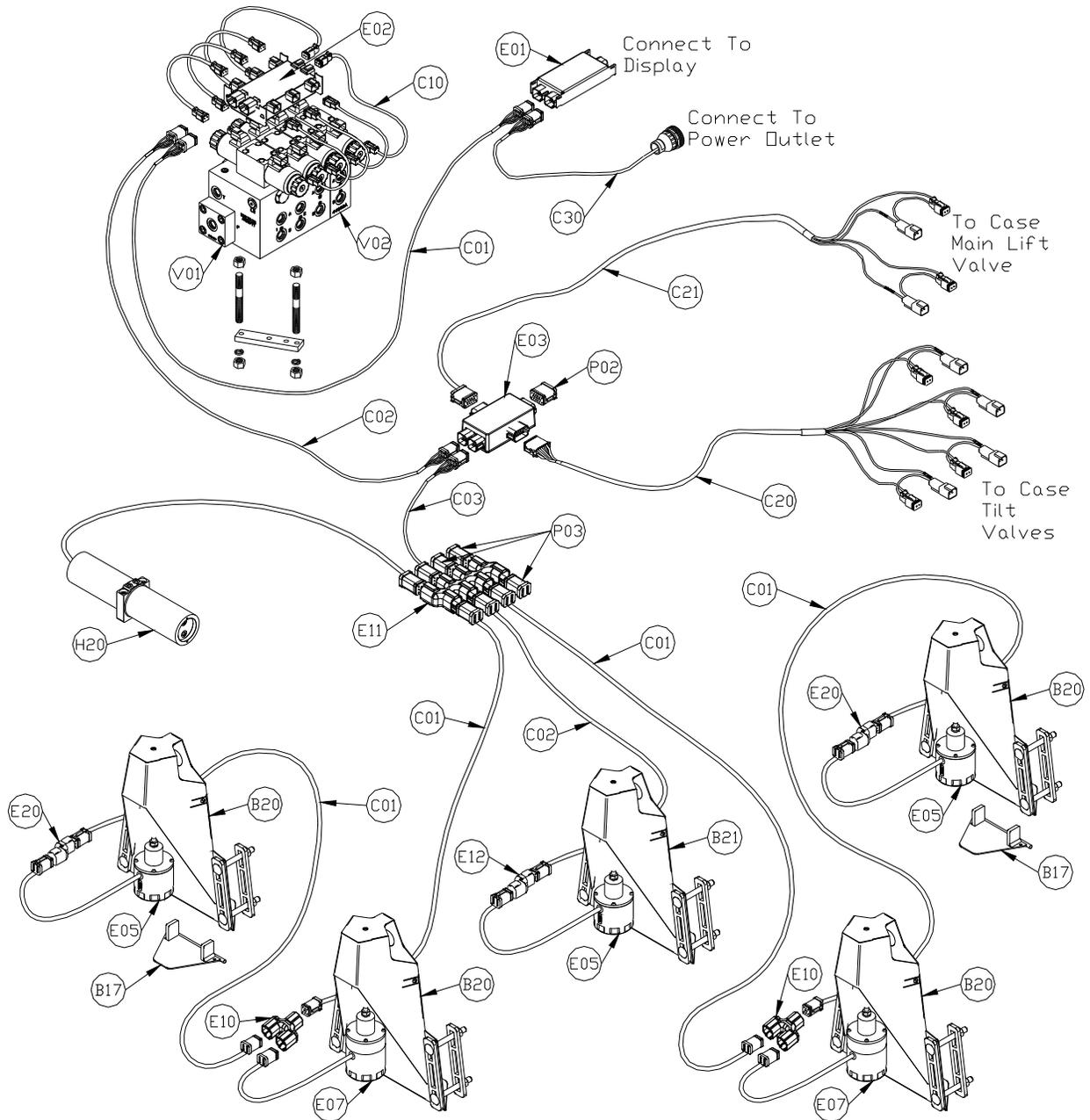


Figure 2: CS05A System Parts

4.2 Hydraulic Plumbing

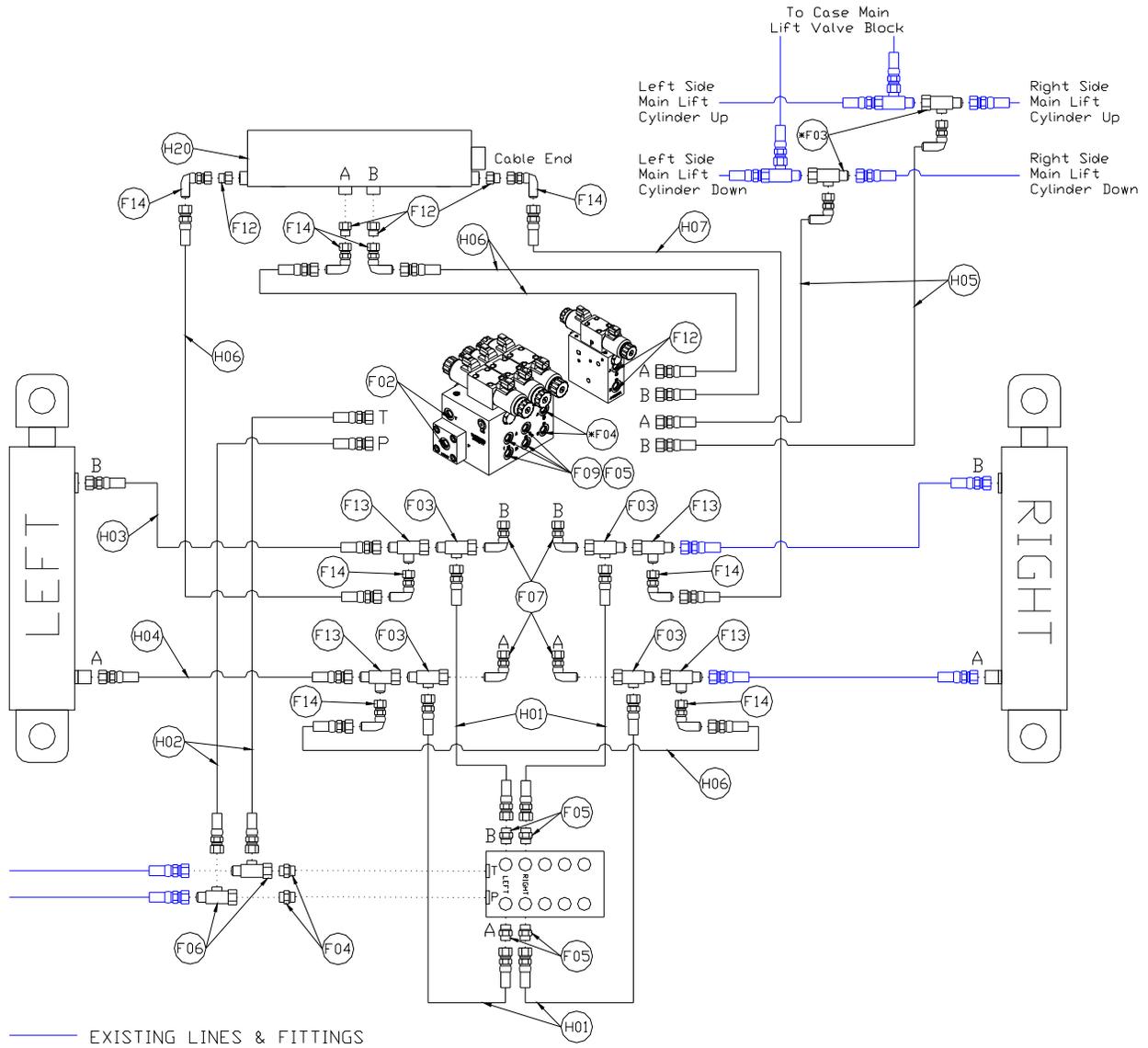


Figure 3: CS05A Hydraulic Plumbing

4.3 List of Parts

Item	Part Number	Name	Quantity
B05	44706-01	KIT CABLE TIE BLACK 10 PCS 21 IN 150 PCS 7.5 IN	1
B07	44746	BRACKET WRC CS	1
B17	44972	SENSOR MOUNTING BRACKET LOW PROFILE RAINFLAP 16GA	2
B20	44971	SENSOR MOUNTING BRACKET LOW PROFILE 16GA	4
B21	44973	SENSOR MOUNTING BRACKET LOW PROFILE 16 GA LARGE FLANGE	1
C01	43220-10	CABLE UC5 NETWORK 14 AWG 10M	5
C02	43220-01	CABLE UC5 NETWORK 14 AWG 1M	2
C03	43220-03	CABLE UC5 NETWORK 14 AWG 3M	1
C10	43230-04	CABLE UC5 VALVE 2PIN DT TO 2PIN DT	8
C20	43240-01	CABLE UC5 INTERFACE TILT DT	1
C21	43240-22	CABLE UC5 INTERFACE MAIN DT (240")	1
C30	43250-04	CABLE UC5 BATTERY AMP FUSED	1
E01	43710	UC5 CONTROLLER MODULE	1
E02	43720	UC5 VALVE MODULE	1
E03	43732	UC5 INPUT MODULE PASS THRU	1
E05	43750	UC5 ULTRASONIC SENSOR	3
E07	50100	ULTRASONIC MAX SENSOR	2
E10	43760	UC5 NETWORK COUPLER 3-WAY	2
E11	43765	UC5 NETWORK COUPLER 8-WAY	1
E12	43764	UC5 NETWORK COUPLER 2-WAY	1
E20	43764T	UC5 NETWORK COUPLER 2-WAY WITH TERMINATOR	2
H01	44862-08	HOSE ASSEMBLY 122R2-04 36 IN L 6FORX 6FORX	4
H02	44863-10	HOSE ASSEMBLY 122R2-06 60 IN L 6FJX 8FORX	2
H03	44863-25	HOSE ASSEMBLY 122R2-06 136 IN L 6FORX 6FORX	1
H04	44863-31	HOSE ASSEMBLY 122R2-06 106 IN L 6FORX 6FORX	1
H05	44863-38	HOSE ASSEMBLY 122R2-06 156 IN L 6FORX 6FORX90	2
H06	44863-23	HOSE ASSEMBLY 122R2-06 32IN L 6FORX 6FORX	4
H07	44863-53	HOSE ASSEMBLY 122R2-06 66 IN L 6FORX 6FORX	1
H10	44865-06	HYDRAULICS FITTING KIT - CS3	1
H11	44865-48	HYDRAULICS FITTING KIT - CS4	1
H12	44865-75	HYDRAULICS FITTING KIT - AWR1	1
H20	44978	WING ROLL CYLINDER W/POSITION SENSOR	1

Item	Part Number	Name	Quantity
M02	UC5-BC-CS05A-INST	MANUAL INSTALLATION UC5 CASE IH (4420, 3320) PROP ML & ACTIVE WING ROLL	1
P02	106602	UC5 NETWORK 12 PIN PLUG (A-KEY)	1
P03	105882	UC5 NETWORK 6 PIN PLUG	3
V01	44960D	VALVE BLOCK ASSEMBLY 3 STATION CC/LS PROP DT 4 BOLT	1
V02	44692D	VALVE ASSEMBLY EXPANSION DPOC PROP DT 4 BOLT	1

 **Important**

Do not use high speed power tools/drills when installing hardware.

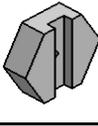
 **Important**

The use of dielectric grease is not recommended on any NORAC electrical connections.

 **Important**

To ensure all stainless steel hardware does not gall or seize apply a light coating of the supplied Permatex Anti-seize grease to all threaded parts upon installation. Permatex Anti-seize lubricant is preferred, but other similar anti-seize products may be used.

4.4 Hydraulic Fitting Kit Details (P/N: 44865-06)

Item	Part Number	Name	Quantity	Picture
F02	103312	MALE ADAPTER - 6MB 6MJ	2	
F03	104586	TEE ADAPTER - 6FORXR 6MORT	4	
F04	104886	MALE ADAPTER - 8MOR 8MB	2	
F05	44917	MALE ADAPTER - 6MB-6MOR MACHINED ORB	8	
F06	104885	TEE ADAPTER - 8FORXR 8MORT	2	
F07	104590	90 DEG ADAPTER - 6MOR 6FORX90	4	
F08	104369	PLUG - 6MBP	2	
F09	44928	ONE WAY ORIFICE INSERT - 0.047	4	
F10	104592	O-RING HYD 3.8 IN FLAT FACE	2	
F11	105184	ORIFICE INLINE 6 FLAT FACE	2	

4.5 Hydraulic Fitting Kit Details (P/N: 44865-48)

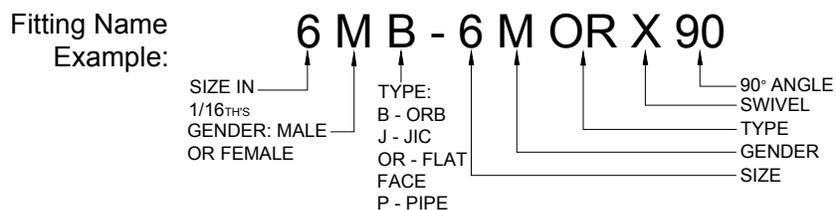
The following fittings are used for connecting the main lift hydraulics.

Item	Part Number	Name	Quantity	Picture
*F03	104586	TEE ADAPTER - 6FORXR 6MORT	2	
*F04	44917	MALE ADAPTER - 6MB 6MOR	2	

4.6 Hydraulic Fitting Kit Details (P/N: 44865-75)

The following fittings are used for connecting the active wing roll hydraulics.

Item	Part Number	Name	Quantity	Picture
F12	44917	MALE ADAPTER - 6MB 6MOR	6	
F13	104586	TEE ADAPTER - 6FORXR 6MORT	4	
F14	104590	90 DEG ADAPTER - 6MOR 6FORX90	9	



Important

Not all fittings are used for this installation.

5 Pre-Install Checklist

The pre-install checklist is necessary to check the existing sprayer functionality before the installation.

1. Unfold the sprayer over a flat, unobstructed area (i.e. no power lines...etc.).
2. Ensure all boom-fold operations are functional (place a check mark in boxes below).
3. Bring engine to field-operational RPM and record below.
4. Record the time (seconds) it takes for a full stroke for all boom functions. To ensure repeatable measurements, take the average of 3 trials.
5. Not all sprayers will have the functions listed below in **Figure 4**.

⚠ Important

Ensure the boom has sufficient travel so it does not contact the ground during these tests.

<input type="checkbox"/>	<input type="checkbox"/>	Inner Fold	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Outer Fold	<input type="checkbox"/>
	IN	OUT	Engine RPM
Left Tilt Up Full Stroke	<input type="checkbox"/>	<input type="checkbox"/>	Right Tilt Up Full Stroke
	↑	↑	↑
	Main Lift Up, Full Stroke		
	Main Lift Down, Full Stroke		
Left Tilt Down Full Stroke	<input type="checkbox"/>	<input type="checkbox"/>	Right Tilt Down Full Stroke
	↓	↓	↓
	<input type="checkbox"/>	<input type="checkbox"/>	
	↶	↷	
	Roll CCW (Slant Left)	Roll CW (Slant Right)	

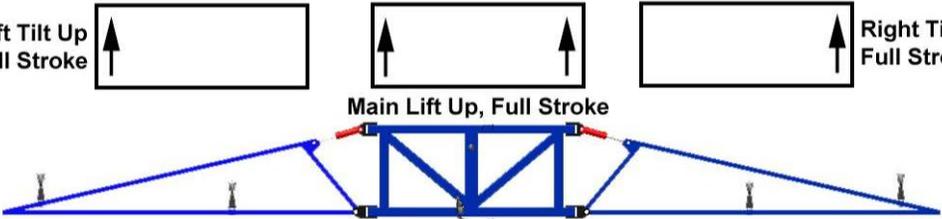


Figure 4: Pre-Install Boom Speeds

6 Ultrasonic Sensor Installation

6.1 Ultrasonic Sensor Serial Number Arrangement

When installing the UC5 sensors, start with the smallest serial number on the left-hand side, and proceed to the largest serial number on the right hand side. Each UC5 sensor has a serial number stamped on the sensor housing.

Apply a light coating of the supplied Permatex Anti-seize grease to all threaded parts upon installation.

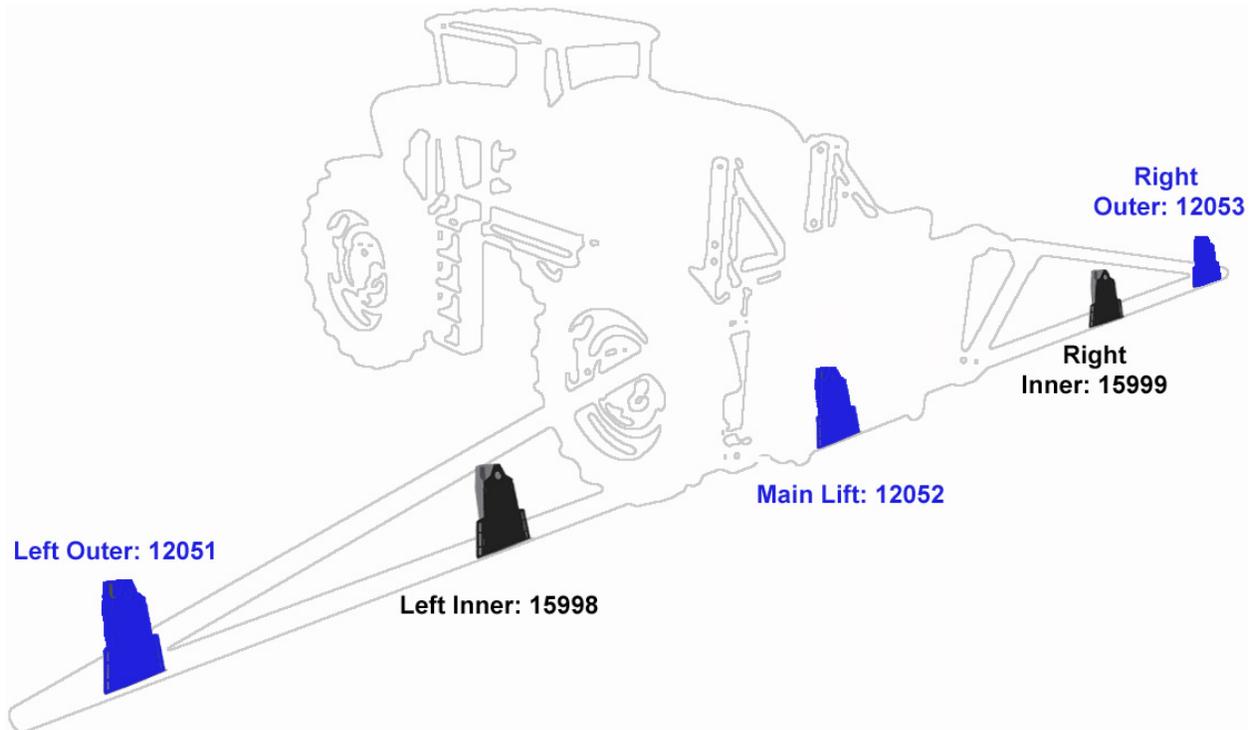


Figure 5: Sensor Serial Number Arrangement

⚠ The E07 sensors will be mounted in the positions shown in black.

6.2 Ultrasonic Sensor Mounting Guidelines

The following guidelines will ensure optimal sensor performance and prevent sensor measurement error. These rules should be followed for both the wing sensors and the main lift (middle) sensor.

1. In its lowest position, the sensor must be 9 inches (23 cm) or more from the ground.
2. Ensure that there are no obstructions within a 12-inch diameter circle projected directly below the center of the sensor.
3. The sensor should be approximately vertical at normal operating heights.

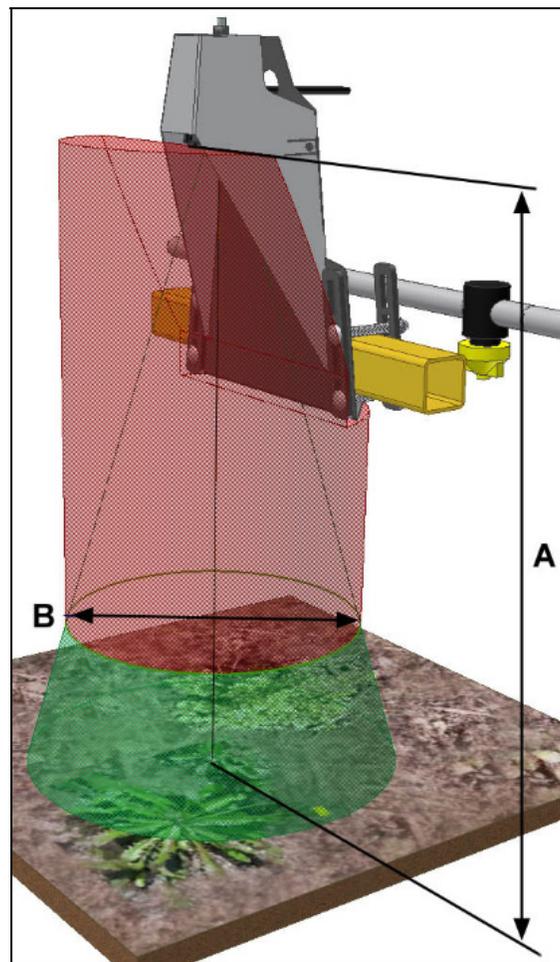


Figure 6: Sensor Mounting Guidelines

6.3 Low Profile Bracket Mounting Guidelines

1. Minimize the distance between the bolts to prevent bending the bracket and prevent the bracket from loosening over time.
2. Ensure the bracket is mounted tight against the bottom of the boom, minimizing the distance between the boom structure and the angled flange.

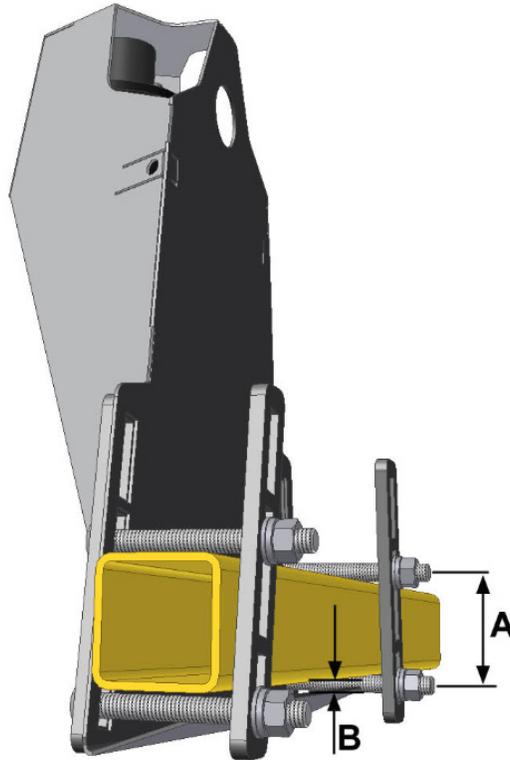


Figure 7: Bracket Mounting Guidelines

Important

A problem can arise if a sensor is not mounted correctly. It is possible for the sensor to read off of the boom instead of the ground. This may only become apparent once the control system is switched from soil to crop mode.

Also be careful that the sensor bracket does not collide with any other part of the boom when the boom is folded to transport position. If possible, mount the sensor brackets while the booms are folded to ensure they will not cause interference.

6.4 Wing Sensor Installation

1. The wing sensor mounting brackets (B20) are the four brackets with the shorter mounting flange.
2. The sensor bracket should be oriented forward (ahead of the boom).
3. Typically the best mounting location for the outer wing sensor brackets will be near the end of the boom tips, approximately two feet (60cm) from the end.
4. Depending on the boom design, some breakaway sections will lift upwards as they break back. If the sensor is mounted to this portion of the boom, the system will force the boom downwards towards the ground as the boom folds backwards.
5. Mount the inner wing sensor brackets approximately half-way between the chassis and the outer wing sensors.
6. Mount the UC5 ultrasonic sensors (E05) into the outer wing sensor brackets.
7. Mount the UC5 plus ultrasonic sensors (E07) into the inner wing sensor brackets.
8. Run the sensor cable either through hole in the back or through the side cut-out and behind the bracket. Ensure the cable is clear of moving parts and will not be damaged during folding.

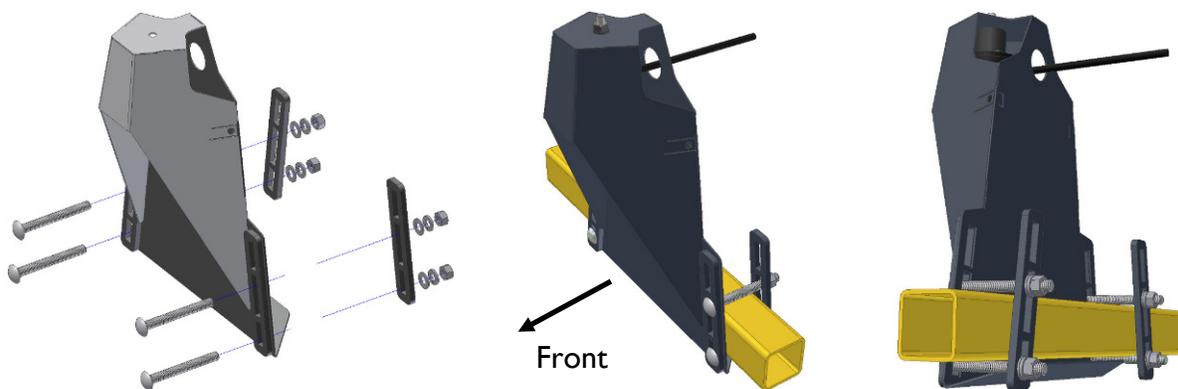


Figure 8: Bracket Mounting Example

6.5 Rainflap Installation

Important

Rainflaps are only installed in the **OUTER** wing sensor brackets and are not installed for 120' booms.

1. Insert one side of the rainflap rod into the pre-bent hinge tab on the sensor bracket. (**Figure 9**)

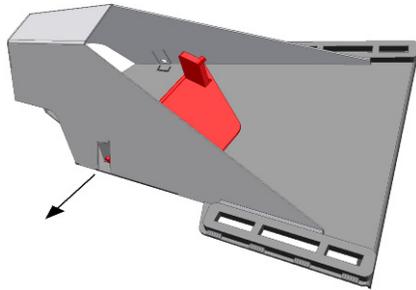


Figure 9: Rainflap Rod in Pre-Bent Hinge Tab

2. Align the other side of the rainflap rod with the unbent hinge tab. (**Figure 10**)

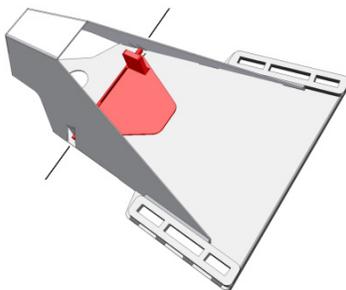


Figure 10: Align Rainflap Rod

3. Bend the hinge tab inward over the rainflap rod until the hinge tab fits securely in the detent groove on the backside of the sensor bracket. (**Figure 11**)

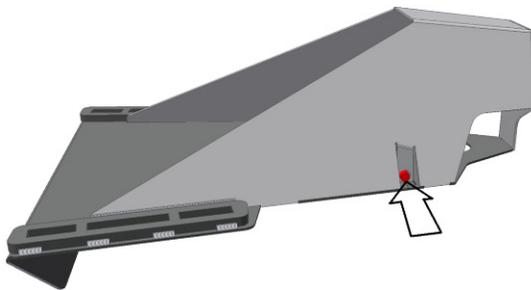


Figure 11: Bend Rainflap Hinge Tab

4. Ensure the rainflap actuates smoothly when the bracket is turned upside down and returns to the open position when the sensor bracket is returned to its operating position (sensor pointing downwards toward the ground).

6.6 Main Lift Sensor Installation

1. The main lift mounting bracket (B21) is the bracket with the longer mounting flange.
2. There are a variety of ways to mount the main lift bracket on most sprayers. The bracket should position the sensor approximately in the center of the sprayer, forward of the boom. An example of this mounting is illustrated in **Figure 13**.

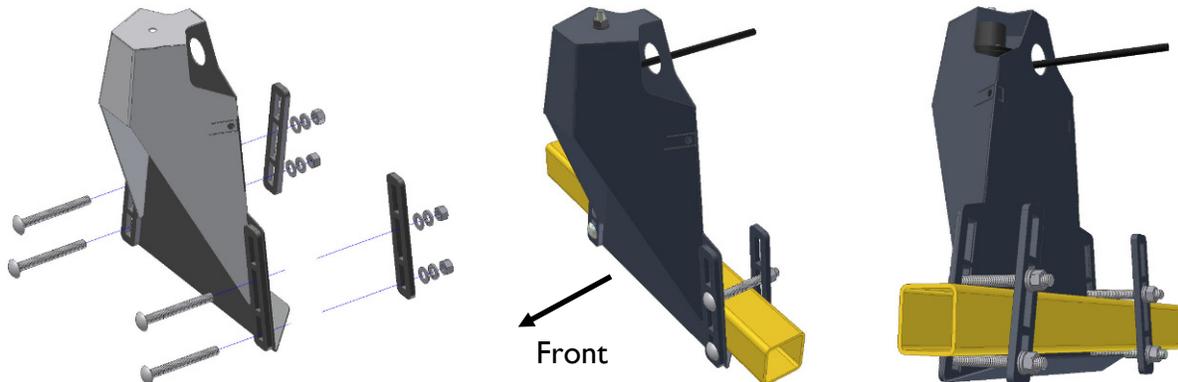


Figure 12: Bracket Mounting Example

3. Mount the UC5 ultrasonic sensor (E05) to the main lift bracket. Run the sensor cable through hole and behind the bracket.

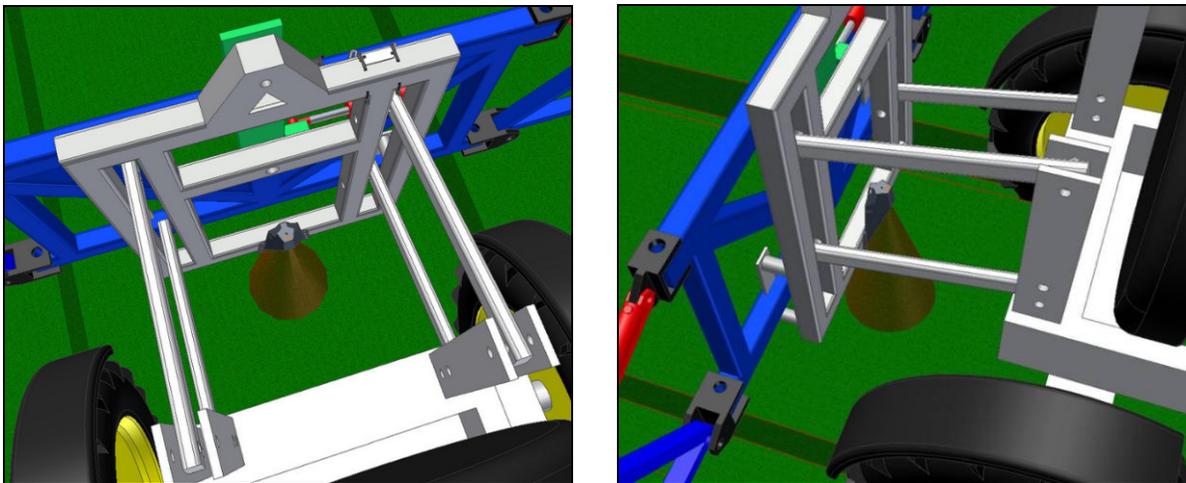


Figure 13: Example Mounting of the Main Lift Bracket

Important

Avoid mounting the main lift sensor over or near a wheel-track. Measurements from the wheel-track do not provide an accurate crop height and will cause measurement and control error.

Ensure the bracket does not collide with any other part of the sprayer throughout the full range of main lift motion.

7 Module Installation

An optional module mounting bracket kit is available for purchase from NORAC. The mounting brackets are compatible with control modules and input modules. One kit is needed per module.

Item	Part Number	Name	Quantity
B20	43708	UC5 MOUNTING BRACKET KIT (CONTROL AND INPUT MODULES)	1

7.1 Control Module

1. Refer to **Figure I** and **Figure I4**.
2. If using a Case AFS Pro 300, 600 or 700 display, follow the control module mounting instructions in the display kit installation manual. Otherwise, securely mount the control module (E01) inside the sprayer cab using screws, cable ties or optional brackets.
3. Connect the display terminal to the control module using the existing display cable. This cable must be connected to the end of the control module with only one Deutsch connector.
4. Connect the power cable (C30) to one of the two CANbus connectors on the control module. Connect the other end of the power cable to an appropriate power source.
5. Route cable C01 from the other CANbus connector towards the rear of the sprayer.

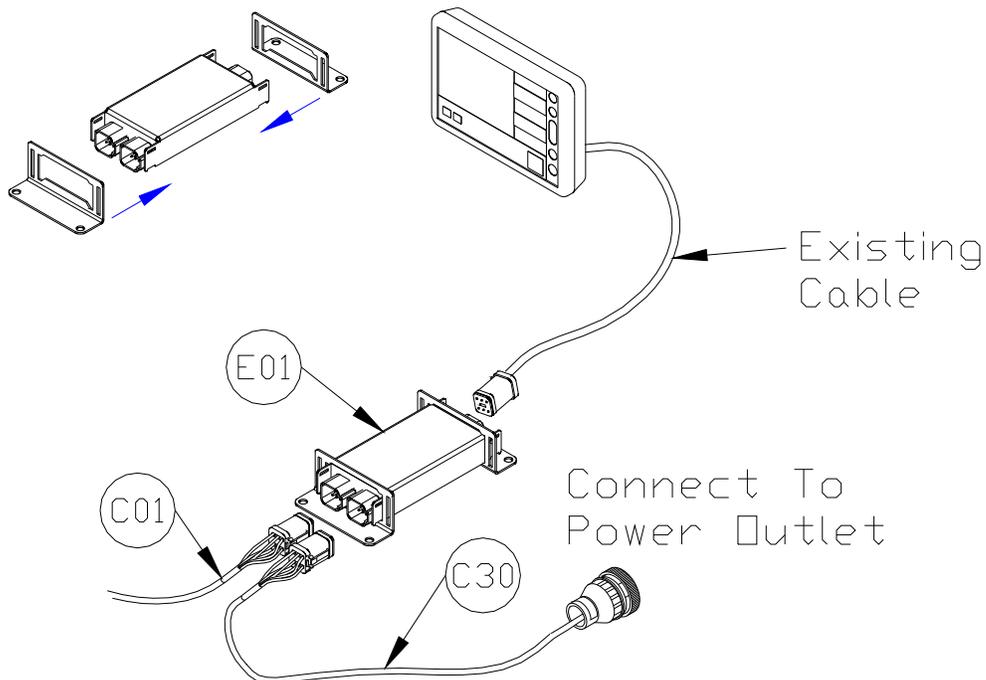
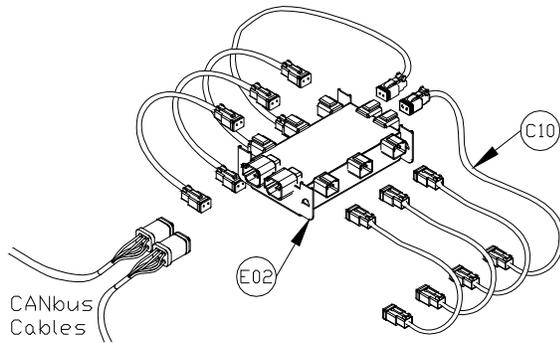


Figure I4: Control Module Mounting

7.2 Valve Module

1. Install the valve module (E02) to the top of the NORAC valve block. Orient the 6-pin Deutsch (CANbus) connectors towards the “P” and “T” ports.



Output Number	Normal Function
1	Left Up
2	Left Down
3	Right Up
4	Right Down
5	Main Up
6	Main Down
7	Roll CW
8	Roll CCW

Figure 15: Valve Module

2. Verify the valve coil connectors are oriented vertically (Figure 16).

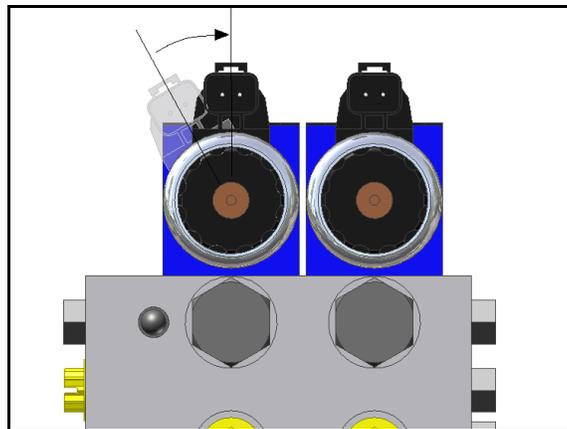


Figure 16: Align Coils

3. Place the valve module between the valve coils. Slide a valve mounting bracket over the connectors of the valve module and the valve coil connectors. This may require flexing the plastic bracket slightly (Figure 17).
4. Ensure the bracket is pushed over the connectors far enough to allow the clips to engage behind the valve connectors.

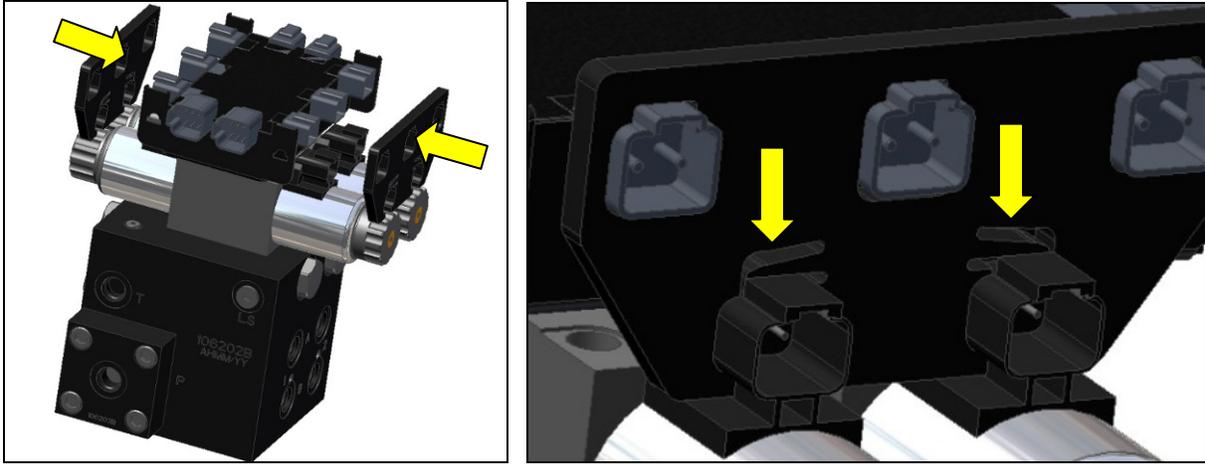


Figure 17: Valve Module Bracket Installation

5. Connect the valve module CANbus to cable C01 from the control module. Route cable C02 from the other connector to the input module.
6. With the valve module securely mounted to the valve block, connect the valve cables (C10), to the valve coils.
7. Connect the temperature probe to the valve block using the supplied 3/8" x 1/2" hex bolt.

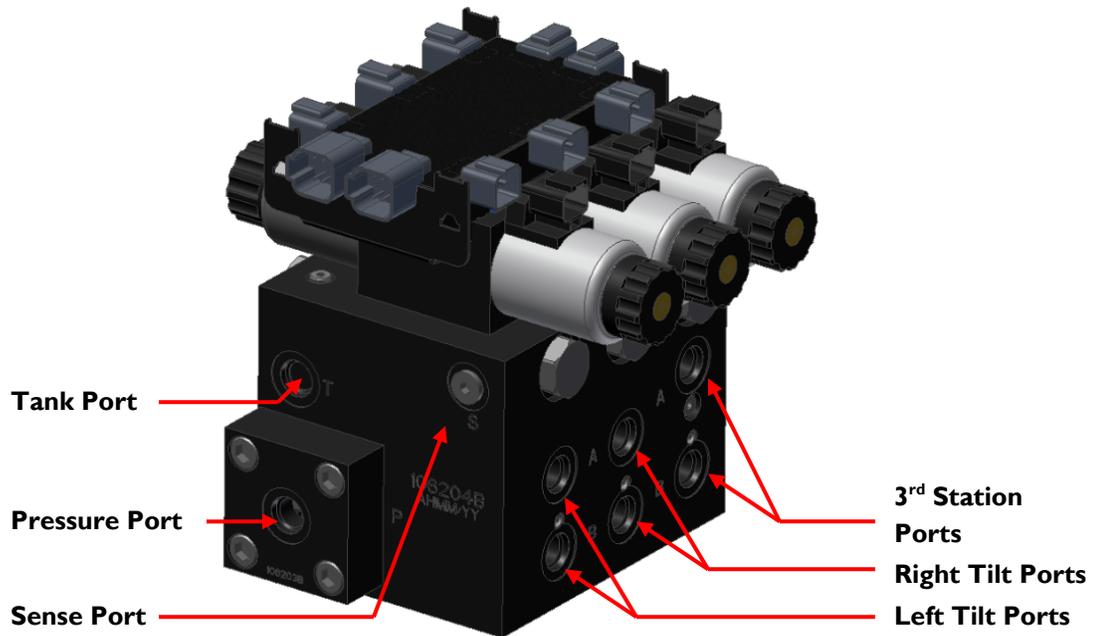


Figure 18: Valve Module Installation

7.3 Input Module

1. Install the input module (E03) on the boom near the sprayer valve block. Secure it to the boom using cable ties or optional brackets.
2. Connect the CANbus cable (C02) from the valve module to the input module. Route cable C03 from the other connector to the 8-way coupler (E11).
3. Insert the 12 pin plug (P02) into the OEM 3 connector on the end of the input module
4. Connect the 12 pin connector on the tilt interface cable (C20) to the *Thru 2* connector on the side of the input module.
5. Insert the other connectors on C20 into the tilt connectors on the sprayer valve block.

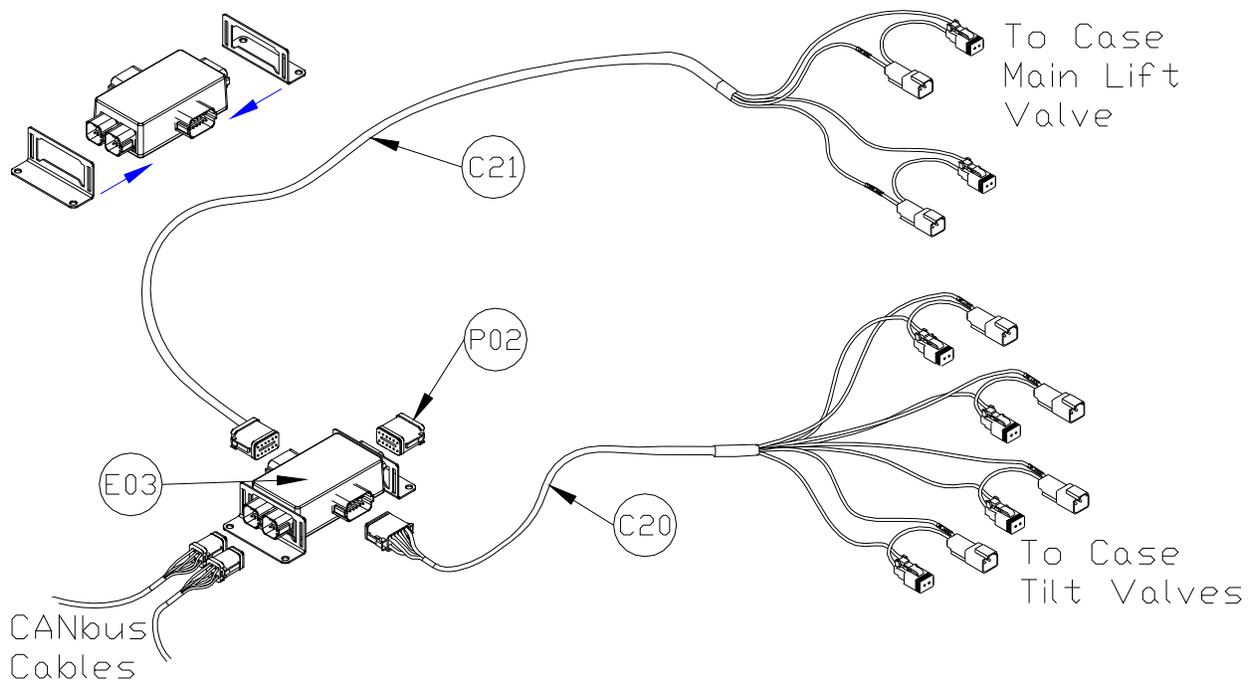


Figure 19: Input Module Connections

6. Connect the 12 pin connector on the main lift interface cable (C21) to the *Thru 1* connector on the side of the input module.
7. Insert the other connectors on C21 into the main lift connectors on the sprayer valve block.
8. The main lift valve on a Case sprayer is located on the belly of the sprayer, forward of the rear axle.

8 Connecting the Sensors to the CANbus

1. Fasten the 8-way coupler to the boom with cable ties.
2. Connect cable C03 from the input module to the 8-way coupler (E11).
3. Connect the WRC (H20) to the 8-way coupler (E11).
4. Connect the main lift sensor to the 8-way coupler using cable C02 and a 2-way coupler (E12). Cable C02 and item E12 may not be needed if the 8-way coupler is mounted close enough to the main lift sensor.
5. Attach a 3-way coupler (E10) to the boom at the inner sensor brackets. Connect two cables (C01) to the 8-way coupler and route along the booms to the inner wing sensors. Plug the sensor and the CANbus cable into the 3-way coupler.
6. Connect cable C01 to the remaining connector on the 3-way coupler and route along the boom to the outer wing sensors.
7. At the sensor brackets, attach a 2-way coupler with terminator (E20) to the sprayer boom. The 2-way coupler with terminator is the white two way coupler. Plug the sensor and the CANbus cable into the 2-way coupler.
8. Insert the 6 pin plugs (P03) into the unused connectors on the 8-way coupler.

Important

Ensure that all unused connectors are plugged with the plugs provided.

9 Hydraulic Installation

⚠ Warning!

Ensure all pressure has been bled from the system before disconnecting any lines or fittings. Hydraulic pressure will exist on the wing tilt circuits unless the wings are being supported by other means. The hydraulic installation may be performed with the wings in transport position, resting on the ground or with the tilt cylinders fully extended.

⚠ Important

Component failure due to oil contamination is not covered under the NORAC UC5 system warranty. It is recommended that a qualified technician perform the hydraulic installation.

9.1 Expansion Block Assembly

1. Remove the four 4MBP plugs from the 3 station valve block (**Figure 20**).
2. Coat the four o-rings in hydraulic oil and install them into the expansion block. Ensure the o-rings are seated properly.
3. Attach the expansion block to the 3 station block using the included spring washers and bolts.
4. Tighten the bolts to 31 ft-lbs (42 Nm).

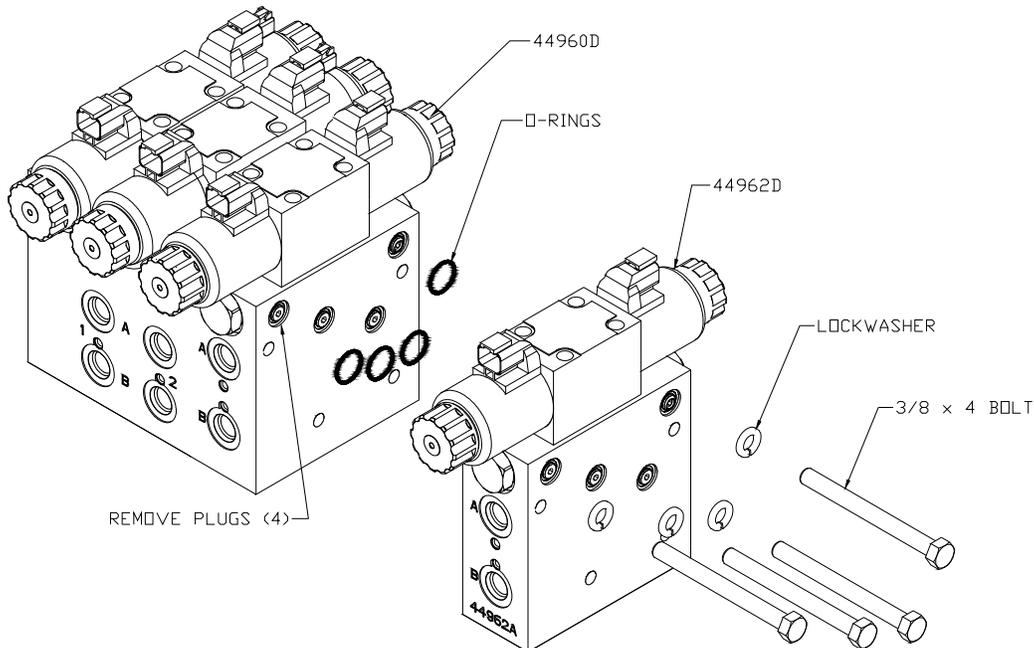


Figure 20: NORAC Expansion Block Assembly

9.2 Valve Assembly

1. On a clean surface remove the plastic plugs from the block.
2. Install the 6MB-6MJ (F02) fittings into the “P” and “T” ports. Tighten to 18 ft-lbs (24 Nm).
3. Insert the two orifices (F09) into the “B” ports with the notch facing outward.
4. Install the 6MB-6MOR (F05) fittings into the “B” ports. Tighten to 18 ft-lbs (24 Nm).
5. Insert the two (2) orifices (F09) into the “A” ports with the notch facing inward.
6. Install the 6MB-6MOR (F05) fittings into the “A” ports. Tighten to 18 ft-lbs (24 Nm).
7. Install the 6MB-6MOR fittings (*F04) into the “A” and “B” ports of the 3rd station.
8. Install the 6MB-6MOR (F12) fittings into the “A” and “B” ports of the expansion block. Tighten to 18 ft-lbs (24 Nm).

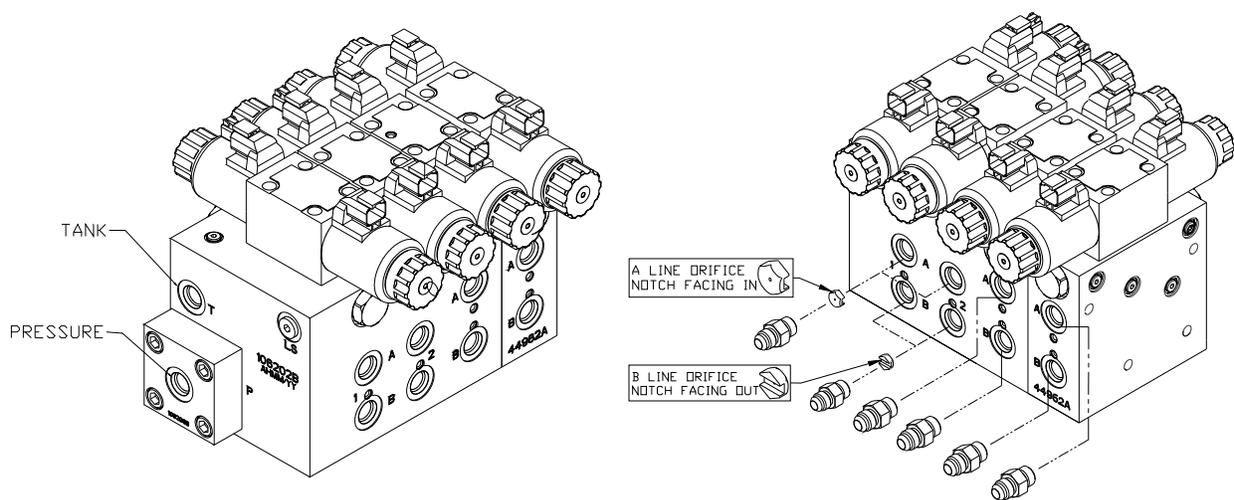


Figure 21: NORAC Valve Block Details

9.3 Valve Block Mounting

1. A suitable mounting location for the valve block is illustrated in **Figure 22**.
2. Insert the threaded rod into the block and use a hex nut to hold the rod. The block holes are 3/8" NC-1" deep. If bolts are used instead of the threaded rod, ensure the bolts thread in at least 3/8".
3. Use the remaining hardware to secure the block to the sprayer.
4. Cut off excess threaded rod, if necessary.

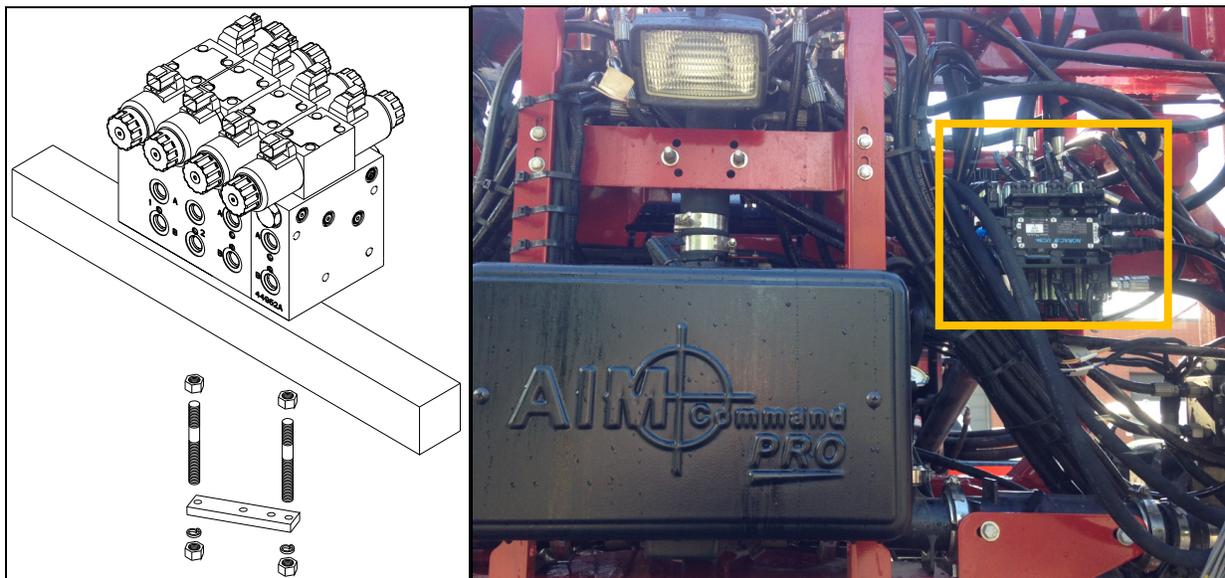


Figure 22: Valve Block Mounting

9.4 Wing Roll Cylinder Mounting

1. Install the WRC mounting bracket (B07) on the boom frame. Clamp bracket to boom frame using supplied hardware. Tighten hardware to 30-40 ft-lb (41-54 Nm).
2. Mount the WRC (H20) to the bracket using the supplied 12mm x 100mm bolts, flat washers and lock washers. Install the WRC with the cable end pointing towards the right-hand wing (when looking from the rear of the sprayer). Tighten mounting bolts to 60-70 ft-lb (81-95 Nm).
3. Route the WRC sensor cable to the 8-way coupler (E11).

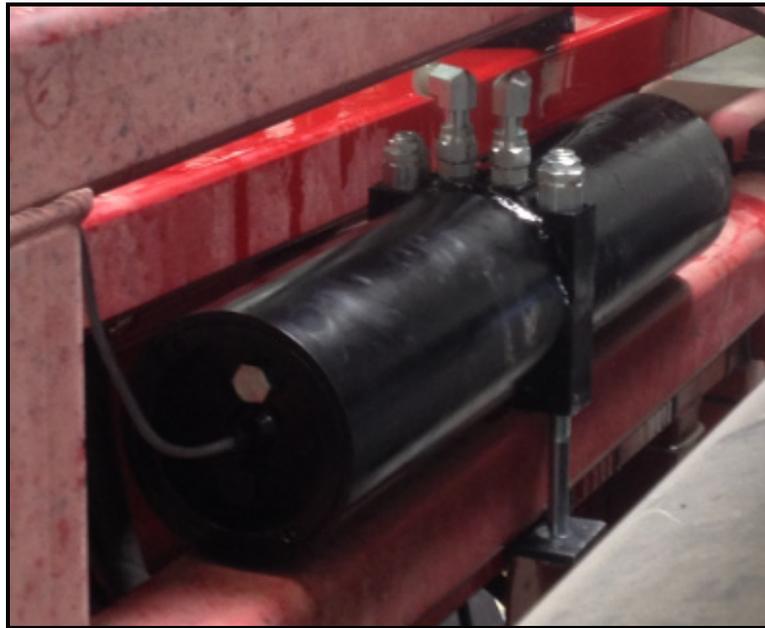


Figure 23: WRC Installed on the Boom Frame

9.5 Main Lift Valve Installation

If the sprayer was built prior to model year 2007 then the main lift valve may have to be replaced with a part from your local Case Dealership. If the booms will go up, but not down; the valve will need to be replaced. The Case part number of the valve is **87558232**.

1. Lower the main lift all the way to the bottom. Turn off the sprayer ignition.
2. Loosen the hoses on each side of one of the main lift cylinders located at the back of the sprayer. This is to remove any pressure from the system.
3. Remove the coils from the main lift valve, located under the sprayer.

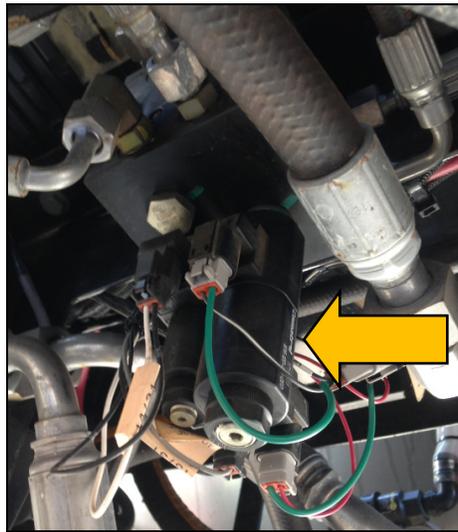


Figure 24: Main Lift Valve location

4. Thread the valve out of the valve housing and thread the new valve in.
5. Reinstall the coils onto the new main lift valve.

9.6 Hydraulic Plumbing

Warning!

From this point on in the installation the booms will be inoperative until the hydraulics are fully installed.

Important

The factory **CASE** main lift accumulators must be charged to their recommended setting for proper operation of the **UC5 Spray Height Control** system. Even on new sprayers, the charge pressure should be checked before proceeding with the installation

1. After the NORAC valve is mounted, the hydraulic hoses and fittings can be plumbed. The plumbing for the hydraulic circuit is shown schematically in **Figure 3**.
2. Connect four (4) 6MOR-6FORX90 fittings (F07) to the “A” and “B” ports on the NORAC valve block. Attach four 6FORXR-6MORT tee fittings (F03) onto the F07 fittings on the NORAC block.
3. Connect four 6FORXR-6MORT tee fittings (F13) onto the F03 tees on the NORAC block.
4. Connect the right “lower” line (the “A” line) hose from the cylinder to one end of the 6FORXR-6MORT tee fitting (F13) on the right NORAC “A” port.
5. Connect the right “raise” line (the “B” line) hose from the cylinder to one end of the 6FORXR-6MORT tee fitting (F13) on the right NORAC “B” port.
6. Connect hose H04 between the left “lower” line (the “A” line) on the cylinder to one end of the 6FORXR-6MORT tee fitting (F13) on the left NORAC “A” port.
7. Connect hose H03 between the left “raise” line (the “B” line) on the cylinder to one end of the 6FORXR-6MORT tee fitting (F13) on the left NORAC “B” port.
8. Install four (4) hoses (H01) between the tee fittings (F03) and the Case valve block. Use four 6MB-6MOR adapters (F05) to connect the hoses to the Case valve block.
9. Connect hoses H02 to the “P” and “T” ports on the NORAC valve block and route to the Case valve block.
10. Tee the pressure and tank lines for the NORAC valve block into the existing “P” and “T” lines on the Case valve block using the 8FORXR-8MORT (F06) fittings and the 8MOR-8MB (F04) adapters.

11. Attach the straight fittings on hoses H05 to the “A” and “B” ports on the 3rd station of the block. Route the free end of the hoses (H05) to the Case main lift tee, which is located near the sprayer axle (**Figure 25**).

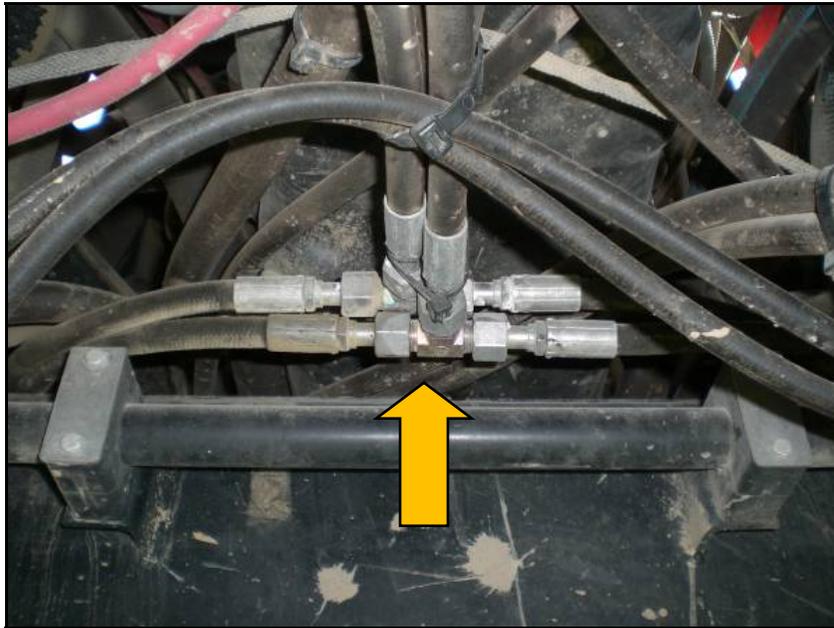


Figure 25: Case Main Lift Tee Location

12. Disconnect the “raise” hose that runs from the Case valve block to the main lift tee and install the 6FORXR-6MORT fitting (*F03). Reconnect the “raise” hose to the tee.
13. Connect the NORAC hose (H05) that is connected to the “B” port on the 3rd station of the NORAC block to the tee fitting (*F03).
14. Disconnect the “lower” hose that runs from the Case valve block to the main lift tee and install the 6FORXR-6MORT fitting (*F03). Reconnect the “lower” hose to the tee.
15. Connect the NORAC hose (H05) that is connected to the “A” port on the 3rd station of the NORAC block to the tee fitting (*F03).
16. Install four (4) 6MOR-6FORX90 fittings (F14) onto the 6FORXR-6MORT tees (F13).
17. Connect hose H06 between the F14 fittings on the “lower” (“A”) lines.
18. Connect hose H06 to the F14 fitting on the left “raise” (“B”) line.
19. Connect hose H07 to the F14 fitting on the right “raise” (“B”) line.
20. Install four (4) 6MB-6MOR fittings (F12) onto the ports on the wing roll cylinder (H20).

21. Install four (4) 6MOR-6FORX90 fittings (F14) onto the F12 fitting on the wing roll cylinder (H20).
22. Connect hose H07 from the right “raise” line to the outer port on the cable end of the wing roll cylinder (H20).
23. Connect hose H06 from the left “raise” line to the outer port on the opposite end of the wing roll cylinder (H20).
24. Connect hose H06 between the “A” port on the wing roll cylinder (H20) and the “A” port on the NORAC expansion block.
25. Connect hose H06 between the “B” port on the wing roll cylinder (H20) and the “B” port on the NORAC expansion block.

⚠ Important

This following portion of the install is only for Case 120’ booms.

26. Before continuing, make sure the booms are lowered all the way to the bottom of the cylinder travel.
27. Place one of the o-rings (F10) into the o-ring groove on the inline orifice (F11).
28. Remove the wing accumulator and insert the inline orifice (F11) between the accumulator and fitting.
29. Reassemble and repeat for the opposite tilt cylinder.

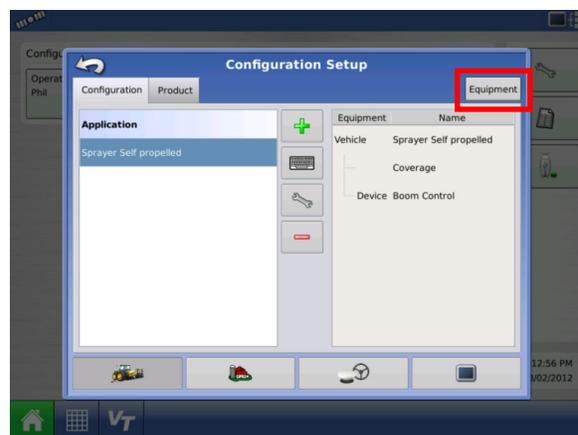
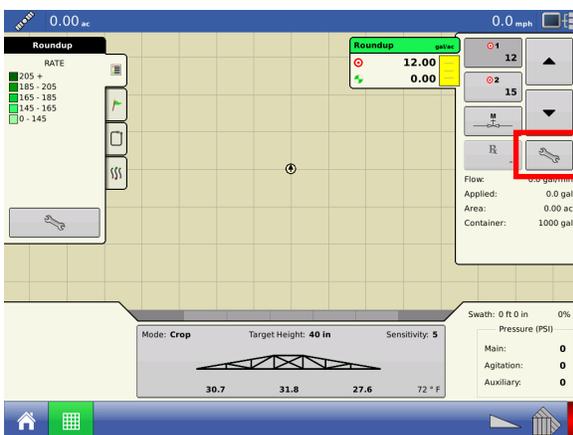


Figure 26: Tilt Cylinder Orifice Location

10.2 Using an AgLeader Proprietary Display

This section is only for AgLeader displays with the UC5™ on the proprietary display. If the UC5 is operating on the VT within the AgLeader screen, follow the procedure in Section 10.1.

1. Remove the air from the tilt cylinders, using the sprayer's joystick controls.
 - a) Move the left tilt cylinder full stroke three times.
 - b) Move the right tilt cylinder full stroke three times.
2. Remove air from the roll channel using the AgLeader display:
 - a) Start an Automatic Install (Figure 27 and Figure 28).
 - b) Select the appropriate sprayer make and model on the screen.
 - c) Read the disclaimer menus and move through the screens.
 - d) At the screen reading "level the boom at 35in", press the picture of a house.
 - e) Using the sprayer's controls raise the boom center to max height and level the wings.
 - f) Navigate to the roll gain screen (Figure 27 and Figure 29).
 - g) Press the manual gain test a few times for each direction to allowing the air to escape. **Don't adjust the wings individually; only use the roll gain tests.**
 - h) Stop with the wings at approximately the same height.
 - i) Ensure that each roll button allows for the boom to rotate in both directions. If the boom doesn't roll in one direction, roll it the opposite way and adjust the wings to their level position.
3. Run a complete automatic install (Figure 27 and Figure 28).



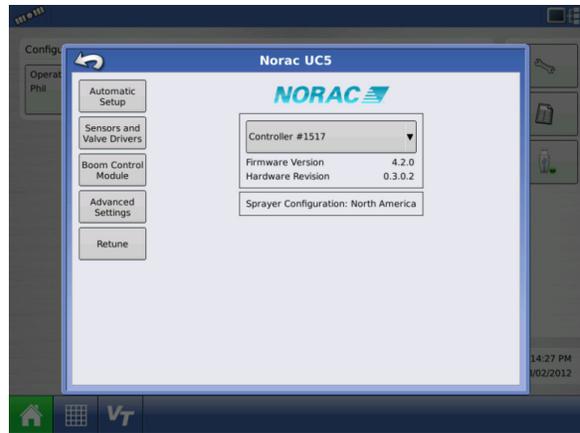
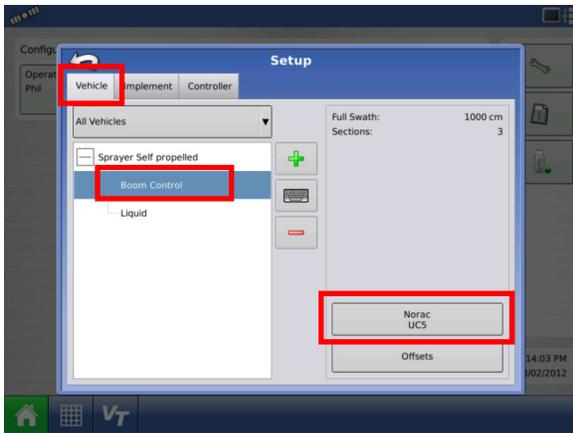


Figure 27: Navigating to NORAC Setup Screen

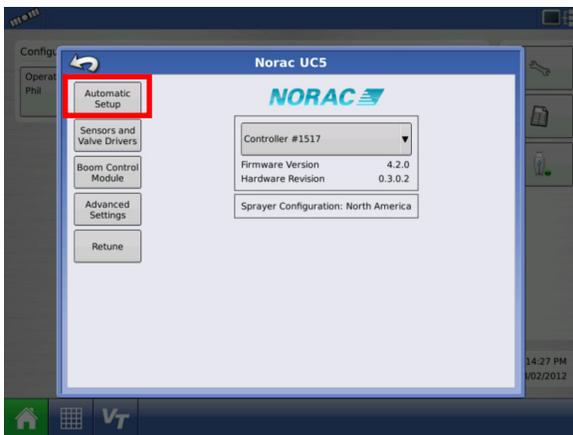
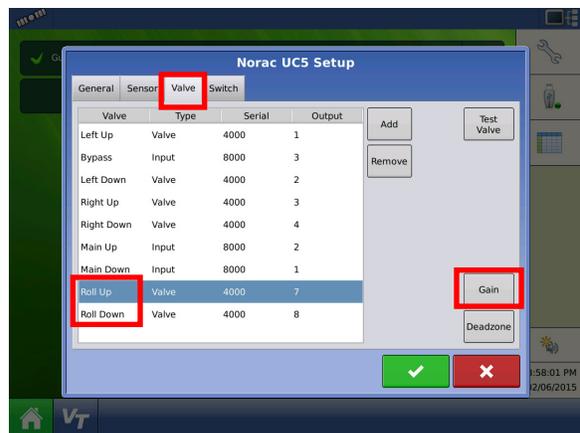
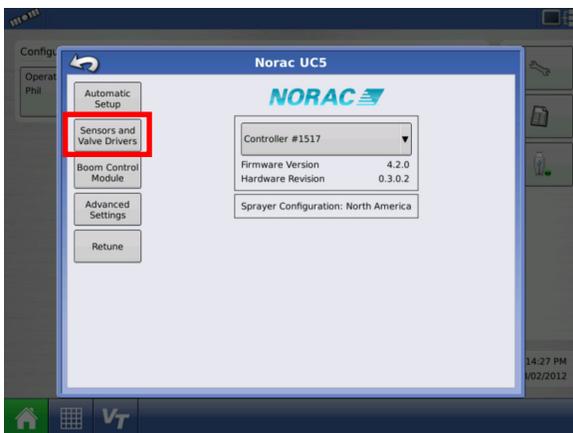


Figure 28: Automatic Setup



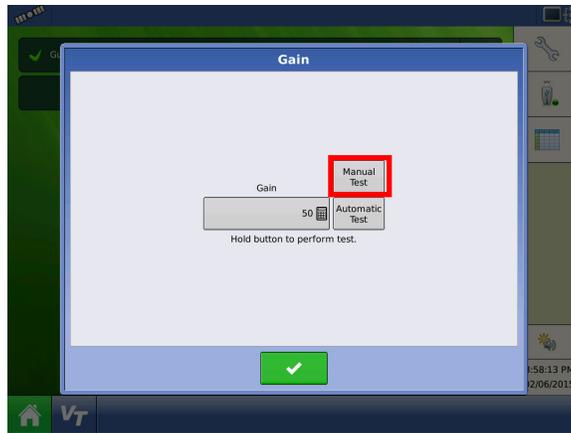


Figure 29: Roll Gain Screens

11 Software Setup

1. Start up the sprayer and test the sprayer's functionality. The display terminal does not need to be powered on for the original boom function switches to operate. Unfold the booms and raise/lower each boom and the main section.

Important

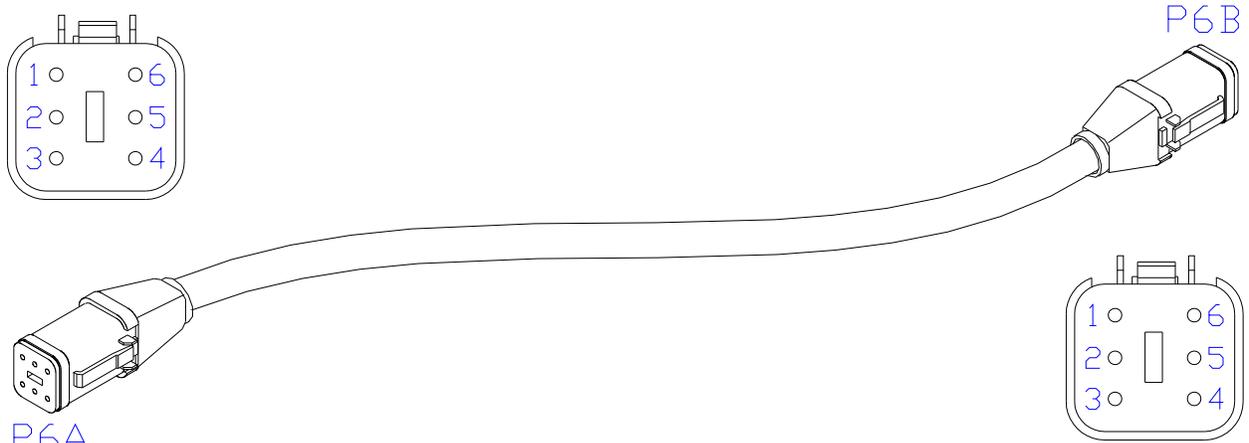
Confirm that the cabling and hoses are agreeable to the entire range of motion.

2. If any functions do not work, review the hydraulic and electrical portions of this manual to check for proper installation.
3. Turn on the power for the display terminal using the switch on the side.
4. The procedure for the installation of the UC5 Spray Height Control system is now complete. Begin the AUTOMATIC SYSTEM SETUP procedure as described in the UC5 Spray Height Control Operator's Manual.

NOTE: Some Case IH Sprayers are known to have improper boom alignment, meaning that the wings will be in a "V" shape either in front or behind the center section. For sprayers equipped with Active Wing Roll™, this can cause the NORAC system to make continuous boom adjustments when the sprayer is stationary and in automatic mode. If this problem is observed, it is recommended that the boom be properly aligned by a certified Case IH technician.

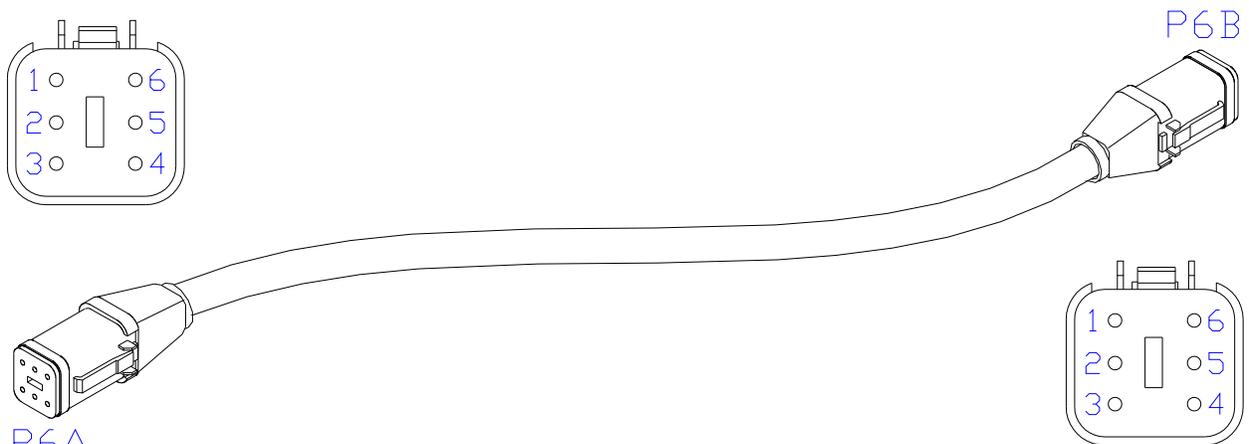
12 Cable Drawings

12.1 ITEM C01: 43220-10 - CABLE UC5 NETWORK 14 AWG - 10M



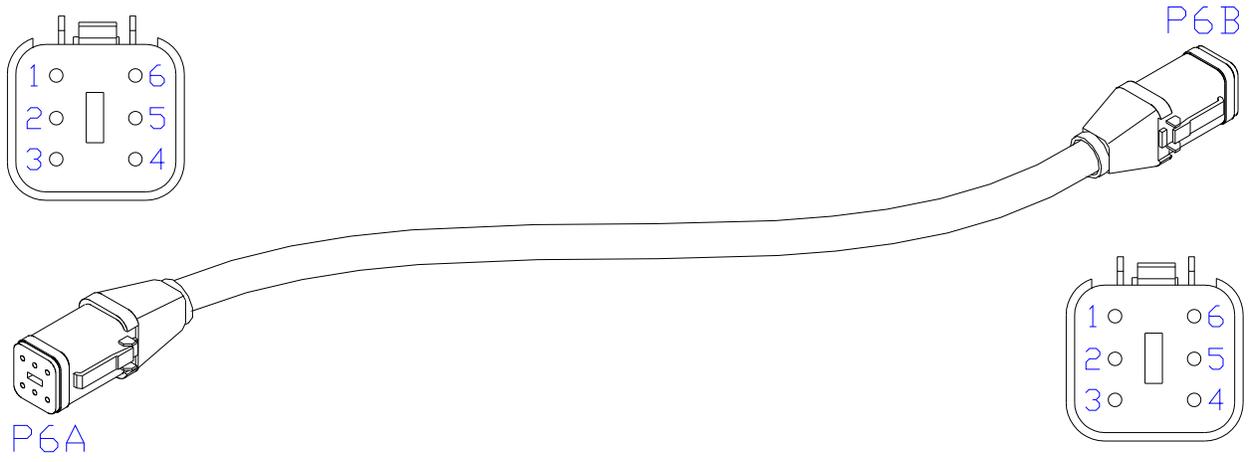
		P6A		P6B			
ECU GND	BLK	①	□	□	①	BLK	ECU GND
SIG GND	BLK/WHT	②	□	□	②	BLK/WHT	SIG GND
CANL	YEL	③	□	□	③	YEL	CANL
CANH	GRN	④	□	□	④	GRN	CANH
SIG PWR	RED/WHT	⑤	□	□	⑤	RED/WHT	SIG PWR
ECU PWR	RED	⑥	□	□	⑥	RED	ECU PWR

12.2 ITEM C02: 43220-01 - CABLE UC5 NETWORK 14 AWG - 1M



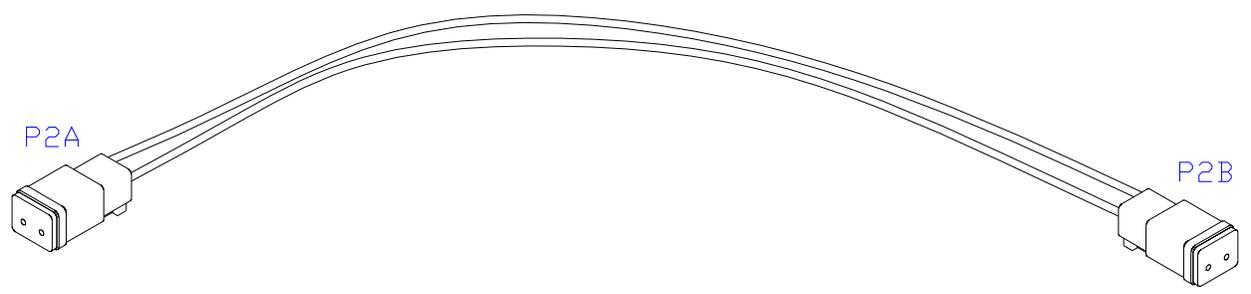
		P6A		P6B			
ECU GND	BLK	①	□	□	①	BLK	ECU GND
SIG GND	BLK/WHT	②	□	□	②	BLK/WHT	SIG GND
CANL	YEL	③	□	□	③	YEL	CANL
CANH	GRN	④	□	□	④	GRN	CANH
SIG PWR	RED/WHT	⑤	□	□	⑤	RED/WHT	SIG PWR
ECU PWR	RED	⑥	□	□	⑥	RED	ECU PWR

12.3 ITEM C03: 43220-03 - CABLE UC5 NETWORK 14 AWG - 3M



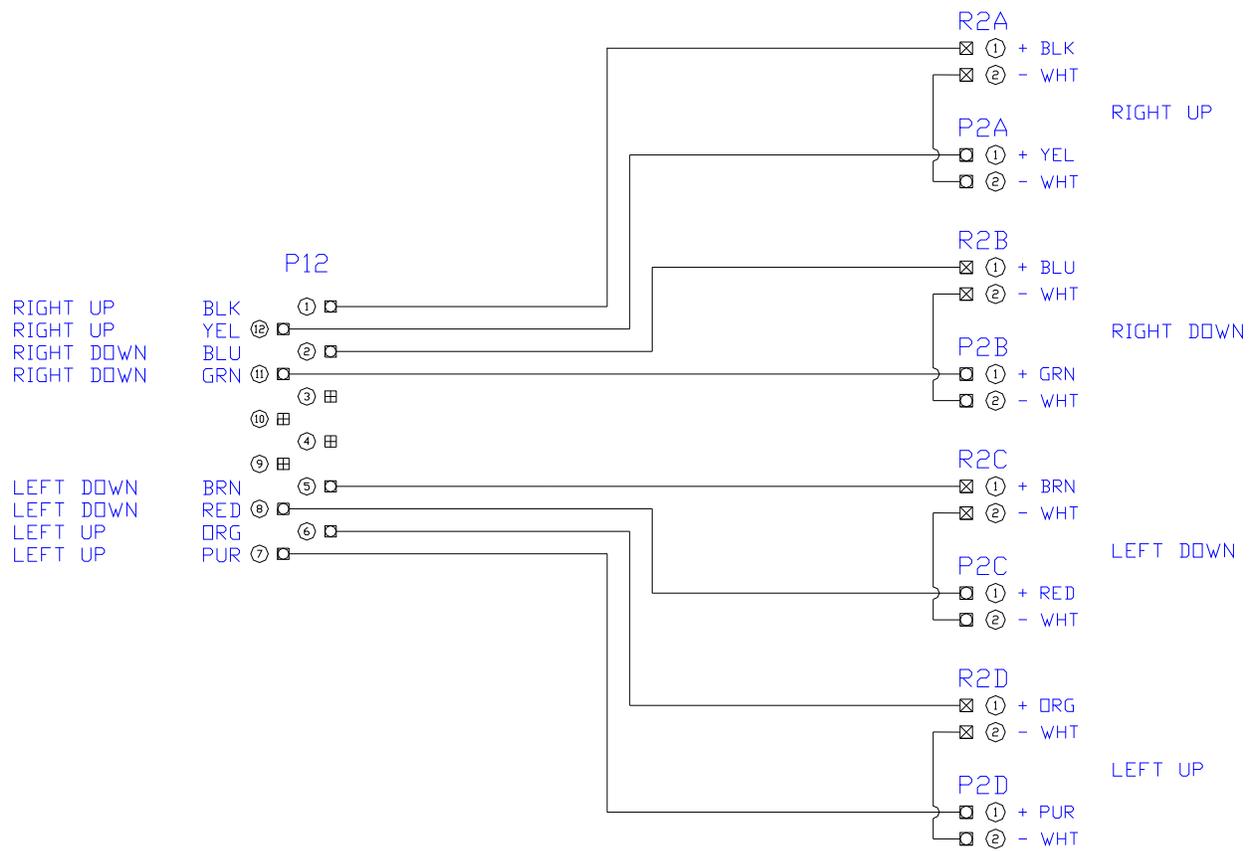
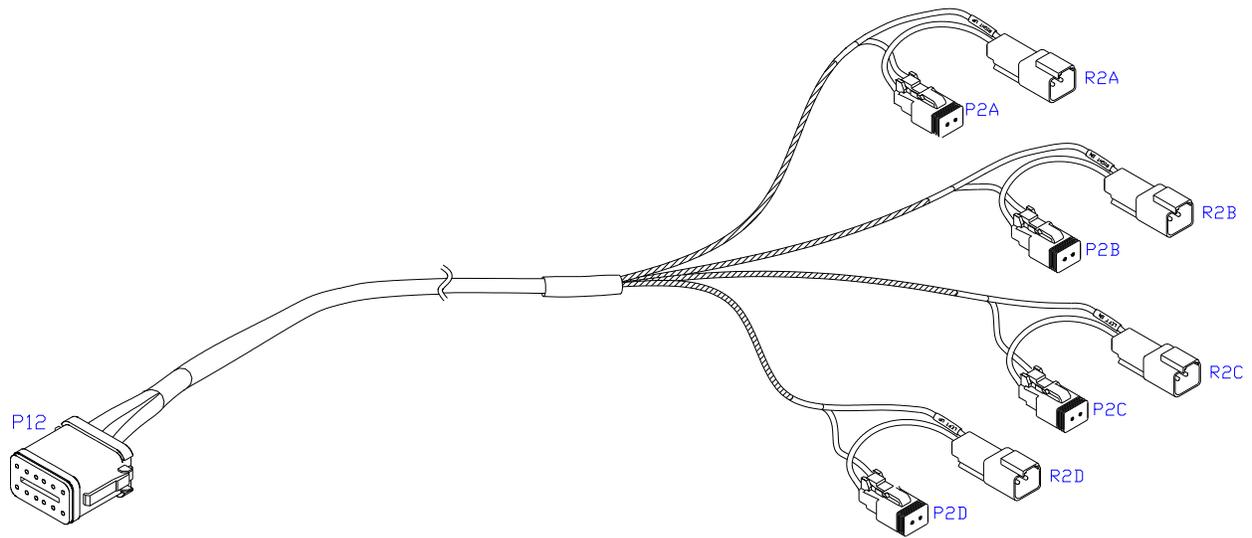
		P6A		P6B			
ECU GND	BLK	①	□	□	①	BLK	ECU GND
SIG GND	BLK/WHT	②	□	□	②	BLK/WHT	SIG GND
CANL	YEL	③	□	□	③	YEL	CANL
CANH	GRN	④	□	□	④	GRN	CANH
SIG PWR	RED/WHT	⑤	□	□	⑤	RED/WHT	SIG PWR
ECU PWR	RED	⑥	□	□	⑥	RED	ECU PWR

12.4 ITEM C10: 43230-04 - CABLE UC5 VALVE DT TO DT

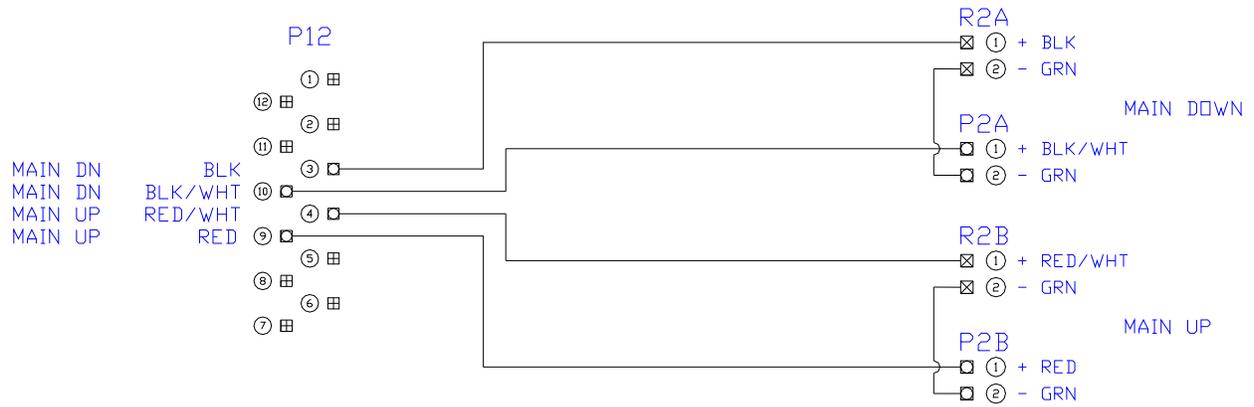
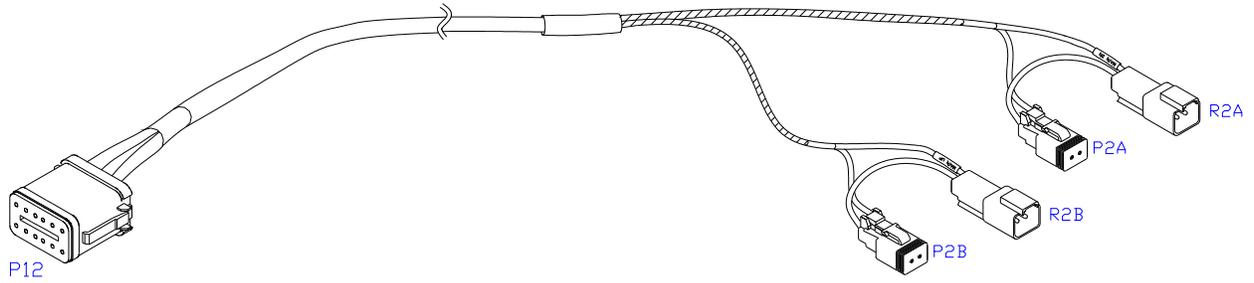


		P2A		P2B			
OUTPUT	WHT	①	□	□	①	WHT	OUTPUT
GND	BLK	②	□	□	②	BLK	GND

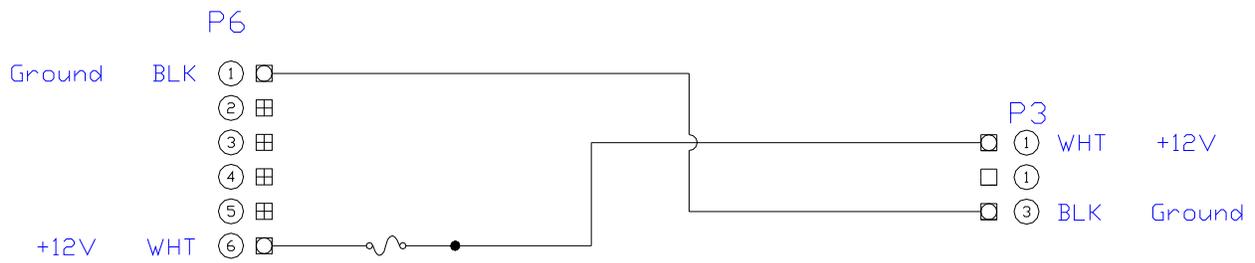
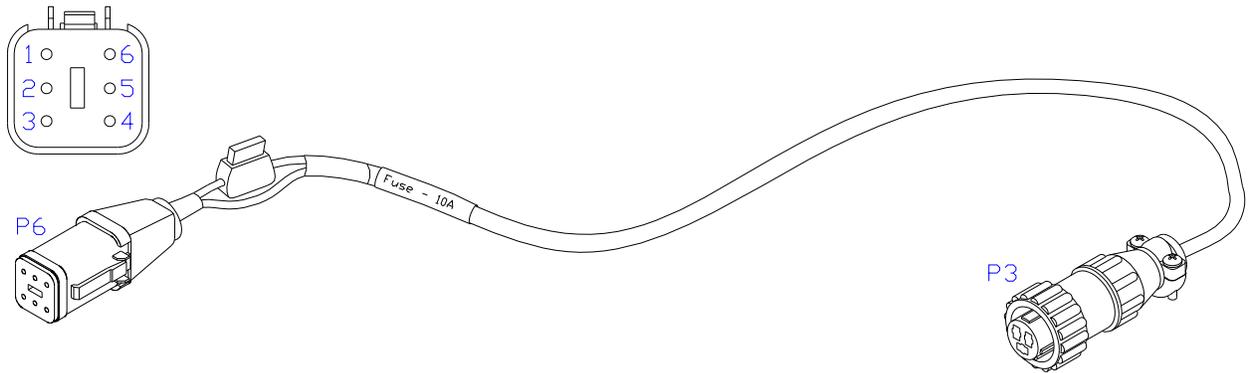
12.5 ITEM C20: 43240-01 – CABLE UC5 INTERFACE TILT DT



12.6 ITEM C21: 43240-22 – CABLE UC5 INTERFACE MAIN DT (240’')



12.7 ITEM C30: 43250-04 – CABLE UC5 BATTERY AMP FUSED



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