Early Riser® 2150
(24 Row 30)
Front Fold Trailing Planter

SERVICE MANUAL

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CASE IH AGRICULTURE

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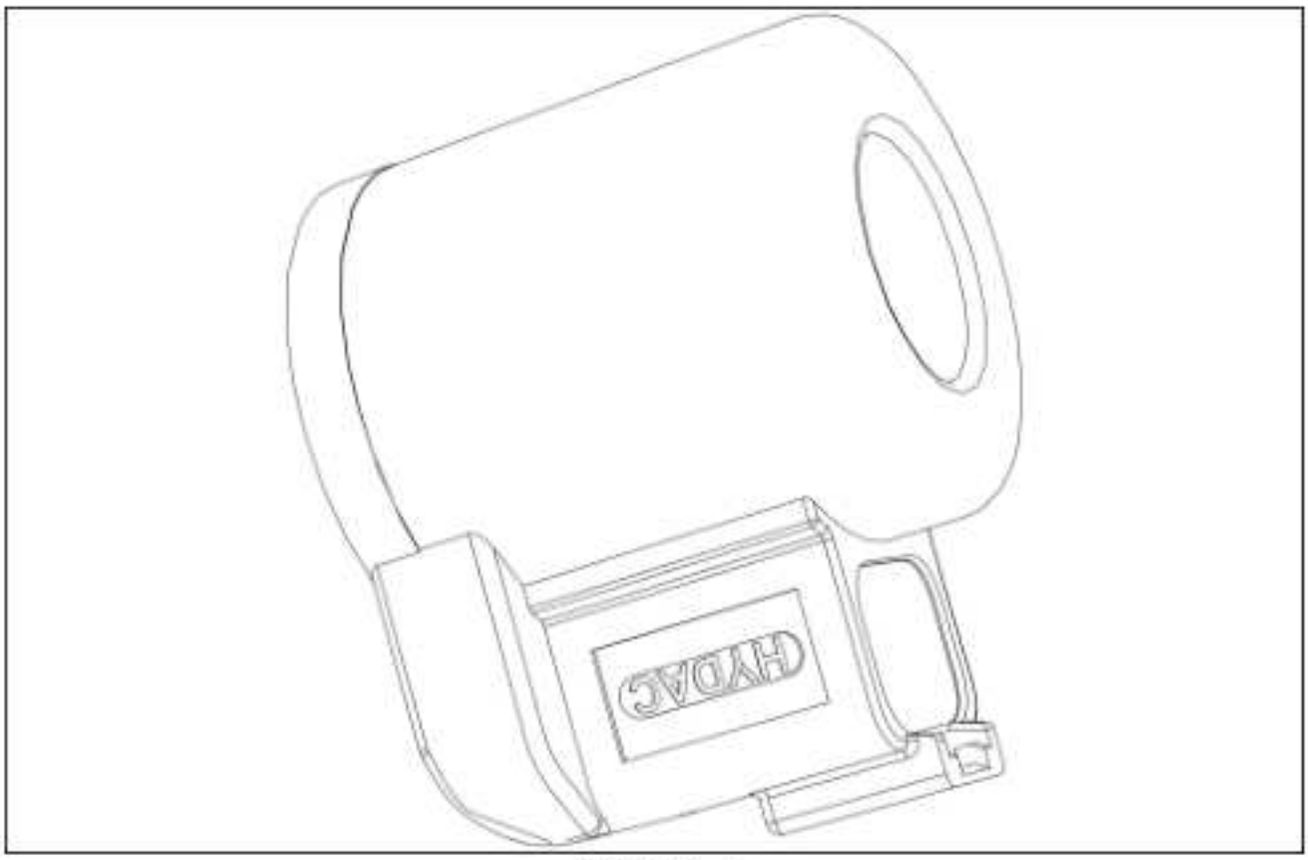
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Control valve solenoid - Technical Data - Electrical coil - Hydraulic down pressure and Wing downforce valve



NHVW16FLA003AFA 1

Location information
Hydraulic down pressure valve block (**DeltaForce®** valve block) - Pressure reducing valve
Wing downforce valve block - Proportional valve solenoid

Parameter	Specification
Pulse Width Modulated (PWM) base voltage	**12.0 V**
Nominal resistance	**2.2 Ω**
Nominal current	**2.1 A**
Ambient temperature range for **100%** duty cycle	**-20 – 60 °C** (**-4 – 140 °F**)
Maximum coil temperature	**180 °C** (**356 °F**)

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Wiring harnesses - Electrical schematic sheet 17 Row unit high speed and standard (option)

Type	Component	Connector / Link	Description
ECU	**A-005**	**X-517**	SPEED BELT MODULE (SBM)
ECU	**A-006**	**X-516**	vDRIVE MODULE (VDM)
ECU	**A-007**	**X-491**	vDRIVE MODULE (VDM)
Sensor	**B-020**	**X-518**	SEED SENSOR
Sensor	**B-021**	**X-492**	SEED SENSOR
Resistor	**R-006**	**X-519**	120 OHM
Resistor	**R-007**	**X-493**	120 OHM
Connector	X-468B	**X-468B**	VDM & SBM
Connector	X-468C	**X-468C**	VDM & SEED SENSOR
Connector	X-491	**X-491**	vDRIVE MODULE (VDM)
Connector	X-492	**X-492**	SEED TUBE
Connector	X-493	**X-493**	ROW CAN TERMINATOR
Connector	X-516	**X-516**	vDRIVE MODULE (VDM)
Connector	X-517	**X-517**	SPEED BELT MODULE (SBM)
Connector	X-518	**X-518**	SEED TUBE
Connector	X-519	**X-519**	ROW CAN TERMINATOR

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NOTE: *If other related ground circuit faults are present, the ground side open circuit condition could be else where in the ground network. Use the electrical schematic for the ground network to locate the open circuit condition.*

4. Check the liquid fertilizer pressure **B-015** sensor liquid fertilizer (LF) harness signal circuit for a short to a voltage source condition.

   Disconnect the in-line liquid fertilizer (LF) harness connector **X-017B** from the UCM interface (UH) harness connector **X-017A** at the UCM bulkhead.

   With the key switch in the ON position, use a multimeter to check for voltage on the UCM interface (UH) harness side :

From	To	Value
X-017A (Receptacle) pin 5	chassis ground	There should be less than **5.2 V**.

   A. If there is greater than **5.2 V**, continue with Step **5**.

   B. If there is less than **5.2 V**, wire LF-304A YE in the liquid fertilizer (LF) harness is shorted to a voltage source. Locate and repair the damage to the conductors or replace the harness.

5. Check the liquid fertilizer pressure **B-015** sensor UCM interface (UH) harness signal circuit for a short to a voltage source condition.

   Disconnect the UCM interface (UH) harness connector from the planter UCM **A-001** at connector **X-006**.

   With the key switch in the OFF position, use a multimeter to check for continuity on the UCM interface (UH) harness side :

From	To	Value
X-017A (Receptacle) pin 5	all other pins in connector **X-017A**	There should be no continuity.

   A. If there is no continuity, continue with Step **7**.

   B. If there is continuity, wire UH-304A YE in the UCM interface (UH) harness is shorted to another wire. Locate and repair the damaged conductors or replace the harness.

6. Replace the liquid fertilizer pressure **B-015** sensor then re-check the status of this fault.

   A. If this fault is still present and active, continue with Step **7**

   B. If this fault is not present, return the planter to field operation and monitor for a recurring fault.

7. Use the Electronic Service Tool (EST) to check the status of the current software.

   Re-flash and/or re-configure as required.

   Re-check the status of this fault.

   A. If this fault is still present and active, the UCM **A-001** has failed internally. Replace the UCM **A-001**.

   B. If this fault is not present, return the planter to field operation and monitor for a recurring fault.

8. Visually inspect the relevant harnesses and connectors for damage, bent or dislocated pins, corroded terminals, or broken wires.

   Verify that the connectors are fully installed.

   Flex the harnesses involved to reveal intermittent breaks or shorts in the wiring concerned.

   Operate the machine while you monitor the display.

   A. If you find damage or the display indicates other than normal display readings, then repair the damage discovered during the inspection or locate and repair the other than normal display condition and verify that the error has been resolved.

   B. If you do not find damage and the display indicates only normal readings, then erase the fault code and continue operation.

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Control valve - Hydraulic schema - Lift and fold hydraulic flow diagrams - Planting position

Refer to the following links for the planting position hydraulic flow diagrams.

- **Hydraulic systems - Hydraulic schema - 24 Row lift and fold - Plant mode - Raise the planter (counter-balance (motion control) valves are bypassed) and fold the markers (35.000)**
- **Hydraulic systems - Hydraulic schema - 24 Row lift and fold - Plant mode - Lower the planter (counter-balance (motion control) valves are piloted open by high pressure) and unfold the markers (35.000)**

When "Plant" is selected in the Frame Operation window on the Planter Frame Control screen of the display, only solenoid valves 6, 7, 8, 9, 15, and 16 are energized to control planter raising and lowering. The direction of hydraulic fluid flow through the lift and fold valve block determines whether the planter is raised or lowered. The "Bar Raise" selection can be set to 'Limited' or 'Full' depending on operator preference for the End of field functions.



RAIL18C6P30545A 1



RAIL18C6P31193A 2

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- "Auto" or "Manual" is selected in the Markers window on the Frame Control screen – that is, markers are not turned Off.



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Marker operation - Operator control

The Marker Ctrl window enables the operator to alternate markers when making the turn at the end of the row by using the tractor remote lever. The window displays the current mode of operation: "A" for automatic **(1)**, "M" for manual, **(2)**, and no letter when markers are turned Off **(3)**. The highlighted arrow in the window indicates which marker will deploy the next time the toolbar is lowered. Whenever markers are On, the next marker to deploy can be advanced by pressing the opposite arrow. The new arrow highlights to indicate the change.

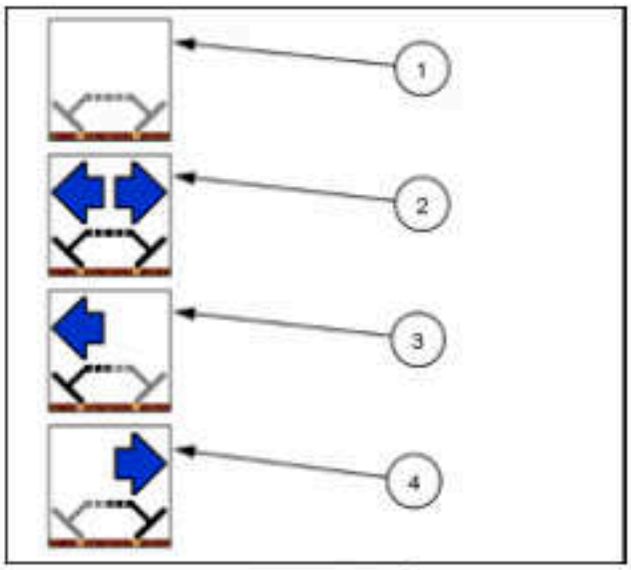


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If no arrow is highlighted in Auto or Manual mode, the first marker to deploy was not selected after configuring the markers for operation; or one of the conditions listed previously is missing.

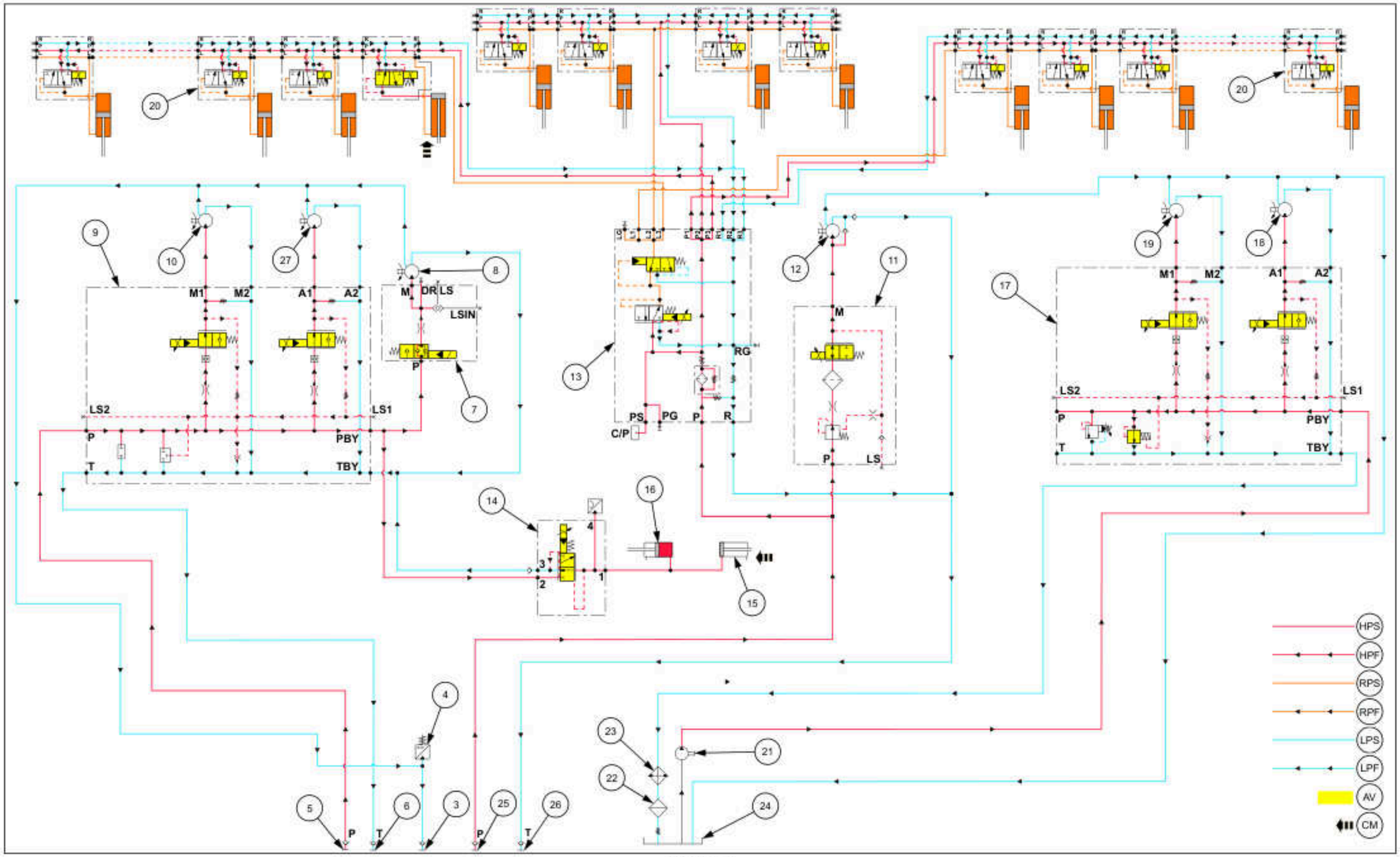
Icons in the Status/Warning area on the Display indicate the "active" or currently deployed marker(s). No marker **(1)** is deployed. Both markers **(2)** are deployed. The left marker **(3)** is deployed. The right marker **(4)** is deployed.

The Frame ECU software controls the switching of the markers. At the headland, when the planter is raising (frame must be moving upward) and it reaches a point 3% below the limited raise point, the markers will auto-switch. The limited raise point can be user calibrated in the CALIBRATIONS->FRAME screen on the display.



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