



## Verification of the components used for the proper functioning of the loading arm

### Content

#### Table of content

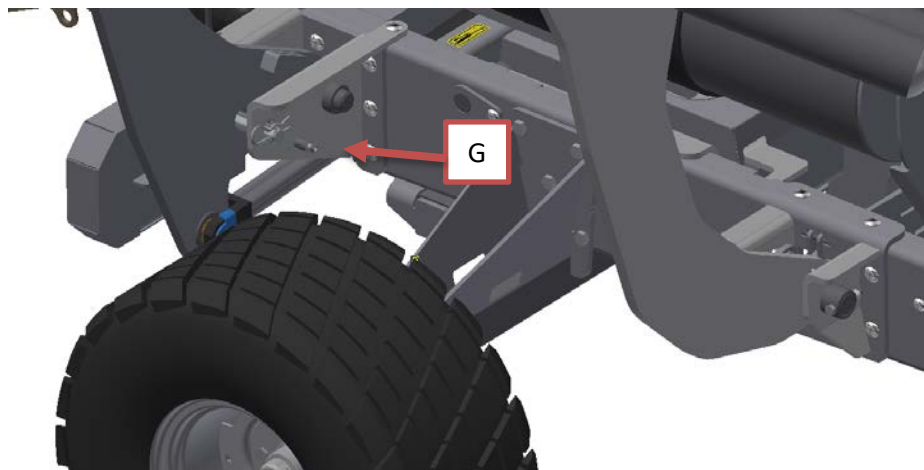
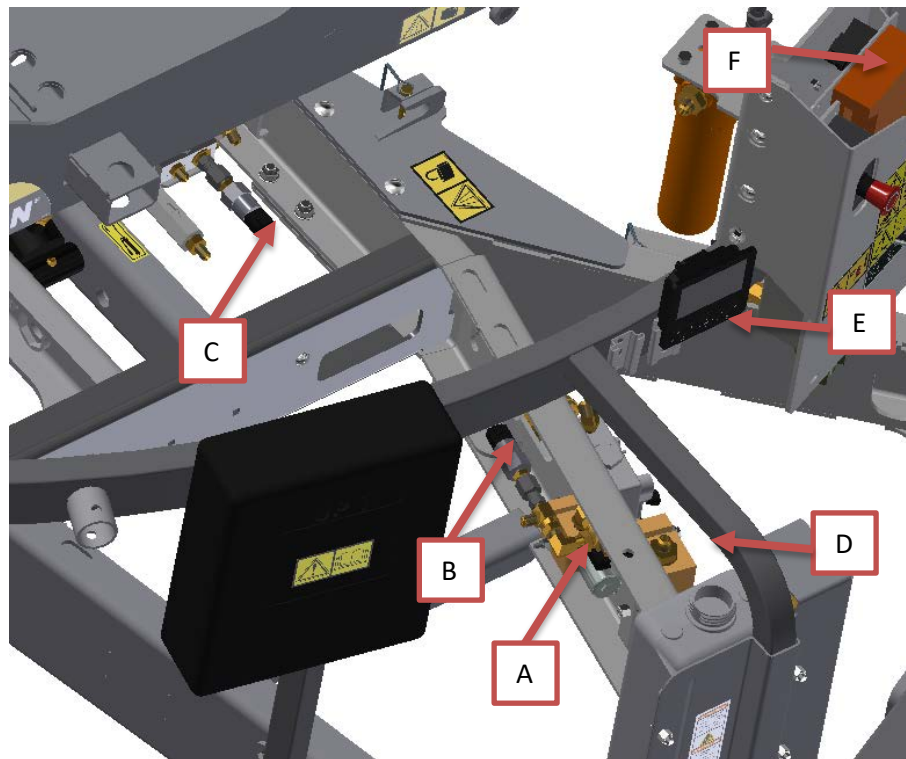
1. Components of the loading arm .....	2
2. Features and particularities of each component:.....	3
3. Ensure proper operation of the loading arm .....	4
4. Interaction of the components .....	5
5. Validation of the proper operation of hydraulic pressure switches (B) & (C).....	6



## 1. Components of the loading arm

Here are all the components that interact together for the operation of the loading arm:

- A- Blocking valve
- B- Pressure switch 400psi (arm lift)
- C- Pressure switch 400psi (arm lowering)
- D- Security valve
- E- Screen
- F- Controller
- G- Loading arm sensor





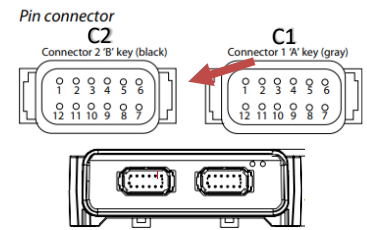
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## 2. Features and particularities of each component:

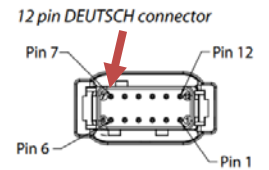
### "A" Blocking valve

- Serves to prevent lifting of the loading arm
- The valve is normally closed when unpowered
- If the valve is closed, the hydraulic oil can pass for the lowering of the arm
- Electrically activated by controller "F" via output C2P06
- Must be electrically powered to move arm up



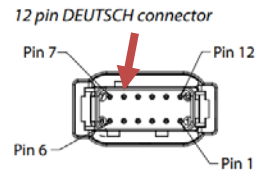
### "B" Pressure switch 400psi (arm lift)

- Detect the movement of the loading arm
- Sensor is normally closed when pressure is below 400psi
- The electrical signal goes to screen "E" on input C1P07



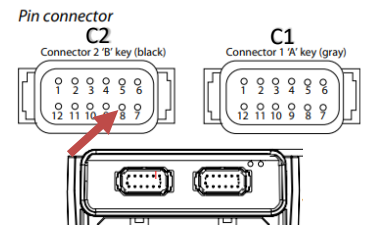
### "C" Pressure switch 400psi (arm lowering)

- Detect the movement of the loading arm
- Sensor is normally closed when pressure is below 400psi
- The electrical signal goes to screen "E" on input C1P08



### "D" Security valve

- Used to prevent oil from entering the main valve when closed
- The valve is normally closed when unpowered
- Electrically activated by controller "F" via output C2P08



### "E" Screen

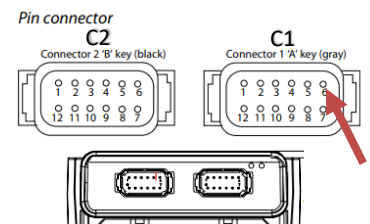
- Used for user interface and automatic operation

### "F" Controller

- Used to manage automatic operation
- It interacts with all the other components of the system

### "G" Loading arm sensor

- Used to know the position of the loading arm
- Sensor turns on when it sees metal at close range (arm down)
- The sensor led lights up at the same time as the sensor sends the signal to the controller
- The signal is connected to the controller "F" on input C1P06





### 3. Ensure proper operation of the loading arm

Be sure that:

- a. All hydraulic hoses are properly connected to the tractor
- b. The controller screen is on and it indicates that there is at least 12V if the tractor is off, and at least 13.5V when the engine is running. The voltage is shown on the right side of the screen.
- c. The controller screen is properly connected to the wrapper. There is a 9 pin connector on the top of the drawbar. Check that the wires and pins inside the connector are secure.



- d. The red emergency stop button near the computer is pulled, in order to allow electrical current to flow through the system.
- e. The computer receives power from the controller screen, through the 9 pin connector. To do this, you can watch the LED light locate on the controller (see F on the first page). If the green LED is not on, inspect the wiring connection inside the connector shown in the previous step.



#### 4. Interaction of the components

Regardless of the initial tractor type selection:

- As soon as the screen (E) is opened (before selecting the type of tractor), the safety block (D) remains closed to prevent the hydraulic oil from circulating in the main circuit and the blocking valve (A) is powered to allow free movement of the loading arm.
- When there is no automatic cycle in progress (alignment or wrapping), the loading arm sensor (F) has no influence on operation.
- During the automatic cycle, as soon as the controller (F) loses the signal from the loading arm sensor (G), the blocking valve (A) closes the hydraulic circuit of the loading arm to prevent it from moving upwards. The goal is to avoid a conflict with the swivel table and a bale that would be in the loading arm.

Closed center type tractor

- Following the selection "Closed center type tractor", the safety block (D) remains closed to prevent the hydraulic oil from circulating in the main circuit.
- The safety block (D) opens only when there is an automatic sequence request (alignment or wrapping) then it closes.
- When there is no automatic cycle, the loading arm has access to all the hydraulic flow and pressure needed to lift the bale onto the turntable.

Open center type tractor

- Following the selection "Open center type tractor", the safety block (D) opens instantaneously to allow the hydraulic oil to circulate in the main circuit.
- When there is no automatic cycle and the loading arm moves up, as soon as the 400 psi switch (B) no longer sends a signal to the display (E), the controller (F) closes the safety valve (D) to prevent hydraulic oil from circulating in the main valve. At the same time, all the hydraulic flow and pressure becomes available to raise the loading arm.
- When there is no automatic cycle and the loading arm moves down, as soon as the 400 psi switch (C) no longer sends a signal to the display (E), the controller (F) closes the safety valve (D) to prevent hydraulic oil from circulating in the main valve. At the same time, all the hydraulic flow and pressure becomes available to lower the loading arm.



## 5. Validation of the proper operation of hydraulic pressure switches (B) & (C)

- Use the screen (E), then press the central button to go to the sub-menus (Button identified by the red circle in the photo below)



- Scroll the cursor down, until you reach "Inputs / Outputs" and then click on the central button again.

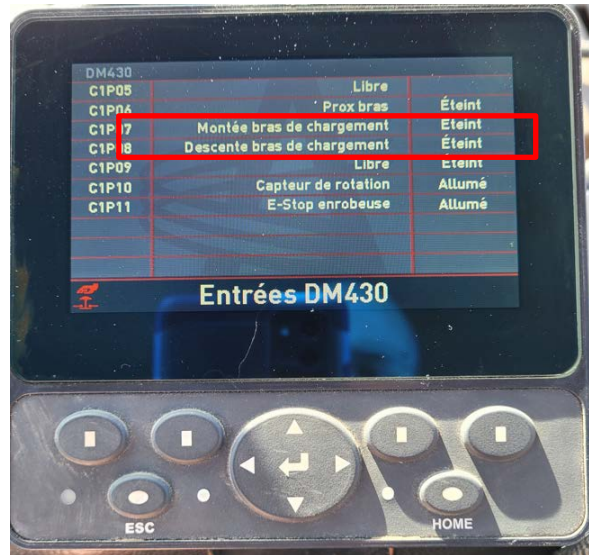




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- c. This should show the status of both hydraulic pressure switches. If there is no movement of the loading arm the switches must have the status "Off"



- i. If the status is "On":
1. Remove the connector on the pressure switch to be checked (B) and/or (C) check that there is 12V on the red wire. Otherwise make sure you have 12V on the red wire.
  2. Pressure switch (B), check continuity of yellow/black wire between C1P07 of screen connector to pressure switch connector (B).
  3. Pressure switch (C), check the continuity of the white/black wire between C1P08 of the screen connector to the pressure switch connector (C).
- d. If you raise the loading arm the state of C1P07 should change to "On" during the movement of the arm. And if you lower the loading arm the state of C1P08 should change to "On" during the movement.
- i. If the statuses are "off" during the movement of the arm
1. Make sure all hydraulic hoses are connected to the tractor
  2. Make sure tractor delivers minimum 8GPM