

OPERATING

5. Pull the mid-PTO engagement knob to the engaged/on position.

NOTE: The mid-PTO will only function when both the mid-PTO and rear PTO are engaged.

6. Pull the rear PTO engagement knob to the engaged/on position.

- The instrument panel PTO engaged light will illuminate when the rear PTO is engaged.

7. Adjust the hand throttle lever forward to the desired speed for implement used.

NOTE: The PTO marker on the tachometer indicates engine speed for a standard 540 PTO. At 540 rpm rear PTO, mid-PTO speed will be 2100 rpm.

Disengaging Mid-PTO

IMPORTANT: Avoid damage! Do not disengage the mid-PTO while the rear PTO is engaged. Disengage the rear PTO first.

1. Adjust engine rpm to low idle or less.
2. Push the rear PTO engagement knob to the disengaged/off position to disengage the rear PTO.
 - The instrument panel PTO engaged light will go out when the rear PTO is disengaged.
3. Push the mid-PTO engagement knob to the disengaged/off position to disengage the mid-PTO.

Using Rear and Mid-PTO (Tractor With Cab, Operator on Seat)

NOTE: The mid-PTO is available as optional equipment, and is only operational with the operator on the seat.

NOTE: The PTO selector lever has three operating positions:

- Rearward for rear PTO only.
- Forward for mid-PTO only.
- Center for both rear and mid-PTO at the same time.

Engaging Rear PTO Only

1. Sit on operator's seat.
2. Stop machine motion and:
 - PowrReverser model: Move the reverser lever to neutral position, and push all PTO engagement knobs to the disengaged/off position.
 - eHydro model: Remove foot from forward and reverse travel pedals, and push all PTO engagement knobs to the disengaged/off position.

NOTE: The starter will not crank if the rear/mid PTO knob is pulled to the engaged/on position. If the operator leaves the seat with the engine running and the rear/mid PTO engaged, the safety interlock system will stop the engine and all implements.

3. Reduce throttle setting to 1500 rpm.
4. Move the PTO selector lever to rearward position for PTO only.
5. Pull the rear PTO engagement knob to the engaged position to engage the rear PTO.
 - The instrument panel PTO engaged light will illuminate when the rear PTO is engaged.
6. Adjust the hand throttle lever forward to the desired speed for implement used.

NOTE: The PTO marker on the tachometer indicates engine speed for a standard 540 PTO.

Disengaging Rear PTO

1. Adjust engine rpm to low idle.
2. Push all PTO engagement knobs to the disengaged position to disengage the rear PTO.
 - The instrument panel PTO engaged light will go out when the rear PTO is disengaged.

Engaging Mid-PTO Only

1. Sit on operator's seat.
2. Stop machine motion and:
 - PowrReverser model: Move the reverser lever to neutral position.
 - eHydro model: Remove foot from forward and reverse travel pedals.
3. Push all PTO engagement knobs to the disengaged position.

NOTE: The starter will not crank if the PTO engagement knob is pulled to the engaged/on position. If the operator leaves the seat with the engine running and the rear PTO engaged, the safety interlock system will stop the engine and all implements.

4. Reduce throttle setting to 1500 rpm.

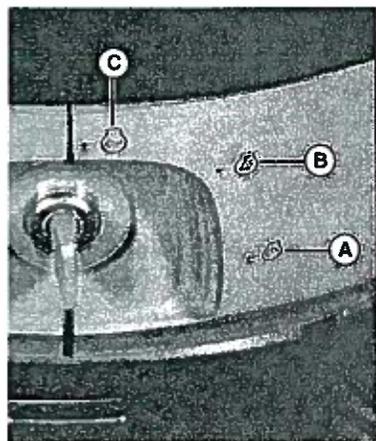
NOTE: The PTO selector lever has three operating positions:

- Rearward for rear PTO.
 - Forward for mid PTO.
 - Center for both rear and mid-PTO at same time.
5. Move the PTO selector lever to forward position for PTO only.
 6. Pull the mid-PTO engagement knob to the engaged position.

OPERATING

comes on when left side door is open and right door is closed.

Warning lights not light.



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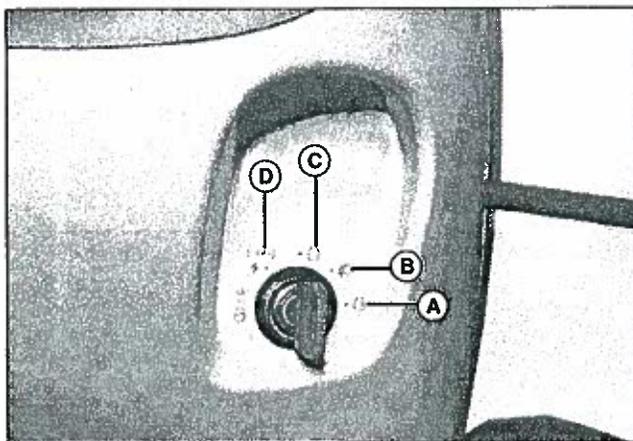
Turn the key to the start position to start the engine. Release the key after the engine has started and it will automatically return to the run position. The engine will continue to run.

With the key in the run position, and the engine not running, the engine oil pressure light should flash and the battery charging light should illuminate. Both lights should turn off when the engine is running. You will also hear a clicking noise when the engine fuel shut-off solenoid engages. With the key in the run position, push the key in to activate the air intake heater system.

With the key in the off position, all switched power is off, and the engine should not run.

IMPORTANT: Avoid damage! There is an accessory key switch position. Push key inward and turn counterclockwise to place key into the accessory position. Be careful not to accidentally move key into this position. Battery could be drained.

Tractor with Cab



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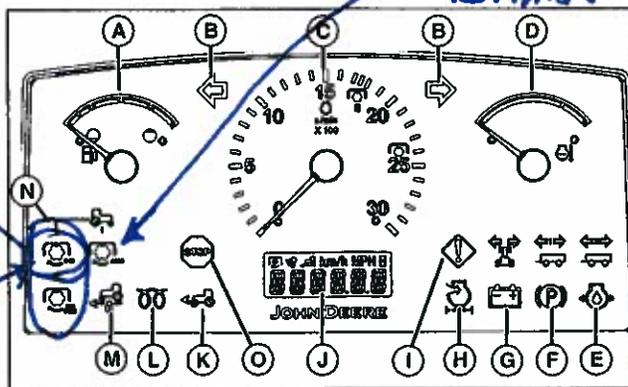
A-Start Position - Turn the key to the start position to start the engine. Release the key after the engine has started and it will automatically return to the run position. The engine will continue to run.

B-Run Position - With the key in the run position, and the engine not running, the engine oil pressure light should flash and the battery charging light should illuminate. Both lights should turn off when the engine is running. You will also hear a clicking noise when the engine fuel shut-off solenoid engages. With the key in the run position, push the key in to activate the air intake heater system.

C-Off Position - With the key in the off position, all switched power is off, and the engine should not run.

IMPORTANT: Avoid damage! There is an accessory key switch position. Push key inward and turn counterclockwise to place key into the accessory position. Be careful not to accidentally move key into this position. Battery could be drained.

Using the Instrument Panel



LVA15112

A-Fuel Gauge: Shows approximately how much fuel is in the fuel tank.

Both Flash with Rear ONLY

TOP ONE ON Solid WHEN IN MID - Both PTO'S TURN

Does NOT LIGHT IN EITHER

Warning Flasher/Turn Signal Indicator: Warning flasher/turn signal indicator lights will turn on and flash when the turn signal switch is in the right or left position.

Tachometer: Shows engine speed in rpm. Example: If indicator is pointing at 1000 rpm. Note the special PTO mark on the tachometer. When the PTO is engaged, the PTO rotates at the industry standard speed.

Engine Coolant Temperature Gauge: Shows the engine coolant temperature. If the needle is approaching or is in the red zone, reduce engine rpm to idle. If the needle remains in red zone, stop the engine to cool, check coolant level, and add coolant if necessary.

Engine Oil Pressure Light: This light should flash when the ignition key switch is in the run position and the engine is not running, and also when engine oil pressure is low with the engine running. If this light flashes when the engine is running, stop engine immediately.

Park Brake Light: This light should illuminate when the park brake is set and locked.

Battery Charging Light: This light should illuminate when the ignition key switch is in the run position and the engine is not running. If this light flashes when the engine is running, see your John Deere dealer for servicing.

Function Indicator: This light will illuminate when an error code is displayed on the display.

Display: This display shows travel speed in mph or kph. When the machine starts moving, the display will show the current travel speed. This display shows several functions that can be controlled through using the Display Mode Select Switch.

Hour Meter: This is the default setting for the display. It shows accumulated running hours. Use the hour meter to schedule servicing various components of the machine.

Machine Travel Speed: Available on eHydro machines only. Contact your John Deere dealer to change the travel speed setting. Travel speed is default at the factory. If other tires are installed, contact your John Deere dealer to change to correct travel speed display.

FunctionMatch (without optional switch): Available on eHydro machines only. Display will read the function selected. FunctionMatch is at factory default setting.

FunctionMatch: Available on eHydro machines only. Display will read the function selected. FunctionMatch is at factory default setting.

ELECTRICAL OPERATION AND DIAGNOSTICS

Rear and Mid PTO Circuit Operation

Rear PTO Function:

To engage the rear PTO and illuminate a light on the display panel to alert the operator that the rear PTO is on.

Operating Conditions:

- Key switch in run or start position,
- Operator on seat, or off seat if the off seat PTO logic is activated, and
- Rear PTO switch on.

Rear PTO Theory of Operation:

The rear PTO switch is used as an interlock to the fuel supply and starting circuits as well as engaging the rear PTO.

In the off (normally closed) position the rear PTO switch supplies current to the fuel supply circuit through the A1 ICC. If the rear PTO is on and the operator leaves the seat, current is removed from the fuel supply circuit unless the off seat PTO logic is activated.

With the key in start or run position, battery voltage is provided to the rear PTO switch through the key switch, 072B Red wire, F5 fuse, and 562 series Red wires.

With the PTO on, voltage is supplied across the rear PTO switch (terminals 1 and 4) from the 562AE Red wire to the 574-series Yel wire. The 574 Yel wire supplies current to the rear PTO solenoid, engaging the rear PTO.

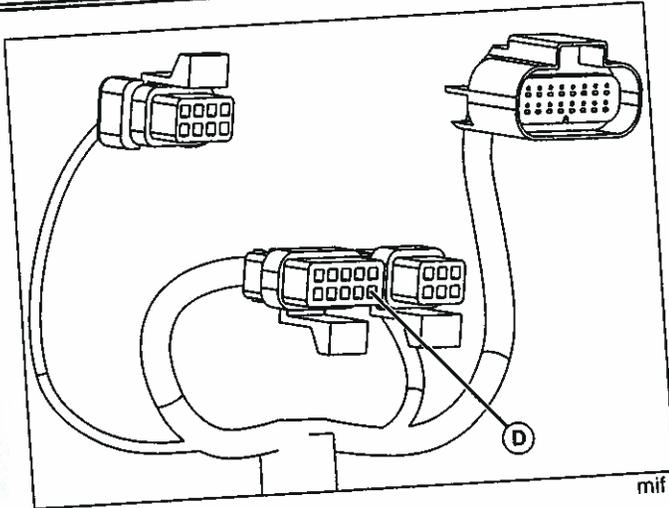
The ground for the rear PTO solenoid is provided through the 010B and 010A Blk wires to the W1 ground circuit.

At the same time, power is removed from the 573 Org wire which supplies current to the A1 ICC through the J4 connector. The display panel logic reads the power being removed from this input and turns on the rear PTO indicator light. Additionally, the display panel checks for the proper inputs from the other switches. If the seat switch is closed (operator on seat), the ICC will continue to provide a fuel enable signal to the ECU. If the operator is off the seat, the off seat PTO logic must be active before the rear PTO switch is placed in the on position or the ICC will remove power to the fuel enable signal to the ECU.

A ground circuit path for the ICC is provided through the 050-series of Blk wires and connector X6.

Mid PTO Function:

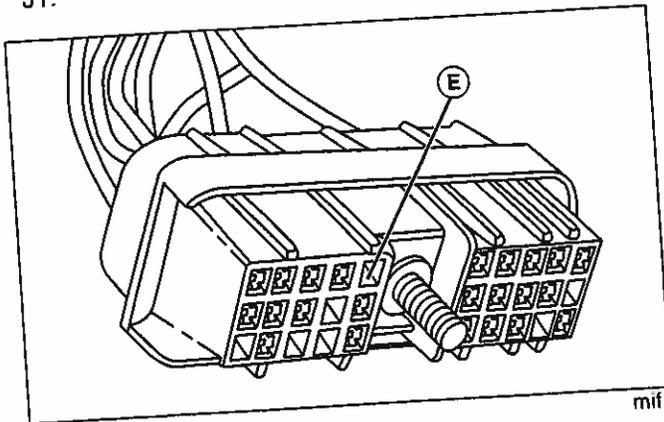
To engage the mid PTO and illuminate a light on the display panel to alert the operator that the mid PTO is on.



7. Is voltage at A1 ICC, J1 connector, 325B Grn wire (D) 7.25 volts or greater?

Yes: Go to next step.

No: Check 325-series Grn wires, connectors X6 and J1.



8. Is voltage at A2 TCU, 325G Grn wire (E) 7.25 volts or greater?

Yes: Test complete.

No: Check 325G Grn wire and connections.

ELECTRICAL OPERATION AND DIAGNOSTICS

Operating Conditions:

- Key switch in run or start position,
- Operator on seat, and
- Mid PTO on.

Mid PTO Theory of Operation:

The mid PTO switch is used as an interlock to the fuel enable circuit as well as engaging the mid PTO.

In the off (normally closed) position the mid PTO sense switch supplies voltage to the fuel enable circuit through the A1 ICC I. If the mid PTO is on and the operator leaves the seat, the ECU removes power from the fuel supply circuit.

With the key in the start or run position, battery voltage is provided to the mid PTO sense switch through the key switch, 072B Red wire, F5 fuse and 562 series Red wires.

With the PTO on, the mid PTO switch is in the on (open)

position, and voltage is removed from the 594 series Yel wires at the A1 ICC. This will indicate to the display panel that the mid PTO is engaged. The mid PTO indicator on the dash panel will illuminate.

The ICC checks for the proper inputs from the other switches. If the seat switch is closed (operator on seat) then the ICC will continue to provide an output for the fuel enable signal to the ECU. If the operator is off the seat, the display panel will remove power to the enable signal, shutting off the engine.

A ground circuit path for the display panel is provided by the 050-series of Blk wires and connector X6.

The rear PTO can be used simultaneously with the mid PTO, but only with the operator on the seat. This will illuminate the PTO indicator lights. These lights will flash or remain on constantly depending PTO selection combinations.

PTO Indicator Light Display Combinations:

Input/PTO Switch Position	Rear PTO Indicator Light Condition	Mid PTO Indicator Light Condition	Audible Warning	REAR MID MINE	
(B+) Rear PTO ON - (B+) Mid PTO OFF	Solid ON	OFF	OFF	Flash	Flash
(Gnd) Rear PTO OFF - (Gnd) Mid PTO ON	OFF	Solid ON	OFF		
(B+) Rear PTO ON - (Gnd) Mid PTO ON	FLASHING	FLASHING	ON	Solid	OFF
(Gnd) Rear PTO OFF - (B+) Mid PTO OFF	OFF	OFF	OFF	OFF	OFF