

PREVIEW - YOUFIXTHIS.COM

(3) Blower Motor at Purge**Action:**

Put blower switch at PURGE.

Check air distribution from the air outlets with the rotary valve in each position.

Defrost Position: Majority of air is at windshield (defrost) and at the feet. Feet Position: Majority of air at feet, some around the dash. Feet and Body Position: Air is split between feet and dash. Body Position: Majority of air is at the dash and some at the feet.

Result:

YES: [GO TO \(4\)](#)

NO: Make note to repair air duct system and then [GO TO \(4\)](#)

(4) Engine Running Checks**Action:**

Set tractor up as follows:

- Start engine and run at 2000 RPM
- Temperature control knob must be CCW
- Blower switch must be at PURGE
- A/C compressor switch ON
- Air duct control set for maximum cooling
- Door and windows closed

Check to see that

- Sight glass is clear (no bubbles)
- Compressor suction line is cool or cold
- Air from air ducts is cold after about six minutes of operation

Result:

YES: [GO TO \(5\)](#)

NO: [GO TO \(7\)](#)

(2) Circuit Check**Action:****→NOTE:**

The warning horn (H4) and the Tachometer Display (H5) receive operational voltage from the same circuit.

Start tractor.

Disconnect the tachometer display (H5) connector, and test for voltage on terminal 16.

Test for continuity to ground from terminal 13 to the Single Point Ground (W30).

Result:

YES:No problem found with circuit. Replace digital tachometer display. [GO TO 1](#).

NO:No voltage is indicated on terminal 16 and the warning horn is functioning at start up. Use the Seven Step Electrical Test Procedure to diagnose a problem with the splice in circuit 972 that supplies operational voltage to the tachometer. [GO TO 1](#).

NO:No continuity to ground is indicated on terminal 13. Repair circuit 050 as necessary. [GO TO 1](#).

(3) Fuse F7 Check**Action:**

Place key switch in RUN position.

Locate fuse F7 in the load center. Remove fuse F7 and inspect. Test for battery voltage on terminal "A" of fuse F7 socket.

Result:

YES:Fuse is intact. Battery voltage is indicated on terminal "A" of fuse F7 socket. Use the [Seven Step Electrical Test Procedure](#) to diagnose a problem upstream of the splice in circuit 972 that supplies operational voltage to the tachometer and warning horn. [GO TO 1](#).

NO:No voltage is indicated on terminal "A" of fuse F7. [GO TO 4](#).

[3] - Repeat check out procedure after repair.

PREVIEW - YOUFIXTHIS.COM

LEGEND:

A4	Central Control Unit (CCU)
A6	Front PTO Control Unit
B6	Radar Sensor [Optional]
B7	Front PTO Speed Pick-Up
B8	Air Filter Restriction Sensor
B9	Transmission Oil Filter Restriction Sensor
B10	Hydraulic Oil Filter Restriction Sensor
B11	Engine Oil Pressure Sensor
B12	Transmission Oil Pressure Sensor
B13	Fuel Level Sensor
B14	Engine Coolant Temperature Sensor
B15	Hydraulic Oil Temperature Sensor
B16	Rear PTO Speed Pick-Up
B17	Engine Speed Pick-Up
B18	Wheel Speed Sensor (W/O Creeper)
B19	Wheel Speed Sensor (W/Creeper)
B24	Steering Pressure (MFWD)
F1	Sensor Switches, CCU, Fuse Sensor Circuit and Radar
F2	Brakes, Rear PTO, MFWD, Differential Lock Switches & Front PTO
F3	Performance Monitor and X26 Connector
F4	Central Control Unit (CCU)
F7	EOL Connector (X25), Tachometer Display, Warning Horn
F10	HCU and CCU Diagnostic/Calibration Functions
H1	High Beam Indicator
H2	Right Turn Indicator
H3	Left Turn Indicator
H4	Warning Horn
H5	Tachometer Display Module
H6	Not Used
H7	Warning/Hazard
R10	CCD Resistor
S29	Front PTO Switch
S30	Left Brake Switch
S31	Right Brake Switch
S32	Rear PTO Switch
S33	MFWD Switch
S34	Differential Lock Switch
S35	Hand Brake Switch
S36	PowrQuad™ Clutch Switch
X25	End-of-Line Programming Connector
X26	For Future Use
X30	Radar Signal
Y20	Front PTO Solenoid
Y21	Differential Lock Solenoid
Y22	MFWD Solenoid
Y23	PowrQuad™ Clutch Cooling Solenoid
Y24	Rear PTO Solenoid

Y24 Rear PTO Solenoid

PREVIEW - YOUFIXTHIS.COM

LEGEND:

A7	Seat RZP Controller
E1	Cigarette Lighter and Indicator Lamp
F22	Front Wiper Switch
F23	Rear Wiper Switch (Optional)
F31	Cigarette Lighter, Seat Controller
K15	Wiper Circuit Relay
K24	Intermittent Wiper Enable Relay
K25	Intermittent Wiper Pulse Relay
M2	Seat Compressor Motor
M3	Front Wiper Motor
M4	Rear Wiper Motor (Optional)
M5	Front Washer Pump Motor
M6	Rear Washer Pump Motor (Optional)
S5	Rear Wiper Switch
S6	Seat Raise/Lower Switch
S7	Operator Presence Switch
S8	Front Wiper Switch
Y5	Seat Bleed Valve Solenoid
Y6	Seat Up-stop Solenoid



(2) MFWD Switch (S33)**Action:****→NOTE:**

The MFWD switch must be electrically removed from its circuit before performing resistance or continuity checks.

Perform continuity check on MFWD switch using the following chart.

Switch Position	Connector Terminals With Continuity
AUTO	B to A and E to F
ON	None (All open)
OFF	B to C

Result:

YES:MFWD switch is good. Check harness if necessary.

NO:Replace MFWD switch.

Using CCU Diagnostic Mode

→NOTE:

The CCU diagnostic mode may be used to check the engine speed sensor, hydraulic oil temperature sensor and operation of the transmission oil pressure sensor. Refer to the following on-board diagnostic procedure.

(1) Access On-Board CCU Diagnostic Mode

Action:

Insert a fuse in location F10 on the load center.

Start tractor and set engine speed at 1200 RPM.

Operate right turn signal until the lower display window shows "CCU".

Pull flash-to-pass switch toward steering wheel to access CCU diagnostic mode.

→NOTE:

The CCU is now in diagnostic mode. All other controllers are in "standby" mode.

Result:

YES:GO TO applicable address, following.

Performance Monitor Set Mode

The "Set" mode is used to enter operating parameter data, alarm set points and backlighting level settings into the performance monitor. It uses this data to collect/process and display field operational data, activate "alarms" when set points are exceeded and control the level of device backlighting. For example, implement width must be set so area/hour can be accurately accumulated.

Pressing the "Set" button commands the performance monitor to enter the set mode for the function that is displayed. However, this will occur ONLY if the function can have its value adjusted, such as area, implement selector arrow, percent slip alarm set point, distance, implement width, service interval and backlighting.

→NOTE:

Use the button with the appropriate numeric value in the bottom, right corner when entering values in the set mode.

→NOTE:

Any time the "Dim/Cancel" button is pressed while in the set mode, the current setting is replaced by the previous setting, and the display is returned to the normal operating mode.

(4) Address 7—Differential Lock Switch**Action:**

Operate right turn signal to obtain "07" in the upper display window.



Display will be. . . .

(---X
Digit)

Not Used

Always "0"

(---X
Digit)

Not Used

Always "0"

(---X
Digit)

**Differential
Lock Switch**

"0" or "1"

"0" When the switch is open.

"1" Differential lock ON. (When switch is closed.)

Result:

YES: [GO TO](#) next circuit address number, or exit beep mode, as necessary.

(6) Clutch Modulation With Clutch Pedal**Action:**

Depress clutch pedal to stop tractor. Put right range lever in "B" and left speed lever in 3rd. Set the engine at 1200—1500 rpm.

Slowly release clutch pedal to full up position.

Clutch modulation is controlled by the speed at which the operator releases the clutch pedal.

Engagement should be smooth without any grabbing or chattering.

Result:

YES: [GO TO 7](#).

(7) Transmission Creep Check**Action:**

With brakes released, fully depress clutch pedal.

Tractor should roll to a stop and not have tendency to creep after it has stopped.

Set the engine at slow idle and then to WOT. There should not be any clutch drag with clutch fully depressed.

Result:

YES: [GO TO 8](#).

(8) Clutch Engagement Check**Action:**

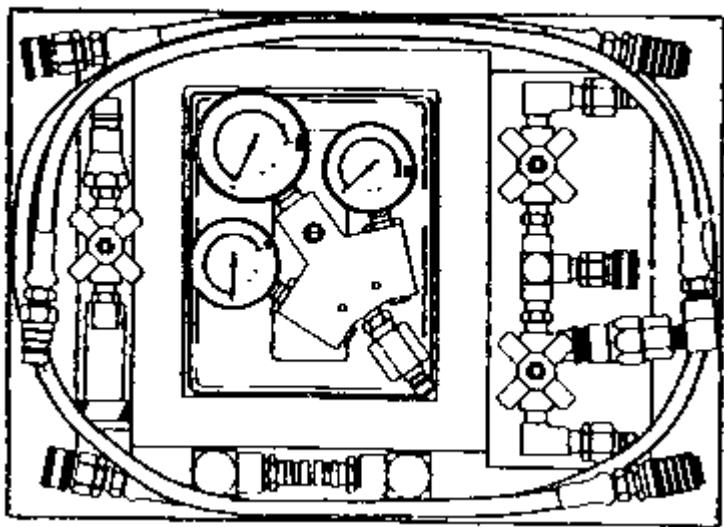
Forward clutch should start to engage when the clutch pedal is released approximately 2—2.5 inches (51—64 mm) from bottom.

Tractor should start moving.

Repeat check in 2nd reverse.

Result:

YES: [GO TO 9](#).



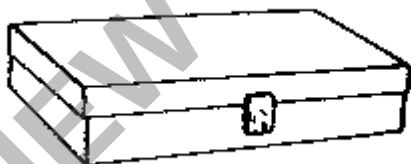
Agricultural Universal Pressure Test Kit

JT05470
[Sub for D15027NU]

Check hydraulic pressures. Use with JT07115 Hydraulic Pressure Test Kit

→NOTE:

See Fitting Guide For Hydraulic Flow Testing—Section 210 for a complete breakdown of this kit.



Power Shift Transmission Test Kit

JT05452
[Sub for D15005NU]

Check element pressures

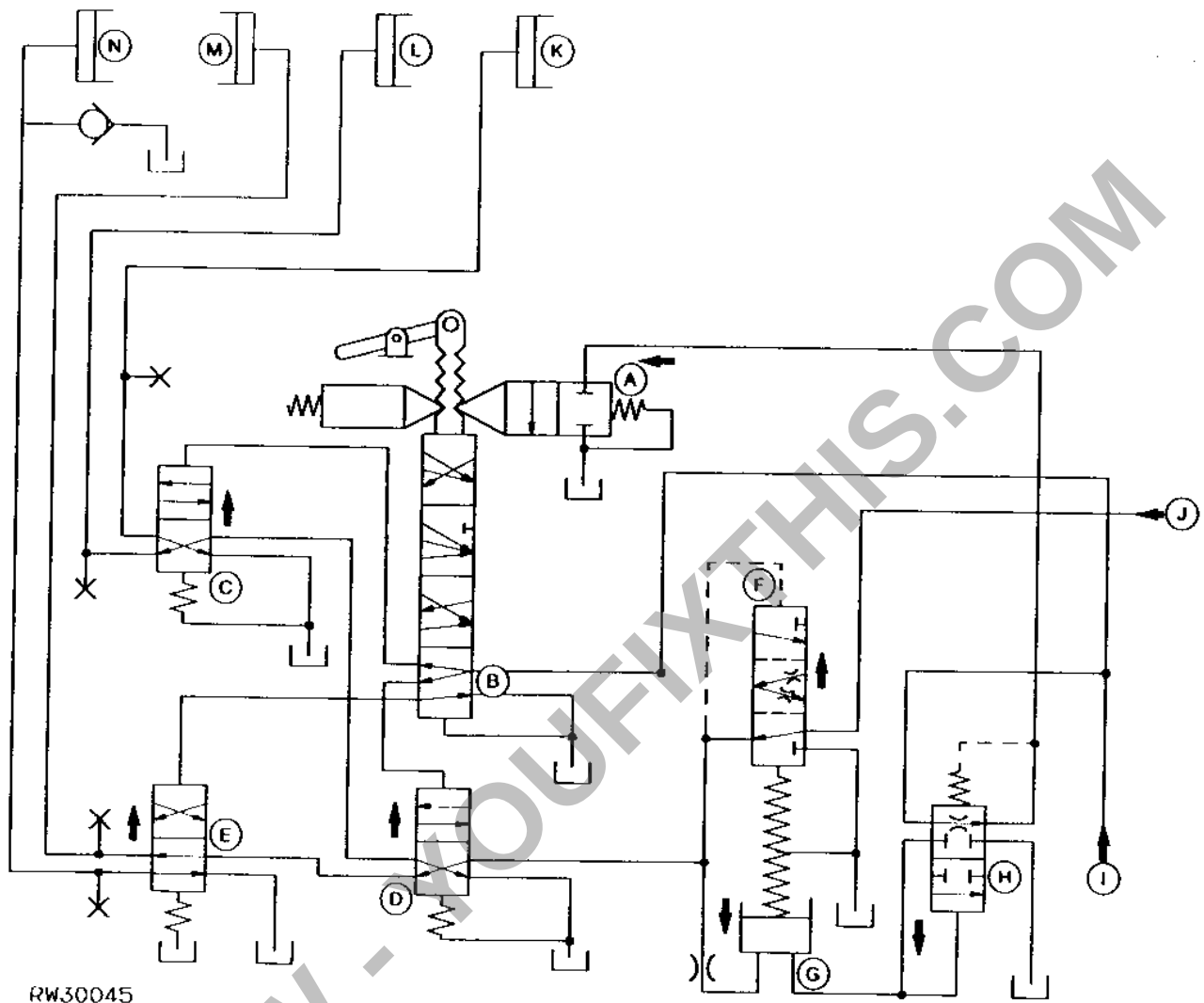


Hand-Held Digital Tachometer

JT05719
[Sub for D05011ST and JT28201]

Check engine speed

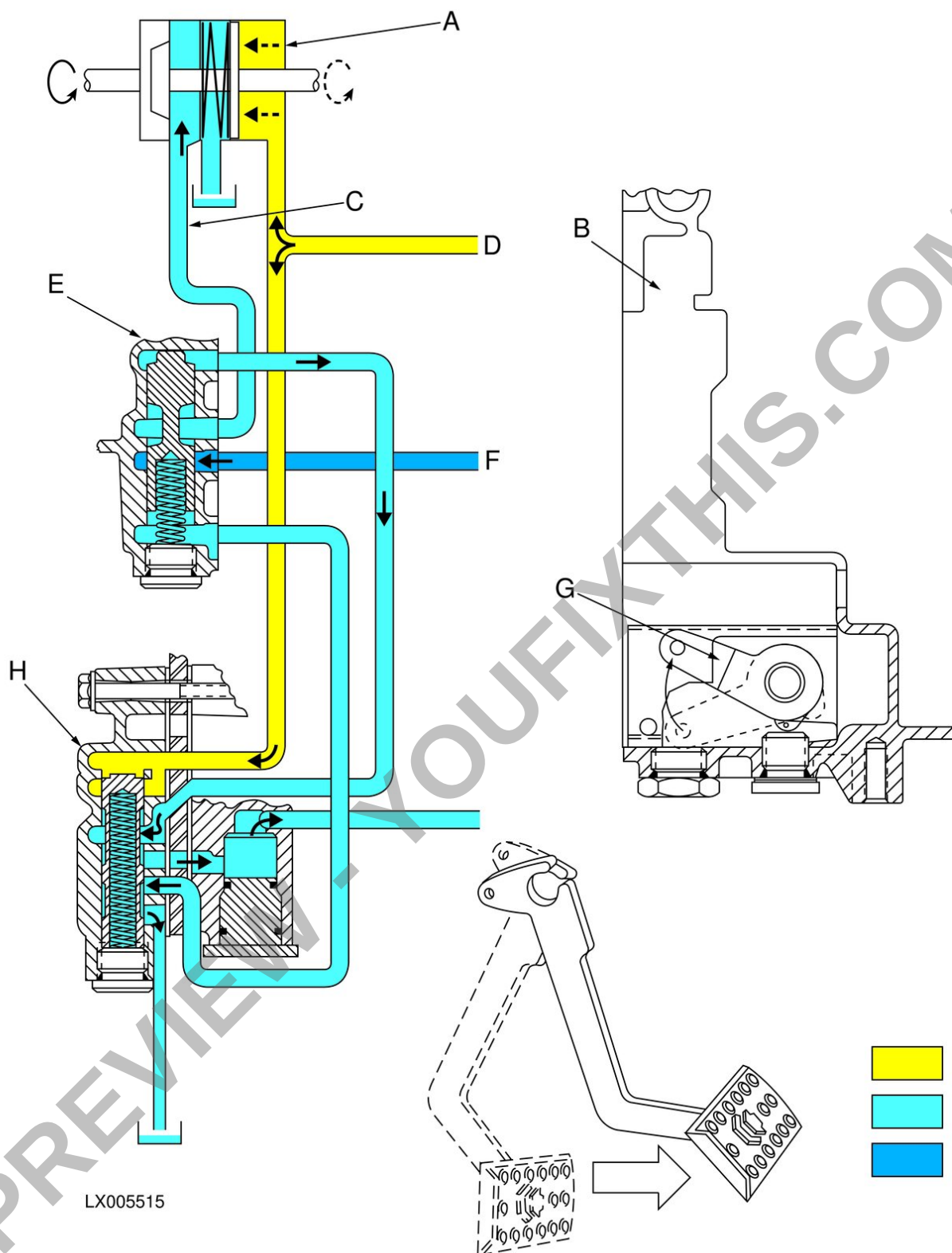
Speed Modulator



ENGINE IS OFF & TRANSMISSION AT PARK

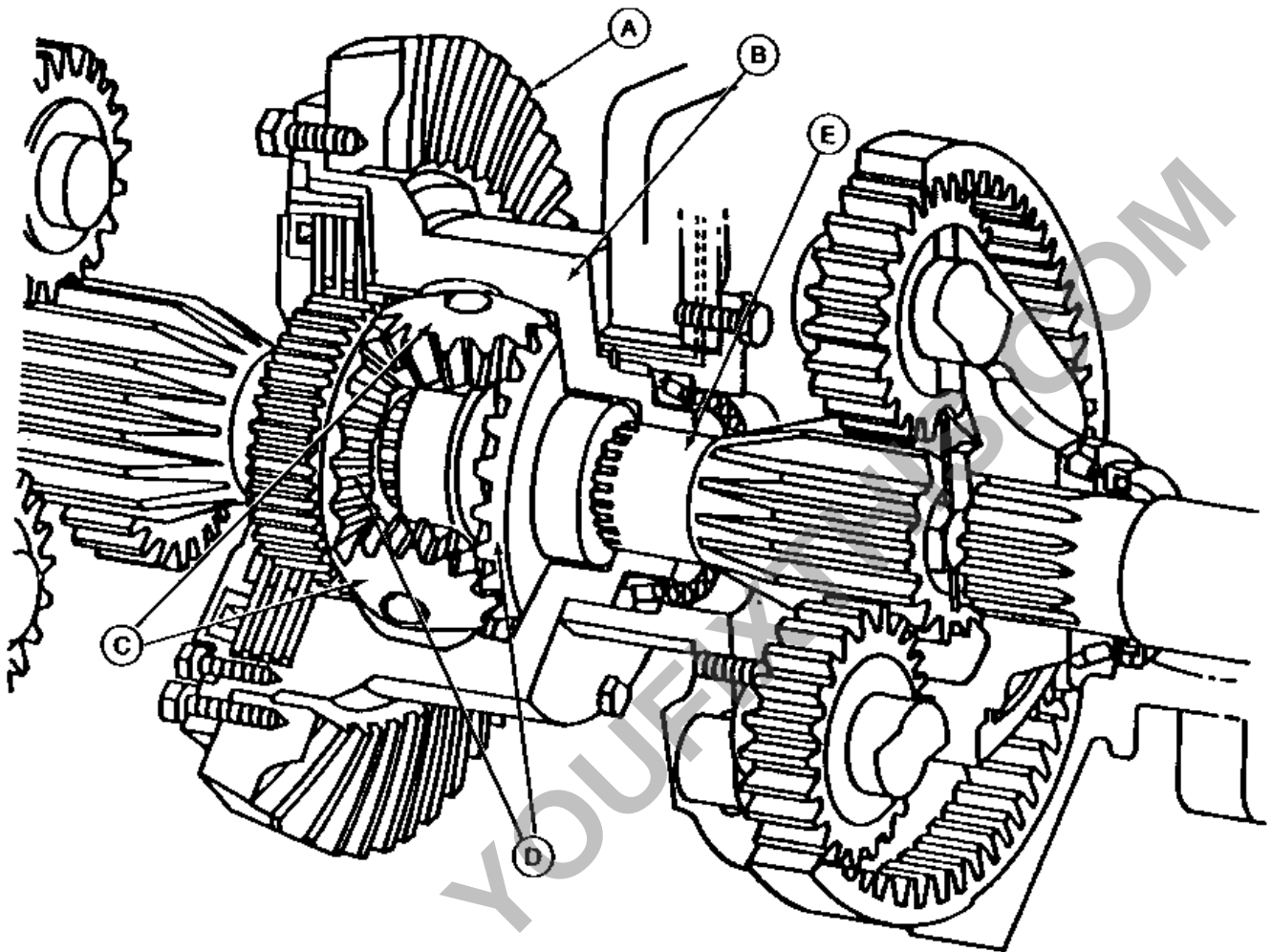
LEGEND:

A	Trigger Valve Spring
B	First Detent-Speed Valve
C	B ₁ -B ₂ Shift Valve
D	B ₂ -B ₃ Shift Valve
E	B ₃ -C ₄ Shift Valve
F	Speed Modulator Valve
G	Accumulator
H	Sump Valve
I	System 1 Port
J	System 2 Port
K	B ₁ Element
L	B ₂ Element
M	B ₃ Element
N	C ₄ Element



Clutch Engaged

Rear Differential Operation



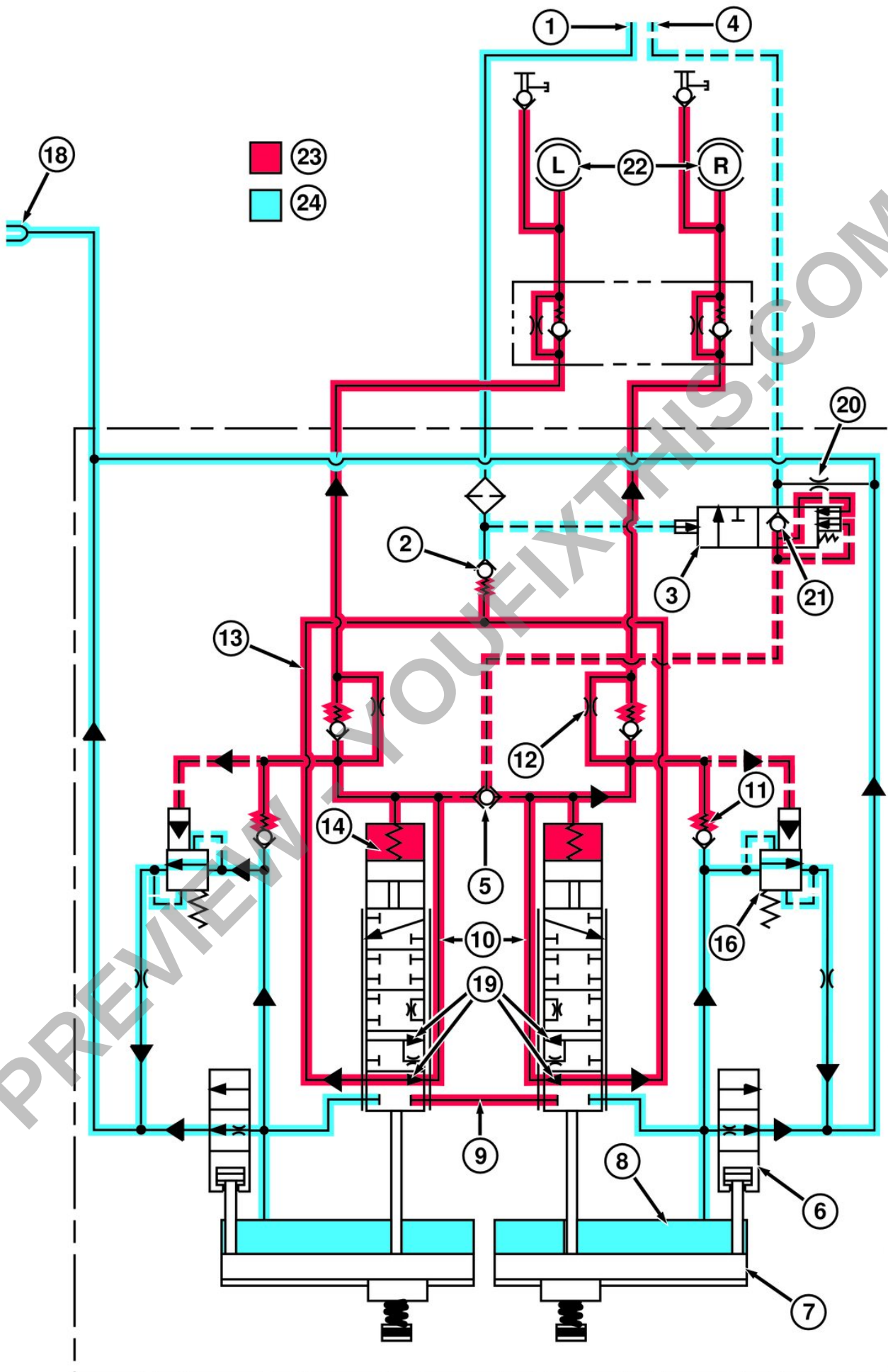
LEGEND:

- A Spiral Bevel Ring Gear
- B Carrier
- C Bevel Pinions
- D Side Bevel Gears
- E Sun Pinion

The rear differential is located in the differential case between the Reduction Gear Box (RGB) and PTO Housing on PST transmissions. On PowrQuad™ transmissions, the rear differential is located in the differential case between the Range Box and PTO Housing.

The purpose of the rear differential is to transmit power from the transmission to the final drives. Power flows from the differential spiral bevel pinion to the spiral bevel ring gear (A) to rotate the differential carrier (B). Three bevel pinions (C) with shafts rotate with the carrier. Power flows through the bevel pinions to side bevel gears (D) which are splined to sun pinions (E). The sun pinions drive the final drives.

When traveling straight ahead, differential bevel pinions do not spin. Bevel pinions and bevel gears rotate with the differential carrier forcing the sun pinions to rotate at the same speed.



(30) Primary Pressure Adjustment**Action:**

Adjust primary pressure as follows:

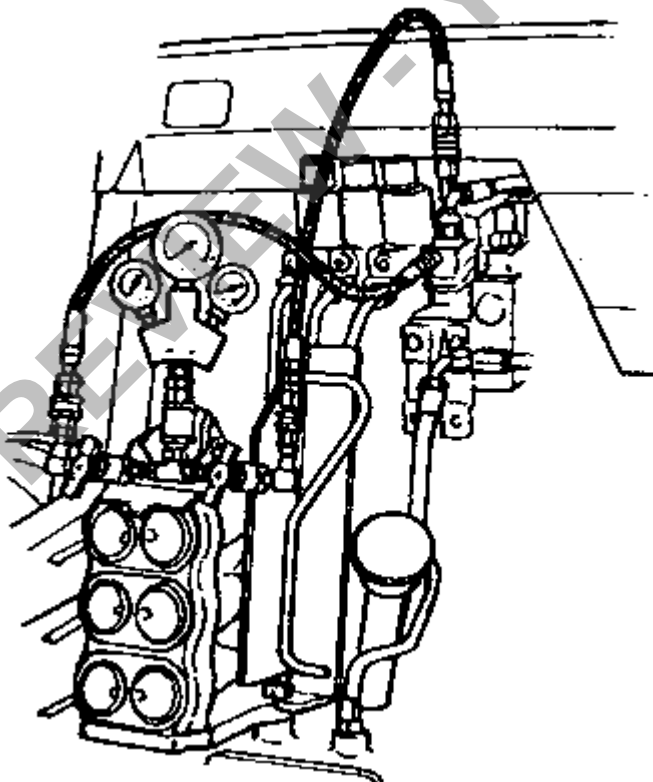
- [1]** - Lower hitch for access to front side of priority valve stack.
- [2]** - Loosen jam nut on adjusting screw for steering load-sense relief valve.
- [3]** - With engine at slow idle turn adjusting screw in to increase pressure or out to decrease relief pressure.

Make adjustment in one-eighth to one-quarter turn increments and repeat

[Step \(28\)](#) until pressure is correctly set with jam nut tight.

Result:

YES:Need Result.

(31) Priority Valve Operational Pressure Check**Action:**

(2) Maximum Load Sensitivity (CW)**Action:**

SLOWLY turn the load/depth control potentiometer full clockwise.

→NOTE:

Load/depth full clockwise voltage must be at least 2 volts more than the full counter clockwise voltage. There should be no “beep” or sudden change in voltage through the full range of control movement.

Voltage reading on the tach display should read between:

06
3.50

and

06
4.50

Result:

YES:If load/depth control operation is still “questionable”, GO TO “HCU Calibration Procedure” in Group 15. If load/depth control operation is good, resume hydraulic/drive train diagnostic test if it was in process prior to doing HCU Test Procedure No. 6.

NO:If there was a “beep”, and/or the voltage reading changed suddenly, replace the load/depth control potentiometer. If the voltage reading is a constant 5 volts, disconnect the lever potentiometer and check the voltage again:If the voltage reading is still 5 volts, the harness is defective.If the voltage reading goes to zero volts, check the potentiometer.

Test Procedure No. 7

→NOTE:

LHP Test Procedure No. 7 is not used.

PREVIEW - YOUFIXTHIS.COM

→NOTE:

Identify size of lift cylinders piston diameter. Compare to following chart for required calibration value.

→NOTE:

Identify cylinder size as follows:

- **SMALL** are 70 mm (2.75 in) diameter or 220 mm (8.66 in) circumference.
- **LARGE** are 80 mm (3.15 in) diameter or 251 mm (9.86 in) circumference.

No./Size of Cylinders**Calibration Value**

2/Small

123 (± 1)

1/Small—1/Large

128 (± 1)

2/Large

133 (± 1)**→NOTE:**

Increasing numbers will increase hitch speed (max. is "165").

Pull the hitch control lever full rearward.

SLOWLY push the hitch control lever forward until the tach display shows the number (± 1) that corresponds to the size and number of lift cylinders on the tractor.

→NOTE:

Push/pull the hitch control lever, as necessary, until the correct value (± 1) is displayed.

The hitch may move, either up or down, depending on setting.

Tach display should be "123", "128" or "133".

→NOTE:

The displayed value may be within one (± 1) of the value listed in the chart.

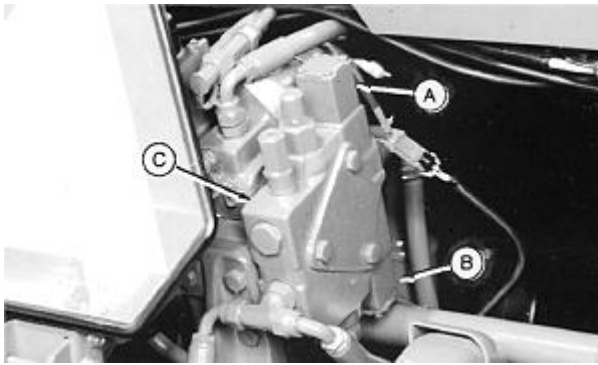
→NOTE:

Do NOT move the hitch control lever again until the calibration procedure has been completed.

LEGEND:

A	Charge Pressure Control Valve
B	Charge Lube Relief Valve
C	To Sump
D	1.7 mm Orifice
E	From Sump
F	Inlet Gallery
G	Gear
H	Internal Toothed Gear
I	Outlet Gallery
J	To Filter
K	Main Pump
L	Filter Housing
M	To Main Pump
N	From Filter
O	1.5 mm Orifice
P	To Lube PTO Clutch
Q	To Lube Final Drives
R	Charge Pump
S	Pressure-Free Oil
T	Lubrication Oil
U	Charge-Pressure Oil

Hitch Control Valve



The hitch is raised and lowered by a single spool valve in the hitch valve housing (C). The spool valve is controlled by two solenoid operated pilot valves, one on each end of the valve. The solenoid valves are located on the top and bottom of the hitch control valve. The return solenoid valve (A) is located at the top of the hitch valve to direct pilot pressure oil to the hitch spool valve and lowers the hitch. The pressure solenoid valve (B) is located at the bottom of the hitch valve to direct pilot pressure oil to the opposite end of the hitch spool valve and raises the hitch.

The engine must be operating so hydraulic pressure is available to lower the hitch. If the engine cannot be operated, remove the knurled cap at the top of the hitch valve. Use a small punch to manually lower the hitch. The hitch cannot be raised mechanically. Both hydraulic and electrical power are required to raise the hitch.

Controlling the valve is accomplished by the amount of current the hitch control unit provides. This current creates a magnetic field inside the solenoid, which causes the pilot spool valve to move. The greater the current, the stronger the magnetic field and the farther the pilot spool valve will move. The pilot pressure required to move the hitch spool valve is proportional to the current input of the solenoids.

⚠ CAUTION:

Close both high and low side valves on gauge set after pressures stabilize.

Compare gauge readings to following table.

Static Pressure Chart				
Temperature		Minimum Pressure		
°C	°F	kPa	bar	psi
15	60	390	3.9	57
18	65	430	4.3	63
21	70	490	4.9	71
24	75	540	5.4	78
27	80	590	5.9	86
29	85	655	6.5	95
32	90	715	7.1	104
35	95	785	7.8	114
38	100	855	8.5	124
41	105	930	9.3	135
43	110	1010	10.1	147
46	115	1095	10.9	159
49	120	1185	11.8	172

→NOTE:

A static pressure reading 20—30% greater than values listed in the chart is an indication the system was charged with a mix of nitrogen or another refrigerant. Reclaim, evacuate and recharge the system.

IMPORTANT:

Venting of refrigerants into the atmosphere is prohibited by law. Refrigerant must be recovered using an approved recovery/recycling station. Use only John Deere™ approved refrigerant and oil when servicing the air conditioning system. Do not mix refrigerants. Follow service procedure in relevant repair manual.

PREVIEW ONLY

You're viewing 25 of 1386 pages

The full manual includes:

- All 1386 pages, complete
 - Searchable PDF (find any keyword)
 - No watermarks
 - Instant download
 - Print-ready quality
-

GET FULL MANUAL NOW

John Deere 7200, 7400 technical



Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual