

NEW HOLLAND

REPAIR MANUAL

TG215
TG245
TG275
TG305
Tractors

NEW HOLLAND AGRICULTURE

SERVICE

87710923

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NOTE: *Engine repair information is not contained within this tractor Repair Manual. For engine repair, refer to publication number 87515682 for the 8.3 & 9.0L 6 Cylinder, 24 Valve CNH Engine with High Pressure Common Rail Fuel System.*

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INSTRUMENTATION CLUSTER - TRANSMISSION LEAKAGE CHECK

The regulated circuit pump is the front section of the tandem gear pump. The pump draws oil from the system reservoir through a 100 mesh suction screen. The pump flow passes through the regulated circuit filter housing and into the priority regulator valve. The priority regulator valve maintains the regulated pressure circuit at 22.4 to 24.5 bar (325 to 355 PSI). The regulated pump flow supplies the PTO/ Diff lock valve, transmission control valves and brake valve. Both the remote and hitch valves are also supplied with pilot pressure.

Once these circuits are satisfied the excess regulated pump flow is directed through the oil coolers and joins up with the charge pump flow at the downstream side of the main filter head.

The 27 GPM tandem gear pump is a fixed displacement pump, therefore the output flow will decrease as the engine speed is lowered. At low engine speeds, leaks in the regulated and transmission circuits are more noticeable.

BACKGROUND INFORMATION:

The transmission controller monitors the pressure through the system pressure transducer. The manifold pressure can be read from the display through the TRANS SYS PRESSURE screen.

- Start and run the engine.

- Press the INCR or DECR key on the programmable instrumentation until TRANS OIL TEMP screen is reached.

NOTE: *Screen order is set by the operator. The TRANS OIL TEMP and TRANS SYS PRESURE screens could or could not be together depending on setup.*

- Operate the engine at 1500 RPM until the transmission temperature displayed on the instrumentation reads at least 49° ***C (120° F).***

- Press the INCR as required to display the TRANS SYS PRESSURE screen.

- With the engine at 1500 RPM, record the transmission system pressure with all hydraulic systems OFF, PTO and Diff Lock in the OFF position and the FWD switch in the ON position.

- Increase engine speed to 2000 RPM. Record the range powershift manifold pressure. Decrease engine speed.

- **The Powershift System Manifold Pressure_____kPa at 2000 RPM**

A. If the pressure reading is greater than 310 PSI (2240 kPa) go to the regulated system leakage test. (Complete the regulated system leakage test before adjusting regulated pressure. See Hydraulic System How It Works And Troubleshooting)

B. If the pressure reading is less than 310 PSI (2240 kPa) go to the regulated pump flow test (See Hydraulic System How It Works And Troubleshooting)..

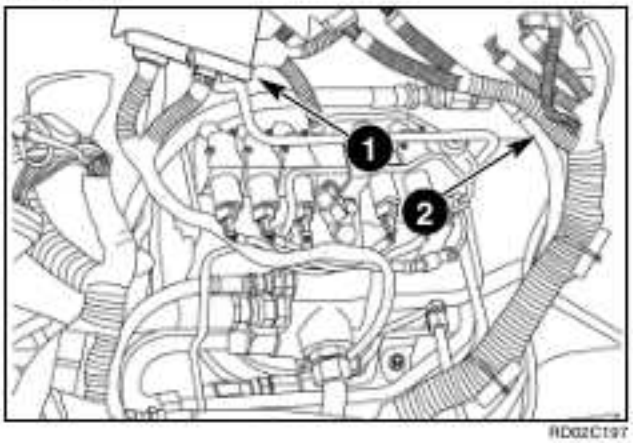
NOTE: ***Transducer Pressure Range: 2240 to 2250 kPa (325 to 355 PSI) at 2000 RPM and 120°F (49°C). To convert kPa to bar, move the decimal place over two places to left, i.e. 2240 kPa equals 22.4 bar.***

Fault codes will be generated if a problem is detected with the following components:

- System pressure transducer failure.
- Wire failed, or shorted between sensor and controller.
- Low regulated supply pressure to powershift valves.
- Low powershift manifold pressure due to leaking clutch.
- Wire failed, or shorted between powershift valve solenoid and controller.

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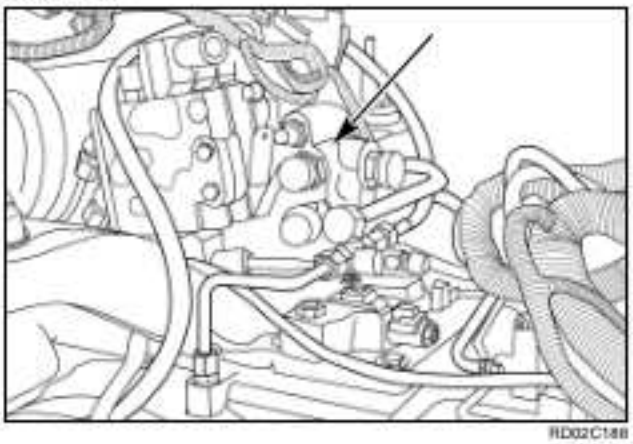
STEP 8



RD02C197

Disconnect the remote auxiliary controller (1) from the wire harness. Move the remaining controllers and wire harness (2) forward until the harness is on the front side of the rear housing/range housing seam.

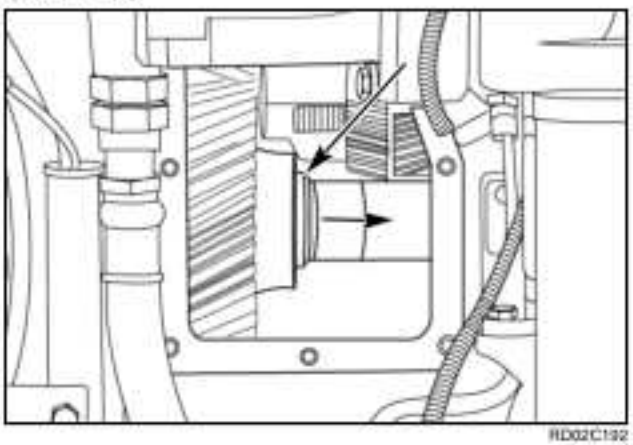
STEP 9



RD02C188

Tag and remove the hydraulic lines from the remote valve. Cap all lines and fittings.

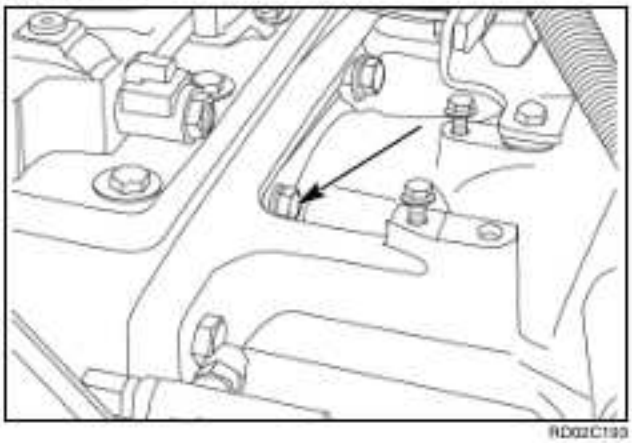
STEP 10



RD02C192

Remove the cover from the RH side of the range transmission. Move the snap ring out of the groove and forward on the shaft.

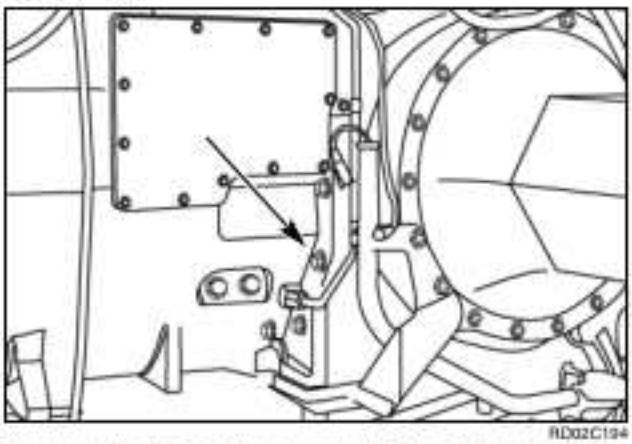
STEP 11



RD02C193

Remove the top bolts.

STEP 12

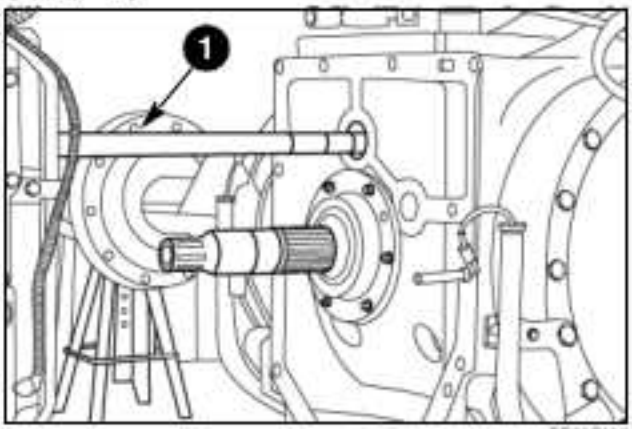


RD02C194

Remove the five bolts on each side of the housing. Install alignment dowels on each side.

NOTE: *Two bolts on the bottom are removed from the rear.*

STEP 13



RD02C196

Separate the rear housing from the range housing. As the rear housing is moved rearward, move the snap ring and gear forward on the shaft. There is also a spacer between the snap ring and gear. Be sure to capture the snap ring, spacer and gear before they reach the end of the shaft.

NOTE: *Be sure that the PTO input shaft (1) stays with the rear housing.*

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TROUBLESHOOTING

Problem – Differential lock will not disengage

1. Check for PTO fault codes.
   A. If fault codes are found, follow procedures outlined in PTO system fault code troubleshooting in this section.

2. Place the differential lock switch in the ON position. Check the tractor monitor for the differential lock icon in the instrumentation display.
   A. If the differential lock icon is displayed, this is an indication the electrical control circuit is functioning correctly. Go to step 4.

   B. If the differential lock icon is not displayed, this in an indication the electrical control circuit is not functioning correctly. Check fault codes, controller, and data bus function.

3. Place the differential lock switch in the ON position. Check for 12 VDC at differential lock valve coil.
   A. If 12 VDC is available to the coil, the differential lock electrical circuit is functioning properly.

   B. If 12 VDC is not found, troubleshoot the differential lock electrical circuit.

      1. Check wires 530A (R) and 175E(BK) ground.

      2. Check all connections for excessive resistance.

   Apply the brakes, this will deactivate the differential lock. Check for 12 VDC at differential lock valve coil.

   C. If 12 VDC is available to the coil, the differential lock electrical circuit is not functioning properly.

      1. Check left and right brake switches.

   D. If 12 VDC is not found the differential lock electrical circuit is functioning properly.

4. Check and repair the differential lock clutch as needed.

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TG SERIES TRACTORS
TG215, TG245, TG275, AND TG305
NAO ELECTRICAL SCHEMATIC
87389710

LEGEND

INDICATES CONSTANT POWER

INDICATES POWER WHEN KEY SWITCH IS ON

TRANSMISSION CONTROL IN PARK
MFD IS OFF

RI05N080

ELECTRICAL SCHEMATIC DIAGRAM B6
NAO TG SERIES TRACTOR

CIRCUIT DESCRIPTION	SECTION	CIRCUIT DESCRIPTION	SECTION
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ACTUATORS

LEVER · HAND · FOOT · TEMP

LIQUID LEVEL FLOAT · PRESSURE · COIL · DIODE

VARIABLE RESISTOR · RESISTOR · CONTACTS: MOMENTARY / MAINTAINED

HOUSINGS

V VACUUM SWITCH · P PRESSURE SWITCH · T TEMPERATURE SWITCH · M MOTOR · LAMP

CONTACT CONFIGURATIONS

S.P.S.T. · S.P.D.T. · D.P.S.T. · D.P.D.T.

MISCELLANEOUS SYMBOLS

FUSE · CIRCUIT BREAKER · RELAYS · FUSE BLOCK

LED · PHOTO TRANSISTOR

COLOR ABBREVIATIONS

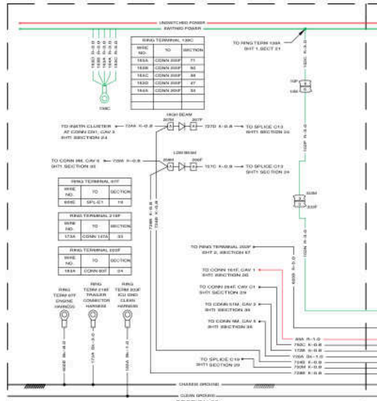
ABBREVIATION	COLOR	ABBREVIATION	COLOR
R	RED	O	ORANGE
T	TAN	K	PINK
W	WHITE	P	VIOLET (PURPLE)
Y	YELLOW	DU	DARK BLUE
Bk	BLACK	LU	LIGHT BLUE
N	BROWN	DG	DARK GREEN
S	GREY	LG	LIGHT GREEN

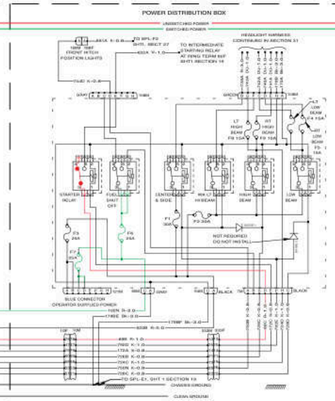
CIRCUIT DIAGRAM LEGENDS

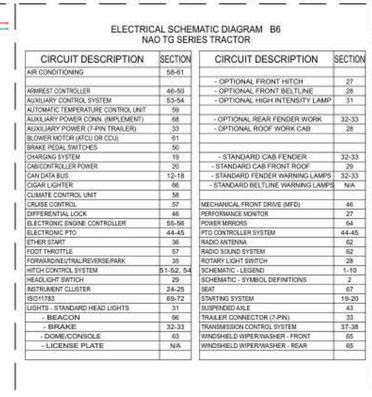
CIRCUIT NUMBER · 702A B-1.0 · COLOR · CIRCUIT TAG IF REQUIRED · CONNECTOR AREA

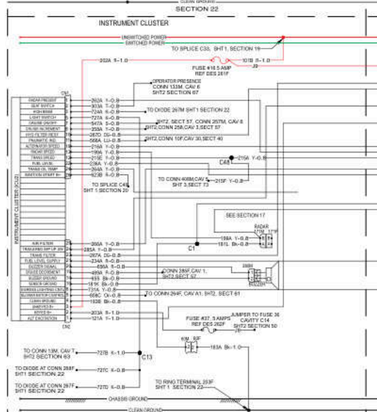
C20 · INDICATES CIRCUIT SPLICE · INDICATES CIRCUIT CONNECTION · INDICATES CIRCUIT CROSSING NOT CONNECTED · INDICATES INTERNALLY GROUNDED UNITS · GROUND

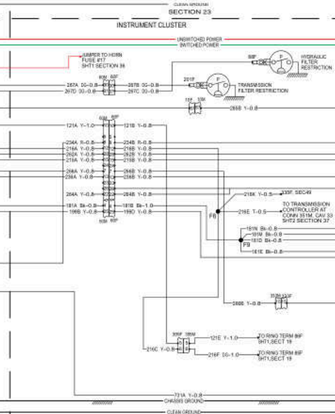
CIRCUIT 1 · CIRCUIT 2 · CIRCUIT 3 · CIRCUIT 4 · WIRE BUNDLE · CIRCUIT 1 · CIRCUIT 2 · CIRCUIT 3 · CIRCUIT 4

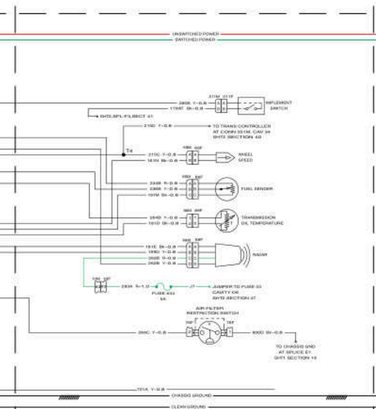


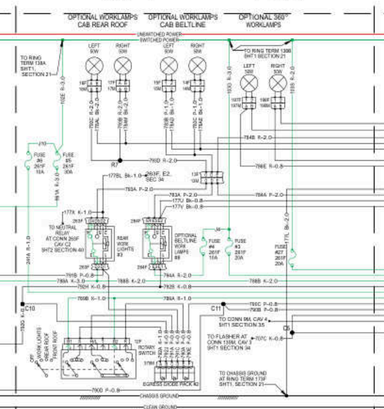


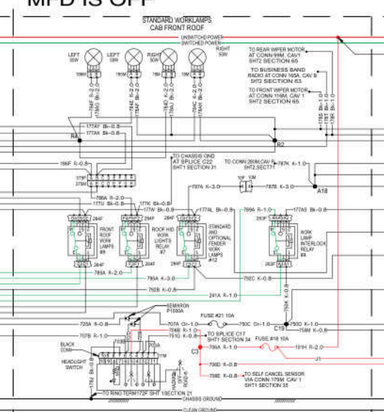


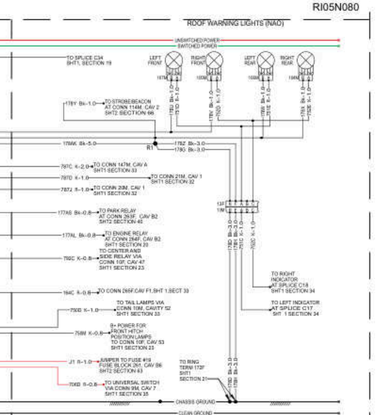


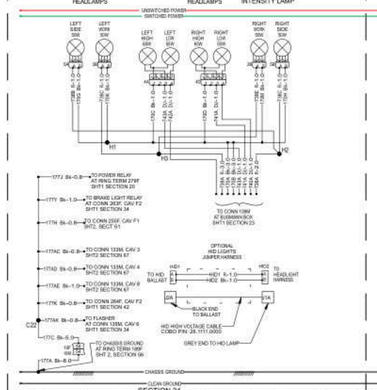


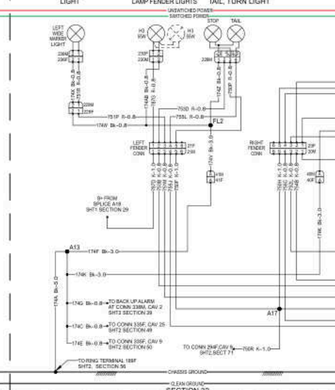


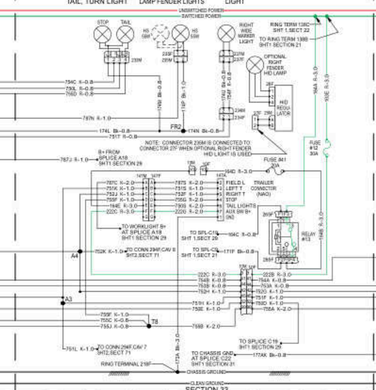


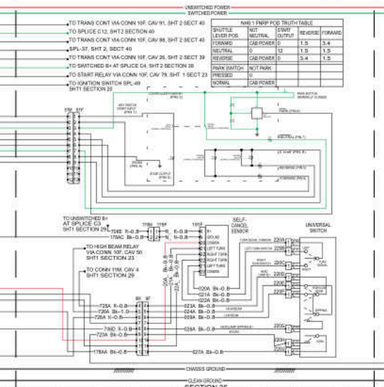


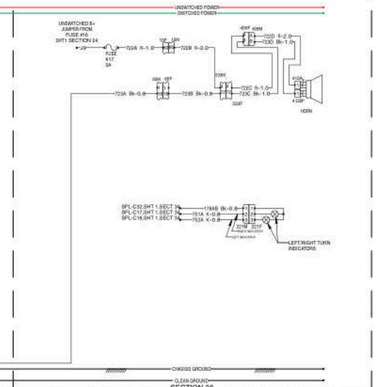


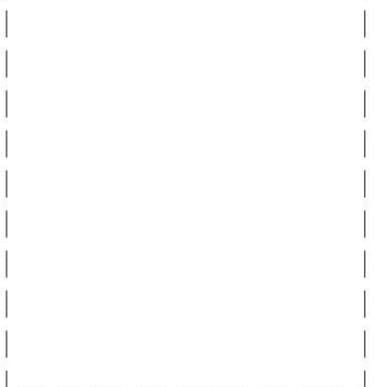












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