NEBRASKA TRACTOR TEST 1855
JOHN DEERE 4720 EHYDRO DIESEL
HYDROSTATIC

LOCATION OF TESTS: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832

DATES OF TESTS: August 31-September 2, 2005

MANUFACTURER: John Deere Commercial Products Inc., 700 Horizon South Parkway, Grovetown Ga. USA, 30813

FUEL, OIL and TIME: Fuel
No. 2 Diesel
Specific gravity converted to 60°/60° F (15°/15°C)
0.8473
Fuel weight
7.055 lbs/gal (0.846 kg/l)

Oil
SAE 15W40
API service classification
CG-4

Transmission and hydraulic lubricant
John Deere Hy-Gard Fluid

TOTAL TIME ENGINE WAS OPERATED
5.0 hours

ENGINE: Make
John Deere Diesel
Type
four cylinder vertical with turbocharger
Serial No.
*PE4024T025769*

CRANKSHAFT LENGTHWISE
Rated engine speed
2400 rpm
Bore and stroke
3.386” x 4.134” (86.0 mm x 105.0 mm)
Compression ratio
20.5 to 1
Displacement
149 cu in (2440 ml)
Starting system
12 volt
Lubrication

Air cleaner
one paper element and one polyester felt element
Oil filter
one full flow cartridge
Oil cooler
engine coolant heat exchanger for crankcase oil, radiator for transmission and hydraulic oil
Fuel filter
one paper element
Muffler
underhood
Exhaust
horizontal
Cooling medium temperature control
one thermostat

ENGINE OPERATING PARAMETERS: Fuel rate:
22.0 - 24.5 lb/hr (10.0 - 11.0 kg/hr)
High idle:
2550 - 2650 rpm
Turbo boost:
nominal 10.2 - 13.1 psi (70 - 90 kPa) as measured 11.6 psi (80 kPa)

CHASSIS: Type
Front wheel assist Serial No.
*LV4720H270091* Tread width rear 51.3” (1304 mm) to 74.8” (1900 mm) front 53.1” (1349 mm) to 74.5” (1940 mm) Wheelbase 71.5” (1816 mm) Hydraulic control system direct engine drive

HYDRAULIC SYSTEM
Transmission
Hydrostatic. Infinitely variable within the ranges shown. The transmission has 3 mechanical ranges
Nominal travel speeds mph (km/h)
A-0-3.7(6.0), B-0-6.6(10.7), C-0-15.5(25.0) reverse A-0-3.7(6.0), B-0-6.6(10.7), C-0-15.5(25.0) Clutch none - travel speed is electronically controlled by foot pedal Brakes single wet disc mechanically operated by two foot pedals which can be locked together Steering hydraulic Power take-off 540 rpm at 2395 engine rpm Unladen tractor mass 3860 lb (1751 kg)

<table>
<thead>
<tr>
<th>POWER TAKE-OFF PERFORMANCE</th>
<th>Front Wheel Drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP (kW)</td>
<td>Crankshaft speed rpm</td>
</tr>
<tr>
<td>51.77 (38.60)</td>
<td>2402</td>
</tr>
<tr>
<td>46.48 (34.66)</td>
<td>2535</td>
</tr>
<tr>
<td>35.22 (26.26)</td>
<td>2567</td>
</tr>
<tr>
<td>23.59 (17.39)</td>
<td>2589</td>
</tr>
<tr>
<td>12.01 (8.96)</td>
<td>2608</td>
</tr>
<tr>
<td>0.60 (0.44)</td>
<td>2644</td>
</tr>
</tbody>
</table>

Maximum Torque 141 lb-ft (191 Nm) at 1550 rpm
Maximum Torque Rise: 24.6%
Torque rise at 1900 rpm: - 17%

<table>
<thead>
<tr>
<th>TRACTOR SOUND LEVEL WITHOUT CAB</th>
<th>Engaged</th>
<th>Disengaged</th>
</tr>
</thead>
<tbody>
<tr>
<td>dB(A)</td>
<td>dB(A)</td>
<td></td>
</tr>
<tr>
<td>At no load in B range speed setting 4.7 mph (7.5 km/h)</td>
<td>86.2</td>
<td>85.7</td>
</tr>
<tr>
<td>Transport speed - no load - C range</td>
<td>86.5</td>
<td></td>
</tr>
<tr>
<td>Bystander in C range</td>
<td>78.4</td>
<td></td>
</tr>
</tbody>
</table>
THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: I
Quick Attach: None

Maximum Force Exerted Through Whole Range:
- 2523 lbs (11.2 kN) (at 24" behind link ends)
- 2821 lbs (15.3 kN) (at lift link ends)

i) Opening pressure of relief valve: NA

Sustained pressure of the open relief valve:
- 2600 psi (179 bar)

ii) Pump delivery rate at minimum pressure
- 10.6 GPM (40.1 l/min)

iii) Pump delivery rate at maximum hydraulic power:
- 11.0 GPM (41.6 l/min)

Delivery pressure:
- 2215 psi (155 bar)

Power:
- 14.2 HP (10.6 kW)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (bar):
- 2510 (173)

Location: hydraulic service port

Hydraulic oil temperature: °F (°C):
- 158 (70)

Category: I
Quick attach: none

SAE Static Test—System pressure 2485 psi (171 Bar)

Hitch point distance to ground level in. (mm):
- 8.1 (205)
- 13.7 (349)
- 20.0 (508)
- 26.9 (684)
- 32.1 (816)

Lift force on frame lb (kN):
- 2961 (13.2)
- 3050 (13.6)
- 3021 (13.4)
- 2833 (11.6)
- 2581 (11.5)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. This tractor did not meet the manufacturer's claims of: 30% torque rise, 3130 lb (1423 kg) lift capacity at ball ends nor implement pump flow of 12.0 GPM (45.3 l/min).

For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 159°F (70°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1855, October 26, 2005.

Leonard L. Bashford
Director

M.F. Kocher
V.I. Adamchuk
J.A. Smith
Board of Tractor Test Engineers

OECD/SAE Test

<table>
<thead>
<tr>
<th>Inch</th>
<th>Millimeter</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>21.9</td>
</tr>
<tr>
<td>B</td>
<td>11.4</td>
</tr>
<tr>
<td>C</td>
<td>13.7</td>
</tr>
<tr>
<td>D</td>
<td>12.7</td>
</tr>
<tr>
<td>E</td>
<td>11.7</td>
</tr>
<tr>
<td>F</td>
<td>5.2</td>
</tr>
<tr>
<td>G</td>
<td>23.1</td>
</tr>
<tr>
<td>H</td>
<td>0.2</td>
</tr>
<tr>
<td>I</td>
<td>12.6</td>
</tr>
<tr>
<td>J</td>
<td>17.9</td>
</tr>
<tr>
<td>K</td>
<td>15.8</td>
</tr>
<tr>
<td>L</td>
<td>32.9</td>
</tr>
<tr>
<td>M</td>
<td>20.1</td>
</tr>
<tr>
<td>N</td>
<td>27.5</td>
</tr>
<tr>
<td>O</td>
<td>8.1</td>
</tr>
<tr>
<td>P</td>
<td>36.0</td>
</tr>
<tr>
<td>Q</td>
<td>30.5</td>
</tr>
<tr>
<td>R</td>
<td>19.0</td>
</tr>
</tbody>
</table>

HITCH DIMENSIONS AS TESTED - NO LOAD

John Deere 4720 Diesel

Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln