NEBRASKA TRACTOR TEST 1853
JOHN DEERE 4320 EHYDRO DIESEL
HYDROSTATIC

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln
Nebraska 68583-0832

Dates of tests: September 1-2, 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.
*PE4024T023019*

Crankshaft lengthwise

Rated engine speed
2400

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 (2,440 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:
19.4 - 21.6 lb/h (8.8 - 9.8 kg/h)

High idle:
2550 - 2650 rpm

Turbo boost:
nominal 7.5 - 9.0 psi (52 - 62 kPa)
as measured 7.8 psi (54 kPa)

CHASSIS:
Type
Front wheel assist

Serial No.
*LV4320H230098*

Tread width
rear 51.3" to 74.8" (1,304 mm to 1,900 mm)

front 53.1" to 56.7" (1,349 mm to 1,440 mm)

Wheelbase
71.5" (1,816 mm)

Hydraulic control system
direct engine drive

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 hydrostatic Power take-off 540 rpm at 2395 engine rpm

Unladen tractor mass
3850 lb (1,746 kg)

Maximum Torque 121 lb-ft. (165 Nm) at 1597 rpm

Maximum Torque Rise -35.3%

Torque rise at 1902 rpm -20%

ENGINE Operating PARAMETERS:
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19.4 - 21.6 lb/h (8.8 - 9.8 kg/h)

High idle:
2550 - 2650 rpm

Turbo boost:
nominal 7.5 - 9.0 psi (52 - 62 kPa) as measured 7.8 psi (54 kPa)

CHASSIS:
Type
Front wheel assist

Serial No.
*LV4320H230098*
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: |
| Sustained pressure of the open relief valve: |
| 2535 psi (175 bar) |
| ii) Pump delivery rate at minimum pressure and rated engine speed: |
| 10.6 GPM (40.1 l/min) |
| iii) Pump delivery rate at maximum hydraulic power: |
| Delivery pressure: |
| 2255 psi (154 bar) |
| Power: |
| 15.4 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 2165 psi (149 Bar)

| Hitch point distance to ground level in. (mm) | 8.1 (205) | 13.7 (347) | 20.0 (509) | 26.9 (684) | 32.1 (816) |
| Lift force on frame lb (kN) | 2981 | 3050 | 3021 | 2981 | 2581 |

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 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 167°F (75°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1853, October 26, 2005.

Leonard L. Bashford
Director

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

Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln