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Test 1853: John Deere 4320 Ehydro Diesel Hydrostatic

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1853

JOHN DEERE 4320 EHYDRO DIESEL

HYDROSTATIC

POWER TAKE-OFF PERFORMANCE

| Power HP (kW) | Crank shaft speed rpm | Gal/hr (l/h) | lb/hp.hr (kg/kW.h) | Hp.hr/gal (kW.h/l) | Mean Atmospheric Conditions |
|---|--------------------------------|-----------------|-----------------------|-----------------------|--------------------------------|
| MAXIMUM POWER AND FUEL CONSUMPTION | | | | | |
| 41.58 (31.01) | 2399 | 2.87 (10.85) | 0.486 (0.296) | 14.51 (2.86) | |

| | | | | | |
|------------------|------|-----------------|------------------|-----------------|--|
| 41.58 (31.01) | 2399 | 2.87 (10.85) | 0.486 (0.296) | 14.51 (2.86) | |
|------------------|------|-----------------|------------------|-----------------|--|

VARYING POWER AND FUEL CONSUMPTION

| | | | | | |
|------------------|------|-----------------|------------------|-----------------|----------------------|
| 41.58 (31.01) | 2399 | 2.87 (10.85) | 0.486 (0.296) | 14.51 (2.86) | Air temperature |
| 37.56 (28.01) | 2558 | 2.78 (10.52) | 0.522 (0.317) | 13.52 (2.66) | 79°F (26°C) |
| 28.53 (21.28) | 2585 | 2.30 (8.69) | 0.568 (0.345) | 12.43 (2.45) | Relative humidity |
| 19.28 (14.38) | 2605 | 1.81 (6.87) | 0.664 (0.404) | 10.63 (2.09) | 57% |
| 9.62 (7.17) | 2626 | 1.36 (5.15) | 0.998 (0.607) | 7.07 (1.39) | Barometer |
| 0.85 (0.64) | 2649 | 1.01 (3.81) | 8.328 (5.066) | 0.85 (0.17) | 28.95"Hg (98.04 kPa) |

Maximum Torque 121 lb.-ft. (165 Nm) at 1597 rpm
Maximum Torque Rise - 33.3%
Torque rise at 1902 rpm - 20%

TRACTOR SOUND LEVEL WITHOUT CAB

| | Front Wheel Drive Engaged | Disengaged |
|--|------------------------------|------------|
| At no load in B range speed setting 4.7 mph (7.5 km/h) | 86.1 | 85.6 |
| Transport speed - no load - C range | | 87.3 |
| Bystander in C range | | 78.5 |

TIRES AND WEIGHT

Rear Tires—No., size, ply & psi (kPa)
Front Tires—No., size, ply & psi (kPa)
Height of Drawbar
Static Weight with operator—Rear
— Front
— Total

Tested Without Ballast
Two 17.5L-24; 8; 20 (135)
Two 10-16.5; 6; 15 (105)
15.5 in (395 mm)
2390 lb (1084 kg)
1635 lb (742 kg)
4025 lb (1826 kg)

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 (2440 ml) Starting system 12 volt Lubrication pressure 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" (1304 mm) to 74.8" (1900 mm) front 53.1" (1349 mm) to 56.7" (1440 mm) Wheelbase 71.5" (1816 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 (1746 kg)

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: 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: 10.3 GPM (39.0 l/min)
Delivery pressure: 2235 psi (154 bar)
Power: 13.4 HP (10.0 kW)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi. (bar) 2510 (173)
Location: hydraulic service port
Hydraulic oil temperature: °F (°C) 158 (70)
Location: hydraulic sump
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 (349) | 20.0 (509) | 26.9 (684) | 32.1 (816) |
|---|-----------|------------|------------|------------|------------|
| Lift force on frame lb | 2961 | 3050 | 3021 | 2833 | 2581 |
| " " " " " (kN) | (13.2) | (13.6) | (13.4) | (11.6) | (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 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.

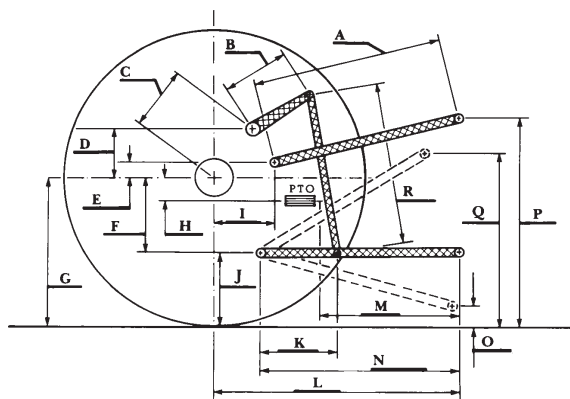
Leonard L. Bashford
Director

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

OECD/SAE Test

| | inch | mm |
|---|------|-----|
| A | 21.9 | 555 |
| B | 11.4 | 290 |
| C | 13.7 | 347 |
| D | 12.7 | 323 |
| E | 11.7 | 297 |
| F | 5.2 | 131 |
| G | 23.1 | 586 |
| H | 0.2 | 6 |
| I | 12.6 | 320 |
| J | 17.9 | 455 |
| K | 15.8 | 402 |
| L | 32.9 | 836 |
| M | 20.1 | 511 |
| N | 27.5 | 699 |
| O | 8.1 | 207 |
| P | 36.0 | 915 |
| Q | 30.5 | 775 |
| R | 19.0 | 483 |

HITCH DIMENSIONS AS TESTED - NO LOAD



John Deere 4320 Diesel