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Test 1855: John Deere 4720 Ehydro Diesel Hydrostatic

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1855

JOHN DEERE 4720 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
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MAXIMUM POWER AND FUEL CONSUMPTION

Rated Engine Speed—(PTO speed—541 rpm)					
51.77 (38.60)	2402	3.29 (12.47)	0.449 (0.273)	15.72 (3.10)	

Standard Power Take-off Speed - (541 rpm)					
51.77 (38.60)	2402	3.29 (12.47)	0.449 (0.273)	15.72 (3.10)	

VARYING POWER AND FUEL CONSUMPTION

51.77 (38.60)	2402	3.29 (12.47)	0.449 (0.273)	15.72 (3.10)	Air temperature
46.48 (34.66)	2535	3.13 (11.86)	0.476 (0.289)	14.84 (2.92)	75°F (24°C)
35.22 (26.26)	2567	2.52 (9.55)	0.505 (0.307)	13.96 (2.75)	Relative humidity
23.59 (17.59)	2589	1.91 (7.24)	0.572 (0.348)	12.33 (2.43)	74%
12.01 (8.96)	2608	1.40 (5.31)	0.824 (0.501)	8.56 (1.69)	Barometer
0.60 (0.44)	2644	0.95 (3.59)	11.246 (6.841)	0.63 (0.12)	28.75"Hg (97.36 kPa)

Maximum Torque 141 lb.-ft. (191 Nm) at 1550 rpm

Maximum Torque Rise - 24.6%

Torque rise at 1900 rpm - 17%

TRACTOR SOUND LEVEL WITHOUT CAB

	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load in B range speed setting 4.7 mph (7.5 km/h)	86.2	85.7
Transport speed - no load - C range		86.5
Bystander in C range		78.4

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)

2395 lb (1086 kg)

1640 lb (744 kg)

4035 lb (1830 kg)

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 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: 22.0 - 24.5 lb/h (10.0 - 11.0 kg/h) 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 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 3860 lb (1751 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: 2600 psi (179 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: 11.0 GPM (41.6 l/min)
Delivery pressure: 2215 psi (153 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)
Location: hydraulic sump
Category: I
Quick attach: none

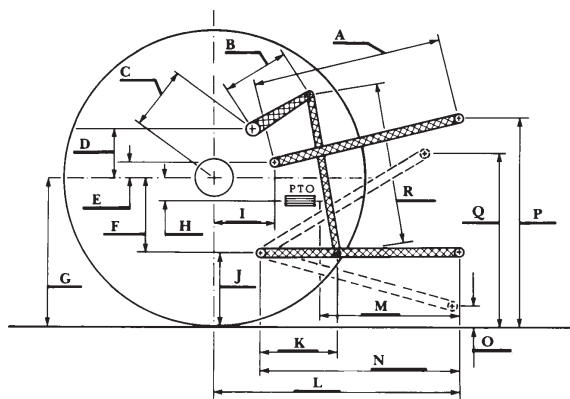
SAE Static Test—System pressure 2485 psi (171 Bar)

Hitch point distance to ground level in. (mm)	8.1 (205)	13.7 (349)	20.0 (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)

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



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



John Deere 4720 Diesel