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2016

Test 2141: John Deere 5085E

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 2141

JOHN DEERE 5085E DIESEL

12 SPEED

CHASSIS SERIAL NUMBERS 400000 AND HIGHER

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption Gal/hr (l/h)	Mean Atmospheric Conditions
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MAXIMUM POWER AND FUEL CONSUMPTION

Rated Engine Speed—(PTO speed—544 rpm)						
72.92 (54.38)	2403	4.94 (18.71)	0.475 (0.289)	14.75 (2.91)	0.14 (0.55)	Fuel used during active exhaust regeneration-0.79 gal (3.00 l) (see note 1, p.2)
Standard Power Take-off Speed (540 rpm)						
73.47 (54.79)	2385	4.90 (18.54)	0.467 (0.284)	15.00 (2.96)	0.14 (0.55)	
Maximum Power (1 hour)						
74.39 (55.48)	2204	4.59 (17.36)	0.432 (0.263)	16.22 (3.20)	0.15 (0.56)	

VARYING POWER AND FUEL CONSUMPTION

72.92 (54.38)	2403	4.94 (18.71)	0.475 (0.289)	14.75 (2.91)	0.14 (0.55)	Air temperature
63.06 (47.03)	2443	4.54 (17.20)	0.505 (0.307)	13.88 (2.73)	0.12 (0.47)	73°F (23°C)
47.78 (35.63)	2466	3.86 (14.62)	0.566 (0.344)	12.37 (2.44)	0.09 (0.33)	Relative humidity
32.18 (24.00)	2495	3.32 (12.58)	0.723 (0.440)	9.69 (1.91)	0.09 (0.33)	14%
16.10 (12.01)	2500	2.76 (10.45)	1.201 (0.731)	5.83 (1.15)	0.09 (0.34)	Barometer
0.75 (0.56)	2500	2.06 (7.82)	19.173 (11.662)	0.37 (0.07)	0.06 (0.22)	28.92" Hg (97.93 kPa)

Maximum torque - 217 lb.-ft. (294 Nm) at 1501 rpm

Maximum torque rise - 36.0%

Torque rise at 1921 engine rpm - 21%

Power increase at 2204 engine rpm - 2.0%

TRACTOR SOUND LEVEL WITH CAB

	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load in 6th (B2) gear	85.8	85.8
Transport in 12th (C4) gear		86.2
Bystander in 12th (C4) gear		81.3

TIRES AND WEIGHT

Rear Tires—No., size, ply and psi (kPa)

Front Tires—No., size, ply and psi (kPa)

Height of Drawbar

Static Weight with operator—Rear

— Front

— Total

Tested Without Ballast

Two 16.9-30; 6; 12 (85)

Two 11.2-24; 6; 20 (140)

17.5 in (445 mm)

4650 lb (2109 kg)

3470 lb (1574 kg)

8120 lb (3683 kg)

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

Dates of tests: April 11 - 14, 2016

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

CONSUMABLE Fluids, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.8417 **Fuel weight** 7.008 lbs/gal (0.840 kg/l) **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.071 lbs/gal (1.087 kg/l) **Oil** SAE 15W-40 **API service classification** CJ-4 **Transmission and hydraulic lubricant** John Deere Hy-Gard fluid **Front axle lubricant** John Deere Hy-Gard fluid **Total time engine was operated:** 11.5 hours

ENGINE: Make John Deere **Diesel Type** four cylinder vertical with turbocharger, air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment **Serial No.** *PE4045U017656* **Crankshaft** lengthwise **Rated engine speed** 2400 **Bore and stroke** 4.19" x 5.00" (106.5 mm x 127.0 mm) **Compression ratio** 19.0 to 1 **Displacement** 276 cu in (4525 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** radiator for transmission and hydraulic oil **Fuel filter** one paper element and sediment bowl **Exhaust** regenerative aftertreatment system consisting of DOC (diesel oxidation catalyst) and SCR (selective catalyst reduction) integrated within a vertical muffler **Cooling medium temperature control** two thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 32.0 - 34.6 lb/h (14.5 - 15.7 kg/h) **High idle:** 2475 - 2525 rpm **Turbo boost:** nominal 17.4 - 19.6 psi (120 - 135 kPa) as measured 18.5 psi (128 kPa)

CHASSIS: Type front wheel assist **Serial No.** *1LV5085EAFY440642* **Tread width** rear 54.8" (1417 mm) to 71.7" (1820 mm) front 52.8" (1340 mm) to 75.0" (1904 mm) **Wheelbase** 90.6" (2300 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.01 (1.63) second 1.37 (2.21) third 1.88 (3.02) fourth 2.52 (4.05) fifth 2.91 (4.69) sixth 3.96 (6.38) seventh 5.41 (8.71) eighth 7.25 (11.67) ninth 8.43 (13.56) tenth 11.46 (18.45) eleventh 15.65 (25.19) twelfth 20.96 (33.74) reverse 1.10 (1.77), 1.50 (2.42), 2.05 (3.30), 2.75 (4.42), 3.18 (5.12), 4.32 (6.96), 5.90 (9.50), 7.91 (12.73), 9.19 (14.79), 12.51 (20.13), 17.08 (27.48), 22.87 (36.81)

HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: None

OECD Static test

Maximum force exerted through whole range: 3213 lbs (14.3 kN)

i) Maximum observed pressure: 2850 psi (197 bar)

two outlet sets combined

ii) Pump delivery rate at minimum pressure and rated engine speed: 16.1 GPM (61.1 l/min)

iii) Pump delivery rate at maximum hydraulic power: 14.9 GPM (56.5 l/min)

Delivery pressure: 2526 psi (174 bar)

Power: 22.0 HP (16.4 kW)

single outlet set

ii) Pump delivery rate at minimum pressure and rated engine speed: 16.2 GPM (61.2 l/min)

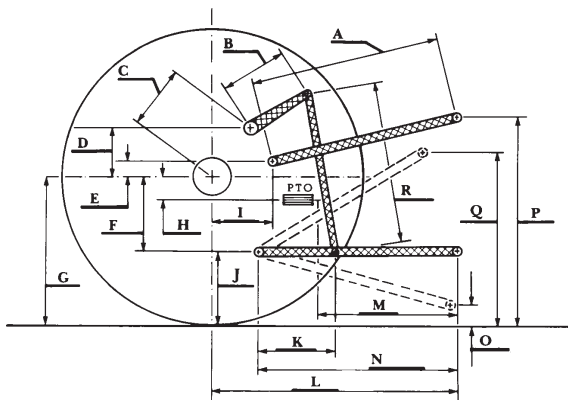
iii) Pump delivery rate at maximum hydraulic power: 14.6 GPM (55.3 l/min)

Delivery pressure: 2511 psi (173 bar)

Power: 21.4 HP (16.0 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	24.1	613
B	11.0	280
C	14.0	356
D	12.2	311
E	11.2	284
F	6.5	165
G	27.4	695
H	0.2	4
I	15.1	384
J	20.9	530
K	16.7	424
L	39.2	996
M	22.4	570
N	32.9	836
O	8.0	203
P	44.9	1140
Q	34.0	864
R	20.8	527



Clutch single wet disc operated by foot pedal

Brakes single wet disc hydraulically operated by two foot pedals which can be locked together

Steering hydrostatic **Power take-off** 540 rpm at 2385 engine rpm or 540 rpm at 1721 engine rpm

Unladen tractor mass 7945 lb (3604 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE 1. The manufacturer declares that the average time between active regenerations is 50 hours. A 4% power increase was observed during the active exhaust regeneration.

NOTE 2: The performance data on this report applies to tractors with chassis serial numbers that end with 400000 and higher.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2141**, May 16, 2016.

Roger M. Hoy
Director

M.F. Kocher
S.K. Pitla
P.J. Jasa
Board of Tractor Test Engineers

Economy mode

540 PTO rpm @ 1721 engine rpm

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	DEF Usage Gal/hr (l/h)
68.28 (50.92)	1721	3.74 (14.15)	0.384 (0.233)	18.27 (3.60)	0.16 (0.62)
51.38 (38.31)	1724	2.99 (11.31)	0.408 (0.248)	17.19 (3.39)	0.10 (0.38)
34.18 (25.49)	1719	2.23 (8.43)	0.457 (0.278)	15.35 (3.02)	0.04 (0.15)
17.18 (12.81)	1722	1.57 (5.93)	0.639 (0.389)	10.96 (2.16)	0.00 (0.01)
0.81 (0.60)	1721	1.14 (4.32)	9.881 (6.010)	0.71 (0.14)	0.00 (0.01)

Normal mode

540 PTO rpm @ 2385 engine rpm

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	DEF Usage Gal/hr (l/h)
68.39 (51.00)	2389	4.60 (17.42)	0.472 (0.287)	14.86 (2.93)	0.13 (0.48)
51.33 (38.28)	2387	3.82 (14.44)	0.521 (0.317)	13.45 (2.65)	0.10 (0.38)
34.17 (25.48)	2390	3.13 (11.85)	0.642 (0.391)	10.91 (2.15)	0.05 (0.18)
16.97 (12.65)	2385	2.46 (9.31)	1.016 (0.618)	6.90 (1.36)	0.03 (0.12)
0.73 (0.55)	2386	1.90 (7.17)	18.117 (11.020)	0.02 (0.08)	0.02 (0.07)



John Deere 5085E Diesel

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