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2012

## Test 2036: John Deere 5085M

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

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# NEBRASKA TRACTOR TEST 2036

## JOHN DEERE 5085M DIESEL

### 16 SPEED

Chassis Serial numbers 4xxxxx and higher

#### 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					
70.82 (52.81)	2201	4.59 (17.36)	0.456 (0.278)	15.44 (3.04)	Rated Engine Speed—(PTO speed—566 rpm) Fuel used during active exhaust regeneration - 1.02 gal (3.86 l) (see Note 1 p.2)
73.58 (54.87)	2100	4.57 (17.31)	0.438 (0.266)	16.09 (3.17)	Standard Power Take-off Speed(540 rpm)
76.68 (57.18)	1952	4.51 (17.08)	0.415 (0.252)	16.99 (3.35)	Maximum Power (1 hour)

#### VARYING POWER AND FUEL CONSUMPTION

70.82 (52.81)	2201	4.59 (17.36)	0.456 (0.278)	15.44 (3.04)	Air temperature
61.85 (46.12)	2261	4.27 (16.15)	0.486 (0.296)	14.49 (2.86)	75°F (24°C)
46.75 (34.86)	2277	3.61 (13.66)	0.544 (0.331)	12.95 (2.55)	Relative humidity
31.30 (23.34)	2297	2.94 (11.12)	0.662 (0.402)	10.65 (2.10)	50%
15.80 (11.78)	2300	2.11 (8.00)	0.943 (0.573)	7.48 (1.47)	Barometer
0.65 (0.48)	2300	1.61 (5.15)	17.438 (10.607)	0.40 (0.08)	28.73"Hg (97.29 kPa)

Maximum torque - 234 lb.-ft. (283 Nm) at 1602 rpm  
Maximum torque rise - 38.3%  
Torque rise at 1762 rpm - 31%  
Power increase at 1952 rpm - 8.3%

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 7th(B3) gear	85.1	85.2
Transport in 16th (D4) gear		87.1
Bystander in 16th (D4) gear		80.3

#### 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 16.9-30; 6; 12 (85)  
Two 11.2-24; 6; 18 (125)  
17.0 in (430 mm)  
4850 lb (2200 kg)  
3150 lb (1429 kg)  
8000 lb (3629 kg)

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

Dates of tests: September 12 - 21, 2012

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)  
0.8467 Fuel weight 7.050 lbs/gal (0.845 kg/l) Oil  
SAE 15W40 API service classification CJ-4  
Transmission and hydraulic lubricant John  
Deere Hy-Gard fluid Front axle lubricant SAE  
80W90 API GL-5 Total time engine was operated  
14.0 hours

ENGINE: Make John Deere Diesel Type four  
cylinder vertical with turbocharger and air to air  
intercooler Serial No. \*PE4045R011261\*  
Crankshaft lengthwise Rated engine speed 2200  
Bore and stroke 4.19" x 5.00" (106.5 mm x 127.0  
mm) Compression ratio 16.8 to 1 Displacement  
276 cu in (4525 ml) Starting system 12 volt  
Lubrication pressure Air cleaner two paper  
elements and aspirator Oil filter one full flow  
cartridge Oil cooler engine coolant heat  
exchanger for crankcase oil, radiator for hydraulic  
and transmission oil Fuel filter one paper element  
Fuel cooler radiator for return fuel Exhaust  
regenerative particulate filter integrated within a  
vertical muffler Cooling medium temperature  
control one thermostat and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel  
rate: 31.7 - 35.0 lb/h (14.4 - 15.9 kg/h) High idle:  
2275 - 2325 rpm Turbo boost: nominal 13.8 -  
16.8 psi (95 - 115 kPa) as measured 14.9 psi (103  
kPa)

CHASSIS: Type front wheel assist Serial No.  
\*11V5085MACJ433797\* Tread width rear 59.4"  
(1508 mm) to 71.4" (1813 mm) front 52.8" (1342  
mm) to 77.0" (1957 mm) Wheelbase 90.6" (2300  
mm) Hydraulic control system direct engine  
drive Transmission selective gear fixed ratio  
Nominal travel speeds mph (km/h) first 1.14  
(1.84) second 1.46 (2.35) third 1.77 (2.85) fourth  
2.12 (3.41) fifth 2.77 (4.45) sixth 3.53 (5.68)  
seventh 4.28 (6.88) eighth 5.11 (8.22) ninth 6.77  
(10.89) tenth 8.64 (13.91) eleventh 10.46 (16.84)  
twelfth 10.48 (16.86) thirteenth 12.52 (20.15)  
fourteenth 13.36 (21.50) fifteenth 16.19 (26.06)  
sixteenth 19.36 (31.15) reverse 1.26 (2.03), 1.61  
(2.59), 1.95 (3.14), 2.33 (3.75), 3.04 (4.90), 3.89  
(6.26), 4.71 (7.58), 5.63 (9.06), 7.46 (12.00), 9.53  
(15.33), 11.53 (18.55), 11.55 (18.58), 13.80  
(22.21), 14.72 (23.69), 17.84 (28.71), 21.33 (34.32)

## HYDRAULIC PERFORMANCE

CATEGORY: II

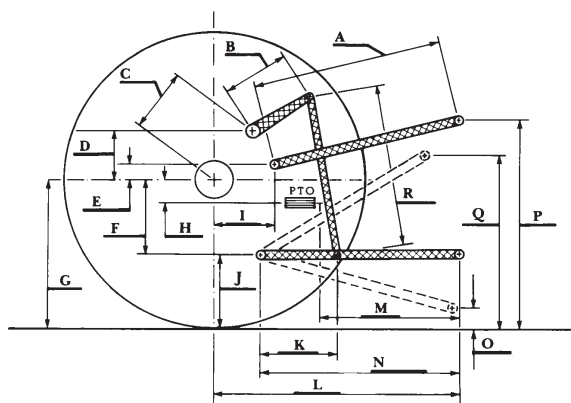
Quick Attach: None

OECD Static test

Maximum force exerted through whole range:	4858 lbs	<i>lift cylinders</i> (21.6 kN) (2 x 56 mm)
	6390 lbs	(28.4 kN) (2 x 63 mm)
i) Sustained pressure of the open relief valve:	2894 psi	(200 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	20.8 GPM	(78.7 l/min)
iii) Pump delivery rate at maximum hydraulic power:	19.6 GPM	(74.2 l/min)
Delivery pressure:	2451 psi	(169 bar)
Power:	28.0 HP	(20.9 kW)

## HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	25.2	640
B	12.6	320
C	17.7	449
D	15.0	380
E	14.8	375
F	8.8	223
G	29.3	745
H	0.2	4
I	15.4	390
J	20.5	522
K	17.5	444
L	41.7	1060
M	23.0	585
N	33.1	840
O	9.1	230
P	44.6	1132
Q	36.2	919
R	27.8	705



**Clutch** wet disc hydraulically actuated by foot pedal **Brakes** wet disc hydraulically actuated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2100 engine rpm or 1000 rpm at 2103 engine rpm Economy PTO - 540 rpm at 1645 engine rpm **Unladen tractor mass** 7825 lb (3549 kg)

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments.

**NOTE 1:** The manufacturer declares that the average time between active regenerations is 100 hours, while operated in Auto Filter Cleaning Mode, at rated speed, full load, under steady state conditions.

**NOTE 2:** The performance data on this report applies to tractor with chassis serial numbers that end with 4xxxxx and higher.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 139°F (59°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2036**, February 13, 2013.

Roger M. Hoy  
Director

M.R. Riley  
P.J. Jasa  
J.D. Luck  
Board of Tractor Test Engineers

## Economy mode

### 540 PTO rpm @ 1645 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)
71.75 (53.50)	1645	3.99 (15.11)	0.392 (0.239)	17.98 (3.54)
53.85 (40.16)	1639	3.10 (11.72)	0.405 (0.247)	17.39 (3.43)
35.85 (26.73)	1641	2.28 (8.64)	0.449 (0.273)	15.71 (3.10)
17.85 (13.31)	1640	1.51 (5.72)	0.596 (0.363)	11.82 (2.33)
0.55 (0.41)	1646	1.12 (4.23)	14.309 (8.710)	0.49 (0.10)

## Normal mode

### 540 PTO rpm @ 2100 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)
72.40 (53.99)	2115	4.45 (16.83)	0.433 (0.264)	16.28 (3.21)
53.60 (39.97)	2092	3.55 (13.44)	0.467 (0.284)	15.09 (2.97)
35.70 (26.62)	2098	2.82 (10.66)	0.556 (0.338)	12.68 (2.50)
17.75 (13.24)	2085	1.97 (7.47)	0.783 (0.477)	9.00 (1.77)
0.50 (0.37)	2107	1.35 (5.12)	19.060 (11.602)	0.37 (0.07)



**JOHN DEERE 5085M DIESEL**