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2009

Test 1960: John Deere 5085M Diesel

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1960

JOHN DEERE 5085M DIESEL

16 SPEED

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—566 rpm)					
70.37 (52.47)	2200	4.68 (17.72)	0.468 (0.285)	15.03 (2.96)	
Standard Power Take-off Speed(540 rpm)					
73.29 (54.66)	2100	4.64 (17.55)	0.445 (0.271)	15.80 (3.11)	
Maximum Power (1 hour)					
74.07 (55.23)	2050	4.59 (17.39)	0.436 (0.265)	16.12 (3.18)	

VARYING POWER AND FUEL CONSUMPTION

70.37 (52.47)	2200	4.68 (17.72)	0.468 (0.285)	15.03 (2.96)	Air temperature
62.02 (46.25)	2280	4.43 (16.75)	0.502 (0.305)	14.01 (2.76)	75°F (24°C)
46.94 (35.01)	2300	3.74 (14.15)	0.560 (0.341)	12.55 (2.47)	Relative humidity
31.54 (23.52)	2318	2.95 (11.15)	0.657 (0.400)	10.70 (2.11)	26%
15.92 (11.87)	2338	2.26 (8.56)	1.000 (0.608)	7.04 (1.39)	Barometer
0.76 (0.57)	2353	1.36 (5.13)	12.495 (7.600)	0.56 (0.11)	28.82"Hg (97.60 kPa)

Maximum torque - 208 lb.-ft. (283 Nm) at 1600 rpm
Maximum torque rise - 24.0%
Torque rise at 1901 rpm - 17%
Power increase at 2050 rpm - 5%

TRACTOR SOUND LEVEL WITHOUT CAB

	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load in 7th(B3) gear	91.2	91.2
Transport in 16th (D4) gear		90.5
Bystander in 16th (D4) gear		83.8

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;8;16 (110)
15.0 in (380 mm)
4725 lb (2143 kg)
2840 lb (1288 kg)
7565 lb (3431 kg)

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

Dates of tests: October 15 - 20, 2009

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) 0.8450 Fuel weight 7.036 lbs/gal (0.843 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 11.0 hours

ENGINE: Make John Deere Diesel Type four cylinder vertical with turbocharger and air to air intercooler Serial No. *PE4045L084666* Crankshaft lengthwise Rated engine speed 2200 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 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 Muffler underhood Exhaust vertical-downward Cooling medium temperature control one thermostat and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 31.8 - 34.9 lb/h (14.4 - 15.8 kg/h) High idle: 2325 - 2425 rpm Turbo boost: nominal 8.7 - 10.2 psi (60 - 70 kPa) as measured 9.4 psi (65 kPa)

CHASSIS: Type front wheel assist Serial No. *LV5085M160368* Tread width rear 61.5" (1563 mm) to 69.7" (1770 mm) front 52.8" (1342 mm) to 77.0" (1957 mm) Wheelbase 85.7" (2178 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: 3951 lbs (17.6 kN) (50 mm cylinders)
4793 lbs (21.3 kN) (56 mm cylinders)

i) Sustained pressure of the open relief valve: 2910 psi (201 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed: 20.6 GPM (78.0 l/min)

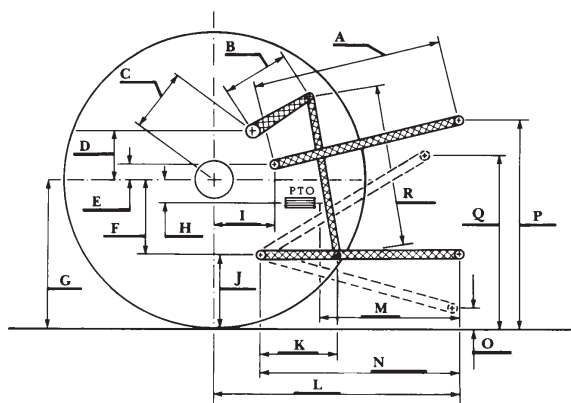
iii) Pump delivery rate at maximum hydraulic power: 19.3 GPM (73.1 l/min)

Delivery pressure: 2518 psi (174 bar)

Power: 28.3 HP (21.1 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	25.6	650
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	7.8	197
P	47.5	1207
Q	33.9	861
R	28.1	715



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** 7390 lb (3352 kg)

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. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 130°F (54°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1960**, December 18, 2009.

Roger M. Hoy
Director

M.F. Kocher
V.I. Adamchuk
J.A. Smith
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)
52.33 (39.02)	1646	3.30 (12.49)	0.444 (0.270)	15.86 (3.12)
39.01 (29.09)	1634	2.59 (9.80)	0.467 (0.284)	15.07 (2.97)
26.36 (19.66)	1654	1.83 (6.95)	0.490 (0.298)	14.37 (2.83)
13.03 (9.72)	1640	1.20 (4.54)	0.647 (0.394)	10.88 (2.14)
0.59 (0.44)	1652	0.68 (2.59)	8.166 (4.971)	0.86 (0.17)

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)
52.36 (39.05)	2104	3.62 (13.70)	0.486 (0.296)	14.48 (2.85)
39.13 (29.18)	2092	2.95 (11.16)	0.530 (0.322)	13.28 (2.61)
26.36 (19.66)	2112	2.28 (8.65)	0.609 (0.371)	11.55 (2.27)
13.07 (9.75)	2100	1.62 (6.14)	0.872 (0.531)	8.07 (1.59)
0.65 (0.49)	2120	1.08 (4.08)	11.571 (7.043)	0.61 (0.12)



JOHN DEERE 5085M DIESEL