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2015

## Test 2114: John Deere 5075M

Nebraska Tractor Test Lab

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

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# NEBRASKA TRACTOR TEST 2114

## JOHN DEERE 5075M DIESEL

### 16 SPEED

Chassis Serial numbers 700000 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					
Rated Engine Speed—(PTO speed—565 rpm)					
60.58 (45.18)	2197	4.70 (17.81)	0.546 (0.332)	12.88 (2.54)	Fuel used during active exhaust regeneration-0.18 gal (0.69 l) (see note 1, p.2)
Standard Power Take-off Speed(540 rpm)					
61.02 (45.50)	2100	4.66 (17.66)	0.538 (0.327)	13.08 (2.58)	
Maximum Power(1 hour)					
63.75 (47.53)	1750	4.28 (16.18)	0.472 (0.287)	14.91 (2.94)	

#### VARYING POWER AND FUEL CONSUMPTION

60.58 (45.18)	2197	4.70 (17.81)	0.546 (0.332)	12.88 (2.54)	Air temperature
52.54 (39.18)	2238	4.40 (16.66)	0.589 (0.358)	11.94 (2.35)	74°F (23°C)
39.67 (29.59)	2263	3.87 (14.67)	0.687 (0.418)	10.24 (2.02)	Relative humidity
26.69 (19.90)	2286	3.37 (12.77)	0.889 (0.541)	7.91 (1.56)	38%
13.49 (10.06)	2300	2.76 (10.46)	1.440 (0.876)	4.88 (0.96)	Barometer
1.02 (0.76)	2300	2.02 (7.63)	13.863 (8.433)	0.51 (0.10)	28.74"Hg (97.33 kPa)

Maximum torque - 208 lb.-ft. (282 Nm) at 1249 rpm  
Maximum torque rise - 43.6%  
Torque rise at 1750 rpm - 31%  
Power increase at 1750 rpm - 5%

#### TRACTOR SOUND LEVEL WITH CAB

	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load in 7th (B3) gear	80.1	80.1
Transport in 16th (D4) gear		82.2
Bystander in 16th (D4) gear		82.4

#### 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 16.9-30; 6; 12 (85)  
Two 11.2-24; 6; 18 (125)  
16.5 in (420 mm)  
5165 lb (2343 kg)  
3100 lb (1406 kg)  
8265 lb (3749 kg)

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

Dates of tests: April 15 - 20, 2015

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) 0.8447 Fuel weight 7.033 lbs/gal (0.843 kg/l) Oil SAE 10W30 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 9.5 hours

**ENGINE:** Make John Deere Diesel Type three cylinder vertical with turbocharger and air to air intercooler Serial No. \*PE3029H027226\* Crankshaft lengthwise Rated engine speed 2200 Bore and stroke 4.19" x 4.33" (106.5 mm x 110.0 mm) Compression ratio 16.9 to 1 Displacement 179 cu in (2938 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 DOC (diesel oxidation catalyst), and regenerative DPF (diesel particulate filter) integrated within a vertical muffler Cooling medium temperature control one thermostat

**ENGINE OPERATING PARAMETERS:** Fuel rate: 30.4 - 33.1 lb/h (13.8 - 15.0 kg/h) High idle: 2275 - 2325 rpm Turbo boost: nominal 16.7 - 19.6 psi (115 - 135 kPa) as measured 18.6 psi (128 kPa)

**CHASSIS:** Type front wheel assist Serial No. \*1LV5075MJEJ743750\* Tread width rear 55.9" (1419 mm) to 71.6" (1819 mm) front 58.6" (1488 mm) to 81.5" (2070 mm) Wheelbase 90.6" (2300 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio Nominal travel speeds mph (km/h) first 1.16 (1.87) second 1.48 (2.38) third 1.80 (2.89) fourth 2.14 (3.45) fifth 2.80 (4.50) sixth 3.57 (5.75) seventh 4.33 (6.97) eighth 5.18 (8.33) ninth 6.85 (11.03) tenth 8.76 (14.09) eleventh 10.59 (17.05) twelfth 10.61 (17.07) thirteenth 12.68 (20.41) fourteenth 13.52 (21.77) fifteenth 16.39 (26.38) sixteenth 19.60 (31.54) reverse 1.28 (2.06), 1.63 (2.62), 1.98 (3.18), 2.36 (3.80), 3.08 (4.96), 3.93 (6.33), 4.77 (7.68), 5.70 (9.18), 7.56 (12.16), 9.64 (15.52), 11.68 (18.79), 11.69 (18.81), 13.98 (22.49), 14.91 (23.99), 18.07 (29.08), 21.60 (34.76)

## HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: None

OECD Static test

Maximum force exerted through whole range: 4858 lbs (21.6 kN) (2 x 56 mm) lift cylinders  
6390 lbs (28.4 kN) (2 x 63 mm)

i) Sustained pressure of the open relief valve: 2960 psi (204 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed: 19.4 GPM (73.6 l/min)

iii) Pump delivery rate at maximum

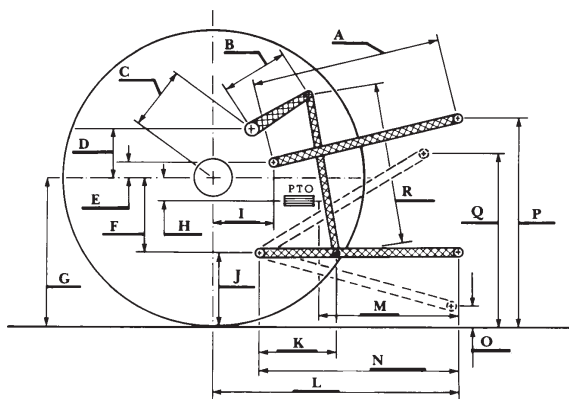
hydraulic power: 18.1 GPM (68.6 l/min)

Delivery pressure: 2570 psi (177 bar)

Power: 27.2 HP (20.3 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, Economy PTO 540 rpm at 1645 engine rpm **Unladen tractor mass** 8265 lb (3749 kg)

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

**NOTE 1:** The manufacturer declares that this model has a 50 hour timed backstop for DPF regenerations. A 5% power loss 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 700000 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. 2114, May 13, 2015.

Roger M. Hoy  
Director

M.F. Kocher  
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)
60.85 (45.38)	1640	4.04 (15.28)	0.467 (0.284)	15.07 (2.97)
46.09 (34.37)	1653	3.37 (12.77)	0.515 (0.313)	13.67 (2.69)
30.65 (22.86)	1655	2.63 (9.95)	0.603 (0.367)	11.66 (2.30)
15.27 (11.39)	1654	1.71 (6.47)	0.788 (0.479)	8.93 (1.76)
0.89 (0.66)	1645	1.05 (3.97)	8.294 (5.045)	0.85 (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)
61.01 (45.49)	2101	4.70 (17.78)	0.541 (0.329)	12.99 (2.56)
45.92 (34.24)	2100	4.01 (15.17)	0.614 (0.373)	11.46 (2.26)
30.65 (22.86)	2106	3.43 (12.99)	0.788 (0.479)	8.93 (1.76)
15.36 (11.46)	2113	2.60 (9.86)	1.192 (0.725)	5.90 (1.16)
0.95 (0.71)	2106	1.74 (6.58)	12.871 (7.829)	0.55 (0.11)



## JOHN DEERE 5075M DIESEL

Institute of Agriculture and Natural Resources  
University of Nebraska–Lincoln