

# NEBRASKA TRACTOR TEST 2114A

## JOHN DEERE 5075M DIESEL

### 16 SPEED

Chassis Serial numbers 700000 and higher

#### POWER TAKE-OFF PERFORMANCE

| Power<br>HP<br>(kW)                           | Crank<br>shaft<br>speed<br>rpm | Gal/hr<br>(l/h) | lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) | Mean Atmospheric<br>Conditions   |
|---|--------------------------------|-----------------|-----------------------|-----------------------|--|
| <b>MAXIMUM POWER AND FUEL CONSUMPTION</b>     |                                |                 |                       |                       |  |
| <b>Rated Engine Speed—(PTO speed—565 rpm)</b> |                                |                 |                       |                       |  |
| 60.58<br>(45.18)                              | 2197                           | 4.70<br>(17.81) | 0.546<br>(0.332)      | 12.88<br>(2.54)       | Fuel used during active exhaust<br>regeneration-0.18 gal (0.69 l)<br>(see note 1, p.2) |
| <b>Standard Power Take-off Speed(540 rpm)</b> |                                |                 |                       |                       |  |
| 61.02<br>(45.50)                              | 2100                           | 4.66<br>(17.66) | 0.538<br>(0.327)      | 13.08<br>(2.58)       |  |
| <b>Maximum Power(1 hour)</b>                  |                                |                 |                       |                       |  |
| 63.75<br>(47.53)                              | 1750                           | 4.28<br>(16.18) | 0.472<br>(0.287)      | 14.91<br>(2.94)       |  |

#### VARYING POWER AND FUEL CONSUMPTION

|                  |      |                 |                   |                 |                      |
|------------------|------|-----------------|-------------------|-----------------|----------------------|
| 60.58<br>(45.18) | 2197 | 4.70<br>(17.81) | 0.546<br>(0.332)  | 12.88<br>(2.54) | Air temperature      |
| 52.54<br>(39.18) | 2238 | 4.40<br>(16.66) | 0.589<br>(0.358)  | 11.94<br>(2.35) | 74°F (23°C)          |
| 39.67<br>(29.59) | 2263 | 3.87<br>(14.67) | 0.687<br>(0.418)  | 10.24<br>(2.02) | Relative humidity    |
| 26.69<br>(19.90) | 2286 | 3.37<br>(12.77) | 0.889<br>(0.541)  | 7.91<br>(1.56)  | 38%                  |
| 13.49<br>(10.06) | 2300 | 2.76<br>(10.46) | 1.440<br>(0.876)  | 4.88<br>(0.96)  | Barometer            |
| 1.02<br>(0.76)   | 2300 | 2.02<br>(7.63)  | 13.863<br>(8.433) | 0.51<br>(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 engine rpm - 31%  
 Power increase at 1750 engine rpm - 5%

#### TRACTOR SOUND LEVEL WITH CAB

|                             | Front Wheel Drive<br>Engaged<br>dB(A) | Disengaged<br>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                |

Horizontal distances of drawbar hitch point behind rear wheel axis - 28.5"(725 mm), 32.5"(825 mm), 34.4"(875 mm)

#### 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** regenerative aftertreatment system consisting of DOC (diesel oxidation catalyst) and SCR (selective catalyst reduction) with an underhood muffler and vertical exhaust **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

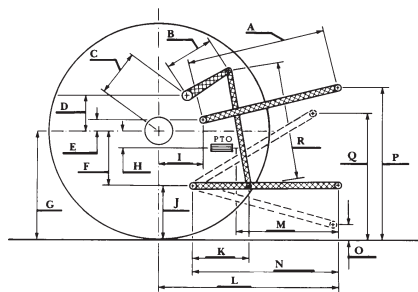
Quick Attach: None

OECD Static test

|  |  |
|--|--|
|  | <u>lift cylinders</u>  |
| Maximum force exerted through whole range:                         | 4858 lbs (21.6 kN) (2 x 56 mm)<br>6390 lbs (28.4 kN) (2 x 63 mm) |
|  | <u>single outlet set</u> <u>two outlet sets combined</u>         |
| i) Sustained pressure of the open relief valve:                    | 2949 psi (203 bar)    2960 psi (204 bar)                         |
| ii) Pump delivery rate at minimum pressure and rated engine speed: | 19.2 GPM (72.7 l/min)    19.4 GPM (73.6 l/min)                   |
| iii) Pump delivery rate at maximum hydraulic power:                | 18.0 GPM (68.1 l/min)    18.1 GPM (68.6 l/min)                   |
| Delivery pressure:   | 2493 psi (172 bar)    2570 psi (177 bar)                         |
| Power:   | 26.2 HP (19.5 kW)    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  |



The following data applies to John Deere 5075M models for production MY2018 and beyond.

CATEGORY: II

Quick Attach: None

OECD Static test

|  |  |
|--|--|
|  | <u>lift cylinders</u>  |
| Maximum force exerted through whole range: | 5161 lbs (23.0 kN) (2 x 65 mm)<br>5958 lbs (26.5 kN) (1 x 65 mm and 1 x 75 mm) |

### HITCH DIMENSIONS AS TESTED—NO LOAD

|   | inch | mm   |
|---|------|------|
| A | 24.9 | 632  |
| B | 14.1 | 358  |
| C | 17.7 | 449  |
| D | 15.0 | 380  |
| E | 11.8 | 300  |
| F | 8.8  | 223  |
| G | 31.3 | 795  |
| H | 0.2  | 4    |
| I | 16.1 | 410  |
| J | 22.5 | 572  |
| K | 17.5 | 444  |
| L | 41.7 | 1060 |
| M | 23.0 | 585  |
| N | 33.1 | 840  |
| O | 9.1  | 230  |
| P | 46.5 | 1182 |
| Q | 38.4 | 975  |
| R | 32.3 | 820  |

## RECOMMENDED CITATION FORMAT:

NTTL.(2018). Nebraska Tractor test 2114A for John Deere 5075M Diesel.

Lincoln, NE:Nebraska Tractor Test Laboratory. Retrieved from <http://tractortestlab.unl.edu>

**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** 8090 lb (3670 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. This tractor exceeded the 78 dB(A) sound power claim by 62.8% (2.1 dB(A)).

**Report reissued.** Three point lift data for tractors denoted Model Year 2018 added November, 2018.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2114A**, December 19, 2018.

Roger M. Hoy  
Director

M.F. Kocher  
P.J. Jasa  
J.D. Luck  
Board of Tractor Test Engineers

## Shiftable PTO Performance

### Economy mode

540 PTO rpm @ 1645 engine rpm

| Power<br>HP<br>(kW) | Crank<br>shaft<br>speed<br>rpm | Gal/hr<br>(l/h) | lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) |
|---------------------|--------------------------------|-----------------|-----------------------|-----------------------|
| 60.85<br>(45.38)    | 1640                           | 4.04<br>(15.28) | 0.467<br>(0.284)      | 15.07<br>(2.97)       |
| 46.09<br>(34.37)    | 1653                           | 3.37<br>(12.77) | 0.515<br>(0.313)      | 13.67<br>(2.69)       |
| 30.65<br>(22.86)    | 1655                           | 2.63<br>(9.95)  | 0.603<br>(0.367)      | 11.66<br>(2.30)       |
| 15.27<br>(11.39)    | 1654                           | 1.71<br>(6.47)  | 0.788<br>(0.479)      | 8.93<br>(1.76)        |
| 0.89<br>(0.66)      | 1645                           | 1.05<br>(3.97)  | 8.294<br>(5.045)      | 0.85<br>(0.17)        |

### Normal mode

540 PTO rpm @ 2100 engine rpm

| Power<br>HP<br>(kW) | Crank<br>shaft<br>speed<br>rpm | Gal/hr<br>(l/h) | lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) |
|---------------------|--------------------------------|-----------------|-----------------------|-----------------------|
| 61.01<br>(45.49)    | 2101                           | 4.70<br>(17.78) | 0.541<br>(0.329)      | 12.99<br>(2.56)       |
| 45.92<br>(34.24)    | 2100                           | 4.01<br>(15.17) | 0.614<br>(0.373)      | 11.46<br>(2.26)       |
| 30.65<br>(22.86)    | 2106                           | 3.43<br>(12.99) | 0.788<br>(0.479)      | 8.93<br>(1.76)        |
| 15.36<br>(11.46)    | 2113                           | 2.60<br>(9.86)  | 1.192<br>(0.725)      | 5.90<br>(1.16)        |
| 0.95<br>(0.71)      | 2106                           | 1.74<br>(6.58)  | 12.871<br>(7.829)     | 0.55<br>(0.11)        |



**JOHN DEERE 5075M DIESEL**

Institute of Agriculture and Natural Resources  
University of Nebraska-Lincoln