NEBRASKA OECD TRACTOR TEST 2076—SUMMARY 892
JOHN DEERE 6105M POWRQUAD-PLUS DIESEL
24 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
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1071 rpm)					
87.83 *(65.49)*	2101	5.65 *(21.37)*	0.452 *(0.275)*	15.56 *(3.06)*	Fuel used during active exhaust regeneration - 0.59 gal *(2.22 l)* (see Note 1 p.2)
Standard Power Take-off Speed (1000 rpm)					
96.86 *(72.23)*	1962	5.79 *(21.93)*	0.420 *(0.256)*	16.72 *(3.29)*	
Maximum Power (1 hour)					
99.07 *(73.87)*	1852	5.81 *(21.99)*	0.412 *(0.251)*	17.05 *(3.36)*	
VARYING POWER AND FUEL CONSUMPTION					
87.83 *(65.49)*	2101	5.65 *(21.37)*	0.452 *(0.275)*	15.56 *(3.06)*	Air temperature
77.10 *(57.49)*	2169	5.18 *(19.61)*	0.472 *(0.287)*	14.88 *(2.93)*	73°F *(23°C)*
58.81 *(43.86)*	2197	4.39 *(16.61)*	0.525 *(0.319)*	13.40 *(2.64)*	Relative humidity
39.52 *(29.47)*	2223	3.57 *(13.51)*	0.635 *(0.386)*	11.08 *(2.18)*	28%
19.99 *(14.91)*	2240	2.75 *(10.41)*	0.967 *(0.588)*	7.27 *(1.43)*	Barometer
1.53 *(1.14)*	2250	2.07 *(7.82)*	9.468 *(5.759)*	0.74 *(0.15)*	28.79" Hg *(97.49 kPa)*

Maximum Torque - 333 lb.-ft. *(452 Nm)* at 1401 rpm
Maximum Torque rise - 51.7%
Torque rise at 1681 engine rpm - 38%
Power increase at 1801 rpm - 10.3%

DRAWBAR PERFORMANCE
(Unballasted–Front Drive Engaged)
FUEL CONSUMPTION CHARACTERISTICS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp.°F cool-ing med	Temp.°F *(°C)* Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—11th (C3) Gear									
82.13 *(61.24)*	5844 *(25.99)*	5.27 *(8.48)*	2100	3.5	0.487 *(0.296)*	14.45 *(2.85)*	188 *(87)*	55 *(13)*	28.64 *(96.99)*
75% of Pull at Maximum Power—11th (C3) Gear									
64.75 *(48.28)*	4369 *(19.43)*	5.56 *(8.95)*	2194	2.7	0.541 *(0.329)*	13.00 *(2.56)*	188 *(86)*	58 *(15)*	28.52 *(96.58)*
50% of Pull at Maximum Power—11th (C3) Gear									
44.00 *(32.81)*	2920 *(12.99)*	5.65 *(9.09)*	2213	1.9	0.642 *(0.391)*	10.95 *(2.16)*	187 *(86)*	59 *(15)*	28.50 *(96.51)*
75% of Pull at Reduced Engine Speed—14th (D2) Gear									
64.80 *(48.32)*	4373 *(19.45)*	5.56 *(8.95)*	1601	2.6	0.481 *(0.293)*	14.61 *(2.88)*	188 *(87)*	60 *(15)*	28.47 *(96.41)*
50% of Pull at Reduced Engine Speed—14th (D2) Gear									
44.12 *(32.90)*	2937 *(13.06)*	5.64 *(9.07)*	1611	1.8	0.539 *(0.328)*	13.05 *(2.57)*	187 *(86)*	60 *(15)*	28.49 *(96.47)*

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

Dates of tests: October 23 to November 18, 2013

Manufacturer: John Deere Werke Mannheim, John-Deere-StraBe 90, Mannheim Germany

FUEL, OIL and Time: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F *(15°/15°C)*** 0.8442 **Fuel weight** 7.029 lbs/gal *(0.842 kg/l)* **Oil SAE** 10W-30 **API service classification** CJ-4 **Transmission and hydraulic lubricant** John Deere Hy-Gard II fluid **Front axle lubricant** John Deere Hy-Gard II fluid **Total time engine was operated** 20.0 hours.

ENGINE: Make John Deere Diesel **Type** four cylinder vertical with turbocharger and air to air intercooler **Serial No.** *CD4045R024531* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.19" x 5.00" *(106.5 mm x 127.0 mm)* **Compression ratio** 17.2 to 1 **Displacement** 276 cu in *(4525 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, engine coolant heat exchanger for hydraulic and transmission oil **Fuel filter** one paper element and one paper cartridge with water separator **Fuel cooler** radiator for pump return fuel **Exhaust** regenerative particulate filter integrated within an underhood muffler with vertical outlet **Cooling medium temperature control** two thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 37.9 - 41.1 lb/h *(17.2 -18.6 kg/h)* **High idle:** 2225 - 2275 rpm **Turbo boost:** nominal 15.2-18.1 psi *(105-125 kPa)* as measured 16.3 psi *(113 kPa)*

CHASSIS: Type front wheel assist **Serial No.** *1L06105MTDG764149* **Tread width** rear 63.5" *(1612 mm)* to 75.4" *(1916 mm)* front 62.4" *(1584 mm)* to 79.4" *(2016 mm)* **Wheel base** 101.6" *(2580 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (4) range operator controlled powershift **Nominal travel speeds mph *(km/h)*** first 0.93 *(1.50)* second 1.12 *(1.81)* third 1.35 *(2.17)* fourth 1.65 *(2.65)* fifth 2.28 *(3.67)* sixth 2.74 *(4.42)* seventh 3.29 *(5.29)* eighth 3.72 *(5.98)* ninth 4.03 *(6.48)* tenth 4.47 *(7.20)* eleventh 5.36 *(8.62)* twelfth 6.09 *(9.81)* thirteenth 6.56 *(10.56)* fourteenth 7.34 *(11.81)* fifteenth 8.79 *(14.15)* sixteenth 9.90 *(15.94)* seventeenth 10.77 *(17.33)* eighteenth 11.93 *(19.20)* nineteenth 13.37 *(21.52)* twentieth 14.29 *(22.99)* twenty-first 16.11 *(25.92)* twenty-second 17.50 *(28.16)* twenty-third 19.29 *(31.04)* twenty-fourth 23.63 *(38.02)*

DRAWBAR PERFORMANCE

Unballasted–Front Drive Engaged-2100 Engine RPM

MAXIMUM POWER IN SELECTED GEARS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
				6th (B2) Gear					
70.08 *(52.26)*	10723 *(47.70)*	2.46 *(3.95)*	2143	14.3	0.575 *(0.350)*	12.23 *(2.41)*	190 *(88)*	47 *(8)*	28.70 *(97.19)*
				7th (B3) Gear					
79.26 *(59.10)*	9587 *(42.64)*	3.10 *(4.99)*	2100	7.7	0.504 *(0.307)*	13.93 *(2.74)*	189 *(87)*	48 *(9)*	28.70 *(97.19)*
				8th (C1) Gear					
79.22 *(59.07)*	8318 *(37.00)*	3.57 *(5.75)*	2100	5.8	0.506 *(0.308)*	13.90 *(2.74)*	188 *(87)*	54 *(12)*	28.67 *(97.09)*
				9th (B4) Gear					
78.30 *(58.39)*	7506 *(33.39)*	3.91 *(6.29)*	2100	4.8	0.510 *(0.310)*	13.79 *(2.72)*	189 *(87)*	50 *(10)*	28.68 *(97.12)*
				10th (C2) Gear					
78.93 *(58.85)*	6773 *(30.13)*	4.37 *(7.03)*	2100	4.2	0.504 *(0.307)*	13.94 *(2.75)*	189 *(87)*	54 *(12)*	28.65 *(97.02)*
				11th (C3) Gear					
82.13 *(61.24)*	5844 *(25.99)*	5.27 *(8.48)*	2100	3.5	0.487 *(0.296)*	14.45 *(2.85)*	188 *(87)*	55 *(13)*	28.64 *(96.99)*
				12th (D1) Gear					
79.16 *(59.03)*	4921 *(21.89)*	6.03 *(9.70)*	2100	3.1	0.504 *(0.307)*	13.94 *(2.75)*	189 *(87)*	56 *(13)*	28.64 *(96.99)*
				13th (C4) Gear					
78.14 *(58.27)*	4502 *(20.02)*	6.51 *(10.48)*	2100	2.7	0.511 *(0.311)*	13.74 *(2.71)*	189 *(87)*	55 *(13)*	28.64 *(96.99)*
				14th (D2) Gear					
76.65 *(57.15)*	3935 *(17.50)*	7.31 *(11.76)*	2100	2.4	0.520 *(0.316)*	13.52 *(2.66)*	189 *(87)*	55 *(13)*	28.64 *(96.99)*
				15th (D3) Gear					
79.06 *(58.96)*	3378 *(15.03)*	8.78 *(14.12)*	2100	2.1	0.504 *(0.306)*	13.96 *(2.75)*	188 *(87)*	55 *(13)*	28.64 *(96.99)*

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load in 10th(C2) Gear	66.6	66.8
Transport in 24th(F4) gear		71.9
Bystander in 23rd(F3) gear		78.8

TIRES AND WEIGHT	Tested Without Ballast
Rear Tires–No., size, ply & psi *(kPa)*	Two 420/85R38;**; 12 *(85)*
Front Tires–No., size, ply & psi *(kPa)*	Two 380/85R24;**; 12 *(85)*
Height of Drawbar	19.5 in *(495 mm)*
Static Weight with operator– Rear	6850 lb *(3107 kg)*
– Front	4190 lb *(1901 kg)*
– Total	11040 lb *(5008 kg)*

reverse 0.98 *(1.57)*, 1.17 *(1.89)*, 1.40 *(2.26)*, 1.72 *(2.77)*, 2.38 *(3.83)*, 2.86 *(4.61)*, 3.43 *(5.52)*, 3.88 *(6.24)*, 4.20 *(6.76)*, 4.67 *(7.51)*, 5.59 *(9.00)*, 6.36 *(10.24)*, 6.84 *(11.02)*, 7.66 *(12.33)*, 9.17 *(14.76)*, 10.34 *(16.64)*, 11.24 *(18.09)*, 12.45 *(20.03)*, 13.96 *(22.46)*, 14.91 *(23.99)*, 16.80 *(27.04)*, 18.26 *(29.39)*, 20.13 *(32.39)*, 24.47 *(39.68)* **Clutch** multiple wet disc hydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1967 engine rpm or 1000 rpm at 1962 engine rpm **Unladen tractor mass** 10865 lb *(4928 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 PTO load, under steady state conditions. A 4% power increase was observed during the active regeneration.

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 119°F *(46°C)*. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2076**, Nebraska Summary 892, January 13, 2014.

Roger M. Hoy
Director

M.F. Kocher
S. Pitla
J.D. Luck
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE
Unballasted–Front Drive Engaged-1850 Engine RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
				6th (B2) Gear					
70.27 *(52.40)*	10726 *(47.71)*	2.46 *(3.96)*	2142	14.3	0.573 *(0.348)*	12.27 *(2.42)*	190 *(88)*	47 *(8)*	28.71 *(97.22)*
				7th (B3) Gear					
81.04 *(60.43)*	10330 *(45.95)*	2.95 *(4.74)*	2043	10.0	0.501 *(0.305)*	14.02 *(2.76)*	190 *(88)*	47 *(8)*	28.70 *(97.19)*
				8th (C1) Gear					
85.11 *(63.46)*	9951 *(44.26)*	3.21 *(5.17)*	1944	8.8	0.486 *(0.296)*	14.47 *(2.85)*	189 *(87)*	54 *(12)*	28.65 *(97.02)*
				9th (B4) Gear					
86.20 *(64.28)*	9582 *(42.62)*	3.38 *(5.43)*	1866	7.6	0.479 *(0.292)*	14.66 *(2.89)*	189 *(87)*	51 *(11)*	28.68 *(97.12)*
				10th (C2) Gear					
87.08 *(64.93)*	8661 *(38.53)*	3.77 *(6.07)*	1850	6.2	0.472 *(0.287)*	14.89 *(2.93)*	189 *(87)*	55 *(13)*	28.64 *(96.99)*
				11th (C3) Gear					
90.25 *(67.30)*	7386 *(32.85)*	4.58 *(7.37)*	1850	4.8	0.454 *(0.276)*	15.47 *(3.05)*	190 *(88)*	55 *(13)*	28.64 *(96.99)*
				12th (D1) Gear					
89.21 *(66.52)*	6357 *(28.28)*	5.26 *(8.47)*	1850	3.9	0.460 *(0.280)*	15.27 *(3.01)*	190 *(88)*	55 *(13)*	28.64 *(96.99)*
				13th (C4) Gear					
88.53 *(66.02)*	5838 *(25.97)*	5.69 *(9.15)*	1850	3.5	0.463 *(0.281)*	15.20 *(2.99)*	190 *(88)*	56 *(13)*	28.63 *(96.95)*
				14th (D2) Gear					
87.36 *(65.14)*	5126 *(22.80)*	6.39 *(10.28)*	1850	3.1	0.469 *(0.285)*	14.98 *(2.95)*	190 *(88)*	55 *(13)*	28.64 *(96.99)*
				15th (D3) Gear					
89.04 *(66.40)*	4344 *(19.32)*	7.69 *(12.38)*	1850	2.6	0.460 *(0.280)*	15.26 *(3.01)*	190 *(88)*	55 *(13)*	28.64 *(96.99)*
				16th (E1) Gear					
86.17 *(64.26)*	3718 *(16.54)*	8.70 *(13.99)*	1849	2.2	0.478 *(0.291)*	14.72 *(2.90)*	190 *(88)*	54 *(12)*	28.64 *(96.99)*

DRAWBAR PERFORMANCE

UNBALLASTED - FRONT DRIVE DISENGAGED

FUEL CONSUMPTION CHARACTERISTICS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—11th (C3) Gear									
81.19 *(60.54)*	5921 *(26.34)*	5.14 *(8.27)*	2100	5.1	0.491 *(0.299)*	14.30 *(2.82)*	189 *(87)*	56 *(13)*	28.64 *(96.99)*
75% of Pull at Maximum Power—11th (C3) Gear									
64.77 *(48.30)*	4442 *(19.76)*	5.47 *(8.80)*	2195	3.4	0.541 *(0.329)*	13.00 *(2.56)*	187 *(87)*	59 *(15)*	28.51 *(96.55)*
50% of Pull at Maximum Power—11th (C3) Gear									
43.84 *(32.69)*	2948 *(13.11)*	5.58 *(8.97)*	2215	2.4	0.640 *(0.389)*	10.99 *(2.16)*	187 *(86)*	59 *(15)*	28.51 *(96.55)*
75% of Pull at Reduced Engine Speed—14th (D2) Gear									
64.79 *(48.31)*	4445 *(19.77)*	5.47 *(8.80)*	1602	3.5	0.478 *(0.291)*	14.70 *(2.90)*	188 *(87)*	60 *(15)*	28.48 *(96.44)*
50% of Pull at Reduced Engine Speed—14th (D2 Gear									
43.81 *(32.67)*	2956 *(13.15)*	5.56 *(8.95)*	1612	2.4	0.535 *(0.326)*	13.14 *(2.59)*	187 *(86)*	60 *(15)*	28.48 *(96.44)*

MAXIMUM POWER IN SELECTED GEARS

8th (C1) Gear									
71.70 *(53.46)*	8158 *(36.29)*	3.30 *(5.31)*	2150	14.4	0.564 *(0.343)*	12.47 *(2.46)*	189 *(87)*	53 *(12)*	28.65 *(97.02)*
9th (B4) Gear									
76.03 *(56.70)*	7628 *(33.93)*	3.74 *(6.02)*	2101	8.3	0.527 *(0.321)*	13.33 *(2.63)*	189 *(87)*	51 *(10)*	28.68 *(97.12)*
10th (C2) Gear									
77.42 *(57.73)*	6867 *(30.55)*	4.23 *(6.81)*	2101	6.6	0.516 *(0.314)*	13.61 *(2.68)*	188 *(87)*	55 *(13)*	28.64 *(96.99)*
11th (C3) Gear									
81.19 *(60.54)*	5921 *(26.34)*	5.14 *(8.27)*	2100	5.1	0.491 *(0.299)*	14.30 *(2.82)*	189 *(87)*	56 *(13)*	28.64 *(96.99)*
12th (D1) Gear									
79.11 *(58.99)*	5019 *(22.33)*	5.91 *(9.51)*	2100	4.2	0.506 *(0.308)*	13.90 *(2.74)*	189 *(87)*	56 *(13)*	28.63 *(96.95)*
13th (C4) Gear									
78.38 *(58.45)*	4600 *(20.46)*	6.39 *(10.28)*	2100	3.8	0.510 *(0.310)*	13.79 *(2.72)*	188 *(87)*	56 *(13)*	28.64 *(96.99)*
14th (D2) Gear									
77.11 *(57.50)*	4025 *(17.90)*	7.19 *(11.56)*	2100	3.2	0.514 *(0.313)*	13.66 *(2.69)*	189 *(87)*	55 *(13)*	28.64 *(96.99)*
15th (D3) Gear									
79.93 *(59.60)*	3467 *(15.42)*	8.65 *(13.91)*	2100	2.7	0.498 *(0.303)*	14.11 *(2.78)*	188 *(87)*	55 *(13)*	28.64 *(96.99)*

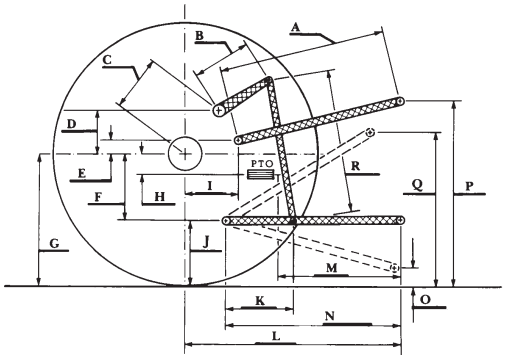
HYDRAULIC PERFORMANCE

CATEGORY: IIIN
Quick Attach: none
OECD Static test
Maximum force exerted through whole range: 4689 lbs *(20.9 kN)* (70 mm cylinders)
6152 lbs *(27.4 kN)* (80 mm cylinders)

	35 cc pump	45 cc pump
Two outlet sets combined		
i) Sustained pressure of the open relief valve:	2966 psi *(204 bar)*	2865 psi *(198 bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	22.2 GPM *(84.0 l/min)*	30.5 GPM *(115.6 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	22.3 GPM *(84.4 l/min)*	29.8 GPM *(112.9 l/min)*
Delivery pressure:	2673 psi *(184 bar)*	2607 psi *(180 bar)*
Power:	34.8 HP *(25.9 kW)*	45.4 HP *(33.8 kW)*
single outlet set		
ii) Pump delivery rate at minimum pressure and rated engine speed:	22.1 GPM *(83.8 l/min)*	30.5 GPM *(115.3 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	22.4 GPM *(84.9 l/min)*	30.6 GPM *(115.9 l/min)*
Delivery pressure:	2623 psi *(181 bar)*	2207 psi *(152 bar)*
Power:	34.3 HP *(25.6 kW)*	39.4 HP *(29.4 kW)*

HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	*mm*
A	25.2	*640*
B	12.8	*325*
C	19.9	*505*
D	18.7	*475*
E	12.6	*320*
F	8.8	*224*
G	31.5	*800*
H	3.1	*80*
I	16.8	*427*
J	22.7	*576*
K	19.8	*502*
L	42.5	*1080*
M	21.7	*550*
N	37.2	*945*
O	9.1	*231*
P	49.6	*1261*
Q	36.2	*920*
R	30.1	*765*



JOHN DEERE 6105M DIESEL

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