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2015

Test 2105: John Deere 6145R AutoQuad-Plus

Nebraska Tractor Test Lab

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NEBRASKA OECD TRACTOR TEST 2105–SUMMARY 983

JOHN DEERE 6195R AUTOQUAD-PLUS DIESEL

20 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption Gal/hr (l/h)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
164.56 (122.71)	2100	9.68 (36.65)	0.412 (0.251)	17.00 (3.35)	0.32 (1.22)	Fuel used during active exhaust regeneration-1.26 gal (4.75 l) (see note 1, p.2)
184.51 (137.59)	1959	10.37 (39.27)	0.394 (0.240)	17.79 (3.50)	0.33 (1.25)	
189.23 (141.11)	1750	10.32 (39.08)	0.382 (0.233)	18.33 (3.61)	0.35 (1.32)	

VARYING POWER AND FUEL CONSUMPTION

164.56 (122.71)	2100	9.68 (36.65)	0.412 (0.251)	17.00 (3.35)	0.32 (1.22)	Air temperature
143.61 (107.09)	2159	8.82 (33.37)	0.430 (0.262)	16.29 (3.21)	0.31 (1.19)	74°F (23°C)
109.05 (81.32)	2182	7.29 (27.61)	0.469 (0.285)	14.95 (2.94)	0.28 (1.07)	Relative humidity
74.35 (55.44)	2223	6.03 (22.82)	0.568 (0.346)	12.34 (2.43)	0.24 (0.92)	79%
37.50 (27.96)	2242	4.41 (16.68)	0.823 (0.501)	8.51 (1.68)	0.23 (0.88)	Barometer
2.86 (2.13)	2250	2.90 (10.98)	7.118 (4.330)	0.98 (0.19)	0.24 (0.91)	28.73" Hg (97.29 kPa)

Maximum torque - 628 lb.-ft. (851 Nm) at 1350 rpm

Maximum torque rise - 52.6%

Torque rise at 1681 engine rpm - 43%

Power increase at 1750 engine rpm - 15.0%

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)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Power at Rated Engine Speed—7th (B3) Gear										
156.92 (117.01)	11411 (50.76)	5.16 (8.30)	2100	3.1	0.432 (0.263)	16.21 (3.19)	0.014 (0.009)	196 (91)	68 (20)	28.69 (97.16)
75% of Pull at Rated Engine Speed—7th (B3) Gear										
123.60 (92.17)	8561 (38.08)	5.41 (8.71)	2189	2.2	0.467 (0.284)	15.02 (2.96)	0.015 (0.009)	195 (90)	80 (27)	28.69 (97.16)
50% of Pull at Rated Engine Speed—7th (B3) Gear										
84.05 (62.67)	5706 (25.38)	5.52 (8.88)	2215	1.4	0.548 (0.333)	12.80 (2.52)	0.011 (0.007)	190 (88)	79 (26)	28.69 (97.16)
75% of Pull at Reduced Engine Speed—11th (C3) Gear										
123.18 (91.86)	8548 (38.02)	5.41 (8.70)	1373	2.2	0.408 (0.248)	17.19 (3.39)	0.013 (0.008)	196 (91)	81 (27)	28.69 (97.16)
50% of Pull at Reduced Engine Speed—11th (C3) Gear										
84.05 (62.67)	5677 (25.25)	5.55 (8.93)	1399	1.4	0.439 (0.267)	15.95 (3.14)	0.014 (0.008)	189 (87)	81 (27)	28.69 (97.16)

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

Dates of tests: June 25 - 30, 2015

Manufacturer: John Deere Tractor Works, 3500 East Donald Street, P.O. Box 270, Waterloo Ia, 50704-0270

CONSUMABLE Fluids, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.8415 **Fuel weight** 7.007 lbs/gal (0.840 kg/l) **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.071 lbs/gal (1.087 kg/l) **Oil SAE 10W-30 API service classification** CJ-4 **Transmission and hydraulic lubricant** John Deere Hy-Gard fluid **Front axle lubricant** John Deere Hy-Gard fluid **Total time engine was operated:** 17.0 hours

ENGINE: Make John Deere **Diesel Type** six cylinder vertical with two turbochargers, air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment **Serial No.** *PE6068U007113* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.19 x 5.00" (106.5 mm x 127.0 mm) **Compression ratio** 17.0 to 1 **Displacement** 414 cu in (6788 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 and prestrainer **Fuel cooler** radiator for pump return fuel **Exhaust** DOC (diesel oxidation catalyst), SCR (selective catalyst reduction) and regenerative DPF (diesel particulate filter) integrated within a vertical muffler **Cooling medium temperature control** 2 thermostats and 2 variable speed fans

ENGINE OPERATING PARAMETERS: Fuel rate: 65.3 - 69.4 lb/h (29.6 - 31.5 kg/h) **High idle:** 2225 - 2275 rpm **Turbo boost:** nominal 15.2 - 18.1 psi (105 - 125 kPa) as measured 16.8 psi (116 kPa)

CHASSIS: Type front wheel assist with duals **Serial No.** *1RW6195RHFA020284* **Tread width** rear 60.0" (1524 mm) to 124.6" (3164 mm) front 58.8" (1494 mm) to 86.9" (2206 mm) **Wheelbase** 110.2" (2800 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (4) range operator controlled power shift **Nominal travel speeds mph (km/h)** first 1.74 (2.80) second 2.09 (3.37) third 2.50 (4.03) fourth 3.07 (4.94) fifth 3.68 (5.93) sixth 4.44 (7.14) seventh 5.31 (8.55) eighth 5.86 (9.43) ninth 6.51 (10.47) tenth 7.06 (11.36) eleventh 8.45 (13.60) twelfth 10.35 (16.66) thirteenth 10.85 (17.46) fourteenth 13.07 (21.03) fifteenth 15.65 (25.18) sixteenth 19.17 (30.85) seventeenth 19.80 (31.86) eighteenth 23.84 (38.37) nineteenth 26.10 (42.00) twentieth 26.10 (42.00) electronically limited

DRAWBAR PERFORMANCE

UNBALLASTED - FRONT DRIVE ENGAGED - 2100 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)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
4th (A4) Gear										
139.63 (104.12)	19375 (86.18)	2.71 (4.35)	2106	12.3	0.485 (0.295)	14.45 (2.85)	0.015 (0.009)	200 (93)	69 (21)	28.68 (97.12)
5th (B1) Gear										
153.21 (114.24)	16507 (73.42)	3.48 (5.60)	2100	5.6	0.441 (0.268)	15.90 (3.13)	0.014 (0.009)	199 (93)	71 (22)	28.68 (97.12)
6th (B2) Gear										
155.34 (115.84)	13635 (60.65)	4.27 (6.87)	2100	3.8	0.438 (0.266)	16.00 (3.15)	0.014 (0.008)	196 (91)	68 (20)	28.69 (97.16)
7th (B3) Gear										
156.92 (117.01)	11411 (50.76)	5.16 (8.30)	2100	3.1	0.432 (0.263)	16.21 (3.19)	0.014 (0.009)	196 (91)	68 (20)	28.69 (97.16)
8th (C1) Gear										
155.82 (116.19)	10240 (45.55)	5.71 (9.19)	2100	2.7	0.434 (0.264)	16.13 (3.18)	0.014 (0.009)	198 (92)	72 (22)	28.70 (97.19)
9th (B4) Gear										
156.48 (116.68)	9234 (41.07)	6.36 (10.23)	2100	2.4	0.434 (0.264)	16.16 (3.18)	0.014 (0.009)	200 (93)	69 (21)	28.69 (97.16)
10th (C2) Gear										
157.71 (117.60)	8568 (38.11)	6.90 (11.10)	2100	2.2	0.432 (0.263)	16.22 (3.20)	0.014 (0.008)	200 (93)	73 (23)	28.70 (97.19)
11th (C3) Gear										
157.19 (117.22)	7102 (31.59)	8.30 (13.36)	2099	1.8	0.431 (0.262)	16.24 (3.20)	0.014 (0.008)	200 (93)	73 (23)	28.69 (97.16)

reverse 1.81 (2.92), 2.18 (3.51), 2.61 (4.21), 3.20 (5.15), 3.84 (6.18), 4.63 (7.45), 5.54 (8.91), 6.11 (9.84), 6.79 (10.93), 7.36 (11.85), 8.82 (14.19), 10.81 (17.39), 11.32 (18.22), 13.63 (21.94), 17.57 (26.28), 20.00 (32.19), 20.66 (33.25), 24.87 (40.03), 26.10 (42.00), 26.10 (42.00) electronically limited **Clutch** wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1960 engine rpm or 1000 rpm at 1960 engine rpm **Unladen tractor mass** 18550 lb (8414 kg)

NOTE 1: The manufacturer declares that the average time between active regenerations is 50 hours, while operated in Auto Filter Cleaning Mode, at rated speed, full load, under steady state conditions.

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. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2105**, Nebraska Summary 983, July 19, 2015.

Roger M. Hoy
Director

M.F. Kocher
P.J. Jasa
S. K. Pitla
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 6th (B2) gear	69.3	69.5
Transport speed - no load - 18th (F2) gear		76.0
Bystander in 18th (F2) gear		82.5

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

Four 480/80R46;***;12(85)
Two 420/90R30;***;12(85)
21.5 in (545 mm)
12625 lb (5727 kg)
6100 lb (2767 kg)
18725 lb (8494 kg)

DRAWBAR PERFORMANCE
UNBALLASTED - FRONT DRIVE ENGAGED - 1750 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption		D.E.F. Consumption	Temp. °F(°C)		Barom. inch Hg (kPa)
					lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	lb/hp.hr (kg/kW.h)	cool- ing med	Air dry bulb	
4th(A4) Gear										
139.74 (104.20)	19383 (86.22)	2.71 (4.35)	2104	12.2	0.484 (0.295)	14.46 (2.85)	0.015 (0.009)	199 (93)	69 (21)	28.68 (97.12)
5th(B1) Gear										
159.81 (119.17)	18224 (81.06)	3.29 (5.29)	2026	7.5	0.442 (0.269)	15.84 (3.12)	0.015 (0.009)	202 (94)	73 (23)	28.68 (97.12)
6th(B2) Gear										
170.24 (126.94)	17216 (76.58)	3.71 (5.97)	1873	6.3	0.425 (0.258)	16.49 (3.25)	0.014 (0.009)	199 (93)	76 (24)	28.68 (97.12)
7th(B3) Gear										
177.29 (132.20)	15782 (70.20)	4.21 (6.78)	1749	5.1	0.407 (0.248)	17.21 (3.39)	0.014 (0.008)	200 (93)	71 (22)	28.70 (97.18)
8th(C1) Gear										
176.60 (131.69)	14136 (62.88)	4.69 (7.54)	1750	4.2	0.410 (0.249)	17.10 (3.37)	0.014 (0.008)	202 (94)	76 (24)	28.70 (97.18)
9th(B4) Gear										
178.95 (133.44)	12810 (56.98)	5.24 (8.43)	1750	3.5	0.404 (0.246)	17.34 (3.42)	0.014 (0.008)	203 (95)	70 (21)	28.69 (97.16)
10th(C2) Gear										
178.81 (133.33)	11769 (52.35)	5.70 (9.17)	1750	3.2	0.405 (0.247)	17.28 (3.40)	0.013 (0.008)	203 (95)	75 (24)	28.70 (97.18)
11th(C3) Gear										
180.57 (134.65)	9864 (43.88)	6.87 (11.05)	1750	2.6	0.401 (0.244)	17.49 (3.45)	0.013 (0.008)	201 (94)	74 (23)	28.70 (97.18)
12th(C4) Gear										
179.67 (133.98)	7965 (35.43)	8.46 (13.62)	1751	2.0	0.404 (0.246)	17.35 (3.42)	0.013 (0.008)	203 (95)	74 (24)	28.70 (97.18)

HYDRAULIC PERFORMANCE

CATEGORY: III

Quick Attach: No

Lift cylinders:

2 x 85 mm

Maximum force exerted through whole range: 11310 lbs (50.3 kN)

i) Sustained pressure at compensator cutoff: 2904 psi (200 bar)

three outlet sets combined

ii) Pump delivery rate at minimum pressure and rated engine speed: 41.1 GPM (155.5 l/min)

iii) Pump delivery rate at maximum hydraulic power: 40.6 GPM (153.7 l/min)

Delivery pressure: 2382 psi (164 bar)

Power: 56.4 HP (42.1 kW)

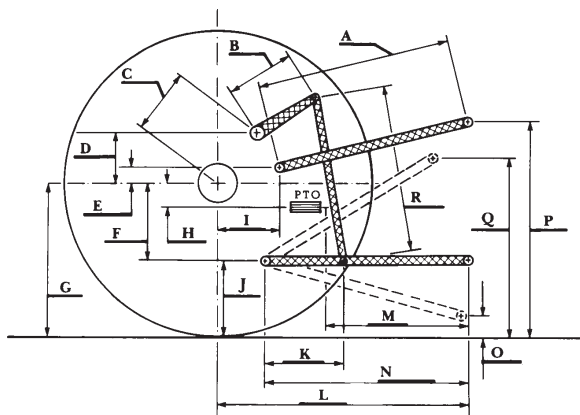
single outlet set

ii) Pump delivery rate at minimum pressure and rated engine speed: 34.3 GPM (129.7 l/min)

iii) Pump delivery rate at maximum hydraulic power: 32.7 GPM (123.8 l/min)

Delivery pressure: 2096 psi (145 bar)

Power: 40.0 HP (29.8 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	29.3	745
B	16.1	410
C	24.6	624
D	23.8	605
E	7.5	190
F	10.8	275
G	38.4	975
H	4.1	105
I	21.8	554
J	27.6	700
K	26.2	666
L	51.3	1303
M	26.9	683
N	43.6	1108
O	9.0	230
P	54.5	1385
Q	40.1	1018
R	43.9	1115



JOHN DEERE 6195R DIESEL