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2022

Nebraska Summary: 1233 John Deere 6R 140 Diesel Infinitely Variable Transmission

Nebraska Tractor Test Lab

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SUMMARY OF OECD TEST 3349 - NEBRASKA SUMMARY 1233

JOHN DEERE 6R 140 DIESEL

INFINITELY VARIABLE TRANSMISSION

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption		D.E.F. Consumption		Mean Atmospheric Conditions
		Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.l/l)	Gal/hr (l/h)	
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1071 rpm)						
116.7 (87.1)	2100	7.24 (27.41)	0.429 (0.261)	16.12 (3.18)	0.15 (0.59)	Fuel used during the active exhaust regeneration - 2.0 gal (7.5 l) (see Note 1, p.2)
Standard Power Take-off Speed (1000 rpm)						
125.1 (93.3)	1960	7.48 (28.30)	0.413 (0.251)	16.75 (3.30)	0.16 (0.61)	
Maximum Power (1 hour)						
131.0 (97.7)	1800	7.51 (28.44)	0.396 (0.241)	17.44 (3.43)	0.16 (0.61)	

VARYING POWER AND FUEL CONSUMPTION

116.7 (87.1)	2100	7.24 (27.41)	0.429 (0.261)	16.12 (3.18)	0.15 (0.59)	Air temperature
101.8 (75.9)	2153	6.68 (25.30)	0.454 (0.276)	15.23 (3.00)	0.13 (0.51)	68°F (20°C)
77.1 (57.5)	2175	5.71 (21.62)	0.513 (0.312)	13.50 (2.66)	0.10 (0.38)	Relative humidity
51.9 (38.7)	2198	4.49 (16.98)	0.597 (0.363)	11.57 (2.28)	0.07 (0.27)	43%
26.4 (19.7)	2236	3.33 (12.59)	0.870 (0.529)	7.94 (1.57)	0.05 (0.18)	Barometer
--	2248	2.24 (8.50)	--	--	0.05 (0.19)	29.9" Hg (101.3 kPa)

Maximum torque - 424 lb.-ft. (575 Nm) at 1600 rpm
 Maximum torque rise - 45.3%
 Torque rise at 1700 engine rpm - 38%
 Power increase at 1800 engine rpm - 12.2%

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)	D.E.F. Consumption Hp.hr/gal (kW.l/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Power at Rated Engine Speed—Speed setting 9									
108.4 (80.8)	7245 (32.22)	5.61 (9.03)	2101	2.7	0.469 (0.285)	14.72 (2.90)	0.005 (0.003)	178 (81)	61 (16) (100.0)
75% of Pull at Rated Engine Speed—Speed setting 9									
84.4 (62.9)	5425 (24.14)	5.83 (9.38)	2169	2.1	0.508 (0.309)	13.55 (2.67)	0.011 (0.007)	198 (92)	61 (16) (100.0)
50% of Pull at Rated Engine Speed—Speed setting 9									
56.5 (42.1)	3565 (15.85)	5.94 (9.55)	2191	1.3	0.628 (0.382)	10.96 (2.16)	0.011 (0.007)	203 (95)	61 (16) (100.0)
75% of Pull at Reduced Engine Speed—Speed setting 11									
84.6 (63.1)	5450 (24.25)	5.82 (9.37)	1615	2.1	0.450 (0.274)	15.31 (3.02)	0.012 (0.007)	207 (97)	62 (17) (100.0)
50% of Pull at Reduced Engine Speed—Speed setting 11									
56.5 (42.1)	3610 (16.05)	5.87 (9.44)	1478	1.4	0.492 (0.299)	14.01 (2.76)	0.018 (0.011)	207 (97)	61 (16) (100.0)

Location of tests: DLGe.V. Test Centre, Technology and Farm inputs, Max-Eyth-Weg 1, D-64823 Gross-Umstadt, Germany

Dates of tests: June to August, 2022

Manufacturer: John Deere GmbH & Co., KG Mannheim Germany

CONSUMABLE Fluids: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.8308 **Fuel weight** 6.92 lbs/gal (0.829 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

ENGINE: Make John Deere **Diesel Type** four cylinder vertical with two turbochargers, air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment **Serial No.** *CD4045U195895* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.19" x 5.00" (106.5 mm x 127.0 mm) **Compression ratio** 16.7 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 and prestrainer **Fuel cooler** radiator for pump return fuel **Exhaust** DOC (diesel oxidation catalyst)/DPF (diesel particulate filter) System and SCR (selective catalyst reduction) with a vertical muffler **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist **Serial No.** *1L06140RCNR149641* **Tread width** rear 71.3" (1810 mm) to 71.3" (1810 mm) front 71.3" (1810 mm) to 71.3" (1810 mm) **Wheelbase** 101.6" (2580 mm) **Hydraulic control system** direct engine drive **Transmission** Infinitely variable **Nominal travel speeds mph (km/h)** forward 0 - 31 mph (0 - 50 km/h), reverse 0 - 31 mph (0 - 50 km/h) **Clutch** a foot pedal controls the hydrostatic oil flow **Brakes** wet multiple disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 1000 rpm at 1962 engine rpm or 540 rpm at 1967 engine rpm **Unladen tractor mass** 14880 lb (6750 kg)

DRAWBAR PERFORMANCE

UNBALLASTED - FRONT DRIVE ENGAGED - 1800 ENGINE RPM MAXIMUM POWER IN SELECTED SPEED SETTINGS

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 dry med bulb	Air dry bulb	Barom. inch Hg (kPa)
Speed setting 5.0										
94.8 (70.7)	14245 (63.36)	2.49 (4.02)	1885	15.0	0.557 (0.339)	12.33 (2.43)	0.017 (0.010)	207 (97)	72 (22)	29.2 (99.0)
Speed setting 6.0										
105.8 (78.9)	12455 (55.41)	3.19 (5.13)	1800	6.1	0.492 (0.299)	14.01 (2.76)	0.016 (0.010)	203 (95)	70 (21)	29.2 (99.0)
Speed setting 7.5										
112.4 (83.8)	10590 (47.11)	3.98 (6.40)	1800	4.5	0.468 (0.285)	14.72 (2.90)	0.015 (0.009)	208 (98)	66 (19)	29.2 (99.0)
Speed setting 9										
117.2 (87.4)	9235 (41.08)	4.76 (7.66)	1800	3.7	0.449 (0.273)	15.33 (3.02)	0.014 (0.009)	207 (97)	66 (19)	29.2 (99.0)
Speed setting 11										
117.5 (87.6)	7540 (33.54)	5.84 (9.40)	1801	2.8	0.450 (0.274)	15.28 (3.01)	0.016 (0.010)	207 (97)	66 (19)	29.2 (99.0)
Speed setting 13										
114.7 (85.5)	6290 (27.98)	6.84 (11.00)	1803	2.3	0.459 (0.279)	15.00 (2.95)	0.013 (0.008)	207 (97)	66 (19)	29.2 (99.0)
Speed setting 15										
110.3 (82.3)	5240 (23.31)	7.89 (12.70)	1803	2.1	0.477 (0.290)	14.52 (2.86)	0.016 (0.010)	208 (98)	57 (14)	29.5 (100.0)
Speed setting 17										
114.3 (85.3)	4795 (21.33)	8.94 (14.39)	1800	1.9	0.460 (0.280)	15.02 (2.96)	0.016 (0.010)	207 (97)	59 (15)	29.5 (100.0)
*Speed setting 19										
120.5 (89.9)	4505 (20.05)	10.03 (16.13)	1803	1.7	0.451 (0.275)	15.33 (3.02)	0.015 (0.009)	207 (97)	59 (15)	29.5 (100.0)

*Intelligent Power Management system activated

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load at 4.6 mph (7.5 km/h)	66.0	63.9
Transport speed - speed setting - 31 mph (50 km/h)		71.2
Bystander		--

Horizontal distances of drawbar hitch point behind rear wheel axis - 33.5 in (850 mm), 37.4 in (950 mm), 39.4 in (1000 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 650/65R38;***;12(80)
 Two 540/65R28;***;12(80)
 22.0 in (560 mm)
 8895 lb (4035 kg)
 6150 lb (2790 kg)
 15045 lb (6825 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE 1: The manufacturer declares that the average time between active regenerations is 100 hours.

NOTE 2: This tractor has an engine control feature, I.P.M. (Intelligent Power Management) that allows the engine to run in a "boosted" mode, increased power level, at elevated drawbar travel speeds.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. The manufacturer's claims of 127 PTO Hp (95 kW), at rated engine speed and 135 PTO Hp (101 kW) at 1000 PTO rpm with I.P.M. activated were not verified. This tractor fell 2.9% short of meeting the manufacturer's 3 point lift claim of 7937 lbs (3600 kg) with 80 mm lift cylinders and 3.9% short of meeting the claim of 9039 lbs (4100 kg) with 85 mm lift cylinders. The manufacturer's claim of 30 GPM (114 l/min) remote hydraulic flow with 45 cc pump was not verified. 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 summary of data from OECD Report No. **3349**, Nebraska Summary 1233, April 12, 2024.

Roger M. Hoy
 Director

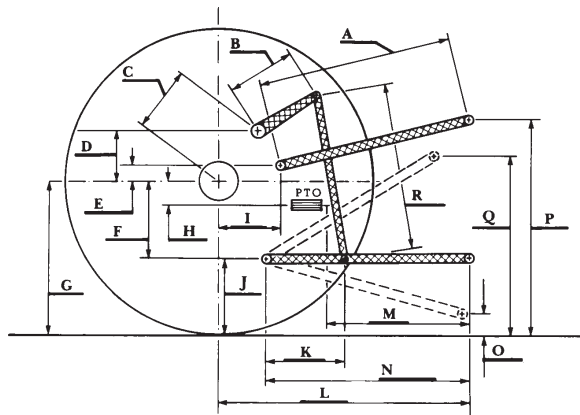
P.J. Jasa
 J.D. Luck
 Y. Shi
 Board of Tractor Test Engineers

HYDRAULIC PERFORMANCE WITH 60 CC PUMP

CATEGORY:3N
Quick Attach: No

	Lift cylinders
Maximum force exerted through whole range:	7710 lbs (34.3 kN) (2 x 80 mm) 8700 lbs (38.7 kN) (2 x 85 mm)
i) Sustained pressure at compensator cutoff:	2975 psi (205 bar)
ii) Pump delivery rate at minimum pressure:	three outlet sets combined 44.2 GPM (167.4 l/min)
iii) Pump delivery rate at maximum	
hydraulic power:	39.3 GPM (148.8 l/min)
Delivery pressure:	2715 psi (187 bar)
Power:	62.2 HP (46.4 kW)
ii) Pump delivery rate at minimum pressure:	single outlet set 32.7 GPM (123.7 l/min)
iii) Pump delivery rate at maximum	
hydraulic power:	30.7 GPM (116.3 l/min)
Delivery pressure:	2220 psi (153 bar)
Power:	39.8 HP (29.7 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	28.2	717
B	15.4	390
C	21.7	552
D	20.7	525
E	9.8	250
F	8.8	224
G	34.4	875
H	4.5	115
I	17.3	439
J	25.6	651
K	22.2	565
L	45.2	1150
M	24.4	620
N	40.0	1015
O	9.1	230
P	52.6	1336
Q	40.0	1015
R	36.4	925

RECOMMENDED CITATION FORMAT:

NTTL.(2024) OECD tractor test 3349 for John Deere 6R 140 Diesel.

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