2022

Nebraska Tractor Summary: 1240 John Deere 6R 230 Infinitely Variable Transmission

Nebraska Tractor Test Lab

SUMMARY OF OECD TEST 3358 - NEBRASKA SUMMARY 1240
JOHN DEERE 6R 230 DIESEL
INFINITELY VARIABLE TRANSMISSION

POWER TAKE-OFF PERFORMANCE

Power HP *(kW)*	Crank shaft speed rpm	Diesel Consumption Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	D.E.F. Consumption Hp.hr/gal *(kW.h/l)*	D.E.F. Consumption Gal/hr *(l/h)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1077 rpm)						
198.3 *(147.9)*	2100	11.26 *(42.64)*	0.393 *(0.239)*	17.61 *(3.47)*	0.25 *(0.94)*	Fuel used during the active exhaust regeneration - 1.1 gal *(4.0 l)* (see Note1, p.2)
Standard Power Take-off Speed (1000 rpm)						
215.9 *(161.0)*	1950	11.95 *(45.25)*	0.383 *(0.233)*	18.07 *(3.56)*	0.28 *(1.07)*	
Maximum Power (1 hour)						
222.5 *(165.9)*	1800	12.17 *(46.05)*	0.379 *(0.230)*	18.29 *(3.60)*	0.28 *(1.07)*	
VARYING POWER AND FUEL CONSUMPTION						
198.3 *(147.9)*	2100	11.26 *(42.64)*	0.393 *(0.239)*	17.61 *(3.47)*	0.25 *(0.94)*	Air temperature
173.4 *(129.3)*	2160	10.20 *(38.60)*	0.408 *(0.248)*	17.00 *(3.35)*	0.22 *(0.82)*	70°F *(21°C)*
132.1 *(98.5)*	2193	8.51 *(32.20)*	0.446 *(0.271)*	15.53 *(3.06)*	0.32 *(1.23)*	Relative humidity
89.3 *(66.6)*	2229	6.59 *(24.95)*	0.511 *(0.311)*	13.55 *(2.67)*	0.20 *(0.75)*	30%
45.1 *(33.6)*	2251	4.93 *(18.65)*	0.757 *(0.460)*	9.14 *(1.80)*	0.08 *(0.30)*	Barometer
-- --	2262	3.04 *(11.50)*	-- --	-- --	0.10 *(0.40)*	29.6" Hg *(100.2 kPa)*

Maximum torque - 717 lb.-ft. *(973 Nm)* at 1600 rpm
Maximum torque rise - 44.6%
Torque rise at 1700 engine rpm - 37%
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)*	Fuel Consumption 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—Speed setting 9										
169.5 *(126.4)*	11430 *(50.85)*	5.56 *(8.95)*	2097	3.6	0.455 *(0.276)*	14.64 *(2.88)*	0.015 *(0.009)*	201 *(94)*	90 *(32)*	29.5 *(100.0)*
75% of Pull at Rated Engine Speed—Speed seting 9										
132.6 *(98.9)*	8545 *(38.01)*	5.82 *(9.37)*	2175	2.7	0.482 *(0.293)*	13.81 *(2.72)*	0.017 *(0.010)*	203 *(95)*	91 *(33)*	29.5 *(100.0)*
50% of Pull at Rated Engine Speed—Speed setting 9										
90.1 *(67.2)*	5645 *(25.10)*	5.99 *(9.64)*	2214	1.7	0.555 *(0.337)*	12.00 *(2.36)*	0.024 *(0.015)*	201 *(94)*	91 *(33)*	29.5 *(100.0)*
75% of Pull at Reduced Engine Speed—Speed setting 11										
132.6 *(98.9)*	8570 *(38.13)*	5.80 *(9.33)*	1588	2.6	0.442 *(0.269)*	15.08 *(2.97)*	0.014 *(0.008)*	196 *(91)*	93 *(34)*	29.5 *(100.0)*
50% of Pull at Reduced Engine Speed—Speed setting 11										
90.5 *(67.5)*	5675 *(25.25)*	5.98 *(9.63)*	1425	1.6	0.472 *(0.287)*	14.11 *(2.78)*	0.009 *(0.005)*	194 *(90)*	93 *(34)*	29.5 *(100.0)*

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

Dates of tests: June to September, 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** six cylinder vertical with two turbochargers, air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment **Serial No.** *CD6068U207855* **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** 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)/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.** *1L06250RTNR147093* **Tread width** rear 74.0 *(1880 mm)* to 75.2" *(1910 mm)* front 72.4" *(1840 mm)* to 79.1" *(2010 mm)* **Wheelbase** 114.2" *(2900 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 1950 engine rpm **Unladen tractor mass** 21365 lb *(9690 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 med	Air dry bulb	Barom. inch Hg *(kPa)*
					Speed setting 6.0					
160.8	20620	2.92	1822	15.0	0.518	12.89	0.016	201	86	29.6
(119.9)	*(91.72)*	*(4.70)*			*(0.315)*	*(2.54)*	*(0.010)*	*(94)*	*(30)*	*(100.4)*
					Speed setting 7.5					
180.5	17490	3.87	1801	7.3	0.460	14.47	0.015	201	82	29.7
(134.6)	*(77.79)*	*(6.23)*			*(0.280)*	*(2.85)*	*(0.009)*	*(94)*	*(28)*	*(100.6)*
					Speed setting 9					
189.5	15160	4.69	1800	5.3	0.441	15.13	0.015	201	79	29.7
(141.3)	*(67.44)*	*(7.54)*			*(0.268)*	*(2.98)*	*(0.009)*	*(94)*	*(26)*	*(100.7)*
					Speed setting 11					
194.6	12345	5.91	1804	3.6	0.427	15.58	0.015	198	75	29.6
(145.1)	*(54.91)*	*(9.51)*			*(0.260)*	*(3.07)*	*(0.009)*	*(92)*	*(24)*	*(100.4)*
					Speed setting 13					
190.3	10215	6.99	1801	2.8	0.435	15.33	0.016	199	74	29.7
(141.9)	*(45.43)*	*(11.25)*			*(0.264)*	*(3.02)*	*(0.010)*	*(93)*	*(23)*	*(100.5)*
					Speed setting 15					
187.1	8840	7.94	1801	2.7	0.444	15.02	0.015	201	74	29.6
(139.5)	*(39.33)*	*(12.77)*			*(0.270)*	*(2.96)*	*(0.009)*	*(94)*	*(23)*	*(100.4)*
					Speed setting 17					
192.3	8040	8.97	1804	2.1	0.432	15.46	0.015	201	75	29.7
(143.4)	*(35.77)*	*(14.43)*			*(0.263)*	*(3.05)*	*(0.009)*	*(94)*	*(24)*	*(100.7)*
					Speed setting 19					
196.1	7315	10.05	1805	1.9	0.425	15.71	0.013	201	77	29.8
(146.2)	*(32.55)*	*(16.17)*			*(0.258)*	*(3.09)*	*(0.008)*	*(94)*	*(25)*	*(100.9)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

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

NOTE 2: The performance figures on this report are the result of replacing the electronic engine control module of the John Deere 6R 250 with the John Deere 6R 230 module.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. The manufacturer's claims of 220 PTO Hp *(164 kW)*, at rated engine speed and 223 PTO Hp *(166 kW)* at 1000 PTO rpm with I.P.M. activated were not verified. This tractor fell 1.2% short of meeting the manufacturer's 3 point lift claim of 15432 lbs *(7000 kg)*. 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. **3358,** Nebraska Summary 1240, April 12, 2024.

Roger M. Hoy
Director

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

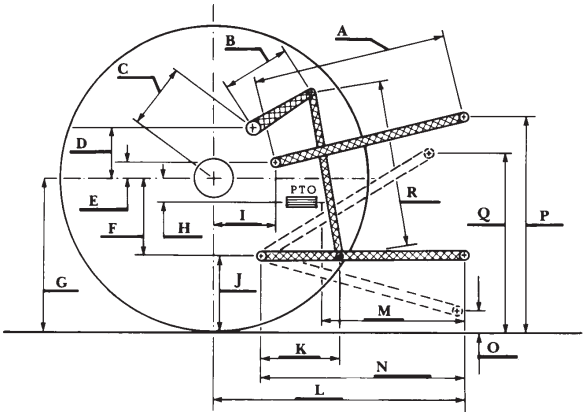
TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load at 4.6 mph *(7.5 km/h)*	67.2	67.2
Transport speed - speed setting - 31 mph *(50 km/h)*		71.2
Bystander		--

Horizontal distances of drawbar hitch point behind rear wheel axis - 36.7 in *(933 mm)*, 38.7 in,*(983 mm)*, 41.5 in *(1053 mm)*, 44.2 in *(1123 mm)*

TIRES AND WEIGHT	Tested Without Ballast
Rear Tires - No., size, ply & psi(*kPa*)	Two 800/70R38;***;12(*80*)
Front Tires - No., size, ply & psi(*kPa*)	Two 600/70R30;***;12(*80*)
Height of Drawbar	24.0 in (*610 mm*)
Static Weight with operator - Rear	13010 lb *(5900 kg)*
- Front	8520 lb *(3865 kg)*
- Total	21530 lb *(9765 kg)*

HYDRAULIC PERFORMANCE

CATEGORY: 3N	
Quick Attach: No	
Lift cylinders:	2 x 90 mm
Maximum force exerted through whole range:	15175 lbs *(67.5 kN)*
i) Sustained pressure at compensator cutoff:	2965 psi *(205 bar)*
	three outlet sets combined
ii) Pump delivery rate at minimum pressure:	46.7 GPM *(176.7 l/min)*
iii)Pump delivery rate at maximum	
hydraulic power:	44.7 GPM *(169.2 l/min)*
Delivery pressure:	2420 psi *(167 bar)*
Power:	63.1 HP *(47.0 kW)*
	single outlet set
ii) Pump delivery rate at minimum pressure:	32.0 GPM *(121.3 l/min)*
iii)Pump delivery rate at maximum	
hydraulic power:	31.2 GPM *(118.2 l/min)*
Delivery pressure:	2205 psi *(152 bar)*
Power:	40.1 HP *(29.9 kW)*



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	*mm*
A	30.0	*762*
B	18.1	*460*
C	24.6	*624*
D	23.8	*605*
E	7.5	*190*
F	13.2	*335*
G	38.4	*975*
H	4.1	*105*
I	21.8	*554*
J	25.2	*640*
K	29.8	*757*
L	51.4	*1305*
M	27.0	*685*
N	43.3	*1100*
O	9.1	*230*
P	52.2	*1325*
Q	40.0	*1015*
R	45.9	*1165*

RECOMMENDED CITATION FORMAT:

NTTL.(2024) OECD tractor test 3358 for John Deere 6R 230 Diesel.
Lincoln, NE:Nebraska Tractor Test Laboratory. Retrieved from http://tractortestlab.unl.edu