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2020

Nebraska Summary 1191: John Deere 6110M FT4

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SUMMARY OF OECD TEST 3217 - NEBRASKA SUMMARY 1191
JOHN DEERE 6110M COMMANDQUAD DIESEL
24 SPEED

Engine Serial numbers 4045U and higher

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—1070 rpm)						
84.5 *(63.0)*	2100	6.14 *(23.25)*	0.501 *(0.305)*	13.76 *(2.71)*	0.38 *(1.45)*	Fuel used during the active exhaust regeneration - 0.39 gal *(1.48 l)* (see Note1, p.2)
Standard Power Take-off Speed (1000 rpm)						
96.5 *(72.0)*	1962	6.39 *(24.20)*	0.457 *(0.278)*	15.10 *(2.97)*	0.39 *(1.47)*	
Maximum Power (1 hour)						
100.2 *(74.7)*	1800	6.33 *(23.94)*	0.436 *(0.265)*	15.84 *(3.12)*	0.48 *(1.83)*	
VARYING POWER AND FUEL CONSUMPTION						
84.5 *(63.0)*	2100	6.14 *(23.25)*	0.501 *(0.305)*	13.76 *(2.71)*	0.38 *(1.45)*	Air temperature
74.0 *(55.1)*	2162	5.82 *(22.02)*	0.542 *(0.330)*	12.72 *(2.51)*	0.35 *(1.34)*	72°F *(22°C)*
56.3 *(42.0)*	2193	5.04 *(19.10)*	0.618 *(0.376)*	11.17 *(2.20)*	0.32 *(1.21)*	Relative humidity
37.7 *(28.2)*	2210	4.41 *(16.70)*	0.804 *(0.489)*	8.55 *(1.69)*	0.24 *(0.92)*	44%
19.1 *(14.3)*	2236	3.43 *(13.00)*	1.240 *(0.754)*	5.56 *(1.10)*	0.13 *(0.51)*	Barometer
-- --	2251	2.62 *(9.90)*	-- --	-- --	0.11 *(0.43)*	30.2" Hg *(102.2 kPa)*

Maximum torque - 325 lb.-ft. *(441 Nm)* at 1500 rpm
Maximum torque rise - 53.8%
Torque rise at 1700 engine rpm - 44%
Power increase at 1800 engine rpm - 18.6%

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—10th (C2) Gear										
80.5 *(60.1)*	5580 *(24.82)*	5.41 *(8.71)*	2095	2.3	0.526 *(0.320)*	12.92 *(2.54)*	0.043 *(0.027)*	160 *(71)*	70 *(21)*	29.4 *(99.5)*
75% of Pull at Rated Engine Speed—10th (C2) Gear										
62.9 *(46.9)*	4170 *(18.54)*	5.67 *(9.11)*	2178	1.8	0.615 *(0.374)*	11.07 *(2.18)*	0.027 *(0.017)*	165 *(74)*	70 *(21)*	29.4 *(99.5)*
50% of Pull at Rated Engine Speed—10th (C2) Gear										
42.5 *(31.7)*	2755 *(12.26)*	5.79 *(9.31)*	2211	1.1	0.779 *(0.474)*	8.73 *(1.72)*	0.027 *(0.017)*	160 *(71)*	72 *(22)*	29.4 *(99.5)*
75% of Pull at Reduced Engine Speed—11th (C3) Gear										
63.1 *(47.0)*	4165 *(18.53)*	5.68 *(9.14)*	1829	1.9	0.522 *(0.317)*	13.02 *(2.56)*	0.035 *(0.022)*	162 *(72)*	70 *(21)*	29.4 *(99.5)*
50% of Pull at Reduced Engine Speed—11th (C3) Gear										
43.0 *(32.1)*	2775 *(12.34)*	5.81 *(9.36)*	1853	1.1	0.618 *(0.376)*	11.01 *(2.17)*	0.061 *(0.038)*	158 *(70)*	72 *(22)*	29.4 *(99.5)*

Location of tests: DLG TestService,GmbH, Max-Eyth-Weg 1, D-64823 Gross-Umstadt, Germany

Dates of tests: May to June, 2020

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

CONSUMABLE Fluids: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F *(15°/15°C)*** 0.8284 **Fuel weight** 6.91 lbs/gal *(0.827 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** CK-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 turbocharger, air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment **Serial No.** *CD4045U097939* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.19" x 5.00" *(106.5 mm x 127.0 mm)* **Compression ratio** 17.1 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.***1L06120MVKX938308* **Tread width** rear 63.5 *(1612 mm)* to 72.0" *(1830 mm)* front 63.5" *(1612 mm)* to 72.0" *(1830 mm)* **Wheelbase** 94.5" *(2400 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 1.14 *(1.84)* second 1.38 *(2.22)* third 1.65 *(2.66)* fourth 2.03 *(3.26)* fifth 2.80 *(4.50)* sixth 3.37 *(5.42)* seventh 4.03 *(6.49)* eighth 4.56 *(7.34)* ninth 4.94 *(7.95)* tenth 5.49 *(8.83)* eleventh 6.57 *(10.58)* twelfth 7.48 *(12.04)* thirteenth 8.05 *(12.96)* fourteenth 9.00 *(14.49)* fifteenth 10.79 *(17.36)* sixteenth 12.15 *(19.56)* seventeenth 13.22 *(21.27)* eighteenth 14.63 *(23.55)* nineteenth 17.44 *(28.07)* twentieth 17.53 *(28.21)* twenty-first 21.00 *(33.79)* twenty-second 21.48 *(34.56)* twenty-third 24.86 *(40.00)* twenty-fourth 24.86 *(40.00)* (electronically limited)

DRAWBAR PERFORMANCE

UNBALLASTED - FRONT DRIVE ENGAGED - 1800 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)*	D.E.F. Consumption lb/hp.hr *(kg/kW.h)*	Temp.°F(°C) cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					5th (B1) Gear					
80.7	13825	2.19	1908	14.8	0.542	12.55	0.051	165	66	29.4
(60.2)	*(61.50)*	*(3.52)*			*(0.330)*	*(2.47)*	*(0.031)*	*(74)*	*(19)*	*(99.5)*
					6th (B2) Gear					
88.2	12455	2.66	1801	9.0	0.495	13.76	0.036	167	66	29.4
(65.8)	*(55.41)*	*(4.28)*			*(0.301)*	*(2.71)*	*(0.022)*	*(75)*	*(19)*	*(99.4)*
					7th (B3) Gear					
92.4	10450	3.31	1803	5.4	0.470	14.47	0.041	167	66	29.4
(68.9)	*(46.49)*	*(5.33)*			*(0.286)*	*(2.85)*	*(0.025)*	*(75)*	*(19)*	*(99.5)*
					8th (C1) Gear					
92.0	9145	3.77	1799	4.6	0.473	14.39	0.031	165	64	29.4
(68.6)	*(40.67)*	*(6.08)*			*(0.288)*	*(2.83)*	*(0.019)*	*(74)*	*(18)*	*(99.5)*
					9th(B4) Gear					
92.3	8380	4.13	1800	3.8	0.473	14.38	0.035	163	66	29.4
(68.8)	*(37.28)*	*(6.64)*			*(0.288)*	*(2.83)*	*(0.021)*	*(73)*	*(19)*	*(99.5)*
					10th (C2) Gear					
94.0	7650	4.61	1802	3.4	0.464	14.64	0.036	162	64	29.4
(70.1)	*(34.03)*	*(7.41)*			*(0.283)*	*(2.89)*	*(0.022)*	*(72)*	*(18)*	*(99.5)*
					11th(C3) Gear					
93.7	6325	5.56	1800	2.5	0.463	14.70	0.033	167	66	29.4
(69.9)	*(28.14)*	*(8.94)*			*(0.282)*	*(2.90)*	*(0.020)*	*(75)*	*(19)*	*(99.4)*
					12th (D1) Gear					
93.5	5510	6.36	1802	2.1	0.467	14.62	0.036	167	64	29.4
(69.7)	*(24.52)*	*(10.23)*			*(0.284)*	*(2.88)*	*(0.022)*	*(75)*	*(18)*	*(99.4)*
					13th(C4) Gear					
92.7	5045	6.89	1806	1.9	0.470	14.49	0.049	169	66	29.4
(69.1)	*(22.44)*	*(11.08)*			*(0.286)*	*(2.86)*	*(0.030)*	*(76)*	*(19)*	*(99.4)*
					14th (D2) Gear					
92.5	4535	7.65	1799	1.6	0.472	14.44	0.044	167	64	29.4
(69.0)	*(20.17)*	*(12.32)*			*(0.287)*	*(2.85)*	*(0.027)*	*(75)*	*(18)*	*(99.4)*
					15th(D3) Gear					
92.4	3730	9.28	1807	1.3	0.472	14.43	0.038	165	64	29.4
(68.9)	*(16.60)*	*(14.93)*			*(0.287)*	*(2.84)*	*(0.023)*	*(74)*	*(18)*	*(99.5)*

TRACTOR SOUND LEVEL WITH CAB	**Front Wheel Drive Engaged dB(A)**	**Disengaged dB(A)**
At no load in 9th (B4) gear	70.4	70.2
Transport speed - no load - 24th (F4) gear		71.0
Bystander		--

Horizontal distances of drawbar hitch point behind rear wheel axis - 32.1 in *(815 mm),* 36.0 in *(915 mm),* 38.0 in *(965 mm)*

TIRES AND WEIGHT	**Tested Without Ballast**
Rear Tires - No., size, ply & psi(*kPa*)	Two 600/65R38;***;12(*80*)
Front Tires - No., size, ply & psi(*kPa*)	Two 480/65R28;***;12(*80*)
Height of Drawbar	17.7 in (*500 mm*)
Static Weight with operator - Rear	7945 lb (*3605 kg*)
- Front	5710 lb (*2590 kg*)
- Total	13655 lb (*6195 kg*)

reverse 1.14 *(1.84)*, 1.38 *(2.22)*, 1.65 *(2.66)*, 2.03 *(3.26)*, 2.80 *(4.50)*, 3.37 *(5.42)*, 4.03 *(6.49)*, 4.56 *(7.34)*, 4.94 *(7.95)*, 5.49 *(8.83)*, 5.57 *(10.58)*, 7.48 *(12.04)*, 9.05 *(12.96)*, 9.00 *(14.49)*, 10.79 *(17.36)*, 12.15 *(19.56)*, 13.22 *(21.27)*, 14.63 *(23.55)*, 17.44 *(28.07)*, 17.53 *(28.21)*, 21.00 *(33.79)*, 21.48 *(34.56)*, 24.86 *(40.00)*, 24.86 *(40.00)* (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 1967 engine rpm or 1000 rpm at 1962 engine rpm **Unladen tractor mass** 13490 lb *(6120 kg)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE 1: The manufacturer declares that the average time between active regenerations is 50 hours.

NOTE 2: The performance figures on this report are the result of replacing the electronic engine control module of the John Deere 6120M with the John Deere 6110M module.

NOTE 3: The performance data on this report applies to tractors that have engine serial numbers containing 4045U.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. The manufacturer's remote hydraulic flow claim of 21.1 GPM *(80 l/min)* with 35 cc pump was not verified. The manufacturer's PTO power claims of 101 hp *(75 kW)* at rated speed and 107 hp *(80 kW)* at 1000 PTO rpm with IPM (Intelligent Power Management) engaged was not verified. This tractor fell 22.2% short meeting the manufacturer's 3 point lift claim at ball ends of 8267 lbs *(3750 kg)* with 65 mm lift cylinders and 22.5 % short of the claim of 11023 lbs *(5000 kg)* with 75 mm lift cylinders. 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. **3217,** Nebraska Summary 1191, February 9, 2022.

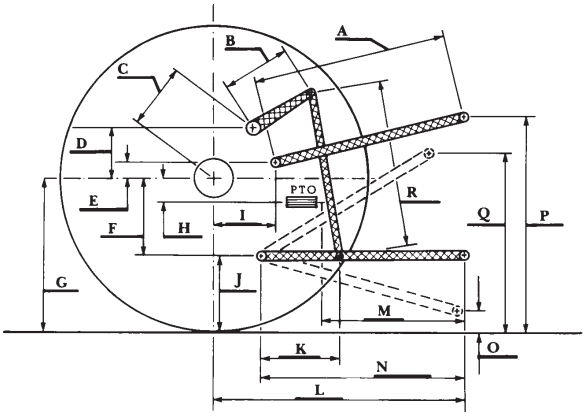
Roger M. Hoy
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Board of Tractor Test Engineers

HYDRAULIC PERFORMANCE WITH 45cc pump

CATEGORY: 3N
Quick Attach: No

	lift cylinders	
Lift cylinders:		
Maximum force exerted through whole range:	2 x 65 mm	2 x 75 mm
on the frame:	5980 lbs *(26.6 kN)*	7960 lbs *(35.4 kN)*
at ball ends:	6430 lbs *(28.6 kN)*	8540 lbs *(38.0 kN)*
i) Sustained pressure at compensator cutoff:	2990 psi *(206 bar)*	
	two outlet sets combined	
ii) Pump delivery rate at minimum pressure:	31.9 GPM *(120.8 l/min)*	
iii)Pump delivery rate at maximum hydraulic power:	29.2 GPM *(110.7 l/min)*	
Delivery pressure:	2695 psi *(186 bar)*	
Power:	45.9 HP *(34.2 kW)*	
	single outlet set	
ii) Pump delivery rate at minimum pressure:	31.5 GPM *(119.3 l/min)*	
iii)Pump delivery rate at maximum hydraulic power:	29.8 GPM *(112.7 l/min)*	
Delivery pressure:	2320 psi *(160 bar)*	
Power:	40.3 HP *(30.1 kW)*	



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	*mm*
A	27.6	*700*
B	15.7	*400*
C	22.0	*560*
D	20.7	*525*
E	12.4	*315*
F	8.5	*215*
G	32.5	*825*
H	3.5	*90*
I	17.9	*455*
J	24.0	*610*
K	21.3	*540*
L	45.5	*1155*
M	23.2	*590*
N	39.8	*1010*
O	9.1	*230*
P	51.0	*1295*
Q	39.5	*1003*
R	34.6	*880*

RECOMMENDED CITATION FORMAT:

NTTL.(2022). OECD tractor test 3217 for John Deere 6110M CommandQuad Diesel. Lincoln, NE:Nebraska Tractor Test Laboratory. Retrieved from http://tractortestlab.unl.edu