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Nebraska Summary: S630 John Deere 6430

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SUMMARY OF OECD TEST 2418—NEBRASKA SUMMARY 630
JOHN DEERE 6430 AUTOQUAD 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-1042 rpm)					
97.0 *(72.3)*	2300	6.00 *(22.73)*	0.433 *(0.263)*	16.15 *(3.18)*	
Standard Power Take-off Speed (1000 rpm)					
104.9 *(78.2)*	2208	6.25 *(23.66)*	0.416 *(0.253)*	16.78 *(3.31)*	
Maximum Power (1 hour)					
112.5 *(83.9)*	1903	6.47 *(24.48)*	0.402 *(0.244)*	17.40 *(3.43)*	
VARYING POWER AND FUEL CONSUMPTION					
97.0 *(72.3)*	2300	6.00 *(22.73)*	0.432 *(0.263)*	16.15 *(3.18)*	Air temperature
84.6 *(63.1)*	2364	5.60 *(21.21)*	0.464 *(0.282)*	15.10 *(2.97)*	66°F *(19°C)*
64.2 *(47.9)*	2393	4.68 *(17.73)*	0.510 *(0.310)*	13.71 *(2.70)*	Relative humidity
43.5 *(32.4)*	2428	3.92 *(14.85)*	0.632 *(0.384)*	11.07 *(2.18)*	35%
22.0 *(16.4)*	2457	2.85 *(10.78)*	0.905 *(0.551)*	7.72 *(1.52)*	Barometer
-- --	2458	2.28 *(8.63)*	-- --	-- --	29.5" Hg *(100.0 kPa)*

Maximum Torque - 327 lb.-ft. *(444 Nm)* at 1499 rpm
Maximum Torque rise - 48.0%
Torque rise at 1800 engine rpm - 46%

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)*	Temp.°F *(°C)* cool-ing	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—10th (C2) Gear									
88.2 *(65.8)*	7105 *(31.61)*	4.66 *(7.49)*	2301	4.9	0.487 *(0.297)*	14.34 *(2.83)*	181 *(83)*	57 *(14)*	29.8 *(100.8)*
75% of Pull at Maximum Power—10th (C2) Gear									
68.9 *(51.4)*	5310 *(23.61)*	4.87 *(7.84)*	2386	4.2	0.545 *(0.332)*	12.83 *(2.53)*	178 *(81)*	59 *(15)*	29.7 *(100.7)*
50% of Pull at Maximum Power—10th (C2) Gear									
46.9 *(34.9)*	3510 *(15.61)*	5.01 *(8.06)*	2419	2.7	0.652 *(0.396)*	10.73 *(2.11)*	174 *(79)*	59 *(15)*	29.7 *(100.7)*
75% of Pull at Reduced Engine Speed—11th (C3) Gear									
68.7 *(51.2)*	5300 *(23.58)*	4.86 *(7.82)*	1980	3.9	0.488 *(0.297)*	14.31 *(2.82)*	180 *(82)*	59 *(15)*	29.7 *(100.7)*
50% of Pull at Reduced Engine Speed—11th (C3) Gear									
47.0 *(35.1)*	3515 *(15.63)*	5.01 *(8.07)*	2022	2.9	0.556 *(0.338)*	12.59 *(2.48)*	172 *(78)*	63 *(17)*	29.7 *(100.7)*

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

Dates of tests: March - April, 2007

Manufacturer: Deere & Company, Moline, Illinois, USA

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F *(15°/15°C)*** 0.840 **Fuel weight** 6.99 lbs/gal *(0.838 kg/l)* **Oil SAE** 10W-40 **API service classification** CF-4 **Transmission and hydraulic lubricant** John Deere Hy-Gard II fluid **Front axle lubricant** SAE 80W90.

ENGINE: Make John Deere Diesel **Type** four cylinder vertical with turbocharger and intercooler **Serial No.** L006439 **Crankshaft** lengthwise **Rated engine speed** 2300 **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 **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 **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist **Serial No.** 520404 **Tread width** rear 59.9" *(1522 mm)* to 79.3" *(2014 mm)* front 60.2" *(1528 mm)* to 79.8" *(2028 mm)* **Wheel base** 94.5" *(2400 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 0.99 *(1.59)* second 1.19 *(1.91)* third 1.42 *(2.29)* fourth 1.74 *(2.80)* fifth 2.41 *(3.88)* sixth 2.90 *(4.67)* seventh 3.47 *(5.59)* eighth 3.93 *(6.32)* ninth 4.25 *(6.84)* tenth 4.73 *(7.61)* eleventh 5.66 *(9.11)* twelfth 6.44 *(10.37)* thirteenth 6.93 *(11.16)* fourteenth 7.75 *(12.48)* fifteenth 9.29 *(14.95)* sixteenth 10.47 *(16.85)* seventeenth 11.38 *(18.31)* eighteenth 12.60 *(20.28)* nineteenth 14.14 *(22.75)* twentieth 15.09 *(24.29)* twenty-first 17.01 *(27.38)* twenty-second 18.49 *(29.76)* twenty-third 20.38 *(32.79)* twenty-fourth 24.96 *(40.17)* reverse 1.03 *(1.66)*, 1.24 *(1.99)*, 1.49 *(2.39)*, 1.82 *(2.93)*, 2.52 *(4.05)*, 3.03 *(4.87)*, 3.62 *(5.83)*, 4.10 *(6.60)*, 4.44 *(7.14)*, 4.93 *(7.94)*, 5.91 *(9.51)*, 6.72 *(10.82)*, 7.24 *(11.65)*, 8.10 *(13.03)*, 9.69 *(15.60)*, 10.93 *(17.59)*, 11.88 *(19.12)*, 13.15 *(21.17)*, 14.76 *(23.75)*, 15.76 *(25.36)*, 17.77 *(28.59)*, 19.30 *(31.06)*, 21.27 *(34.23)*, 26.05 *(41.93)* **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 2143 engine rpm or 1000 rpm at 2208 engine rpm. **Unladen tractor mass** 10845 lb *(4920 kg)*

DRAWBAR PERFORMANCE
(Unballasted–Front Drive Engaged)
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)*
				9th (B4) Gear					
89.8 *(67.0)*	10775 *(47.93)*	3.13 *(5.04)*	1928	15.1	0.508 *(0.309)*	13.76 *(2.71)*	181 *(83)*	64 *(18)*	29.7 *(100.6)*
				10th (C2) Gear					
97.9 *(73.0)*	10025 *(44.59)*	3.66 *(5.89)*	1899	9.6	0.465 *(0.283)*	15.02 *(2.96)*	181 *(83)*	50 *(10)*	29.9 *(101.4)*
				11th (C3) Gear					
101.9 *(76.0)*	8450 *(37.59)*	4.52 *(7.28)*	1901	6.6	0.453 *(0.277)*	15.43 *(3.04)*	185 *(85)*	50 *(10)*	29.9 *(101.4)*
				12th (D1) Gear					
101.5 *(75.7)*	7295 *(32.45)*	5.22 *(8.40)*	1900	5.1	0.454 *(0.277)*	15.41 *(3.04)*	185 *(85)*	50 *(10)*	29.9 *(101.2)*
				13th (C4) Gear					
100.7 *(75.1)*	6625 *(29.47)*	5.70 *(9.17)*	1901	4.7	0.453 *(0.276)*	15.43 *(3.04)*	185 *(85)*	50 *(10)*	29.9 *(101.2)*
				14th (D2) Gear					
101.2 *(75.4)*	5960 *(26.51)*	6.37 *(10.25)*	1903	4.1	0.456 *(0.278)*	15.32 *(3.02)*	185 *(85)*	50 *(10)*	29.9 *(101.2)*
				15th (D3) Gear					
102.6 *(76.5)*	5010 *(22.28)*	7.68 *(12.36)*	1902	3.4	0.452 *(0.275)*	15.48 *(3.05)*	183 *(84)*	50 *(10)*	29.9 *(101.1)*
				16th (E1) Gear					
99.5 *(74.2)*	4290 *(19.08)*	8.70 *(14.00)*	1903	3.1	0.462 *(0.281)*	15.13 *(2.98)*	185 *(85)*	50 *(10)*	29.9 *(101.1)*

TRACTOR SOUND LEVEL WITH CAB (IVT transmission)	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged dB(A)
At no load at 4.6 mph *(7.5 km/h)* (engine 1200 rpm)	67.9	67.7
At no load at 4.6 mph *(7.5 km/h)* (engine 2460 rpm)	72.0	71.7
Transport	--	75.7
Bystander	--	84.4

TRACTOR SOUND LEVEL WITH CAB (AutoQuad transmission)	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged dB(A)
At no load in 10th(C2) Gear	71.8	71.4
Maximum Sound level	73.2	72.2
Bystander	--	--

TIRES AND WEIGHT

	Tested Without Ballast
Rear Tires–No., size, ply & psi *(kPa)*	Two 460/85R38;**; 12 *(80)*
Front Tires–No., size, ply & psi *(kPa)*	Two 420/85R24;**; 12 *(80)*
Height of Drawbar	20.5 in *(520 mm)*
Static Weight with operator– Rear	6825 lb *(3095 kg)*
– Front	4190 lb *(1900 kg)*
– Total	11015 lb *(4995 kg)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's claim of 71.0 dB(A) cab sound level. The performance results on this summary were taken from OECD tests conducted under the Code II Test Code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2418**, Nebraska Summary 630, February 15, 2009.

Roger M. Hoy
Director

M.F. Kocher
V.I. Adamchuk
J.A. Smith
Board of Tractor Test Engineers

This vehicle is equipped with an electronically controlled engine Power management system that monitors and boosts engine power output in certain circumstances. This is achieved by electronically changing the characteristics of the engine power-speed curve. The engine Power management function ("boosted" power level) becomes active in the higher transmission gears (16th and above) and for road transport applications. The system is also activated when power transfer through the PTO exceeds a preset level (and forward speed exceeds 0.5 km/h), for mobile PTO driven implement applications. An overide system is provided to enable PTO operations at the "boosted" power level while the vehicle is stationary for test purposes. The results of of this PTO output test are presented below.

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—1042 rpm)					
110.0 *(82.0)*	2300	6.64 *(25.12)*	0.422 *(0.257)*	16.56 *(3.26)*	
Standard Power Take-off Speed - (1000 rpm)					
114.1 *(85.1)*	2208	6.70 *(25.36)*	0.410 *(0.250)*	17.04 *(3.36)*	
Maximum Power (1 hour)					
116.7 *(87.0)*	2099	6.76 *(25.57)*	0.405 *(0.246)*	17.27 *(3.40)*	
VARYING POWER AND FUEL CONSUMPTION					
110.0 *(82.0)*	2300	6.64 *(25.12)*	0.422 *(0.257)*	16.56 *(3.26)*	Air temperature
96.6 *(72.0)*	2373	6.15 *(23.27)*	0.446 *(0.271)*	15.70 *(3.09)*	66°F *(19°C)*
73.2 *(54.6)*	2406	5.24 *(19.84)*	0.500 *(0.304)*	13.97 *(2.75)*	Relative humidity
49.5 *(36.9)*	2437	4.27 *(16.15)*	0.604 *(0.367)*	11.58 *(2.28)*	35%
24.9 *(18.6)*	2457	2.98 *(11.28)*	0.835 *(0.508)*	8.37 *(1.65)*	Barometer
-- --	2459	2.34 *(8.87)*	-- --	-- --	29.5"Hg *(100.0 kPa)*

Maximum Torque 326 lb.-ft. *(442 Nm)* at 1501 rpm
Maximum Torque rise - 29.6%
Torque rise at 1800 rpm - 29%

HYDRAULIC PERFORMANCE

CATEGORY: II
Quick Attach: none
OECD Static test

Maximum force exerted through whole range:	5110 lbs *(22.7 kN)* (75 mm cylinders)	
	6398 lbs *(28.5 kN)* (80 mm cylinders	
pump size:	17.5 GPM *(66.3 l/min)*	29.0 GPM *(110.0 l/min)*
i) Sustained pressure of the open relief valve:	3005 psi *(207 bar)*	3020 psi *(208 bar)*
ii) Pump delivery rate at minimum pressure:	18.9 GPM *(71.7 l/min)*	33.3 GPM *(125.9 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	18.3 GPM *(69.2 l/min)*	29.0 GPM *(109.7 l/min)*
Delivery pressure:	2560 psi *(176 bar)*	2715 psi *(187 bar)*
Power:	27.3 HP *(20.4 kW)*	46.9 HP *(35.0 kW)*

THREE POINT HITCH PERFORMANCE(SAE static test)

Observed maximum pressure psi. *(bar)*	2990 *(206)*
Location:	lift cylinder
Hydraulic oil temperature: °F *(°C)*	149 *(65)*
Location:	hydraulic valve
Category:	II
Quick attach:	none

System pressure 2545 psi *(176 Bar)* - with lift cylinders 2 x 75 mm

Hitch point distance to ground level in. *(mm)*	7.9 *(201)*	14.9 *(379)*	21.9 *(556)*	28.9 *(735)*	36.1 *(917)*
Lift force on frame lb	6676	7154	7246	7032	6355
" " " " " " *(kN)*	*(29.7)*	*(31.8)*	*(32.2)*	*(31.3)*	*(28.3)*

System pressure - 2480 psi *(171 Bar)* - with lift cylinders 2 x 80 mm

Hitch point distance to ground level in. *(mm)*	8.0 *(203)*	16.4 *(417)*	24.0 *(610)*	31.9 *(810)*	40.0 *(1016)*
Lift force on frame lb	15683	9566	9428	9212	8322
" " " " " " *(kN)*	*(69.8)*	*(42.6)*	*(41.9)*	*(41.0)*	*(37.0)*

	OECD test		SAE test	
	inch	*mm*	inch	*mm*
A	25.8	*655*	24.4	*620*
B	12.6	*320*	12.6	*320*
C	20.0	*507*	20.0	*507*
D	23.9	*475*	23.9	*475*
E	9.7	*245*	9.7	*245*
F	8.7	*220*	8.7	*220*
G	32.3	*820*	32.3	*820*
H	4.9	*125*	4.9	*125*
I	17.6	*448*	17.6	*448*
J	23.6	*600*	23.6	*600*
K	19.8	*502*	19.8	*502*
L	42.3	*1076*	42.3	*1076*
M	21.5	*546*	21.5	*546*
N	37.2	*945*	37.2	*945*
O	7.9	*200*	7.9	*200*
P	47.6	*1210*	42.6	*1083*
Q	34.6	*880*	34.6	*880*
R	31.3	*795*	31.3	*795*

