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NEBRASKA OECD TRACTOR TEST 1889–SUMMARY 556
JOHN DEERE 8430T DIESEL
16 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—1048 rpm)					
258.54 *(192.79)*	2100	14.42 *(54.58)*	0.390 *(0.238)*	17.93 *(3.53)*	
Standard Power Take-off Speed(1000 rpm)					
283.84 *(211.66)*	2004	15.34 *(58.07)*	0.378 *(0.230)*	18.50 *(3.64)*	
Maximum Power (1 hour)					
298.22 *(222.38)*	1800	15.79 *(59.77)*	0.371 *(0.225)*	18.89 *(3.72)*	
VARYING POWER AND FUEL CONSUMPTION					
258.54 *(192.79)*	2100	14.42 *(54.58)*	0.390 *(0.238)*	17.93 *(3.53)*	Air temperature
225.10 *(167.85)*	2154	12.98 *(49.14)*	0.404 *(0.246)*	17.34 *(3.42)*	76°F *(24°C)*
169.85 *(126.66)*	2165	10.61 *(40.17)*	0.437 *(0.266)*	16.01 *(3.15)*	Relative humidity
113.47 *(84.61)*	2176	8.13 *(30.76)*	0.501 *(0.305)*	13.96 *(2.75)*	41%
57.23 *(42.68)*	2185	6.04 *(22.87)*	0.739 *(0.450)*	9.47 *(1.87)*	Barometer
1.36 *(1.01)*	2194	4.04 *(15.30)*	20.883 *(12.703)*	0.34 *(0.07)*	29.11" Hg *(98.58 kPa)*

Maximum torque - 960 lb.-ft. *(1302 Nm)* at 1500 rpm
Maximum torque rise - 48.4%
Torque rise at 1699 engine rpm - 42%

DRAWBAR PERFORMANCE (Unballasted)
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)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—9th Gear									
219.81 *(163.91)*	19312 *(85.90)*	4.27 *(6.87)*	2102	3.06	0.456 *(0.278)*	15.34 *(3.02)*	190 *(88)*	47 *(8)*	28.70 *(97.19)*
75% of Pull at Maximum Power—9th Gear									
171.64 *(127.99)*	14480 *(64.41)*	4.44 *(7.15)*	2156	1.57	0.493 *(0.300)*	14.22 *(2.80)*	184 *(84)*	48 *(9)*	28.85 *(97.70)*
50% of Pull at Maximum Power—9th Gear									
116.23 *(86.67)*	9667 *(43.00)*	4.51 *(7.26)*	2167	0.66	0.574 *(0.349)*	12.21 *(2.40)*	179 *(82)*	49 *(9)*	28.85 *(97.70)*
75% of Pull at Reduced Engine Speed—11th Gear									
171.73 *(128.06)*	14455 *(64.30)*	4.45 *(7.17)*	1612	1.51	0.448 *(0.273)*	15.63 *(3.08)*	196 *(91)*	51 *(11)*	28.85 *(97.70)*
50% of Pull at Reduced Engine Speed—11th Gear									
116.26 *(86.70)*	9620 *(42.79)*	4.53 *(7.29)*	1627	0.73	0.515 *(0.313)*	13.60 *(2.68)*	183 *(84)*	50 *(10)*	28.85 *(97.70)*

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

Dates of tests: October 4 - November 1, 2006

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

FUEL, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F *(15°/15°C)*** 0.8409 **Fuel weight** 7.002 lbs/gal *(0.839 kg/l)* **Oil SAE** 15W-40 **API service classification** CI-4 **Transmission and hydraulic lubricant** John Deere Hy-Gard fluid **Total time engine was operated:** 26.5 hours

ENGINE: Make John Deere Diesel **Type** six cylinder vertical with turbocharger and air to air aftercooler **Serial No.***RG6090L005734* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.661" x 5.354"*(118.4 mm x 136.0 mm)* **Compression ratio** 16.3 to 1 **Displacement** 548 cu in *(8984 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 **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 97.0 - 105.2 lb/h *(44.0 - 47.7 kg/h)* **High idle:** 2175 - 2225 rpm **Turbo boost:** nominal 28.3 - 32.6 psi *(195 - 225 kPa)* as measured 30.4 psi *(209 kPa)*

CHASSIS: Type tracklayer-rubber tracked **Serial No.***RW8430T901180* **Track width** 91.9" *(2335 mm)* to 119.5" *(3035 mm)* **Length of track on ground** 89.0" *(2261 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled power shift **Nominal travel speeds mph *(km/h)*** first 0.91 *(1.47)* second 1.22 *(1.96)* third 1.62 *(2.61)* fourth 2.17 *(3.50)* fifth 2.44 *(3.93)* sixth 2.81 *(4.53)* seventh 3.27 *(5.26)* eighth 3.77 *(6.06)* ninth 4.35 *(7.00)* tenth 5.01 *(8.07)* eleventh 5.83 *(9.38)* twelfth 6.72 *(10.81)* thirteenth 7.92 *(12.74)* fourteenth 10.60 *(17.06)* fifteenth 14.12 *(22.72)* sixteenth 18.91 *(30.43)* reverse 0.85 *(1.37)*, 2.28 *(3.67)*, 2.88 *(4.64)*, 5.29 *(8.51)* @1500 engine rpm **Clutch** wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc hydraulically actuated by foot pedal **Steering** electro-hydraulic differential steering controlled by steering wheel **Power take-off** 1000 rpm at 2003 engine rpm **Unladen tractor mass** 29615 lb *(13433 kg)*

DRAWBAR PERFORMANCE
Unballasted - 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)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					6th Gear				
183.59	27696	2.49	2140	14.22	0.535	13.09	184	45	28.85
(136.90)	*(123.20)*	*(4.00)*			*(0.325)*	*(2.58)*	*(85)*	*(7)*	*(97.70)*
					7th Gear				
209.09	25800	3.04	2101	8.03	0.479	14.62	187	46	28.85
(155.92)	*(114.77)*	*(4.89)*			*(0.291)*	*(2.88)*	*(86)*	*(8)*	*(97.70)*
					8th Gear				
217.82	22446	3.64	2100	4.48	0.461	15.17	189	45	28.71
(162.43)	*(99.85)*	*(5.86)*			*(0.281)*	*(2.99)*	*(87)*	*(7)*	*(97.22)*
					9th Gear				
219.81	19312	4.27	2102	3.06	0.456	15.34	190	47	28.70
(163.91)	*(85.90)*	*(6.87)*			*(0.278)*	*(3.02)*	*(88)*	*(8)*	*(97.19)*
					10th Gear				
221.85	16755	4.97	2099	2.02	0.451	15.54	190	47	28.70
(165.44)	*(74.53)*	*(7.99)*			*(0.274)*	*(3.06)*	*(88)*	*(8)*	*(97.19)*
					11th Gear				
220.82	14271	5.80	2097	1.35	0.454	15.42	194	49	28.69
(164.67)	*(63.48)*	*(9.34)*			*(0.276)*	*(3.04)*	*(90)*	*(9)*	*(97.16)*
					12th Gear				
218.86	12196	6.73	2100	0.92	0.457	15.33	194	49	28.69
(163.21)	*(54.25)*	*(10.83)*			*(0.278)*	*(3.02)*	*(90)*	*(9)*	*(97.16)*
					13th Gear				
217.40	10261	7.95	2098	0.70	0.463	15.12	199	49	28.69
(162.11)	*(45.64)*	*(12.79)*			*(0.282)*	*(2.98)*	*(93)*	*(9)*	*(97.16)*

TRACTOR SOUND LEVEL WITH CAB	dB(A)
At no load in 9th gear	72.5
Transport speed - no load - 16th gear	74.7
Bystander in 16th gear	87.0

TIRES, BALLAST AND WEIGHT	With Ballast	Without Ballast
Track width	30.0 in *(760 mm)*	30.0 in *(760 mm)*
Ballast - Cast iron(front)	2710 lb *(1229 kg)*	None
Height of Drawbar	19.0 in *(485 mm)*	18.5 in *(470 mm)*
Static Weight with operator	31500 lb(*14288 kg)*	28790 lb(*13059 kg)*

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. For the maximum power tests the fuel temperature at the injection pump inlet was maintained at 124°F*(51°C)*. The performance figures on this summary were taken from a test conducted under the OECD Code II test procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1889**, Nebraska Summary 556, December 8, 2006.

Roger M. Hoy
Director

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

DRAWBAR PERFORMANCE
Unballasted - 1800 RPM
MAXIMUM POWER IN SELECTED GEARS

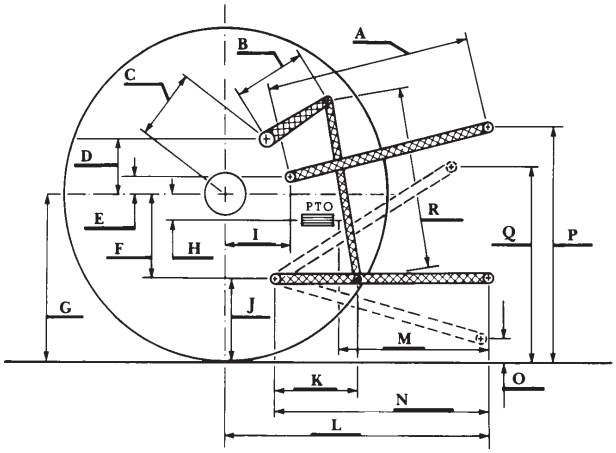
Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					6th Gear				
186.64 *(139.18)*	28138 *(125.16)*	2.49 *(4.00)*	2131	13.78	0.527 *(0.321)*	13.28 *(2.62)*	183 *(84)*	45 *(7)*	28.85 *(97.70)*
					7th Gear				
209.61 *(156.31)*	26483 *(117.80)*	2.97 *(4.78)*	2080	9.30	0.483 *(0.294)*	14.49 *(2.85)*	186 *(86)*	46 *(8)*	28.85 *(97.70)*
					8th Gear				
230.13 *(171.61)*	25540 *(113.61)*	3.38 *(5.44)*	2013	7.46	0.461 *(0.280)*	15.20 *(2.99)*	196 *(91)*	46 *(8)*	28.70 *(97.19)*
					9th Gear				
243.33 *(181.45)*	24584 *(109.36)*	3.71 *(5.97)*	1899	6.69	0.450 *(0.274)*	15.54 *(3.06)*	206 *(97)*	47 *(8)*	28.70 *(97.19)*
					10th Gear				
252.27 *(188.12)*	22921 *(101.96)*	4.13 *(6.64)*	1801	5.13	0.440 *(0.268)*	15.92 *(3.14)*	204 *(95)*	48 *(9)*	28.70 *(97.19)*
					11th Gear				
256.29 *(191.12)*	19658 *(87.44)*	4.89 *(7.87)*	1800	3.19	0.430 *(0.262)*	16.27 *(3.21)*	202 *(94)*	49 *(9)*	28.70 *(97.19)*
					12th Gear				
260.60 *(194.33)*	17161 *(76.34)*	5.69 *(9.16)*	1799	2.14	0.424 *(0.258)*	16.52 *(3.25)*	206 *(97)*	49 *(9)*	28.69 *(97.16)*
					13th Gear				
260.46 *(194.22)*	14404 *(64.07)*	6.78 *(10.91)*	1804	1.40	0.424 *(0.258)*	16.51 *(3.25)*	201 *(94)*	49 *(9)*	28.69 *(97.16)*
					14th Gear				
255.28 *(190.36)*	10458 *(46.52)*	9.15 *(14.73)*	1806	0.72	0.434 *(0.264)*	16.13 *(3.18)*	202 *(94)*	49 *(9)*	28.68 *(97.12)*

DRAWBAR PERFORMANCE
Ballasted - 1800 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)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					5th Gear				
186.34 *(138.96)*	32192 *(143.20)*	2.17 *(3.49)*	2145	13.99	0.521 *(0.317)*	13.44 *(2.65)*	182 *(83)*	40 *(4)*	29.02 *(98.27)*
					6th Gear				
207.37 *(154.63)*	31177 *(138.68)*	2.49 *(4.01)*	2073	11.32	0.489 *(0.297)*	14.33 *(2.82)*	187 *(86)*	40 *(4)*	29.02 *(98.27)*
					7th Gear				
229.83 *(171.39)*	30298 *(134.77)*	2.84 *(4.58)*	1998	9.67	0.464 *(0.282)*	15.09 *(2.97)*	191 *(88)*	40 *(4)*	29.02 *(98.27)*
					8th Gear				
244.80 *(182.55)*	29140 *(129.62)*	3.15 *(5.07)*	1883	8.45	0.449 *(0.273)*	15.60 *(3.07)*	201 *(94)*	40 *(4)*	29.02 *(98.27)*
					9th Gear				
253.74 *(189.22)*	26727 *(118.89)*	3.56 *(5.73)*	1801	5.81	0.436 *(0.265)*	16.06 *(3.16)*	204 *(96)*	40 *(4)*	29.02 *(98.27)*
					10th Gear				
259.65 *(193.62)*	23238 *(103.37)*	4.19 *(6.74)*	1801	3.89	0.426 *(0.259)*	16.43 *(3.24)*	204 *(95)*	41 *(5)*	29.01 *(98.24)*
					11th Gear				
259.66 *(193.63)*	19775 *(87.96)*	4.92 *(7.92)*	1799	2.64	0.425 *(0.259)*	16.47 *(3.25)*	203 *(95)*	41 *(5)*	29.01 *(98.24)*
					12th Gear				
260.81 *(194.49)*	17079 *(75.97)*	5.73 *(9.22)*	1801	1.92	0.421 *(0.256)*	16.63 *(3.28)*	201 *(94)*	41 *(5)*	29.01 *(98.24)*
					13th Gear				
258.78 *(192.97)*	14309 *(63.65)*	6.78 *(10.91)*	1799	1.32	0.427 *(0.260)*	16.41 *(3.23)*	202 *(94)*	41 *(5)*	29.01 *(98.24)*
					14th Gear				
250.81 *(187.03)*	10279 *(45.72)*	9.15 *(14.73)*	1804	0.89	0.442 *(0.269)*	15.85 *(3.12)*	204 *(95)*	42 *(6)*	29.00 *(98.20)*

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: III		
Quick Attach: yes		
Maximum force exerted through whole range:	16830 lbs *(74.9 kN)*	
i) Opening pressure of relief valve:	NA	
	45 cc pump	57 cc pump
Sustained pressure at compensator cutoff:	3012 psi *(208 bar)*	3000 psi *(207 bar)*
	three outlet sets combined	
ii) Pump delivery rate at minimum pressure and rated engine speed:	34.9 GPM *(132.1 l/min)*	43.0 GPM *(162.8 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	33.0 GPM *(124.9 l/min)*	42.0 GPM *(159.0 l/min)*
Delivery pressure:	2752 psi *(190 bar)*	2596 psi *(179 bar)*
Power:	53.0 HP *(39.5 kW)*	63.6 HP *(47.4 kW)*
	single outlet set	
ii) Pump delivery rate at minimum pressure and rated engine speed:	34.4 GPM *(130.2 l/min)*	39.0 GPM *(147.6 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	32.9 GPM *(124.5 l/min)*	34.3 GPM *(129.8 l/min)*
Delivery pressure:	2116 psi *(146 bar)*	2065 psi *(142 bar)*
Power:	40.6 HP *(30.0 kW)*	41.3 HP *(30.8 kW)*



HITCH DIMENSIONS AS TESTED - NO LOAD

	inch	*mm*
A	28.8	*732*
B	20.5	*520*
C	20.9	*532*
D	18.9	*480*
E	7.3	*185*
F	14.4	*365*
G	34.7	*880*
H	3.1	*80*
I	20.7	*525*
J	20.3	*515*
K	28.7	*730*
L	50.0	*1270*
*L'	54.1	*1375*
M	27.1	*689*
N	42.6	*1081*
O	9.0	*230*
P	42.3	*1074*
Q	39.9	*1013*
R	42.7	*1085*

*L' to Quick Attach ends

JOHN DEERE 8430T DIESEL

Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln