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CODE 2
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NEBRASKA TRACTOR TEST LABORATORY
DEPARTMENT OF BIOLOGICAL SYSTEMS ENGINEERING
INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES
UNIVERSITY OF NEBRASKA - EAST CAMPUS
LINCOLN, NEBRASKA 68583-0832, USA

REPORT ON TEST IN ACCORDANCE WITH OECD STANDARD CODE 2 FOR THE OFFICIAL TESTING OF AGRICULTURAL TRACTORS



John Deere 7930 AutoQuad Plus
Mechanical Front Wheel Drive (MFWD)

MANUFACTURED BY:	**John Deere Tractor Works** **3500 East Donald Street** **Waterloo, IA 50704-0270**
NEBRASKA TEST NO.	**1896**
TEST DATES:	**March – April, 2007**

This test report provides the results of the tests conducted in accordance with the OECD Standard Test Code for the Official Testing of Agricultural Tractor Performance - C(87)53 Final, Code 2.

This report has been approved by the OECD Coordinating Centre in Paris on 16 May 2008 for the John Deere 7930 AutoQuad Plus, Mechanical Front Wheel Drive (MFWD) tractor with OECD Number 2/2 408.

No reproduction of this report or any part of it can be made without prior approval by the Nebraska Tractor Test Laboratory, Lincoln, Nebraska USA.

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Date: MAY 21 2008

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SPECIMEN TEST REPORT

Note: Units shown below, which appear in ISO 1000:1992, shall be stated and followed by national units in parentheses, if necessary.

C[1]		- Tractors manufacturer's name and address:	John Deere Tractor Works 3500 East Donald St. P.O. Box 270 Waterloo, IA 50704-0270
D[1]		- Location of tractor assembly:	Same
D		- Submitted for test by:	The Manufacturer
C		- Selected for test by:	The Manufacturer in agreement with the Nebraska Tractor Test Laboratory
D		- Place of running-in:	John Deere Product Engineering Center, Waterloo, Iowa
D		- Duration of running-in (hours):	79 hours
C		- Location of test:	Nebraska Tractor Test Laboratory, Lincoln, Nebraska U.S.A.
	1.	**SPECIFICATIONS OF TRACTOR**	
	1.1	**Identification**	
C	1.1.1	- Make of tractor (*):	John Deere
C		- Model (trade name):	7930
C		- Type: • *2 WD or 4 WD; rubber or steel tracks (if applicable); articulated 4 WD or articulated 4WD with twin (dual) wheels (if applicable)* (*) *Possibly different from tractor manufacturer's name*	4WD
	1.1.2	Numbers	
D		- 1st Serial No. or prototype:	CONFIDENTIAL
C		- Serial No.:	*RW7930A002240*
	1.1.3	Other specifications (if applicable)	
D		- Model(s) for other countries:	N/A
C		- Transmission type or gears x ranges:	40K AutoQuad PLUS (AQ) (4 gears x 5 ranges)
C		- Speed version: • *30, 40, or 50 km/h*	40 km/h
D		- Manufacturer identification or Technical type number:	N/A

1. The information opposite each item shall be validated by the Testing Station. An item marked "C" indicates to the test report user that the information declared by the manufacturer has been checked; an item marked "D" that the manufacturer's declaration has been endorsed. For example, the make of the supercharging device is declared by the manufacturer and checked "C" as consistent with the tractor by the testing station, while the pressure of the supercharging device is simply declared "D" by the manufacturer. Testing station's markings show compliance with article 8 of Appendix 3 to the Decision.

	1.2	Engine	
C		- Make / Model / Type:	John Deere / PE6068HRW65 / Diesel; 4-stroke; turbocharged, direct injection, air to air intercooled
C		- Serial No.:	*PE6068L004262*
	1.2.1	Cylinders	
C		- Number / disposition:	6 / inline, vertical
D		- Bore / Stroke (mm / mm):	106.5 x 127
D		- Capacity (cm^3):	6784
D		- Compression ratio:	17.0 : 1
D		- Arrangement of valves:	Overhead; 4 valves per cylinder
D		- Cylinder liners (wet or dry):	Wet; replaceable
	1.2.2	Supercharging	
C		- Make / Model / Type:	Borg Warner / RE526247 / Variable Geometry exhaust gas driven
D		- Pressure (MPa):	0.153
	1.2.3	Fuel System	
C		- Fuel feed system:	Electric Transfer Pump
		- Make / Model / Type of fuel filter(s)	
C		. Primary:	Fleetguard / RE529643 / 30 micron multilayer water separating
C		. Secondary:	Fleetguard / RE522878 / 2 micron multilayer water separating
D		- Capacity of fuel tank (dm^3):	392 on tested tractor; 358 w/RH door
C		- Make / Model / Type of injection pump:	Denso / RE527528 / HPCR; electronic
C		- Serial No.:	05H 00837
		- Manufacturer's production setting of injection pump	
C		. Flow rate (rated engine speed and full load) (dm^3/h):	39.0 +/- 2
D		. Timing:	Variable
D		- Make / Model / Type of injectors:	Denso / RE527248 / HPCR Injection
D		- Injection pressure (MPa):	115
C		- Make / Model / Type of carburetor:	N/A
	1.2.4	Governor	
C		- Make / Model / Type:	John Deere / FOCUS / Electronic Control
C		- Governed range of engine speed from ____ to ____ (min^{-1} (rev/min)):	900 to 2200
C		- Rated engine speed (min^{-1} (rev/min)):	2100

	1.2.5	Air Cleaner	
		- Pre-cleaner	
C		. Make / Model / Type:	Donaldson / RE196946 / Stratotube precleaner with fan aspirator
C		. Location of air intake:	Under hood, front of tractor
		- Main cleaner	
		. Make / Model / Type	
C		- Primary:	Donaldson / RE196945 / PowerCore™ pleated paper
C		- Secondary:	Donaldson / RE181915 / PowerCore™ pleated paper
C		. Location of air intake (in case of no pre-cleaner):	Under hood, in front of cab
C		- Maintenance indicator:	Console mounted warning light and audible signal
	1.2.6	Lubrication system	
D		- Type of feed pump:	Full pressure, positive displacement
C		- Type of filter(s):	Full Flow
C		- Number of filter(s):	1 spin on
	1.2.7	Cooling system	
C		- Type of coolant:	Liquid
D		- Type of pump:	Centrifugal, belt driven
		- Specification of fan or blower	
C		. Number of fan blades:	9
C		. Fan diameter (mm):	660.4
D		- Coolant capacity (dm^3):	29.3
C		- Type of temperature control:	Two thermostats and variable speed fan
D		- Superpressure system (kPa):	70 +/- 2
	1.2.8	Starting system	
C		- Make / Model / Type:	Denso / RE501294 / Solenoid engaged
D		- Starter motor power rating (kW):	4.0
C		- Cold starting aid:	Glow plug thermal assist
C		- Safety device:	Electrical lockout on gearshift lever
	1.2.9	Electrical system	
C		- Voltage (V):	12
		- Generator	
C		. Make / Model / Type:	Bosch/ RE210793 / Belt driven alternator with built-in regulator
D		. Power (kW):	2.4
		- Battery of accumulators	
C		. Number:	Two; 925 CCA, RC 180
D		. Rating (Ah at ____ hours):	154 Ah at 20 hours

	1.2.10	Exhaust system	
C		- Make / Model / Type:	Nelson / RE200848 / Expansion Chamber
C		- Location:	Vertical muffler, right front corner of cab
	1.3	Transmission	
	1.3.1	Clutch (travel alone)	
D		- Make / Model / Type:	John Deere / Multiple plate / Oil cooled
D		- Number of plates:	5 forward / 5 reverse
D		- Diameter of plates (mm):	225 forward; 295 reverse
C		- Method of operation:	Electro-Hydraulic; pedal actuated
	1.3.2	Gear box	
D		- Make / Model / Type:	John Deere / 40K AutoQuad Plus / Mechanical countershaft and planetary deisgn
		- Description:	5 manually synchronized ranges and a 4 speed planetary gear set with multiple wet disc clutches and brake units.

	Forward	Reverse
Number of ranges	5	5
Number of gears	4	4
Total of arrangements	20	20

D	- Available options:	30K, 16 speed PowerQuad Plus 40K, 20 speed AutoQuad Plus 50K, 20 speed AutoQuad Plus (specialty market) 40K, Infinitely Variable Transmission 50K, Infinitely Variable Transmission (specialty market)
	1.3.3	Rear axle and final drives
D	- Make / Model / Type:	John Deere / AR231827 / Spiral bevel with pinion differential and inboard planetary reduction
	- Differential lock	
D	. Type:	Electo-hydraulic, wet multi-plate
C	. Method of engagement:	Foot operated switch
C	. Method of disengagement:	Self-disengaging with brake pedal operation
	1.3.4	Front axle and final drives
D	- Make / Model / Type:	John Deere / AR231264 / Spiral bevel and pinion, differential and outboard planetary reduction
	- Differential lock	
D	. Type:	Limited slip
C	. Method of engagement:	Self-engaging
C	. Method of disengagement:	Self-disengaging

1.3.5 Total ratios and traveling speeds

Gear No.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal traveling speed (*) at rated engine of 2100 min^{-1} (rev / min) km/h
1	A1	285.574	2.51
2	A2	237.165	3.02
3	A3	198.016	3.62
4	A4	161.646	4.43
5	B1	134.738	5.32
6	B2	111.898	6.40
7	B3	93.427	7.67
8	C1	84.664	8.46
9	B4	76.267	9.39
10	C2	70.312	10.19
11	C3	58.706	12.20
12	C4	47.923	14.95
13	D1	45.729	15.67
14	D2	37.977	18.87
15	D3	31.708	22.60
16	E1	30.867	23.21
17	D4	25.884	27.68
18	E2	25.635	27.95
19	E3	21.403	33.47
20	E4	17.472	41.01**
Reverse			
1	A1	-273.675	-2.62
2	A2	-227.283	-3.15
3	A3	-189.765	-3.78
4	A4	-154.910	-4.63
5	B1	-129.124	-5.55
6	B2	-107.235	-6.68
7	B3	-89.534	-8.00
8	C1	-81.137	-8.83
9	B4	-73.089	-9.80
10	C2	-67.383	-10.63
11	C3	-56.260	-12.74
12	C4	-45.926	-15.60
13	D1	-43.824	-16.35
14	D2	-36.395	-19.69
15	D3	-30.387	-23.58
16	E1	-29.581	-24.22
17	D4	-24.806	-28.88
18	E2	-24.567	-29.16
19	E3	-20.511	-34.93
20	E4	-16.744	-42.79**

(*) Calculated with a tyre dynamic radius index of 905 mm (pneumatic tyred tractors only)
(**) Speed reached at reduced engine speed below 2100rpm

- Number of revolutions of front wheels for one revolution of rear-wheels (For 4WD tractors only): MFWD – 1.322

	1.4	Power take-off (PTO)	
	1.4.1	Main power take-off	
C		- Type (independent, semi-independent or not independent):	Independent
C		- Method of engagement (if necessary describe the type of clutch):	Electro-hydraulically actuated multi-plate wet clutch operated by single hand switch
C		- Number of shafts:	One
C		- Method of changing power take-off shaft ends and speeds:	Reversible shaft: two (540/1000) or three speed lever option (540/1000/540E)
	1.4.1.1	Power take-off proportional to engine speed	
		Power take-off at 540 min^{-1} (rev / min)	
C		- Location:	Rear of tractor; center plane
C		- Diameter of power take-off shaft end (mm):	35
C		- Number of splines: (Conformity to ISO 500:1991)	6; conforms to ISO 500 / 1991
C		- Height above ground (mm):	730
C		- Distance from the median plane of the tractor (mm):	0
C		- Distance behind rear-wheel axis (mm):	687
C		- PTO speed at rated engine speed (min^{-1} (rev/min)):	582
C		- Engine speed at standard power take-off speed (min^{-1} (rev/min)):	1950
C		- Ratio of rotation speeds (engine speed / p.t.o. speed):	3.611 : 1
D		- Power restriction (kW):	None
D		- Maximum torque transmissible (Nm):	Maximum engine torque
C		- Direction of rotation: (viewed from behind tractor)	Clockwise

Power take-off at 1000 min^{-1} (rev / min)

C	- Location:	Rear of tractor, center plane
C	- Diameter of power take-off shaft end (mm):	35
C	- Number of splines: (Conformity to ISO 500:1991)	21; conforms to ISO 500 / 1991
C	- Height above ground (mm):	730
C	- Distance from the median plane of the tractor (mm):	0
C	- Distance behind rear-wheel axis (mm):	687
C	- PTO speed at rated engine speed (min^{-1} (rev/min)):	1077
C	- Engine speed at standard power take-off speed (min^{-1} (rev/min)):	1950
C	- Ratio of rotation speeds (engine speed / p.t.o. speed):	1.950 : 1
D	- Power restriction (kW):	None
D	- Maximum torque transmissible (Nm):	Maximum engine torque
C	- Direction of rotation: (viewed from behind tractor)	Clockwise

1.4.1.2 Power take-off proportional to ground speed

C	- Indicate 540 or 1000 min^{-1} (rev / min):	N/A
C	- Traveling distance for one revolution of take-off shaft (m):	
C	- Number of power take-off shaft revolutions for one revolution of (rear) driving wheels:	
C	- Direction of rotation with forward gear engaged (viewed from behind tractor):	

1.4.2 Optional power take-off

C	- Give the same description as for the main PTO:	Not Available

	1.5	Hydraulic power lift	
C		- Make / Model / Type:	John Deere / N/A / Electro-hydraulic lower link sensing; variable mix of draft and position control; adjustable rate of drop
C		- Type of hydraulic system:	Closed center; pressure and flow compensated
C		- Type and number of cylinders (single or double acting):	Two external, single acting (90mm or 100 mm)
C		- Type of linkage lock for transport:	Electro-hydraulic
D		- Relief valve pressure setting (tolerance) (MPa):	20.3 +/- 0.3
D		- Opening pressure of cylinder safety valve (if fitted) (MPa):	23.2
D		- Lift pump type:	Closed center, load sensing pressure-flow compensated axial piston pump with full flow charge pump
D		- Transmission between pump and engine:	Gear driven; transmission front housing
C		- Type and number of filters:	Synthetic spin on filter; one
C		- Site of oil reservoir:	Differential case housing
C		- Type, number, and location of tapping points:	ISO standard breakaway couplers / 3 standard with 4th optional and power beyond optional; rear of tractor, 5th and 6th optional mid-mount valves
D		- Maximum volume of oil available to external cylinders (dm^3):	50

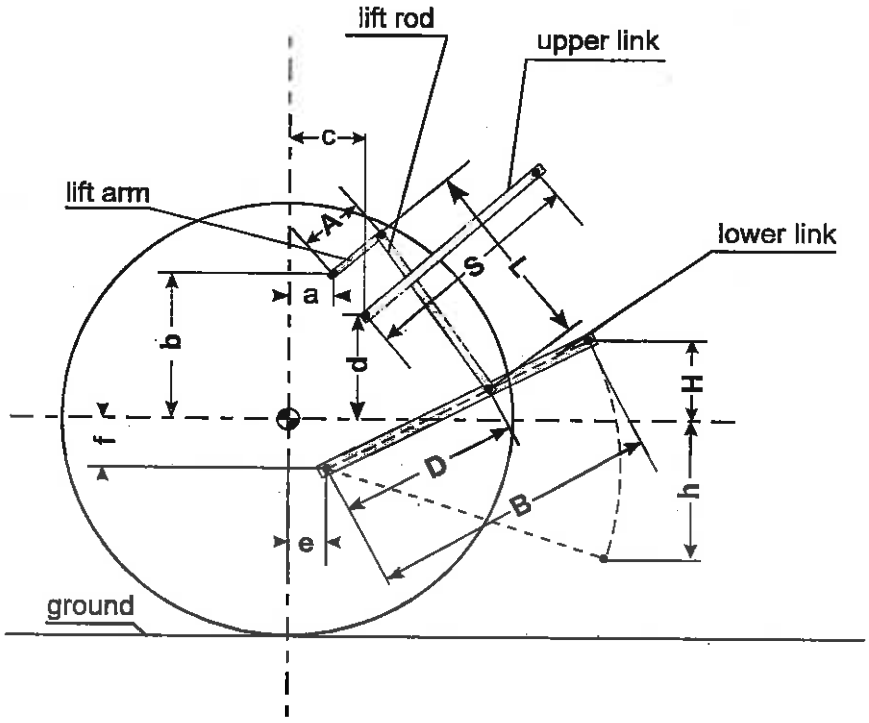


Figure 2.1
Lift Test – Linkage geometry

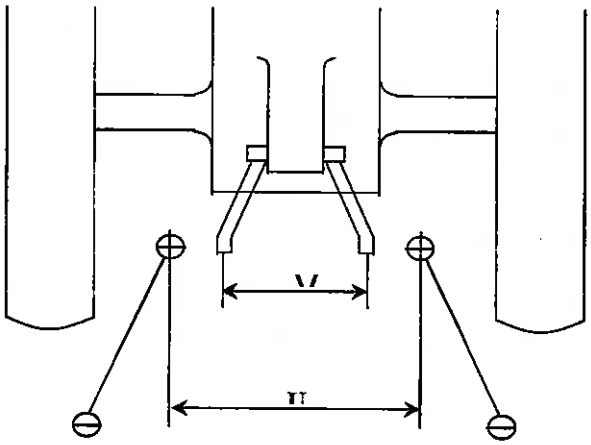


Figure 2.2
Lift Test – Linkage geometry

C	- Category: • *Conformity with categories 1, 2, 3, 4, 3N, or 4N of ISO 730-1:1994 + Cor.1:1995 and ISO 730-2:1979*	3 Specific Market Version Standard Lift
C	- Category adapter:	None

			Dimension or range	Settings used in test(s)
			mm	mm
C	Length of arms:	(A)	425	Same
C	Length of lower links:	(B)	1120	Same
	Distance of lift arm pivot point from rear wheel axis			
C	- horizontally:	(a)	230	Same
C	- vertically:	(b)	608	Same
C	Horizontal distance between the 2 lower link points:	(u)	529	Same
C	Horizontal distance between the 2 lift arm end points:	(v)	680	Same
C	Length of upper arm link:	(S)	630 to 810	760
	Distance of upper link pivot point from rear wheel axis			
C	- horizontally:	(c)	532/527/530	530
C	- vertically:	(d)	201/283/353	353
	Distance of lower link pivot point from rear wheel axis			
C	- horizontally:	(e)	180	Same
C	- vertically:	(f)	315	Same
C	Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	688	Same
C	Length of lift rods:	(L)	910 to 1050	975
	Height of lower hitch points relative to the rear wheel axis			
C	- in low position:	(h)	539 to 788	675
C	- in high position:	(H)	24 to 236	120
C	Height above ground of lower hitch points when locked in transport position (*):		929 to 1141	1025
	(*) Assuring r = 905 Tyre dynamic radius index (pneumatic tyred tractors only)			

Table 1.1

Dimensions of linkage geometry when connected to the standard frame

C	- Category: • *Conformity with categories 1, 2, 3, 4, 3N, or 4N of ISO 730-1:1994 + Cor.1:1995 and ISO 730-2:1979*	3 North American Version Standard Lift
C	- Category adapter:	None

			Dimension or range	Settings used in test(s)
			Mm	mm
C	Length of arms:	(A)	425	Same
C	Length of lower links:	(B)	1024	Same
	Distance of lift arm pivot point from rear wheel axis			
C	- horizontally:	(a)	230	Same
C	- vertically:	(b)	608	Same
C	Horizontal distance between the 2 lower link points:	(u)	529	Same
C	Horizontal distance between the 2 lift arm end points:	(v)	680	Same
C	Length of upper arm link:	(S)	625 to 770	700
	Distance of upper link pivot point from rear wheel axis			
C	- horizontally:	(c)	523/570	523
C	- vertically:	(d)	190/120	190
	Distance of lower link pivot point from rear wheel axis			
C	- horizontally:	(e)	180	Same
C	- vertically:	(f)	324	Same
C	Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	617	Same
C	Length of lift rods:	(L)	910 to 1050	940
	Height of lower hitch points relative to the rear wheel axis			
C	- in low position:	(h)	559 to 809	640
C	- in high position:	(H)	15 to 252	184
C	Height above ground of lower hitch points when locked in transport position (*):		920 to 1157	1028
	(*) Assuring r = 905 mm Tyre dynamic radius index (pneumatic tyred tractors only)			

Table 1.1

Dimensions of linkage geometry when connected to the standard frame

C	- Category: • *Conformity with categories 1, 2, 3, 4, 3N, or 4N of ISO 730-1:1994 + Cor.1:1995 and ISO 730-2:1979*	3 North American Version Optional High Lift
C	- Category adapter:	3QC

			Dimension or range	Settings used in test(s)
			mm	mm
C	Length of arms:	(A)	425	Same
C	Length of lower links Quick Coupler offset:	(B)	1024+88	Same
	Distance of lift arm pivot point from rear wheel axis			
C	- horizontally:	(a)	230	Same
C	- vertically:	(b)	608	Same
C	Horizontal distance between the 2 lower link points:	(u)	529	Same
C	Horizontal distance between the 2 lift arm end points:	(v)	680	Same
C	Length of upper arm link:	(S)	660 to 825	670
	Distance of upper link pivot point from rear wheel axis			
C	- horizontally:	(c)	523/520	523
C	- vertically:	(d)	190/120	190
	Distance of lower link pivot point from rear wheel axis			
C	- horizontally:	(e)	180	Same
C	- vertically:	(f)	315	Same
C	Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	688.5	Same
C	Length of lift rods:	(L)	910 to 1050	990
	Height of lower hitch points relative to the rear wheel axis			
C	- in low position:	(h)	523 to 748	675
C	- in high position:	(H)	7 to 218	75
C	Height above ground of lower hitch points when locked in transport position (*):		912 to 1123	980
	(*) Assuring r = 870			

Table 1.1

Dimensions of linkage geometry when connected to the standard frame

	1.7	Swinging drawbar	
C		- Type:	Oscillating
		- Height above ground	
C		. Minimum (mm):	437; offset down
C		. Maximum (mm):	501: offset up
C		- Type of adjustment:	Offset drawbar
		- Distance of hitch point from rear wheel axis	
C		. Horizontally (mm):	936, 1036, 1086
		- Distance of hitch point from power take-off shaft end	
C		. Horizontally (mm):	249, 349, 399
C		. Vertically (mm):	289.4
C		- Lateral adjustment (center of clevis)	
C		. Left hand (mm):	200
C		. Right hand (mm):	200
		- Distance of pivot point from rear wheel axis	
C		. Horizontally (mm):	14
C		- Diameter of drawbar pinhole (mm):	33
D		- Maximum vertical permissible load (kN):	18.0 – PTO Position 27.0 – Short Position
	1.8	**Trailer hitch**	
C		- Type:	N/A
C		- Hole diameter (mm):	N/A
C		- Height above ground (mm):	N/A
		- Distance of hitch point from rear wheel axis	
C		. Horizontally (mm):	N/A
		- Distance of hitch point from take-off shaft end	
C		. Horizontally (mm):	N/A
C		. Vertically (mm):	N/A
D		- Maximum vertical permissible load (kN):	N/A
	1.9	Holed drawbar	
C		- Number of holes:	N/A
C		- Distance between holes (mm):	N/A
C		- Hole diameter (mm):	N/A
C		- Thickness / width of the drawbar (mm /mm):	N/A
		- Height above ground	
C		. Minimum (mm):	N/A
C		. Maximum (mm):	N/A
C		- Horizontal distance to power take-off shaft end (rear) (mm):	N/A

	1.10	**Steering**	
D		- Make / Model / Type:	Sauer / RE208148 / Hydrostatic gerotor metering unit with load sensing
		- Method of operation	
D		. Pump(s):	Same as main hydraulic pump
D		. Rams(s):	Integrated symmetrical design
D		- Working pressure (MPa):	18.5
	1.11	**Brakes**	
	1.11.1	Service brake	
D		- Make / Model / Type:	Eaton / RE231213 / John Deere Oil immersed
C		- Method of operation:	Hydraulic, operated by two pedals which can be locked together
C		- Trailer braking take-off (hydraulic or air brakes):	Optional air or hydraulic (not installed)
	1.11.2	Parking brake	
C		- Type:	Transmission lock
C		- Method of operation:	Gear selector lever
	1.12	**Wheels**	
		- Number	
C		. Front (driving / steering):	Two; driving and steering
C		. Rear (driving / steering):	Two; Driving
C		- Wheelbase (mm):	MFWD – 2860
		- Track width adjustment:	

		Minimum mm	Maximum mm	Adjustment method
D	Front	1524	2235	Reversing wheels and offset lug rims
D	Rear	1524	2778	Rack and pinion axle; reversing wheels and offset lug rims

	1.13	**Protective structure**	
C		- Make / Model / Type:	John Deere/CG001/Cab
C		- Manufacturer's name and address:	John Deere Waterloo Works Waterloo, Iowa, USA
		- Protective device	
C		. Cab / frame / rollguard / other:	Cab
C		. Tiltable / not tiltable:	Not tiltable
		- OECD approval	
C		. approval number:	4/1 015
C		. Date of approval:	13 July 2007
C		. Nos. of minor modification certificates, if any:	None

	1.14	**Seat(s)**	
	1.14.1	Driver's seat	
C		- Make / Model / Type	John Deere/ Sears Manufacturing / Comfort Command / air cushion suspension
C		- Seat and steering wheel reversible: Yes / No	No
C		- Type of suspension:	Air ride
C		- Type of damping:	Adjustable viscous damping
		- Range of adjustment	
C		. Longitudinally (mm):	178
C		. Vertically (mm):	172
C		- Safety belt:	Yes
		. Type:	2 point, fully retractable
	1.14.2.	Optional driver's seat(s)	
	1.14.2.1	Option 1	
D		- Make / Model / Type	John Deere/ Sears Manufacturing/ John Deere Active Seat
D		- Type of suspension:	Air/Hydraulic
D		- Type of damping:	Active position control
		- Range of adjustment	
D		. Longitudinally (mm):	178
D		. Vertically (mm):	172; (87 mm adjustment range)
	1.14.2.2	Option 2	
D		- Make / Model / Type	John Deere / Sears Manufacturing / John Deere Personal Posture™
D		- Type of suspension:	Air Ride
D		- Type of damping:	Adjustable, viscous damping
		- Range of adjustment	
D		. Longitudinally (mm):	200
D		. Vertically (mm):	140
	1.14.3	Passenger seat	
C		- Location:	Optional Instruction seat located left of driver's seat
C		- Capacity (number)	One

1.15 Lighting

	Height above ground of centre	Size	Distance from outside edge of lights to median plane of tractor
	mm	mm	mm
Headlights			
Inner Pair	1570	180 x 120	170
Outer Pair	1570	155 x 126	330
Sidelights			
Midbody	2150	165 x 112	620
Rearlights			
Roof	2880	165 x 113	405
Fender	2115	165 x 113	843
Reflectors			
Front	3980	72 x 200	770
Rear	2965	72 x 200	770
Brake	1915	210 x 104	910
Extremity	2155	160 x 80	1792

2. TEST CONDITIONS

Separate tables may be added to report other test conditions or equipments.

2.1 Overall dimensions

	Length	Width*		Height at top of:	
		minimum	maximum	protective structure	exhaust pipe
	mm	mm	mm	mm	mm
Ballasted	5711	2807	3830	3072	3090
Unballasted	5394	2807	2807	3072	3090

** Assumes rear duals for ballasted width and rear singles for unballasted width.*

2.2 Ground clearance (unballasted tractor)

(mm): 451

- Clearance – limiting part: Hitch Sway Blocks

2.3 Tractor mass

- Mass (with cab):

	Ballasted		Unballasted	
	With Driver	Without Driver	With Driver	Without Driver
	kg	kg	kg	kg
Front	4332	4312	2962	2942
Rear	7157	7102	5155	5100
Total	**11489**	**11414**	**8117**	**8042**

Ballast Added	Number	Total Mass	Liquid
		kg	kg
Front (weight support)	1	54	-
Front (weights)	20	907	-
Rear (weights)	2	1310	-
Rear(weights)	4	303	-
Rear (duals)	2	798	-

Track materials:	N/A
Track width and base (mm):	
Dynamic radius (rolling radius) (mm):	
Track support system:	
Treadbars	
. Number of treadbars per metre:	
. Height, width, and length (mm):	
Other specifications:	

2.5 Tyres and track specifications

	Front	Rear
Tyres		
- dimensions:	Goodyear 420/90R30	Goodyear 480/80R46
- ply rating:	142 A8	151 A8
- type:	Radial	Radial
- maximum load (tyre manufacturer's) (kN):	25.9	41.6
- maximum load (tractor manufacturer's) (kN):	Same	Same
- inflation pressure (tyre manufacturer's) (kPa):	From 60 to 160	From 60 to 160
- dynamic radius index (mm):	720	905
Chosen track width (mm):	1524	1600

2.6 Fuel

- Type: No. 2 Diesel
  - *in conformityy with national standards*
- Density at 15° C: 0.840 kg/l

2.7 Oil and lubricants

2.7.1 Capacity and change interval

	Capacity	Oil Change	Filter change
	Dm^3	H	h
Engine	26	250 (500 with John Deere PLUS-50 and John Deere filter)	Same
Gear Box	150	1500	Same
Front Axle	14.4	1500	N/A
Rear Axle	Common w/gearbox	1500	Common w/gearbox
Final Drive (front)	3.8	1500	N/A
Final Drive (rear)	Common w/gearbox	1500	Common w/gearbox
Hydraulic System (*)	Common w/gearbox	1500	Common w/gearbox
Other (steering, ___)	N/A	N/A	N/A
(*) State if common with gear box and rear axle.			

2.7.2 Specifications (SAE, API, CCMC, ACEA, Mil.L, ISO)

	Recommended	Used during test
Engine oil		
. Type:	John Deere; Torq-Gard Supreme SAE 5W30: PLUS-50 SAE 15W40 or 0W40	John Deere; Torq-Gard Supreme SAE 15W40
. Viscosity:	12.5 - 16.3 cSt @ 100 C	Same
. Classifications:	API CF-4; CH - 4; ACEA E2	Same
Transmission oils		
. Type:	John Deere HY-GARD; J20C SAE 10W-30	Same
. Viscosity:	58 cSt at 43 C	Same
. Classifications:	N/A	N/A
Hydraulic fluid		
. Type:	Same as transmission	Same
. Viscosity:		
. Classifications:		
Steering oil		
. Type:	Same as transmission	Same
. Viscosity:		
. Classifications:		

2.7.3 Grease

- Number of lubrication points: MFWD – 22 (as tested)
ILS – 32

3. COMPULSORY TESTS RESULTS

3.1 Main power take-off

- Date and location of tests: 28-Mar-07 Nebraska Tractor Test Laboratory, Lincoln, NE, USA
- Type of dynamometer bench: Eaton

	Speed			Fuel consumption			Specific
Power	Engine	PTO	Fan	Hourly		Specific	energy
kW	rev/min			kg/h	l/h	g/kWh	kW-h/l
3.1 MAXIMUM POWER - ONE HOUR TEST							
151.66	1850	947	1448	36.16	43.04	238	3.52
3.1.2 POWER AT RATED ENGINE SPEED							
136.54	2100	1075	1403	33.45	39.82	245	3.43
3.1.3 STANDARD POWER TAKE-OFF SPEED (1000 +/- 25 rev/min							
149.68	1953	1000	1462	35.82	42.64	239	3.51
3.1.4 PART LOADS							
3.1.4.1 the torque corresponding to maximum power at rated engine speed							
136.54	2100	1075	1403	33.45	39.82	245	3.43
3.1.4.2 85% of torque obtained in 3.1.4.1							
119.12	2157	1105	1351	30.48	36.28	256	3.28
3.1.4.3 75% of torque defined in 3.1.4.2							
89.79	2165	1109	1128	24.58	29.26	274	3.07
3.1.4.4 50% of torque defined in 3.1.4.2							
60.20	2176	1115	1032	19.32	23.00	321	2.62
3.1.4.5 25% of torque defined in 3.1.4.2							
30.20	2188	1121	1041	12.97	15.44	430	1.96
3.1.4.6 unloaded							
0.92	2196	1125	1048	8.71	10.37	9482	0.09
3.1.5 PART LOADS AT STANDARD POWER TAKE-OFF SPEED (1000 +/- 25 rev/min)							
3.1.5.1 the torque corresponding to maximum power at standard PTO speed							
149.68	1953	1000	1462	35.82	42.64	239	3.51
3.1.5.2 85% of torque obtained in 3.1.5.1							
134.19	2052	1051	1462	32.61	38.82	243	3.46
3.1.5.3 75% of torque defined in 3.1.5.2							
100.28	2052	1051	1379	25.90	30.83	258	3.25
3.1.5.4 50% of torque defined in 3.1.5.2							
66.70	2052	1051	1216	19.69	23.43	295	2.85
3.1.5.5 25% of torque defined in 3.1.5.2							
33.46	2052	1051	1042	12.79	15.23	382	2.20
3.1.5.6 unloaded							
0.82	2052	1051	1050	7.35	8.75	8953	0.09

- No load maximum engine speed: 2196 rev/min
- Torque (equivalent crankshaft) at rated speed:
  - At rated engine speed 621 Nm
  - At maximum power 783 Nm
- Maximum torque (equivalent crankshaft): 885 Nm
  (engine speed: 1601 rev/min)

Mean atmospheric conditions:		
Dry bulb	24	°C
Pressure	97.4	kPa
Relative Humidity	55	%
Maximum temperatures:		
Coolant	103	°C
Engine oil	122	°C
Fuel	66	°C
Engine air intake	28	°C

3. COMPULSORY TESTS RESULTS

3.1 Main power take-off

- Date and location of tests: 28-Mar-07 Nebraska Tractor Test Laboratory, Lincoln, NE, USA
- Type of dynamometer bench: Eaton

Power	Speed			Fuel consumption			Specific energy
				Hourly		Specific	
kW	Engine	PTO	Fan	kg/h	l/h	g/kWh	kW-h/l
3.1.6 PART LOADS AT DIFFERENT ENGINE SPEEDS							
3.1.6.1 maximum power at rated engine speed							
136.54	2100	1075	1403	33.45	39.82	245	3.43
3.1.6.2 80% of power obtained in 3.1.6.1 at max speed setting							
109.02	2160	1106	1399	28.44	33.85	261	3.22
3.1.6.3 80% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed							
108.86	1892	969	1260	26.94	32.07	248	3.39
3.1.6.4 40% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed							
54.38	1892	969	1081	16.10	19.17	296	2.84
3.1.6.5 60% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed							
82.01	1261	645	1029	18.91	22.51	231	3.64
3.1.6.6 40% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed							
54.44	1261	646	999	13.61	16.20	250	3.36

3.2 HYDRAULIC POWER AND LIFTING FORCE

3.2.1 Hydraulic Power Test

Date of Test: 30-Mar-07 Location of Test-City-State: Tractor Test Lab, Lincoln, NE, USA
Tractor Model: John Deere 7930 Tapping point used for test: Remote hydraulic outlets

3.2.1.1 Hydraulic Fluid Characteristics

Viscosity at 65°C = 25 mm²/s

3.2.1.2 Compulsory Report (Test Results):

	Pressure	Reservoir oil Temperature	Engine Speed	Flow Rate	Power
	MPa	°C	rev/min	l/min	kW
Rated Engine Speed: (Manufactures Specification)			2100		
Maximum (sustained) pressure with relief valve open as measured at the coupler Pump stalled: Yes	19.95	81	2193		
Flow rate corresponding to a hydraulic pressure equivalent to 90 percent of the actual relief valve pressure setting and corresponding hydraulic power through two coupler pairs:	17.84	84	2174	162.0	48.2
Maximum available flow from one coupler pair:	11.90	93	2178	153.3	30.4
Maximum available power from one coupler pair:	13.23	97	2171	145.4	32.1
Maximum available flow from coupler pairs operating simultaneously (flow through two or more coupler pairs if required):	2.79	63	2190	177.2	8.2
Maximum power from coupler pairs operating simultaneously (flow through two or more coupler pairs if required):	17.51	82	2182	166.9	48.7

3.2 POWER LIFT TEST

Category III, S.M. lower links with lifting cylinders (2) x 90 mm dia.

Date of test: 17 Feb 2004. Data from tests conducted on the John Deere 7820 which is technically equivalent.

	Hitch points	Frame
Lower hitch points above ground - down position:	230 mm	246 mm
Vertical movement - without load:	795 mm	836 mm
with load:	748 mm	781 mm
Maximum corrected force exerted through full range:	55.2 kN	60.6 kN
Corresponding pressure:	18.5 MPa	18.5 MPa
Moment about rear axle:	71.8 kNm	115.8 kNm
Maximum mast tilt angle	--	4.6 degrees

Lifting height relative to horizontal position of lower links.

mm	-347	-331	-297	-200	-97	3	100	200	301	401	450
Corrected lift forces											
At the Hitch point kN	55.2	--	58.2	62.8	66.4	69.1	71.3	72.7	74.2	76.1	--
at the frame kN	--	61.9	62.9	64.7	65.6	65.9	65.7	64.6	62.9	61.4	60.6

Corresponding pressure 18.5 Mpa

OECD Drawbar Data (SI)

Date of tests:	02,03-Apr-07						Fuel density:	0.840 kg/l							
Type of track:	Concrete						Test number:	1896							
3.3.1 Maximum power in tested gears (unballasted, FWA)								Tire pressure:	117 kPa, rear	97 kPa, front			Drawbar Height:	559 mm	
Gear	Gear Designation	Power	Drawbar pull	Speed	Engine speed	Slip of wheels and/or tracks	Fan speed	Fuel		Temperature			Atmospheric conditions		
								Specific fuel consumption	Specific energy	Fuel	Coolant	Oil	Temperature	Relative humidity	Pressure
		kW	kN	km/h	min^{-1}	%	min^{-1}	g/kW.h	kW.h/l	°C	°C	°C	°C	%	kPa
*4	A4	83.94	71.43	4.23	2158	10.5	1062	322	2.61	57	85	104	6	77	97.7
*5	B1	101.88	71.80	5.11	2155	9.8	1120	302	2.78	53	83	95	12	72	97.3
6	B2	118.26	69.99	6.08	2097	8.3	946	284	2.96	61	92	110	10	75	97.5
7	B3	131.99	68.97	6.89	1970	7.8	1104	272	3.09	61	94	113	8	66	97.6
8	C1	135.97	67.08	7.30	1861	6.3	1098	267	3.15	64	95	112	12	77	97.2
9	B4	136.45	59.91	8.20	1858	5.0	1126	265	3.17	65	95	116	12	82	97.2
10	C2	136.80	54.80	8.99	1855	3.8	1140	265	3.17	64	95	116	10	81	97.3
11	C3	137.97	46.03	10.79	1845	3.1	1206	261	3.22	65	95	117	11	76	97.3
12	C4	135.18	36.56	13.31	1847	2.5	1301	268	3.13	65	95	115	13	67	97.2
* Note: Slip within operating limits of test station.															
3.3.2 Fuel consumption															
3.3.2.1		In selected gear/speed setting nearest 7.5 km/hr, at maximum power at rated engine speed													
7	B3	123.42	58.60	7.58	2102	4.9	1019	271	3.10	64	93	114	12	77	97.2
3.3.2.1.1		75% of pull corresponding to maximum power at rated engine speed													
7	B3	96.14	43.69	7.92	2155	3.0	1065	290	2.90	65	93	111	14	64	97.2
3.3.2.1.2		50% of pull corresponding to maximum power at rated engine speed													
7	B3	65.34	29.15	8.07	2170	1.9	1062	335	2.51	65	89	109	15	64	97.2
3.3.2.1.3		Highest gear/speed setting at reduced engine speed able to achieve both 3.3.2.1.1 and 3.3.2.1.2; same pull and traveling speed as in 3.3.2.1.1													
10	C2	95.84	43.79	7.88	1613	3.0	1039	263	3.19	62	87	103	16	61	97.2
3.3.2.1.4		Same gear/speed selection as 3.3.2.1.3 at reduced engine speed; same pull and traveling speed as in 3.3.2.1.2													
10	C2	65.09	29.17	8.03	1625	1.8	1041	291	2.89	60	82	99	16	65	97.2
3.3.2.2		In selected gear/speed setting nearest between 7 km/hr and 10 km/hr at rated engine speed													
10	C2	121.81	42.71	10.27	2096	2.7	1157	275	3.06	65	92	115	11	76	97.3
3.3.2.2.1		75% of pull corresponding to maximum power at rated engine speed													
10	C2	94.89	32.10	10.64	2157	2.1	1223	294	2.86	65	93	111	17	61	97.2
3.3.2.2.2		50% of pull corresponding to maximum power at rated engine speed													
10	C2	64.02	21.37	10.78	2170	1.3	1065	351	2.39	65	90	110	17	62	97.2
3.3.2.2.3		Highest gear/speed setting at reduced engine speed able to achieve both 3.3.2.2.1 and 3.3.2.2.2; same pull and traveling speed as in 3.3.2.2.1													
11	C3	94.60	32.18	10.58	1791	2.1	1050	268	3.13	62	91	107	19	59	97.2
3.3.2.2.4		Same gear/speed setting 3.3.2.2.3 at reduced engine speed; same pull and traveling speed as in 3.3.2.2.2													
11	C3	63.79	21.42	10.72	1801	1.3	1049	313	2.69	61	84	104	18	59	97.2

OECD Drawbar Data (SI)

Date of tests:	4-Apr-2007	Fuel density:	0.840 kg/l
Type of track:	Concrete	Test number:	1896

4.1 Maximum power in tested gears (ballasted, FWA)								Tire pressure:	76 kPa, rear	138 kPa, front			Drawbar Height:	533 mm	
Gear	Gear Designation	Power	Drawbar pull	Speed	Engine speed	Slip of wheels and/or tracks	Fan speed	Fuel		Temperature			Atmospheric conditions		
								Specific fuel consumption	Specific energy	Fuel	Coolant	Oil	Temperature	Relative humidity	Pressure
		kW	kN	km/h	min^{-1}	%	min^{-1}	g/kW.h	kW.h/l	°C	°C	°C	°C	%	kPa
*3	A3	99.29	103.09	3.47	2154	9.4	1088	306	2.74	60	87	104	7	45	98.9
4	A4	115.82	99.10	4.21	2093	7.6	727	291	2.89	62	92	111	7	45	98.9
5	B1	129.22	94.04	4.95	2013	5.8	1138	274	3.07	62	92	110	7	43	98.9
6	B2	135.19	87.56	5.56	1853	4.5	1204	268	3.13	64	96	115	7	43	98.9
7	B3	139.79	74.40	6.76	1854	3.1	1146	260	3.23	65	96	116	7	50	98.9
8	C1	139.53	67.08	7.49	1851	2.6	1162	260	3.23	64	96	114	7	45	99.0
9	B4	138.11	59.69	8.33	1848	2.2	1142	263	3.19	64	96	116	7	45	99.0
10	C2	137.33	54.40	9.09	1854	2.0	1180	263	3.19	65	96	117	8	46	99.0
11	C3	137.39	45.31	10.92	1852	1.6	1131	260	3.23	62	96	115	8	46	98.9
12	C4	133.10	35.77	13.40	1848	1.1	1198	273	3.08	64	96	117	7	51	98.9

* Note: Pull limited to avoid excessive bouncing.

4.2 POWER LIFT TEST (for settings used see p.10)
Category III, S.M. lower links with lifting cylinders (2) x 100 mm dia.
Date of test: 17 Feb 2004. Data from tests conducted on the John Deere 7820 which is technically equivalent.

	Hitch points	Frame
Lower hitch points above ground - down position:	230 mm	236 mm
Vertical movement - without load:	795 mm	847 mm
with load:	748 mm	781 mm
Maximum corrected force exerted through full range:	69.6 kN	75.1 kN
Corresponding pressure:	18.5 MPa	18.5 MPa
Moment about rear axle:	90.5 kNm	143.3 kNm
Maximum mast tilt angle	--	3.7 degrees

Lifting height relative to horizontal position of lower links.

mm	-347	-341	-298	-199	-99	3	101	202	302	401	440
Corrected lift forces											
At the Hitch point kN	69.6	--	72.9	78.5	82.5	86.0	88.5	90.8	92.6	94.6	--
at the frame kN	--	77.7	78.9	80.8	81.8	82.1	81.7	80.1	78.1	75.8	75.1
Corresponding pressure 18.5 Mpa											

4.3 POWER LIFT TEST (for settings used see p.11)
Category III, Quick attaching couple with lifting cylinders (2) x 90 mm dia.
Date of test: 17 Feb 2004. Data from tests conducted on the John Deere 7820 which is technically equivalent.

	Hitch points	Frame
Lower hitch points above ground - down position:	230 mm	216 mm
Vertical movement - without load:	824 mm	960 mm
with load:	762 mm	875 mm
Maximum corrected force exerted through full range:	53.1 kN	48.9 kN
Corresponding pressure:	18.4 MPa	18.4 MPa
Moment about rear axle:	68.7 kNm	93.0 kNm
Maximum mast tilt angle	--	9.3 degrees

Lifting height relative to horizontal position of lower links.

mm		-361	-347	-301	-199	-103	-2	98	199	298	415	514
Corrected lift forces												
At the Hitch point	kN	--	53.1	55.5	59.8	62.6	65.0	66.8	67.9	68.6	69.7	--
at the frame	kN	57.5	--	57.8	58.4	58.5	58.1	57.0	55.0	52.1	--	48.9
Corresponding pressure	18.4 Mpa											

4.4 POWER LIFT TEST (for settings see p.12)
Category III, Quick attaching couple with lifting cylinders (2) x 100 mm dia.
Date of test: 17 Feb 2004. Data from tests conducted on the John Deere 7820 which is technically equivalent.

	Hitch points	Frame
Lower hitch points above ground - down position:	229 mm	219 mm
Vertical movement - without load:	750 mm	853 mm
with load:	686 mm	767 mm
Maximum corrected force exerted through full range:	75.2 kN	69.3 kN
Corresponding pressure:	18.5 MPa	18.5 MPa
Moment about rear axle:	97.2 kNm	131.8 kNm
Maximum mast tilt angle	--	6.7 degrees

Lifting height relative to horizontal position of lower links.

mm	-358	-348	-302	-202	-102	-3	98	198	298	338	409
Corrected lift forces											
At the Hitch point kN	--	75.2	78.6	84.4	88.0	91.1	93.1	94.1	95.0	95.1	--
at the frame kN	80.4	--	81.0	81.9	81.4	80.2	78.2	74.7	--	71.3	69.3

Corresponding pressure 18.5 Mpa

4.5 Measurement of External Noise Level – John Deere 7930 AutoQuad Plus

-- Date of Test	March 20, 2007
-- Location of Test	Nebraska Tractor Test Laboratory
-- Sound Level Meter	Bruel and Kjaer 2236
-- Type of Track	Concrete Oval
-- Gear Number	20(E4)
-- Speed Prior to Acceleration	31 km/h
-- Noise Level	81.8 dB(A)

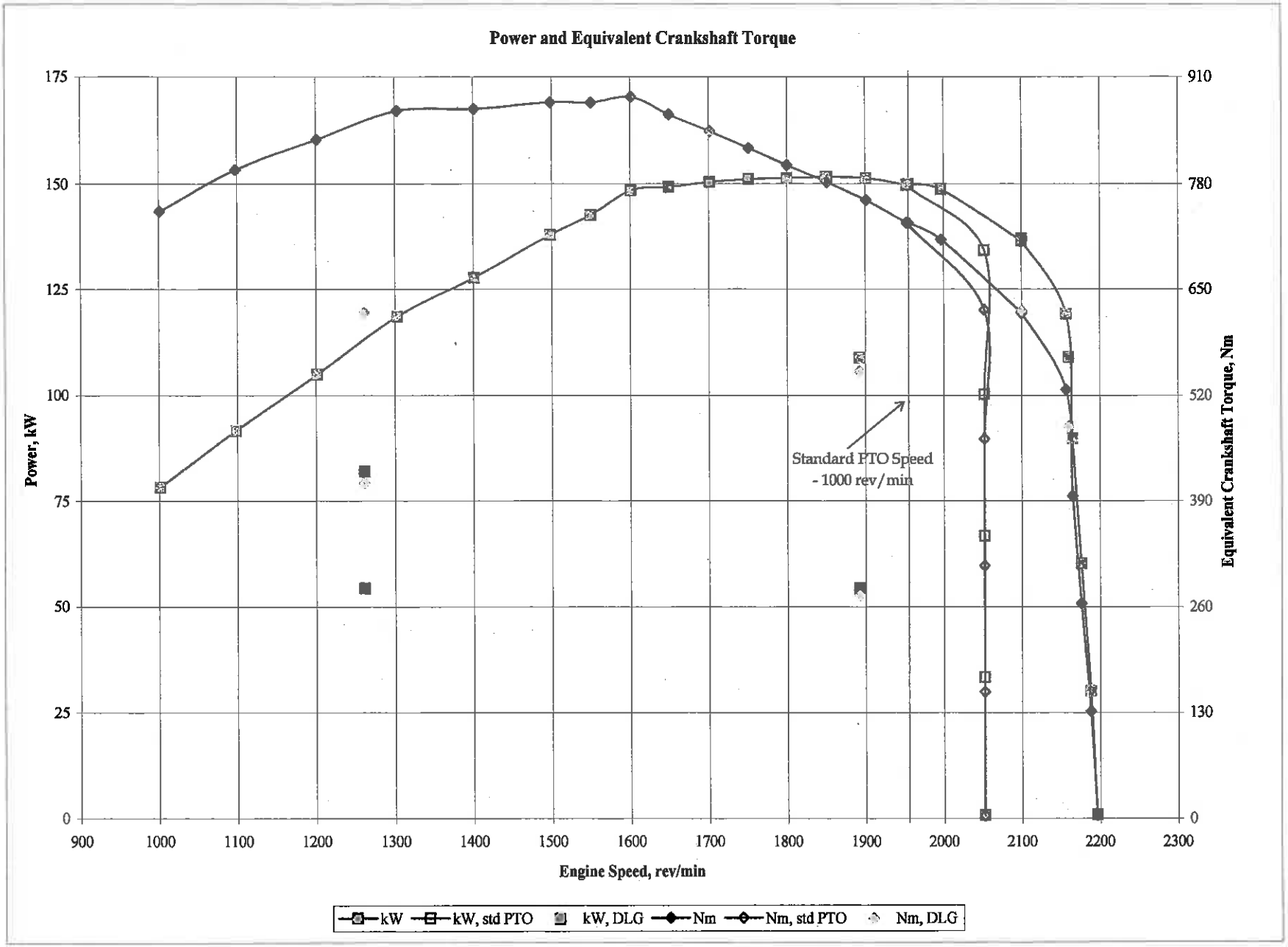
4.6 Measurement of Noise Level at Operator's Ear*

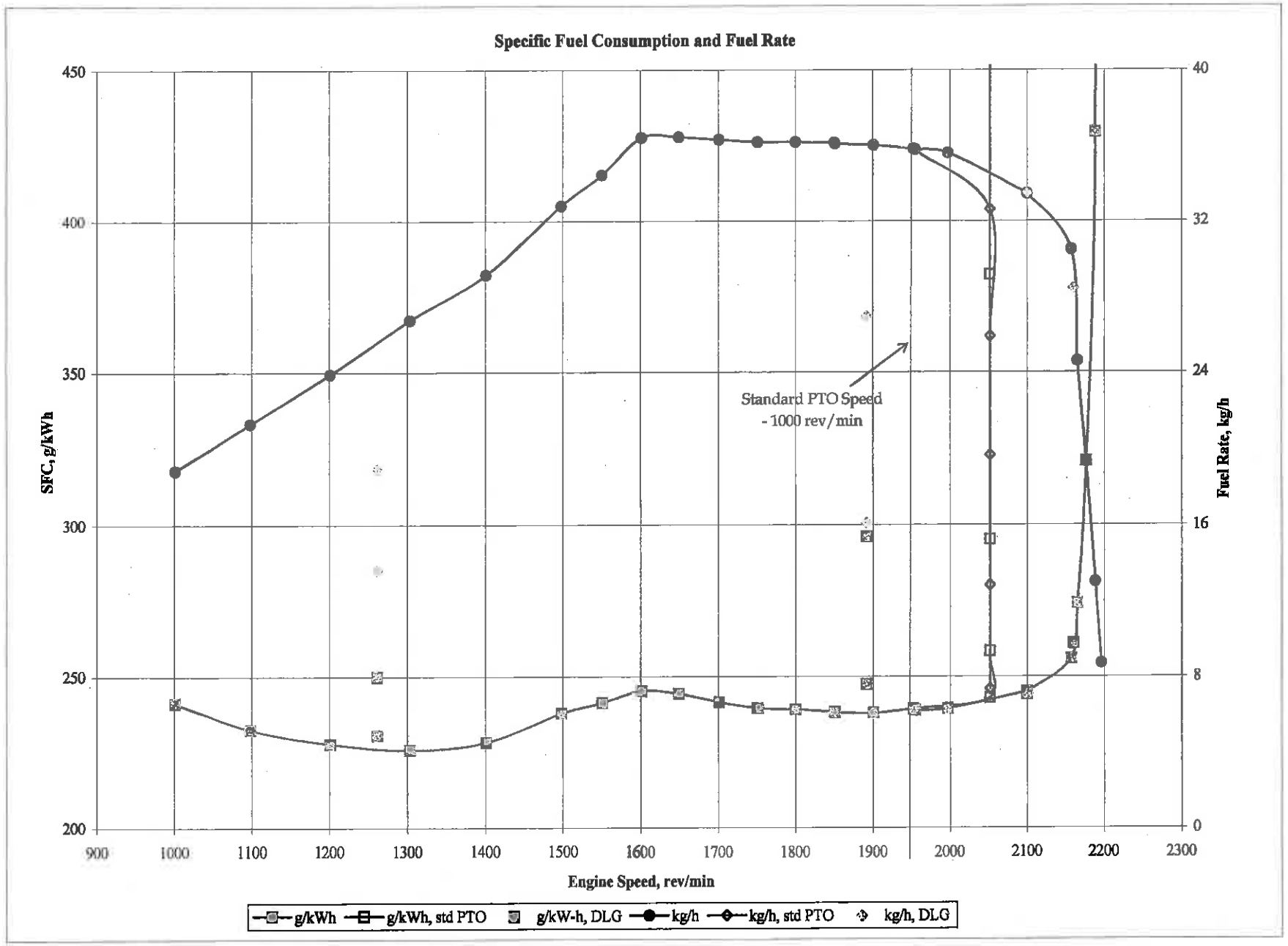
-- Date of Test	March 20, 2007
-- Location of Test	Nebraska Tractor Test Laboratory
-- Sound Level Meter	Bruel and Kjaer 2236
-- Type of Track	Concrete Oval
-- Gear Number	7(B3)
-- Drawbar Load	None
-- Noise at Operator Ear	67.7 dB(A) - front wheel drive engaged 67.6 dB(A) - front wheel drive disengaged

* Note: Nebraska tractor test station guidelines. Not covered by OECD approval

5. Repairs and Adjustments: None

6. Remarks: None


Power and Equivalent Crankshaft Torque
Power, kW
Equivalent Crankshaft Torque, Nm
Engine Speed, rev/min
Standard PTO Speed
- 1000 rev/min
175
150
125
100
75
50
25
0
910
780
650
520
390
260
130
0
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
kW
kW, std PTO
kW, DLG
Nm
Nm, std PTO
Nm, DLG


Specific Fuel Consumption and Fuel Rate
SFC, g/kWh
Fuel Rate, kg/h
Engine Speed, rev/min
Standard PTO Speed
- 1000 rev/min
450
400
350
300
250
200
40
32
24
16
8
0
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
g/kWh
g/kWh, std PTO
g/kW-h, DLG
kg/h
kg/h, std PTO
kg/h, DLG

John Deere 7930

