OECD APPROVAL NO. 2/2 381
CODE 2
DATE OF APPROVAL: 27 August 2007

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

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



John Deere 8530 IVT
Mechanical Front Wheel Drive (MFWD)

MANUFACTURED BY:	**John Deere Tractor Works** **3500 East Donald Street** **P.O. Box 270** **Waterloo, Iowa 50704-0270**
NEBRASKA TEST NO.	**1890**
TEST DATES:	**June – October, 2006**

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 27 August 2007 for the John Deere 8530 IVT, Mechanical Front Wheel Drive (MFWD) tractor with OECD Number 2/2 381.

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: DEC 06 2007

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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):	72 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):	8530
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)*	4WD
		(*) *Possibly different from tractor manufacturer's name*	
	1.1.2	Numbers	
D		- 1st Serial No. or prototype:	CONFIDENTIAL
C		- Serial No.:	*RW8530D005577*
	1.1.3	Other specifications (if applicable)	
D		- Model(s) for other countries:	N/A
C		- Transmission type or gears x ranges:	40K Infinitely Variable Transmission (IVT, Hydro-mechanical)
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 / 6090HRW08 / Diesel; 4-stroke; turbocharged, direct injection, air to air intercooled
C		- Serial No.:	*RG6090L006210*
	1.2.1	Cylinders	
C		- Number / disposition:	6 / inline, vertical
D		- Bore / Stroke (mm / mm):	118.4 x 136
D		- Capacity (cm^3):	8984
D		- Compression ratio:	16.3 : 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 / RE529978 / Variable Geometry exhaust gas driven
D		- Pressure (MPa):	0.224
	1.2.3	Fuel System	
C		- Fuel feed system:	Electric transfer pump
		- Make / Model / Type of fuel filter(s)	
C		. Primary:	Racor / RE520906 / 10 micron multilayer water separating
C		. Secondary:	Racor / RE523236 / 2 micron multilayer water separating
D		- Capacity of fuel tank (dm^3):	681.4
C		- Make / Model / Type of injection pump:	Denso / RE519597 / HPCR; electronic
C		- Serial No.:	N/A
		- Manufacturer's production setting of injection pump	
C		. Flow rate (rated engine speed and full load) (dm^3/h):	59.1 +/- 2.4
D		. Timing:	Variable
D		- Make / Model / Type of injectors:	Denso / RE529149 / HPCR Injection
D		- Injection pressure (MPa):	140
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:	Fleetguard / RE242336 / 25 tube precleaner with fan source scavenge
C		. Location of air intake:	Under hood, middle of tractor
		- Main cleaner	
		. Make / Model / Type	
C		- Primary:	Fleetguard / RE210102 / Opti-Air™ pleated paper media
C		- Secondary:	Fleetguard / RE210103 / 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 top load
	1.2.7	Cooling system	
C		- Type of coolant:	Liquid
D		- Type of pump:	Centrifugal, gear driven
		- Specification of fan or blower	
C		. Number of fan blades:	8
C		. Fan diameter (mm):	788
D		- Coolant capacity (dm^3):	40
C		- Type of temperature control:	Two thermostats and variable speed fan
D		- Superpressure system (kPa):	69 +/- 6.9
	1.2.8	Starting system	
C		- Make / Model / Type:	Denso / RE529661 / Solenoid engaged
D		- Starter motor power rating (kW):	4.0
C		- Cold starting aid:	Ether spray in intake manifold
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):	2.8
		- Battery of accumulators	
C		. Number:	Two; 950 CCA, RC 180
D		. Rating (Ah at ____ hours):	154 Ah at 20 hours

1.2.10 Exhaust system

C - Make / Model / Type: Fleetguard / RE210829 / Expansion Chamber

C - Location: Vertical muffler, right front corner of cab

1.3 Transmission

1.3.1 Clutch (travel and power take-off / travel alone)

D - Make / Model / Type: John Deere / Multiple plate / Oil cooled

D - Number of plates: 5 forward / 6 reverse

D - Diameter of plates (mm): 211 forward / 323 reverse

C - Method of operation: Electro-Hydraulic; pedal actuated

1.3.2 Gear box

D - Make / Model / Type: John Deere / 40K IVT / Variable

- Description: Infinitely variable electronically controlled transmission

	Forward	Reverse
C Number of ranges	N/A	N/A
C Number of gears	N/A	N/A
C Total of arrangements	N/A	N/A

D - Available options:

1.3.3 Rear axle and final drives

D - Make / Model / Type: John Deere / AR254859 / Spiral bevel gear and 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 / AR235526 / Spiral bevel and pinion, differential and outboard planetary reduction, independent link suspension

- Differential lock

D . Type: Electo-hydraulic, wet multi-plate

C . Method of engagement: Foot operated switch, common w/ rear axle differential lock engagement

C . Method of disengagement: Self-disengaging with brake pedal operation

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
N/A			
(*) Calculated with r = 940 mm			

C - Number of revolutions of front wheels for one revolution of rear-wheels (For 4WD tractors only): ILS Axle, 4 Step – 1.254 ILS Axle, 5 Step – 1.322 (as tested)

Infinitely Variable Transmission (IVT)

C 1.3.6 Travel Speed is infinitely variable from – 0 to 40 km/h
40 km/h can occur at an engine speed of 1625 rpm

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: Type 2 PTO available; Removable shaft

1.4.1.1 Power take-off proportional to engine speed

Power take-off at 540 min^{-1} (rev / min)

C - Location: N/A

C - Diameter of power take-off shaft end (mm): N/A

C - Number of splines: (Conformity to ISO 500:1991) N/A

C - Height above ground (mm): N/A

C - Distance from the median plane of the tractor (mm): N/A

C - Distance behind rear-wheel axis (mm): N/A

C - PTO speed at rated engine speed (min^{-1} (rev/min)): N/A

C - Engine speed at standard power take-off speed (min^{-1} (rev/min)): N/A

C - Ratio of rotation speeds (engine speed / p.t.o. speed): N/A

D - Power restriction (kW): N/A

D		- Maximum torque transmissible (Nm):	N/A
C		- Direction of rotation: (viewed from behind tractor)	N/A
		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):	45
C		- Number of splines: (Conformity to ISO 500:1991)	20; conforms to ISO 500 / 1991
C		- Height above ground (mm):	740
C		- Distance from the median plane of the tractor (mm):	0
C		- Distance behind rear-wheel axis (mm):	683.3
C		- PTO speed at rated engine speed (min^{-1} (rev/min)):	1050
C		- Engine speed at standard power take-off speed (min^{-1} (rev/min)):	2000
C		- Ratio of rotation speeds (engine speed / p.t.o. speed):	2.000 : 1
D		- Power restriction (kW):	None
D		- Maximum torque transmissible (Nm):	None
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):	N/A
C		- Number of power take-off shaft revolutions for one revolution of (rear) driving wheels:	N/A
C		- Direction of rotation with forward gear engaged (viewed from behind tractor):	N/A
	1.4.2	Optional power take-off	
C		- Give the same description as for the main PTO:	Same as 1.4.1
	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 2 x 112 mm
C		- Type of linkage lock for transport:	Electro-hydraulic
D		- Relief valve pressure setting (tolerance) (MPa):	20.4 +/- 0.3

D	- Opening pressure of cylinder safety valve (if fitted) (MPa):	23.25 +/- 0.5
D	- Lift pump type:	Closed center, load sensing pressure-flow compensated axial piston pump with partial flow charge pump with combined return flow charge
D	- Transmission between pump and engine:	Gear driven; Rear Differential case hypoid gear set
C	- Type and number of filters:	Synthetic spin on filter; two
C	- Site of oil reservoir:	Differential case housing
C	- Type, number, and location of tapping points:	ISO standard breakaway couplers / 4 standard with 5th and power beyond optional; rear of tractor
D	- Maximum volume of oil available to external cylinders (dm^3):	25; Optional 50

1.6 Three point linkage

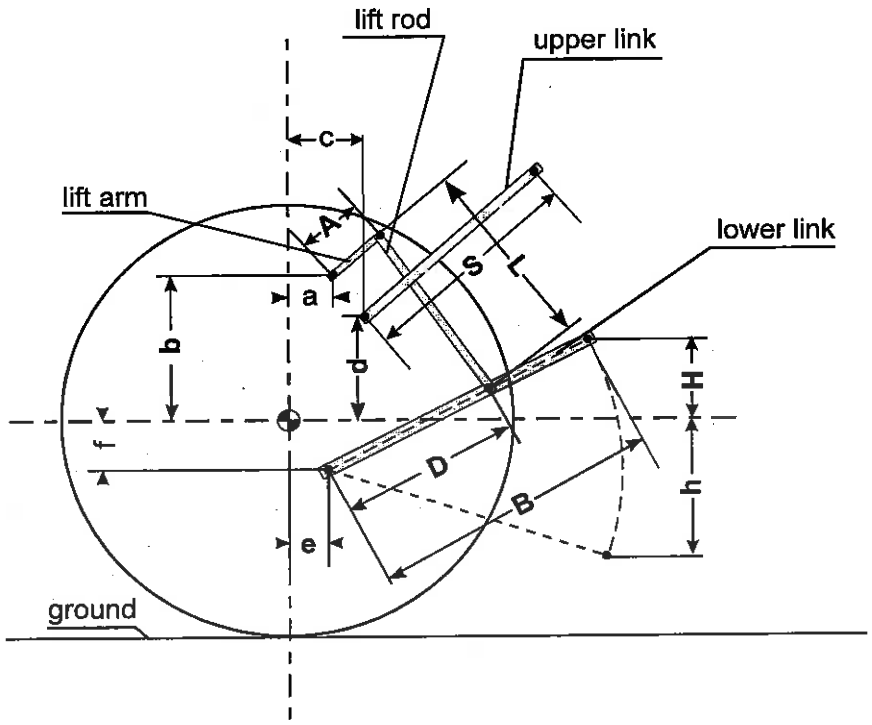


Figure 2.1
Lift Test – Linkage geometry

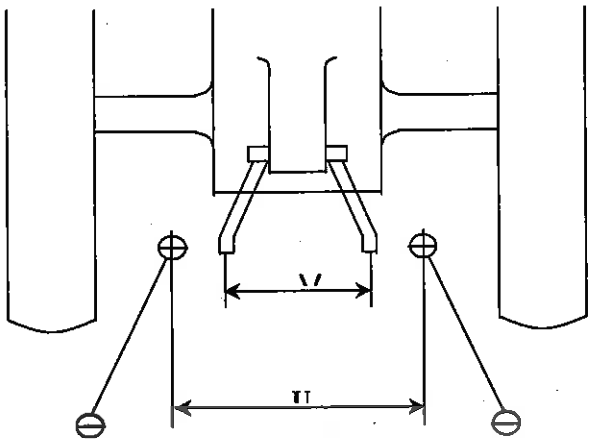


Figure 2.2
Lift Test – Linkage geometry

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

			Dimension or range	Settings used in test(s)
			mm	mm
C	Length of arms:	(A)	520	Same
C	Length of lower links:	(B)	1091	Same
	Distance of lift arm pivot point from rear wheel axis			
C	- horizontally:	(a)	230	Same
C	- vertically:	(b)	480	Same
C	Horizontal distance between the 2 lower link points:	(u)	855	Same
C	Horizontal distance between the 2 lift arm end points:	(v)	758	Same
C	Length of upper arm link:	(S)	735 to 914	794
	Distance of upper link pivot point from rear wheel axis			
C	- horizontally:	(c)	555	Same
C	- vertically:	(d)	304	Same
	Distance of lower link pivot point from rear wheel axis			
C	- horizontally:	(e)	276	Same
C	- vertically:	(f)	365	Same
C	Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	734	Same
C	Length of lift rods:	(L)	968 to 1121	1084
	Height of lower hitch points relative to the rear wheel axis			
C	- in low position:	(h)	496 – 744	712
C	- in high position:	(H)	122 - 316	140
C	Height above ground of lower hitch points when locked in transport position (*):		1077 – 1269	1082
	(*) Assuming r = 940 mm			

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):	463
C		. Maximum (mm):	587
C		- Type of adjustment:	Offset drawbar
		- Distance of hitch point from rear wheel axis	
C		. Horizontally (mm):	1191.5
		- Distance of hitch point from power take-off shaft end	
C		. Horizontally (mm):	508
C		. Vertically (mm):	153, 277
C		- Lateral adjustment (center of clevis)	
C		. Left hand (mm):	168
C		. Right hand (mm):	168
		- Distance of pivot point from rear wheel axis	
C		. Horizontally (mm):	190.5 (forward)
C		- Diameter of drawbar pinhole (mm):	52.8
D		- Maximum vertical permissible load (kN)):	22.0 – standard (as tested) 48.9 – optional
	1.8	**Trailer hitch**	
C		- Type:	N/A
C		- Hole diameter (mm):	
C		- Height above ground (mm):	
		- Distance of hitch point from rear wheel axis	
C		. Horizontally (mm):	
		- Distance of hitch point from take-off shaft end	
C		. Horizontally (mm):	
C		. Vertically (mm):	
D		- Maximum vertical permissible load (kN):	
	1.9	Holed drawbar	
C		- Number of holes:	N/A
C		- Distance between holes (mm):	
C		- Hole diameter (mm):	
C		- Thickness / width of the drawbar (mm /mm):	
		- Height above ground	
C		. Minimum (mm):	
C		. Maximum (mm):	
C		- Horizontal distance to power take-off shaft end (rear) (mm):	

1.10 Steering

D - Make / Model / Type: Sauer / OSPF / 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): 20.7

1.11 **Brakes**

1.11.1 Service brake

D - Make / Model / Type: Eaton / RE210856 / 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: Spring applied; hydraulically released friction disk

C - Method of operation: Gear selector lever

1.12 **Wheels**

- Number

C . Front (driving / steering): Two; driving and steering

C . Rear (driving / steering): Four; driving

C - Wheelbase (mm): 3020

- Track width adjustment:

		Minimum mm	Maximum mm	Adjustment method
D	Front – single	1626	2235	Reversing wheels and offset lug rims
D	Front – dual	3048	3657	Rack and pinion axle; reversing wheels and offset lug rims
D	Rear – single	1524	2710 – as single 2278 – with duals 1932 – with triples	Rack and pinion axle; reversing wheels and offset lug rims
D	Rear – dual	2622 – as dual 2824 – with triples	3368 – as dual 3032 – with triples	Rack and pinion axle; reversing wheels and offset lug rims
D	Rear – triple	4240	4546	Rack and pinion axle; reversing wheels and offset lug rims

	1.13	**Protective structure**	
C		- Make / Model / Type:	John Deere/SG096/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:	4/0 914
C		. Date of approval:	8 November 2005
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	
D		- Type of suspension:	
D		- Type of damping:	
		- Range of adjustment	
D		. Longitudinally (mm):	
D		. Vertically (mm):	
	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	1782	155 x 110	238
Outer Pair	1782	122 x 86	376
Center	1782	130 x 86	65
Sidelights			
Midbody	2392	160 x 110	700
Rearlights			
Roof	3080	160 x 110	508
Fender	2310	160 x 110	914
Reflectors			
Front	3156	180 x 72	736
Rear	3156	180 x 72	743
Brake	2074	210 x 95	910
Extremity	2280	140 x 72	2335

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	6494	4720	5026	3190	3206
Unballasted	5938	3102	3848	3190	3206

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

2.2 Ground clearance (unballasted tractor)

(mm): 384

- Clearance – limiting part: Drawbar safety support

2.3 Tractor mass

- Mass (with cab):

	With driver	Without driver
	kg	Kg
Unballasted		
Front	5076	5061
Rear	7151	7091
Total	12227	12152
Ballasted		
Front	6672	6657
Rear	10174	10114
Total	16846	16771

Ballast Added	Number of Weights	Total Mass	Liquid
		kg	kg
Front (weight support)	1	172	-
Front (weights)	10	446	-
Front (duals)	2	723	-
Rear (triples)	2	1080	-
Rear (weights)	2	1249	-
Rear (weights)	4	803	-
Rear (weights)	2	147	-

2.4 Track specifications

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 420/85R34	Goodyear 480/80R50
- ply rating:	147 A8	159 A8
- type:	Radial	Radial
- maximum load (tyre manufacturer's) (kN):	30.2 kN	42.9 kN
- maximum load (tractor manufacturer's) (kN):	Same	Same
- inflation pressure (tyre manufacturer's) (kPa):	From 60 to 240	From 40 to 240
- dynamic radius index (mm):	745	940
Chosen track width (mm):	1840 (inner) 3380 (outer)	1524 (inner) 2780 (center) 3860 (outer)

2.6 Fuel

- Type:
  - *in conformity with national standards* — No. 2 Diesel
- Density at 15° C: — 0.838 kg/l

2.7 Oil and lubricants

2.7.1 Capacity and change interval

	Capacity	Oil Change	Filter change
	Dm^3	h	h
Engine	28	250 (375 with John Deere PLUS-50 and John Deere filter)	Same
Gear Box	160	1500	Same
Front Axle	Common w/gearbox	1500	Common w/gearbox
Rear Axle	Common w/gearbox	1500	Common w/gearbox
Final Drive (front)	4.0	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: 32

3. COMPULSORY TESTS RESULTS

3.1 Main power take-off

- Date and location of tests: 5-Oct-06 Nebraska Tractor Test Laboratory, Lincoln, NE, USA
- Type of dynamometer bench: Eaton

	Speed			Fuel consumption			Specific energy
Power	Engine	PTO	Fan	Hourly		Specific	
kW	rev/min			kg/h	l/h	g/kWh	kW-h/l
3.1 MAXIMUM POWER - ONE HOUR TEST							
233.20	1800	900	1639	52.90	63.05	227	3.70
3.1.2 POWER AT RATED ENGINE SPEED							
206.95	2100	1050	1512	48.84	58.22	236	3.55
3.1.3 STANDARD POWER TAKE-OFF SPEED (1000 +/- 25 rev/min							
225.49	2000	1000	1576	51.54	61.42	229	3.67
3.1.4 PART LOADS							
3.1.4.1 the torque corresponding to maximum power at rated engine speed							
206.95	2100	1050	1512	48.84	58.22	236	3.55
3.1.4.2 85% of torque obtained in 3.1.4.1							
180.19	2154	1076	1565	44.91	53.52	249	3.37
3.1.4.3 75% of torque defined in 3.1.4.2							
136.02	2163	1081	1424	37.51	44.71	276	3.04
3.1.4.4 50% of torque defined in 3.1.4.2							
91.05	2173	1086	1215	28.67	34.17	315	2.66
3.1.4.5 25% of torque defined in 3.1.4.2							
45.82	2186	1093	1202	18.87	22.49	412	2.04
3.1.4.6 unloaded							
1.09	2194	1097	1188	13.20	15.73	12107	0.07
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							
225.49	2000	1000	1576	51.54	61.42	229	3.67
3.1.5.2 85% of torque obtained in 3.1.5.1							
201.07	2100	1050	1513	47.58	56.71	237	3.55
3.1.5.3 75% of torque defined in 3.1.5.2							
150.76	2100	1050	1527	39.78	47.41	264	3.18
3.1.5.4 50% of torque defined in 3.1.5.2							
100.74	2100	1050	1179	29.85	35.57	296	2.83
3.1.5.5 25% of torque defined in 3.1.5.2							
50.58	2100	1050	1168	18.78	22.38	371	2.26
3.1.5.6 unloaded							
1.04	2100	1050	1152	11.75	14.00	11258	0.07

- No load maximum engine speed:	2194	rev/min
- Torque (equivalent crankshaft) at rated speed:		
- At rated engine speed	941	Nm
- At maximum power	1237	Nm
- Maximum torque (equivalent crankshaft):	1364	Nm
(engine speed:	1597	rev/min)

Mean atmospheric conditions:		
Dry bulb	24	°C
Pressure	98.4	kPa
Relative Humidity	41	%
Maximum temperatures:		
Coolant	99	°C
Engine oil	124	°C
Fuel	54	°C
Engine air intake	33	°C

3. COMPULSORY TESTS RESULTS

3.1 Main power take-off

- Date and location of tests: 5-Oct-06 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							
206.95	2100	1050	1512	48.84	58.22	236	3.55
3.1.6.2 80% of power obtained in 3.1.6.1 at max speed setting							
165.68	2156	1078	1533	42.68	50.87	258	3.26
3.1.6.3 80% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed							
165.84	1890	945	1416	40.51	48.28	244	3.44
3.1.6.4 40% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed							
83.15	1890	945	1042	23.68	28.22	285	2.95
3.1.6.5 60% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed							
124.49	1260	630	745	27.31	32.55	219	3.83
3.1.6.6 40% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed							
82.76	1260	630	703	20.59	24.54	249	3.37

3.2 HYDRAULIC POWER AND LIFTING FORCE

3.2.1 Hydraulic Power Test - 85 cc pump

Date of Test: 12-Oct-06 Location of Test-City-State: Tractor Test Lab, Lincoln, NE, USA

Tractor Model: John Deere 8530 Tapping point used for test: Remote hydraulic outlets

3.2.1.1 Hydraulic Fluid Characteristics

Found in: **2.7.2 Specifications**

Viscosity@65C - 25cSt

3.2.1.2 Compulsory Report(Test Results):

	Pressure	Reservoir oil Temperature	Engine Speed	Flow Rate	Power
	MPa	°C	rev/min^{-1}	l/min	kW
Rated Engine Speed: (Manufactures Specification)			2100		
Maximum (sustained) pressure with relief valve open as measured at the coupler Pump stalled: Yes	20.62	71	2194		
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:	18.56	74	2183	177.9	55.0
Maximum available flow from one coupler pair:	6.82	71	2183	148.0	16.8
Maximum available power from one coupler pair:	14.32	72	2181	141.2	33.7
Maximum available flow from coupler pairs operating simultaneously (flow through two or more coupler pairs if required):	4.57	66	2185	241.9	18.4
Maximum power from coupler pairs operating simultaneously (flow through two or more coupler pairs if required):	17.02	73	2171	232.4	66.0

3.2.2 POWER LIFT TEST Category IVN, Walterscheid lower links with lifting cylinders (2) x 112 mm dia .
Date of test: 21 June 2006

	Hitch points	Frame
Lower hitch points above ground - down position:	230 mm	233 mm
Vertical movement - without load:	852 mm	894 mm
with load:	800 mm	836 mm
Maximum corrected force exerted through full range:	87.1 kN	84.4 kN
Corresponding pressure:	18.4 MPa	18.4 MPa
Moment about rear axle:	115.2 kNm	163.2 kNm
Maximum mast tilt angle	--	*3.8 degrees

Lifting height relative to horizontal position of lower links.

mm	-344	-341	-299	-200	-96	0	100	199	300	400	456	495
Corrected lift forces												
At the Hitch point kN	87.1	--	88.1	90.9	93.7	95.9	97.9	100.1	102.3	104.5	105.8	--
at the frame kN	--	94.9	93.0	91.8	91.6	91.4	90.7	89.8	88.4	86.5	85.6	84.4
Corresponding pressure 18.4 Mpa												

*Maximum tilt angle available with settings on tractor

OECD (SI) UNBALLASTED FWA

OECD Drawbar Data (SI)

Date of test 13, 16, 17-Oct-2006							Fuel density:	0.839 kg/l						
Type of tra Concrete							Test number:	1890						
3.3.1 Maximum power in tested gears (unballasted, FWA)							Tire pressure:	76 kPa, rear	159 kPa, front			Drawbar Height:	483 mm	
Speed Setting	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
km/h	kW	kN	km/h	min^{-1}	%	min^{-1}	g/kW.h	kW.h/l	°C	°C	°C	°C	%	kPa(1)
*5.8	159.78	110.49	5.21	2122	10.7	902	302	2.78	51	92	112	16	75	96.6
*6.4	163.26	103.71	5.67	2081	10.2	1012	301	2.79	52	94	118	16	75	96.6
7.0	174.26	101.19	6.20	2043	8.4	1007	287	2.93	52	93	119	16	75	96.6
7.5	185.35	99.83	6.68	2008	7.4	994	274	3.06	51	94	118	16	75	96.6
8.0	189.05	98.54	6.91	1965	7.1	1006	273	3.08	51	94	119	16	75	96.6
9.0	195.74	96.46	7.31	1839	6.7	1017	269	3.12	49	93	119	16	75	96.6
10.0	202.11	89.46	8.13	1802	4.6	945	262	3.21	48	93	119	8	36	97.6
11.0	204.77	81.85	9.01	1803	4.0	978	258	3.25	48	93	119	10	35	97.6
12.0	203.43	74.23	9.87	1801	3.5	1012	258	3.25	48	93	119	11	36	97.6
13.0	202.90	67.95	10.75	1805	3.2	1036	259	3.24	48	93	120	11	38	97.5
14.0	203.13	63.10	11.59	1802	2.9	1037	260	3.23	49	93	120	12	30	97.5
15.0	202.18	58.42	12.46	1804	2.6	1038	262	3.21	49	93	120	13	32	97.5
16.0	201.54	54.49	13.32	1804	2.5	1033	262	3.20	48	93	120	13	32	97.5
* Note: Slip within test station operating procedures.														
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													
7.5	174.28	87.29	7.19	2099	4.8	915	274	3.06	53	95	118	15	84	96.2
3.3.2.1.1	75% of pull corresponding to maximum power at rated engine speed													
7.5	137.02	65.75	7.50	2157	3.3	910	299	2.80	51	94	113	16	70	96.6
3.3.2.1.2	50% of pull corresponding to maximum power at rated engine speed													
7.5	93.07	43.87	7.64	2169	2.1	924	343	2.44	52	86	111	16	70	96.6
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													
Auto Mode	136.68	65.79	7.48	1716	3.2	954	279	3.01	47	94	110	16	70	96.7
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													
Auto Mode	92.66	44.10	7.56	1324	2.0	662	261	3.21	47	85	107	16	70	96.6
3.3.2.2	In selected gear/speed setting nearest between 7 km/hr and 10 km/hr at rated engine speed													
10.0	179.23	67.04	9.62	2097	3.0	900	269	3.12	49	93	117	8	40	97.6
3.3.2.2.1	75% of pull corresponding to maximum power at rated engine speed													
10.0	139.51	50.35	9.98	2157	2.3	911	296	2.83	53	93	112	15	84	96.2
3.3.2.2.2	50% of pull corresponding to maximum power at rated engine speed													
10.0	93.67	33.37	10.11	2168	1.5	912	344	2.44	55	91	113	14	84	96.2
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													
Auto Mode	139.24	50.17	9.99	1734	2.2	942	277	3.03	50	96	112	14	84	96.2
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													
Auto Mode	94.11	33.43	10.14	1350	1.5	717	265	3.17	51	87	111	14	84	96.2

(1) see remarks p 25

OECD (SI) UNBALLASTED FWA

OECD Drawbar Data (SI)

Date of tests:	**13, 16, 17-Oct-2006**					**Fuel density:**	**0.839 kg/l**							
Type of track:	**Concrete**					**Test number:**	**1890**							
4.1 Maximum power in tested gears (unballasted, FWA)							**Tire pressure:**	**76 kPa, rear**	**159 kPa, front**			**Drawbar Height:**	**483 mm**	
Speed Setting	**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**
km/h	**kW**	**kN**	**km/h**	**min^{-1}**	**%**	**min^{-1}**	**g/kW.h**	**kW.h/l**	**°C**	**°C**	**°C**	**°C**	**%**	**kPa(1)**
***5.0**	**158.43**	**109.61**	**5.20**	**2128**	**11.0**	**949**	**304**	**2.76**	**52**	**95**	**114**	**16**	**75**	**96.6**
6.4	**165.12**	**102.32**	**5.81**	**2098**	**8.8**	**1028**	**294**	**2.86**	**52**	**94**	**117**	**16**	**75**	**96.6**
7.0	**169.50**	**93.71**	**6.51**	**2098**	**6.4**	**1009**	**286**	**2.93**	**51**	**94**	**118**	**16**	**75**	**96.6**
7.5	**174.28**	**87.29**	**7.19**	**2099**	**4.8**	**915**	**274**	**3.06**	**53**	**95**	**118**	**15**	**84**	**96.2**
8.0	**177.37**	**83.89**	**7.61**	**2100**	**4.2**	**886**	**269**	**3.12**	**53**	**94**	**115**	**15**	**84**	**96.2**
9.0	**178.60**	**74.72**	**8.60**	**2097**	**3.6**	**957**	**267**	**3.14**	**52**	**94**	**118**	**15**	**84**	**96.2**
10.0	**179.23**	**67.04**	**9.62**	**2097**	**3.0**	**900**	**269**	**3.12**	**49**	**93**	**117**	**8**	**40**	**97.6**
11.0	**179.15**	**60.75**	**10.62**	**2098**	**2.7**	**918**	**268**	**3.14**	**49**	**94**	**118**	**9**	**39**	**97.6**
12.0	**177.63**	**54.96**	**11.64**	**2101**	**2.4**	**975**	**270**	**3.10**	**49**	**93**	**118**	**11**	**36**	**97.6**
13.0	**176.30**	**50.36**	**12.60**	**2097**	**2.2**	**987**	**273**	**3.08**	**50**	**92**	**119**	**11**	**32**	**97.5**
14.0	**175.87**	**46.47**	**13.62**	**2101**	**2.1**	**1015**	**273**	**3.07**	**49**	**94**	**119**	**12**	**34**	**97.5**

*** Note: Slip within test station operating procedures.**

(1) see remarks p.25

OECD (SI) UNBALLASTED FWA

OECD Drawbar Data (SI)

Date of tests:	13, 16, 17-Oct-2006						Fuel density:	0.839 kg/l						
Type of track:	Concrete						Test number:	1890						
4.2 Maximum power in tested gears (unballasted, FWA)							Tire pressure:	76 kPa, rear	159 kPa, front			Drawbar Height:	483 mm	
Speed Setting	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
km/h	kW	kN	km/h	min^{-1}	%	min^{-1}	g/kW.h	kW.h/l	°C	°C	°C	°C	%	kPa(1)
*5.8	156.78	108.16	5.22	1905	11.5	932	297	2.82	51	95	116	16	75	96.6
6.4	164.53	101.84	5.82	1992	8.5	894	287	2.92	50	95	116	16	75	96.6
7.0	170.35	93.37	6.57	2007	6.2	929	278	3.02	51	95	118	16	75	96.6
7.5	174.35	87.15	7.20	2034	4.8	883	270	3.11	52	95	117	15	84	96.2
8.0	177.20	84.07	7.59	2046	4.3	887	267	3.14	52	94	117	15	84	96.2
9.0	179.18	74.97	8.60	2040	3.7	901	264	3.18	50	94	117	15	84	96.2
10.0	179.37	66.87	9.66	2019	3.1	877	264	3.18	48	93	117	9	37	97.6
11.0	179.11	60.43	10.67	2009	2.7	898	264	3.17	47	93	117	11	36	97.6
12.0	177.53	54.61	11.70	2018	2.4	932	267	3.14	49	93	117	11	32	97.6
13.0	176.52	49.96	12.72	2007	2.2	978	268	3.13	49	93	118	12	34	97.5
14.0	176.18	46.27	13.71	2043	2.0	1003	271	3.09	50	93	119	12	30	97.5

* Note: Slip within test station operating procedures.

(1) see remarks p.25

OECD (SI) BALLASTED FWA

OECD Drawbar Data (SI)

Date of tests:	19-Oct-2006						Fuel density:	0.839 kg/l						
Type of track:	Concrete						Test number:	1890						
4.3 Maximum power in tested gears (ballasted, FWA)							Tire pressure:	76 kPa, rear	117 kPa, front			Drawbar Height:	495 mm	
Gear Number and range	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
3.8	148.92	163.84	3.27	2128	13.3	897	320	2.62	49	89	112	7	57	97.6
4.5	168.69	154.95	3.92	2058	9.3	874	290	2.89	51	93	116	8	60	97.6
5.2	183.99	150.50	4.40	1977	8.1	863	277	3.03	50	94	117	10	63	97.5
6.0	192.98	145.55	4.77	1843	7.2	871	271	3.09	50	96	117	10	63	97.5
7.0	199.10	129.12	5.55	1801	5.3	977	265	3.17	49	93	119	11	64	97.5
7.6	201.70	119.57	6.07	1802	4.7	989	262	3.20	50	93	119	11	59	97.4
8.0	203.19	114.10	6.41	1801	4.3	968	258	3.25	50	95	119	12	55	97.4
9.0	204.62	101.30	7.27	1802	3.6	988	259	3.24	49	93	119	12	56	97.4
10.0	205.69	91.27	8.11	1801	3.1	997	256	3.28	50	93	119	12	56	97.4
11.0	206.04	82.81	8.96	1802	2.8	972	256	3.28	50	96	120	13	51	97.3
12.0	204.67	75.32	9.78	1799	2.5	1008	257	3.26	50	93	119	13	51	97.3
13.0	203.68	69.12	10.61	1797	2.3	1032	258	3.25	50	94	120	13	52	97.3
14.0	203.06	63.70	11.48	1800	2.0	1037	259	3.24	50	93	120	13	52	97.3
15.0	202.13	59.05	12.32	1801	1.8	1045	262	3.20	49	93	120	14	48	97.2
16.0	201.20	55.12	13.14	1799	1.7	1048	262	3.21	49	93	120	14	49	97.2

4.4 Measurement of External Noise Level – John Deere 8530 IVT

-- Date of Test	October 16, 2006
-- Location of Test	Nebraska Tractor Test Laboratory
-- Sound Level Meter	Bruel and Kjaer 2236
-- Type of Track	Concrete Oval
-- Gear Number	N/A
-- Speed Prior to Acceleration	31.0 km/h
-- Noise Level	86.5 dB(A)

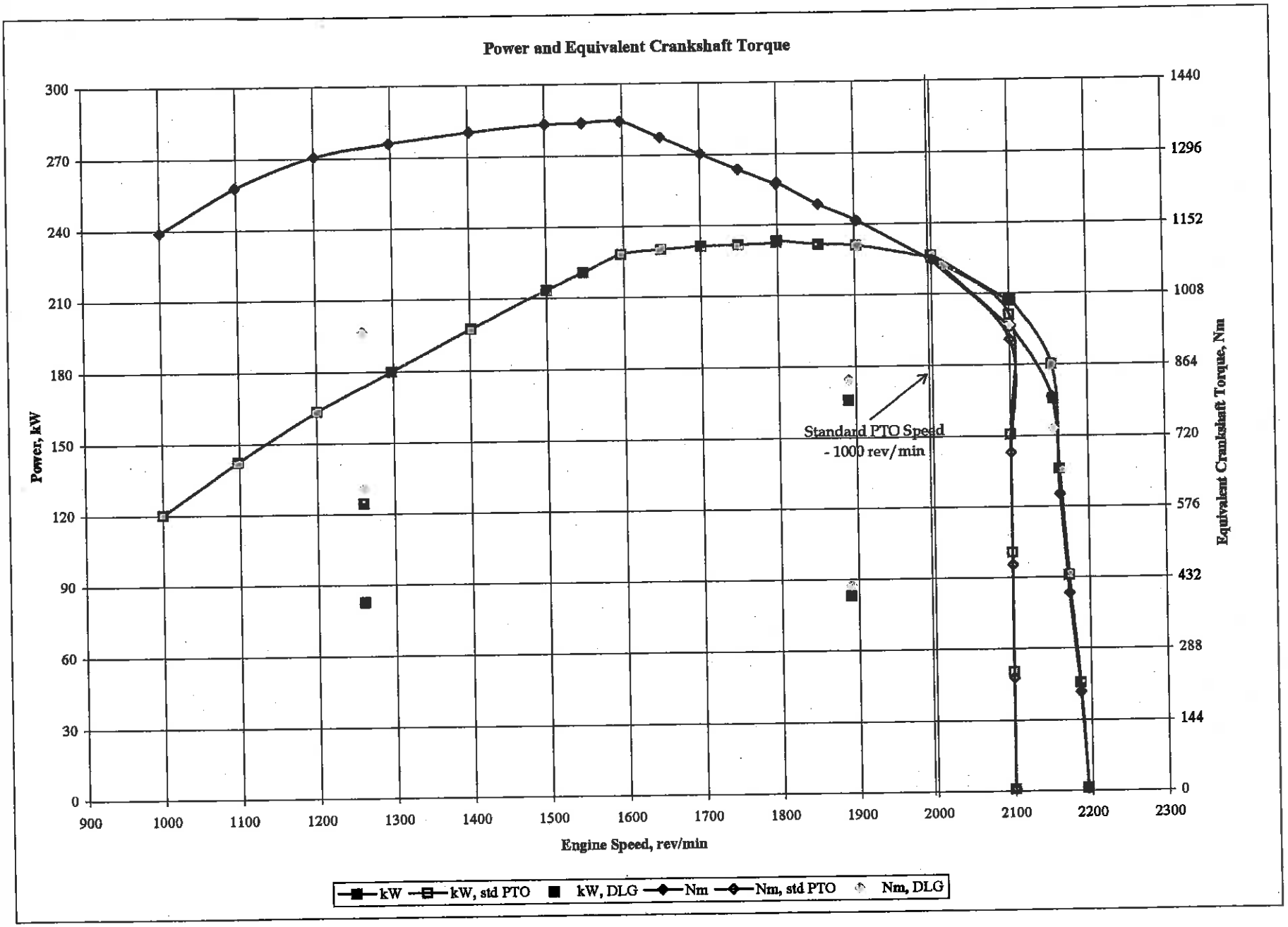
4.5 Measurement of Noise Level at Operator's Ear*

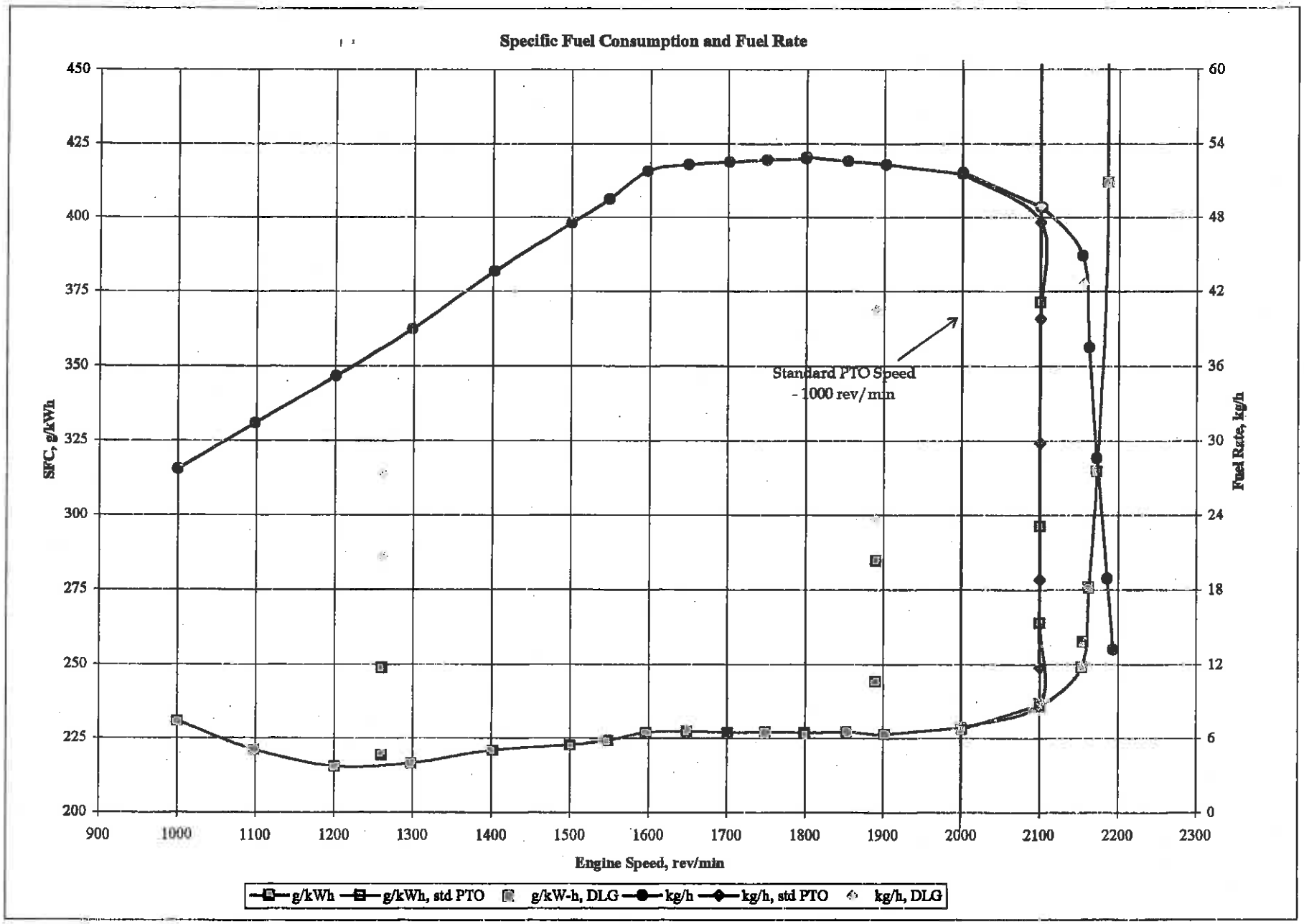
-- Date of Test	October 16, 2006
-- Location of Test	Nebraska Tractor Test Laboratory
-- Sound Level Meter	Bruel and Kjaer 2236
-- Type of Track	Concrete Oval
-- Gear Number	N/A - Speed 7.5 km/h
-- Drawbar Load	None
-- Noise at Operator Ear	71.4 dB(A) – front wheel drive engaged 71.2 dB(A) – front wheel drive disengaged

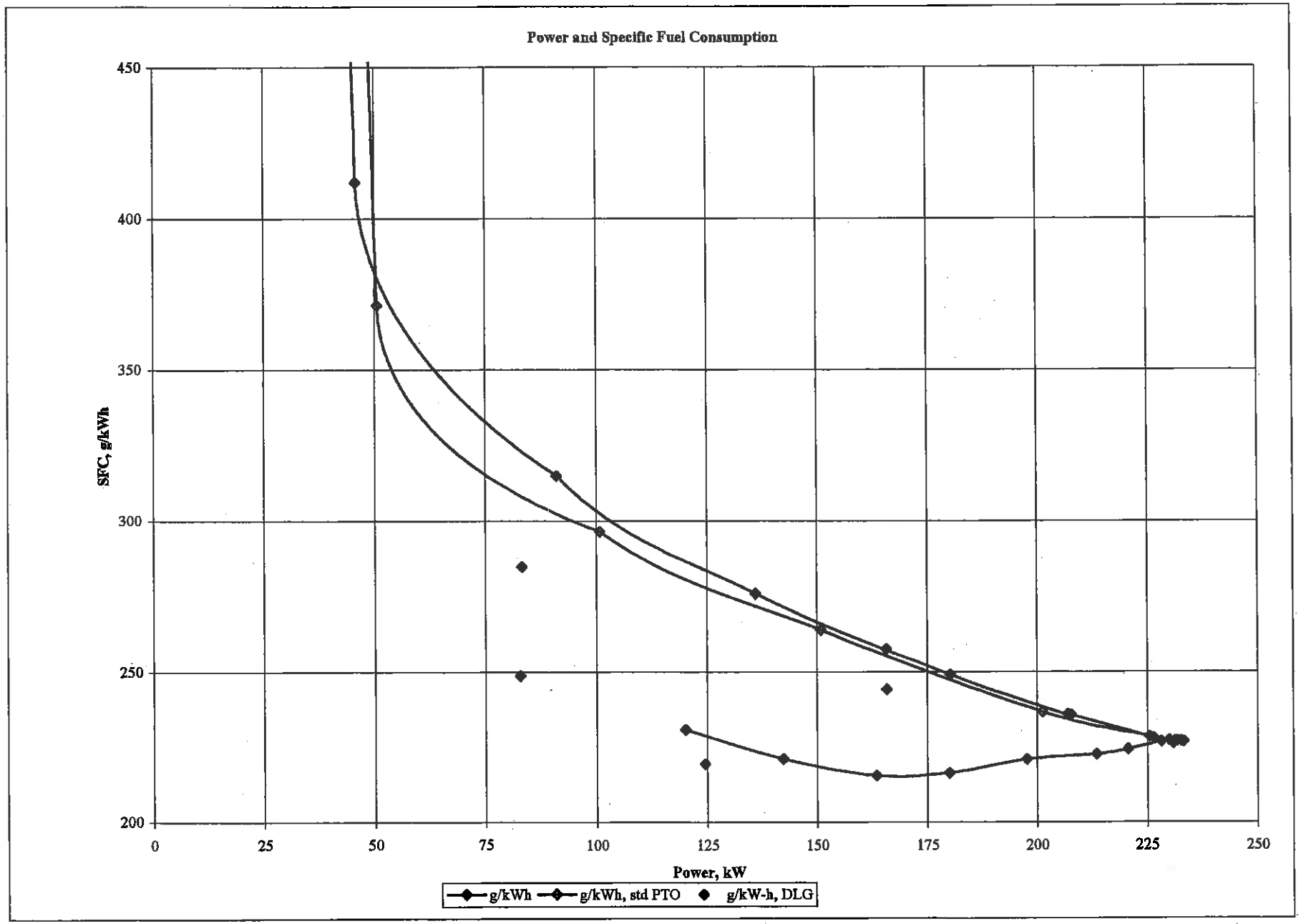
* Note: Nebraska tractor test station guidelines. Not covered by OECD approval

5. Repairs and Adjustments: None

6. Remarks: The required atmospheric pressure of 96.6 kPa was not available for some of the drawbar tests ran for sections 3.3.2, 4.1 and 4.2. No adjustments were made to the fuel injection system for these tests.


Power and Equivalent Crankshaft Torque
Power, kW
Equivalent Crankshaft Torque, Nm
Engine Speed, rev/min
Standard PTO Speed
- 1000 rev/min
kW
kW, std PTO
kW, DLG
Nm
Nm, std PTO
Nm, DLG
300
270
240
210
180
150
120
90
60
30
0
1440
1296
1152
1008
864
720
576
432
288
144
0
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300


Specific Fuel Consumption and Fuel Rate
SFC, g/kWh
Fuel Rate, kg/h
Engine Speed, rev/min
Standard PTO Speed
- 1000 rev/min
g/kWh
g/kWh, std PTO
g/kW-h, DLG
kg/h
kg/h, std PTO
kg/h, DLG


Power and Specific Fuel Consumption
SFC, g/kWh
450
400
350
300
250
200
0
25
50
75
100
125
150
175
200
225
250
Power, kW
g/kWh
g/kWh, std PTO
g/kW-h, DLG