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CODE 2
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NEBRASKA TRACTOR TEST LABORATORY
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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 7510 4 WD
PowrQuad - MFWD
16 Forward speeds - 30 km/h Version

MANUFACTURED BY:	John Deere Tractor Works 3500 East Donald Street, P.O. Box 270 Waterloo, Iowa 50704-0270
NEBRASKA TEST NO.	1786
TEST DATES:	October 23 - November 29, 2000

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 19 June 2001 for the John Deere 7510 PowrQuad, MFWD, 30 km/h version, with OECD Number 2/1 959.

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Date: JUN 2 5 2001

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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.

- Tractor manufacturer's name and address:	John Deere Waterloo Works 3500 East Donald St. P.O. Box 270 Waterloo, Iowa U.S.A.
- Location of tractor assembly:	Same
- Submitted for test by:	The manufacturer
- Selected for test by:	The manufacturer in agreement with the test station.
- Place of running-in:	John Deere Product Engineering Center, Waterloo, Iowa U.S.A.
- Duration of running-in:	125 hours
- Location of test:	Nebraska Tractor Test Laboratory Lincoln, Nebraska, USA.

1. SPECIFICATIONS OF TRACTOR

1.1 Identification

-Make/Model/Type:	John Deere/7510/4 WD
-Number of driving wheels:	2 or 4
-Serial N:	*RW7510H037961*
-1st Serial N:	*RW7510H030001*

1.2 Engine

- Make/Model/Type:	John Deere/6068TRW70/Diesel;4-stroke; direct injection; turbocharged
- Serial N°:	*T06068T856910*

1.2.1 *Cylinders*

- Number/disposition:	6, in-line, vertical
- Bore/stroke:	106.5 mm x 127.0 mm
- Capacity:	6788 cm^3
- Compression ratio:	17.0:1
- Arrangement of valves:	Overhead
- Cylinder liners (wet or dry):	Wet; replaceable

1.2.2 *Supercharging*

- Make/Model/Type:	Garret/RE59883/Exhaust gas driven
- Pressure:	0.068 ± 0.015 MPa at rated speed and load

1.2.3 *Fuel system*

- Fuel feed system:	Mechanical transfer pump
- Make/Model/Type of fuel filter(s):	
• Primary:	Stanadyne/AR103220/fuel strainer
• Secondary:	Stanadyne/RE62419/paper element
- Capacity of fuel tank:	189 dm^3
- Fuel cooler:	None
- Make/Model/Type of injection pump:	Stanadyne/RE502826/rotary; electric shutoff
- Serial N°:	DB4629-5530 502826
- Manufacturer's production setting of injection pump	
. Flow rate (rated engine speed and full load):	26.0 ± 0.85 dm^3/hr
. Timing: Crankshaft	7 degrees ± 1 degree BTDC
- Make/Model/Type of injectors:	Stanadyne/44508/Pencil Type
- Injection pressure:	29.0 + 1.2/-0.0 MPa
-Make/Model/Type of carburettor:	Not Applicable

1.2.4 Governor

-Make/Model/Type:	Stanadyne/all speed/mechanical
- Governed range of engine speed:	From 850 to 2275 min^{-1} (rev/min)
- Rated engine speed:	2100 min^{-1} (rev/min)

1.2.5 *Air cleaner*

- Pre-cleaner	
.Make/Model/Type:	N/A
.Location of air intake:	Under hood, front of tractor
- Main cleaner	
.Make/Model/Type:	Mann & Hummerl/AL78869/ Integrated; pleated paper
- Secondary Element	
.Make/Model/Type:	Mann & Hummel/AL78870/ Pleated paper
- Maintenance indicator:	Dashed mounted warning light and audible signal

1.2.6 *Lubrication system*

- Type of feed pump:	Full pressure; positive displacement
- Type of filter(s):	Full flow
- Number of filters:	One; spin-on
- Oil cooler:	Stacked plate heat exchanger with engine coolant

1.2.7 *Cooling system*

- Type of coolant:	Liquid
- Type of pump:	Centrifugal, belt driven
- Specification of fan or blower:	Belt driven; Suction type; Variable speed
. Number of fan blades:	7
. Fan diameter:	531 mm
- Coolant capacity:	19 dm^3
- Type of temperature control:	Two thermostats and variable speed fan
- Superpressure system:	69 kPa

1.2.8 *Starting system*

- Make/Model/Type:	Nippondenso/RE59596/Solenoid Engaged
- Starter motor power rating:	4.0 kW
- Cold starting aid:	Electrical resistance preheater in air intake manifold
- Safety device:	Electrical lockout on gearshift

1.2.9 *Electrical system*

- Voltage &grounding:	12 Volt DC; negative ground
- Alternator	
. Make/Model/type:	Nippondenso/RE60745/Belt driven with built-in regulator
. Power Rating:	1.62 kW; 120 Amp at rated engine speed and 13.5 Volt at 25° C Ambient
- Batteries	
. Number & Connection:	Two: 12 Volt batteries in parallel; SAE tapered post
. Rating:	925 cold cranking amps/battery; 175 Ah/battery at 20 h rating

1.2.10 *Exhaust system*

- Make/Model/Type:	Nelson/RE71565/Expansion chamber
- Location:	Horizontal muffler; under hood
- Exhaust stack location:	Vertical; right front of cab

1.3 Transmission

1.3.1 *Clutch (Travel)*

- Make/Model/Type: John Deere/Multiple plate/Oil cooled
- Number of plates: 4 for forward; 3 for reverse
- Diameter of plates: 225 mm for forward; 295 mm for reverse
- Method of operation: Hydraulic; pedal actuated

1.3.2 *Gear box*

- Make/Model/Type: John Deere/PowrQuad™/Mechanical
- Arrangement: Countershaft and planetary design consisting of: One 4 or 5-speed gear box with 4 or 5 mechanically synchronized speeds and a 4-speed planetary gear set with multiple wet disk clutch and brake units
- Oil cooler: Heat exchanger with air

Version Tested:
16 Speed PowrQuad - 30 km/hr

	Forward	Reverse
Number of gears	4	4
Number of ranges/groups	4	4
Total of arrangements	16	16

- Available options:
- 16 Speed PowrQuad with Creeper - 30 km/hr

	Forward	Reverse
Number of gears	4	4
Number of ranges/groups	3in Creeper 4 in Non-Creeper	4in Creeper 4 in Non-Creeper
Total of arrangements	28	28

- 20 Speed PowrQuad - 40 km/hr

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

- 20 Speed PowrQuad with Creeper - 40 km/hr

	Forward	Reverse
Number of gears	4	4
Number of ranges/groups	3in Creeper 5 in Non-Creeper	4in Creeper 5 in Non-Creeper
Total of arrangements	32	32

1.3.3 *Rear axle and final drives*

- Make/Model/Type: John Deere/RE66310/Spiral bevel with pinion, differential and inboard planetary reduction

- Differential lock
  - . Type: Electro-Hydraulic
  - . Method of engagement: Pedal operated switch
  - . Method of disengagement: Self-disengaging with brake operation

1.3.4 *Front axle and final drives*

- Make/Model/Type: John Deere/MFWD RE66946/Spiral bevel and pinion, differential and outboard planetary reduction

- Differential lock
  - . Type: Limited slip
  - . Method of engagement: Self-engaging
  - . Method of disengagement: Self-disengaging

1.3.5 *Total ratios and traveling speeds*

16 Speed 30km/h PowrQuad

Gear No.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal traveling speed (*) at rated engine speed of 2100 min^{-1} (rev/min) km/h
FWD			
1	A1	270.0140	2.40
2	A2	224.2421	2.89
3	A3	187.2267	3.47
4	A4	152.8381	4.25
5	B1	127.3963	5.10
6	B2	105.8005	6.14
7	B3	88.3361	7.35
8	C1	80.0512	8.11
9	B4	72.1111	9.00
10	C2	66.4812	9.76
11	C3	55.5072	11.70
12	C4	45.3120	14.33
13	D1	38.6049	16.82
14	D2	32.0608	20.25
15	D3	26.7685	24.25
16	D4	21.8519	29.71
REV			
1	A1	227.6588	2.85
2	A2	189.0669	3.43
3	A3	157.8578	4.11
4	A4	128.8635	5.04
5	B1	107.4126	6.04
6	B2	89.2044	7.28
7	B3	74.4795	8.72
8	C1	67.4941	9.62
9	B4	60.7996	10.68
10	C2	56.0528	11.58
11	C3	46.8002	13.87
12	C4	38.2042	16.99
13	D1	32.5493	19.94
14	D2	27.0316	24.02
15	D3	22.5695	28.76
16	D4	18.4241	35.24
Number of front wheel revolutions for one rear wheel revolution: 1.345			

* (Calculated with a tire dynamic radius index of 820 mm (ISO 4251/1 – 1998)

16 Speed 30km/h PowrQuad with Creeper

Gear No.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal traveling speed (*) at rated engine speed of 2100 min^{-1} (rev/min) km/h
FWD			
1	A1 CRP	4577.7548	0.14
2	A2 CRP	3801.7498	0.17
3	A3 CRP	3174.1979	0.20
4	A4 CRP	2591.1820	0.25
5	B1 CRP	1554.7870	0.42
6	B2 CRP	1291.2249	0.50
7	B3 CRP	1078.0834	0.60
8	B4 CRP	880.0681	0.74
9	C1 CRP	773.4359	0.84
10	C2 CRP	642.3257	1.01
11	C3 CRP	536.2975	1.21
12	C4 CRP	437.7939	1.48
13	A1	473.8011	1.37
14	A2	393.4840	1.65
15	A3	328.5319	1.98
16	A4	268.1893	2.42
17	B1	160.9216	4.03
18	B2	133.6428	4.86
19	B3	111.5825	5.82
20	B4	91.0877	7.13
21	C1	80.0512	8.11
22	C2	66.4812	9.76
23	C3	55.5072	11.70
24	C4	45.3120	14.33
25	D1	38.6049	16.82
26	D2	32.0608	20.25
27	D3	26.7685	24.25
28	D4	21.8519	29.71
REV			
1	A1 CRP	3859.6756	0.17
2	A2 CRP	3205.3969	0.20
3	A3 CRP	2676.2845	0.24
4	A4 CRP	2184.7221	0.30
5	B1 CRP	1310.8988	0.50
6	B2 CRP	1088.6798	0.60
7	B3 CRP	908.9723	0.71
8	B4 CRP	742.0182	0.87
9	C1 CRP	652.1126	1.00
10	C2 CRP	541.5687	1.20
11	C3 CRP	452.1724	1.44
12	C4 CRP	369.1203	1.76

13	A1	399.4794	1.63
14	A2	331.7610	1.96
15	A3	276.9975	2.34
16	A4	226.1204	2.87
17	B1	135.6790	4.78
18	B2	112.6792	5.76
19	B3	94.0793	6.90
20	B4	76.7994	8.45
21	C1	67.4941	9.62
22	C2	56.0528	11.58
23	C3	46.8002	13.87
24	C4	38.2042	16.99
25	D1	32.5493	19.94
26	D2	27.0316	24.02
27	D3	22.5695	28.76
28	D4	18.4241	35.24
Number of front wheel revolutions for one rear wheel revolution: 1.345			

* Calculated with a tire dynamic radius index of 820 mm (ISO 4251/1 – 1998)

20 Speed 40km/h PowrQuad

Gear No.	Group Or Range	Number of engine revolutions for one revolution of the driving wheels	Nominal traveling speed (*) at rated engine speed of 2100 min^{-1} (rev/min) km/h
FWD			
1	A1	270.0140	2.40
2	A2	224.2421	2.89
3	A3	187.2267	3.47
4	A4	152.8381	4.25
5	B1	127.3963	5.10
6	B2	105.8005	6.14
7	B3	88.3361	7.35
8	C1	80.0512	8.11
9	B4	72.1111	9.00
10	C2	66.4812	9.76
11	C3	55.5072	11.70
12	C4	45.3120	14.33
13	D1	43.2375	15.01
14	D2	35.9081	18.08
15	D3	29.9807	21.65
16	E1	29.1853	22.24
17	D4	24.4741	26.53
18	E2	24.2379	26.78
19	E3	20.2370	32.08
20	E4	16.5200	39.30
REV			
1	A1	227.6588	2.85
2	A2	189.0669	3.43
3	A3	157.8578	4.11
4	A4	128.8635	5.04
5	B1	107.4126	6.04
6	B2	89.2044	7.28
7	B3	74.4795	8.72
8	C1	67.4941	9.62
9	B4	60.7996	10.68
10	C2	56.0528	11.58
11	C3	46.8002	13.87
12	C4	38.2042	16.99
13	D1	36.4552	17.81
14	D2	30.2754	21.44
15	D3	25.2779	25.68
16	E1	24.6072	26.38
17	D4	20.6350	31.46
18	E2	20.4359	31.77
19	E3	17.0626	38.05
20	E4	13.9286	46.61
Number of front wheel revolutions for one rear wheel revolution: 1.345			

* Calculated with a tire dynamic radius index of 820 mm (ISO 4251/1 – 1998)

20 Speed 40km/h PowrQuad with Creeper

Gear No.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal traveling speed (*) at rated engine speed of 2100 min^{-1} (rev/min) km/h
FWD			
1	A1 CRP	2608.8114	0.25
2	A2 CRP	2166.5748	0.30
3	A3 CRP	1808.9400	0.36
4	A4 CRP	1476.6857	0.44
5	B1 CRP	1230.8730	0.53
6	B2 CRP	1022.2197	0.64
7	B3 CRP	853.4827	0.76
8	C1 CRP	773.4359	0.84
9	B4 CRP	696.7206	0.93
10	C2 CRP	642.3257	1.01
11	C3 CRP	536.2975	1.21
12	C4 CRP	437.7939	1.48
13	A1	270.0140	2.40
14	A2	224.2421	2.89
15	A3	187.2267	3.47
16	A4	152.8381	4.25
17	B1	127.3963	5.10
18	B2	105.8005	6.14
19	B3	88.3361	7.35
20	C1	80.0512	8.11
21	B4	72.1111	9.00
22	C2	66.4812	9.76
23	C3	55.5072	11.70
24	C4	45.3120	14.33
25	D1	43.2375	15.01
26	D2	35.9081	18.08
27	D3	29.9807	21.65
28	E1	29.1853	22.24
29	D4	24.4741	26.53
30	E2	24.2379	26.78
31	E3	20.2370	32.08
32	E4	16.5200	39.30
REV			
1	A1 CRP	2199.5861	0.30
2	A2 CRP	1826.7199	0.36
3	A3 CRP	1525.1847	0.43
4	A4 CRP	1245.0487	0.52
5	B1 CRP	1037.7949	0.63
6	B2 CRP	861.8715	0.75
7	B3 CRP	719.6031	0.90
8	C1 CRP	652.1126	1.00
9	B4 CRP	587.4311	1.11

10	C2 CRP	541.5687	1.20
11	C3 CRP	452.1724	1.44
12	C4 CRP	369.1203	1.76
13	A1	227.6588	2.85
14	A2	189.0669	3.43
15	A3	157.8578	4.11
16	A4	128.8635	5.04
17	B1	107.4126	6.04
18	B2	89.2044	7.28
19	B3	74.4795	8.72
20	C1	67.4941	9.62
21	B4	60.7996	10.68
22	C2	56.0528	11.58
23	C3	46.8002	13.87
24	C4	38.2042	16.99
25	D1	36.4552	17.81
26	D2	30.2754	21.44
27	D3	25.2779	25.68
28	E1	24.6072	26.38
29	D4	20.6350	31.46
30	E2	20.4359	31.77
31	E3	17.0626	38.05
32	E4	13.9286	46.61
Number of front wheel revolutions for one rear wheel revolution: 1.345			

* Calculated with a tire dynamic radius index of 820 mm (ISO 4251/1 – 1998)

1.4 Power take-off

1.4.1 *Main power take-off*

- Type (independent, semi-independent or not independent):	Independent
- Method of engagement (if necessary describe the type of clutch):	Electro-Hydraulically actuated multi-plate wet clutch operated by single hand control switch
- Number of shafts:	One
- Method of changing power take-off shaft ends and speeds:	Reversible Shaft

1.4.1.1 Power take-off proportional to engine speed

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

- Location:	Rear of tractor; center plane
- Diameter of power take-off shaft end:	35 mm
- Number of splines: ....., in conformity with ISO 500:1991	6; conforms to ISO 500/1991
- Height above ground:	740 mm
- Distance from the median plane of the tractor:	0 mm
- Distance behind rear-wheel axis:	620 mm
- PTO speed at rated engine speed (2100 rev/min):	545 min^{-1} (rev/min)
- Engine speed at standard power take-off speed:	2080 min^{-1} (rev/min)
- Ratio of rotation speeds (engine speed/p.t.o. speed):	3.851: 1
- Power restriction:	56 kW
- Maximum torque transmissible:	1000 Nm
- Direction of rotation (viewed from shaft end):	Clockwise

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

- Location:	Rear of tractor; center plane
- Diameter of shaft:	35 mm
- Number of splines:	21; conforms to ISO 500/1991
- Height above ground:	740 mm
- Distance from the median plane of the tractor:	0 mm
- Distance from behind rear axle:	620 mm
- PTO speed at rated engine speed (2100 rev/min):	1003 min^{-1} (rev/min)
- Engine speed at standard power take-off speed:	2093 min^{-1} (rev/min)
- Engine speed/PTO speed ration:	2.093:1
- Power restriction:	None
- Direction of rotation (viewed from shaft end):	Clockwise

1.4.1.2 Power take-off proportional to ground speed — Not Available

1.4.2 *Optional power take-off* — Not Available

1.5 Hydraulic Power Lift

- Make/Model/Type:	John Deere/ /Electronic lower link sensing; variable mix of draft and position control; adjustable rate of drop
- Type of hydraulic system:	Closed center; pressure and flow compensated
- Type and number of cylinders (single or double-acting):	One external, single acting, 70 mm or 80mm diameter Two external, single acting, 80 mm diameter
- Type of linkage lock for transport:	Electro-hydraulic
- Relief valve pressure setting (tolerance):	20.3 + 0.4/-0.6 MPa
- Opening pressure of cylinder safety valve (if fitted):	24.0 ± 1.0 MPa
- Lift pump type:	Axial piston, variable delivery and flow, pressure and flow compensated
- Transmission between pump and engine:	Spiral bevel gear drive
- Type and number of filters:	Synthetic media, spin-on canister/one
- Site of oil reservoir:	Differential case housing
- Type, number and location of tapping points:	ISO Standard breakaway couplers/2 standard with 3rd and 4th, and additional inlet/outlet pair for externally controlled implements optional/rear of tractor
- Maximum volume of oil available to external cylinders:	19 dm^3; additional 11 dm^3 allowable overfill for total of 30 dm^3

1.6 Three point linkage

- Category: 2 in conformity with ISO 730/1-1994 + Cor. 1:1995 and ISO 730-2:1979
- Category adapter: None

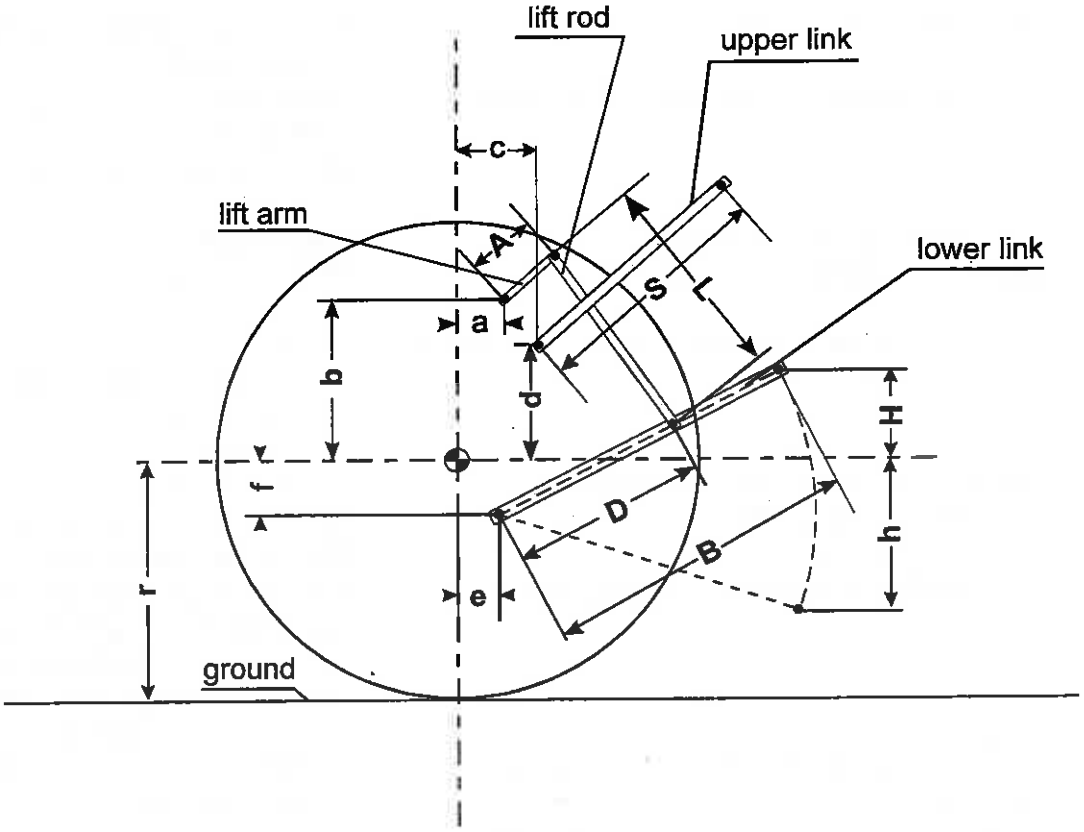


Figure 2.1
Lift test - Linkage Geometry

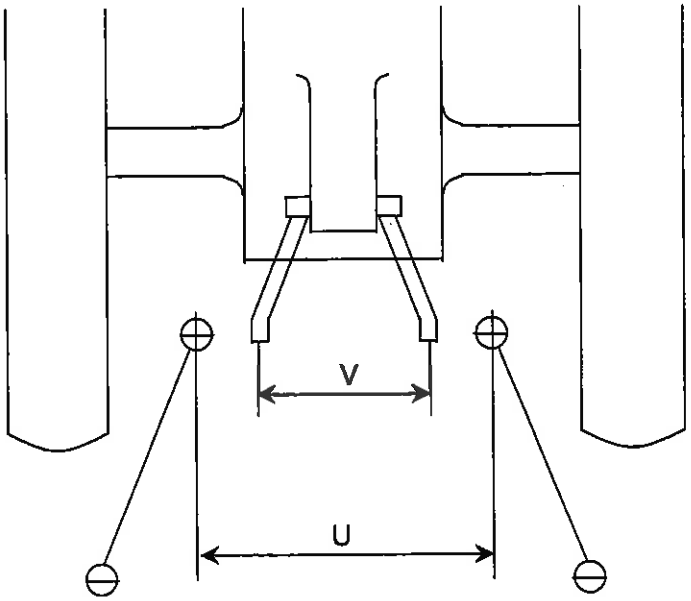


Figure 2.2
Lift test - Linkage Geometry

		Dimension or range	Settings Used in test
		mm	mm
Lift category:		II	II
Rear Tire – Radius Index:	(r)	820	same
Front Tire – Radius Index:	(r')	640	610
Length of lift arms:	(A)	400	same
Length of lower links:	(B)	962	same
Distance of lift arm pivot point from rear-wheel axis:			
- horizontally	(a)	184	same
- vertically	(b)	523	same
Horizontal distance between the 2 lower link points:	(U)	495	same
Horizontal distance between the 2 lift arm end points:	(V)	647	same
Length of upper link:	(S)	596 to 743	705
Distance of upper link pivot point from rear wheel axis:			
- horizontally	(c)	456	same
- vertically	(d)	125	same
Distance of lower link pivot point from rear wheel axis:			
- horizontally	(e)	160	same
- vertically	(f)	250	same
Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	537	same
Length of lift rods:	(L)	778 to 940	889
Height of lower hitch points relative to the rear-wheel axis:			
- in low position	(h)	0 to 693	632
- in high position	(H)	-275 to 405	76
Height above ground of lower hitch points when locked in transport position (*)		1093 to 818	911

(*) Assuming r = 820 mm tire dynamic radius index of ISO 4251-1:1998

1.7 Swinging drawbar

- Type:	Oscillating
- Height above ground	
. Maximum (offset up):	473 mm
. Minimum (offset down):	352 mm
- Type of adjustment:	Invert drawbar and reposition clevis
- Distance of hitch point from rear-wheel axis, horizontally:	836, 936, 986 mm
- Distance of hitch point from power take-off shaft end	
. Vertically:	285 mm
. Horizontally:	251, 351, and 401 mm
- Lateral adjustment (centre of clevis)	
. Right hand:	190 mm
. Left hand:	190 mm
- Distance of pivot point from rear-wheel axis, horizontally:	27 mm
- Diameter of drawbar pin hole:	33 mm
- Maximum vertical permissible load:	28 kN – short position 21 kN – intermediate position 14 kN - extended position

1.8 Trailer hitch — Not applicable

1.9 Holed drawbar — Not applicable

1.10 Steering

- Make/Model/Type:	Eaton/RE34138/Hydrostatic
- Method of operation	Steering wheel
. Pump(s):	Same as main hydraulic pump
. Ram(s):	One internal: double acting
- Working pressure:	17.0 ±0.5 MPa

1.11 Brake System

1.11.1 *Service brake*

- Make/Model/Type:	Vickers/RE159288/John Deere oil immersed disc
- Method of operation:	Hydraulic; operated by two pedals which can be locked together

1.11.2 *Parking brake*

- Type:	Transmission lock
- Method of operation:	Gear selector lever

1.11.3 *Trailer Brake* — None

1.12 Wheels

- Number
  - .Front: Two; Driving and steering
  - .Rear: Two; Driving
- Wheelbase: 2625 mm

Track Width Adjustment

	Minimum	Maximum	Adjustment
	mm	mm	Method
Front	1524	2235	Reversing wheels and offset lug rims
Rear	1524	2548	Rack and pinion axle Reversing wheels and offset lug rims

1.13 Protective structure

- Make/Model/Type: John Deere/ Sound Gard SG-060/Cab, not tiltable
- Manufacturer's name and address: John Deere Tractor Works Waterloo, Iowa, USA
- Protective device: Cab; not tiltable
- OECD approval: None
- Date of Approval
- USA (OSHA) approval: USA-OSHA 29CFR1928, Subpart C and SAE J2194, Dec 87

1.14 Seat

1.14.1 *Driver's Seat*

- Make/Model/Type: Sears/RE163040/Air suspension; personal posture cushioning
- Seat and steering wheel reversible: Yes/No: No
- Type of suspension: Air
- Type of damping: Three-position viscous damping
- Range of adjustment
  - .Longitudinally: 167 mm
  - .Vertically: 80 mm
  - Rotation: 20 degrees left and right
- Safety belt Yes/No: Yes

1.14.2 *Optional driver's seat(s)* Not Available

1.14.3 *Passenger seat* Not applicable

1.15 Lighting

	Height above ground of centre	Size	Distance from outside edge of lights to median plane of tractor
	mm	mm	mm
Headlights			
Grille inner	1110	162 x 102	225
Grille side	1110	152 x 102	275
Roof inner	2950	51 x 127	350
outer	2950	51 x 127	500
Upper mid-body	1990	70 x 127	630
Rearlights			
roof	2830	70 x 127	483
Tail lights	1930	89 x 210	934
Hazard lights			
Roof front	2940	82 x 240[a]	770
Roof rear	2830	76 x 120	635

(a) = Wrap-around lights

2. TEST CONDITIONS

2.1 Overall dimensions

	Length	Width		Height at top of	
		minimum	maximum	protective structure	exhaust pipe
	mm	mm	mm	mm	mm
Unballasted	4435	2808	3015	2880	2880
Ballasted	4750	2808	3015	2880	2880

2.2 Ground clearance (unballasted tractor): 360 mm

- Clearance-limiting part: Sway blocks

2.3 Tractor mass

Mass (with cab, full fuel tank):

	Without driver	With driver
	kg	kg
Unballasted		
Front	2133	2143
Rear	3895	3960
Total	6028	6103
Ballasted		
Front	2734	2744
Rear	4253	4318
Total	6987	7062

Ballast Added	Number of Weights	Total Mass	Liquid
		kg	kg
Front	10	454	0
Front weight support	1	51	
Rear (weights)	2	454	0

2.4 Track specifications

Not applicable

2.5 Tires and track width specifications

	Front	Rear
Tires:	Goodyear	Goodyear
- dimensions	14.9R28	18.4R38
- ply rating	Three Star	One Star
- type	Radial	Radial
- maximum load (tire manufacturer's)	20.19 kN/tire	25.26 kN/tire
- maximum load (tractor manufacturer's)	same	same
- inflation pressure (tractor manufacturer's)		
maximum	210 kPa	120 kPa
minimum	82 kPa	83 kPa
- dynamic radius index	640 mm	820 mm
Chosen track width	1930 mm	1930 mm

2.6 Fuel

- Type/grade: Premier: Grade 2-D, in conformity with national standard
- Density (PTO test): 0.841 g/cm^3 at 15° C
- (Drawbar test): Same as PTO test

2.7 Oils and lubricants

2.7.1 *Capacity and change interval*

	Capacity	Oil change	Filter change
	liter	hours	hours
Engine (with filter)	19.0	250 (375 with John Deere PLUS-50® oil and John Deere filter)	same
Front axle	14.4	1500	Not applicable
Transmission, final drive, rear axle and hydraulics	64	1500	Annually or as required
Final drive, front	1.9 each	1500	Not applicable

2.7.2 *Oil and Lubricant specifications:*

	Recommended	Used during test
Engine oil . Type: . Viscosity: . Classification:	John Deere; Torq-Gard Supreme®, PLUS-50®; SAE 15W-40 or 0W40 12.8 mm^2/s (cSt) at 100°C API CG-4 or CF-4; ACEA E-2 or E-3	John Deere; Torq-Gard Supreme®, PLUS-50®; SAE 15W-40
Transmission . Type: . Viscosity: . Classification:	John Deere HY-GARD®; (J20C) SAE 10W-30 58 mm^2/s (cSt) at 40°C JDM J20C	same
Front axle differential. . Type: . Viscosity: . Classification:	John Deere HY-GARD®; (J20C) SAE 10W-30 58 mm^2/s (cSt) at 40°C JDM J20C	same
Final Drive oil (front) . Type: . Viscosity: . Classification:	John Deere GL-5 Gear Lubricant or John Deere Extreme-Gard® SAE 85W-140 JDM J11 (API GL-5)	same

Hydraulic Fluid . Type: . Viscosity: . Classification:	Same as transmission	same
Steering system . Type: . Viscosity: . Classification:	Same as transmission	same
Grease	John Deere MOLY High Temperature EP Grease	same

2.7.3 *Grease*

- Number of lubrication points: 19

3. COMPULSORY TESTS RESULTS

3.1 Main power take-off

- Date and location of tests: 24-Oct-00 Nebraska Tractor Test Laboratory, Lincoln, NE, USA
- Type of dynamometer bench: Eaton

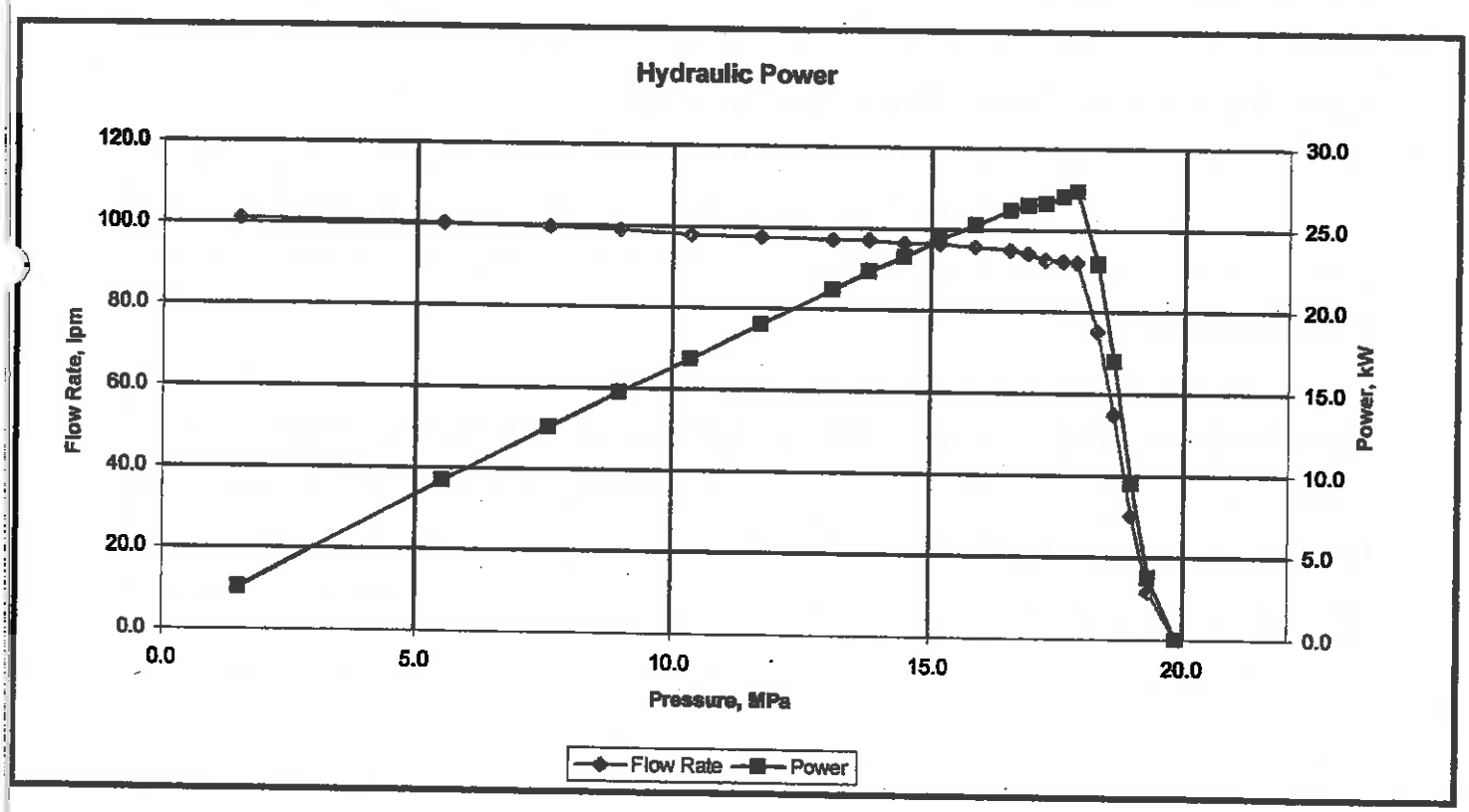
	Speed		Fuel consumption			Specific
Power	Engine	PTO	Hourly		Specific	energy
kW	rev/min		kg/h	l/h	g/kWh	kW-h/l
3.1 MAXIMUM POWER - TWO HOUR TEST						
88.60	1901	908	21.15	25.16	239	3.52
3.1.2 POWER AT RATED ENGINE SPEED						
85.81	2101	1003	21.65	25.75	252	3.33
3.1.3 STANDARD POWER TAKE-OFF SPEED (1000 +/- 25 rev/min)						
85.81	2101	1003	21.65	25.75	252	3.33
3.1.4 PART LOADS						
3.1.4.1 the torque corresponding to maximum power at rated engine speed						
85.81	2101	1003	21.65	25.75	252	3.33
3.1.4.2 85% of torque obtained in 3.1.4.1						
74.48	2151	1027	19.73	23.47	265	3.17
3.1.4.3 75% of torque defined in 3.1.4.2						
56.91	2179	1041	16.60	19.74	292	2.88
3.1.4.4 50% of torque defined in 3.1.4.2						
38.20	2209	1055	13.20	15.70	346	2.43
3.1.4.5 25% of torque defined in 3.1.4.2						
19.41	2245	1072	9.12	10.84	470	1.79
3.1.4.6 unloaded						
1.15	2265	1082	6.26	7.44	5433	0.15
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						
85.81	2101	1003	21.65	25.75	252	3.33
3.1.5.2 85% of torque obtained in 3.1.5.1						
74.48	2151	1027	19.73	23.47	265	3.17
3.1.5.3 75% of torque defined in 3.1.5.2						
56.91	2179	1041	16.60	19.74	292	2.88
3.1.5.4 50% of torque defined in 3.1.5.2						
38.20	2209	1055	13.20	15.70	346	2.43
3.1.5.5 25% of torque defined in 3.1.5.2						
19.41	2245	1072	9.12	10.84	470	1.79
3.1.5.6 unloaded						
1.15	2265	1082	6.26	7.44	5433	0.15

- No load maximum engine speed: 2265 rev/min
- Torque (equivalent crankshaft) at rated speed:
  - At rated engine speed 390 Nm
  - At 2-hour test 445 Nm
- Maximum torque (equivalent crankshaft): 535 Nm
  (engine speed: 1302 rev/min)

Mean atmospheric conditions:		
Dry bulb	24	°C
Pressure	98.4	kPa
Relative Humidity	78	%
Maximum temperatures:		
Coolant	87	°C
Engine oil	113	°C
Fuel	70	°C
Engine air intake	26	°C

3.2 Hydraulic Power and lifting forces

Date of Test:	3-Nov-00	John Deere 7510	
Location of Test-City-State:		Tractor Test Lab, Lincoln, NE, USA	
Tapping point used for test:		Remote hydraulic outlets	
I.	Sustained pressure with pump stalled:		
	19.86 MPa		
	2880 psig		
II.	Pump delivery rate at minimum pressure at rated engine speed:		
	101.1 l/min		
	26.7 gpm		
III.	Flow rate, pressure, power:		
	90% of relief valve setting		
	92.0 l/min	17.86 MPa	27.4 kW
	24.3 gpm	*2590 psig*	*36.7 hp*
	Maximum hydraulic power:		
	92.0 l/min	17.86 MPa	27.4 kW
	24.3 gpm	*2590 psig*	*36.7 hp*
IV.	Hydraulic fluid temperature at flow meter:		
	59 °C		
	138 ° F		
	This hydraulic system does not use an accumulator. Opening and closing pressures of the unloading valve could not be measured.		



3.2.2 POWER LIFT TEST Category II , lift cylinders 1 x 70 mm & 1 x 80 mm
Date of test: 1 June 1994. The lift data presented here is from OECD test 1537 on the John Deere 7200 SP which has a mechanically equivalent hitch system.

	Hitch points	Frame
Lower hitch points above ground - down position:	188 mm	81 mm
Vertical movement - without load:	708 mm	956 mm
with load:	696 mm	945 mm
Maximum corrected force exerted through full range:	46.5 kN	30.5 kN
Corresponding pressure:	18.3 MPa	18.3 MPa
Moment about rear axle:	52.2 kNm	52.8 kNm
Maximum mast tilt angle	--	13.5 degrees

Lifting height relative to horizontal position of lower links.

mm	-470	-363	-300	-201	-99	0	99	201	300	333	419	475

Corrected lift forces

At the Hitch point kN	--	48.5	46.5	46.7	47.2	47.4	48.2	49.1	50.1	50.2	--	--
at the frame kN	40.4	37.2	36.5	35.9	–	35.0	33.8	--	32.5	31.9	31.1	30.5

Corresponding pressure 18.3 Mpa

3.3 Drawbar performance - unballasted,4WD

OECD Drawbar Data (SI)

Date of tests: 27-Oct-00							Fuel density: 0.841 kg/l							
Type of track: Concrete							Test number: 1786							
Maximum power in tested gears (unballasted, 4wd)							Tire pressure: 97 kPa, rear 97 kPa, front					Drawbar Height: 559 mm		
Gear	Gear Designation	Power	Drawbar pull	Speed	Engine speed	Slip	Fuel		Temperature			Atmospheric conditions		
							SFC	SFE	Fuel	Coolant	Oil	Temperature	Relative humidity	Pressure
		kW	kN	km/h	rev/min	%	kg/kW.h	kW.h/l	°C	°C	°C	°C	%	kPa
*3	A3	54.05	61.36	3.17	2159	13	0.331	2.54	67	83	111	14	73	98.5
*4	A4	66.34	61.46	3.89	2131	12	0.311	2.70	68	83	112	14	73	98.4
5	B1	75.83	57.97	4.71	2061	8	0.282	2.98	69	85	112	14	73	98.5
6	B2	76.76	51.58	5.36	1906	6	0.274	3.07	71	84	109	23	51	97.7
7	B3	77.46	42.57	6.55	1907	4	0.272	3.09	72	85	114	22	51	97.7
8	C1	78.17	38.84	7.25	1902	4	0.270	3.11	70	86	115	21	61	97.8
9	B4	79.11	35.30	8.07	1899	3	0.268	3.14	68	84	114	17	80	97.7
10	C2	79.02	32.35	8.79	1902	3	0.268	3.14	69	85	114	18	76	97.7
11	C3	78.87	26.86	10.57	1897	2	0.270	3.12	69	86	113	18	76	97.8
12	C4	75.57	20.91	13.01	1898	2	0.280	3.01	70	86	113	13	78	98.6
* Note:	Pull limited to avoid excessive tractor bouncing.													
3.3.2 Fuel consumption														
3.3.2.1			In selected gear at maximum power at rated engine speed.											
9	B4	76.20	30.52	8.99	2103	3	0.284	2.96	69	85	114	17	80	97.7
3.3.2.1.1			75% of pull at maximum power at rated engine speed											
9	B4	58.94	22.89	9.27	2152	2	0.312	2.70	68	86	113	24	46	97.7
3.3.2.1.2			50% of pull at maximum power at rated engine speed											
9	B4	40.37	15.29	9.51	2192	1	0.364	2.31	66	86	110	24	46	97.7
3.3.2.1.3			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.1											
10	C2	58.89	22.88	9.27	1983	2	0.295	2.85	68	93	112	24	46	97.7
3.3.2.1.4			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.2											
10	C2	40.28	15.26	9.50	2019	1	0.341	2.47	65	84	109	24	46	97.7
3.3.2.1.5			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.1											
11	C3	58.94	22.89	9.27	1657	2	0.279	3.01	68	91	111	24	46	97.7
3.3.2.1.6			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.2											
11	C3	40.34	15.27	9.51	1688	1	0.315	2.67	65	83	107	24	46	97.7
3.3.2.2			In selected gear nearest to 7.5 km/h at rated engine speed.											
7	B3	75.51	37.40	7.27	2100	4	0.283	2.97	70	84	115	22	54	97.7
3.3.2.2.1			75% of pull at maximum power at rated engine speed											
7	B3	58.80	28.05	7.55	2157	2	0.309	2.72	67	83	111	24	49	97.7
3.3.2.2.2			50% of pull at maximum power at rated engine speed											
7	B3	40.19	18.69	7.74	2194	2	0.363	2.31	65	83	110	24	49	97.7
3.3.2.2.3			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.1											
8	C1	58.79	28.01	7.55	1957	3	0.291	2.89	68	84	111	24	49	97.7
3.3.2.2.4			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.2											
8	C1	40.17	18.69	7.74	1987	2	0.334	2.52	65	90	109	24	46	97.7
3.3.2.2.5			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.1											
10	C2	58.78	28.03	7.55	1626	3	0.276	3.05	68	84	111	24	49	97.7
3.3.2.2.6			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.2											
10	C2	40.30	18.68	7.77	1657	2	0.308	2.73	65	83	107	24	46	97.7

4.1 Drawbar performance - Ballasted,2100 rpm,4WD

OECD Drawbar Data (SI)

Date of tests:	28-Nov-00				**Fuel density:**	0.841 kg/l								
Type of track:	Concrete				**Test number:**	1786								
Maximum power in tested gears (ballasted, 4wd)						**Tire pressure:**		110 kPa, rear		124 kPa, front	**Drawbar Height:**		559 mm	
Gear	**Gear Designation**	**Power**	**Drawbar pull**	**Speed**	**Engine speed**	**Slip**	**Fuel**		**Temperature**			**Atmospheric conditions**		
							SFC	**SFE**	**Fuel**	**Coolant**	**Oil**	**Temperature**	**Relative humidity**	**Pressure**
		kW	**kN**	**km/h**	**rev/min**	**%**	**kg/kW.h**	**kW.h/l**	**°C**	**°C**	**°C**	**°C**	**%**	**kPa**
*3	A3	59.47	68.98	3.10	2141	14	0.324	2.59	68	83	113	18	71	97.8
4	A4	72.35	66.08	3.94	2101	10	0.296	2.84	67	83	113	19	67	97.8
5	B1	77.85	56.42	4.97	2101	5	0.277	3.03	68	84	113	8	60	98.1
6	B2	78.50	46.63	6.06	2104	4	0.275	3.06	67	85	114	9	56	98.1
7	B3	78.23	38.46	7.32	2106	3	0.278	3.03	66	86	115	9	57	97.9
8	C1	76.91	34.20	8.10	2101	3	0.280	3.00	68	86	115	9	56	98.0
9	B4	76.65	30.65	9.00	2098	3	0.282	2.99	68	86	115	9	56	98.1
10	C2	76.58	28.16	9.79	2100	2	0.280	3.00	70	87	114	7	58	98.1
11	C3	75.68	23.12	11.79	2102	2	0.284	2.96	68	85	115	6	62	98.1
12	C4	72.99	18.18	14.45	2097	2	0.296	2.84	68	86	114	5	61	98.2
* Note:	Slip within operating procedures of testing station.													

4.2 - Drawbar performance, ballasted, 1900 rpm, 4WD

OECD Drawbar Data (SI)

Date of tests:	28-Nov-00					**Fuel density:**	0.841 kg/l							
Type of track:	Concrete					**Test number:**	1786							
Maximum power in tested gears (ballasted, 4wd)							**Tire pressure:**	110 kPa, rear	124 kPa, front			**Drawbar Height:**	559 mm	
Gear	**Gear Designation**	**Power**	**Drawbar pull**	**Speed**	**Engine speed**	**Slip**	**Fuel**		**Temperature**			**Atmospheric conditions**		
							SFC	**SFE**	**Fuel**	**Coolant**	**Oil**	**Temperature**	**Relative humidity**	**Pressure**
		kW	kN	km/h	rev/min	%	kg/kW.h	kW.h/l	°C	°C	°C	°C	%	kPa
*3	A3	60.10	69.52	3.11	2141	14	0.322	2.61	67	84	113	18	71	97.8
4	A4	72.13	65.98	3.94	2098	10	0.297	2.83	69	84	114	19	67	97.8
5	B1	78.99	60.95	4.67	1990	6	0.270	3.12	69	84	114	7	58	98.1
6	B2	80.28	53.15	5.44	1901	5	0.264	3.19	68	86	115	8	61	98.1
7	B3	80.12	43.77	6.59	1903	4	0.264	3.18	68	86	115	9	56	98.0
8	C1	78.68	38.79	7.30	1903	3	0.267	3.15	69	86	115	9	56	98.0
9	B4	79.16	35.05	8.13	1904	3	0.266	3.16	68	86	115	9	56	98.1
10	C2	78.70	32.01	8.85	1905	3	0.266	3.16	70	87	115	7	57	98.1
11	C3	78.13	26.41	10.65	1906	2	0.268	3.13	70	86	116	6	63	98.1
12	C4	76.18	20.97	13.08	1903	2	0.277	3.03	67	86	113	6	62	98.2
* Note:	Slip within operating procedures of testing station.													

4.3 POWER LIFT TEST Category II , lift cylinders 2 x 80 mm
Date of test: 1 June 1994. The lift data presented here is from OECD test 1537 on the John Deere 7200 SP which has a mechanically equivalent hitch system.

	Hitch points	Frame
Lower hitch points above ground - down position:	188 mm	79 mm
Vertical movement - without load:	708 mm	956 mm
with load:	696 mm	947 mm
Maximum corrected force exerted through full range:	53.4 kN	34.6 kN
Corresponding pressure:	18.3 MPa	18.3 MPa
Moment about rear axle:	59.9 kNm	60.0 kNm
Maximum mast tilt angle	--	13.5 degrees

Lifting height relative to horizontal position of lower links.

mm	-472	-363	-300	-201	-99	0	99	201	300	333	427	475

Corrected lift forces

At the Hitch point kN	--	54.0	53.4	53.5	54.2	54.7	55.5	56.6	57.8	57.8	--	--
at the frame kN	45.2	42.4	41.6	--	40.9	39.8	38.6	--	37.1	36.3	35.4	34.6

Corresponding pressure 18.3 Mpa

4.4 Measurement of External Noise Level - John Deere 7510

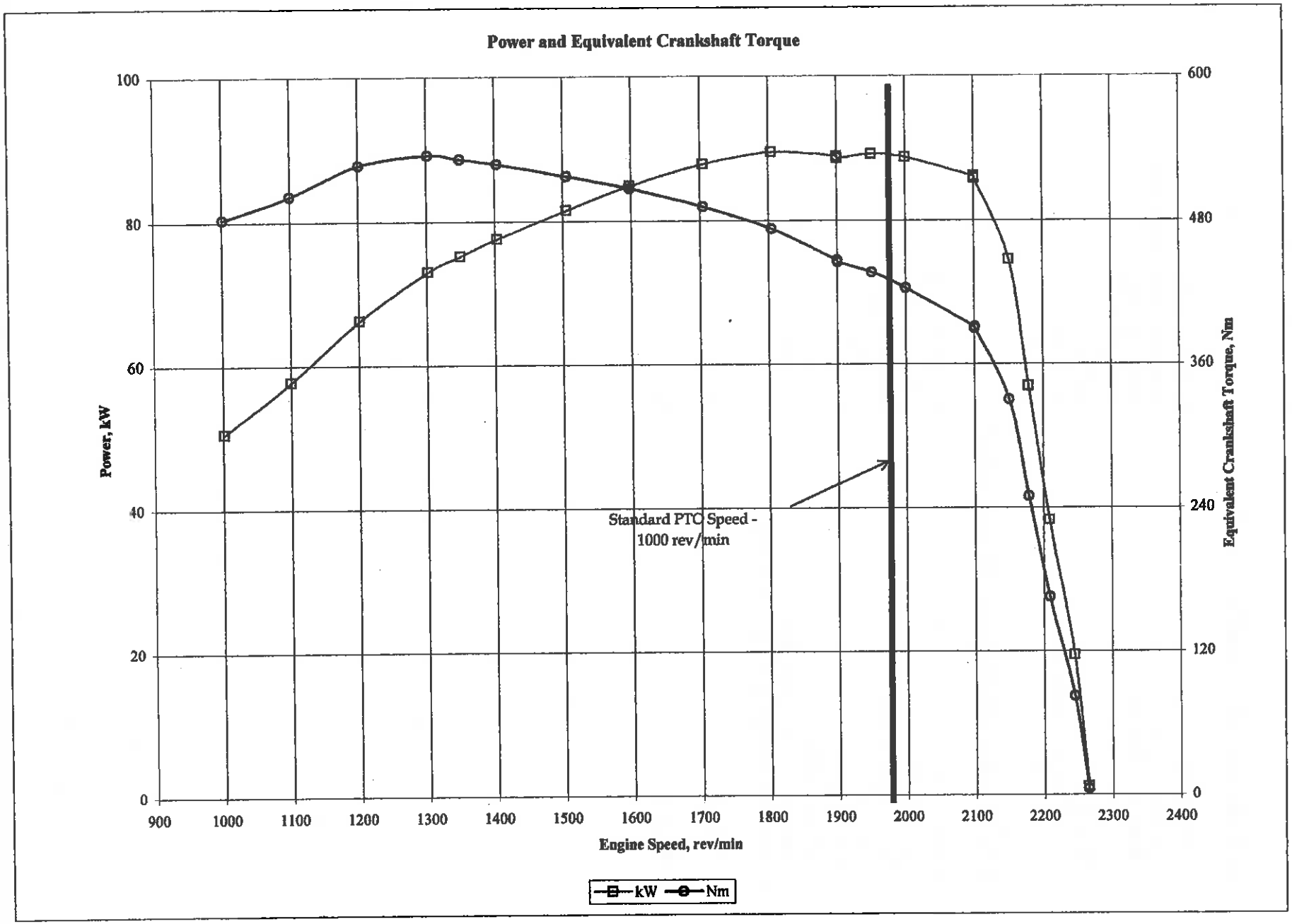
-- Date of Test	October 27, 2000
-- Location of Test	Nebraska Tractor Test Laboratory
-- Sound Level Meter	Bruel and Kjaer 2236
-- Type of Track	Concrete Oval
-- Gear Number	16 (D4)
-- Speed Prior to Acceleration	23.9 km/h
-- Noise Level	82.0 dB(A)

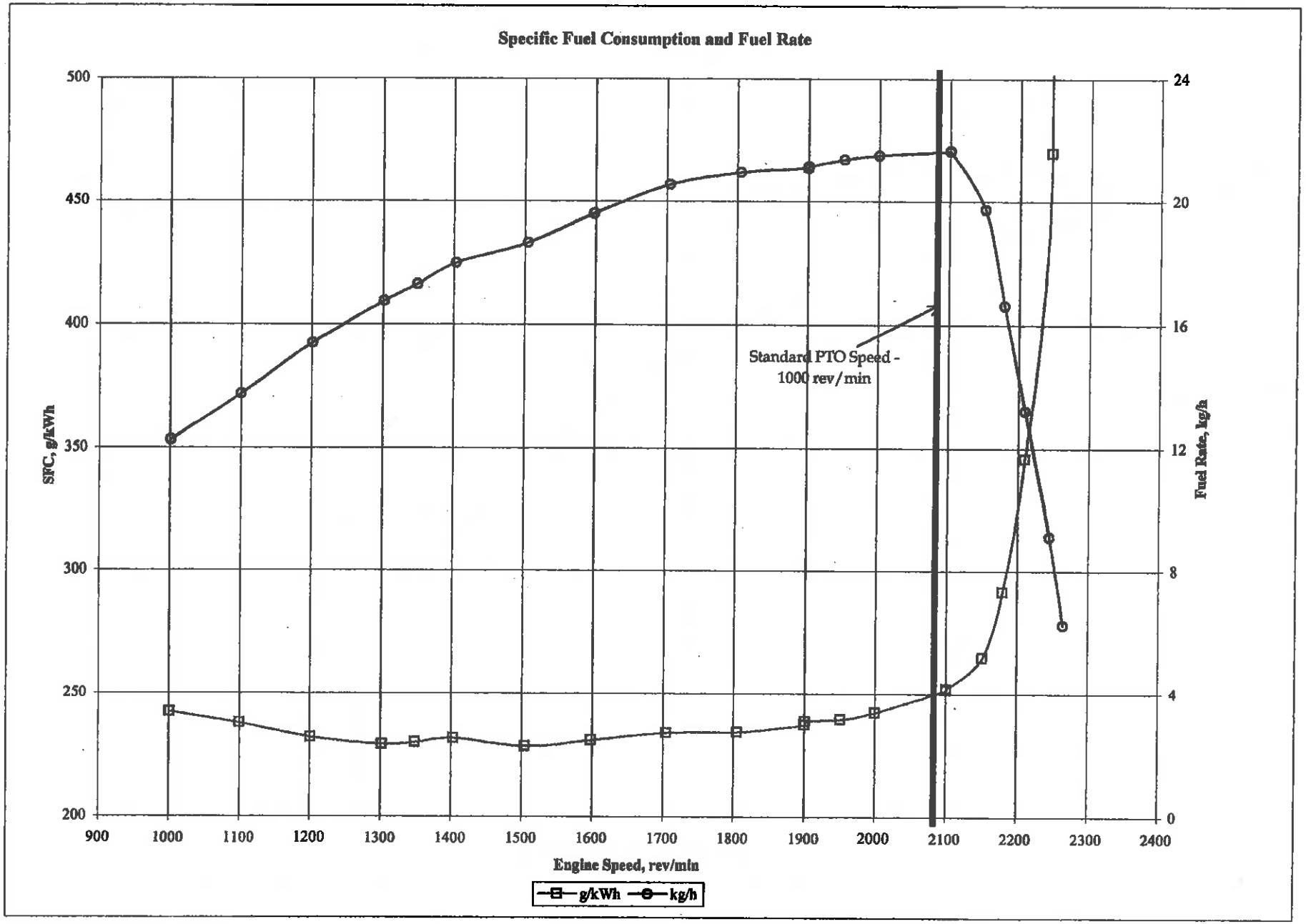
4.5 Measurement of Noise Level at Operator's Ear*

-- Date of Test	October 27, 2000
-- 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 (no load)	72.7 dB(A)

* Note: Nebraska tractor test station guidelines

5. Repairs	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
kW
Nm
100
80
60
40
20
0
600
480
360
240
120
0
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400


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
kg/h
500
450
400
350
300
250
200
24
20
16
12
8
4
0
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400

John Deere 7510

