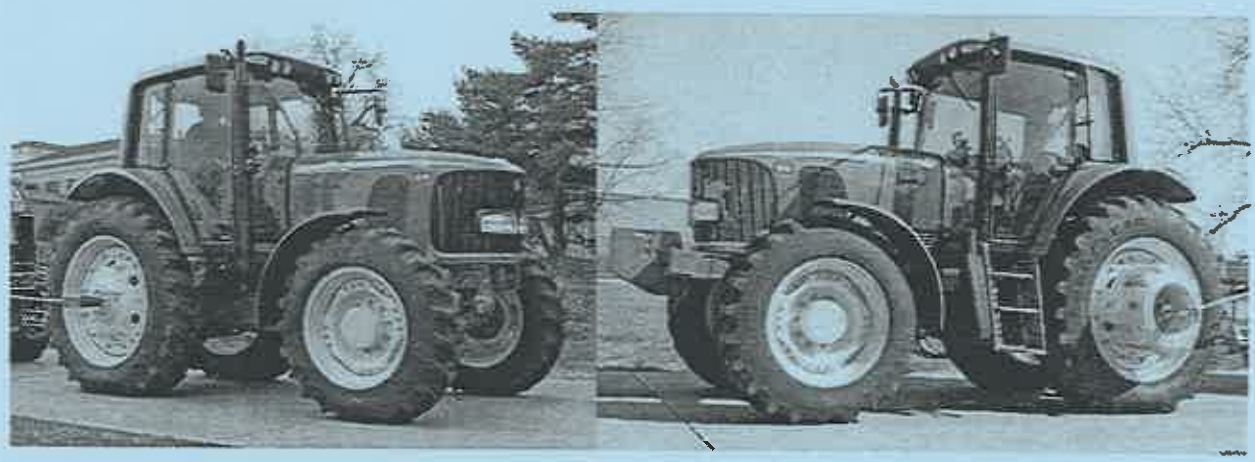
OECD APPROVAL NO. 2/2 082
CODE 2
DATE OF APPROVAL: 17 September 2003

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 7520 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.	**1818**
TEST DATES:	**March 5, 2003 – April 17, 2003**

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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 17 September 2003 for the John Deere 7520 IVT, mechanical front wheel drive (MFWD), with OECD Number 2/2 082.

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.

Dr. Leonard L. Bashford, Director
Nebraska Tractor Test Laboratory and
Chair, Nebraska Tractor Test Board

David L. Morgan, Assistant Director
Nebraska Tractor Test Laboratory

Brent T. Sampson, Test Engineer
Nebraska Tractor Test Laboratory

Date: DEC 1 7 2003

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	- Tractor manufacturer's name and address:	John Deere Waterloo Works, 3500 East Donald Street, P.O. Box 270, Iowa, USA
C	- Location of tractor assembly:	Same
D	- Submitted for test by:	The manufacturer
C	- Selected for test by:	The manufacturer in agreement with the test station.
D	- Place of running-in:	John Deere Product Engineering Center, Waterloo, Iowa U.S.A.
C	- Duration of running-in:	106 hrs
C	- Location of test:	Nebraska Tractor Test Laboratory Lincoln, Nebraska, USA.

1. SPECIFICATIONS OF TRACTOR

1.1 Identification

C	-Make/Model/Type:	John Deere 7520 IVT™ MFWD Unit construction, mechanical front wheel drive (MFWD)
C	-Number of driving wheels:	**2 or 4**
C	-Serial N°:	*RW7520D001770*
D	-1st Serial N°:	CONFIDENTIAL

1.2 Engine

C	- Make/Model/Type:	John Deere 6068HRW01 Diesel; 4-stroke; turbocharged, direct injection, water to air aftercooled
C	- Serial N°:	*PE6068H242652*

1.2.1 *Cylinders*

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

1.2.2 *Supercharging*

C	- Make/Model/Type:	CZ/RE509058/Exhaust gas driven
D	- Pressure:	73 +/- 15 kPa at rated engine speed and load

1.2.3 *Fuel system*

C	- Fuel feed system:	Electrical transfer pump
C	- Make/Model/Type of fuel filter(s):	
	. Primary:	Stanadyne/RE67227/paper element Service part # RE62419
D	- Capacity of fuel tank(as tested):	207 L
D	- Capacity of fuel tank(optional):	250 L
C	- Fuel cooler:	Return fuel circuit
C	- Make/Model/Type of injection pump:	Bosch/VP44/Rotary; electric shutoff
C	- Serial N°:	47058018
	- Manufacturer's production setting of injection pump	
C	.Flow rate (rated engine speed and full load):	28.0 +/- 0.8 dm^3/hr
D	.Timing:	Crankshaft
D	- Make/Model/Type of injectors:	Stanadyne/RE48786/mechanical
D	- Injection pressure:	68.0 MPa
	- Make/Model/Type of carburettor:	N/A

1.2.4 *Governor*

C	- Make/Model/Type:	Bosch/VP44/electronic
C	- Governed range of engine speed:	850 rpm to 2260 rpm
C	- Rated engine speed:	2100 rpm

1.2.5 *Air cleaner*

	- Pre-cleaner	
C	. Make/Model/Type:	Donaldson/AL150287/ Vacuum aspirated (cooling fan) cyclone type pre-cleaner integrated in front cover of main cleaner housing
C	.Location of air intake:	Under hood, front of tractor
	- Main cleaner	
C	.Make/Model/Type:	Donaldson/AL150285/pleated paper
	- Secondary Element	
C	.Make/Model/Type:	Donaldson/AL150288/pleated paper
C	- Maintenance indicator:	Dash mounted warning light

1.2.6 *Lubrication system*

D	- Type of feed pump:	Full pressure; positive displacement
C	- Type of filter(s):	Full flow with bypass
C	- Number of filters:	One spin-on
C	- Oil cooler:	Heat exchanger with engine coolant

1.2.7 *Cooling system*

C	- Type of coolant:	Liquid
C	- Type of pump:	Centrifugal, belt driven
C	- Specification of fan or blower:	Belt driven; Suction type; Variable speed
C	. Number of fan blades:	8
C	. Fan diameter:	600 mm
D	- Coolant capacity:	15.5 L
C	- Type of temperature control:	Two thermostats and variable speed fan
D	- Superpressure system:	70 +/-20 kPa

1.2.8 *Starting system*

C	- Make/Model/Type:	Bosch/RE50357/Solenoid Engaged Service Part # RE503226
D	- Starter motor power rating:	3.0 kW
C	- Cold starting aid:	Electrical resistance pre-heater in air intake manifold
C	- Safety device:	Electrical lockout on gearshift

1.2.9 *Electrical system*

C	- Voltage &grounding:	12 VDC; Negative ground
	- Alternator (as tested)	
C	. Make/Model/type:	Bosch/AL119537/belt driven w/built-in regulator
D	. Power Rating:	1.80 kW at rated speed
	- Alternator (optional)	
D	. Make/Model/type:	Bosch/AL111676/belt driven w/built-in regulator
D	. Power Rating:	1.38 kW at rated speed
	- Batteries	
C	. Number & Connection:	One; 12 VDC; SAE tapered post
D	. Rating:	174 Ah, 1500 CCA, 380 min RC

1.2.10 *Exhaust system*

C	- Make/Model/Type (As tested):	Roth-Technik /AL153972/Expansion chamber
C	- Location:	Horizontal muffler; under hood
C	- Exhaust stack location:	Vertical; right front of cab
C	- Make/Model/Type (Optional):	Roth-Technik/AL154208/Expansion chamber
C	- Location:	Horizontal muffler; under hood
C	- Exhaust stack location:	Vertical; right front of cab

1.3 Transmission

1.3.1 *Clutch (Travel)*

D	- Make:	ZF
D	- Model:	Multiple plate
D	- Type:	Oil cooled
D	- Number of plates:	9 forward; 8 for reverse
D	- Diameter of plates:	189 mm forward; 189 mm reverse
C	- Method of operation:	Hydraulic; pedal actuated

1.3.2 *Gear box*

D	- Make:	John Deere
D	- Model:	40 K IVT
D	- Type:	Variable
D	- Description:	Infinitely variable electronically controlled transmission.
C	- Oil cooler:	Heat exchanger oil to water

1.3.2 *Optional Gear box*

D	- Make:	John Deere
D	- Model:	PowrQuad™ Plus
D	- Type:	Mechanical countershaft and planetary design
D	- Description:	One four speed gear box with 5 manually synchronized speeds and a 4 speed planetary gear set with multiple wet disc clutches and brake units
D	- Oil cooler:	Heat exchanger with coolant

1.3.3 *Rear axle and final drives*

D	- Make/Model/Type:	John Deere/RE66310/Spiral bevel with pinion differential and inboard planetary reduction
	- Differential lock	
D	. Type:	Wet multi-plate
C	. Method of engagement:	Electro-hydraulic foot operated switch
C	. Method of disengagement:	Self disengaging with brake pedal operation or travel speeds exceeding 12 km/h

1.3.4 *Front axle and final drives*

D	- Make/Model/Type:	Dana/745/Spiral bevel w/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 D *Total ratios and traveling speeds (As Tested)*

Infinitely Variable Transmission (IVT)
Travel Speed is infinitely Variable from –17 to 40 km/h
40 km/h can occur at an engine speed of 1423 rpm

(*) Calculated with a tire dynamic radius index of 870 mm

Number of revolutions of front wheels for one revolution of the rear wheel: 1.32

1.3.5 Total ratios and traveling speeds

20 Speed PowrQuad+™ (w/o creeper): optional – not on tested tractor

	Gear Number	Number of engine revolutions for one revolution of the driving wheels	Nominal travel speed(*) at rated engine speed of 2100 rev/min (km/hr)
	Forward		
C	A1	269.10	2.56
C	A2	223.48	3.08
C	A3	186.59	3.69
C	A4	152.32	4.52
C	B1	126.99	5.42
C	B2	105.46	6.53
C	B3	88.05	7.82
C	C1	79.78	8.63
C	B4	71.88	9.58
C	C2	66.26	10.40
C	C3	55.32	12.45
C	C4	45.16	15.25
C	D1	43.10	15.98
C	D2	35.80	19.24
C	D3	29.89	23.05
C	E1	29.81	23.11
C	E2	24.75	27.82
C	D4	24.40	28.23
C	E3	20.67	33.33
C	E4	16.87	40.82
	Reverse		
D	A1	257.88	-2.67
D	A2	214.16	-3.22
D	A3	178.81	-3.85
D	A4	145.97	-4.72
D	B1	121.69	-5.66
D	B2	101.06	-6.82
D	B3	84.38	-8.16
D	C1	76.46	-9.01
D	B4	68.88	-10.00
D	C2	63.49	-10.85
D	C3	53.01	-12.99
D	C4	43.28	-15.92
D	D1	41.31	-16.67
D	D2	34.30	-20.08
D	D3	28.64	-24.05
D	E1	28.56	-24.11
D	E2	23.72	-29.03
D	D4	23.38	-29.46
D	E3	19.81	-34.78
D	E4	16.17	-42.60

(*) Calculated with a tire dynamic radius index of 870 mm

Number of revolutions of front wheels for one revolution of the rear wheel: 1.317

1.3.5 Total ratios and traveling speeds

20 Speed PowrQuad+™ (w/creeper) (optional – not on tested tractor)

Additional 20 Speeds are included in w/o creeper table

	Gear Number	Number of engine revolutions for one revolution of the driving wheels	Nominal travel speed(*) at rated engine speed of 2100 rev/min (km/hr)
	Forward		
D	A1	2599.94	0.26
D	A2	2159.18	0.32
D	A3	1802.75	0.38
D	A4	1471.64	0.47
D	B1	1226.90	0.56
D	B2	1018.91	0.68
D	B3	850.71	0.81
D	C1	770.83	0.89
D	B4	694.46	0.99
D	C2	640.15	1.08
D	C3	534.48	1.29
D	C4	436.31	1.58
D	D1	416.46	1.65
D	D2	345.86	1.99
D	D3	288.77	2.39
D	E1	287.99	2.39
D	E2	239.17	2.88
D	D4	235.73	2.92
D	E3	199.69	3.45
D	E4	163.01	4.23
	Reverse		
D	A1	2491.56	-0.28
D	A2	2069.18	-0.33
D	A3	1727.60	-0.40
D	A4	1410.29	-0.49
D	B1	1175.76	-0.59
D	B2	976.44	-0.71
D	B3	815.25	-0.84
D	C1	738.69	-0.93
D	B4	665.51	-1.03
D	C2	613.47	-1.12
D	C3	512.20	-1.34
D	C4	418.12	-1.65
D	D1	399.10	-1.73
D	D2	331.44	-2.08
D	D3	276.73	-2.49
D	E1	275.98	-2.50
D	E2	229.20	-3.01
D	D4	225.90	-3.05
D	E3	191.36	-3.60
D	E4	156.21	-4.41

(*) Calculated with a tire dynamic radius index of 870 mm

Number of revolutions of front wheels for one revolution of the rear wheel: 1.317

1.4 Power take-off

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

1.4.1.1 Power take-off proportional to engine speed
Reversible shaft (tested version)

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

C	- Location:	Rear of tractor; center plane
C	- Diameter of power take-off shaft end:	35 mm
C	- Number of splines:	6; conforms to ISO 500/1991
C	- Height above ground:	740 mm
C	- Distance from the median plane of the tractor:	0 mm
C	- Distance behind rear-wheel axis:	620 mm
C	- PTO speed at rated engine speed:	568 rpm
C	- Engine speed at standard power take-off speed:	1995 rpm
C	- Ratio of rotation speeds (engine speed/p.t.o. speed):	3.694:1
C	- Power restriction:	70 kW
D	- Maximum torque transmissible:	Not Specified
C	- Direction of rotation (viewed from shaft end):	Clockwise

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

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

1.4.1.2 Power take-off proportional to ground speed

1.4.2 *Optional power take-off* N/A

1.5 Hydraulic Power Lift

C	- Make/Model/Type:	John Deere/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, 80 mm or 85 mm
D	- Type of linkage lock for transport:	Electro-hydraulic
C	- Relief valve pressure setting (tolerance):	20.0 +/- 0.5 MPa
D	- Opening pressure of cylinder safety valve (if fitted):	24.0 +/- 0.5 MPa
D	- Lift pump type:	Axial piston, variable delivery and flow, pressure and flow compensated
D	- Transmission between pump and engine:	Spiral bevel gear driven
C	- Type and number of filters:	Synthetic media, canister element/ one
C	- Site of oil reservoir:	Differential case housing
C	- Type, number and location of tapping points:	ISO standard breakaway couplers/ 2 standard with 3rd, 4th and power beyond optional/rear of tractor optional mid-body
D	- Maximum volume of oil available to external cylinders:	19 L; additional 11 L allowable overfill for total of 30 L

1.6 Three point linkage

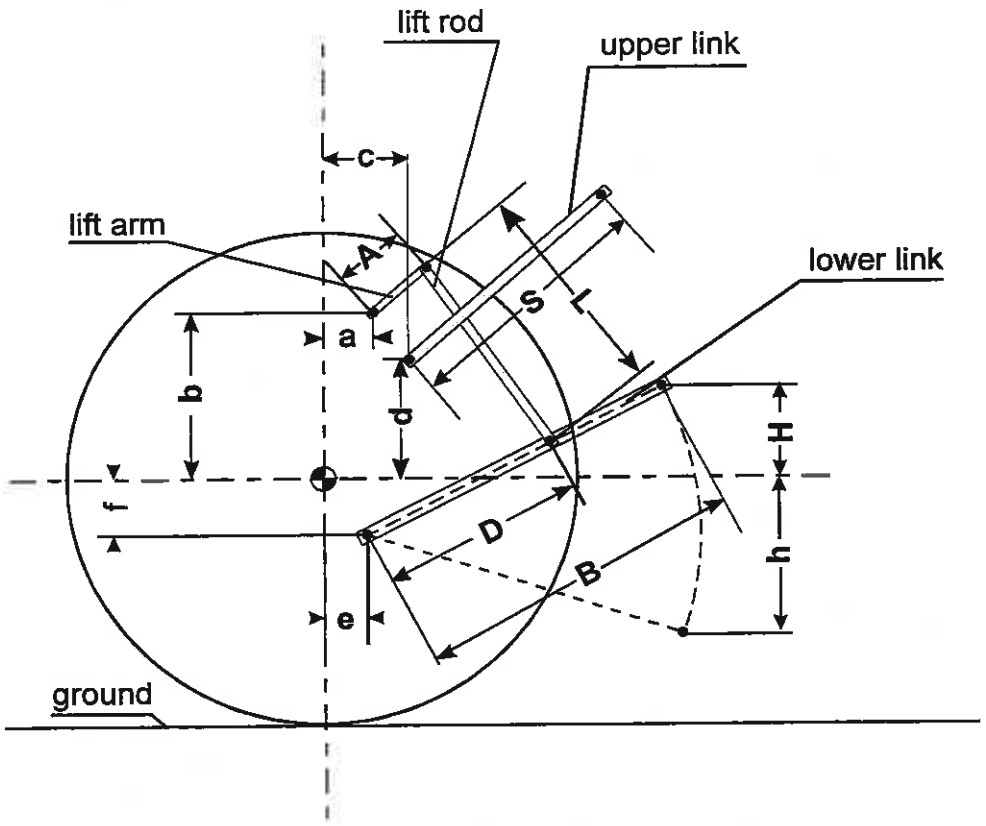


Figure 2.1
Lift test - Linkage Geometry

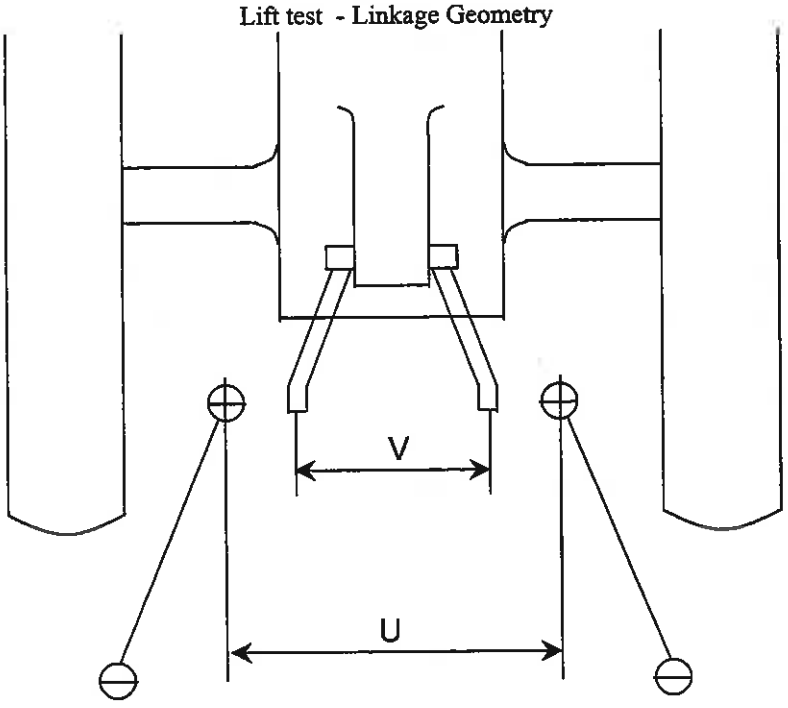


Figure 2.2
Lift test - Linkage Geometry

1.6.1 Three point linkage

C - Category — II in conformity with ISO 730/1 - 1990
C - Category adapter: — None

			mm	mm
C	Lift category:		II	II
C	Rear Tire – Radius Index:	(r)	820	same
C	Front Tire – Radius Index:	(r')	640	same
C	Length of lift arms:	(A)	400	same
C	Length of lower links:	(B)	979.4	same
	Distance of lift arm pivot point from rear-wheel axis			
C	- horizontally:	(a)	184	same
C	- vertically:	(b)	523	same
C	Horizontal distance between the 2 lower link points:	(U)	494	same
C	Horizontal distance between the 2 lift arm end points:	(V)	639.6	same
C	Length of upper link:	(S)	587 to 782	700
	Distance of upper link pivot point from rear wheel axis			
C	- horizontally:	(c)	460.5	same
C	- vertically:	(d)	217.8	same
	Distance of lower link pivot point from rear wheel axis			
C	- horizontally:	(e)	160	same
C	- vertically:	(f)	250	same
C	Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	547.4	same
C	Length of lift rods:	(L)	705 to 900	880
	Height of lower hitch points relative to the rear-wheel axis			
C	- in low position:	(h)	440 to 650	620
C	- in high position:	(H)	30 to 235	63
C	Height above ground of lower hitch points when locked in transport position (*):		850 to 1055	883

(*) Tire dynamic index of 820 mm

** Note: dynamic index of 820 was on tractor supplied for tests.

C - Category — IIIN in conformity with ISO 730/1 - 1990

C - Category adapter: — None

			mm	mm
C	Lift category:		IIIN	IIIN
C	Rear Tire – Radius Index:	(r)	820	same
C	Front Tire – Radius Index:	(r')	640	same
C	Length of lift arms:	(A)	400	same
C	Length of lower links:	(B)	979.4	same
	Distance of lift arm pivot point from rear-wheel axis			
C	- horizontally:	(a)	184	same
C	- vertically:	(b)	523	same
C	Horizontal distance between the 2 lower link points:	(U)	494	same
C	Horizontal distance between the 2 lift arm end points:	(V)	639.6	same
C	Length of upper link:	(S)	587 to 782	698
	Distance of upper link pivot point from rear wheel axis			
C	- horizontally:	(c)	460.5	same
C	- vertically:	(d)	217.8,287.8	287.8
	Distance of lower link pivot point from rear wheel axis			
C	- horizontally:	(e)	160	same
C	- vertically:	(f)	250	same
C	Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	547.4	same
C	Length of lift rods:	(L)	705 to 900	865
	Height of lower hitch points relative to the rear-wheel axis			
C	- in low position:	(h)	440 to 650	590
C	- in high position:	(H)	30 to 235	100
C	Height above ground of lower hitch points when locked in transport position (*):		850 to 1055	920

(*) Tire dynamic index of 820 mm

** Note: dynamic index of 820 was on tractor supplied for tests.

1.7 Swinging drawbar

C	- Type:	Oscillating
	- Height above ground	
C	. Maximum (offset up):	473 mm
C	. Minimum (offset down):	352 mm
C	- Type of adjustment:	Invert drawbar; reposition clevis
C	- Distance of hitch point from rear-wheel axis, horizontally:	870 mm, 970 mm, and 1020 mm
	- Distance of hitch point from power take-off shaft end	
C	. Vertically:	285 mm
C	. Horizontally:	250 mm, 350 mm, and 400 mm
	- Lateral adjustment (centre of clevis)	
C	. Right hand:	190 mm
C	. Left hand:	190 mm
C	- Distance of pivot point from rear-wheel axis, horizontally:	27 mm
C	- Diameter of drawbar pin hole:	33 mm
C	- Maximum vertical permissible load:	2250 kg – 250 mm 1400 kg – 350 mm 1200 kg – 400 mm

1.8 Trailer hitch N/A

1.9 Holed drawbar N/A

1.10 Steering

D	- Make/Model/Type:	Danfoss/-/Hydrostatic
C	- Method of operation	Steering Wheel
D	. Pump(s):	Same as main hydraulic pump
D	. Ram(s):	Integrated Symmetrical design
D	- Working pressure:	18.5 +/- 0.5 MPa

1.11 Brake System

1.11.1 *Service brake*

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

1.11.2 *Parking brake*

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

1.11.3 *Trailer Brake* None

1.12 Wheels

	- Number	
C	.Front:	Two; Driving and steering
C	.Rear:	Two; Driving
C	- Wheelbase:	2650 mm

Track Width Adjustment

		Minimum	Maximum	Adjustment
		mm	mm	Method
D	Front	1510 mm	2235 mm	Reversing wheels and offset lug rims
D	Rear	1524 mm	2548 mm	Rack and pinion axle Reversing wheels and offset lug rims

1.13 Protective structure

C	- Make/Model/Type:	John Deere/ComfortGard™ Cab SG 083/Cab, tiltable
C	- Manufacturer's name and address:	John Deere Tractor Works, Waterloo, Iowa, USA
C	- Protective device:	Cab; tiltable (with tools)
D	- OECD approval:	N/A; certified to SAE J2194
D	- Date of Approval:	N/A

1.14 Seat

1.14.1 *Driver's seat(s)*

C	- Make/Model/Type:	Grammar/MSG95AL-AL154348/Air suspension; ComfortCommand™
C	- Seat and steering wheel reversible: Yes/No	No
C	- Type of suspension:	Air
C	- Type of damping:	Hydraulic viscous damping
	- Range of adjustment	
C	.Longitudinally:	210 mm
C	.Vertically:	80 mm
C	Rotation:	15 degrees left & right
C	- Safety belt Yes/No:	Yes

1.14.2 *Optional Driver's Seat(s)*

D	- Make/Model/Type:	Grammar/MSG95AL-AL159389/Air suspension; ComfortCommand™
D	- Seat and steering wheel reversible: Yes/No	No
D	- Type of suspension:	Air
D	- Type of damping:	Hydraulic viscous damping
	- Range of adjustment	
D	. Longitudinally:	210 mm
D	. Vertically:	80 mm
D	Rotation:	15 degrees left & right
D	- Safety belt Yes/No:	Yes
D	- Make/Model/Type:	Grammar/MSG85-AL154417/Air suspension; ComfortCommand™
D	- Seat and steering wheel reversible: Yes/No	No
D	- Type of suspension:	Mechanical
D	- Type of damping:	Hydraulic viscous damping
	- Range of adjustment	
D	. Longitudinally:	210 mm
D	. Vertically:	80 mm
D	Rotation:	15 degrees left & right
D	- Safety belt Yes/No:	Yes

1.14.3 *Passenger seat*

C	- Location:	Optional Instructional 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
C	Headlights			
	Grille inner	1430	165 x 105	195
	Grille side	1430	155 x 105 curved	280
	Roof inner	2770	80 x 90 oval	280
	outer	2770	80 x 90 oval	410
C	Upper mid-body	2060	80 x 90 oval	825
C	Rearlights			
	Roof	2805	80 x 90 oval	463
C	Tail lights	1960	255 x 255 bubble	780
C	Hazard lights			
	Roof front	2820	205 x 65 curved	610
	Roof rear	2805	125 x 80	631

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
Unballasted	4471	2438	2686	2915	2882
Ballasted	5164	2438	2686	2915	2882

2.2 Ground clearance (unballasted tractor): 465 mm

- Clearance-limiting part: Sway Blocks

2.3 Tractor mass

Mass (with cab, full fuel tank):

	Without driver	With driver
	kg	kg
Unballasted		
Front	2239	2259
Rear	3964	4019
Total	6203	6278
Ballasted		
Front	2634	2654
Rear	4912	4967
Total	7546	7621

Ballasted Added	Number of Weights	Total Mass	Liquid
		kg	kg
Front	4	205	-
Front weight support	1	130	-
Rear (weights)	4	170	-
Rear (duals)	2	838	-

2.4 Track specifications Not applicable

2.5 Tires and track width specifications

	Front	Rear
Tires:	Goodyear	Goodyear
- dimensions	380/85R30	480/80R42
- ply rating	135 A8	151 A8
- type	Radial	Radial
- maximum load (tire manufacturer's)	21.37 kN	33.83 kN
- maximum load (tractor manufacturer's)	Same	Same
- inflation pressure (tractor manufacturer's)		
maximum	160 kPa	160 kPa
minimum	60 kPa	60 kPa
- dynamic radius index	665 mm	870 mm
Chosen track width	1816 mm	1574 mm

2.6 Fuel

- Type/grade: No. 2 Diesel in conformity with national standard
- Density at 15° C 0.838 g/cm^3

2.7 Oils and lubricants

2.7.1 *Capacity and change interval*

	Capacity	Oil change	Filter change
	liter	hours	hours
Engine (with filter)	19.5 L	250 (375 with JD PLUS-50 oil and filter)	250
Front axle	7.2 L	1500	N/A
Transmission, final drive, rear axle and hydraulics	56 L	1500	750
Final drive, front	1.7 L	750	N/A

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; PLUS-50®; 15W-40 12.8 mm^2/s (cSt) at 100°C API CH-4 and CF-4; ACEA E-2 and E-3
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 w/o TLS (as tested): 11
- Number of lubrication points w/TLS: 15

3. COMPULSORY TESTS RESULTS

3.1 Main power take-off

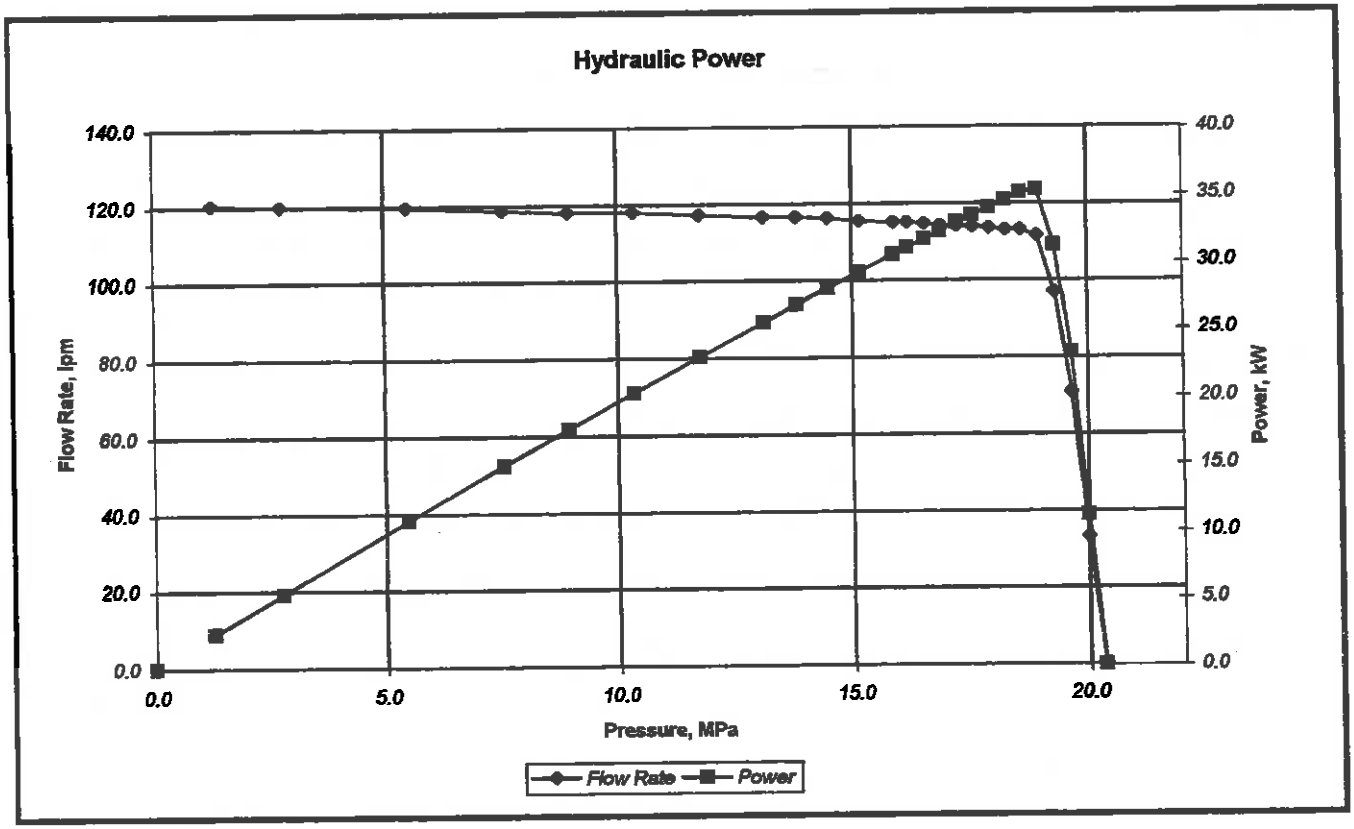
- Date and location of tests: 25-Mar-03 Nebraska Tractor Test Laboratory, Lincoln, NE, USA
- Type of dynamometer bench: Eaton

	Speed		Fuel consumption			Specific energy
Power	Engine	PTO	Hourly		Specific	
kW	rev/min		kg/h	l/h	g/kWh	kW-h/l
3.1 MAXIMUM POWER - TWO HOUR TEST						
107.36	1800	860	24.22	28.90	226	3.72
3.1.2 POWER AT RATED ENGINE SPEED						
93.77	2100	1003	22.95	27.38	245	3.42
3.1.3 STANDARD POWER TAKE-OFF SPEED (1000 +/- 25 rev/min)						
93.77	2100	1003	22.95	27.38	245	3.42
3.1.4 PART LOADS						
3.1.4.1 the torque corresponding to maximum power at rated engine speed						
93.77	2100	1003	22.95	27.38	245	3.42
3.1.4.2 85% of torque obtained in 3.1.4.1						
82.37	2170	1036	20.55	24.52	249	3.36
3.1.4.3 75% of torque defined in 3.1.4.2						
62.67	2200	1051	17.01	20.30	271	3.09
3.1.4.4 50% of torque defined in 3.1.4.2						
42.30	2227	1064	13.61	16.24	322	2.61
3.1.4.5 25% of torque defined in 3.1.4.2						
21.08	2249	1074	10.21	12.18	484	1.73
3.1.4.6 unloaded						
1.52	2249	1074	6.67	7.96	4373	0.19
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						
93.77	2100	1003	22.95	27.38	245	3.42
3.1.5.2 85% of torque obtained in 3.1.5.1						
82.37	2170	1036	20.55	24.52	249	3.36
3.1.5.3 75% of torque defined in 3.1.5.2						
62.67	2200	1051	17.01	20.30	271	3.09
3.1.5.4 50% of torque defined in 3.1.5.2						
42.30	2227	1064	13.61	16.24	322	2.61
3.1.5.5 25% of torque defined in 3.1.5.2						
21.08	2249	1074	10.21	12.18	484	1.73
3.1.5.6 unloaded						
1.52	2249	1074	6.67	7.96	4373	0.19

- No load maximum engine speed: 2249 rev/min
- Torque (equivalent crankshaft) at rated speed:
  - At rated engine speed 426 Nm
  - At 2-hour test 569 Nm
- Maximum torque (equivalent crankshaft): 616 Nm
  (engine speed: 1505 rev/min)

Mean atmospheric conditions:		
Dry bulb	24	°C
Pressure	97.9	kPa
Relative Humidity	21	%
Maximum temperatures:		
Coolant	91	°C
Engine oil	110	°C
Fuel	48	°C
Engine air intake	25	°C

Date of Test:	4-Apr-03	John Deere 7520 IVT	
Location of Test-City-State:		Tractor Test Lab, Lincoln, NE, USA	
Tapping point used for test:		Two sets of remote hydraulic outlets	
I.	Sustained pressure with pump stalled:		
	20.33 MPa		
	2949 psig		
II.	Pump delivery rate at minimum pressure:		
	120.4 l/min		
	31.8 gpm		
III.	Flow rate, pressure, power:		
	90% of relief valve setting		
	113.2 l/min	18.28 MPa	34.5 kW
	29.9 gpm	*2652 psig*	*46.3 hp*
	Maximum hydraulic power:		
	111.7 l/min	18.96 MPa	35.3 kW
	29.5 gpm	*2750 psig*	*47.3 hp*
IV.	Hydraulic fluid temperature at flow meter:		
	70 °C		
	158 °F		
	This hydraulic system does not use an accumulator. Opening and closing pressures of the unloading valve could not be measured.		



3.2 POWER LIFT TEST
Category II, with lifting cylinders (2) x 80 mm dia.
Date of test: 5 March 2003.

	Hitch points	Frame
Lower hitch points above ground - down position:	200 mm	54 mm
Vertical movement - without load:	683 mm	923 mm
with load:	660 mm	910 mm
Maximum corrected force exerted through full range:	53.8 kN	35.2 kN
Corresponding pressure:	18.0 MPa	18.0 MPa
Moment about rear axle:	62.6 kNm	62.4 kNm
Maximum mast tilt angle	--	9.4 degrees

Lifting height relative to horizontal position of lower links.

mm	-511	-365	-299	-200	-100	0	101	200	295	399
Corrected lift forces										
At the Hitch point kN	--	53.8	54.2	54.7	55.2	55.5	56.1	57.0	57.6	--
at the frame kN	44.2	43.6	42.9	42.0	–	40.6	39.2	37.7	37.1	35.2
Corresponding pressure 18.0 Mpa										

OECD Drawbar Data (SI)

Date of tests: 27-March & 4,9-Apr-03 — Fuel density: 0.838 kg/l

Type of track: Concrete — Test number: 1818

3.3.1 Maximum power in tested gears (unballasted, FWA) AUTO MODE — Tire pressure: 83 kPa, rear 69 kPa, front — Drawbar Height: 559 mm

Gear	Speed Setting	Power	Drawbar pull	Speed	Engine speed	Slip	Fuel		Temperature			Atmospheric conditions		
							SFC	SFE	Fuel	Coolant	Oil	Temperature	Relative humidity	Pressure
	km/h	kW	kN	km/h	rev/min	%	kg/kW.h	kW.h/l	°C	°C	°C	°C	%	kPa
*2.5	4.0	56.15	60.65	3.33	1722	14	0.318	2.64	47	83	107	11	65	95.8
3.1	5.0	68.71	58.70	4.21	1976	12	0.319	2.62	47	85	109	14	54	95.8
3.7	6.0	80.17	57.67	5.00	1904	10	0.305	2.75	47	86	109	14	63	95.8
4.3	6.9	84.79	53.10	5.75	1829	7	0.291	2.88	49	89	112	21	57	96.1
5.0	8.0	86.76	50.93	6.13	1827	6	0.281	2.99	47	87	111	17	80	96.2
5.6	9.0	90.35	46.25	7.03	1828	5	0.272	3.08	47	86	110	16	75	96.3
6.2	10.0	92.41	42.62	7.81	1827	4	0.265	3.16	47	88	111	15	64	96.3
6.8	10.9	92.86	38.72	8.63	1827	4	0.266	3.15	48	88	112	16	60	96.4
7.6	12.2	92.32	34.32	9.68	1826	3	0.267	3.14	47	87	110	17	53	96.4
8.1	13.0	91.02	31.32	10.46	1826	3	0.271	3.10	48	89	112	20	41	96.4
8.7	14.0	89.64	28.79	11.21	1829	2	0.274	3.06	48	88	111	20	41	96.4
9.3	15.0	87.26	26.33	11.93	1825	2	0.281	2.98	47	89	111	20	41	96.4
10.0	16.1	88.96	24.68	12.98	1825	2	0.276	3.04	47	88	112	19	48	96.4
* Note: Pull limited to avoid excessive bouncing														
3.3.2 Fuel consumption														
3.3.2.1			In selected speed setting at maximum power at rated engine speed.											
6.8	11	84.33	29.52	10.29	1974	2	0.274	3.06	47	86	109	15	45	98.3
3.3.2.1.1			75% of pull at maximum power at rated engine speed											
6.8	11	64.34	22.06	10.50	1766	2	0.285	2.94	46	83	106	13	42	98.5
3.3.2.1.2			50% of pull at maximum power at rated engine speed											
6.8	11	44.61	14.77	10.87	1447	1	0.296	2.83	46	81	103	14	40	98.4
3.3.2.1.3			Higher speed setting at reduced engine speed, same pull and travel speed as 3.3.2.1.1											
6.8	11	64.68	22.17	10.50	1767	2	0.283	2.96	46	83	106	13	42	98.5
3.3.2.1.4			Higher speed setting at reduced engine speed, same pull and travel speed as 3.3.2.1.2											
6.8	11	44.45	14.72	10.87	1445	1	0.293	2.86	47	81	104	14	40	98.4
3.3.2.2			In selected speed setting nearest to 7.5 km/h at rated engine speed.											
5	8	80.08	38.49	7.49	1974	3	0.280	2.99	48	85	110	16	43	98.2
3.3.2.2.1			75% of pull at maximum power at rated engine speed											
5	8	60.37	28.68	7.58	1658	2	0.276	3.04	47	83	107	20	49	96.3
3.3.2.2.2			50% of pull at maximum power at rated engine speed											
5	8	42.35	19.20	7.94	1406	1	0.290	2.89	47	82	104	21	49	96.3
3.3.2.2.3			Higher speed setting at reduced engine speed, same pull and travel speed as 3.3.2.2.1											
5	8	60.26	28.66	7.57	1655	2	0.274	3.06	47	84	106	20	49	96.3
3.3.2.2.4			Higher speed setting at reduced engine speed, same pull and travel speed as 3.3.2.2.2											
5	8	42.54	19.23	7.97	1407	1	0.290	2.89	47	82	104	21	49	96.3

OECD Drawbar Data (SI)

Date of tests: 27-Mar & 04,09-Apr-03 — Fuel density: 0.838 kg/l

Type of track: Concrete — Test number: 1818

4.1 Maximum power in tested gears (unballasted, 4wd, Auto Mode) — Tire pressure: 83 kPa, rear 69 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
	km/h	kW	kN	km/h	rev/min	%	kg/kW.h	kW.h/l	°C	°C	°C	°C	%	kPa
*2.5	4.0	58.45	61.20	3.44	2182	13	0.345	2.43	48	84	108	12	60	95.8
3.1	5.0	69.86	59.12	4.25	2143	12	0.331	2.53	49	85	109	14	54	95.8
3.7	6.0	76.89	51.90	5.33	2102	6	0.306	2.74	47	85	109	14	63	95.8
4.3	6.9	76.40	43.51	6.32	2099	4	0.307	2.73	49	86	110	20	64	96.1
5.0	8.0	78.46	38.19	7.40	2101	4	0.298	2.81	48	86	110	19	68	96.2
5.6	9.0	81.31	35.30	8.29	2099	3	0.287	2.92	47	86	110	16	85	96.3
6.2	10.0	82.68	32.28	9.22	2099	3	0.282	2.97	47	86	108	16	74	96.3
6.8	10.9	82.69	29.38	10.13	2096	2	0.283	2.96	47	86	109	15	60	96.3
7.6	12.2	81.54	25.87	11.35	2095	2	0.285	2.94	48	86	109	16	56	96.4
8.1	13.0	79.59	23.30	12.29	2100	2	0.294	2.85	48	86	109	18	46	96.4
8.7	14.0	77.44	21.08	13.22	2100	2	0.300	2.79	48	87	109	20	41	96.4

* Note: Pull limited to avoid excessive bouncing

OECD Drawbar Data (SI)

Date of tests: 27-Mar, 04, 09-Apr-03 | Fuel density: 0.838 kg/l
Type of track: Concrete | Test number: 1818

4.2 Maximum power in tested gears manual mode (unballasted, 4wd) | Tire pressure: 83 kPa, rear 69 kPa, front | Drawbar Height: 559 mm

Gear	Speed Setting	Power	Drawbar pull	Speed	Engine speed	Slip	Fuel		Temperature			Atmospheric conditions		
							SFC	SFE	Fuel	Coolant	Oil	Temperature	Relative humidity	Pressure
	km/h	kW	kN	km/h	rev/min	%	kg/kW.h	kW.h/l	°C	°C	°C	°C	%	kPa
*2.5	4.0	59.61	61.67	3.48	2181	12	0.338	2.48	48	83	104	11	70	95.8
3.1	5.0	70.15	59.18	4.27	2146	12	0.328	2.56	48	85	108	14	54	95.8
3.7	6.0	78.65	58.08	4.88	2008	10	0.310	2.70	47	86	110	14	63	95.8
4.3	6.9	82.09	54.07	5.47	1874	7	0.298	2.81	48	88	112	21	61	96.1
5.0	8.0	86.98	50.92	6.15	1797	6	0.283	2.96	48	89	113	18	72	96.2
5.6	9.0	90.48	46.61	6.99	1802	5	0.270	3.10	46	87	111	16	80	96.3
6.2	10.0	92.61	42.77	7.80	1801	4	0.263	3.18	47	87	111	16	70	96.3
6.8	10.9	92.82	38.81	8.61	1802	4	0.265	3.16	47	88	111	16	60	96.4
7.6	12.1	92.37	34.40	9.67	1800	3	0.266	3.15	47	87	111	17	53	96.4
8.1	13.0	91.12	31.36	10.46	1799	3	0.268	3.12	47	88	110	19	40	96.4
8.7	14.0	89.25	28.54	11.26	1799	2	0.275	3.04	48	88	109	20	41	96.4
9.3	15.0	88.35	26.41	12.04	1798	2	0.279	3.00	47	88	112	20	41	96.4
10.0	16.1	89.60	24.91	12.95	1798	2	0.274	3.05	48	88	112	20	41	96.4
* Note: Slip limited to avoid excessive bouncing														
4.2.2 Fuel consumption														
4.2.2.1			In selected gear at maximum power at rated engine speed.											
7	6.8M	82.69	29.38	10.13	2096	2	0.283	2.96	47	86	109	15	60	96.3
4.2.2.1.1			75% of pull at maximum power at rated engine speed											
7	6.8M	65.05	22.06	10.62	2182	2	0.308	2.72	47	84	108	13	46	98.5
4.2.2.1.2			50% of pull at maximum power at rated engine speed											
7	6.8M	44.33	14.72	10.84	2214	1	0.359	2.34	48	83	106	14	35	98.4
4.2.2.1.3			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.1											
9	9.3M	64.79	22.14	10.54	1796	2	0.283	2.96	47	85	107	14	39	98.4
4.2.2.1.4			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.2											
9	9.3M	44.28	14.75	10.81	1712	1	0.315	2.66	47	83	103	15	41	98.4
4.2.2.2			In selected gear nearest to 7.5 km/h at rated engine speed.											
5	5.0M	78.46	38.19	7.40	2101	4	0.298	2.81	48	86	110	19	68	96.2
4.2.2.2.1			75% of pull at maximum power at rated engine speed											
5	5.0M	62.23	28.82	7.77	2184	3	0.320	2.62	49	86	107	19	48	96.3
4.2.2.2.2			50% of pull at maximum power at rated engine speed											
5	5.0M	42.37	19.16	7.96	2217	1	0.373	2.25	48	83	106	21	49	96.3
4.2.2.2.3			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.1											
8	7.5M	62.23	28.74	7.80	1600	2	0.273	3.07	47	84	107	20	49	96.3
4.2.2.2.4			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.2											
8	7.5M	42.77	19.17	8.03	1619	1	0.301	2.78	46	82	103	21	49	96.3

OECD Drawbar Data (SI)

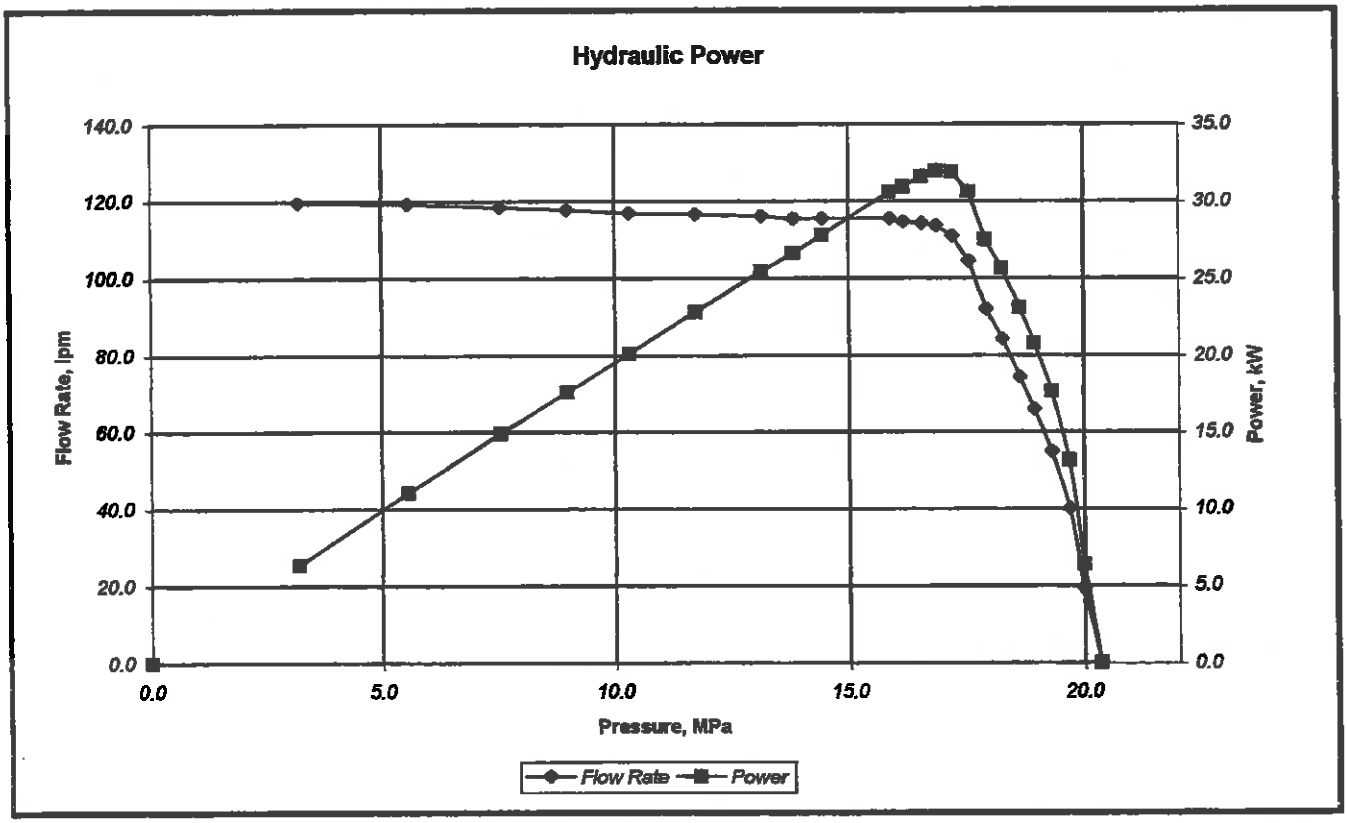
Date of tests: 10-Apr-03 | Fuel density: 0.838 kg/l

Type of track: Concrete | Test number: 1818

4.3 Maximum power in tested gears Manual mode (ballasted, 4wd) | Tire pressure: 117 kPa, rear 90 kPa, front | Drawbar Height: 546 mm

Gear	Speed Setting	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	4	66.55	71.47	3.35	2164	15	0.336	2.49	48	83	107	6	78	97.5
3	5	79.31	67.04	4.26	2052	8	0.303	2.76	49	85	109	12	55	98.0
4	6	83.82	65.76	4.59	1853	8	0.293	2.86	48	86	110	13	47	97.9
4	7	86.23	58.26	5.33	1800	6	0.284	2.95	48	88	110	14	45	97.9
5	8	89.56	51.50	6.26	1799	5	0.272	3.08	48	88	111	16	43	97.9
6	9	91.72	46.74	7.06	1801	4	0.268	3.13	48	87	110	16	43	97.9
6	10	92.95	42.65	7.84	1799	3	0.264	3.17	49	88	111	17	40	97.9
7	11	92.75	38.66	8.64	1798	3	0.265	3.17	48	87	110	17	40	97.9
8	12	92.02	34.08	9.72	1802	3	0.266	3.15	48	88	111	18	41	97.8
8	13	90.78	31.13	10.50	1800	2	0.270	3.11	48	88	111	18	42	97.8
9	14	88.67	28.26	11.30	1799	2	0.276	3.03	49	89	112	19	43	97.8
9	15	87.68	26.03	12.13	1805	2	0.279	3.01	49	89	112	19	47	97.8
10	16	89.04	24.58	13.04	1804	2	0.277	3.03	48	89	111	20	41	97.8

Date of Test:	4-Apr-03	John Deere 7520 IVT	
Location of Test-City-State:		Tractor Test Lab, Lincoln, NE, USA	
Tapping point used for test:		One set of remote hydraulic outlets	
I.	Sustained pressure with pump stalled:		
	20.36 MPa		
	2953 psig		
II.	Pump delivery rate at minimum pressure:		
	119.6 l/min		
	31.6 gpm		
III.	Flow rate, pressure, power:		
	90% of relief valve setting		
	84.0 l/min	18.27 MPa	25.6 kW
	22.2 gpm	*2650 psig*	*34.3 hp*
	Maximum hydraulic power:		
	113.6 l/min	16.89 MPa	32.0 kW
	30.0 gpm	*2449 psig*	*42.9 hp*
IV.	Hydraulic fluid temperature at flow meter:		
	70 °C		
	157 °F		
	This hydraulic system does not use an accumulator. Opening and closing pressures of the unloading valve could not be measured.		



4.4.1 POWER LIFT TEST
Category II, with lifting cylinders (2) x 85 mm dia.
Date of test: 5 March 2003.

	Hitch points	Frame
Lower hitch points above ground - down position:	201 mm	56 mm
Vertical movement - without load:	683 mm	923 mm
with load:	665 mm	908 mm
Maximum corrected force exerted through full range:	60.7 kN	39.9 kN
Corresponding pressure:	18.0 MPa	18.0 MPa
Moment about rear axle:	70.6 kNm	70.7 kNm
Maximum mast tilt angle	--	9.4 degrees

Lifting height relative to horizontal position of lower links.

mm	-509	-364	-299	-200	-100	0	101	200	301	399
Corrected lift forces										
At the Hitch point kN	--	60.7	61.2	61.9	62.4	62.7	63.3	64.3	64.6	--
at the frame kN	50.0	49.4	48.6	47.5	--	45.9	44.3	42.6	41.9	39.9
Corresponding pressure 18.0 Mpa										

4.4.2 POWER LIFT TEST
Category IIIN, with lifting cylinders (2) x 80 mm dia.
Date of test: 5 March 2003.

	Hitch points	Frame
Lower hitch points above ground - down position:	230 mm	104 mm
Vertical movement - without load:	690 mm	915 mm
with load:	661 mm	901 mm
Maximum corrected force exerted through full range:	53.4 kN	35.4 kN
Corresponding pressure:	18.0 MPa	18.0 MPa
Moment about rear axle:	62.2 kNm	62.8 kNm
Maximum mast tilt angle	--	10.8 degrees

Lifting height relative to horizontal position of lower links.

mm	-461	-335	-299	-200	-99	1	101	200	295	326	440
Corrected lift forces											
At the Hitch point kN	--	53.4	53.7	54.4	55.2	55.6	56.1	57.0	58.3	58.4	--
at the frame kN	44.2	–	43.4	42.6	–	41.4	40.0	38.3	37.7	37.3	35.4
Corresponding pressure 18.0 Mpa											

4.4.3 POWER LIFT TEST
Category IIIN, with lifting cylinders (2) x 85 mm dia.
Date of test: 5 March 2003.

	Hitch points	Frame
Lower hitch points above ground - down position:	230 mm	104 mm
Vertical movement - without load:	690 mm	915 mm
with load:	661 mm	902 mm
Maximum corrected force exerted through full range:	60.6 kN	39.9 kN
Corresponding pressure:	18.0 MPa	18.0 MPa
Moment about rear axle:	70.4 kNm	70.7 kNm
Maximum mast tilt angle	--	11.0 degrees

Lifting height relative to horizontal position of lower links.

mm	-461	-335	-299	-199	-100	0	101	203	295	326	441
Corrected lift forces											
At the Hitch point kN	--	60.6	60.8	61.6	62.3	62.8	63.2	64.4	65.9	65.8	--
at the frame kN	49.9	–	49.0	48.2	–	46.5	45.0	43.2	42.6	42.1	39.9
Corresponding pressure 18.0 Mpa											

4.5 Measurement of External Noise Level – John Deere 7520

-- Date of Test	March 27, 2003
-- Location of Test	Nebraska Tractor Test Laboratory
-- Sound Level Meter	Bruel and Kjaer 2236
-- Type of Track	Concrete Oval
-- Gear Number	Not applicable
-- Speed Prior to Acceleration	30.0 km/h
-- Noise Level	83.1 dB(A) – manual mode

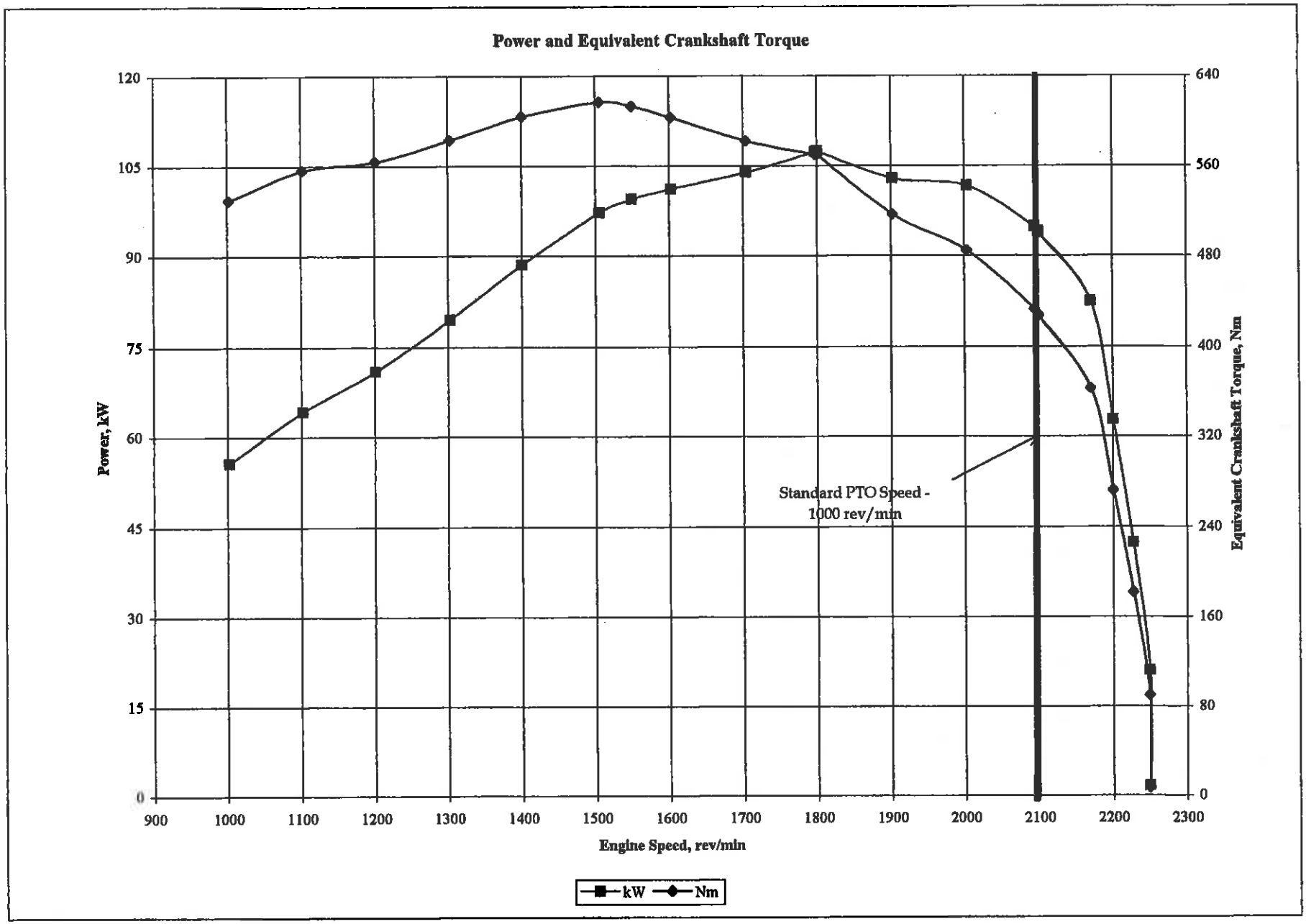
4.6 Measurement of Noise Level at Operator's Ear*

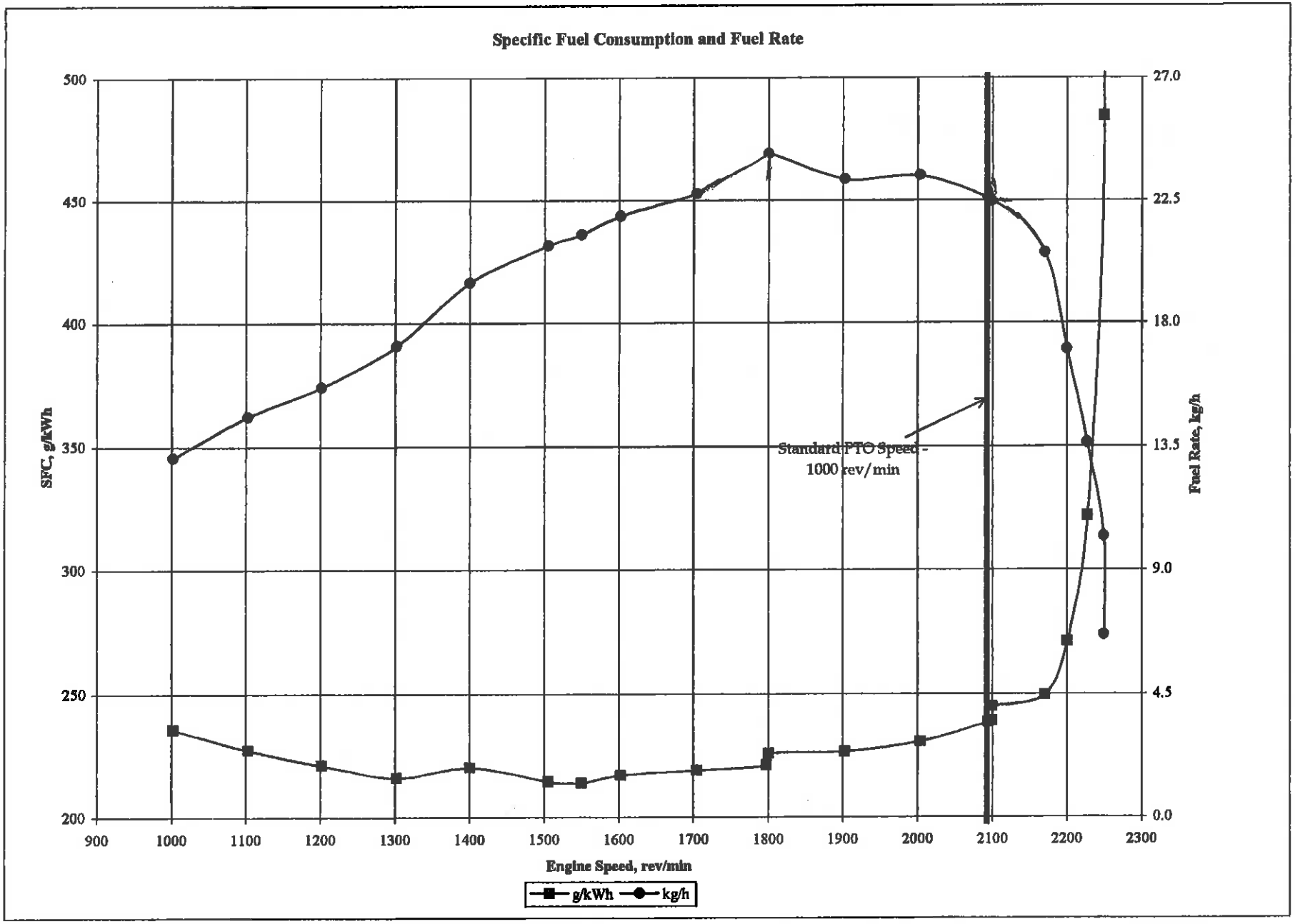
-- Date of Test	March 27, 2003
-- Location of Test	Nebraska Tractor Test Laboratory
-- Sound Level Meter	Bruel and Kjaer 2236
-- Type of Track	Concrete Oval
-- Gear Number	Not applicable – speed 7.3 km/h
-- Drawbar Load	None
-- Noise at Operator Ear	65.8 dB(A) – front wheel drive engaged 66.3 dB(A) – front wheel drive disengaged

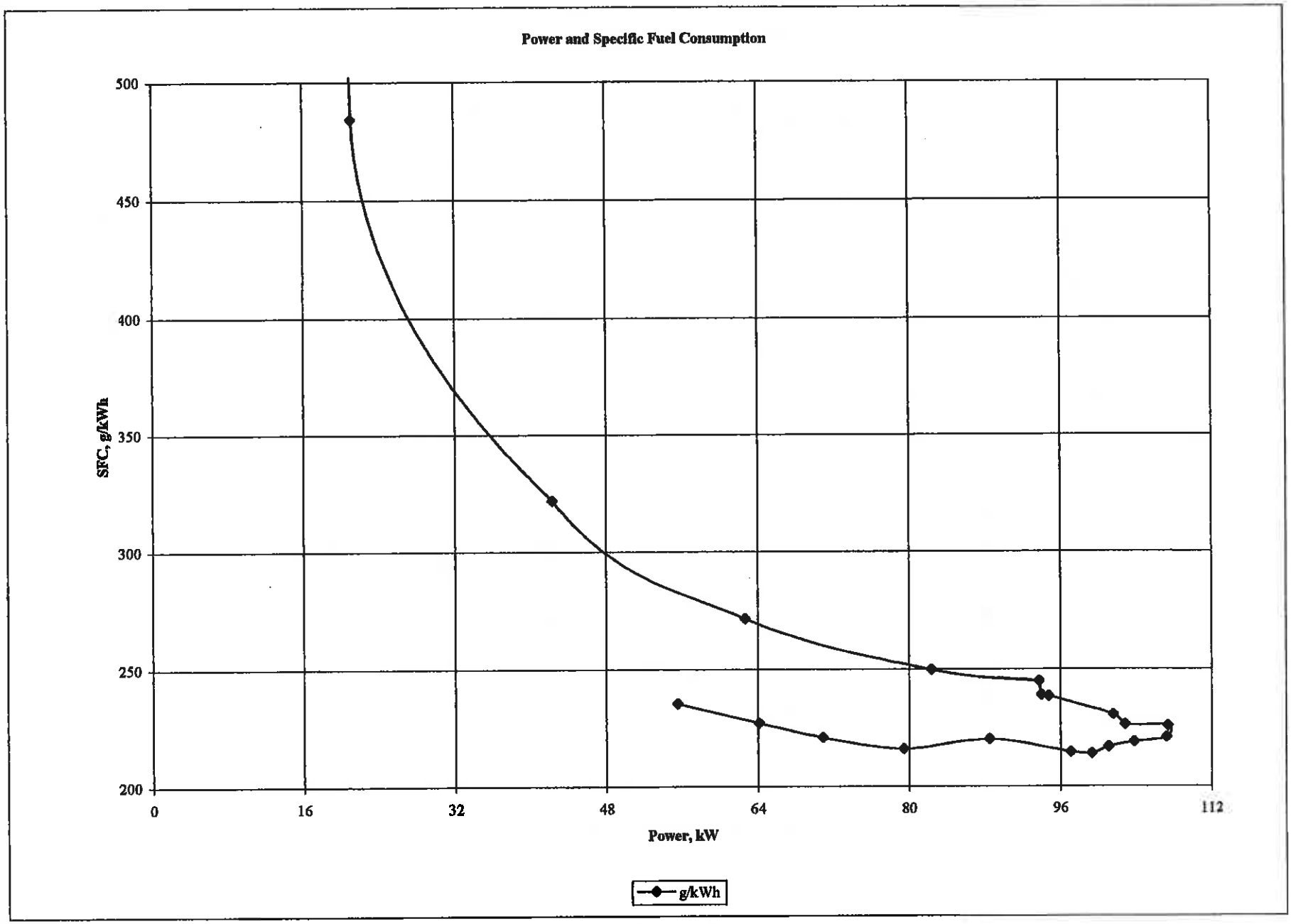
* Note: Nebraska tractor test station guidelines.

5. Repairs and Adjustments: None

6. Remarks: The minimum atmospheric pressure of 96.6 kPa was not available for all times that official testing was conducted.


Power and Equivalent Crankshaft Torque
Power, kW
Equivalent Crankshaft Torque, Nm
Engine Speed, rev/min
Standard PTO Speed - 1000 rev/min
kW
Nm
0
15
30
45
60
75
90
105
120
0
80
160
240
320
400
480
560
640
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
kg/h
500
450
400
350
300
250
200
27.0
22.5
18.0
13.5
9.0
4.5
0.0
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300


Power and Specific Fuel Consumption
SFC, g/kWh
500
450
400
350
300
250
200
0
16
32
48
64
80
96
112
Power, kW
g/kWh