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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 9620T
Powershift
Rubber Tracklaying Tractor

MANUFACTURED BY:	John Deere Tractor Works 3500 East Donald Street P.O. Box 270 Waterloo, Iowa 50704-0270
NEBRASKA TEST NO.	1845
TEST DATES:	November 22 –December 11, 2004

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 August 4, 2005 for the John Deere 9620T Powershift, rubber tracklaying tractor with OECD Number 2/2 265.

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: AUG 24 2005

TABLE OF CONTENTS

Page

1. **SPECIFICATIONS** 1

2. **TEST CONDITIONS** 15

3. **COMPULSORY TESTS**
   - **3.1** Main Power Take-Off Performance (Standard Power) 17
   - **3.2** Hydraulic Power and Lifting Forces 19
   - **3.3** Drawbar Performance 21

4. **OPTIONAL TESTS**
   - **4.1** Drawbar Power (Unballasted – 2100 rev/min) 22
   - **4.2** Two Hour Max Drawbar Power Test 23
   - **4.3** Drawbar Full Load (lugging run) Test 23
   - **4.4** 75 % of Pull at Maximum Power at Rated Engine Speed 23
   - **4.5** 50 % of Pull at Maximum Power at Rated Engine Speed 23
   - **4.6** Drawbar Power (Ballasted – 1800 rev/min) 24
   - **4.7** Hydraulic Power (2 coupler pair) 25
   - **4.8** Power Lift Test (Category IV) 26
   - **4.9** Measurement of Noise at Operator's Ear 27

5. **REPAIRS** 27

6. **REMARKS** 27

7. **PTO PERFORMANCE CURVES** 28

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):	91.6 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):	9620T
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)*	Rubber Tracklayer

(*) *Possibly different from tractor manufacturer's name*

	1.1.2	Numbers	
D		- 1st Serial No. or prototype:	CONFIDENTIAL
C		- Serial No.:	*RW9620T903228*
	1.1.3	Other specifications (if applicable)	
D		- Model(s) for other countries:	N/A
C		- Transmission type or gears x ranges:	18 Speed Full Powershift
C		- Speed version: • *30, 40, or 50 km/h*	34 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

	1.2	Engine	
C		- Make / Model / Type:	John Deere / 6125HRW18 / Diesel; 4-stroke; turbocharged, direct injection, air to air intercooled
C		- Serial No.:	*RG6125H041866*
	1.2.1	Cylinders	
C		- Number / disposition:	6 / inline, vertical
D		- Bore / Stroke (mm / mm):	127 x 165
D		- Capacity (cm^3):	12536
D		- Compression ratio:	14.7 : 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 / RE522343 / Exhaust gas driven
D		- Pressure (MPa):	0.222
	1.2.3	Fuel System	
C		- Fuel feed system:	Mechanical Transfer Pump
		- Make / Model / Type of fuel filter(s)	
C		. Primary:	Racor / RE515345 / 10 micron multilayer water separating
C		. Secondary:	Racor / RE506428 / 2 micron multilayer water separating
D		- Capacity of fuel tank (dm^3):	1022
C		- Make / Model / Type of injection pump:	Delphi / EUI 200 / Electronic Unit Injector
C		- Serial No.:	NA
		- Manufacturer's production setting of injection pump	
C		. Flow rate (rated engine speed and full load) (dm^3/h):	94.5 +/- 4.0
D		. Timing:	Variable
D		- Make / Model / Type of injectors:	Delphi / RG33967 / Electronic Unit Injector
D		- Injection pressure (MPa):	170
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 2255
C		- Rated engine speed (min^{-1} (rev/min)):	2100

	1.2.5	Air Cleaner	
		- Pre-cleaner	
C		. Make / Model / Type:	Donaldson / RE218405 / Stratotube precleaner with fan aspirator
C		. Location of air intake:	Top of Air Stack, right front corner of cab
		- Main cleaner	
		. Make / Model / Type	
C		- Primary:	Donaldson / RE63931 / pleated paper
C		- Secondary:	Donaldson / RE63932 / pleated paper
C		. Location of air intake (in case of no pre-cleaner):	
C		- Maintenance indicator:	Console mounted warning light and audible signal
	1.2.6	Lubrication system	
D		- Type of feed pump:	Full pressure, positive displacement
C		- Type of filter(s):	Full Flow
C		- Number of filter(s):	1 spin-on
	1.2.7	Cooling system	
C		- Type of coolant:	Liquid
D		- Type of pump:	Centrifugal, gear driven
		- Specification of fan or blower	
C		. Number of fan blades:	8
C		. Fan diameter (mm):	785
D		- Coolant capacity (dm^3):	60
C		- Type of temperature control:	Two thermostats and variable speed fan
D		- Superpressure system (Kpa):	69 +/- 5
	1.2.8	Starting system	
C		- Make / Model / Type:	Denso / RE522851 / Solenoid engaged
D		- Starter motor power rating (kW):	5.0
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:	Denso / RE186320 / Belt driven alternator with built-in regulator
D		. Power (kW):	2.1
		- Battery of accumulators	
C		. Number:	Three; 950 CCA, RC 180
D		. Rating (Ah at ____ hours):	154 Ah at 20 hours

1.2.10 Exhaust system

C	- Make / Model / Type:	Nelson / RE234654 / 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:	7
D	- Diameter of plates (mm):	279
C	- Method of operation:	Electro-Hydraulic; pedal actuated

1.3.2 Gear box

D	- Make / Model / Type:	John Deere / 18 Speed PowerShift / Full PowerShift
	- Description:	Countershaft design consisting of 8 multi-disk hydraulically cooled clutches and multi-disk hydraulically cooled planetary brake

		Forward	Reverse
C	Number of ranges		
C	Number of gears	18	6
C	Total of arrangements	18	6

D	- Available options:	None

1.3.3 Rear axle and final drives

D	- Make / Model / Type:	John Deere / RE222678 / Spiral bevel with pinion differential and outboard planetary reduction
	- Differential lock	
D	. Type:	N/A
C	. Method of engagement:	
C	. Method of disengagement:	

1.3.4 Front axle and final drives

D	- Make / Model / Type:	N/A
	- Differential lock	
D	. Type:	N/A
C	. Method of engagement:	
C	. Method of disengagement:	

1.3.5 Total ratios and traveling speeds

Gear No.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal traveling speed (*) at rated engine of 2100 min^{-1} (rev / min) km/h
1	1	180.2575	3.43
2	2	146.4435	4.22
3	3	132.2418	4.67
4	4	118.4433	5.21
5	5	107.4719	5.75
6	6	96.2420	6.42
7	7	86.9205	7.10
8	8	77.8354	7.93
9	9	70.6357	8.74
10	10	63.2721	9.76
11	11	57.1429	10.81
12	12	51.7114	11.94
13	13	46.4294	13.30
14	14	42.0084	14.70
15	15	33.9806	18.17
16	16	27.6170	22.36
17	17	22.3428	27.64
18	18	18.1535	34.02
Reverse			
1	1	-180.2575	-3.43
2	2	-132.2418	-4.67
3	3	-118.4433	-5.21
4	4	-86.9205	-7.10
5	5	-77.8354	-7.93
6	6	-57.1429	-10.81
(*) Calculated with a tyre dynamic radius index of 780 mm			

- Number of revolutions of front wheels for one revolution of rear-wheels (For 4WD tractors only): N/A

1.4 Power take-off (PTO)

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): Hydraulically actuated multi-plate wet clutch operated by single hand control lever
- Number of shafts: One
- Method of changing power take-off shaft ends and speeds: None

		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):	817
C		- Distance from the median plane of the tractor (mm):	0
C		- Distance behind rear-wheel axis (mm):	760
C		- PTO speed at rated engine speed (min^{-1} (rev/min)):	1108
C		- Engine speed at standard power take-off speed (min^{-1} (rev/min)):	1895
C		- Ratio of rotation speeds (engine speed / p.t.o. speed):	1.895 : 1
D		- Power restriction (kW):	285 kW
D		- Maximum torque transmissible (Nm):	1680
C		- Direction of rotation: (viewed from behind tractor)	Clockwise
	1.4.1.2	Power take-off proportional to ground speed	N/A
	1.4.2	Optional power take-off	N/A
	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
C		- Type of linkage lock for transport:	Electro-hydraulic
D		- Relief valve pressure setting (tolerance) (MPa):	20.2 +/- 0.4

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 full flow charge pump
D	- Transmission between pump and engine:	Gear driven; transmission front housing
C	- Type and number of filters:	Synthetic spin on filter; one
C	- Site of oil reservoir:	Under hood; engine compartment
C	- Type, number, and location of tapping points:	ISO standard breakaway couplers / 4 standard with 5th optional and power beyond optional; rear of tractor
D	- Maximum volume of oil available to external cylinders (dm^3):	51.9

1.6 Three point linkage

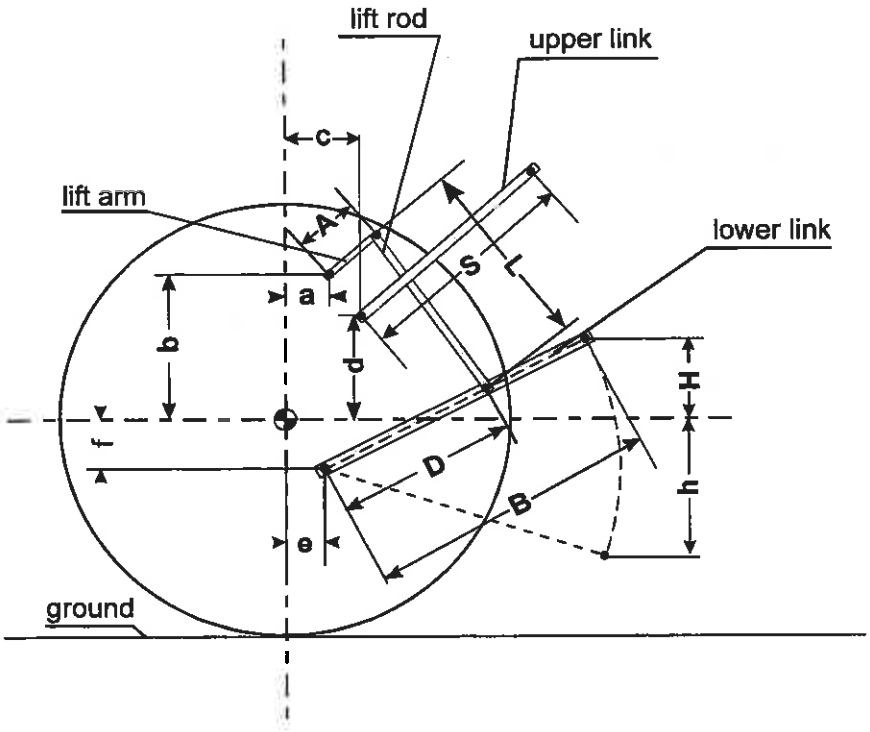


Figure 2.1
Lift Test – Linkage geometry

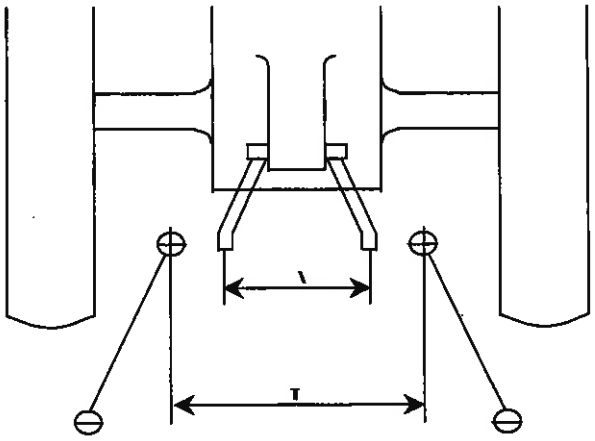


Figure 2.2
Lift Test – Linkage geometry

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

			Dimension or range	Settings used in test(s)
			mm	mm
C	Length of arms:	(A)	471	Same
C	Length of lower links (with quick attach):	(B)	1095	Same
C	Length of lower links (without quick attach):		928	NA
	Distance of lift arm pivot point from rear wheel axis			
C	- horizontally:	(a)	244	Same
C	- vertically:	(b)	772	Same
C	Horizontal distance between the 2 lower link points:	(u)	644	Same
C	Horizontal distance between the 2 lift arm end points:	(v)	750	Same
C	Length of upper arm link:	(S)	from 747 to 868	783
	Distance of upper link pivot point from rear wheel axis			
C	- horizontally:	(c)	577	Same
C	- vertically:	(d)	288	Same
	Distance of lower link pivot point from rear wheel axis			
C	- horizontally:	(e)	288	Same
C	- vertically:	(f)	350	Same
C	Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	746	Same
C	Length of lift rods:	(L)	From 1110 to 1270	1238
	Height of lower hitch points relative to the rear wheel axis			
C	- in low position:	(h)	337 to 657	634
C	- in high position:	(H)	110 to 340	166
C	Height above ground of lower hitch points when locked in transport position (*):		Any Position within range	1003
	(*) Assuring r = 837 Tyre dynamic radius			

Table 1.1

Dimensions of linkage geometry when connected to the standard frame

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

			Dimension or range	Settings used in test(s)
			mm	mm
C	Length of arms:	(A)	471	Same
C	Length of lower links (with quick attach):	(B)	1095	Same
	Length of lower links (without quick attach):		918	NA
	Distance of lift arm pivot point from rear wheel axis			
C	- horizontally:	(a)	244	Same
C	- vertically:	(b)	772	Same
C	Horizontal distance between the 2 lower link points:	(u)	644	Same
C	Horizontal distance between the 2 lift arm end points:	(v)	750	Same
C	Length of upper arm link:	(S)	747 to 868	762
	Distance of upper link pivot point from rear wheel axis			
C	- horizontally:	(c)	577	Same
C	- vertically:	(d)	288	Same
	Distance of lower link pivot point from rear wheel axis			
C	- horizontally:	(e)	288	Same
C	- vertically:	(f)	350	Same
C	Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	746	Same
C	Length of lift rods:	(L)	1110 to 1270	1216
	Height of lower hitch points relative to the rear wheel axis			
C	- in low position:	(h)	337 to 657	613
C	- in high position:	(H)	110 to 340	187
C	Height above ground of lower hitch points when locked in transport position (*):		Any Position within range	1029
	(*) Assuring r = 837 Tyre dynamic radius			

Table 1.1

Dimensions of linkage geometry when connected to the standard frame

	1.7	Swinging drawbar	
C		- Type:	Oscillating; wide swing
		- Height above ground	
C		. Minimum (mm):	483
C		. Maximum (mm):	483
C		- Type of adjustment:	None
		- Distance of hitch point from rear wheel axis	
C		. Horizontally (mm):	1119 to 1269
		- Distance of hitch point from power take-off shaft end	
C		. Horizontally (mm):	359 to 509 (based on position)
C		. Vertically (mm):	335
C		- Lateral adjustment (center of clevis)	
C		. Left hand (mm):	714
C		. Right hand (mm):	714
		- Distance of pivot point from rear wheel axis	
C		. Horizontally (mm):	1373 to 1523
C		- Diameter of drawbar pinhole (mm):	53
D		- Maximum vertical permissible load (kN):	20 kN
	1.10	Steering	
D		- Make / Model / Type:	John Deere Hydrostatic Differential Steering/ Pump and Motor/ Electro-Hydraulic Differential steering controlled by steering wheel
		- Method of operation	
D		. Pump(s):	Axial Piston Variable displacement pump and Axial piston fixed displacement motor
D		. Rams(s):	None
D		- Working pressure (MPa):	Up to 48.5 +/- 2.0
	1.11	**Brakes**	
	1.11.1	Service brake	
D		- Make / Model / Type:	Vickers -John Deere / Oil immersed/Load sensing power with manual backup
C		- Method of operation:	Hydraulic, operated by one pedal
C		- Trailer braking take-off (hydraulic or air brakes):	N/A
	1.11.2	Parking brake	
C		- Type:	Spring applied; hydraulic release
C		- Method of operation:	Gear selector lever

1.12 Wheels

- Number

C . Front (driving / steering): N/A

C . Rear (driving / steering): N/A

C - Wheelbase (mm): N/A

- Track width adjustment: None

		Minimum mm	Maximum mm	Adjustment method
D	Inner	2692	2692	None
D				
D				

1.13 Protective structure

C - Make / Model / Type: John Deere / SG081 / 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: 4/0 720

C . Date of approval: 04 April 2002

C . Nos. of minor modification certificates, if any: 1st extension 08Sep04

1.14 Seat(s)

1.14.1 Driver's seat

C - Make / Model / Type: 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

1.14.3 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
Headlights			
Inner	2140	135 x 90	445
Outer	2140	155 x 115	270
Center	2140	130 x 85	65
Sidelights			
Front	3420	160 x 110	955
Rear	3420	160 x 110	955
Rearlights			
Fender	1990	160 x 110	1350
	1990	160 x 110	1135
Reflectors			
Front (Wrap around)	3350	82 x 240	715
Rear (Wraparound)	3330	82 x 240	715
Tail lights	1850	210 x 95	898
Extremity	1910	110 dia	1780

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	6660	3952	3962	3454	3860
Unballasted	6020	3580	3580	3454	3860

2.2 Ground clearance (unballasted tractor)

(mm): 375

- Clearance – limiting part: Drawbar rear support

2.3 Tractor mass

Mass (with cab, full fuel tank):

	Without driver	With driver
	kg	kg
Unballasted		
Total	19681	19756
Ballasted		
Total	22599	22674

Ballast Added	Number of Weights	Total Mass	Liquid
		kg	kg
Front Bracket	1	265	-
Side Brackets	4	197	
Weights	57	2456	

2.4 Track specifications

Track materials	Camoplast
Track width and base	915 mm and 2819 mm
Dynamic radius (rolling radius)	780 mm
Track support system	Oscillating front idler & four mid-rollers supported by midframe and rear wheel attached to drive axle
Treadbars	
Total per track Number per metre Bar length at top Bar width at top Bar width at center Bar height	**42** 4.37 per meter 470 mm 52 mm 70 mm 61 mm
Track Length	9601 mm
Track ground contact length	2819 mm

2.5 Track width specifications **Tread width setting: 2692 mm**

2.6 Fuel

- Type:
  - *in conformity / not in conformity with national standards*

No. 2 Diesel in Conformity with National Standard

- Density at 15° C: 0.840

2.7 Oil and lubricants

2.7.1 Capacity and change interval

	Capacity	Oil Change	Filter change
	Dm^3	h	h
Engine	42	250 (375 with John Deere PLUS-50 and John Deere filter)	250
Gear Box	246	1500	750
Front Axle	Common w/gearbox	1500	Common w/gearbox
Rear Axle	Common w/gearbox	1500	Common w/gearbox
Final Drive (front)	Common w/gearbox	1500	Common w/gearbox
Final Drive (rear)	Common w/gearbox	1500	Common w/gearbox
Hydraulic System (*)	87; separate from gearbox	1500	750
Other (steering, ___)	Steering common w/hydraulic system	1500	Steering common w/hydraulic system
(*) 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	12.5 - 16.3 cSt @ 100 C
. 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:	NA	NA
Hydraulic fluid		
. Type:	John Deere HY-GARD; J20C SAE 10W-30	Same
. Viscosity:	58 cSt at 43 C	Same
. Classifications:	NA	NA
Steering oil		
. Type:	Same as hydraulic	Same
. Viscosity:		
. Classifications:		

2.7.3 Grease

- Number of lubrication points: 6

3. COMPULSORY TESTS RESULTS

3.1 Main power take-off

- Date and location of tests: 29-Nov-04 Nebraska Tractor Test Laboratory, Lincoln, NE, USA
- Type of dynamometer bench: Eaton

	Speed			Fuel consumption			Specific
Power	Engine	PTO	Fan	Hourly		Specific	energy
kW	rev/min			kg/h	l/h	g/kWh	kW-h/l
3.1 MAXIMUM POWER - ONE HOUR TEST*							
279.19	1700	897	1395	63.50	75.58	227	3.69
3.1.2 POWER AT RATED ENGINE SPEED							
241.68	2100	1108	1632	60.87	72.46	251	3.34
3.1.3 STANDARD POWER TAKE-OFF SPEED (1000 +/- 25 rev/min)							
271.08	1894	1000	1544	64.31	76.55	237	3.54
3.1.4 PART LOADS							
3.1.4.1 the torque corresponding to maximum power at rated engine speed							
241.68	2100	1108	1632	60.87	72.46	251	3.34
3.1.4.2 85% of torque obtained in 3.1.4.1							
211.26	2156	1138	1692	57.83	68.84	274	3.07
3.1.4.3 75% of torque defined in 3.1.4.2							
159.73	2179	1150	1362	46.40	55.23	291	2.89
3.1.4.4 50% of torque defined in 3.1.4.2							
107.56	2199	1161	1336	37.56	44.71	349	2.41
3.1.4.5 25% of torque defined in 3.1.4.2							
54.50	2221	1172	1208	26.67	31.75	489	1.72
3.1.4.6 unloaded							
1.26	2236	1180	1044	17.55	20.90	13970	0.06
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							
271.08	1894	1000	1544	64.31	76.55	237	3.54
3.1.5.2 85% of torque obtained in 3.1.5.1							
235.89	1940	1024	1517	57.02	67.87	242	3.48
3.1.5.3 75% of torque defined in 3.1.5.2							
179.15	1965	1037	1289	46.67	55.56	261	3.22
3.1.5.4 50% of torque defined in 3.1.5.2							
121.01	1988	1049	1237	36.74	43.73	304	2.77
3.1.5.5 25% of torque defined in 3.1.5.2							
61.24	2019	1065	1007	24.77	29.48	404	2.08
3.1.5.6 unloaded							
1.14	2037	1075	923	14.15	16.85	12363	0.07

- No load maximum engine speed: 2236 rev/min
- Torque (equivalent crankshaft) at rated speed:
  - At rated engine speed 1099 Nm
  - At 2-hour test 1569 Nm
- Maximum torque (equivalent crankshaft): 1672 Nm
  (engine speed: 1051 rev/min)

Mean atmospheric conditions:		
Dry bulb	24	°C
Pressure	98.7	kPa
Relative Humidity	51	%
Maximum temperatures:		
Coolant	91	°C
Engine oil	114	°C
Fuel	63	°C
Engine air intake	37	°C

*Note: The JD 9620T has an electronic control system to prevent it from transmitting full engine power through the PTO

3. COMPULSORY TESTS RESULTS (OPTIONAL PTO PART LOAD TEST)

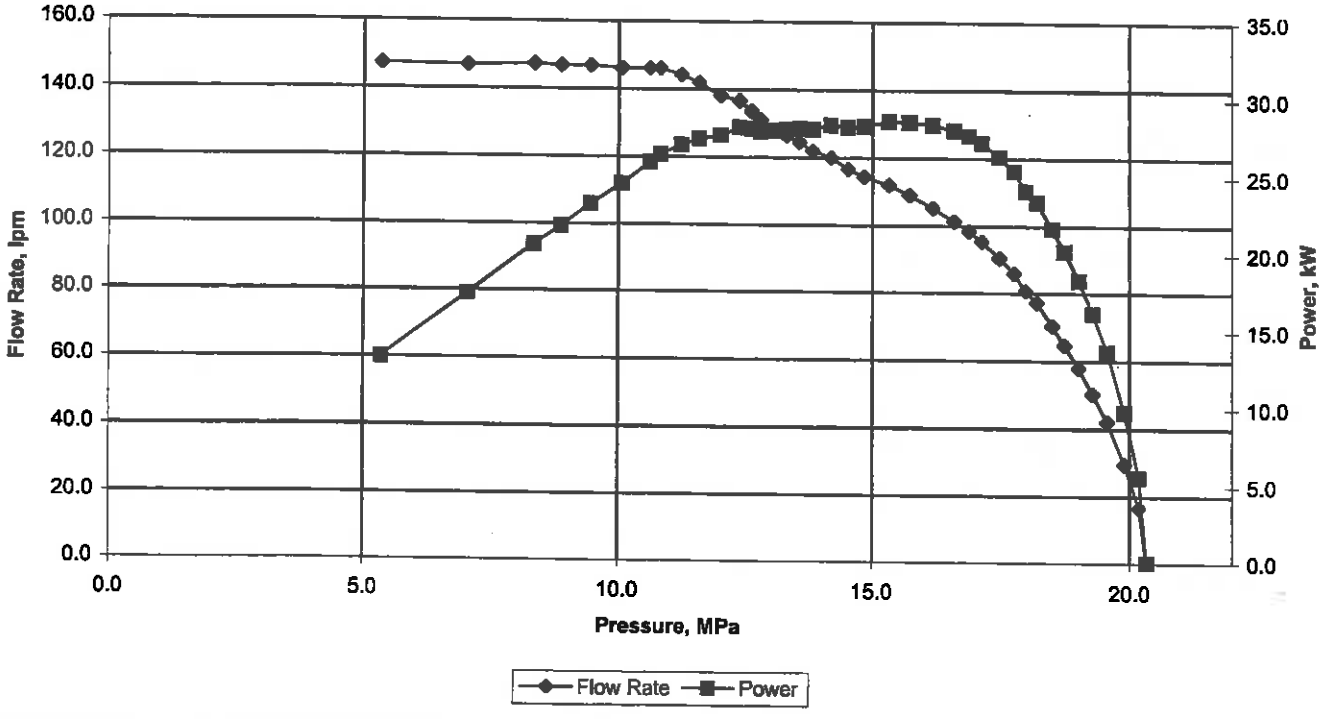
3.1 Main power take-off

- Date and location of tests: 29-Nov-04 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							
241.68	2100	1108	1632	60.87	72.46	251	3.34
3.1.6.2 80% of power obtained in 3.1.6.1 at max speed setting							
193.35	2165	1142	1637	54.16	64.47	280	3.00
3.1.6.3 80% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed							
193.26	1892	999	1352	48.72	57.99	252	3.33
3.1.6.4 40% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed							
97.12	1892	999	1113	30.21	35.96	311	2.70
3.1.6.5 60% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed							
145.48	1261	666	886	34.16	40.66	235	3.58
3.1.6.6 40% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed							
97.10	1259	664	810	24.22	28.83	249	3.37

3.2.1 Hydraulic Power

Date of Test:	2-Dec-04	JD 9620T	
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:		
	20.34 MPa		
	2950 psig		
II.	Pump delivery rate at minimum pressure at high idle:		
	147.3 l/min		
	38.9 gpm		
III.	Flow rate, pressure, power:		
	90% of relief valve setting		
	77.2 l/min	18.20 MPa	23.4 kW
	20.4 gpm	*2640 psig*	*31.4 hp*
	Maximum hydraulic power:		
	112.0 l/min	15.32 MPa	28.6 kW
	29.6 gpm	*2222 psig*	*38.4 hp*
IV.	Hydraulic fluid temperature at flow meter:		
	81 °C		
	177 °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 III, N.A. Quick attach linkage.
Date of test: 19 Dec 2000. Test conducted on John Deere 9300T which is technically eqivalent.

	Hitch points	Frame
Lower hitch points above ground - down position:	203 mm	179 mm
Vertical movement - without load:	800 mm	889 mm
with load:	799 mm	879 mm
Maximum corrected force exerted through full range:	62.5 kN	60.5 kN
Corresponding pressure:	18.5 MPa	18.5 MPa
Moment about rear axle:	96.8 kNm	130.6 kNm
Maximum mast tilt angle	--	5.4 degrees

Lifting height relative to horizontal position of lower links.

mm		-306	-281	-200	-101	3	151	305	405	495	518	573
Corrected lift forces												
At the Hitch point	kN	--	62.5	65.1	68.0	70.3	73.0	75.6	77.4	79.1	79.6	--
at the frame	kN	63.8	65.4	--	65.8	65.9	65.1	64.1	62.7	62.5	61.1	60.5
Corresponding pressure	18.5 MPa											

OECD Drawbar Data (SI)

Date of tests:	22,23 Nov & 4,8 Dec, 2004				**Fuel density:**	0.840 kg/l								
Type of track:	Concrete				**Test number:**	1845								
3.3.1 Maximum power in tested gears (unballasted, CRWL)							**Tire pressure:**	track kPa, rear		track kPa, front		**Drawbar Height:**	470 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}**	**kg/kW.h**	**kW.h/l**	**°C**	**°C**	**°C**	**°C**	**%**	**kPa**
2	183.25	176.79	3.73	2160	14.0	NA	0.330	2.55	61	84	105	8	74	97.1
3	205.57	180.51	4.10	2134	13.7	NA	0.314	2.68	62	84	108	8	73	97.1
4	225.58	178.91	4.54	2106	13.3	NA	0.308	2.72	61	85	109	8	66	97.1
5	246.57	170.66	5.20	2101	9.6	NA	0.297	2.83	61	84	110	6	63	97.4
6	266.28	167.56	5.72	2068	9.6	1425	0.297	2.83	61	86	111	7	65	97.4
7	290.67	165.47	6.32	2051	9.0	NA	0.295	2.85	61	87	114	8	67	97.4
8	310.90	160.50	6.97	2000	7.9	NA	0.293	2.87	62	87	114	8	67	97.4
9	321.14	152.23	7.59	1927	5.6	NA	0.286	2.94	60	87	112	7	71	97.1
10	328.80	142.84	8.29	1864	4.6	NA	0.280	3.00	60	88	115	7	72	97.1
11	334.01	134.57	8.94	1801	3.8	1434	0.275	3.06	61	88	115	10	63	97.1
12	338.91	122.07	9.99	1805	2.8	NA	0.262	3.20	59	87	117	5	76	97.5
13	332.49	106.99	11.19	1798	1.9	1527	0.275	3.05	62	89	116	11	59	97.1
14	336.29	97.22	12.45	1801	1.4	1554	0.271	3.09	62	90	119	11	59	97.1
15	330.45	76.87	15.48	1798	0.7	1603	0.278	3.02	61	93	116	12	55	97.1
3.3.2 Fuel consumption														
3.3.2.1		In selected gear at maximum power at rated engine speed.												
12	289.26	87.98	11.84	2099	1.0	NA	0.278	3.03	62	84	115	9	87	97.4
3.3.2.1.1		75% of pull at maximum power at rated engine speed												
12	224.51	65.97	12.25	2162	0.5	1560	0.310	2.71	62	83	110	14	54	97.1
3.3.2.1.2		50% of pull at maximum power at rated engine speed												
12	151.38	43.78	12.45	2191	0.2	1368	0.357	2.36	63	81	108	15	55	97.1
3.3.2.1.3		Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.1												
13	224.74	65.93	12.27	1944	0.5	1330	0.292	2.88	62	85	108	15	55	97.1
3.3.2.1.4		Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.2												
13	151.63	43.73	12.48	1972	0.3	1252	0.333	2.52	60	83	106	14	59	97.1
3.3.2.1.5		Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.1												
14	224.79	66.01	12.26	1758	0.5	1272	0.280	3.01	61	84	107	14	59	97.1
3.3.2.1.6		Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.2												
14	151.33	43.77	12.45	1780	0.2	1100	0.308	2.73	60	83	104	14	58	97.1
3.3.2.2		In selected gear nearest to 7.5 km/h at rated engine speed.												
7	284.70	153.20	6.69	2105	6.2	1559	0.287	2.93	62	86	114	8	66	97.4
3.3.2.2.1		75% of pull at maximum power at rated engine speed												
7	229.38	115.15	7.17	2168	2.4	1405	0.300	2.80	60	82	109	9	68	97.4
3.3.2.2.2		50% of pull at maximum power at rated engine speed												
7	157.03	76.63	7.38	2193	0.7	1267	0.332	2.53	60	78	106	9	68	97.4
3.3.2.2.3		Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.1												
8	228.98	115.20	7.16	1935	2.3	NA	0.278	3.02	60	84	107	9	68	97.4
3.3.2.2.4		Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.2												
8	157.16	76.67	7.38	1965	0.7	NA	0.304	2.77	60	82	104	9	68	97.4
3.3.2.2.5		Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.1												
9	228.98	115.22	7.15	1755	2.2	NA	0.268	3.13	59	84	106	9	68	97.4
3.3.2.2.6		Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.2												
9	157.77	76.70	7.41	1789	0.7	NA	0.287	2.93	59	82	103	9	68	97.4

OECD Drawbar Data (SI)

Date of tests:	22,23 Nov & 4,8 Dec, 2004			**Fuel density:**	0.840 kg/l									
Type of track:	Concrete			**Test number:**	1845									
4.1 Maximum power in tested gears (unballasted, CRWL)							**Tire pressure:**	track kPa, rear		track kPa, front		**Drawbar Height:**	470 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}	kg/kW.h	kW.h/l	°C	°C	°C	°C	%	kPa
2	182.43	177.34	3.70	2162	14.8	NA	0.333	2.52	61	84	106	8	74	97.1
3	202.77	178.00	4.10	2144	14.1	NA	0.317	2.65	61	84	107	8	73	97.1
4	221.38	177.04	4.50	2108	14.0	NA	0.314	2.68	62	85	111	8	66	97.1
5	247.19	170.03	5.23	2104	9.2	NA	0.296	2.84	61	84	110	6	63	97.4
6	266.34	161.52	5.94	2102	7.7	1692	0.292	2.88	60	84	110	7	64	97.4
7	284.70	153.20	6.69	2105	6.2	1559	0.287	2.93	62	86	114	8	66	97.4
8	291.86	137.56	7.64	2100	4.1	1447	0.278	3.02	60	85	113	9	87	97.3
9	293.10	124.28	8.49	2096	3.0	1406	0.277	3.03	60	84	113	9	81	97.3
10	291.86	109.69	9.58	2099	2.0	1394	0.277	3.03	59	84	113	9	87	97.3
11	290.48	97.98	10.67	2098	1.4	NA	0.279	3.02	59	84	113	10	46	97.4
12	289.26	87.98	11.84	2099	1.0	NA	0.278	3.03	62	84	115	9	87	97.4
13	280.89	76.36	13.24	2102	0.7	1638	0.286	2.94	60	84	115	9	87	97.4

OECD Drawbar Data (SI)

Date of tests:	22,23 Nov & 4,8 Dec, 2004					**Fuel density:**	0.840 kg/l							
Type of track:	Concrete					**Test number:**	1845							
Maximum power in tested gears (unballasted, CRWL)							**Tire pressure:**	TRK kPa, rear	TRK kPa, front			**Drawbar Height:**	470 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}	kg/kW.h	kW.h/l	°C	°C	°C	°C	%	kPa
4.2	**Two hour maximum drawbar power test***													
12	313.44	110.62	10.20	1888	5.1	1669	0.288	2.92	62	90	119	14	54	97.1
4.3	**Drawbar full load (lugging run) test**													
12	289.26	87.98	11.84	2099	1.0	NA	0.278	3.03	62	84	115	9	87	97.4
12	322.91	103.45	11.24	2008	1.7	NA	0.270	3.11	60	85	115	5	76	97.5
12	331.00	112.40	10.60	1902	2.1	NA	0.268	3.14	59	87	116	5	76	97.5
12	338.91	122.07	9.99	1805	2.8	NA	0.262	3.20	59	87	117	5	76	97.5
12	336.62	128.69	9.42	1709	3.2	NA	0.261	3.21	57	87	117	5	76	97.5
12	327.55	133.72	8.82	1607	3.7	NA	0.260	3.23	58	87	116	5	76	97.5
12	310.89	135.22	8.28	1511	3.9	NA	0.249	3.37	56	86	112	5	76	97.5
12	289.20	134.72	7.73	1409	3.8	NA	0.249	3.37	57	86	112	4	84	97.5
12	269.16	135.49	7.15	1305	3.9	NA	0.246	3.42	56	87	112	4	84	97.5
12	247.56	135.15	6.59	1203	3.7	NA	0.249	3.37	58	86	111	4	75	97.5
12	225.71	134.53	6.04	1102	3.7	NA	0.256	3.28	57	87	110	4	75	97.5
4.4	**75% of pull at maximum power at rated engine speed**													
12	224.51	65.97	12.25	2162	0.5	1560	0.310	2.71	62	83	110	14	54	97.1
4.5	**50% of pull at maximum power at rated engine speed**													
12	151.38	43.78	12.45	2191	0.2	1368	0.357	2.36	63	81	108	15	55	97.1

*Maximum drawbar power sustained for two hours

OECD Drawbar Data (SI)

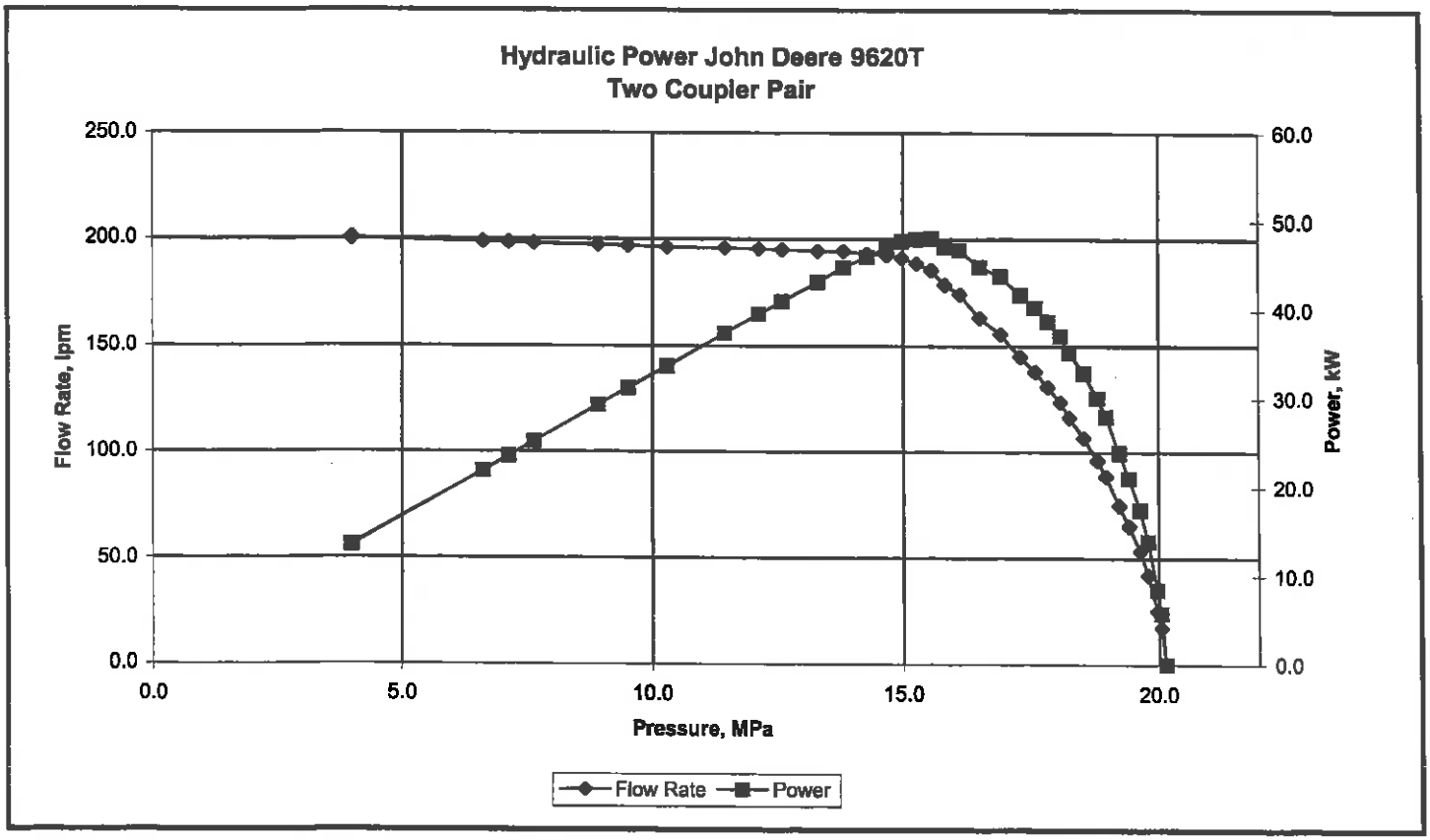
Date of tests:	9,11-Dec-2004	**Fuel density:**	0.840 kg/l
Type of track:	Concrete	**Test number:**	1845

4.6 Maximum power in tested gears (ballasted, CRWL) — **Tire pressure:** TRK kPa, rear / TRK kPa, front — **Drawbar Height:** 470 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}	kg/kW.h	kW.h/l	°C	°C	°C	°C	%	kPa
1	185.28	217.92	3.06	2160	13.4	1067	0.324	2.59	60	84	106	4	67	97.6
2	215.93	203.95	3.81	2106	10.1	1224	0.301	2.79	60	84	107	5	68	97.6
3	230.48	197.33	4.21	2058	8.3	1367	0.290	2.90	64	85	108	11	71	96.4
4	246.39	184.41	4.81	2069	6.6	1429	0.286	2.94	62	85	109	11	71	96.4
5	264.85	180.32	5.29	2056	6.3	1531	0.285	2.95	63	85	110	12	66	96.4
6	285.20	178.25	5.76	2004	6.2	1577	0.287	2.92	63	86	112	12	66	96.4
7	314.52	177.03	6.40	2006	6.0	1611	0.286	2.94	63	87	113	12	66	96.4
8	326.22	176.38	6.66	1868	6.0	1601	0.278	3.03	63	89	115	12	66	96.5
9	332.01	167.09	7.15	1801	5.0	1574	0.277	3.04	63	89	116	12	66	96.5
10	336.69	149.50	8.11	1800	3.0	1416	0.272	3.09	59	88	113	6	69	97.5
11	337.46	134.06	9.06	1801	2.6	1399	0.271	3.10	59	88	115	6	70	97.5
12	339.20	121.40	10.06	1799	1.9	1487	0.270	3.11	59	87	116	7	71	97.5
13	333.54	106.21	11.30	1803	1.5	1526	0.274	3.06	61	88	116	7	72	97.4
14	335.94	96.65	12.51	1802	1.1	1560	0.271	3.10	59	88	116	8	73	97.4
15	327.78	76.15	15.49	1798	0.7	1594	0.282	2.98	60	90	116	8	67	97.4

4.7 Hydraulic Power

Date of Test:	2-Dec-04	JD 9620T	
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:		
	20.15 MPa		
	2922 psig		
II.	Pump delivery rate at minimum pressure at high idle:		
	200.6 l/min		
	53.0 gpm		
III.	Flow rate, pressure, power:		
	90% of relief valve setting		
	123.4 l/min	18.06 MPa	37.1 kW
	32.6 gpm	*2619 psig*	*49.8 hp*
	Maximum hydraulic power:		
	185.5 l/min	15.55 MPa	48.1 kW
	49.0 gpm	*2256 psig*	*64.5 hp*
IV.	Hydraulic fluid temperature at flow meter:		
	77 °C		
	170 ° F		
	This hydraulic system does not use an accumulator. Opening and closing pressures of the unloading valve could not be measured.		



4.8 POWER LIFT TEST Category IV, N.A. Quick attach linkage.
Date of test: 20 Dec 2000. Test conducted on John Deere 9300T which is technically equivalent

	Hitch points	Frame
Lower hitch points above ground - down position:	224 mm	210 mm
Vertical movement - without load:	800 mm	900 mm
with load:	797 mm	885 mm
Maximum corrected force exerted through full range:	70.3 kN	66.4 kN
Corresponding pressure:	18.5 MPa	18.5 MPa
Moment about rear axle:	109.7 kNm	144.1 kNm
Maximum mast tilt angle	--	6.9 degrees

Lifting height relative to horizontal position of lower links.

mm	-275	-261	-202	-101	-2	102	197	305	398	497	536	610
Corrected lift forces												
At the Hitch point kN	--	70.3	72.4	75.8	78.4	80.9	82.8	84.8	86.6	88.7	89.5	--
at the frame kN	71.3	–	71.5	72.3	72.8	72.8	72.1	70.9	69.5	–	67.5	66.4
Corresponding pressure 18.5 MPa												

4.9 Measurement of Noise Level at Operator's Ear*

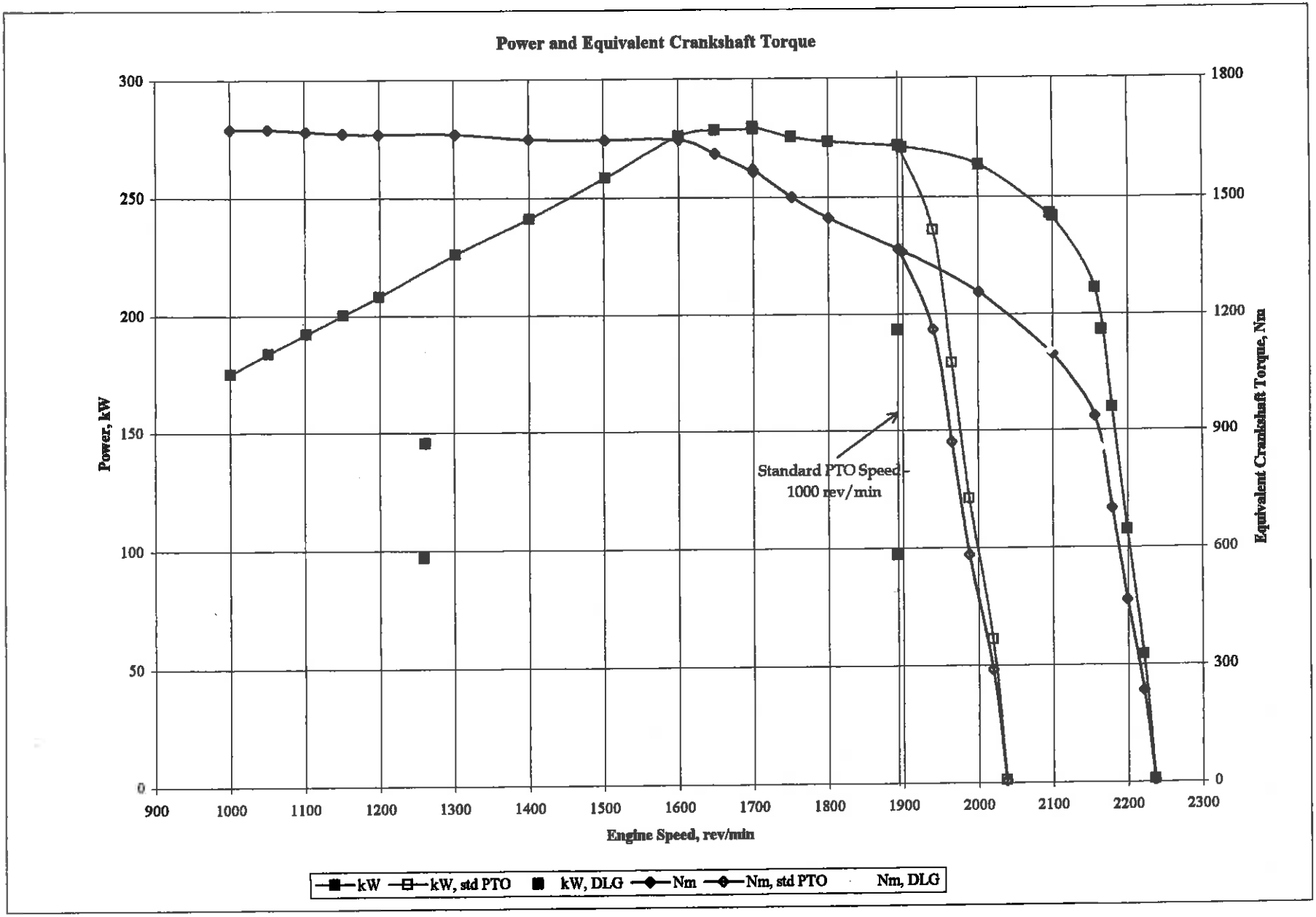
-- Date of Test	November 24, 2004
-- Location of Test	Nebraska Tractor Test Laboratory
-- Sound Level Meter	Bruel and Kjaer 2236
-- Type of Track	Concrete Oval
-- Gear Number	7
-- Drawbar Load	None
-- Noise at Operator Ear	73.7 dB(A)

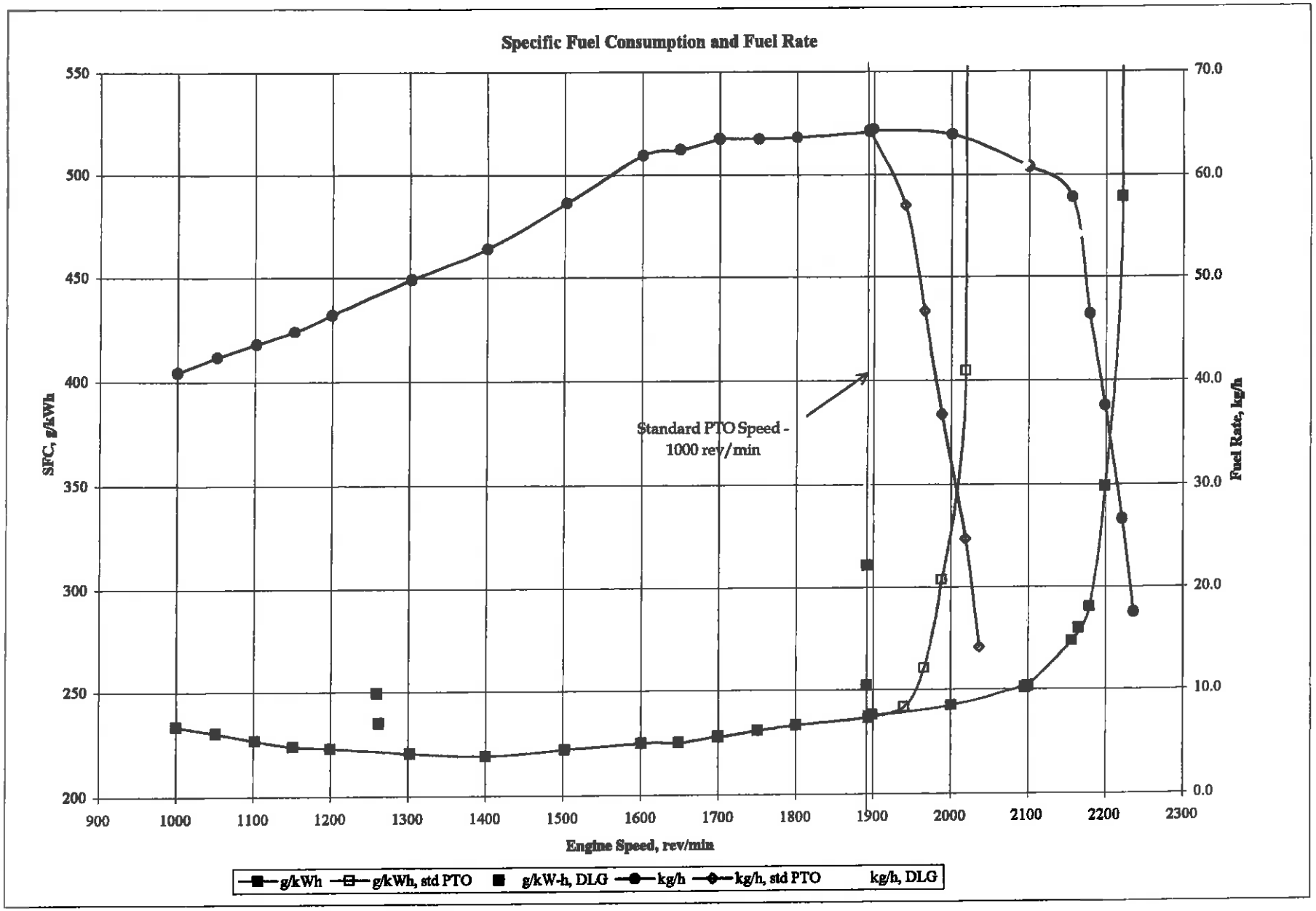
* Note: Nebraska tractor test station guidelines.

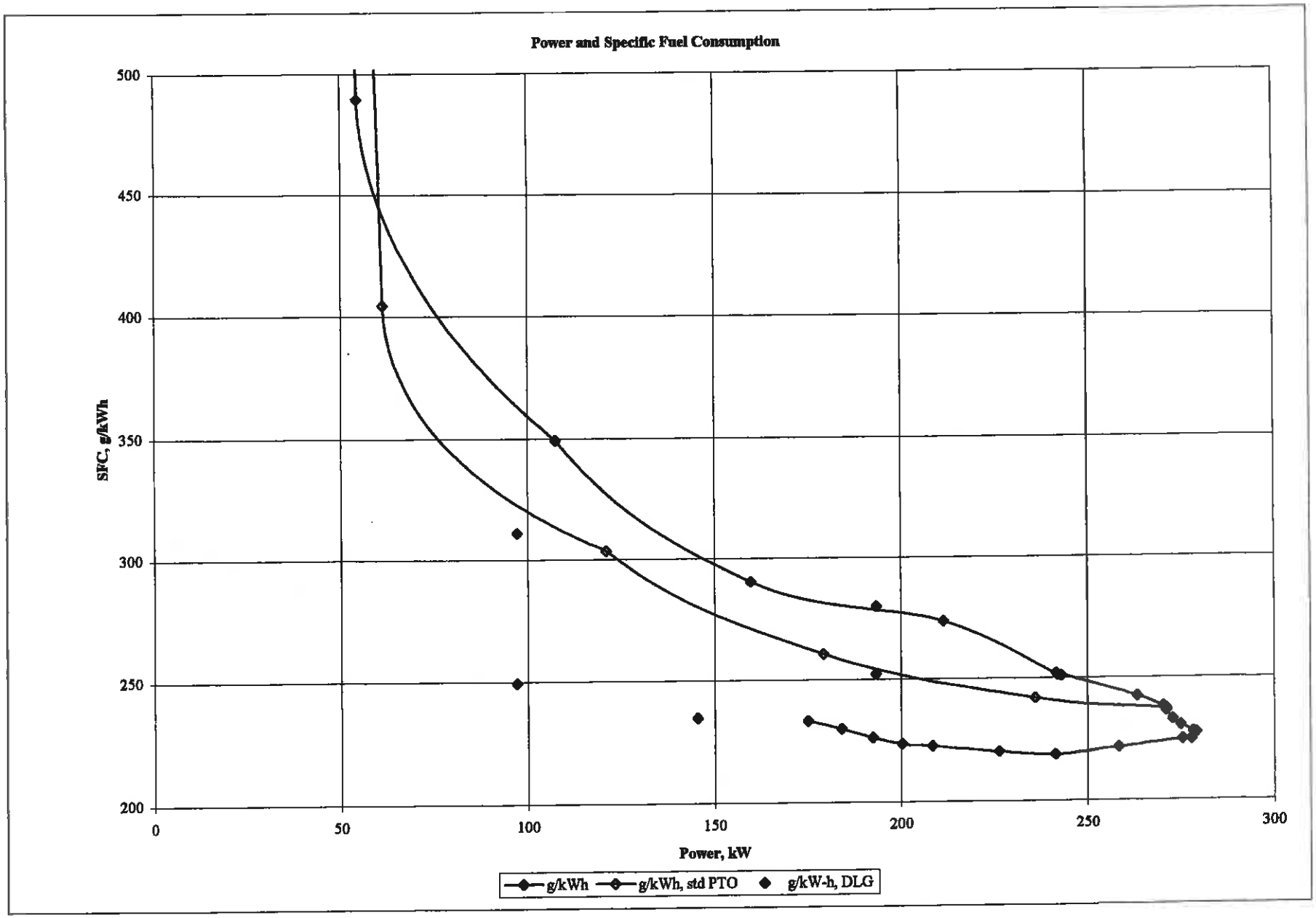
5. Repairs and Adjustments: None

6. Remarks: The minimum atmospheric pressure of 96.6 kPa was not achieved in gears 3 through 9 on the ballasted drawbar performance test.

Note: The 9620T engine has an electronic control system which provides a vehicle protection system to avoid overloading the drive train. This system provides six different engine power levels. At 2100 rpm the engine produces 280 kW (375 hp) when the tractor is being used for stationary PTO operations. At 2100 rpm the engine produces 298 kW (400 hp) when the transmission is in forward gears 1 through 3. At 2100 rpm the engine produces 317 kW (425 hp) when the transmission is in gear 4. At 2100 rpm the engine produces 336 kW (450 hp) when the transmission is in gear 5. At 2100 rpm the engine produces 354 kW (475 hp) when the transmission is in gear 6. At 2100 rpm the engine produces 373 kW (500 hp) in all other applications.


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
0
50
100
150
200
250
300
0
300
600
900
1200
1500
1800
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
550
500
450
400
350
300
250
200
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
g/kWh
g/kWh, std PTO
g/kW-h, DLG
kg/h
kg/h, std PTO
kg/h, DLG


Power and Specific Fuel Consumption
SFC, g/kWh
500
450
400
350
300
250
200
0
50
100
150
200
250
300
Power, kW
g/kWh
g/kWh, std PTO
g/kW-h, DLG