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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 6603
Mechanical Front Wheel Drive (MFWD)

MANUFACTURED BY:	**Industrius John Deere** **Boulevard Valdez Sanchez #470** **Saltillo, Coahuila CP25005** **Mexico**
NEBRASKA TEST NO.	**1809**
TEST DATES:	**September 6 – September 23, 2002**

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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 April 2003 for the John Deere 6603, mechanical front wheel drive (MFWD) tractor with OECD Number 2/2 059.

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: APR 18 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.

- Tractor manufacturer's name and address:	Industrius John Deere Boulevard Valdez Sanchez #470 Saltillo, Coahuila CP25005 Mexico
- 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:	85 hours
- Location of test:	Nebraska Tractor Test Laboratory Lincoln, Nebraska, USA.

1. SPECIFICATIONS OF TRACTOR

1.1 Identification

-Make/Model/Type:	John Deere / 6603 / Mechanical front wheel drive (MFWD)
-Number of driving wheels:	Four
-Serial N°:	PO6603X001054
-1st Serial N°:	CONFIDENTIAL

1.2 Engine

- Make/Model/Type:	John Deere / 6068TP054 / 4-stroke diesel; turbocharged
- Serial N°:	PE6068T164824

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:	17:1
- Arrangement of valves:	overhead
- Cylinder liners (wet or dry):	Wet, replaceable

1.2.2 *Supercharging*

- Make/Model/Type:	CZ / RE505182 / K27_25
- Pressure:	44 ± 10 kPa

1.2.3 *Fuel system*

-Fuel feed system:	Cam driven transfer pump with rotary injection.
- Make/Model/Type of fuel filter(s):	
Primary:	Stanadyne / RE62419 / Paper Element
Secondary:	Stanadyne / RE62424 / 150 micron strainer
- Capacity of fuel tank:	158 liters
- Fuel cooler:	None
- Make/Model/Type of injection pump:	Stanadyne / H1 DB4629-5783 / Rotary
- Serial N°:	10030549
- Manufacturer's production setting of injection pump	
. Flow rate (rated engine speed and full load):	21.1 ± 0.5 liter/hr
. Timing:	Crankshaft 5.5 deg. N.L.
- Make/Model/Type of injectors:	Stanadyne / RE44508 / Pencil
- Injection pressure:	3740 kPa NOP
-Make/Model/Type of carburettor:	NA

1.2.4 *Governor*

-Make/Model/Type:	Mechanical
- Governed range of engine speed:	825 - 2300 RPM
- Rated engine speed:	2100 RPM

1.2.5 *Air cleaner*

- Pre-cleaner	None
. Make/Model/Type:	
.Location of air intake:	
- Main cleaner	
.Make/Model/Type:	Donaldson / RE171235 / Dry
- Secondary Element	
.Make/Model/Type:	Donaldson / RE171236 / Dry
- Maintenance indicator:	Electrical Switch With Light On The Dash

1.2.6 *Lubrication system*

- Type of feed pump:	Full pressure; positive displacement
- Type of filter(s):	Full Flow
- Number of filters:	One
- Oil cooler:	In block

1.2.7 *Cooling system*

- Type of coolant:	Liquid
- Type of pump:	Centrifugal, Gear-driven
- Specification of fan or blower:	RE182763
.Number of fan blades:	Six
.Fan diameter:	533.4 mm
- Coolant capacity:	18.5 liter
- Type of temperature control:	Thermostat
- Superpressure system:	103 Kpa

1.2.8 *Starting system*

- Make/Model/Type:	Iskra / RE508322 / Direct Drive
- Starter motor power rating:	4.2 kW
- Cold starting aid:	Optional • Manifold Heater • Block Heater
- Safety device:	Electrical lockout on gearshift lever

1.2.9 *Electrical system*

- Voltage & grounding:	12 volt with negative ground
- Alternator	
.Make/Model/type:	Bosch
.Power Rating:	0.780 kW, 65 Amps
- Batteries	
.Number & Connection:	One with negative ground
.Rating:	925 Cold Cranking Amps, 175 Ah/battery at 20h rating

1.2.10 *Exhaust system*

- Make/Model/Type:	Nelson / RE173542 / Expansion Chamber
- Location:	Above the hood
- Exhaust stack location:	Vertical / Through the hood

1.3 Transmission

1.3.1 *Clutch (Travel)*

- Make: LUK
- Model: YZ90101
- Type: Dry, cerametallic disk
- Number of plates: One
- Diameter of plates: 304.8 mm
- Method of operation: Mechanical Linkage

1.3.2 *Gear box*

- Make: Funk / John Deere
- Configuration Number: MRTSSMISA
- Type: Top Shaft Synchronized
- Oil cooler: Combined With Hydraulic System Oil Cooler
- Description:

	Forward	Reverse
Number of gears	3	3
Number of ranges/groups	3	1
Total number of arrangements	9	3

1.3.3 *Rear axle and final drives*

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

- Differential lock
  - . Type: Foot Operated
  - . Method of engagement: Manual, Mechanical Linkage
  - . Method of disengagement: Automatic, Manually Held

1.3.4 *Front axle and final drives*

- Make/Model/Type: ZF / AS2035 / Spiral bevel gear and pinion, differential and outboard planetary reduction

- Differential lock: Limited Slip Differential
  - . Type: Not Applicable
  - . Method of engagement: Not Applicable
  - . Method of disengagement: Not Applicable

1.3.5 *Total ratios and traveling speeds*

Gear No.	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
A1	211.46	3.07
A2	154.19	4.21
A3	124.15	5.23
B1	99.94	6.50
B2	72.88	8.91
B3	58.68	11.06
C1	35.98	18.04
C2	26.24	24.74
C3	21.12	30.74
AR	132.16	4.91
BR	62.46	10.39
CR	22.49	28.87
	*Tire Rolling Radius	820 mm

- Number of revolutions of front wheels for one revolution of rear-wheels: 1.4278

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): Lever actuation (dry, 12 inch disk)
- Number of shafts: One
- Method of changing power take-off shaft ends and speeds: Manual (speed automatically selected when PTO output shaft is changed end for end)

SM – Option

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

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

- Location:	Rear
- Diameter of power take-off shaft end:	35 mm
- Number of splines:	Six
- Height above ground:	48.5 mm below axle centerline With 18.4 – 38 8PR R1 rear tires (slr=785) 736 mm above ground.
- Distance from the median plane of the tractor:	Zero
- Distance behind rear-wheel axis:	555 mm
- PTO speed at rated engine speed:	544 rpm
- Engine speed at standard power take-off speed:	2085 rpm
- Ratio of rotation speeds (engine speed/p.t.o. speed):	3.861
- Power restriction:	Maximum power available
- Maximum torque transmissible:	Maximum torque available
- Direction of rotation (viewed from shaft end):	Clockwise

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

- Location:	Rear
- Diameter of shaft:	35 mm
- Number of splines:	21
- Height above ground:	48.5 mm below axle centerline With 18.4 – 38 8PR R1 rear tires (slr=785 mm) 736 mm above ground
- Distance from the median plane of the tractor:	Zero
- Distance behind rear axle:	555 mm
- PTO speed at rated engine speed:	1016 rpm
- Engine speed at standard power take-off speed:	2067 rpm
- Engine speed/PTO speed ration:	2.067
- Power restriction:	Maximum power available
- Maximum torque transmissible:	Maximum torque available
- 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 / NA / Internal Rockshaft
- Type of hydraulic system:	Open Center
- Type and number of cylinders (single or double-acting):	Single Internal
- Type of linkage lock for transport:	None
- Relief valve pressure setting (tolerance):	19,310 +/- 3.4 kpa
- Opening pressure of cylinder safety valve (if fitted):	24,000 kPa
- Lift pump type:	31.8 cc/rev, Gear Pump
- Transmission between pump and engine:	Gear Driven At 97% (30 / 31) Engine Speed
- Type and number of filters:	Suction / One
- Site of oil reservoir:	Differential Case
- Type, number and location of tapping points:	ISO standard breakaway couplers. Two pairs of couplers standard with optional third pair
- Maximum volume of oil available to external cylinders:	33 liters

1.6 Three point linkage

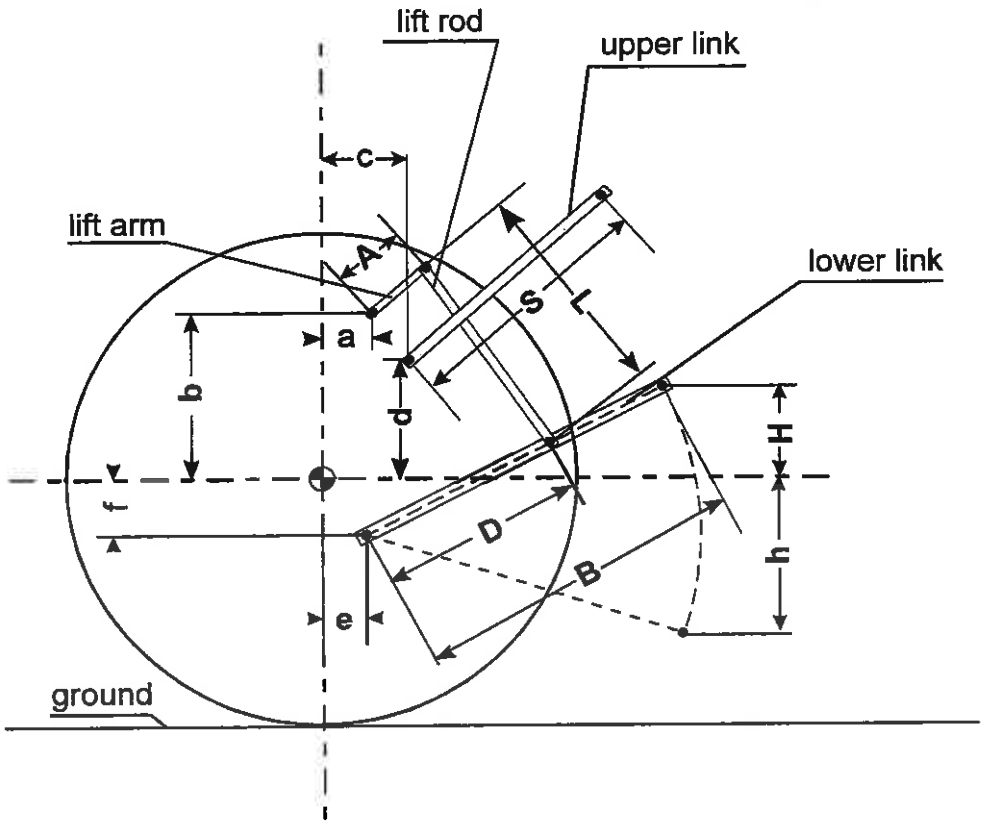


Figure 2.1
Lift test - Linkage Geometry

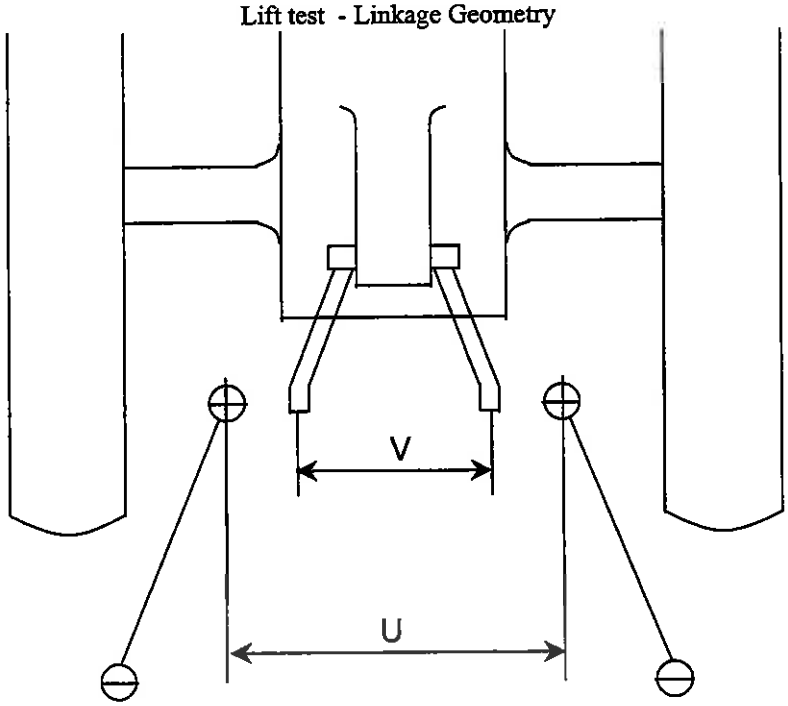


Figure 2.2
Lift test - Linkage Geometry

1.6.1 Three point linkage

- Category: 3N/2 in conformity with ISO 730-1:1994 + Cor.1:1995 and ISO 730:1979
- Category adapter: None

		Dimension or range mm	Setting used in test mm
Lift category:		Category 2	same
Rear Tire – Radius Index:	(r)	820	same
Front Tire – Radius Index:	(r')	590	same
Length of lift arms:	(A)	325	same
Length of lower links:	(B)	945	same
Distance of lift arm pivot point from rear-wheel axis:			
- horizontally	(a)	210	same
- vertically	(b)	473	same
Horizontal distance between the 2 lower link points:	(U)	482	same
Horizontal distance between the 2 lift arm end points:	(V)	526	same
Length of upper link:	(S)	530 to 725	691
Distance of upper link pivot point from rear wheel axis:			
- horizontally	(c)	489	same
- vertically	(d)	153	same
Distance of lower link pivot point from rear wheel axis:			
- horizontally	(e)	176	same
- vertically	(f)	176	same
Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	503	same
Length of lift rods:	(L)	705 to 865	791
Height of lower hitch points relative to the rear-wheel axis:			
- in low position	(h)	510 to 722	617
- in high position	(H)	-80 to 180	15
Height above ground of lower hitch points when locked in transport position (*)		660 to 920	835
(*) Assuming r = 820 mm (pneumatic tyred tractors only)			

1.7 Swinging drawbar

-Type	Offset with optional draw pin strap
- Height above ground	With 18.4 – 38 8PR R1 Tires (slr = 785)
. Maximum (offset up):	618 mm
. Minimum (offset down):	490 mm
- Type of adjustment:	Manual
- Distance of hitch point from rear-wheel axis, horizontally:	760, 805, 860, 910, 960, or 1010 mm
- Distance of hitch point from power take-off shaft end	
. Vertically:	168 mm - 295 mm
. Horizontally:	205, 250, 305, 355, 405, or 455 mm
- Lateral adjustment (centre of clevis)	
. Right hand:	200 mm - 250 mm
. Left hand:	200 mm - 250 mm
- Distance of pivot point from rear-wheel axis, horizontally:	25 mm forward of rear axle
- Diameter of drawbar pin hole:	33 mm
- Maximum vertical permissible load:	Operating Position — Weight
	Short Position — 1900 kg
	Extended Position — 800 kg

1.8 Trailer hitch

Not Applicable

1.9 Holed drawbar

Not Applicable

1.10 Steering

- Make/Model/Type:	Sauer – Danfoss / OSPC 160 / Hydrostatic Power
- Method of operation	
. Pump(s):	One
. Ram(s):	One
- Working pressure:	13,000 kPa Max

1.11 Brake System

1.11.1 *Service brake*

- Make/Model/Type:	Meritor / YZ90862 / Wet Disk
- Method of operation:	Mechanically Actuated

1.11.2 *Parking brake*

- Make/Model/Type:	Meritor / YZ90862 / Wet Disk
- Method of operation:	Mechanical Lock Of Service Brakes

1.11.3 *Trailer Brake*

None

1.12 Wheels

- Number
  - .Front: Two Driving / Two Steering
  - .Rear: Two Driving
- Wheelbase: 2636 mm

-Track Width Adjustment

	Minimum	Maximum	Adjustment
	mm	mm	Method
Front	1516 mm	2016 mm	Reversing wheels and offset lug rims
Rear	1512 mm	2016 mm	Reversing wheels and offset lug rims

1.13 Protective structure

- Make/Model/Type: John Deere / RG028 / Foldable Roll Over Protective Structure
- Manufacturer's name and address: Industrius John Deere
Boulevard Valdez Sanchez #470
Saltillo, Coahuila CP25005
Mexico
- Protective device
  - . Cab/frame/rollguard/other: rollguard
  - . Tiltable/not tiltable: not tiltable
- OECD approval: None
- Date of Approval: None
- Tested to SAE approval J2194

1.14 Seat

1.14.1 *Driver's Seat*

- Make/Model/Type: Grammer / AP37816 / Mechanical Adjustment
- Seat and steering wheel reversible: Yes/No: No
- Type of suspension: Spring, 100 mm Total
- Type of damping: Air Shock
- Range of adjustment
  - .Longitudinally: 120 mm In 9 Positions
  - .Vertically: 60 mm Total In Three Positions
  - Rotation: None
- Safety belt Yes/No: Yes

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

1.14.3 *Passenger seat* Not Available

1.15 Lighting

	Height above ground of center	Size	Distance from outside edge of lights to median plane of tractor
	mm	mm	mm
Headlights	1153	154 X 90	218
Upper mid-body	1650	154 X 90	830
Rearlights	1885	134 X 89	909
Tail lights	1856	150 X 58	653
Hazard lights			
Roof front	2710	195 X 50	525
Roof rear	2710	195 X 50	525
ROPs	1978	132 X 87	644

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 18.4 – 38 8PR R1 rear tire	
		minimum	maximum	protective structure	exhaust pipe
	mm	mm	mm	mm	mm
Unballasted	4359	2342	2342	2900	2600
Ballasted	4909	2342	2342	2900	2600

2.2 **Ground clearance** (unballasted tractor): 485 mm

- Clearance-limiting part: MFWD Axle Differential

2.3 Tractor mass

Mass (with cab, full fuel tank):

	Without driver	With driver
	kg	kg
Unballasted		
Front	1566	1601
Rear	2704	2744
Total	4270	4345
Ballasted		
Front	2351	2386
Rear	3065	3105
Total	5416	5491

Ballast Added	Number of Weights	Total Mass	Liquid
		kg	kg
Front	14	667 kg	-
Front weight support	1	47 kg	-
Rear (wheel weights)	8	432 kg	-

2.4 Track specifications Not applicable

2.5 Tires and track width specifications

	Front	Rear
Tires:		
- dimensions	14.9 - 24	18.4 - 38
- ply rating	6	8
- type	Titan	Firestone
- maximum load (tire manufacturer's)	1360 kg	2430 kg
- maximum load (tractor manufacturer's)	1360 kg	2430 kg
- inflation pressure (tractor manufacturer's)	140 kPa	140 kPa
- dynamic radius index	590 mm	820 mm
Chosen track width	1605 mm	1815 mm

2.6 Fuel

- Type/grade: No. 2 diesel in conformity with national standard
- Density at 15°C: 0.842 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)	11 liter	200 (500 with John Deere PLUS-50 oil and John Deere filter)	After first 100 hours Then every 500 hours
Front axle	Axle Housing 5 liters	1000	Not Applicable
Transmission, final drive, rear axle and hydraulics	67 liters	1000	After first 100 hours Then every 500 hours
Final drive, front	Wheel Hubs 0.8 liters each	1000	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 10W40 12.8 mm^2/s (cSt) at 100°C API CH-4 or CF-4; ACEA E-2 or E-3	John Deere PLUS-50® SAE 15W40
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)	GL-5 Gear Lubricant SAE 85W-140
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:

10 Total
3– Hitch Lift Links
2– Rear Axle Bearings
1 – MFWD Drive Shaft Splines
2– MFWD U-Joints
2 – Front Axle Pivots

3. COMPULSORY TESTS RESULTS

3.1 Main power take-off

- Date and location of tests: 06-Sep-02 Nebraska Tractor Test Laboratory, Lincoln, NE, USA
- Type of dynamometer bench: Eaton

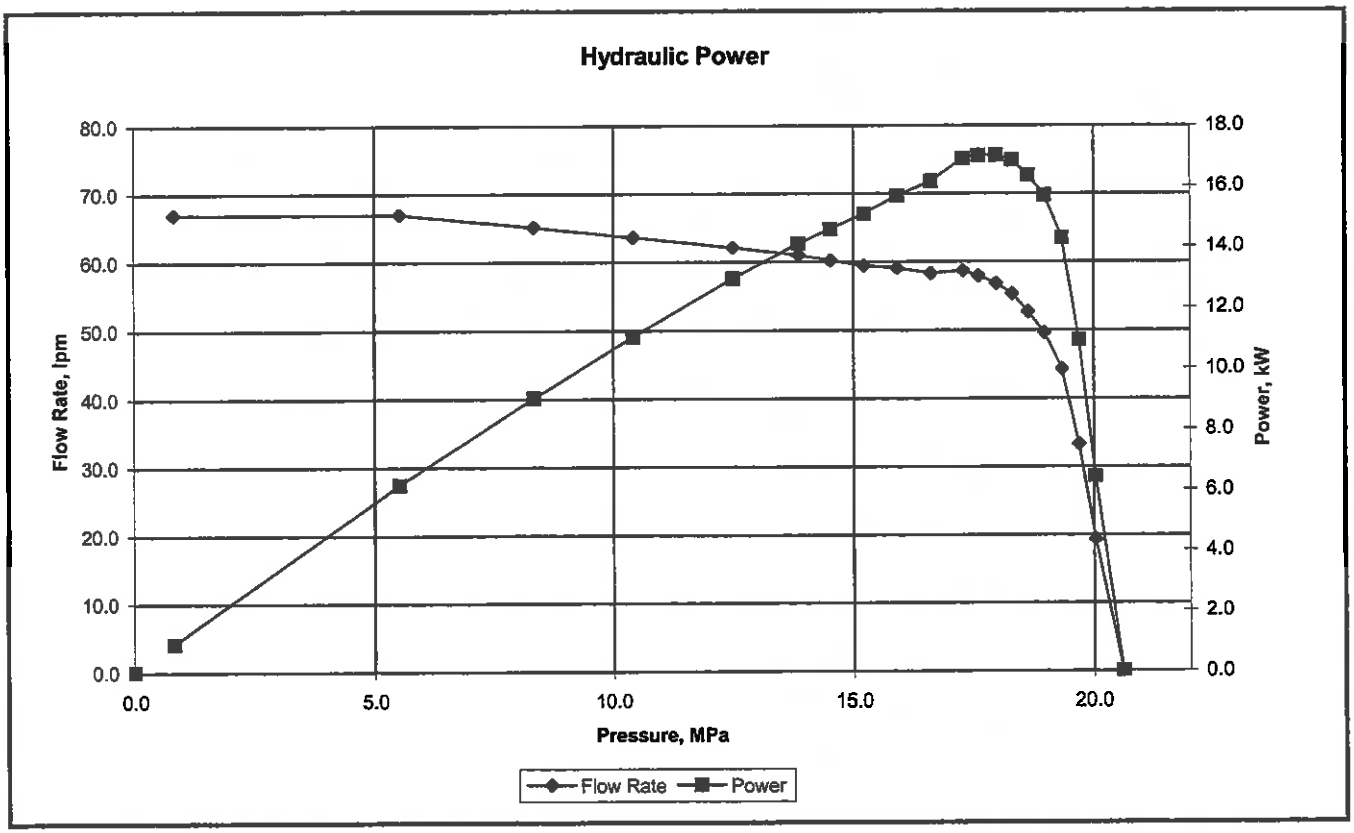
	Speed		Fuel consumption			Specific
Power	Engine	PTO	Hourly		Specific	energy
kW	rev/min		kg/h	l/h	g/kWh	kW-h/l
3.1 MAXIMUM POWER - TWO HOUR TEST						
75.85	1950	944	17.98	21.38	237	3.55
3.1.2 POWER AT RATED ENGINE SPEED						
72.35	2100	1016	18.05	21.47	250	3.37
3.1.3 STANDARD POWER TAKE-OFF SPEED (1000 +/- 25 rev/min)						
73.35	2066	1000	18.05	21.47	246	3.42
3.1.4 PART LOADS						
3.1.4.1 the torque corresponding to maximum power at rated engine speed						
72.35	2100	1016	18.05	21.47	250	3.37
3.1.4.2 85% of torque obtained in 3.1.4.1						
63.72	2182	1056	16.86	20.05	265	3.18
3.1.4.3 75% of torque defined in 3.1.4.2						
48.71	2215	1072	14.27	16.98	293	2.87
3.1.4.4 50% of torque defined in 3.1.4.2						
32.80	2246	1087	11.01	13.10	336	2.50
3.1.4.5 25% of torque defined in 3.1.4.2						
16.79	2272	1100	8.16	9.70	486	1.73
3.1.4.6 unloaded						
0.79	2293	1110	5.57	6.63	7080	0.12
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						
73.35	2066	1000	18.05	21.47	246	3.42
3.1.5.2 85% of torque obtained in 3.1.5.1						
64.91	2148	1039	16.86	20.05	260	3.24
3.1.5.3 75% of torque defined in 3.1.5.2						
49.34	2176	1053	14.14	16.82	287	2.93
3.1.5.4 50% of torque defined in 3.1.5.2						
33.42	2211	1070	10.88	12.94	326	2.58
3.1.5.5 25% of torque defined in 3.1.5.2						
16.91	2237	1083	7.88	9.38	467	1.80
3.1.5.6 unloaded						
0.78	2261	1094	5.44	6.47	7009	0.12

- No load maximum engine speed: 2293 rev/min
- Torque (equivalent crankshaft) at rated speed:
  - At rated engine speed 329 Nm
  - At 2-hour test 371 Nm
- Maximum torque (equivalent crankshaft): 452 Nm
  (engine speed: 1101 rev/min)

Mean atmospheric conditions:		
Dry bulb	26	°C
Pressure	97.7	kPa
Relative Humidity	68	%
Maximum temperatures:		
Coolant	93	°C
Engine oil	111	°C
Fuel	61	°C
Engine air intake	30	°C

3.2.1 Hydraulic Power (two inlets, two outlets)

Date of Test:	13-Sep-02	JOHN DEERE 6603	
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:		
	20.61 MPa		
	2989 psig		
II.	Pump delivery rate at minimum pressure at rated engine speed:		
	67.0 l/min		
	17.7 gpm		
III.	Flow rate, pressure, power:		
	90% of relief valve setting		
	52.6 l/min	18.64 MPa	16.3 kW
	13.9 gpm	*2703 psig*	*21.9 hp*
	Maximum hydraulic power:		
	56.8 l/min	17.97 MPa	17.0 kW
	15.0 gpm	*2607 psig*	*22.8 hp*
IV.	Hydraulic fluid temperature at flow meter:		
	66 °C		
	151 °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
Date of test: 22 September 2002.

	Hitch points	Frame
Lower hitch points above ground - down position:	203 mm	79 mm
Vertical movement - without load:	632 mm	838 mm
with load:	607 mm	808 mm
Maximum corrected force exerted through full range:	31.2 kN	21.7 kN
Corresponding pressure:	17.5 MPa	17.5 MPa
Moment about rear axle:	26.2 kNm	28.0 kNm
Maximum mast tilt angle	--	9.6 degrees

Lifting height relative to horizontal position of lower links.

mm		-488	-363	-277	-175	-76	25	127	226	244	320
Corrected lift forces											
At the Hitch point	kN	--	31.2	31.8	32.7	33.2	33.8	33.6	33.7	33.7	--
at the frame	kN	28.3	26.4	26.5	–	25.9	25.0	23.5	--	22.1	21.7
Corresponding pressure	18.3 Mpa										

OECD Drawbar Data (SI)

Date of tests: 10,11 Sep 2002							Fuel density:	0.842 kg/l						
Type of track: Concrete							Test number:	1809						
3.3.1 Maximum power in tested gears (unballasted, 4wd)							Tire pressure:	83 kPa, rear		83 kPa, front		Drawbar Height:	495 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	47.57	36.36	4.71	2192	15	0.340	2.48	58	83	102	17	75	98.2
4	B1	58.16	37.13	5.64	2114	15	0.311	2.70	58	83	102	15	84	98.2
5	B2	63.03	30.17	7.52	1953	10	0.285	2.95	60	85	110	18	80	98.2
6	B3	63.60	23.65	9.68	1953	7	0.284	2.97	60	85	109	18	85	98.2
3.3.2 Fuel consumption														
3.3.2.1			In selected gear at maximum power at rated engine speed.											
5	B2	61.16	26.72	8.24	2097	9	0.297	2.84	60	85	109	18	80	98.2
3.3.2.1.1			75% of pull at maximum power at rated engine speed											
5	B2	49.18	20.01	8.85	2195	6	0.327	2.57	58	83	106	18	80	98.2
3.3.2.1.2			50% of pull at maximum power at rated engine speed											
5	B2	34.06	13.36	9.18	2228	4	0.382	2.20	55	84	104	19	72	98.3
3.3.2.1.3			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.1											
6	B3	49.18	20.07	8.82	1761	6	0.282	2.98	58	84	106	18	80	98.2
3.3.2.1.4			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.2											
6	B3	34.12	13.38	9.18	1793	4	0.320	2.63	56	83	101	20	68	98.3
3.3.2.2			In selected gear nearest to 7.5 km/h at rated engine speed.											
4	B1	58.25	36.95	5.67	2123	15	0.311	2.70	58	83	102	16	79	98.2
3.3.2.2.1			75% of pull at maximum power at rated engine speed											
4	B1	47.69	27.33	6.28	2204	9	0.328	2.57	58	84	106	18	80	98.3
3.3.2.2.2			50% of pull at maximum power at rated engine speed											
4	B1	33.47	18.28	6.59	2229	6	0.378	2.23	55	84	103	18	80	98.3
3.3.2.2.3			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.1											
5	B2	47.72	27.40	6.27	1605	9	0.274	3.07	58	84	106	18	80	98.3
3.3.2.2.4			Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.2											
5	B2	33.43	18.25	6.59	1625	5	0.300	2.80	55	83	100	18	76	98.3

4.1 Drawbar Power (unballasted - 2100 rev/min, FWA engaged)

OECD Drawbar Data (SI)

Date of tests: 10,11 Sep 2002							Fuel density:	0.842 kg/l						
Type of track: Concrete							Test number:	1809						
4.1.1 Maximum power in tested gears (unballasted, gears only, 4wd)							Tire pressure:	83 kPa, rear	83 kPa, front			Drawbar Height:	495 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
4	B1	58.25	36.95	5.67	2123	15	0.311	2.70	58	83	102	16	79	98.2
5	B2	61.16	26.72	8.24	2097	9	0.297	2.84	60	85	109	18	80	98.2
6	B3	60.50	20.77	10.49	2092	6	0.299	2.82	59	84	108	18	85	98.2

4.2 Drawbar Power (ballasted - 1950 rev/min, FWA engaged)

OECD Drawbar Data (SI)

Date of tests: 12-Sep-02 | Fuel density: 0.842 kg/l

Type of track: Concrete | Test number: 1809

4.2.1 Maximum power in tested gears (ballasted, 4wd) | Tire pressure: 83 kPa, rear 124 kPa, front | Drawbar Height: 533 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	57.21	45.32	4.54	2123	15	0.318	2.65	58	83	101	17	70	97.9
4	B1	61.51	40.62	5.45	1990	12	0.293	2.87	59	84	103	17	66	97.9
5	B2	63.33	29.34	7.77	1957	7	0.283	2.97	60	85	105	18	63	97.9
6	B3	62.85	23.09	9.80	1949	5	0.284	2.96	60	85	106	19	59	97.9

4.3 Drawbar Power (ballasted -2100 rev/min, FWA disengaged)

OECD Drawbar Data (SI)

Date of tests: 12-Sep-02							Fuel density: 0.842 kg/l							
Type of track: Concrete							Test number: 1809							
4.3.1 Maximum power in tested gears (ballasted, 2wd)							Tire pressure: 83 kPa, rear 124 kPa, front					Drawbar Height: 533 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
4	B1	49.14	31.29	5.65	2190	15	0.340	2.47	58	84	101	17	66	97.9
5	B2	58.66	27.18	7.77	2099	11	0.308	2.73	59	84	104	18	62	97.9
6	B3	59.30	21.26	10.04	2099	7	0.304	2.77	59	84	104	18	63	97.9
4.3.2 Fuel consumption														
4.3.2.1			In selected gear at maximum power at rated engine speed.											
5	B2	58.66	27.18	7.77	2099	11	0.308	2.73	59	84	104	18	62	97.9
4.3.2.1.1			75% of pull at maximum power at rated engine speed											
5	B2	48.13	20.38	8.50	2199	7	0.329	2.56	58	84	102	19	63	97.9
4.3.2.1.2			50% of pull at maximum power at rated engine speed											
5	B2	33.51	13.61	8.87	2228	4	0.382	2.20	57	83	99	21	64	97.9
4.3.2.1.3			Higher gear at reduced engine speed, same pull and travel speed as 4.3.2.1.1											
6	B3	47.97	20.38	8.48	1766	7	0.288	2.92	58	83	101	19	64	97.9
4.3.2.1.4			Higher gear at reduced engine speed, same pull and travel speed as 4.3.2.1.2											
6	B3	33.43	13.46	8.94	1808	4	0.322	2.61	57	83	98	22	58	97.9

4.4 Measurement of External Noise Level – John Deere 6603

-- Date of Test	September 9, 2002
-- Location of Test	Nebraska Tractor Test Laboratory
-- Sound Level Meter	Bruel and Kjaer 2236
-- Type of Track	Concrete Oval
-- Gear Number	9 (C3)
-- Speed Prior to Acceleration	24.2 km/h
-- Noise Level	84.6 dB(A)

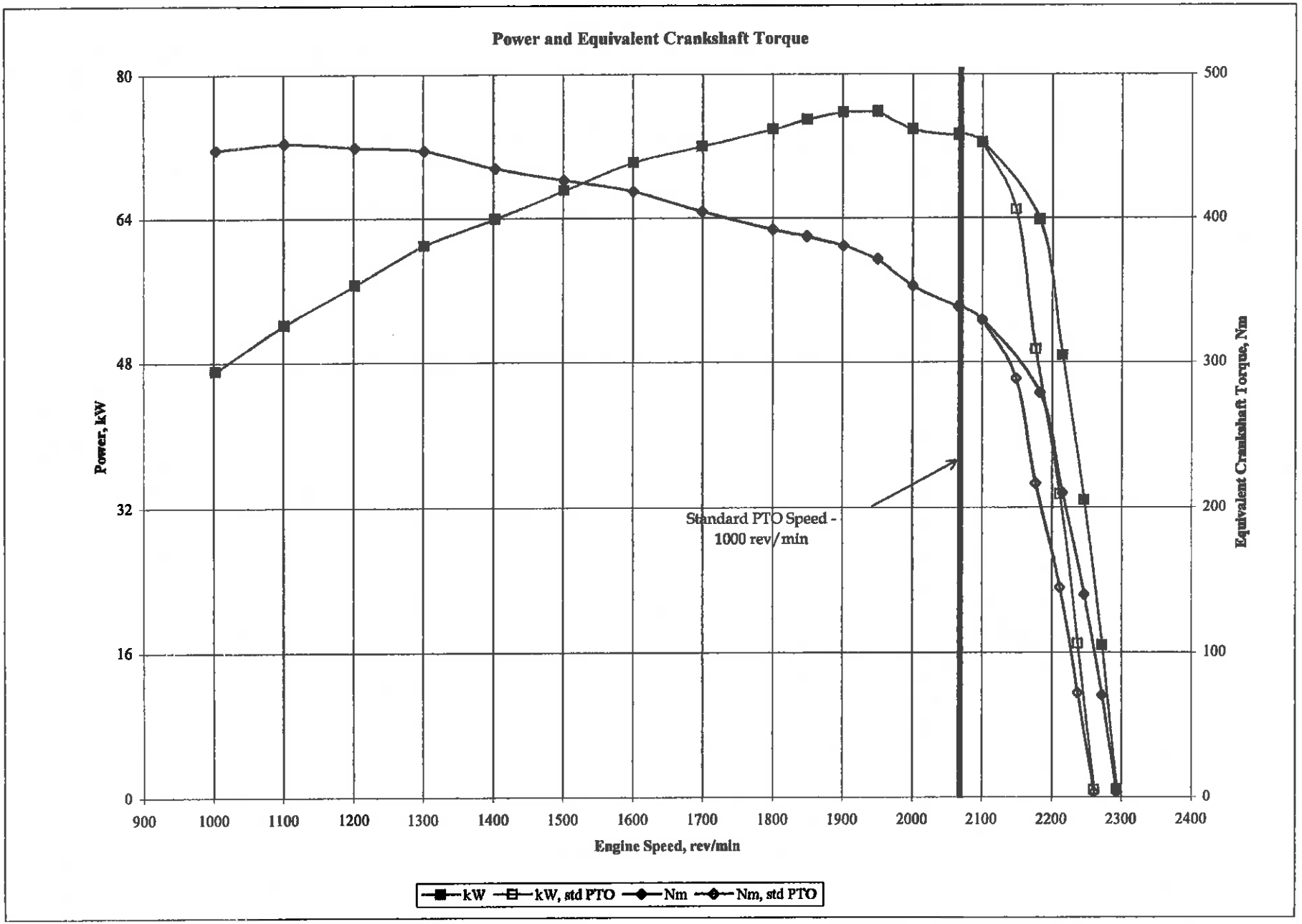
4.5 Measurement of Noise Level at Operator's Ear*

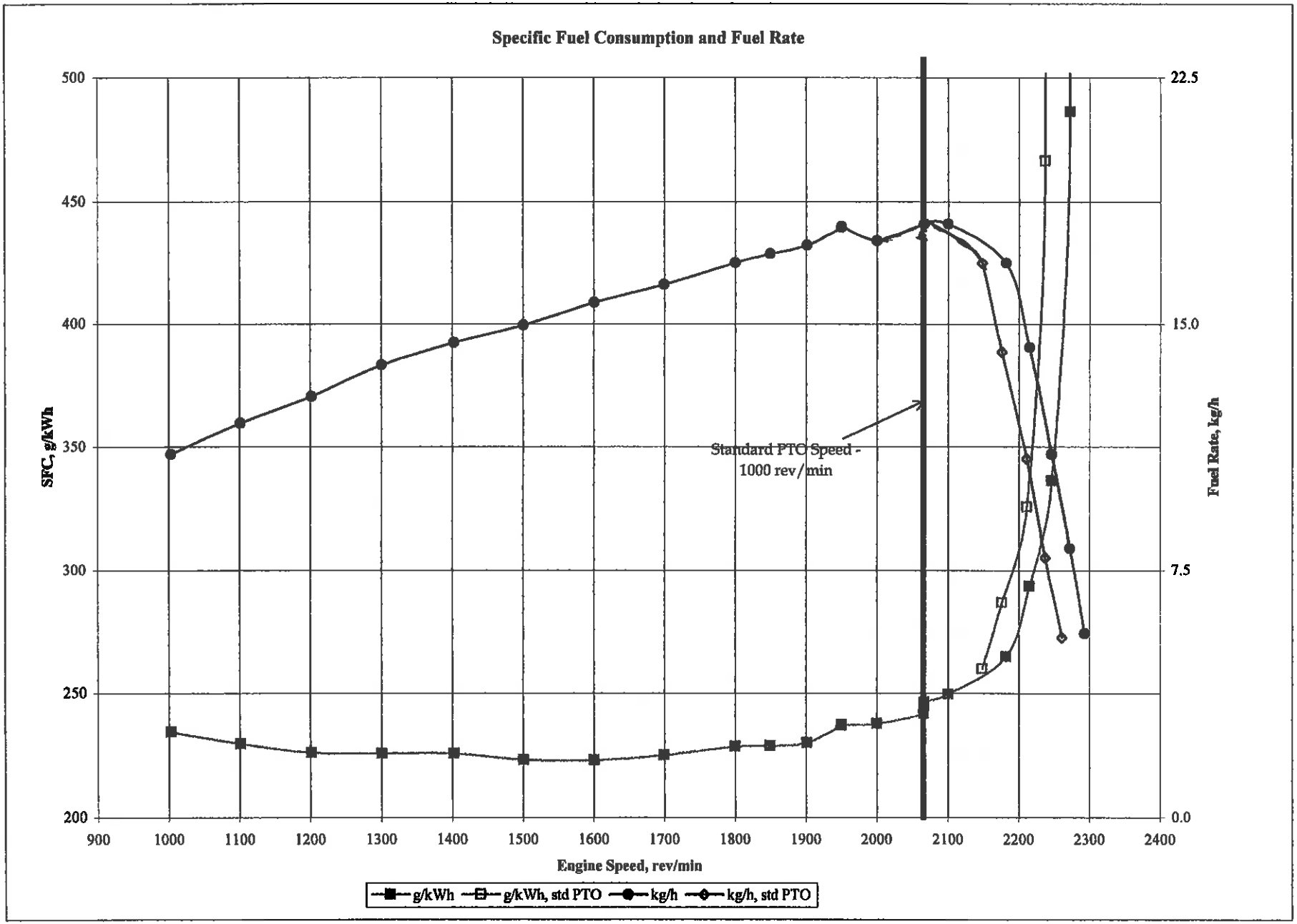
-- Date of Test	September 9, 2002
-- Location of Test	Nebraska Tractor Test Laboratory
-- Sound Level Meter	Bruel and Kjaer 2236
-- Type of Track	Concrete Oval
-- Gear Number	4 (B1)
-- Drawbar Load	None
-- Noise at Operator Ear	93.3 dB(A) – front drive engaged 93.6 dB(A) – front drive disengaged

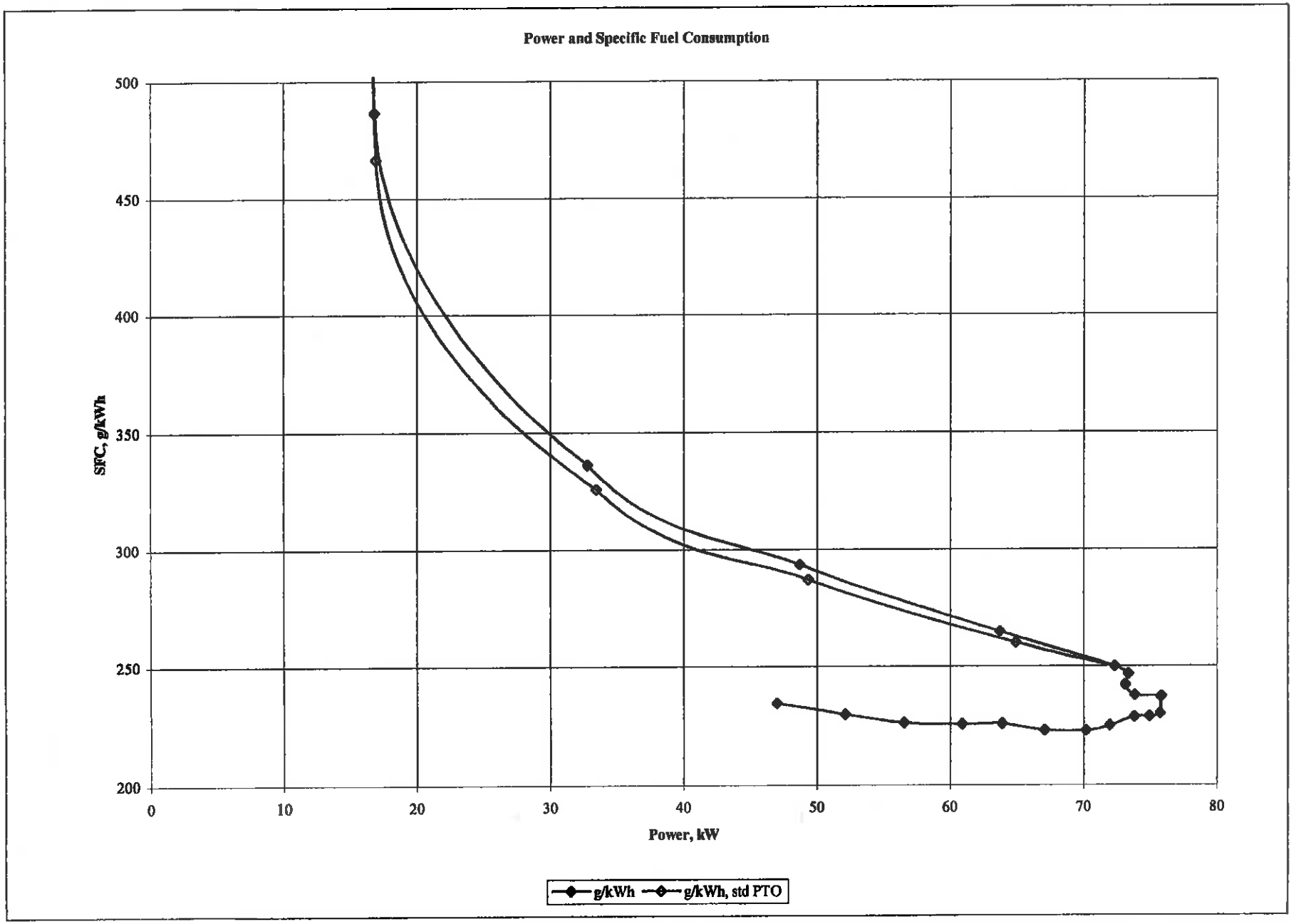
* Note: Nebraska tractor test station guidelines.

5. Repairs and Adjustments: None

6. Remarks: None


Power and Equivalent Crankshaft Torque
Power, kW
Equivalent Crankshaft Torque, Nm
Engine Speed, rev/min
80
64
48
32
16
0
500
400
300
200
100
0
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
Standard PTO Speed - 1000 rev/min
kW
kW, std PTO
Nm
Nm, std PTO


Specific Fuel Consumption and Fuel Rate
SFC, g/kWh
Fuel Rate, kg/h
Engine Speed, rev/min
Standard PTO Speed - 1000 rev/min
500
450
400
350
300
250
200
22.5
15.0
7.5
0.0
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
g/kWh
g/kWh, std PTO
kg/h
kg/h, std PTO


Power and Specific Fuel Consumption
SFC, g/kWh
500
450
400
350
300
250
200
0
10
20
30
40
50
60
70
80
Power, kW
g/kWh
g/kWh, std PTO