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CODE 2
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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 7210 POWRQUAD MFWD

MANUFACTURED BY:	John Deere Waterloo Works P.O. Box 270, Waterloo, Iowa 50704-0270
NEBRASKA TEST NO.	1739
TEST DATES	October 6-21, 1997

This test report provides the results of the tests conducted in accordance with OECD Standard Code for the Official Testing of Agricultural Tractors - C(87)53 Final, Code 2.

This report has been approved by the OECD Coordinating Centre in Paris (CEMAGREF) on 27 April 1998 for the **John Deere 7210 PowrQuad MFWD**, OECD No. 2/1749.

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SPECIFICATIONS OF TRACTOR

Manufacturers name/address	John Deere Waterloo Works, 3500 East Donald Street, P.O. Box 270, Waterloo, Iowa, USA
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 Eng. Ctr, Waterloo, Iowa, USA
Duration of running in	155 hours
Location of Test	Nebraska Tractor Test Laboratory Lincoln, Nebraska, USA.

SPECIFICATIONS OF TRACTOR

Make	John Deere
Model	7210 PowrQuad MFWD
Type	Unit construction, mechanical front wheel drive (MFWD)
Number of driving wheels	2 or 4
Serial Number	*RW7210H002212*
1st Serial number	*RW7210R001001*

ENGINE

Make	John Deere
Model	6068TRW50
Type	Diesel; 4-stroke; turbocharged, direct injection
Serial Number	*T06068T720071*

Cylinders

Number/Disposition	6, in-line, vertical
Bore/stroke	106.5 mm x 127.0 mm
Capacity	6788 cm^3
Compression Ratio	17.0 - 1
Arrangement of valves	Overhead
Cylinder liners	Wet; replaceable

Super Charging

Make/Model/Type	Garret/RE59883/Exhaust gas driven
Pressure	67 +/- 15 kPa at rated speed and load

Fuel System

Feed system	Mechanical transfer pump
Make/Type/Model of filters	Stanadyne/RE62419/paper element
Fuel tank capacity	189 l
Fuel Cooler	None

Make/Model/Type Injection Pump	Lucas/(RE59526)/rotary; electric shutoff
Pump Serial number	1192 8921A192W 23420DPG
Production setting of pump Flow Rate (Rated Eng.Spd & Full Load)	18.30 ± 0.37 kg/hour
Fuel density	0.844 kg/l.
Make/Model/Type Injectors	Stanadyne/44508/Pencil Type
Injection pressure	29.0 +1.2/-0.0 MPa
Timing	6.5 degrees BTDC

Governor

Make/Model/Type	Lucas/DP203/mechanical
Governed engine speed range	From 850 to 2275 rev/min
Rated engine speed	2100 rev/min
High-idle speed range	2275 ± 50 rev/min

Air Cleaner

Pre-cleaner	
Make/Model/type	N/A
Air intake location	
Main Cleaner	
Make/Model/Type	Mann & Hummel/AL78869/ integrated; pleated paper
Location	Under hood, front of tractor
Secondary element	Mann & Hummel/AL78870/pleated paper
Maintenance indicator	Dash mounted warning light and audible signal

Lubrication system

Type of feed pump	Full pressure; positive displacement
Type of filters	Full flow with bypass
Number	One spin-on.
Oil cooler	Heat exchanger with engine coolant

Cooling system

Type of coolant	Liquid
Type of pump	Centrifugal, belt driven
Fan specification	Belt driven; Suction type; Variable speed
Number of fan blades	7
Fan diameter	531 mm
Coolant system capacity	19 l
Type of temperature control	Two thermostats and variable speed fan
System pressure	69 kPa

Starting System	
Make/Model/Type of starter	Nippondenso/RE59596/Solenoid Engaged
Power Rating	4.0 kW
Cold starting aid	Electrical resistance preheater in air intake manifold
Safety device	Electrical lockout on gearshift
Electrical System	
Voltage & grounding.	12 Volt DC; Negative ground
Alternator	
Make/Model/Type	Nippondenso/RE46608/Belt driven with built-in regulator
Power rating	140 Amp at rated engine speed and 25^{0}C ambient
Batteries	
Number & connection	Two; 12 Volt batteries in parallel; SAE tapered post
Rating	925 cold cranking amps/battery; 175 Ah/battery at 20 h rating
Exhaust System	
Muffler Make/Model/Type	Nelson/RE71565/Expansion chamber
Location	Horizontal muffler; under hood
Exhaust stack location	Vertical; right front of cab

TRANSMISSION

Clutch (Travel)	
Make/Model/Type	John Deere/Multiple plate/oil cooled
Number of plates	4 for forward; 2 for reverse
Plate diameter	225 mm for forward; 295 mm for reverse
Method of operation	Hydraulic; pedal actuated
Gear Box	
Make/Model/Type	John Deere/PowrQuad™/Mechanical
Arrangement	Countershaft and planetary design consisting of: One 4-speed gear box with 4 mechanically synchronized speeds and a 4-speed planetary gear set with multiple wet disc clutch and brake units
Number of gears	16 forward and 16 reverse operated by two levers
Oil cooler	Heat exchanger with air
Other Available options	Creeper transmission

Rear Axle and Final Drives	
Make/Model/Type	John Deere/RE66310/Spiral bevel with pinion, differential and inboard planetary reduction
Differential Lock	
Type	Electro-hydraulic
Method of engagement	Pedal operated switch
Method of disengagement	Self-disengaging with brake pedal operation
Front Axle and Final Drives	
Make/Model/Type	John Deere/MFWD 900 Series/Spiral bevel with pinion, differential and outboard planetary reduction
Differential Lock	
Type	Limited slip
Method of engagement	Self-engaging
Method of disengagement	Self-disengaging

GEAR RATIOS AND TRAVEL SPEEDS (US version)

(Tire dynamic radius of 820 mm. ISO 4251/1-1992)

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/h]
Forward			
1	A1	270.01	2.40
2	A2	224.24	2.90
3	A3	187.22	3.47
4	A4	152.84	4.25
5	B1	127.39	5.10
6	B2	105.80	6.12
7	B3	88.34	7.35
8	C1	80.05	8.11
9	B4	72.11	9.00
10	C2	66.48	9.77
11	C3	55.51	11.69
12	C4	45.31	14.33
13	D1	38.60	16.81
14	D2	32.06	20.25
15	D3	26.77	24.25
16	D4	21.85	29.71
Reverse			
1	A1	227.66	2.85
2	A2	189.07	3.43
3	A3	157.86	4.11
4	A4	128.86	5.04
5	B1	107.41	6.04
6	B2	89.20	7.28
7	B3	74.48	8.72
8	C1	67.49	9.62
9	B4	60.80	10.68
10	C2	56.05	11.58
11	C3	46.80	13.87
12	C4	38.20	16.99
13	D1	32.55	19.94
14	D2	27.03	24.02
15	D3	22.57	28.76
16	D4	18.42	35.24

Number of front wheel revolutions for one rear wheel revolution: 1.345

CREEPER GEAR

(Tire dynamic radius of 820 mm. ISO 4251/1-1992)

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/h]
Forward			
1	A1	2608.81	0.25
2	A2	2166.57	0.30
3	A3	1808.94	0.36
4	A4	1476.69	0.44
5	B1	1230.87	0.53
6	B2	1022.22	0.63
7	B3	853.48	0.76
8	C1	773.44	0.84
9	B4	696.72	0.93
10	C2	642.33	1.01
11	C3	536.30	1.21
12	C4	437.79	1.48
Reverse			
1	A1	2199.59	0.30
2	A2	1826,72	0.36
3	A3	1613.08	0.40
4	A4	1245.05	0.52
5	B1	1037.79	0.63
6	B2	861.87	0.75
7	B3	719.60	0.90
8	C1	652.11	1.00
9	B4	587.43	1.10
10	C2	541.57	1.20
11	C3	452.17	1.44
12	C4	369.12	1.76

Number of front wheel revolutions for one rear wheel revolution: 1.345

POWER - TAKE-OFF

Main Power-Take-Off

Type	Independent
Method of engagement	Electro-hydraulically actuated multi-plate wet clutch operated by hand control switch
Number of shafts	One
Method of changing speeds	Reversible shaft

Standard PTO - 540 rev/min.

Location	Rear of tractor; center plane
Diameter of shaft	35 mm
Number of splines	6; conforms to ISO 500/1991
Height above ground	740 mm
Distance from median plane of tractor	0 mm
Distance behind rear axle	620 mm
PTO Speed at rated engine speed	545 rev/min
Engine speed at Std. PTO speed	2080 rev/min
Engine speed/PTO speed ratio	3.851:1
Power restriction	56 kW
Direction of rotation when viewed from shaft end	Clockwise

Standard PTO-1000 rev/min.

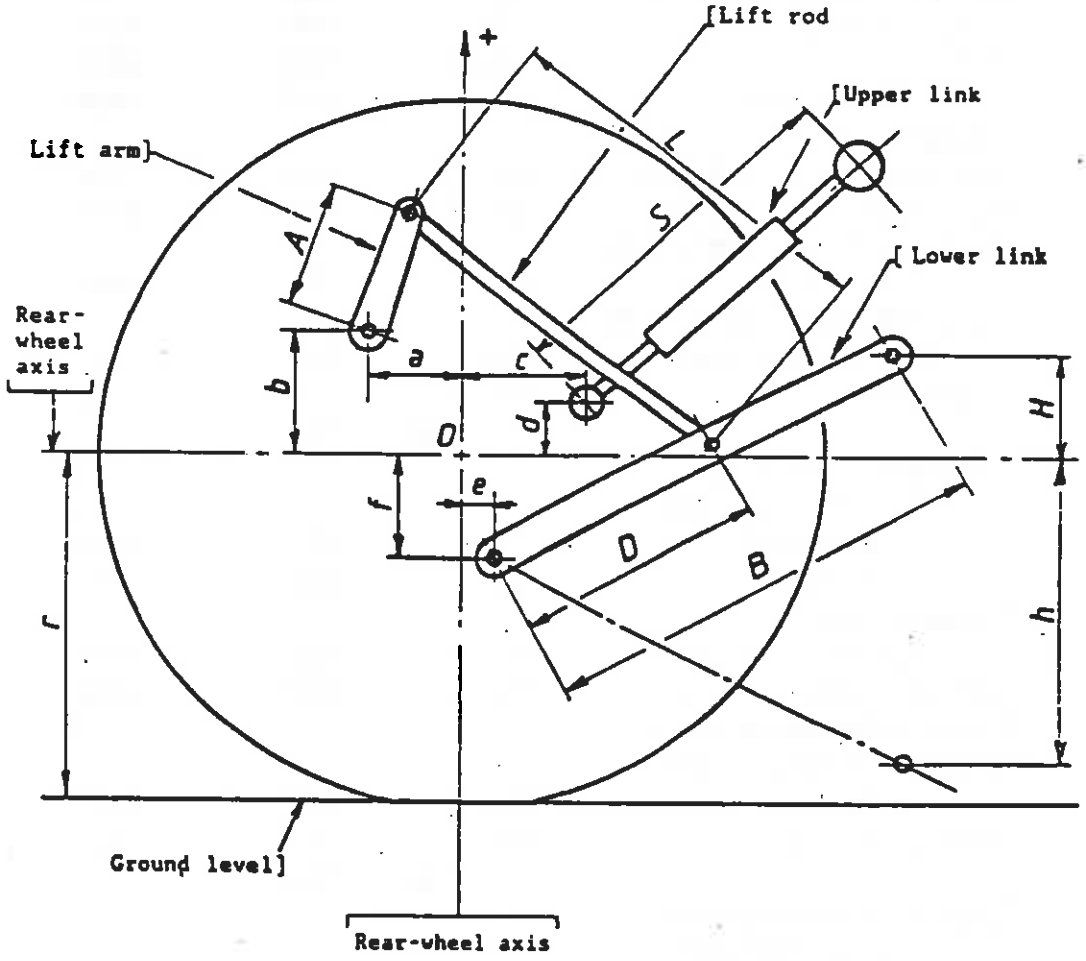
Location	Rear of tractor; center plane
Diameter of shaft	35 mm
Number of splines	21; conforms to ISO 500/1991
Height above ground	740 mm
Distance from median plane of tractor	0 mm
Distance behind rear axle	620 mm
PTO Speed at rated engine speed	1003 rev/min
Engine speed at Std. PTO speed	2093 rev/min
Engine speed/PTO speed ratio	2.093:1
Power restriction	None
Direction of rotation when viewed from shaft end	Clockwise

POWER LIFT

Make/Model/Type	John Deere/8390 lb capacity/electronic lower link sensing; variable mix of draft and position control; adjustable rate of drop
Type of hydraulic system	Closed center; pressure and flow compensated
Number/Type of cylinders	Two external, single acting, 70 m or 80 mm diameter
Type of linkage lock for transport	Electro-hydraulic
Relief valve pressure setting	20.3 +0.4/-0.6 MPa
Opening pressure of cylinder safety valve	24.0 ± 1.0 MPa
Lift pump type	Axial piston, variable delivery and flow, pressure and flow compensated
Power transmission to pump	Spiral bevel gear drive
Type/Number of filters	Synthetic media, spin-on/one
Location of oil reservoir	Differential case housing
Type/Number/Location of tapping points	ISO standard breakaway couplers/2 standard with 3rd and 4th, and additional inlet/outlet pair for externally controlled implements optional/rear of tractor
Maximum oil volume available for external cylinders	19 l; additional 11 l allowable overfill for total of 30 l

THREE POINT LINKAGE

- Category 3N/2 in conformity with ISO 730/1-1990
- Category adaptor - none



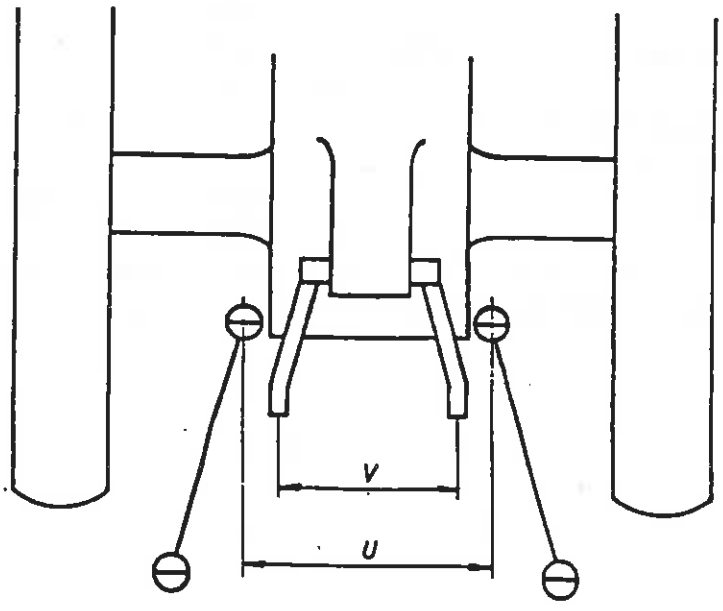


Table 1.1 - LINKAGE GEOMETRY DIMENSIONS

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

* Tire dynamic index of 820 mm ISO 4251/1-1992

SWINGING DRAWBAR

Type		Oscillating
Height above ground-	maximum	473 mm
	minimum	352 mm
Adjustments		Invert drawbar; reposition clevis
Distance of hitch point from rear wheel axis-horizontal		836, 936, 986 mm
Distance of hitch point from PTO shaft end	Vertical	285 mm
	Horizontal	251, 351 and 401 mm
Lateral adjustment-	Right side	190 mm
	Left side	190 mm
Distance of pivot point from rear wheel axis-	Horizontal	27 mm
Diameter of drawbar pin hole		33 mm
Maximum vertical static permissible load		28 kN - short position 21 kN - intermediate position 14 kN - extended position

STEERING

Make/Model/Type	Eaton/RE34138/Hydrostatic
Method of operation	Steering wheel
Pump(s)	Same as main hydraulic pump
Ram(s)	Two external; double acting
Working pressure	17.0 ± 0.5 MPa

BRAKE SYSTEM

Service brake

Make/Model/Type	Vickers/RE67321/John Deere oil immersed disc
Method of operation	Hydraulic; operated by two pedals which can be locked together

Parking brake

Type	Transmission lock
Method of operation	Gear selector lever

Trailer brake — None

WHEELS

Number -	Front	Two; Driving and steering
	Rear	Two; Driving
Wheel base		2625 mm

TRACK WIDTH ADJUSTMENT

	Minimum [mm]	Maximum [mm]	Adjustment method
Front	1524	2235	Reversing wheels and offset lug rims
Rear	1524	2548	Rack and Pinion axle; Reversing wheels and offset lug rims

PROTECTIVE STRUCTURE

Make/Model/Type	John Deere/Sound Gard SG 060/Cab, not tiltable
Manufacturer's name/address	John Deere Tractor Works, Waterloo, Iowa, USA
Protective device	Cab; not tiltable
OECD approval number	CSS 0394/113
Date of Approval	11 December 1996

DRIVER'S SEAT

Make/Model/Type	Sears/RE35125/Air suspension; Personal posture cushioning
Type of suspension	Air
Type of damping	Three-position viscous damper
Range of adjustment	
Longitudinal	167 mm
Vertical	80 mm
Rotation	20 degrees left and right
Safety Belt	No

LIGHTING

	Height above ground of center [mm]	Size [mm x mm]	Distance from outside edge of lights to median plane of tractor [mm]
Head lights	1335	160 x 102	225
Side lights	1315	110 x 102	275
Rear lights	1820	127 x 76	892
Reflectors-rear			
Outside	1820	43 x 70	934
Inside	1820	43 x 70	807

TEST CONDITIONS

Overall Dimensions

Length	Overall	4435 mm
Width	Minimum	2438 mm
	Maximum	2686 mm
Height	Top protective structure	2880 mm
	Top of exhaust	2880 mm
Ground clearance		360 mm
Clearance-limiting part		Sway Blocks

Tractor Mass (with cab, full fuel tank)

		Without driver [kg]	With driver [kg]
Unballasted			
	Front	2042	2052
	Rear	3756	3821
	Total	5798	5873
Maximum Permissible Load			
	Front	3300	3300
	Rear	6580	6580

Tire Specifications		Front Wheels	Rear Wheels
Make		Titan	Goodyear
Dimensions		14.9R28	18.4R38
Number/Ply rating		3 star	1 star
Type		Radial	Radial
Maximum load		20.21 kN/tire	25.26 kN/tire
Inflation pressure(tire manufacturer)			
	maximum	207 kPa	165 kPa
	minimum	62 kPa	83 kPa
Dynamic Radius Index		640 mm	820 mm
Chosen track width		1930 mm	1930 mm

OILS AND LUBRICATION

Capacity and change interval:

	Capacity liter	Oil change hours	Filter change hours
Engine (with filter)	19.0	250	250
Front axle	8.5	1500	
Transmission, final drive, rear axle and hydraulics	64	1500	Annually or as required
Final drive, front	1.9	1500	

Oil and Lubricant specifications:

	Recommended	Used during test
Engine oil		
Type	John Deere, TORQ-GARD SUPREME Plus 50; SAE 15W-40	same
Viscosity	12.8 cSt at 100°C	
Classification	API CE or CD; CCMD specification D5 or D6	
Transmission		
Type	John Deere HY-GARD (J20C) SAE 10W-30	same
Viscosity	58 cSt at 40°C	
Classification	NA	
Hydraulic fluid	Same as transmission	same
Front axle Diff.		
Type	John Deere HY-GARD (J20C) SAE 10W-30	same
Viscosity	58 cSt at 40°C	
Classification	NA	
Front axle hubs	John Deere GL5 Gear Lube	
Viscosity	SAE 85W-140	same
Classification	API GL5	
Steering system	Same as transmission	same
Grease	John Deere Moly High Temperature EP Grease	same
Number of lube points	19	

FUEL

Type/grade	Premier; Grade 2-D, in conformity with the National Standard
Density (Pto test)	0.844 kg/l at 15° C
(Drawbar test)	Same as PTO test

COMPULSORY TESTS

1. MAIN POWER TAKE OFF

Date: 7-Oct-97 Location: UNL Tractor Test Lab, Lincoln, NE, USA

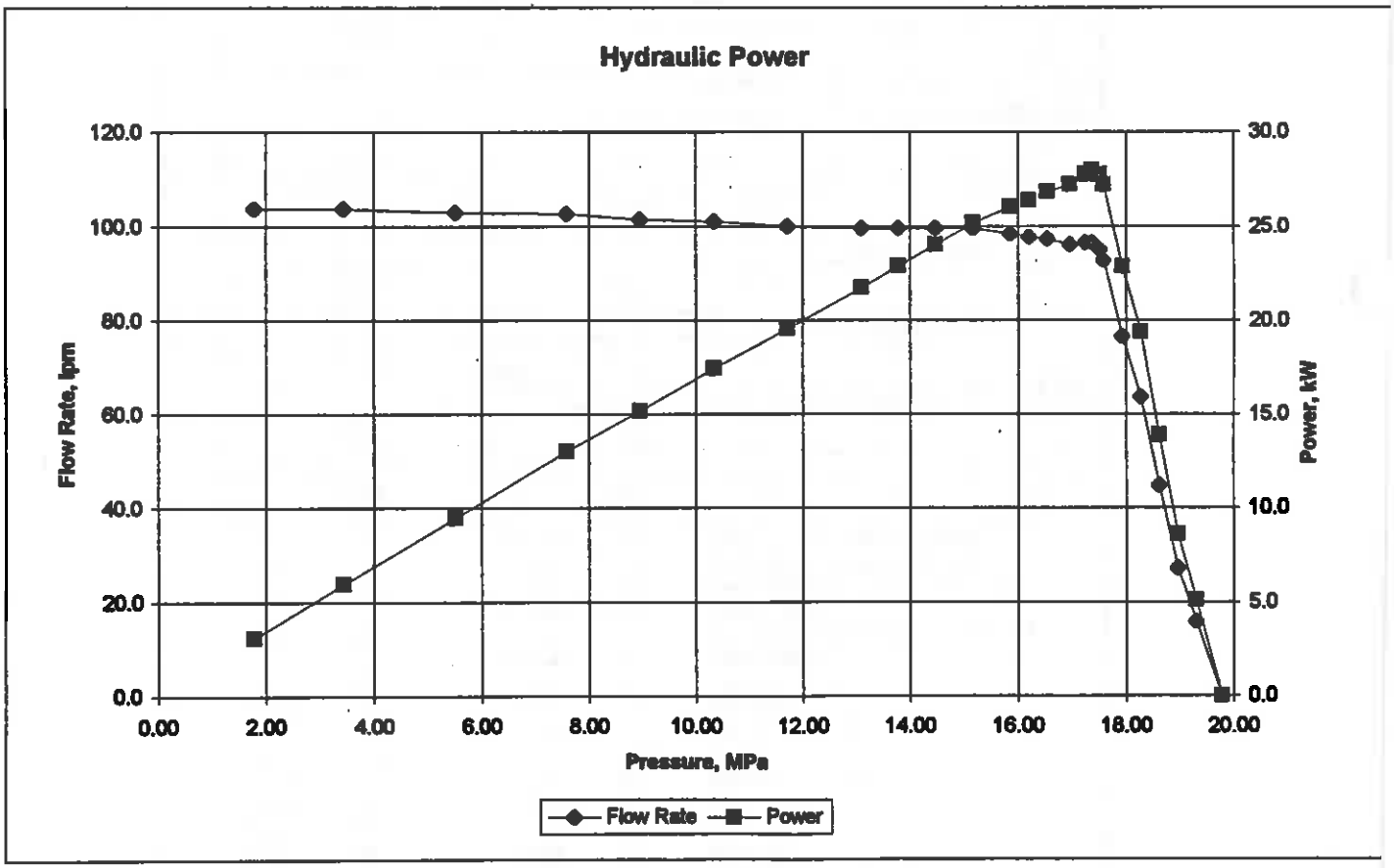
Type of dynamometer: Eddy current, Eaton

Fuel Density 0.844 kg/l

Power kW / *hp*	Engine rev/min	PTO rev/min	l/h / *gal/h*	kg/h / *lb/hr*	kg/kW-h / *lb/hp-h*	kW-h/l / *hp-h/gal*
1.1 Maximum Power - 2 Hours						
73.29	1800	858	20.72	17.49	0.239	3.54
98.28			*5.47*	*38.56*	*0.392*	*17.95*
1.2 Power at Rated Engine Speed - 1 hour						
71.54	2100	1002	21.83	18.42	0.257	3.28
95.94			*5.77*	*40.61*	*0.423*	*16.64*
1.3 Power at Standard Power Take Off Speed - 1 hour						
71.54	2100	1002	21.83	18.42	0.257	3.28
95.94			*5.77*	*40.61*	*0.423*	*16.64*
1.4 Part Loads						
1.4.1 Torque at maximum power at rated engine speed						
71.54	2100	1002	21.83	18.42	0.257	3.28
95.94			*5.77*	*40.61*	*0.423*	*16.64*
1.4.2 85% of torque obtained in 1.4.1						
63.05	2180	1040	20.32	17.15	0.272	3.10
84.55			*5.37*	*37.80*	*0.447*	*15.75*
1.4.3 75% of torque defined in 1.4.2						
47.93	2212	1055	17.58	14.83	0.309	2.73
64.28			*4.64*	*32.70*	*0.509*	*13.84*
1.4.4 50% of torque defined in 1.4.2						
32.57	2237	1067	14.19	11.97	0.368	2.30
43.68			*3.75*	*26.40*	*0.604*	*11.65*
1.4.5 25% of torque defined in 1.4.2						
16.47	2262	1079	10.64	8.98	0.545	1.55
22.08			*2.81*	*19.80*	*0.897*	*7.86*
1.4.6 unloaded						
0.77	2283	1089	7.58	6.40	8.273	0.10
1.04			*2.00*	*14.10*	*13.601*	*0.52*
1.5 Part Loads at Standard Power Take Off Speed						
1.5.1 Torque at maximum power						
71.54	2100	1002	21.83	18.42	0.257	3.28
95.94			*5.77*	*40.61*	*0.423*	*16.64*
1.5.2 85% of torque obtained in 1.5.1						
63.05	2180	1040	20.32	17.15	0.272	3.10
84.55			*5.37*	*37.80*	*0.447*	*15.75*
1.5.3 75% of torque defined in 1.5.2						
47.93	2212	1055	17.58	14.83	0.309	2.73
64.28			*4.64*	*32.70*	*0.509*	*13.84*
1.5.4 50% of torque defined in 1.5.2						
32.57	2237	1067	14.19	11.97	0.368	2.30
43.68			*3.75*	*26.40*	*0.604*	*11.65*
1.5.5 25% of torque defined in 1.5.2						
16.47	2262	1079	10.64	8.98	0.545	1.55
22.08			*2.81*	*19.80*	*0.897*	*7.86*
1.5.6 unloaded						
0.77	2283	1089	7.58	6.40	8.273	0.10
1.04			*2.00*	*14.10*	*13.601*	*0.52*

No load maximum engine speed:	2283	rev/min		
Equivalent torque at rated speed:	325	N.m	*240*	*lb-ft*
Equivalent torque at maximum power:	389	N.m	*287*	*lb-ft*
(engine speed:	1800	rev/min)		
Maximum equivalent crankshaft torque:	450	N.m	332	*lb-ft*
(engine speed:	1301	rev/min)		
Mean Dry bulb:	26	deg C	*78*	*deg F*
Wet bulb:	21	deg C	*71*	*deg F*
Relative Humidity	64	%		
Pressure:	97.7	kPa	*28.84*	*in Hg*
Maximum Coolant:	96	deg C	*204*	*deg F*
Engine Oil:	114	deg C	*237*	*deg F*
Fuel:	64	deg C	*148*	*deg F*
Air Intake:	28	deg C	*83*	*deg F*
Transmission/hydraulic oil:	62	deg C	*143*	*deg F*
Intake manifold pressure at rated speed:	58	kPa	*8.5*	*psig*
Intake manifold pressure at maximum power:	53	kPa	*7.7*	*psig*

Date of Test: 16-Oct-97			
Location of Test-City-State:	Tractor Test Lab, Lincoln, NE, USA		
Tapping point used for test:	Remote hydraulic outlets		
I. Sustained pressure with pump stalled:			
19.79 MPa			
2870 psig			
II. Pump delivery rate at minumum pressure and rated engine speed:			
103.7 l/min			
27.4 gpm			
III. Flow rate, pressure, power:			
90% of relief valve setting			
76.5 l/min	17.93 MPa	22.8 kW	
20.2 gpm	*2600 psig*	*30.6 hp*	
Maximum hydraulic power:			
96.5 l/min	17.37 MPa	28.0 kW	
25.5 gpm	*2520 psig*	*37.5 hp*	
IV. Hydraulic fluid temperature at flow meter:			
68.0 °C			
154 °F			
This hydraulic system does not use an accumulator. Opening and closing pressures of the unloading valve could not be measured.			



2.2 POWER LIFT TEST. Cat II,with lift cylinders 1x70 mm & 1x80 mm
(for settings see p.10)
Date of test: 1 June 1994
The data presented here is from OECD test 1537 done on the John Deere 7200 SP which has the mechanically identical hitch system.

		Hitch points	Frame
Lower hitch points above ground - down position:	[mm/in]	188/7.4	81/3.2
Vertical movement:			
without load:	[mm/in]	708/27.9	956/37.6
with load:	[mm/in]	696/27.4	945/37.2
Maximum corrected force through full range:	[kN/lb]	46.5/10463	30.5/6858
Corresponding pressure:	[kPa/psi]	18306/2655	
Moment about rear axle:	[kN.m/lb.ft]	52.2/38537	52.8/38976
Maximum mast tilt angle:	[deg]	--	13.5

Lifting height relative to horizontal position of lower links.

	[mm]	470	-363	-300	-201	-99	0
	[in]	-18.5	-14.3	-11.8	-7.9	-3.9	0
Corrected lift forces							
Hitch point.	[kN]	--	48.5	46.5	46.7	47.2	47.4
	[lb]	--	10899	10463	10494	10602	10661
at frame	[kN]	40.4	37.2	36.5	35.9	--	35.0
	[lb]	9081	8370	8208	7871	--	7871

Lifting height relative to horizontal position of lower links.

	[mm]	99	201	300	333	419	475
	[in]	3.9	7.9	11.8	13.1	16.5	18.7
Corrected lift forces							
Hitch point	[kN]	48.2	49.1	50.1	50.2	--	--
	[lb]	10832	11030	11259	11282	--	--
at frame	[kN]	33.8	--	32.5	31.9	31.1	30.5
	[lb]	7610	--	7317	7173	6898	6858

OECD Drawbar Data (SI)

Date of tests: 15,16-Oct-97 — Fuel density: 0.844 kg/l
Type of track: Concrete — Test number: 1739

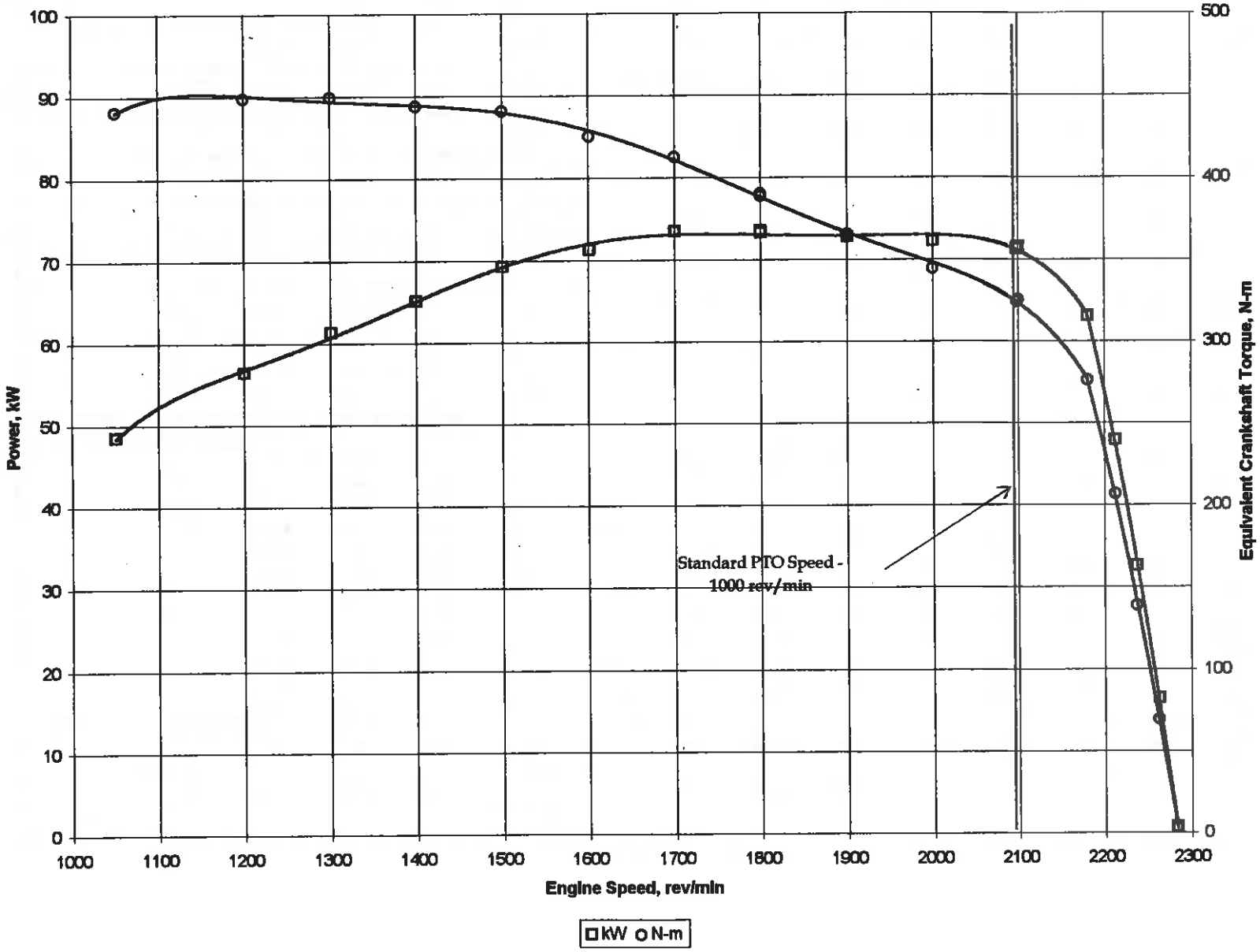
Gear	Gear designation	Power kW	Pull kN	Speed km/h	Engine speed rev/min	Slip	SFC kg/kW.h	SFE kW.h/l	Temperature, deg C Fuel	Coolant	Oil	Dry	Wet	Rel hum-idity	Baro. Pres kPa
I. Maximum Power (unballasted, 4wd at 1800 rev/min)							Tire pressure:		110 kPa, rear		110 kPa, front		Drawbar height:	546 mm	
2	A2	42.67	57.34	2.68	2202	15%	0.359	2.35	62	84	110	18	12	53%	98.85
3	A3	51.56	57.48	3.23	2184	14%	0.329	2.56	62	84	111	17	12	56%	98.88
4	A4	61.71	56.25	3.95	2081	10%	0.297	2.84	61	88	113	16	11	56%	98.92
5	B1	65.04	50.37	4.65	1977	7%	0.278	3.04	62	88	114	14	10	58%	98.98
6	B2	64.95	45.69	5.12	1801	6%	0.268	3.15	60	89	113	20	13	44%	98.81
7	B3	65.21	37.72	6.22	1801	5%	0.265	3.18	60	89	113	21	13	45%	98.81
8	C1	65.14	33.83	6.93	1806	4%	0.266	3.17	61	89	112	19	13	51%	98.81
9	B4	64.48	30.03	7.73	1805	4%	0.270	3.13	60	89	113	19	13	47%	98.81
10	C2	64.70	27.77	8.39	1799	3%	0.268	3.15	61	89	112	19	13	51%	98.81
11	C3	64.32	22.85	10.13	1806	3%	0.270	3.12	61	90	113	18	13	54%	98.81
12	C4	62.14	17.97	12.45	1799	2%	0.279	3.02	61	90	111	18	13	54%	98.81
13	D1	60.65	14.90	14.65	1796	2%	0.286	2.95	60	90	109	18	13	54%	98.81
II. Part loads (unballasted, 4wd)															
II.1 in selected gear at maximum power at rated engine speed.															
7	B3	63.17	31.10	7.31	2098	4%	0.288	2.93	62	89	113	19	13	51%	98.81
II.1.1 75% of pull at maximum power at rated engine speed															
7	B3	50.17	23.33	7.74	2198	3%	0.319	2.65	62	86	110	14	10	63%	99.32
II.1.2 50% of pull at maximum power at rated engine speed															
7	B3	34.27	15.59	7.92	2227	2%	0.377	2.24	62	85	108	16	12	64%	99.26
II.1.3 higher gear at reduced engine speed, same pull and travel speed as II.1.1															
8	C1	50.12	23.33	7.73	1988	3%	0.298	2.83	62	86	108	14	11	63%	99.29
II.1.4 higher gear at reduced engine speed, same pull and travel speed as II.1.2															
8	C1	34.29	15.61	7.91	2015	2%	0.350	2.41	61	85	106	16	12	64%	99.26
II.1.5 higher gear at reduced engine speed, same pull and travel speed as II.1.3															
10	C2	50.15	23.30	7.75	1657	3%	0.273	3.09	62	88	107	14	11	63%	99.29
II.1.6 higher gear at reduced engine speed, same pull and travel speed as II.1.4															
10	C2	34.28	15.55	7.94	1683	2%	0.313	2.69	62	85	103	16	12	69%	99.26
II.2 in selected gear nearest to 7.5 km/h at rated engine speed.															
7	B3	63.17	31.10	7.31	2098	4%	0.288	2.93	62	89	113	19	13	51%	98.81
II.2.1 75% of pull at maximum power at rated engine speed															
7	B3	50.17	23.33	7.74	2198	3%	0.319	2.65	62	86	110	14	10	63%	99.32
II.2.2 50% of pull at maximum power at rated engine speed															
7	B3	34.27	15.59	7.92	2227	2%	0.377	2.24	62	85	108	16	12	64%	99.26
II.2.3 higher gear at reduced engine speed, same pull and travel speed as II.2.1															
8	C1	50.12	23.33	7.73	1988	3%	0.298	2.83	62	86	108	14	11	63%	99.29
II.2.4 higher gear at reduced engine speed, same pull and travel speed as II.2.2															
8	C1	34.29	15.61	7.91	2015	2%	0.350	2.41	61	85	106	16	12	64%	99.26
II.2.5 higher gear at reduced engine speed, same pull and travel speed as II.2.3															
10	C2	50.15	23.30	7.75	1657	3%	0.273	3.09	62	88	107	14	11	63%	99.29
II.2.6 higher gear at reduced engine speed, same pull and travel speed as II.2.4															
10	C2	34.28	15.55	7.94	1683	2%	0.313	2.69	62	85	103	16	12	69%	99.26

OECD Drawbar Data (US)

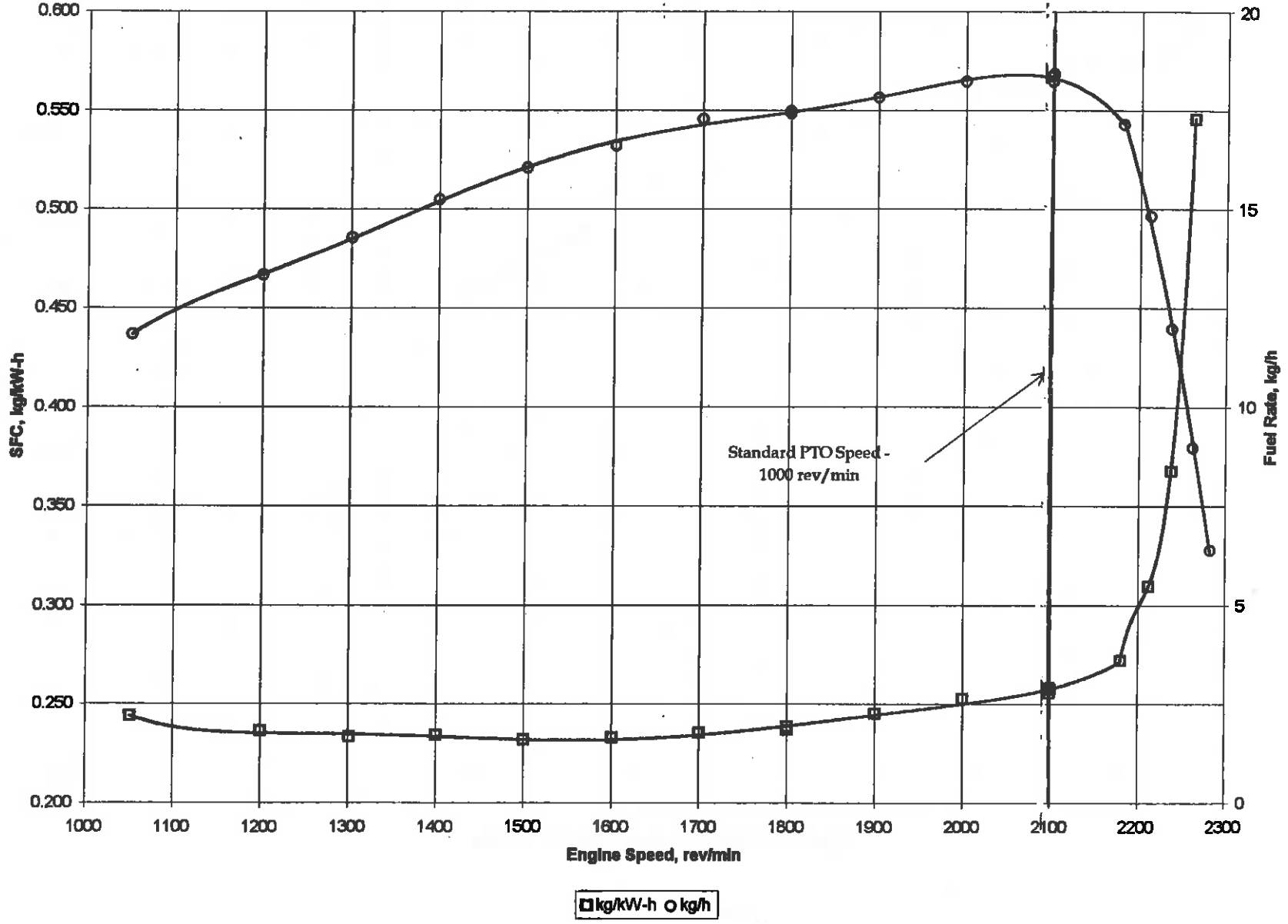
Date of tests: 15,16-Oct-97 | Fuel density: 7.043 lb/gal
Type of track: Concrete | Test number: 1739

Gear	Gear designation	Power hp	Pull lb	Speed mph	Engine speed rev/min	Slip	SFC lb/hp.h	SFE hp.h/gal	Temperature, deg F Fuel	Coolant	Oil	Dry	Wet	Rel hum-idity	Baro. Pres in Hg
I. Maximum Power (unballasted, 4wd at 1800 rev/min)							Tire pressure:		16 psig, rear		16 psig, front	Drawbar height:		21.5 in	
2	A2	57.23	12891	1.66	2202	15%	0.590	11.94	143	184	230	64	54	53%	29.19
3	A3	69.14	12922	2.01	2184	14%	0.542	13.01	143	184	231	62	53	56%	29.20
4	A4	82.75	12645	2.45	2081	10%	0.488	14.44	143	190	236	61	52	56%	29.21
5	B1	87.22	11323	2.89	1977	7%	0.457	15.42	143	191	237	58	50	58%	29.23
6	B2	87.10	10273	3.18	1801	6%	0.440	16.01	140	193	235	68	55	44%	29.18
7	B3	87.45	8479	3.87	1801	5%	0.436	16.14	141	193	236	69	56	45%	29.18
8	C1	87.35	7605	4.31	1806	4%	0.438	16.09	141	193	234	66	55	51%	29.18
9	B4	86.46	6752	4.80	1805	4%	0.443	15.88	140	192	235	67	55	47%	29.18
10	C2	86.76	6244	5.21	1799	3%	0.441	15.98	142	193	234	66	55	51%	29.18
11	C3	86.25	5137	6.30	1806	3%	0.444	15.85	142	194	236	65	55	54%	29.18
12	C4	83.33	4040	7.74	1799	2%	0.459	15.33	141	194	233	65	55	54%	29.18
13	D1	81.34	3351	9.10	1796	2%	0.470	14.97	140	194	229	65	55	54%	29.18
II. Part loads (unballasted, 4wd)															
II.1 in selected gear at maximum power at rated engine speed.															
7	B3	84.71	6991	4.54	2098	4%	0.474	14.87	143	192	235	66	55	51%	29.18
II.1.1 75% of pull at maximum power at rated engine speed															
7	B3	67.28	5244	4.81	2198	3%	0.524	13.44	143	187	230	57	50	63%	29.33
II.1.2 50% of pull at maximum power at rated engine speed															
7	B3	45.96	3504	4.92	2227	2%	0.620	11.35	143	186	226	60	53	64%	29.31
II.1.3higher gear at reduced engine speed, same pull and travel speed as II.1.1															
8	C1	67.21	5245	4.81	1988	3%	0.490	14.38	143	188	227	58	51	63%	29.32
II.1.4 higher gear at reduced engine speed, same pull and travel speed as II.1.2															
8	C1	45.99	3510	4.91	2015	2%	0.576	12.23	142	185	222	60	53	64%	29.31
II.1.5 higher gear at reduced engine speed, same pull and travel speed as II.1.3															
10	C2	67.25	5239	4.81	1657	3%	0.449	15.67	144	191	225	58	51	63%	29.32
II.1.6 higher gear at reduced engine speed, same pull and travel speed as II.1.4															
10	C2	45.97	3495	4.93	1683	2%	0.515	13.68	143	185	218	60	54	69%	29.31
II.2 in selected gear nearest to 4.6 mph at rated engine speed.															
7	B3	84.71	6991	4.54	2098	4%	0.474	14.87	143	192	235	66	55	51%	29.18
II.2.1 75% of pull at maximum power at rated engine speed															
7	B3	67.28	5244	4.81	2198	3%	0.524	13.44	143	187	230	57	50	63%	29.33
II.2.2 50% of pull at maximum power at rated engine speed															
7	B3	45.96	3504	4.92	2227	2%	0.620	11.35	143	186	226	60	53	64%	29.31
II.2.3 higher gear at reduced engine speed, same pull and travel speed as II.2.1															
8	C1	67.21	5245	4.81	1988	3%	0.490	14.38	143	188	227	58	51	63%	29.32
II.2.4 higher gear at reduced engine speed, same pull and travel speed as II.2.2															
8	C1	45.99	3510	4.91	2015	2%	0.576	12.23	142	185	222	60	53	64%	29.31
II.2.5 higher gear at reduced engine speed, same pull and travel speed as II.2.3															
10	C2	67.25	5239	4.81	1657	3%	0.449	15.67	144	191	225	58	51	63%	29.32
II.2.6 higher gear at reduced engine speed, same pull and travel speed as II.2.4															
10	C2	45.97	3495	4.93	1683	2%	0.515	13.68	143	185	218	60	54	69%	29.31

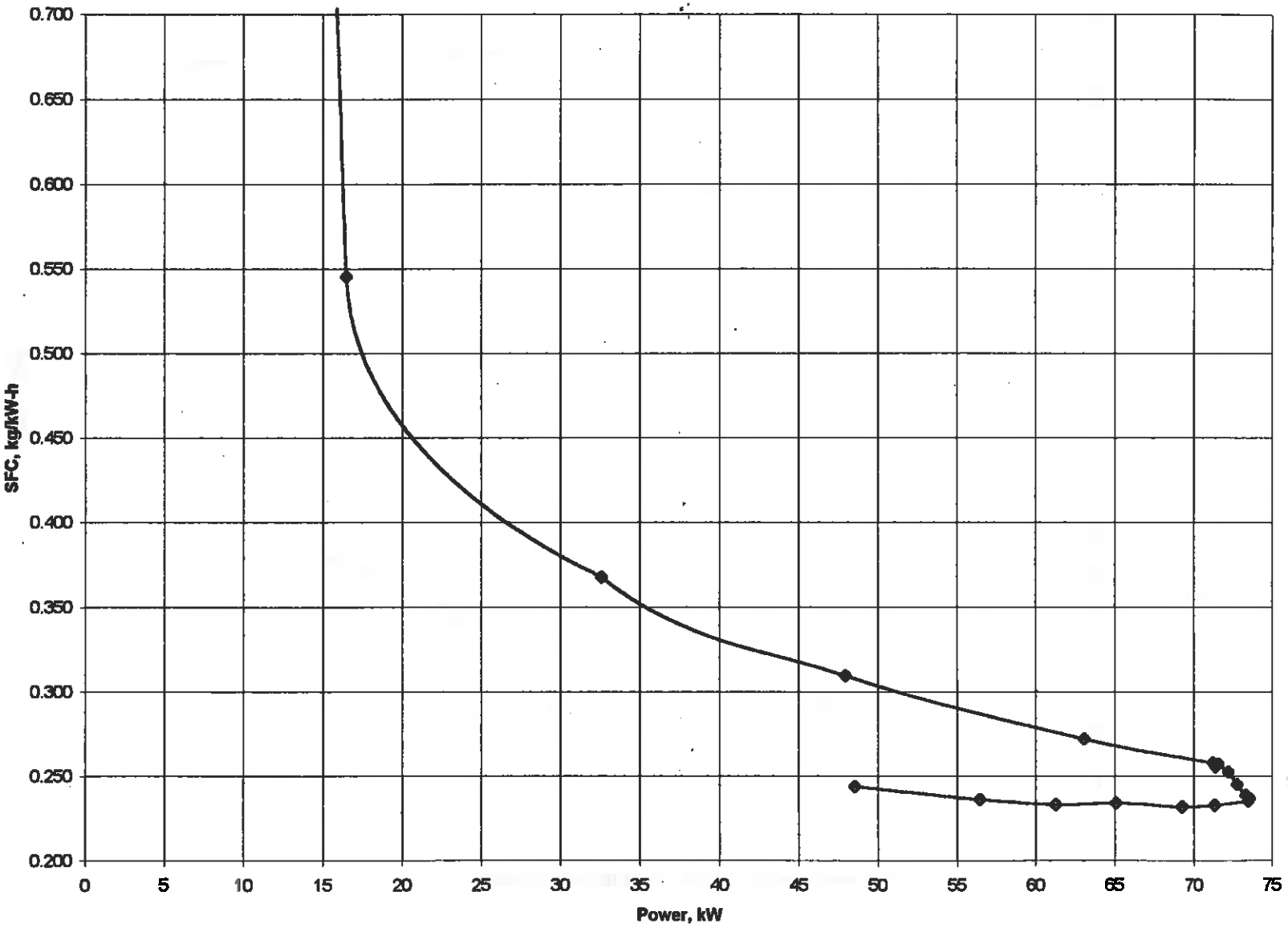
Power and Equivalent Crankshaft Torque



Specific Fuel Consumption and Fuel Rate



Power and Specific Fuel Consumption



2.2 POWER LIFT TEST. Cat II,with lift cylinders 2 x 80 mm
(for settings see p. 10)
Date of test: 1 June 1994
The data presented here is from OECD test 1537 done on the John Deere 7200 SP which has the mechanically identical hitch system.

		Hitch points	Frame
Lower hitch points above ground - down position:	[mm/in]	188/7.4	79/3.1
Vertical movement:			
without load:	[mm/in]	708/27.9	956/37.6
with load:	[mm/in]	696/27.4	947/37.3
Maximum corrected force through full range:	[kN/lb]	53.4/12002	34.6/7790
Corresponding pressure:	[kPa/psi]	18306/2655	
Moment about rear axle:	[kN.m/lb.ft]	59.9/44206	60.0/44270
Maximum mast tilt angle:	[deg]	--	13.5

Lifting height relative to horizontal position of lower links.

	[mm]	472	-363	-300	-201	-99	0
	[in]	-18.6	-14.3	-11.8	-7.9	-3.9	0
Corrected lift forces							
Hitch point.	[kN]	--	54.0	53.4	53.5	54.2	54.7
	[lb]	--	12141	12002	12038	12191	12294
at frame	[kN]	45.2	42.4	41.6	--	40.9	39.8
	[lb]	10157	9540	9360	--	9194	8955

Lifting height relative to horizontal position of lower links.

	[mm]	99	201	300	333	427	475
	[in]	3.9	7.9	11.8	13.1	16.8	18.7
Corrected lift forces							
Hitch point	[kN]	55.5	56.6	57.8	57.8	--	--
	[lb]	12479	12722	12996	12992	--	--
at frame	[kN]	38.6	--	37.1	36.3	35.4	34.6
	[lb]	8667	--	8343	8159	7965	7790

OPTIONAL TESTS - Unballasted, Front Drive Disengaged, 2100 rev/min

Tests conducted under the responsibility of the Nebraska Tractor Test Laboratory

OECD Drawbar Data (SI)

Date of tests: 15,16-Oct-97 — Fuel density: 0.844 kg/l

Type of track: Concrete — Test number: 1739

Gear	Gear designation	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg C					Rel hum-idity	Baro. Pres
		kW	kN	km/h	rev/min		kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet		kPa
I. Maximum Power (unballasted, 2wd at 2100 rev/min)							Tire pressure:		110 kPa, rear		110 kPa, front	Drawbar height:		546 mm	
4	A4	52.17	49.06	3.83	2176	15%	0.339	2.49	61	86	111	15	11	59%	98.98
5	B1	62.64	46.48	4.85	2101	7%	0.293	2.88	61	87	113	13	9	62%	99.02
6	B2	62.66	38.09	5.92	2099	5%	0.290	2.91	60	89	115	20	13	44%	98.81
7	B3	62.97	31.56	7.18	2101	4%	0.290	2.91	60	89	114	21	13	45%	98.81
8	C1	62.84	28.40	7.97	2098	4%	0.290	2.91	60	88	114	19	13	51%	98.81
9	B4	61.99	25.15	8.87	2094	3%	0.294	2.87	60	88	113	19	13	47%	98.81
10	C2	61.93	22.99	9.70	2104	3%	0.293	2.88	61	88	113	19	13	51%	98.81
11	C3	62.20	19.26	11.63	2095	2%	0.292	2.89	61	88	114	18	13	54%	98.81
12	C4	59.85	15.03	14.33	2099	2%	0.304	2.78	61	88	114	18	13	54%	98.81
II. Part loads (unballasted, 2wd)															
II.1 in selected gear at maximum power at rated engine speed.															
7	B3	62.97	31.56	7.18	2101	4%	0.290	2.91	60	89	114	21	13	45%	98.81
II.1.1 75% of pull at maximum power at rated engine speed															
7	B3	50.21	23.68	7.63	2199	3%	0.314	2.69	61	86	110	14	10	63%	99.32
II.1.2 50% of pull at maximum power at rated engine speed															
7	B3	34.21	15.79	7.80	2228	2%	0.371	2.27	62	84	108	16	12	64%	99.26
II.1.3 higher gear at reduced engine speed, same pull and travel speed as II.1.1															
10	C2	50.12	23.67	7.62	1655	3%	0.269	3.13	62	88	108	15	11	64%	99.26
II.1.4 higher gear at reduced engine speed, same pull and travel speed as II.1.2															
10	C2	34.24	15.69	7.85	1690	2%	0.306	2.76	61	84	102	16	12	69%	99.26

OPTIONAL TESTS - Unballasted, Front Drive Disengaged, 2100 rev/min

Tests conducted under the responsibility of the Nebraska Tractor Test Laboratory

OECD Drawbar Data (US)

Date of tests: 15,16-Oct-97 — Fuel density: 7.043 lb/gal

Type of track: Concrete — Test number: 1739

Gear	Gear designation	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg F					Rel hum-idity	Baro. Pres
		hp	lb	mph	rev/min		lb/hp.h	hp.h/gal	Fuel	Coolant	Oil	Dry	Wet		in Hg
I. Maximum Power (unballasted, 2wd at 2100 rev/min)							Tire pressure:		16 psig, rear		16 psig, front	Drawbar height:		21.5 in	
4	A4	69.96	11030	2.38	2176	15%	0.557	12.64	142	186	232	59	51	59%	29.23
5	B1	84.00	10449	3.01	2101	7%	0.482	14.60	143	189	235	56	49	62%	29.24
6	B2	84.03	8562	3.68	2099	5%	0.477	14.76	140	192	239	68	55	44%	29.18
7	B3	84.45	7096	4.46	2101	4%	0.476	14.80	141	192	238	69	56	45%	29.18
8	C1	84.27	6384	4.95	2098	4%	0.476	14.78	140	191	237	66	55	51%	29.18
9	B4	83.13	5654	5.51	2094	3%	0.483	14.59	140	190	236	67	55	47%	29.18
10	C2	83.05	5169	6.03	2104	3%	0.482	14.63	141	190	236	66	55	51%	29.18
11	C3	83.41	4330	7.22	2095	2%	0.481	14.65	141	191	237	65	55	54%	29.18
12	C4	80.26	3379	8.91	2099	2%	0.499	14.11	141	191	237	65	55	54%	29.18
II. Part loads (unballasted, 2wd)															
II.1 in selected gear at maximum power at rated engine speed.															
7	B3	84.45	7096	4.46	2101	4%	0.476	14.80	141	192	238	69	56	45%	29.18
II.1.1 75% of pull at maximum power at rated engine speed															
7	B3	67.33	5325	4.74	2199	3%	0.516	13.65	143	186	231	57	50	63%	29.33
II.1.2 50% of pull at maximum power at rated engine speed															
7	B3	45.87	3550	4.85	2228	2%	0.610	11.54	143	184	227	60	53	64%	29.31
II.1.3higher gear at reduced engine speed, same pull and travel speed as II.1.1															
10	C2	67.22	5322	4.74	1655	3%	0.443	15.91	144	190	226	59	52	64%	29.31
II.1.4 higher gear at reduced engine speed, same pull and travel speed as II.1.2															
10	C2	45.91	3528	4.88	1690	2%	0.503	14.01	143	184	216	60	54	69%	29.31

Optional Tests - Unballasted, Front Drive Engaged, Rated Engine Speed

OECD Drawbar Data (SI)

Date of tests:		15-Oct-97			Fuel density:	0.844 kg/l									
Type of track:		Concrete			Test number:	1739									
Gear	Gear designation	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg C					Rel hum-idity	Baro. Pres
		kW	kN	km/h	rev/min		kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet		kPa
I. Maximum Power (unballasted, 4wd at 2100 rev/min)							Tire pressure:		110 kPa, rear		110 kPa, front	Drawbar height:		546 mm	
3	A3	51.03	57.74	3.18	2184	15%	0.334	2.52	61	85	111	17	12	56%	98.88
4	A4	61.51	54.95	4.03	2103	9%	0.298	2.83	61	87	113	16	11	60%	98.95
5	B1	63.77	46.01	4.99	2101	6%	0.288	2.94	62	87	113	14	9	58%	99.02
6	B2	63.00	37.43	6.06	2099	5%	0.289	2.92	60	89	114	21	13	45%	98.81
7	B3	63.17	31.10	7.31	2098	4%	0.288	2.93	62	89	113	19	13	51%	98.81
8	C1	62.27	27.55	8.14	2103	3%	0.292	2.89	60	89	113	19	13	47%	98.81
9	B4	60.90	24.21	9.06	2097	3%	0.299	2.82	60	88	113	20	13	44%	98.81
10	C2	61.04	22.31	9.85	2099	3%	0.299	2.83	60	89	113	19	13	51%	98.81
11	C3	60.49	18.40	11.84	2097	2%	0.300	2.81	61	88	114	18	13	54%	98.81
12	C4	57.50	14.18	14.60	2102	2%	0.317	2.66	60	88	113	18	13	54%	98.81

Optional Tests - Unballasted, Front Drive Engaged, Rated Engine Speed

OECD Drawbar Data (US)

Date of tests:		15-Oct-97			Fuel density:	7.043 lb/gal									
Type of track:		Concrete			Test number:	1739									
Gear	Gear designation	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg F					Rel hum-	Baro. Pres
		hp	lb	mph	rev/min		lb/hp.h	hp.h/gal	Fuel	Coolant	Oil	Dry	Wet	idity	in Hg
I. Maximum Power (unballasted, 4wd at 2100 rev/min)						Tire pressure:		16 psig, rear		16 psig, front		Drawbar height:		21.5 in	
3	A3	68.43	12980	1.98	2184	15%	0.550	12.82	143	186	232	62	53	56%	29.20
4	A4	82.49	12353	2.50	2103	9%	0.490	14.37	143	189	235	60	52	60%	29.22
5	B1	85.51	10343	3.10	2101	6%	0.473	14.90	144	189	235	57	49	58%	29.24
6	B2	84.49	8415	3.76	2099	5%	0.475	14.84	140	193	237	69	56	45%	29.18
7	B3	84.71	6991	4.54	2098	4%	0.474	14.87	143	192	235	66	55	51%	29.18
8	C1	83.51	6195	5.06	2103	3%	0.481	14.65	140	192	236	67	55	47%	29.18
9	B4	81.67	5443	5.63	2097	3%	0.492	14.31	140	191	235	68	55	44%	29.18
10	C2	81.86	5016	6.12	2099	3%	0.491	14.34	141	193	235	66	55	51%	29.18
11	C3	81.12	4136	7.35	2097	2%	0.493	14.28	141	190	237	65	55	54%	29.18
12	C4	77.11	3187	9.07	2102	2%	0.521	13.53	140	190	236	65	55	54%	29.18

Remarks : None
Repairs : None