OECD APPROVAL # 1421
(Restricted code)
Date of approval: 20 January 1993

NEBRASKA TRACTOR TESTING LABORATORY
DEPARTMENT OF AGRICULTURAL ENGINEERING
INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES
UNIVERSITY OF NEBRASKA - EAST CAMPUS
LINCOLN, NEBRASKA 68583-0832, USA

REPORT ON TEST IN ACCORDANCE WITH OECD RESTRICTED CODE (CODE II)

FOR THE OFFICIAL TESTING OF AGRICULTURAL TRACTORS

JOHN DEERE 5200 MFWD (4WD)



MANUFACTURED BY: John Deere Commercial Products Inc.
P.O.Box 15458
Augusta, GA 30919 USA

NEBRASKA TEST NO. 1660

Test dates: September-October 1992

This test report provides the results of the tests conductedin accordance with the OECD Standard Test Code for the Official Testing of Agricultural Tractor Performance - C(87)53 Final - Annex II, Restricted Code.

This report has been approved by the OECD Coordinating Centre in Paris (CEMAGREF) on 20 January, 1993

John Deere 5200 (MFWD) OECD # 1421

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SPECIFICATIONS OF TRACTOR.

Manufacturers name/address	John Deere Commercial Products Inc. P.O.Box 15458, Augusta Georgia, USA
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	134 hours
Location of Test	Tractor Testing Laboratory Lincoln, Nebraska,USA.

TRACTOR SPECIFICATIONS.

Make	John Deere
Model	5200
Type	Unit construction, mechanical front wheel drive (MFWD)
Number of driving wheels	4
Serial Number	LV5200C-110022
1st Serial number	LV5200C-110000

ENGINE.

Make	John Deere
Model	3029
Type	Diesel; 4-stroke; Naturally Aspirated, direct injection
Serial Number	CD 3029D 104433
Cylinders	
Number/Disposition	3, in-line, vertical
Bore/stroke	106.4 mm x 110 mm (4.189 in x 4.33 in)
Capacity	2943 ml (179.6 in^3)
Compression Ratio	17.8 - 1
Arrangement of valves	Overhead
Cylinder liners	Wet; replaceable
Super charging	None
Fuel System	
Feed system	Gravity
Make/Type/Model of filters	Stanadyne/RE50455/2-stage filter
Fuel tank capacity	68.1 liters (18 US gallons)
Make/Model/Type Injection Pump	CAV/DPA2 3239F200W(RE45524)/ Rotary; electric shutoff
Pump Serial number	11489 MJG

Production setting of pump	
Flow Rate (Rated Eng.Spd & Full Load)	7.95 +/- 0.35 kg/hour (17.53 +/- 0.77 lbs/hr)
Make/Model/Type Injectors	Stanadyne/RE36936/Pencil
Injection pressure	400-500 bar (5804-7255 psi)
Timing	18 degrees BTDC
Governor	
Make/Model/Type	CAV/mechanical
Governed engine speed range	From 750 to 2575 rev/min
Rated engine speed	2400 rev/min
High-idle speed range	2575 +/- 25 rpm
Air Cleaner.	
Main Cleaner	
Make/Model/Type	Nelson/RE45825/Cellulose fiber paper; pleated
Air Intake Location	Under hood
Secondary cleaner	Nelson/RE45826/polyester felt; oiled; single wrap
Maintenance indicator	Dash mounted warning light
Lubrication system.	
Type of feed pump	Gear pump; engine driven
Type of filters	Full flow
Number	One spin-on.
Oil cooler	None
Cooling system.	
Type of coolant	Liquid
Type of pump	Centrifugal, belt driven
Fan specification	Belt driven; Suction type; steel
Number of fan blades	7
Fan diameter	405 mm (15.9 in)
Coolant system capacity	9.5 l (9.8 US qt)
Type of temperature control	Thermostat
Superpressure system	48 kPa (6.96 psi)
Starting system.	
Make/Model/Type of starter	Delco/RE50095/Electric
Power Rating	2.5 kW (3.35 hp)
Cold starting aid	Electrical resistance plug in air intake
Safety device	Electrical lockout on gearshift

Electrical system.	
Voltage & grounding.	12 Volt DC;negative ground
Generator	
Make/Model/Type	Nippondenso/RE42778/Belt driven
Power rating	40 Amp at 1500 engine rpm. 13.5 Volt at 25°C Ambient.
Batteries	
Number & connection	One 12 Volt battery
Rating	700 cold cranking amps min at -18°C. 100 Amp at 20 hr rating
Exhaust system.	
Muffler	
Make/Model/Type	Nelson/RE42628/Expansion chamber
Location	Horizontal;under hood
Exhaust stack location	Vertical; left side of engine.

TRANSMISSION.

Clutch. (travel)	
Make/Model/Type	Carraro/RE42515/Dry clutch
Number of plates	One
Plate diameter	280 mm (11 in)
Method of operation	Mechanical; pedal actuated
Gear Box.	
Make/Model/Type	Kanzaki/RE42421/Collar shift
Arrangement	3-speed main gearbox ahead of a 3-speed range;
Number of gears	9 forward and 3 reverse operated by two hand levers
Oil cooler	None
Available options	MFWD ; Creeper range
Rear axle and final drives.	
Make/Model/Type	John Deere/AL76856/Planetary
Differential Lock	
Type	Mechanical
Method of engagement	Pedal
Method of disengagement	Self-disengaging by brake pedal
Front Axle and final drives.	
Make/Model/Type	Carraro/RE40638/mechanical
Differential lock	None

Gear ratios and travel speeds.

(Tire dynamic radius of 670 mm (26.3 in) ISO 4251/1-1984)

Gear Number	Number of engine revolutions for one revolution of the driving wheels	Nominal travel speed at rated engine speed of 2400 rev/min [km/h]	[mph]
Forward			
I-1	289.78	2.09	1.30
I-2	200.71	3.02	1.88
I-3	147.18	4.12	2.56
II-1	125.32	4.84	3.00
II-2	86.80	6.98	4.34
II-3	63.65	9.52	5.91
III-1	45.64	13.28	8.25
III-2	31.61	19.18	11.91
III-3	23.18	26.15	16.24
Reverse			
I	172.42	3.52	2.19
II	74.57	8.13	5.05
III	27.16	22.32	13.86

Number of front wheel revolutions
for one rear wheel revolution: 1.35

Creeper gear ratios and travel speeds.
(not supplied with tested tractor)

(Tire dynamic radius of 670 mm (26.3 in) ISO 4251/1-1984)

Gear Number	Number of engine revolutions for one revolution of the driving wheels	Nominal travel speed at rated engine speed of 2400 rev/min [km/h]	[mph]
Forward			
C-1	1770.28	0.34	0.21
C-2	1226.15	0.49	0.30
C-3	899.14	0.67	0.42
Reverse			
C-R	1053.32	0.58	0.36

POWER - TAKE - OFF.

Main Power-Take-Off.

Type	Independent
Method of engagement	Mechanically actuated single plate dry clutch operated by hand lever
Number of shafts	One
Method of changing speeds	None

Standard PTO. 540 rev/min.

Location	Rear of tractor; center plane
Diameter of shaft	35 mm (1.375 in)
Number of splines	6; conforms to ISO 500/1979.
Height above ground	666 mm (26.22 in)
Distance from median plane of tractor	0 mm
Distance behind rear axle	426 mm (16.77 in)
PTO Speed at rated engine spd	545 rev/min
Engine speed at Std. PTO spd	2376 rev/min
Engine speed/PTO speed ratio	4.4:1 (66/15)
Power restriction	None
Direction of rotation when viewed from shaft end	Clockwise.

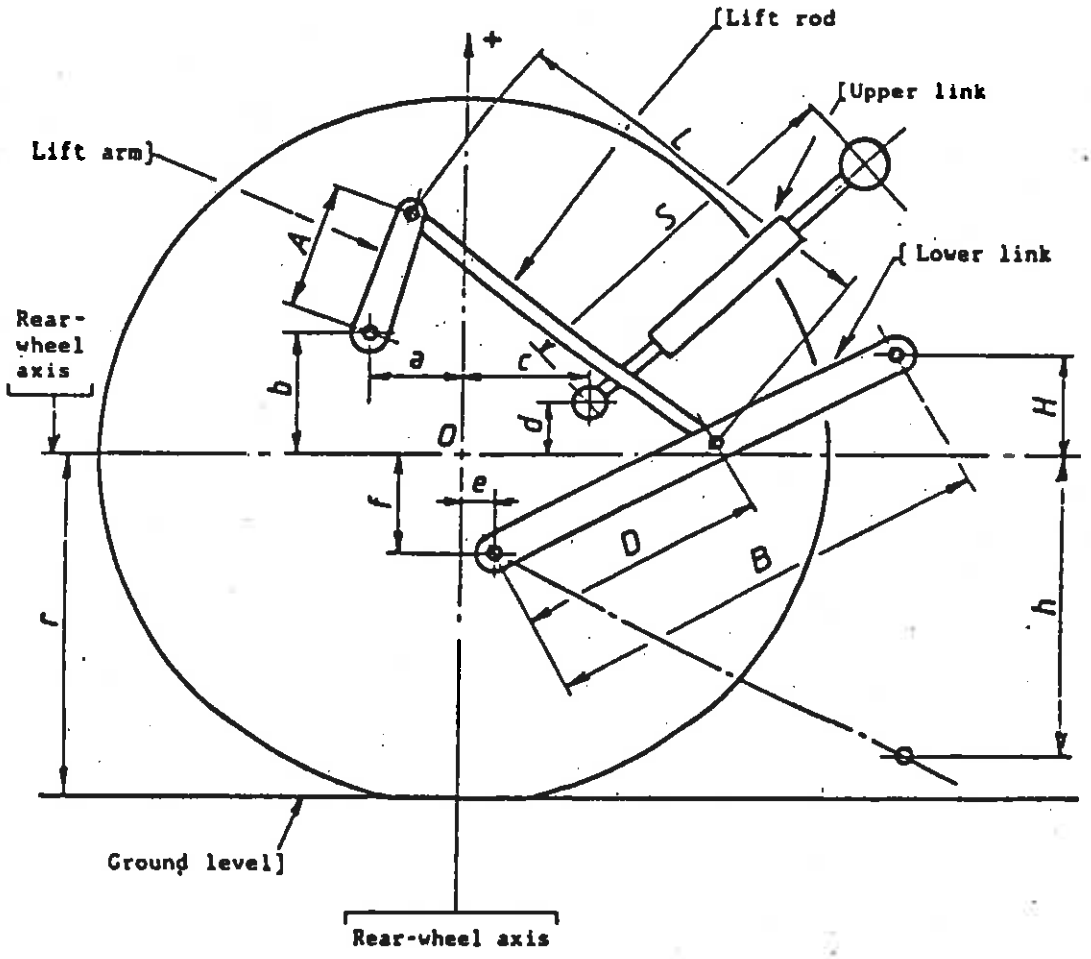
POWER LIFT.

Make/Model/Type	John Deere/RE46019/Draft and position control sensing through top link.
Type of hydraulic system	Open center
Number/Type of cylinders	One internal, single acting
Type of linkage lock for transport	Rate of drop valve can be fully closed to lock hitch by parking lever in notch on quadrant.
Relief valve spressure setting	190 -0/+7 bar (2757 -0/+102 psi)
Opening pressure of cylinder safety valve	235 +/- 5 bar (3410 +/- 73 psi)
Lift pump type	Gear
Power transmission to pump	Gear drive
Type/Number of filters	Pleated polyester felt/one
Location of oil reservoir	Transmission housing
Number/Type/Location of tapping points.	Up to 3 pairs of ISO standard couplings at rear of tractor.
Max. oil volume available for external cylinders.	10 liters (2.64 gallons)

THREE POINT LINKAGE.

- Category 2 in conformity with	ISO 730/1-1990
- Category adaptor	Convertible to Category I

THREE POINT LINKAGE



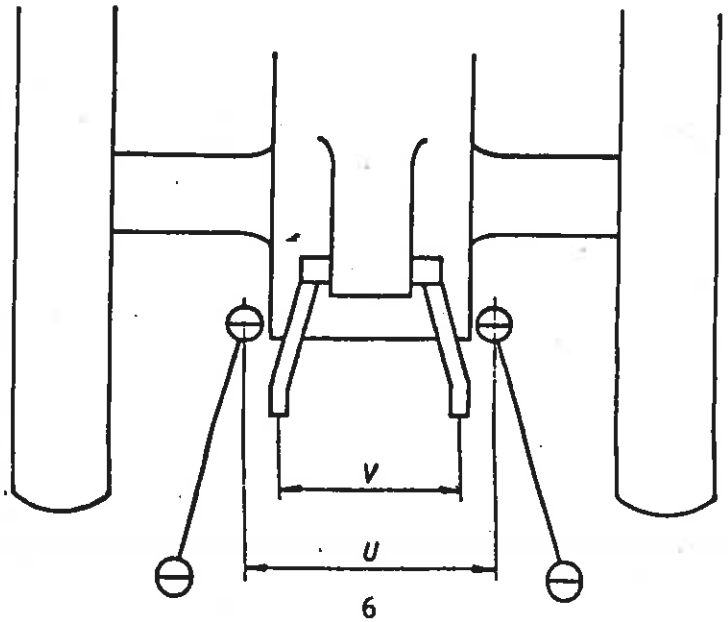


Table 1.1 -*Linkage geometry dimensions.

		Dimension or range		Settings used on test	
		[mm]	[in]	[mm]	[in]
Lift category		II		same	
Rear Tire - Radius Index	(r)	670	26.4	same	
Front Tire - Radius Index	(r')	495	19.5	same	
Length of lift arms	(A)	280	11.0	same	
Length of lower links	(B)	836	32.9	same	
Distance of lift arm pivot from: horizontal	(a)	173	6.8	same	
rear wheel axis: vertical	(b)	311	12.2	same	
Horizontal distance between the 2 lower link points	(U)	405	15.9	same	
Horizontal distance between the 2 lift arm end points	(V)	530	20.9	same	
Length of upper link	(S)	500	19.7	613	24.1
	to	700	27.6		
Distance of upper link pivot point from rear wheel axis					
Top Hole - horizontal	(c)	384	15.1	same	
- vertical	(d)	284	11.2	same	
Center Hole - horizontal	(c)	400	15.7	not used	
- vertical	(d)	250	9.8	not used	
Bottom Hole - horizontal	(c)	400	15.7	not used	
- vertical	(d)	213	8.4	not used	
Distance of lower link pivot to rear wheel axis.					
- horizontal	(e)	160	6.3	same	
- vertical	(f)	166	6.5	same	
Distance of lower link pivot points to lift rod pivot pts on lower links.	(D)	424	16.7	same	
Length of lift rods	(L)	475	18.7	527	20.7
	to	575	22.6		
Height of lower hitch points relative to rear wheel axis					
In low position	(h)	363	14.3	492	19.4
	to	573	22.6		
In high position	(H)	97	3.8	168	6.6
	to	272	10.7		
Height above ground of lower hitch points when locked in transport position.		767	30.2	838	33.0
	to	942	37.1		

*Assuming (r) with a tire dynamic index of 670 mm (26.4 in)
ISO 4251/1-1984

SWINGING DRAWBAR.

Type	Swinging
Height above ground	450 mm (17.7")
Adjustments	Fore/aft with removable pin
Distance of hitch point from rear wheel axis-horizontal	615/782 mm (24.1/30.8")
Distance of hitch point from PTO shaft end: Vertical	220 mm (8.7")
Horizontal	189/356 mm (7.4/14.0")
Lateral adjustment-Right side	239 mm (9.4")
Left side	239 mm (9.4")
Distance of pivot point from rear wheel axis-horizontal	358 mm (14.1")
Diameter of drawbar pin hole	19.8 mm (0.8")
Maximum vertical static permissible load	Position 1: 11.0 kN (2475 lb) Position 2: 7.12 kN (1602 lb)

STEERING.

Make/Model/Type	Danfoss/Hydrostatic
Method of operation	Steering wheel
Pump	Gear pump,engine mounted
Ram(s)	One double acting cylinder
Working pressure	130 bar Max (1886 psi)

BRAKES.

Service brake.

Make/Model/Type	John Deere/Wet disk
Method of operation	Hydraulical; operated by two pedals which can be locked together.

Parking brake.

Type	Transmission lock;
Method of operation	Gear selector lever engages park pawl in gear box.

Trailer Brake — None

WHEELS.

Number.	
Front	Two; Driving and steering
Rear	Two; Driving
Wheel base	2050 mm (80.7 in)

Track width adjustment

	Minimum [mm]	Minimum [in]	Maximum [mm]	Maximum [in]	Adjustment method
Front	1317	51.9	1982	78.0	Reversing wheels and offset lug rims
Rear	1417	55.8	1820	71.7	Reversing wheels and offset lug rims

PROTECTIVE STRUCTURE.

Make/Model/Type	John Deere/2-post/foldable
Manufacturer's name/address	Crenlo Inc./1600 4th Ave NW Rochester, Minnesota 55901 USA
Protective device	2-post Roll-Gard/Foldable
OECD approval number	None
USA approval number	USA OSHA 29CFR Part 1928/ Subpart C, SAE J1194, May 89

DRIVER'S SEAT.

Make/Model/Type	Milscoe/RE42502/Mechanical
Type of suspension	Back mounted spring
Type of damping	Gas-filled shock absorber
Range of adjustment	16° incline for simultaneous longitudinal and vertical adj
Longitudinal	146 mm (5.7 in)
Vertical	50 mm (2.0 in) plus 42 mm (1.7 in) on incline

LIGHTING.

	Height above ground of center [mm]	Height above ground of center [in]	Size [mm]	Distance from out - side edge to median plane of tractor. [mm]	Distance from out - side edge to median plane of tractor. [in]
Head lights	1269	50.0	106x160	226	8.9
Rear lights	1752	69.0	111x112	507	20.0
Rear reflectors	1676	66.0	40x111	507	20.0

TEST CONDITIONS.

Overall dimensions.

Length		3541 mm (139.4 in)
Width	Minimum	1846 mm (72.7 in)
	Maximum	2249 mm (88.5 in)
Height - Top protective structure		2289 mm (90.1 in)
- Top of exhaust		2334 mm (91.9 in)
Ground clearance. (unballasted)		388 mm (15.3 in)
Clearance-limiting part		Drawbar support bracket

Tractor Mass (with cab,full fuel tank).

		without driver [kg]	without driver [lb]	with driver [kg]	with driver [lb]
Unballasted	Front	922	2032	937	2065
	Rear	1314	2898	1374	3030
	Total	2236	4930	2311	5095
Ballasted	Front	941	2075	956	2108
	Rear	1764	3890	1824	4022
	Total	2705	5965	2780	6130

Ballast.

	Number of weights	Mass (total) [kg]	Mass (total) [lb]	Water [kg]	Water [lb]
Front	0	--	--	--	--
Rear	0	--	--	450	992
Additional: test equipment		19	43	--	--

Tire Specifications.

	Front Wheels	Rear Wheels
Make	Firestone	Firestone
Dimensions	9.5 x 24	16.9 x 28
Ply rating	6	6
Type	Bias	Bias
Max.load (tire manufacturer)	939 kg/tire (2070 lb/tire)	1840 kg/tire (4056 lb/tire)
Max.load (tractor manufacturer)	Same	Same
Inflation pressure (tire mfr)-min	83 kPa/12 psi	83 kPa/12 psi
-max	165 kPa/24 psi	124 kPa/18 psi
Dynamic Radius Index	495 mm/19.5 in	670 mm/26.4 in
Chosen track width	1470 mm/57.9 in	1417 mm/55.8 in

Oils and Lubrication.

Capacity and change interval:

	Capacity liter	Capacity quart	Oil change hours	Filter change hours
Engine (w/o filter)	8.5	9.0	250	250
Gear Box, final drive rear axle and hydraulics	38.0	40.2	1200	250
Front axle	5.0	5.3	600	
Final drive, front	0.6	0.6	600	

Oil and Lubricant specifications:

	Recommended	Used during test
Engine oil		
Type	John Deere, Torq-Gard Supreme, SAE 15W-40	same
Viscosity	102 cSt at 100°C	
Classification	API CE or CD, Mil-L-2104D	
Transmission		
Type	John Deere Hy-Gard, J20C SAE 10W-30	same
Viscosity	58 cSt at 100°C	
Classification	NA	
Hydraulic fluid	Same as transmission	same
Front axle and hubs		
Type	John Deere GL-5 Gear Lubricant, SAE 80W-90	same
Viscosity		
Classification	APL GL-5	
Steering system	Same as transmission	same
Grease	John Deere High Temp. Extreme pressure, non clay	same
Number of lube points	8	

Fuel

Type/grade	Premier; Grade 2-D, in conformity with the national standard
Density (Pto test)	0.8392 g/cubic-cm (6.987 lb/gallon) at 15° C (59° F)
(Drawbar test)	same as Pto test.
Cetane number	53.9
Viscosity	2.31 cSt at 37.8° C (100° F)

COMPULSORY TESTS

1. MAIN POWER TAKE-OFF

Date: 17-Sep-92 Location: UNL Tractor Test Lab, Lincoln, NE, U.S.A.

Type of dynamometer: Eddy current, Eaton Fuel density: 6.987 lb/gal

Power kW *hp*	Eng rev/min	PTO rev/min	l/h *gal/h*	kg/h *lb/h*	kg/kW-hr *lb/hp-hr*	kW-hr/l *hp-hr/gal*
1.1 Maximum Power – 2 hours						
31.24	2246	511	9.49	7.94	0.254	3.29
41.90			*2.51*	*17.52*	*0.418*	*16.71*
1.2 Power at Rated Engine Speed – 1 hour						
30.66	2399	545	9.56	8.01	0.261	3.21
41.12			*2.53*	*17.65*	*0.429*	*16.28*
1.3 Power at Standard Power Take-Off Speed – 1 hour						
30.66	2399	545	9.49	7.94	0.261	3.23
41.12			*2.51*	*17.52*	*0.429*	*16.40*
1.4 Part Loads						
1.4.1 Torque at maximum power at rated engine speed						
30.66	2399	545	9.56	8.01	0.261	3.21
41.12			*2.53*	*17.65*	*0.429*	*16.28*
1.4.2 85% of torque obtained in 1.4.1						
26.74	2466	561	8.45	7.08	0.265	3.16
35.86			*2.23*	*15.60*	*0.435*	*16.06*
1.4.3 75% of torque defined in 1.4.2						
20.36	2503	569	7.15	5.99	0.294	2.85
27.30			*1.89*	*13.20*	*0.484*	*14.45*
1.4.4 50% of torque defined in 1.4.2						
13.60	2509	570	6.01	5.03	0.370	2.26
18.24			*1.59*	*11.10*	*0.609*	*11.48*
1.4.5 25% of torque defined in 1.4.2						
6.84	2524	574	4.71	3.95	0.577	1.45
9.18			*1.25*	*8.70*	*0.948*	*7.37*
1.4.6 unloaded						
0.33	2538	577	3.25	2.72	8.306	0.10
0.44			*0.86*	*6.00*	*13.656*	*0.51*
1.5 Part Loads at Standard Power Take-off Speed						
1.5.1 Torque at maximum power						
30.66	2399	545	9.49	7.94	0.261	3.23
41.12			*2.51*	*17.52*	*0.429*	*16.40*
1.5.2 85% of torque obtained in 1.5.1						
26.74	2466	561	8.45	7.08	0.265	3.16
35.86			*2.23*	*15.60*	*0.435*	*16.06*
1.5.3 75% of torque defined in 1.5.2						
20.36	2503	569	7.15	5.99	0.294	2.85
27.30			*1.89*	*13.20*	*0.484*	*14.45*
1.5.4 50% of torque defined in 1.5.2						
13.60	2509	570	6.01	5.03	0.370	2.26
18.24			*1.59*	*11.10*	*0.609*	*11.48*
1.5.5 25% of torque defined in 1.5.2						
6.84	2524	574	4.71	3.95	0.577	1.45
9.18			*1.25*	*8.70*	*0.948*	*7.37*
1.5.6 unloaded						
0.33	2538	577	3.25	2.72	8.306	0.10
0.44			*0.86*	*6.00*	*13.656*	*0.51*

No load maximum engine speed:	2538 rev/min	
Equivalent torque at rated speed:	122 N-m	*90 lb-ft*
Equivalent torque at maximum power:	133 N-m	*98 lb-ft*
(engine speed:	2246 rev/min)	
Maximum equivalent crankshaft torque:	156 N-m	*115 lb-ft*
(engine speed:	1320 rev/min)	
Mean Dry bulb:	23 deg C	*74 deg F*
Wet bulb:	15 deg C	*59 deg F*
Relative humidity:	37 %	
Pressure:	98.32 kPa	*29.04 in Hg*
Maximum Coolant:	83 deg C	*182 deg F*
Engine oil:	113 deg C	*235 deg F*
Fuel:	60 deg C	*140 deg F*
Air intake:	27 deg C	*80 deg F*
Transmission/hydraulic oil:	72 deg C	*161 deg F*

2. HYDRAULIC POWER AND LIFTING FORCE.

Date of test: 24 September 1992
Location: TTL/UNL, Lincoln, Nebr.

2.1 HYDRAULIC POWER TEST - HYDRAULIC PUMP PERFORMANCE

Sustained pressure with with relief valve open	19.51 MPa (2830 psi)
Pump delivery rate at minimum pressure & rated engine speed	44.7 l/m (11.8 g/m)

	Flow Rate l/min (gal/min)	Pressure MPa (psi)	Power kW (hp)
At 90% of relief valve setting	34.4 (9.1)	17.6 (2550)	10.1 (13.5)
At maximum hydraulic power.	39.0 (10.3)	16.9 (2450)	11.0 (14.7)

Tapping point	remote hydraulic outlet
Hydraulic fluid temperature at flow meter	67'C (153'F)

2.2 POWER LIFT TEST.

Date of test: 5 October 1992

		Hitch points	Frame
Lower hitch points above ground - down position:	[mm/in]	178/7.0	119/4.7
Vertical movement: without load:	[mm/in]	660/26.0	873/34.4
Vertical movement: with load:	[mm/in]	656/25.8	868/34.2
Maximum corrected force through full range:	[kN/lb]	16.9/3807	12.9/2905
Corresponding pressure:	[kPa/psi]	17561/2547	
Moment about rear axle:	[kN.m/lb.ft]	30.7/22668	31.3/23108
Maximum mast tilt angle:	[deg]	--	14.7

Lifting height relative to horizontal position of lower links.

[mm]	-363	-305	-251	-152	-53	48
[in]	-14.3	-12.0	-9.9	-6.0	-2.1	1.9
Corrected lift forces						
Hitch point. [kN]	--	17.1	16.9	19.1	20.4	21.4
Hitch point. [lb]	--	3847	3807	4293	4595	4811
at frame [kN]	15.0	15.5	--	16.3	16.5	16.4
at frame [lb]	3371	3474	--	3665	3706	3695

Lifting height relative to horizontal position of lower links.

[mm]	147	249	315	350	447	505
[in]	5.8	9.8	11.8	15.8	16.4	19.9
Corrected lift forces						
Hitch point [kN]	21.9	22.1	22.3	20.8	--	--
Hitch point [lb]	4912	4959	5022	4684	--	--
at frame [kN]	--	15.7	--	14.9	14.1	12.9
at frame [lb]	--	3535	--	3343	3164	2905

OECD Drawbar Data (SI)

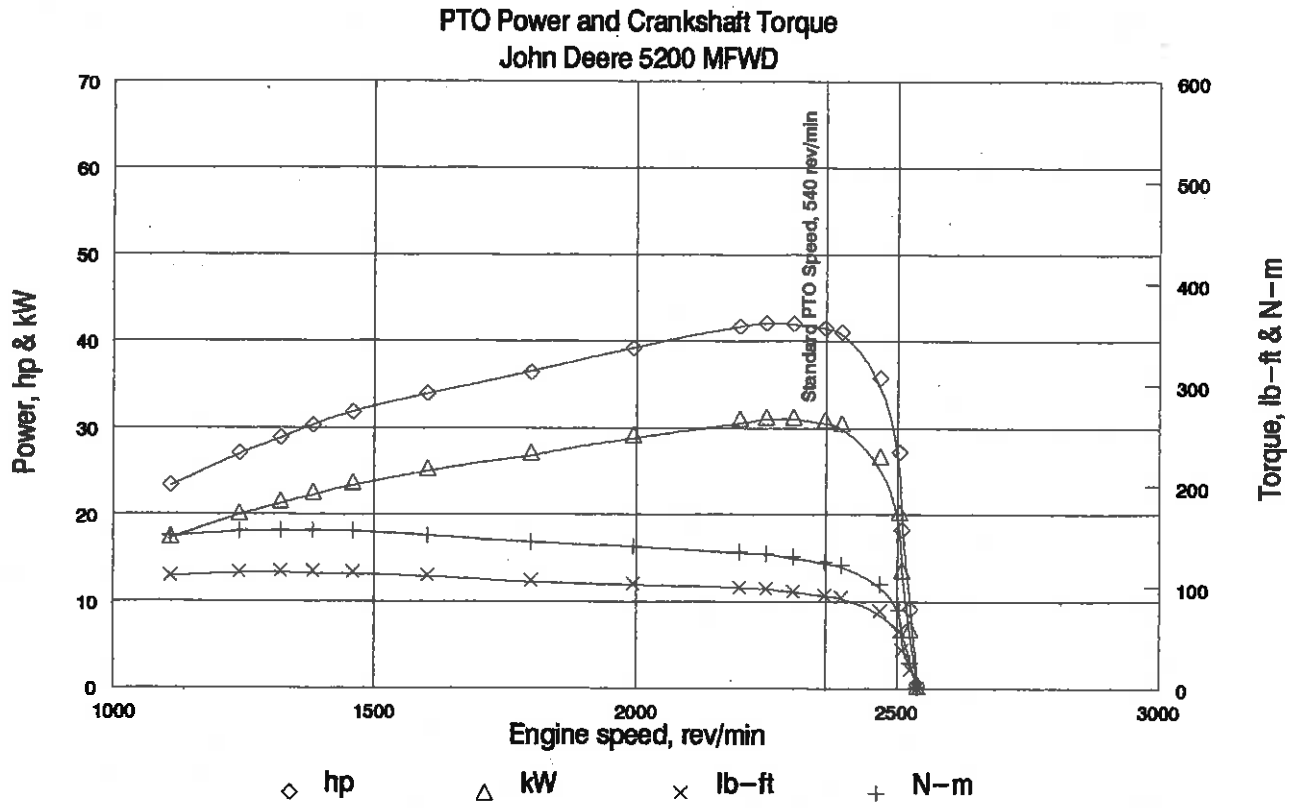
Date of tests: 23 Sep 92 — Fuel density: 0.837 kg/l
Type of track: Concrete — Test number: 1660

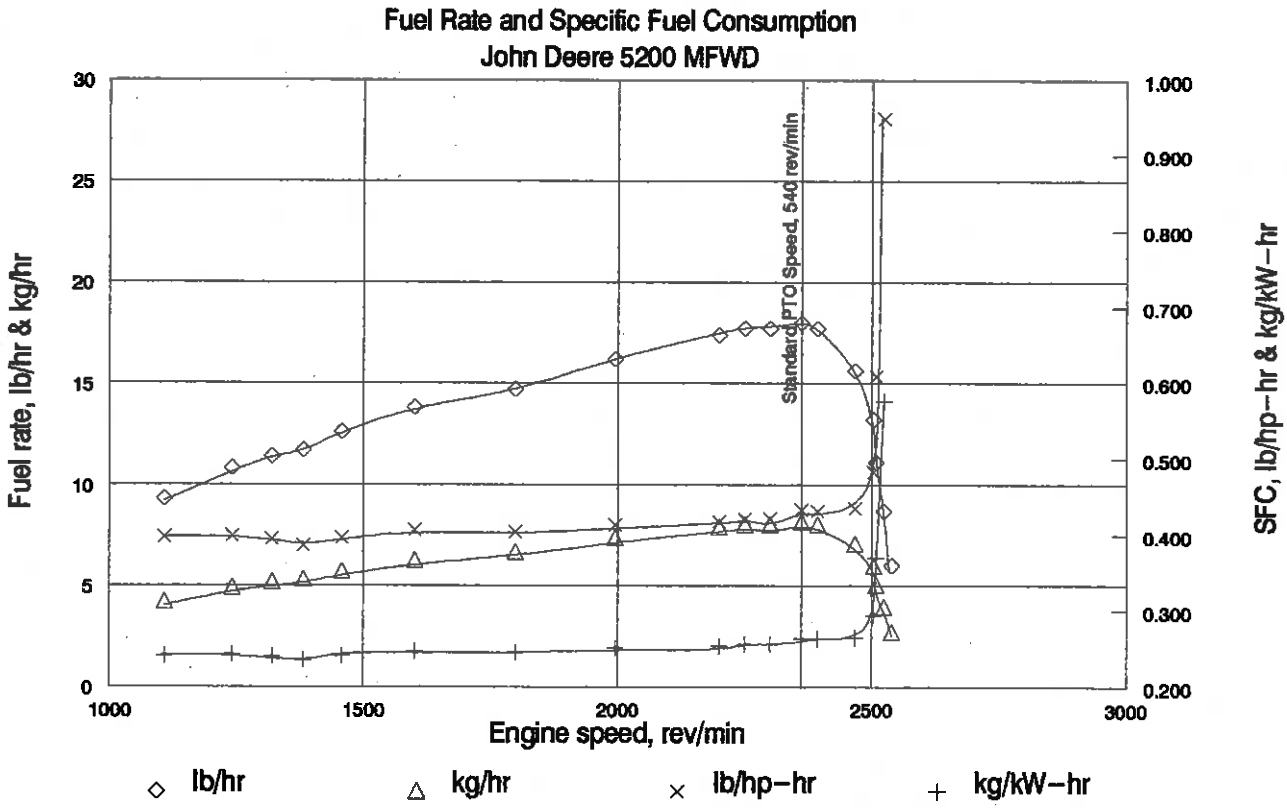
Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg C					Rel humidity	Pressure
	kW	kN	km/h	rev/min		kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet		kPa
I. Maximum Power (unballasted, 4wd at 2250 rev/min)						Tire pressure		83 kPa, rear		83 kPa, front		Drawbar height	419 mm	
2 (I 2)	16.69	22.55	2.66	2498	14.35%	0.375	2.23	58	79	98	16	11	54%	98.81
3 (I 3)	22.86	22.96	3.58	2469	14.50%	0.340	2.46	58	80	99	13	9	59%	98.71
4 (II 1)	25.25	21.54	4.22	2417	12.41%	0.321	2.61	61	81	101	16	11	54%	98.81
5 (II 2)	26.73	15.65	6.15	2296	7.02%	0.301	2.78	61	81	105	18	13	57%	98.81
6 (II 3)	26.62	11.38	8.42	2245	4.54%	0.297	2.82	59	81	104	18	14	65%	98.81
7 (III 1)	26.64	8.05	11.92	2247	3.15%	0.296	2.83	62	81	104	20	13	44%	98.71
II. Part loads (unballasted, 4wd)														
II.1 in selected gear at maximum power														
5 (II2)	26.65	14.88	6.45	2396	6.61%	0.305	2.74	62	81	103	18	13	57%	98.81
II.1.1 75% of pull at maximum power at rated speed														
5 (II2)	21.17	11.17	6.82	2482	4.48%	0.324	2.58	55	81	97	22	16	54%	98.61
II.1.2 50% of pull at maximum power at rated speed														
5 (II2)	14.44	7.43	7.00	2505	2.90%	0.383	2.19	57	80	100	22	16	54%	98.61
II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1														
6 (II3)	21.18	11.19	6.81	1816	4.48%	0.286	2.93	60	82	98	22	16	54%	98.61
II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2														
6 (II3)	14.47	7.42	7.02	1842	3.02%	0.319	2.63	56	80	96	22	16	54%	98.61
II.2 in selected gear nearest to 7.5 km/h														
5 (II2)	26.65	14.88	6.45	2396	6.61%	0.305	2.74	62	81	103	18	13	57%	98.81
II.2.1 75% of pull at maximum power at rated speed														
5 (II2)	21.17	11.17	6.82	2482	4.48%	0.324	2.58	55	81	97	22	16	54%	98.61
II.2.2 50% of pull at maximum power at rated speed														
5 (II2)	14.44	7.43	7.00	2505	2.90%	0.383	2.19	57	80	100	22	16	54%	98.61
II.2.3 next higher gear at reduced engine speed, same pull and travel speed as II.2.1														
6 (II3)	21.18	11.19	6.81	1816	4.48%	0.286	2.93	60	82	98	22	16	54%	98.61
II.2.4 next higher gear at reduced engine speed, same pull and travel speed as II.2.2														
6 (II3)	14.47	7.42	7.02	1842	3.02%	0.319	2.63	56	80	96	22	16	54%	98.61

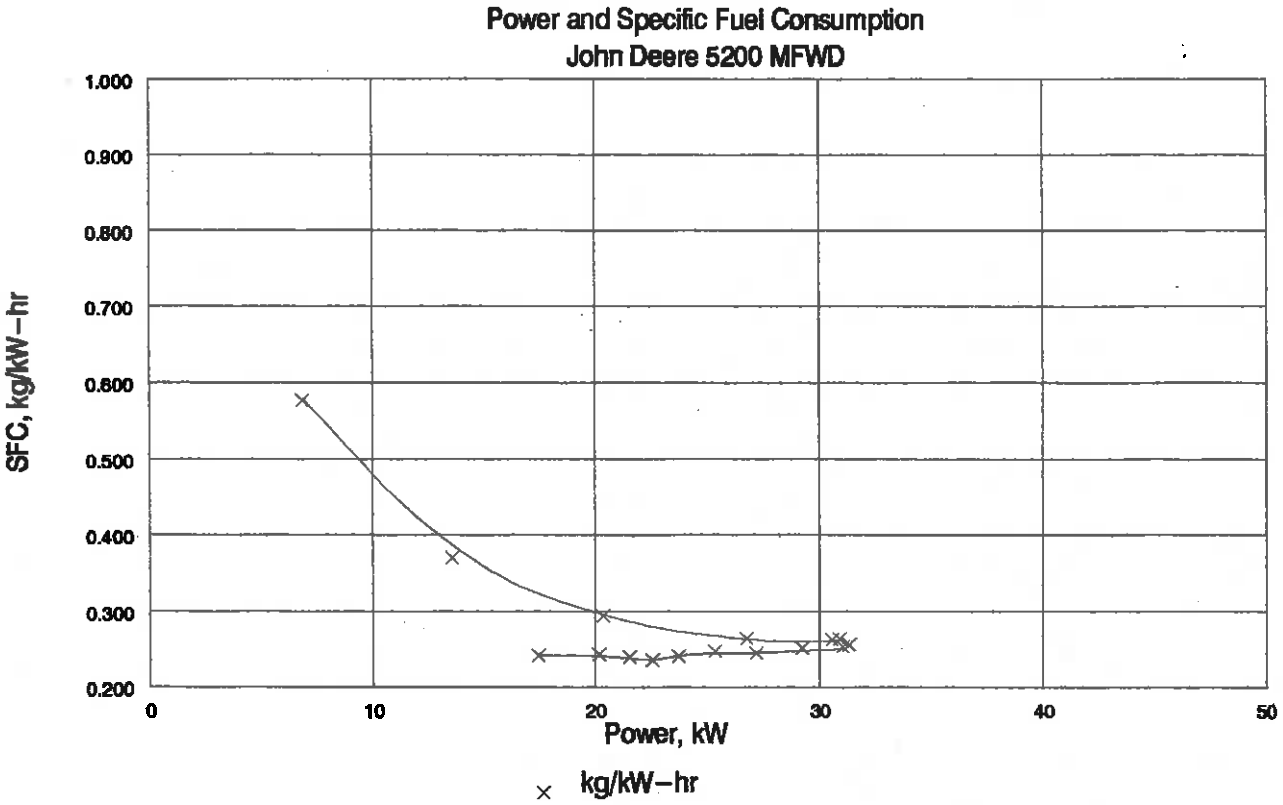
OECD Drawbar Data (US)

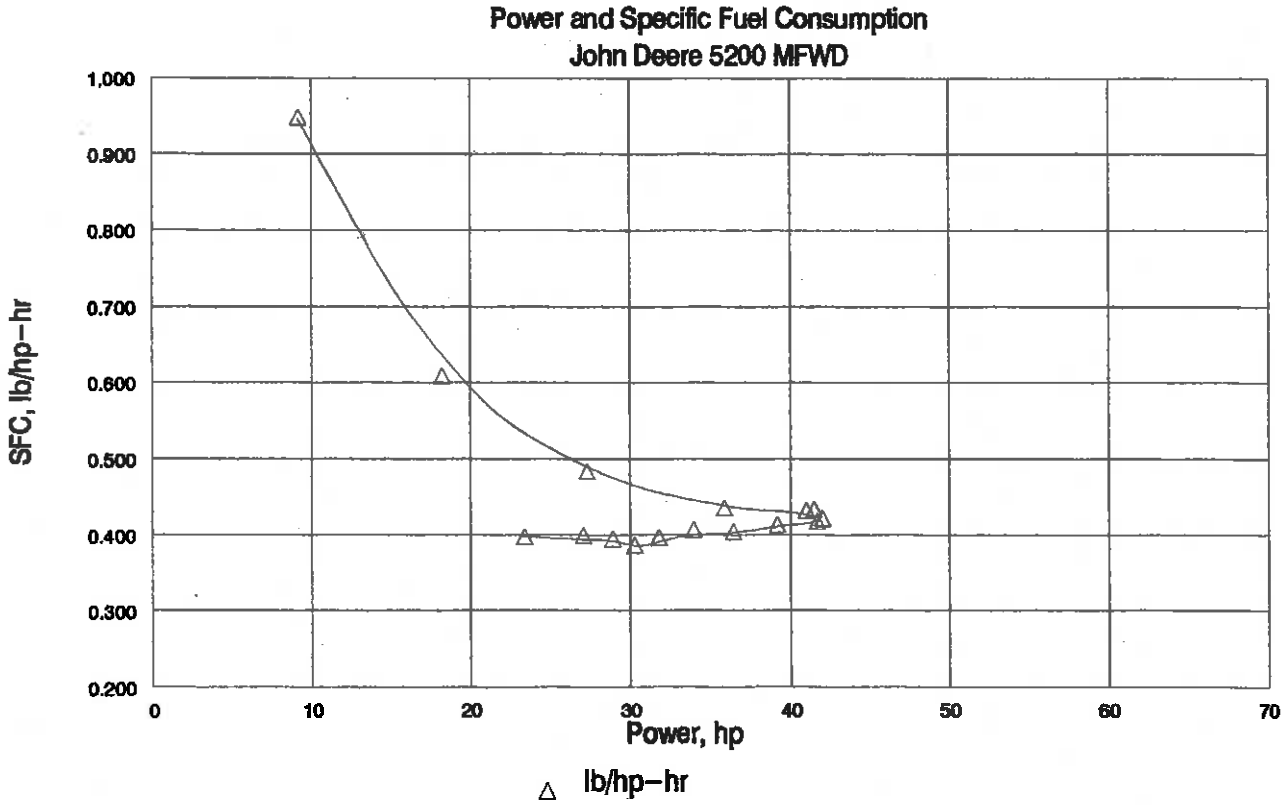
Date of tests: 23 Sep 92 — Fuel density: 6.987 lb/gal
Type of track: Concrete — Test number: 1660

Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg F					Rel humidity	Pressure
	hp	lb	mph	rev/min		lb/hp.h	hp.h/gal	Fuel	Coolant	Oil	Dry	Wet		in Hg
I. Maximum Power (unballasted, 4wd at 2250 rev/min)						Tire pressure		12 psig, rear		12 psig, front		Drawbar height	16.5 in	
2 (I 2)	22.38	5069	1.66	2498	14.35%	0.617	11.33	137	174	209	60	52	54%	29.18
3 (I 3)	30.66	5162	2.23	2469	14.50%	0.559	12.51	137	176	211	56	49	59%	29.15
4 (II 1)	33.86	4842	2.62	2417	12.41%	0.527	13.25	143	177	213	60	52	54%	29.18
5 (II 2)	35.85	3519	3.82	2296	7.02%	0.495	14.13	141	178	221	64	55	57%	29.18
6 (II 3)	35.70	2559	5.23	2245	4.54%	0.488	14.33	139	178	219	65	57	65%	29.18
7 (III 1)	35.73	1809	7.41	2247	3.15%	0.487	14.35	143	179	220	68	56	44%	29.15
II. Part loads (unballasted, 4wd)														
II.1 in selected gear at maximum power														
5 (II2)	35.74	3345	4.01	2396	6.61%	0.501	13.93	143	178	218	64	55	57%	29.18
II.1.1 75% of pull at maximum power at rated speed														
5 (II2)	28.38	2510	4.24	2482	4.48%	0.533	13.10	131	178	207	71	61	54%	29.12
II.1.2 50% of pull at maximum power at rated speed														
5 (II2)	19.37	1671	4.35	2505	2.90%	0.629	11.10	135	176	212	71	61	54%	29.12
II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1														
6 (II3)	28.40	2517	4.23	1816	4.48%	0.470	14.88	140	179	209	71	61	54%	29.12
II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2														
6 (II3)	19.40	1668	4.36	1842	3.02%	0.524	13.34	132	177	205	71	61	54%	29.12
II.2 in selected gear nearest to 4.6 mph														
5 (II2)	35.74	3345	4.01	2396	6.61%	0.501	13.93	143	178	218	64	55	57%	29.18
II.2.1 75% of pull at maximum power at rated speed														
5 (II2)	28.38	2510	4.24	2482	4.48%	0.533	13.10	131	178	207	71	61	54%	29.12
II.2.2 50% of pull at maximum power at rated speed														
5 (II2)	19.37	1671	4.35	2505	2.90%	0.629	11.10	135	176	212	71	61	54%	29.12
II.2.3 next higher gear at reduced engine speed, same pull and travel speed as II.2.1														
6 (II3)	28.40	2517	4.23	1816	4.48%	0.470	14.88	140	179	209	71	61	54%	29.12
II.2.4 next higher gear at reduced engine speed, same pull and travel speed as II.2.2														
6 (II3)	19.40	1668	4.36	1842	3.02%	0.524	13.34	132	177	205	71	61	54%	29.12


PTO Power and Crankshaft Torque
John Deere 5200 MFWD
Power, hp & kW
Torque, lb–ft & N–m
Engine speed, rev/min
Standard PTO Speed, 540 rev/min
hp
kW
lb–ft
N–m


Fuel Rate and Specific Fuel Consumption
John Deere 5200 MFWD
Fuel rate, lb/hr & kg/hr
SFC, lb/hp–hr & kg/kW–hr
Engine speed, rev/min
Standard PTO Speed, 540 rev/min
lb/hr
kg/hr
lb/hp–hr
kg/kW–hr


Power and Specific Fuel Consumption
John Deere 5200 MFWD
SFC, kg/kW–hr
1.000
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0
10
20
30
40
50
Power, kW
× kg/kW–hr


Power and Specific Fuel Consumption
John Deere 5200 MFWD
SFC, lb/hp–hr
1,000
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0
10
20
30
40
50
60
70
Power, hp
△ lb/hp–hr

OECD Drawbar Data (SI)

Date of tests: 1 Oct 92 — Fuel density: 0.837 kg/l
Type of track: Concrete — Test number: 1660

Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg C					Rel hum-idity	Pressu
	kW	kN	km/h	rev/min		kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet		kPa
I. Maximum Power (ballasted, 2wd at 2400 rev/min)					Tire pressure		97 kPa, rear		83 kPa, front		Drawbar height		419 mm	
4 (II1)	22.17	19.29	4.14	2462	14.88%	0.340	2.46	60	80	103	16	13	71%	98.
5 (II2)	26.23	15.08	6.26	2400	8.35%	0.308	2.72	63	81	105	18	14	65%	98.
6 (II3)	26.21	10.68	8.84	2402	5.31%	0.306	2.74	61	81	106	20	16	66%	98.
7 (III1)	26.13	7.52	12.51	2394	3.58%	0.305	2.75	62	81	107	20	16	66%	98.
II. Part loads (ballasted, 2wd)														
II.1 in selected gear at maximum power														
5 (II2)	26.23	15.08	6.26	2400	8.35%	0.308	2.72	63	81	105	18	14	65%	98.
II.1.1 75% of pull at maximum power at rated speed														
5 (II2)	20.98	11.31	6.68	2485	5.67%	0.326	2.57	62	81	100	24	19	62%	98.
II.1.2 50% of pull at maximum power at rated speed														
5 (II2)	14.41	7.53	6.89	2510	3.65%	0.382	2.19	60	80	103	24	19	62%	98.
II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1														
6 (II3)	20.96	11.34	6.65	1817	5.67%	0.290	2.89	63	82	101	24	19	62%	98.
II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2														
6 (II3)	14.42	7.51	6.92	1847	3.65%	0.322	2.60	60	81	99	24	19	62%	98.
II.2 in selected gear nearest to 7.5 km/h														
5 (II2)	26.23	15.08	6.26	2400	8.35%	0.308	2.72	63	81	105	18	14	65%	98.
II.2.1 75% of pull at maximum power at rated speed														
5 (II2)	20.98	11.31	6.68	2485	5.67%	0.326	2.57	62	81	100	24	19	62%	98.
II.2.2 50% of pull at maximum power at rated speed														
5 (II2)	14.41	7.53	6.89	2510	3.65%	0.382	2.19	60	80	103	24	19	62%	98.
II.2.3 next higher gear at reduced engine speed, same pull and travel speed as II.2.1														
6 (II3)	20.96	11.34	6.65	1817	5.67%	0.290	2.89	63	82	101	24	19	62%	98.
II.2.4 next higher gear at reduced engine speed, same pull and travel speed as II.2.2														
6 (II3)	14.42	7.51	6.92	1847	3.65%	0.322	2.60	60	81	99	24	19	62%	98.

OECD Drawbar Data (US)

Date of tests: 1 Oct 92 — Fuel density: 6.987 lb/gal
Type of track: Concrete — Test number: 1660

Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg F					Rel hum-idity	Pressu
	hp	lb	mph	rev/min		lb/hp.h	hp.h/gal	Fuel	Coolant	Oil	Dry	Wet		ir
I. Maximum Power (ballasted, 2wd at 2400 rev/min)					Tire pressure		14 psig, rear		12 psig, front		Drawbar height		16.5 in	
4 (II1)	29.73	4338	2.57	2462	14.88%	0.559	12.51	141	176	217	60	56	71%	29.
5 (II2)	35.18	3390	3.89	2400	8.35%	0.506	13.81	145	178	222	64	58	65%	29.
6 (II3)	35.15	2400	5.49	2402	5.31%	0.503	13.88	143	178	223	68	61	66%	29.
7 (III1)	35.04	1691	7.77	2394	3.58%	0.501	13.94	144	178	224	68	61	66%	29.
II. Part loads (ballasted, 2wd)														
II.1 in selected gear at maximum power														
5 (II2)	35.18	3390	3.89	2400	8.35%	0.506	13.81	145	178	222	64	58	65%	29.
II.1.1 75% of pull at maximum power at rated speed														
5 (II2)	28.14	2544	4.15	2485	5.67%	0.536	13.05	144	178	213	76	66	62%	28.
II.1.2 50% of pull at maximum power at rated speed														
5 (II2)	19.32	1693	4.28	2510	3.65%	0.628	11.13	140	176	217	76	66	62%	28.
II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1														
6 (II3)	28.10	2549	4.13	1817	5.67%	0.477	14.65	145	180	214	76	66	62%	28.
II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2														
6 (II3)	19.34	1688	4.30	1847	3.65%	0.529	13.20	139	177	210	76	66	62%	28.
II.2 in selected gear nearest to 4.6 mph														
5 (II2)	35.18	3390	3.89	2400	8.35%	0.506	13.81	145	178	222	64	58	65%	29.
II.2.1 75% of pull at maximum power at rated speed														
5 (II2)	28.14	2544	4.15	2485	5.67%	0.536	13.05	144	178	213	76	66	62%	28.
II.2.2 50% of pull at maximum power at rated speed														
5 (II2)	19.32	1693	4.28	2510	3.65%	0.628	11.13	140	176	217	76	66	62%	28.
II.2.3 next higher gear at reduced engine speed, same pull and travel speed as II.2.1														
6 (II3)	28.10	2549	4.13	1817	5.67%	0.477	14.65	145	180	214	76	66	62%	28.
II.2.4 next higher gear at reduced engine speed, same pull and travel speed as II.2.2														
6 (II3)	19.34	1688	4.30	1847	3.65%	0.529	13.20	139	177	210	76	66	62%	28.

OECD Drawbar Data (SI)

Date of tests: 1 Oct 92 — Fuel density: 0.837 kg/l
Type of track: Concrete — Test number: 1660

Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg C					Rel humidity	Pressure
	kW	kN	km/h	rev/min		kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet		kPa
I. Maximum Power (ballasted, 4wd at 2400 rev/min)					Tire pressure		97 kPa, rear		83 kPa, front		Drawbar height			419 mm
2 (I 2)	18.96	26.03	2.62	2490	14.80%	0.358	2.34	59	78	98	12	11	89%	98.21
3 (I 3)	24.43	25.39	3.46	2417	15.00%	0.331	2.53	62	81	101	16	13	71%	98.21
4 (II 1)	26.21	22.12	4.27	2397	10.08%	0.308	2.72	61	81	104	16	13	71%	98.21
5 (II 2)	26.87	14.96	6.47	2395	5.48%	0.300	2.79	62	81	105	18	14	65%	98.21
6 (II 3)	26.41	10.52	9.03	2404	3.27%	0.306	2.74	61	81	105	18	14	65%	98.21
7 (III 1)	26.18	7.44	12.67	2390	2.12%	0.307	2.72	62	82	106	20	16	66%	98.21

OECD Drawbar Data (US)

Date of tests: 1 Oct 92 — Fuel density: 6.987 lb/gal
Type of track: Concrete — Test number: 1660

Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg F					Rel humidity	Pressure
	hp	lb	mph	rev/min		lb/hp.h	hp.h/gal	Fuel	Coolant	Oil	Dry	Wet		in Hg
I. Maximum Power (ballasted, 4wd at 2400 rev/min)					Tire pressure		14 psig, rear		12 psig, front		Drawbar height			16.5 in
2 (I 2)	25.42	5851	1.63	2490	14.80%	0.589	11.86	138	173	208	53	52	89%	29.00
3 (I 3)	32.76	5709	2.15	2417	15.00%	0.544	12.84	144	177	215	60	56	71%	29.00
4 (II 1)	35.15	4973	2.65	2397	10.08%	0.507	13.78	143	177	219	60	56	71%	29.00
5 (II 2)	36.03	3363	4.02	2395	5.48%	0.494	14.14	143	178	221	64	58	65%	29.00
6 (II 3)	35.42	2366	5.61	2404	3.27%	0.503	13.89	142	178	222	64	58	65%	29.00
7 (III 1)	35.11	1673	7.87	2390	2.12%	0.505	13.82	143	179	223	68	61	66%	29.00

Repairs: None
Remarks: During steady state operation on the PTO dynamometer, the character of the fuel system causes momentary engine speed fluctuations of +/- 10 rev/min.