OECD APPROVAL # 1508/1 and 2
(Restricted code)
Date of approval: 16 March 1994

NEBRASKA TRACTOR TESTING LABORATORY
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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 8570 POWRSYNC (4WD)
JOHN DEERE 8570 SYNCRO (4WD)



MANUFACTURED BY: John Deere Waterloo Works
P.O.Box 270
Waterloo, Iowa 50704-0270

NEBRASKA TEST NO. 1670

Test dates: October-December , 1993

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 - Annex II, Restricted Code.

This report has been approved by the OECD Coordinating Centre in Paris (CEMAGREF) on 16 March 1994

John Deere 8570 PowrSync (4WD) - Articulated OECD # 1508/1
John Deere 8570 Syncro (4WD) - Articulated OECD # 1508/2

The transmissions of the 8570 Powrsync and 8570 Syncro are mechanically similar and thus tests were not repeated. The test results are valid for both models.

No reproduction of this report or any part of it can be made without prior approval by the Tractor Testing Laboratory - University of Nebraska, Lincoln.

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SPECIFICATIONS OF TRACTOR.

Manufacturers name/address	John Deere Tractor Works 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	191 hours
Location of Test	Tractor Testing Laboratory Lincoln, Nebraska,USA.

TRACTOR SPECIFICATIONS.

Make	John Deere
Model	8570 PowerSync
Type	Articulated frame, four-wheel drive
Number of driving wheels	8
Serial Number	*RW8570H001103*
1st Serial number	*RW8570H001001*

ENGINE.

Make	John Deere
Model	6076TRW32
Type	Diesel; 4-stroke; turbocharged aftercooled, direct injection,
Serial Number	*6076HRW32-516489*

Cylinders

Number/Disposition	6, in-line, vertical
Bore/stroke	115.8 mm x 120.7 mm
Capacity	7634 ml
Compression Ratio	15.5 : 1
Arrangement of valves	Overhead
Cylinder liners	Wet; replaceable

Super charging

Make/Model/Type	Switzer/RE56465/Exh. driven
Pressure	127-147 kPa at rated speed

Fuel System

Feed system	Transfer pump integral with injection pump

Make/Type/Model of filters	Stanadyne/paper element;RE57073 secondary filter;RE53729 primary filter
Fuel tank capacity	835 l
Fuel Cooler	None
Make/Model/Type Injection Pump	Bosch/RE47396/in line; also ECU/RE28320; electric shutoff
Pump Serial number	36513796
Production setting of pump Flow Rate (Rated Eng.Spd & Full Load)	38.7 +/- 1.7 kg/h
Make/Model/Type Injectors	Nippondenso/RE52113/21 mm
Injection pressure	29 MPa
Timing	21 degrees BTDC
Governor	
Make/Model/Type	Bosch/RE24/Electronic control
Governed engine speed range	From 900 to 2260 rev/min
Rated engine speed	2100 rev/min
High-idle speed range	2260 +/- 50 rpm
Air Cleaner.	
Pre-cleaner	
Make/Model/type	Donaldson/R116631/Strato-tube precleaner with aspirator
Air intake location	Top of air stack, right front corner of cab
Main Cleaner	
Make/Model/Type	Donaldson/AR70106/pleated paper
Location	Below pre-cleaner, right front
Secondary cleaner	Donaldson/RE70107/pleated paper
Maintenance indicator	Dash mounted warning light and audio 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	8
Fan diameter	762 mm
Coolant system capacity	55 l

Type of temperature control	Two thermostats and variable speed fan
System pressure	103 kPa
Starting system.	
Make/Model/Type of starter	Delco-Remy/RE37961/Solenoid engaged
Power Rating	4.75 kW
Cold starting aid	Ether spray in intake manifold
Safety device	Electrical lockout on gearshift
Electrical system.	
Voltage & grounding.	12 Volt DC;negative ground
Generator	
Make/Model/Type	Nippondenso/RE51921/Belt driven
Power rating	120 Amp at rated engine speed
Batteries	
Number & connection	Two; 12 Volt batteries in parallel.
Rating	925 cold cranking amps/battery 175 Ah/battery at 20 h. rating
Exhaust system.	
Muffler Make/Model/Type	Nelson/RE52167/Expansion chamber
Location	Vertical, right front corner of cab
Exhaust stack location	Vertical; right front corner of cab

TRANSMISSION.

Clutch. (travel)

Make/Model/Type	John Deere/Multiple plate/oil cooled
Number of plates	7
Plate diameter	279 mm
Method of operation	Hydraulic; pedal actuated
Gear Box.	
Make/Model/Type	John Deere/Powrsync/Mechanical
Arrangement	Countershaft and Planetary design consisting of one 3 speed gearbox with 4 synchronized ranges and one two-speed planetary gearset with multiple wet disc and brake.

Number of gears	24 forward and 6 reverse operated by 2 levers
(8570 PowrSync)	12 forward, 3 reverse (same arrangement without the two speed planetary gearset)
Available options	
(8570 Syncro)	
Oil cooler	Heat exchanger with air
<u>Rear axle and final drives.</u>	
Make/Model/Type	John Deere/Crown wheel and pinion, differential and inboard planetary reduction
Differential Lock (optional)	None
<u>Front Axle and final drives.</u>	
Make/Model/Type	John Deere/1150/Crown wheel and pinion, differential and inboard planetary reduction
Differential lock (optional)	None

Gear ratios and travel speeds - PowrSync transmission.

(Tire dynamic radius of 870 mm 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 2100 rev/min [km/h]
Forward		
A1	213.20	3.23
A2	177.66	3.88
A3	165.48	4.16
A4	138.07	4.99
A5	120.97	5.69
A6	100.86	6.83
B1	100.00	6.89
C1	90.71	7.59
B2	83.40	8.26
B3	77.69	8.87
C2	75.65	9.10
C3	70.47	9.77
B4	64.79	10.63
C4	58.77	11.72
B5	56.76	12.13
C5	51.48	13.38
B6	47.34	14.55
C6	42.94	16.04
D1	42.56	16.18
D2	35.50	19.40
D3	33.06	20.83
D4	27.57	24.98
D5	24.16	28.51
D6	20.15	34.18
Reverse		
A1	177.66	3.88
A2	148.20	4.65
B1	83.40	8.26
C1	75.65	9.10
B2	69.56	9.90
C2	63.08	10.92

Number of front wheel revolutions
for one rear wheel revolution: 1

Gear ratios and travel speeds - Syncro transmission.

(Tire dynamic radius of 870 mm 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 2100 rev/min [km/h]
Forward		
A1	213.20	3.23
A2	165.48	4.16
A3	120.97	5.69
B1	100.00	6.89
C1	90.71	7.59
B2	77.69	8.87
C2	70.47	9.77
B3	56.76	12.13
C3	51.48	13.38
D1	42.56	16.18
D2	33.06	20.83
D3	24.16	28.51
Reverse		
A1	177.66	3.88
B1	83.40	8.26
C1	75.65	9.10

Number of front wheel revolutions
for one rear wheel revolution: 1

POWER - TAKE - OFF.

Main Power-Take-Off.

Type	Independent
Method of engagement	Electro-hydraulically actuated multi-plate wet clutch operated by hand control lever
Number of shafts	One
Method of changing speeds	None

PTO Proportional to engine speed

Standard PTO-1000 rev/min.

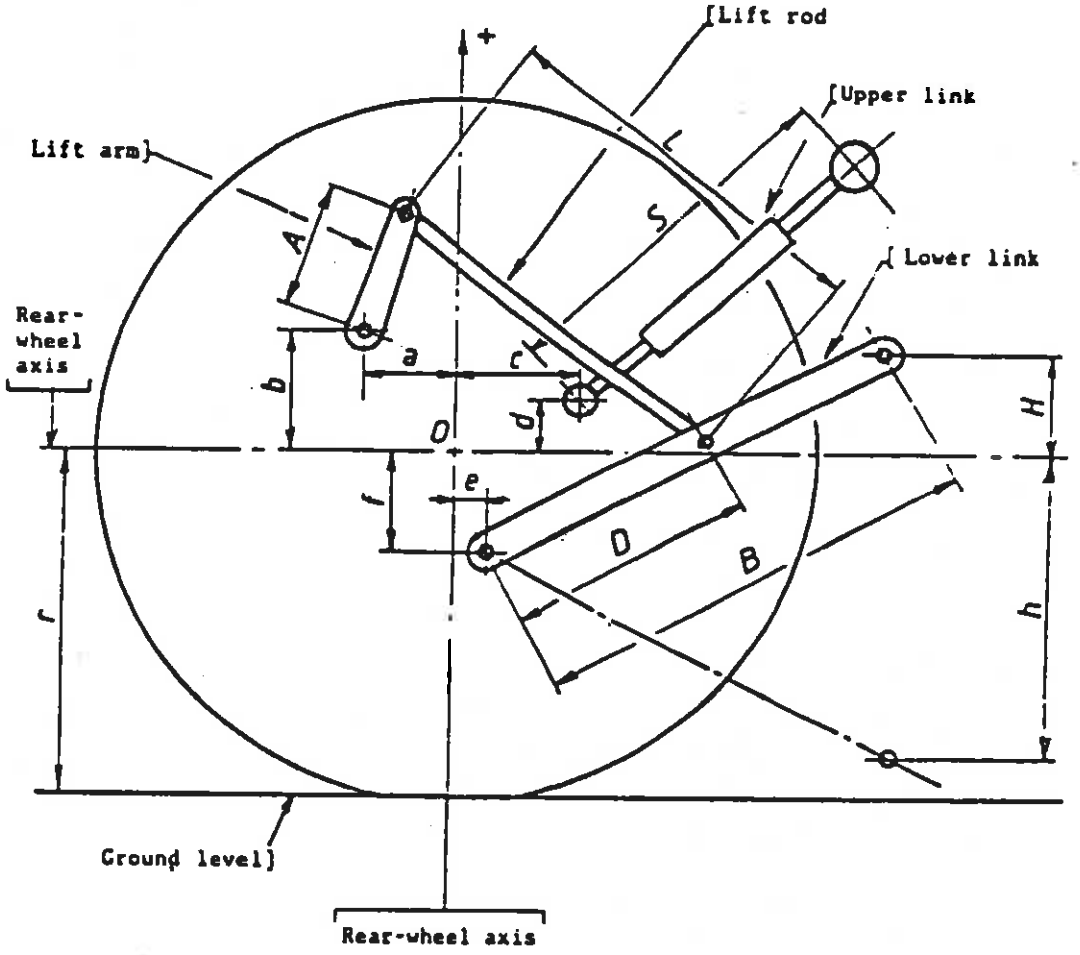
Location	Rear of tractor;center plane
Diameter of shaft	44.5 mm
Number of splines	20; conforms to ISO 500/1979.
Height above ground	764 mm
Distance from median plane of tractor	0 mm
Distance behind rear axle	760 mm
PTO Speed at rated engine spd	1108 rev/min
Engine speed at Std. PTO spd	1895 rev/min
Engine speed/PTO speed ratio	1.895:1
Power restriction	None
Direction of rotation when viewed from shaft end	Clockwise.

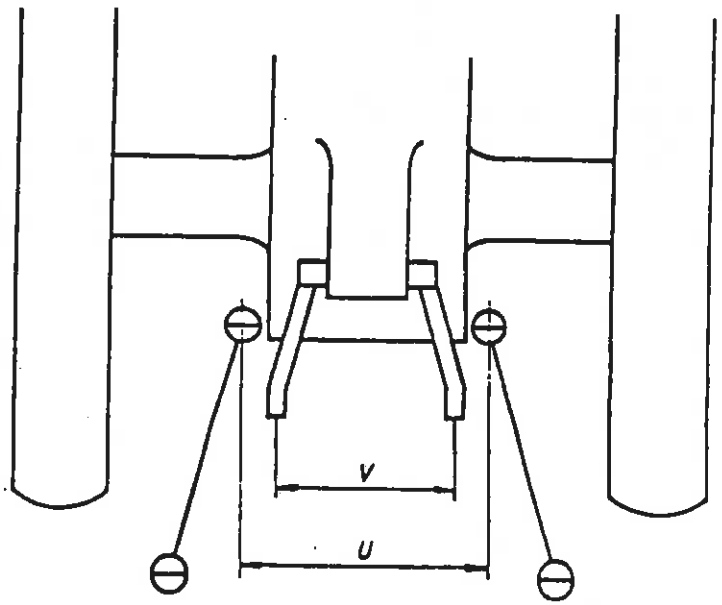
POWER LIFT - Optional.

Make/Model/Type	John Deere/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
Type of linkage lock for transport	Hydraulic
Relief valve pressure setting (pump diagnostic port)	172 - 178 bar
Opening pressure of cylinder safety valve	197 - 218 bar
Lift pump type	Radial piston, variable delivery and flow, constant pressure
Power transmission to pump	Direct drive
Type/Number of filters	Spin-on canister/one
Location of oil reservoir	Integral with right side fuel tank
Number/Type/Location of tapping points.	3 pairs of ISO standard couplings at rear of tractor; 4th and 5th coupler optional
Max. oil volume available for external cylinders.	19 liters regular; 32 liters with additional 13 liters allowable overfill

THREE POINT LINKAGE

- Category III in conformity with ISO 730/1-1990
- Category adaptor Quick Attach





THREE POINT LINKAGE.

- Category 3 in conformity with ISO 730/1-1990
- Category adaptor Quick-attach

Table 1.1 - Linkage geometry dimensions *.
ISO Category III Hook Type Draft Link Ends

		Dimension or range [mm]	Settings used [mm]
Lift category		III	III
Rear Tire - Radius Index	(r)	870	892
Front Tire - Radius Index	(r')	870	892
Length of lift arms	(A)	472	same
Length of lower links	(B)	1117	same
Distance of lift arm pivot from: horizontal	(a)	244	same
rear wheel axis: vertical	(b)	620	same
Horizontal distance between the 2 lower link points	(U)	640	same
Horizontal distance between the 2 lift arm end points	(V)	750	same
Length of upper link	(S)	705 to 825	800
Distance of upper link pivot point from rear wheel axis - horizontal	(c)	577	same
- vertical	(d)	288	same
Distance of lower link pivot from: horizontal	(e)	288	same
rear wheel axis: vertical	(f)	350	same
Distance of lower link pivot points to lift rod pivot pts on lower links.	(D)	731	same
Length of lift rods	(L)	1030 to 1150	1121
Height of lower hitch points relative to rear wheel axis In low position	(h)	521 to 724	667
In high position	(H)	89 to 284	120
Height above ground of lower hitch points when locked in transport position.		980 to 1176	1022

* Tire dynamic index of 892 mm - ISO 4251/1-1984

SWINGING DRAWBAR.

Type	Oscillating
Height above ground to top	
- maximum	464 mm
- minimum	439 mm
Adjustments	Invert drawbar; removable clevis
Distance of hitch point from rear wheel axis-horizontal	1118 or 1268 mm
Distance of hitch point from PTO shaft end: Vertical	300 mm
Horizontal	358 or 508 mm
Lateral adjustment-Right side	200 mm
Left side	200 mm
Distance of pivot point from rear wheel axis-horizontal	435 or 585 mm
Diameter of drawbar pin hole	40 mm
Maximum vertical static permissible load	18.3 kN - both positions

STEERING.

Make/Model/Type	John Deere/Hydrostatic
Method of operation	Steering wheel
Pump(s)	Same as main hydraulic pump
Ram(s)	Two external; double acting; with feedback
Working pressure	175 +/- 3 bar

BRAKE SYSTEM.

Service brake.	
Make/Model/Type	John Deere/oil immersed disc
Method of operation	Hydraulic actuated by main system; operated by one pedal
Parking brake.	
Type	Transmission lock.
Method of operation	Gear selector lever
Trailer Brake	None

WHEELS.

Number.	
Front	Four; Driving and steering
Rear	Four; Driving and steering
Wheel base	3400 mm

Track width adjustment

	Minimum [mm]	Maximum [mm]	Adjustment method
Inner wheels	1524	2235	Rack axle, reversing wheels and offset rims
Outer wheels	2891	3348	Same as inner wheels

PROTECTIVE STRUCTURE.

Make/Model/Type	John Deere/SG-041/Sound-Gard body
Manufacturer's name/address	John Deere Tractor Works Waterloo, Iowa, USA
Protective device	Cab; tiltable with tool
OECD approval number	
John Deere 8570 24 spd PowrSync	CSS 0141/19
John Deere 8570 12 spd Syncro	CSS 0141/18

DRIVER'S SEAT.

Make/Model/Type	Sears/FS92-01/Air suspension; Personal posture cushioning
Type of suspension	Air
Type of damping	Air
Range of adjustment	
Longitudinal	150 mm
Vertical	64 mm
Rotation	20 degrees left and right

LIGHTING.

	Height above ground of center [mm]	Size [mm]	Distance from outside edge to median plane of tractor. [mm]
Head lights	1990	100 diam.	483
Rear lights	1945	100 diam.	845
Reflectors			
front	3485	50 x 197	533
rear	3485	50 x 197	554

TEST CONDITIONS.

Overall dimenensions

Length	7266 mm
Width	
minimum	3360 mm
maximum	3825 mm
Height - Top protective structure	3480 mm
- Top of exhaust	4100 mm
Ground clearance	353 mm
Clearance-limiting part	Drawbar rear support

Tractor Mass (with cab,full fuel tank).

		without driver [kg]	with driver [kg]
Unballasted	Front	7842	7879
	Rear	6718	6756
	Total	14560	14635

Tire Specifications.

	Front Wheels	Rear Wheels
Make	Goodyear	Goodyear
Dimensions	18.4R42	18.4R42
Number/Ply rating	2 star	2 star
Type	Radial	Radial
Max.load (tire mfg)	2970 kg/tire	2970 kg/tire
Inflation pressure(tire mfr)-max	165 kPa	165 kPa
- as tested	90 kPa	90 kPa
Dynamic Radius Index	870 mm	870 mm
Chosen track width-inners	1689 mm	1689 mm
-outers	3316 mm	3316 mm

Oils and Lubrication.

Capacity and change interval:

	Capacity liter	Oil change hours	Filter change hours
Engine (w/o filter)	23.0	250	250
Transmission	37.8	1500	1500
Hydraulic system combined with Rear axle, Front axle and Steering system	144.0	1500	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 D4	
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
Steering system	Same as transmission	same
Grease	John Deere MOLY HIGH TEMPERATURE EP GREASE	same
Number of lube points	22	

Fuel

Type/grade	Premier; Grade 2-D, in conformity with the national standard
Density (Pto test)	0.838 kg/l at 15° C
(Drawbar test)	same as Pto test.
Cetane number	53.9
Viscosity	2.31 cSt at 37.8° C

COMPULSORY TESTS

1. MAIN POWER TAKE-OFF

Date: 21-Oct-93 Location: UNL Tractor Test Lab, Lincoln, NE, U.S.A.

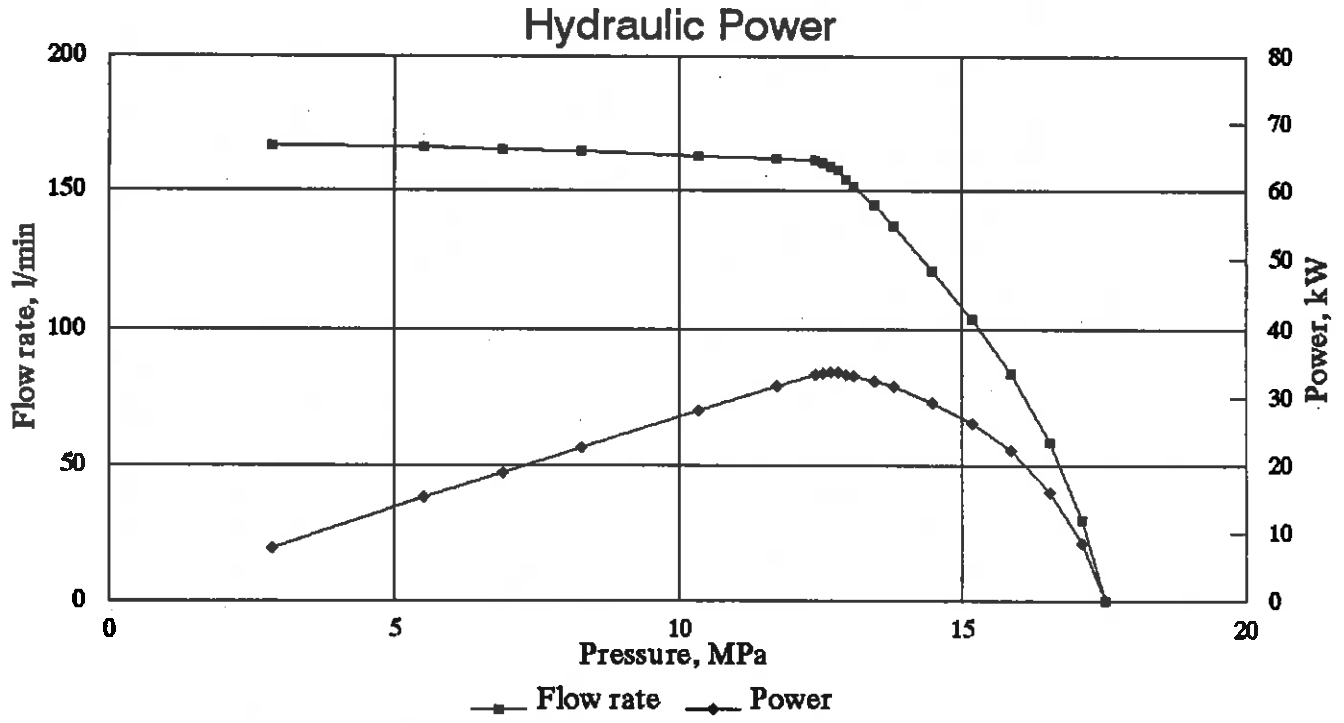
Type of dynamometer: Eddy current, Eaton Fuel density: 6.994 lb/gal

Power kW *hp*	Eng rev/min	PTO rev/min	l/h *gal/h*	kg/h *lb/h*	kg/kW-h *lb/hp-h*	kW-h /l *hp-h/gal*
1.1 Maximum Power – 2 hours						
172.14	1900	1003	47.18	39.54	0.230	3.65
230.84			*12.46*	*87.17*	*0.378*	*18.52*
1.2 Power at Rated Engine Speed – 1 hour						
155.26	2100	1109	45.14	37.83	0.244	3.44
208.21			*11.93*	*83.41*	*0.401*	*17.46*
1.3 Power at Standard Power Take-Off Speed – 1 hour						
172.14	1900	1003	47.18	39.54	0.230	3.65
230.84			*12.46*	*87.17*	*0.378*	*18.52*
1.4 Part Loads						
1.4.1 Torque at maximum power at rated engine speed						
155.26	2100	1109	45.14	37.83	0.244	3.44
208.21			11.93	83.41	0.401	17.46
1.4.2 85% of torque obtained in 1.4.1						
135.64	2158	1139	40.43	33.88	0.250	3.35
181.90			*10.68*	*74.70*	*0.411*	*17.03*
1.4.3 75% of torque defined in 1.4.2						
103.33	2188	1155	32.64	27.35	0.265	3.17
138.57			*8.62*	*60.30*	*0.435*	*16.07*
1.4.4 50% of torque defined in 1.4.2						
69.56	2216	1170	24.84	20.82	0.299	2.80
93.28			*6.56*	*45.90*	*0.492*	*14.21*
1.4.5 25% of torque defined in 1.4.2						
35.02	2239	1182	16.56	13.88	0.396	2.11
46.97			*4.38*	*30.60*	*0.652*	*10.74*
1.4.6 unloaded						
1.06	2260	1193	10.72	8.98	8.486	0.10
1.42			*2.83*	*19.80*	*13.950*	*0.50*
1.5 Part Loads at Standard Power Take-off Speed						
1.5.1 Torque at maximum power						
172.14	1900	1003	47.18	39.54	0.230	3.65
230.84			*12.46*	*87.17*	*0.378*	*18.52*
1.5.2 85% of torque obtained in 1.5.1						
149.36	1925	1021	41.89	35.11	0.235	3.57
200.29			*11.07*	*77.40*	*0.386*	*18.10*
1.5.3 75% of torque defined in 1.5.2						
113.81	1969	1039	33.29	27.90	0.245	3.42
152.62			*8.79*	*61.50*	*0.403*	*17.36*
1.5.4 50% of torque defined in 1.5.2						
77.19	2004	1058	25.33	21.23	0.275	3.05
103.51			*6.69*	*46.80*	*0.452*	*15.47*
1.5.5 25% of torque defined in 1.5.2						
39.20	2031	1072	17.37	14.56	0.371	2.26
52.57			*4.59*	*32.10*	*0.611*	*11.45*
1.5.6 unloaded						
0.77	2059	1087	9.26	7.76	10.053	0.08
1.03			*2.44*	*17.10*	*16.528*	*0.42*

No load maximum engine speed:	2260	rev/min	
Equivalent torque at rated speed:	706	N-m	*521 lb-ft*
Equivalent torque at maximum power:	865	N-m	*638 lb-ft*
(engine speed:	1900	rev/min)	
Maximum equivalent crankshaft torque:	1041	N-m	***768 lb-ft***
(engine speed:	1399	rev/min)	
Mean Dry bulb:	25	deg C	*78 deg F*
Wet bulb:	15	deg C	*60 deg F*
Relative humidity:	33	%	
Pressure:	98.98	kPa	*29.23 in Hg*
Maximum Coolant:	89	deg C	*192 deg F*
Engine oil:	107	deg C	*225 deg F*
Fuel:	62	deg C	*144 deg F*
Air intake:	42	deg C	*108 deg F*
Transmission/hydraulic oil:	72	deg C	*162 deg F*
Intake manifold pressure at rated speed:	138	kPa	*20.0 psig*
Intake manifold pressure at maximum power:	145	kPa	*21.0 psig*

Hydraulic Power Test

Date of test: 29- Oct-93					
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:					
17.51 MPa					
2540 psi					
II. Pump delivery rate at minimum pressure and rated engine speed:					
166.6 l/min					
44.0 gpm					
III. Flow rate, pressure, power:					
90% of relief valve setting:					
	84.0 l/min		15.86 MPa		22.21 kW
	22.2 gpm		*2300 psi*		*29.79 hp*
Maximum hydraulic power:					
	157.5 l/min		12.82 MPa		33.66 kW
	41.6 gpm		*1860 psi*		*45.14 hp*
IV. Hydraulic fluid temperature at flow meter:					
68 C					
155 F					



2.2 POWER LIFT TEST. Cat III, quick attach, 100 mm cylinders
(for settings see p. 9)

Date of test: 1 June 1989

		Hitch points	Frame
Lower hitch points above ground - down position:	[mm/in]	225/8.9	215/8.5
Vertical movement: without load:	[mm/in]	823/32.4	895/35.3
Vertical movement: with load:	[mm/in]	749/29.5	828/32.6
Maximum corrected force through full range:	[kN/lb]	64.3/14459	62.5/14040
Corresponding pressure:	[kPa/psi]	15840/2297	
Moment about rear axle:	[kN.m/lb.ft]	98.8/72834	134.0/98802
Maximum mast tilt angle:	[deg]	--	6.5

Lifting height relative to horizontal position of lower links.

[mm]	-327	-317	-233	-131	1
[in]	-12.9	-12.5	-9.2	-5.2	0

Corrected lift forces

Hitch point. [kN]	--	64.3	67.0	69.7	72.6
Hitch point. [lb]	--	14459	15071	15665	16322
at frame [kN]	66.0	--	66.5	67.1	67.6
at frame [lb]	14832	--	14949	15093	15192

Lifting height relative to horizontal position of lower links.

[mm]	128	229	331	432	501
[in]	5.0	9.0	13.0	17.0	19.7

Corrected lift forces

Hitch point [kN]	74.8	76.3	77.5	78.0	--
Hitch point [lb]	16817	17150	17420	17537	--
at frame [kN]	67.4	66.4	64.9	--	62.5
at frame [lb]	15147	14931	14598	--	14040

OECD Drawbar Data (SI)

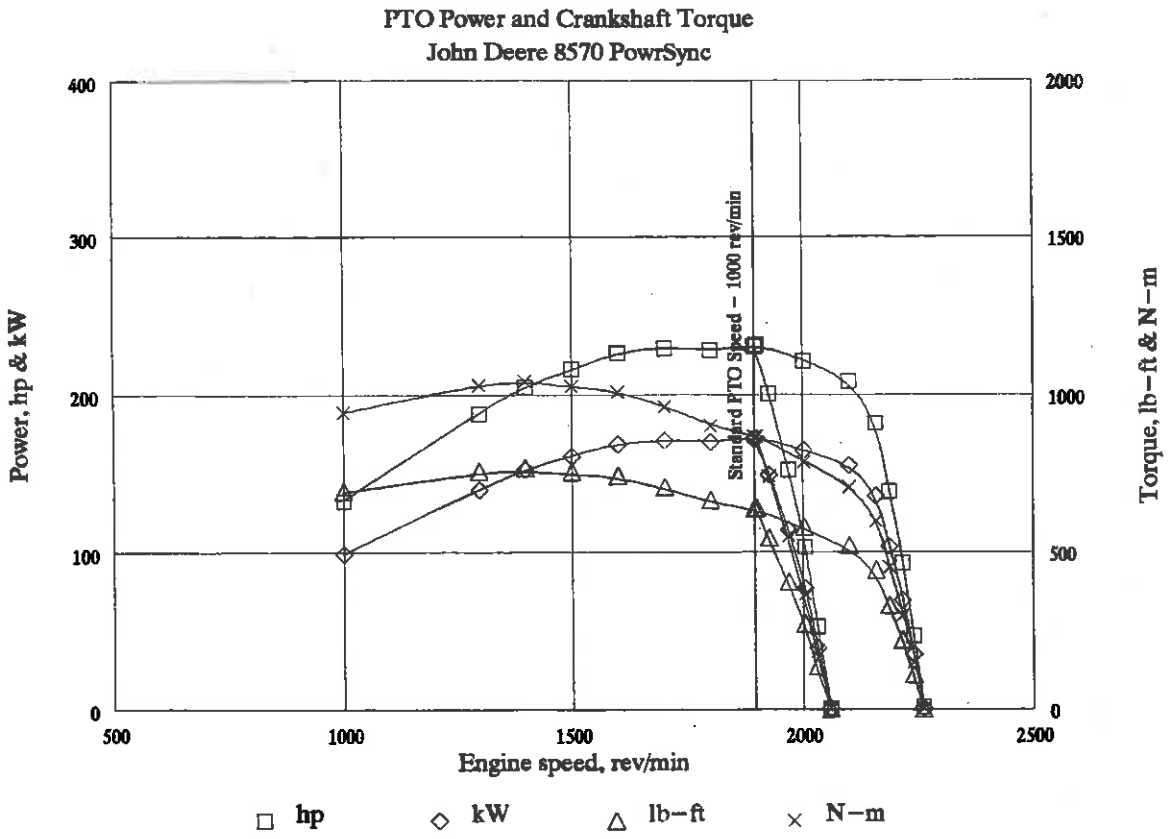
Date of tests:	9,10-Nov-93	Fuel density:	0.838 kg/l
Type of track:	Concrete	Test number:	1670

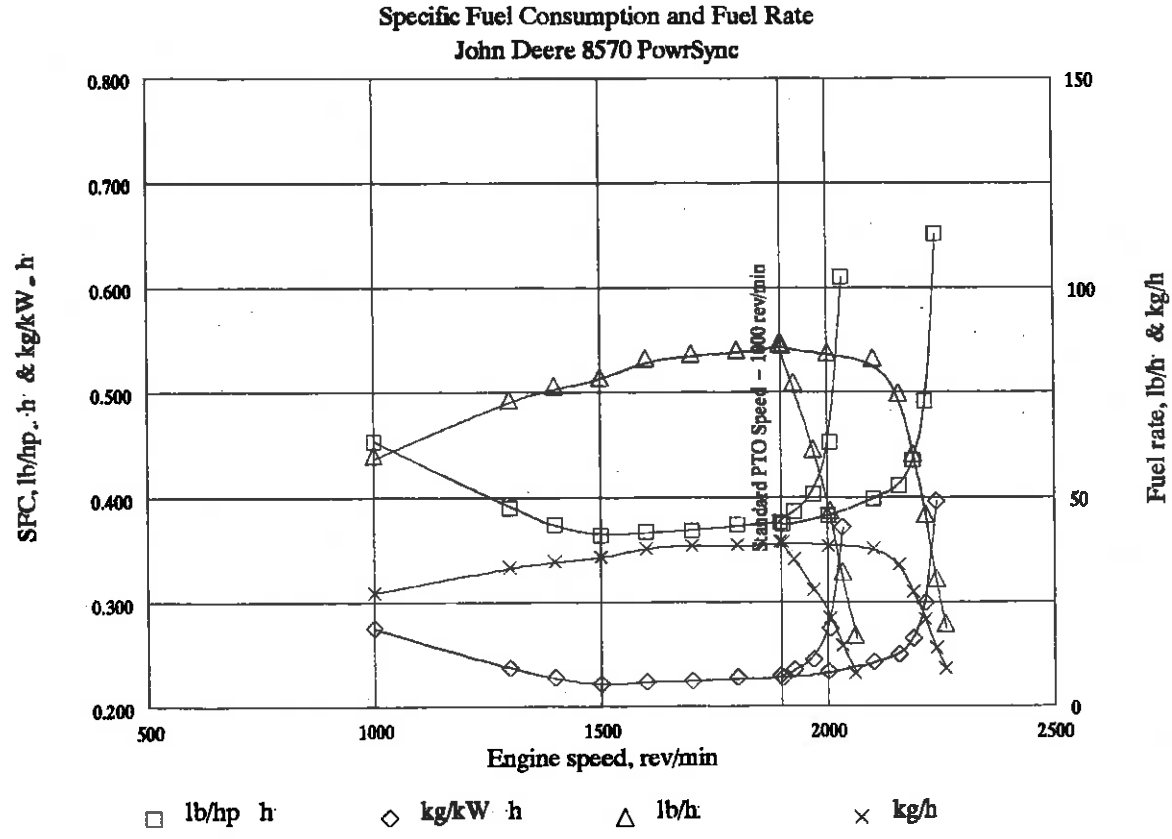
Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg C					Rel humidity	Pressure
	kW	kN	km/h	rev/min		kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet		kPa
I. Maximum Power (unballasted, 4wd at 2100 rev/min					Tire pressure:			90 kPa, rear		90 kPa, front	Drawbar height:		470 mm	
* A1	121.46	142.00	3.08	2154	9.04%	0.286	2.93	59	78	97	9	6	64%	98.78
A2	136.32	131.91	3.72	2102	6.07%	0.277	3.03	60	78	98	9	6	64%	98.78
A3	139.79	124.88	4.03	2100	5.09%	0.270	3.11	62	79	99	9	6	64%	98.78
A4	139.63	102.34	4.91	2099	3.67%	0.269	3.11	56	81	101	9	6	64%	98.78
A5	142.26	90.91	5.63	2098	2.99%	0.265	3.16	61	82	102	9	6	64%	98.44
A6	138.48	73.25	6.81	2099	2.38%	0.273	3.07	59	83	103	9	6	64%	98.44
B1	142.70	74.76	6.87	2099	2.21%	0.264	3.18	61	83	103	16	9	38%	98.75
C1	142.87	67.72	7.59	2099	1.95%	0.263	3.19	60	82	103	12	7	48%	98.75
B2	140.36	60.99	8.29	2102	1.68%	0.268	3.13	60	84	103	12	7	48%	98.75
B3	140.59	56.88	8.90	2099	1.59%	0.268	3.13	60	84	104	12	7	48%	98.75
C2	139.74	55.10	9.13	2098	1.59%	0.267	3.13	60	84	103	16	9	38%	98.75
C3	140.93	51.70	9.81	2097	1.51%	0.267	3.13	59	84	103	16	9	38%	98.75
B4	136.70	45.89	10.72	2103	1.42%	0.273	3.07	59	82	103	16	9	38%	98.75
C4	136.79	41.65	11.82	2101	1.24%	0.274	3.06	59	85	102	16	9	38%	98.75
B5	137.86	40.57	12.23	2098	1.24%	0.271	3.10	58	84	103	17	9	32%	98.61
C5	137.29	36.55	13.52	2101	1.06%	0.274	3.06	58	84	101	17	9	32%	98.61
* Pull limited to avoid excessive tractor bounce.														
II. Part loads (unballasted, 4wd)														
II.1 in selected gear at maximum power														
B3	140.59	56.88	8.90	2099	1.59%	0.268	3.13	60	84	104	12	7	48%	98.75
II.1.1 75% of pull at maximum power at rated speed														
B3	109.34	42.59	9.24	2171	1.33%	0.287	2.92	56	83	101	16	8	30%	98.54
II.1.2 50% of pull at maximum power at rated speed														
B3	74.18	28.37	9.41	2203	0.88%	0.329	2.55	53	80	97	16	8	30%	98.54
II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1														
B5	109.31	42.57	9.24	1587	1.24%	0.258	3.25	50	83	99	16	8	30%	98.54
II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2														
B5	74.33	28.35	9.44	1614	0.88%	0.285	2.94	47	80	96	16	8	30%	98.54
II.2 in selected gear nearest to 7.5 km/h														
C1	142.87	67.72	7.59	2099	1.95%	0.263	3.19	60	82	103	12	7	48%	98.75
II.2.1 75% of pull at maximum power at rated speed														
C1	111.51	50.82	7.90	2172	1.51%	0.279	3.00	56	82	101	16	8	30%	98.54
II.2.2 50% of pull at maximum power at rated speed														
C1	75.85	33.91	8.05	2204	0.88%	0.319	2.63	54	80	98	16	8	30%	98.54
II.2.3 next higher gear at reduced engine speed, same pull and travel speed as II.2.1														
B4	111.76	50.86	7.91	1554	1.51%	0.255	3.29	50	83	100	16	8	30%	98.54
II.2.4 next higher gear at reduced engine speed, same pull and travel speed as II.2.2														
B4	75.67	33.92	8.03	1570	1.06%	0.278	3.01	48	80	96	16	8	30%	98.54

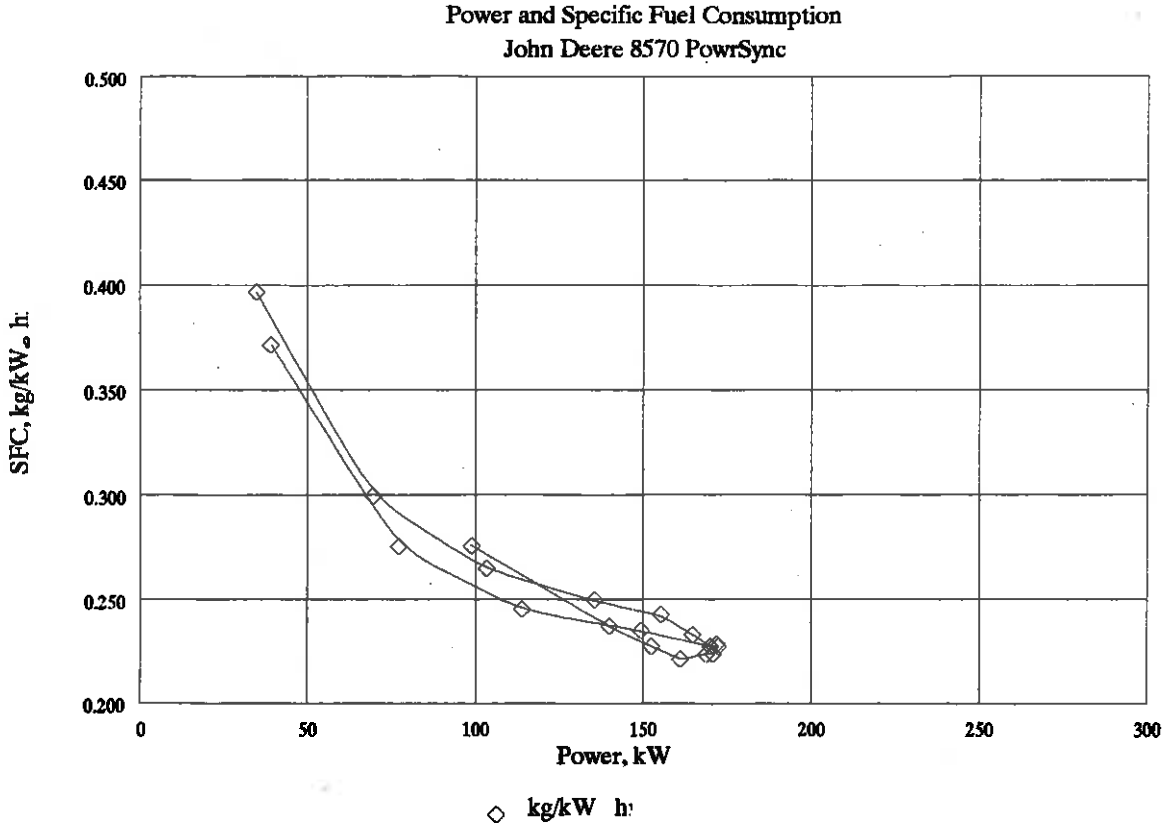
OECD Drawbar Data (US)

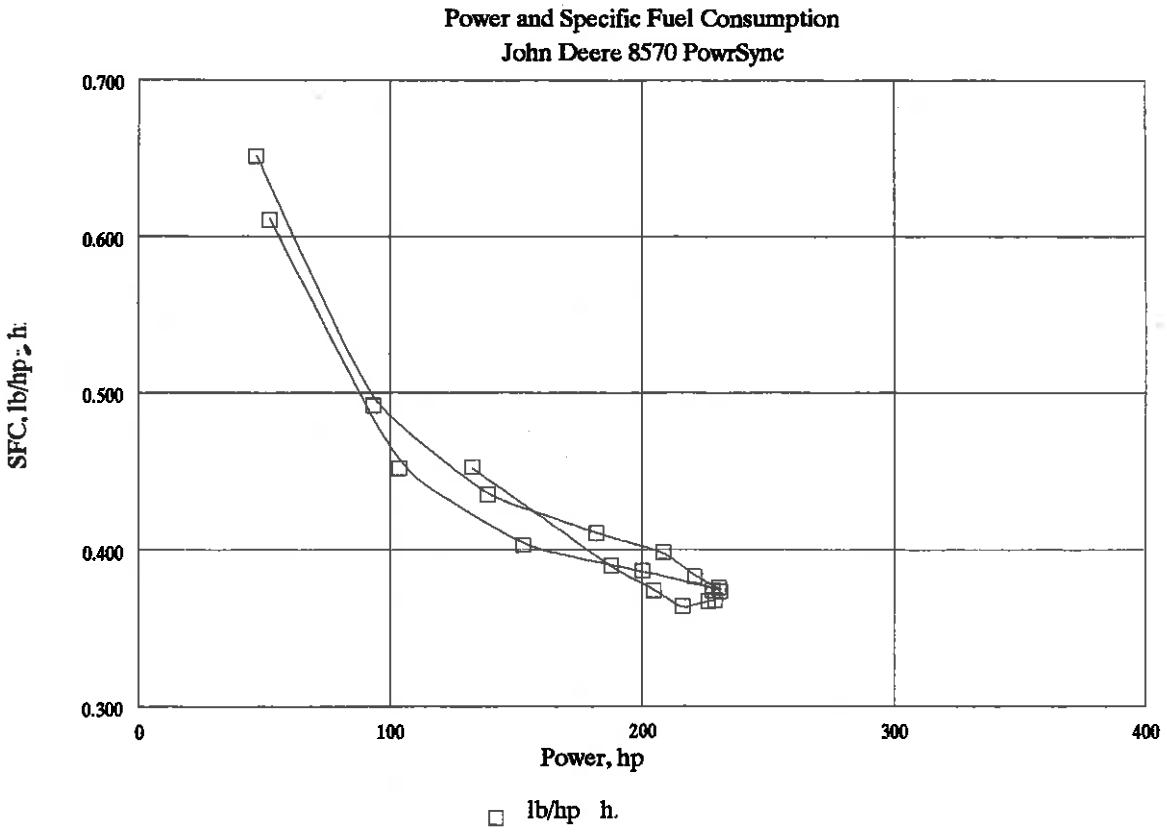
Date of tests:	9,10-Nov-93	Fuel density:	6.994 lb/gal
Type of track:	Concrete	Test number:	1670

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 2100 rev/min					Tire pressure:			13 psig, rear		13 psig, front	Drawbar height:		18.5 in	
* A1	162.89	31924	1.91	2154	9.04%	0.471	14.86	138	172	207	49	42	64%	29.17
A2	182.81	29654	2.31	2102	6.07%	0.455	15.38	141	173	209	49	42	64%	29.17
A3	187.46	28075	2.50	2100	5.09%	0.444	15.77	143	174	211	49	42	64%	29.17
A4	187.24	23008	3.05	2099	3.67%	0.442	15.81	133	178	214	49	42	64%	29.17
A5	190.78	20438	3.50	2098	2.99%	0.436	16.04	142	180	215	49	42	64%	29.07
A6	185.70	16467	4.23	2099	2.38%	0.448	15.59	138	182	217	49	42	64%	29.07
B1	191.36	16808	4.27	2099	2.21%	0.434	16.13	141	182	218	60	48	38%	29.16
C1	191.59	15225	4.72	2099	1.95%	0.432	16.20	140	180	217	54	45	48%	29.16
B2	188.22	13711	5.15	2102	1.68%	0.440	15.88	140	183	217	54	45	48%	29.16
B3	188.53	12787	5.53	2099	1.59%	0.440	15.90	140	183	219	54	45	48%	29.16
C2	187.39	12386	5.67	2098	1.59%	0.440	15.91	140	183	218	60	48	38%	29.16
C3	188.99	11623	6.10	2097	1.51%	0.440	15.91	138	183	217	60	48	38%	29.16
B4	183.32	10317	6.66	2103	1.42%	0.449	15.57	138	180	217	60	48	38%	29.16
C4	183.44	9364	7.35	2101	1.24%	0.450	15.53	138	185	216	60	48	38%	29.16
B5	184.87	9120	7.60	2098	1.24%	0.445	15.71	137	184	218	62	49	32%	29.12
C5	184.10	8216	8.40	2101	1.06%	0.451	15.52	137	184	214	62	49	32%	29.12
* Pull limited to avoid excessive tractor bounce.														
II. Part loads (unballasted, 4wd)														
II.1 in selected gear at maximum power														
B3	188.53	12787	5.53	2099	1.59%	0.440	15.90	140	183	219	54	45	48%	29.16
II.1.1 75% of pull at maximum power at rated speed														
B3	146.63	9575	5.74	2171	1.33%	0.471	14.83	133	181	215	61	47	30%	29.10
II.1.2 50% of pull at maximum power at rated speed														
B3	99.48	6378	5.85	2203	0.88%	0.540	12.95	127	176	207	61	47	30%	29.10
II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1														
B5	146.59	9570	5.74	1587	1.24%	0.424	16.49	123	182	211	61	47	30%	29.10
II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2														
B5	99.68	6374	5.86	1614	0.88%	0.469	14.91	117	176	204	61	47	30%	29.10
II.2 in selected gear nearest to 4.6 mph														
C1	191.59	15225	4.72	2099	1.95%	0.432	16.20	140	180	217	54	45	48%	29.16
II.2.1 75% of pull at maximum power at rated speed														
C1	149.53	11426	4.91	2172	1.51%	0.459	15.23	134	180	214	61	47	30%	29.10
II.2.2 50% of pull at maximum power at rated speed														
C1	101.71	7623	5.00	2204	0.88%	0.525	13.33	129	176	208	61	47	30%	29.10
II.2.3 next higher gear at reduced engine speed, same pull and travel speed as II.2.1														
B4	149.87	11434	4.92	1554	1.51%	0.419	16.69	123	182	212	61	47	30%	29.10
II.2.4 next higher gear at reduced engine speed, same pull and travel speed as II.2.2														
B4	101.47	7626	4.99	1570	1.06%	0.457	15.30	119	176	205	61	47	30%	29.10


PTO Power and Crankshaft Torque
John Deere 8570 PowrSync
Power, hp & kW
Torque, lb–ft & N–m
Engine speed, rev/min
Standard PTO Speed – 1000 rev/min
400
300
200
100
0
2000
1500
1000
500
0
500
1000
1500
2000
2500
hp
kW
lb–ft
N–m


Specific Fuel Consumption and Fuel Rate
John Deere 8570 PowrSync
SFC, lb/hp..h & kg/kW..h
Fuel rate, lb/h & kg/h
Engine speed, rev/min
Standard PTO Speed – 1000 rev/min
0.800
0.700
0.600
0.500
0.400
0.300
0.200
150
100
50
0
500
1000
1500
2000
2500
lb/hp h
kg/kW h
lb/h
kg/h


Power and Specific Fuel Consumption
John Deere 8570 PowrSync
0.500
0.450
0.400
0.350
0.300
0.250
0.200
0
50
100
150
200
250
300
Power, kW
kg/kW h


Power and Specific Fuel Consumption
John Deere 8570 PowrSync
0.700
0.600
0.500
0.400
0.300
0
100
200
300
400
Power, hp
lb/hp h

OPTIONAL TESTS - Drawbar Performance at 1900 Engine RPM

OECD Drawbar Data (SI)

Date of tests: 10-Nov-93 Fuel density: 0.838 kg/l
Type of track: Concrete Test number: 1670

Gear	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 humidity	Pressure kPa
I. Maximum Power (unballasted, 4wd at 1900 rev/min)					Tire pressure:			90 kPa, rear		90 kPa, front	Drawbar height:		470 mm	
* A1	120.49	141.05	3.08	2154	9.11%	0.289	2.90	58	75	93	9	6	64%	98.78
A2	136.92	134.42	3.67	2084	6.71%	0.276	3.03	62	79	99	9	6	64%	98.78
A3	143.48	134.62	3.84	2031	6.55%	0.269	3.12	61	79	99	9	6	64%	98.78
A4	151.96	124.03	4.41	1913	4.85%	0.259	3.23	62	82	102	9	6	64%	98.78
A5	155.47	110.77	5.05	1901	4.01%	0.254	3.30	59	82	102	9	6	64%	98.44
A6	153.71	90.41	6.12	1901	2.99%	0.257	3.27	58	84	103	9	6	64%	98.44
B1	155.80	90.75	6.18	1901	2.90%	0.253	3.32	61	83	104	16	9	38%	98.75
C1	156.15	82.40	6.82	1896	2.47%	0.253	3.31	60	83	103	12	7	48%	98.75
B2	155.35	75.05	7.45	1899	2.21%	0.253	3.31	61	84	104	12	7	48%	98.75
B3	156.87	70.38	8.02	1900	2.03%	0.250	3.35	60	84	104	12	7	48%	98.75
C2	154.73	67.62	8.24	1900	1.95%	0.254	3.31	59	84	104	16	9	38%	98.75
C3	156.07	63.36	8.87	1902	1.86%	0.250	3.35	59	83	103	16	9	38%	98.75
B4	152.74	56.89	9.66	1902	1.68%	0.255	3.28	59	84	103	16	9	38%	98.75
C4	152.96	51.64	10.66	1901	1.51%	0.256	3.27	58	84	104	16	9	38%	98.75
B5	153.75	50.11	11.05	1900	1.42%	0.254	3.29	59	85	104	17	9	32%	98.61
C5	152.90	45.18	12.18	1898	1.24%	0.256	3.27	59	84	104	17	9	32%	98.61
B6	149.22	40.49	13.27	1898	1.15%	0.263	3.18	59	85	104	17	9	32%	98.61

* Pull limited to avoid excessive tractor bounce.

OECD Drawbar Data (US)

Date of tests: 10-Nov-93 Fuel density: 6.994 lb/gal
Type of track: Concrete Test number: 1670

Gear	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 humidity	Pressure in Hg
I. Maximum Power (unballasted, 4wd at 1900 rev/min)					Tire pressure:			13 psig, rear		13 psig, front	Drawbar height:		18.5 in	
* A1	161.57	31709	1.91	2154	9.11%	0.476	14.70	136	167	199	49	42	64%	29.17
A2	183.61	30219	2.28	2084	6.71%	0.454	15.40	143	174	211	49	42	64%	29.17
A3	192.41	30264	2.38	2031	6.55%	0.442	15.84	142	174	211	49	42	64%	29.17
A4	203.79	27884	2.74	1913	4.85%	0.426	16.42	143	180	216	49	42	64%	29.17
A5	208.48	24908	3.14	1901	4.01%	0.417	16.75	139	180	216	49	42	64%	29.07
A6	206.12	20325	3.80	1901	2.99%	0.422	16.58	137	183	218	49	42	64%	29.07
B1	208.93	20401	3.84	1901	2.90%	0.415	16.84	142	182	219	60	48	38%	29.16
C1	209.40	18524	4.24	1896	2.47%	0.416	16.82	141	182	218	54	45	48%	29.16
B2	208.32	16872	4.63	1899	2.21%	0.417	16.79	141	183	219	54	45	48%	29.16
B3	210.36	15821	4.99	1900	2.03%	0.412	16.99	139	183	219	54	45	48%	29.16
C2	207.50	15203	5.12	1900	1.95%	0.417	16.78	139	183	219	60	48	38%	29.16
C3	209.30	14245	5.51	1902	1.86%	0.411	17.00	139	182	217	60	48	38%	29.16
B4	204.83	12791	6.01	1902	1.68%	0.420	16.67	138	184	218	60	48	38%	29.16
C4	205.12	11609	6.63	1901	1.51%	0.421	16.60	137	183	219	60	48	38%	29.16
B5	206.19	11265	6.86	1900	1.42%	0.418	16.72	139	185	219	62	49	32%	29.12
C5	205.05	10157	7.57	1898	1.24%	0.421	16.61	138	184	219	62	49	32%	29.12
B6	200.10	9102	8.24	1898	1.15%	0.433	16.16	138	185	220	62	49	32%	29.12

* Pull limited to avoid excessive tractor bounce.

MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of Test	27 October 1993
Sound Level Meter Make/Model/Type	Bruel and Kjaer 2203
Type of track	Concrete oval
Gear number	24th (D-6)
Travel speed before acceleration	27.6 km/h
Sound Level	85.5 dB(A)

Repairs: None
Remarks: None