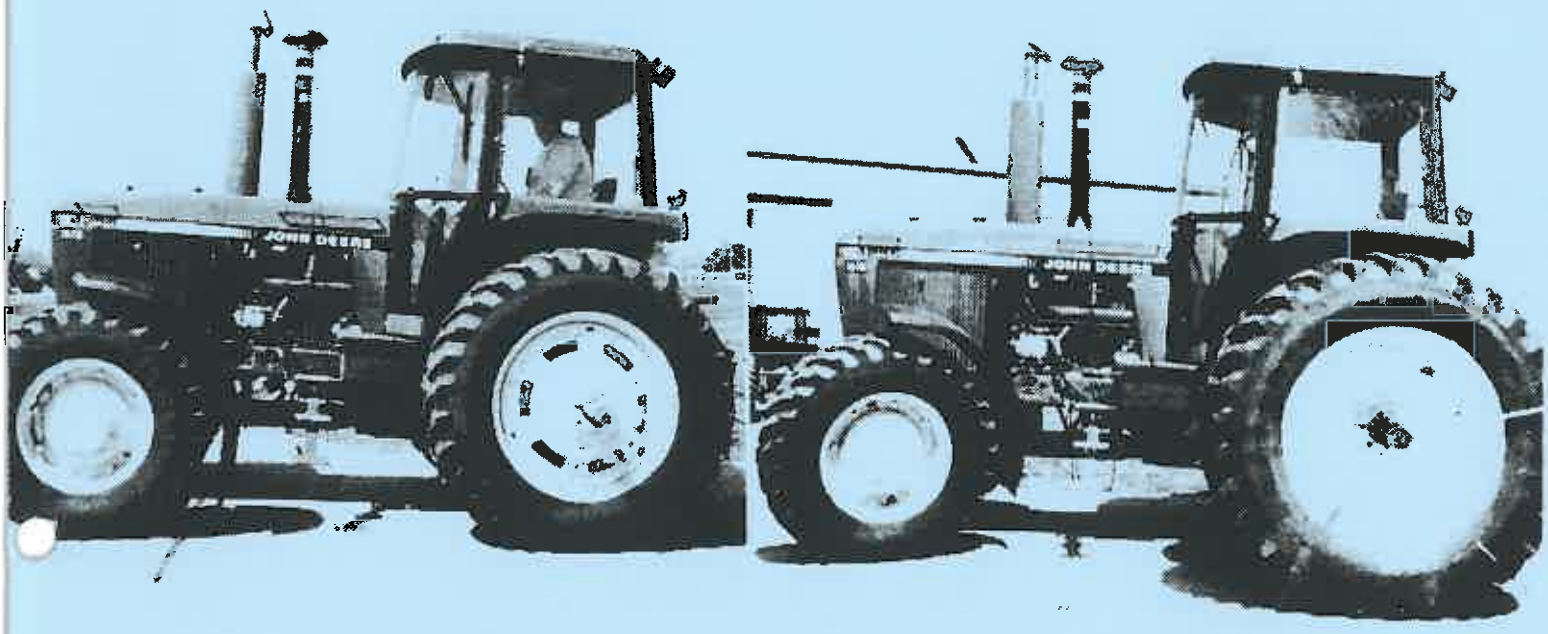
OECD APPROVAL # 1233
Date of approval:February 15, 1990

CENTER FOR AGRICULTURAL EQUIPMENT
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 STANDARD CODE FOR THE OFFICIAL TESTING OF AGRICULTURAL TRACTOR PERFORMANCE

RESTRICTED TEST-CODE II

JOHN DEERE 4255 POWERSHIFT WITH MECHANICAL FRONT WHEEL DRIVE (4 WD)



MANUFACTURED BY: John Deere Waterloo Works
P.O.Box 3500
Waterloo, Iowa 50706, USA

NEBRASKA TEST NO.1618

Test date: April-May 1989

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 February 15,1990.

John Deere 4255 Powershift with MFWD OECD # 1233

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Table of Contents.

	Page
1. SPECIFICATIONS	1
2. TEST CONDITIONS	11
3. COMPULSORY TESTS	
Main Power Take-Off Performance	13
Power Lift and Hydr. Pump Perf.	16
Drawbar Performance	19
4. GRAPHS	22
5. OPTIONAL TESTS	
External noise levels	25
Drawbar Performance (Ballasted)	26
Power lift test with Walterscheid lower link arms	28

SPECIFICATIONS OF TRACTOR.

Manufacturers name/address	:	John Deere Waterloo Works P.O.Box 3500 Waterloo , Iowa
Submitted for test by	:	The manufacturer
Selected for test by	:	The manufacturer in agreement with the test station.
Place of running in	:	John Deere P.E.C. Waterloo , Iowa
Duration of running in	:	49 hours
Location of Test	:	Center for Agricultural Equipment, Lincoln, Nebraska,USA.

TRACTOR.

Make	John Deere
Model	4255
Type	Unit construction, mechanical front wheel drive (4WD)
Number of driving wheels	4
Serial Number	*RW4255P001019*
1st Serial number	*RW4255P001001*

ENGINE.

Make	John Deere
Model	6076TRW01
Type	Diesel, turbocharged.
Serial Number	*RG6076T101998*
Cylinders	
Number & Disposition	6, in-line, vertical
Bore x stroke	115.8 mm x 120.7 mm (4.56 in x 4.75 in)
Cubic capacity	7634 ml (466 cu.in.)
Compression Ratio	16.0 - 1
Arrangement of valves	Overhead
Cylinder liners	Wet, replacable
Super charging	
Make/Model/Type	Air Research/RE29308/ exhaust gas driven
Pressure	80-100 kPa (12-15 psi) at rated speed & load.
Fuel System	
Feed system	Transfer pump integral with injection pump
Make/Type/Model of filters	Stanadyne/RE27091/ paper element
Fuel Tank capacity	246 liter (65 US gallons)

Make/Model/Type Injection Pump	Nippondenso/RE36656/In line
Pump Serial number	10H1050
Production setting of pump	
Flow Rate (Rated Eng.Spd & Full Load)	23.5 +/- 1.06 kg/hr 51.8 +/- 2.34 lb/hr
Make/Model/Type of injectors	Nippondenso/RE30084/21 mm
Injection pressure	29.0 MPa(4200 psi)
Timing	27 degrees before TDC

Governor

Make/Model/Type	Nippondenso/RSV200/mechanical
Governed engine speed range	From 800 to 2400 rev/min
Rated engine speed	2200 rev/min
High-idle speed range	2375 +/-25 rev/min

Air Cleaner.

Pre-cleaner	
Make/Type	Donaldson/plastic mesh chaff screen
Air intake location	top of air stack
Main Cleaner	
Make/Model/Type	Donaldson/AR79679/ pleated paper
Secondary element	
Make/Model/Type	Donaldson/AR79680/ pleated paper
Maintenance indicator	Dash mounted light and horn

Lubrication system.

Type of feed pump	Full pressure, positive displacement.
Type of filters	Full flow with bypass
Number	one
Oil cooler	Heat exchanger with engine coolant

Cooling system.

Type of coolant	Liquid
Type of pump	Centrifugal
Fan specification	Belt driven, variable speed
Number of fan blades	8
Fan diameter	610 mm (24.0 in)
Coolant system capacity	25.6 liter (27 qt)
Type of temperature control	2 thermostats and variable speed fan
Superpressure system	69 kPa (10 psi)

Starting system.

Make/Model/Type of starter	Nippondenso/RE38336/electric
Power Rating	4.75 kW (6.4 hp)
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/RE37201/belt driven
Power rating	120 Ampere at 2200 engine rpm.
Batteries	
Number & connection	2-12 V batteries in parallel
Rating	175 Ampere-hours per battery at 20 hour rating 925 cold crank amps per battery
Exhaust system.	
Make/Model/Type	Donaldson/RE35448/ expansion chamber
Location	Vertical above hood, left of centerline

TRANSMISSION.

Clutch. (travel)	
Make/Type	John Deere/multiple plate oil cooled
Number of plates	2, 3,or 5 (depending on gear)
Plate diameter	279.4 mm (11.0 in)
Method of operation	hydraulically actuated by foot pedal.
Gear Box.	
Make/Type	John Deere/full powershift
Arrangement	planetary design consisting of: one input planetary gearset, one 2 speed planetary gearset, two compound planetary gearsets, all with multiple wet disc clutches and brakes
Number of gears	15 forward and 4 reverse controlled by a single hand lever
Oil cooler	Heat exchanger with air
Available options	None
Rear axle and final drives.	
Make/Type	John Deere/crown wheel and pinion, differential and inboard planetary reduction
Differential Lock	
Type	Hydraulic
Method of engagement	Foot pedal
Method of disengagement	Self disengaging with brake pedal

Front Axle and final drives.

Make/Model/Type	John Deere/crown wheel and 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.

(Tire dynamic radius of 842 mm (33.1 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 2200 rev/min [km/h]	[mph]
1 fwd	307.69	2.27	1.41
2 fwd	214.84	3.25	2.02
3 fwd	182.27	3.83	2.38
4 fwd	141.57	4.93	3.06
5 fwd	122.84	5.68	3.53
6 fwd	108.27	6.45	4.01
7 fwd	93.98	7.43	4.61
8 fwd	83.87	8.32	5.17
9 fwd	72.82	9.58	5.96
10 fwd	64.16	10.88	6.76
11 fwd	55.68	12.53	7.79
12 fwd	48.53	14.38	8.94
13 fwd	39.22	17.80	11.06
14 fwd	28.76	24.27	15.08
15 fwd	23.25	30.02	18.65
1 rev	252.58	2.76	1.72
2 rev	176.42	3.96	2.46
3 rev	116.16	6.01	3.73
4 rev	77.11	9.05	5.62

Number of front wheel revolutions
for one rear wheel revolution. 1.3422

POWER - TAKE - OFF.

Main Power-Take-Off.

Type	Independent
Method of engagement	Hydraulically actuated multi-plate wet clutch operated by hand lever, independent of main drive clutch.
Number of shafts	One
Method of changing PTO shafts ends and speeds	Interchangeable shafts

Standard PTO. 1000 rev/min.

Location	Rear of tractor, vertical center plane.
Diameter of shaft	34.9 mm (1.375 in)
Number of splines	21; conforms to ISO 500/1979.
Height above ground	675 mm (26.6 in)
Distance from median plane of tractor	0 mm
Distance behind rear axle	498 mm (19.6 in)
PTO Speed @ rated engine speed	1002 rev/min
Engine speed @ Std. PTO Speed	2195 rev/min
Ratio of Engine rpm to PTO rpm	2.195
Direction of rotation (viewed facing driving end)	Clockwise.

Standard PTO 540 rev/min. (not tested)

Location	Rear of tractor, vertical center plane.
Diameter of PTO shaft end.	34.9 mm (1.375 in)
Number of splines	6; ISO 500/1979
Height above ground	675 mm (26.6 in)
Distance from median plane of tractor	0 mm
Distance behind rear wheels	521 mm (20.5 in)
PTO speed @ rated engine speed	540 rev/min
Engine speed @ Std PTO Speed	2201 rev/min
Ratio of Eng spd./PTO spd.	4.0758
Maximum allowed power	56 kW (75 hp)
Rotation direction when viewed from shaft end	Clockwise.

POWER LIFT.

Make	John Deere
Type of hydraulic system	Hydraulic lift with variable mix of draft and position control; Lower link sensing with adjustable speed of drop. Closed center
Number/Type of cylinders	One internal and one or two optional external, all single acting
Type of linkage lock for transport	Hydraulic
Relief valve setting	17.5 +/- 0.3 MPa (2535 +/- 45 psi)
Opening pressure of cylinder safety valve	20.7 MPa (3000 psi)
Lift pump type	Radial piston ,variable delivery constant pressure
Power transmission to pump	direct drive
Type/Number of filters	paper element/one
Location of oil reservoir	transmission housing
Number/Type/Location of tapping points.	2 pairs of ISO standard couplings at rear of tractor. (A third set is optional)
Max. oil volume available for external cylinders.	5.0 l (5.3 qt) 10.0 l (10.6 qt) with 5.0 l (5.3 qt) allowable overfill

THREE POINT LINKAGE.

- Category 2 or 3N in conformity with ISO 730/1-1977
- Category adaptor - none

THREE POINT LINKAGE.

Figure 1.1

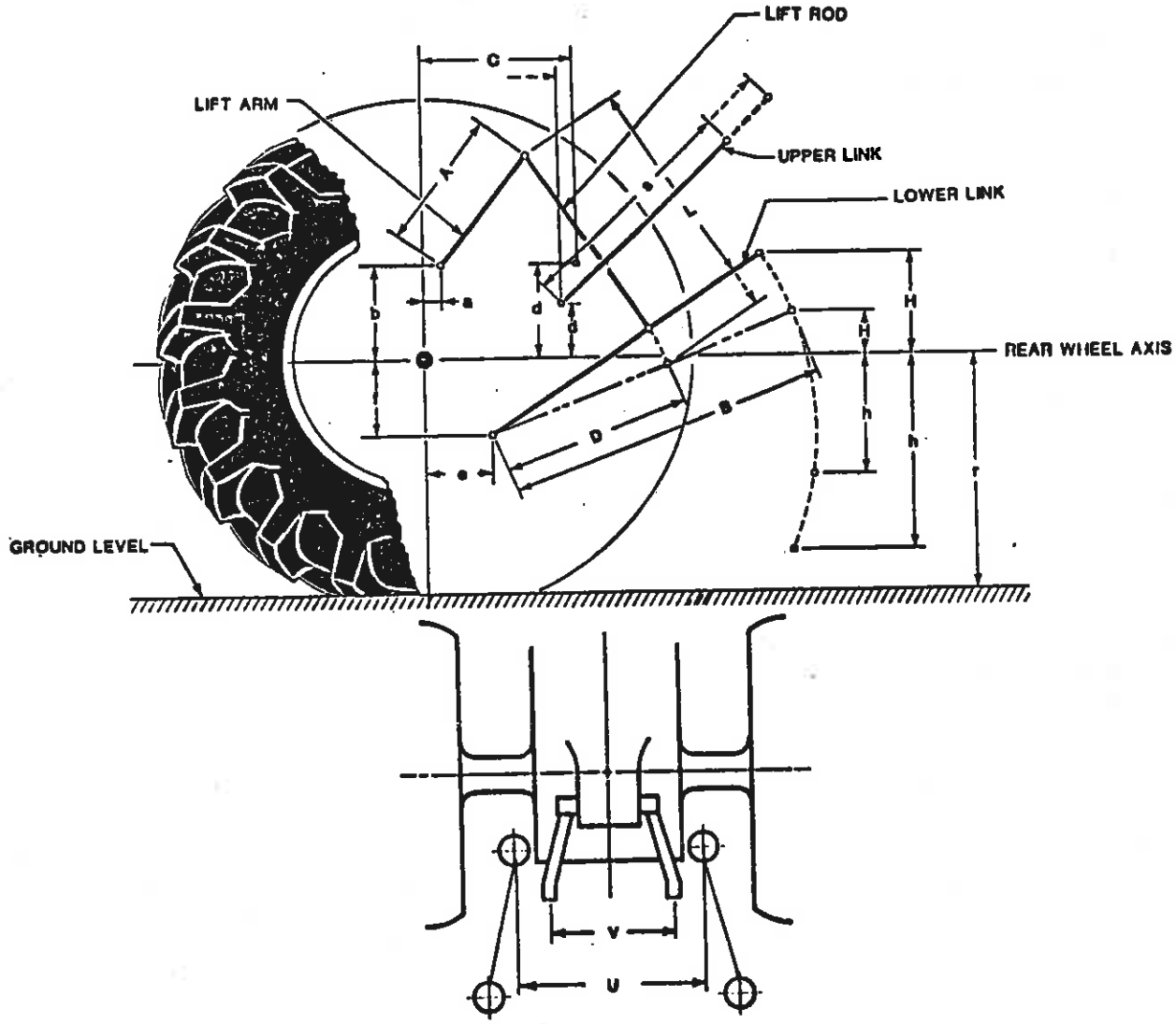


Figure 1.2

Table 1.1 -*Linkage geometry dimensions.

		Dimension or range [mm]	[in]	Settings used on test [mm]	[in]
Lift category		II			
Rear Tire - Radius Index	(r)	842	33.1		
Front Tire - Radius Index	(r')	628	24.7		
Length of lift arms	(A)	292	11.5	same	
Length of lower links	(B)	942	37.1	same	
Distance of lift arm pivot from: horizontal	(a)	70	2.8	same	
rear wheel axis: vertical	(b)	278	10.9	same	
Horizontal distance between the 2 lower link points	(u)	427	16.8	same	
Horizontal distance between the 2 lift arm end points	(v)	583	23.0	same	
Length of upper link	(S)	635	25.0	676	26.6
	to	815	32.1		
Distance of upper link pivot from: horizontal	(c)	362	14.3	362	14.3
		349	13.7		
rear wheel axis: vertical	(d)	143	5.6	143	5.6
		216	8.5		
Distance of lower link pivot from: horizontal	(e)	114	4.5	same	
rear wheel axis: vertical	(f)	256	10.1	same	
Distance of lower link pivot points to lift rod pivot pts on lower links	(D)	587	23.1	same	
Length of lift rods	(L)	775	30.5	833	32.8
	to	845	33.3		
Height of lower hitch points relative to rear wheel axis					
In low position	(h)	638	25.1	630	24.8
	to	478	18.8		
In high position	(H)	165	6.5	62	2.5
	to	48	1.9		
Height above ground of lower hitch points when locked in transport position.		886	34.9	894	35.2
	to	1006	39.6		

* Assuming (r) with a tire dynamic index of 842 mm (33.1 in) ISO 4251/1-1984

SWINGING DRAWBAR.

Type	Oscillating
Height above ground	Minimum: 417 mm (16.4 in) Maximum: 531 mm (20.9 in)
Adjustments	Inverting drawbar and repositioning drawbar
Distance of hitch point from rear wheel axis,horizontal	727, 804, 870, 903 mm (28.6,31.7,34.3,35.6 in)
Distance of hitch point from PTO shaft end.....1000 rpm	
Vertical	108 mm (4.3 in),223 mm (8.8 in)
Horizontal	228, 305, 371, 404 mm (9.0,12.0,14.6,15.9 in)
.....540 rpm	
Vertical	108 mm (4.3 in),223 mm (8.8 in)
Horizontal	204, 281, 347, 380 mm (8.0,11.0,13.7,14.9 in)
Lateral adjustment; Right side	218 mm (8.6 in)
Left side	218 mm (8.6 in)
Distance of pivot point from rear wheel axis; horizontal	175 mm (6.9 in) forward.
Diamater of drawbar pin hole	33 mm (1.3 in)
Maximum vertical static permissible load	13.2 kN (2950 lb)

STEERING

Make/Model/Type	John Deere/hydrostatic
Method of operation	steering wheel
Pump	same as main hydraulic pump
Ram(s)	two internal
Working pressure	same as main hydraulic pressure

BRAKE SYSTEM.

Service brake.	
Make/Type	John Deere/oil immersed disc
Method of operation	Hydraulically actuated from main system; operated by two pedals which can be locked together.
Parking brake.	
Type	Transmission lock
Method of operation	Gear selector lever.
Trailer Brake (optional)	
Type	Hydraulic

WHEELS.

Number.	
Front	Two; Driving and steering
Rear	Two or four; Driving
Wheelbase	2675 mm (105.3 in)

Track width adjustment

	Minimum [mm]	Minimum [in]	Maximum [mm]	Maximum [in]	Adjustment method
Front	1538	60.6	2235	88.0	Reversing wheels and offset lug rims
Rear	1574	62.0	2800	110.2	Rack and pinion axle reversing wheels and offset lug rims.

PROTECTIVE STRUCTURE.

Make/Model/Type	John Deere/SG046/ Sound-Gard Body
Manufacturer's name/address	John Deere Tractor Works Waterloo ,Iowa
Protective device	Cab, not tiltable.
OECD approval number	CSS 073/17

DRIVER'S SEAT.

Make/Model/Type	John Deere/HydraCushioned
Type of damping and suspension	Gas charged accumulator and spring loaded attenuator
Range of adjustment	
Longitudinal	150 mm (5.9 in)
Vertical	64 mm (2.5 in)
Rotation	25 degrees either way

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]
Headlights	1768	69.6	50 x 125	250	9.8
	1898	74.7	100 dia.	978	38.5
Rearlights	2725	107.3	100 dia.	813	32.0
	2002	78.8	100 dia.	813	32.0
Rear reflectors	2878	113.3	50 x 197	554	21.8
	1862	73.3	83 x 190	870	34.3

TEST CONDITIONS.

Overall dimensions.

Length		4425 mm (174.2 in)
Width	Minimum	2438 mm (96.0 in)
	Maximum	2870 mm (113.0 in)
Height -	Top of cab	3018 mm (118.8 in)
-	Top of exhaust	3173 mm (124.9 in)
Ground clearance (unballasted)		399 mm (15.7 in)
Clearance-limiting part		bottom of drawbar

Tractor Mass (with Cab, full fuel tank)

		Without driver [kg]	Without driver [lb]	With driver [kg]	With driver [lb]
Unballasted	Front	2429	5355	2429	5355
	Rear	3943	8695	4018	8860
	Total	6372	14050	6447	14215
Ballasted	Front	2426	5350	2426	5350
	Rear	4635	10220	4710	10385
	Total	7061	15570	7136	15735

Ballast.

	Number of weights	Mass (total) [kg]	Mass (total) [lb]	Water [kg]	Water [lb]
Front	none	none		none	
Rear	none	none		none	
Duals (rear)		639	1410		
Additional test equipment		50	110		

Tire Specifications.

	Front wheels	Rear wheels
Make	Goodyear	Goodyear
Dimensions	14.9R26	18.4R38
Ply rating	3 star (10 ply)	1 star (8 ply)
Type	Radial	Radial
Max.load (tire manufacturer)	2135 kg/tire (4710 lb/tire)	2760 kg/tire (6080 lb/tire)
Max.load(tractor manufacturer)	2120 kg/tire (4680 lb/tire)	2720 kg/tire (6000 lb/tire)
Inflation pressure (tire mfr)	205 kPa(30 psi)	125 kPa(18 psi)
Dynamic Radius Index	628 mm(24.7 in)	842 mm (33.1 in)
Chosen track width - singles	1690 mm(66.5 in)	1707 mm (67.2 in)
- duals		3175 mm(125.0 in)

Oils and Lubrication.

Capacity and change interval:

	Capacity liter	Capacity quart	Oil change hrs	Filter change hrs
Engine (w/o filter)	18	19	250	250
Gear Box (includes rear axle and rear final drive)	60	63.6	1500	annually
Front axle housing	9.5	9	1500	NA
Final drive, front	1.9	2	1500	NA
Hydraulic system	commom with gearbox			

Oil and Lubricant specifications:

	Recommended	Used during test
Engine oil		
Type	John Deere Torq-gard Supreme	same
Viscosity	102 cSt	
Classification	API - CD MIL-L-2104D	
Transmission		
Type	John Deere Hy-Gard	same
Viscosity	58 cSt	
Classification	NA	
Hydraulic fluid	same as transmission oil	same
Steering oil	same as transmission oil	same
Front axle and hubs		
Type	Gear Lubricant	same
Viscosity	85W-140	
Classification	GL-5	
Grease		
Number of lubrication points	21	

Fuel

Type/grade	Diesel Fuel "Premier";grade 2-D
Density (Pto test)	0.828 g/cubic-cm (6.912 lbs/gallon) at 15 'C (59 'F)
(Drawbar test)	same as Pto test.
Cetane number	51.1
Viscosity	2.31 cSt at 38 'C (100 'F)

Remarks: This tractor is equipped with a variable speed cooling fan. Since engine power is influenced by fan speed, all power tests were conducted at approximately the same ambient air temperatures.

COMPULSORY TESTS.

(1) MAIN POWER TAKE-OFF PERFORMANCE (1000 rev/min).

Date of tests : 7 April 1989
Location of tests : Center for Agricultural Equipment,
University of Nebraska, Lincoln, Nebraska.
Type of Dynamometer: Eaton Dynamatic 2025 D.G.

Power kW (hp)	Speeds engine rev/min	Speeds PTO rev/min	Fuel Consumption hourly l/h (gal/h)	Fuel Consumption hourly kg/h (lb/h)	Fuel Consumption specific kg/kW.h (lb/hp.h)	Specific energy kW.h/l (hp.h/gal)
1.1 Maximum Power - 2 hour test.						
94.46 (126.68)	2000	911	27.39 (7.24)	22.69 (50.02)	0.240 (0.395)	3.45 (17.51)
1.2 Power at rated engine speed.(1 hour)						
91.99 (123.36)	2200	1003	27.78 (7.34)	23.01 (50.73)	0.250 (0.411)	3.31 (16.81)
1.3 Maximum power at standard PTO speed.(1000 rev/min)						
91.99 (123.36)	2200	1003	27.78 (7.34)	23.01 (50.73)	0.250 (0.411)	3.31 (16.81)

1.4 Part Loads - governor hand lever set for maximum power at rated engine speed

Power kW (hp)	Speeds engine rev/min	PTO rev/min	Fuel Consumption hourly 1/h (gal/h)	hourly kg/h (lb/h)	specific kg/kW.h (lb/hp.h)	Specific energy kW.h/l (hp.h/gal)
(i) Torque obtained at maximum power at rated engine speed.						
91.99 (123.36)	2200	1003	27.78 (7.34)	23.01 (50.73)	0.250 (0.411)	3.31 (16.81)
(ii) 85% of the torque obtained in (i)						
80.22 (107.57)	2260	1030	25.79 (6.81)	21.36 (47.10)	0.266 (0.438)	3.11 (15.79)
(iii) 75% of the torque defined in (ii)						
61.16 (82.02)	2292	1044	21.69 (5.73)	17.96 (39.60)	0.294 (0.483)	2.82 (14.31)
(iv) 50% of the torque defined in (ii)						
41.35 (55.45)	2323	1059	17.74 (4.69)	14.70 (32.40)	0.356 (0.585)	2.33 (11.82)
(v) 25% of the torque defined in (ii)						
20.86 (27.98)	2345	1069	13.47 (3.56)	11.16 (24.60)	0.535 (0.879)	1.55 (7.86)
(vi) Unloaded						
0.19 (0.26)	2367	1078	9.36 (2.47)	7.76 (17.10)	40.531 (66.632)	0.02 (0.10)

1.5 Part Loads - governor hand lever set for maximum power at standard pto speed.

Power kW (hp)	Speeds engine rev/min	Speeds PTO rev/min	Fuel Consumption hourly l/h (gal/h)	Fuel Consumption hourly kg/h (lb/h)	Fuel Consumption specific kg/kW.h (lb/hp.h)	Specific energy kW.h/l (hp.h/gal)
(i) Torque obtained at standard pto speed.						
91.99 (123.36)	2200	1003	27.78 (7.34)	23.01 (50.73)	0.250 (0.411)	3.31 (16.81)
(ii) 85% of the torque obtained in (i)						
80.22 (107.57)	2260	1030	25.79 (6.81)	21.36 (47.10)	0.266 (0.438)	3.11 (15.79)
(iii) 75% of the torque defined in (ii)						
61.16 (82.02)	2292	1044	21.69 (5.73)	17.96 (39.60)	0.294 (0.483)	2.82 (14.32)
(iv) 50% of the torque defined in (ii)						
41.33 (55.42)	2323	1059	17.74 (4.69)	14.70 (32.40)	0.356 (0.585)	2.33 (11.82)
(v) 25% of the torque defined in (ii)						
20.86 (27.98)	2345	1069	13.47 (3.56)	11.16 (24.60)	0.535 (0.879)	1.55 (7.86)
(vi) Unloaded						
0.26 (0.19)	2367	1078	9.36 (2.47)	7.76 (17.10)	40.531 (66.632)	0.02 (0.10)

No-load maximum engine speed 2367 rev/min

Equivalent engine torque:

at rated engine speed	399 Nm(2200 rev/min)
at maximum power	451 Nm(2000 rev/min)
at maximum torque	521 Nm(1350 rev/min)

Mean atmospheric conditions:

Temperature-dry bulb	24 °C (75 °F)
Relative Humidity	37 %
Barometer -	97.20 kPa(28.70 in Hg)

Maximum Temperatures :		
Thermostat housing	89 °C	(192 °F)
Engine oil pan	104 °C	(220 °F)
Fuel at injection pump	47 °C	(116 °F)
Engine air intake	37 °C	(98 °F)
Trans./Hydr. Oil	61 °C	(142 °F)
Turbocharger boost pressure		
at rated speed	84 kPa	(12.2 psi)
at maximum power	79 kPa	(11.5 psi)

2. POWER LIFT AND HYDRAULIC PUMP PERFORMANCE TEST.

Date of test: 2 May 1989
Location: CAE/UNL, Lincoln, Nebr.

2.1 HYDRAULIC POWER TEST - Hydraulic pump performance

i. Sustained pressure with pump stalled	17.37 MPa (2520 psi)
ii. Pump delivery rate @ minimum pressure & rated engine speed	102.6 l/m (27.1 gpm)

iii.

	Flow Rate l/min (gal/min)	Pressure MPa (psi)	Power kW (hp)
At 90% of relief valve setting.	59.4 (15.7)	15.65 (2270)	15.5 (20.8)
At maximum hydraulic power.	99.2 (26.2)	14.13 (2050)	23.4 (31.3)

Tapping point(s)	Two hydraulic outlets combined
Hydraulic fluid temperature	
in oil reservoir	68 °C (155 °F)
at flow meter	64 °C (148 °F)

2.2 POWER LIFT TEST.

	Hitch Points	Frame
Lower hitch points above ground - down position. [mm/in]	239/9.4	178/7.0
Vertical movement without load [mm/in]	692/27.2	810/31.9
Vertical movement with load [mm/in]	551/21.7	666/26.2
Maximum corrected force through full range [kN/lbf]	27.7/6233	23.9/5373
Corresponding pressure [kPa/psi]	14134/2050	
Moment about rear axle [kN.m/ft.lb]	29.3/21609	39.8/29370
Maximum mast tilt angle [degrees]	---	5.0

Lifting height relative to the horizontal position of lower links

[mm]	-408	-347	-269	-170	-68
[in]	-16.1	-13.7	-10.6	-6.7	-2.7
Corrected lift forces.					
hitch points [kN]	---	27.7	28.3	29.9	31.0
hitch points [lb]	---	6233	6352	6716	6964
at frame [kN]	27.6	---	26.9	27.4	27.1
at frame [lb]	6216	---	6047	6160	6087

Lifting height relative to the horizontal position of lower links

[mm]	1	102	204	257
[in]	0	4.0	8.0	10.1
Corrected lift forces.				
hitch points [kN]	31.3	31.5	31.8	---
hitch points [lb]	7035	7075	7154	---
at frame [kN]	26.4	25.2	---	23.9
at frame [lb]	5927	5670	---	5373

THREE POINT LIFT PERFORMANCE
(With lift assist cylinder)
(for settings used see p.8)

		Hitch Points	Frame
Lower hitch points above ground - down position.	[mm/in]	246/9.7	185/7.3
Vertical movement without load	[mm/in]	692/27.2	810/31.9
Vertical movement with load	[mm/in]	543/21.4	660/26.0
Maximum corrected force through full range	[kN/lbf]	36.0/8089	31.6/7107
Corresponding pressure	[kPa/psi]	14134/2050	
Moment about rear axle	[kN.m/ft.lb]	38.0/28043	52.3/38572
Maximum mast tilt angle	[degrees]	--	5.3

Lifting height relative to the horizontal position of lower links

[mm]		-401	-340	-264	-162	-60
[in]		-15.8	-13.4	-10.4	-6.4	-2.4
Corrected lift forces.						
hitch points	[kN]	--	36.0	37.6	39.7	41.0
	[lb]	--	8089	8457	8920	9215
at frame	[kN]	36.0	--	35.8	36.2	36.0
	[lb]	8095	--	8055	8127	8087

Lifting height relative to the horizontal position of lower links

[mm]	-2	102	204	260	
[in]	-0.1	4.0	8.0	10.2	
Corrected lift forces.					
hitch points [kN]	42.1	42.2	42.8	--	
[lb]	9463	9495	9630	--	
at frame [kN]	34.9	33.3	--	31.6	
[lb]	7854	7485	--	7107	

3. DRAWBAR POWER AND FUEL CONSUMPTION (UNBALLASTED TRACTOR)

OECD Drawbar Data (SI)

Date of tests: 19-Apr-89 19-Apr-89 Fuel density: 0.828 kg/l
Type of track: Concrete Test # 1618

Gear	Power	Pull	Speed	Engine Speed	Slip	SFC		Temperature, deg C					Rel hum	Pressure
	kW	kN	km/h	rev/min	%	kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet	%	kPa
I. Maximum Power (unballasted, fwa @ 2000 rev/min) Tire pressure: 110 kPa, rear 207 kPa, front Drawbar height: 432 mm														
3rd	55.61	59.50	3.36	2273	14.22%	0.360	2.30	45	84	100	18	11	41%	98.37
4th	70.01	60.26	4.18	2196	14.28%	0.329	2.52	43	85	99	18	11	41%	98.41
5th	77.55	55.95	4.99	2100	7.17%	0.295	2.81	44	85	98	18	11	41%	98.44
6th	79.22	52.44	5.44	2004	6.58%	0.286	2.89	44	86	100	19	12	43%	98.34
7th	81.60	45.77	6.42	2001	4.20%	0.278	2.98	43	85	99	17	10	40%	98.51
8th	79.38	39.48	7.24	1997	3.40%	0.285	2.90	44	85	99	17	10	40%	98.48
9th	79.35	34.00	8.40	2003	2.92%	0.286	2.90	44	86	99	19	12	43%	98.31
10th	79.48	29.94	9.56	1999	2.51%	0.285	2.90	44	86	99	21	12	32%	98.27
11th	79.05	25.72	11.06	2000	2.10%	0.287	2.89	44	86	99	21	12	32%	98.24
12th	81.23	22.97	12.73	2000	1.77%	0.277	2.99	44	86	99	21	12	32%	98.21
13th	78.94	17.96	15.82	2000	1.36%	0.287	2.89	44	86	99	22	12	28%	98.17

OECD Drawbar Data (US)

Date of tests: 19-Apr-89 19-Apr-89 Fuel density: 6.912 lb/gal
Type of track: Concrete Test # 1618

Gear	Power	Pull	Speed	Engine Speed	Slip	SFC		Temperature, deg F					Rel hum	Pressure
	hp	lb	mph	rpm	%	lb/hp-hr	hp-hr/gal	Fuel	Coolant	Oil	Dry	Wet	%	in Hg
I. Maximum Power (unballasted, fwa @ 2000 rev/min) Tire pressure: 16 psi, rear 30 psi, front Drawbar height: 17 in														
3rd	74.57	13377	2.09	2273	14.22%	0.591	11.69	112	184	213	65	52	41%	29.05
4th	93.89	13548	2.60	2196	14.28%	0.540	12.80	110	185	210	65	52	41%	29.06
5th	104.00	12577	3.10	2100	7.17%	0.485	14.25	111	185	209	64	51	41%	29.07
6th	106.24	11789	3.38	2004	6.58%	0.471	14.69	111	187	212	67	53	43%	29.04
7th	109.43	10289	3.99	2001	4.20%	0.457	15.12	110	186	211	63	50	40%	29.09
8th	106.45	8877	4.50	1997	3.40%	0.469	14.73	111	185	210	63	50	40%	29.08
9th	106.41	7644	5.22	2003	2.92%	0.470	14.72	111	188	211	67	53	43%	29.03
10th	106.59	6731	5.94	1999	2.51%	0.469	14.73	111	186	210	69	53	32%	29.02
11th	106.01	5782	6.88	2000	2.10%	0.472	14.65	111	187	211	69	53	32%	29.01
12th	108.93	5164	7.91	2000	1.77%	0.456	15.16	111	188	210	70	54	32%	29.00
13th	105.86	4038	9.83	2000	1.36%	0.471	14.67	111	188	210	71	54	28%	28.99

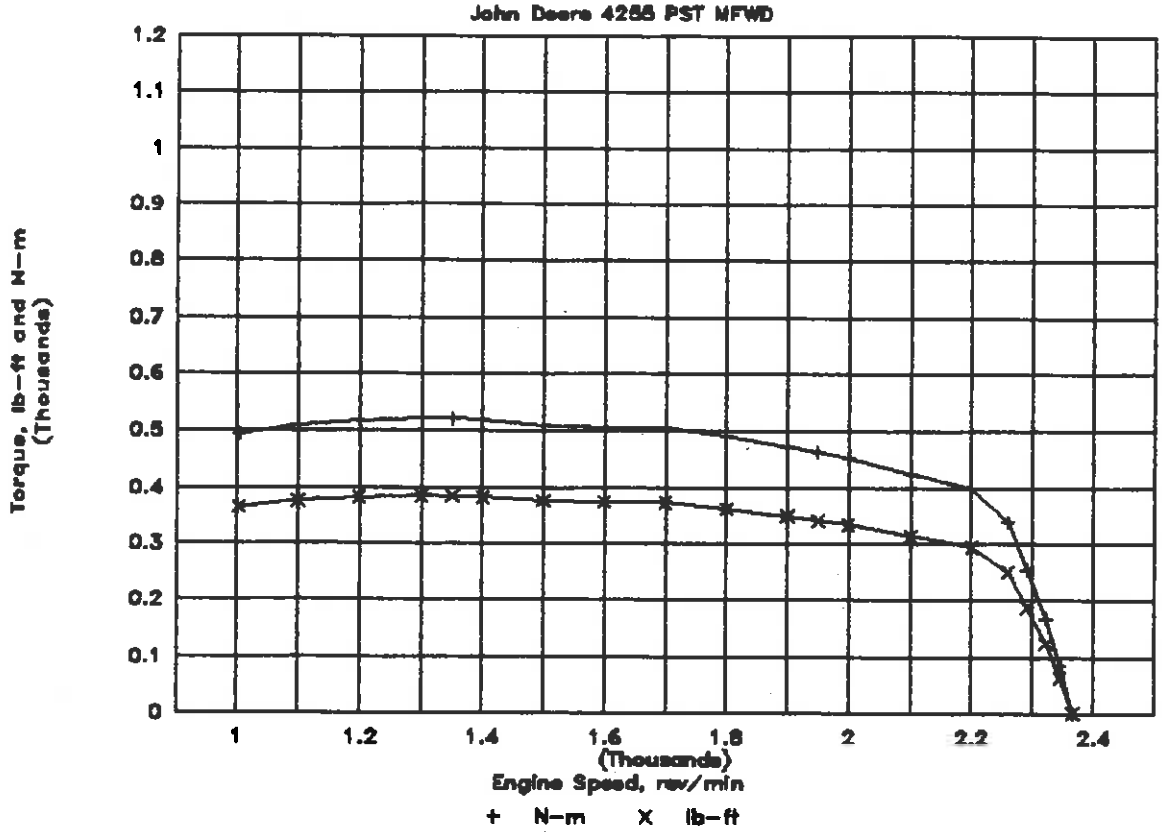
Date of tests: 19-Apr-89 19-Apr-89 Fuel density: 0.828 kg/l
Type of track: Concrete Test # 1618

Gear	Power	Pull	Speed	Engine Speed	Slip	SFC		Temperature, deg C					Rel hum	Pressure
	kW	kN	km/h	rev/min	%	kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet	%	kPa
II. Part Loads (unballasted, fwa) Tire pressure: 110 kPa, rear 207 kPa, front Drawbar height: 432 mm														
II.1 in selected gear at maximum power														
7th	81.60	45.77	6.42	2001	4.20%	0.278	2.98	43	85	99	17	10	40%	98.51
II.1.1 75% of pull at maximum power at rated speed														
7th 75% @	61.05	29.60	7.43	2275	2.68%	0.321	2.58	44	85	101	22	12	28%	98.17
II.1.2 50% of pull at maximum power at rated speed														
7th 50% @	41.79	19.78	7.61	2309	1.69%	0.378	2.19	42	83	98	22	12	28%	98.17
II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1														
9th 75% @	60.86	29.60	7.40	1757	2.60%	0.291	2.85	43	84	98	22	12	28%	98.17
II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2														
9th 50% @	41.73	19.74	7.61	1789	1.69%	0.328	2.53	41	82	96	22	12	28%	98.17
II.2 Note - selected gear was closest gear to 7.5 km/h														

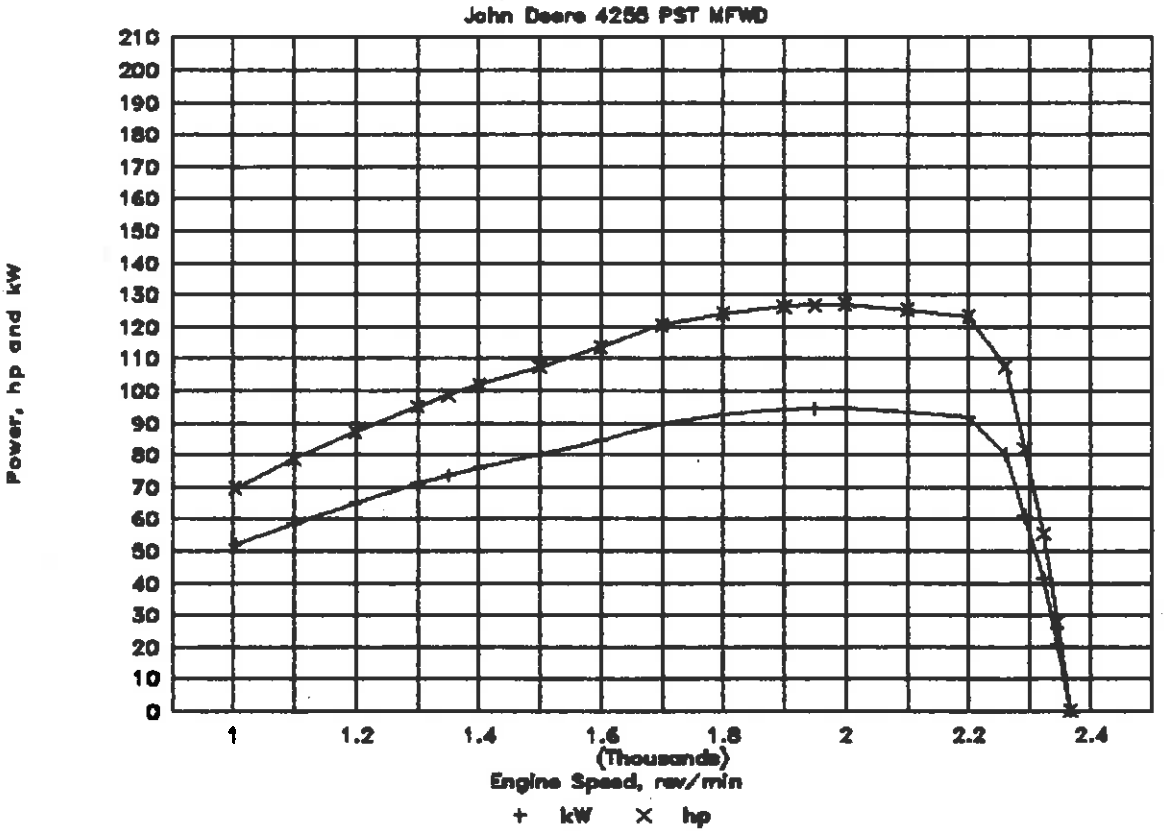
Date of tests: 19-Apr-89 19-Apr-89 Fuel density: 6.912 lb/gal
Type of track: Concrete Test # 1618

Gear	Power	Pull	Speed	Engine Speed	Slip	SFC		Temperature, deg F					Rel hum	Pressure
	hp	lb	mph	rpm	%	lb/hp-hr	hp-hr/gal	Fuel	Coolant	Oil	Dry	Wet	%	in Hg
II. Part Loads (unballasted, fwa) Tire pressure: 16 psi, rear 30 psi, front Drawbar height: 17 in														
II.1 in selected gear at maximum power														
7th	109.43	10289	3.99	2001	4.20%	0.457	15.12	110	186	211	63	50	40%	29.09
II.1.1 75% of pull at maximum power at rated speed														
7th 75% @	81.87	6654	4.61	2275	2.68%	0.528	13.09	112	185	213	72	54	28%	28.99
II.1.2 50% of pull at maximum power at rated speed														
7th 50% @	56.05	4446	4.73	2309	1.69%	0.621	11.13	108	181	209	72	54	28%	28.99
II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1														
9th 75% @	81.61	6654	4.60	1757	2.60%	0.478	14.45	110	183	208	72	54	28%	28.99
II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2														
9th 50% @	55.96	4438	4.73	1789	1.69%	0.539	12.83	106	180	205	72	54	28%	28.99
II.2 Note - selected gear was closest gear to 4.6 mph														

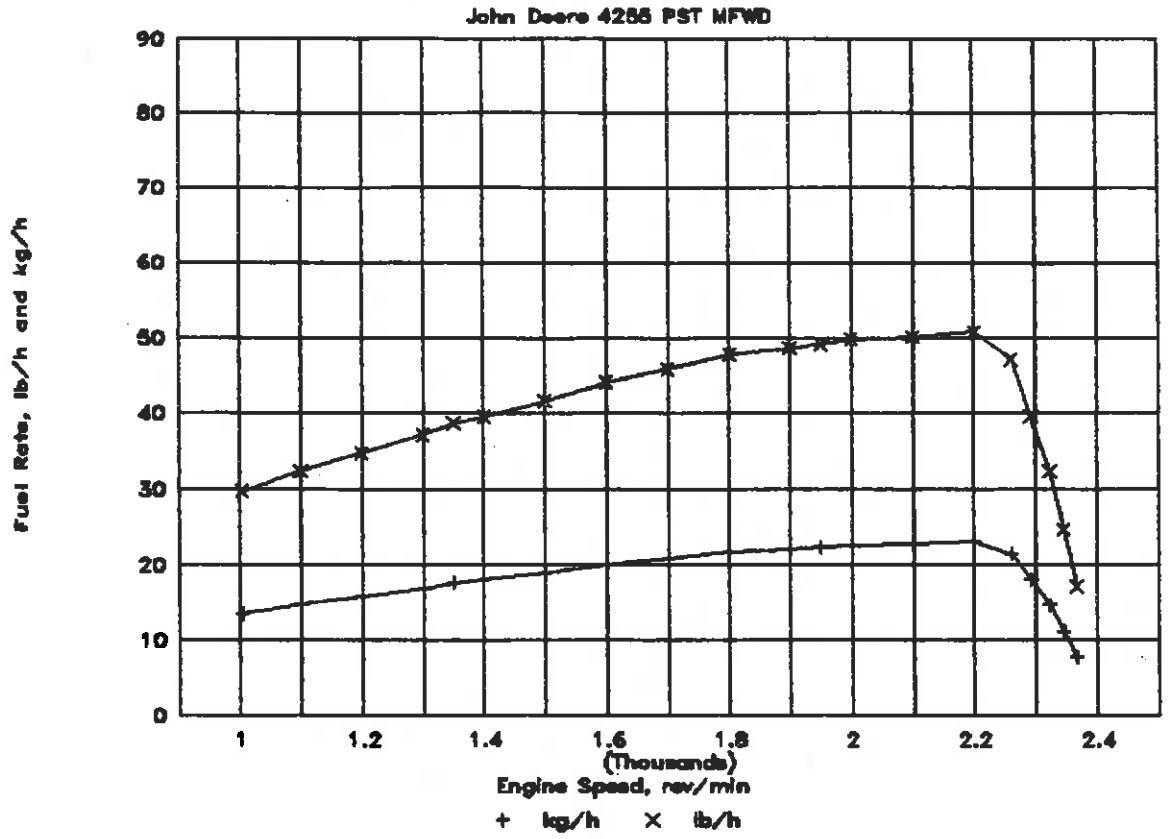
Equivalent Crankshaft Torque



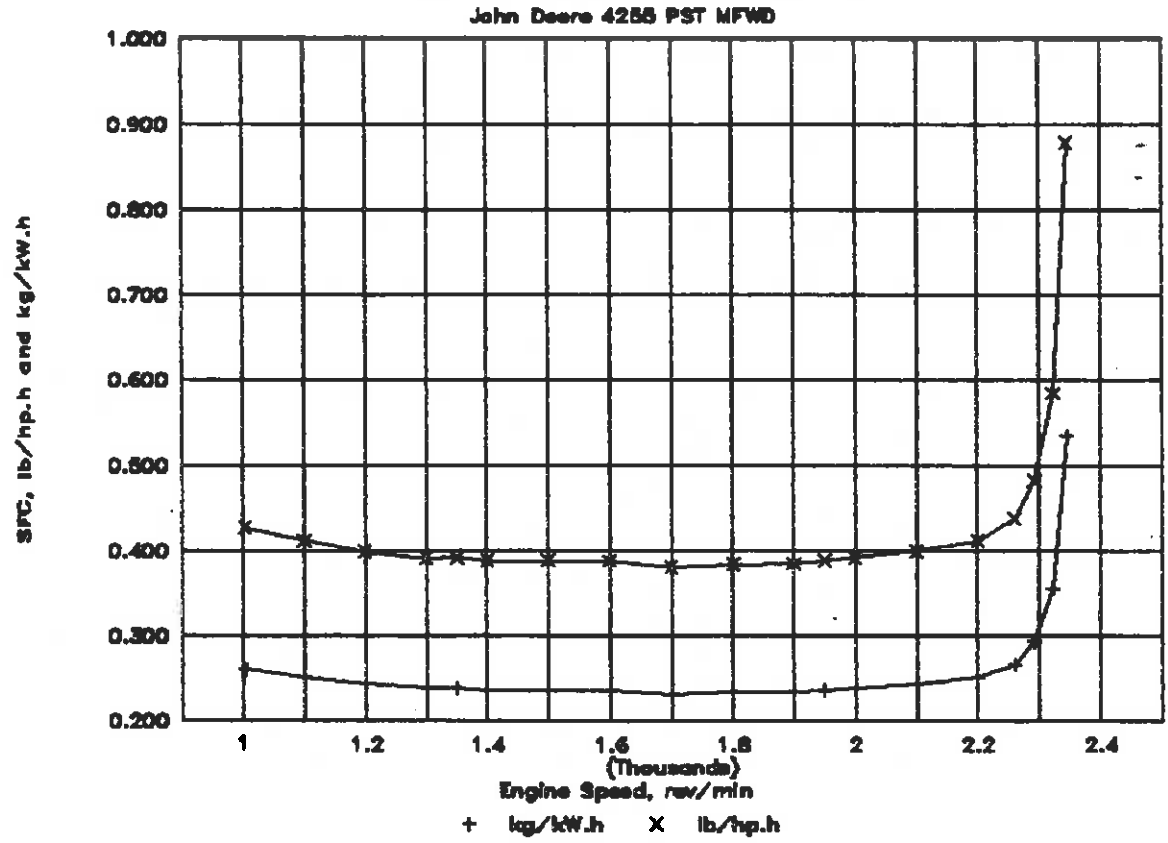
PTO Power

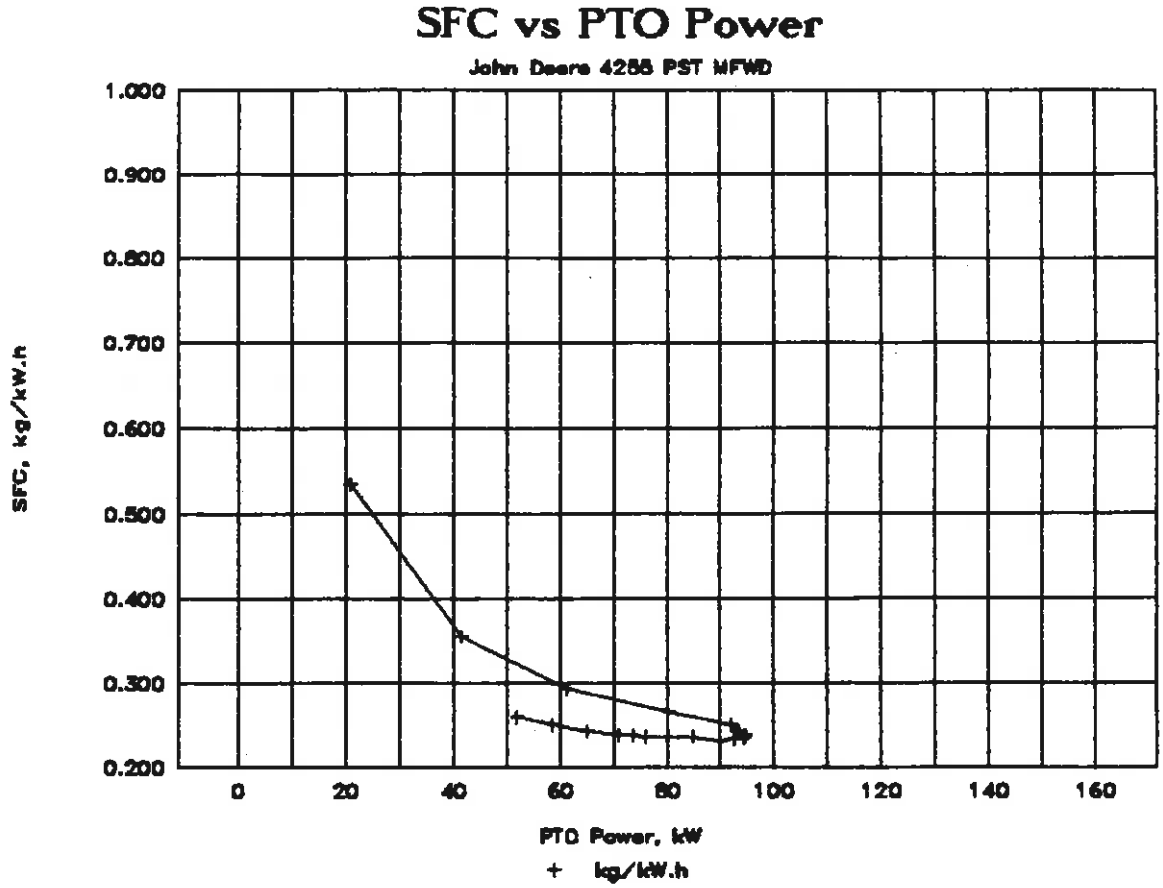


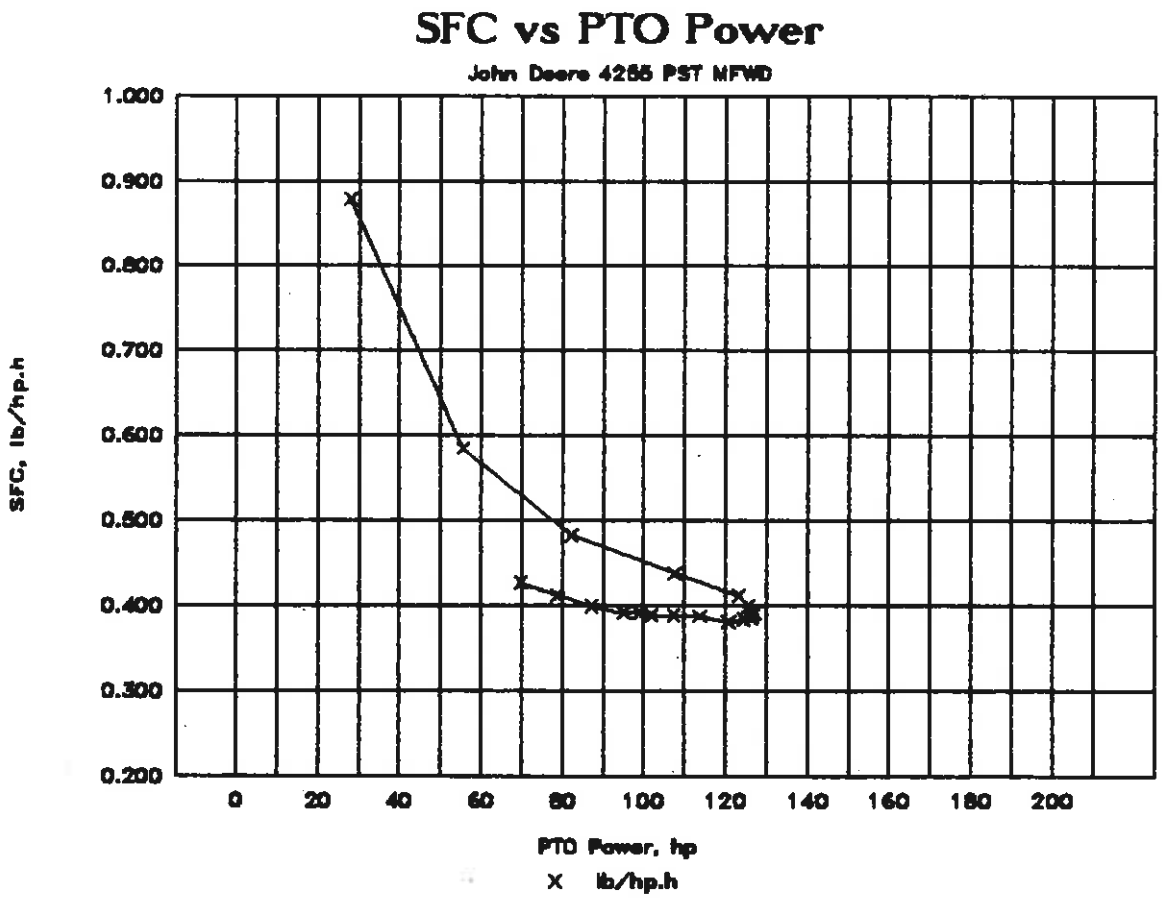
PTO Fuel Consumption



PTO Specific Fuel Consumption




SFC vs PTO Power
John Deere 4255 PST MFWD
SFC, kg/kW.h
1.000
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0
20
40
60
80
100
120
140
160
PTO Power, kW
+ kg/kW.h


SFC vs PTO Power
John Deere 4255 PST MFWD
SFC, lb/hp.h
1.000
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0
20
40
60
80
100
120
140
160
180
200
PTO Power, hp
X lb/hp.h

5. OPTIONAL TESTS.

5.1 MEASUREMENT OF EXTERNAL NOISE LEVEL.

Date of test	:	18 April 1989
Location of test	:	CAE/UNL, Lincoln, Nebr.
Sound level meter	:	B & K 2203
Type of track	:	Concrete oval
Gear number	:	15th
Speed prior to acceleration	:	23.5 km/h (14.6 mph)
Sound level	:	86.5 dB(A)

5.2 MAXIMUM POWER AT 2000 REV/MIN (BALLASTED TRACTOR)

OECD Drawbar Data (SI)

Date of tests: 26-Apr-89 27-Apr-89 Fuel density: 0.828 kg/l
Type of track: Concrete Test # 1618

Gear	Power	Pull	Speed	Engine Speed	Slip	SFC		Temperature, deg C					Rel hum	Pressure
	kW	kN	km/h	rev/min	%	kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet	%	kPa
Ib. Maximum Power (ballasted, fwa @ 2000 rev/min) Tire pressure: 83 kPa, rear 207 kPa, front Drawbar height: 445 mm														
2nd	55.18	69.68	2.85	2277	14.59%	0.354	2.34	44	85	100	23	18	62%	97.09
3rd	63.97	70.04	3.29	2249	14.53%	0.349	2.37	45	86	101	22	18	68%	97.09
4th	75.89	62.30	4.39	2122	7.38%	0.300	2.76	44	87	101	26	19	51%	97.12
5th	77.89	58.16	4.82	2000	6.03%	0.290	2.85	44	87	101	27	20	52%	97.12
6th	78.85	51.12	5.55	2001	4.72%	0.286	2.89	45	88	102	28	20	48%	97.16
7th	80.40	44.57	6.49	2002	3.30%	0.280	2.96	44	86	100	22	18	54%	97.05
8th	78.60	38.82	7.29	2002	3.05%	0.288	2.87	44	88	101	27	19	47%	96.99
9th	78.36	33.40	8.45	2003	2.57%	0.289	2.87	43	88	101	27	19	47%	96.99
10th	78.29	29.32	9.61	2001	2.32%	0.291	2.85	44	87	100	24	18	56%	96.99
11th	78.10	25.31	11.11	2002	1.99%	0.290	2.86	44	88	101	28	19	42%	96.99
12th	80.09	22.57	12.78	2002	1.74%	0.282	2.93	43	88	100	27	19	47%	96.99
13th	77.55	17.59	15.87	2002	1.33%	0.292	2.83	44	88	101	28	19	42%	96.99

OECD Drawbar Data (US)

Date of tests: 26-Apr-89 27-Apr-89 Fuel density: 6.912 lb/gal
Type of track: Concrete Test # 1618

Gear	Power	Pull	Speed	Engine Speed	Slip	SFC		Temperature, deg F					Rel hum	Pressure
	hp	lb	mph	rpm	%	lb/hp-hr	hp-hr/gal	Fuel	Coolant	Oil	Dry	Wet	%	in Hg
Ib. Maximum Power (ballasted, fwa @ 2000 rev/min) Tire pressure: 12 psi, rear 30 psi, front Drawbar height: 17.5 in														
2nd	73.99	15664	1.77	2277	14.59%	0.581	11.89	112	185	212	74	65	62%	28.67
3rd	85.79	15746	2.04	2249	14.53%	0.573	12.05	113	186	213	72	65	68%	28.67
4th	101.77	14006	2.72	2122	7.38%	0.493	14.01	112	188	213	79	67	51%	28.68
5th	104.45	13074	3.00	2000	6.03%	0.477	14.49	111	189	214	81	68	52%	28.68
6th	105.74	11492	3.45	2001	4.72%	0.470	14.70	112	190	215	83	68	48%	28.69
7th	107.82	10019	4.04	2002	3.30%	0.460	15.01	111	187	212	71	64	54%	28.66
8th	105.40	8727	4.53	2002	3.05%	0.474	14.58	111	190	214	81	67	47%	28.64
9th	105.08	7509	5.25	2003	2.57%	0.475	14.56	110	191	214	81	67	47%	28.64
10th	104.98	6592	5.97	2001	2.32%	0.478	14.47	111	189	212	76	64	56%	28.64
11th	104.73	5690	6.90	2002	1.99%	0.477	14.50	111	191	213	82	67	42%	28.64
12th	107.41	5074	7.94	2002	1.74%	0.464	14.88	110	190	212	81	67	47%	28.64
13th	104.00	3955	9.86	2002	1.33%	0.481	14.38	111	191	213	83	67	42%	28.64

MAXIMUM POWER AT 2200 REV/MIN (BALLASTED TRACTOR)

OECD Drawbar Data (SI)

Date of tests: 26-Apr-89 27-Apr-89 Fuel density: 0.828 kg/l
Type of track: Concrete Test # 1618

Gear	Power	Pull	Speed	Engine Speed	Slip	SFC		Temperature, deg C					Rel hum	Pressure
	kW	kN	km/h	rev/min	%	kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet	%	kPa
Ic. Maximum Power (ballasted, fwa @ 2200 rev/min) Tire pressure: 83 kPa, rear 207 kPa, front Drawbar height: 445 mm														
3rd	64.72	70.43	3.31	2247	14.15%	0.345	2.40	45	85	100	22	18	68%	97.05
4th	75.49	59.03	4.60	2200	5.96%	0.302	2.74	44	86	100	24	19	62%	97.09
5th	76.52	51.23	5.38	2199	4.72%	0.300	2.76	44	89	101	28	20	48%	97.12
6th	76.92	44.93	6.16	2201	3.94%	0.296	2.80	45	88	101	29	21	49%	97.16
7th	77.82	39.07	7.17	2198	2.81%	0.295	2.81	44	86	101	21	18	75%	97.05
8th	74.95	33.49	8.06	2201	2.48%	0.304	2.72	44	88	101	27	19	47%	96.99
9th	74.66	28.88	9.31	2200	2.16%	0.306	2.71	44	88	100	27	19	47%	96.99
10th	74.63	25.39	10.58	2197	2.16%	0.306	2.71	44	87	100	26	19	51%	96.99
11th	74.82	22.01	12.24	2199	1.66%	0.304	2.72	44	88	101	28	19	42%	96.99
12th	75.94	19.40	14.09	2202	1.49%	0.301	2.75	44	88	100	28	19	42%	96.99

OECD Drawbar Data (US)

Date of tests: 26-Apr-89 27-Apr-89 Fuel density: 6.912 lb/gal
Type of track: Concrete Test # 1618

Gear	Power	Pull	Speed	Engine Speed	Slip	SFC		Temperature, deg F					Rel hum	Pressure
	hp	lb	mph	rpm	%	lb/hp-hr	hp-hr/gal	Fuel	Coolant	Oil	Dry	Wet	%	in Hg
Ic. Maximum Power (ballasted, fwa @ 2200 rev/min) Tire pressure: 12 psi, rear 30 psi, front Drawbar height: 17.5 in														
3rd	86.79	15833	2.06	2247	14.15%	0.568	12.17	112	185	212	71	64	68%	28.66
4th	101.24	13271	2.86	2200	5.96%	0.497	13.91	111	187	212	76	66	62%	28.67
5th	102.61	11517	3.34	2199	4.72%	0.493	14.01	111	192	215	83	68	48%	28.68
6th	103.14	10101	3.83	2201	3.94%	0.486	14.22	114	191	214	85	69	49%	28.69
7th	104.36	8783	4.46	2198	2.81%	0.485	14.26	111	186	213	70	64	75%	28.66
8th	100.51	7529	5.01	2201	2.48%	0.500	13.83	111	190	214	81	67	47%	28.64
9th	100.12	6492	5.78	2200	2.16%	0.503	13.73	111	190	213	81	67	47%	28.64
10th	100.08	5707	6.58	2197	2.16%	0.503	13.74	111	189	212	78	66	51%	28.64
11th	100.33	4947	7.61	2199	1.66%	0.500	13.82	111	190	214	82	67	42%	28.64
12th	101.83	4361	8.76	2202	1.49%	0.495	13.97	111	190	212	83	67	42%	28.64

5.3 POWER LIFT TEST

*Linkage geometry dimensions.
(Tractor equipped with Walterscheid lower link ends)

		Dimension or range		Settings used on test	
		[mm]	[in]	[mm]	[in]
Lift category		II			
Rear Tire - Radius Index	(r)	842	33.1		
Front Tire - Radius Index	(r')	628	24.7		
Length of lift arms	(A)	292	11.5	same	
Length of lower links	(B)	1022	40.2	same	
Distance of lift arm pivot from: horizontal	(a)	70	2.8	same	
rear wheel axis: vertical	(b)	278	10.9	same	
Horizontal distance between the 2 lower link points	(u)	427	16.8	same	
Horizontal distance between the 2 lift arm end points	(v)	583	23.0	same	
Length of upper link	(S)	665	26.2		
	to	850	33.5	752	29.6
Distance of upper link pivot from:horizontal	(c)	380	15.0		
		367	14.4	367	14.4
rear wheel axis:vertical top	(d)	380	15.0		
middle		216	8.5		
bottom		155	6.1	155	6.1
Distance of lower link pivot from: horizontal	(e)	114	4.5	same	
rear wheel axis: vertical	(f)	256	10.1	same	
Distance of lower link pivot points to lift rod pivot pts on lower links	(D)	587	23.1	same	
Length of lift rods	(L)	775	30.5	814	32.1
	to	845	33.3		
Height of lower hitch points relative to rear wheel axis In low position	(h)	638	25.1	621	24.5
	to	478	18.8		
In high position	(H)	48	1.9	116	4.6
	to	165	6.5		
Height above ground of lower hitch points when locked in transport position.		886	34.9		
	to	1006	39.6	958	37.7

*Assuming (r) with a dynamic tire index of 842 mm (33.1 in)
ISO 4251/1-1984

THREE POINT LIFT PERFORMANCE
(Upper link in bottom hole on tractor)
(Tractor equipped with 2 lift assist cylinders)

		Hitch point	Frame
Lower hitch points above ground - down position.	[mm/in]	284/11.2	191/7.5
Vertical movement			
without load	[mm/in]	737/29.0	866/34.1
with load	[mm/in]	683/26.9	783/30.8
Maximum corrected force through full range	[kN/lbf]	44.8/10079	36.9/8296
Corresponding pressure	[kPa/psi]	14134/2050	
Moment about rear axle	[kN.m/ft.lb]	50.9/37543	64.4/47494
Maximum mast tilt angle	[degrees]	--	7.7

Lifting height relative to the horizontal position of lower links

[mm]		-395	-302	-201	-99	0
[in]		-15.6	-11.9	-7.9	-3.9	0
Corrected lift forces.						
hitch points	[kN]	--	44.8	46.4	48.6	50.0
	[lb]	--	10079	10432	10930	11243
at frame	[kN]	42.1	42.2	42.8	42.7	41.9
	[lb]	9460	9476	9621	9605	9420

Lifting height relative to the horizontal position of lower links

[mm]		102	203	305	381	387
[in]		4.0	8.0	12.0	15.0	15.3
Corrected lift forces.						
hitch points	[kN]	50.7	51.2	51.7	52.2	--
	[lb]	11388	11516	11621	11725	--
at frame	[kN]	40.4	38.9	--	--	36.9
	[lb]	9091	9792	--	--	8296

THREE POINT LIFT PERFORMANCE
(Upper link in top hole on tractor)
(Tractor equipped with 2 lift assist cylinders)
(for settings used see p.28)

		Hitch point	Frame
Lower hitch points above ground - down position.	[mm/in]	284/11.2	354/13.9
Vertical movement without load	[mm/in]	735/28.9	610/24.0
Vertical movement with load	[mm/in]	683/26.9	419/16.5
Maximum corrected force through full range	[kN/lbf]	44.8/10079	52.2/11741
Corresponding pressure	[kPa/psi]	14134/2050	
Moment about rear axle	[kN.m/ft.lb]	50.9/37543	91.1/67218
Maximum mast tilt angle	[degrees]	--	5.3*

*Tiltangle of mast from vertical position to uppermost position - 1.7°negative

Lifting height relative to the horizontal position of lower links

[mm]	-302	-232	-99	0	
[in]	-11.9	-9.2	-3.9	0	
Corrected lift forces.					
hitch points [kN]	44.8	46.4	48.6	50.7	
hitch points [lb]	10079	10432	10930	11388	
at frame [kN]	--	64.2	57.2	55.1	
at frame [lb]	--	14431	12865	12392	

Lifting height relative to the horizontal position of lower links

[mm]	102	187	203	305	381
[in]	4.0	7.4	8.0	12.0	15.0
Corrected lift forces.					
hitch points [kN]	50.7	--	51.2	51.7	52.2
hitch points [lb]	11388	--	11516	11621	11725
at frame [kN]	52.9	52.2	--	--	--
at frame [lb]	11902	11741	--	--	--

Repairs: None
Remarks: None