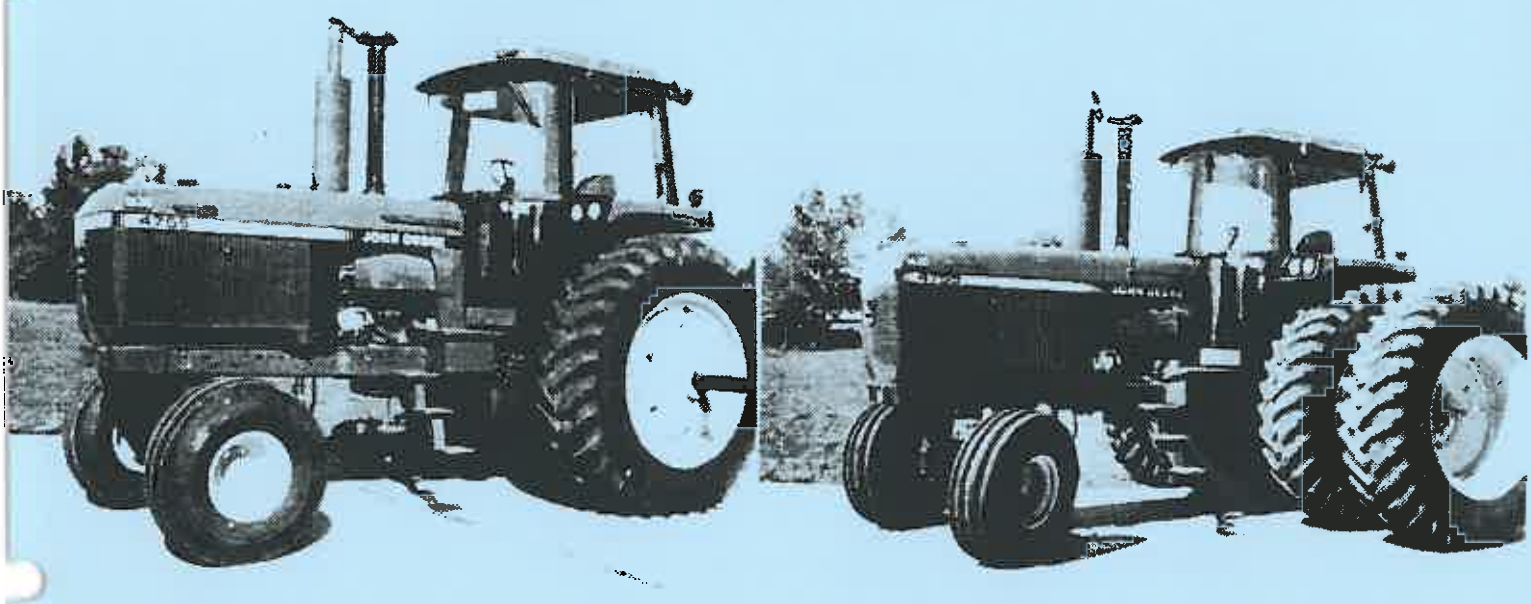
OECD APPROVAL # 1250
Date of approval: March 29, 1990

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 4755 QUAD-RANGE (2 WD)



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

NEBRASKA TEST NO.1630

Test date: September 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 March 29, 1990

John Deere 4755 Quad-Range OECD # 1250

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SPECIFICATIONS OF TRACTOR.

Manufacturers name/address	:	John Deere Tractor 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	:	70.0 hours.
Location of Test	:	Center for Agricultural Equipment, Lincoln, Nebraska,USA.

TRACTOR.

Make	John Deere
Model	4755
Type	Unit construction, mechanical
Number of driving wheels	2
Serial Number	*RW4755H001852*
1st Serial number	*RW4755H001001*

ENGINE.

Make	John Deere
Model	6076ARW06
Type	Diesel, turbocharged and intercooled
Serial Number	*RG6076A109849*

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	110-131 kPa (16-19 psi)

Fuel System

Feed system	Transfer pump integral with injection pump
Make/Type/Model of filters	Stanadyne/RE27091/ paper element
Fuel Tank capacity	386 liter (102 US gallons)

Make/Model/Type Injection Pump	Nippondenso/RE36653/in line
Pump Serial number	2J00790
Production setting of pump Flow Rate (Rated Eng.Spd & Full Load)	31.6 +/- 1.4 kg/hr 69.7 +/- 3.1 lb/hr
Make/Model/Type of injectors	Nippondenso/RE30083/21 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/Model/Type	Donaldson/plastic mesh chaff screen
Air intake location	top of air stack
Main Cleaner Make/Model/Type	Donaldson/AR80652/ pleated paper
Secondary element Make/model/Type	Donaldson/AR80653/ 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	1
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	660 mm (26.0 in)
Coolant system capacity	30.3 liter (32 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/RE35449/expansion chamber
Location	Above hood, left of centerline

TRANSMISSION.

Clutch. (travel)	
Make/Type	John Deere/multiple plate oil cooled
Number of plates	2
Plate diameter	304.8 mm (12.0 in)
Method of operation	Hydraulically actuated by foot pedal
Gear Box.	
Make/Type	John Deere/Quad-Range
Arrangement	countershaft and planetary design consisting of: one 8 speed gearbox with 4 non-synchronized ranges and 2 synchronized speeds in each range one 2 speed planetary gearset with a multiple wet disc clutch and brake
Number of gears	16 forward and 6 reverse controlled by 2 hand levers
Oil cooler	Heat exchanger with air
Available options	None
Rear axle and final drives.	
Make/Type	John Deere/crown wheel and pinion, differential and planetary reduction
Differential Lock	
Type	Hydraulic
Method of engagement	Foot pedal
Method of disengagement	self disengaging with brake
Front axle	
Make/Type	John Deere/not propelled

Gear ratios and travel speeds.

(Tire dynamic radius of 918 mm (36.1 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]
Forward			
A1	218.25	3.49	2.17
A2	171.88	4.43	2.75
A3	120.81	6.30	3.91
B1	97.65	7.80	4.84
A4	95.12	8.00	4.97
C1	83.11	9.16	5.69
B2	76.90	9.90	6.15
C2	65.46	11.63	7.22
B3	54.04	14.09	8.75
D1	51.29	14.84	9.22
C3	46.00	16.55	10.28
B4	42.55	17.89	11.11
D2	40.40	18.85	11.71
C4	36.23	21.01	13.05
D3	28.38	26.83	16.66
D4	22.35	34.07	21.16
Reverse			
AR1	115.79	6.58	4.09
AR2	91.17	8.35	5.19
BR1	51.79	14.70	9.13
CR1	44.08	17.27	10.72
BR2	40.79	18.67	11.59
CR2	34.72	21.93	13.62

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.

Standard PTO. 1000 rev/min.

Location	Rear of tractor, vertical center plane.
Diameter of shaft	44.5 mm (1.75 inch)
Number of splines	20; conforms to ISO 500/1979
Height above ground	739 mm (29.1 in)
Distance from median plane of tractor	0 mm
Distance behind rear axle	559 mm (22.0 in)
PTO Speed @ rated engine speed	998 rev/min
Engine speed @ Std. PTO Speed	2205 rev/min
Ratio of Engine rpm to PTO rpm	2.2045
Direction of rotation when facing 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 with one 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.	3 pairs of ISO standard coup - lings at rear of tractor. (a 4th set is optional)
Max. oil volume available for external cylinders.	6.0 l (6.3 qt) 13.0 l (13.7 qt) with 7.0 l (7.4 qt) allowable overfill

THREE POINT LINKAGE.

- Category 3 or 3N in conformity with ISO 730/1-1977
- Category adaptor - Quick coupler

Figure 1.1

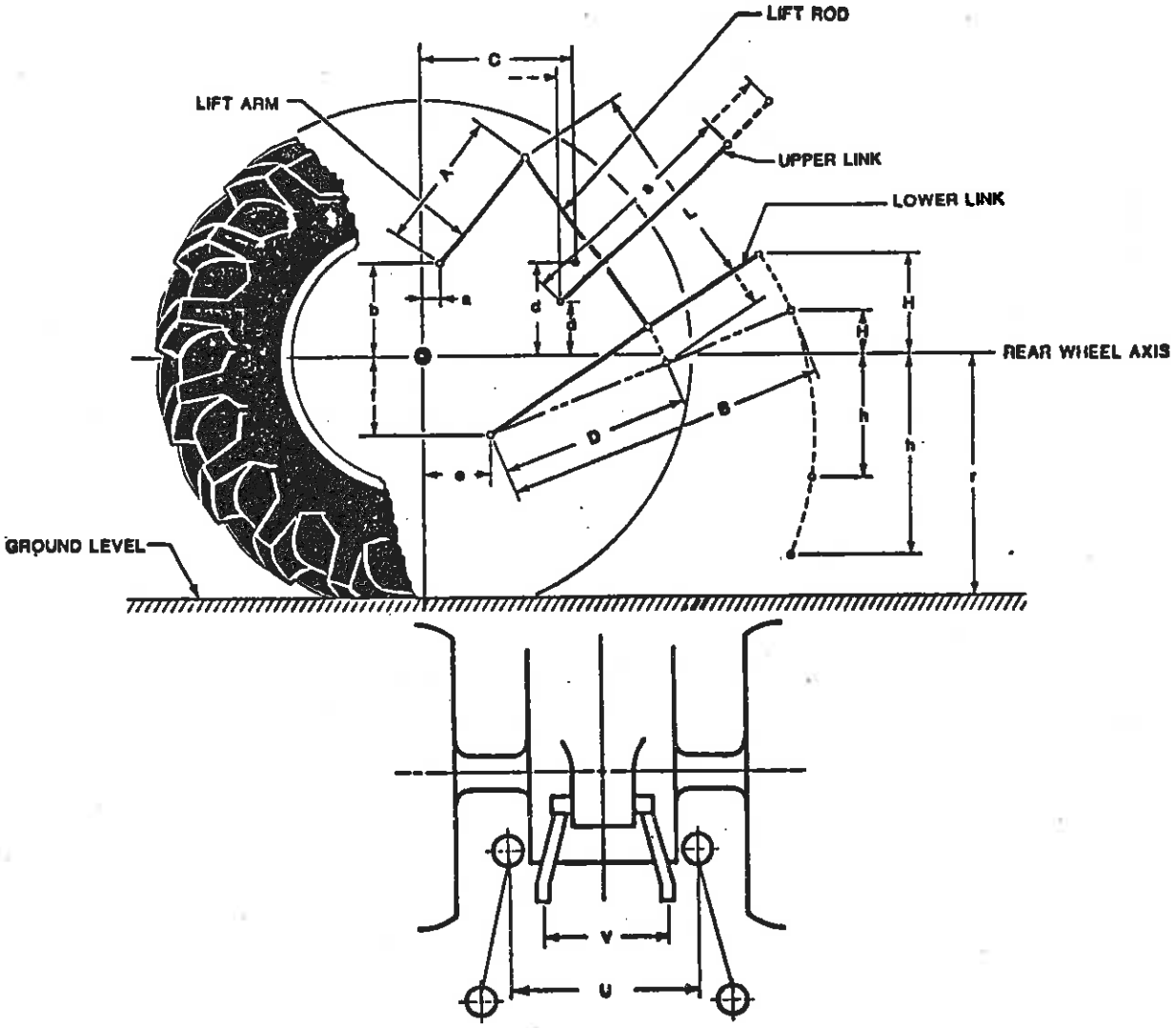


Figure 1.2

Table 1.1 -*Linkage geometry dimensions.

		Dimension or range [mm]	Dimension or range [in]	Settings used on test [mm]	Settings used on test [in]
Lift category		III			
Rear Tire - Radius Index	(r)	918	36.1		
Front Tire - Radius Index	(r')	716	28.2		
Length of lift arms	(A)	468	18.4	same	
Length of lower links	(B)	968	38.1	same	
Distance of lift arm pivot from: horizontal	(a)	0	0	same	
rear wheel axis: vertical	(b)	327	12.9	same	
Horizontal distance between the 2 lower link points	(u)	582	22.9	same	
Horizontal distance between the 2 lift arm end points	(v)	746	29.4	same	
Length of upper link	(S)	705 to 825	27.8 to 32.5	714	28.1
Distance of upper link pivot from: horizontal	(c)	384	15.1	same	
rear wheel axis: vertical	(d)	172	6.8	same	
Distance of lower link pivot from: horizontal	(e)	156	6.1	same	
rear wheel axis: vertical	(f)	330	13.0	same	
Distance of lower link pivot points to lift rod pivot pts on lower links.	(D)	716	28.2	same	
Length of lift rods	(L)	860 to 947	33.8 to 37.3	947	37.3
Height of lower hitch points relative to rear wheel axis In low position	(h)	554 to 678	21.8 to 26.7	660	26.0
In high position	(H)	147 to 249	5.8 to 9.8	162	6.4
Height above ground of lower hitch points when locked in transport position.		1064 to 1166	41.9 to 45.9	1079	42.5

*Assuming (r) with a dynamic tire index of 918 mm (36.1 in)
ISO 4251/1-1984

SWINGING DRAWBAR.

Type	Oscillating
Height above ground	Minimum: 478 mm (18.8 in) Maximum: 625 mm (24.6 in)
Adjustments	Inverting drawbar and repositioning clevis.
Distance of hitch point from rear wheel axis,horizontal	1003 mm(39.5 in),1067 mm(42.0 in)
Distance of hitch point from PTO shaft end Vertical	127 mm (5.0 in),222 mm (8.7 in)
Horizontal	444 mm (17.5 in),508 mm (20.0 in)
Lateral adjustment;Right side	229 mm (9.0 in)
Left side	229 mm (9.0 in)
Distance of pivot point from rear wheel axis; horizontal	511 mm (20.1 in) forward.
Diamater of drawbar pin hole	37 mm (1.5 in)
Maximum vertical static permissible load	16.4 kN (3650 lb)

STEERING

Make/Model/Type	John Deere/Hydrostatic
Method of operation	Steering wheel
Pump(s)	Same as main hydraulic pump
Ram(s)	Two internal
Working pressure	Same as main hydraulic pressure

BRAKE SYSTEM.

Service brake.

Make/Model/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.

Trailering brake(optional)

Type	Hydraulic

WHEELS.

Number.	
Front	Two; Driving and steering
Rear	Two or four; Driving
Wheelbase	3010 mm (118.5 in)

Track width adjustment

	Minimum [mm]	Minimum [in]	Maximum [mm]	Maximum [in]	Adjustment method
Front	1550	61.0	2160	85.0	Adjustable front axle
Rear	1642	64.6	2938	115.7	Rack and pinion axle, reversing wheels and offset lug rims

PROTECTIVE STRUCTURE.

Make/Model/Type	John Deere/SG025/ Sound-Gard Cab
Manufacturer's name/address	John Deere Waterloo, Iowa
Protective device	Cab, not tiltable.
OECD approval number	CSS 010/2

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 each way

LIGHTING.

	Height above ground of center [mm]	Height above ground of center [in]	Size [mm]	Distance from outside edge to median plane of tractor. [mm]	Distance from outside edge to median plane of tractor. [in]
Headlights	1735	68.3	50 x 125	317	12.5
	1970	77.6	100 dia.	978	38.5
Rearlights	2835	111.6	100 dia.	813	32.0
	2155	84.8	100 dia.	813	32.0
Rear reflectors	3005	118.3	50 x 197	554	21.8
	1995	78.5	50 x 190	870	34.3

TEST CONDITIONS.

Overall dimensions.

Length		4975 mm (195.9 in)
Width	Minimum	2758 mm (109.0 in)
	Maximum	2997 mm (118.0 in)
Height	- Top of cab	3110 mm (122.5 in)
	- Top of exhaust	3190 mm (125.6 in)
Ground clearance (unballasted)		445 mm (17.5 in)
Clearance-limiting part		Hitch sway blocks

Tractor Mass (with Cab, full fuel tank)

		without driver [kg]	without driver [lb]	with driver [kg]	with driver [lb]
Unballasted	Front	2207	4865	2206	4865
	Rear	5064	11165	5138	11330
	Total	7271	16030	7345	16195
Ballasted	Front	2209	4870	2209	4870
	Rear	7008	15450	7083	15615
	Total	9217	20320	9292	20485

Ballast.

	Number of weights	Mass(total) [kg]	Mass(total) [lb]	Water [kg]	Water [lb]
Front	none				
Rear	4	907	2000		
Duals (rear)	2	885	1950	none	
Additional test equipment		154	340		

Tire Specifications.

	Front wheels	Rear wheels
Make	Goodyear	Goodyear
Dimensions	14L-16.1	20.8R42
Ply rating	(10 ply)	2 star (10 ply)
Type	Rib	Radial
Max.load (tire manufacturer)	1730 kg/tire (3830 lb/tire)	4130 kg/tire (9100 lb/tire)
Max.load(tractor manufacturer)	same	same
Inflation pressure (tire mfr)	302 kPa(44 psi)	165 kPa(24 psi)
Dynamic Radius Index	716 mm (28.2 in)	918 mm (36.1 in)
Chosen track width - singles	1550 mm (61.0 in)	1700 mm (67.0 in)
- duals		3405 mm(134.0 in)

Oils and Lubrication.

Capacity and change interval:

	Capacity liter	Capacity quart	Oil change hrs	Filter change hrs
Engine (w/o filter)	21	22	250	250
Gear Box (includes rear axle and rear final drive)	102	108	1500	annually
Hydraulic system	common 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
Grease		
Number of lubrication points	23	

Fuel

Type/grade	Diesel Fuel "Premier";grade 2-D
Density (Pto test)	0.828 g/cubic-cm (6.910 lb/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 : 21 September 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.						
134.49 (180.35)	2000	908	36.17 (9.55)	29.95 (66.02)	0.223 (0.366)	3.72 (18.88)
1.2 Power at rated engine speed (1 hour).						
132.07 (177.11)	2200	998	36.82 (9.73)	30.49 (67.21)	0.231 (0.379)	3.59 (18.21)
1.3 Maximum power at standard PTO speed (1000 rev/min).						
132.07 (177.11)	2200	998	36.82 (9.73)	30.49 (67.21)	0.231 (0.379)	3.59 (18.21)

1.4 Part Loads - governor hand lever set for maximum power at rated engine 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 maximum power at rated engine speed.						
132.07 (177.11)	2200	998	36.82 (9.73)	30.49 (67.21)	0.231 (0.379)	3.59 (18.21)
(ii) 85% of the torque obtained in (i)						
115.07 (154.31)	2253	1022	33.20 (8.77)	27.49 (60.60)	0.239 (0.393)	3.47 (17.60)
(iii) 75% of the torque defined in (ii)						
87.03 (116.72)	2281	1035	27.45 (7.25)	22.72 (50.10)	0.261 (0.429)	3.17 (16.10)
(iv) 50% of the torque defined in (ii)						
59.15 (79.32)	2317	1051	20.87 (5.51)	17.28 (38.10)	0.292 (0.480)	2.83 (14.39)
(v) 25% of the torque defined in (ii)						
29.91 (40.11)	2351	1067	15.12 (3.99)	27.60 (12.52)	0.419 (0.688)	1.98 (10.04)
(vi) Unloaded						
0.58 (0.77)	2385	1082	9.04 (2.39)	16.50 (7.48)	12.990 (21.356)	0.06 (0.32)

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

Power kW (hp)	Speeds engine rev/min	PTO rev/min	Fuel Consumption hourly l/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 standard PTO speed.						
132.07 (177.11)	2200	998	36.82 (9.73)	30.49 (67.21)	0.231 (0.379)	3.59 (18.21)
(ii) 85% of the torque obtained in (i)						
115.07 (154.31)	2253	1022	33.20 (8.77)	27.49 (60.60)	0.239 (0.393)	3.47 (17.60)
(iii) 75% of the torque defined in (ii)						
87.03 (116.72)	2281	1035	27.45 (7.25)	22.72 (50.10)	0.261 (0.429)	3.17 (16.10)
(iv) 50% of the torque defined in (ii)						
59.15 (79.32)	2317	1051	20.87 (5.51)	17.28 (38.10)	0.292 (0.480)	2.83 (14.39)
(v) 25% of the torque defined in (ii)						
29.91 (40.11)	2351	1067	15.12 (3.99)	12.52 (27.60)	0.419 (0.688)	1.98 (10.04)
(vi) Unloaded						
0.58 (0.77)	2385	1082	9.04 (2.39)	7.48 (16.50)	12.990 (21.356)	0.06 (0.32)

No-load maximum engine speed 2385 rev/min

Equivalent engine torque:

at rated engine speed	573 Nm(2200 rev/min)
at maximum power	642 Nm(2000 rev/min)
at maximum torque	779 Nm(1400 rev/min)

Mean atmospheric conditions:

Temperature-dry bulb	24 °C (75 °F)
Relative Humidity	56 %
Barometer -	97.87 kPa (28.90 in Hg)

Maximum temperatures:		
Thermostat housing	89 °C	(192 °F)
Engine oil pan	108 °C	(226 °F)
Fuel at injection pump	49 °C	(120 °F)
Engine air intake	27 °C	(81 °F)
Trans./Hydr. Oil	57 °C	(134 °F)
Turbocharger boost pressure		
at rated engine speed	117 kPa	(17.0 psi)
at maximum power	117 kPa	(17.0 psi)

2. HYDRAULIC POWER AND LIFTING FORCE.

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	17.65 MPa (2560 psi)
ii. Pump delivery rate @ minimum pressure & rated engine speed	133.2 l/m (35.2 gpm)

iii.

	Flow Rate l/min (gal/min)	Pressure MPa (psi)	Power kW (hp)
At 90% of relief valve setting.	31.8 (8.4)	15.86 (2300)	8.4 (11.3)
At maximum hydraulic power.	127.6 (33.7)	12.07 (1750)	25.7 (34.4)

Tapping point(s)	Two hydraulic outlets combined
Hydraulic fluid temperature	
in oil reservoir	74 °C (166 °F)
at flow meter	78 °C (173 °F)

2.2 POWER LIFT TEST.

		Hitch Points	Frame
Lower hitch points above ground - down position.	[mm/in]	283/11.1	276/10.9
Vertical movement without load	[mm/in]	822/32.4	940/37.0
Vertical movement with load	[mm/in]	787/31.0	897/35.3
Maximum corrected force through full range	[kN/lbf]	27.3/6129	25.9/5821
Corresponding pressure	[kPa/psi]	12066/1750	
Moment about rear axle	[kN.m/ft.lb]	34.1/25127	48.1/35511
Maximum mast tilt angle	[degrees]	--	9.6

Lifting height relative to the horizontal position of lower links

[mm]		-312	-305	-226	-127	0	102
[in]		-12.3	-12.0	-8.9	-5.0	0	4.0
Corrected lift forces.							
hitch points	[kN]	--	27.3	29.2	30.9	33.0	33.9
	[lb]	--	6129	6557	6936	7414	7621
at frame	[kN]	27.2	--	28.1	28.8	29.5	29.5
	[lb]	6114	--	6307	6486	6643	6629

Lifting height relative to the horizontal position of lower links

[mm]		203	305	406	483	584
[in]		8.0	12.0	16.0	19.0	23.0
Corrected lifting forces.						
hitch points	[kN]	34.9	35.7	36.3	37.7	--
	[lb]	7850	8029	8164	8480	--
at frame	[kN]	29.0	28.0	--	26.9	25.9
	[lb]	6521	6286	--	6057	5821

THREE POINT LIFT PERFORMANCE
(with 44 mm. lift assist cylinder)
(for settings used see p.8)

		Hitch Points	Frame
Lower hitch points above ground - down position.	[mm/in]	283/11.1	270/10.6
Vertical movement without load	[mm/in]	822/32.4	940/37.0
Vertical movement with load	[mm/in]	787/31.0	899/35.4
Maximum corrected force through full range	[kN/lbf]	30.9/6957	29.4/6614
Corresponding pressure	[kPa/psi]	12066/1750	
Moment about rear axle	[kN.m/ft.lb]	38.7/28524	54.7/40347
Maximum mast tilt angle	[degrees]	--	9.4

Lifting height relative to the horizontal position of lower links

[mm]	-318	-305	-229	-127	0	102
[in]	-12.5	-12.0	-9.0	-5.0	0	4.0

Corrected lift forces.

hitch points [kN]	--	30.9	32.8	35.4	37.8	39.1
hitch points [lb]	--	6957	7379	7950	8500	8800
at frame [kN]	30.8	--	32.2	33.0	33.9	33.9
at frame [lb]	6930	--	7236	7429	7629	7629

Lifting height relative to the horizontal position of lower links

[mm]	203	305	406	483	582
[in]	8.0	12.0	16.0	19.0	22.9

Corrected lifting forces.

hitch points [kN]	39.9	40.4	41.3	42.5	--
hitch points [lb]	8971	9079	9293	9559	--
at frame [kN]	33.3	32.0	--	30.8	29.4
at frame [lb]	7486	7186	--	6914	6614

THREE POINT LIFT PERFORMANCE
(with 55 mm. lift assist cylinder)
(for settings used see p.8)

		Hitch Points	Frame
Lower hitch points above ground - down position.	[mm/in]	283/11.1	276/10.9
Vertical movement without load	[mm/in]	822/32.4	940/37.0
Vertical movement with load	[mm/in]	787/31.0	894/35.2
Maximum corrected force through full range	[kN/lbf]	33.3/7479	31.4/7057
Corresponding pressure	[kPa/psi]	12066/1750	
Moment about rear axle	[kN.m/ft.lb]	41.6/30662	58.4/43049
Maximum mast tilt angle	[degrees]	--	9.4

Lifting height relative to the horizontal position of lower links

[mm]	-312	-305	-229	-127	0	102
[in]	-12.3	-12.0	-9.0	-5.0	0	4.0
Corrected lift forces.						
hitch points [kN]	--	33.3	35.5	38.2	40.7	41.7
hitch points [lb]	--	7479	7979	8586	9150	9386
at frame [kN]	32.9	--	33.8	35.7	36.2	36.2
at frame [lb]	7392	--	7602	8036	8129	8136

Lifting height relative to the horizontal position of lower links

[mm]	203	305	406	478	582
[in]	8.0	12.0	16.0	18.8	22.9
Corrected lifting forces.					
hitch points [kN]	42.9	43.4	44.1	45.7	--
hitch points [lb]	9636	9764	9921	10274	--
at frame [kN]	34.8	33.6	--	32.2	31.4
at frame [lb]	7826	7546	--	7231	7057

3. DRAWBAR POWER AND FUEL CONSUMPTION (UNBALLASTED TRACTOR)

OECD Drawbar Data (SI)

Date of tests: 26-Sep-89 26-Sep-89 Fuel density: 0.828 kg/l
Type of track: Concrete Test # 1630

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, 2wd @ 2000 rev/min) Tire pressure: 124 kPa, rear 303 kPa, front Drawbar height: 648 mm														
2nd(A2)	67.42	61.49	3.95	2286	14.24%	0.322	2.57	46	82	102	12	8	58%	99.12
3rd(A3)	94.98	61.94	5.52	2246	14.24%	0.298	2.77	46	83	102	11	7	56%	99.12
4th(B1)	114.60	57.85	7.13	2150	6.51%	0.265	3.13	46	85	104	11	7	56%	99.12
5th(A4)	114.23	57.16	7.19	2134	7.33%	0.264	3.13	47	85	103	12	8	58%	99.12
6th(C1)	116.37	51.09	8.20	2079	5.34%	0.257	3.22	46	85	103	13	8	50%	99.12
7th(B2)	118.50	49.70	8.58	2008	4.92%	0.252	3.28	46	86	104	13	9	59%	99.12
8th(C2)	119.63	42.43	10.15	1998	3.79%	0.249	3.33	46	86	104	14	9	51%	99.12
9th(B3)	117.90	34.06	12.46	2005	3.09%	0.253	3.27	46	87	104	15	9	44%	99.12
10th(D1)	116.88	32.06	13.12	1999	2.73%	0.257	3.22	46	86	103	16	10	46%	99.12

OECD Drawbar Data (US)

Date of tests: 26-Sep-89 26-Sep-89 Fuel density: 6.910 lb/gal
Type of track: Concrete Test # 1630

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, 2wd @ 2000 rev/min) Tire pressure: 18 psi, rear 44 psi, front Drawbar height: 25.5 in														
2nd(A2)	90.41	13824	2.45	2286	14.24%	0.530	13.04	114	180	215	53	46	58%	29.27
3rd(A3)	127.37	13925	3.43	2246	14.24%	0.491	14.09	115	182	216	52	45	56%	29.27
4th(B1)	153.68	13005	4.43	2150	6.51%	0.435	15.87	115	185	219	51	45	56%	29.27
5th(A4)	153.19	12851	4.47	2134	7.33%	0.435	15.90	116	185	218	54	46	58%	29.27
6th(C1)	156.06	11485	5.10	2079	5.34%	0.422	16.36	114	186	217	55	47	50%	29.27
7th(B2)	158.91	11172	5.33	2008	4.92%	0.415	16.66	115	186	219	56	48	59%	29.27
8th(C2)	160.43	9540	6.31	1998	3.79%	0.409	16.90	115	188	219	57	48	51%	29.27
9th(B3)	158.10	7658	7.74	2005	3.09%	0.416	16.60	115	188	219	59	49	44%	29.27
10th(D1)	156.74	7209	8.15	1999	2.73%	0.423	16.34	115	188	218	61	50	46%	29.27

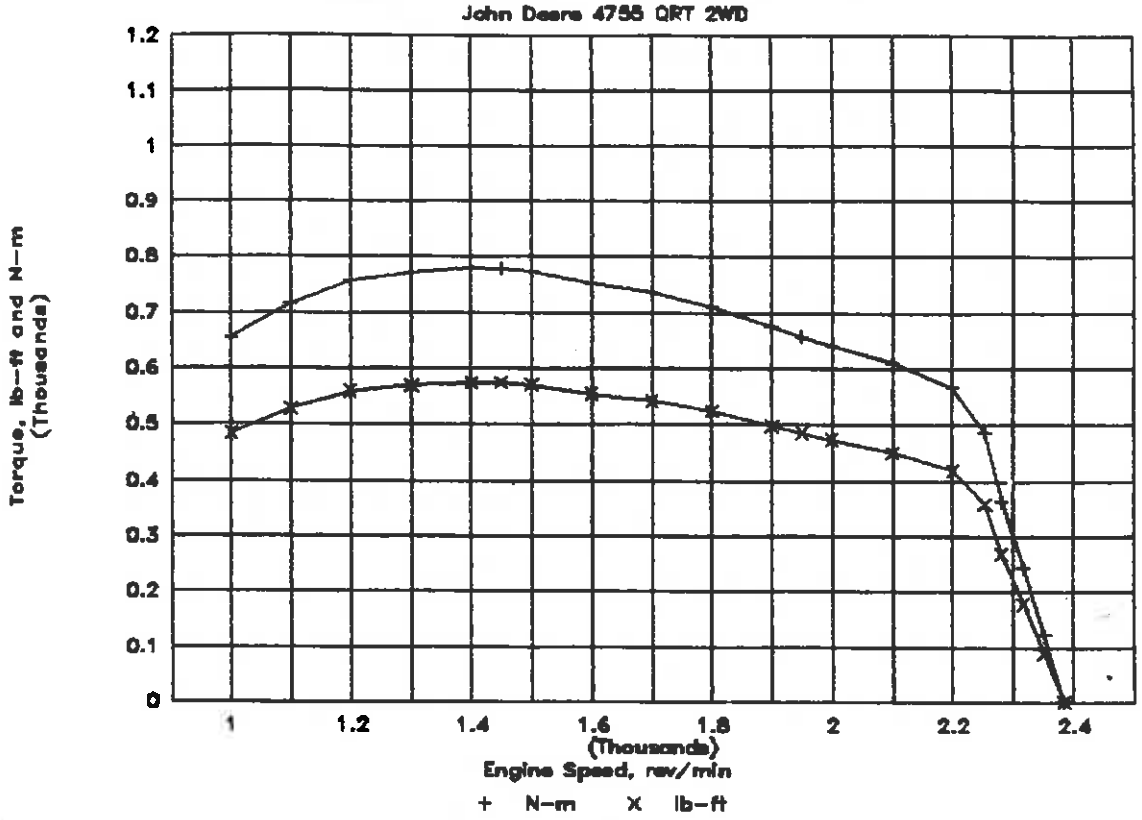
Date of tests: 26-Sep-89 26-Sep-89 Fuel density: 0.828 kg/l
Type of track: Concrete Test # 1630

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 load (unballasted)						Tire pressure:		124 kPa, rear			303 kPa, front			
				Drawbar height:	648 mm									
II.1 in selected gear at maximum power														
8(C2)	119.63	42.43	10.15	1998	3.79%	0.249	3.33	46	86	104	14	9	51%	99.12
II.1.1 75% of pull at maximum power at rated speed														
8th 75%	91.55	28.13	11.72	2266	2.28%	0.272	3.04	44	85	102	21	12	32%	98.92
II.1.2 50% of pull at maximum power at rated speed														
8th 50%	62.63	18.78	12.00	2304	1.47%	0.314	2.64	44	82	102	21	12	32%	98.92
II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1														
10th 75%	91.72	28.17	11.72	1777	2.19%	0.259	3.20	43	85	102	21	12	32%	98.88
II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2														
10th 50%	62.71	18.82	11.99	1804	1.37%	0.282	2.94	42	82	101	21	12	32%	98.88
II.2 in selected gear nearest to 7.5 km/h														
4(B1)	114.60	57.85	7.13	2150	6.51%	0.265	3.13	46	85	104	11	7	56%	99.12
II.2.1 75% of pull at maximum power at rated speed														
4th 75%	90.22	41.94	7.74	2267	3.71%	0.276	3.00	44	85	101	21	12	32%	98.95
II.2.2 50% of pull at maximum power at rated speed														
4th 50%	62.00	27.97	7.98	2304	2.37%	0.310	2.67	43	83	102	21	12	32%	98.95
II.2.3 next higher gear at reduced engine speed, same pull and travel speed as II.2.1														
7th 75%	90.26	41.96	7.74	1787	3.79%	0.255	3.24	45	84	103	21	12	32%	98.95
II.2.4 next higher gear at reduced engine speed, same pull and travel speed as II.2.2														
7th 50%	62.04	27.99	7.98	1814	2.28%	0.278	2.98	43	82	101	21	12	32%	98.92

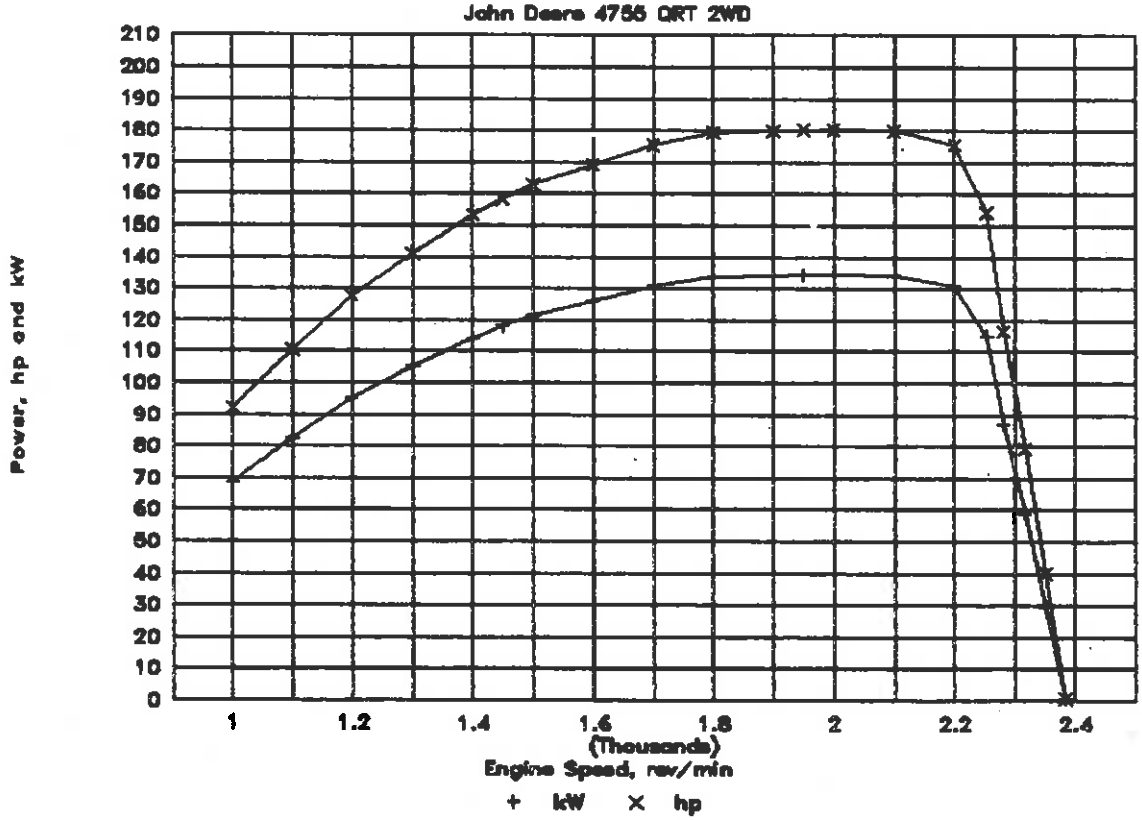
Date of tests: 26-Sep-89 26-Sep-89 Fuel density: 6.910 lb/gal
Type of track: Concrete Test # 1630

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 load (unballasted) Drawbar height: 25.5 in							Tire pressure:	18 psi, rear			44 psi, front			
II.1 in selected gear at maximum power														
8th(C2)	160.43	9540	6.31	1998	3.79%	0.409	16.90	115	188	219	57	48	51%	29.27
II.1.1 75% of pull at maximum power at rated speed														
8th 75%	122.77	6325	7.28	2266	2.28%	0.448	15.43	111	186	216	69	54	32%	29.21
II.1.2 50% of pull at maximum power at rated speed														
8th 50%	83.99	4223	7.46	2304	1.47%	0.516	13.40	111	180	216	69	54	32%	29.21
II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1														
10th 75%	123.00	6332	7.28	1777	2.19%	0.425	16.25	109	186	216	69	53	32%	29.20
II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2														
10th 50%	84.10	4232	7.45	1804	1.37%	0.463	14.92	108	180	215	69	53	32%	29.20
II.2 in selected gear nearest to 4.6 mph														
4th(B1)	153.68	13005	4.43	2150	6.51%	0.435	15.87	115	185	219	51	45	56%	29.27
II.2.1 75% of pull at maximum power at rated speed														
4th 75%	120.99	9430	4.81	2267	3.71%	0.454	15.24	112	185	215	69	54	32%	29.22
II.2.2 50% of pull at maximum power at rated speed														
4th 50%	83.14	6287	4.96	2304	2.37%	0.510	13.54	110	182	216	69	54	32%	29.22
II.2.3 next higher gear at reduced engine speed, same pull and travel speed as II.2.1														
7th 75%	121.04	9433	4.81	1787	3.79%	0.420	16.46	113	184	217	69	54	32%	29.22
II.2.4 next higher gear at reduced engine speed, same pull and travel speed as II.2.2														
7th 50%	83.20	6292	4.96	1814	2.28%	0.456	15.14	110	180	215	69	54	32%	29.21

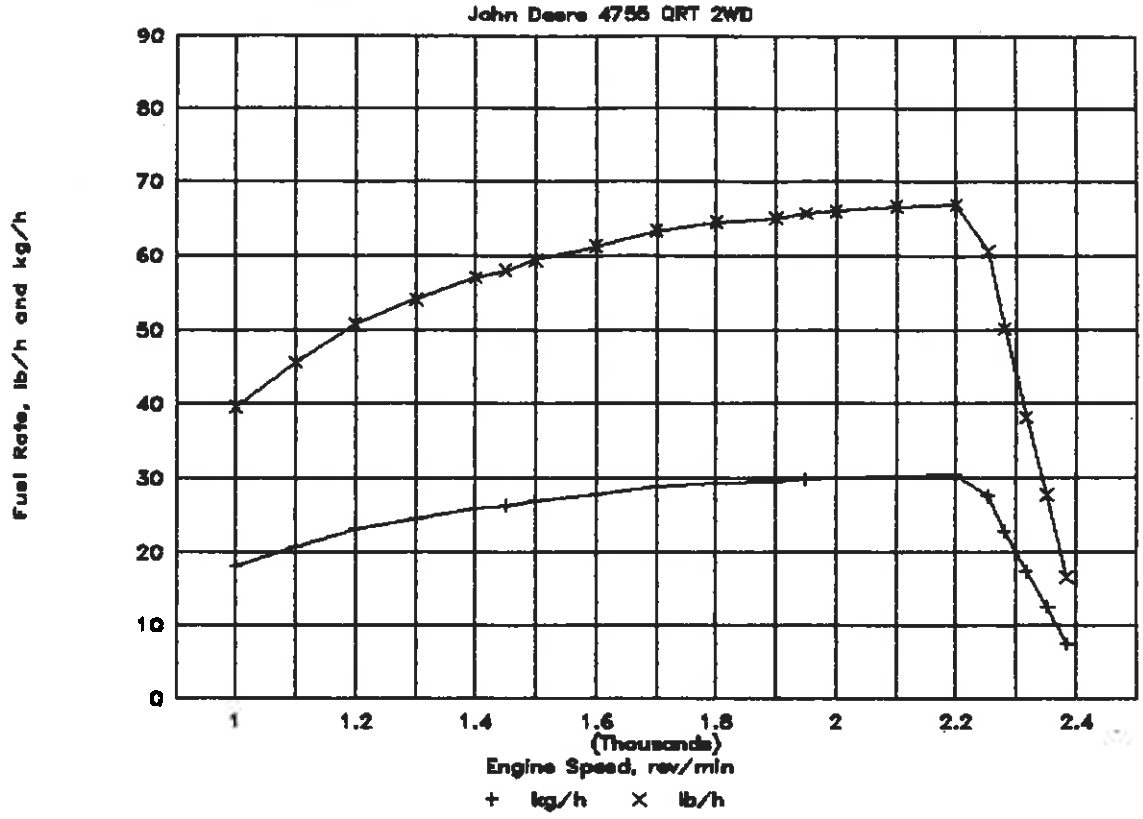
Equivalent Crankshaft Torque



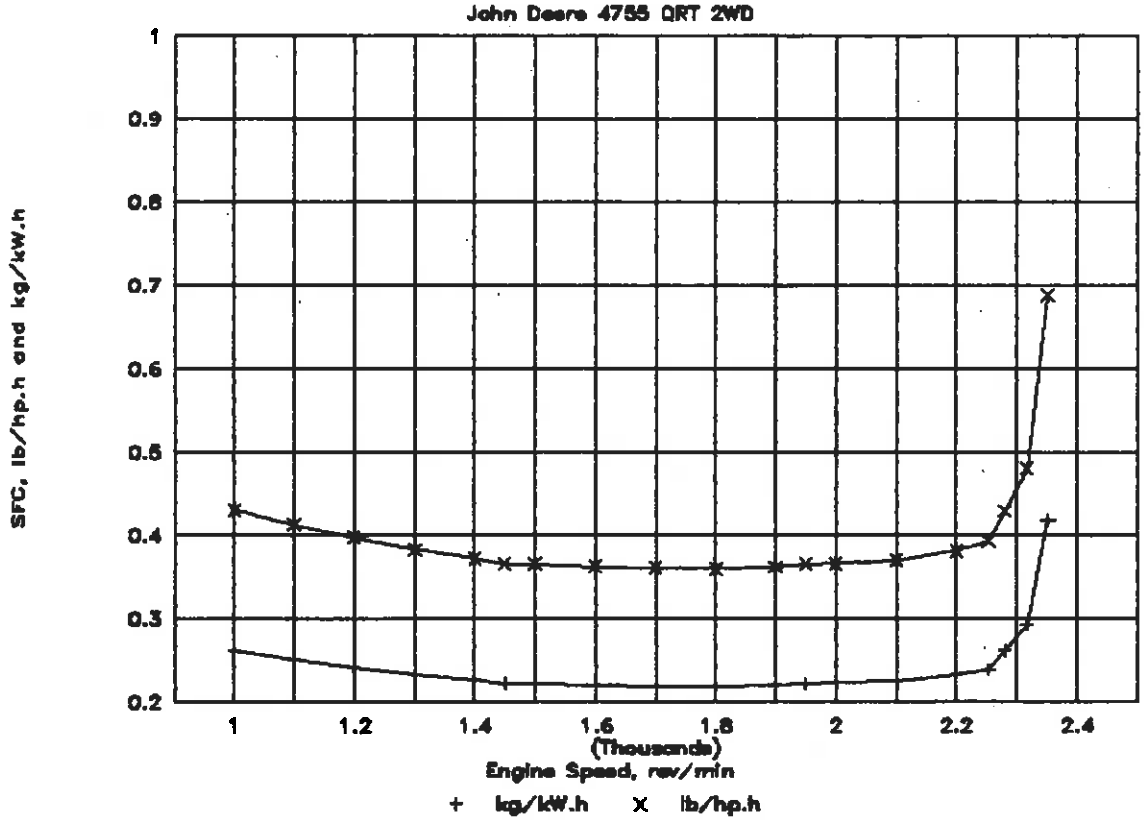
PTO Power



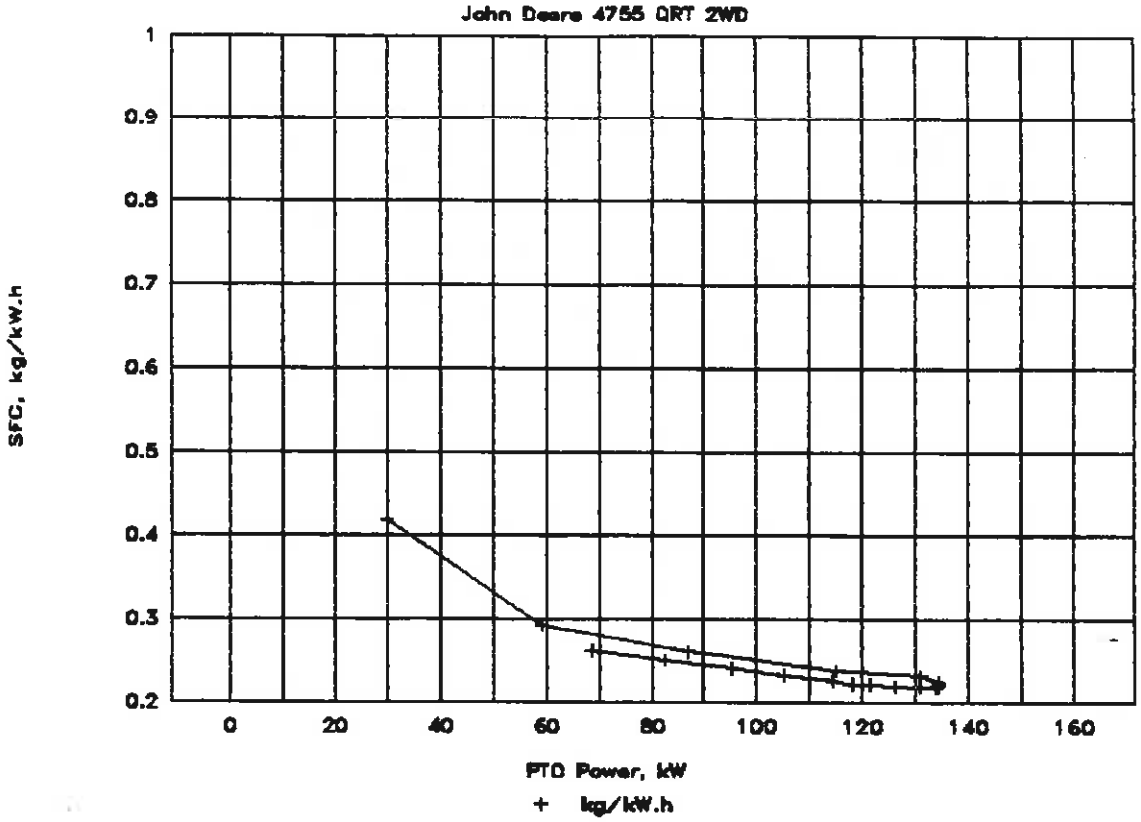
PTO Fuel Consumption



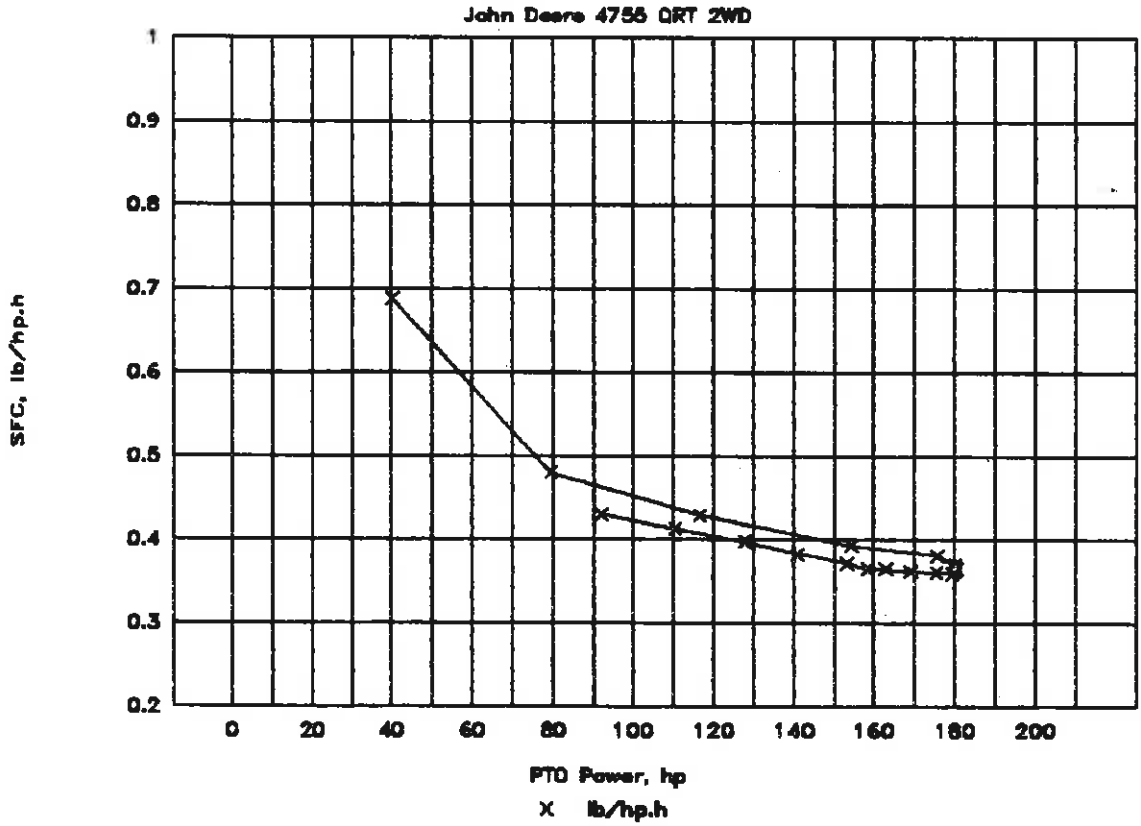
PTO Specific Fuel Consumption



SFC vs PTO Power



SFC vs PTO Power



5. OPTIONAL TESTS.

5.1 MEASUREMENT OF EXTERNAL NOISE LEVEL.

Date of test	:	September 22, 1989
Location of test	:	CAE/UNL, Lincoln, Nebr.
Sound level meter	:	B & K 2203
Type of track	:	Concrete oval
Gear number	:	16th(D4)
Speed prior to acceleration	:	27.7 km/h (17.2 mph)
Sound level	:	86.5 dB(A)

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

OECD Drawbar Data (SI)

Date of tests: 09-Oct-89 09-Oct-89 Fuel density: 0.828 kg/l
Type of track: Concrete Test # 1630

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, 2wd @ 2000 rev/min) Tire pressure: 97 kPa, rear (inner) 303 kPa, front Drawbar height: 572 mm 97 kPa, rear (outer)														
1st(A1)	75.34	86.36	3.14	2272	12.92%	0.315	2.63	47	84	103	20	13	44%	97.80
2nd(A2)	98.39	86.99	4.07	2248	10.25%	0.285	2.91	48	84	103	18	13	57%	97.80
3rd(A3)	113.76	70.55	5.81	2126	4.92%	0.267	3.11	46	86	104	22	14	40%	97.77
4th(B1)	115.57	58.99	7.05	2062	3.71%	0.261	3.18	47	86	104	23	14	36%	97.73
5th(A4)	117.59	58.68	7.21	2055	3.62%	0.257	3.23	46	86	105	23	14	36%	97.73
6th(C1)	116.34	51.83	8.08	2001	3.27%	0.257	3.22	46	86	105	24	15	37%	97.70
7th(B2)	118.84	48.91	8.75	1999	2.91%	0.251	3.30	46	87	104	24	15	37%	97.70
8th(C2)	118.03	41.05	10.35	2002	2.56%	0.253	3.27	47	86	104	24	15	37%	97.66
9th(B3)	115.70	33.06	12.60	2002	1.83%	0.258	3.21	47	87	105	25	15	33%	97.63
10th(D1)	114.84	31.14	13.28	2000	1.83%	0.260	3.19	46	87	104	25	15	33%	97.60

OECD Drawbar Data (US)

Date of tests: 09-Oct-89 09-Oct-89 Fuel density: 6.910 lb/gal
Type of track: Concrete Test # 1630

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, 2wd @ 2000 rev/min) Tire pressure: 14 psi, rear (inner) 44 psi, front Drawbar height: 22.5 in 14 psi, rear (outer)														
1st(A1)	101.04	19414	1.95	2272	12.92%	0.517	13.36	117	183	217	68	56	44%	28.88
2nd(A2)	131.94	19557	2.53	2248	10.25%	0.468	14.77	118	183	217	64	55	57%	28.88
3rd(A3)	152.56	15860	3.61	2126	4.92%	0.438	15.77	114	187	219	72	57	40%	28.87
4th(B1)	154.99	13261	4.38	2062	3.71%	0.429	16.13	117	187	220	73	57	36%	28.86
5th(A4)	157.69	13192	4.48	2055	3.62%	0.422	16.38	115	188	221	74	58	36%	28.86
6th(C1)	156.02	11652	5.02	2001	3.27%	0.423	16.33	116	188	221	75	59	37%	28.85
7th(B2)	159.37	10996	5.44	1999	2.91%	0.412	16.76	115	189	219	75	59	37%	28.85
8th(C2)	158.28	9229	6.43	2002	2.56%	0.416	16.60	116	188	220	76	59	37%	28.84
9th(B3)	155.16	7432	7.83	2002	1.83%	0.424	16.31	116	189	221	77	59	33%	28.83
10th(D1)	154.01	7000	8.25	2000	1.83%	0.427	16.18	115	188	220	77	59	33%	28.82

MAXIMUM POWER AT 2200 REV/MIN BALLASTED TRACTOR)

OECD Drawbar Data (SI)

Date of tests: 09-Oct-89 09-Oct-89 Fuel density: 0.828 kg/l
Type of track: Concrete Test # 1630

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, 2wd @ 2200 rev/min) Drawbar height: 572 mm								Tire pressure:		97 kPa, rear (inner) 97 kPa, rear (outer)		303 kPa, front		
2nd(A2)	97.41	88.51	3.96	2248	12.70%	0.290	2.86	47	84	102	16	12	63%	97.80
3rd(A3)	113.48	67.69	6.04	2201	4.58%	0.268	3.09	46	86	103	22	14	40%	97.77
4th(B1)	113.96	54.25	7.56	2201	3.27%	0.266	3.12	47	86	103	22	14	40%	97.77
5th(A4)	115.56	53.63	7.76	2200	3.36%	0.263	3.15	47	86	104	23	14	36%	97.73
6th(C1)	114.95	46.45	8.91	2197	2.82%	0.265	3.12	46	86	104	23	14	36%	97.70
7th(B2)	116.24	43.28	9.67	2201	2.73%	0.261	3.17	47	86	104	24	15	37%	97.66
8th(C2)	116.29	36.74	11.40	2198	2.28%	0.261	3.17	47	86	103	24	15	37%	97.66
9th(B3)	113.33	29.38	13.89	2202	1.83%	0.268	3.09	47	86	104	25	15	33%	97.63

OECD Drawbar Data (US)

Date of tests: 09-Oct-89 09-Oct-89 Fuel density: 6.910 lb/gal
Type of track: Concrete Test # 1630

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, 2wd @ 2200 rev/min) Drawbar height: 22.5 in								Tire pressure:		14 psi, rear (inner) 14 psi, rear (outer)		44 psi, front		
2nd(A2)	130.62	19898	2.46	2248	12.70%	0.477	14.50	116	183	216	60	53	63%	28.8
3rd(A3)	152.18	15217	3.75	2201	4.58%	0.441	15.66	114	186	218	72	57	40%	28.87
4th(B1)	152.82	12196	4.70	2201	3.27%	0.437	15.82	117	186	217	72	57	40%	28.87
5th(A4)	154.97	12057	4.82	2200	3.36%	0.432	16.00	117	187	219	74	58	36%	28.86
6th(C1)	154.15	10444	5.54	2197	2.82%	0.436	15.85	115	188	220	74	58	36%	28.85
7th(B2)	155.88	9730	6.01	2201	2.73%	0.429	16.09	116	187	220	75	59	37%	28.84
8th(C2)	155.95	8259	7.08	2198	2.28%	0.429	16.10	116	187	218	75	59	37%	28.84
9th(B3)	151.98	6604	8.63	2202	1.83%	0.441	15.68	117	187	220	77	59	33%	28.83

Repairs: None
Remarks: None