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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
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OFFICIAL TESTING OF AGRICULTURAL TRACTOR PERFORMANCE

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RESTRICTED TEST-CODE II

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JOHN DEERE 4255 QUAD-RANGE (2 WD)



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

NEBRASKA TEST NO.1627

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 30, 1990

John Deere 4255 Quad-Range

OECD # 1247

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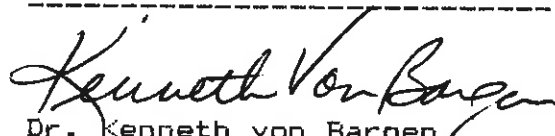

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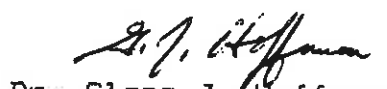

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Date: 24 May 1990

LINCOLN, NEBRASKA 68583-0832, USA

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SPECIFICATIONS OF TRACTOR.

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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 hours
Location of Test	:	Center for Agricultural Equip- ment, Lincoln, Nebraska, USA.

TRACTOR.

Make	John Deere
Model	4255
Type	Unit construction
Number of driving wheels	2
Serial Number	*RW4255H001914*
1st Serial number	*RW4255H001001*

ENGINE.

Make	John Deere
Model	6076TRW01
Type	Diesel, turbocharged.
Serial Number	*RG6076T109300*

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, replaceable

Super charging

Make/Model/Type	Schwitzer/RE29310/ 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	12H0017
Production setting of pump	
Flow Rate (Rated Eng. Speed and 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
<u>Governor</u>	
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
<u>Air Cleaner.</u>	
Pre-cleaner	
Make/Model/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
<u>Lubrication system.</u>	
Type of feed pump	Full pressure, positive displacement.
Type of filters	Full flow with bypass
Number	One
Oil cooler	Heat exchanger with engine coolant
<u>Cooling system.</u>	
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)
<u>Starting system.</u>	
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

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 gear box 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

inboard planetary reduction

Differential Lock

Type

Hydraulic

Method of engagement

Foot pedal

Method of disengagement

self disengaging with

brake pedal

Front Axle

Make/Model/Type

John Deere/not propelled

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]

Forward			
A1	202.76	3.44	2.14
A2	159.77	4.37	2.71
A3	122.77	5.69	3.53
A4	96.70	7.22	4.48
B1	88.21	7.92	4.92
C1	74.42	9.38	5.83
B2	69.44	10.06	6.25
C2	58.60	11.92	7.40
B3	53.39	13.08	8.12
D1	48.48	14.40	8.95
C3	45.05	15.50	9.63
B4	42.04	16.61	10.32
D2	38.18	18.29	11.36
C4	35.47	19.69	12.23
D3	29.34	23.80	14.78
D4	23.10	30.23	18.77
Reverse			
AR1	126.80	5.51	3.42
AR2	99.82	7.00	4.34
BR1	55.12	12.67	7.87
CR1	46.51	15.01	9.32
BR2	43.41	16.09	10.00
CR2	36.62	19.07	11.84

POWER - TAKE - OFF.

=====

Main Power-Take-Off.

Type

Method of engagement

Independent

Hydraulically actuated multi-plate wet clutch operated by hand lever, independent of main drive clutch.

One

Number of shafts

Method of changing PTO shaft 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; conforms to 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 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.	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

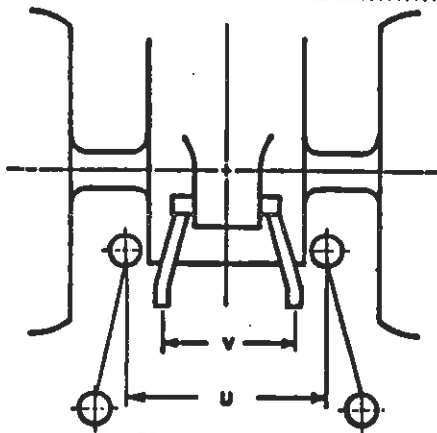
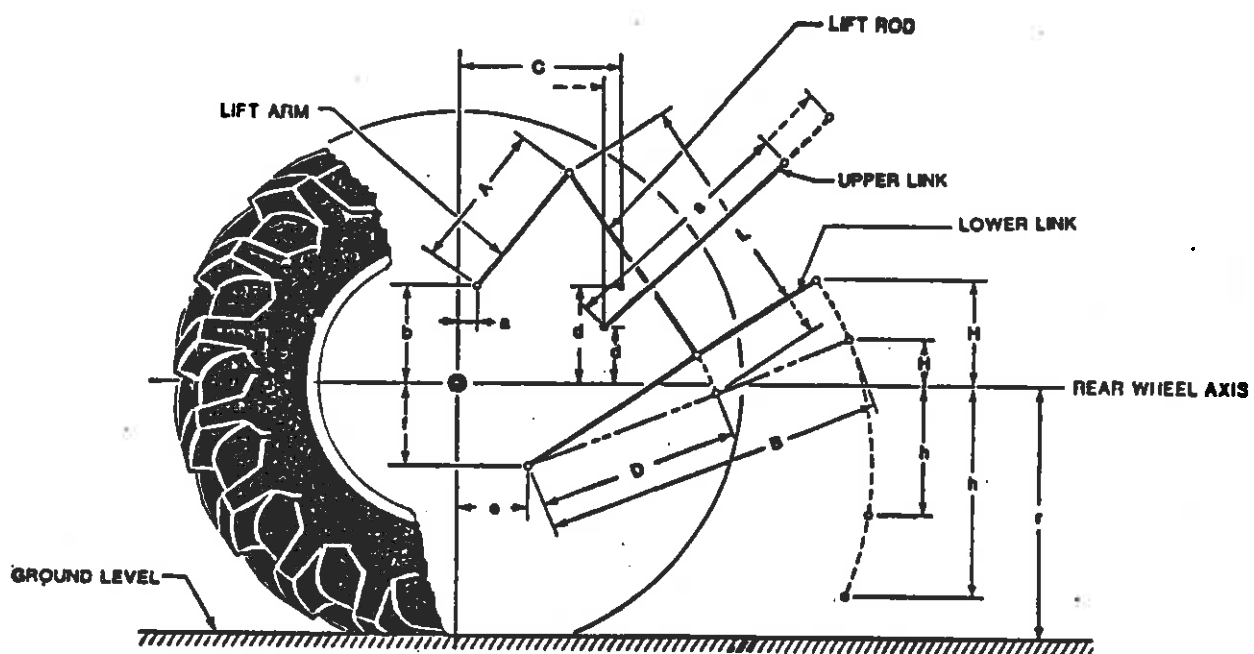


Figure 1.2

Table 1.1 --*Linkage geometry dimensions.

		Dimension or range		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)	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)	349	13.7		
		362	14.3	362	14.3
rear wheel axis: vertical	(d)	216	8.5		
		143	5.6	143	5.6
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		
	to	1006	39.6	894	35.2

*Assuming (r) with a dynamic tire 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
Left side

218 mm (8.6 in)

218 mm (8.6 in)

Distance of pivot point from
rear wheel axis; horizontal

175 mm (6.9 in) forward

Diameter 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
pump

Steering wheel

Same as main hydraulic pump

Ram(s)

One internal

Working pressure

Same as main hydraulic pressure

BRAKE SYSTEM.

=====

Service brake.

Make/Model/Type

John Deere/oil immersed disc
Hydraulically actuated from
main system; operated by two
pedals which can be locked
together.

Method of operation

Parking brake.

Type

Transmission lock

Method of operation

Gear selector lever.

Trailer brake(optional)

Type

Hydraulic

WHEELS.

=====

Number.	
Front	Two; Steering
Rear	Two or four; Driving
Wheelbase	2710 mm (106.7 in)

Track width adjustment

	Minimum		Maximum		Adjustment method
	[mm]	[in]	[mm]	[in]	
Front	1470	58.0	2080	82.0	Adjustable front axle
Rear	1574	62.0	2800	110.2	Rack and pinion axle reversing wheels and off-set lug rims

PROTECTIVE STRUCTURE.

=====

Make/Model/Type	John Deere/SG046/ Sound-Gard Cab
Manufacturer's name/address	John Deere Tractor Works Waterloo, Iowa
Protective device	Cab, not tiltable.
OECD approval number	CSS 073/20

DRIVER'S SEAT.

=====

Make/Model/Type	John Deere/HydraCushioned
Type of suspension and damping	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		Size	Distance from out - side edge to median plane of tractor.	
	[mm]	[in]		[mm]	[in]
Headlights	1727	68.0	50 x 125	250	9.8
	1890	74.4	100 dia.	978	38.5
Rearlights	2675	105.3	100 dia.	813	32.0
	2025	79.7	100 dia.	813	32.0
Reflectors	2885	113.6	50 x 197	554	21.8
	1880	74.0	83 x 190	870	34.3

TEST CONDITIONS.

=====

Overall dimensions.

Length		4285 mm (164.0 in)
Width	Minimum	2438 mm (96.0 in)
	Maximum	2870 mm (113.0 in)
Height - Top of cab		2970 mm (117.0 in)
- Top of exhaust		3125 mm (123.0 in)
Ground clearance (unballasted)		424 mm (16.1 in)
Clearance-limiting part		bottom of drawbar

Tractor Mass (with Cab, full fuel tank)

		Without driver		With driver	
		[kg]	[lb]	[kg]	[lb]
Unballasted	Front	1721	3795	1721	3795
	Rear	3823	8430	3898	8595
	Total	5544	12225	5619	12390
Ballasted	Front	1719	3790	1719	3790
	Rear	4995	11015	5070	11180
	Total	6714	14805	6789	14970

Ballast.

		Mass (total)		Water	
		Number of weights	[kg] [lb]	[kg] [lb]	
Front	none		none	none	
Rear	none		none	none	
Duals (rear)		639	1410		
Additional test equipment		77	170		

Tire Specifications.

	Front wheels	Rear wheels
Make	Goodyear	Goodyear
Dimensions	11.00-16	18.4R38
Ply rating	(8 ply)	(8 ply)
Type	Rib	1 star Radial
Max.load (tire manufacturer)	1300 kg/tire (2920 lb/tire)	2758 kg/tire (6080 lb/tire)
Max.load (tractor manufacturer)	1300 kg/tire (2920 lb/tire)	2720 kg/tire (6000 lb/tire)
Inflation pressure (tire mfr)	280 kPa (40 psi)	124 kPa (18 psi)
Dynamic Radius Index	457 mm (18.0 in)	842 mm (33.1 in)
Chosen track width - singles	1475 mm (58.0 in)	1700 mm (67.0 in)
- duals		3100 mm (122.0 in)

Oils and Lubrication.

Capacity and change interval:

	Capacity		Oil	change	Filter change
	liter	quart		hrs	hrs
Engine (w/o filter)	18	19		250	250
Gear Box (includes rear axle and rear final drive)	60.5	64.0		1500	Annually
Hydraulic system		common with gear box			

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	17	

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 : 11 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		Fuel Consumption			Specific
	engine	PTO	hourly	specific	energy	
	rev/min	rev/min	1/h (gal/h)	kg/h (lb/h)	kg/kW.h (lb/hp.h)	kW.h/l (hp.h/gal)
1.1 Maximum Power- 2 hour test.						
95.38 (127.91)	1900	866	27.38 (7.23)	22.67 (49.99)	0.238 (0.391)	3.48 (17.68)
1.2 Power at rated engine speed - (1 hour)						
92.23 (123.69)	2200	1002	28.44 (7.51)	23.55 (51.91)	0.255 (0.420)	3.24 (16.46)
1.3 Maximum power at standard PTO speed (1000 rev/min)						
92.23 (123.69)	2200	1002	28.44 (7.51)	23.55 (51.91)	0.255 (0.420)	3.24 (16.46)

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

Power kW (hp)	Speeds		Fuel Consumption			Specific energy kW.h/l (hp.h/gal)
	engine rev/min	PTD rev/min	hourly l/h (gal/h)	kg/h (lb/h)	specific kg/kW.h (lb/hp.h)	
(i) Torque obtained at maximum power at rated engine speed.						
92.23 (123.69)	2200	1002	28.44 (7.51)	23.55 (51.91)	0.255 (0.420)	3.24 (16.46)
(ii) 85% of the torque obtained in (i)						
81.87 (109.79)	2296	1046	26.79 (7.08)	22.18 (48.90)	0.271 (0.445)	3.06 (15.51)
(iii) 75% of the torque defined in (ii)						
62.15 (83.35)	2322	1058	22.35 (5.90)	18.51 (40.80)	0.298 (0.490)	2.78 (14.12)
(iv) 50% of the torque defined in (ii)						
41.70 (55.92)	2343	1068	17.91 (4.73)	14.83 (32.70)	0.356 (0.585)	2.33 (11.82)
(v) 25% of the torque defined in (ii)						
21.01 (28.17)	2361	1076	13.80 (3.65)	11.43 (25.20)	0.544 (0.895)	1.52 (7.72)
(vi) Unloaded						
1.03 (0.77)	2379	1084	9.70 (2.56)	8.03 (17.70)	10.433 (17.152)	0.40 (0.08)

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

Power kW (hp)	Speeds		Fuel Consumption			Specific energy kW.h/l (hp.h/gal)
	engine	PTO	hourly	specific		
	rev/min	rev/min	l/h (gal/h)	kg/h (lb/h)	kg/kW.h (lb/hp.h)	
(i) Torque obtained at standard pto speed.						
92.23 (123.69)	2200	1002	28.44 (7.51)	23.55 (51.91)	0.255 (0.420)	3.24 (16.46)
(ii) 85% of the torque obtained in (i)						
81.87 (109.79)	2296	1046	26.79 (7.08)	22.18 (48.90)	0.271 (0.445)	3.06 (15.51)
(iii) 75% of the torque defined in (ii)						
62.15 (83.35)	2322	1058	22.35 (5.90)	18.51 (40.80)	0.298 (0.490)	2.78 (14.12)
(iv) 50% of the torque defined in (ii)						
41.70 (55.92)	2343	1068	17.91 (4.73)	14.83 (32.70)	0.356 (0.585)	2.33 (11.82)
(v) 25% of the torque defined in (ii)						
21.01 (28.17)	2361	1076	13.80 (3.65)	11.43 (25.20)	0.544 (0.895)	1.52 (7.72)
(vi) Unloaded						
0.77 (1.03)	2379	1084	9.70 (2.56)	8.03 (17.70)	10.433 (17.152)	0.40 (0.08)

No-load maximum engine speed 2379 rev/min

Equivalent engine torque:

at rated speed 400 Nm(2200 rev/min)
at maximum power 479 Nm(1900 rev/min)
at maximum torque 535 Nm(1252 rev/min)

Mean atmospheric conditions:

Temperature-dry bulb 23 °C (74 °F)
Relative Humidity 30 %
Barometer 98.76 kPa(29.16 in Hg)

Maximum temperatures :

Thermostat housing	88 °C	(191 °F)
Engine oil pan	106 °C	(223 °F)
Fuel at injection pump	46 °C	(114 °F)
Engine air intake	32 °C	(90 °F)
Trans./Hydr. Oil	60 °C	(140 °F)

Turbocharger boost pressure

at rated engine speed	102 kPa (14.8 psi)
at maximum power	90 kPa (13.0 psi)

=====

2. HYDRAULIC POWER AND LIFTING FORCE.

Date of test: 26 September 1989

Location: CAE/UNL, Lincoln, Nebr.

2.1 HYDRAULIC POWER TEST - Hydraulic pump performance

i. Sustained pressure with pump stalled	17.72 MPa (2570 psi)									
ii. Pump delivery rate @ minimum pressure & rated engine speed	103.7 l/m (27.4 gpm)									
iii.	<table><tr><th>Flow Rate</th><th>Pressure</th><th>Power</th></tr><tr><th>l/min</th><th>MPa</th><th>kW</th></tr><tr><th>(gal/min)</th><th>(psi)</th><th>(hp)</th></tr></table>	Flow Rate	Pressure	Power	l/min	MPa	kW	(gal/min)	(psi)	(hp)
Flow Rate	Pressure	Power								
l/min	MPa	kW								
(gal/min)	(psi)	(hp)								
At 90% of relief valve setting.	<table><tr><td>62.5</td><td>15.93</td><td>16.6</td></tr><tr><td>(16.5)</td><td>(2310)</td><td>(22.2)</td></tr></table>	62.5	15.93	16.6	(16.5)	(2310)	(22.2)			
62.5	15.93	16.6								
(16.5)	(2310)	(22.2)								
At maximum hydraulic power.	<table><tr><td>99.6</td><td>14.48</td><td>24.0</td></tr><tr><td>(26.3)</td><td>(2100)</td><td>(32.2)</td></tr></table>	99.6	14.48	24.0	(26.3)	(2100)	(32.2)			
99.6	14.48	24.0								
(26.3)	(2100)	(32.2)								
Tapping point(s)	Two hydraulic outlets combined									
Hydraulic fluid temperature in oil reservoir	70 °C (158 °F)									
at flow meter	71 °C (159 °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		
with load	[mm/in]	551/21.7	666/26.2		
Maximum corrected force through full range [kN/lbf]		28.4/6385	24.5/5504		
Corresponding pressure [kPa/psi]		14479/2100			
Moment about rear axle [kN.m/ft.lb]		29.7/21923	40.5/29903		
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 [kN]	--	28.4	28.9	30.6	31.7
points [lb]	--	6385	6507	6880	7134
at [kN]	28.3	--	27.6	28.1	27.7
frame [lb]	6367	--	6195	6310	6236
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 [kN]	32.1	32.2	32.6	--	
points [lb]	7207	7248	7329	--	
at [kN]	27.0	25.8	--	24.5	
frame [lb]	6071	5808	--	5504	

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		
with load	[mm/in]	543/21.4	660/26.0		
Maximum corrected force through full range [kN/lbf]		36.9/8287	32.4/7281		
Corresponding pressure [kPa/psi]		14479/2100			
Moment about rear axle [kN.m/ft.lb]		38.6/28451	53.6/39558		
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 [kN]	--	36.9	38.5	40.6	42.0
points [lb]	--	8287	8663	9137	9440
=====					
at [kN]	36.9	--	36.7	37.0	36.9
frame [lb]	8293	--	8251	8325	8284
=====					
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 [kN]	43.1	43.3	43.9	--	
points [lb]	9694	9726	9865	--	
=====					
at [kN]	35.8	34.1	--	32.4	
frame [lb]	8046	7667	--	7281	
=====					

3. DRAWBAR POWER AND FUEL CONSUMPTION (UNBALLASTED TRACTOR)

OECD Drawbar Data (SI)

Date of tests: 14-Sep-89 15-Sep-89 Fuel density: 0.828 kg/l														
Type of track: Concrete Test # 1627														
Gear	Power	Pull	Speed	Engine	Slip	SFC		Temperature, deg C					Rel	Pressure
	kW	kN	km/h	Speed rev/min	%	kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet	hum %	kPa
I. Maximum Power (unballasted 2nd @ 1900 rev/min)														
Drawbar height: 559 mm					Tire pressure:		110 kPa, rear			276 kPa, front				
2nd(A2)*	55.09	47.51	4.17	2320	8.53%	0.336	2.46	45	82	100	12	11	89%	98.34
3rd(A3)*	71.43	47.58	5.40	2297	8.24%	0.310	2.67	46	83	101	11	10	89%	98.34
4th(A4)	82.21	45.26	6.54	2166	7.29%	0.286	2.90	45	84	101	12	11	89%	98.34
5th(B1)	83.45	43.31	6.94	2076	6.32%	0.279	2.97	45	84	102	14	12	79%	98.34
6th(C1)	83.91	39.87	7.58	1902	5.56%	0.271	3.06	45	85	101	18	13	57%	98.31
7th(B2)	85.49	37.73	8.16	1898	5.10%	0.268	3.09	45	85	103	18	13	57%	98.48
8th(C2)	86.19	31.69	9.79	1901	4.01%	0.265	3.13	43	85	103	18	13	57%	98.41
9th(B3)	85.18	28.32	10.83	1904	3.37%	0.266	3.11	44	86	102	18	13	57%	98.37
10th(D1)	85.21	25.66	11.95	1901	3.13%	0.267	3.10	44	86	103	18	13	57%	98.34
11th(C3)	84.72	23.67	12.88	1899	2.81%	0.268	3.10	45	86	102	18	13	57%	98.34
Note: *Pull limited due to tangential pull limit.														

OECD Drawbar Data (US)

Date of tests: 14-Sep-89 15-Sep-89 Fuel density: 6.910 lb/gal														
Type of track: Concrete Test # 1627														
Gear	Power	Pull	Speed	Engine	Slip	SFC		Temperature, deg F					Rel	Pressure
	hp	lb	mph	Speed rpm	%	lb/hp-hr	hp-hr/gal	Fuel	Coolant	Oil	Dry	Wet	hum %	in Hg
I. Maximum Power (unballasted 2nd @ 1900 rev/min)														
Drawbar height: 22 in					Tire pressure:		16 psi, rear			40 psi, front				
2nd(A2)*	73.88	10681	2.59	2320	8.53%	0.553	12.50	113	179	213	54	52	89%	29.04
3rd(A3)*	95.79	10697	3.36	2297	8.24%	0.509	13.57	114	182	214	51	50	89%	29.04
4th(A4)	110.24	10175	4.06	2166	7.29%	0.470	14.70	114	183	214	54	52	89%	29.04
5th(B1)	111.90	9737	4.31	2076	6.32%	0.458	15.08	114	184	215	58	54	79%	29.04
6th(C1)	112.53	8964	4.71	1902	5.56%	0.445	15.53	113	186	213	64	56	57%	29.03
7th(B2)	114.64	8482	5.07	1898	5.10%	0.440	15.70	112	185	217	64	55	57%	29.08
8th(C2)	115.59	7124	6.08	1901	4.01%	0.436	15.86	110	186	218	64	56	57%	29.06
9th(B3)	114.23	6368	6.73	1904	3.37%	0.438	15.78	112	186	216	64	56	57%	29.05
10th(D1)	114.26	5769	7.43	1901	3.13%	0.439	15.74	112	186	217	64	56	57%	29.04
11th(C3)	113.61	5322	8.01	1899	2.81%	0.440	15.71	113	186	215	64	56	57%	29.04
Note: *Pull limited due to tangential pull limit.														

OECD Drawbar Data (SI)

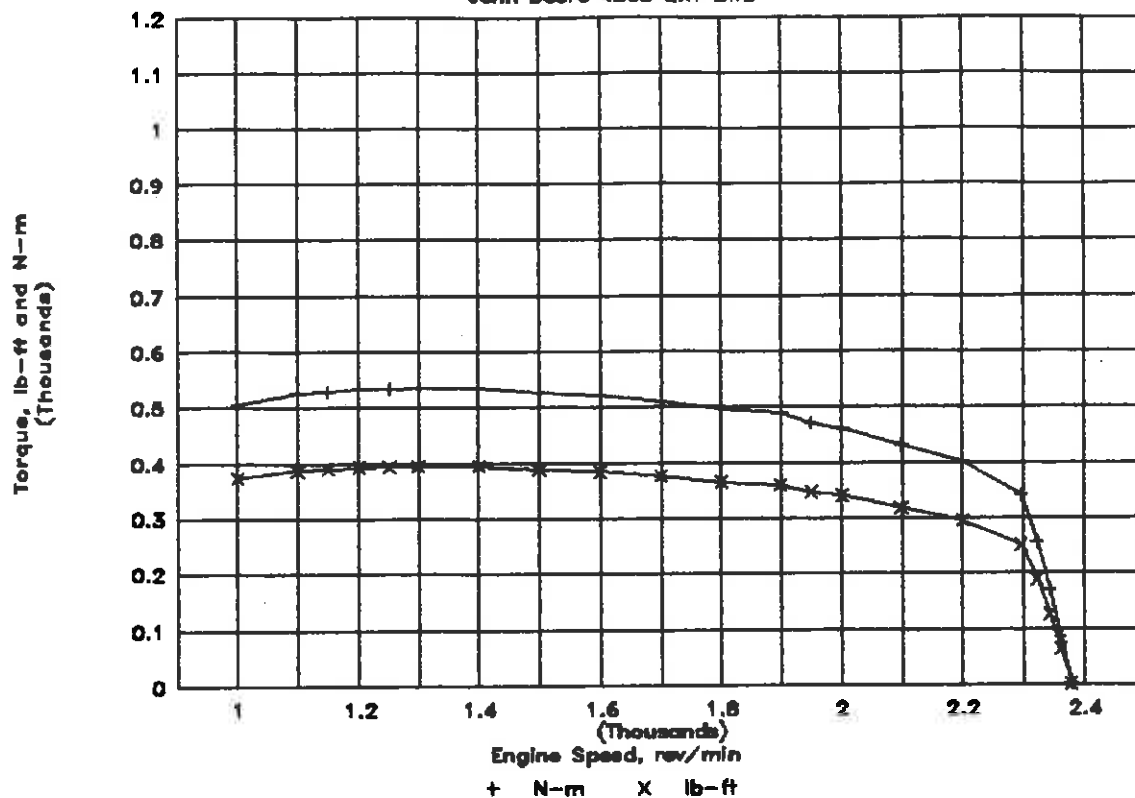
Date of tests: 15-Sep-89 14-Sep-89 Fuel density: 0.828 kg/l														
Type of track: Concrete Test # 1627														
Gear	Power	Pull	Speed	Engine	Slip	SFC		Temperature, deg C					Rel Pressure	
	kW	kN	km/h	Speed rev/min	%	kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet	%	kPa
II. Part Load (unballasted)					Tire pressure: 110 kPa, rear					276 kPa, front				
Drawbar height: 559 mm														
II.1 in selected gear at maximum power														
8th(C2)	86.19	31.69	9.79	1901	4.01%	0.265	3.13	43	85	103	18	13	57%	98.41
II.1.1 75% of pull at maximum power at rated speed														
8th 75%	66.87	19.92	12.08	2308	2.48%	0.306	2.71	41	84	100	19	13	50%	98.21
II.1.2 50% of pull at maximum power at rated speed														
8th 50%	45.12	13.20	12.31	2332	1.66%	0.362	2.28	41	82	101	19	13	50%	98.21
II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1														
11th 75%	66.83	19.92	12.08	1772	2.40%	0.275	3.01	41	83	100	19	13	50%	98.21
II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2														
11th 50%	45.07	13.20	12.30	1791	1.57%	0.309	2.68	40	80	98	20	14	51%	98.21
II.2 in selected gear nearest to 7.5 km/h														
5th(B1)	83.45	43.31	6.94	2076	6.32%	0.279	2.97	45	84	102	14	12	79%	98.34
II.2.1 75% of pull at maximum power at rated speed														
5th 75%	65.31	29.71	7.91	2309	3.85%	0.308	2.69	42	83	99	19	13	50%	98.24
II.2.2 50% of pull at maximum power at rated speed														
5th 50%	44.19	19.60	8.12	2334	2.48%	0.361	2.30	44	82	100	19	13	50%	98.24
II.2.3 next higher gear at reduced engine speed, same pull and travel speed as II.2.1														
7th 75%	65.26	29.71	7.91	1817	3.77%	0.274	3.03	42	83	99	19	13	50%	98.24
II.2.4 next higher gear at reduced engine speed, same pull and travel speed as II.2.2														
7th 50%	44.17	19.59	8.12	1838	2.40%	0.307	2.70	42	80	98	19	13	50%	98.24

OECD Drawbar Data (US)

Date of tests: 15-Sep-89 14-Sep-89 Fuel density: 6.910 lb/gal														
Type of track: Concrete Test # 1627														
Gear	Power	Pull	Speed	Engine	Slip	SFC		Temperature, deg F					Rel	Pressure
	hp	lb	mph	Speed rpm	%	lb/hp-hr	hp-hr/gal	Fuel	Coolant	Oil	Dry	Wet	hum %	in Hg
II. Part Load (unballasted)														
Drawbar height: 22 in					Tire pressure: 16 psi, rear					40 psi, front				
II.1 in selected gear at maximum power														
8th(C2)	115.59	7124	6.08	1901	4.01%	0.436	15.86	110	186	218	64	56	57%	29.06
II.1.1 75% of pull at maximum power at rated speed														
8th 75%	89.67	4479	7.51	2308	2.48%	0.503	13.75	106	183	212	66	56	50%	29.00
II.1.2 50% of pull at maximum power at rated speed														
8th 50%	60.50	2967	7.65	2332	1.66%	0.596	11.60	107	180	214	66	56	50%	29.00
II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1														
11th 75%	89.63	4479	7.50	1772	2.40%	0.452	15.28	106	182	212	67	56	50%	29.00
II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2														
11th 50%	60.45	2967	7.64	1791	1.57%	0.507	13.62	104	177	209	68	57	51%	29.00
II.2 in selected gear nearest to 4.6 mph														
5th(B1)	111.90	9737	4.31	2076	6.32%	0.458	15.08	114	184	215	58	54	79%	29.04
II.2.1 75% of pull at maximum power at rated speed														
5th 75%	87.58	6679	4.92	2309	3.85%	0.507	13.64	108	182	210	66	56	50%	29.01
II.2.2 50% of pull at maximum power at rated speed														
5th 50%	59.26	4407	5.04	2334	2.48%	0.593	11.66	111	180	213	66	56	50%	29.01
II.2.3 next higher gear at reduced engine speed, same pull and travel speed as II.2.1														
7th 75%	87.52	6679	4.91	1817	3.77%	0.450	15.36	107	181	211	66	56	50%	29.01
II.2.4 next higher gear at reduced engine speed, same pull and travel speed as II.2.2														
7th 50%	59.23	4404	5.04	1838	2.40%	0.504	13.70	108	176	209	66	56	50%	29.01

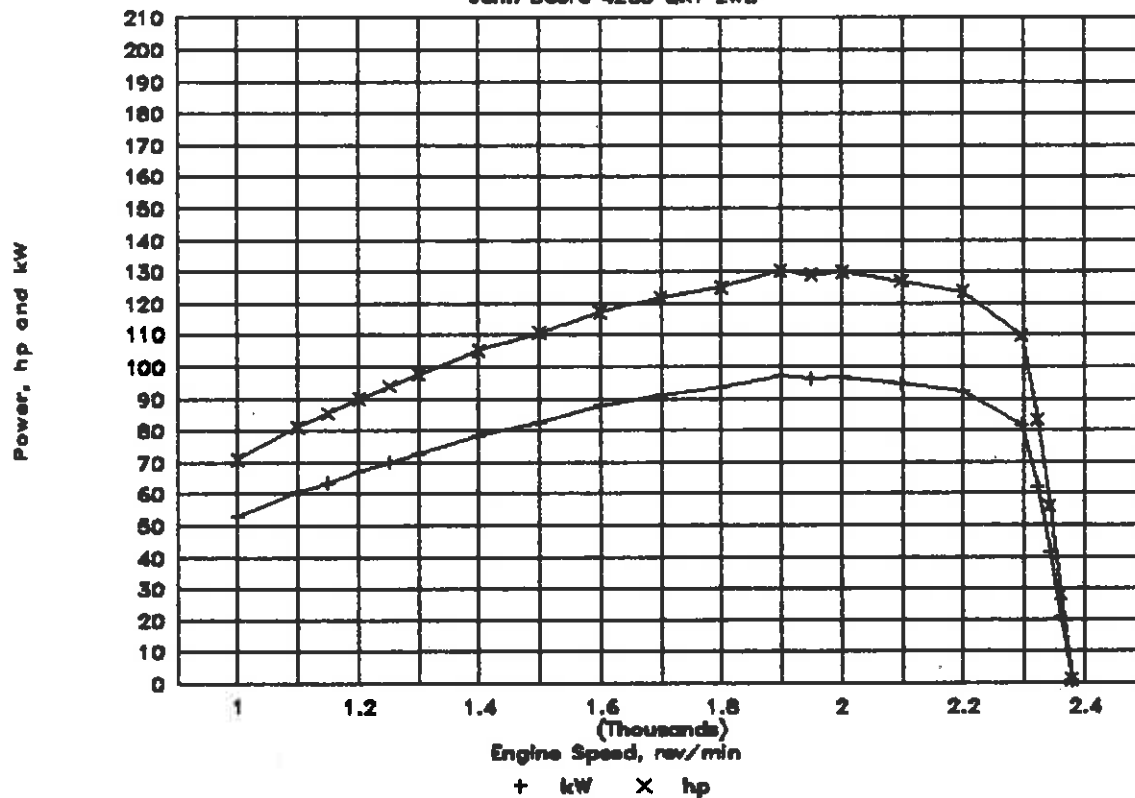
Equivalent Crankshaft Torque

John Deere 4255 QRT 2WD



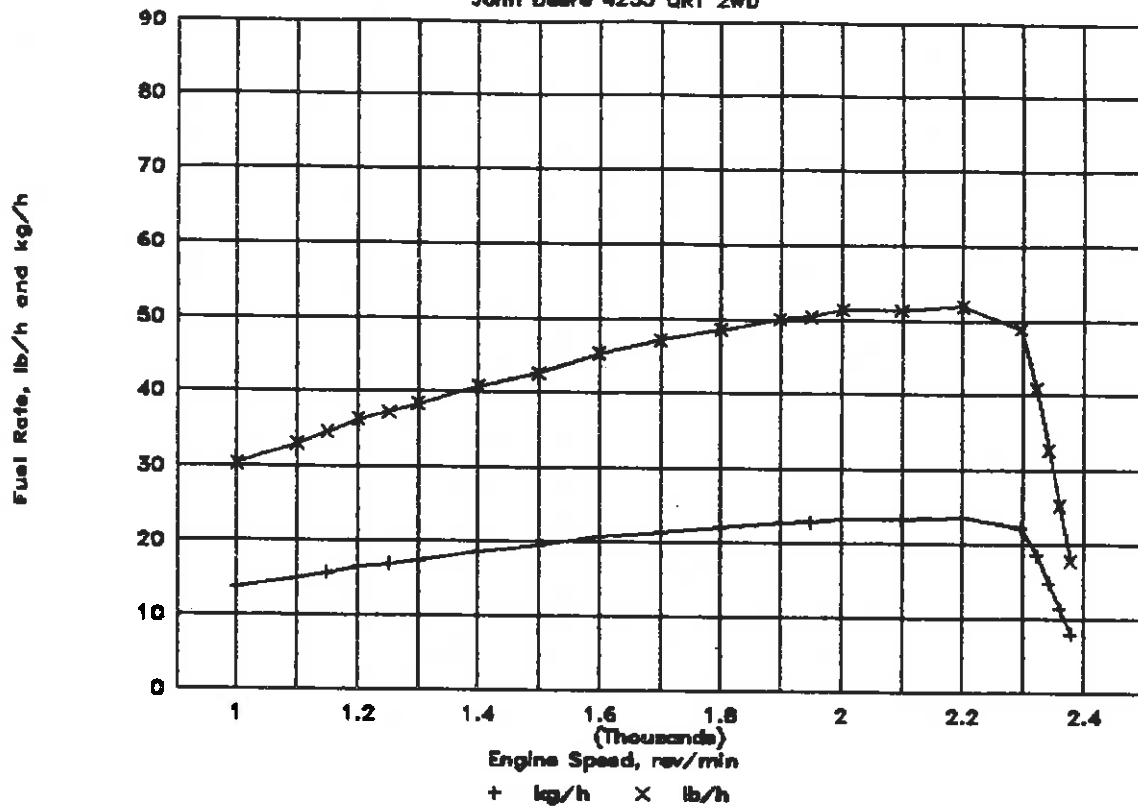
PTO Power

John Deere 4255 QRT 2WD



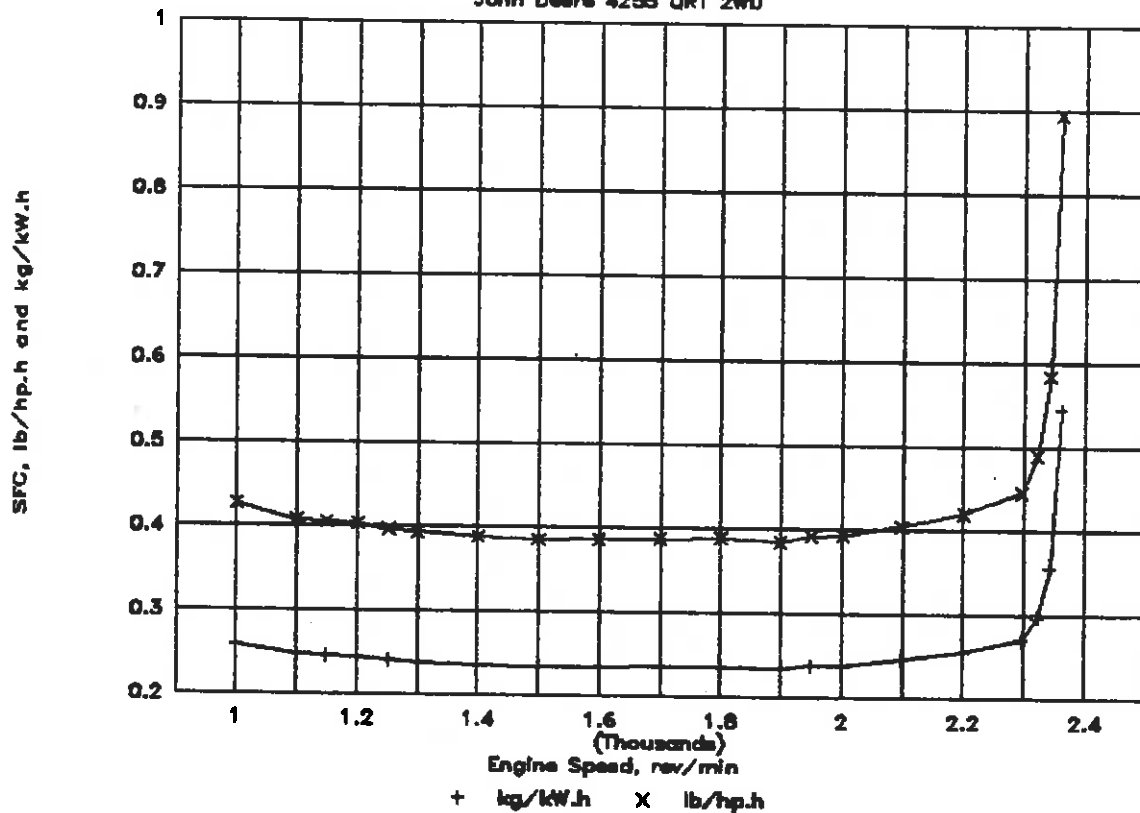
PTO Fuel Consumption

John Deere 4255 QRT 2WD



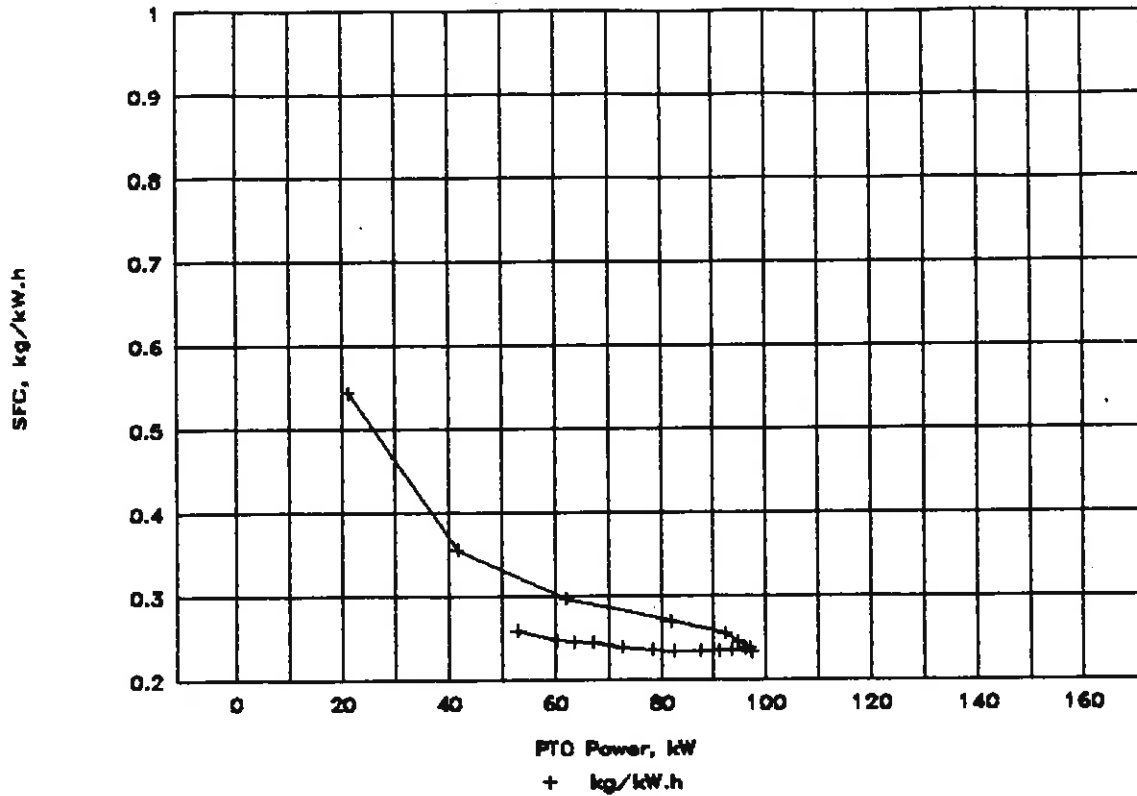
PTO Specific Fuel Consumption

John Deere 4255 QRT 2WD



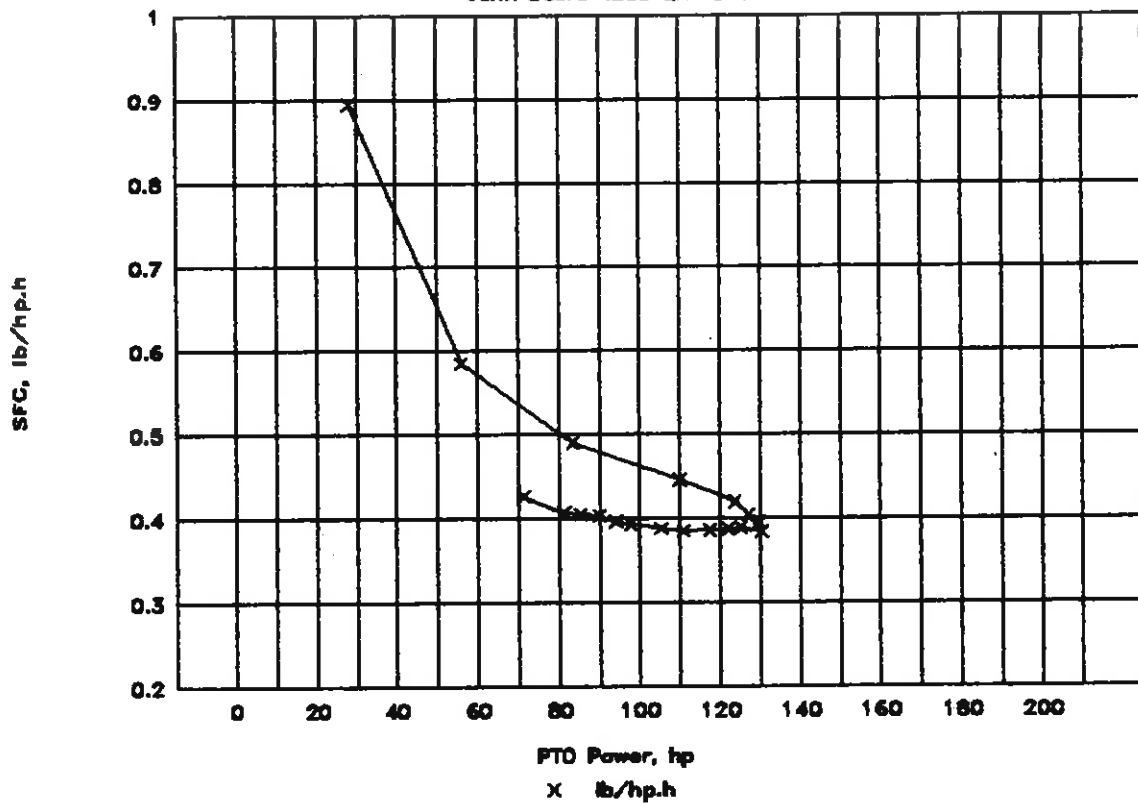
SFC vs PTO Power

John Deere 4255 QRT 2WD



SFC vs PTO Power

John Deere 4255 QRT 2WD



5. OPTIONAL TESTS.

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5.1 MEASUREMENT OF EXTERNAL NOISE LEVEL.

Date of test : 15 September 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 : 24.0 km/h (14.9 mph)
Sound level : 85.0 dB(A)

5.2 MAXIMUM POWER AT 1900 REV/MIN (BALLASTED TRACTOR)
OECD Drawbar Data (SI)

Date of tests: 25-Sep-89 25-Sep-89 Fuel density: 0.828 kg/l														
Type of track: Concrete Test # 1627														
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 @ 1900 rev/min)						Tire pressure:			83 kPa, rear (inner) 276 kPa, front					
Drawbar height: 546 mm									83 kPa, rear (outer)					
1st(A1)	55.43	65.01	3.07	2314	14.54%	0.354	2.34	45	82	101	14	10	60%	98.65
2nd(A2)	70.01	65.06	3.87	2293	14.04%	0.325	2.54	45	83	100	13	9	59%	98.68
3rd(A3)	81.82	57.80	5.10	2123	6.37%	0.287	2.88	45	85	103	18	12	49%	98.61
4th(A4)	84.17	48.21	6.29	2023	4.29%	0.275	3.01	45	85	103	22	14	40%	98.58
5th(B1)	83.56	46.27	6.50	1901	4.14%	0.273	3.03	44	85	103	22	14	40%	98.54
6th(C1)	83.26	38.60	7.77	1901	3.26%	0.272	3.04	45	85	103	22	14	40%	98.48
7th(B2)	86.07	37.27	8.31	1897	3.18%	0.264	3.13	45	86	102	23	14	36%	98.44
8th(C2)	86.27	31.26	9.93	1902	2.61%	0.264	3.13	44	86	103	24	14	31%	98.41
9th(B3)	84.60	27.88	10.92	1901	2.45%	0.270	3.07	45	86	103	24	14	31%	98.41
10th(D1)	83.94	25.06	12.06	1901	2.29%	0.272	3.05	45	86	103	24	14	31%	98.41
11th(C3)	83.57	23.14	13.00	1900	2.04%	0.272	3.05	45	86	101	25	14	28%	98.41

OECD Drawbar Data (US)

Date of tests: 25-Sep-89 25-Sep-89 Fuel density: 6.910 lb/gal														
Type of track: Concrete Test # 1627														
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 @ 1900 rev/min)						Tire pressure:			12 psi, rear (inner) 40 psi, front					
Drawbar height: 21.5 in									12 psi, rear (outer)					
1st(A1)	74.33	14615	1.91	2314	14.54%	0.583	11.86	114	180	213	58	50	60%	29.13
2nd(A2)	93.89	14627	2.41	2293	14.04%	0.535	12.92	114	181	212	55	48	59%	29.14
3rd(A3)	109.72	12994	3.17	2123	6.37%	0.472	14.64	113	186	218	64	54	49%	29.12
4th(A4)	112.87	10837	3.91	2023	4.29%	0.452	15.27	114	186	218	72	58	40%	29.11
5th(B1)	112.06	10402	4.04	1901	4.14%	0.449	15.40	111	186	218	72	58	40%	29.10
6th(C1)	111.66	8678	4.83	1901	3.26%	0.448	15.43	114	185	217	72	58	40%	29.08
7th(B2)	115.42	8378	5.17	1897	3.18%	0.434	15.91	114	187	215	74	58	36%	29.07
8th(C2)	115.69	7028	6.17	1902	2.61%	0.435	15.90	112	188	218	76	58	31%	29.06
9th(B3)	113.45	6268	6.79	1901	2.45%	0.443	15.59	113	188	217	76	58	31%	29.06
10th(D1)	112.56	5634	7.49	1901	2.29%	0.447	15.47	112	187	217	76	58	31%	29.06
11th(C3)	112.07	5201	8.08	1900	2.04%	0.447	15.47	113	188	215	77	57	28%	29.06

MAXIMUM POWER AT 2200 REV/MIN (BALLASTED TRACTOR)

OECD Drawbar Data (SI)

Date of tests: 25-Sep-89 25-Sep-89 Fuel density: 0.828 kg/l														
Type of track: Concrete Test # 1627														
Gear	Power	Pull	Speed	Engine	Slip	SFC		Temperature, deg C					Rel	Pressure
	kW	kN	km/h	Speed rev/min	%	kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet	hum	kPa
Ic. Maximum Power (ballasted @ 2200 rev/min)						Tire pressure:		83 kPa, rear (inner)		276 kPa, front				
Drawbar height:						546 mm		83 kPa, rear (outer)						
2nd(A2)	70.09	65.10	3.88	2293	14.04%	0.325	2.55	45	83	102	13	9	59%	98.65
3rd(A3)	80.66	54.41	5.34	2200	5.38%	0.291	2.84	45	84	103	17	11	47%	98.61
4th(A4)	81.97	42.84	6.89	2200	3.66%	0.285	2.90	46	85	103	20	13	44%	98.58
5th(B1)	81.90	38.87	7.59	2200	3.34%	0.288	2.88	44	85	103	22	14	40%	98.54
6th(C1)	81.85	32.59	9.04	2201	2.78%	0.288	2.87	45	85	103	22	14	40%	98.51
7th(B2)	83.44	31.02	9.69	2197	2.61%	0.283	2.93	44	85	103	24	14	31%	98.44
8th(C2)	82.44	25.69	11.55	2202	2.20%	0.286	2.90	44	85	103	24	14	31%	98.41
9th(B3)	81.69	23.13	12.72	2203	2.04%	0.288	2.87	44	85	103	24	14	31%	98.41
10th(D1)	80.67	20.72	14.02	2201	1.96%	0.292	2.84	44	86	102	24	14	31%	98.41

OECD Drawbar Data (US)

Date of tests: 25-Sep-89 25-Sep-89 Fuel density: 6.910 lb/gal														
Type of track: Concrete Test # 1627														
Gear	Power	Pull	Speed	Engine	Slip	SFC			Temperature, deg F				Rel	Pressure
	hp	lb	mph	rpm	%	lb/hp-hr	hp-hr/gal	Fuel	Coolant	Oil	Dry	Wet	hum	in Hg
Ic. Maximum Power (ballasted @ 2200 rev/min)						Tire pressure:			12 psi, rear (inner)		40 psi, front			
Drawbar height: 21.5 in								12 psi, rear (outer)						
2nd(A2)	93.99	14635	2.41	2293	14.04%	0.534	12.93	113	182	215	55	48	59%	29.13
3rd(A3)	108.17	12231	3.32	2200	5.38%	0.479	14.42	113	184	217	62	52	47%	29.12
4th(A4)	109.92	9632	4.28	2200	3.66%	0.469	14.74	115	185	217	68	56	44%	29.11
5th(B1)	109.83	8738	4.71	2200	3.34%	0.473	14.62	111	185	218	72	58	40%	29.10
6th(C1)	109.76	7326	5.62	2201	2.78%	0.474	14.59	112	186	218	72	58	40%	29.09
7th(B2)	111.90	6973	6.02	2197	2.61%	0.465	14.86	112	185	218	76	58	31%	29.07
8th(C2)	110.56	5776	7.18	2202	2.20%	0.470	14.70	112	185	217	76	58	31%	29.06
9th(B3)	109.55	5199	7.90	2203	2.04%	0.474	14.57	111	185	217	76	58	31%	29.06
10th(D1)	108.18	4657	8.71	2201	1.96%	0.480	14.41	112	186	216	76	58	31%	29.06

Repairs: None
Remarks: None

