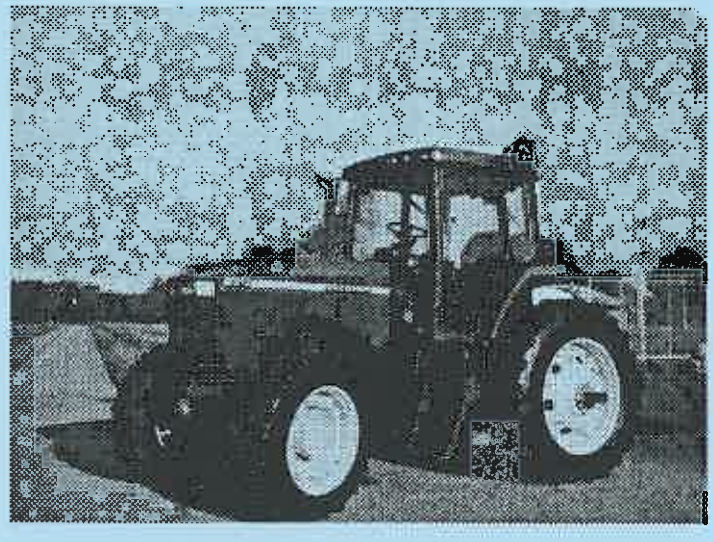
OECD APPROVAL NUMBER 1701 (Restricted code)
Date of approval: 4 November, 1997

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

REPORT ON TEST IN ACCORDANCE WITH OECD RESTRICTED CODE (CODE II) FOR THE OFFICIAL TESTING OF AGRICULTURAL TRACTORS



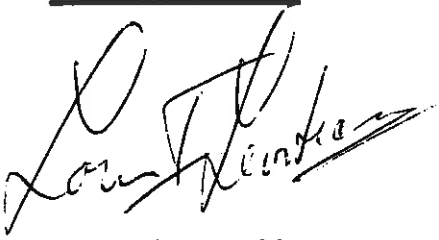
JOHN DEERE 7610 POWERSHIFT MFWD - 40 km/h

MANUFACTURED BY	John Deere Waterloo Tractor Works Tractor Division P.O. Box 270 Waterloo, Iowa 50704-0270
NEBRASKA TEST NUMBER	1725
TEST DATES	May 22 through June 19, 1997

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 **4 November, 1997** for the **John Deere 7610 Powershift MFWD - 40 km/h** with **OECD Number 1701** (Restricted Code)

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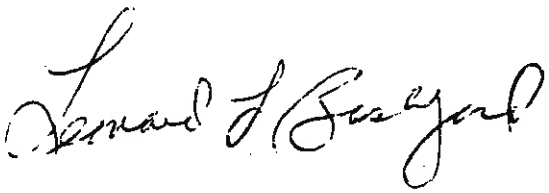
Associate Director



Dr. Louis I. Leviticus

Senior Test Engineer

Chairman, Tractor Test Board



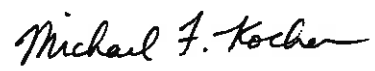
Dr. Leonard L. Bashford

Members, Tractor Test Board



David L. Morgan

Test Engineer



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Date:

NOV 21 1997

LINCOLN, NEBRASKA 68583-0832,USA

TABLE OF CONTENTS.

	PAGE
1. SPECIFICATIONS	1
2. TEST CONDITIONS	13
3. COMPULSORY TESTS	
Main Power Take-Off Performance	16
Hydraulic Pump Performance	17
Power Lift Performance	18
Drawbar Performance	19
4. GRAPHS	21
5. OPTIONAL TESTS	
Power lift with alternative settings	25
Drawbar Performance	
Front wheel drive disengaged and at rated engine speed	26
Measurement of external noise levcl	27

SPECIFICATIONS OF TRACTOR.

Manufacturers name/address	John Deere Tractor Works, 3500 East Donald Street P.O. Box 270, Waterloo, Iowa, USA
Location of tractor assembly	Same
Submitted for test by	The manufacturer
Selected for test by	The manufacturer in agreement with the test station.
Place of running in	John Deere Product Eng. Ctr., Waterloo, Iowa, USA
Duration of running in	170 hours
Location of Test	Nebraska Power Laboratory, Tractor Testing Laboratory Lincoln, Nebraska,USA.

TRACTOR SPECIFICATIONS.

Make	John Deere
Model	7610P Powershift MFWD - 40 km/h
Type	Unit construction, mechanical front wheel drive (MFWD)
Number of driving wheels	2 or 4
Serial Number	RW7610P001326
1st Serial number	RW7610P001001

ENGINE.

Make	John Deere
Model	6068TRW52
Type	Diesel; 4-stroke; turbocharged, direct injection
Serial Number	TO6068T705447

Cylinders

Number/Disposition	6, in-line, vertical
Bore/stroke	106.5 mm x 127.0 mm
Capacity	6788 cm^3
Compression Ratio	17.0 - 1
Arrangement of valves	Overhead
Cylinder liners	Wet; replaceable

Super charging

Make/Model/Type	Garret/RE59883/Exhaust gas driven
Pressure	67 ± 15 kPa at rated speed and load

Fuel System

Feed system	Mechanical transfer pump
Make/Type/Model of filters	Stanadyne/RE62419/paper element
Fuel tank capacity	344 l

Fuel Cooler	Heat exchanger with air
Make/Model/Type Injection Pump	Lucas/RE59514/Rotary; electric shutoff
Pump Serial number	11948921A211W3108J0G
Production setting of pump	
Flow Rate (Rated Eng.Spd & Full Load)	21.8 ± 1.0 kg/h
Fuel density	0.841 kg/l
Make/Model/Type Injectors	Stanadyne/RE44508/ Pencil Type
Injection pressure	29.0 +/-1.5 MPa
Timing	6.5 degrees BTDC
Governor	
Make/Model/Type	Lucas/DP203/Mechanical
Governed engine speed range	From 850 to 2275 rev/min
Rated engine speed	2100 rev/min
High-idle speed range	2275 ± 50 rpm
Air Cleaner.	
Pre-cleaner	
Make/Model/type	Donaldson/RE65789/Strato-tube precleaner with aspirator
Air intake location	Under hood, front of tractor
Main Cleaner	
Make/Model/Type	Donaldson/RE67156/Pleated paper
Location	Under hood, front of tractor
Secondary element	Donaldson/RE34963/Pleated paper
Maintenance indicator	Dash mounted warning light and audio signal
Lubrication system.	
Type of feed pump	Full pressure; positive displacement
Type of filters	Full flow
Number	One spin-on.
Oil cooler	Heat exchanger with engine coolant
Cooling system.	
Type of coolant	Liquid
Type of pump	Centrifugal, belt driven
Fan specification	Belt driven; Suction type; Variable speed
Number of fan blades	6
Fan diameter	582 mm
Coolant system capacity	24 l
Type of temperature control	Two thermostats and variable speed fan
System pressure	69 kPa

Starting system.	
Make/Model/Type of starter	Nippondenso/RE59596/Solenoid engaged
Power Rating	4.0 kW
Cold starting aid	Electrical resistance preheater plug in air intake
Safety device	Electrical lockout on gearshift
Electrical system.	
Voltage & grounding.	12 Volt DC;negative ground
Alternator	
Make/Model/Type	Nippondenso/RE46608/Belt driven
Power rating	140 Amp at rated engine speed and 25°C ambient
Batteries	
Number & connection	Two; 12 Volt batteries in parallel; SAE tapered post
Rating	925 cold cranking amps/battery 175 Ah/battery at 20 hour rating
Exhaust system.	
Muffler Make/Model/Type	Nelson/RE65768/Expansion chamber
Location	Horizontal muffler; under hood
Exhaust stack location	Vertical; right front of cab

TRANSMISSION.

Clutch. (travel)	
Make/Model/Type	John Deere/Multiple plate/oil cooled
Number of plates	3, 5 or 8 depnding on gear selection
Plate diameter	225 mm
Method of operation	Hydraulic; pedal actuated
Gear Box.	
Make/Model/Type	John Deere/Full Powershift/Mechanical
Arrangement (tested version)	Planetary design; One input planetary gearset; One 2-speed planetary gearset; Two compound planetary gearsets. All with multiple wet disc clutches and brakes.
Number of gears	19 forward and 7 reverse operated one lever
Oil cooler	Heat exchanger with air
Other Available options	None
Rear axle and final drives.	
Make/Model/Type	John Deere/RE66320/Spiral bevel and pinion, differential and inboard planetary reduction
Differential Lock	
Type	Electro-Hydraulic
Method of engagement	Pedal operated switch
Method of disengagement	Self-disengaging with brake pedal operation

Front Axle and final drives.	
Make/Model/Type	John Deere/MFWD 1100 series/Spiral bevel 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 820 mm - ISO 4251/1-1992)

Gear Number	Number of engine revolutions for one revolution of the driving wheels	Nominal travel speed at rated engine speed of 2100 rev/min [km/h]
Forward		
1	429.48	1.51
2	300.03	2.16
3	239.49	2.71
4	197.60	3.29
5	171.52	3.78
6	151.13	4.30
7	131.18	4.95
8	110.19	5.89
9	95.54	6.79
10	84.27	7.70
11	73.15	8.87
12	63.74	10.18
13	55.33	11.73
14	48.75	13.32
15	42.32	15.34
16	37.78	17.18
17	30.53	21.28
18	21.85	29.70
19	17.66	36.75
Reverse		
1	267.31	2.43
2	186.74	3.48
3	123.00	5.28
4	106.75	6.08
5	94.07	6.90
6	81.65	7.95
7	42.17	15.40

Number of front wheel revolutions for one rear wheel revolution: 1.3188

POWER - TAKE - OFF.

Main Power-Take-Off.

Type	Independent
Method of engagement	Electro-hydraulically actuated multi-plate wet clutch operated by hand control switch
Number of shafts	One
Method of changing speeds	Reversible shaft
SM-Option	Reversible shaft with 2 speeds selectable by hand lever

1. PTO Proportional to Engine speed - reversible shaft (tested version)

Standard PTO - 540 rev/min.

Location	Rear of tractor; center plane
Diameter of shaft	35 mm
Number of splines	6; conforms to ISO 500/1991
Height above ground	715 mm
Distance from median plane of tractor	0 mm
Distance behind rear axle	620 mm
PTO Speed at rated engine spd	547 rev/min
Engine speed at Std. PTO spd	2072 rev/min
Engine speed/PTO speed ratio	3.837 : 1
Power restriction	56 kW
Direction of rotation when viewed from shaft end	Clockwise.

Standard PTO-1000 rev/min.

Location	Rear of tractor; center plane
Diameter of shaft	35 mm
Number of splines	21; conforms to ISO 500/1991
Height above ground	715 mm
Distance from median plane of tractor	0 mm
Distance behind rear axle	620 mm
PTO Speed at rated engine spd	1007 rev/min
Engine speed at Std. PTO spd	2086 rev/min
Engine speed/PTO speed ratio	2.086 : 1
Power restriction	None
Direction of rotation when viewed from shaft end	Clockwise.

2. PTO Proportional to Engine speed - reversible two-speed shaft (SM-option)

Standard PTO - 540 rev/min.

Location	Rear of tractor; center plane
Diameter of shaft	35 mm
Number of splines	6 or 21 splines - conforms to ISO 500/1991
Height above ground	715 mm
Distance from median plane of tractor	0 mm
Distance behind rear axle	620 mm
PTO Speed at rated engine spd	656 rev/min
Engine speed at Std. PTO spd	1730 rev/min
Engine speed/PTO speed ratio	3.204 : 1
Power restriction	56 kW
Direction of rotation when viewed from shaft end	Clockwise.

Standard PTO-1000 rev/min.

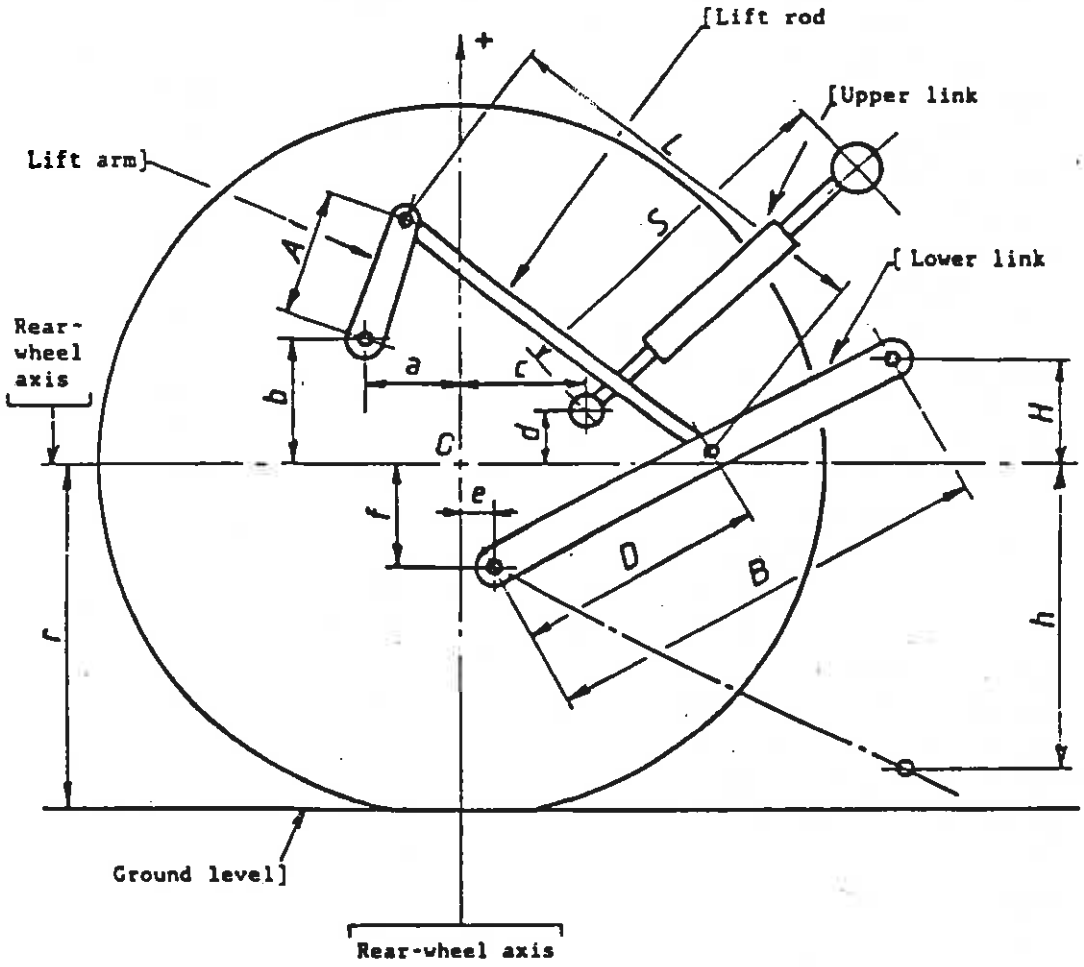
Location	Rear of tractor; center plane
Diameter of shaft	35 mm
Number of splines	6 or 21 splines; conforms to ISO 500/1991
Height above ground	715 mm
Distance from median plane of tractor	0 mm
Distance behind rear axle	620 mm
PTO Speed at rated engine spd	1064 rev/min
Engine speed at Std. PTO spd	1973 rev/min
Engine speed/PTO speed ratio	1.973 : 1
Power restriction	None
Direction of rotation when viewed from shaft end	Clockwise.

POWER LIFT.

Make/Model/Type	John Deere/10050 Lb system/Electronic lower link sensing; variable mix of draft and position control; adjustable rate of drop
Type of hydraulic system	Closed center; pressure and flow compensated
Number/Type of cylinders	Two external, single acting
Type of linkage lock for transport	
Relief valve pressure setting	20.3 + 0.4/-0.6 MPa
Opening pressure of cylinder safety valve	24.0 ± 1.0 MPa
Lift pump type	Axial piston, variable delivery and flow, pressure and flow compensated
Power transmission to pump	Spiral bevel gear drive
Type/Number of filters	Synthetic media; screw-on canister/one
Location of oil reservoir	Differential case housing
Number/Type/Location of tapping points.	ISO standard breakaway couplers at rear; 2 standard, 3rd and 4th optional. Additional inlet/outlet pair for externally controlled implements
Max. oil volume available for external cylinders.	19.0 liters; additional 11 liters allowable overfill for total of 30 liters

THREE POINT LINKAGE.

- Category 3N/2 or 2 in conformity with ISO 730/1-1990
- Category adaptor None



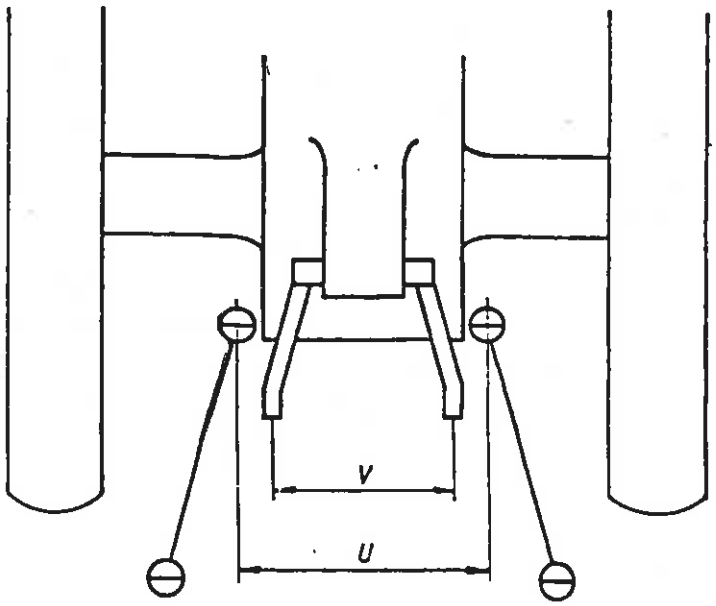


Table 1.1 - LINKAGE GEOMETRY DIMENSIONS.
ISO Category III Hook Type Draft Link Ends

			Dimension or range [mm]	Settings used on test [mm]
Rear Tire - Radius Index		(r)	820	905
Front Tire - Radius Index		(r')	610	695
Length of lift arms		(A)	375	same
Length of lower links		(B)	1011	same
Distance of lift				
arm pivot from:	horizontal	(a)	205	same
rear wheel axis:	vertical	(b)	588	same
Horizontal distance between the 2 lower link points		(U)	520	same
Horizontal distance between the 2 lift arm end points		(V)	647	same
Length of upper link		(S)	609 to 808	692
Distance of upper link pivot point from rear wheel axis				
-	horizontal	(c)	504	same
-	vertical	(d)	353, 283,200	283
Distance of lower				
link pivot from:	horizontal	(e)	195	same
rear wheel axis:	vertical	(f)	275	same
Distance of lower link pivot points to lift rod pivot pts on lower links.		(D)	612, 688	612
Length of lift rods		(L)	842 to 1051	968
Height of lower hitch points below rear wheel axis				
In low position		(h)	409 to 802	654
In high position		(H)	281 to 49	103
Height above ground of lower hitch points when locked in transport position			808 to 1044	1008

* Tire dynamic index of 905 mm, ISO 4251/1-1992

*Note: Dynamic index of 820 mm was on tractor supplied for test. European market will have tires with 905 mm dynamic radius.

SWINGING DRAWBAR.

Type		Oscillating
Height above ground	Maximum	473 mm
	Minimum	409 mm
Adjustments		Invert drawbar; reposition clevis
Distance of hitch point from rear wheel axis-	Horizontal	920, 970, 1020 mm
Distance of hitch point from PTO shaft end:	Vertical	250 mm
	Horizontal	250, 350, 400 mm
Lateral adjustment	Right side	190 mm
	Left side	190 mm
Distance of pivot point from rear wheel axis	Horizontal	27 mm
Diameter of drawbar pin hole		33 mm
Maximum vertical static permissible load		28 kN -short position
		21 kN -intermediate position
		14 kN -extended position

STEERING.

Make/Model/Type	Eaton/RE34138/Hydrostatic
Method of operation	Steering wheel
Pump(s)	Power Mode - Same as main pump Manual Mode - Ground driven pump
Ram(s)	Two external; double acting
Working pressure	17.0 ± 0.5 MPa

BRAKE SYSTEM.

Service brake.

Make/Model/Type	Vickers/RE67321/John Deere oil immersed disc
Method of operation	Hydraulic; operated by two pedals which can be locked together.

Parking brake.

Type	Transmission lock.
Method of operation	Gear selector lever

Trailer Brake — None

WHEELS.

Number	Front	Two; Driving and steering
	Rear	Two; Driving
Wheel base		2800 mm

TRACK WIDTH ADJUSTMENT

	Minimum [mm]	Maximum [mm]	Adjustment method
Front	1524	2235	Reversing wheels and offset lug rims
Rear	1525	2548	Rack and Pinion axle; Reversing wheels and offset lug rims

PROTECTIVE STRUCTURE.

Make/Model/Type	John Deere/SG-060/ComfortGard
Manufacturer's name/address	John Deere Tractor Works, Waterloo, Iowa, USA
Protective device	Cab; not tiltable
OECD approval number	CSS 0394/59
Approval date	27 September 1996

DRIVER'S SEAT.

Make/Model/Type	Sears/RE35125/Air suspension; Personal posture cushioning
Type of suspension	Air
Type of damping	Three-position viscous damper
Range of adjustment	
Longitudinal	167 mm
Vertical	80 mm
Rotation	20 degrees left & right

LIGHTING.

	Height above ground of center [mm]	Size [mmxmm]	Distance from outside edge to median plane of tractor. [mm]
Head lights	1110	162 x 102	232
Side lights	1110	152 x 102	277
Rear lights	1930	127 x 76	892
Reflectors-rear - Outside	1930	43 x 70	934
- Inside	1930	43 x 70	807

TEST CONDITIONS.

Overall dimensions.

Length	Overall	4755	mm
Width	Minimum	2808	mm
	Maximum	3015	mm
Height	Top protective structure	2973	mm
	Top of exhaust	2908	mm
Ground clearance		465	mm
Clearance-limiting part		Drawbar	

Tractor Mass (with cab,full fuel tank).

		Without driver [kg]	With driver [kg]
Unballasted	Front	2326	2336
	Rear	4387	4452
	Total	6713	6788

Max. permissible load	front	4800 kg
	rear	10000 kg

Tire Specifications.	**Front Wheels**		**Rear Wheels**	
Make	Goodyear		Goodyear	
Dimensions	13.6R28		18.4R38	
Number/Ply rating	3 star		2 star	
Type	Radial		Radial	
Max.load - Tire mfr - 40 km/hour	1700	kg/tire	3000	kg/tire
- Tire mfr - 30 km/hour	1815	kg/tire	3200	kg/tire
Inflation pressure - tire mfr - max	210	kPa	160	kPa
- min	40	kPa	40	kPa
as tested	105	kPa	90	kPa
Dynamic Radius Index	610	mm	820	mm
Chosen track width	1930	mm	1930	mm

OILS AND LUBRICATION

Capacity and change interval:

	Capacity liter	Oil change hours	Filter change hours
Engine (without filter)	18.0	250	250
Front axle	8.5	1500	750
Transmission, final drive, rear axle and hydraulics	102.3	1500	Annually or as required
Final drive, front	1.9	1500	

Oil and Lubricant specifications:

	Recommended	Used during test
Engine oil		
Type	John Deere, TORQ-GARD Supreme Plus 50; SAE 15W-40	same
Viscosity	12.8 cSt at 100°C	
Classification	API CE or CD; CCMC specification D5 or D6	
Transmission		
Type	John Deere HY-GARD (J20C) SAE 10W-30	same
Viscosity	58 cSt at 40°C	
Classification	NA	
Hydraulic fluid	Same as transmission	same
Front axle hubs		
Type	John Deere GL5 Gear Lubricant SAE 85W-140	same
Viscosity	13.5 cSt at 100 °C	
Classification	API GL-5	
Front differential		
Type	John Deere HY-GARD J20C SAE 10W-30	same
Viscosity	58 cSt at 40° C	
Classification	NA	
Steering system	Same as transmission	same
Grease	John Deere Moly High Temperature EP Grease	same
Number of lubepoints	19	

FUEL

Type/grade	Premier; Grade 2-D, in conformity with the national standard
Density (Pto test)	0.841 kg/l at 15^0 C
(Drawbar test)	same as Pto test.
Cetane number	50.6
Viscosity	2.51 cSt at 38^0 C

COMPULSORY TESTS

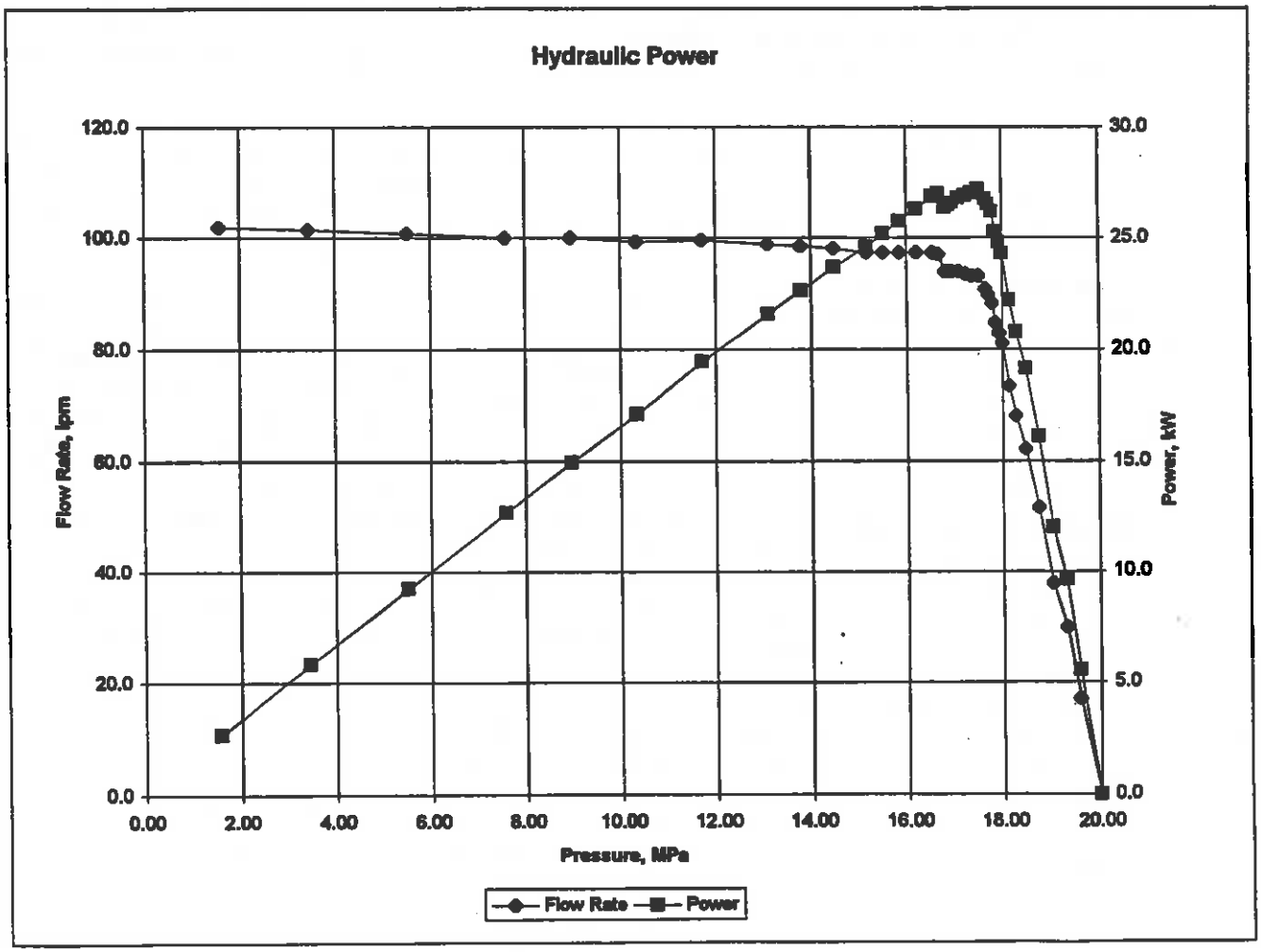
1. MAIN POWER TAKE OFF

Date: 23-May-97 Location: UNL Tractor Test Lab, Lincoln, NE, USA
Type of dynamometer: Eddy current, Eaton
Fuel Density 0.841 kg/l

Power kW *hp*	Engine rev/min	PTO rev/min	l/h *gal/h*	kg/h *lb/hr*	kg/kW-h *lb/hp-h*	kW-h/l *hp-h/gal*
1.1 Maximum Power - 2 Hours						
87.45 *117.27*	1801	863	24.66 *6.51*	20.73 *45.71*	0.237 *0.390*	3.55 *18.00*
1.2 Power at Rated Engine Speed - 1 hour						
86.47 *115.96*	2100	1007	25.82 *6.82*	21.71 *47.87*	0.251 *0.413*	3.35 *17.00*
1.3 Power at Standard Power Take Off Speed - 1 hour						
86.47 *115.96*	2100	1007	25.82 *6.82*	21.71 *47.87*	0.251 *0.413*	3.35 *17.00*
1.4 Part Loads						
1.4.1 Torque at maximum power at rated engine speed						
86.47 *115.96*	2100	1007	25.82 *6.82*	21.71 *47.87*	0.251 *0.413*	3.35 *17.00*
1.4.2 85% of torque obtained in 1.4.1						
76.12 *102.08*	2170	1041	23.95 *6.33*	20.14 *44.40*	0.265 *0.435*	3.18 *16.13*
1.4.3 75% of torque defined in 1.4.2						
57.76 *77.46*	2202	1056	19.91 *5.26*	16.74 *36.90*	0.290 *0.476*	2.90 *14.73*
1.4.4 50% of torque defined in 1.4.2						
38.81 *52.05*	2233	1071	16.18 *4.28*	13.61 *30.00*	0.351 *0.576*	2.40 *12.17*
1.4.5 25% of torque defined in 1.4.2						
19.59 *26.27*	2257	1082	11.81 *3.12*	9.93 *21.90*	0.507 *0.834*	1.66 *8.42*
1.4.6 unloaded						
0.77 *1.03*	2267	1087	7.77 *2.05*	6.53 *14.40*	8.464 *13.915*	0.10 *0.50*
1.5 Part Loads at Standard Power Take Off Speed						
1.5.1 Torque at maximum power						
86.47 *115.96*	2100	1007	25.82 *6.82*	21.71 *47.87*	0.251 *0.413*	3.35 *17.00*
1.5.2 85% of torque obtained in 1.5.1						
76.12 *102.08*	2170	1041	23.95 *6.33*	20.14 *44.40*	0.265 *0.435*	3.18 *16.13*
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19.59 *26.27*	2257	1082	11.81 *3.12*	9.93 *21.90*	0.507 *0.834*	1.66 *8.42*
1.5.6 unloaded						
0.77 *1.03*	2267	1087	7.77 *2.05*	6.53 *14.40*	8.464 *13.915*	0.10 *0.50*

No load maximum engine speed:	2267	rev/min		
Equivalent torque at rated speed:	393	N.m	*290*	*lb-ft*
Equivalent torque at maximum power:	**464**	**N.m**	*342*	*lb-ft*
(engine speed:	**1801**	**rev/min)**		
Maximum equivalent crankshaft torque:	552	N.m	*407*	*lb-ft*
(engine speed:	1247	rev/min)		
Mean Dry bulb:	24	deg C	*75*	*deg F*
Wet bulb:	17	deg C	*63*	*deg F*
Relative Humidity	49	%		
Pressure:	97.7	kPa	*28.86*	*in Hg*
Maximum Coolant:	90	deg C	*194*	*deg F*
Engine Oil:	111	deg C	*232*	*deg F*
Fuel:	65	deg C	*150*	*deg F*
Air Intake:	27	deg C	*81*	*deg F*
Transmission/hydraulic oil:	53	deg C	*128*	*deg F*
Intake manifold pressure at rated speed:	70	kPa	*10.2*	*psig*
Intake manifold pressure at maximum power:	63	kPa	*9.1*	*psig*

Date of Test: 19-Jun-97	John Deere 7610 PS	
Location of Test-City-State:	Tractor Test Lab, Lincoln, NE, USA	
Tapping point used for test:	Remote hydraulic outlets	
I. Sustained pressure with pump stalled:		
19.99 MPa		
2900 psig		
II. Pump delivery rate at minumum pressure and rated engine speed:		
101.8 l/min		
26.9 gpm		
III. Flow rate, pressure, power:		
90% of relief valve setting		
81.0 l/min	18.00 MPa	24.3 kW
21.4 gpm	*2610 psig*	*32.6 hp*
Maximum hydraulic power:		
93.1 l/min	17.51 MPa	27.2 kW
24.6 gpm	*2540 psig*	*36.5 hp*
IV. Hydraulic fluid temperature at flow meter:		
61.9 °C		
143 °F		
This hydraulic system does not use an accumulator. Opening and closing pressures of the unloading valve could not be measured.		



2.2 POWER LIFT TEST. Test A-Upper link in middle hole on tractor

Date of test: 15 June 1993
(Data taken from OECD test 1489 done on the John Deere 7600 Powershift which has the same mechanical lifting system and pressure settings)

		Hitch points	Frame
Lower hitch points above ground - down position:	[mm/in]	251/9.9	201/7.9
Vertical movement: without load:	[mm/in]	757/29.8	889/35.0
Vertical movement: with load:	[mm/in]	729/28.7	879/34.6
Maximum corrected force through full range:	[kN/lb]	49.4/11111	45.2/10161
Corresponding pressure:	[kPa/psi]	18.0/2610	
Moment about rear axle:	[kN.m/lb.ft]	59.6/43979	82.1/60543
Maximum mast tilt angle:	[deg]	--	9.4

Lifting height relative to horizontal position of lower links.

	[mm]	-424	-373	-300	-201	-99
	[in]	-16.7	-14.7	-11.8	-7.9	-3.9
Corrected lift forces						
Hitch point.	[kN]	--	49.4	52.8	56.5	59.0
	[lb]	--	11111	11867	12704	13523
at frame	[kN]	48.6	--	49.8	51.5	52.4
	[lb]	10935	--	11196	11583	11772

Lifting height relative to horizontal position of lower links.

	[mm]	0	99	201	290	356	454
	[in]	0	3.9	7.9	11.4	14.0	17.9
Corrected lift forces							
Hitch point	[kN]	61.4	62.9	64.8	66.8	67.7	--
	[lb]	13793	14144	14558	15026	15215	--
at frame	[kN]	52.4	51.7	50.4	49.8	48.7	45.2
	[lb]	11772	11619	11340	11196	10944	10161

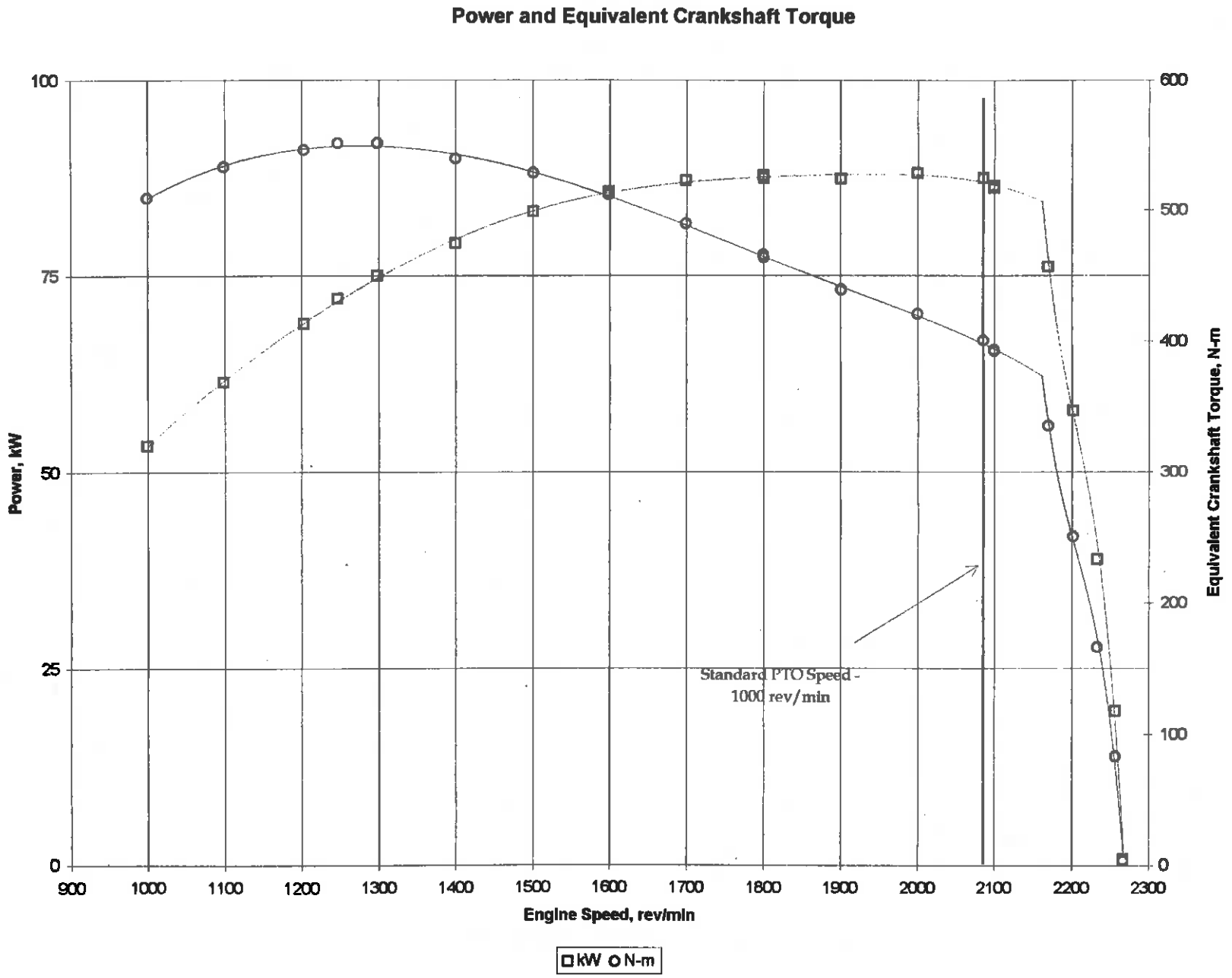
OECD Drawbar Data (SI)

Test 02Jun97-19Jun97				Fuel density:	0.841 kg/l									
trac Concrete				Test number	1725									
Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg C					Rel humidity	Ba Pr
	kW	kN	km/h	rev/min		kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet		kl
I. Maximum Power (unballasted, 4wd at 1800 rev/min)						Tire pressure:		90 kPa, rear		103 kPa, front			Drawbar height:	533 mm
4	50.31	61.50	2.94	2187	15%	0.375	2.24	63	84	106	29	22	50%	97
5	60.61	64.39	3.39	2167	14%	0.341	2.46	64	84	109	15	12	48%	97
6	67.98	60.85	4.02	2130	9%	0.315	2.67	65	86	110	18	13	43%	97
7	70.69	58.93	4.32	1981	5%	0.297	2.83	63	86	111	21	15	42%	97
8	70.50	52.56	4.83	1800	5%	0.291	2.89	64	87	111	21	15	42%	97
9	71.62	45.71	5.64	1801	4%	0.287	2.93	63	86	111	22	15	42%	97
10	72.02	40.23	6.45	1800	3%	0.284	2.96	63	88	112	24	15	39%	97
11	72.72	34.90	7.50	1807	3%	0.281	2.99	63	88	113	24	16	40%	97
12	71.38	29.80	8.62	1801	2%	0.288	2.92	64	87	113	25	16	40%	97
13	71.39	25.84	9.95	1797	2%	0.288	2.92	65	88	113	25	16	40%	97
14	70.98	22.49	11.36	1803	2%	0.291	2.89	65	88	113	25	16	40%	97
15	70.75	19.43	13.11	1801	1%	0.292	2.88	65	88	112	26	16	39%	97
II. Part loads (unballasted, 4wd)														
II.1 in selected gear at maximum power at rated engine speed.														
11	71.78	29.49	8.76	2099	2%	0.298	2.82	64	88	113	24	16	40%	97
II.1.1 75% of pull at maximum power at rated engine speed														
11	56.47	22.09	9.20	2190	2%	0.333	2.52	63	86	109	25	18	50%	98
II.1.2 50% of pull at maximum power at rated engine speed														
11	38.39	14.73	9.38	2221	1%	0.396	2.12	61	84	106	26	18	47%	98
II.1.3 higher gear at reduced engine speed, same pull and travel speed as II.1.1														
12	56.60	22.07	9.23	1915	2%	0.309	2.73	62	86	109	25	18	50%	98
II.1.4 higher gear at reduced engine speed, same pull and travel speed as II.1.2														
12	38.44	14.76	9.37	1934	1%	0.364	2.31	61	84	106	26	18	47%	98
II.1.5 higher gear at reduced engine speed, same pull and travel speed as II.1.3														
13	56.57	22.02	9.25	1665	2%	0.292	2.88	62	86	109	25	18	50%	98
II.1.6 higher gear at reduced engine speed, same pull and travel speed as II.1.4														
13	38.48	14.72	9.41	1685	1%	0.333	2.52	60	81	103	26	17	42%	98
II.2 in selected gear nearest to 7.5 km/h at rated engine speed.														
10	71.07	33.76	7.58	2100	3%	0.300	2.80	63	87	111	23	15	42%	97
II.2.1 75% of pull at maximum power at rated engine speed														
10	55.91	25.31	7.95	2187	2%	0.333	2.52	63	85	109	25	17	47%	98
II.2.2 50% of pull at maximum power at rated engine speed														
10	37.95	16.81	8.13	2221	1%	0.399	2.11	62	84	108	26	18	47%	98
II.2.3 higher gear at reduced engine speed, same pull and travel speed as II.2.1														
11	55.97	25.32	7.96	1899	2%	0.304	2.76	63	84	108	25	17	0%	98
II.2.4 higher gear at reduced engine speed, same pull and travel speed as II.2.2														
11	38.01	16.87	8.11	1924	1%	0.355	2.37	60	83	104	26	18	47%	98
II.2.5 higher gear at reduced engine speed, same pull and travel speed as II.2.3														
12	55.89	25.17	7.99	1662	2%	0.293	2.87	63	87	108	25	18	50%	98
II.2.6 higher gear at reduced engine speed, same pull and travel speed as II.2.4														
12	37.89	16.76	8.14	1681	1%	0.333	2.52	60	83	103	26	18	47%	98

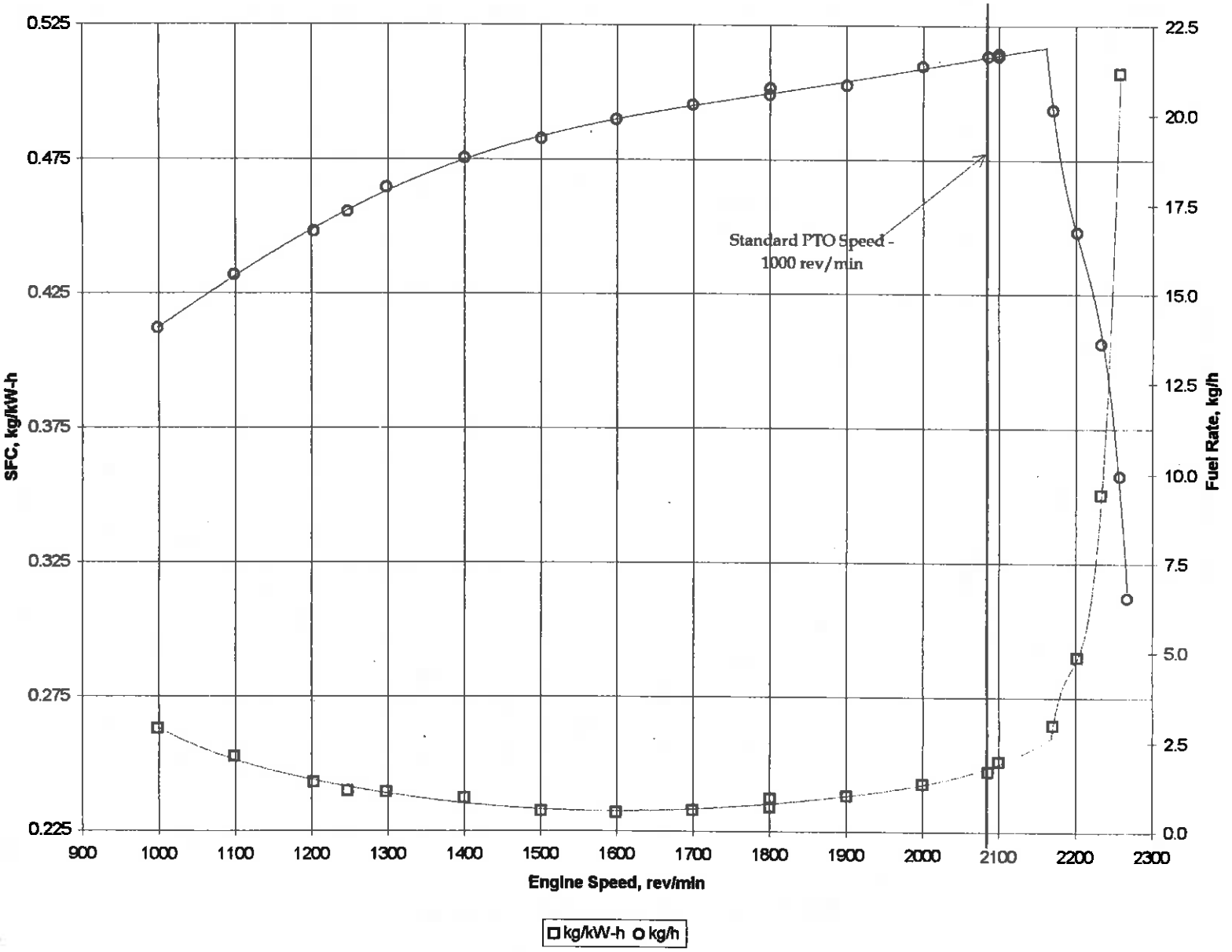
ECD (U.S.) UNBALLASTED 4WD

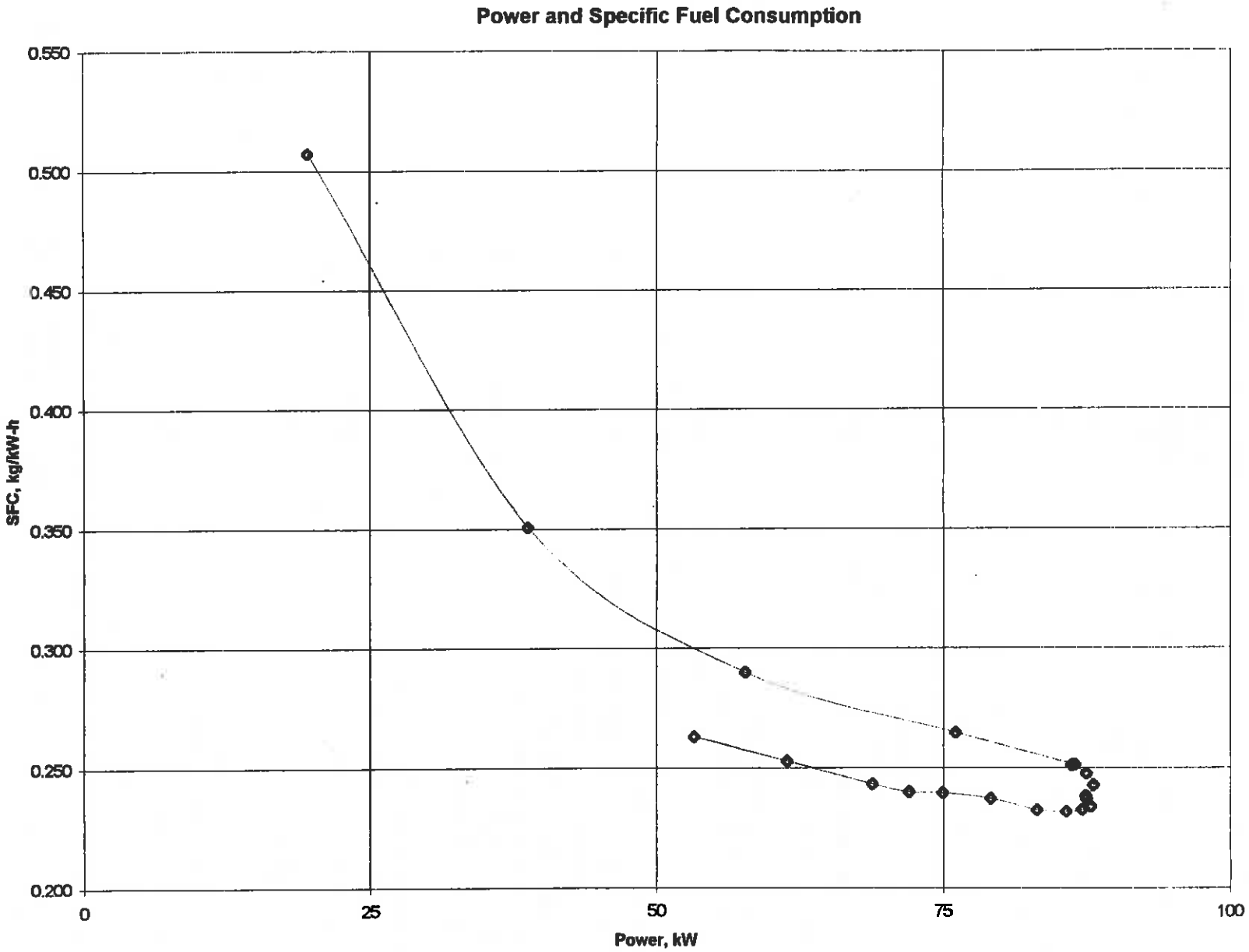
OECD Drawbar Data (US)

te of test 02Jun97-19Jun97				Fuel density:	7.017 lb/gal									
pe of trac Concrete				Test number	1725									
Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg F					Rel humidity	Bare. Pres
	hp	lb	mph	rev/min		lb/hp.h	hp.h/gal	Fuel	Coolant	Oil	Dry	Wet		in Hg
Maximum Power (unballasted, 4wd at 1800 rev/min)						Tire pressure:		13 psig, rear		15 psig, front		Drawbar height:		21.0 in
4	67.46	13827	1.83	2187	15%	0.616	11.40	145	183	224	84	71	53%	28.72
5	81.27	14475	2.11	2167	14%	0.561	12.51	148	184	229	59	54	74%	28.86
6	91.17	13680	2.50	2130	9%	0.518	13.54	150	186	230	64	56	62%	28.86
7	94.80	13249	2.68	1981	9%	0.489	14.36	146	186	231	70	59	53%	28.88
8	94.54	11816	3.00	1800	5%	0.478	14.69	148	189	233	70	59	53%	28.87
9	96.04	10276	3.50	1801	4%	0.472	14.86	146	187	231	72	59	47%	28.87
10	96.58	9043	4.00	1800	3%	0.466	15.05	146	190	234	75	59	39%	28.87
11	97.51	7846	4.66	1807	3%	0.462	15.19	146	190	235	76	60	40%	28.87
12	95.73	6699	5.36	1801	2%	0.473	14.84	148	189	235	77	61	40%	28.87
13	95.74	5808	6.18	1797	2%	0.474	14.81	149	190	235	77	61	40%	28.87
14	95.19	5056	7.06	1803	2%	0.478	14.69	148	191	235	77	61	40%	28.87
15	94.87	4368	8.15	1801	1%	0.481	14.60	148	191	233	78	60	35%	28.88
Part loads (unballasted, 4wd)														
1 in selected gear at maximum power at rated engine speed.														
11	96.26	6631	5.44	2099	2%	0.490	14.33	147	190	235	76	60	40%	28.87
1.1 75% of pull at maximum power at rated engine speed														
11	75.72	4967	5.72	2190	2%	0.548	12.80	145	187	229	77	64	50%	29.02
1.2 50% of pull at maximum power at rated engine speed														
11	51.48	3313	5.83	2221	1%	0.651	10.78	142	184	223	78	64	47%	28.98
1.3higher gear at reduced engine speed, same pull and travel speed as II.1.1														
12	75.91	4962	5.74	1915	2%	0.507	13.84	143	187	228	77	64	50%	29.01
1.4 higher gear at reduced engine speed, same pull and travel speed as II.1.2														
12	51.55	3319	5.82	1934	1%	0.598	11.74	141	183	223	78	64	47%	28.97
1.5 higher gear at reduced engine speed, same pull and travel speed as II.1.3														
13	75.86	4950	5.75	1665	2%	0.480	14.63	144	187	228	77	64	50%	29.00
1.6 higher gear at reduced engine speed, same pull and travel speed as II.1.4														
13	51.60	3310	5.85	1685	1%	0.548	12.80	140	178	218	79	63	42%	28.96
2 in selected gear nearest to 4.6 mph at rated engine speed.														
10	95.31	7589	4.71	2100	3%	0.493	14.23	146	188	232	74	59	42%	28.87
2.1 75% of pull at maximum power at rated engine speed														
10	74.98	5689	4.94	2187	2%	0.547	12.82	146	186	229	77	63	47%	29.03
2.2 50% of pull at maximum power at rated engine speed														
10	50.90	3779	5.05	2221	1%	0.656	10.70	143	184	226	78	64	47%	28.99
2.3 higher gear at reduced engine speed, same pull and travel speed as II.2.1														
11	75.05	5692	4.94	1899	2%	0.500	14.03	145	184	227	77	63	0%	29.03
2.4 higher gear at reduced engine speed, same pull and travel speed as II.2.2														
11	50.97	3792	5.04	1924	1%	0.583	12.03	141	181	220	78	64	47%	28.99
2.5 higher gear at reduced engine speed, same pull and travel speed as II.2.3														
12	74.95	5659	4.97	1662	2%	0.481	14.59	145	188	227	77	64	50%	29.02
2.6 higher gear at reduced engine speed, same pull and travel speed as II.2.4														
12	50.82	3769	5.06	1681	1%	0.548	12.82	140	181	218	78	64	47%	28.98


Power and Equivalent Crankshaft Torque
Power, kW
Equivalent Crankshaft Torque, N-m
Engine Speed, rev/min
100
75
50
25
0
600
500
400
300
200
100
0
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
Standard PTO Speed -
1000 rev/min
kW
N-m

Specific Fuel Consumption and Fuel Rate




Power and Specific Fuel Consumption
SFC, kg/kW-h
0.550
0.500
0.450
0.400
0.350
0.300
0.250
0.200
0
25
50
75
100
Power, kW

LINKAGE GEOMETRY DIMENSIONS - Alternative setting - top link in top hole

ISO Category III Hook Type Draft Link Ends

			Dimension or range [mm]	Settings used on test [mm]
Rear Tire - Radius Index		(r)	820	905
Front Tire - Radius Index		(r')	610	695
Length of lift arms		(A)	375	same
Length of lower links		(B)	1011	same
Distance of lift				
arm pivot from:	horizontal	(a)	205	same
rear wheel axis:	vertical	(b)	588	same
Horizontal distance between the 2 lower link points		(U)	520	same
Horizontal distance between the 2 lift arm end points		(V)	647	same
Length of upper link		(S)	609	
		to	808	670
Distance of upper link pivot point from rear wheel axis				
-	horizontal	(c)	504	same
-	vertical	(d)	353, 283,200	353
Distance of lower				
link pivot from:	horizontal	(e)	195	same
rear wheel axis:	vertical	(f)	275	same
Distance of lower link pivot points to lift rod pivot pts on lower links.		(D)	612, 688	688
Length of lift rods		(L)	842	
		to	1051	1022
Height of lower hitch points below rear wheel axis				
In low position		(h)	409	
		to	802	651
In high position		(H)	281	
		to	49	41
Height above ground of lower hitch points when locked in transport position			808	
		to	1044	946

* Tire dynamic index of 905 mm, ISO 4251/1-1992

*Note: Dynamic index of 820 mm was on tractor supplied for test. European market will have tires with 905 mm dynamic radius.

2.2 POWER LIFT TEST. Test B-Upper link in top hole on tractor

Date of test: 15 June 1993
(Data taken from OECD test 1489 done on the John Deere 7600 Powershift which has the same mechanical lifting system and pressure settings)

		Hitch points	Frame
Lower hitch points above ground - down position:	[mm/in]	254/10.0	257/10.1
Vertical movement:			
without load:	[mm/in]	692/27.3	740/29.1
with load:	[mm/in]	665/26.2	713/28.1
Maximum corrected force through full range:	[kN/lb]	55.5/12488	57.4/12915
Corresponding pressure:	[kPa/psi]	18.0/2610	
Moment about rear axle:	[kN.m/lb.ft]	67.0/49430	104.3/76952
Maximum mast tilt angle:	[deg]	--	4.3

Lifting height relative to horizontal position of lower links.

[mm]	-371	-300	-201	-99
[in]	-14.6	-11.8	-7.9	-3.9
Corrected lift forces				
Hitch point. [kN]	55.5	59.2	63.0	65.4
[lb]	12488	13316	14162	14702
at frame [kN]	63.3	63.0	63.5	63.4
[lb]	14229	14153	14270	14256

Lifting height relative to horizontal position of lower links.

[mm]	0	99	201	295	343
[in]	0	3.9	7.9	11.6	13.5
Corrected lift forces					
Hitch point [kN]	68.0	69.3	70.8	72.0	--
[lb]	15278	15575	15908	16187	--
at frame [kN]	62.9	61.8	60.1	58.6	57.4
[lb]	14148	13887	13509	13176	12915

OPTIONAL TESTS - FRONT DRIVE DISENGAGED

Tests conducted under the responsibility of
the Nebraska Tractor Testing Laboratory

ECD (SI) UNBAL 2WD

OECD Drawbar Data (SI)

ite of test 02Jun97-10Jun97 Fuel density: 0.841 kg/l
ype of trac Concrete Test number 1725

Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg C					Rel humidity	Baro. Pres
	kW	kN	km/h	rev/min		kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet		kPa
Maximum Power (unballasted, 2wd at 2100 rev/min)						Tire pressure:		90 kPa, rear		103 kPa, front		Drawbar height:		533 mm
7	61.02	49.65	4.42	2165	15%	0.342	2.46	65	86	110	20	14	56%	97.70
8	68.37	43.88	5.61	2101	6%	0.313	2.69	65	87	111	21	14	53%	97.73
9	69.96	38.35	6.57	2098	5%	0.306	2.75	63	87	108	22	16	54%	97.80
10	70.60	33.78	7.52	2098	4%	0.306	2.75	63	86	111	23	15	44%	97.77
11	71.01	29.28	8.73	2101	3%	0.304	2.77	64	88	113	24	16	40%	97.77
12	69.41	24.76	10.09	2104	3%	0.312	2.70	64	87	111	25	16	40%	97.77
13	69.41	21.47	11.64	2097	2%	0.309	2.72	64	88	113	25	16	40%	97.77
14	68.37	18.56	13.26	2099	2%	0.315	2.67	63	86	109	25	16	40%	97.77
I. Part loads (unballasted, 2wd)														
I.1 in selected gear at maximum power at rated engine speed.														
11	71.01	29.28	8.73	2101	3%	0.304	2.77	64	88	113	24	16	40%	97.77
I.1.1 75% of pull at maximum power at rated engine speed														
11	56.06	21.95	9.20	2191	2%	0.335	2.51	63	85	109	25	18	50%	98.24
I.1.2 50% of pull at maximum power at rated engine speed														
11	38.22	14.66	9.39	2221	2%	0.396	2.12	61	84	107	26	18	47%	98.10
I.1.3 higher gear at reduced engine speed, same pull and travel speed as II.1.1														
13	56.18	21.94	9.22	1661	2%	0.292	2.88	62	86	108	25	18	50%	98.21
I.1.4 higher gear at reduced engine speed, same pull and travel speed as II.1.2														
13	38.28	14.66	9.40	1682	1%	0.331	2.54	60	83	103	26	17	42%	98.07

ECD (U.S.) UNBALLASTED 2WD

OECD Drawbar Data (US)

ate of test 02Jun97-10Jun97 Fuel density: 7.017 lb/gal
ype of trac Concrete Test number 1725

Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg F					Rel humidity	Baro. Pres
	hp	lb	mph	rev/min		lb/hp.h	hp.h/gal	Fuel	Coolant	Oil	Dry	Wet		in Hg
Maximum Power (unballasted, 2wd at 2100 rev/min)						Tire pressure:		13 psig, rear		15 psig, front		Drawbar height:		21.0 in
7	81.83	11162	2.75	2165	15%	0.562	12.48	149	186	231	68	58	56%	28.85
8	91.68	9864	3.49	2101	6%	0.514	13.66	149	189	233	69	58	53%	28.86
9	93.82	8622	4.08	2098	5%	0.503	13.95	145	188	227	71	60	54%	28.88
10	94.67	7595	4.67	2098	4%	0.503	13.95	145	187	232	73	59	44%	28.87
11	95.22	6583	5.42	2101	3%	0.499	14.05	147	190	236	76	60	40%	28.87
12	93.07	5566	6.27	2104	3%	0.512	13.70	147	189	231	77	61	40%	28.87
13	93.08	4828	7.23	2097	2%	0.509	13.80	148	190	236	77	61	40%	28.87
14	91.69	4173	8.24	2099	2%	0.517	13.57	146	188	229	77	61	40%	28.87
I. Part loads (unballasted, 2wd)														
I.1 in selected gear at maximum power at rated engine speed.														
11	95.22	6583	5.42	2101	3%	0.499	14.05	147	190	236	76	60	40%	28.87
I.1.1 75% of pull at maximum power at rated engine speed														
11	75.18	4935	5.71	2191	2%	0.550	12.76	145	186	229	77	64	50%	29.01
I.1.2 50% of pull at maximum power at rated engine speed														
11	51.25	3296	5.83	2221	2%	0.651	10.77	141	184	225	78	64	47%	28.97
I.1.3higher gear at reduced engine speed, same pull and travel speed as II.1.1														
13	75.34	4932	5.73	1661	2%	0.479	14.64	144	187	227	77	64	50%	29.00
I.1.4 higher gear at reduced engine speed, same pull and travel speed as II.1.2														
13	51.33	3296	5.84	1682	1%	0.544	12.89	140	182	217	79	63	42%	28.96

MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of Test	June 6, 1997
Sound Level Meter Make/Model/Type	Bruel and Kjaer 2236
Type of track	Concrete oval
Gear number	19th
Travel speed before acceleration	27.6 km/h
Sound Level	81.8 dB(A)

Remarks : None
Repairs : None