O.E.C.D. No.: 536
Printed: October 1976

Report on test in accordance with
O.E.C.D. STANDARD CODE for the Official Testing
of Agricultural Tractors



Agricultural Tractor JOHN DEERE 1630

Manufactured by: JOHN DEERE WERKE MANNHEIM
D-6800 Mannheim

Date of Tests: June till August 1976

DLG-Testing Station for Agricultural Machinery
D-6114 Groß-Umstadt

DEUTSCHE LANDWIRTSCHAFTS-GESELLSCHAFT e.V.
Prüfungsabteilung für Landmaschinen
D-6000 Frankfurt/Main 1, Zimmerweg 16

This bulletin is based on engineering tests in accordance with the O.E.C.D. STANDARD CODE for the Official Testing of Agricultural Tractors. It does not contain an evaluation of the performance of the tractor on practical work.

This report has been approved by the O.E.C.D. Coordinating Center (C.N.E.E.M.A., France) as being in accordance with the O.E.C.D. STANDARD CODE.

Date of Approval: 14th September 1976

Serial No.: 536

In this report all performance characteristics are given according to the International System of Units.

The relation with the former used Technical System of Units is given by the following formulas:

Forces:	1 N = 0,102 kp	or 1 kp	= 9,81 N
Powers:	1 kW = 1,36 PS	or 1 PS	= 0,736 kW
Pressures:	1 bar = 1,02 kp/cm²	or 1 kp/cm²	= 0,981 bar
	1000 mbar = 750,1 mm Hg		

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PRÜFUNGS-ABTEILUNG
JOHN DEERE 1630

Test No. 76-89

Tractor manufacturer:	JOHN DEERE WERKE MANNHEIM D-6800 Mannheim
Submitted for test by:	Manufacturer
Selected by:	Manufacturer with agreement by DLG
Place of running-in:	Mannheim and Groß-Umstadt
Duration of running-in:	Engine and tractor appr. 100 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	JOHN DEERE WERKE MANNHEIM
Model:	1630
Type:	Wheeled agricultural tractor, rear wheel driven, unit construction
Serial No:	203 465

Engine

Make:	COMPAGNIE FRANCAISE JOHN DEERE
Model:	3179 DL 01
Type:	4-stroke DIESEL engine, direct injection, watercooled
Serial No:	263 740 CD
Cylinders:	3, in-line; bore 106,5 mm, stroke 110 mm; displacement 2940 cm^3; compression ratio 16,2:1
Valves:	Overhead
Fuel system:	ROTO DIESEL fuel feed pump 2 FS; ROTO DIESEL distributor injection pump: R 3432 530; manufacturer's production setting 56 mm^3/stroke at rated engine speed and full load; injection timing 15° before TDC; ROOSA MASTER injection nozzles 20631; injection pressure 215 bar; ROOSA MASTER fuel filter, replaceable cartridge; model: Box type master filter; water separator optionally; capacity of fuel tank 62,5 l
Governor:	Mechanically acting variable speed governor incorporated in injection pump; governed range of engine speed 660 to 2675 rev/min rated engine speed 2500 rev/min

Air cleaner:	DONALDSON dry paper element filter with replaceable cartridge and service indicator; precleaner optionally; safety element in main filter optionally too
Exhaust silencer:	EBERSPÄCHER multi chamber silencer; 213 x 118 oval, 483 long; at the left hand side of tractor above the bonnet; mouth showing upwards; mouth 2565 mm above ground; optional at the left hand side beside the gear box with mouth showing rearwards
Lubrication system:	Forced feed from gear type pump; strainer in sump; oil filter in full flow with by-pass valve and replaceable cartridge; plate type oil cooler below oil filter; oil capacity 5,7 l; oil changing interval 100 hours; recommended oil viscosities: below -23 C SAE 5W or SAE 5W/20 below 0 C SAE 10W or SAE 10W/20 SAE 10W/30 above 0 C SAE 30 recommended oil qualities: JOHN DEERE TORQ-GARD-SUPREME engine oil or other oils as per MIL-L-46152 or MIL-L-2104 C;
Cooling system:	Pressurized water cooling system with pump; overpressure set at 0,4 to 0,5 bar; thermostat with by-pass; fan with 4 blades, 413 mm diameter; cooling water capacity 10,4 l
Starting system:	Electrical; BOSCH screw push starter motor 2,9 kW; CAV flame glow plug in intake pipe or ether starting aid
Electrical equipment:	12 V, negative earth; BOSCH 3-phase alternator GL 14 V - 28 A; 2 lead acid batteries 55 Ah at 20 hours rating

Transmission

Clutch:	FICHTEL UND SACHS For tractors with 540 and 1000 rev/min p.t.o. Dry dual disc clutch, semi independent; tractor drive disc 280 mm diameter, p.t.o. drive disc 270 mm diameter, both discs are operated with the same pedal with pressure point, tractor drive disc releases first For tractors with 540 rev/min p.t.o. only Either dry dual disc clutch as above or dry single disc clutch, for tractor drive only, pedal operated; disc diameter 280 mm
Gear box:	Own make; speed change gear with 4 speeds, collar shifted; group gear with 2 forward and 1 reverse group, collar shifted; HI-LO torque converter; (optionally without HI-LO torque converter); totally 16 forward and 8 reverse speeds
Rear axle and final drive:	Bevel gear drive with crown wheel and pinion; bevel gear differential with lock; operated by hand lever and pedal, self disengaging; planetary final drive
Lubrication:	Oil capacity 36 l, maximum 40 l; recommended oil quality: JOHN DEERE HY-GARD transmission and hydraulic oil or other comparable oils; oil changing interval 1000 hours

Power take-off

Main p.t.o.:	Semi independent p.t.o.; at rear of tractor; driven through the 270 mm disc of the dual disc clutch; 624 mm above ground, 25,4 mm left from tractor's median plane

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Total ratios and speeds

Group	Gear	Total ratio engine: driving wheel	Nominal travelling speed *) at rated engine speed km/h	at standard p.t.o. speed 540 rev/min km/h
Forward speeds				
slow	1.LO	407,4	1,60	1,33
	1.HI	320,1	2,04	1,70
	2.LO	285,2	2,29	1,91
	2.HI	224,1	2,92	2,42
	3.LO	192,2	3,40	2,83
	3.HI	151,0	4,33	3,60
	4.LO	137,5	4,76	3,96
	4.HI	108,0	6,05	5,03
fast	5.LO	103,8	6,31	5,24
	5.HI	81,6	8,03	6,66
	6.LO	72,7	9,02	7,47
	6.HI	57,1	11,46	9,52
	7.LO	49,0	13,37	11,10
	7.HI	38,5	17,01	14,14
	8.LO	35,0	18,69	15,51
	8.HI	27,5	23,81	19,72
Reverse speeds				
reverse	1.LO	350,6	1,86	1,55
	1.HI	275,5	2,38	1,97
	2.LO	245,4	2,67	2,22
	2.HI	192,8	3,40	2,82
	3.LO	165,4	3,96	3,29
	3.HI	130,0	5,04	4,18
	4.LO	118,3	5,53	4,59
	4.HI	93,0	7,04	5,85

*) Calculated with the INDEX-RADIUS 695 mm as per WdK 154

The transmission is optionally available for a maximum speed of 30 km/h in the 8th HI gear

Optionally a mechanically operating front wheel drive is available

Main p.t.o.: (Continuation)	2 interchangeable p.t.o.-shafts for 540 and 1000 rev/min p.t.o.-speeds; by interchanging p.t.o. stub shafts correct speed ratio is selected
	1) 540 rev/min p.t.o. 29 x 34,9 x 8,7 mm = 1 3/8 in, 6 splines; DIN 9611 Form 1; BS 1495; ASAE S 203.7; 650 rev/min at rated engine speed; standard p.t.o. speed 540 rev/min at 2075 rev/min engine speed
	2) 1000 rev/min p.t.o. involute profile 1 3/8 in, 21 splines; DIN 9611 Form 2; ASAE S 204.4; 1210 rev/min at rated engine speed; standard p.t.o. speed 1000 rev/min at 2066 rev/min engine speed
	A not interchangeable p.t.o. for 540 rev/min only is optionally available; either independent with dry single disc clutch for tractor drive only, with wet multiplate clutch, hydraulically operated, shiftable under load, or semi-independent with dry dual disc clutch same as above
	P.t.o. speeds can be set by aid of tractor-meter; direction of rotation clockwise, viewed from tractor rear
Belt pulley	Optional, not fitted on tractor tested; only for use with 540 rev/min p.t.o.; pulley drive attached on p.t.o. shaft; operated by p.t.o. hand lever; 305 mm diameter, 216 mm width; 1169 rev/min at rated engine speed; 18,7 m/s linear belt speed; direction of rotation clockwise viewed from the left hand side of tractor; oil capacity 1,2 l, JD HY-GARD or transmission oil SAE 90 or similar oils

Power lift

Own make;
hydraulic power lift, unit construction;
closed centre system, system pressure 155 bar;
draft control, position control and mixing load and depth control, floating position;
self regulating 8-piston radial type pump, directly driven by front end of crankshaft;
delivery 22,6 cm³/rev or 47,2 l/min at rated engine speed;
a pump with 23,6 l/min delivery at rated engine speed is optionally available;
gear type feed pump in transmission box;
the power lift assembly is connected to the hydraulic circuit by an oil flow control valve which restricts the oil flow to the power lift at the maximum rate of 16,4 l/min at minimum pressure;
1 single acting ram, 82,5 mm bore, 130 mm stroke;
overpressure relief valve for ram set to 240 to 310 bar overpressure;
JOHN DEERE control valve, single acting, incorporated in power lift unit;
up to 2 double acting selective control valves with 2 oil tappings each in front and in the rear or only in the rear at the right or the left hand side available;
oil reservoir and oil changing interval common with gear box, see page 6;
up to 14 l (18 l at 40 l oil capacity) may be taken off through oil tappings for short time;
the oil circuit is in common for all hydraulically controlled units of tractor

Implement linkage

Three point linkage category II DIN 9674;
telescopic lower links;
reversible lower links for category I or II are optionally available;
lift rods adjustable from 566 to 695 mm;
lifting range above ground with
short lift rods from 382 to 965 mm
long lift rods from 110 to 750 mm

Implement crossbar	Short crossbar, (long crossbar optionally); category II (category I optionally); fitted on clevis of lower links; length between the ball joints 825 mm, thickness of the bar 25 mm; centre hole and 4 holes at either side with 80 mm distance each; all holes 33 mm diameter; height above ground adjustable by power lift from 122 to 977 mm depending on lift rods length, measured at the surface of the bar; within the lifting range steplessly-hydraulically fixable by sink throttle; with lower links in horizontal position distance of centre hole from rear axle centre 973 mm p.t.o. shaft end 561 mm

Pull attachments

Swinging drawbar:	Height above ground 426 mm; hole diameter 33 mm, 26,5 mm optionally; distance of hole from end of p.t.o. shaft 183, 356 or 397 mm rear axle centre 605, 778 or 819 mm adjustable by shifting drawbar; 235 mm swingable to either side; distance of pivot point to rear axle centre 51 mm
Trailer hitch:	Own make; not automatically acting; swingable aside when top link is used; height above ground 834 mm; coupling hole 33 mm diameter; distance of coupling hole from rear axle centre 451 mm; permissible vertical load 800 kg
Towing hitch:	892 mm above ground

Brakes

Parking brake:	Mechanically acting wet wedge band brake, acting on a drum with 238 mm diameter on the differential housing, operated by hand lever with ratchet
Service brake:	Hydraulically operated wet disc brake; acting on discs with 279 mm diameter on the final drive shafts; pedal operated
Steering brakes:	Divided pedal of service brake; for normal use locked together

Steering

Mechanically acting central steering; hydraulically assisted; oil supply from the hydraulic system of power lift with flow control valve; optionally mechanically acting central steering without hydraulical assistance

Wheels

Steering wheels:	Two pneumatics at front 7,50-16 AS 6 ply; maximum permissible load per tyre 857 kg at 2,25 bar inflation pressure and 25 km/h; track width from 1260 to 1923 mm in steps of 51 mm each, changeable by extending telescopic front axle; maximum track width 2057 mm with wheel discs reversed; rims 5,50 F x 16
Driving wheels:	Two pneumatics at rear 16,9-30 AS 6 ply; maximum permissible load per tyre 2030 kg at 1,3 bar inflation pressure and 25 km/h; track widths from 1550 to 1950 mm in steps of 100 mm each by turning wheels and offset lug type rims; rims W 14 L x 30
Wheel base:	2050 mm

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Weights Ready for use as tested with safety frame

		without driver	with driver
Without ballast:	front	795 kg	800 kg
	rear	1620 kg	1690 kg
	total	2415 kg	2490 kg
Front ballast:	1 basic weight		80 kg
	6 front weights	40 kg each	240 kg
Rear ballast:	3 weights per wheel	35 kg each	210 kg
	water in the tyres		500 kg
With ballast:	front	1185 kg	1190 kg
	rear	2260 kg	2330 kg
	total	3445 kg	3520 kg

Seat GRAMMER
DS 20 L 2 H;
upholstered seat with back and arm rests;
adjustable spring with shock absorber;
height of seat platform above ground 690 mm;
height of seat above platform 600 mm with seat not compressed in downmost position;
adjustable fore and aft 101 mm
adjustable up and down 101 mm steplessly

Dimensions

Total length: 3430 mm with 3 point linkage without ballast
3680 mm with 3 point linkage with ballast

Total width: 1965 mm at smallest track width
2365 mm at largest track width

Total height: 2450 mm to top of frame
2565 mm to top of exhaust pipe

Ground clearance: 355 mm below swinging drawbar

Safety frame FRITZMEIER
M 901
O.E.C.D. tested
appr.no. CS 1139 or CS 1140b or CS 1140c

Number of grease points 8

PRÜFUNGS-ABTEILUNG
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Lighting equipment 12 V
in accordance with the regulations of the various countries

	Dimensions mm	Height above ground of centre mm	Distance from outside edge of tractor to centre *) mm
Head lights	125 Ø	992	715
Implement lights	130 Ø	1445	470
Side lights	70 x 70	1495	70
Rear lights	66 x 163	1408	155
Reflectors	78 Ø	1199	114

*) at smallest track width

All officially registred tyres (track widths, permissible loads)

Dimensions	Track width adjustabilities from mm	in steps of mm	to mm	Permissible axle load kg
Front wheels *)				
6,50-16 **)	1260	51	1923	1230
7,50-16	1260	51	1923	1490
Driving wheels *)				
12,4-36 **)	1350	100	1950	2600
13,6-36	1450	100	1950	2600
14,9-30	1450	100	1950	2600
16,9-28 **)	1550	100	1950	2600
16,9-30	1550	100	1950	2600

*) All tyres 6 ply
**) Not available ex factory

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FUELS AND LUBRICANTS USED IN TESTS

Fuel:	ARAL DIESEL fuel DIN 51 601		
	specific gravity at 15°C		
	at engine tests		0,830 kg/l
	at p.t.o. tests	540 rev/min	0,830 kg/l
		1000 rev/min	0,828 kg/l
	at drawbar tests		0,823 kg/l
Engine oil:	SHELL ROTELLA TX 30		
Transmission oil:	JOHN DEERE HY-GARD		
Hydraulic oil:	JOHN DEERE HY-GARD		

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COMPULSORY TESTS

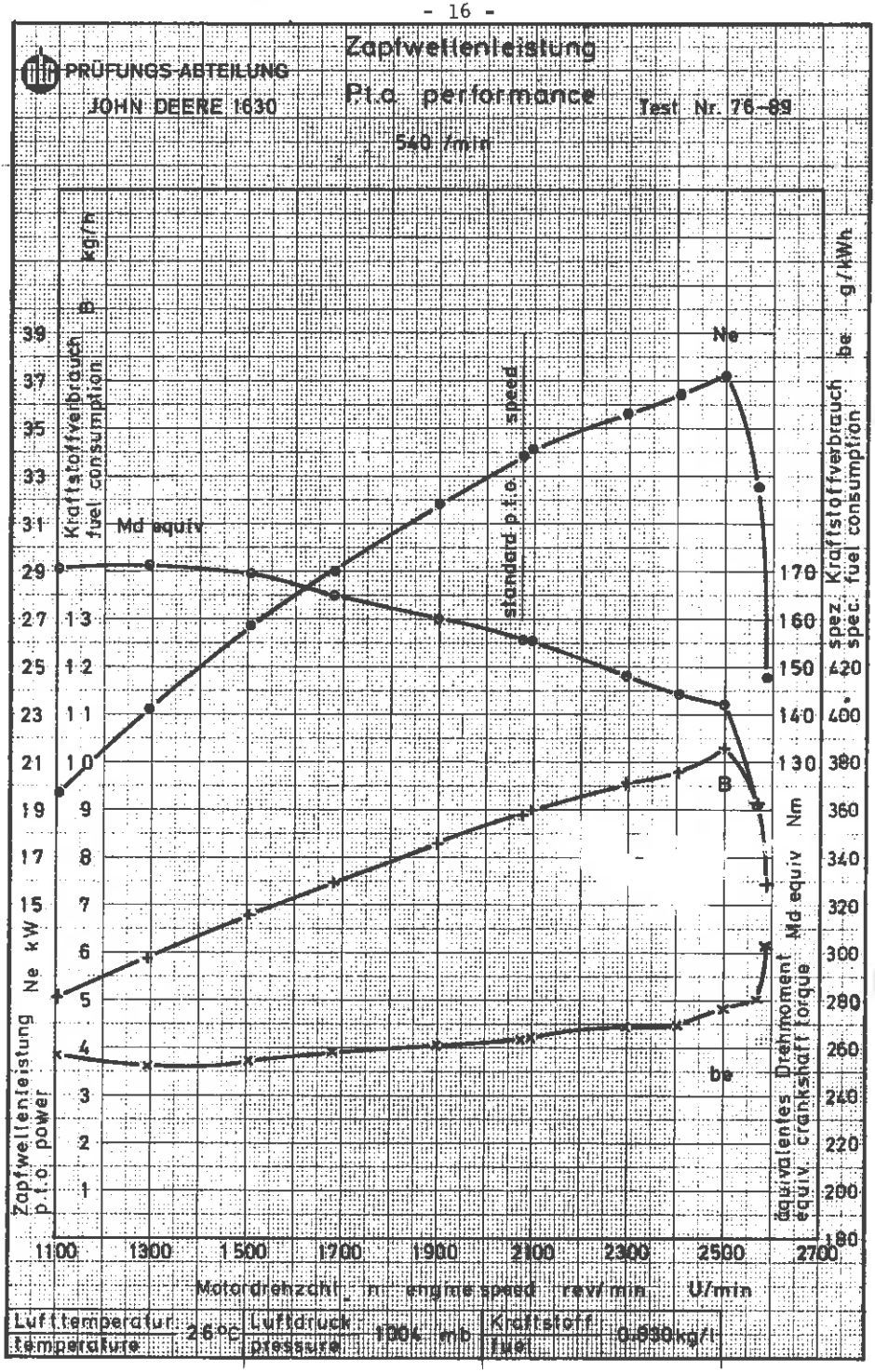
(1) MAIN POWER TAKE-OFF PERFORMANCE

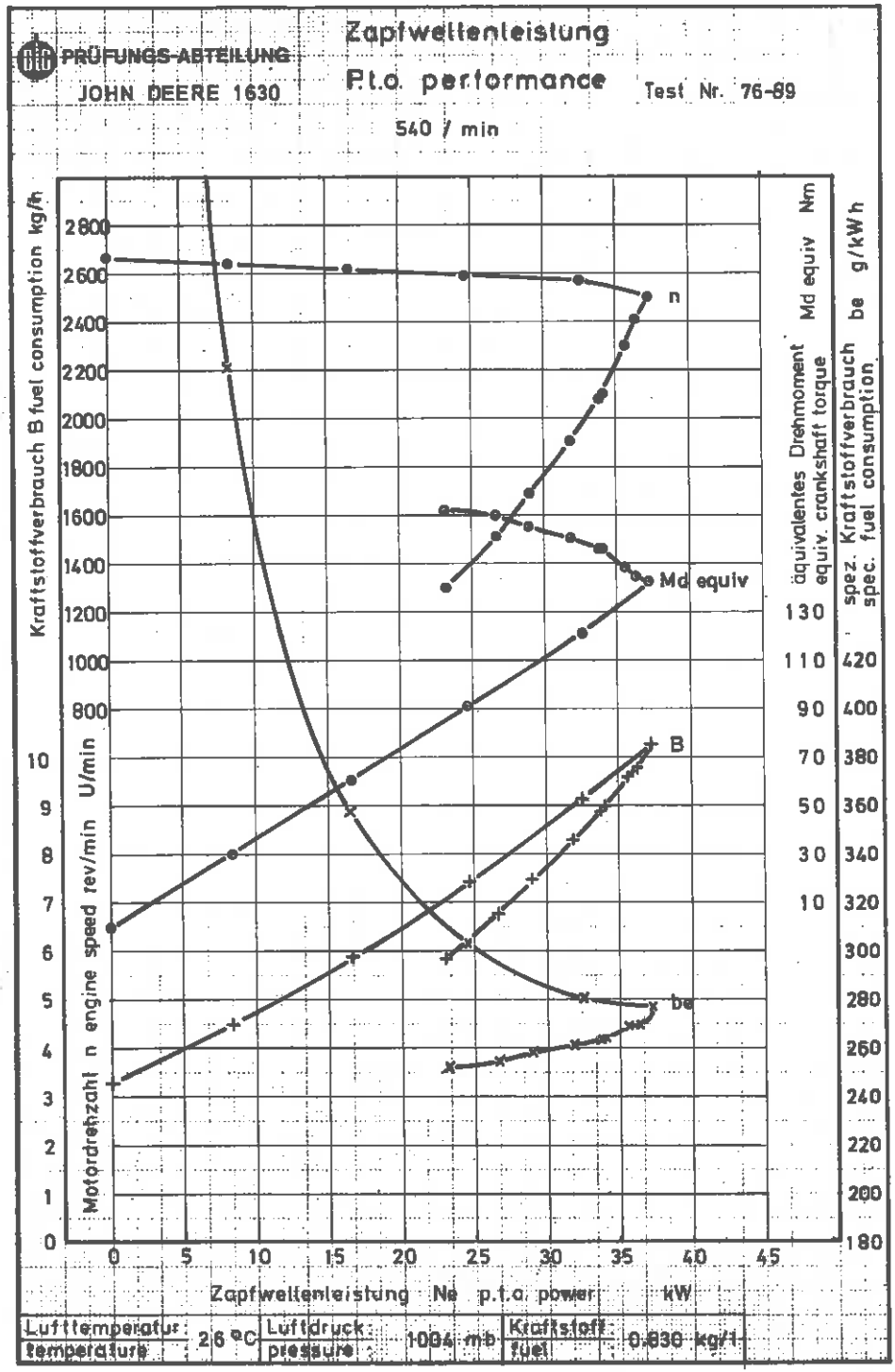
Date of tests: 29th June 1976
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power						
At 2-hour test						
37.2	2500	650	12.40	10.29	277	3.00
At standard p.t.o. speed (540 rev/min)						
33.8	2076	540	10.73	8.90	263	3.15
At the speed recommended for drawbar work						
37.2	2500	650	12.40	10.29	277	3.00
Part loads						
(i) 85% of the torque at maximum power at 2-hour test						
32.5	2569	668	10.96	9.10	280	2.96
(ii) unloaded						
-	2662	693	3.96	3.28	-	-
(iii) 50% of the load defined in (i)						
16.6	2615	680	7.14	5.92	358	2.32
(iv) maximum power						
37.2	2500	650	12.40	10.29	277	3.00
(v) 25% of the load defined in (i)						
8.3	2638	686	5.43	4.50	541	1.53
(vi) 75% of the load defined in (i)						
24.6	2588	673	8.97	7.44	303	2.74

No load maximum engine speed: 2662 rev/min
Equivalent crankshaft torque at maximum power (2 hours): 142 Nm
Maximum equivalent crankshaft torque: 171 Nm at 1296 rev/min of the engine

Mean atmospheric conditions:	temperature	26 °C
	pressure	1004 mbar
	relative humidity	75 %
Maximum temperatures:	coolant	82 °C
	engine oil	126 °C
	fuel	27 °C


PRÜFUNGS-ABTEILUNG
JOHN DEERE 1630
Zapfwellenleistung
P.t.o. performance
540 /min
Test Nr. 76-89
Kraftstoffverbrauch B kg/h
fuel consumption
Md equiv
standard p.t.o. speed
Ne
B
be
Zapfwellenleistung Ne kW
p.t.o. power
spez. Kraftstoffverbrauch be g/kWh
spec. fuel consumption
äquivalentes Drehmoment Md equiv Nm
equiv. crankshaft torque
Motordrehzahl n engine speed rev/min U/min
Lufttemperatur 26°C
temperature
Luftdruck 1004 mb
pressure
Kraftstoff 0,830kg/l
fuel


PRÜFUNGS-ABTEILUNG
JOHN DEERE 1630
Zapfwellenleistung
P.t.o. performance
Test Nr. 76-89
540 / min
Kraftstoffverbrauch B fuel consumption kg/h
Motordrehzahl n engine speed rev/min U/min
äquivalentes Drehmoment Md equiv Nm
equiv. crankshaft torque
spez. Kraftstoffverbrauch be g/kWh
spec. fuel consumption
n
Md equiv
B
be
Zapfwellenleistung Ne p.t.o. power kW
Lufttemperatur temperature 26 °C
Luftdruck pressure 1004 mb
Kraftstoff fuel 0,830 kg/l

PRÜFUNGS-ABTEILUNG
JOHN DEERE 1630

(2) DRAWBAR PERFORMANCE

Date of tests: 2nd till 9th August 1976
Type of track: Concrete

Gear No. and Group.	Speed km/h	Power kW	Drawbar pull N	Engine speed rev/min	Slip of wheels %	Specific energy kWh/l
(i) MAXIMUM POWER with ballast height of drawbar above ground 560 mm						
1st LO	1,46	13,5	33300	2607	15,0	1,81
1st HI	1,86	17,2	33300	2594	15,0	2,04
2nd LO	2,07	19,4	33770	2584	15,0	2,10
2nd HI	2,62	24,1	33120	2565	14,9	2,26
3rd LO	3,00	27,6	33090	2525	15,0	2,25
3rd HI	3,93	30,2	27640	2500	11,4	2,41
4th LO	4,39	30,1	24640	2500	10,0	2,41
4th HI	5,72	31,4	19730	2500	7,7	2,52
5th LO	5,98	31,5	18930	2500	7,2	2,51
5th HI	7,74	32,1	14910	2500	5,6	2,56
6th LO	8,75	31,5	12950	2501	4,9	2,51
6th HI	11,28	32,0	10200	2500	3,6	2,54
7th LO	13,20	31,0	8440	2500	3,1	2,47
(ii) FIVE-HOUR-TEST at 75% of pull at maximum power in 5th LO gear						
5th LO	6,29	24,8	14480	2572	5,1	2,46
(iii) FIVE-HOUR-TEST at pull corresponding to 15% wheel slip in test (i)						
3rd LO	-	-	33770	-	-	-
(v) MAXIMUM POWER without ballast height of drawbar above ground 490 mm						
3rd LO	3,02	21,7	25900	2573	15,0	2,16
3rd HI	3,80	27,3	25900	2541	14,9	2,29
4th LO	4,17	28,8	24860	2500	13,5	2,29
4th HI	5,54	30,4	19780	2501	9,8	2,44
5th LO	5,78	30,4	18930	2500	9,3	2,43
5th HI	7,54	31,6	15070	2500	7,0	2,52
6th LO	8,56	31,2	13130	2500	5,8	2,51
6th HI	11,03	31,6	10310	2500	4,7	2,53
7th LO	12,99	30,7	8500	2500	3,6	2,48

Total oil consumption during ten hours duration of tests (ii) and (iii): 25 g/h

PRÜFUNGS-ABTEILUNG

Test No. 76-89

Tyres make and size — front: VEITH-PIRELLI 7,50-16 6 ply
rear: VEITH-PIRELLI 16,9-30 6 ply

Tread bar height at the beginning of drawbar tests: 80% of the value when new

Specific fuel consumpt. g/kWh	Temperatures Fuel °C	Coolant °C	Engine-oil °C	Atmospheric conditions Tempe-rature °C	Relative humidity %	Pressure mbar
tyre inflation pressure 1,3 bar rolling radius of tyres under static load 709 mm						
456	21	80	108	21	84	1012
404	21	80	115	18	88	1012
393	23	80	110	21	75	1012
364	23	80	110	21	77	1012
367	23	80	110	21	77	1012
342	23	80	115	21	76	1012
342	23	80	110	20	80	1012
326	24	80	115	21	78	1012
328	23	80	115	21	78	1012
322	23	80	112	21	76	1012
329	22	80	116	20	79	1012
324	23	80	116	21	77	1012
333	23	80	115	21	76	1012
335	21	80	110	21	75	1012
-	22	80	112	22	71	1012
tyre inflation pressure 1,1 bar rolling radius of tyres under static load 703 mm						
382	25	80	110	23	70	1010
358	25	80	108	23	63	1010
359	25	80	110	23	62	1010
337	25	80	114	23	62	1010
340	22	80	112	21	71	1010
327	22	80	116	20	71	1010
329	20	80	115	20	74	1010
326	21	80	110	20	71	1010
333	21	80	110	20	71	1010

Test (iii) was carried out with additional ballast, the figures not quoted are therefore irrelevant

PRÜFUNGS-ABTEILUNG
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(3) TURNING SPACE AND TURNING CIRCLE

Wheel equipment front: 7,50-16 AS Front 6 ply
rear: 16,9-30 AS 6 ply

Track of wheels front: 1464 mm
rear: 1550 mm

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	3,14	3,13	3,52	3,61
Radius of turning circle	2,97	2,96	3,35	3,44

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	855 mm
Distance forward from the vertical plane containing the axis of the rear wheels	695 mm
Distance of the median plane of the tractor	0 mm

PRÜFUNGS-ABTEILUNG
JOHN DEERE 1630

Test No. 76-89

(5) BRAKING PERFORMANCE

A) SERVICE BRAKE

Date of tests: 4th August 1976
Type of track: Concrete
Type of decelerometer: MOTO-METER-Bremsverzögerungs- und Pedalkraftschreiber

Weight of ballasted tractor: 3520 kg with driver

Cold brakes

		With ballast	Without ballast
Travelling speed	km/h	25,0	25,0
Deceleration	m/s^2	4,3	4,7
Stopping distance	m	6,4	6,2
Force on pedal	N	530	440
Force on pedal to achieve a deceleration of 2,5 m/s^2	N	295	195

Brake fade characteristics (hot tests)

Deceleration	hot/cold	%	102	100
Stopping distance	cold/hot	%	97	103
Force on pedal	cold/hot	%	98	96

B) PARKING BRAKE

Tractor facing up slope:
Pull on hand brake 40 N, tractor does not roll

Tractor facing down slope:
Pull on hand brake 40 N, tractor does not roll

PRÜFUNGS-ABTEILUNG
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Test No. 76-89

(6) AMBIENT NOISE EMITTED BY THE TRACTOR

Date of test: 3rd August 1976
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2203

Results of test

Gear: 8th HI
Travelling speed before acceleration: 19,0 km/h
Sound level: 89 dB(A)

(7) NOISE AT THE DRIVER'S EAR LEVEL

Date of tests: 3rd August 1976
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2607
Type of frequency analyser: (fitted with octave filter) BRÜEL AND KJAER model 1614

A safety frame was fitted on tractor;
O.E.C.D. tested: CS 1139 or CS 1140b or CS 1140c

Results of tests

Gear	Drawbar pull at which the tractor develops the maximum sound level	Travelling speed nominal	Travelling speed effective	Sound level
	N	km/h	km/h	dB(A)
1 LO	25600	1,60	1,33	96
1 HI	24780	2,04	1,47	97
2 LO	24650	2,29	2,01	97
2 HI	25050	2,92	2,56	97
3 LO	25050	3,40	2,99	97
3 HI	24650	4,41	3,26	97
4 LO	24230	4,76	4,02	97,5
4 HI	19250	6,05	5,56	97,5
5 LO	18900	6,31	5,80	97,5
5 HI*)	14380	8,03	7,66	98
6 LO	12500	9,02	8,66	97,5
6 HI	9980	10,58	11,14	98
7 LO	8460	13,37	12,99	97,5
7 HI	6250	17,01	16,84	98
8 LO	5580	18,69	18,41	97,5
8 HI	light load	23,81	25,41	96

*) The 5th HI gear corresponds to the travelling speed nearest to 7,5 km/h

(8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

Date of tests: 25th and 26th July 1976

HYDRAULIC PUMP

The tractor contains one circuit for all hydraulically operated tractor units. Power lift assembly is connected to the hydraulic supply circuit by an oil flow control valve. This restricts the oil flow to the power lift cylinder at the maximum rate of 16,4 l/min at minimum pressure

Circuit of power lift

(1) Sustained pressure with pump stalled	155 bar
(2) Delivery rate at minimum pressure and maximum engine speed	16,4 l/min
(3) Delivery rate	19,1 l/min
Delivery pressure	130 bar
Hydraulic power (power lift circuit only)	4,1 kW

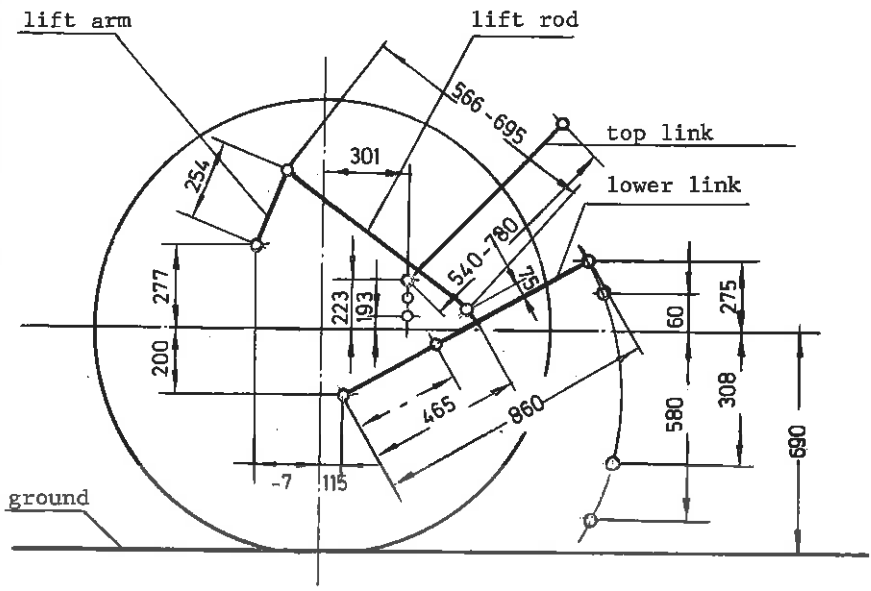
Main circuit through oil tapping

(1) Sustained pressure with pump stalled	155 bar
(2) Delivery rate at minimum pressure and maximum engine speed	49,3 l/min
(3) Delivery rate	47,9 l/min
Delivery pressure	142 bar
Total hydraulic power power lift circuit included	11,3 kW

PRÜFUNGS-ABTEILUNG
JOHN DEERE 1630

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Dimensions of implement linkage for the table on page 25



all dimensions in mm

LINKAGE GEOMETRY when connected to the standard frame	Maximum mechanical advantage	Minimum mechanical advantage
Projected length in side view:		
Lower links	860 mm	860 mm
Lift arms	254 mm	254 mm
Lift rods	695 mm	566 mm
Top link	670 mm	670 mm
Distance of lift rod connection point from pivot point of lower link	465 mm	465 mm
The following dimensions are given relative to rear axle centre line 690 mm above ground		
Lower link pivot point	115 mm behind, 200 mm below	115 mm behind, 200 mm below
Top link pivot point	301 mm behind, 223 mm above	301 mm behind, 193 mm above
Lift arm pivot point	7 mm behind, 277 mm above	7 mm behind, 277 mm above
Maximum and minimum height of lower link hitch points	60 mm above, 580 mm below	275 mm above, 308 mm below
Height of lower link hitch points above ground when locked in highest transport position	750 mm	965 mm

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LIFTING FORCES

Lifting heights relative to horizontal lower links

mm	-385	-380	-300	-200	-120	-108	-100	0
at hitch points maximum mechanical advantage								
N						10450	10460	12800
minimum mechanical advantage								
N		9270	10840	12150			15180	15760

Max. force exerted throughout the whole range 10450 N

Front axle of tractor does not lift

at test frame maximum mechanical advantage								
N	10600		11420	12010			12340	12340
minimum mechanical advantage								
N					8900		9320	10590

Max. force exerted throughout the whole range 10600 N

Front axle of tractor does not lift, when fitted with all allowable ballast

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+100	+200	+260	+295	+300	+400	+475	+500	+600	+610
lift rods 566 mm long									
14130	15110			15460	15980	16600			
lift rods 695 mm long									
14150	14700	14950							

lift rods 695 mm long

12010	12010		11510						
lift rods 566 mm long									
11330	11430			11000	10590		10200	9850	9840

All values of forces for pressure at max. hydraulic power 130 bar, see page 23; calculated from measurements at max. oil pressure 155 bar

PRÜFUNGS-ABTEILUNG

JOHN DEERE 1630 Test No. 76-89

OPTIONAL TESTS

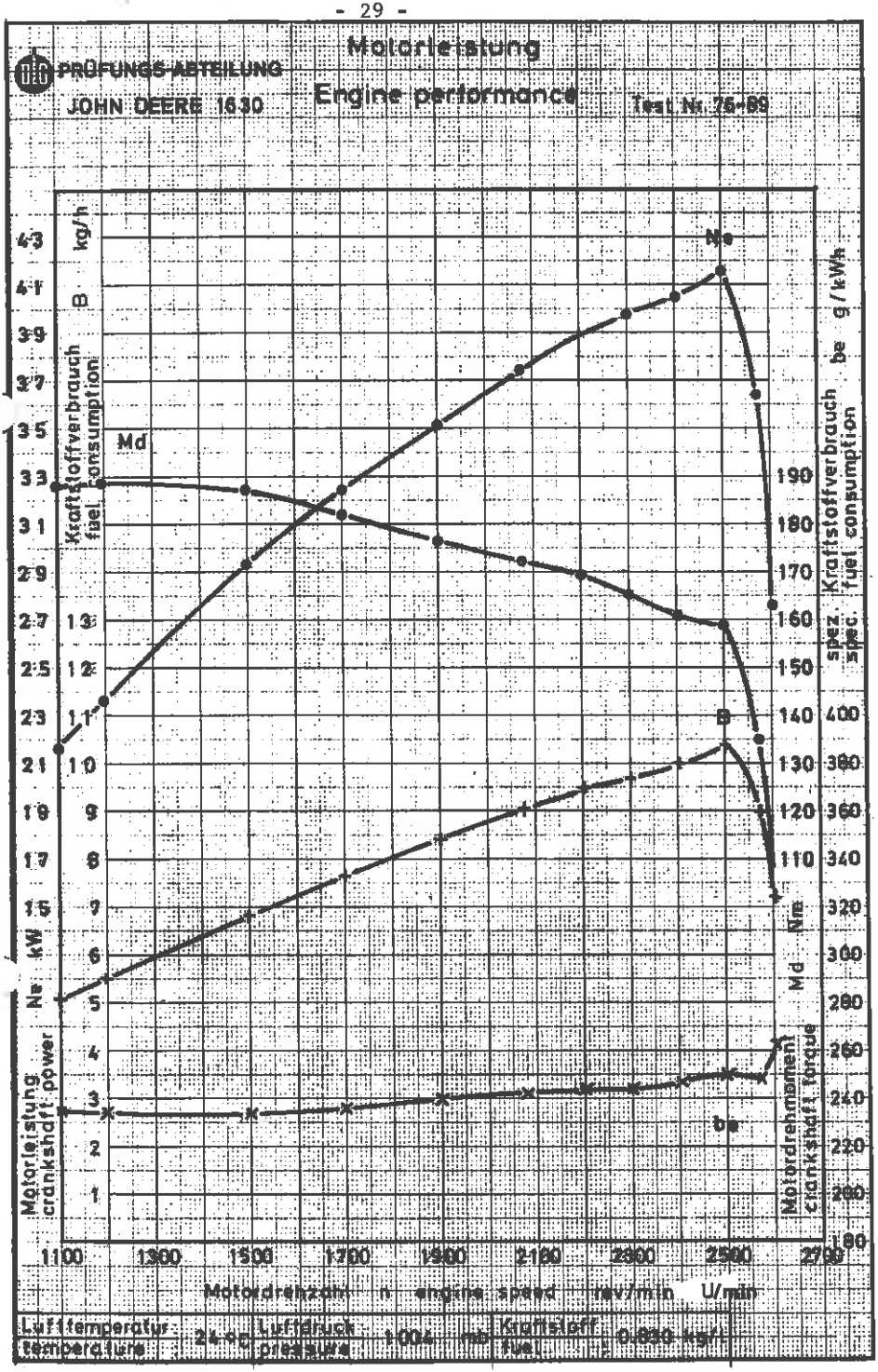
(1) ENGINE PERFORMANCE

Date of tests: 23rd June 1976
Type of dynamometer: SCHENCK eddy-current dynamometer W 150

Power kW	Engine speed rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power					
At 2-hour test					
41.6	2500	12.51	10.38	250	3.32
At standard p.t.o. speed (540 rev/min)					
37.4	2076	10.91	9.05	242	3.43
At the speed recommended for drawbar work					
41.6	2500	12.51	10.38	250	3.32
Part loads					
(i) 85% of the torque at maximum power at 2-hour test					
36.3	2573	10.84	9.00	248	3.35
(ii) unloaded					
-	2672	3.25	2.70	-	-
(iii) 50% of the load defined in (i)					
18.5	2626	6.76	5.61	302	2.74
(iv) maximum power					
41.6	2500	12.51	10.38	250	3.32
(v) 25% of the load defined in (i)					
9.4	2655	4.94	4.10	438	1.90
(vi) 75% of the load defined in (i)					
27.5	2601	8.72	7.24	263	3.16

Optimum fuel consumption: 224 g/kWh at 22.1 kW and 1500 rev/min
No load maximum engine speed: 2672 rev/min
Torque at maximum power (2 hours): 159 Nm
Maximum torque: 188 Nm at 1198 rev/min of the engine

Mean atmospheric conditions:	temperature	24 °C
	pressure	1004 mbar
	relative humidity	74 %
Maximum temperatures:	coolant	82 °C
	engine oil	122 °C
	fuel	23 °C

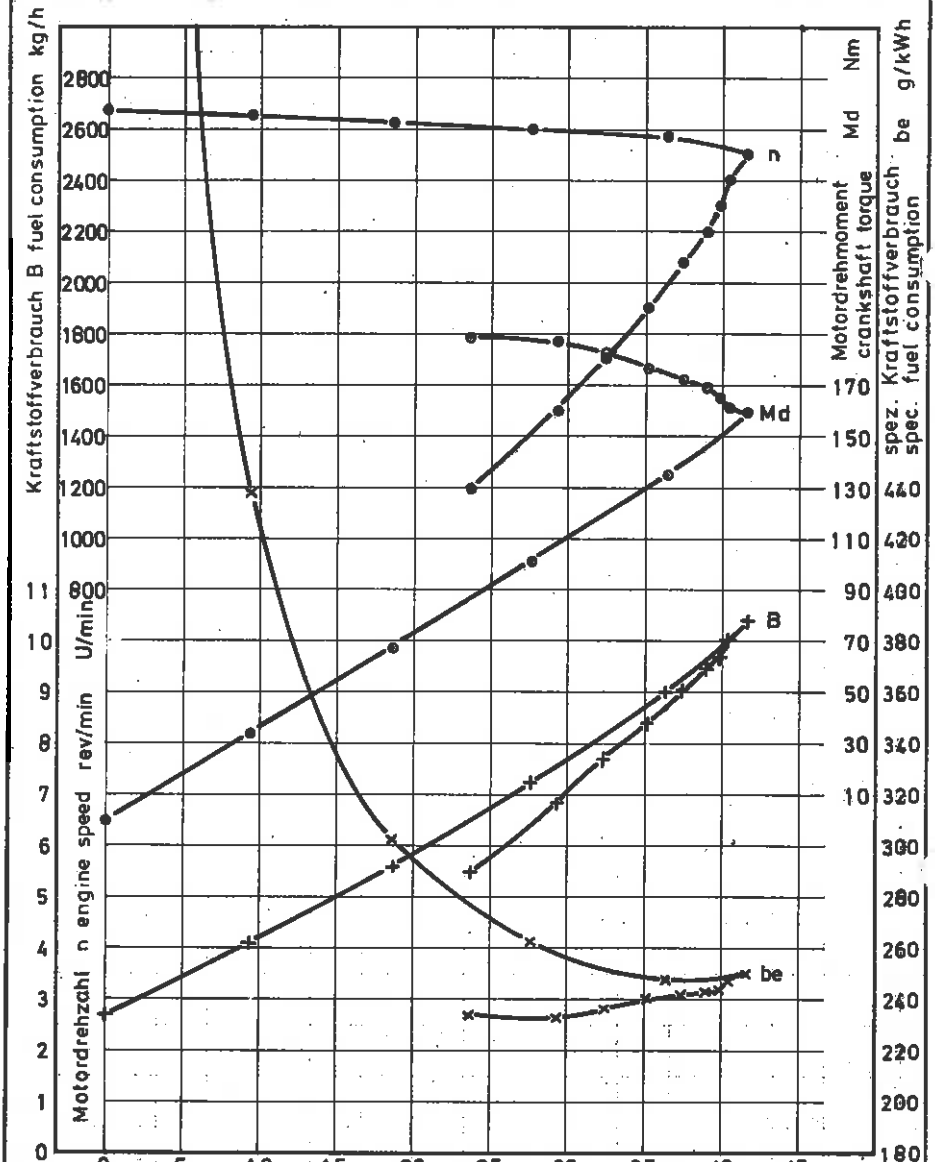

Motorleistung
PRÜFUNGS-ABTEILUNG
JOHN DEERE 1630
Engine performance
Test Nr. 75-69
Kraftstoffverbrauch B kg/h
fuel consumption
Md
Ne
B
spez. Kraftstoffverbrauch be g/kWh
spec. fuel consumption
Motorleistung Ne kW
crankshaft power
Motordrehmoment Md Nm
crankshaft torque
be
Motordrehzahl n engine speed rev/min U/min
1100 1300 1500 1700 1900 2100 2300 2500 2700
Lufttemperatur 24 °C Luftdruck 1004 mb Kraftstoff 0.830 kg/l
temperature pressure fuel

PRÜFUNGS-ABTEILUNG

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Motorleistung
Engine performance

Test Nr. 76-89



Lufttemperatur / temperature	24 °C	Luftdruck / pressure	1004 mb	Kraftstoff / fuel	0,830 kg/l

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Motorleistung
Engine performance

Test Nr.76-89

Motorleistung in % der Leistung bei Nenndrehzahl
engine power in % of power at rated engine speed

Motordrehzahl in % der Nenndrehzahl engine speed in % of rated engine speed

Belastung in % des Drehmomentes bei Nenndrehzahl
load in % of torque at rated engine speed

224 g/kWh

Lufttemperatur: temperature	24 °C	Luftdruck: pressure	1004 mb	Kraftstoff: fuel	0,830 kg/l

PRÜFUNGS-ABTEILUNG
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Test No. 76-89

OPTIONAL TESTS

(2) MAIN POWER TAKE-OFF PERFORMANCE

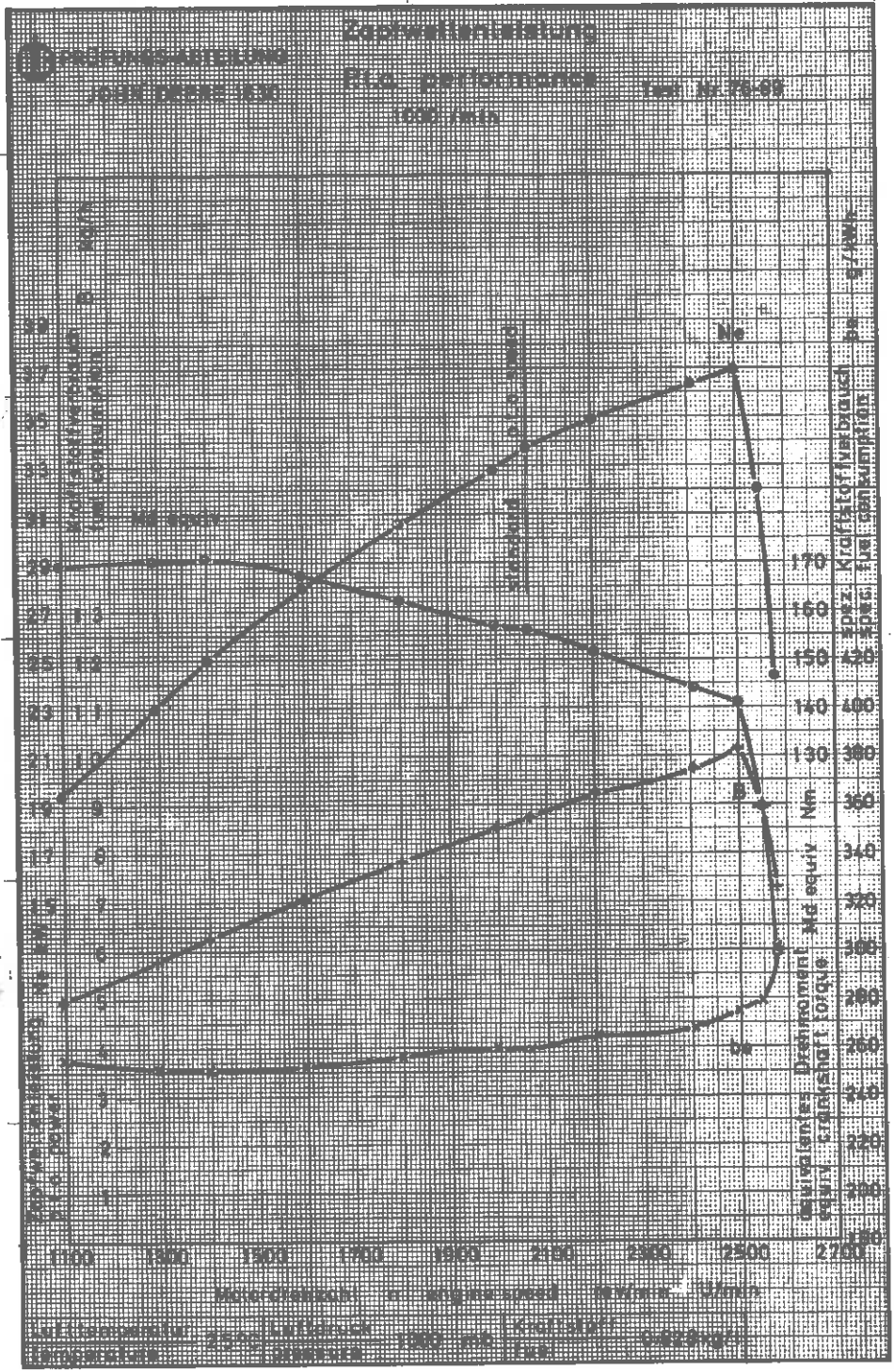
Date of tests: 20th July 1976
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

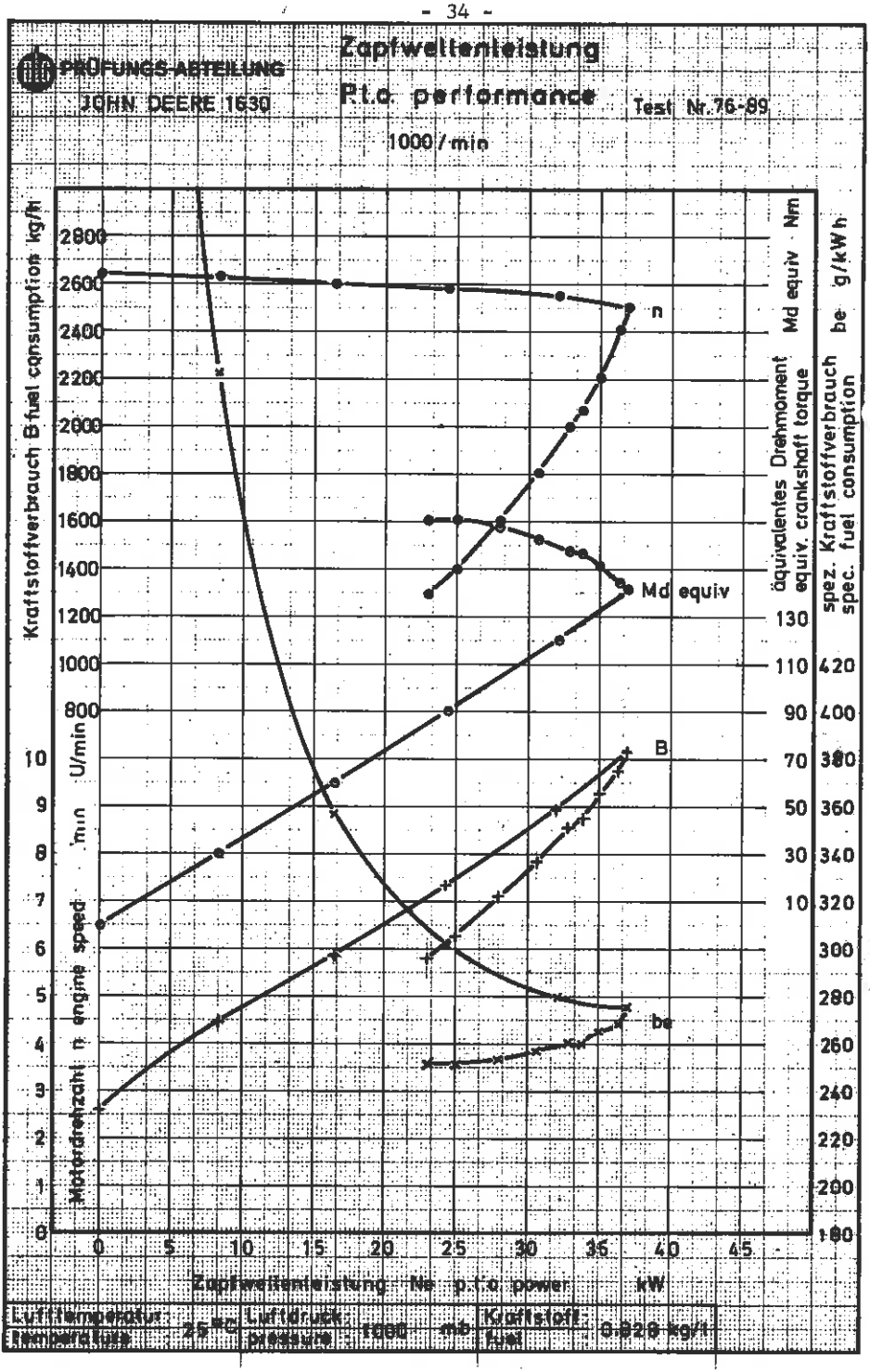
Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power						
At 2-hour test						
36.9	2500	1210	12.27	10.16	275	3.01
At standard p.t.o. speed (1000 rev/min)						
33.8	2066	1000	10.58	8.76	260	3.19
At the speed recommended for drawbar work						
36.9	2500	1210	12.27	10.16	275	3.01
Part loads						
(i) 85% of the torque at maximum power at 2-hour test						
32.0	2549	1234	10.82	8.96	280	2.96
(ii) unloaded						
-	2640	1278	3.16	2.62	-	-
(iii) 50% of the load defined in (i)						
16.4	2602	1259	7.06	5.85	357	2.32
(iv) maximum power						
36.9	2500	1210	12.27	10.16	275	3.01
(v) 25% of the load defined in (i)						
8.2	2629	1272	5.39	4.46	542	1.53
(vi) 75% of the load defined in (i)						
24.3	2579	1248	8.86	7.33	302	2.75

No load maximum engine speed: 2640 rev/min
Equivalent crankshaft torque at maximum power (2 hours): 141 Nm
Maximum equivalent crankshaft torque: 171 Nm at 1399 rev/min of the engine

Mean atmospheric conditions:
- temperature 25 °C
- pressure 1000 mbar
- relative humidity 91 %

Maximum temperatures:
- coolant 82 °C
- engine oil 126 °C
- fuel 27 °C


Zapfwellenleistung
PTO performance
1000 r/min
Test Nr. P6-95
Motordrehzahl n
engine speed
Drehmoment
torque
Nennleistung
rated power
Nennmoment
rated torque
Leerlaufdrehzahl
idling speed
Kraftstoffverbrauch
fuel consumption
Nm
kW
g/kWh
Ne
Me


PRÜFUNGS-ABTEILUNG
JOHN DEERE 1630
Zapfwellenleistung
P.t.o. performance
Test Nr. 76-89
1000 / min
Kraftstoffverbrauch B fuel consumption kg/h
Motordrehzahl n engine speed U/min
äquivalentes Drehmoment Md equiv Nm
equiv. crankshaft torque
spez. Kraftstoffverbrauch be g/kWh
spec. fuel consumption
n
Md equiv
B
be
Zapfwellenleistung Ne p.t.o. power kW
Lufttemperatur 25 °C Luftdruck 1000 mb Kraftstoff 0,828 kg/l
temperature pressure fuel

PRÜFUNGS-ABTEILUNG
JOHN DEERE 1630

Test No. 76-89

ADDITIONAL TEST

out of the O.E.C.D. CODE under the responsibility of the DLG Testing Station

(1) MAIN POWER TAKE-OFF PERFORMANCE

at engine speed corresponding to standard p.t.o. speed (540 rev/min)

Date of tests: 30th June 1976
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power at standard p.t.o. speed						
33.8	2076	540	10.73	8.90	264	3.15
Part loads at standard p.t.o. speed						
(i) 85% of the torque at maximum power						
29.3	2115	550	9.29	7.71	264	3.15
(ii) unloaded						
-	2248	585	2.92	2.43	-	-
(iii) 50% of the load defined in (i)						
15.1	2184	568	5.86	4.86	321	2.58
(iv) maximum power						
33.8	2076	540	10.73	8.90	264	3.15
(v) 25% of the load defined in (i)						
7.7	2217	577	4.41	3.66	476	1.74
(vi) 75% of the load defined in (i)						
22.4	2158	561	7.51	6.24	279	2.98

Equivalent crankshaft torque at standard p.t.o. speed 155 Nm

Mean atmospheric conditions:	temperature	26 °C
	pressure	1005 mbar
	relative humidity	50 %
Maximum temperatures:	coolant	82 °C
	engine oil	125 °C
	fuel	26 °C