O.E.C.D. Report No. 319

Report on test in accordance with
O.E.C.D. Test Code for Agricultural Tractors

Agricultural Tractor Type 3120

Manufactured by: JOHN DEERE WERKE MANNHEIM
68 Mannheim



Date of Tests: October 1969 - March 1970

This report has been approved by the O.E.C.D.
Co-ordinating Centre (C.N.E.E.M.A., France) as being
in accordance with the O.E.C.D.-Tractor Test Code

Date of Approval: 6.5.1970 Serial No.: 319

DEUTSCHE LANDWIRTSCHAFTS-GESELLSCHAFT e.V.
Prüfungsabteilung für Landmaschinen
6 Frankfurt am Main, Zimmerweg 16

This Bulletin is based on engineering tests in accordance with the O.E.C.D.-Tractor Test Code. It does not contain an evaluation of the performance of the tractor on practical farm work.

All rights (including the right of translation, reprint and photomechanical copying - also of excerpts) reserved by Deutsche Landwirtschaft-Gesellschaft e.V., Frankfurt/Main.

Printed in Germany

PRÜFUNGS-ABTEILUNG
John Deere 3120

Test No. 69-100

TABLE OF CONTENTS

	Page
Specification of tractor	4 - 9
Fuel and lubricants used in tests	10
COMPULSORY TESTS	
(1) Main power take-off performance	
Table with the results at 540 rev/min	11
Table with the results at 1000 rev/min	12
Diagrams with the results	13-14
(2) Drawbar performance tests on a concrete track	
Table with the results	15
Diagrams with the results	16-18
(3 and 4) Turning space and turning circle	19
(5) Location of centre of gravity	19
(6) Tests of brakes	20
(7) Measuring of ambient noise, emitted by the tractor	21
(8) Measuring of the noise at the driver's ear level	21
(9) Tests of power lift and hydraulic pump performance	22
OPTIONAL TESTS	
(10) Engine tests	
Table with the results	23
Diagrams with the results	24-26

PRUFUNGS-ABTEILUNG
John Deere 3120

Test No. 69-100

Tractor manufacturer:	John Deere Werke Mannheim, 68 Mannheim
Submitted for test by:	Manufacturer
Selected by:	Manufacturer with the agreement of the DLG testing station
Place of running-in:	Mannheim and Groß-Umstadt
Duration of running-in:	Engine appr. 220 hours, tractor appr. 130 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	John Deere Werke Mannheim, 68 Mannheim
Model:	3120
Type:	Wheel type tractor, unit construction
Serial No.:	036581 L

Engine

Make:	John Deere Werke
Model:	M 63 LH
Type:	4-stroke direct injection diesel, water cooled
Serial No.:	050 136 CD

Cylinders: 6 cylinders, vertical in line; 98 mm bore, 110 mm stroke; capacity 4976 cm^3, compression ratio 16,7 : 1; overhead valves; replaceable wet cylinder liners

Fuel system: Fuel: Commercially available diesel oil; Roto-Diesel type DPA/ 346 2060 distributor type injection pump; Roosa-Master injection nozzles, 197 kp/cm^2 injection pressure, 0° before TDC injection timing; AC fuel feed pump; Roosa-Master dual filter with water traps and replaceable filter elements; capacity of fuel tank appr.106 l

Governor: Roto-Diesel mechanical variable speed type governor, incorporated in fuel injection pump; governed range of engine speed 600 to 2360 rev/min;

rated engine speed for p.t.o.-work	2200 rev/min
for field-work	2200 rev/min
for transportation-work	2200 rev/min

Air cleaner: Make: Hengst-Donaldson, type AT 26453 dry type filter with maintenance indicator

PRÜFUNGS-ABTEILUNG
John Deere 3120

Test No. 69-100

Lubrication system:	Forced feed from gear type pump; Purolator filter element in full flow with by-pass safety valve; oil capacity 10,3 l; recommended oil change period 15 hours; recommended oil in winter HD SAE 10 W in summer HD SAE 20 W in tropics HD SAE 30 W
Cooling system:	Water cooling, impeller assisted with 5-blade 484 mm dia belt driven fan; thermostat for temperatur control; cooling water capacity 19,9 l
Electrical equipment	Voltage 12 Volt, negative earth
Starting device:	Bosch 12 Volt starter motor type JD (R) 12 V 4 PS
Starting aid:	Thermostart cold start device
Generator:	Bosch type K1 14 V 32 A 22, three phase current generator
Battery:	2 batteries 12 V in parallel, 176 Ah total capacity

Transmission

Clutch:	Fichtel & Sachs AG., 872 Schweinfurt single plate dry type clutch type GN 300 K, foot pedal operated
Gearbox:	John Deere werke Mannheim, 68 Mannheim three speed constant mesh changespeed gear with parking lock, three group constant mesh group gear and two stage hydraulic torque converter transmission (high-low), giving total 12 forward speeds and 6 reverse
Rear axle and final drive:	John Deere Werke Mannheim, 68 Mannheim crown wheel and pinion, bevel gear type differential gear with differential lock, operated by hand lever or foot pedal; planetary reduction gear on final drive shafts
Oil capacity:	Total transmission 57 l; recommended oil changing period 1000 hours

PRÜFUNGS-ABTEILUNG
John Deere 3120

Test No. 69-100

Total gear ratios and speeds

Group	Change speed gear No.	Torque converter transmission	Total ratio engine to driving wheels	Theoretical travelling speed at rated engine speed of 2200 rev/min km/h	m/s
slow	1	low	328,9	1,91	0,53
		high	243,9	2,58	0,72
	2	low	198,0	3,17	0,88
		high	147,0	4,28	1,19
	3	low	122,5	5,14	1,43
		high	91,0	6,92	1,92
fast	4	low	91,4	6,89	1,92
		high	67,8	9,29	2,58
	5	low	55,2	11,41	3,17
		high	40,9	15,38	4,27
	6	low	34,1	18,47	5,13
		high	25,3	24,89	6,92
reverse	1	low	273,2	2,30	0,64
		high	202,8	3,10	0,86
	2	low	164,7	3,80	1,06
		high	122,2	5,15	1,43
	3	low	101,9	6,19	1,72
		high	75,6	8,33	2,31

Power take-off	Main p.t.o. as proportional engine speed p.t.o.; to clutch on load by a hydraulically operated multi disc clutch
Location:	At rear of tractor, 689 mm above ground, 25,4 mm to the left of median plane
Dimensions:	2 interchangeable stub shafts 1) spline shaft 29 x 34,9 x 8,7 mm = $1\frac{3}{8}$", 6 splines (acc.to DIN 9611 Form A; B.S. 1495; ASAE S 203.5) for the standard p.t.o. speed of 540 rev/min; 2) shaft with $1\frac{3}{8}$" involute 21 splines (acc.to ASAE S 204.4) for the standard p.t.o. speed of 1000 rev/min
	When stub shaft is bolted in position correct speed ratio is selected
Speed:	545 rev/min at 2200 rev/min rated engine speed (acc.to DIN 9611; B.S. 1495; ASAE S 203.5); 1013 rev/min at 2200 rev/min rated engine speed (acc. to B.S. 1495; ASAE S 204.4)
Direction of rotation:	Clockwise viewed from tractor rear
Power lift	Make: John Deere Werke Mannheim, 68 Mannheim. Life hydraulic closed centre system with power control, position control, variable proportion of power and position controls, floating position, gear pump in transmission casing supplies oil to a variable delivery pressure controlled radial piston pump driven from the front of crankshaft supplying oil to a single acting ram cylinder and spool valve, for external tappings supplying 2 dual acting cylinders; maximum pressure of system 160 ± 1,5 kp/cm²; working pressure of control valve 148 kp/cm²; oil capacity 57 l (oil of transmission case); hydraulic transport lock; overload relief safety valve in lifting cylinder, opening pressure 280 kp/cm²
Pull attachment	
Implement linkage:	Three-point implement linkage category II (acc.to DIN 9674) controlled by power lift; lift height above ground: 110 mm to 1040 mm
Drawbar:	Fixed on implement linkage, hydraulically controlled by power lift; height above ground 110 mm to 1040 mm adjustable by power lift; centre hole 33 mm dia and 4 holes 80 mm distance each apart either side of centre hole; distance of centre hole from the end of the p.t.o.-shaft with lower links in horizontal position with 540 rev/min stub shaft 508 mm, with 1000 rev/min stub shaft 518 mm
Swinging drawbar:	Height above ground 335 mm and 635 mm by reversing drawbar; distance of hole from the end of the 540 rev/min p.t.o.-shaft 355 mm, of the end of the 1000 rev/min p.t.o.-shaft 406 mm

Trailer hitch: At rear of tractor; height above ground 920 mm; distance from rear axle 520 mm

Towing hitch: At front of tractor; height above ground 810 mm

Steering device: Make: John Deere Werke Mannheim, 68 Mannheim type AT 26 378; mechanic steering hydraulically assisted with single drop arm and drag link; operated by hand wheel

Brakes

Parking brake: Park lock operated by the gear shifting lever of the group gear

Foot brake: Hydraulically operated wet disc brakes on differential shafts

Steering brake: Operated by independant parts of foot brake pedal; for normal use both parts are locked together by a latch

Wheels

Steering wheels: Two at front; 7,50-18 6 ply AS Front pneumatics; maximum permissible weight on each tyre 765 kp at 2,5 kp/cm², when transporting mounted implements 956 kp; rim 5,50 F x 18; track width from 1445 mm to 1955 mm in 100 mm steps changed by extending front axle and from 1600 mm to 2110 mm in 100 mm steps changed by reversing wheels and extending front axle

Driving wheels: Two at rear; 18,4/15-34 8 ply AS pneumatics; maximum permissible weight on each tyre 2415 kp at 1,4 kp/cm², when transporting mounted implements 2772 kp; rim W 15 L x 34; track width steplessly changed from 1575 mm to 2320 mm by rack on rear axle shaft and pinion and by offset lugs on rims

Wheel base: 2464 mm

PRÜFUNGS-ABTEILUNG Test No. 69-100

John Deere 3120

Weights With safety frame, power lift, three-point linkage full fuel tank, water and oil, as tested

		without driver	with driver
Weights of tractor without ballast:	Front axle load:	1142 kp	1152 kp
	Rear axle load:	2665 kp	2735 kp
	Total:	3807	3887 kp
Ballast front:	8 weights 42 kp each	=	336 kp
Ballast rear:	5 wheelweights 63 kp each per wheel	=	630 kp
	water in tyres	=	700 kp
		without driver	with driver
Weight of tractor with ballast:	Front axle load:	1590 kp	1600 kp
	Rear axle load:	3883 kp	3955 kp
	Total:	5473 kp	5555 kp

Seat Make: Grammer, 845 Amberg
upholstered seat and backrest, coil spring suspension adjustable for driver's weight, shock absorber; height and distance from steering wheel interdependently adjustable by shifting the seat on inclined guideways

Number of grease points (whole tractor) : 6 nipples for greasegun
4 plugs replaceable by nipples

Overall dimensions

Overall length:	4135	mm with three-point linkage
Overall width:	2878	mm at maximum track, without ballast weights
Overall height:	2575	mm to top of safety guard frame
Maximum ground clearance:	370	mm in median plane of tractor
	520	mm apart median plane

ighting equipment Electric 12 Volt, equipment according to the regulations of the specific country

Equipment of the tractor tested

	Height above ground of centre mm	Dimensions of area mm	Distance of the centres of both lights mm
Head lights	1000	100 Ø	835
Side lights	1620	75 Ø	1310
Rear lights	1575	100 Ø	1210
Reflectors	1265	75 Ø	1350

PRÜFUNGS-ABTEILUNG
John Deere 3120

Test No. 96-100

FUELS AND LUBRICANTS USED IN TESTS

Laboratory tests

Fuel:	Aral Diesel oil, specific gravity at 15° C : 0,820 kg/l (commercially available quality acc.to DIN 51 601)
Engine oil:	Shell Rotella T HD 30
Transmission oil:	J.D.M. J 14 B

Track tests

Fuel:	Aral Diesel oil, specific gravity at 15° C : 0, 820 kg/l (Commercially available quality acc.to DIN 51 601)
Engine oil:	Shell Rotella T HD 30
Transmission oil :	J.D.M. J 14 B

PRÜFUNGS-ABTEILUNG
John Deere 3120

Test No. 69-100

COMPULSORY TESTS

(1a) MAIN POWER TAKE-OFF PERFORMANCE at the standard p.t.o.-speed 540 rev/min

Date and location of tests: 4.11.1969, Groß-Umstadt

Type of dynamometer: Schenck hydraulic dynamometer U1-40

Maximum power

Horsepower (metric) hp	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption specific g/hph	hph/l
At maximum power 2-hour test					
76,0	2216	550	18,70	202	4,06
At standard p.t.o.-speed (540 rev/min)					
75,0	2176	540	18,10	198	4,14
At the speed recommended by the manufacturer for drawbar work					
75,8	2200	547	18,40	200	4,12
Fuel consumption at part loads					
(i) 85% of torque at maximum power					
65,8	2264	561	16,10	201	3,27
(ii) unloaded					
-	2380	591	5,12	-	-
(iii) 50% of the load defined in (i)					
33,7	2323	577	10,25	247	3,29
(iv) maximum power					
76,0	2216	550	18,70	202	4,06
(v) 25% of the load defined in (i)					
17,2	2360	586	7,70	368	2,23
(vi) 75% of the load defined in (i)					
50,0	2300	570	13,05	212	3,83

No load maximum engine speed: 2380 rev/min

Torque at maximum power: 24,6 kpm

Maximum torque*) 28,8 kpm at 1388 rev/min of the engine

Mean atmospheric conditions: temperature: 24°C
pressure: 750 mm Hg
relative humidity: 34%

Maximum temperatures: coolant: 80°C
engine oil: 81°C
fuel: 26°C

*)The torque reported is the equivalent crankshaft torque

PRÜFUNGS-ABTEILUNG
John Deere 3120

Test No. 69-100

(1b) MAIN POWER TAKE-OFF PERFORMANCE

Date and location of tests: 5.11.1969, Groß-Umstadt

Type of dynamometer: Schenck hydraulic dynamometer U1-40

Maximum power

Horsepower (metric) hp	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption specific g/hph	hph/l
At maximum power 2-hour test					
78,5	2215	1020	18,48	193	4,25
At standard p.t.o.-speed (1000 rev/min)					
77,5	2170	1000	18,08	191	4,28
At the speed recommended by the manufacturer for drawbar work					
78,3	2200	1018	18,48	193	4,25
Fuel consumption at part loads					
(i) 85% of torque at maximum power					
68,3	2260	1041	16,38	197	4,17
(ii) unloaded					
-	2380	1095	5,12	-	-
(iii) 50% of the load defined in (i)					
35,0	2322	1069	10,32	241	3,39
(iv) maximum power					
78,5	2215	1020	18,48	193	4,25
(v) 25% of the load defined in (i)					
17,9	2362	1089	7,77	357	2,31
(vi) 75% of the load defined in (i)					
52,0	2285	1045	13,13	207	3,96

No load maximum engine speed: 2380 rev/min

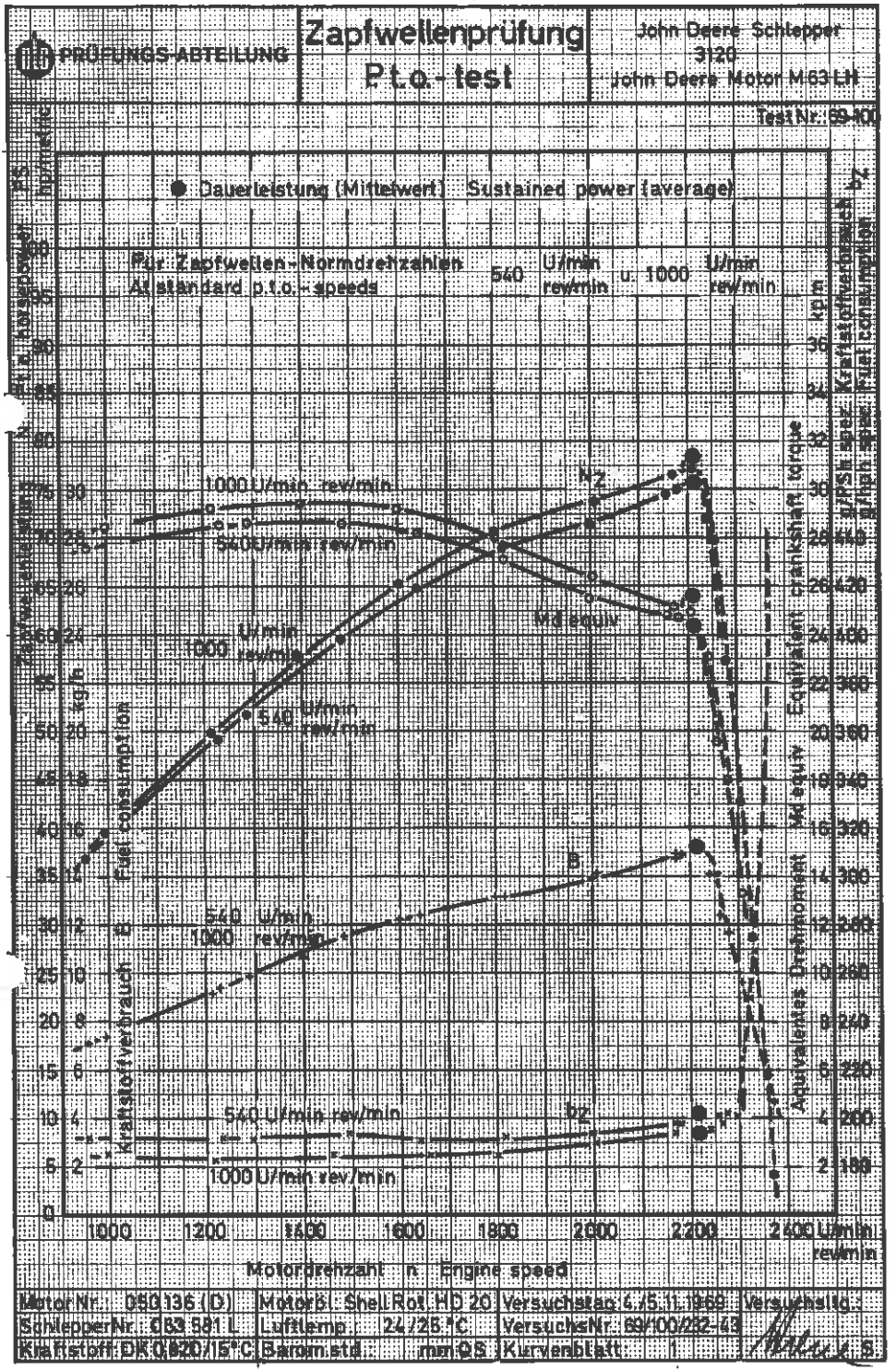
Torque*) at maximum power: 25,4 kpm

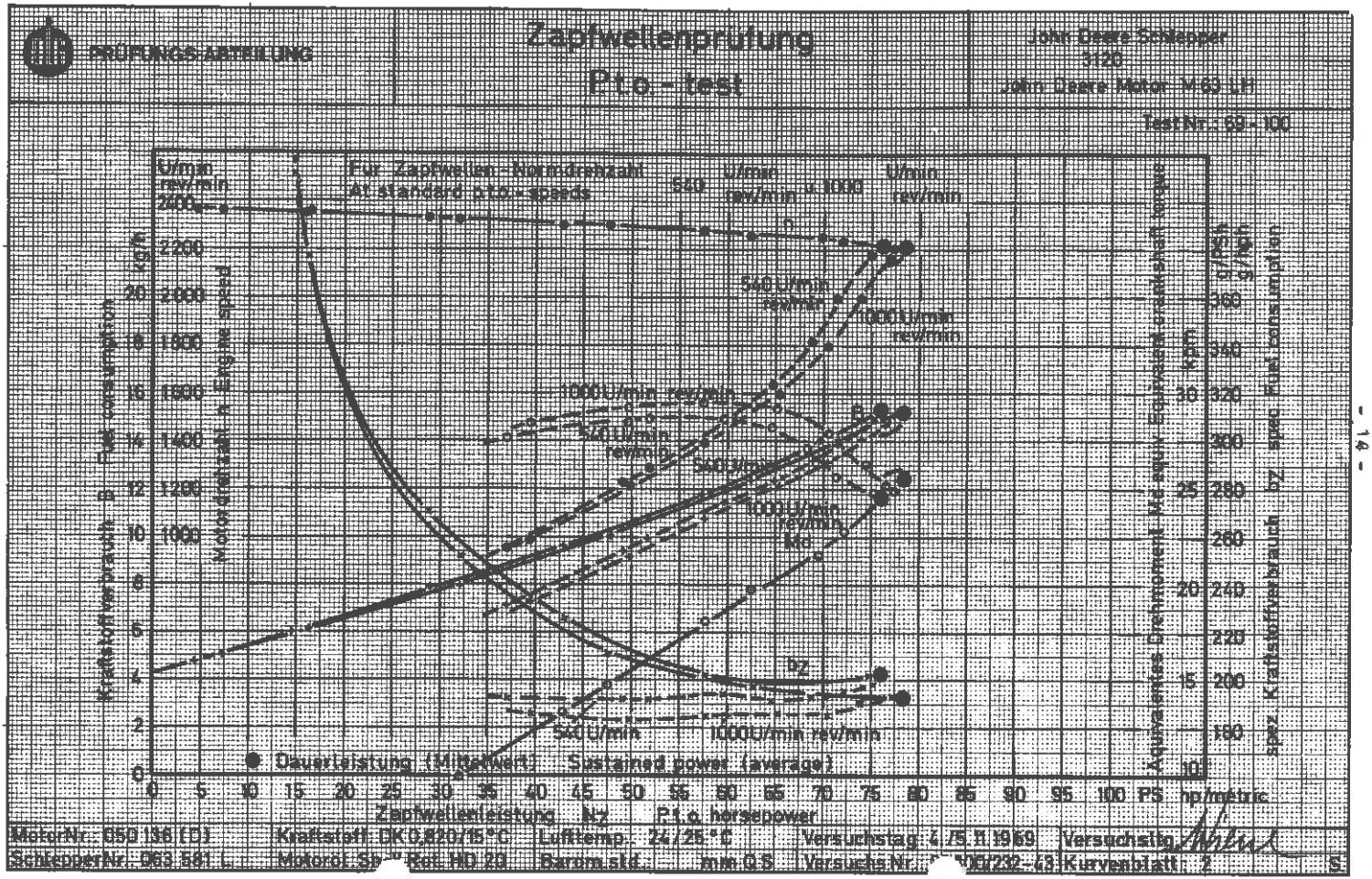
Maximum torque*): 29,7 kpm at 1390 rev/min of the engine

Mean atmospheric conditions: temperature: 24°C
pressure: 753 mm Hg
relative humidity: 28%

Maximum temperatures: coolant: 83°C
engine oil: 84°C
fuel: 26°C

*) The torque reported is the equivalent crankshaft torque


PRÜFUNGS-ABTEILUNG
Zapfwellenprüfung
P.t.o.-test
John Deere Schlepper 3120
John Deere Motor M 63 LH
Test Nr. 69-100
Dauerleistung (Mittelwert) Sustained power (average)
Für Zapfwellen-Normdrehzahlen 540 U/min rev/min u. 1000 U/min rev/min
At standard p.t.o.-speeds
1000 U/min rev/min
540 U/min rev/min
Md equiv
Fuel consumption
Kraftstoffverbrauch
Equivalent crankshaft torque
Äquivalentes Drehmoment
Motordrehzahl n Engine speed
1000
1200
1400
1600
1800
2000
2200
2400 U/min rev/min
Motor Nr. 050136 (D)
Motor: Shell Rot HD 20
Versuchstag 4./5.11.1969
Schlepper Nr. 063581 L
Lufttemp. 24/25 °C
Versuchs Nr. 69/100/252-43
Kraftstoff DIN 0620/15°C
Barom. std.
mm QS
Kurvenblatt 1


PRÜFUNGSABTEILUNG
Zapfwellenprüfung
P.t.o. - test
John Deere Schlepper
3120
John Deere Motor M 60 UH
Test Nr.: 69 - 100
Für Zapfwellen-Normdrehzahl
At standard p.t.o.-speeds
540 U/min rev/min
w 1000 U/min rev/min
1000 U/min rev/min
Kraftstoffverbrauch
Motordrehzahl
Anzeigender Drehmoment-Mittelwert
spez. Kraftstoffverbrauch
Dauerleistung (Mittelwert) Sustained power (average)
Zapfwellenleistung PS P.t.o. horsepower hp/metric
Motor Nr.: 050 136 (D)
Schlepper Nr.: 063 581
Kraftstoff: DK 0,820/15°C
Motoröl: SE
Rot. HD 20
Lufttemp. 24/25 °C
Barom. std. mm QS
Versuchstag: 4./5.11.1969
Versuchs Nr.: 100/232 - 43
Versuchsing.
Kurvenblatt 2 S.

(2) DRAWBAR PERFORMANCE

Date of tests: 26.2. - 25.3.1970

Type of track: Concrete

Height of drawbar above ground: 620 mm with ballast, 630 mm without ballast

With ballast

Gear No and Group	Horse-power (metric) hp	Drawbar pull kp	Engine speed rev/min	Slip of wheels %	Specific work hph/l	Specific fuel consumpt. g/hph	Temperatures Fuel °C	Coolant °C	Engine oil °C	Atmospheric conditions Temperature °C	Relative humidity %	Pressure mm Hg
(i) MAXIMUM POWER												
1.L.	33,8	5100	2310	13,0	3,02	275	10	75	80	10	88	751
1.S.	46,2	5100	2300	13,0	3,33	244	11	75	80	11	87	751
2.L.	54,5	5100	2240	13,0	3,43	242	10	75	80	11	93	751
2.S.	64,6	4450	2210	10,8	3,55	233	6	75	80	6	95	748
3.L.	64,5	3580	2215	8,1	3,54	233	10	75	80	10	90	748
3.S.	67,3	2720	2205	5,6	3,68	224	14	75	80	14	78	749
4.L.	68,0	2740	2210	5,8	3,64	226	14	75	80	15	79	749
4.S.	68,5	2030	2210	3,9	3,75	220	10	75	80	10	90	751
5.L.	65,3	1550	2200	2,6	3,67	232	12	75	80	13	87	751
(ii) FIVE-HOUR-TEST AT 75% OF PULL AT MAXIMUM POWER IN 4th L.GEAR												
4.L.	52,4	2025	2280	3,8	3,54	233	8	75	80	8	82	740
(iii) FIVE-HOUR-TEST AT PULL CORRESPONDING TO 13% WHEEL SLIP IN TEST (i)												
2.L.	54,5	5100	2240	13,0	3,43	242	8	75	80	8	82	740
Without ballast												
(v) MAXIMUM POWER												
2.S.	53,2	3580	2265	11,7	3,5	237	7	75	80	7	79	755
3.L.	63,1	3580	2240	12,0	3,5	236	7	75	80	7	70	755
3.S.	67,3	2770	2215	8,5	3,7	225	5	75	80	5	70	755
4.L.	68,0	2800	2215	8,4	3,7	223	4	75	80	4	75	755
4.S.	68,6	2060	2210	6,2	3,7	220	5	75	80	5	71	751
5.L.	68,4	1640	2210	4,6	3,7	222	10	75	80	10	64	752

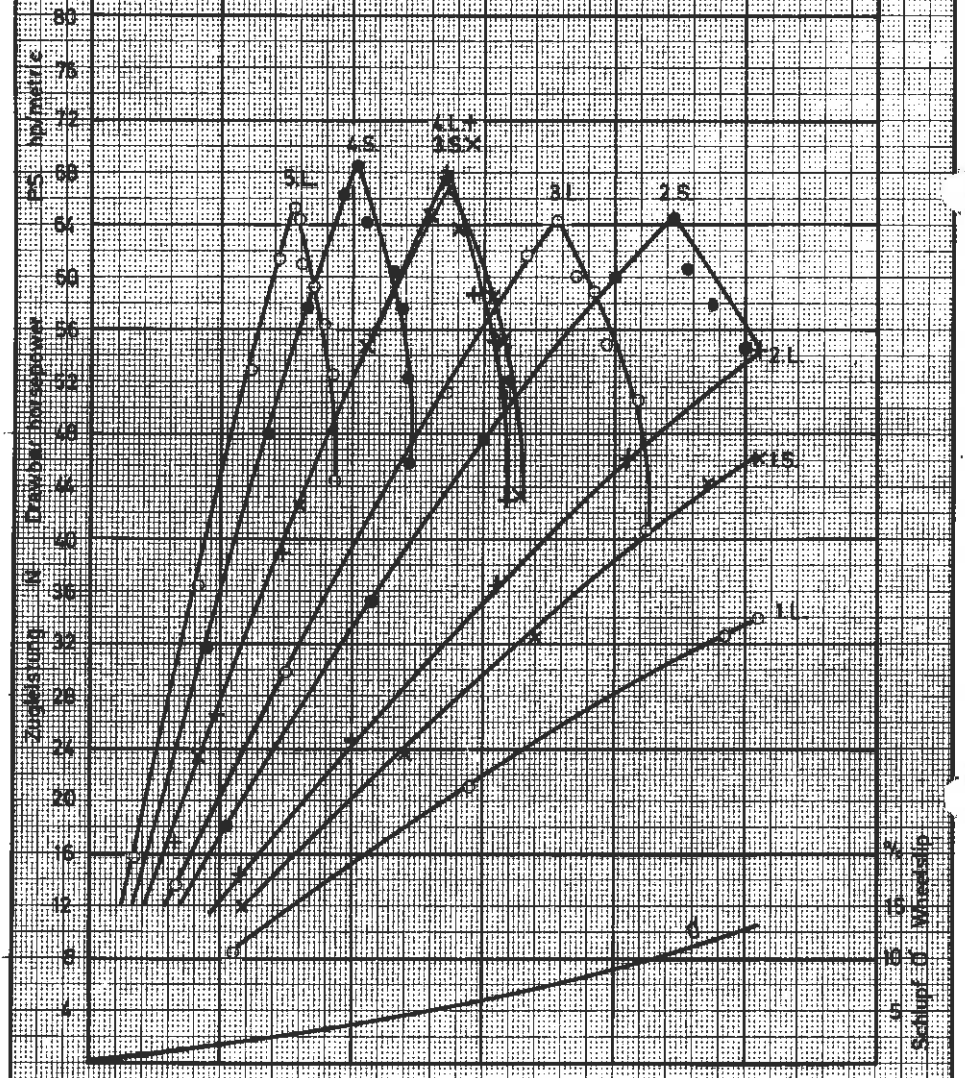
Engine oil consumption during ten hours duration of tests (ii) and (iii) : 85 g/h

PRÜFUNGS-ABTEILUNG

Zugprüfung
Drawbar-test

John Deere Motor
John Deere Schlepper
3120

mit Ballast — with Ballast — Test Nr. 69-100



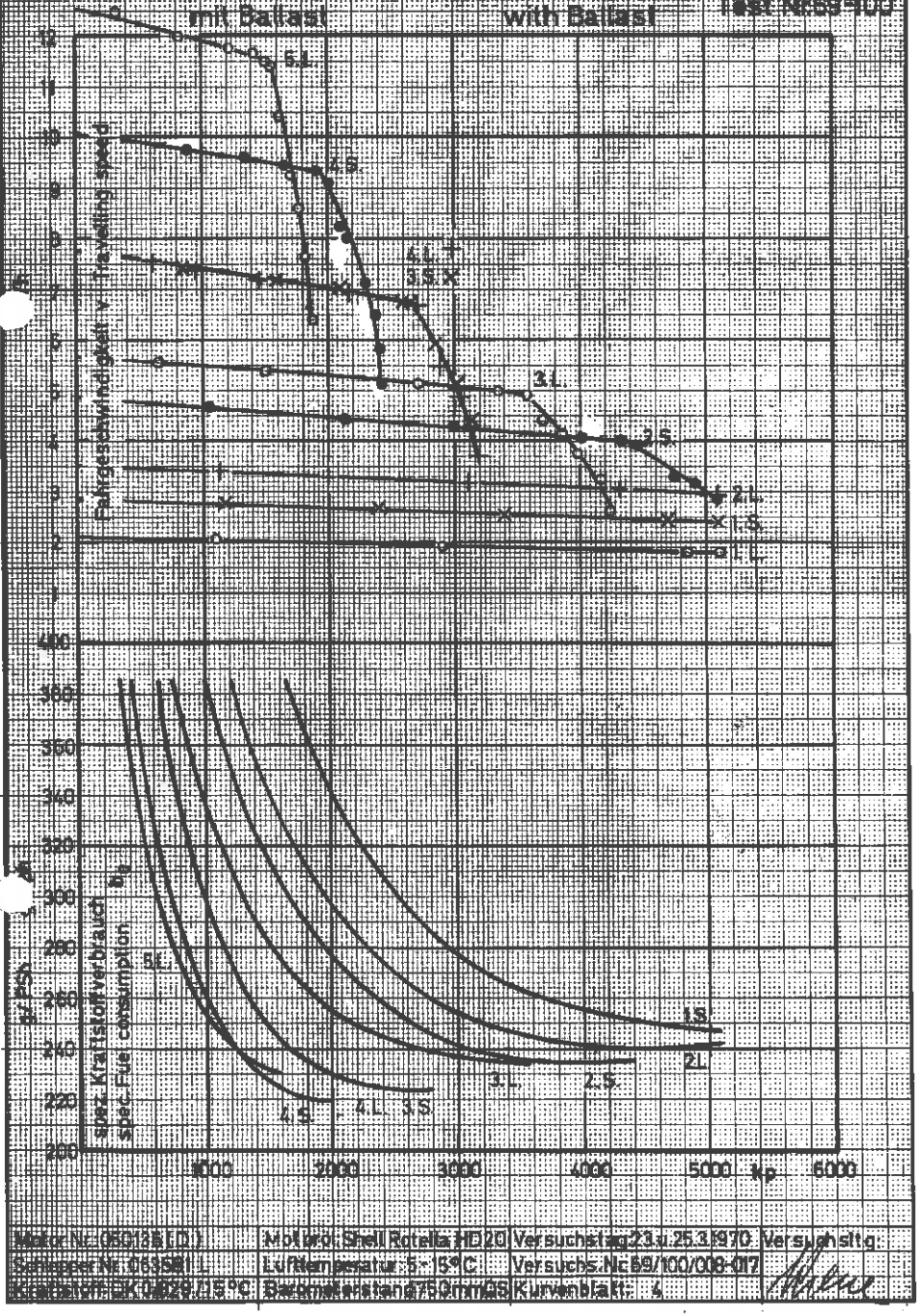
Motor Nr. 050135 [D]	Motoröl: Shell Rotella HD20	Versuchstag: 23.v.25.9.1970 Versuchsltg.
Schlepper Nr. D03581 L	Lufttemperatur: 5 - 15 °C	Versuchs Nr. 69/100/006-017
Kraftstoff: DK 0,829 / 15° C	Barometerstand: 750 mm QS	Kurvenblatt: 3

PRÜFUNGS-ABTEILUNG

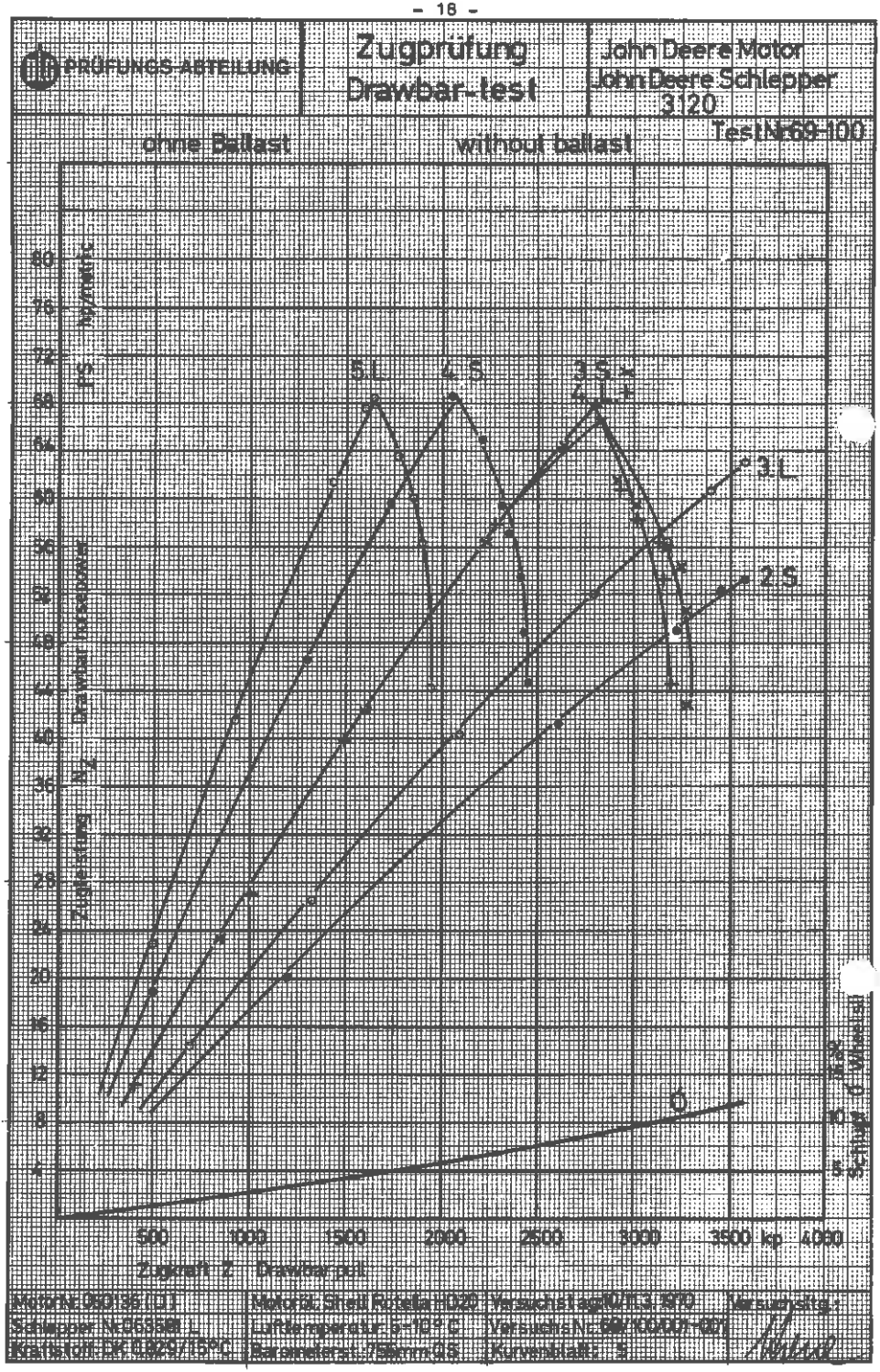
Zugprüfung
Drawbar-test

John Deere Motor
John Deere Schlepper 3120

mit Ballast — with Ballast — Test Nr.69-100



Motor Nr. 050138 (D)	Motoröl: Shell Rotella HD 20	Versuchstag 23.u.25.3.1970	Versuchsstg.
Schlepper Nr. 063581 L	Lufttemperatur: 5 - 13 °C	Versuchs.Nr. 69/100/008-017	
Kraftstoff: DK 0,828 / 15 °C	Barometerstand: 750 mm QS	Kurvenblatt: 4	


PRÜFUNGS-ABTEILUNG
Zugprüfung
Drawbar-test
John Deere Motor
John Deere Schlepper
3120
Test No 69-100
ohne Ballast
without ballast
PS
5 L
4 S
3 S
3 L
2 S
0
Zugkraft Z Drawbar pull
500 1000 1500 2000 2500 3000 3500 kp 4000
Motor No 090356 [01]
Schlepper No 065388 L
Kraftstoff DK 6929/75pc
Motoröl Shell Rotella HD20
Lufttemperatur 6–10° C
Barometerst. 715mm QS
Versuchstag 07.03.1970
Versuchs-No 69/100/07-407
Kurvenblatt 5
Versuchsing.

(3 and 4) TURNING SPACE AND TURNING CIRCLE

Wheel equipment front: 7,50-18 AS Front, 6 ply, without ballast
rear: 18,4/15-34 AS, 8 ply, without ballast

Track of wheels front: 1560 mm
rear: 1735 mm

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	3,85	3,85	4,40	4,30
Radius of turning circle	3,70	3,65	4,25	4,10

(5) LOCATION OF CENTRE OF GRAVITY

	Without ballast
Height above ground	935 mm
Distance forward from the vertical plane containing the axis of the rear wheels	730 mm
Distance from the median plane of the tractor	9 mm right

PRÜFUNGS-ABTEILUNG
John Deere 3120

Test No. 89-100

(6) BRAKE TESTS

A) FOOT BRAKE

Date of test: 16.3.1970

Type of track: Concrete

Type of decelerometer: Moto Meter Bremsverzögerungs- und Pedalkraft-schreiber, Moto Meter Hermann Schlaich 7 Stuttgart N

Travelling speed of tractor: 27,7 km/h

With cold brakes

		Tractor without ballast	Tractor with ballast
Maximum deceleration	m/s^2	5,5	5,7
Stopping distance	m	8,8	8,2
Force on pedal	kp	37	50

Brake fade characteristics, hot test, tractor without ballast

Deceleration: hot/cold 100%

Stopping distance: cold/hot 100%

Force on pedal: cold/hot 100%

B) PARKING LOCK

When the parking lock has been applied no rotation of the rear-wheels of tractor occured when the tractor has been towed.

PRÜFUNGS-ABTEILUNG
John Deere 3120

Test No. 69-100

(7) MEASUREMENT OF AMBIENT NOISE EMITTED BY THE TRACTOR

Date of test: 21.10.1969
Type of track: Concrete
Type of sound level meter: Brüel & Kjaer, type 2203

Results of test

Speed: 6.S.
Travelling speed before acceleration: 18,75 km/h
Sound level: 93 dBA

(8) NOISE MEASUREMENT AT THE DRIVER'S EAR

Date of test: 26.3.1970
Type of track: Concrete
Type of sound level meter: EZGN, Rohde & Schwarz, 8 München
Type of octavfilter: PBO, Rohde & Schwarz, 8 München

The tractor was fitted with anti-roll safety frame

Results of tests

Gear	Travelling speed *) nominal km/h	real km/h	Sone
3.S.	6,92	6,9	93

*) The first gear tested corresponds to the travelling speed nearest to 7,25 km/h

PRÜFUNGS-ABTEILUNG Test No. 69-100

John Deere 3120

(9) TEST OF POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

Date and location of tests: 26.11.1969, Groß-Umstadt

Hydraulic fluid: John Deere Type 303 Special-oil

POWER LIFT

Height above ground in down position: hitch point (mm)	Height above ground in down position: test frame (mm)	Total vertical movement (mm)	Maximum force exerted through full lift range (kp)	Pressure of hydr. oil (kp/cm²)	Linkage load at which unballasted front end of tractor lifts off the ground (kp)
Measured on the hitch points of lower links					
148	-	592	2285	161	2550
428	-	532	2510	161	2550
Measured on the test frame 610 mm to the rear of the hitch points					
a) Upper link hinged in the lowest hole on the tractor					
148	125	645	2480	160	1645
428	418	667	2270	161	1645
b) Upper link hinged in the uppermost hole on the tractor					
148	165	573	2715	160	1645
428	415	600	2505	160	1645

Type of linkage lock for transport: Hydraulically

Opening pressure of the cylinder over pressure relief valve: 280 kp/cm² (manufacturer's specification)

PUMP CHARACTERISTICS

(i) Oil-pressure of the hydraulic system: 160 ±1,5 kp/cm²

Working pressure of the control valve: 148 kp/cm² (manufacturer's specification)

Pump delivery rate at external tapping

(ii) at minimum pressure: 49,0 l/min

(iii) at maximum hydraulic power: 46,9 l/min

maximum hydraulic power: 13,8 hp (metric)

delivery pressure: 132,5 kp/cm²

PRÜFUNGS-ABTEILUNG
John Deere 3120

Test No. 69-100

OPTIONAL TESTS

(10) ENGINE TESTS

Date and location of tests: 27 10.1969, Groß-Umstadt

Type of dynamometer: Schenck hydraulic dynamometer U1-30

Maximum power

Horsepower (metric) hp	Engine speed rev/min	Fuel consumption total l/h	Fuel consumption specific g/hph	hph/l
At maximum power 2-hour test				
84,2	2218	18,60	181	4,52
At standard p.t.o.-speed (540 rev/min)				
83,2	2175	18,41	181	4,52
At standard p.t.o.-speed (1000 rev/min)				
82,7	2170	18,41	181	4,49
At the speed recommended by the manufacturer for drawbar work				
83,6	2200	18,65	182	4,48
Fuel consumption at part loads				
(i) 85% of torque at maximum power				
74,1	2295	16,59	183	4,47
(ii) unloaded				
-	2420	4,88	-	-
(iii) 50% of the load defined in (i)				
38,2	2361	10,10	217	3,78
(iv) maximum power				
84,2	2218	18,60	181	4,52
(v) 25% of the load defined in (i)				
19,3	2396	7,26	310	2,66
(vi) 75% of the load defined in (i)				
56,4	2327	13,10	190	4,30

Optimum fuel consumption: 169 g/hph at 51,7 hp and 1522 rev/min

Standard fuel consumption 1/2 (acc.to DIN 9606): 7,2/ 14,7 l/h

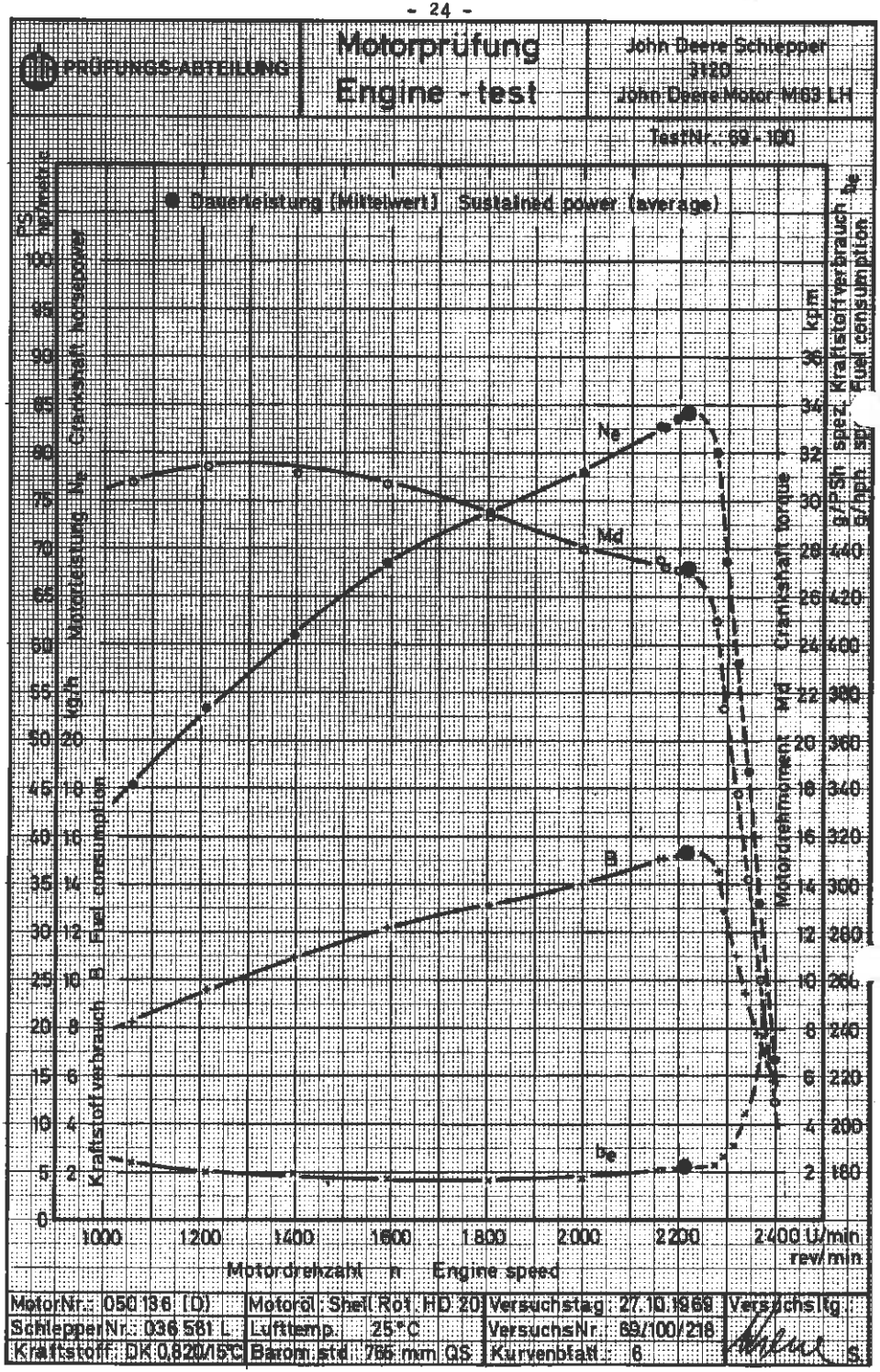
No load maximum engine speed: 2420 rev/min

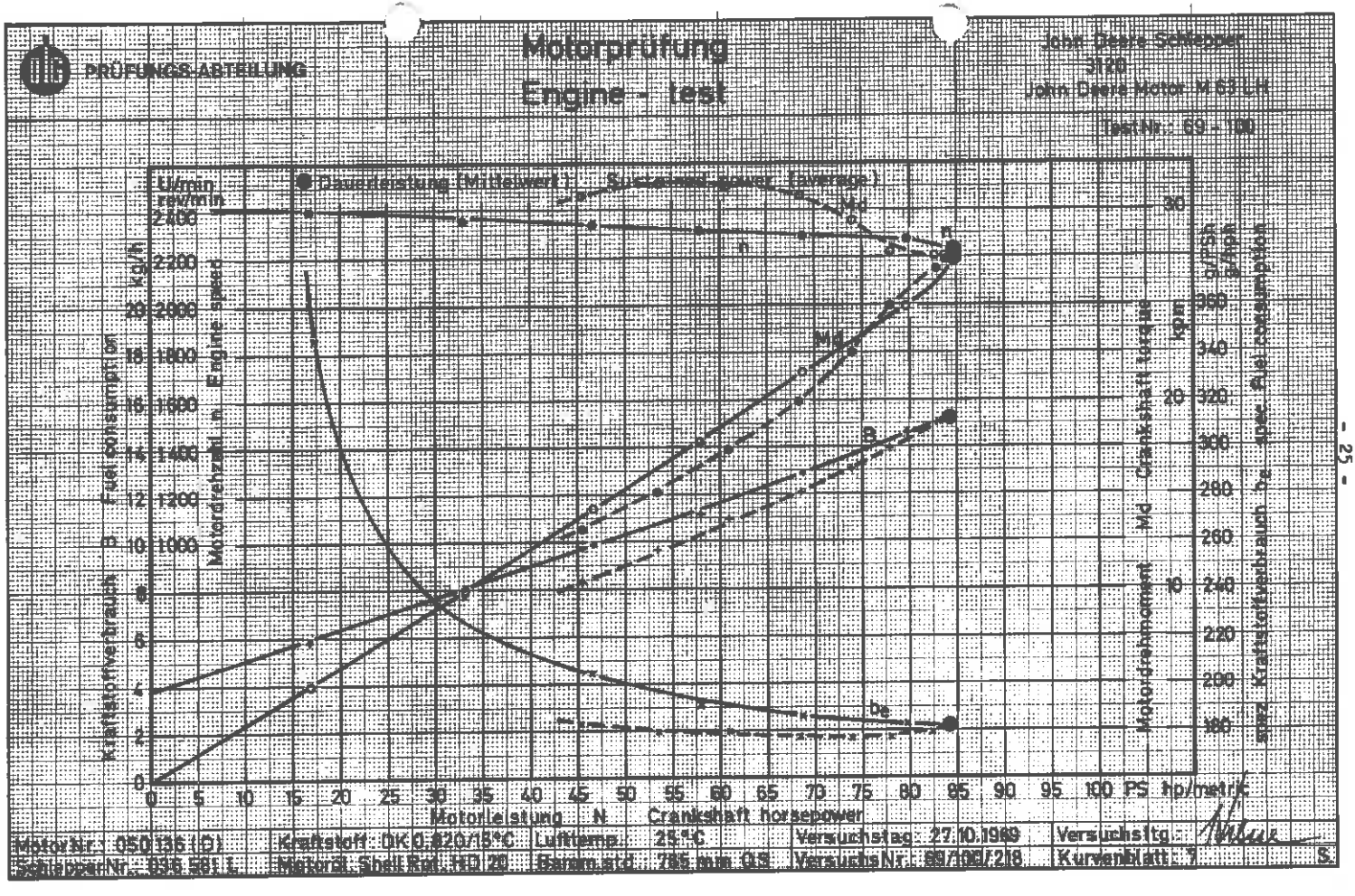
Torque at maximum power: 27,2 kpm

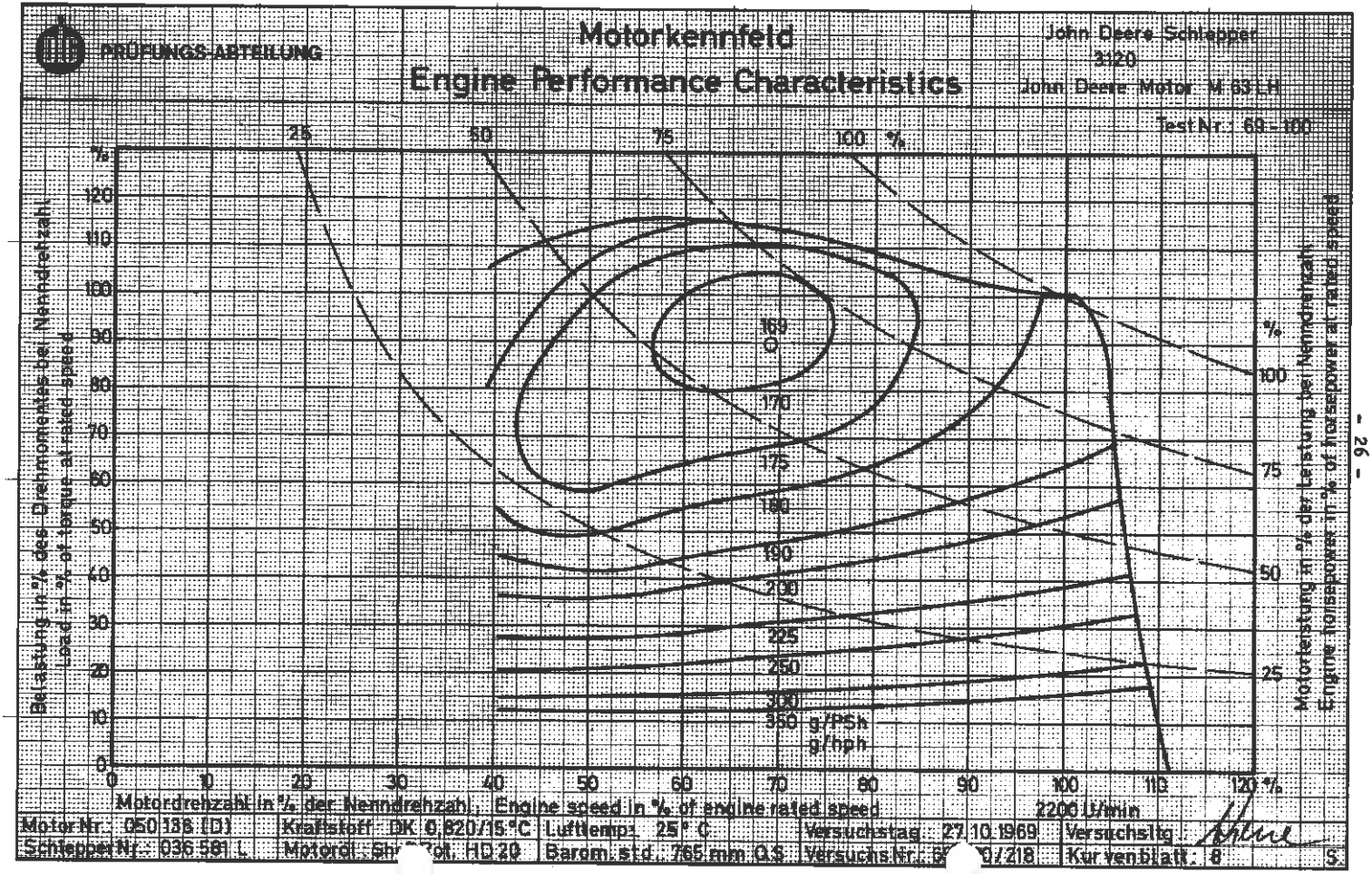
Maximum torque: 31,5 kpm at 1218 rev/min of the engine

Mean atmospheric conditions: temperature: 25°C
pressure: 763 mm Hg
relative humidity: 33 - 52%

Maximum temperatures: coolant: 74°C
engine oil: 80°C
fuel: 27°C


PRÜFUNGS-ABTEILUNG
Motorprüfung
Engine - test
John Deere Schlepper
3120
John Deere Motor M63 LH
Test Nr.: 69 - 100
Dauerleistung (Mittelwert) Sustained power (average)
Leistung
Power
Geschwindigkeit
Velocity
Motordrehzahl
Engine speed
Kraftstoffverbrauch B
Fuel consumption
Kraftstoffverbrauch be
Fuel consumption
spez.
Drehmoment Md
Crankshaft torque
Motordrehmoment
Ne
Md
B
be
PS
kp
km/h
kg/h
g/PSh
g/hph
kpm
U/min
rev/min
Motordrehzahl n Engine speed
Motor Nr.: 050136 (D)
Schlepper Nr.: 036581 L
Kraftstoff: DK 0,820/15°C
Motoröl: Shell Rot. HD 20
Lufttemp.: 25 °C
Barom. std: 755 mm QS
Versuchstag: 27.10.1969
Versuchs Nr.: 69/100/218
Kurvenblatt: 6
Versuchsltg.:
S.


PRÜFUNGS-ABTEILUNG
Motorprüfung
Engine - test
John Deere Schlepper
3120
John Deere Motor M 62 LH
Test Nr.: 69 - 100
Dauerleistung (Mittelwert)
Sustained power (average)
Md
n
B
be
U/min
rev/min
km/h
Motordrehzahl n Engine speed
Kraftstoffverbrauch
Fuel consumption
Motordrehmoment Md Crankshaft torque
kpm
spez. Kraftstoffverbrauch be spec. fuel consumption
g/PSh
Motorleistung N Crankshaft horsepower
PS hp/metric
Motor Nr.: 050136 (D)
Schlepper Nr.: 036581 L
Kraftstoff: DK 0,820/15°C
Motoröl: Shell Rot. HD 20
Lufttemp.: 25°C
Barom. st.: 785 mm QS
Versuchstag: 27.10.1989
Versuchs Nr.: 69/100/218
Versuchsltg.:
Kurvenblatt:


PRÜFUNGS-ABTEILUNG
Motorkennfeld
Engine Performance Characteristics
John Deere Schlepper 3120
John Deere Motor M 63 LH
Test Nr.: 69-100
Belastung in % des Drehmoments bei Nenndrehzahl
Load in % of torque at rated speed
Motorleistung in % der Leistung bei Nenndrehzahl
Engine horsepower in % of horsepower at rated speed
Motordrehzahl in % der Nenndrehzahl; Engine speed in % of engine rated speed
2200 U/min
g/PSh
g/bph
Motor Nr.: 050 138 (D)
Schlepper Nr.: 036 581 L
Kraftstoff: DIK 0,820/15 °C
Motorol: Shell Rot. HD 20
Lufttemp.: 25° C
Barom. std.: 765 mm QS
Versuchstag: 27.10.1969
Versuchs Nr.: 69/218
Kurvenblatt: 8