Report on test in accordance with O.E.C.D. STANDARD CODE

O.E.C.D. No. **890**



Agricultural Tractor DEUTZ-FAHR DX 4.50 (4WD)

Type denomination D 1037 A-N, D 1037 A-S, D 1037 A-T

Manufacturer
Klöckner-Humboldt-Deutz AG
D-5000 Köln-Deutz

Deutsche Landwirtschafts-Gesellschaft e. V.
Zimmerweg 16 · D-6000 Frankfurt a. M. 1
Telefon: (0611) 7168-0 · Telex: 0413185 dlg-d

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

Duration of Tests: May till June 1983
DLG-Testing-Station for Agricultural Machinery, Max-Eyth-Weg 1,
D-6114 Groß-Umstadt

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

Date of Approval: 22nd February 1984 O.E.C.D. No. 890

The tractor DX 4.50, type denomination D 1037, has been tested in 3 variants:

1: As model D 1037 A-N with a speed change gear with 4 speeds and a maximum design related speed of 25 km/h.

2: As model D 1037 A-S with a speed change gear with 5 speeds and a maximum design related speed of 30 km/h.

3: As model D 1037 A-T with a speed change gear with 6 speeds and a maximum design related speed of 40 km/h.

In the rest all variants are identical.

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

The reference to the former used Technical System of Units is given by the following relations:

Forces	1 daN = 10 N	=	1,02 kp	or 1 kp	= 0,981 daN
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	=	750,10 mm Hg		

All rights including the right of translation, reprint and photomechanical copying — also of excerpts — reserved by the editor.

Printed in the Federal Republic of Germany
March 1984; DLG-No. 189

TABLE OF CONTENTS

	Page
SPECIFICATION OF TRACTOR	4 to 14
TEST CONDITIONS	15
COMPULSORY TESTS	
(1) Main power take-off performance	16 to 19
(2) Drawbar performance on a concrete track	20 and 21
(3) Turning space and turning circle	22
(4) Location of centre of gravity	22
(5) Braking	23 to 25
(6) Measurement of external noise level	25
(7) Noise measurement at the driver's ear	26
(8) Power lift and hydraulic pump performance	27 and 28
OPTIONAL TESTS	
(9) Engine performance	29 to 32

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

Tractor manufacturer:	KLÖCKNER-HUMBOLDT-DEUTZ AG D-5000 Köln-Deutz
Submitted for test by:	Manufacturer
Selected by:	Manufacturer with agreement by DLG
Place of running in:	Köln and Groß-Umstadt
Duration of running in:	Engine and tractor appr. 100 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	DEUTZ-FAHR
Trade name:	DX 4.50
Type denomination:	D 1037 A-N, D 1037 A-S and D 1037 A-T
Type:	Four-wheel-drive tractor, unit construction
Serial No.:	7815 0165

Engine

Make:	DEUTZ
Model:	BF4L 913 T
Type:	Supercharged 4-stroke Diesel engine, direct injection, air cooled
Serial No.:	670 9188
Cylinders:	4, in-line, bore 102 mm, stroke 125 mm, displacement 4086 cm³, compression ratio 15,5 : 1; replaceable ribbed cylinder liners
Valves:	Overhead
Fuel system:	PIERBURG fuel feed pump; BOSCH in-line injection pump: PES 4A 85D 410/3 RS 2683; manufacturer's production setting 60,5 mm³/stroke at rated engine speed and full load; injection timing 27° before TDC; BOSCH multihole injection nozzles DLLA 149S 774, injection pressure 175 + 8 bar; MANN fuel filter with replaceable cartridge; capacity of fuel tank 132 l;
Governor:	BOSCH centrifugal variable speed governor: EP/RSV 325-1150 AOC 2168 L; governed range of engine speed 650 to 2460 rev/min, rated engine speed 2300 rev/min

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

Supercharger:	GARRETT TA 3112 exhaust driven turbo supercharger, maximum supercharge pressure 500 mbar
Air cleaner:	MANN dry paper element filter with precleaner, replaceable cartridge, electrical maintenance indicator; air intake below bonnet
Exhaust silencer:	multichamber-reflexion-expansion type silencer, 170 x 130 mm oval, 948 mm long; on the left hand side of bonnet, mouth showing upwards; mouth 2691 mm above ground
Lubrication system:	Forced feed from gear pump; strainer in sump; MANN oil filter in full flow with by-pass valve and replaceable cartridge; cartridge change every 500 operating hours; oil capacity 11 l; specified oils and change intervals: API-CD every 250 operating hours; specified oil viscosities: below - 5°C SAE 10W from -10°C to +10°C SAE 20W/20 from + 5°C to +30°C SAE 30 over +25°C SAE 40 or over -10°C SAE 15W/40; engine oil cooler inside of cooling baffle
Cooling system:	Air cooling with axial blower driven by V-belt and fluid coupling, blower speed controlled by exhaust gas temperature
Starting system:	Electrical BOSCH solenoid pre-engaged-drive-starting motor JF 12V 2,7 kW; BERU flame plug in intake manifold
Electrical equipment:	12 Volt, negative earth; BOSCH 3 phase alternator G1 14V 33A, 462 W; 1 lead acid battery 110 Ah at 20 hours rating

Transmission

Clutch:	LAMELLEN- UND KUPPLUNGSBAU GMBH dry dual disc clutch A2 031, travel drive disc 310 mm dia, pedal operated; p.t.o. drive disc 280 mm dia, hand lever operated
Gear box:	DEUTZ-FAHR TW 901, synchromesh speed change gear with 6 speeds at model D 1037 A-T, with 5 speeds at model D 1037 A-S, with 4 speeds at model D 1037 A-N; synchronized range gear with 3 forward speeds and 1 reverse speed; totally 18 forward and 6 reverse speeds at model D 1037 A-T; 15 forward and 5 reverse speeds at model D 1037 A-S; 12 forward and 4 reverse speeds at model D 1037 A-N; optionally available collar shifted creeper group, not fitted to tested tractor
Rear axle and final drives:	DEUTZ-FAHR bevel gear drive, bevel gear type differential on intermediate shaft; spur gear final drives; differential lock in the rear axle, pedal operated, not self disengaging, with electrical indicator
Driven front axle:	SIGE 4180 OPTITRAC driven by universal joint shaft to central bevel gear drive, multi disc safety clutch, collar shifted by hand lever, automatical lock effect; planetary final drives

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

Total ratios and speeds (tyres 18.4 R 34)

Group	Gear	Total ratio engine : driving wheels	Nominal travelling speed *) at rated engine speed km/h
L	1	279,30	2,39
	2	207,59	3,22
	3	164,18	4,07
	4	113,23	5,90
	5 +)	92,26	7,24
	6 ++)	73,05	9,14
M	1	135,08	4,94
	2	100,40	6,65
	3	79,41	8,41
	4	54,76	12,19
	5 +)	44,62	14,96
	6 ++)	35,33	18,90
H	1	66,36	10,06
	2	49,32	13,54
	3	39,01	17,12
	4	26,90	24,82
	5 +)	21,92	30,46
	6 ++)	17,36	38,47
R	1	144,68	4,61
	2	107,53	6,21
	3	85,05	7,85
	4	58,65	11,38
	5 +)	47,49	13,97
	6 ++)	37,84	17,64

*) calculated with the radius index 770 mm
+) not at model D 1037 A-N
++) not at model D 1037 A-N and D 1037 A-S

PRÜFUNGS-ABTEILUNG Test No. 83-79
DEUTZ-FAHR DX 4.50

Gear lubrication:	Gear box, rear axle and final drives 44 l front axle bevel gear drive 5 l front axle final drives, each 0,6 l with gear oil strainer, recommended oil: gear box SAE 15W/40 API-CC or API-CD front axle SAE 90 API-GL5
Oil change:	Gear box every 2000 operating hours with cleaning of strainer, front axle with final drives every 1000 operating hours
Power-take-off	Independent p.t.o. 2 p.t.o. shafts at rear of tractor, driven by 2nd plate of dual clutch, hand lever operated, no speed selector *) 540 rev/min p.t.o. 605 mm above ground, 50 mm to the right of medium plane, p.t.o. shaft's end 525 mm behind rear axle centre; 35 mm dia, 6 splines, ISO 500/DIN 9611, type 1 567 rev/min at rated engine speed, standard p.t.o. speed 540 rev/min at engine speed 2192 rev/min 1000 rev/min p.t.o. 590 mm above ground, 48 mm to the left of medium plane, p.t.o. shaft's end 530 mm behind rear axle centre; 35 mm dia, 6 splines, ISO 500/DIN 9611, type 1, 1039 rev/min at rated engine speed, standard p.t.o. speed 1000 rev/min at engine speed 2214 rev/min direction of rotation clockwise, viewed from tractor rear
Power lift	DEUTZ-FAHR K 55.3 DEUTZ TRANSFERMATIC-system, hydraulic power lift in unit construction, draft control, position control and intermixable control, floating position; top link sensing, no lowering throttle *) optionally available with 1 shaft with 2 preselectable speeds 540 and 1000 rev/min

PRÜFUNGS-ABTEILUNG Test No. 83-79
DEUTZ-FAHR DX 4.50

Hydraulic system:	Open centre BOSCH tandem gear type pump HY/ZFFS 11/19 + 11 BL (218/1), directly driven by engine, displacement 19 cm^3/rev, oil filter with replaceable cartridge and electrical maintenance indicator
	DEUTZ control valve, maximum pressure 175 + 8 bar; single acting ram 90 mm dia, 145 mm stroke; overpressure relief valve set to 240 bar; 1 single acting assister ram (optional 2 single acting rams) 55 mm dia, 200 mm stroke; 3 single or double acting DEUTZ-auxiliary valves with oil tappings at front or at rear of tractor available; hydraulic oil reservoir with 13 l (optional additional reservoir with 25 l capacity); 6 l (30 l) can be taken out of oil tappings if tractor is standing or driving; hydraulic oil cooler at cooling baffle; recommended oil and oil change periods: engine oil SAE 20W/20 API-CC every 1000 operating hours, API CD every 2000 operating hours, filter change yearly
Implement linkage:	3-point linkage, coupling points according to ISO 730/I category 2; optional WALTERSCHEID quick couplers; lift rods adjustable from 730 to 850 mm, at mean length of lift rods 790 mm lifting range above ground from 295 mm to 880 mm; length of top link 730 to 850 mm; length of lower links 940 mm

Pull attachments

Trailer hitch:	CRAMER KU 9602, automatical height above ground 910 mm; coupling pin 32 mm dia; distance from pin centre to rear axle centre 585 mm, from p.t.o. shaft end 60 mm, resp. 55 mm, permissible vertical load 2000 kg

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

Swinging drawbar:	Optionally avaiable, not fitted to tested tractor
Holed drawbar:	Short bar; fitted to joint balls of lower links; length between joint balls 825 mm; thickness 30 mm, width 80 mm; centre hole, 4 holes to each side, 33 mm dia; height above ground adjustable by power lift from 310 mm to 895 mm at mean length of lift rods, measured at surface of bar, distance of holes centre line at horizontal lower links from centre of rear axle 1085 mm from p.t.o. shaft end 560 mm, resp. 555 mm height of bar can be locked hydraulically - mechanically at 570 mm above ground
Towing hitch:	820 mm above ground

Steering

DANFOSS
hydrostatic steering, model OSPC 100 OR
oil reservoir in common with power lift;
tandem part of power lift pump with displacement 11 cm^3/rev;
1 double acting ram acting directly on front axle;
bore 50 mm, stroke 250 mm, ram 25 mm dia

Brakes

Parking brake: Mechanical internal-expanding-shoe brakes;
acting on rear axle; actuated by pulling handle with ratchet;
1 drum on either intermediate half-shaft, 180 mm dia and 40 mm width, outside of gearbox

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

Service brake:	Pedal operated muscle power brake with hydraulic transmission; KNOTT internal shoe brakes, no servo effect, acting on rear axle by intermediate shaft, 2 drums with 254 mm dia and 70 mm width outside of either side of gear box; TEVES S54 caliper disc brake with 256 mm dia on universal joint shaft to front wheel drive *)
Steering brake:	Divided pedal of service brake, for normal braking locked together
Trailer brake:	Optionally available; dual line or combined single-dual line airbrake, not fitted to tested tractor

Wheels

Steered wheels:	In front, 2 pneumatics 13.6 R 24 8 ply radial carcass; maximum permissible load per tyre 1545 kg at 2,0 bar inflation pressure and 30 km/h; track width 1600 mm and 1800 mm by reversing wheels; rims W 12 x 24
Driving wheels:	In front and rear; rear driving wheels: 2 pneumatics 18.4 R 34 8 ply radial carcass; maximum permissible load per tyre 2565 kg at 1,4 bar inflation pressure and 30 km/h; track width 1600 mm to 2000 mm by steps of 100 mm adjustable by offset lug type rims; rims W15 L x 34
Wheel base:	2400 mm

*) Front axle brake at 40 km/h version standard;
for other versions optional

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

Cab

DEUTZ-FAHR
OECD-tested safety cab SK 1905-37/4
OECD-No. CSD 0501/22 (D 1037 A-N)
OECD-No. CSD 0501/20 (D 1037 A-S)
OECD-No. CSD 0501/24 (D 1037 A-T)

fitted to tractor with 4 antivibration mounts,
1 door and 2 steps each to the right and
to the left,
steps above ground 605 and 875 mm,
driver's platform 1125 mm above ground

windscreen and rear window tiltable;
engine oil heat exchanger combined with
ventilation within instrument panel;
air intake above engine hood,
outlet jets for windscreen, floor and upper cab,
air recirculation

noise reduction materials:

floor	foam PUR	25 mm
	covered by PE foil	0,05 mm
	rubber mat	5 mm
mudguards	moltoprene foam coated by imitation leather	8 mm
front wall	polyurethane foam	15 mm
	covered by PE foil	0,05 mm
seat support	rubber mat	4 mm
roof	resin-impregnated cotton fleece	2-6 mm
	needle fleece	2 mm
	foam	30 mm
	needle fleece	3 mm

Seat

GRAMMER DS 85 H/90 A
upholstered seat with back rest and arm rests,
adjustable suspension, shock absorber;
height of unballasted seat above platform
adjustable in 2 steps from 480 to 540 mm,
back rest inclination adjustable 10°,
longitudinal adjustment 160 mm

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

Number of grease points: 18

Dimensions

Total length: 4140 mm without ballast
4360 mm with ballast

Total width: 2304 mm with and without ballast

Total height: 2691 mm to top of exhaust mouth

Ground clearance: 410 mm below front axle brake

Lighting equipment: Electrical, 12 Volt, as per German legislation

	Dimensions mm	Height above ground of centre mm	Distance from outside edge of tractor to centre mm
Head lights	130 dia	1105	995
Side lights	50 x 50	1658	370
Rear lights	45 x 60	1690	335
Reflectors			
1st pair	103 x 58	1285	143
2nd pair	103 x 58	625	663

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

Available tyres

Tyre size			
front		rear	
12.4 - 24	6 ply	9.5 - 44	8 ply
12.4 - 24	6 ply	13.6 - 38	6 ply
12.4 - 24	6 ply	16.9 - 34	6 ply
12.4 - 24	6 ply	18.4 - 34	8 ply
13.6 - 24	8 ply	18.4 - 34	8 ply
9.5 - 28	6 ply	9.5 - 44	8 ply

Running-time meter — Mechanical, combined with tachometer, driven by camshaft of engine; reference engine speed for one really counted hour 1500 rev/min

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

TEST CONDITIONS

Track of wheels	at front	1800 mm	
	at rear	1800 mm	
Weights	as used for drawbar performance test		
Without ballast:		without driver	with driver
	front	1630 kg	1640 kg
	rear	2515 kg	2575 kg
	total	4145 kg	4215 kg
Front ballast:	weights		360 kg
	water in the tyres		235 kg
Rear ballast:	weights		290 kg
	water in the tyres		700 kg
with ballast:	front	2290 kg	2300 kg
	rear	3440 kg	3500 kg
	total	5730 kg	5800 kg

Fuels and lubricants used in tests

Fuel:	ARAL Diesel fuel DIN 51601 specific gravity at 15°C	
	at engine and p.t.o. tests	0,833 kg/l
	at drawbar tests	0,847 kg/l
Engine oil:	DEUTZ HDC	SAE 15W/40
Gear oil:	DEUTZ HDC in gear box and rear axle	SAE 15W/40
	DEUTZ gear oil in front axle	SAE 90
Hydraulic oil:	DEUTZ SGHD-B in power lift and hydrostatic steering	SAE 20W/20

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

COMPULSORY TESTS

(1) MAIN POWER TAKE-OFF PERFORMANCE (1000 rev/min)

Date of tests: 30th May 1983
Location of tests: DLG-Testing-Station Groß-Umstadt
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption hourly l/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power						
At 2-hour test						
55.6	2300	1039	16.72	13.93	251	3.32
At standard p.t.o. speed						
55.2	2214	1000	16.33	13.61	246	3.38
At rated engine speed						
55.6	2300	1039	16.72	13.93	251	3.32
Part loads, the governor hand lever in the position corresponding to the maximum power at full load (curve a)						
(i) 85% of the torque at maximum power at 2-hour test						
48.1	2345	1059	14.93	12.44	258	3.23
(ii) unloaded						
-	2456	1109	5.01	4.17	-	-
(iii) 50% of the load defined in (i)						
24.5	2391	1080	9.73	8.11	330	2.52
(iv) maximum power						
55.6	2300	1039	16.72	13.93	251	3.32
(v) 25% of the load defined in (i)						
12.4	2407	1087	7.28	6.07	491	1.70
(vi) 75% of the load defined in (i)						
36.5	2372	1071	12.38	10.31	282	2.95

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

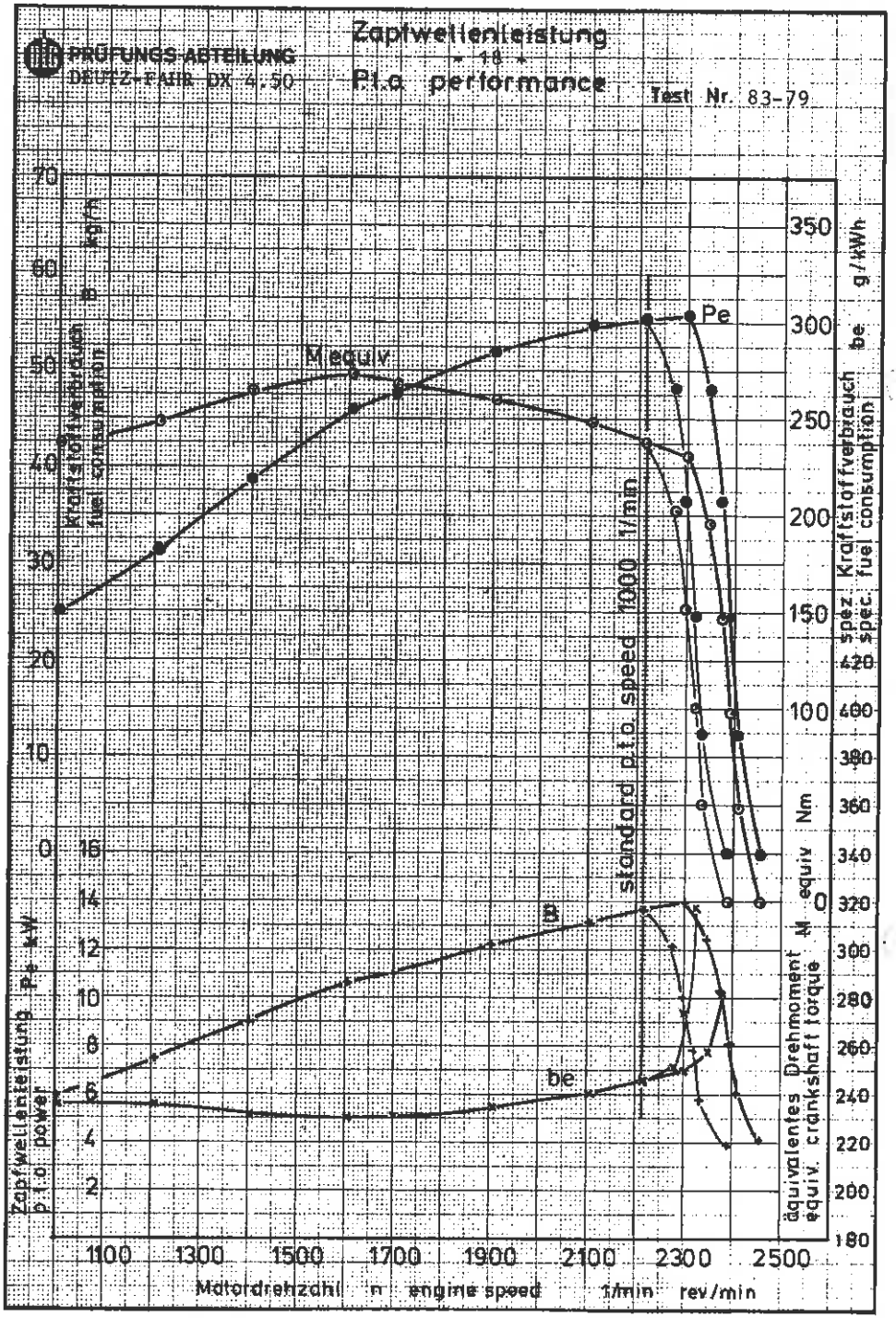
Test No. 83-79

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption hourly l/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Part loads, the governor hand lever in the position corresponding to the standard p.t.o. speed at full load (curve b)						
(i) 85% of the torque at maximum power at standard p.t.o. speed						
48.2	2274	1027	14.60	12.16	252	3.30
(ii) unloaded						
-	2391	1080	4.69	3.91	-	-
(iii) 50% of the load defined in (i)						
24.6	2318	1047	9.38	7.81	318	2.62
(iv) maximum power						
55.2	2214	1000	16.33	13.61	246	3.38
(v) 25% of the load defined in (i)						
12.4	2333	1054	6.90	5.75	465	1.79
(vi) 75% of the load defined in (i)						
36.5	2296	1037	12.02	10.01	274	3.04

Standard specific fuel consumption (g/kWh): 258/330/252/318

No load maximum engine speed: 2456 rev/min
Equivalent crankshaft torque at maximum power (2 hours): 231 Nm
Maximum equivalent crankshaft torque: 273 Nm at 1605 rev/min of the engine

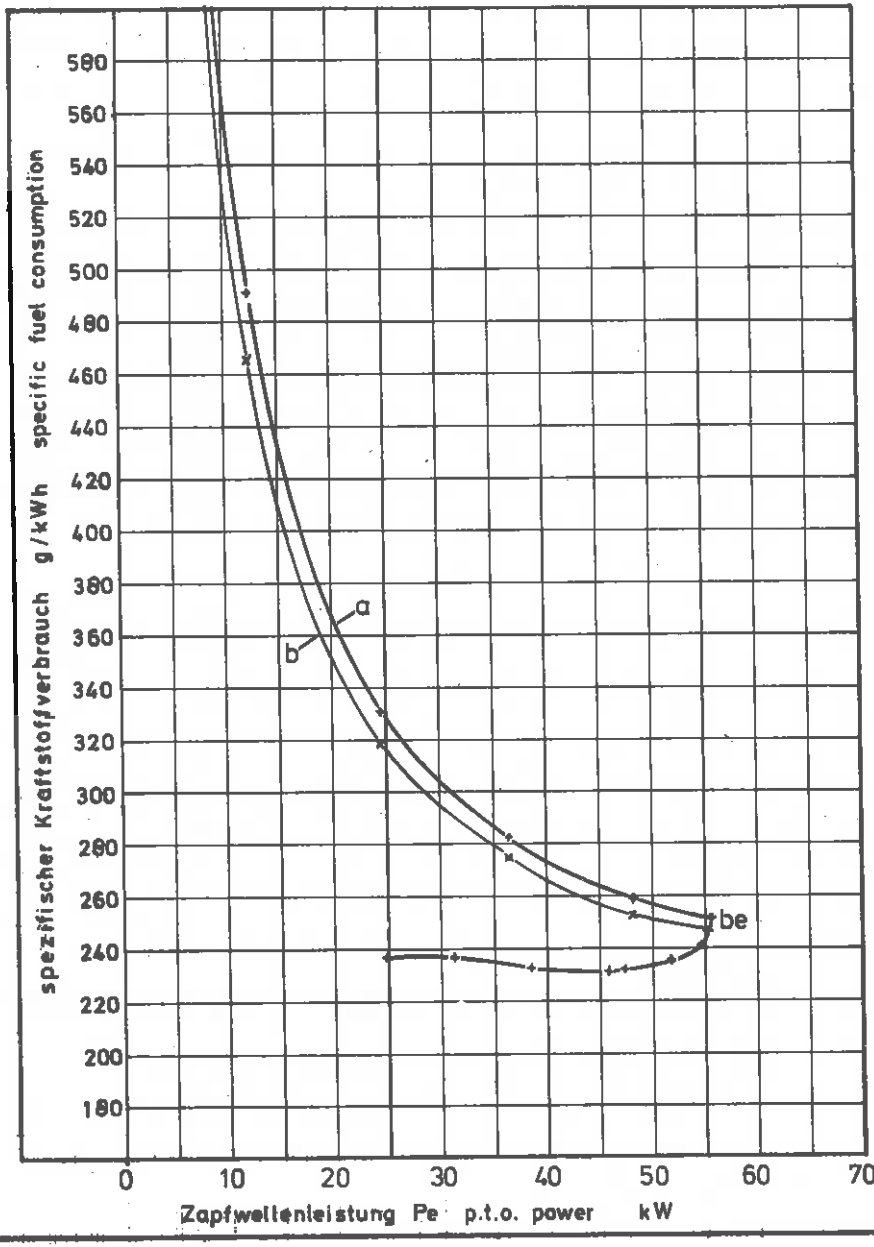
Mean atmospheric conditions:	temperature	19 °C
	pressure	995 mbar
	relative humidity	55 %
Maximum temperatures:	cylinder head	110 °C
	engine oil	92 °C
	fuel	18 °C
	engine air intake	19 °C


PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50
Zapfwellenleistung
- 18 -
P.t.o. performance
Test Nr. 83-79
Pe
Mequiv
be
standard p.t.o. speed 1000 1/min
Kraftstoffverbrauch be g/kWh
fuel consumption
spez. Kraftstoffverbrauch be g/kWh
spec. fuel consumption
Zapfwellenleistung P e kW
p.t.o. power
äquivalentes Drehmoment M equiv Nm
equiv. crankshaft torque
Motordrehzahl n engine speed t/min rev/min
1100
1300
1500
1700
1900
2100
2300
2500

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Zapfwellenleistung
- 19 -
P.t.o. performance

Test Nr. 83-79



PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

(2) DRAWBAR PERFORMANCE

Date of tests: 6th till 16th June 1983
Type of track: Concrete

Gear no. and group	Driving speed km/h	Power kW	Drawbar pull daN	Engine speed rev/min	Slip of wheels %
(i)	MAXIMUM POWER (unballasted) height of drawbar above ground 560 mm				
2 L	2,81	33,9	4348	2347	15,0
3 L	3,51	42,1	4319	2319	15,0
1 M	4,44	46,2	3747	2301	11,3
4 L	5,45	47,1	3110	2301	8,8
2 M	6,23	48,0	2771	2297	7,4
5 L *)	6,87	47,0	2464	2304	6,4
3 M	8,03	47,7	2139	2299	5,5
6 L +)*)	8,83	45,9	1872	2304	4,7
1 H	9,71	47,4	1759	2296	4,3
4 M	11,88	47,5	1438	2298	3,6
2 H	13,25	46,2	1254	2297	3,1
(ii)	MAXIMUM POWER (ballasted) height of drawbar above ground 540 mm				
1 L	2,10	33,8	5788	2348	14,9
2 L	2,81	44,6	5713	2299	13,9
3 L	3,82	47,0	4427	2296	6,9
1 M	4,71	48,7	3720	2298	5,4
4 L	5,69	49,0	3098	2301	4,3
2 M	6,46	48,5	2704	2305	3,8
5 L *)	7,05	47,5	2427	2301	3,3
3 M	8,20	48,0	2107	2300	2,8
6 L *)+)	8,97	46,1	1850	2302	2,5
1 H	9,87	47,3	1726	2299	2,3
4 M	11,99	46,4	1392	2298	1,9
2 H	13,37	45,5	1225	2299	1,6
(iii)	FIVE-HOUR-TEST at 75 % of pull at maximum power in 2 M gear				
2 M	6,65	37,5	2028	2348	2,8
(iv)	FIVE-HOUR-TEST at pull corresponding to 15 % wheel slip in test (ii)				
1 L	2,10	-	5788	2350	-

Total oil consumption during ten hours duration of tests (iii) and (iv) 62 g/h
*) not at model D 1037 A-N
+) not at model D 1037 A-N and D 1037 A-S

PRÜFUNGS-ABTEILUNG Test No. 83-79

Tyre size front: 13.6 R 24 8 ply
rear: 18.4 R 34 8 ply

Tread bar height at the beginning of drawbar tests 87 % at front, 85 % at rear of the value when new

Specific fuel consumpt. g/kWh	Specific energy kWh/l	Temperatures Fuel °C	Cylinder head °C	Engine-oil °C	Atmospheric conditions Tempe-rature °C	Relative humidity %	Pressure mbar
tyre inflation pressure 0,9 bar at front, 1,1 bar at rear							
341	2,49	30	79	87	17	84	1004
323	2,63	30	78	87	17	85	1004
304	2,80	24	83	94	19	81	1004
296	2,88	26	85	93	19	77	1004
293	2,90	29	75	93	20	76	1004
299	2,84	27	75	90	21	77	1004
294	2,89	29	81	94	21	76	1004
303	2,81	29	88	94	21	77	1004
295	2,89	29	82	90	20	75	1004
293	2,90	28	80	91	21	74	1004
301	2,83	29	81	95	23	67	1004
tyre inflation pressure 1,3 bar at front, 1,1 bar at rear							
330	2,57	24	78	85	15	88	1008
310	2,73	28	80	89	15	76	1010
294	2,88	19	73	89	14	81	1010
286	2,96	19	79	91	14	82	1010
282	3,00	20	71	89	15	79	1010
285	2,98	20	79	91	16	74	1010
291	2,91	19	81	91	15	76	1010
288	2,94	20	69	92	15	76	1010
303	2,79	20	75	89	16	74	1011
295	2,87	21	78	91	16	73	1010
299	2,83	20	79	90	16	74	1011
307	2,76	21	75	91	16	74	1011
310	2,73	21	73	90	18	76	1010
-	-	25	67	85	15	87	1010

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

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

(3) TURNING SPACE AND TURNING CIRCLE

Wheel equipment front: 13.6 R 24 8 ply
rear: 18.4 R 34 8 ply

Track of wheels front: 1800 mm
rear: 1800 mm

front axle drive disengaged

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	4,38	4,34	4,98	4,94
Radius of turning circle	4,08	4,00	4,68	4,60

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	963 mm
Distance forward from rear axle centre	934 mm
Distance from tractor's median plane, to the left	14 mm

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

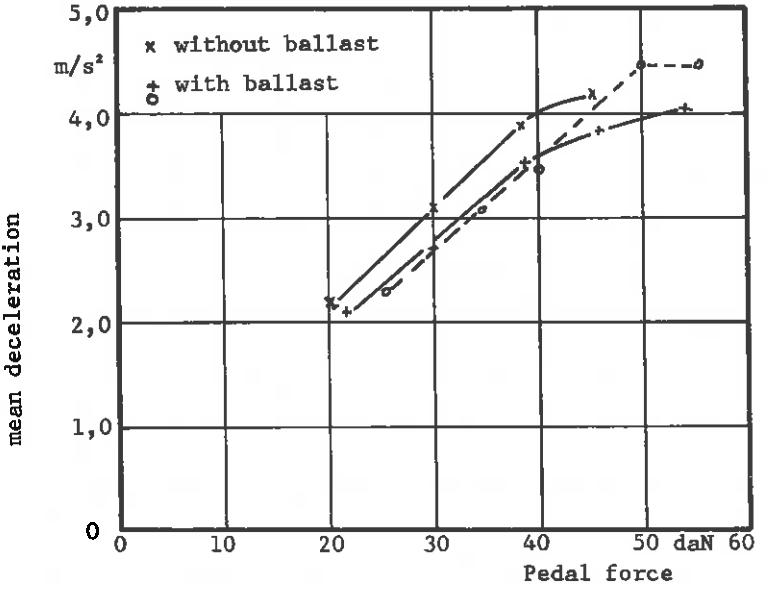
(5) Braking D 1037 A-T (front wheel drive disengaged)

Date of tests: 9th June 1983

Tractor masses during tests with driver:	front kg	rear kg	total kg
without ballast	1640	2575	4215
with ballast	2300	3500	5800

A) Service brake

Type-0-test (cold brakes) ——, Type-I-(fade)test – – –



Speed before application of brakes, without ballast 39,6 km/h
with ballast 39,2 km/h

The brakes were heated by towing of the tractor for 1 km

B) Parking brake D 1037 A-T, D 1037 A-S, D 1037 A-N

	Ballasted tractor on 18%-slope		Unballasted tractor on 12%-slope with trailer of 3000 kg	
	up	down	up	down
Braking device control force daN	27	29	24	26

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

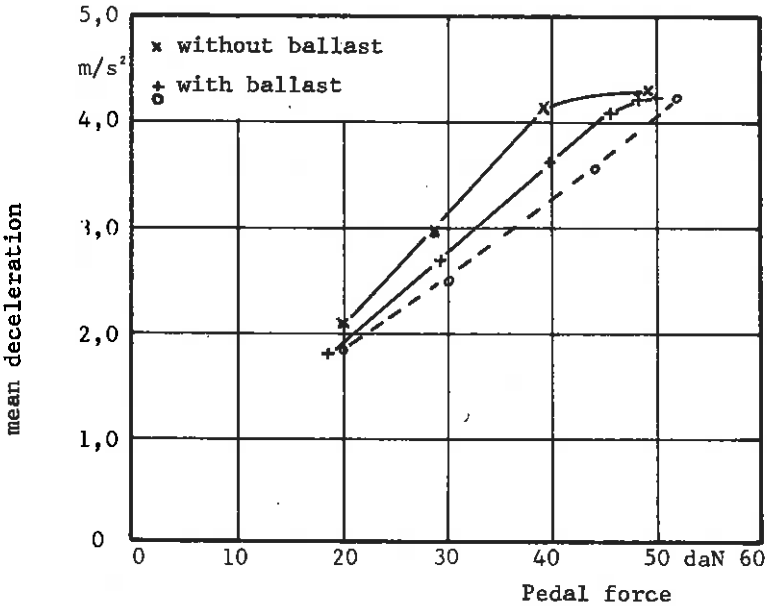
Test No. 83-79

Braking D 1037 A-S (front wheel drive disengaged)

Tractor masses during tests as D 1037 A-T

Service brake

Type-O-test (cold brakes) ——— , Type-I-(fade)test – – –



Speed before application of brakes, without ballast 31,5 km/h
with ballast 31,2 km/h

The brakes were heated by towing of the tractor for 1 km

Braking D 1037 A-N (front wheel drive disengaged)

Tractor masses during tests as D 1037 A-T

Speed before application of brakes, without ballast 25,7 km/h
with ballast 25,5 km/h

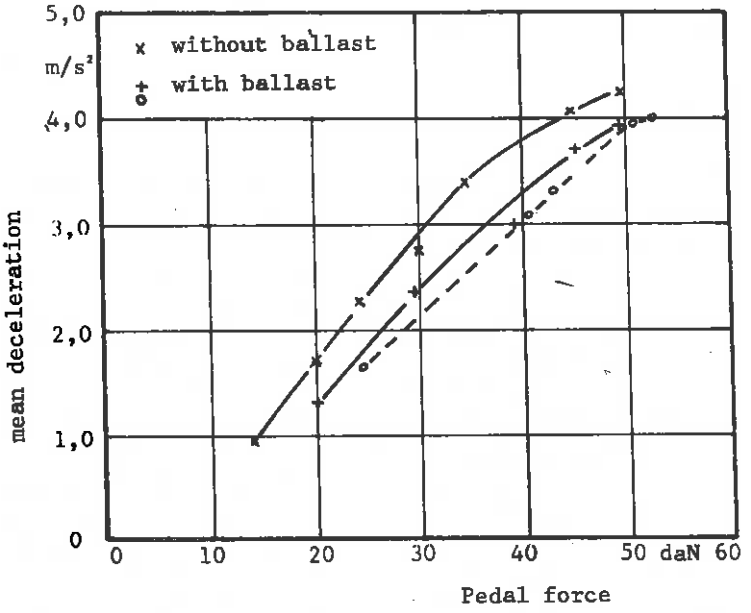
The brakes were heated by towing of the tractor for 1 km

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

Service brake D 1037 A-N *)

Type-0-test (cold brakes) ——— , Type-I-(fade)test – – –



(6) MEASUREMENTS OF EXTERNAL NOISE LEVEL

Date of test:	7th June 1983
Type of track:	Concrete
Type of sound level meter:	BRÜEL AND KJAER model 2203

Results of test

Gear: *)	4 H	5 H	6 H
Travelling speed before acceleration:	19,5 km/h	23,8 km/h	30,6 km/h
Sound level:	85,0 dB(A)	85,0 dB(A)	84,5 dB(A)

*) Front wheel drive disengaged

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

(7) NOISE MEASUREMENT AT THE DRIVER'S EAR

Date of tests: 7th June 1983
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2607
with DEUTZ-FAHR safety cab SK 1905-37/4

Results of tests

Gear no. and range	Drawbar pull at which the tractor develops the maximum sound level daN	Travelling speed nominal km/h	Travelling speed effective km/h	Sound level dB(A)
1 L	4185	2,39	2,09	82,5
2 L	4161	3,22	2,79	83,0
3 L	4188	4,07	3,49	82,5
1 M	3719	4,94	4,42	83,0
4 L	3112	5,90	5,43	83,0
2 M +)	2753	6,65	6,25	83,5
2 M +)	light load	6,65	7,10	83,0
5 L +)	1761	7,24	7,16	85,0
5 L +)	light load	7,24	7,70	83,0
3 M	1877	8,41	8,23	84,0
6 L	1820	9,14	8,84	83,5
1 H	1421	10,06	9,96	84,5
4 M	1439	12,19	11,86	83,0
2 H	1056	13,54	13,56	83,5
5 M	1104	14,96	14,65	83,0
3 H	971	17,12	16,83	83,0
4 H *)	light load	24,82	26,02	83,5
5 H *)	light load	30,46	31,76	83,5
6 H *)	light load	38,74	40,75	84,0

*) Front wheel drive disengaged

+) At model D 1037 A-N the 2nd M gear, at the models D 1037 A-S and D 1037 A-T the 5th L gear correspond to the travelling speed nearest to 7,5 km/h

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

(8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

Date of tests: 21st June 1983

Power Lift

	Height of lower hitch point above ground in down pos. mm	Vertical movement mm	Max. force exerted through full range daN	Corresp. pressure of hydraul. fluid bar	Moment about rear axle daNm	Max. tilt angle of mast over range of lift degrees
At hitch points	295	585	2900	158	-	-
On the frame	295	688	2225	158	3776	12 *)

Temperature of hydraulic fluid at start of test 65 °C

*) tilting angle of mast from vertical plane to uppermost position 9°

Lifting heights relative to horizontal lower links

mm	-326	-300	-278	-200	-100	±0	+100	+200	+300	+307	+362
Lifting forces at hitch points											
daN			2900	3100	3210	3250	3250	3210	3185	3210	
Lifting forces at test frame											
daN	2750	2790		2790	2750	2680	2570	2420	2290		2225

Hydraulic Pump Performance

Opening pressure of the relief valve in remote circuit	166 bar
Sustained pressure with relief valve open	178 bar
Pump delivery rate at minimum pressure, the governor control lever being set for max. power	42,6 l/min
Hydraulic power at 90% of relief valve setting	10,5 kW
Corresponding delivery rate	39,3 l/min
Pressure	160 bar
Temperature of hydraulic fluid	65 °C

Tapping point used for test: at rear of tractor

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR

Test No. 83-79

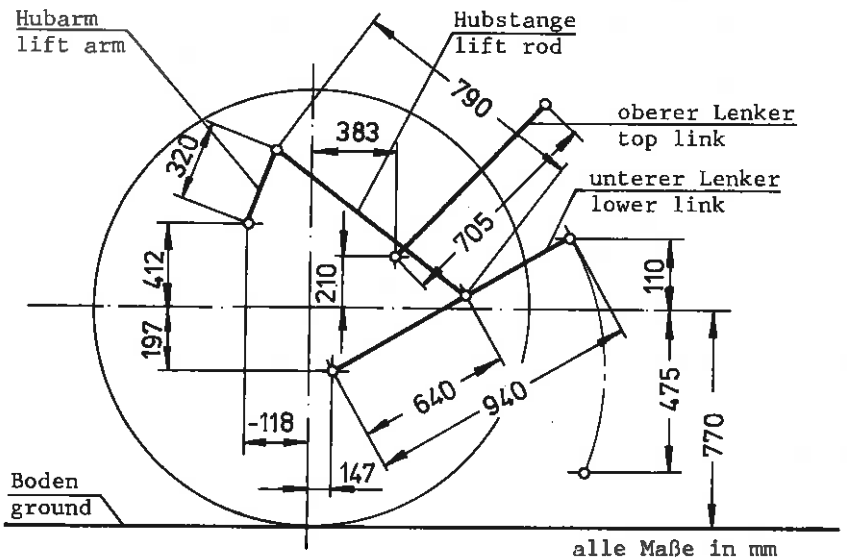
LINKAGE GEOMETRY when connected to the standard frame

Projected length in side view:

Lower links	940 mm
Lift arms	320 mm
Lift rods	790 mm
Top link	705 mm
Distance of lift rod connection point from pivot point of lower link	640 mm

The following dimensions are given relative to the rear wheel centre line, situated 770 mm above ground:

Lower link pivot point	197 mm below,	147 mm behind
Top link pivot point	210 mm above,	383 mm behind
Lift arm pivot point	412 mm above,	118 mm behind
Maximum and minimum height of lower link hitch points	110 mm above,	475 mm below
Height of lower link hitch points when locked in transport position	215 mm below	



alle Maße in mm
all dimensions in mm

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Test No. 83-79

OPTIONAL TESTS

(9) ENGINE PERFORMANCE

Date of tests: 13th May 1983
Location of tests: DLG-Testing-Station Groß-Umstadt
Type of dynamometer: SCHENCK eddy-current dynamometer W 150

Power kW	Engine speed rev/min	Fuel consumption hourly l/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power					
At 2-hour test					
60.3	2300	16.79	13.98	232	3.59
At standard p.t.o. speed (1000 rev/min)					
59.2	2214	16.26	13.54	229	3.64
At rated engine speed					
60.3	2300	16.79	13.98	232	3.59
Part loads					
(i) 85% of the torque at maximum power at 2-hour test					
52.0	2334	14.78	12.31	237	3.52
(ii) unloaded					
-	2455	4.24	3.53	-	-
(iii) 50% of the torque defined in (i)					
26.5	2380	9.37	7.80	294	2.83
(iv) maximum power					
60.3	2300	16.79	13.98	232	3.59
(v) 25% of the torque defined in (i)					
13.4	2406	6.71	5.59	416	2.00
(vi) 75% of the torque defined in (i)					
39.4	2357	12.02	10.01	254	3.28

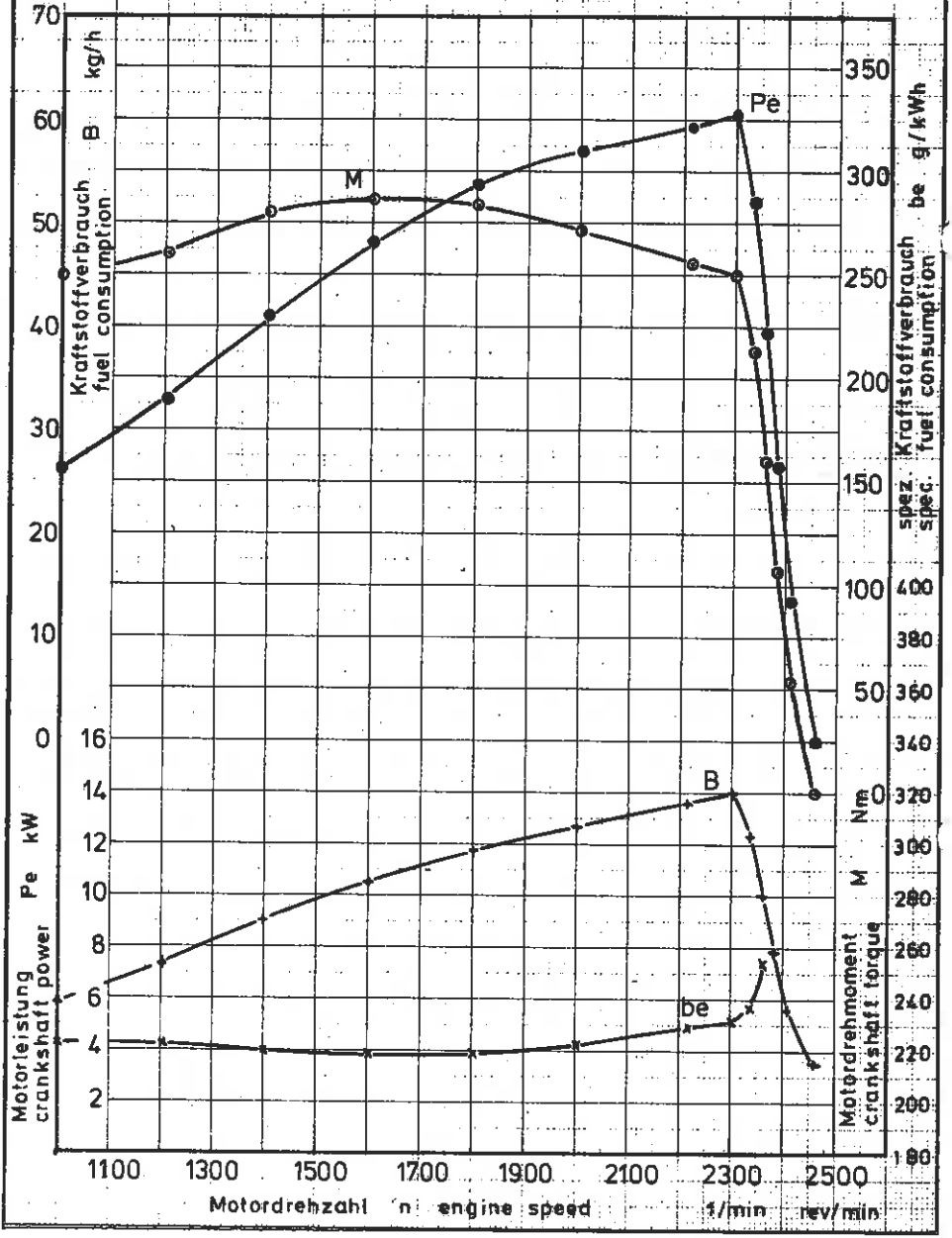
Optimum fuel consumption: 218 g/kWh at 48 kW and 1600 rev/min
No load maximum engine speed: 2455 rev/min
Torque at maximum power (2 hours): 251 Nm
Maximum torque: 286 Nm at 1601 rev/min of the engine

Mean atmospheric conditions:	temperature	20 °C
	pressure	984 mbar
	relative humidity	55 %
Maximum temperatures:	cylinder head	104 °C
	engine oil	84 °C
	fuel	19 °C
	engine air intake	22 °C

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Motorleistung
- 30 -
Engine performance

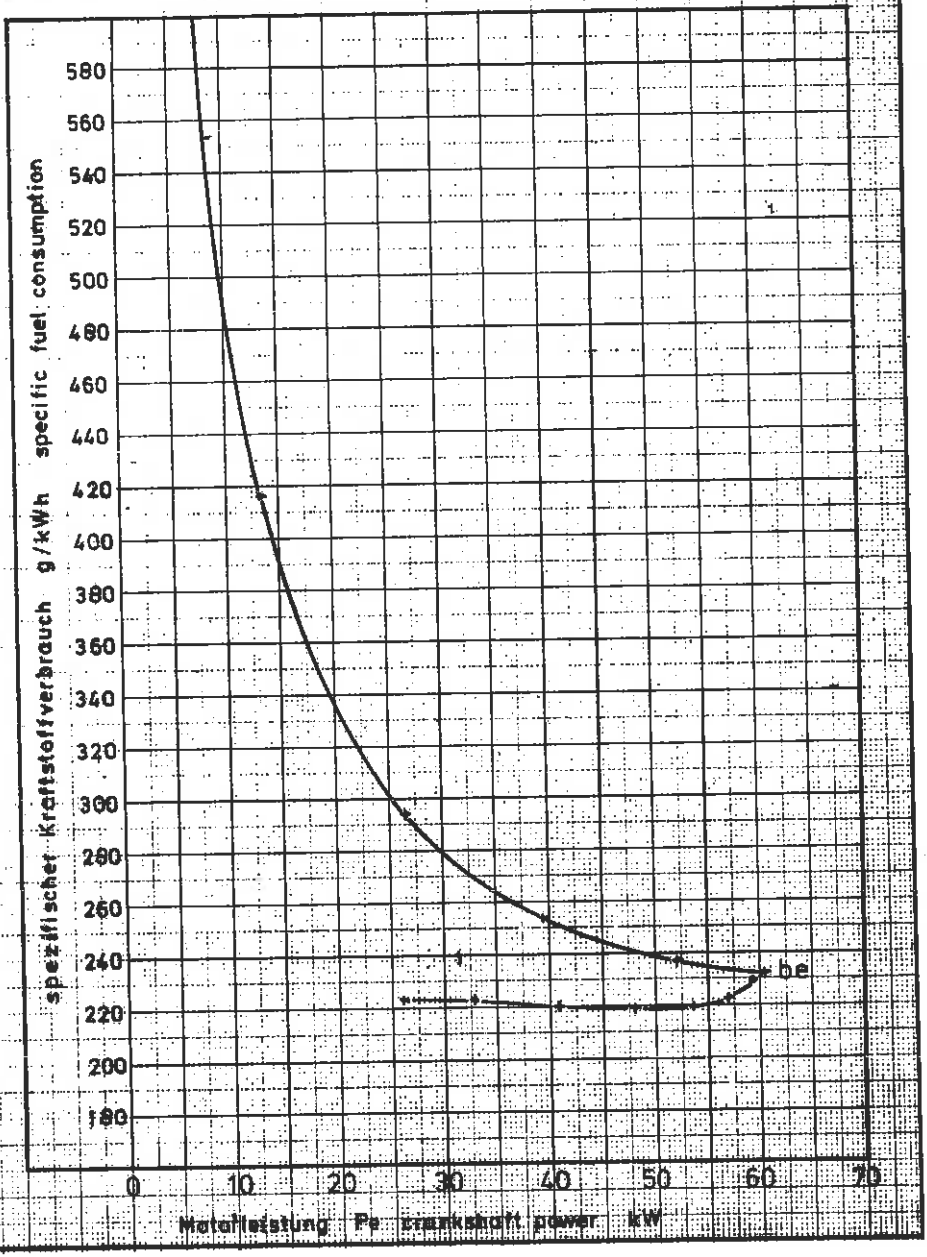
Test Nr. 83-79



PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Motorleistung
- 31 -
Engine performance

Test Nr. 83-79



PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 4.50

Motorleistung

Engine performance

Test Nr. 83-79

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

Published
with the support of the Federal Minister for Food, Agriculture and Forestry

Deutsche Landwirtschafts-Gesellschaft e. V. (DLG)
Fachbereich Landtechnik – Prüfungsabteilung –
Zimmerweg 16 (DLG-Haus)
D-6000 Frankfurt am Main 1