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

O.E.C.D. No. 881



Agricultural Tractor DEUTZ-FAHR DX 92 (4WD)

Type denomination D 1040 A-N, D 1040 A-S

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

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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: January till March 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: 6th October 1983 O.E.C.D. No. 881

The tractor DX 92 was tested in two variants:

i) as model D 1040 A-S with a speed change gear with 5 speeds and a maximum design related speed of 30 km/h,

ii) as model D 1040 A-N with the same speed change gear but without the 5th gear and a maximum design related speed of 25 km/h.

In the rest both 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		

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PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Test No. 82-125

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 and 24
(6) Measurement of external noise level	25
(7) Noise measurement at the driver's ear	25
(8) Power lift and hydraulic pump performance	26 and 27
OPTIONAL TESTS	
(9) Engine performance	28 to 31

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Test No. 82-125

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 92
Type denomination:	D 1040 A-S and D 1040 A-N
Type:	Four-wheel-drive tractor, unit construction
Serial No.:	7823 0005

Engine

Make:	DEUTZ
Model:	BF4L 913
Type:	Supercharged 4-stroke Diesel engine, direct injection, air cooled
Serial No.:	670 8526
Cylinders:	4, in-line, bore 102 mm, stroke 125 mm, displacement 4086 mm^3, 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 2638; manufacturer's production setting 68 mm^3/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; BOSCH fuel filter with replaceable cartridge; capacity of fuel tank 132 l
Governor:	BOSCH centrifugal variable speed governor: EP/RSV 325-1150 AOB 2168 L; governed range of engine speed 650 to 2460 rev/min, rated engine speed 2300 rev/min

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Test No. 82-125

Supercharger: GARRETT
TA 3112
exhaust driven turbo supercharger,
maximum supercharge pressure 650 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 2680 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;
recommended oils and change intervals:
API-CD every 250 operating hours;
recommended 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 20W/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

PRÜFUNGS-ABTEILUNG

DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Test No. 82-125

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 902 synchromesh speed change gear with 5 speeds, model D 1040 A-N with 4 speeds; synchronized group gear with 3 forward groups (L, M and H) and 1 reverse group (R); totally 15 forward and 5 reverse speeds, model D 1040 A-N 12 forward and 4 reverse speeds; optionally available collar shifted creeper group, not fitted on tested tractor
Rear axle and final drive:	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 D 1040 A-N
D 1040 A-S

Test No. 82-125

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	292,37	2,28
	2	217,30	3,07
	3	171,86	3,88
	4	118,53	5,63
	5 +)	96,58	6,91
M	1	141,44	4,72
	2	105,09	6,35
	3	83,12	8,03
	4	57,32	11,65
	5 +)	46,71	14,29
H	1	69,46	9,61
	2	51,62	12,93
	3	40,83	16,35
	4	28,16	23,71
	5 +)	22,94	29,10
R	1	151,45	4,41
	2	112,56	5,93
	3	89,03	7,50
	4	61,40	10,87
	5 +)	50,03	13,34

*) calculated with the radius index 770 mm
+) not at model D 1040 A-N

Gear lubrication:

Gear box, rear axle and final drives		44 l
front axle bevel gear drive		5 l
front axle final drives, each with gear oil strainer, recommended oil:		0,6 l
gear box	SAE 15W/40 API-CC or API-CD	
front axle	SAE 90 API-GL5	

Oil change: Every 2000 operating hours with cleaning of strainer

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Test No. 82-125

Power-take-off	Independent p.t.o. driven by 2nd plate of dual disc clutch, hand lever operated, at rear of tractor in medium plane, 700 mm above ground, p.t.o. shaft end 536 mm behind rear axle; 35 mm dia, 6 splines, ISO 500, DIN 9611, type 1 2 speeds are preselectable by hand lever 540 rev/min p.t.o. 613 rev/min at rated engine speed, standard p.t.o. speed 540 rev/min at engine speed 2025 rev/min 1000 rev/min p.t.o. 1089 rev/min at rated engine speed, standard p.t.o. speed 1000 rev/min at engine speed 2111 rev/min direction of rotation clockwise, viewed from tractor rear
Power lift	DEUTZ-FAHR K 55.4 DEUTZ TRANSFERMATIC-System; hydraulic power lift in unit construction; draft control, position control and inter- mixable control, floating position; lower link sensing; no lowering throttle
Hydraulic system:	Open centre REXROTH tandem gear type pump 2 PF 2G 230/ 19 + 11 LC 2020 KP; 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;

2 single acting assister rams 55 mm dia and 200 mm stroke;
3 single or double acting DEUTZ-auxiliary valves with oil tappings fitted to tested tractor;
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 travelling;
hydraulic oil cooler at cooling baffle of engine;
recommended oil:
engine oil SAE 20W/20 API-CC or API-CD
oil change and filter change yearly

Implement linkage: 3 point linkage according to ISO 730/I category 2,
optional WALTERSCHEID quick couplers, fitted to tested tractor;
lift rods adjustable from 730 to 890 mm; at mean length of lift rods 810 mm lifting range above ground from 312 mm to 865 mm; length of lower links 940 mm, length of top link 580 to 860 mm

Pull attachments

Trailer hitch: CRAMER
KU 9602, automatical;
height above ground adjustable to 845 mm or 910 mm;
coupling pin 32 mm dia;
distance from pin centre
to rear axle centre 587 mm,
to p.t.o. shaft end 51 mm,
permissible vertical load 2000 kg

Swinging drawbar: Optional, fitted on tested tractor,
height above ground 475 mm;
diameter of hitch hole 33 mm;
pivot point of drawbar 338 mm in front of rear axle centre;
drawbar can be fixed in 3 positions in pivot point

distance of hitch hole from
rear axle centre/p.t.o. shaft end:

891/355 936/400 or 1036/500 mm

permissible
vertical load 1350 1350 1100 kg

swinging range to either side each 265, 270
or 295 mm

Holed drawbar: Short bar;
fitted to clevis of lower links;
length between joint balls 835 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 327 mm to 880 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 1087 mm
from p.t.o. shaft end 551 mm

height of bar can be locked hydraulically -
mechanically at 615 mm above ground

Towing hitch: 830 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 60 mm width, outside of gearbox

Service brake:	TEVES, SS 60 pedal operated muscle power brake with hydraulic transmission, acting on rear axle; 1 dual caliper disc-brake on either intermediate half shaft with 276 mm dia, outside of gear box
Steering brake:	Divided pedal of service brake; for normal braking locked together
Trailer brake:	optionally available; dual line or combined single-dual line airbrake, fitted to tested tractor

Wheels

Steered wheels:	In front, 2 pneumatics 13.6-24 8 ply cross ply tyres; 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 W12 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 W 15 Lx34
Wheel base:	2400 mm

PRÜFUNGS-ABTEILUNG

DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Test No. 82-125

Cab

DEUTZ-FAHR
OECD-tested safety cab SK 1905-37/4
OECD-No. CSD 0501/13 (D 1040 A-N)
OECD-No. CSD 0501/11 (D 1040 A-S)
fitted to tractor with 4 antivibration mounts,
windscreen and upper rear window tiltable,
driver's platform 1120 mm above ground,
door to the left, optional 2 doors right and left;
2 steps 580 and 875 mm above ground

noise reduction materials

floor:
foam 21 mm and rubber mat 4 mm,

mudguards:
imitation leather coated foam plastics
mat 8 mm,

roof:
multilayer coating 38 mm,

front wall below windscreen, at engine side:
multi layer foam mat 29 mm

engine oil heat exchanger combined with
ventilation system within instrument panel,
air intake above engine hood,
outlet jets for windscreen, floor and upper cab;
air recirculation within cab possible,
optionally available is auxiliary heater and/or
air conditioning

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 460 to 520 mm,
back rest inclination adjustable 10°,
longitudinal adjustment 160 mm

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Test No. 82-125

Number of grease points: 20

Dimensions

Total length: 4045 mm without ballast
4345 mm with ballast

Total width: 2320 mm with and without ballast

Total height: 2680 mm to top of exhaust mouth

Ground clearance: 395 mm below swinging drawbar

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	960
Side lights	50 x 50	1635	370
Rear lights	45 x 60	1600	340
Reflectors			
1st pair	103 x 58	1290	150
2nd pair	103 x 58	620	675

Available tyres

Tyre size	
front	rear
9.5 - 32 10 ply	9.5 - 48 8 ply
12.4 - 24 6 ply	13.6 - 38 6 ply
12.4 - 28 6 ply	16.9 - 38 8 ply
13.6 - 24 8 ply	18.4 - 34 8 ply
14.9 - 24 6 ply	16.9 - 38 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 D 1040 A-N
D 1040 A-S

Test No. 82-125

TEST CONDITIONS

Track of wheels — at front 1600 mm
at rear 1700 mm

Weights — as used for drawbar performance test

		without driver	with driver
Without ballast:	front	1650 kg	1660 kg
	rear	2780 kg	2845 kg
	total	4430 kg	4505 kg
Front ballast:	weights		675 kg
	water in the tyres		349 kg
Rear ballast:	weights		666 kg
with ballast:	front	2390 kg	2400 kg
	rear	3730 kg	3795 kg
	total	6120 kg	6195 kg

Fuels and lubricants used in tests

Fuel:	ARAL Diesel fuel DIN 51601 specific gravity at 15°C	0,827 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 D 1040 AN
D 1040 AS

Test No. 82-125

COMPULSORY TESTS

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

Date of tests: 20th January 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						
62.3	2300	1089	18.57	15.43	248	3.36
At standard p.t.o. speed						
61.2	2111	1000	17.59	14.62	239	3.48
At the speed recommended for drawbar work						
62.3	2300	1089	18.57	15.43	248	3.36
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						
54.1	2351	1113	16.54	13.75	254	3.27
(ii) unloaded						
-	2451	1161	4.30	3.57	-	-
(iii) 50% of the load defined in (i)						
27.7	2401	1137	10.77	8.95	323	2.57
(iv) maximum power						
62.3	2300	1089	18.57	15.43	248	3.36
(v) 25% of the load defined in (i)						
13.9	2422	1147	7.93	6.59	473	1.76
(vi) 75% of the load defined in (i)						
41.1	2380	1128	13.65	11.34	276	3.01

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR D 1040 AN
D 1040 AS

Test No. 82-125

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						
52.9	2147	1017	15.30	12.71	240	3.46
(ii) unloaded						
-	2237	1060	4.24	3.52	-	-
(iii) 50% of the load defined in (i)						
27.1	2198	1041	9.59	7.97	294	2.83
(iv) maximum power						
61.2	2111	1000	17.59	14.62	239	3.48
(v) 25% of the load defined in (i)						
13.6	2210	1047	6.79	5.64	414	2.01
(vi) 75% of the load defined in (i)						
40.3	2181	1033	12.31	10.23	254	3.27

Standard specific fuel consumption (g/kWh): 254/323/240/294

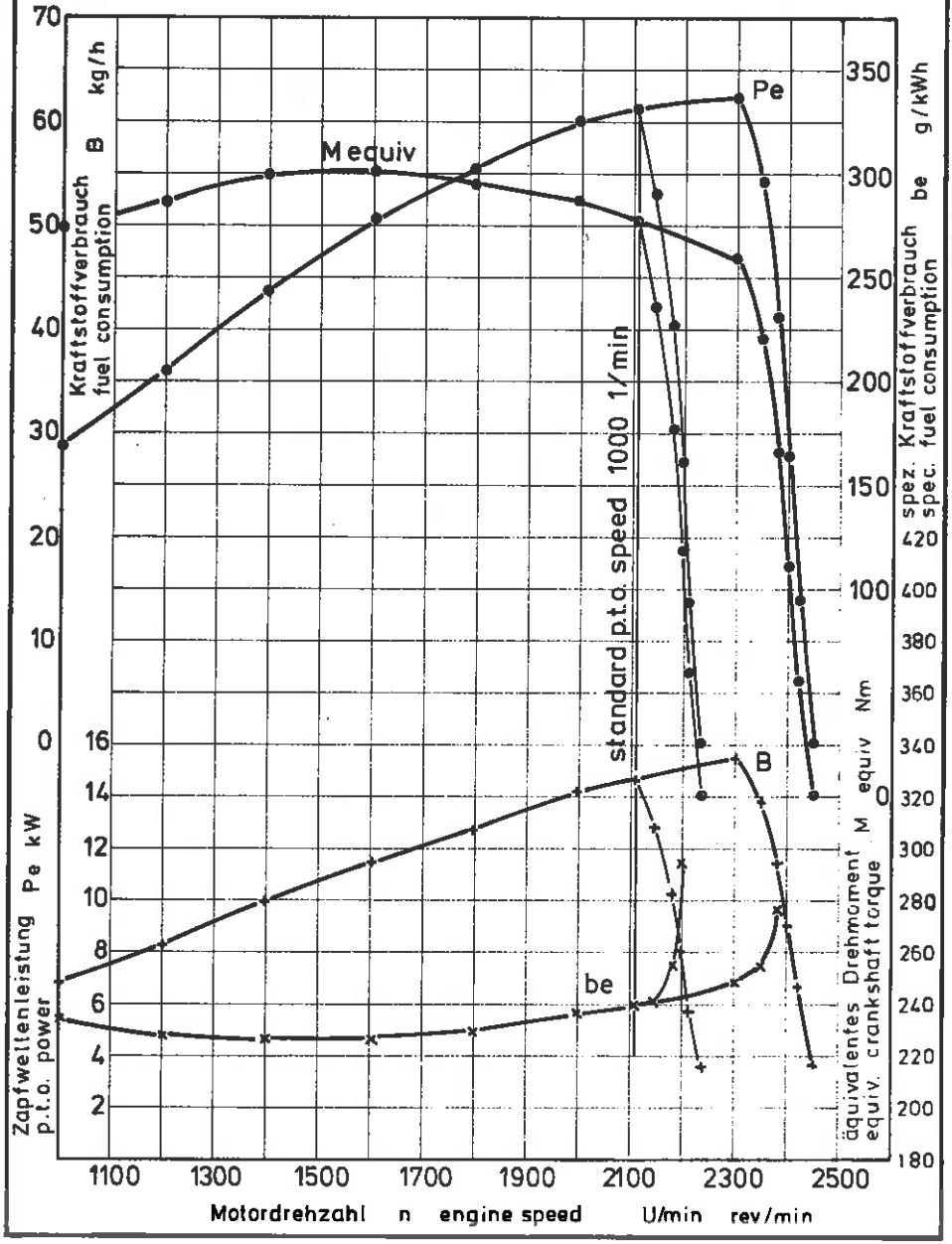
No load maximum engine speed: 2451 rev/min
Equivalent crankshaft torque at maximum power (2 hours): 259 Nm
Maximum equivalent crankshaft torque: 301 Nm at 1605 rev/min of the engine

Mean atmospheric conditions:	temperature	20 °C
	pressure	1011 mbar
	relative humidity	40 %
Maximum temperatures:	cylinder head	119 °C
	engine oil	100 °C
	fuel	20 °C
	engine air intake	18 °C

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Zapfwellenleistung
- 18 -
P.t.o. performance

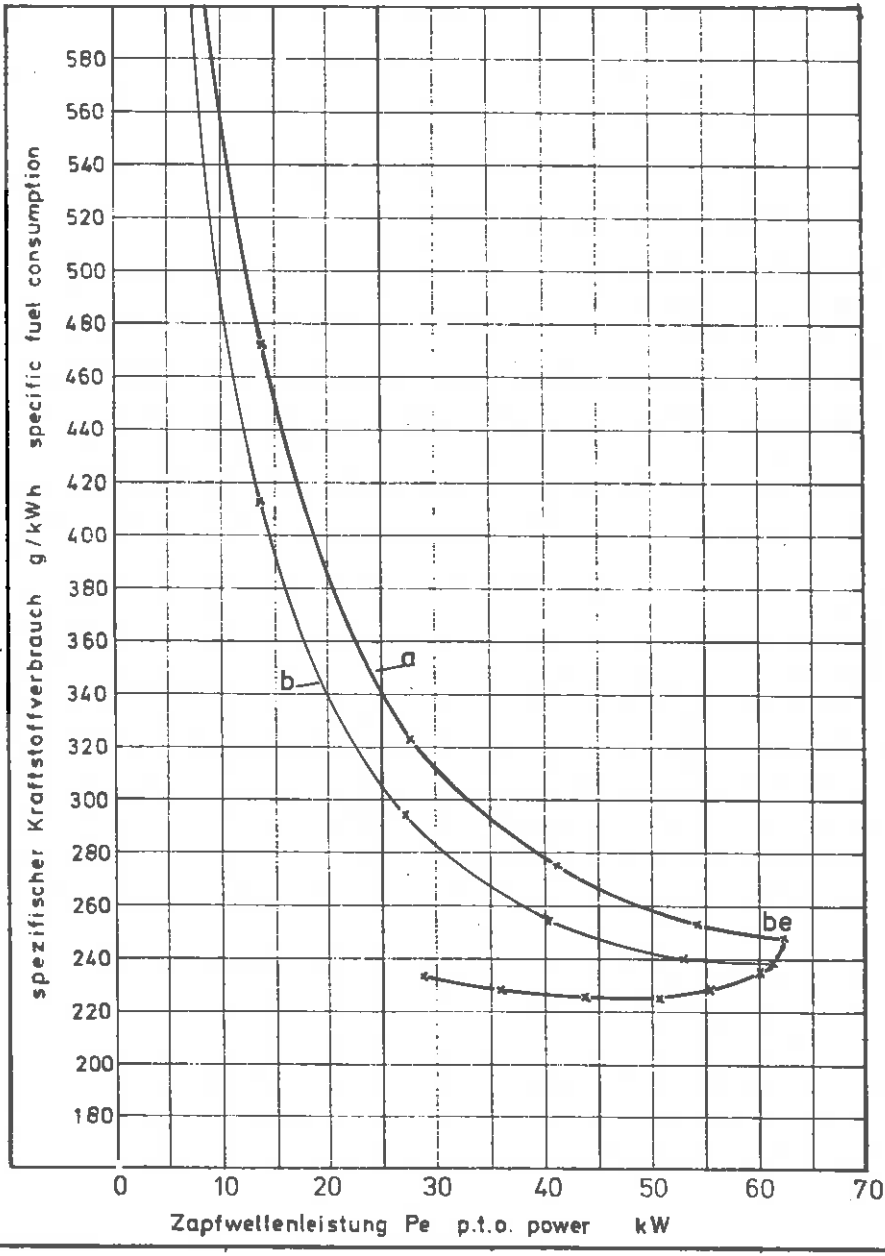
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PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Zapfwellenleistung
- 19 -
P.t.o. performance

Test Nr 82-125



PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR D 1040 A-N
D 1040 A-S

(2) DRAWBAR PERFORMANCE

Date of tests: 22nd February till 9th March 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 460 mm					
2 L	2,74	35,6	4674	2374	15,0
3 L	3,44	44,4	4646	2348	14,9
1 M	4,24	51,3	4354	2298	11,7
4 L	5,24	53,4	3667	2297	8,4
2 M	6,05	54,0	3214	2304	6,5
5 L	6,63	53,3	2896	2301	5,7
3 M	7,77	54,3	2518	2298	4,7
1 H	9,39	53,7	2057	2301	3,7
4 M	11,44	53,4	1680	2298	2,8
2 H	12,73	52,5	1485	2297	2,3
(ii) MAXIMUM POWER (ballasted) height of drawbar above ground 460 mm					
1 L	2,04	35,5	6259	2360	14,9
2 L	2,69	46,7	6247	2324	14,9
3 L	3,65	51,2	5047	2300	7,9
1 M	4,53	52,2	4148	2298	5,8
4 L	5,46	52,2	3444	2297	4,5
2 M	6,19	52,3	3044	2298	4,0
5 L	6,78	51,0	2709	2300	3,4
3 M	7,90	51,6	2352	2297	2,9
1 H	9,53	50,5	1909	2303	2,2
4 M	11,56	50,4	1568	2300	1,7
2 H	12,87	49,5	1386	2300	1,5
(iii) FIVE-HOUR-TEST at 75 % of pull at maximum power in 3 M gear					
3 M	8,19	40,1	1764	2361	2,1
(iv) FIVE-HOUR-TEST at pull corresponding to 15 % wheel slip in test (ii)					
2 L	2,47	42,9	6259	2328	-

Total oil consumption during ten hours duration of tests (iii) and (iv) 91 g/h

PRÜFUNGS-ABTEILUNG

Test No. 82-125

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

Tread bar height at the beginning of drawbar tests 90 % at front, 87 % at rear of the value when new

Specific fuel consumpt. g/kWh	Specific energy kWh/l	Temperatures Fuel °C	Coolant °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							
345	2,41	7	65	85	-2	69	1011
322	2,58	7	67	92	-2	70	1011
304	2,74	7	99	94	-1	70	1011
292	2,85	7	98	93	-1	70	1011
288	2,88	7	95	95	-1	68	1011
292	2,85	8	99	98	-1	69	1011
286	2,91	8	94	97	0	69	1011
290	2,88	8	97	98	0	68	1011
291	2,86	7	95	94	0	65	1011
296	2,81	7	99	96	0	66	1011
tyre inflation pressure 1,4 bar at front, 1,1 bar at rear							
343	2,41	15	90	90	8	86	1004
323	2,56	10	98	90	6	90	1004
299	2,76	15	98	91	8	88	1004
293	2,82	16	82	89	9	86	1004
294	2,81	15	80	89	9	82	1004
294	2,81	17	82	89	11	85	1004
301	2,75	16	79	88	11	85	1004
299	2,76	17	79	91	11	82	1004
303	2,73	17	79	88	12	83	1004
304	2,72	18	82	91	12	81	1004
309	2,68	18	81	91	12	81	1004
315	2,63	16	71	95	9	90	1004
-	-	16	91	96	9	84	1004

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

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Test No. 82-125

(3) TURNING SPACE AND TURNING CIRCLE

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

Track of wheels front: 1600 mm
rear: 1700 mm

Front wheel drive disengaged

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	4,30	4,31	4,87	4,88
Radius of turning circle	3,98	3,93	4,55	4,49

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	957 mm
Distance forward from rear axle centre	884 mm
Distance from tractor's median plane, to the left	10 mm

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR D 1040 A-N

Test No. 82-125

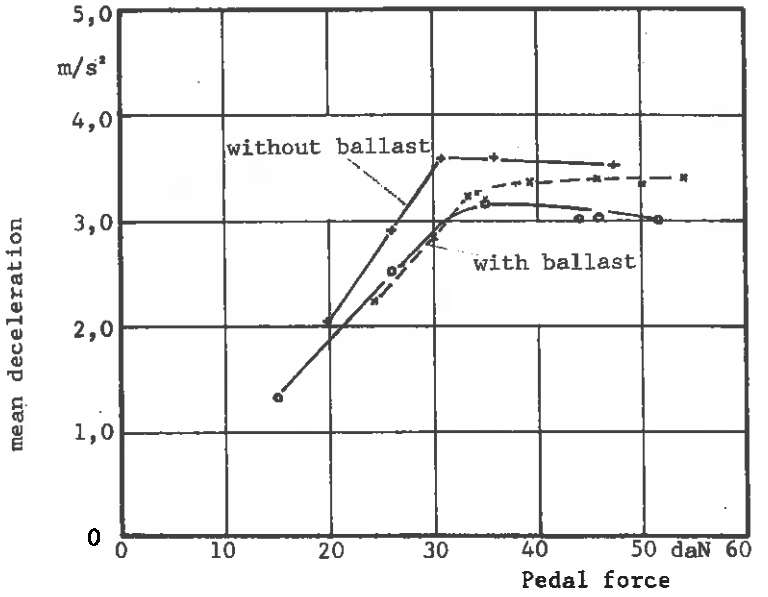
(5) Braking (Front wheel drive disengaged)

Date of tests: 24th February and 8th March 1983

Tractor masses during tests with driver:	front kg	rear kg	total kg
without ballast	1660	2845	4505
with ballast	2400	3795	6195

A) Service brake

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



Speed before application of brakes, without ballast 24,6 km/h
with ballast 24,6 km/h

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

B) Parking brake

	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	30	18	24

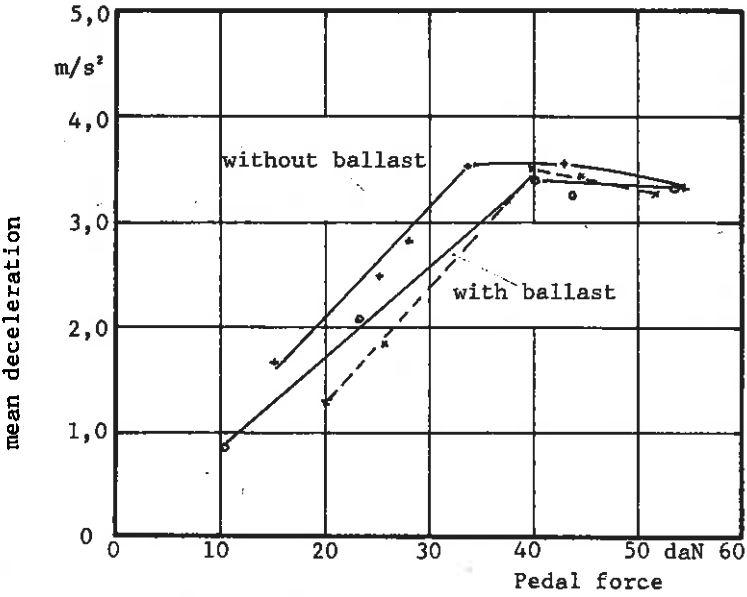
(5) Braking (Front wheel drive disengaged)

Date of tests: 24th February and 8th March 1983

Tractor masses during tests with driver:	front kg	rear kg	total kg
without ballast	1600	2845	4505
with ballast	2400	3795	6195

A) Service brake

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



Speed before application of brakes, without ballast 30,0 km/h
with ballast 30,0 km/h

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

B) Parking brake ; values as D 1040 A-N

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Test No. 82-125

(6) MEASUREMENT OF EXTERNAL NOISE LEVEL *)

Date of test:	23rd February 1983	
Type of track:	Concrete	
Type of sound level meter:	BRÜEL AND KJAER model 2209	
Results of test	D 1040 A-N	D 1040 A-S
Gear:	4 H	5 H
Travelling speed before acceleration:	18,5 km/h	22,6 km/h
Sound level:	84,0 dB(A)	85,0 dB(A)

(7) NOISE MEASUREMENT AT THE DRIVER'S EAR

Date of tests: 22nd February 1983
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2209

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	4649	2,28	2,04	84,5
2 L	4643	3,07	2,73	84,5
3 L	4651	3,88	3,43	85,0
1 M	4203	4,72	4,40	85,0
4 L	3569	5,63	5,40	85,5
2 M	3151	6,35	6,08	85,0
5 L+)	2835	6,91	6,73	84,5
3 M**)	2434	8,03	7,88	85,5
3 M**)	light load	8,03	8,64	83,5
1 H	2013	9,61	9,47	85,0
4 M	1635	11,65	11,59	85,5
2 H	1416	12,93	12,93	85,0
5 M+)	1235	14,29	14,35	85,0
3 H	1108	16,35	16,43	85,0
4 H**)	light load	23,71	24,60	83,5
5 H**)+)	light load	29,10	30,10	83,5

*) Front wheel drive disengaged
**) The 3rd M-gear corresponds to the travelling speed nearest to 7,5 km/h
+) The 5th gear not fitted to model D 1040 A-N

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Test No.82-125

(8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

Date of tests: 26th January 1983

Power Lift with 2 additional assister rams with 55 mm dia

	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	312	553	4180	158	4543	-
On the frame	312	615	3290	158	5583	8*)

Temperature of hydraulic fluid at start of test 65 °C
*) maximum tilting angle of mast from vertical to uppermost position 7°
Lifting heights relative to horizontal lower links

mm	-215	-200	-198	-100	±0	+100	+200	+300	+355	+400
Lifting forces at hitch points										
daN			4180	4330	4430	4480	4430	4390	4390	
Lifting forces at test frame										
daN	4010	4010		4010	3920	3810	3670	3450		3290

Hydraulic Pump Performance

Opening pressure of the relief valve in remote circuit	162 bar
Sustained pressure with relief valve open	183 bar
Pump delivery rate at minimum pressure, the governor control lever being set for max. power	48,6 l/min
Hydraulic power at 90% of relief valve setting	11,5 kW
Corresponding delivery rate	41,7 l/min
Pressure	165 bar
Temperature of hydraulic fluid	65 °C

Tapping point used for test: at rear of tractor

PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Test No. 82-125

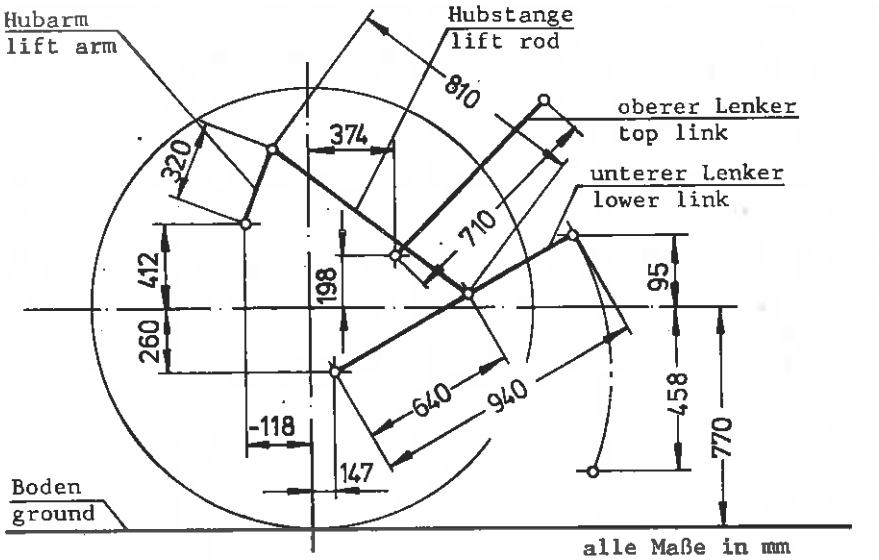
LINKAGE GEOMETRY when connected to the standard frame

Projected length in side view:

Lower links	940 mm
Lift arms	320 mm
Lift rods	810 mm
Top link	710 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	147 mm behind,	260 mm below
Top link pivot point	374 mm behind,	198 mm above
Lift arm pivot point	118 mm behind,	412 mm above
Maximum and minimum height of lower link hitch points	458 mm below,	95 mm above
Height of lower link hitch points when locked in transport position	170 mm below or	95 mm above



PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR D 1040 AN
D 1040 AS

Test No. 82-125

OPTIONAL TESTS

(9) ENGINE PERFORMANCE

Date of tests: 6th January 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					
66.5	2300	18.69	15.46	232	3.56
At standard p.t.o. speed (1000 rev/min)					
65.4	2111	17.80	14.72	225	3.67
At rated engine speed					
66.5	2300	18.69	15.46	232	3.56
Part loads					
(i) 85% of the torque at maximum power at 2-hour test					
57.8	2350	16.49	13.64	236	3.50
(ii) unloaded					
-	2461	4.42	3.66	-	-
(iii) 50% of the torque defined in (i)					
29.6	2407	10.50	8.68	294	2.82
(iv) maximum power					
66.5	2300	18.69	15.46	232	3.56
(v) 25% of the torque defined in (i)					
14.9	2429	7.37	6.10	408	2.03
(vi) 75% of the torque defined in (i)					
43.9	2380	13.47	11.14	254	3.26

Optimum fuel consumption: 212 g/kWh at 43,3 kW and 1495 rev/min
No load maximum engine speed: 2461 rev/min
Torque at maximum power (2 hours): 276 Nm
Maximum torque: 318 Nm at 1701 rev/min of the engine

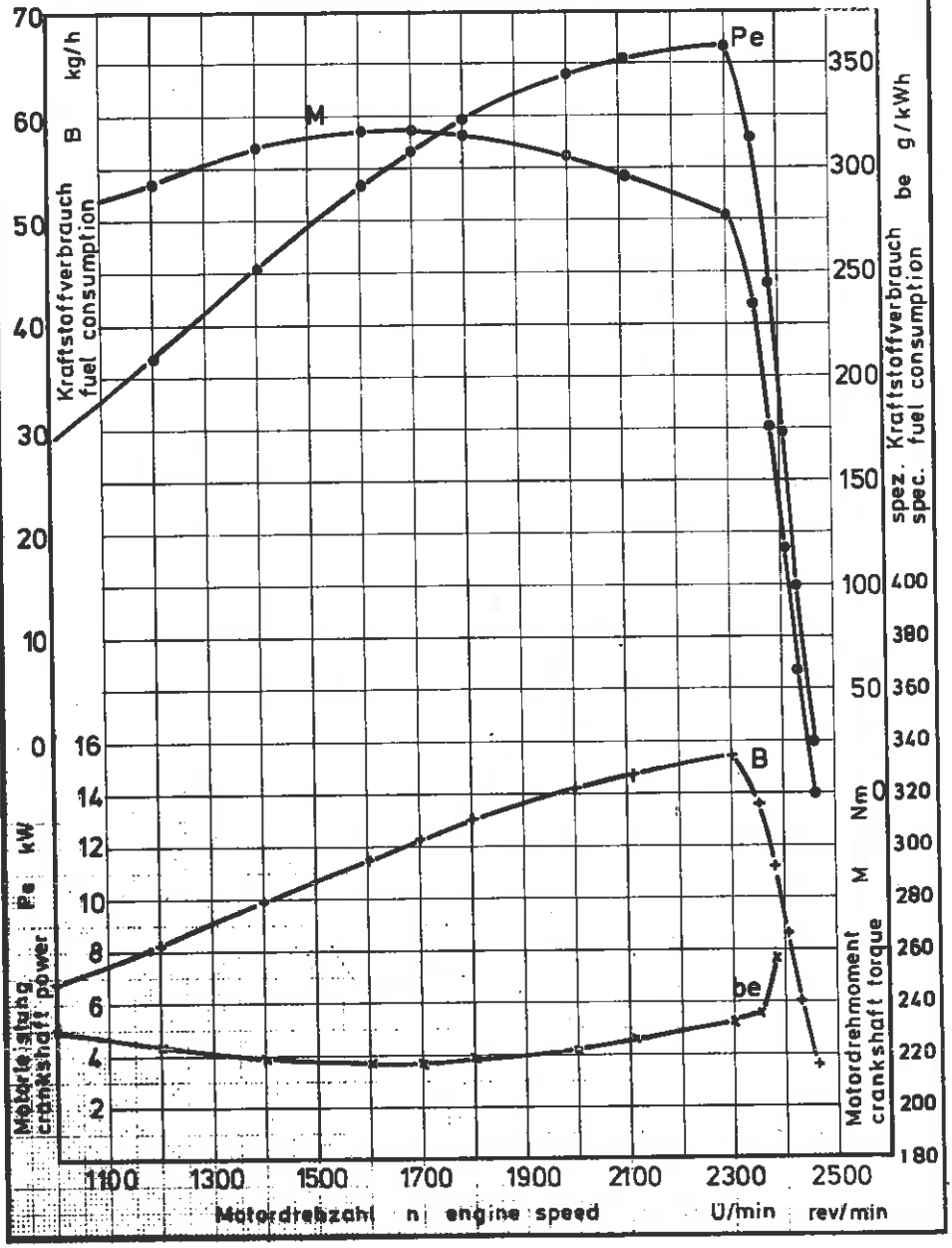
Mean atmospheric conditions:	temperature	19 °C
	pressure	1005 mbar
	relative humidity	60 %
Maximum temperatures:	cylinder head	116 °C
	engine oil	95 °C
	fuel	22 °C
	engine air intake	21 °C

PRÜFUNGS-ABTEILUNG

DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Motorleistung
- 29 -
Engine performance

Test Nr. 82-125



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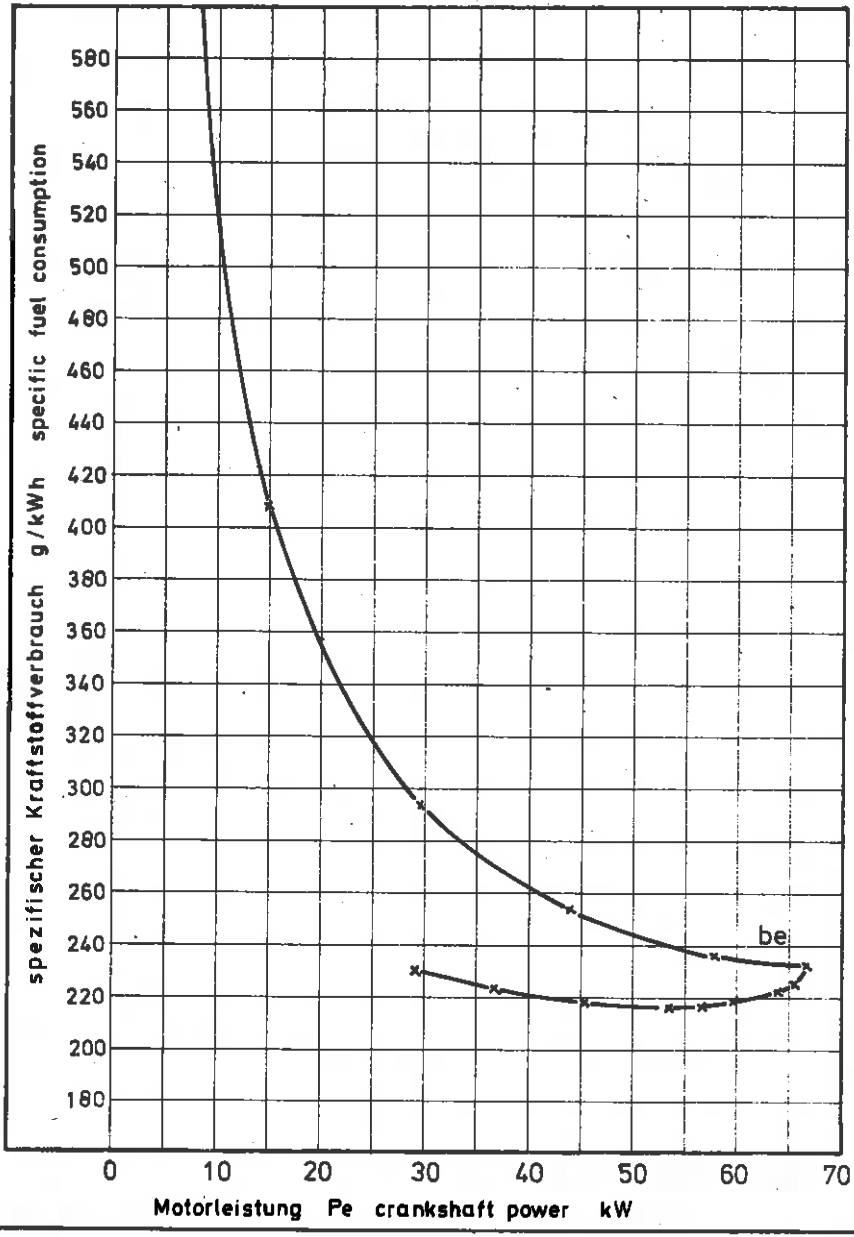
DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Motorleistung

- 30 -

Engine performance

Test Nr. 82-125



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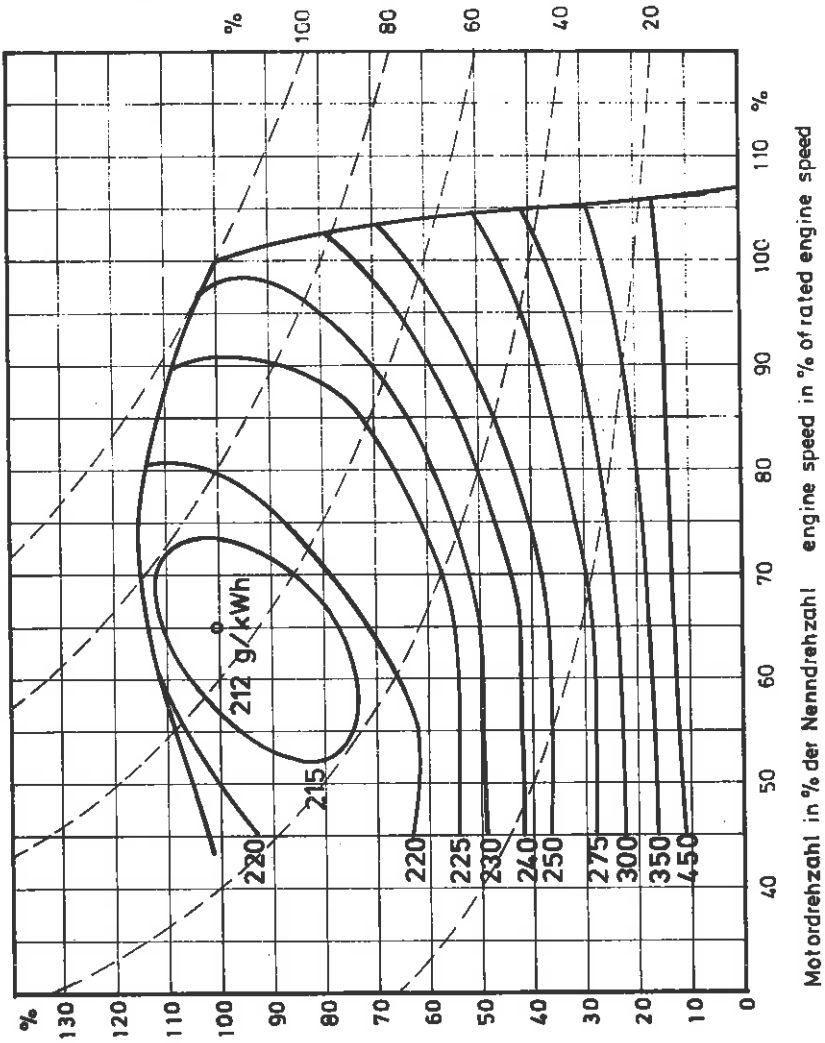
DEUTZ-FAHR D 1040 A-N
D 1040 A-S

Motorleistung
- 31 -
Engine performance

Test Nr. 82-125

Motorleistung in % der Leistung bei Nenndrehzahl

engine power in % of power at rated engine speed



Belastung in % des Drehmomentes bei Nenndrehzahl

load in % of torque at rated engine speed

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