Report on test in accordance with OECD STANDARD CODE

OECD No. 1219

FULL CODE



Agricultural Tractor DEUTZ-FAHR DX 3.65 (4WD)

Type denomination D 1071 A-T

Manufacturer

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

Deutsche Landwirtschafts-Gesellschaft e.V.
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This is a report on a tractor test in accordance with OECD STANDARD CODE for the Official Testing of Agricultural Tractor Performance (C(87)53(Final), Code I). It does not contain an evaluation of the tractor on practical work.

Duration of tests: December 1988 till April 1989

DLG-Testing Station for Agricultural Machinery, Max-Eyth-Weg 1,
D-6114 Groß-Umstadt

This report has been approved by the OECD Co-Ordinating Centre (CEMAGREF, France) as being in accordance with the OECD STANDARD CODE.

Date of approval: 22nd November 1989

OECD No. 1219
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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 kN	=	1000 N	=	102 kp
Powers			1 kW	=	1,36 PS
Pressures	1 MPa	=	10 bar	=	10,2 kp/cm²
	100 kPa	=	1000 mbar	=	750,10 mm Hg

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PRÜFUNGS-ABTEILUNG
DEUTZ-FAHR DX 3.65

Test No. 89-3

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Tractor manufacturer:	KLÖCKNER-HUMBOLDT-DEUTZ AG D-5000 Köln-Deutz
Location of tractor assembly:	D-5000 Köln-Deutz
Submitted for test by:	Manufacturer
Selected by:	Manufacturer with agreement by DLG
Place for running-in:	Köln and Groß-Umstadt
Duration of running-in:	Engine and tractor appr. 20 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	DEUTZ-FAHR
Trade name:	DX 3.65
Type denomination:	D 1071 A-T
Type:	Four-wheel-drive tractor, unit construction
Serial No.:	7768 0562
Start of series:	7768 0001

Engine

Make:	DEUTZ
Model:	F4L 912
Type:	4-stroke Diesel engine, direct injection, air cooled
Serial No.:	7570595
Cylinders:	4, in-line, bore 100 mm, stroke 120 mm, displacement 3770 cm³, compression ratio 17:1; replaceable ribbed cylinder liners
Valves:	Overhead
Supercharging:	None

Fuel system: PIERBURG fuel supply pump,
BOSCH in-line injection pump
PES 4A 80D410/3RS 1349,
serial No.: 0400 464 132,
manufacturer's production setting
50±1 mm³/stroke at rated engine
speed and full load;
injection timing 28°±1° before TDC;
BOSCH multihole injection nozzles
DLLA 149 S 774, injection
pressure 17,5±0,8 MPa;
MANN fuel filter WK 7.31 with
replaceable cartridge;
capacity of fuel tank 83 dm³

Governor:	BOSCH centrifugal variable speed governor RSV 325-1175 A8C 657-3L, governed range of engine speed 650 to 2490 rev/min, rated engine speed 2350 rev/min
Air cleaner:	MANN dry paper element filter with precleaner, replaceable cartridge, pilot lamp; air intake below bonnet
Lubrication system:	Forced-feed lubrication with gear pump, MANN oil filter in full flow with by-pass valve and replaceable cartridge; engine oil cooler inside of cooling baffle
Cooling system:	Air cooling with axial blower with 11 blades, 230 mm dia, V-belt drive
Starting system:	Electrical BOSCH solenoid pre-engaged-drive-starting motor JF 12V 2,7 kW; flame plug in intake manifold; depressed clutch pedal as safety device
Electrical equipment:	12 Volt, negative earth; BOSCH 3-phase alternator K1 14V 33A, 462 W; 1 lead acid battery 110 Ah at 20 hours rating
Exhaust silencer:	ROTH, 13058014000, multichamber-expansion type silencer, conical, 60 to 125 mm dia, 800 mm long, vertical on the left, above the bonnet, mouth showing upwards; mouth 2600 mm above ground

Transmission

Clutch:	LUK dry dual disc clutch DT 280/250; travel drive pedal operated, disc 280 mm dia; p.t.o. drive handlever operated, disc 250 mm dia
Gear box:	DEUTZ-FAHR TW 521-T/II, synchromesh gearbox with 4 speeds; group gear with 2 collar shifted forward ranges (L and H) and 1 sliding gear shifted reverse range (R); synchromesh close stepped gear DUAL-SPLIT with 2 ranges (N and +20%); total 16 forward and 8 reverse speeds, 3 shift levers
Rear axle and final drives:	DEUTZ-FAHR bevel gear driven intermediate shaft, spur gear transmission to bevel gear differential with pedal operated lock on rear axle; lock not self disengaging, with pilot lamp
Front axle and final drives:	SIGE 002, driven by universal joint shaft placed in tractor's median plane; lever operated dog clutch, not shiftable under load; bevel gear, bevel gear differential without lock, planetary final drives

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Total ratios and speeds

Gear	Close stepped range	Range	Total ratio engine : driving wheel	Nominal travelling speed at rated engine speed of 2350 rev/min km/h *)
1	N	L	240,80	2,74
2			156,84	4,21
3			107,40	6,15
4			63,75	10,35
1	+20 %		196,45	3,36
2			127,96	5,16
3			87,62	7,53
4			52,01	12,69
1	N	H	80,93	8,16
2			52,71	12,52
3			36,10	18,28
4			21,43	30,81
1	+20 %		66,02	10,00
2			43,00	15,35
3			29,45	22,41
4			17,48	37,76
1	N	R	207,20	3,19
2			134,96	4,89
3			92,42	7,14
4			54,85	12,03
1	+20 %		169,04	3,90
2			110,10	5,99
3			75,40	8,75
4			44,75	14,75

*) calculated with the radius index 745 mm (ISO 4251/1-1984)

Number of revolutions of front wheels for one revolution of rear wheels: 1,3829

Main p.t.o.

Independent, driven by second disc of dual disc clutch;
1 p.t.o. shaft at rear of tractor, 695 mm above ground, 5 mm to the left from tractor's median plane, shaft end 425 mm behind rear wheel centre;
35 mm dia, 6 splines, ISO 500-1979, DIN 9611, type 1;
sense of rotation clockwise, viewed facing tractor's rear;
2 speeds are preselectable by hand lever

P.t.o.	P.t.o. speed rev/min	Engine speed rev/min	P.t.o. transmission ratio	Power restriction kW
540	540	2202	4,0769	-
	576	2350		
1000	1000	2211	2,2105	-
	1063	2350		

Power lift

DEUTZ-FAHR
K 46.3 DEUTZ-FAHR TRANSFERMATIC;
hydraulic power lift in unit construction;
draft- and position-control, both steplessly mixable, floating position;
upper link sensing;
no lowering throttle

Hydraulic system:

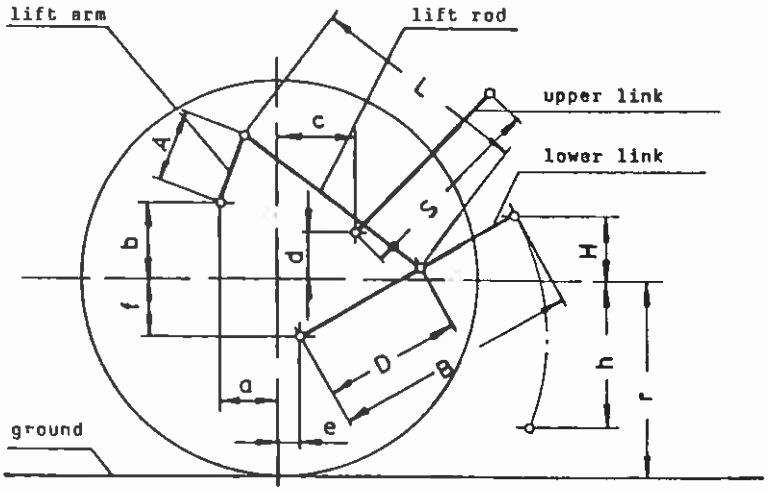
Open centre system,
BOSCH gear type tandem pump HY/ZFFS 11/16+11,
gear driven by engine,
delivery 41 l/min at rated engine speed;
DEUTZ-FAHR control valve,
remote control of power lift at tractor's rear;
relief valve pressure setting 17,5+0,8 MPa;
single acting cylinder with 90 mm bore and 152 mm stroke,
1 single acting additional ram, 45 mm dia, 192 mm stroke;
safety valve set to 24,0 MPa

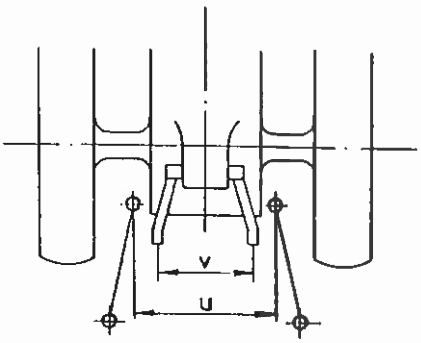
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1 double acting DEUTZ-FAHR additional control valve SD80 with 2 oil tappings at rear of tractor;
max. 3 double acting additional valves optionally available;
1 separate oil return line at rear of tractor;
hydraulic oil tank with 16 dm³ capacity in power lift unit;
max. 7 dm³ may be taken off if tractor is working stationary or travelling;
oil-filter and -cooler see page 11
- steering -

Implement linkage: 3-point linkage, category 2 acc. to ISO 730/1-1977 or DIN 9674
WALTERSCHEID quick couplers





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Dimensions of rear implement linkage (projected lengths in mm, underlined dimensions are valid for power lift measurements p.21)

Rear tyres	radius index	(r) *)	745
Front tyres	radius index	(r')	540
Length of lift arms		(A)	280
Length of lower links		(B)	905
Distance of lift arm pivot points from rear wheel centre	horizontal	(a)	-47
	vertical	(b)	312
Horizontal distance between lower link pivot points		(u)	470
Horizontal distance between lift arm end points		(v)	610
Length of upper link		(S)	650 to 870, 705
Distance of upper link pivot point from rear wheel centre	horizontal	(c)	277, 277, 300
	vertical	(d)	243, 293, 355
Distance of lower link pivot point from rear wheel centre	horizontal	(e)	88
	vertical	(f)	165
Distance of lower link pivot points from lift rod pivot points on lower links		(D)	564, 636
Length of lift rods		(L)	620 to 760, 700

Height of lower link hitch points relative to rear wheels' centre line (situated 745 mm above ground), these data are valid for unloaded power lift:

Length of lift rods	(L)	700	620		760	
Linkage distance of lift rods	(D)	564	564	636	564	636
Lowest position	(h)	545	370	265	675	560
Highest position	(H)	125	220	250	-10	45
Transport position	(H')	270	115	50	380	300

Type of transport lock: Hydraulic-mechanical

*) Assuming (r) = tyre dynamic radius index of ISO 4251/1-1984

Pull attachment

Trailer hitch: CRAMER, KU 8140
non automatical
hole diameter 33 mm
hitch point
above ground 490,570,730,795,855,915,965 mm
behind rear wheel centre 597 mm
above p.t.o. 35,100,160,220,270 mm
below p.t.o. 125,205 mm
behind p.t.o. shaft end 172 mm
permissible vertical load 1250 kg

Swinging drawbar: Optionally available, not fitted

Holed drawbar: Short bar,
length between joint balls 825 mm,
thickness 30 mm, width 80 mm,
9 holes 33 mm dia with 80 mm distance each,
holes' centres behind p.t.o. shaft
end 568 mm (with horizontal lower links),
height above ground (measured without
load): minimum 70 mm
maximum 995 mm

Towing hitch: at front,
780 mm above ground

Steering

ZF 8492
hydrostatic, oil in common with power lift; oil supply by tandem part of hydraulic pump, delivery 28 l/min at rated engine speed, maximum pressure 15,0 MPa;
hydraulic oil cooler in steering-oil circuit, at engine's cooling air baffle;
replaceable oil filter PUROLATOR PER 330-H in return line of steering circuit;
1 integrated WEBER cylinder (symmetrical design) 254 mm stroke, 65 mm bore and 45 mm piston rod diameter, directly acting on steering levers

Brakes

Service brake: DEUTZ-FAHR and ATE,
pedal operated muscle power brake with hydraulic transmission, acting on both axles;
1 DEUTZ-FAHR caliper brake with 2 calipers with 424 mm disc dia at each rear wheel;
1 ATE caliper brake with 224 mm disc dia between joint shaft and front axle differential

Parking brake: Mechanical drum brake, acting on rear wheels, actuated by pulling handle with ratchet;
1 brake drum with 180 mm dia and 60 mm width on intermediate shaft, on the right, outside of gearbox

Steering brake: Divided pedal of service brake, for normal use locked together

Trailer brake: Optionally available (hydraulic trailer brake for France)

Wheels

Steered wheels: At front, 2 pneumatics 12.4 R 24, rims W10x24

Driving wheels: At front and at rear,
at rear: 2 pneumatics 16.9 R 34, rims W15Lx34

Wheelbase: 2249 mm

Track widths: At front 1500 or 1650 mm, by turning the wheels;
at rear 1420 to 1920 mm, in steps of 100 mm each, by adjustable gauge bowl wheels

Permissible tyre combinations:

Tyre size	
at front	at rear
9.5 - 28 6 ply	9.5 - 42 10 ply
11.2 - 24 8 ply	12.4 - 36 8 ply
12.4 - 24 6 ply	13.6 - 36 6 ply 13.6 R 38 6 ply
12.5 - 20 MPT 10 ply	14.9 - 30 6 ply
11.2 - 24 8 ply 14.5 - 20 MPT 10 ply	16.9 R 30 6 ply
12.4 R 24 6 ply 425/75 R 20 x 148 G	16.9 R 34 6 ply

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Protective structure

DEUTZ-FAHR safety-cab with integrated safety-frame, type 82/1
OECD-approved safety cab, approval-no. CSD 1022/6, antivibration mounted by 4 silent blocks on tractor;
1 door with 2 steps, steps 530 and 825 mm, driver's platform 1075 mm above ground;
windscreen, rear and side windows tiltable;
hot-air heating by engine cooling air;
air outlet jets at cab floor and at windscreen
optionally available additional Diesel heating 1,7/3,2 kW

Noise-reduction materials:

floor	rubber mat	5 mm
	with foam PUR, foil coated	15 mm
	bitumen foil	5 mm
seat support	rubber mat	5 mm
	PU foam	15 mm
mudguards	moltoprene foam, imitation leather coated	27 mm
roof	phenolic-resin bonded cotton fleece, molded	4 to 30 mm
	textile (PU) covering	1 mm
bulkhead	PU heavy foam at engine's side	10 mm

Seat

GRAMMER, DS 85/H3
upholstered seat with back rest, adjustable spring, hydraulic shock absorber;
height of unloaded seat above platform adjustable in 2 steps from 460 to 520 mm;
longitudinal adjustment 160 mm

Running-time meter

Mechanical, combined with tachometer, driven by camshaft of engine;
reference engine speed for one really counted hour 1875 rev/min

Lighting: Electrical, 12 Volt, as per German legislation

	Height above ground of centre mm	Size mm	Distance from outside edge to median plane of tractor mm
Headlights	1043	130 dia	268
Side lights	1655	55 x 60	810
Rear lights	1395	30 x 60	705
Reflectors	1355	181 x 41	778

TEST CONDITIONS

Overall dimensions

Length: 3870 mm without ballast
4090 mm with ballast

Width: 1955 mm with and without ballast

Height: 2550 mm to top of cab
2600 mm to exhaust silencer mouth

Ground clearance: 400 mm below front axle brake

Tractor mass

		Without driver kg	With driver kg
Without ballast:	at front	1315	1330
	at rear	2055	2130
	total	3370	3460
With ballast:	at front	2085	2100
	at rear	2825	2900
	total	4910	5000

Front ballast: 12 weights, total 480 kg
water in the tyres 170 kg

Rear ballast: 3 weights per wheel,
total 290 kg
water in the tyres 600 kg

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Tyres and track widths specifications

	Front	Rear
Tyres:	CONTINENTAL	PIRELLI TM 300 S
dimensions	12.4 R 24	16.9 R 34
type	radial	radial
load and speed index	119 A8	139 A8
maximum load	1360 kg (40 km/h)	2430 kg (40 km/h)
inflation pressure	160 kPa	160 kPa
radius index	540 mm	745 mm
Chosen track width:	1500 mm	1520 mm
Technically permissible axle load:	2100 kg	3500 kg
Technically permissible total weight:	5000 kg	

Oils and lubrication

Capacity and change interval:

	Capacity dm³	Oil change h	Filter change h
Engine	11	*) 250/500	250
Gear box with rear axle	24	2000	-
Front axle	5	1000	-
Front final drives	2 x 1	1000	-
Hydraulic system with steering	16	1000	yearly

*) API-CC/API-CD

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Specifications:

	Recommended	Used during test
Engine oil:		
type	engine oil	DEUTZ HDC
viscosity		
below -5°C	SAE 10W	
-10°C to +10°C	SAE 20W/20	
+5°C to +30°C	SAE 30	SAE 15W/40
above +25°C	SAE 40	
above -10°C	SAE 15W/40	
classification	API-CC or - CD	API-CD
Transmission oils:		
gear box		
type	engine oil / gear oil	DEUTZ HDC
viscosity	SAE 15W/40 / SAE 90	SAE 15W/40
classification	API-CC or -CD / API-GL4	API-CD
front axle and front final drives		
type	gear oil	gear oil
viscosity	SAE 90	SAE 90
classification	API-GL5	API-GL5
Hydraulic system with steering		
type	engine oil	DEUTZ HDC
viscosity	SAE 15W/40	SAE 15W/40
classification	API-CC or-CD	API-CD

Grease: Multi purpose grease
number of lubrication points: 23

Fuel

type: ARAL Diesel-fuel in conformity with DIN 51601
density: at 15°C at engine tests, p.t.o. tests and drawbar power tests 0,836 g/cm³

REPAIRS None

REMARKS None

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COMPULSORY TESTS

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

Date of tests: 19th January 1989
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						
1.1 At 2-hour test						
47,6	2350	1063	13,90	11,62	244	3,42
1.2 At rated speed						
47,6	2350	1063	13,90	11,62	244	3,42
1.3 At standard p.t.o. speed						
47,3	2211	1000	13,63	11,39	241	3,47
1.4 Part loads, the governor hand lever in the position corresponding to maximum power at full load (curve a)						
1.4.1 the torque corresponding to maximum power at rated speed						
47,6	2350	1063	13,90	11,62	244	3,42
1.4.2 85% of the torque obtained in 1.4.1						
41,4	2408	1089	12,33	10,31	249	3,36
1.4.3 75% of the torque defined in 1.4.2						
31,4	2431	1100	10,08	8,43	269	3,11
1.4.4 50% of the torque defined in 1.4.2						
21,1	2448	1107	7,87	6,58	312	2,68
1.4.5 25% of the torque defined in 1.4.2						
10,6	2470	1117	5,77	4,82	454	1,84
1.4.6 unloaded						
-	2492	1127	3,95	3,30	-	-

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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
1.5 Part loads, the governor hand lever in the position corresponding to the standard p.t.o. speed at full load (curve b)						
1.5.1 the torque corresponding to maximum power						
47,3	2211	1000	13,63	11,39	241	3,47
1.5.2 85% of the torque obtained in 1.5.1						
41,2	2266	1025	11,92	9,97	242	3,46
1.5.3 75% of the torque defined in 1.5.2						
31,3	2294	1038	9,63	8,05	257	3,25
1.5.4 50% of the torque defined in 1.5.2						
21,1	2316	1048	7,45	6,23	296	2,83
1.5.5 25% of the torque defined in 1.5.2						
10,6	2336	1057	5,38	4,50	423	1,98
1.5.6 unloaded						
-	2354	1065	3,57	2,98	-	-

No load maximum engine speed: 2492 rev/min
Equivalent flywheel torque at rated engine speed: 193 Nm
Maximum equivalent flywheel torque: 231 Nm at 1553 rev/min of the engine

Mean atmospheric conditions

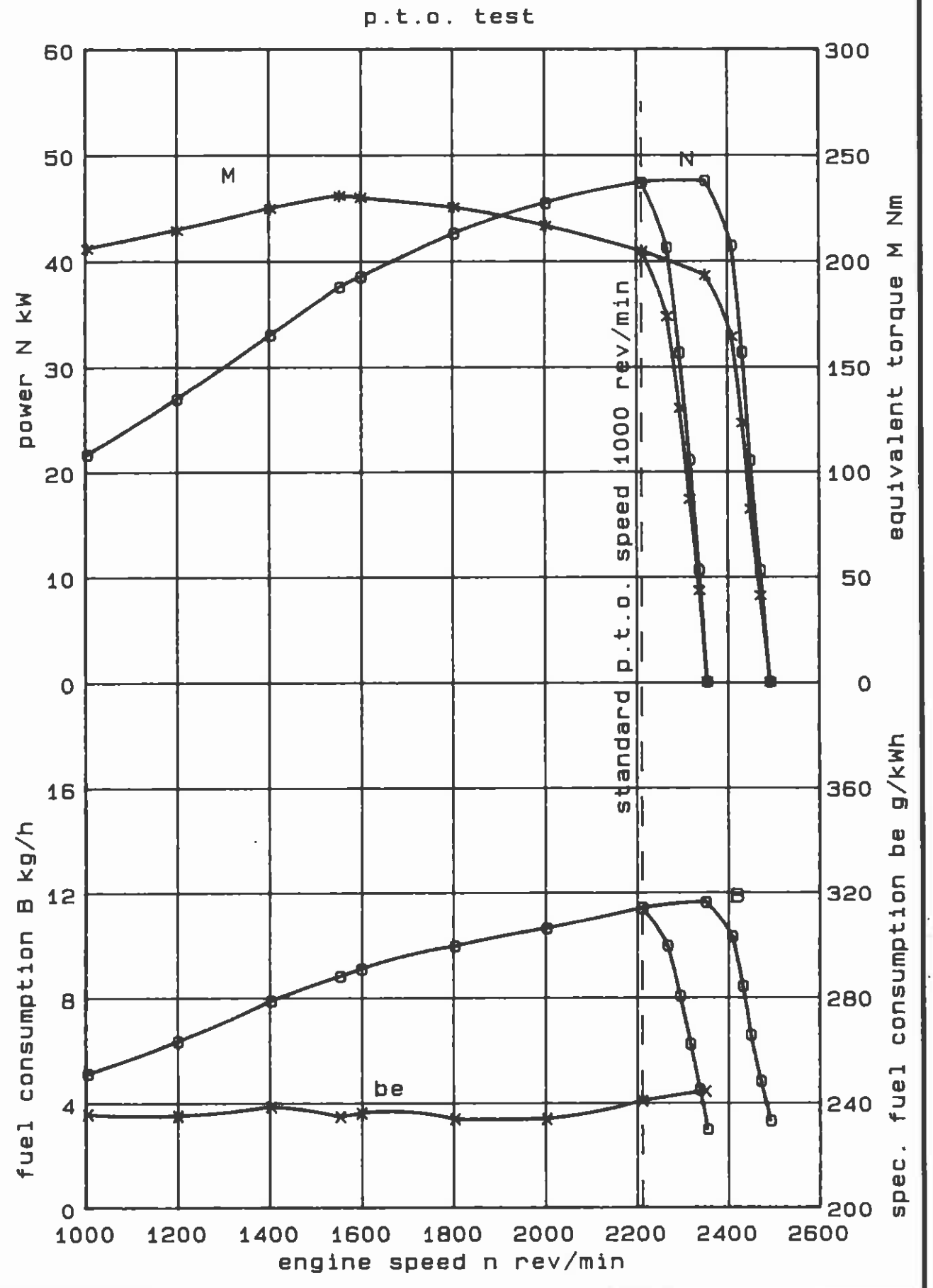
temperature	19 °C
pressure	102 kPa
rel. humidity	30 %

Maximum temperatures

cylinder head	97 °C
oil	103 °C
fuel	15 °C
air intake	20 °C

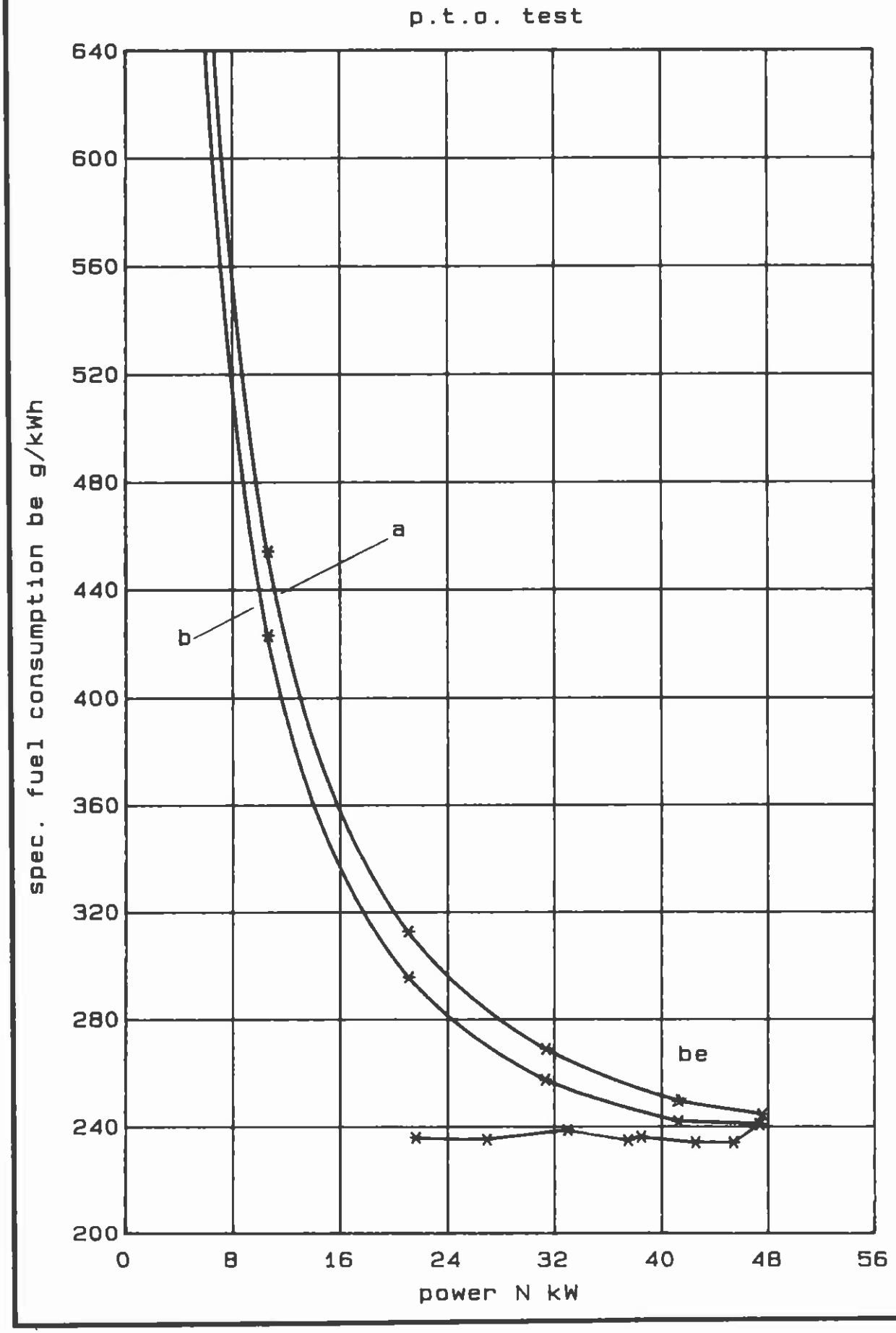
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2 HYDRAULIC POWER AND LIFTING FORCE

Date of tests: 10th and 11th April 1989

2.1 Hydraulic power test

Sustained pressure with relief valve open 18,0 MPa
Pump delivery rate at minimum pressure 42,6 l/min

	Hydraulic power kW	Flow rate l/min	Pressure MPa	Oil temperature °C
At 90% of the actual relief valve setting	10,2	37,6	16,2	65
At max. power	10,3	39,0	15,8	65

Tapping point used for test: At rear of tractor

2.2 Power lift test

	At the hitch point	On the frame
Height of lower hitch points above ground in down position	200 mm	200 mm
Vertical movement without load	670 mm	770 mm
Vertical movement with load	625 mm	720 mm
Max. corrected force exerted through full range	27,0 kN	20,0 kN
Corresponding pressure	15,8 MPa	15,8 MPa
Moment about rear axle	-	32,1 kNm
Max. tilt angle of mast from vertical	-	7°

Lifting heights relative to horizontal lower links

mm	-420	-400	-380	-300	-200	-100	0	+100	+200	+245	+300

Lifting forces at hitch points, corrected to 15,8 MPa

kN			27,4	28,3	28,7	28,5	27,9	27,4	27,0	27,0	

Lifting forces at standard frame, corrected to 15,8 MPa

kN	25,1	25,3		25,3	24,6	23,9	22,7	21,7	20,7		20,0

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3 DRAWBAR PERFORMANCE

Date of tests: 30th March till 20th April 1989
Type of track: Concrete

Gear	Driving speed km/h	Power kW	Drawbar pull kN	Engine speed rev/min	Slip of wheels %
3.1 Maximum power in tested gears (unballasted tractor) height of drawbar above ground 460 mm					
1 L +20%	2,95	29,2	35,62	2414	15,1
2 L N	3,65	35,8	35,32	2383	15,0
2 L +20%	4,77	39,5	29,79	2350	8,2
3 L N	5,85	39,8	24,51	2352	5,5
3 L +20%	7,26	40,8	20,21	2350	4,1
1 H N	7,88	41,2	18,82	2348	3,6
1 H +20%	9,75	41,4	15,30	2350	2,7
4 L N	10,11	40,1	14,28	2348	2,5
2 H N	12,28	39,8	11,67	2348	2,0
3.2 Maximum power in tested gears (ballasted tractor) height of drawbar above ground 440 mm					
1 L N	2,38	32,7	49,42	2401	15,0
1 L +20%	3,10	38,8	45,02	2352	8,1
2 L N	4,01	39,9	35,78	2352	4,8
2 L +20%	4,98	40,9	29,58	2350	3,5
3 L N	5,98	40,1	24,16	2352	2,7
3 L +20%	7,36	40,1	19,63	2352	2,2
1 H N	7,95	40,8	18,47	2350	2,0
1 H +20%	9,80	40,5	14,86	2350	1,6
4 L N	10,15	39,6	14,03	2350	1,5
3.3.1 Five-hour-test at 75% of pull at maximum power in 1 H N gear					
1 H N	8,18	31,5	13,85	2414	1,5
3.3.2 Five-hour-test at pull corresponding to 15% wheel slip in test 3.2					
1 L N	2,43	33,4	49,42	2401	-

Total oil consumption during ten hours duration of tests 3.3.1 and 3.3.2: 36 g/h

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Tyre size front: 12.4 R 24
rear: 16.9 R 34

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 kPa
Tyre inflation pressure: 80 kPa at front, 80 kPa at rear							
339	2,46	22	64	80	13	86	100,2
319	2,62	24	66	81	13	80	100,2
295	2,84	27	70	87	16	75	100,2
289	2,89	27	71	85	16	74	100,2
284	2,94	28	71	86	18	73	100,2
281	2,97	29	73	84	18	76	100,2
279	3,00	29	74	84	18	69	100,2
287	2,91	31	74	85	21	59	100,2
290	2,88	32	78	87	21	58	100,2
Tyre inflation pressure: 110 kPa at front and 80 kPa at rear							
339	2,47	17	70	75	9	70	98,4
298	2,81	18	72	84	9	70	98,4
289	2,89	18	72	85	9	70	98,4
284	2,94	19	66	80	9	70	98,4
291	2,87	19	70	80	10	65	98,4
287	2,92	14	68	80	8	76	98,2
286	2,92	17	69	75	11	75	98,5
287	2,91	20	69	75	14	64	98,6
295	2,84	20	69	75	14	64	98,6
312	2,68	20	78	85	16	68	98,6
-	-	24	75	90	15	50	98,6

Test 3.3.2 was carried out with additonal ballast of 200 kg,
the figures not quoted are therefore irrelevant

4 TURNING AREA AND TURNING CIRCLE (front wheel drive disengaged)

Wheel equipment front: 12.4 R 24
rear: 16.9 R 34

Track of wheels front: 1500 mm
rear: 1520 mm

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning area	3,90	4,43	4,60	5,29
Radius of Turning circle	3,73	4,28	4,43	5,14

5 LOCATION OF CENTRE OF GRAVITY

Height above ground	880 mm
Distance forward from rear axle centre	865 mm
Distance from tractor's median plane, to the left	10 mm

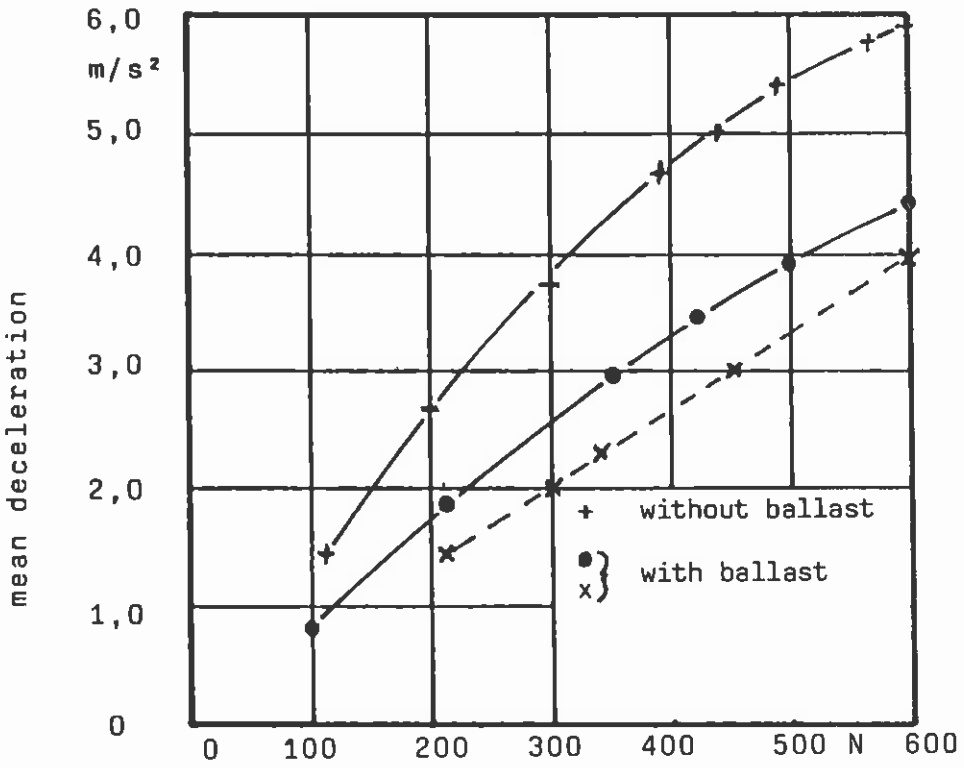
6 BRAKING (Front wheel drive disengaged)

Date of tests: 14th March and 4th April 1989

	Tractor mass (with driver) front kg	rear kg	total kg	Speed before application of brakes km/h
Without ballast	1330	2130	3460	40,0
With ballast	2100	2900	5000	38,6

6.1 Cold service braking device test

6.2 Fade test



No significant deviation of tractor from original course and no abnormal vibrations

Brakes-heating: Actuating of brake for 1 km with pedal force corresponding to 1 m/s²

6.3 Parking braking device test

		Ballasted tractor on 18% - slope up	down
Braking device control force	N	320	360

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7 MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of test: 14th March 1989
Type of track: Concrete
Type of sound level meter: BRÜEL & KJAER model 2233

Results of test

Gear: 4 H +20% +)
Travelling speed before acceleration: 29,9 km/h
Sound level: 85,0 dB(A)

APPENDIX

MEASUREMENTS OF NOISE IN THE PROTECTIVE STRUCTURE

with DEUTZ-FAHR safety-cab D 82/1 Star Cab,
results of OECD-test no. CSD 1022/6/NM 0034

Date of test: 18th July 1988
Type of track: Concrete
Type of sound level meter: BRÜEL & KJAER model 2209

Gear	Drawbar pull kN	Travelling speed km/h	Sound level dB(A)
3 L +20% *)	19,53	7,39	81,0
3 L +20% *)	light load	7,90	78,5
4 H *)	light load	38,85	79,5

*) The 1 H gear corresponds to the nominal travelling speed nearest to 7,5 km/h

+) Front wheel drive disengaged

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OPTIONAL TEST

8. ENGINE PERFORMANCE

Date of tests: 4th January 1989
Location of tests: DLG-Testing-Station Groß-Umstadt
Type of dynamometer: SCHENCK eddy-current-dynamometer W 150

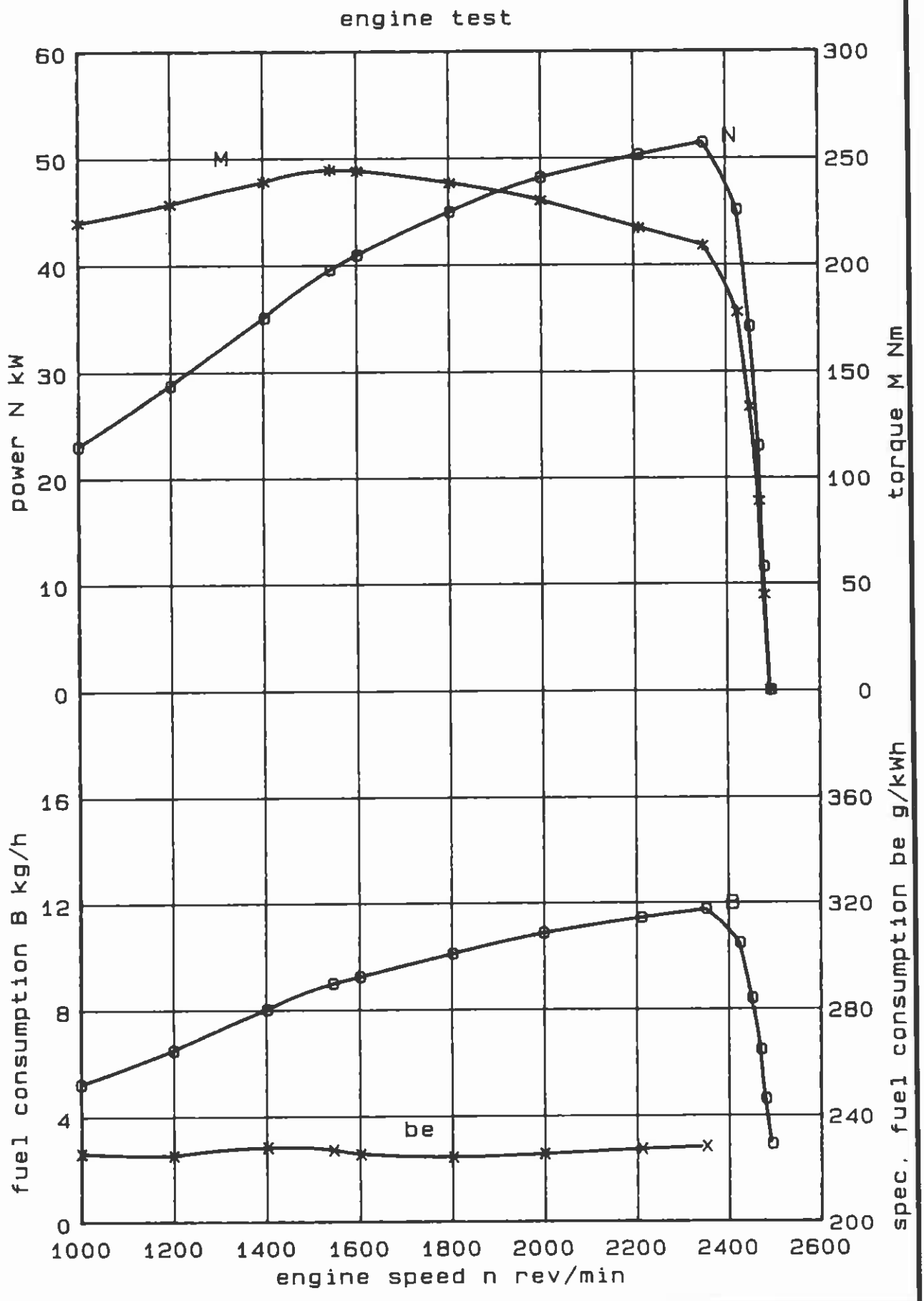
	Power kW	Engine speed rev/min	Fuel consumption hourly l/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power						
8.1 At 2[1]hour test	51,4	2350	14,05	11,74	228	3,66
8.2 At rated engine speed	51,4	2350	14,05	11,74	228	3,66
8.3 At standard p.t.o. speed (1000 rev/min)	50,3	2211	13,68	11,44	228	3,67
8.4 Part loads						
8.4.1 the torque corresponding to maximum power at rated speed	51,4	2350	14,05	11,74	228	3,66
8.4.2 85% of the torque obtained in 8.4.1	45,1	2424	12,53	10,47	232	3,60
8.4.3 75% of the torque obtained in 8.4.2	34,2	2450	10,04	8,39	245	3,41
8.4.4 50% of the torque obtained in 8.4.2	23,0	2469	7,73	6,46	281	2,97
8.4.5 25% of the torque obtained in 8.4.2	11,5	2479	5,50	4,59	398	2,10
8.4.6 unloaded	-	2493	3,48	2,91	-	-

Optimum fuel consumption: 214 g/kWh at 27,8 kW and 1410 rev/min
No load maximum engine speed: 2493 rev/min
Torque at rated engine speed: 209 Nm
Maximum torque: 244 Nm at 1543 rev/min of the engine

Mean atmospheric conditions	temperature	19 °C
	pressure	102 kPa
	relative humidity	30 %
Maximum temperatures	cylinder head	94 °C
	oil	90 °C
	fuel	18 °C
	engine air intake	20 °C

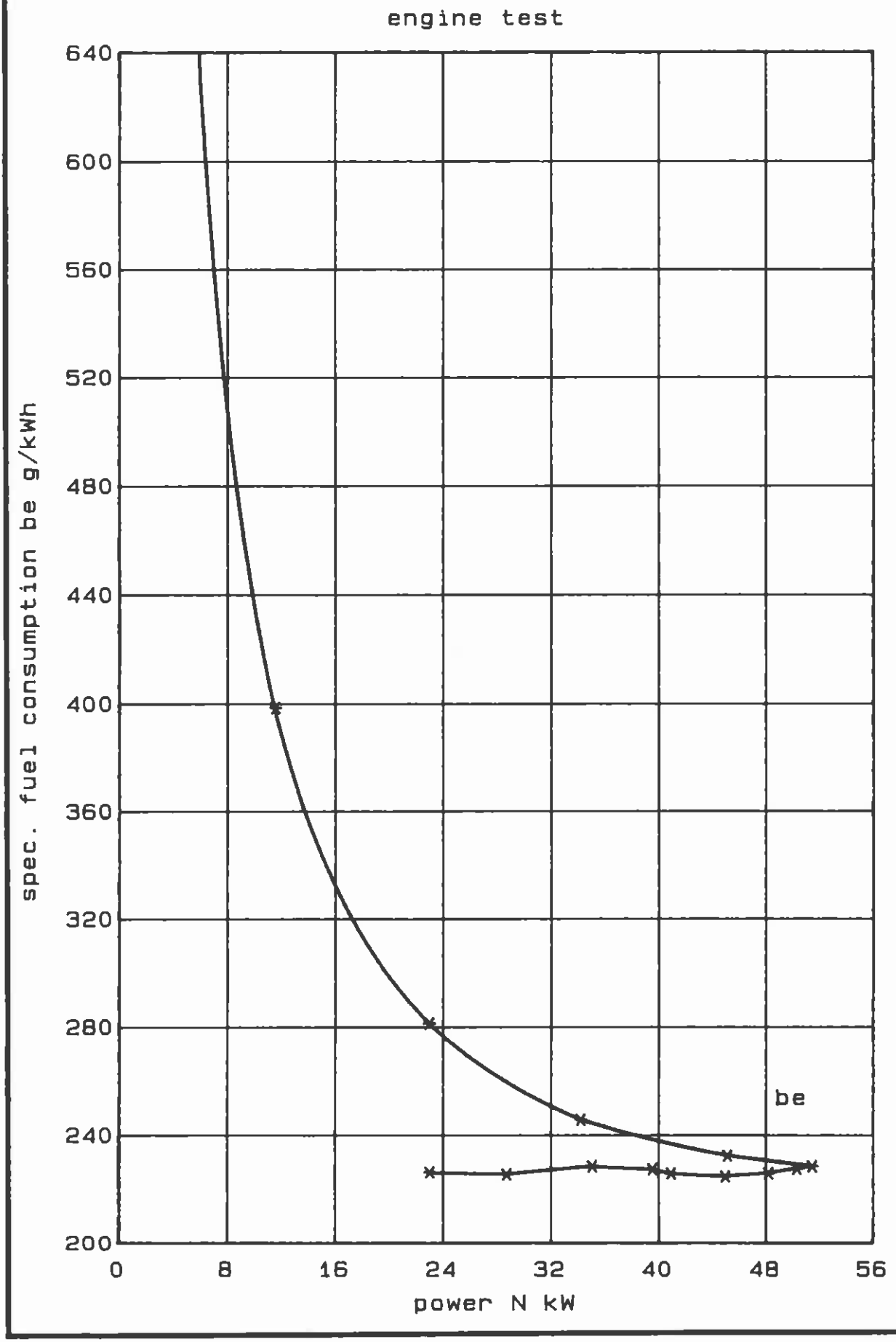
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