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

O.E.C.D. No. **880**

Agricultural Tractor IH 956 XL (4WD)

Type denomination IH 956-A-XL

Manufacturer
International Harvester Company m. b. H.
D-4040 Neuss

Deutsche Landwirtschafts-Gesellschaft e. V.
Zimmerweg 16 · D-6000 Frankfurt a. M. 1
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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 May 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: 21st September 1983 O.E.C.D. No. 880

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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IH 956-A-XL

Test No. 83-8

Tractor manufacturer:	INTERNATIONAL HARVESTER COMPANY MBH D-4040 Neuss
Submitted for test by:	Manufacturer
Selected by:	Manufacturer with agreement by DLG
Place of running-in:	Neuss and Groß-Umstadt
Duration of running-in:	Engine and tractor appr. 100 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	INTERNATIONAL HARVESTER COMPANNY MBH
Trade name:	IH 956 XL
Type denomination:	IH 956-A-XL
Type:	Wheel tractor, unit construction, all-wheel driven
Serial-No.:	D030 732 D001041

Engine

Make:	INTERNATIONAL HARVESTER
Model:	D-358
Type:	Watercooled 4-stroke Diesel-engine, direct injection
Serial-No.:	358 DT 2 D13000 4
Cylinders:	6, in line, bore 98,4 mm, stroke 128,5 mm; displacement 5863 cm^3, compression ratio 16/1 replaceable wet cylinder liners
Valves:	Overhead
Fuel system:	PIERBURG fuel supply pump, BOSCH distributor injection pump with timing device, VA6/10H 1100 CR 87/2 F; manufacturer's production setting 51±2mm^3/stroke at rated engine speed and full load; start of pump delivery 14° before TDC + 12° range of adjustment; BOSCH multihole injection nozzles DLLA 150 S 815, injection pressure 225 + 8 bar; BOSCH two-stage fuel filter with replaceable elements; capacity of fuel tank 140 l
Governor:	Hydraulically acting variable speed governor incorporated in injection pump; governed range of engine speed 750 to 2380 rev/min, rated engine speed 2200 rev/min

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Air cleaner:	MANN dry paper element filter with precleaner, replaceable cartridge with safety cartridge; electrically operating maintenance indicator; air intake below engine bonnet
Exhaust silencer:	WALKER HT 55 single chamber absorption type silencer 110 mm dia, 672 mm long, on the right hand side above engine bonnet, mouth showing upwards, mouth 2890 mm above ground
Lubrication system:	Forced-feed lubrication with gear type pump, strainer in sump; MANN oil filter in full flow with by-pass valve, replaceable; filter and oil change period 200 operating hours; oil capacity 12 l; specified oil quality API CD; specified oil viscosities winter SAE 5W/20 summer SAE 10W/30 tropics SAE 10W/30
Cooling system:	Water cooling with centrifugal pump and overpressure relief valve, relief valve adjusted to 0,6 bar; thermostat with by-pass; fan with 6 blades, 500 mm dia; water capacity 24,4 l, cooling system with replaceable cooling water filter, filter change period 400 operating hours
Starting system:	Electrical BOSCH solenoid pre engaged-drive performance starter motor JF 12V 2,7 kW; BOSCH heating spiral in intake manifold
Electrical equipment:	12 Volt, negative earth; BOSCH 3-phase alternator K1-14V 55A 20, 770 W; 1 lead acid battery, 110 Ah at 20 hours rating

Transmission

Clutch:	FICHTEL & SACHS dry dual disc type clutch DUT 310-310/310 travel drive pedal operated, disc 310 mm dia; p.t.o. drive hand lever operated, disc 310 mm dia
Gear box:	INTERNATIONAL HARVESTER, France synchro-mesh speed change gear with 4 speeds; collar shifted range gear with 2 forward ranges (A and S) and 1 reverse range (R); synchronized reduction gear with 2 ranges (CS and N) for all speeds, totally 16 forward and 8 reverse speeds
Rear axle and final drives:	Bevel gear drive; bevel gear differential with pedal operated, self disengaging lock; planetary final drives
Front axle and final drives:	ZAHNRADFABRIK FRIEDRICHSHAFEN APL-1552 driven by laterally situated propeller shaft; front-wheel drive under load shiftable by wet multi-plate clutch; multi-plate clutch with overload protection function; bevel gear drive; multi-plate self locking differential Lok-O-Matic; planetary final drives
Oil capacity and oil change intervals:	Gearbox 31 l rear axle and final drives, either side 7 l oil change period 1600 operating hours front axle 6 l front axle final drives, either side 1 l oil change period 800 operating hours Gear oil filter, change period 800 operating hours

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Recommended oils: Gearbox IH HY-TRAN-FLUID
IH specification B6

axles and
final drives gear oil SAE 90 API GL5

Total ratios and speeds (tyres 18.4-38)

Reduction gear	Range	Gear	Total ratio engine:driving wheel	Nominal travelling speed *) at rated engine speed km/h
Forward speeds				
CS	A	1	359,21	1,89
		2	261,47	2,60
		3	168,60	4,03
		4	111,33	6,11
	S	1	92,37	7,36
		2	67,24	10,11
		3	43,35	15,69
		4	28,63	23,76
N	A	1	293,85	2,31
		2	213,90	3,18
		3	137,92	4,93
		4	91,07	7,47
	S	1	75,56	9,00
		2	55,00	12,36
		3	35,47	19,18
		4	23,42	29,04
Reverse speeds				
CS	R	1	241,65	2,81
		2	175,90	3,87
		3	113,42	6,00
		4	74,89	9,08
N	R	1	197,68	3,44
		2	143,90	4,73
		3	92,78	7,33
		4	61,27	11,10

*) calculated with the radius index 820 mm

Power-take-off

Shiftable as independent p.t.o. or as ground speed p.t.o.;
2 p.t.o. shafts, for 540 rev/min and for 1000 rev/min at rear of tractor;
both shafts rotate simultaneously and are shifted in common by p.t.o. hand lever

540 rev/min p.t.o.
728 mm above ground, 62 mm to the right of tractor's median plane,
407 mm behind rear axle centre;
35 mm dia, 6 splines, ISO 500/DIN 9611 type 1

1000 rev/min p.t.o.
762 mm above ground, 36 mm to the left of tractor's median plane,
402 mm behind rear axle centre;
35 mm dia, 6 splines ISO 500/DIN 9611 type 1,
optional 35 mm dia, 21 splines ISO 500/DIN 9611 type 2

Independent p.t.o.:

Driven by the second disc of the dual disc type clutch, operated by hand lever;
both p.t.o. shafts rotate clockwisely, viewed from tractor rear

540 rev/min p.t.o.
619 rev/min at rated engine speed;
standard p.t.o. speed 540 rev/min at engine speed 1920 rev/min

1000 rev/min p.t.o.
1100 rev/min at rated engine speed;
standard p.t.o. speed 1000 rev/min at engine speed 2000 rev/min

Ground speed p.t.o.:

Driven by rear axle drive, locked if S-group is engaged;
both p.t.o. shafts rotate at forward movement clockwisely, viewed from tractor rear

540 rev/min p.t.o.
travel distance for 1 rev of p.t.o. shaft 0,160 m; 32,27 rev of p.t.o. for 1 rev of rear wheel

1000 rev/min p.t.o.
travel distance for 1 rev of p.t.o. shaft 0,090 m; 57,38 rev of p.t.o. for 1 rev of rear wheel

Power lift

INTERNATIONAL HARVESTER
K 120
hydraulic power lift, unit construction;
draft control, position control and floating position; lower link sensing; lowering throttle;
position control lever with additional remote control at rear of tractor

Hydraulic system:

Open centre system;
BOSCH tandem gear pump HY/ZFFS 11/11+8 L 158, directly driven by engine;
delivery 40 l/min at rated engine speed;
hydraulic filter with replaceable cartridge incorporated in pressure delivery line, cartridge change period 800 operating hours

BOSCH control valve
maximum working pressure 160 + 10 bar;
single acting cylinder with 120 mm bore and 168 mm stroke;
overpressure relief valve in cylinder set to 200 + 20 bar;
1 additional cylinder with 50 mm bore and 230 mm stroke optionally, attached to tested tractor;
1 BOSCH additional control valve SRZ 60 double acting,
2 couplings at rear of tractor;
maximum working pressure in remote circuit 170+10 bar

Oil capacity and oil change interval:

Hydraulic oil reserve in power lift unit and additional tank, total capacity 46 l;
up to 20 l may be taken off when tractor is working stationary or when tractor is travelling;
oil change period 800 operating hours

Oil:

IH-HY-TRAN-FLUID IH specification B6

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Implement linkage: Three point linkage with quick couplers, joint balls category 2 acc. to ISO 730/I; lift rods adjustable from 615 to 750 mm; lifting range above ground with mean lift rod length of 683 mm: from 255 mm to 910 mm

Pull attachment

Swinging drawbar: Height above ground 497 mm, measured at the surface; hole 33 mm diameter; distance of hole centre to rear axle centre 785 mm, to p.t.o. shaft end (540 rpm) 378 mm; pivot point 51 mm before rear axle centre; swinging drawbar laterally swingable about 208 mm to either side; permissible vertical load 1200 kg

Holed bar: Short bar, fitted on clevis of lower links; length between the joint balls 825 mm, thickness 30 mm, width 80 mm; centre hole and 4 holes in 80 mm distance each on either side; all holes 33 mm diameter; distance of holes' centre line with lower links in horizontal position:

from rear axle centre		1087 mm
from p.t.o. shaft end	540 p.t.o.	680 mm
	1000 p.t.o.	685 mm

height above ground adjustable by power lift in the range from 270 to 925 mm with lift rods length 683 mm, measured at the surface of the bar

Trailer hitch: CRAMER, KU 9502 height above ground adjustable from 878 to 1035 mm by shifting and turning the hitch; hitch hole 33 mm diameter; distance of hitch hole centre to rear axle centre 522 mm, to p.t.o. shaft end (540 rpm) 115 mm; permissible vertical load 1500 kg

Towing hitch: At front of tractor, 709 mm above ground

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Steering

ZAHNRADFABRIK FRIEDRICHSHAFEN
hydrostatic steering model 8452;
oil circuit in common with hydraulic power lift;
tandem part of the BOSCH pump HY/ZFFS 11/11+8
with 8 mm³/revolution delivery;
1 double acting differential ram,
directly acting on front wheels

Brakes

Parking brake: Mechanically acting wet band brake,
hand lever operated;
acting on 1 brake drum on the rear axle
differential with 305 mm diameter and
40 mm width

Service brake: INTERNATIONAL HARVESTER, France
pedal operated power assisted brake with
hydraulic transmission;
wet full-disc brake acting on the differential
half shafts of rear axle;
2 lining discs on each differential half shaft;
disc diameter 256 mm
WABCO brake booster, fed by the hydraulic
system of tractor

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

Wheels

Steered wheels: 2 pneumatics at front 13,6 R 28 6 ply,
radial type tyre casing;
maximum permissible load per tyre 1430 kg at
1,6 bar inflation pressure and 30 km/h;
track width 1740 mm;
rims W 11 x 28

Driving wheels: At front and at rear;
rear driving wheels:
2 pneumatics 18,4 R 38 8 ply,
radial type tyre casing;
maximum permissible load per tyre 2715 kg at
1,4 bar inflation pressure and 30 km/h;
track width 1800 mm,
by turning wheels adjustable to 1904 mm ;
rims W 15L x 38

Wheel base: 2587 mm

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Cab

INTERNATIONAL HARVESTER, France
C-85, model CFD 30,
OECD-tested safety cab, approval no.
CSD 0490/5-a(C);
all-steel construction of moulded elements,
welded and bolted together,
antivibration mounted by 4 silent blocks on
tractor;
1 door and 2 steps each on the left and right
hand side;
door windows, upper rear window and roof
hatch tiltable;
hot water heating, in circuit with cooling system;
heat exchanger and ventilation system combined,
incorporated in the roof;
air intake on the left and right side of the
roof, air outlet jets for cab floor and wind
screen,
further outlet jets in the roof;

driver's platform 1150 mm above ground;

noise-reduction materials:

floor	synthetic-heavy foil and viscose elastic impregnated foam	25 mm
roof	moulded, resin impregnated cotton fiber	5 to 7 mm
mudguards	carriage panel (paper), absorbend foam and imitation leather	20 mm
doors	right hand: ABS and imitation leather	3 mm
	left hand: polyurethan foam and PVC-foil	30 mm
seat support	synthetic-heavy foil, composite flaky foam and polyethylene foam	25 mm
front and rear wall	synthetic-heavy foil and composite flaky foam	15 mm

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Seat

GRAMMER
model DS 85H/90 AR
upholstered seat with back rest and arm rests,
adjustable spring with shock absorber;
height of unloaded seat above platform
adjustable from 500 to 560 mm in 2 steps;
seat for and aft movable about 150 mm

Number of grease points

20

Dimensions

Total length: 4402 mm without ballast
5802 mm with ballast *)

Total width: 2306 mm without ballast
2680 mm with ballast *)

Total height: 2890 mm to top of exhaust silencer
2770 mm to top of cab roof

Ground clearance: 445 mm below swinging drawbar bracket

*) when using a frame for ballast weights each at front and at rear

Available wheel equipments

Tyre sizes			
at front		at rear	
13-24 (11.25-24)	6 ply	18.4-34	6 ply
11.2-28	6 ply		
11.2-28	8 ply		
14.9-24	6 ply	16.9-38	8 ply
12.4-28	6 ply		
13.6-28	6 ply	18.4-38	8 ply
14.9-24	6 ply		
14.9-26	8 ply		

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Lighting equipment — Electrical 12 Volt, in accordance with German legislation

	Dimensions mm	Height above ground of centre mm	Distance from outside edge of tractor to centre mm
Head lights	140 x 125	1050	999
Side lights	90 x 30	1680	309
Rear lights	250 x 20	1710	345
Reflectors			
1st pair	90 x 45	1473	165
2nd pair	50 dia	764	683

Running-time meter — Mechanical, combined with tachometer, driven by camshaft of engine; reference engine speed for one really counted hour 1540 rev/min

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TEST CONDITIONS

Track setting: 1704 mm at front
1800 mm at rear

Weights

		without driver	with driver
Without ballast:	front	1875 kg	1885 kg
	rear	2940 kg	3000 kg
	total	4815 kg	4885 kg
Front ballast:	1 front frame		180 kg
	32 weights, total		1185 kg
Rear ballast:	1 rear frame		300 kg
	44 weights, total		1740 kg
With ballast:	front	2850 kg	2860 kg
	rear	5370 kg	5430 kg
	total	8220 kg	8290 kg

Fuels and lubricants used in tests

Fuel: ARAL Diesel-fuel DIN 51601
density at 15°C
at engine and p.t.o. test 0,831 kg/l
at drawbar test 0,833 kg/l

Engine oil: IH-engine oil HD/CD SAE 10W/30

Transmission oil: IH-HY-TRAN-FLUID IH specification B6
in gearbox and rear axle drive

IH-gear oil EP SAE 90
in front axle differential and all final drives

Hydraulic oil: IH-HY-TRAN-FLUID IH specification B6
in hydraulic and steering systems

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COMPULSORY TESTS

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

Date of tests: 10th February 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						
65.5	2200	1100	20.56	17.08	261	3.19
At standard p.t.o. speed						
61.0	2000	1000	19.10	15.87	260	3.20
At the speed recommended for drawbar work						
65.5	2200	1100	20.56	17.08	261	3.19
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						
57.5	2271	1135	18.28	15.19	264	3.15
(ii) unloaded						
-	2380	1190	5.66	4.71	-	-
(iii) 50% of the load defined in (i)						
29.7	2344	1172	11.66	9.69	326	2.55
(iv) maximum power						
65.5	2200	1100	20.56	17.08	261	3.19
(v) 25% of the load defined in (i)						
15.0	2365	1182	8.49	7.06	472	1.76
(vi) 75% of the load defined in (i)						
44.0	2319	1160	14.87	12.36	281	2.96

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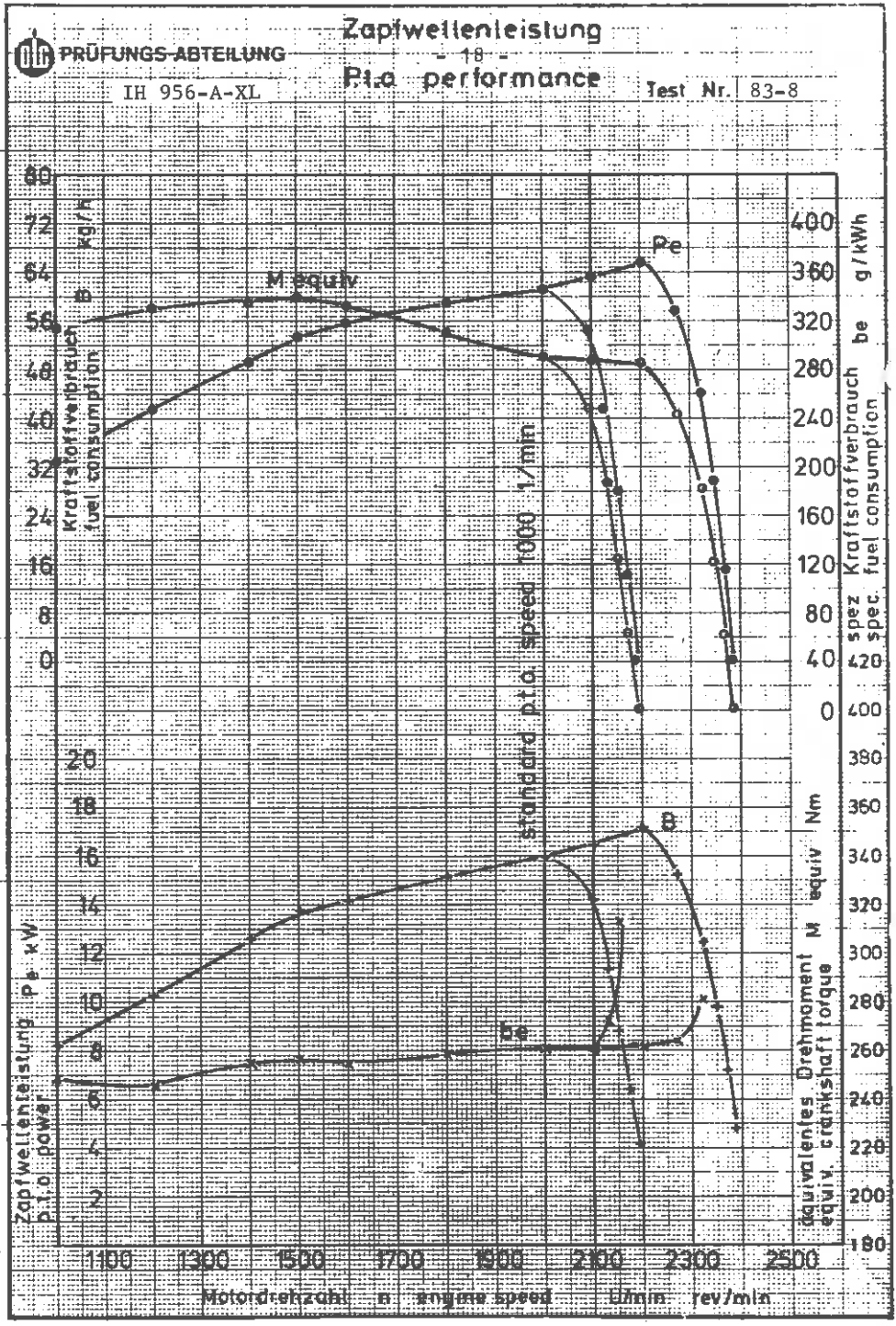
Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption hourly l/h	Fuel consumption hourly kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Part loads, the governor hand lever in the position corresponding to the standard p.t.o. speed at full load (curve b)						
(i) 85% of the torque at maximum power at standard p.t.o. speed						
54.3	2092	1046	16.99	14.12	260	3.19
(ii) unloaded						
-	2185	1092	4.91	4.08	-	-
(iii) 50% of the load defined in (i)						
27.9	2151	1076	10.49	8.72	312	2.66
(iv) maximum power						
61.0	2000	1000	19.10	15.87	260	3.20
(v) 25% of the load defined in (i)						
14.1	2169	1085	7.54	6.26	445	1.87
(vi) 75% of the load defined in (i)						
41.4	2127	1064	13.50	11.22	271	3.06

Standard specific fuel consumption (g/kWh): 264/326/260/312

No load maximum engine speed: 2380 rev/min
Equivalent crankshaft torque at maximum power (2 hours): 284 Nm
Maximum equivalent crankshaft torque: 340 Nm at 1501 rev/min of the engine

Mean atmospheric conditions:	temperature	17 °C
	pressure	991 mbar
	relative humidity	37 %
Maximum temperatures:	coolant	87 °C
	engine oil	113 °C
	fuel	24 °C
	engine air intake	18 °C


Zapfwellenleistung
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P.t.o. performance
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Pe
M equiv
B
Be
Kraftstoffverbrauch fuel consumption kg/h
Zapfwellenleistung P.t.o. power kW
standard p.t.o. speed 1000 1/min
spez Kraftstoffverbrauch spec. fuel consumption be g/kWh
äquivalentes Drehmoment M equiv Nm
equiv. crankshaft torque
Motordrehzahl n engine speed U/min rev/min
1100
1300
1500
1700
1900
2100
2300
2500

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Zapfwellenleistung

P.t.o. performance

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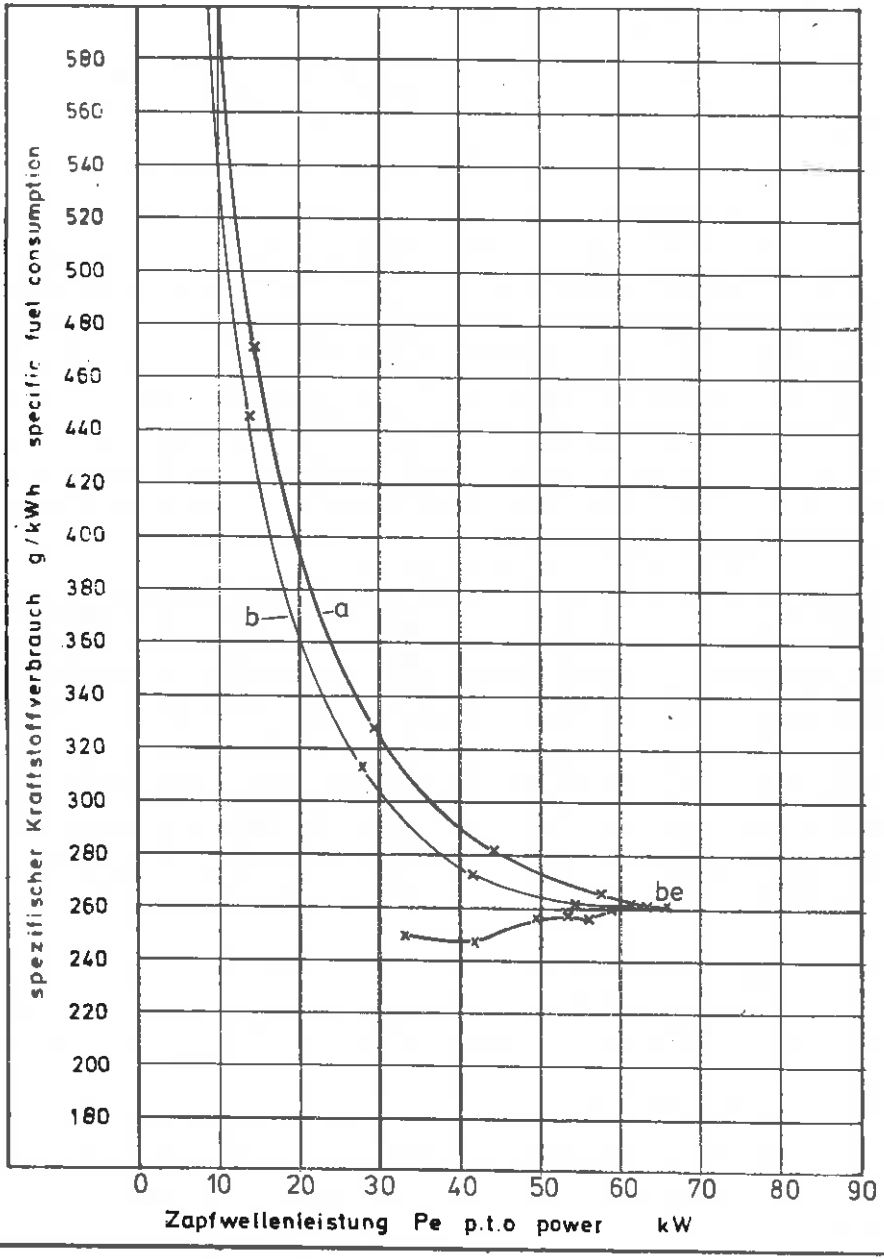

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(2) DRAWBAR PERFORMANCE

Date of tests: 16th till 29th 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 510 mm					
2 N A	2,90	41,2	5111	2304	14,9
3 CS A	3,58	50,7	5095	2242	15,0
3 N A	4,51	55,5	4433	2203	10,6
4 CS A	5,78	56,0	3485	2198	7,5
1 CS S	7,09	56,1	2851	2204	5,9
4 N A	7,19	57,2	2863	2201	5,8
1 N S	8,77	57,0	2341	2199	4,6
2 CS S	9,88	55,5	2022	2199	3,9
2 N S	12,20	55,8	1647	2201	3,1
(ii) MAXIMUM POWER (ballasted) height of drawbar above ground 475 mm					
1 CS A	1,70	37,5	7937	2283	14,9
1 N A	2,05	45,0	7907	2255	15,0
2 CS A	2,28	50,3	7942	2222	15,0
2 N A	2,92	56,1	6918	2198	10,0
3 CS A	3,84	56,4	5288	2197	6,5
3 N A	4,77	57,8	4364	2203	4,9
4 CS A	5,98	56,7	3414	2197	3,6
1 CS S	7,27	56,7	2808	2198	2,7
4 N A	7,35	56,3	2759	2196	2,8
1 N S	8,93	56,3	2269	2200	2,2
2 CS S	10,06	55,2	1976	2201	1,9
2 N S	12,37	54,8	1596	2202	1,4
(iii) FIVE-HOUR-TEST at 75 % of pull at maximum power in 1st N S gear					
1 N S	9,34	44,2	1702	2295	1,5
(iv) FIVE-HOUR-TEST at pull corresponding to 15 % wheel slip in test (ii)					
2 CS A	2,30	50,7	7942	2230	-

Total oil consumption during ten hours duration of tests (iii) and (iv) 16 g/h

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Tyre size front: 13.6 R 28 6 ply
rear: 18.4 R 38 8 ply

Tread bar height at the beginning of drawbar tests:
front 93 %, rear 87 % 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 0,8 bar at front; 1,1 bar at rear							
335	2,49	26	81	104	13	71	1002
327	2,55	26	81	104	14	74	1002
310	2,70	31	80	100	14	71	1002
304	2,75	31	81	99	13	72	1002
304	2,75	32	82	101	13	74	1002
300	2,79	31	81	101	13	73	1002
300	2,78	31	80	99	13	72	1002
308	2,71	29	81	95	5	84	1007
307	2,71	30	81	94	5	80	1007
tyre inflation pressure 1,6 bar at front; 1,4 bar at rear							
347	2,40	26	81	91	5	82	985
332	2,51	25	81	94	5	80	985
328	2,54	25	81	100	5	81	985
305	2,73	26	82	94	5	83	985
303	2,75	29	81	92	7	80	986
297	2,80	29	81	96	7	81	986
302	2,76	31	81	96	6	80	986
303	2,75	29	81	93	7	79	987
303	2,75	30	81	92	7	80	987
306	2,72	31	82	94	7	75	987
312	2,67	32	81	94	7	78	987
314	2,65	32	81	93	7	76	988
319	2,61	28	80	101	7	74	992
-	-	28	81	107	6	71	986

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

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(3) TURNING SPACE AND TURNING CIRCLE

Wheel equipment front: 13.6 R 28 6 ply
rear: 18.4 R 38 8 ply

Track of wheels front: 1740 mm
rear: 1800 mm

Front axle drive disengaged

	With brakes left-hand m	With brakes right-hand m	Without brakes left-hand m	Without brakes right-hand m
Radius of turning space	4,98	4,82	5,72	5,55
Radius of turning circle	4,67	4,52	5,41	5,25

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	971 mm
Distance forward from rear axle centre	997 mm
Distance from tractor's median plane, to the right	6 mm

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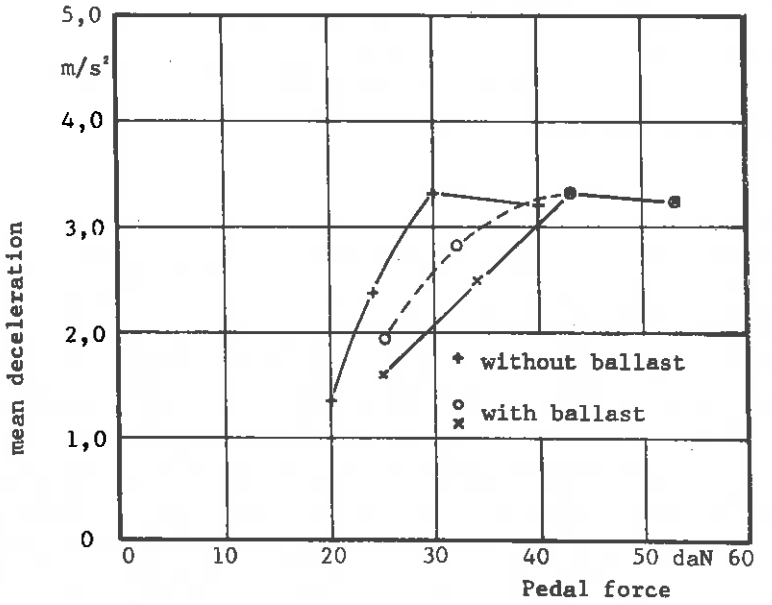
(5) Braking

Date of tests: 17th and 21st March 1983

Tractor masses during tests with driver:	front kg	rear kg	total kg
without ballast	1885	3000	4885
with ballast	2860	5430	8290

A) Service brake

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



Speed before application of brakes, without ballast 31,00 km/h
with ballast 30,42 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	40	34	24	21

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(6) MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of test:	17th March 1983
Type of track:	Concrete
Type of sound level meter:	BRÜEL AND KJAER model 2203

Results of test

Gear:	4th N S +)
Travelling speed before acceleration:	23,3 km/h
Sound level:	87,5 dB(A)

(7) NOISE MEASUREMENT AT THE DRIVER'S EAR

Date of tests:	17th March 1983
Type of track:	Concrete
Type of sound level meter:	BRÜEL AND KJAER model 2209

Tractor with IH-safety cab C-85

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 CS A	5012	1,89	1,75	82,0
1 N A	4999	2,31	2,15	82,0
2 CS A	5021	2,60	2,32	82,0
2 N A	4987	3,18	2,87	83,0
3 CS A	5010	4,03	3,54	82,5
3 N A	4380	4,93	4,54	82,5
4 CS A	3433	6,11	5,83	82,5
1 CS S	2783	7,36	7,20	83,0
4 N A++)	2790	7,47	7,27	82,5
4 N A++)	light load	7,47	8,20	79,5
1 N S	2317	9,00	8,78	82,5
2 CS S	2006	10,11	10,03	83,5
2 N S	1601	12,36	12,28	82,5
3 CS S	1193	15,69	15,67	83,0
4 N S+)	light load	29,04	31,00	81,0

+) Front axle drive disengaged
++) The 4th N A gear corresponds to the travelling speed nearest to 7,5 km/h

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(8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

Date of tests: 3rd May 1983

Power Lift (with 1 additional lifting cylinder)

	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	255	655	3189	144	-	-
On the frame	255	735	3141	144	5330	8,5 *)

Temperature of hydraulic fluid at start of test 65 °C

*) tilt angle of mast from vertical position to uppermost position 6,5°

Lifting heights relative to horizontal lower links

mm	-403	-400	-368	-300	-200	-100	0	+100	+200	+287	+300	+332
Lifting forces at hitch points												
daN			3189	3584	3979	4207	4374	4391	4444	4374		
Lifting forces at test frame												
daN	3141	3141		3536	3799	3869	3869	3799	3668		3536	3404

Hydraulic Pump Performance

Opening pressure of the relief valve in remote circuit	158 bar
Sustained pressure with relief valve open	170 bar
Pump delivery rate at minimum pressure, the governor control lever being set for max. power	44,0 l/min
Hydraulic power at 90% of relief valve setting	9,5 kW
Corresponding delivery rate	37,4 l/min
Pressure	153 bar
Temperature of hydraulic fluid	65 °C

Tapping point used for test: at rear of tractor

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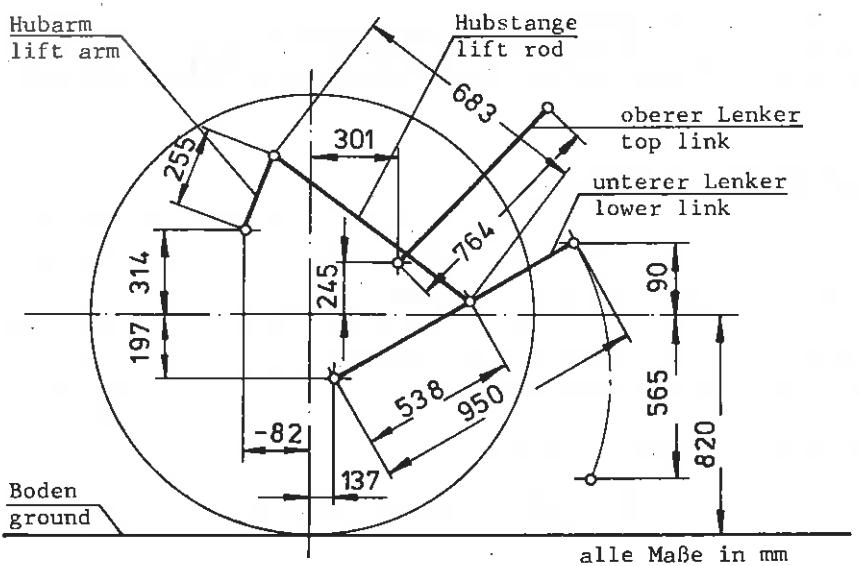
LINKAGE GEOMETRY when connected to the standard frame

Projected length in side view:

Lower links	950 mm
Lift arms	255 mm
Lift rods	683 mm
Top link	764 mm
Distance of lift rod connection point from pivot point of lower link	538 mm

The following dimensions are given relative to the rear wheel centre line, situated 820 mm above ground:

Lower link pivot point	197 mm below,	137 mm behind
Top link pivot point	245 mm above,	301 mm behind
Lift arm pivot point	314 mm above,	82 mm behind
Maximum and minimum height of lower link hitch points	90 mm above,	565 mm below
Height of lower link hitch points when locked in transport position	90 mm above	



OPTIONAL TESTS

(9) ENGINE PERFORMANCE

Date of tests: 2nd February 1983
Location of tests: DLG-Testing-Station Groß-Umstadt
Type of dynamometer: SCHENCK eddy-current dynamometer W 400

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					
70.7	2200	20.55	17.08	241	3.44
At standard p.t.o. speed (1000 rev/min)					
66.6	2000	19.28	16.02	240	3.46
At rated engine speed					
70.7	2200	20.55	17.08	241	3.44
Part loads					
(i) 85% of the torque at maximum power at 2-hour test					
61.7	2257	17.94	14.91	242	3.44
(ii) unloaded					
-	2371	5.02	4.17	-	-
(iii) 50% of the torque defined in (i)					
31.9	2336	11.09	9.22	289	2.88
(iv) maximum power					
70.7	2200	20.55	17.08	241	3.44
(v) 25% of the torque defined in (i)					
16.2	2348	7.85	6.52	403	2.06
(vi) 75% of the torque defined in (i)					
47.3	2305	14.42	11.98	254	3.28

Optimum fuel consumption: 222 g/kWh at 30,2 kW and 990 rev/min
No load maximum engine speed: 2371 rev/min
Torque at maximum power (2 hours): 307 Nm
Maximum torque: 364 Nm at 1400 rev/min of the engine

Mean atmospheric conditions:	temperature	18 °C
	pressure	995 mbar
	relative humidity	35 %
Maximum temperatures:	coolant	85 °C
	engine oil	103 °C
	fuel	19 °C
	engine air intake	20 °C

Motorleistung
Engine performance

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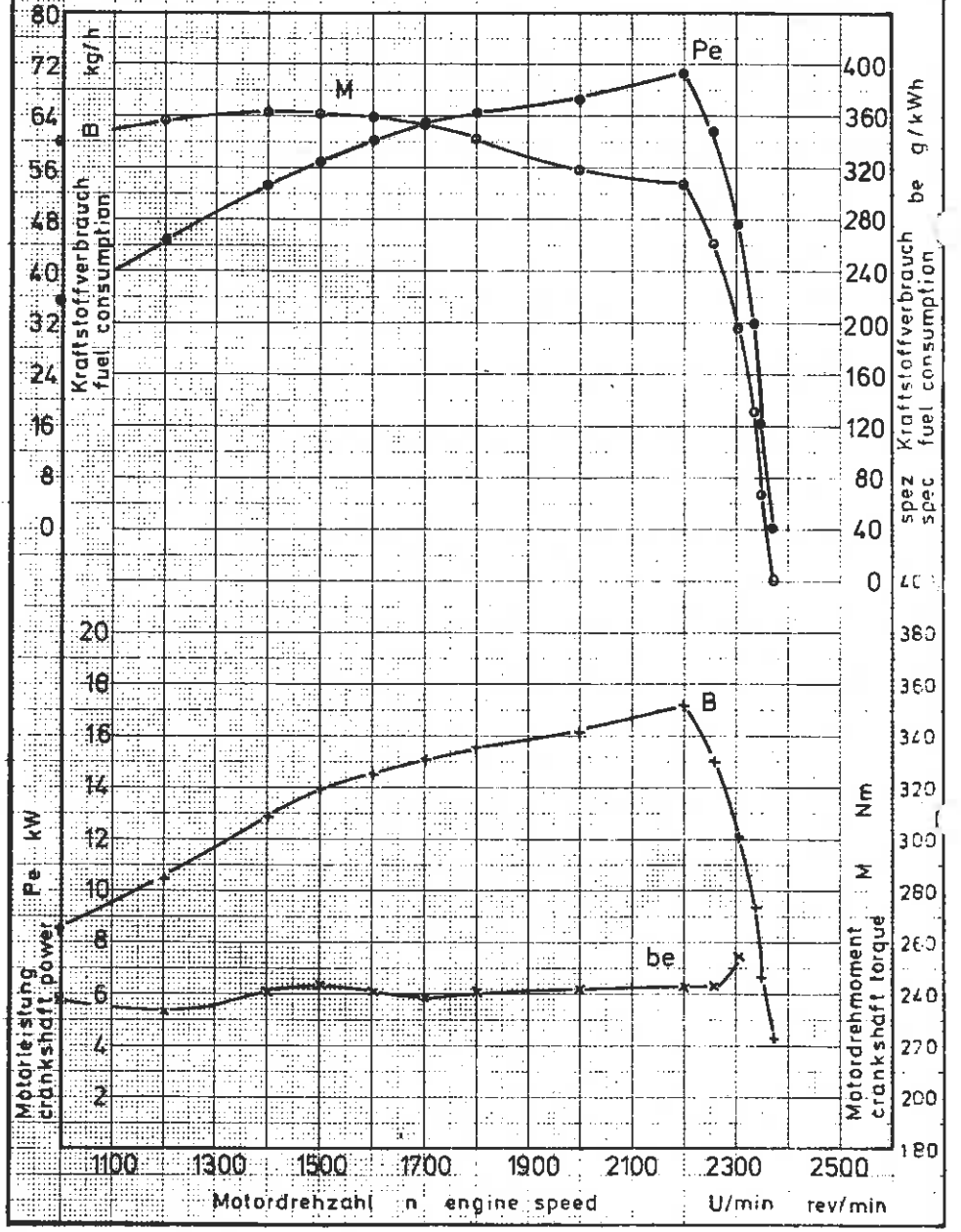
Test Nr. 83-8



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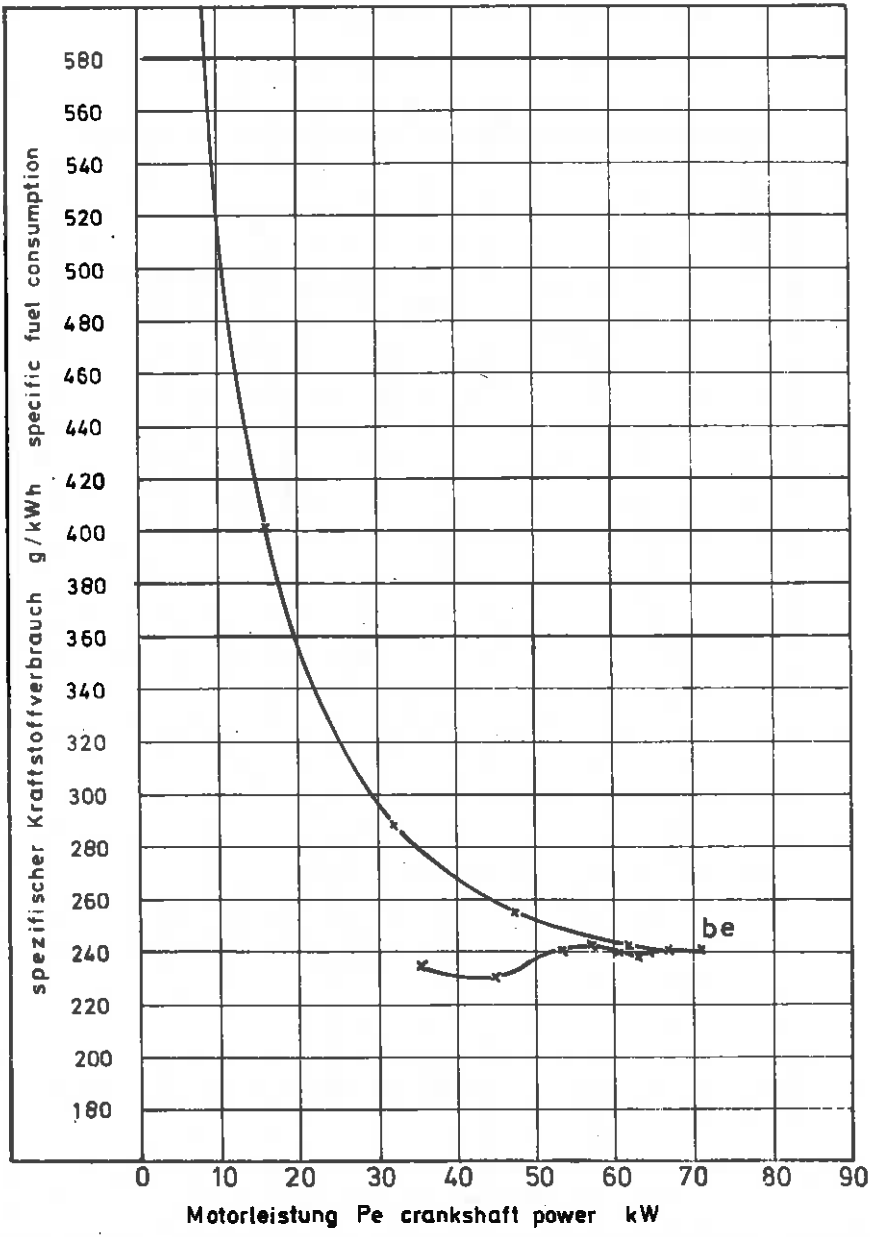
Motorleistung
- 29 -
Engine performance

Test Nr 83-8



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Motorleistung

- 30 -

Engine performance

Test Nr. 83-8

Motorleistung in % der Leistung bei Nenndrehzahl

engine power in % of power at rated engine speed

ADDITIONAL TESTS

(10) LIFTING FORCES OF POWER LIFT (without additional lifting cylinder)

The dimensions of linkage geometry are same as stated on page 26

Date of tests: 5th May 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	255	655	2773	144	-	-
On the frame	255	735	2659	144	4512	8,5 *)

Temperature of hydraulic fluid at start of test 65°C

*) tilt angle of mast from vertical position to uppermost position 6,5°

Lifting heights relative to horizontal lower links

mm	-403	-400	-368	-300	-200	-100	0	+100	+200	+287	+300	+332
Lifting forces at hitch points												
daN			2773	3080	3365	3497	3562	3584	3562	3475		
Lifting forces at test frame												
daN	2681	2702		2944	3097	3119	3097	3010	2944		2900	2659

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Test No. 83-8

(11) NOISE MEASUREMENT AT THE DRIVER'S EAR

Date of tests: 17th March 1983
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2209
Type of octave filter: BRÜEL AND KJAER model 1613

Tractor with IH-safety cab C-85

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)	Sound level Noise Rating
4 N A	2790	7,47	7,27	82,5	78,5
2 CS S	2006	10,11	10,03	83,5	80,0

There is no gear combination in which the NOISE RATING number is higher than 80

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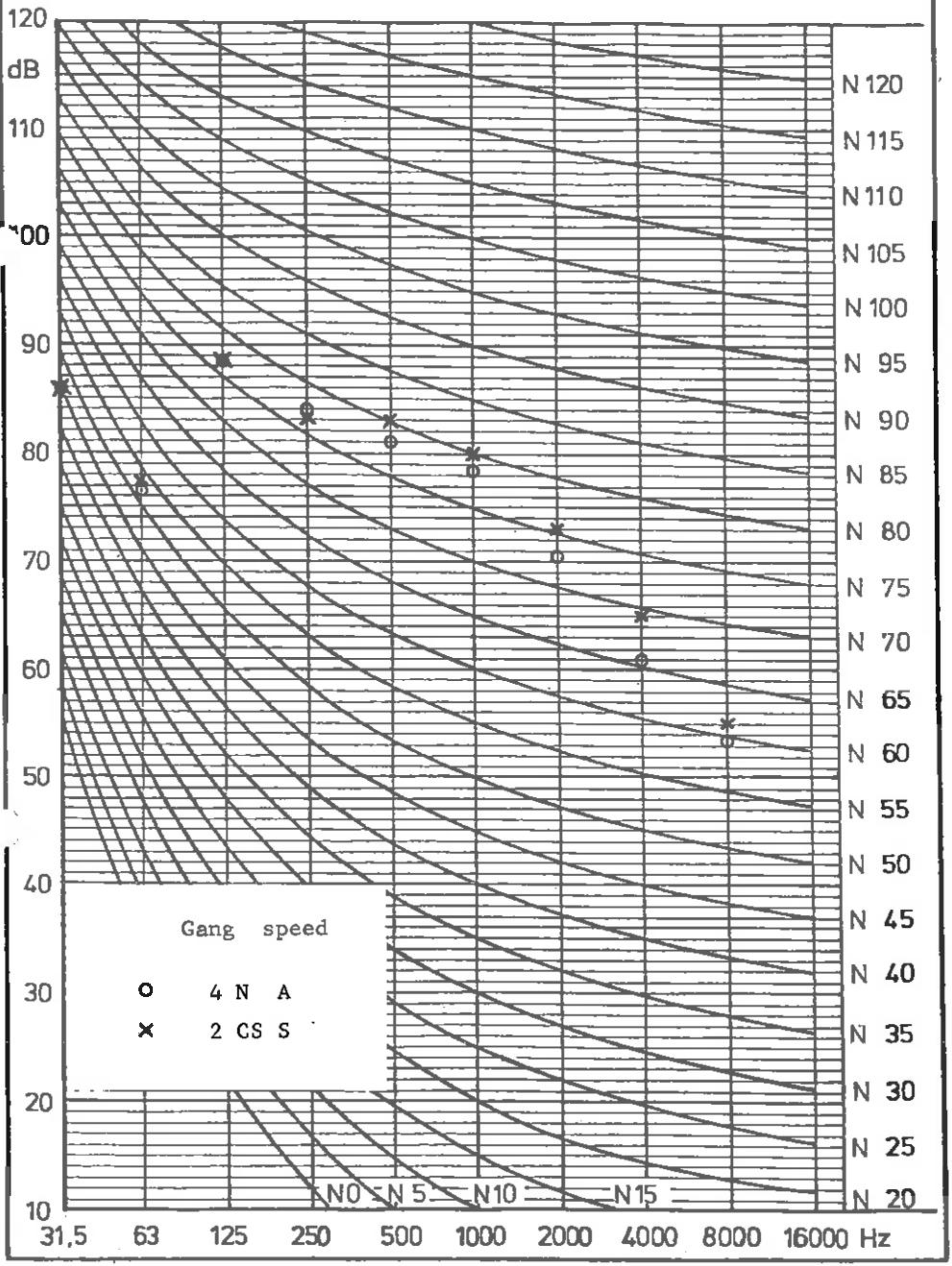
Test Nr. 83-8

Schleppergeräusch am Ohr des Fahrers
Noise at the driver's ear



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