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

O.E.C.D. No. 1039



Agricultural Tractor
KUBOTA L 2550 D (4WD)

Manufacturer
Kubota Ltd.,
Naniwa-Ku, Osaka, Japan

Deutsche Landwirtschafts-Gesellschaft e. V.
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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: July till August 1986
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: 12th January 1987 O.E.C.D. No. 1039

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
KUBOTA L 2550 D

Test No. 86-149

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*) All stated dimensions refer to tyre sizes 7-16 at front and 12.4-24 at rear, as well as track widths 1120 mm at front and 1050 mm at rear

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KUBOTA L 2550 D

Test No. 86-149

Tractor manufacturer:	KUBOTA LTD. Naniwa-Ku, Osaka, Japan
Submitted for test by:	KUBOTA TECHNICAL CENTER EUROPE 95101 Argenteuil, France
Selected by:	Manufacturer with agreement by DLG
Place of running-in:	Osaka and Groß-Umstadt
Duration of running-in:	Engine and tractor appr. 75 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	KUBOTA
Trade name:	L 2550 D
Type:	Wheel tractor, all-wheel driven semi-chassis construction
Serial-No.:	523 24
Start of series:	500 01

Engine

Make:	KUBOTA
Model:	D 1402-DI-A
Type:	Watercooled 4-stroke Diesel-engine direct injection
Serial-No.:	12 944
Cylinders:	3, in line, bore 85 mm, stroke 82 mm, displacement 1396 cm^3, compression ratio 18:1; replaceable dry cylinder liners
Valves:	Overhead
Fuel system:	Diaphragm pump for fuel supply, DIESEL KIKI in line injection pump NP-PFR 3 KD 75/2NP17 (BOSCH "Mine K type"), Serial-no. 552 0006, manufacturer's production setting 24,5±1,5 mm^3/stroke at rated engine speed and full load; start of pump delivery 18±1° before TDC; STANADYNE multihole injection nozzles model 27836, injection pressure 235±5 bar; TAIYOGIKEN fuel filter with replaceable paper element; capacity of fuel tank 29 l

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Governor:	KUBOTA centrifugal variable speed type governor, governed range of engine speed 800 to 2800 r/min, rated engine speed 2600 r/min
Air cleaner:	TOKYO ROKI dry paper element filter with cyclone type pre-cleaner, filter element replaceable; without maintenance indicator, air intake below engine bonnet
Exhaust silencer:	KUBOTA reflection type silencer and absorption type silencer, on the left hand side, 585 mm long, 140 x 98 mm oval and 320 mm long, 54 mm dia; vertical, mouth showing upwards to the left, 2000 mm above ground
Lubrication system:	Forced-feed with internal gear pump; KUBOTA filter in full flow with by-pass valve, replaceable; cartridge changing period 400 operating hours, oil changing period 200 operating hours, oil capacity 5,7 l; specified oil quality and viscosities: API-CC or -CD above 25°C SAE 30 or SAE 10W/30 between 0°C and 25°C SAE 20 or SAE 10W/30 below 0°C SAE 10W or SAE 10W/30
Cooling system:	Water cooling with centrifugal pump, controlled by thermostat; overpressure-valve set to 0,9 bar; fan with 340 mm dia, 6 blades, V-belt driven; direction of blowing from behind to the front; water capacity 5,0 l
Starting system:	Electrical NIPPON DENSO solenoid pre engaged-drive starting motor, 1,4 kW NIPPON TOKUSHU glow plugs; depressed clutch pedal as safety device
Electrical equipment:	12 Volt, negative earth; NIPPON DENSO 3-phase alternator ND 121000-0980, 12 V, 35 A, 420 W; 1 lead acid battery, 80 Ah at 20 hours rating

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Transmission

Clutch: DAIKIN SEISAKUSHO
dry dual disc clutch, discs 215 mm dia,
pedal operated (2 steps)

Gear box: KUBOTA
gear box with 4 speeds, 1st and 2nd speed collar shifted, 3rd and 4th speed synchronized (as option);
collar shifted range gear with 2 ranges H and L;
sliding gear shifted creep speed group Cr *) (as option), use only for cultivation work;
collar shifted reversing gear, at reverse movement 4th speed is locked in range H;
total 16 forward and 14 reverse speeds,
3 shift levers

Total ratios and speeds

Range	Gear	Total ratio engine to driving wheel		Nominal travelling speed**) at rated engine speed km/h	
		without Cr (N)	with Cr*)	without Cr (N)	with Cr*)
Forward					
L	1	365,88	2905,52	1,45	0,18
	2	262,68	2086,02	2,01	0,25
	3	167,13	1327,21	3,17	0,40
	4	118,26	939,16	4,48	0,56
H	1	67,65	537,20	7,82	0,99
	2	48,57	385,68	10,90	1,37
	3	30,90	245,39	17,13	2,16
	4	21,87	173,64	24,21	3,05
Reverse					
L	1	406,00	3224,11	1,30	0,16
	2	291,49	2314,75	1,82	0,23
	3	185,46	1472,74	2,85	0,36
	4	131,23	1042,14	4,03	0,51
H	1	75,06	596,10	7,05	0,89
	2	53,89	427,97	9,82	1,24
	3	34,29	272,29	15,44	1,94

*) not fitted
**) calculated with the radius index 540 mm

Rear axle and final drives: KUBOTA
bevel gear drive;
bevel gear differential with pedal operated self disengaging lock;
spur gear final drives

Front axle and final drives: KUBOTA
central driven, sliding gear shifted;
bevel gear drive with bevel gear differential without lock;
final drives with bevel gear drive, vertical shaft within steering knuckle and bevel gear drive

Lubrication:

	Oil sort and quality	Oil viscosity SAE	Oil capacity l	Oil change operating hours
Gear box, rear axle and hydraulic system	multi purpose gear oil	75	28,5	300
Front axle differential and front axle final drives	gear oil API-GL4	80 or 90	6,5	

Power take-off: Semi-independent; driven by 2nd disc of dry dual disc clutch, disc 215 mm dia, pedal operated;
1 p.t.o. shaft at rear of tractor, in tractor's median plane, 555 mm above ground,
distance to rear wheels' centre line 173 mm;
35 mm dia, 6 splines, ISO 500/DIN 9611 type 1, sense of rotation clockwise (viewed to the tractor's rear)

2 speeds are preselectable by hand lever

P.t.o.	P.t.o. speed r/min	Engine speed r/min	P.t.o. transmission ratio
540	540	2298	4,255
	611	2600	
1000 *)	1000	2438	2,438
	1067	2600	

*) speed not in conformity with ISO 500

Power lift	KUBOTA hydraulic power lift, unit construction; position control, floating position, lowering throttle
Hydraulic system:	Open centre system; KUBOTA gear pump, model GPS-90-L 532320, gear driven by engine; delivery 25 l/min at rated engine speed; KUBOTA control valve, maximum working pressure 152+5 bar; single acting ram with 85 mm bore and 90 mm stroke, overpressure relief valve in cylinder set to 200+10 bar; additional hydraulic block *) (without own control valve) for remote circuit
Hydraulic oil:	In common with gear box, see on page -7-; oil filter in suction line, filter cleaning every 300 operating hours
Implement linkage:	Three point linkage, category 1 ISO 730/I respectively DIN 9674, dimensions see on pages 10 and 11

Pull attachments

Fixed drawbar:	Turnable;	
	height above ground	400 or 295 mm
	hole's centre	
	behind rear wheel centre line	529 mm
	behind p.t.o. shaft	355 mm
	below p.t.o. shaft	155 or 260 mm
	hole's diameter	25 mm
	permissible vertical load	500 kg

*) below hydraulic pump, 5 l oil available to external cylinders

Holed drawbar: Short bar,
length between joint balls 680 mm,
thickness 25 mm, width 70 mm;
9 holes with 22 mm dia and 71 mm distance each;
height above ground minimum 190 mm
maximum 895 mm
holes' centres behind p.t.o. shaft 559 mm
(if lower links are horizontal)

Towing hitch: None

Steering
NIPPON SEIKO
mechanical, ball srew type,
acting by divided steering track rod on
front wheels

Brakes

Service brake: KUBOTA
pedal operated muscle power brake with
mechanical transmission;
wet full-disc brakes acting on the
differential half shafts of the rear axle,
with 2 lining discs on each side,
disc diameter 210 mm; trailer braking take-off:
none

Parking brake: Pulling handle with hook-interlock acting
on pedals of service brake

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

Wheels

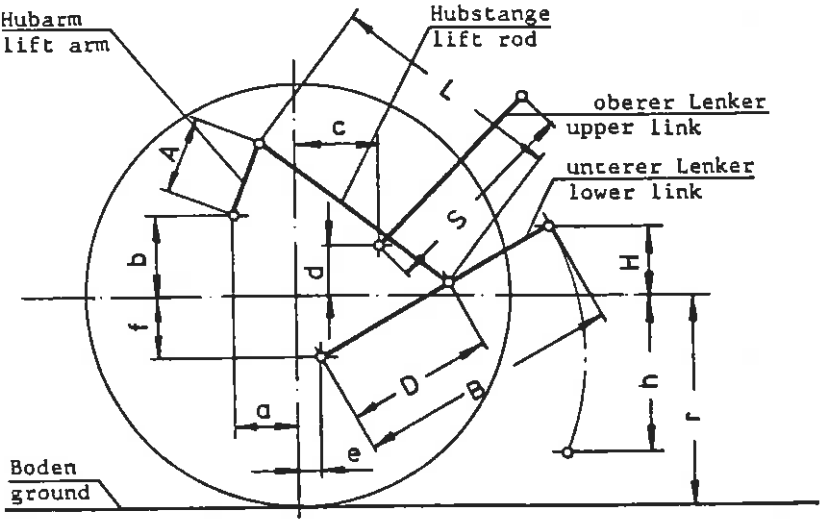
Steered wheels: 2 pneumatics at front BRIDGESTONE 7-16 4 ply,
cross-ply type tyre casing;
maximum permissible load per tyre 405 kg
at 1,8 bar inflation pressure and 30 km/h;
track width 1120 mm, non adjustable;
rims 16 x 5 JA

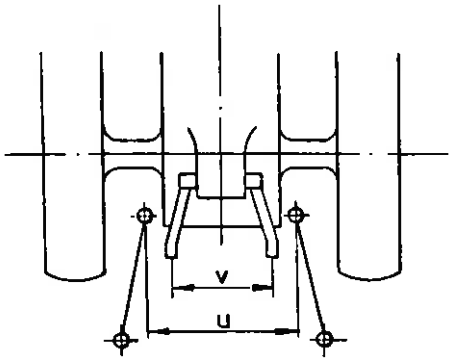
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Implement linkage:





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Dimensions of rear implement linkage (projected lengths in mm, underlined dimensions are valid for power lift measurements p. 25)

Rear tyres	radius index	(r)	540
Front tyres	radius index	(r')	345
Length of lift arms		(A)	230
Length of lower links		(B)	620
Distance of lift arm pivot points from rear wheel centre	horizontal	(a)	10
	vertical	(b)	305
Horizontal distance between lower link pivot points		(u)	285
Horizontal distance between lift arm end points		(v)	295
Length of upper link		(S)	480 to 760, <u>645</u>
Distance of upper link pivot point from rear wheel centre	horizontal	(c)	102
	vertical	(d)	131, 191, <u>251</u>
Distance of lower link pivot point from rear wheel centre	horizontal	(e)	112
	vertical	(f)	85
Distance of lower link pivot points from lift rod pivot points on lower links		(D)	280
Length of lift rods	left hand side	(L)	390, 415, <u>440</u>
	right hand side		335 to <u>495</u>

Height of lower link hitch points relative to rear wheel centre line (situated 540 mm above ground), these data are valid for unloaded power lift:

Length of lift rods	(L)	390	<u>440</u>
Linkage distance of lift rods	(D)	280	280
Lowest position	(h)	202	350
Highest position	(H)	355	255
Transport position	(H')	355	255

Type of transport lock: Hydraulic-mechanical

Driving wheels:	At front and at rear; rear driving wheels: 2 pneumatics BRIDGESTONE 12.4-24 4 ply, cross-ply type tyre casing; maximum permissible load per tyre 945 kg at 1,1 bar inflation pressure and 30 km/h; track width 1050 mm, adjustable to 1050 1150, 1240, 1335, 1420 or 1515 mm by adjustable-gauge bowl wheels; rims 24 x W 10
Wheel base:	1640 mm
Safety frame	BUISARD frame 554023, OECD-tested, approval no. CSD 01010/1; 2-post-frame of steel tube, mounted to rear axle casing, behind driver's seat
Seat	BOSTROM, BALTIC XH2; upholstered seat with back rest, adjustable spring, hydraulic shock absorber; height of unloaded seat above driver's platform adjustable in 6 steps from 540 to 610 mm, longitudinal adjustment 150 mm; driver's platform 620 mm above ground

Overall dimensions

Total length:	2995 mm without ballast 3185 mm with ballast
Total width:	1340 mm without ballast 1725 mm with ballast
Total height:	2000 mm to mouth of exhaust silencer 2395 mm to top of safety frame
Ground clearance:	340 mm below front axle differential

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Running-time meter — Mechanical, combined with tachometer, driven by camshaft of injection pump, reference engine speed for one really counted hour 2600 1/min

Lighting equipment — Electrical 12 Volt, in acc. with French regulations

	Dimensions mm	Height above ground of centre mm	Distance from outside edge of tractor to centre mm
Head lights	140 x 90	1120	520
Side lights	110 x 35	1250	140
Rear lights	110 x 35	1250	140
Reflectors	94 x 44	1170	205

Permissible tyre sizes

Tyre size	
at front	at rear
7 - 16 4 ply	11.2 - 24 4 ply 12.4 - 24 4 ply

TEST CONDITIONS

Track setting: 1120 mm at front
1050 mm at rear

Weights

		without driver	with driver
Without ballast:	front	535 kg	550 kg
	rear	700 kg	770 kg
	total	1235 kg	1320 kg
Front ballast:	8 weights, total		200 kg
Rear ballast:	8 weights per wheel, total		432 kg
	3 weights at implement linkage		75 kg
	water in the tyres		273 kg
With ballast:	front	790 kg	805 kg
	rear	1425 kg	1495 kg
	total	2215 kg	2300 kg

Technically permissible axle loads: at front 800 kg
at rear 1500 kg

Technically permissible total weight: 2300 kg

Repairs and remarks: None

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Fuels and lubricants used in tests

Engine:	ARAL Diesel-fuel DIN 51601	
	density at 15°C	
	at engine tests	0,853 kg/l
	at p.t.o. tests	0,853 kg/l
	at drawbar tests	0,845 kg/l
	Engine oil ESSOLUBE HDX SAE 20W/20	
Gear box, axles and power lift:	Gear oil ESSO TORQUE FLUID 56	
Grease points:	Multi-purpose grease	
Number of grease points:	8	

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COMPULSORY TESTS

(1) MAIN POWER TAKE OFF PERFORMANCE (540 r/min)

Date of tests: 8th August 1986
Location of tests: DLG-Testing Station Groß-Umstadt
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	speed engine r/min	speed p.t.o. r/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						
17,6	2600	611	5,39	4,60	261	3,26
At rated speed						
17,6	2600	611	5,39	4,60	261	3,26
At standard p.t.o. speed						
17,5	2298	540	5,13	4,38	251	3,40
Part loads, the governor hand lever in the position corresponding to maximum power at full load (curve a)						
(i) the torque corresponding to maximum power at rated speed						
17,6	2600	611	5,39	4,60	261	3,26
(ii) 85% of the torque obtained in (i)						
15,2	2649	622	4,76	4,06	266	3,20
(iii) 75% of the torque defined in (ii)						
11,6	2677	629	3,88	3,31	286	2,98
(iv) 50% of the torque defined in (ii)						
7,8	2708	636	3,07	2,62	335	2,55
(v) 25% of the torque defined in (ii)						
4,0	2757	648	2,34	1,99	504	1,69
(vi) unloaded						
-	2804	659	1,72	1,47	-	-

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Power kW	speed engine r/min	speed p.t.o. r/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) the torque corresponding to maximum power						
17,5	2298	540	5,13	4,38	251	3,40
(ii) 85% of the torque obtained in (i)						
15,1	2338	549	4,46	3,81	252	3,39
(iii) 75% of the torque defined in (ii)						
11,6	2378	559	3,63	3,10	268	3,18
(iv) 50% of the torque defined in (ii)						
7,8	2418	568	2,79	2,38	305	2,80
(v) 25% of the torque defined in (ii)						
4,0	2465	579	2,06	1,76	438	1,95
(vi) unloaded						
-	2522	593	1,42	1,21	-	-

Standard specific fuel consumption (g/kWh): 286/335/252/305

No load maximum engine speed: 2804 r/min
Equivalent flywheel torque at rated engine speed: 65 Nm
Maximum equivalent flywheel torque: 82 Nm at 1601 r/min of the engine

Mean atmospheric conditions

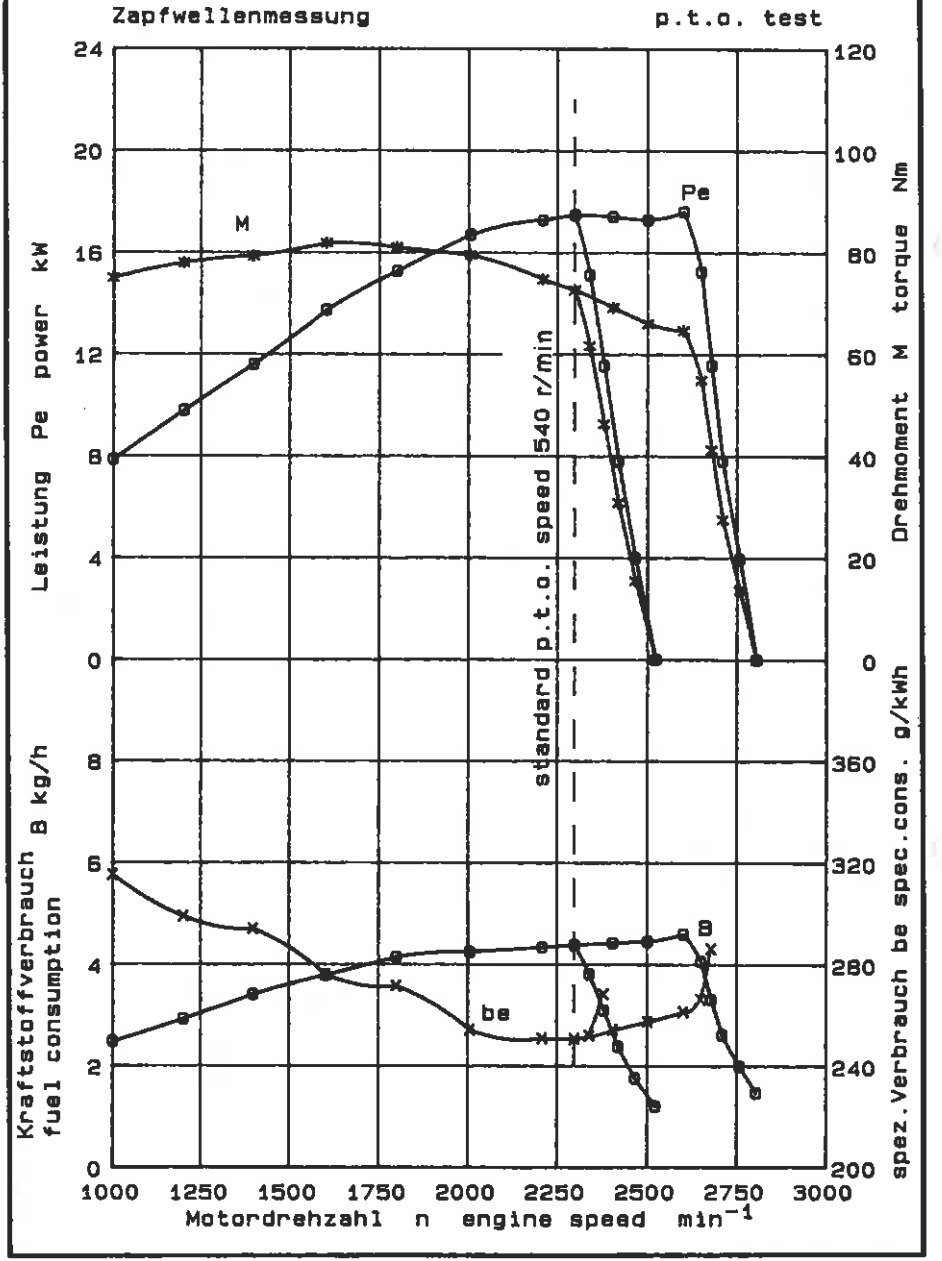
temperature	21 °C
pressure	997 mbar
rel. humidity	60 %

Maximum temperatures

coolant	100 °C
oil	109 °C
fuel	24 °C
air intake	28 °C

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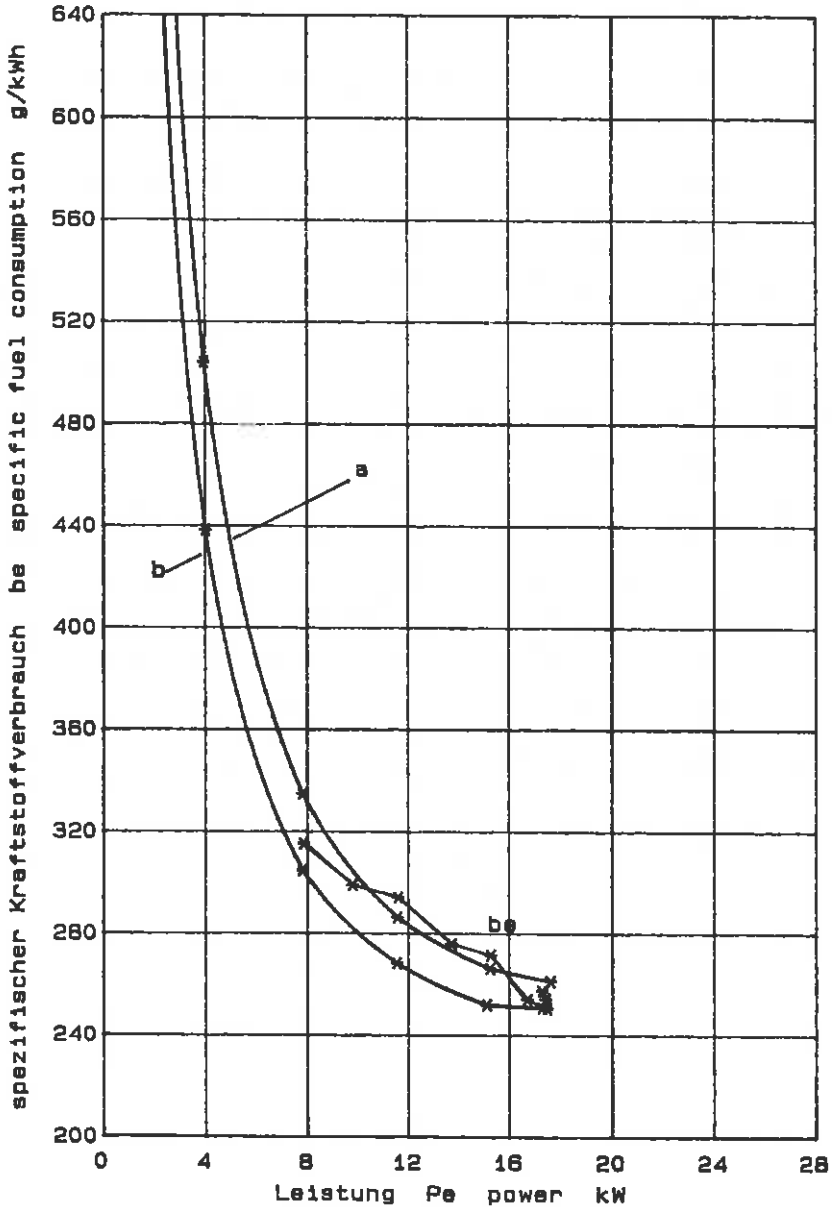


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Zapfwellenmessung

p.t.o. test



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(2) DRAWBAR PERFORMANCE

Date of tests: 13th till 15th August 1986
Type of track: Concrete

Gear	Driving speed km/h	Power kW	Drawbar pull daN	Engine speed r/min	Slip of wheels %
(i) MAXIMUM POWER (unballasted) height of drawbar above ground 420 mm					
2 L N	1,80	6,7	1341	2712	14,9
3 L N	2,79	10,6	1364	2675	14,9
4 L N	3,88	14,0	1296	2603	13,9
1 H N	7,34	14,4	704	2602	6,7
2 H N	10,44	14,5	500	2603	4,4
3 H N	16,79	13,2	283	2602	2,2
(ii) MAXIMUM POWER (ballasted) height of drawbar above ground 400 mm					
1 L N	1,27	7,6	2166	2717	15,1
2 L N	1,74	10,4	2155	2684	15,0
3 L N	2,75	14,3	1869	2600	12,0
4 L N	4,08	14,6	1292	2602	7,6
1 H N	7,41	14,2	689	2600	3,8
2 H N	10,42	13,7	474	2601	2,5
(iii) FIVE-HOUR-TEST at 75% of pull at maximum power in 1 H N gear					
1 H N	7,68	11,0	517	2667	2,8
(iv) FIVE-HOUR-TEST at pull corresponding to 15% wheel slip in test (ii)					
2 L N	1,75	10,5	2166	2678	-

Total oil consumption during ten hours duration of tests (iii) and (iv) 25 g/h

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Tyre size front: 7 - 16 4 ply
rear: 12.4 - 24 4 ply

Tread bar height at the beginning of drawbar tests: 86% 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: 1,0 bar at front; 0,8 bar at rear							
427	1,98	26	84	95	20	98	999
360	2,35	26	84	99	20	89	999
332	2,54	26	87	100	20	87	999
320	2,64	26	89	102	20	90	999
316	2,67	26	89	103	26	89	999
351	2,41	26	89	102	26	91	995
tyre inflation pressure: 1,2 bar at front; 0,8 bar at rear							
410	2,06	24	83	92	20	92	999
365	2,31	25	84	97	20	89	999
324	2,61	25	85	101	20	93	999
312	2,70	25	87	102	20	95	999
323	2,61	25	89	104	20	89	992
335	2,53	25	90	102	20	89	992
345	2,45	31	95	105	24	68	992
-	-	22	85	106	18	99	992

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 (Front wheel drive disengaged)

Wheel equipment front: 7 - 16
rear: 12.4 - 24

Track of wheels front: 1120 mm
rear: 1050 mm

	With brakes left-hand m	With brakes right-hand m	Without brakes left-hand m	Without brakes right-hand m
Radius of turning space	2,51	2,54	2,85	3,01
Radius of turning circle	2,32	2,33	2,76	2,80

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	719 mm
Distance forward from rear axle centre	682 mm
Distance from tractor's median plane	0 mm

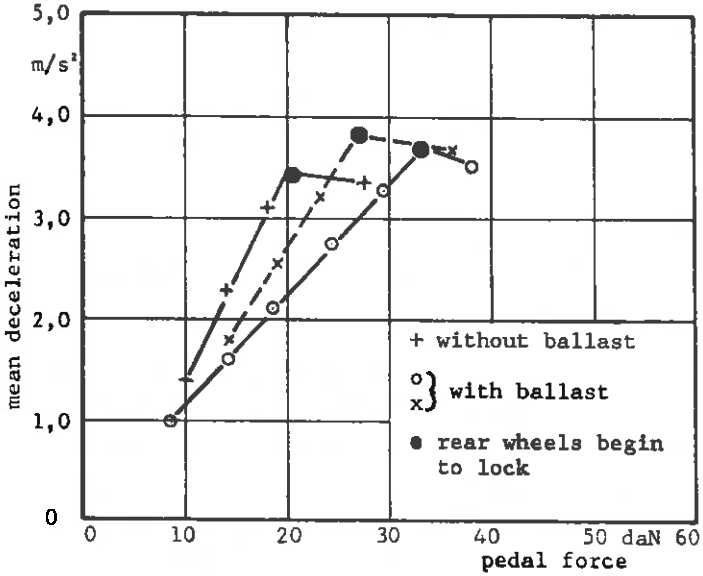
(5) BRAKING (Front wheel drive disengaged)

Date of tests: 13th and 14th August 1986

	Tractor mass (with driver) front kg	rear kg	total kg	Speed before application of brakes km/h
Without ballast	550	770	1320	25,6
With ballast	805	1495	2300	25,0

A) Service brake

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

B) Parking brake (actuated by pedal)

	Ballasted tractor on 18%-slope		Unballasted tractor on 12%-slope with trailer of 1320 kg	
	up	down	up	down
Braking device control force daN	50	50	50	50

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(6) MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of test: 13th August 1986
Type of track: Concrete
Type of sound level meter: BRÜEL & KJAER model 2209

Results of test

Gear: 4 H N *)
Travelling speed before acceleration: 19,2 km/h
Sound level: 83,5 dB(A)

(7) NOISE MEASUREMENT AT THE DRIVER'S EAR

Date of tests: 13th August 1986
Type of track: Concrete
Type of sound level meter: BRÜEL & KJAER model 2209

Tractor fitted out with safety frame BUISARD model 55 4023

Results of tests

Gear	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 N	1338	1,45	1,29	89,5
2 L N	1337	2,01	1,79	90,0
3 L N	1345	3,17	2,77	90,5
4 L N	1077	4,48	4,11	91,0
1 H N **)	651	7,82	7,54	91,0
1 H N **)	light load	7,82	8,45	88,5
2 H N	455	10,90	10,52	91,0
3 H N	249	17,13	17,75	91,5
4 H N *)	light load	24,21	25,60	90,0

*) Front wheel drive disengaged

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

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(8) LIFTING FORCES AND HYDRAULIC POWER

Date of tests: 28th August 1986

Lifting Forces (Linkage dimensions: see page 10 and 11)

	Height of lower hitch points 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	190	585	880	125	-	-
On the frame	190	750	680	125	913	16,0

Temperature of hydraulic fluid at start of test 65 °C

Lifting heights relative to horizontal lower links

mm	-330	-300	-265	-200	-100	0	+100	+200	+300	+320	+400	+420
Lifting forces at hitch points												
daN			880	920	960	990	1010	1020	1000	990		
Lifting forces at test frame												
daN	690	710		740	770	780	780	770	760		700	680

Hydraulic Power

Sustained pressure with relief valve open 156 bar
Pump delivery rate at minimum pressure 26,0 l/min

	Hydraulic power kW	Flow rate l/min	Pressure bar	Oil temperature °C
at 90% of the actual relief valve setting	2,0	8,7	140	65
maximum	5,3	25,5	125	65

Tapping point used for test: at hydraulic block for remote circuit

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Kubota L 2550 D Test No. 86-149

OPTIONAL TEST

(9) ENGINE PERFORMANCE

Date of tests: 5th August 1986
Location of tests: DLG-Testing-Station Groß-Umstadt
Type of dynamometer: SCHENCK eddy-current-dynamometer W 150

Power kW	Engine speed r/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					
19,8	2600	5,41	4,62	233	3,66
At rated engine speed					
19,8	2600	5,41	4,62	233	3,66
At standard p.t.o. speed (540 r/min)					
19,4	2298	5,13	4,38	226	3,78
Part loads					
(i) the torque corresponding to maximum power at rated speed					
19,8	2600	5,41	4,62	233	3,66
(ii) 85% of the torque obtained in (i)					
17,1	2648	4,75	4,05	236	3,61
(iii) 75% of the torque obtained in (ii)					
13,0	2673	3,82	3,26	251	3,40
(iv) 50% of the torque obtained in (ii)					
8,8	2708	2,96	2,52	287	2,97
(v) 25% of the torque obtained in (ii)					
4,5	2754	2,15	1,83	410	2,08
(vi) unloaded					
-	2796	1,39	1,19	-	-

Optimum fuel consumption: 220 g/kWh at 14.8 kW and 1950 r/min
No load maximum engine speed: 2795 r/min
Torque at rated engine speed: 72 Nm
Maximum torque: 91 Nm at 1600 r/min of the engine

Mean atmospheric conditions

temperature	22 °C
pressure	1000 mbar
relative humidity	80 %

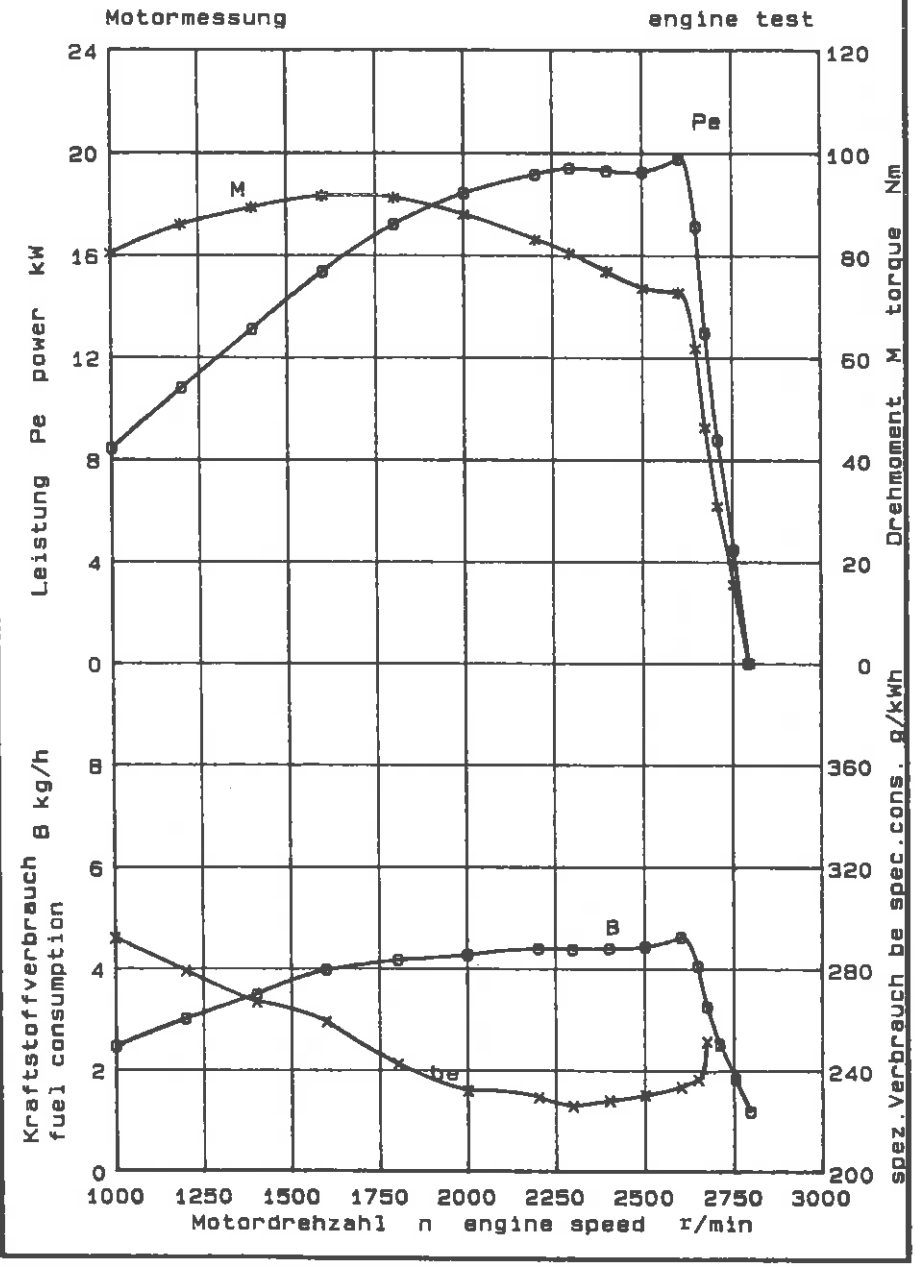
Maximum temperatures

coolant	94 °C
oil	107 °C
fuel	23 °C
engine air intake	27 °C

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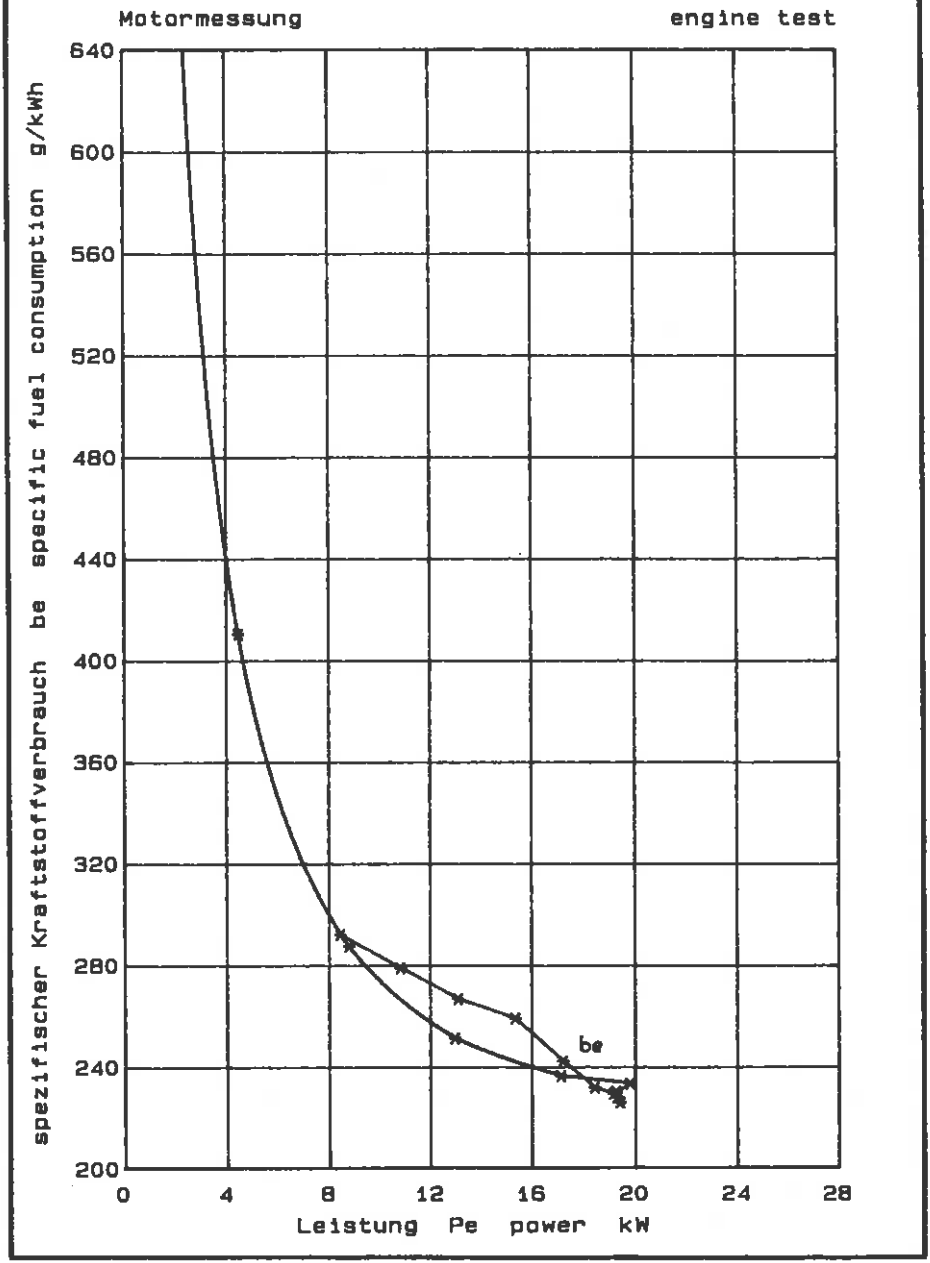
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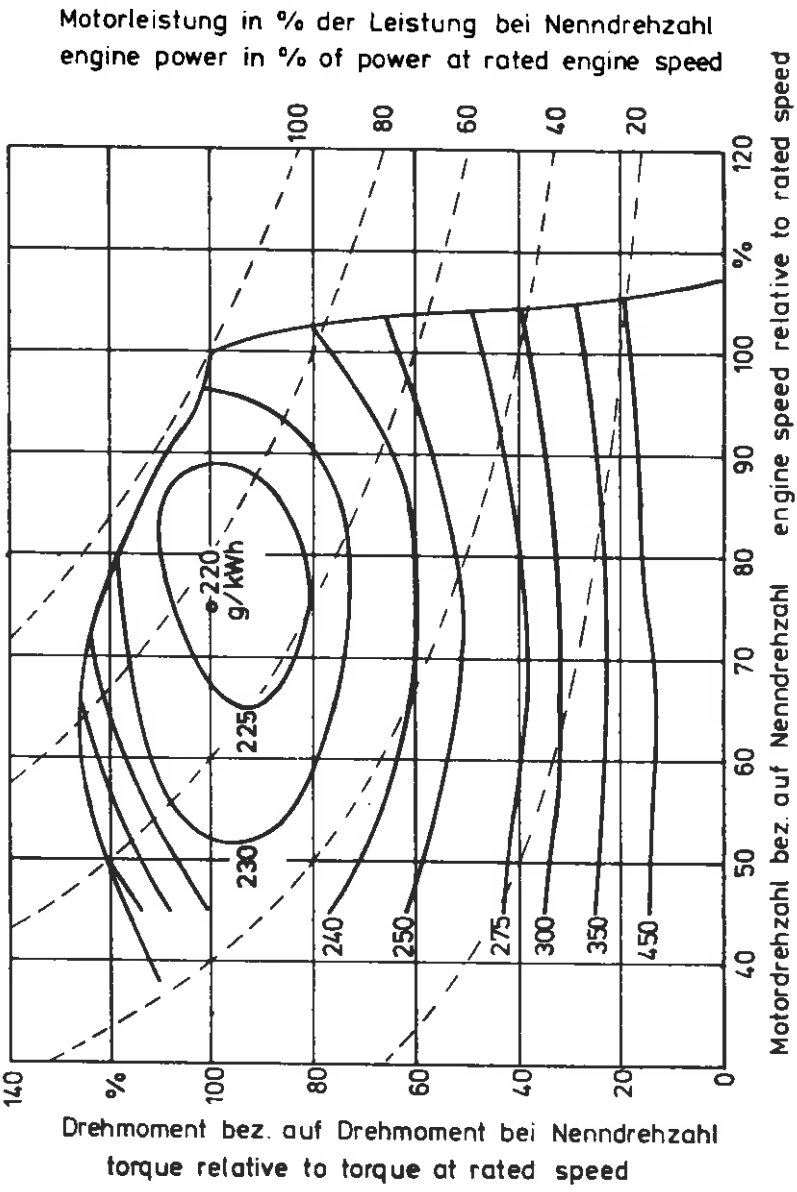
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