

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



O.E.C.D. No.

714



Agricultural Tractor FENDT Farmer 104 LS Turbomatik

Manufacturer

**X. Fendt & Co., Maschinen- und Schlepperfabrik
D-8952 Marktoberdorf**

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 November 1980
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.N.E.E.M.A., France) as being in accordance with the O.E.C.D. STANDARD CODE.

Date of Approval: 26th May, 1981

OECD No. 714

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	$1 \text{ daN} = 10 \text{ N}$	$= 1,02 \text{ kp}$	or 1 kp	$= 0,981 \text{ daN}$
Powers	1 kW	$= 1,36 \text{ PS}$	or 1 PS	$= 0,736 \text{ kW}$
Pressures	1 bar	$= 1,02 \text{ kp/cm}^2$	or 1 kp/cm^2	$= 0,981 \text{ bar}$
	1000 mbar	$= 750,1 \text{ mm Hg}$		

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TABLE OF CONTENTS

	Page
<u>SPECIFICATION OF TRACTOR</u>	4 to 14
<u>TEST CONDITIONS</u>	14 and 15
<u>COMPULSORY TESTS</u>	
(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
(6) Measurement of external noise level	24
(7) Noise measurement at the driver's ear	24
(8) Power lift and hydraulic pump performance	25 to 28
<u>OPTIONAL TESTS</u>	
(9) Engine performance	29 to 32



Tractor manufacturer: X. FENDT UND CO
D-8952 Marktoberdorf
Submitted for test by: Manufacturer
Selected by: Manufacturer with agreement by DLG
Place of running-in: Marktoberdorf and Groß-Umstadt
Duration of running-in: Engine and tractor appr. 120 hours

SPECIFICATION OF TRACTOR

Tractor

Make: X. FENDT UND CO
Model: FARMER 104 LS TURBOMATIK
Type: Wheeled tractor, unit construction,
rear wheel driven
Serial No.: 238/05/24678

Engine

Make: MWM MOTORENWERKE MANNHEIM AG
Model: D 226-3
Type: 4-stroke Diesel engine with direct injection;
watercooled
Serial No.: 226.3.2.08254
Cylinders: 3 in-line; bore 105 mm, stroke 120 mm;
displacement 3116 cm³; compression ratio 18;
dry forced-in cylinder liners
Valves: Overhead
Fuel system: SOLEX fuel feed pump PE 20136;
BOSCH in-line injection pump;
PES 3 A 80 D 320/3 RS 1299;
manufacturer's production setting 56 mm³/stroke
at 2350 rev/min and full load;
injection timing 28° before TDC;
BOSCH multihole injection nozzles 0.433.270.114;
injection pressure 180 bar;
BOSCH fuel filter with replaceable cartridge;
capacity of fuel tank 73 l
Governor: BOSCH centrifugal variable speed type governor;
EP/RSV 325-1500 A 2 B 505 DR;
governed range of engine speed from
650 to 2520 rev/min;
rated engine speed 2350 rev/min



PRÜFUNGS-ABTEILUNG

FENDT FARMER 104 LS

- 5 -

Test No. 79-243

- Air cleaner:** MANN
dry paper element filter with precleaner incorporated, with replaceable cartridge; maintenance indicator;
(safety cartridge optional)
- Exhaust silencer:** EBERSPÄCHER
multi-chamber reflection type silencer;
110 mm diameter, 720 mm long;
above engine cowling, mouth showing upward;
mouth 2390 mm above ground;
(optional: silencer on the left hand side with mouth showing rearward available)
- Lubrication system:** Forced feed from gear type pump;
strainer in sump;
MANN oil filter in full flow with by-pass valve and replaceable cartridge;
oil capacity 7,25 l;
oil and oilfilter changing period 200 hours or once a year;
recommended oil quality MIL-L-2104 C
or MIL-L-46152
recommended oil viscosities:
winter SAE 10W
summer SAE 20W/20
tropics SAE 30
- Cooling system:** Water cooling with impeller pump;
pressurized system adjusted to 0,3 bar overpressure with by-pass thermostat;
fan with 7 blades, 400 mm diameter;
water capacity 10 l
- Starting system:** Electrical;
BOSCH pre-engaged-drive starting motor 2 kW;
BERU flame plug in intake pipe 154 GF
- Electrical equipment:** 12 Volt, negative earth;
BOSCH three phase alternator G1 14V 33A 27,462 W
1 lead acid battery 88 Ah at 20 hours rating



Transmission

- Clutch : 1. VOITH GETRIEBE KG
 fluid clutch 358 TD-F,
 for travel and p.t.o. drive
2. FICHTEL UND SACHS AG
 dry single-plate type clutch G 250 K,
 for travel drive only, 250 mm dia,
 pedal operated
- Gear box: Own make
 spur gear reduction gear between fluid
 clutch and disc clutch;
 synchromesh speed change gear with
 3 forward gears and 1 reverse gear;
 collar shifted group gear with
 2 groups A and S;
 fine stepped transmission with collar shifted
 slow and fast group arranged before the
 speed change gear and group gear;
 1 synchronized high speed gear independent
 from fine stepped transmission and from
 group gear;
 totally 13 forward and 4 reverse speeds;
 optional: the fine stepped transmission
 may be fitted with a sliding gear shifted
 creep speed group,
 not fitted on tractor tested;
 with creep speed group engaged the road group
 is locked automatically;
 optional: the tractor may be fitted with
 a reversing gear for all forward speeds;
 preselected by hand lever, operated by disc
 clutch pedal
- Rear axle and Own make
final drives: Portal construction;
 bevel gear drive;
 bevel gear type differential with pedal
 operated, self disengaging lock;
 spur gear final drives in portals



PRÜFUNGS-ABTEILUNG
FENDT FARMER 104 LS

- 7 -

Test No. 79-243

Total ratios and speeds

Group	Fine stepped gear	Gear	Total ratio engine : driving wheel	Nominal travelling speed at rated engine speed *) km/h
Forward speeds				
A	FL	1	461,57	1,31
		2	279,18	2,16
		3	159,13	3,79
	FS	1	362,14	1,67
		2	219,03	2,75
		3	124,85	4,83
S	FL	1	111,67	5,40
		2	67,54	8,95
		3	38,50	15,70
	FS	1	87,61	6,90
		2	52,99	11,41
		3	30,21	20,01
High speed gear			20,69	29,22
Reverse speeds				
A	FL	R	268,01	2,25
	FS	R	210,27	2,87
S	FL	R	64,84	9,33
	FS	R	50,87	11,89

*) Calculated with the radius index 695 mm,
1,8% slippage of the fluid clutch is included



Oil capacity:	Fluid clutch	5,1 l
	spur gear reduction gear	5,7 l
	speed change gear, group gear,	
	axle drive and fine stepped	
	transmission	25,75 l
	final drives	each 2,9 l

Oil changing		
period:	Fluid clutch	5000 hours
	gears	1000 hours

Recommended			
oil qualities:	Fluid clutch	engine oil	SAE 10W
		MIL-L-2104C or	MIL-L-46152
	final drives	hypoid oil	SAE 90
			MIL-L-2105B
	other gears	transmission oil	SAE 80
			MIL-L-2105

Power take-off

Main p.t.o.: Live p.t.o., at rear of tractor,
driven by an independent dry multiplate clutch,
operated by hand lever;
height above ground 645 mm, in median plane
of tractor,
356 mm behind rear axle centre line;
35 mm dia, 6 splines DIN 9611/ISO 500 type 1

2 speeds are preselectable by hand lever:

540 rev/min p.t.o.

592 rev/min at rated engine speed and full load,
603 rev/min at rated engine speed without load;
standard p.t.o.-speed 540 rev/min at
2150 rev/min engine speed and full load or at
2106 rev/min engine speed without load

1000 rev/min p.t.o.

1074 rev/min at rated engine speed without load,
standard p.t.o.-speed 1000 rev/min at
2189 rev/min engine speed without load

fluid clutch slippage under full load
at rated engine speed 1,8%
at standard p.t.o.-speed 540 rev/min 2,1%

direction of rotation clockwise, viewed
from tractor rear



Ground speed

p.t.o.: Optional, not fitted on tractor tested

Secondary

p.t.o.: Optional, not fitted on tractor tested;
front p.t.o., driven by the front end
of the engine-crankshaft

Power lift

Hydraulic
system:

Own make
hydraulic power lift in unit construction;
BOSCH gear type pump 0510 615 317
with 16 cm³/rev delivery,
directly driven by engine;
BOSCH control valve for lifting, lowering,
floating position, draft and position control,
both steplessly mixable;
top link sensing;
max. oil pressure 175 bar;
single acting ram with 86 mm bore and
138 mm stroke, without overpressure relief
valve;
with lowering throttle;
with oil filter;
1 single acting additional control valve with
oil tapping;
up to 2 single acting or 1 single and
1 double acting additional control valves with
oil tappings available;
hydraulic oil tank with 16,5 l capacity,
10 l may be taken off through oil tappings
when tractor is working stationary or driving;
recommended oil:
engine oil SAE 20W/20 MIL-L-2104C
or MIL-L-46152

oil and oil-filter changing interval all
1000 hours or once a year



Implement
linkage:

Three point linkage DIN 9674 or ISO 730/I,
category 2;
lift rods length adjustable from
633 mm to 723 mm;
lifting height above ground with
short lift rods from 284 to 915 mm
long lift rods from 64 to 785 mm

Holed bar:

Long bar, fitted on clevis of lower links,
total length 1700 mm, length between the
joint balls 825 mm, thickness 25 mm,
width 100 mm,
centre hole and 4 holes on either side
with 80 mm distance each,
right and left from this hole range further
4 holes with 80 mm distance each;
all holes 33 mm dia;
height above ground adjustable by power lift;
the holed bar is hydraulically-mechanically
lockable in the height 357 to 565 mm above
ground, depending on lift rods length,
measured at the surface of the bar;
distance of holes centre line
to rear axle centre 971 mm
to p.t.o. shaft end 615 mm

Pull attachment

Trailer hitch:

Own make, AV-001
height above ground adjustable by
shifting to 500, 550, 650, 750, 800, 850
and 900 mm; permissible vertical load 1000 kg;
hitch hole 33 mm dia;
distance of hitch hole centre:
to rear axle centre line 477 mm
to p.t.o. shaft end 121 mm

Swinging
drawbar:

Optionally available,
not fitted on tractor tested

Towing hitch:

At front of tractor, 672 mm above ground



Steering

Own make in cooperation with
ZAHNRADFABRIK FRIEDRICHSHAFEN AG
hydrostatic steering model 8450,
connected with flow-control valve to the
hydraulic system of power lift;
1 double acting FENDT cylinder
with 246 mm stroke and 45 mm dia,
directly acting on front axle

Brakes

- Parking brake: Band brake,
mechanically acting on 2 brake drums
with 205 mm diameter on the differential
half shafts;
operated by hand lever with ratchet
- Service brake: Own make
internal-expanding-shoe brake;
mechanically acting on 2 brake drums
with 180 mm dia on the differential half shafts;
pedal operated
- Steering
brakes: Divided pedal of service brake,
for normal use locked together

Wheels

- Steered wheels: 2 pneumatics at front 7,50-18 6 ply,
max. permissible load on each tyre 810 kg
at 2,25 bar inflation pressure and 30 km/h;
track width 1500 mm, adjustable by telescopic
half axles to 1265 or 1365 mm;
rims 5,50 F x 18
- Driving wheels: 2 pneumatics at rear 16,9 R 30 6 ply,
radial type tyre casing;
max. permissible load on each tyre 1900 kg
at 1,3 bar inflation pressure and 30 km/h;
track width 1500 mm, changeable by turning
wheels to 1360 mm;
rims DW 14 x 30;
optionally offset lug type rims available
- Wheel base: 2143 mm



Cab

EDSCHA 4053 2407
OECD-tested safety cab,
OECD-no. CSD 0015/2-a(C),
antivibration mounts,
front windshield tiltable, without upper
rear window,
lower sliding rear window,
doors on both sides of the cab,
2 mounting steps on either side;
without heating and ventilation system;

noise damping materials

bottom:

molded heavy layer mat 4 mm thick with
PU-foam 15 mm, below this mat a second
rubber mat 3 mm

mudguards:

foam rubber coated with plastic fabric about
10 to 40 mm

roof:

about 20 mm foam rubber, covered with
plastic-coated foam rubber, perforated, 5 mm

optional:

tiltable upper rear window,
hot water heating and ventilation system

Seat

GRAMMER DS 50

upholstered seat with back rest,
adjustable spring with shock absorber;
height of driver's platform above ground
835 mm,
height of unloaded seat above platform
adjustable in 2 steps from 510 to 570 mm,
for and aft adjustable about 105 mm

Number of grease points 12



Lighting equipment Electrical, 12 Volt
as per German legislation

	Dimensions	Height of centre above ground	Distance from outside edge of tractor to centre
	mm	mm	mm
Head lamps	135 x 120	900	788
Side lamps	55 x 60	1520	120
Rear lamps	60 x 50	1430	240
Reflectors			
1st pair	125 x 36	1370	240
2nd pair	80 dia	660	575

Dimensions

Total length: 3680 mm without ballast
 3800 mm with ballast

Total width: 1930 mm without ballast
 2010 mm with ballast

Total height: 2435 mm to top of cab

Ground clearance: 420 mm below rear axle



Permissible total weights and axle loads
for all available wheel equipment acc. to German regulations

Tyre dimensions		Permissible total weight kg	Permissible axle load	
at front	at rear		at front kg	at rear kg
7,50-16 or 7,50-18	16,9-30 13,6-36 14,9-30	4000	1600	3400
	8,3-44 9,5-44			2880 3400

All tyres 6 ply, only tyres 9.5 - 44 8 ply

TEST CONDITIONS

Weights

		Without driver	With driver
Without ballast:	front	965 kg	975 kg
	rear	1850 kg	1920 kg
	total	2815 kg	2895 kg
Front ballast:	1 base plate		30 kg
	5 front weights 35 kg each		175 kg
Rear ballast:	5 weights per wheel 64 kg each		640 kg
	water in the tyres		460 kg
With ballast:	front	1200 kg	1210 kg
	rear	2920 kg	2990 kg
	total	4120 kg	4200 kg



Track setting during tests

front axle	1500 mm
rear axle	1500 mm

Fuel and lubricants used in tests

Fuel:	ARAL Diesel fuel	DIN 51601	
	specific gravity at 15°C		
	at engine and p.t.o. tests		0,824 kg/l
	at drawbar tests		0,822 kg/l
Engine:	ARAL engine oil KOWAL		SAE 20W/20
Fluid clutch:	MOBIL engine oil MOTREX 8910		SAE 10W
Transmission and rear axle:	MOBIL multi purpose transmission oil GX80		SAE 80
Final drives:	MOBIL hypoid oil GX 90		SAE 90
Hydraulic system:	MOBIL engine oil MOTREX 8920		SAE 20W/20

**PRÜFUNGS-ABTEILUNG**

FENDT FARMER 104 LS

- 16 -

Test No. 79-243

COMPULSORY TESTS(1) MAIN POWER TAKE-OFF PERFORMANCE (540 rev/min)

Date of tests: 26th September 1980

Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	engine	Speed fl.clutch output rev/min	p.t.o. rev/min	Fuel consumption			Specific energy
	rev/min			total l/h	kg/h	specific g/kWh	kWh/l

Maximum powerAt 2-hour test

37.8	2350	2307	592	11.78	9.70	257	3.21
------	------	------	-----	-------	------	-----	------

At the speed recommended for drawbar work

37.8	2350	2307	592	11.78	9.70	257	3.21
------	------	------	-----	-------	------	-----	------

Part loads, the governor hand lever in the position
corresponding to the maximum power at full load

(i) 85% of the torque at maximum power at 2-hour test

32.8	2400	2360	605	10.25	8.44	257	3.20
------	------	------	-----	-------	------	-----	------

(ii) unloaded

-	2506	2506	642	3.32	2.73	-	-
---	------	------	-----	------	------	---	---

(iii) 50% of the torque defined in (i)

17.0	2462	2436	625	6.65	5.48	323	2.55
------	------	------	-----	------	------	-----	------

(iv) maximum power

37.8	2350	2307	592	11.78	9.70	257	3.21
------	------	------	-----	-------	------	-----	------

(v) 25% of the torque defined in (i)

8.6	2484	2470	633	4.93	4.06	471	1.75
-----	------	------	-----	------	------	-----	------

(vi) 75% of the torque defined in (i)

25.1	2436	2400	615	8.54	7.03	280	2.94
------	------	------	-----	------	------	-----	------



PRÜFUNGS-ABTEILUNG
FENDT FARMER 104 LS

- 17 -

Test No. 79-243

Power kW	engine rev/min	Speed	p.t.o. rev/min	Fuel consumption		Specific energy kWh/l	
		fl.clutch output rev/min		total l/h	specific kg/h		g/kWh
Part loads, the governor hand lever in the position corresponding to the standard p.t.o. speed at full load							
(i) 85% of the torque at maximum power at standard p.t.o speed							
31.4	2207	2162	554	9.66	7.96	254	3.24
(ii) unloaded							
-	2275	2273	583	2.61	2.15	-	-
(iii) 50% of the torque defined in (i)							
16.1	2242	2216	568	5.99	4.93	307	2.69
(iv) maximum power							
35.9	2150	2105	540	10.96	9.02	251	3.28
(v) 25% of the torque defined in (i)							
8.1	2261	2250	577	4.31	3.55	435	1.89
(vi) 75% of the torque defined in (i)							
23.8	2223	2191	562	7.71	6.35	266	3.09

Standard specific fuel consumption (g/kWh): 257/323/254/307

No load maximum engine speed: 2506 rev/min

Equivalent flywheel torque at maximum power (2 hours): 156 Nm

Maximum equivalent flywheel torque: 184 Nm at 1600 rev/min
of the engine

Mean atmospheric conditions: temperature 20 °C
pressure 1007 mbar
relative humidity 55 %

Maximum temperatures: coolant 85 °C
engine oil 101 °C
fuel 23 °C
engine air intake 22 °C

The equivalent flywheel torques are given relative to the output shaft of the fluid clutch

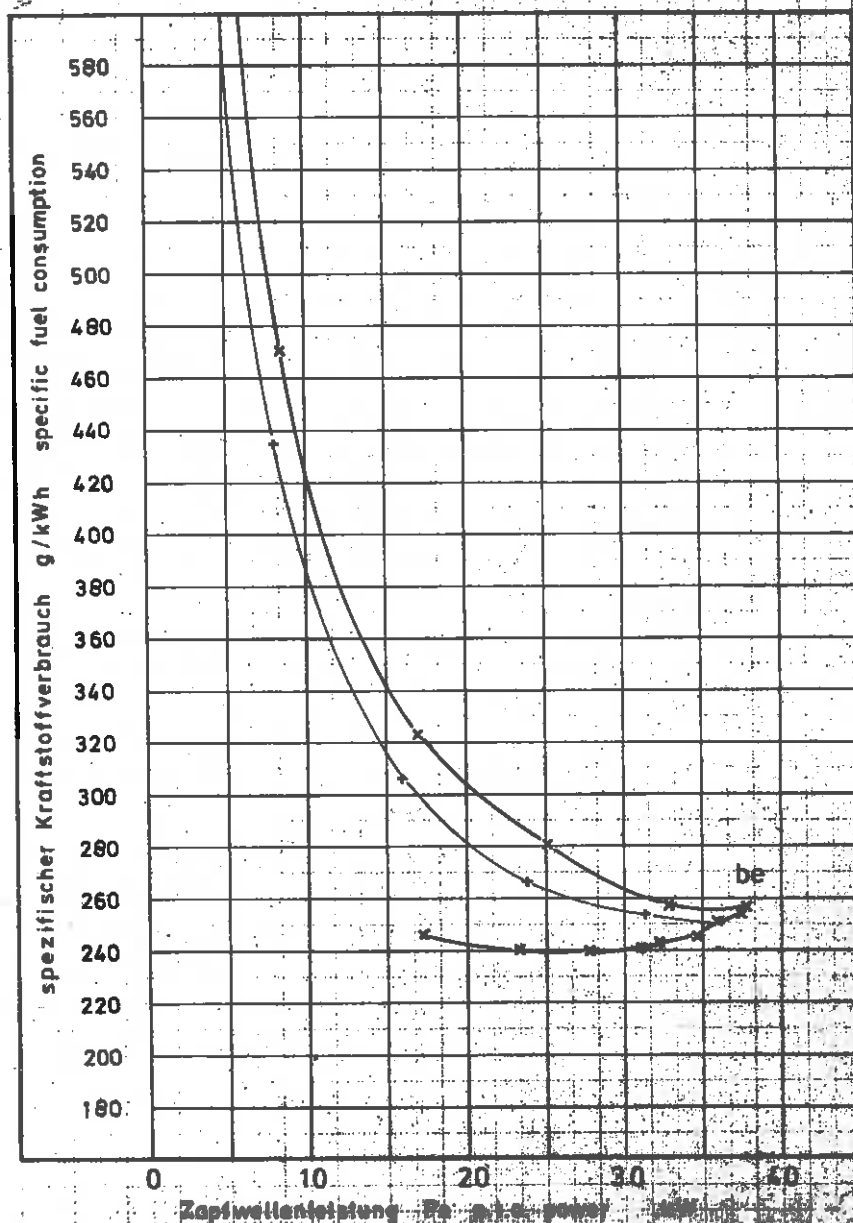


PRÜFUNGS-ABTEILUNG
FENDT FARMER 104 LS

Zapfwellenleistung

Pto performance

Test Nr. 79-243



(2) DRAWBAR PERFORMANCE

Date of tests: 13th till 25th November 1980

Type of track: Concrete

Gear No. and Group	Driving speed km/h	Power kW	Drawbar pull daN	Engine speed rev/min	Slip of wheels %
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(i) MAXIMUM POWER with ballast
height of drawbar above ground 510 mm

1 A FL	1,17	12,6	3864	2458	14,9
1 A FS	1,47	15,8	3869	2446	15,0
2 A FL	1,89	20,3	3875	2431	15,0
2 A FS	2,36	25,4	3873	2394	15,0
3 A FL	3,42	30,8	3247	2352	8,4
3 A FS	4,49	31,6	2535	2347	5,7
1 S FL	5,06	32,7	2325	2350	4,9
1 S FS	6,55	31,5	1729	2352	3,6
2 S FL	8,54	32,2	1358	2350	2,8
2 S FS	10,97	31,4	1031	2352	2,0

(ii) FIVE-HOUR TEST at 75% of pull at maximum power
in 1st S FS gear

1 S FS	6,83	24,6	1297	2418	2,6
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(iii) FIVE HOUR TEST
at pull corresponding to 15% wheel slip in test (i)

2 A FS	2,40	26,3	3875	2392	-
--------	------	------	------	------	---

(iv) MAXIMUM POWER without ballast
height of drawbar above ground 570 mm

2 A FS	2,43	19,0	2816	2438	14,9
3 A FL	3,28	25,6	2808	2398	14,9
3 A FS	4,29	30,4	2551	2353	10,5
1 S FL	4,88	31,5	2321	2348	8,8
1 S FS	6,40	32,3	1816	2350	6,1
2 S FL	8,44	32,6	1390	2350	4,3
2 S FS	10,87	32,5	1077	2350	3,3
3 S FL	15,11	31,8	757	2350	2,1

Total oil consumption during ten hours duration of tests
(ii) and (iii) 24 g/h



Tyres size front: 7,50-18 6 ply
rear: 16,9 R 30 6 ply

Tread bar height at the beginning of drawbar tests 95% of the value when new

Specific energy kWh/l	Specific fuel consumpt. g/kWh	Temperatures			Atmospheric conditions		
		Fuel °C	Coolant °C	Engine- oil °C	Tempe- rature °C	Relative humidity %	Pressure mbar
tyre inflation pressure 0,9 bar							
1,90	431	21	81	87	17	71	1002
2,09	392	21	81	88	17	70	1002
2,28	359	21	83	88	18	69	1002
2,42	338	21	83	89	18	70	1002
2,58	317	21	83	89	16	74	1002
2,66	307	21	84	89	16	76	1002
2,74	298	21	85	92	17	76	1002
2,67	308	16	85	91	16	78	1002
2,72	302	16	85	90	15	79	1003
2,65	310	16	85	89	15	79	1003

2,59	317	20	85	97	19	80	1004
-	-	16	85	98	15	82	1007

tyre inflation pressure 0,8 bar							
2,23	370	11	79	83	10	78	1002
2,41	343	11	79	83	10	79	1002
2,58	320	12	82	89	10	75	1002
2,68	308	12	83	88	10	74	1002
2,72	303	12	83	88	10	75	1002
2,75	299	12	83	87	10	73	1002
2,74	301	12	84	87	10	72	1002
2,69	307	12	84	87	9	71	1002

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

**(3) TURNING SPACE AND TURNING CIRCLE**

Wheel equipment front: 7,50-18 6 ply
 rear: 16,9 R 30 6 ply

Track of wheels front: 1500 mm
 rear: 1500 mm

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	3,59	3,52	4,09	4,02
Radius of turning circle	3,36	3,26	3,86	3,76

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	852 mm
Distance forward from rear axle centre	719 mm
Distance from tractor's median plane, to the right	3 mm



(5) BRAKING PERFORMANCE

A) SERVICE BRAKE

Date of tests: 17th and 18th November 1980
Type of track: Concrete
Type of decelerometer: MOTO-METER-Bremsverzögerungs-
und Pedalkraftschreiber

Weight of ballasted tractor with driver 4200 kg

Cold brakes

		With ballast	Without ballast
Travelling speed	km/h	25,0	25,0
Deceleration	m/s ²	4,6	4,2
Stopping distance	m	5,6	6,2
Force on pedal	daN	51	30
Force on pedal to achieve a deceleration of 2,5 m/s ²	daN	27	18

Brake fade characteristics (hot tests)

Deceleration	hot/cold	%	96	100
Stopping distance	cold/hot	%	96	100
Force on pedal	cold/hot	%	91	100

B) PARKING BRAKE

Tractor facing up 16 % slope
Pull on hand brake 42 daN, tractor does not roll

Tractor facing down 16 % slope
Pull on hand brake 45 daN, tractor does not roll

**(6) AMBIENT NOISE EMITTED BY THE TRACTOR**

Date of test: 14th November 1980
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2209

Results of test

Gear: High speed gear
Travelling speed before
acceleration: 23,5 km/h
Sound level: 87,0 dB(A)

(7) NOISE AT THE DRIVER'S EAR LEVEL

Date of tests: 13th November 1980
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2209

Tractor with EDSCHA safety cab, without upper rear window

Results of tests

Gear	Drawbar pull at which the tractor develops the maximum sound level daN	Travelling speed		Sound level dB(A)
		nominal km/h	effective km/h	
1 A FL	2644	1,31	1,14	85
1 A FS	2647	1,67	1,48	85,5
2 A FL	2714	2,16	1,79	86,5
2 A FS	2675	2,75	2,39	86,5
3 A FL	2668	3,79	3,29	88
3 A FS	2534	4,83	4,19	88,5
1 S FL	2294	5,40	4,87	88
1 S FS *)	1754	6,90	6,44	88
2 S FL	1351	8,95	8,45	88
2 S FS	1037	11,41	10,86	87,5
3 S FL	735	15,70	15,09	88,5
High speed	light load	29,22	31,3	85,5

*) The 1st S FS gear corresponds to the travelling speed nearest to 7,5 km/h



(8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

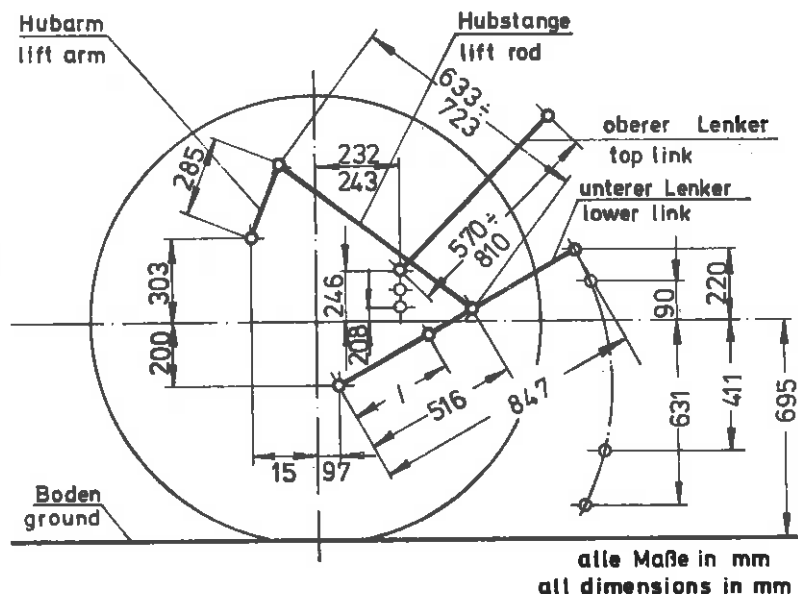
Date of tests: 9th and 10th October 1980

HYDRAULIC PUMP

- | | |
|---|------------|
| (1) Opening pressure of relief valve in remote circuit | 150 bar |
| Sustained pressure by open relief valve | 180 bar |
| (2) Pump delivery rate at minimum pressure and rated engine speed | 30,3 l/min |
| (3) Pump delivery rate at max. hydraulic power | 28,5 l/min |
| corresponding delivery pressure | 160 bar |
| power | 7,6 kW |

POWER LIFT

Dimensions of linkage geometry for the table on page 28





LIFTING FORCES

Lifting heights relative to horizontal lower links

mm	-445	-431	-400	-300	-220	-211	-200	-100
----	------	------	------	------	------	------	------	------

at hitch points maximum mechanical advantage

daN						1670	1670	1760
-----	--	--	--	--	--	------	------	------

minimum mechanical advantage

daN		1400	1440	1540			1610	1650
-----	--	------	------	------	--	--	------	------

Max. force exerted throughout the whole range 1670 daN

Front axle does not lift

at test frame maximum mechanical advantage

daN					1690		1700	1740
-----	--	--	--	--	------	--	------	------

minimum mechanical advantage

daN	1530		1540	1550			1550	1530
-----	------	--	------	------	--	--	------	------

Max. force exerted throughout the whole range 1400 daN

Front of tractor does not lift if front axle is ballasted
to its max. permissible load (1600 kg)



0	+100	+200	+290	+300	+305	+400	+420	+435
---	------	------	------	------	------	------	------	------

lift rods 633 mm long

1800	1810	1790		1760		1750	1750	
------	------	------	--	------	--	------	------	--

lift rods 723 mm long

1650	1620	1620	1620					
------	------	------	------	--	--	--	--	--

lift rods 633 mm long, high top link pivot point

1740	1690	1610		1530		1440		1400
------	------	------	--	------	--	------	--	------

lift rods 723 mm long, lower top link pivot point

1480	1430	1390		1350	1340			
------	------	------	--	------	------	--	--	--

All values of forces for pressure 160 bar at max. hydraulic power, see page 25; calculated from measurements at max. oil pressure 180 bar



LINKAGE GEOMETRY when connected to the standard frame	Maximum mechanical advantage	Minimum mechanical advantage
Projected length in side view:		
Lower links	847 mm	847 mm
Lift arms	285 mm	285 mm
Lift rods	633 mm	723 mm
Top link	712 mm	702 mm
Distance of lift rod connection point from pivot point of lower link	516 mm	516 mm
The following dimensions are given relative to rear axle centre line 695 mm above ground		
Lower link pivot point	97 mm behind, 200 mm below	97 mm behind, 200 mm below
Top link pivot point	232 mm behind, 246 mm above	243 mm behind, 208 mm above
Lift arm pivot point	15 mm before, 303 mm above	15 mm before, 303 mm above
Maximum and minimum height of lower link hitch points	220 mm above, 411 mm below	90 mm above, 631 mm below
Height of lower link hitch points above ground when locked in highest transport position	485 mm	



OPTIONAL TESTS

(9) ENGINE PERFORMANCE

Date of tests: 2nd July and 22nd September 1980
Type of dynamometer: SCHENCK eddy-current dynamometer W 150

Power kW	Engine speed rev/min	Fuel consumption			Specific energy kWh/l
		total l/h	kg/h	specific g/kWh	
<u>Maximum power</u>					
At 2-hour test					
42.7	2350	12.06	9.93	233	3.54
At standard p.t.o. speed (540 rev/min)					
40.4	2150	11.09	9.13	226	3.64
At the speed recommended for drawbar work					
42.7	2350	12.06	9.93	233	3.54
<u>Part loads</u>					
(i) 85% of the torque at maximum power at 2-hour test					
37.2	2409	10.47	8.62	232	3.56
(ii) unloaded					
-	2521	2.67	2.20	-	-
(iii) 50% of the load defined in (i)					
19.0	2461	6.38	5.25	276	2.98
(iv) maximum power					
42.7	2350	12.06	9.93	233	3.54
(v) 25% of the load defined in (i)					
9.5	2486	4.45	3.66	385	2.14
(vi) 75% of the load defined in (i)					
28.3	2448	8.44	6.95	246	3.35

Optimum fuel consumption: 213 g/kWh at 21,1 kW and 1292 rev/min

No load maximum engine speed: 2521 rev/min

Torque at maximum power (2 hours): 173 Nm

Maximum torque: 198 Nm at 1549 rev/min of the engine

Mean atmospheric conditions: temperature 21 °C
pressure 997 mbar
relative humidity 85 %

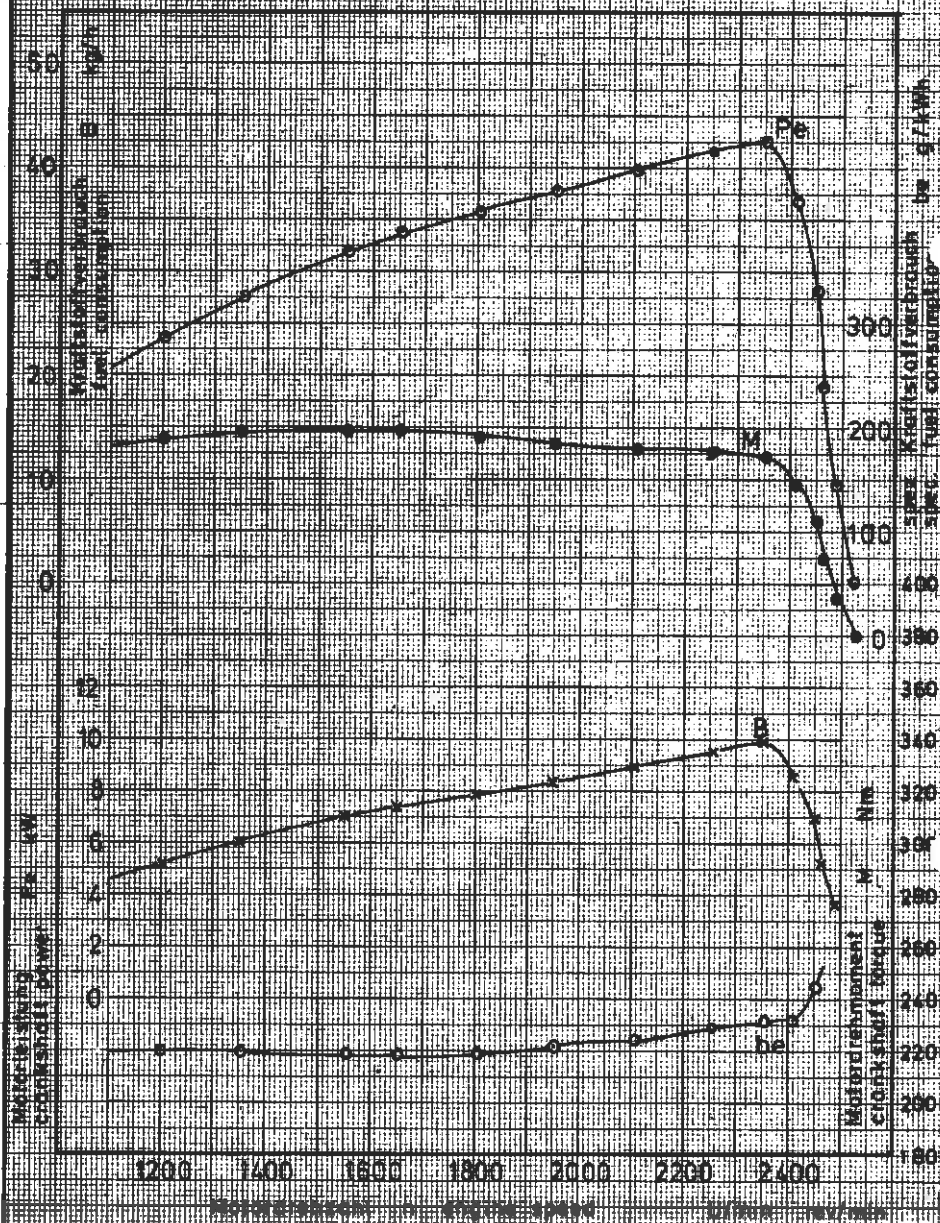
Maximum temperatures: coolant 86 °C
engine oil 101 °C
fuel 25 °C
engine air intake 21 °C



Prüfungsbereich
Motorleistung

Motorleistung Engine performance

Test Nr. 79-243



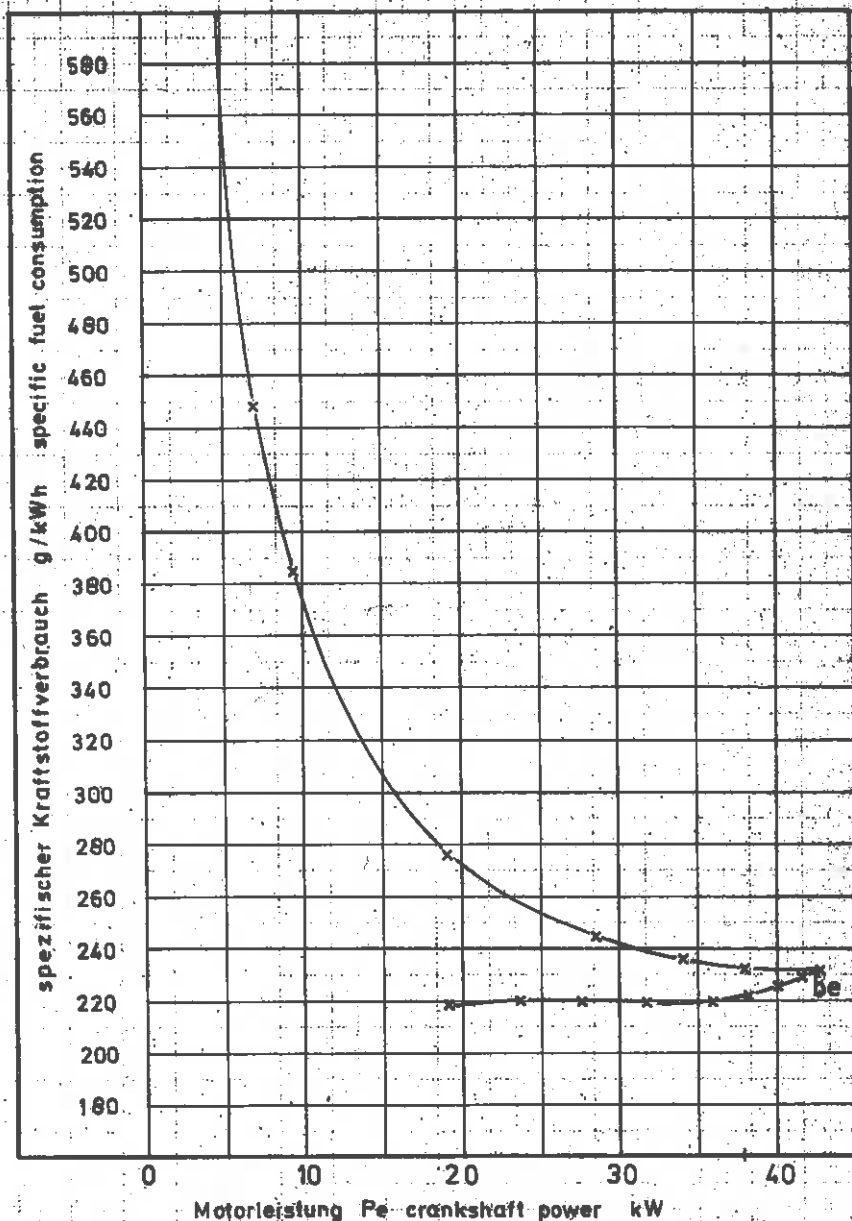


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Motorleistung

Engine performance

Test Nr. 79-243





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TRAFU CAMPUS 100 ES

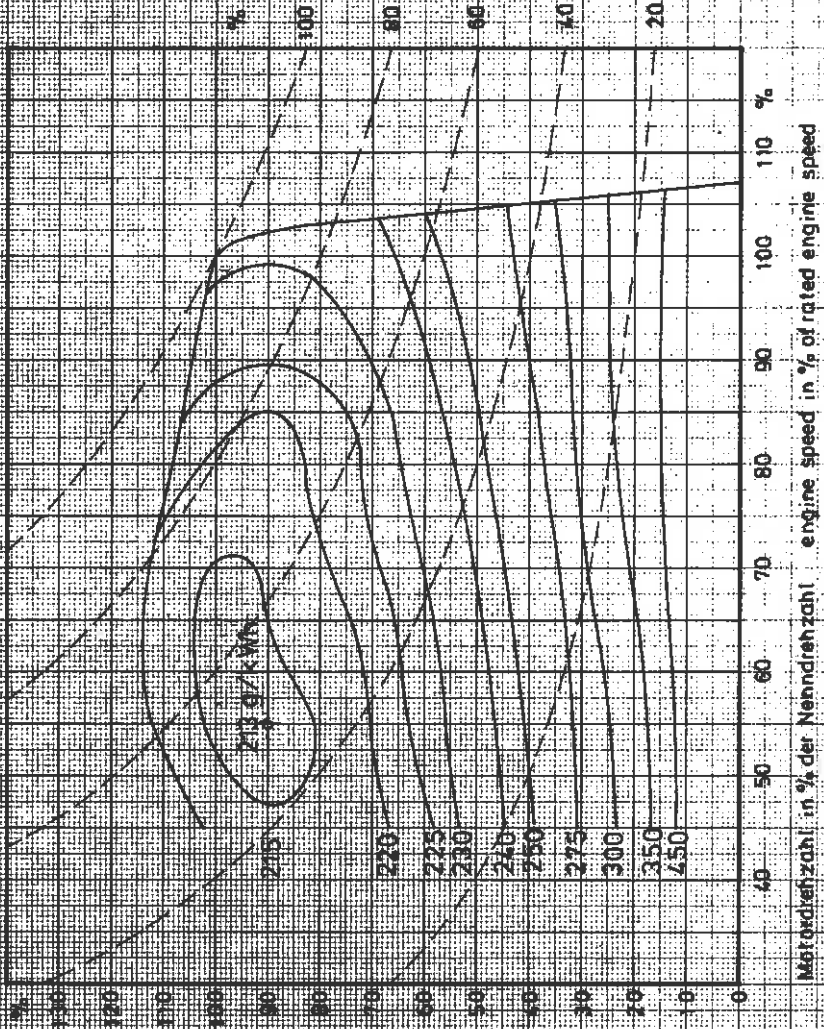
Motorleistung

Engine performance

Test Nr. 79-243

Motorleistung in % der Leistung bei Nenndrehzahl

Engine power in % of power at rated engine speed



Leistung in % des Drehmomentes bei Nenndrehzahl

Torque in % of torque at rated engine speed



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